



RFP No. W912PM18R0003

**US Army Corps
of Engineers®**
Wilmington District

SOF Human Performance
Training Center (HPTC)
PN 79443
Fort Bragg, North Carolina

Specifications - Volume 1 of 3

September 2018

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SOF Human Performance Training Center, FY-18, PN 79443, Ft. Bragg, NC.

SOLICITATION, OFFER, AND AWARD <i>(Construction, Alteration, or Repair)</i>	1. SOLICITATION NO. W912PM18R0003	2. TYPE OF SOLICITATION <input type="checkbox"/> SEALED BID (IFB) <input checked="" type="checkbox"/> NEGOTIATED (RFP)	3. DATE ISSUED 07-Sep-2018	PAGE OF PAGES 1 OF 101
	IMPORTANT - The "offer" section on the reverse must be fully completed by offeror.			

4. CONTRACT NO.	5. REQUISITION/PURCHASE REQUEST NO.	6. PROJECT NO.
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7. ISSUED BY U S ARMY CORPS OF ENGINEERS, WILMINGTON WILMINGTON DISTRICT ATTN: CONTRACTING DIVISION 69 DARLINGTON AVE WILMINGTON NC 28403-1343 TEL: 910-251-4700 FAX: 910-251-4454	CODE W912PM	8. ADDRESS OFFER TO <i>(If Other Than Item 7)</i> CODE See Item 7 TEL: FAX:
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9. FOR INFORMATION CALL:	A. NAME MICHAEL M MULLEN	B. TELEPHONE NO. <i>(Include area code) (NO COLLECT CALLS)</i> 910-251-4710
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SOLICITATION

NOTE: In sealed bid solicitations "offer" and "offeror" mean "bid" and "bidder".

10. THE GOVERNMENT REQUIRES PERFORMANCE OF THE WORK DESCRIBED IN THESE DOCUMENTS *(Title, identifying no., date):*

W912PM18R0003 Construct SOF Human Performance Training Center (HPTC), Fort Bragg, NC

This procurement is being solicited and procured using the Low est Price Technically Acceptable (LPTA) source selection process. This Request for Proposal is issued in accordance w ith FAR Part 15.101-2.

This is an unrestricted solicitation.

The Magnitude of Construction is betw een \$10,000,000.00 and \$25,000,000.00.

Point of Contact:
Michael Mullen
michael.m.mullen@usace.army.mil
910-251-4710

11. The Contractor shall begin performance w ithin 10 calendar days and complete it w ithin 540 calendar days after receiving award, notice to proceed. This performance period is mandatory, negotiable. (See 00 73 00 .)

12 A. THE CONTRACTOR MUST FURNISH ANY REQUIRED PERFORMANCE AND PAYMENT BONDS?
(If "YES," indicate within how many calendar days after award in Item 12B.)
 YES NO

12B. CALENDAR DAYS
10

13. ADDITIONAL SOLICITATION REQUIREMENTS:

- A. Sealed offers in original and 1 copies to perform the w ork required are due at the place specified in Item 8 by 02:00 PM (hour) local time 07 Oct 2018 (date). If this is a sealed bid solicitation, offers must be publicly opened at that time. Sealed envelopes containing offers shall be marked to show the offeror's name and address, the solicitation number, and the date and time offers are due.
- B. An offer guarantee is, is not required.
- C. All offers are subject to the (1) w ork requirements, and (2) other provisions and clauses incorporated in the solicitation in full text or by reference.
- D. Offers providing less than 90 calendar days for Government acceptance after the date offers are due w ill not be considered and w ill be rejected.

SOLICITATION, OFFER, AND AWARD (Continued) <i>(Construction, Alteration, or Repair)</i>											
OFFER (Must be fully completed by offeror)											
14. NAME AND ADDRESS OF OFFEROR <i>(Include ZIP Code)</i>					15. TELEPHONE NO. <i>(Include area code)</i>						
					16. REMITTANCE ADDRESS <i>(Include only if different than Item 14)</i>						
					See Item 14						
CODE		FACILITY CODE									
17. The offeror agrees to perform the work required at the prices specified below in strict accordance with the terms of this solicitation, if this offer is accepted by the Government in writing within _____ calendar days after the date offers are due. <i>(Insert any number equal to or greater than the minimum requirements stated in Item 13D. Failure to insert any number means the offeror accepts the minimum in Item 13D.)</i>											
AMOUNTS		SEE SCHEDULE OF PRICES									
18. The offeror agrees to furnish any required performance and payment bonds.											
19. ACKNOWLEDGMENT OF AMENDMENTS <i>(The offeror acknowledges receipt of amendments to the solicitation -- give number and date of each)</i>											
AMENDMENT NO.											
DATE											
20A. NAME AND TITLE OF PERSON AUTHORIZED TO SIGN OFFER <i>(Type or print)</i>					20B. SIGNATURE			20C. OFFER DATE			
AWARD (To be completed by Government)											
21. ITEMS ACCEPTED:											
22. AMOUNT		23. ACCOUNTING AND APPROPRIATION DATA									
24. SUBMIT INVOICES TO ADDRESS SHOWN IN <i>(4 copies unless otherwise specified)</i>				ITEM		25. OTHER THAN FULL AND OPEN COMPETITION PURSUANT TO					
						<input type="checkbox"/> 10 U.S.C. 2304(c)		<input type="checkbox"/> 41 U.S.C. 253(c)			
26. ADMINISTERED BY			CODE		27. PAYMENT WILL BE MADE BY:					CODE	
CONTRACTING OFFICER WILL COMPLETE ITEM 28 OR 29 AS APPLICABLE											
<input type="checkbox"/> 28. NEGOTIATED AGREEMENT <i>(Contractor is required to sign this document and return _____ copies to issuing office.)</i> Contractor agrees to furnish and deliver all items or perform all work, requisitions identified on this form and any continuation sheets for the consideration stated in this contract. The rights and obligations of the parties to this contract shall be governed by (a) this contract award, (b) the solicitation, and (c) the clauses, representations, certifications, and specifications or incorporated by reference in or attached to this contract.					<input type="checkbox"/> 29. AWARD <i>(Contractor is not required to sign this document.)</i> Your offer on this solicitation, is hereby accepted as to the items listed. This award commutes the contract, which consists of (a) the Government solicitation and your offer, and (b) this contract award. No further contractual document is necessary.						
30A. NAME AND TITLE OF CONTRACTOR OR PERSON AUTHORIZED TO SIGN <i>(Type or print)</i>					31A. NAME OF CONTRACTING OFFICER <i>(Type or print)</i>						
30B. SIGNATURE			30C. DATE		TEL:		EMAIL:				
					31B. UNITED STATES OF AMERICA BY			31C. AWARD DATE			

Section 00 10 00 - Solicitation

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0001		1	Job		
	Base Bid: Engineering and Design Human Performance Training Center (HPTC).				
	In accordance with plans and specifications. Complete.				
	FOB: Destination				

NET AMT

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0002		1	Job		
	Base Bid: Construct Human Performance Training Center (HPTC).				
	In accordance with plans and specifications. Complete.				
	FOB: Destination				

NET AMT

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0003		1	Job		
	Base Bid: Site Preparation and Development.				
	In accordance with plans and specifications. Complete.				
	FOB: Destination				

NET AMT

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0004	Payment and Performance Bonds In accordance with plans and specifications. Complete. FOB: Destination	1	Job		

NET AMT

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0005 OPTION	Optional Bid Item 1: Exterior Turf Field In accordance with plans and specifications. Complete. FOB: Destination	1	Job		

NET AMT

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0006 OPTION	Optional Bid Item 2: Furniture Fixtures and Equipment (FF&E) In accordance with plans and specifications. Complete.				

NET AMT

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0006AA OPTION	Optional Bid Item 2: FF&E - Purchase and Delivery.	1	Job		
In accordance with plans and specifications. Complete. FOB: Destination					

NET AMT

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0006AB OPTION	Optional Bid Item 2: FF&E - Installation	1	Job		
In accordance with plans and specifications. Complete. FOB: Destination					

NET AMT

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0007 OPTION	Optional Bid Item 3: Audio Visual (AV) - Strength/Conditioning Area				
In accordance with plans and specifications. Complete.					

NET AMT

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0007AA OPTION	Optional Bid Item 3: AV - Strength/Conditioning Area, Purchase and Delivery.	1	Job		
In accordance with plans and specifications. Complete. FOB: Destination					

NET AMT

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0007AB OPTION	Optional Bid Item 3: AV - Strength/Conditioning Area, Installation.	1	Job		
In accordance with plans and specifications. Complete. FOB: Destination					

NET AMT

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0008 OPTION	Optional Bid Item 4: Audio Visual (AV) - Office/Admin Areas 1st Floor				
In accordance with plans and specifications. Complete.					

NET AMT

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0008AA OPTION	Optional Bid Item 4: AV - Office/Admin Areas 1st Floor, Purchase and Delivery.	1	Job		
In accordance with plans and specifications. Complete. FOB: Destination					

NET AMT

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0008AB OPTION	Optional Bid Item 4: AV - Office/Admin Areas 1st Floor, Installation.	1	Job		
In accordance with plans and specifications. Complete. FOB: Destination					

NET AMT

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0009 OPTION	Optional Bid Item 5: Audio Visual (AV) - Office/Admin Areas 2nd Floor				
In accordance with plans and specifications. Complete.					

NET AMT

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0009AA OPTION	Optional Bid Item 5: AV - Office/Admin Areas 2nd Floor, Purchase and Delivery.	1	Job		
	In accordance with plans and specifications. Complete. FOB: Destination				

NET AMT

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0009AB OPTION	Optional Bid Item 5: AV - Office/Admin Areas 2nd Floor, Installation.	1	Job		
	In accordance with plans and specifications. Complete. FOB: Destination				

NET AMT

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0010 OPTION	Optional Bid Item 6: Electronic Security System - Closed Circuit Television, Purchase and Delivery	1	Job		
	In accordance with plans and specifications. Complete. FOB: Destination				

NET AMT

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0011 OPTION	Optional Bid Item 6: Electronic Security System - Closed Circuit Television, Installation.	1	Job		
<p>In accordance with plans and specifications. Complete. FOB: Destination</p>					

NET AMT

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0012 OPTION	Optional Bid Item 7: Electronic Security System - Intrusion Detection System, Purchase and Delivery.	1	Job		
<p>In accordance with plans and specifications. Complete. FOB: Destination</p>					

NET AMT

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0013 OPTION	Optional Bid Item 7: Electronic Security System - Intrusion Detection System, Installation.	1	Job		
<p>In accordance with plans and specifications. Complete. FOB: Destination</p>					

NET AMT

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0014 OPTION	Optional Bid Item 8: Electronic Security System - Access Control, Purchase and Delivery.	1	Job		
In accordance with plans and specifications. Complete. FOB: Destination					

NET AMT

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0015 OPTION	Optional Bid Item 8: Electronic Security System - Access Control, Installation.	1	Job		
In accordance with plans and specifications. Complete. FOB: Destination					

NET AMT

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0016 OPTION	Optional Bid Item 9: Complete Climbing Wall.	1	Job		
In accordance with plans and specifications. Complete. FOB: Destination					

NET AMT

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0017		1	Job		
OPTION	Optional Bid Item 10: Demolition Building E-4128.				

In accordance with plans and specifications. Complete.
FOB: Destination

NET AMT

Section 00 21 16 - Instructions to Proposers

NOTICE TO OFFERORS

SUBTOTAL Base Bid Items; CLINS 0001 – 0004 \$ _____

SUBTOTAL Optional Bid Item 0001, CLIN 0005 \$ _____

SUBTOTAL Optional Bid Item 0002, CLIN 0006 \$ _____

SUBTOTAL Optional Bid Item 0003, CLIN 0007 \$ _____

SUBTOTAL Optional Bid Item 0004, CLIN 0008 \$ _____

SUBTOTAL Optional Bid Item 0005, CLIN 0009 \$ _____

SUBTOTAL Optional Bid Item 0006, CLIN 0010 \$ _____

SUBTOTAL Optional Bid Item 0006, CLIN 0011 \$ _____

SUBTOTAL Optional Bid Item 0007, CLIN 0012 \$ _____

SUBTOTAL Optional Bid Item 0007, CLIN 0013 \$ _____

SUBTOTAL Optional Bid Item 0008, CLIN 0014 \$ _____

SUBTOTAL Optional Bid Item 0008, CLIN 0015 \$ _____

SUBTOTAL Optional Bid Item 0009, CLIN 0016 \$ _____

SUBTOTAL Optional Bid Item 0010, CLIN 0017 \$ _____

SUBTOTAL of all Optional Bid Items; CLINS 0005-0017 \$ _____

TOTAL AMOUNT OF ALL LINE ITEMS 0001-0017 \$ _____

PERIOD OF PERFORMANCE **540**

NOTICE TO OFFERORS

NOTE 1:

The period of performance of CLIN’s 0001-0016 shall run concurrently with the entire contract duration so that the period of performance shall not exceed 540 calendar days.

NOTE 2:

The exercise of all optional bid items 1 through 10 (CLIN’s 0005-0017) shall be subject to the availability of funds.

NOTE 3:

The government reserves the right to exercise optional bid items 1, (CLIN 0005) within 90 days after award of the base contract.

NOTE 4:

The government reserves the right to exercise optional bid items 2 through 8 (CLIN's 0006-0016) by no later than 360 Days after Notice To Proceed.

NOTE 5:

The government reserves the right to exercise Optional Bid Item 10 (CLIN 0017) prior to final Acceptance of the HTPC. If exercised Optional Bid Item 10, (CLIN 0017) shall have a Period of Performance of 60 days after NTP. NTP maybe issued up to 180 days after exercise of the option.

SCOPE OF WORK

See Description at 1.1 General Proposal Submission Instructions & Requirements.

INSTRUCTION AND REQUIREMENTS**GENERAL PROPOSAL SUBMISSION INSTRUCTIONS & REQUIREMENTS****W912PM18R0003****PN 79443****SOF Human Performance Training Center (HPTC)****Fort Bragg, North Carolina****1. OVERVIEW.**

1.1 This Request for Proposal (RFP) solicits construction and design of a Human Performance Training Center. The scope of work includes: Construct a standard large human performance training center (HPTC) of approximately 57,000 SF including human performance areas incorporating strength and conditioning, hydrotherapy, sports medicine, multipurpose space, and administrative space. Construction will consist of concrete and steel columns and beams with metal deck and concrete floors. Exterior will consist of masonry with stone front glazing. Built-in building systems include fire alarm/mass notification; fire suppression; utility management control, telephone; advanced communications networks; cable television; and infrastructure for intrusion detection, closed circuit surveillance and electronic access control systems. Project includes the installation of electronic security system equipment (intrusion detection, closed circuit surveillance, and electronic access control) funded by other appropriations. Supporting facilities include all related site-work and utilities (electrical, water, gas, sanitary sewer, and information systems distribution), security lighting, privately owned vehicle parking, access drives, roads, curb and gutter, sidewalks, storm drainage and treatment structures, signage, landscaping, and other site improvements. Special construction includes sustainable construction features complying with and certifiable to Leadership in Energy and Environmental Design (LEED) "Silver" with enhanced commissioning. Access for persons with disabilities will be provided. Comprehensive interior, electronic security systems, and audio visual design services

are included. The project includes demolition of existing building E-4128. Air conditioning to be included.

The period of performance is **540 calendar days**. Work location is Fort Bragg, North Carolina. Antiterrorism/Force protection measures and sustainment mandates will be incorporated. The resultant contract will be **Firm-Fixed Price (FFP)**.

1.2 The instructions and requirements contained herein establish uniform evaluation procedures for the technical evaluation of proposals by the Source Selection Evaluation Board (SSEB) and the development of the Best Value Decision by the Source Selection Authority (SSA) using the Lowest Price Technically Acceptable Source Selection Process (See Federal Acquisition Regulation 15.101-2). Proposals should be specific and complete in every detail as well as be prepared simply and economically, providing a straightforward and concise description of capabilities to satisfactorily perform the contract.

2. GENERAL INSTRUCTIONS.

In accordance with FAR Clause 52.215-1, Instructions to Offerors – Competitive Acquisitions, the Government reserves the right to make award without discussions. Therefore, offerors should submit their best technical and price terms in their initial offer and not automatically assume that they will have an opportunity to participate in discussions or to submit a revised offer. The Government may make award of a conforming proposal without discussions, if deemed to be within the best interests of the Government.

In accordance with 15.306(c) (1) and FAR Clause 52.215-1(f) (4), Instructions to Offerors – Competitive Acquisitions, the Government reserves the right to conduct discussions if the Contracting Officer later determines them to be necessary. If the Contracting Officer determines that the number of proposals that would otherwise be in the competitive range exceeds the number at which an efficient competition can be conducted, the Contracting Officer may limit the number of proposals in the competitive range to the greatest number that will permit an efficient competition among the most highly rated proposals.

2.1 Contractor Team Arrangements. The Government will recognize the integrity and validity of contractor teaming arrangements, provided the arrangements are identified and company relationships are fully disclosed in the offer. As further described in paragraph 2.3, below, the Government will only evaluate the information submitted by the legal entity with whom the Government would enter into a contract. This is the legal entity represented in Tab E, as registered in System for Award Management (SAM) and identified by its specifically assigned CAGE Code.

2.2 If applicable, a 8(a) Joint Venture or SBA/DoD approved Mentor-Protégé must submit all required documentation with their offer to be considered responsive.

2.3 The Government will only evaluate the information submitted by the legal entity with whom the Government would enter into a contract. This is the legal entity represented in Tab E, as registered in System for Award Management (SAM) and identified by its specifically assigned

CAGE Code. The Government will also evaluate past experience and past performance submitted by the individual firms that make up a joint venture.

2.4 Notwithstanding the specific requirements of any other area of the RFP, information submitted about any company other than the offeror, whether a predecessor company, affiliated company, subsidiary (including wholly owned subsidiaries), or subcontractor, WILL NOT be evaluated for any factor. Successor entities shall clearly demonstrate in Volume I, Tab A of their proposal the official legal means performed to transform the former Predecessor Company to its current Successor, legal business entity. Examples of substantive documentation may include but is not limited to Articles of Incorporation, Joint Venture Agreements, Novation Agreements, and Merger Documentation.

"Successor" means an entity that has replaced a predecessor by acquiring the assets and carrying out the affairs of the predecessor under a new name (often through acquisition or merger).

Note: The term "successor" does not include new offices/ divisions of the same company or a company that only changes its name.

2.5 Offerors shall submit their proposal in accordance with the Section 3. General Proposal Format, paragraph 3.4.

2.6 Proposals are due no later than the time and date specified in Block 13 of Standard Form 1442.

3. GENERAL PROPOSAL FORMAT.

3.1 Cover Page. Include the title of the solicitation, solicitation number, offeror name, and date of the submittal.

3.2 Table of Contents. Each volume of the proposal shall contain a detailed table of contents. If more than one Adobe PDF file is used for a volume, the complete table of contents shall be included in each. Any materials submitted but not required by this solicitation (such as company brochures) shall be relegated to appendices.

3.3 All information intended to be evaluated as part of the Technical Proposal must be submitted as part of the Technical Proposal. Do not cross-reference similar material in the Price Proposal, or vice versa. No dollar amounts from the Price Proposal are to be included in the Technical proposal.

3.4 Each offeror must submit Price, Technical, and Past Performance Proposals via the AMRDEC SAFE website. No hard paper copies will be accepted or evaluated. The Price, Technical, and Past Performance Proposals must be received by the closing date and time set for receipt of proposals.

In an effort to reduce paperwork and reduce cost, all proposals shall be submitted electronically. All submissions shall be in Adobe PDF format and shall be on 8 ½ x 11 size pages in no less than a 10 pitch or 10 font. Page limitations, where specified in the RFP, shall be considered a

maximum. Offerors may use compressions utility software such as WinZip or PKZip to reduce file size and facilitate transmission.

Title the file(s) in the following format:

W912PM18R0003_ *COMPANY NAME*_ VOLUME I

W912PM18R0003_ *COMPANY NAME*_ VOLUME II

Submit the Price, Technical, and Past Performance Proposals electronically via the AMRDEC SAFE website at: <https://safe.amrdec.army.mil/SAFE/welcome.aspx>. At the AMRDEC SAFE website, select the blue button labeled 'Click Here', below the 'Non-CAC Users' title. Register, access the site and submit your proposal(s). [Note: It has been reported that documents are more quickly uploaded into the AMRDEC SAFE website when using a Firefox web browser. The Government cannot verify that this is true and offers no guarantee that offerors will have more success utilizing any particular browser.

When your proposals are submitted via the AMRDEC SAFE website, the website will provide notification of the submittal to the Government recipients. When completing the information for transmittal at the AMRDEC SAFE website, you will be required to enter email addresses for the recipients. For this solicitation, the recipients will be the Contracting Officer and Contract Specialist. The Contract Specialist for this project Michael Mullen: email address is michael.m.mullen@usace.army.mil. The Contracting Officer for this project is Mr. John Hill: email address is john.t.hill@usace.army.mil. BOTH of these email addresses are the ones you will enter as recipients.

In addition, after uploading your documents, you will be required to verify your email address before AMRDEC will send notification to the Government recipients. This is a very important step – even if you successfully upload your proposal to AMRDEC SAFE, notification will not be sent to the Government until you verify your email address, which may result in the rejection of your proposal for lateness. Follow the instructions on the AMRDEC website and confirmation emails you receive from AMRDEC.

Proposal due Date and Time:

Request For Proposal No: W912PM18R0003

Due Date of Proposal: 7 October, 2018

Time by which Proposals are due: 2:00 P.M. (Eastern Time)

Title of Project: PN 79443 SOF Human Performance Training Center (HPTC), Fort Bragg, North Carolina

The date and time of delivery will be established by the time of receipt of the email notification to the Contract Specialist and Contracting Officer by the AMRDEC SAFE website, not by the date and time of uploading of the proposal into the AMRDEC SAFE website. Do not assume that electronic communication is instantaneous – in fact, it can take several minutes or even hours in some cases. Please make allowances for delays in transmittal. If an electronic submission is uploaded minutes before the deadline but notification is not actually received in the recipients'

email inboxes until after the deadline, the submission will be considered late. The Government will not be responsible for proposals delivered to any location or to anyone other than those designated to receive proposals on its behalf. Offerors are responsible for ensuring that proposals are submitted so as to reach the designated recipient of proposals. Offerors are responsible for allowing sufficient time for the proposal to be received in accordance with the instructions provided.

3.5 The offeror is responsible for including sufficient details in its proposal to permit a complete and accurate evaluation. Accordingly, the offeror shall be clear and concise in its proposal. The Government will not make assumptions concerning the offeror's intent.

3.6 The technical data criteria specified for each factor identified herein and as described in these instructions shall be submitted as part of the proposal. Failure to submit all the data required by the RFP, and these instructions may be cause for determining a proposal incomplete and, therefore, not considered for award.

3.7 Do not include exceptions to the terms and conditions of the solicitation in either the technical or price proposal. Should the offer include any standard company terms and conditions that conflict with the terms and conditions of the solicitation, the offer may be determined "unacceptable" and thus ineligible for award. Should the offeror have any questions related to specific terms and conditions, these should be resolved prior to the submission of the offer.

3.8 Tabs. Proposal shall be organized and tabbed as follows:

3.8.1 VOLUME I: OFFEROR'S CERTIFICATIONS AND PRICE (FACTOR 1)

One (1) electronic copy Adobe PDF file as tabbed per the table below shall be submitted and one (1) original copy of the bid guarantee in both electronic and hardcopy shall be submitted.

TAB	CONTENTS OF THE PRICE PROPOSAL
A	The Proposal Cover Sheet
B	Standard Form 1442
C	Acknowledgement of Amendments (If Applicable)
D	FACTOR 1: PRICE
E	Section 00 45 00 – Representations and Certifications
F	Teaming Arrangement (If Applicable)
G	Bid Guarantee (Bid Bond)
H	Financial Information and Bonding Capability
I	Subcontracting Plan (FOR LARGE BUSINESSES ONLY)

TAB A – The proposal cover sheet is required by FAR 52.215-1 (c) (2) and must be submitted by all offerors. The format for the proposal cover sheet is as follows:

PROPOSAL COVER SHEET

1. The solicitation number;
2. The name, address, and telephone and facsimile numbers of the offeror (and electronic address if available);
3. A statement specifying the extent of agreement with all terms, conditions, and provisions included in the solicitation and agreement to furnish any or all items upon which prices are offered at the price set opposite each item;
4. Names, titles, and telephone and facsimile numbers (and electronic addresses if available) of persons authorized to negotiate on the offeror's behalf with the Government in connection with this solicitation; and
5. Name, title, and signature of person authorized to sign the proposal. Proposals signed by an agent shall be accompanied by evidence of that agent's authority, unless that evidence has been previously furnished to the issuing office.

Offerors should ensure telephone number; fax number, e-mail address, DUNS number and CAGE Code are all included. DUNS number will be used to access Past Performance Information Retrieval System (PPIRS) data. Offerors should also provide any other assigned number that identifies them in the PPIRS database. If a separate DUNS has been created for a joint venture (J-V) it must be submitted. The offeror should also submit their Tax ID number on the proposal data Sheet.

TAB B - Standard Form 1442, completed and signed by authorized individual(s) of the offeror. Offers submitted in the name of a Joint Venture must be signed in accordance with the terms and conditions specified in the joint venture agreement as evidenced in the proposal.

TAB C - If applicable - All amendments must be acknowledged by all offerors and duly executed with an original signature by an official authorized to bind the company in accordance with FAR 4.102.

TAB D – Factor 1 - Price. Proposed price schedule is to be completed in its entirety by all offerors to include the Subtotals and Totals section as found in Section 00 10 00 - Solicitation, Contract Line Item Number (CLIN) Schedule.

TAB E - Section 00 45 00 – Representations and Certifications. Offerors shall include any narratives as it pertains to the requirement at 2.2 to document any teaming arrangement the offeror has or will enter into.

TAB F - Teaming Agreement, if applicable. See paragraph 2.1 and 2.2 Note to 8(a)—SBA must approve a joint venture agreement prior to the award of an 8(a) contract on behalf of the joint venture.

TAB G - Offerors shall provide a fully executed Bid Bond as required by FAR Clause 52.228-1, Bid Guarantee in **both Hard copy** and **electronically in Tab G**.

For the purposes of this Request for Proposal, please note that in accordance with (IAW) FAR 28.001:

“Bond means a written instrument executed by a bidder or contractor (the “principal”), and a second party (the “surety” or “sureties”) (except as provided in 28.204), to assure fulfillment of the principal’s obligations to a third party (the “obligee” or “Government”), identified in the bond. If the principal’s obligations are not met, the bond assures payment, to the extent stipulated, of any loss sustained by the obligee.”

Bonds shall therefore be executed in the name of the legal entity, whether a joint venture, partnership or the Prime Contractor of an informal teaming arrangement, with whom the government would enter into a contract for a successful offeror. The entity named on the bond must be able to acquire bonding capacity on its own merits, and not as the result of indemnification from a subcontractor or third party.

TAB H - Financial Information & Bonding Capability (e.g. past three years financial statements, annual reports, Dun & Bradstreet Ratings and/or number, etc.) Provide a list of all current contracts held, total dollar value, award date, anticipated completion, performance and payment bond amount.

TAB I - Subcontracting Plan – FOR LARGE BUSINESS OFFERORS ONLY. Subcontracting Plan shall be prepared in accordance with FAR 52.219-9, and SBA’s Electronic Subcontracting Reporting System (eSRS) located at <http://esrs.gov>. Instructions for completion of requisite forms, as well as guidance on coordinating and preparing for all compliance reviews by Federal agencies can be found at this website. Offerors are to ensure subcontractors agree to submit to ESRS.

3.8.2 VOLUME II: TECHNICAL PROPOSAL (FACTORS 2-5)

One (1) electronic copy Adobe PDF file as tabbed per the table below shall be submitted.

TAB	CONTENTS OF THE TECHNICAL PROPOSAL
A	Factor 2: Past Experience – Construction
B	Factor 3: Past Experience - Design
C	Factor 4: Key Personnel
D	Factor 5: Past Performance

Page Limitations: The following page limitations are established for each factor described above:

Factor 2: Past Experience, Construction – Limited to 20 pages (maximum of 5 forms)

Factor 3: Past Experience, Design – Limited to 20 pages (maximum of 5 forms)

Factor 4: Key Personnel – Limited to **5** pages per individual resume
 Factor 5: Limited to no fewer than three (3) and no more than five (5) projects.
 Individual project Past Performance Assessment Questionnaires shall not exceed four (4) pages; Government evaluators will review and evaluate only the information contained on the first four (4) pages.

NOTE: Pages that exceed the required page limitations will not be evaluated. Additional pages over the maximum allowed will be removed or not read and will not be evaluated by the Government. Tables of content, proposal cover letters, and tabs between proposal information do not count toward any page limitations in the proposal.

Offerors are cautioned that “parroting” of the Technical requirements or the Scope of Work with a statement of intent to perform *does not* reflect an understanding of the requirement or capability to perform. Offerors are responsible for including sufficient details to permit a complete and accurate evaluation of each proposal. Proprietary information shall be clearly marked.

4. SUBMISSION REQUIREMENTS & EVALUATION FACTORS

VOLUME II: TAB A—FACTOR 2 – PAST EXPERIENCE, CONSTRUCTION

4.1 SUBMISSION/MINIMUM REQUIREMENTS:

4.1.1 The offeror shall demonstrate the experience as a prime contractor on projects of similar size, scope, and complexity.

4.1.2 The minimum requirement for a project of similar size, scope, or complexity is defined as having all of the following criteria:

- **Thirty** thousand **30,000** square feet (SF) or more aggregate interior space.
- Includes a multi-story building or multiple buildings on a single project.
- Total value of project equal to or greater than **\$15,000,000.00**

4.1.3 The offeror shall complete a minimum of three (3), but no more than five (5), “Experience Information” forms, (See Attachment 2), in response to this factor. All projects submitted must be at least 50% complete within the last **six (6) years preceding the date of the solicitation**

4.1.4 Offerors shall utilize Experience Information Form in Attachment 2. This sheet is MANDATORY and SHALL be used to submit project information. For all submitted projects, the description of the project shall clearly describe the scope of work performed and the relevancy to the project requirements of this RFP. If the same project is being used to demonstrate construction and design experience, submit separate Project Data Sheets for construction and design. Except as specifically requested, the Government will not consider information submitted in addition to this form. Individual blocks on this form may be expanded; however, total length for each project data sheet shall not exceed FOUR (4) pages.

4.1.5 If the offeror is a Joint Venture (J-V), relevant project experience should be submitted for projects completed by the Joint Venture entity, or the individual firms that make up the joint venture. **Offerors that are part of the DoD Mentor Protégé program may only submit two (2) recent and relevant project completed by the Mentor.** Offerors are still limited to a total of five (5) projects. **Experience of proposed subcontractors to be utilized on this project will not be considered.**

4.2 EVALUATION CRITERIA:

4.2.1 The Government will evaluate the extent of recent, relevant experience of the prime contractor as identified in paragraph 4.1.2. Projects that were awarded on an individual task/delivery order basis will not be aggregated for purposes of meeting minimum or additional criteria. Federal Government project experience will not be rated inherently more important than non-Federal Government project experience.

4.2.2 To be considered eligible for award, the Government will verify that each offeror has submitted a minimum of three (3) projects which meet the minimum criteria of paragraph 4.1.2.

4.2.3 The offeror's Past Experience will be evaluated based on the Government's assessment of each submitted project's similarity (in terms of size, scope and complexity) to the work described in this RFP.

4.2.4 The Government will review the project experience of the offeror on projects provided in response to the Past Experience Factor. Offerors must meet all of the minimum acceptability standards to receive an "ACCEPTABLE" rating on this factor.

5. SUBMISSION REQUIREMENTS & EVALUATION FACTORS

VOLUME II: TAB B—FACTOR 3 – PAST EXPERIENCE, DESIGN

5.1 SUBMISSION/MINIMUM REQUIREMENTS:

5.1.1 Submit a minimum of three (3) and a maximum of five (5) **relevant** and **recent** design projects for the design team that best demonstrates design experience similar in size, scope, and complexity to the RFP. **The Government will consider the qualifications, performance, and experience of the proposed designer of record, only if the prime contractor is firmly committed to using that designer (through a teaming agreement or other appropriate arrangement).**

5.1.2 The minimum requirement for a project of similar size, scope, or complexity is defined as having all of the following criteria:

- **Thirty thousand 30,000** square feet (SF) or more aggregate interior space.
- Includes a multi-story building or multiple buildings on a single project.
- Total value of project equal to or greater than **\$15,000,000.00**

5.1.3 The offeror shall complete a minimum of three (3), but no more than five (5), "Experience Information" forms, (See Attachment 2), in response to this factor. All DESIGN projects submitted must be at least *100% designed* or complete within the last **six (6) years**

preceding the date of this solicitation.

5.1.4 Offerors shall utilize Experience Information Form in Attachment 2. This sheet is MANDATORY and SHALL be used to submit project information. For all submitted projects, the description of the project shall clearly describe the scope of work performed and the relevancy to the project requirements of this RFP. If the same project is being used to demonstrate construction and design experience, submit separate Project Data Sheets for construction and design. Except as specifically requested, the Government will not consider information submitted in addition to this form. Individual blocks on this form may be expanded; however, total length for each project data sheet shall not exceed FOUR (4) pages.

5.1.5 If the offeror is a Joint Venture (J-V), relevant project experience should be submitted for projects completed by the Joint Venture entity, or the individual firms that make up the joint venture. **Offerors that are part of the DoD Mentor Protégé program may only submit two (2) recent and relevant project completed by the Mentor.** Offerors are still limited to a total of five (5) projects. **Experience of proposed subcontractors other than the designer of record, to be utilized on this project will not be considered.**

5.2 EVALUATION CRITERIA:

5.2.1 The Government will evaluate the extent of recent, relevant experience of the *Partnered Design* contractor as identified in paragraph 5.1.2. Projects that were awarded on an individual task/delivery order basis will not be aggregated for purposes of meeting minimum or additional criteria. Federal Government project experience will not be rated inherently more important than non-Federal Government project experience.

In order for a design firm to be evaluated, an affirmative statement shall be provided within Volume II: Tab B as part of the proposal materials for this criteria. For example, XYZ company fully intends to use ABC design firm as our DoR for this project.

5.2.2 To be considered eligible for award, the Government will verify that each offeror has submitted a minimum of three (3) projects which meet the minimum criteria of paragraph 5.1.2.

5.2.3 The offeror's Past Experience will be evaluated based on the Government's assessment of each submitted project's similarity (in terms of size, scope and complexity) to the work described in this RFP.

5.2.4 The Government will review the project experience of the offeror on projects provided in response to the Past Experience Factor. Offerors must meet all of the minimum acceptability standards to receive an "ACCEPTABLE" rating on this factor.

6. SUBMISSION REQUIREMENTS & EVALUATION FACTORS **VOLUME II: TAB C —FACTOR 4 – KEY PERSONNEL.**

6.1 SUBMISSION/MINIMUM REQUIREMENTS:

6.1.1 Each offeror shall provide resumes for the following Key Personnel proposed for this contract. Resumes shall not exceed five (5) pages per person. The proposed position of each person shall be clearly stated at the beginning of the resume.

CQC System Manager

The CQC System Manager is required to be a graduate engineer, graduate architect, or a graduate of construction management with a minimum of 5 years construction experience on construction similar to this Contract or possess 10 year's construction experience as a CQC on construction similar to this Contract. Construction similar to this contract is defined previously in paragraph 5.1.2.

For further information refer to:

3.4.2 CQC SYSTEM MANAGER

SECTION 01 45 00.00 10 QUALITY CONTROL

Project Superintendent

The Project Superintendent shall have a minimum of 5 years of experience as a Project Superintendent.

Refer to:

3.1 GENERAL REQUIREMENTS

SECTION 01 45 00.00 10 QUALITY CONTROL

Licensed Architect/Designer of Record (DOR)

The DOR is registered or licensed to practice their respective design profession as defined by the statutory requirements of the professional registration laws in state in which the design professional works. The DOR shall have a minimum of five (5) years of experience as a licensed design professional.

Refer to:

1.3.10 DESIGNER OF RECORD (DOR)

SECTION 01 45 35 SPECIAL INSPECTIONS

6.1.2 Sample suggested resume format is included with this RFP (Attachment 4). If offerors elect not to use the suggested resume format, all information identified on the sample format is still required for each resume submitted under this Factor. Proposals that fail to include resumes or that fail to include all required information on these resumes may be rejected as unacceptable.

6.1.3 The Key Personnel identified must be used on the project. No deviations will be permitted unless they meet the same qualifications and experience of those individuals proposed and are expressly approved by the Contracting Officer in advance. An offeror's use of different personnel than those proposed without approval from the Contracting Officer will be grounds for a Termination for Default.

6.2 EVALUATION CRITERIA:

6.2.1 The Government will review the resumes provided in response to the Personnel Factor. Offerors must demonstrate all of the following minimum acceptability standards to receive an “ACCEPTABLE” rating on this factor.

6.2.2 The offeror must demonstrate in all resumes that the key personnel proposed have or exceed the minimum requirements of specialized and relevant experience as identified in paragraph 6.1.1 in the following roles: **CQC System Manager, Project Superintendent, and Licensed Architect/Designer of Record (DOR).**

6.2.3 Failure to demonstrate the minimally acceptability standards under this factor will result in an “UNACCEPTABLE” rating and possible elimination from further consideration for contract award.

7. SUBMISSION REQUIREMENTS & EVALUATION FACTORS VOLUME II: TAB D — FACTOR 5 - PAST PERFORMANCE.

7.1 SUBMISSION/MINIMUM REQUIREMENTS:

7.1.1 Past performance refers to the **quality** of recent and relevant project experience from the owner’s perspective. The offeror shall complete and provide a Past Performance Assessment Questionnaire (Attachment 3) on no fewer than three (3) and no more than five (5) projects. Projects submitted under this factor must first be deemed recent and relevant.

7.1.1.1 Relevant: Offer must demonstrate experience as a prime contractor on projects of similar size, scope, or complexity. The minimum requirement for a project of similar size, scope, or complexity is defined as a requirement with all of the following:

- **Thirty thousand 30,000** square feet (SF) or more aggregate interior space
- Includes a multi-story building or multiple buildings on a single project
- Total value of project equal to or greater than **\$15,000,000.00**

7.1.1.2 Recent: Projects of similar size, scope, and complexity that must have been completed (fully designed and at least 50% construction progress completed) within **six (6) years preceding the date of the solicitation**

7.1.2 Though not required, ideally project past performance information submitted under this factor would be on the same projects submitted for consideration under FACTOR 2, PAST EXPERIENCE. Individual project Past Performance Assessment Questionnaires shall not exceed four (4) pages; Government evaluators will review and evaluate only the information contained on the first four (4) pages. If any firm has multiple functions or divisions, limit the project examples to those performed by the division, unit or team member submitting the offer. The Government will call and confirm information provided by the offeror on the Past Performance Assessment Questionnaire with the points of contact, to the extent necessary to conduct a meaningful evaluation. The Government reserves the right to interview other individuals if the point of contact is not available.

7.1.3 The Government may contact sources other than those provided by the offeror for information with respect to past performance. These other sources may include but are not limited to: Past Performance Information Retrieval System (PPIRS), other Government sources, and interviews with organizations or individuals familiar with the offeror's performance.

7.1.4 Offerors shall utilize the Past Performance Assessment Questionnaire in Attachment 3.

7.1.5 If the offeror is a Joint Venture (J-V), relevant project experience should be submitted for projects completed by the Joint Venture entity, or the individual firms that make up the joint venture. **Offerors that are part of the DoD Mentor Protégé program may only submit two (2) recent and relevant project completed by the Mentor.** Offerors are still limited to a total of five (5) projects. Experience of proposed subcontractors to be utilized on this project will not be considered.

7.2 EVALUATION CRITERIA:

7.2.1 The Government will consider past performance of the prime construction contractor. If a firm has multiple functions or divisions, the Government will only evaluate the past performance of the unit or division submitting the offer. Where the Government views an offeror's role, or that of its team members, if any, as not significant or as not clearly defined, the Government reserves the right to view this lack of involvement, or clarity, as a risk which may impact an offeror's rating for this factor despite the quality of recent, relevant past performance information.

7.2.2 Past performance shall be initially evaluated to determine whether the offeror's present/past performance is recent, and relevant to the effort to be acquired.

Relevant: The minimum requirement for a project of similar size, scope, and complexity is defined as a **Thirty** thousand **30,000** square feet (SF) or more aggregate interior space, including a multi-story or multiple buildings on a single project, with a total value equal to or greater than **\$15,000,000.00**.

Recent: Projects of similar size, scope, and complexity that must have been completed (fully designed and at least 50% construction progress completed) within **six (6) years preceding the date of the solicitation**

7.2.3 The Government will evaluate ONLY recent and relevant past performance based on the elements listed below to assign a confidence rating of acceptable/unacceptable.

7.2.4 Second, the past performance evaluation shall determine how well the offeror performed on the prior contracts. The contractor shall have no **"unsatisfactory"** in criteria 1-7, and no **"marginal"** ratings in criteria 1-4 (below) in the Past Performance Information Retrieval System (PPIRS): quality, schedule, cost control, management, and utilization of small business, regulatory compliance, and safety.

- (1) **Quality of Construction.** The Government will evaluate all information available with respect to the quality of the actual construction undertaken and the offeror's ability to maintain quality control and accuracy of quality control documentation.
- (2) **Schedule.** The Government will evaluate all information available with respect to the completion of projects within the scheduled completion times.
- (3) **Cost Control.** The Government will evaluate all information available with respect to the offeror's ability to efficiently utilize resources and demonstrate cost responsibility.
- (4) **Management.** The Government will evaluate all information available with respect to the offeror's ability to manage resources and key personnel.
- (5) **Utilization of Small Business.** The Government will evaluate all information available with respect to the offeror's ability to meet small business subcontracting plan goals.
- (6) **Regulatory Compliance.** The Government will evaluate all information available with respect to the offeror's ability to enforce laws and regulations, correct deficiencies when non-compliant, and communicate laws and regulations to subcontractors.
- (7) **Safety.** The Government will evaluate all information available with respect to the contractor's safety program or efforts.

7.2.5 Failure to demonstrate the minimum acceptability standards under this factor will result in an "UNACCEPTABLE" rating and possible elimination from further consideration for contract award.

8. EVALUATION STANDARDS.

8.1 The Government will evaluate proposals using the Lowest Price Technically Acceptable Source Selection Process of FAR 15.101-2.

8.2 Proposals will be evaluated for acceptability, but not ranked using non-cost/price factors.

8.3 Tradeoffs will not be permitted.

8.4 Each evaluation factor and its risk rating combined will be determined and assigned using the adjectival and color descriptions contained herein. Upon assessment of each individual sub-factor and its risk rating, the appropriate overall rating for the **technical proposal** will be assigned using these acceptable and unacceptable (pass/fail) ratings as defined below:

Color	Rating	Description
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Green	Acceptable	Proposal clearly meets the minimum requirements of the solicitation.
Red	Unacceptable	Proposal does not clearly meet the minimum requirements of the solicitation.

8.5 Upon assessment of past performance information, the appropriate overall rating for **past performance** will be assigned using these acceptable and unacceptable (pass/fail) ratings as defined below:

Color	Rating	Description
Green	Acceptable	Based on the offeror's performance record, the Government has a reasonable expectation that the offeror will successfully perform the required effort, or the offeror's performance record is unknown. (See Paragraph 8.6)
Red	Unacceptable	Based on the offeror's performance record, the Government does not have a reasonable expectation that the offeror will be able to successfully perform the required effort.

8.6 In the case of an offeror without a record of relevant past performance or for whom information on past performance is not available or so sparse that no meaningful past performance rating can be reasonably assigned, the offeror may not be evaluated favorably or unfavorably on past performance (see FAR 15.305 (a) (2) (iv)). Therefore, the offeror shall be determined to have unknown (or "neutral") past performance. In the context of acceptability/unacceptability, a neutral rating shall be considered "acceptable."

8.7 To be considered technically acceptable, no technical factor in the proposal may be determined to be unacceptable. The failure of a proposal to meet any of the acceptability standards for non-cost factors will result in a technically unacceptable rating and preclude award.

9. RELATIVE IMPORTANCE OF FACTORS.

9.1 Evaluation factors other than cost or price are of equal importance. An unacceptable rating on any non-price factor will render a proposal ineligible for award.

10. PROPOSAL EVALUATION

10.1 Proposals must meet all the criteria stated in this RFP in order to be eligible for award, to include responsiveness, technical acceptability, and responsibility.

10.2 The Government will evaluate each proposal independently from other proposals using only the RFP evaluation criteria.

11. EXCEPTIONS.

11.1 Exceptions to the contractual terms and conditions of the solicitation (e.g., standard company terms and conditions) may result in a determination to reject a proposal.

12. RESTRICTIONS.

12.1 Failure to submit all the data in the format indicated in this section may be cause for determining a proposal incomplete and, therefore, not considered for evaluation, and for subsequent award.

13. PRICE.

13.1 Price analysis will be performed to determine fairness and reasonableness as well as to assure an understanding of the work and ability to execute the task order at the price proposed. The evaluation will determine the extent to which the price proposal is realistic and consistent with the requirements of the RFP and reflect a clear understanding of the requirements, and are consistent with the information provided by the offeror.

Historical price information, competitive price information, the Independent Government Estimate (IGE), or any other pricing tool will be utilized as necessary in making this determination. Offerors are advised that any offer wherein pricing is deemed unbalanced or unreasonable, to include offers deemed to be unreasonably low, will be rendered ineligible for award. Additionally, all offers will be analyzed for unbalanced pricing.

Price will be evaluated and considered but will not be scored or combined with other aspects of the proposal evaluation.

The otherwise technically-acceptable, lowest-priced offeror may be required to confirm its price on either a, CLIN, element, or total price basis, and/or provide additional information in support of their price, prior to contract award at the Government's request and discretion.

14. BASIS FOR AWARD.

14.1 Award will be made on the basis of the lowest evaluated price of technically acceptable proposals meeting or exceeding the acceptability standards for non-cost factors.

14.2 The proposal that provides the lowest price and is otherwise technically acceptable in all factors will be selected for award.

TECHNICAL MATTERS

Technical inquiries and questions relating to proposal procedures or bonds shall be submitted via Bidder Inquiry in ProjNet at www.projnet.org/projnet.

Offerors shall not submit their proposals via ProjNet. Any questions regarding acceptable means of submitting offers shall be made directly to the Contract Specialist identified in the solicitation. To submit and review inquiry items, offerors will need to be a current registered user or self-register into system. To self-register go to web page, click BID tab select Bidder Inquiry, select agency USACE, enter Key for this solicitation listed below, and your e-mail address, click login. Fill in all required information and click create user. Verify that information on next screen is correct and click continue. From this page you may view all inquiries or add inquiry. Offerors will receive an acknowledgement of their question via email, followed by an answer to their question after it has been reviewed and response approved by the Contracting Officer.

i. The Solicitation Number is: W912PM18R0003

ii. The Bidder Inquiry Key is: H8NXP9-7UYK2S

Offerors are requested to review the specification in its entirety and to review the Bidder Inquiry System for answers to questions prior to submission of a new inquiry. The name of the submitter or firm is not published for the public on the report of all Bidder Inquiries. Offerors are on notice of, and assumed to be aware of, all inquiries, responses, and information posted in the Bidder Inquiry System up to the date of submission, whether the inquiry was generated by the Offeror themselves or another potential Offeror.

Government responses to technical inquiries and questions relating to proposal procedures or bonds that are submitted to ProjNet in accordance with the procedures above are not binding on the Government unless an amendment to the solicitation is issued on Standard Form 30. In the case of any conflicts, the solicitation governs. Any changes or revisions to the solicitation will be made by formal amendment.

The ability to enter technical inquiries and questions relating to proposal procedures or bonds will be disabled **Ten (10) calendar days** prior to the closing date stated in the solicitation. The Government reserves the right to not respond to questions/inquiries received after this date. No inquiries will be accepted by the Bidder Inquiry system within **Ten (10) calendar days** prior to the proposal due date. However, the Bidder Inquiry system may still be accessed to view answers/replies to previous inquiries until the proposal due date.

CLAUSES INCORPORATED BY REFERENCE

52.215-1	Instructions to Offerors--Competitive Acquisition	JAN 2017
52.217-4	Evaluation Of Options Exercised At The Time Of Contract Award	JUN 1988
52.217-5	Evaluation Of Options	JUL 1990

CLAUSES INCORPORATED BY FULL TEXT

52.216-1 TYPE OF CONTRACT (APR 1984)

The Government contemplates award of a **FIRM-FIXED PRICE** contract resulting from this solicitation.

(End of provision)

52.222-23 NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (FEB 1999)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Goals for minority participation for each trade	Goals for female participation for each trade
26.2%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance, U.S. Department of Labor, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the --

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is:

Cumberland County, North Carolina.

(End of provision)

52.225-12 NOTICE OF BUY AMERICAN REQUIREMENT-- CONSTRUCTION MATERIALS UNDER TRADE AGREEMENTS (MAY 2014)

(a) Definitions. "Commercially available off-the-shelf (COTS) item," "construction material," "designated country construction material," "domestic construction material," and "foreign construction material," as used in this provision, are defined in the clause of this solicitation entitled "Buy American -- Construction Materials Under Trade Agreements" (Federal Acquisition Regulation (FAR) clause 52.225-11).

(b) Requests for determination of inapplicability. An offeror requesting a determination regarding the inapplicability of the Buy American statute should submit the request to the Contracting Officer in time to allow a determination before submission of offers. The offeror shall include the information and applicable supporting data required by paragraphs (c) and (d) of FAR clause 52.225-11 in the request. If an offeror has not requested a determination regarding the inapplicability of the Buy American statute before submitting its offer, or has not received a response to a previous request, the offeror shall include the information and supporting data in the offer.

(c) Evaluation of offers. (1) The Government will evaluate an offer requesting exception to the requirements of the Buy American statute, based on claimed unreasonable cost of domestic construction materials, by adding to the offered price the appropriate percentage of the cost of such foreign construction material, as specified in paragraph (b)(4)(i) of FAR clause 52.225-11.

(2) If evaluation results in a tie between an offeror that requested the substitution of foreign construction material based on unreasonable cost and an offeror that did not request an exception, the Contracting Officer will award to the offeror that did not request an exception based on unreasonable cost.

(d) Alternate offers. (1) When an offer includes foreign construction material, other than designated country construction material, that is not listed by the Government in this solicitation in paragraph (b)(3) of FAR clause 52.225-11, the offeror also may submit an alternate offer based on use of equivalent domestic or designated country construction material.

(2) If an alternate offer is submitted, the offeror shall submit a separate Standard Form 1442 for the alternate offer, and a separate price comparison table prepared in accordance with paragraphs (c) and (d) of FAR clause 52.225-11 for the offer that is based on the use of any foreign construction material for which the Government has not yet determined an exception applies.

(3) If the Government determines that a particular exception requested in accordance with paragraph (c) of FAR clause 52.225-11 does not apply, the Government will evaluate only those offers based on use of the equivalent domestic or designated country construction material, and the offeror shall be required to furnish such domestic or designated country construction material. An offer based on use of the foreign construction material for which an exception was requested-- (i) Will be rejected as nonresponsive if this acquisition is conducted by sealed bidding; or

(ii) May be accepted if revised during negotiations.

(End of provision)

52.233-2 SERVICE OF PROTEST (SEP 2006)

(a) Protests, as defined in section 33.101 of the Federal Acquisition Regulation, that are filed directly with an agency, and copies of any protests that are filed with the Government Accountability Office (GAO), shall be served on the Contracting Officer (addressed as follows) by obtaining written and dated acknowledgment of receipt from:

Mr. John T. Hill, Contracting Officer
U.S. Army Engineer District, Wilmington
69 Darlington Avenue
Wilmington, NC 28403

(b) The copy of any protest shall be received in the office designated above within one day of filing a protest with the GAO.

(End of provision)

52.236-27 SITE VISIT (CONSTRUCTION) (FEB 1995)

(a) The clauses at 52.236-2, Differing Site Conditions, and 52.236-3, Site Investigations and Conditions Affecting the Work, will be included in any contract awarded as a result of this solicitation. Accordingly, offerors or quoters are urged and expected to inspect the site where the work will be performed.

(b) Site visits may be arranged during normal duty hours by contacting:

an organized site visit will be held on **20 September 2018 at 10:00 am EST**. Offerors shall meet at Bldg 2-2414 Woodruff Street, Fort Bragg, North Carolina.

Jonathon B. McCormick
jonathan.b.mccormick@usace.army.mil
Work: (910) 432-1307
Cell: (910) 308-8621

(End of provision)

52.236-28 PREPARATION OF PROPOSALS--CONSTRUCTION (OCT 1997)

(a) Proposals must be (1) submitted on the forms furnished by the Government or on copies of those forms, and (2) manually signed. The person signing a proposal must initial each erasure or change appearing on any proposal form.

(b) The proposal form may require offerors to submit proposed prices for one or more items on various bases, including--

(1) Lump sum price;

(2) Alternate prices;

(3) Units of construction; or

(4) Any combination of paragraphs (b)(1) through (b)(3) of this provision.

(c) If the solicitation requires submission of a proposal on all items, failure to do so may result in the proposal being rejected without further consideration. If a proposal on all items is not required, offerors should insert the words “no proposal” in the space provided for any item on which no price is submitted.

(d) Alternate proposals will not be considered unless this solicitation authorizes their submission.

(End of provision)

52.252-1 SOLICITATION PROVISIONS INCORPORATED BY REFERENCE (FEB 1998)

This solicitation incorporates one or more solicitation provisions by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. The offeror is cautioned that the listed provisions may include blocks that must be completed by the offeror and submitted with its quotation or offer. In lieu of submitting the full text of those provisions, the offeror may identify the provision by paragraph identifier and provide the appropriate information with its quotation or offer. Also, the full text of a solicitation provision may be accessed electronically at this/these address(es):

www.acquisition.gov
www.farsite.hill.af.mil

(End of provision)

ATTACHMENT 1

**ATTACHMENT 1
VOLUME I: TAB A
Proposal Cover Sheet**

**W912PM18R0003
SOF Human performance Training Center**

1. Offeror:

Address:

Phone:

Fax:

E-mail:

DUNS # (used for accessing CPARS)

CAGE Code:

Tax ID #

Please include name, address, and DUNS number of any proposed team members as defined in paragraph 2.2 of the RFP. (Note: Information regards the nature of team associations and such should NOT be included here. IAW Section 00100, paragraph 3.6 provide at Tab E.)

Team Member:

Team Member:

Team Member:

2. AUTHORIZED NEGOTIATORS. FAR 52.215-11

The Offeror represents that the following persons are authorized to negotiate on its behalf with the Government in connection with this Request for Proposals (RFP).

[List names, titles, and telephone number of the authorized negotiator.]

Name of Person Authorized to Negotiate:

Negotiator's Address:

Negotiator's Telephone:

Negotiator's E-mail:

ATTACHMENT 2

**ATTACHMENT 2
VOLUME II: TAB A**

**Factor 2:
Past Experience - Construction**

**W912PM18R0003
SOF Human Performance Training Center**

Project Title:

Location:

Address of building(s):

Contract number and date of award (if a task order provide Contract and Task Order number with date of award of Task Order):

Specific role of Offeror in performance of cited contract action. Describe via identification of key or critical tasks and responsibilities not by job or functional titles alone:

Significance of role to performance of overall contract, include percentage of work performed in comparison to contract as a whole:

Procuring activity address:

Procurement point of contact and telephone number:

Contract/Task Order Completion Date (dd/mm/yyyy):

If Contract/Task Order not complete provide percent of completed construction as of date of solicitation:

Awarded Contract or Task Order value (if subcontract provide only awarded subcontract value):

General description of project to include whether Government or private industry:

List elements of project which satisfy minimum experience requirements of RFP:

List elements of project which meet one or more of additional experience criteria of RFP:

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ATTACHMENT 3

Attachment 3

VOLUME II, TAB B

Factor 3:

Past Experience - Design

W912PM18R0003

SOF Human Performance Training Center

Project Title:

Location:

Address of building(s):

Contract number and date of award (if a task order provide Contract and Task Order number with date of award of Task Order):

Specific role of Offeror in performance of cited contract action. Describe via identification of key or critical tasks and responsibilities not by job or functional titles alone:

Significance of role to performance of overall contract, include percentage of work performed in comparison to contract as a whole:

Procuring activity address:

Procurement point of contact and telephone number:

Contract/Task Order Completion Date (dd/mm/yyyy):

If Contract/Task Order not complete provide percent of completed construction as of date of solicitation:

Awarded Contract or Task Order value (if subcontract provide only awarded subcontract value):

General description of project to include whether Government or private industry:

List elements of project which satisfy minimum experience requirements of RFP:

List elements of project which meet one or more of additional experience criteria of RFP:

ATTACHMENT 4

**Attachment 4
VOLUME II, TAB C**

**Factor 4:
Key Personnel Resume
W912PM18R0003
SOF Human Performance Training Center**

Name and Title

Name of your firm

No. of years: With this firm _____ With other firms' _____

Education (Degree(s)/Year/Specialization

Active Registration: No. _____ State _____

Your specific experience and qualifications relevant to this project. Include a POC with phone number for the two most recent projects described:

#1 – Project Name and Location:

Date(s) involved with this project:

General Scope of Project:

Your Role in the Project and a Description of the Duties You Performed:

Owner's POC for reference (name and phone number):

#2 – Project Name and Location:

Date(s) involved with this project:

General Scope of Project:

Your Role in the Project and a Description of the Duties You Performed:

Owner's POC for reference (name and phone number):

#3 – Project Name and Location:

Date(s) involved with this project:

General Scope of Project:

Your Role in the Project and a Description of the Duties You Performed:

Owner's POC for reference (name and phone number):

ATTACHMENT 5

**Attachment 5
VOLUME II, TAB D**

**Factor 5:
Past Performance
W912PM18R0003
SOF Human Performance Training Center**

See Attached NAFAC/USACE PPQ

Section 00 45 00 - Representations and Certifications

PREAWARD INFORMATION

PRE-AWARD INFORMATION
(Wilmington Local Instruction)

1. Contracts shall be awarded to responsible prospective contractors only. Before award, to be determined responsible, a prospective contractor must:
 - a. Have adequate financial resources to perform the contract, or the ability to obtain them;
 - b. Be able to comply with the required or proposed delivery or performance schedule, taking into consideration all existing commercial and government business commitments;
 - c. Have a satisfactory performance record;
 - d. Have a satisfactory record of integrity and business ethics;
 - e. Have the necessary organization, experience, accounting and operational controls, and technical skills, or the ability to obtain them;
 - f. Have the necessary production, construction, and technical equipment and facilities, or the ability to obtain them; and
 - g. Be otherwise qualified and eligible to receive an award under applicable laws and regulations.
2. Each Offerer shall, upon request of the Contracting Officer, furnish information on any or all of the above areas so that the Contracting Officer can make an affirmative determination of responsibility or non-responsibility.

CLAUSES INCORPORATED BY FULL TEXT

52.204-3 TAXPAYER IDENTIFICATION (OCT 1998)

(a) Definitions.

Common parent, as used in this provision, means that corporate entity that owns or controls an affiliated group of corporations that files its Federal income tax returns on a consolidated basis, and of which the offeror is a member.

Taxpayer Identification Number (TIN), as used in this provision, means the number required by the Internal Revenue Service (IRS) to be used by the offeror in reporting income tax and other returns. The TIN may be either a Social Security Number or an Employer Identification Number.

(b) All offerors must submit the information required in paragraphs (d) through (f) of this provision to comply with debt collection requirements of 31 U.S.C. 7701(c) and 3325(d), reporting requirements of 26 U.S.C. 6041, 6041A, and 6050M, and implementing regulations issued by the IRS. If the resulting contract is subject to the payment reporting requirements described in Federal Acquisition Regulation (FAR) 4.904, the failure or refusal by the offeror to furnish the information may result in a 31 percent reduction of payments otherwise due under the contract.

(c) The TIN may be used by the Government to collect and report on any delinquent amounts arising out of the offeror's relationship with the Government (31 U.S.C. 7701(c)(3)). If the resulting contract is subject to the payment reporting requirements described in FAR 4.904, the TIN provided hereunder may be matched with IRS records to verify the accuracy of the offeror's TIN.

(d) Taxpayer Identification Number (TIN).

___ TIN:.....

___ TIN has been applied for.

___ TIN is not required because:

___ Offeror is a nonresident alien, foreign corporation, or foreign partnership that does not have income effectively connected with the conduct of a trade or business in the United States and does not have an office or place of business or a fiscal paying agent in the United States;

___ Offeror is an agency or instrumentality of a foreign government;

___ Offeror is an agency or instrumentality of the Federal Government.

(e) Type of organization.

___ Sole proprietorship;

___ Partnership;

___ Corporate entity (not tax-exempt);

___ Corporate entity (tax-exempt);

___ Government entity (Federal, State, or local);

___ Foreign government;

___ International organization per 26 CFR 1.6049-4;

___ Other.....

(f) Common parent.

___ Offeror is not owned or controlled by a common parent as defined in paragraph (a) of this provision.

___ Name and TIN of common parent:

Name-----

TIN-----

(End of provision)

52.204-8 ANNUAL REPRESENTATIONS AND CERTIFICATIONS (JAN 2018)

(a)(1) The North American Industry Classification System (NAICS) code for this acquisition is 236220.

(2) The small business size standard is \$36,500,000.

(3) The small business size standard for a concern which submits an offer in its own name, other than on a construction or service contract, but which proposes to furnish a product which it did not itself manufacture, is 500 employees.

(b)(1) If the provision at 52.204-7, System for Award Management, is included in this solicitation, paragraph (d) of this provision applies.

(2) If the provision at 52.204-7 is not included in this solicitation, and the offeror is currently registered in System for Award Management (SAM), and has completed the Representations and Certifications section of SAM electronically, the offeror may choose to use paragraph (d) of this provision instead of completing the corresponding individual representations and certifications in the solicitation. The offeror shall indicate which option applies by checking one of the following boxes:

(X) Paragraph (d) applies.

() Paragraph (d) does not apply and the offeror has completed the individual representations and certifications in the solicitation.

(c) (1) The following representations or certifications in SAM are applicable to this solicitation as indicated:

(i) 52.203-2, Certificate of Independent Price Determination. This provision applies to solicitations when a firm-fixed-price contract or fixed-price contract with economic price adjustment is contemplated, unless—

(A) The acquisition is to be made under the simplified acquisition procedures in Part 13;

(B) The solicitation is a request for technical proposals under two-step sealed bidding procedures; or

(C) The solicitation is for utility services for which rates are set by law or regulation.

(ii) 52.203-11, Certification and Disclosure Regarding Payments to Influence Certain Federal Transactions. This provision applies to solicitations expected to exceed \$150,000.

(iii) 52.203-18, Prohibition on Contracting with Entities that Require Certain Internal Confidentiality Agreements or Statements--Representation. This provision applies to all solicitations.

(iv) 52.204-3, Taxpayer Identification. This provision applies to solicitations that do not include the provision at 52.204-7, System for Award Management.

(v) 52.204-5, Women-Owned Business (Other Than Small Business). This provision applies to solicitations that—

- (A) Are not set aside for small business concerns;
 - (B) Exceed the simplified acquisition threshold; and
 - (C) Are for contracts that will be performed in the United States or its outlying areas.
- (vi) 52.209-2; Prohibition on Contracting with Inverted Domestic Corporations--Representation.
- (vii) 52.209-5; Certification Regarding Responsibility Matters. This provision applies to solicitations where the contract value is expected to exceed the simplified acquisition threshold.
- (viii) 52.209-11, Representation by Corporations Regarding Delinquent Tax Liability or a Felony Conviction under any Federal Law. This provision applies to all solicitations.
- (ix) 52.214-14, Place of Performance--Sealed Bidding. This provision applies to invitations for bids except those in which the place of performance is specified by the Government.
- (x) 52.215-6, Place of Performance. This provision applies to solicitations unless the place of performance is specified by the Government.
- (xi) 52.219-1, Small Business Program Representations (Basic & Alternate I). This provision applies to solicitations when the contract will be performed in the United States or its outlying areas.
- (A) The basic provision applies when the solicitations are issued by other than DoD, NASA, and the Coast Guard.
 - (B) The provision with its Alternate I applies to solicitations issued by DoD, NASA, or the Coast Guard.
- (xii) 52.219-2, Equal Low Bids. This provision applies to solicitations when contracting by sealed bidding and the contract will be performed in the United States or its outlying areas.
- (xiii) 52.222-22, Previous Contracts and Compliance Reports. This provision applies to solicitations that include the clause at 52.222-26, Equal Opportunity.
- (xiv) 52.222-25, Affirmative Action Compliance. This provision applies to solicitations, other than those for construction, when the solicitation includes the clause at 52.222-26, Equal Opportunity.
- (xv) 52.222-38, Compliance with Veterans' Employment Reporting Requirements. This provision applies to solicitations when it is anticipated the contract award will exceed the simplified acquisition threshold and the contract is not for acquisition of commercial items.
- (xvi) 52.223-1, Biobased Product Certification. This provision applies to solicitations that require the delivery or specify the use of USDA-designated items; or include the clause at 52.223-2, Affirmative Procurement of Biobased Products Under Service and Construction Contracts.
- (xvii) 52.223-4, Recovered Material Certification. This provision applies to solicitations that are for, or specify the use of, EPA- designated items.
- (xviii) 52.223-22, Public Disclosure of Greenhouse Gas Emissions and Reduction Goals--Representation. This provision applies to solicitations that include the clause at 52.204-7.)
- (xix) 52.225-2, Buy American Certificate. This provision applies to solicitations containing the clause at 52.225-1.

(xx) 52.225-4, Buy American--Free Trade Agreements--Israeli Trade Act Certificate. (Basic, Alternates I, II, and III.) This provision applies to solicitations containing the clause at 52.225- 3.

(A) If the acquisition value is less than \$25,000, the basic provision applies.

(B) If the acquisition value is \$25,000 or more but is less than \$50,000, the provision with its Alternate I applies.

(C) If the acquisition value is \$50,000 or more but is less than \$80,317, the provision with its Alternate II applies.

(D) If the acquisition value is \$80,317 or more but is less than \$100,000, the provision with its Alternate III applies.

(xxi) 52.225-6, Trade Agreements Certificate. This provision applies to solicitations containing the clause at 52.225-5.

(xxii) 52.225-20, Prohibition on Conducting Restricted Business Operations in Sudan--Certification. This provision applies to all solicitations.

(xxiii) 52.225-25, Prohibition on Contracting with Entities Engaging in Certain Activities or Transactions Relating to Iran—Representation and Certification. This provision applies to all solicitations.

(xxiv) 52.226-2, Historically Black College or University and Minority Institution Representation. This provision applies to solicitations for research, studies, supplies, or services of the type normally acquired from higher educational institutions.

(2) The following representations or certifications are applicable as indicated by the Contracting Officer:

XX (i) 52.204-17, Ownership or Control of Offeror.

XX (ii) 52.204-20, Predecessor of Offeror.

(iii) 52.222-18, Certification Regarding Knowledge of Child Labor for Listed End Products.

(iv) 52.222-48, Exemption from Application of the Service Contract Labor Standards to Contracts for Maintenance, Calibration, or Repair of Certain Equipment--Certification.

(v) 52.222-52 Exemption from Application of the Service Contract Labor Standards to Contracts for Certain Services--Certification.

(vi) 52.223-9, with its Alternate I, Estimate of Percentage of Recovered Material Content for EPA-Designated Products (Alternate I only).

XX (vii) 52.227-6, Royalty Information.

XX (A) Basic.

(B) Alternate I.

(viii) 52.227-15, Representation of Limited Rights Data and Restricted Computer Software.

(d) The offeror has completed the annual representations and certifications electronically via the SAM website accessed through <https://www.acquisition.gov>. After reviewing the SAM database information, the offeror verifies by submission of the offer that the representations and certifications currently posted electronically that apply to this solicitation as indicated in paragraph (c) of this provision have been entered or updated within the last 12 months, are current, accurate, complete, and applicable to this solicitation (including the business size standard applicable to the NAICS code referenced for this solicitation), as of the date of this offer and are incorporated in this offer by reference (see FAR 4.1201); except for the changes identified below [offeror to insert changes, identifying change by clause number, title, date]. These amended representation(s) and/or certification(s) are also incorporated in this offer and are current, accurate, and complete as of the date of this offer.

FAR Clause	Title	Date	Change
-----	-----	-----	-----
-----	-----	-----	-----

Any changes provided by the offeror are applicable to this solicitation only, and do not result in an update to the representations and certifications posted on SAM.

(End of provision)

52.209-7 INFORMATION REGARDING RESPONSIBILITY MATTERS (JULY 2013)

(a) Definitions. As used in this provision--

Administrative proceeding means a non-judicial process that is adjudicatory in nature in order to make a determination of fault or liability (e.g., Securities and Exchange Commission Administrative Proceedings, Civilian Board of Contract Appeals Proceedings, and Armed Services Board of Contract Appeals Proceedings). This includes administrative proceedings at the Federal and State level but only in connection with performance of a Federal contract or grant. It does not include agency actions such as contract audits, site visits, corrective plans, or inspection of deliverables.

Federal contracts and grants with total value greater than \$10,000,000 means--

- (1) The total value of all current, active contracts and grants, including all priced options; and
- (2) The total value of all current, active orders including all priced options under indefinite-delivery, indefinite-quantity, 8(a), or requirements contracts (including task and delivery and multiple-award Schedules).

Principal means an officer, director, owner, partner, or a person having primary management or supervisory responsibilities within a business entity (e.g., general manager; plant manager; head of a division or business segment; and similar positions).

(b) The offeror () has () does not have current active Federal contracts and grants with total value greater than \$10,000,000.

(c) If the offeror checked “has” in paragraph (b) of this provision, the offeror represents, by submission of this offer, that the information it has entered in the Federal Awardee Performance and Integrity Information System (FAPIS) is current, accurate, and complete as of the date of submission of this offer with regard to the following information:

(1) Whether the offeror, and/or any of its principals, has or has not, within the last five years, in connection with the award to or performance by the offeror of a Federal contract or grant, been the subject of a proceeding, at the Federal or State level that resulted in any of the following dispositions:

(i) In a criminal proceeding, a conviction.

(ii) In a civil proceeding, a finding of fault and liability that results in the payment of a monetary fine, penalty, reimbursement, restitution, or damages of \$5,000 or more.

(iii) In an administrative proceeding, a finding of fault and liability that results in--

(A) The payment of a monetary fine or penalty of \$5,000 or more; or

(B) The payment of a reimbursement, restitution, or damages in excess of \$100,000.

(iv) In a criminal, civil, or administrative proceeding, a disposition of the matter by consent or compromise with an acknowledgment of fault by the Contractor if the proceeding could have led to any of the outcomes specified in paragraphs (c)(1)(i), (c)(1)(ii), or (c)(1)(iii) of this provision.

(2) If the offeror has been involved in the last five years in any of the occurrences listed in (c)(1) of this provision, whether the offeror has provided the requested information with regard to each occurrence.

(d) The offeror shall post the information in paragraphs (c)(1)(i) through (c)(1)(iv) of this provision in FAPIIS as required through maintaining an active registration in the System for Award Management database via <https://www.acquisition.gov> (see 52.204-7).

(End of provision)

252.204-7007 ALTERNATE A, ANNUAL REPRESENTATIONS AND CERTIFICATIONS (JAN 2015)

Substitute the following paragraphs (d) and (e) for paragraph (d) of the provision at FAR 52.204-8:

(d)(1) The following representations or certifications in the System for Award Management (SAM) database are applicable to this solicitation as indicated:

(i) 252.209-7003, Reserve Officer Training Corps and Military Recruiting on Campus--Representation. Applies to all solicitations with institutions of higher education.

(ii) 252.216-7008, Economic Price Adjustment--Wage Rates or Material Prices Controlled by a Foreign Government. Applies to solicitations for fixed-price supply and service contracts when the contract is to be performed wholly or in part in a foreign country, and a foreign government controls wage rates or material prices and may during contract performance impose a mandatory change in wages or prices of materials.

(iii) 252.222-7007, Representation Regarding Combating Trafficking in Persons, as prescribed in 222.1771. Applies to solicitations with a value expected to exceed the simplified acquisition threshold.

(iv) 252.225-7042, Authorization to Perform. Applies to all solicitations when performance will be wholly or in part in a foreign country.

(v) 252.225-7049, Prohibition on Acquisition of Commercial Satellite Services from Certain Foreign Entities--Representations. Applies to solicitations for the acquisition of commercial satellite services.

(vi) 252.225-7050, Disclosure of Ownership or Control by the Government of a Country that is a State Sponsor of Terrorism. Applies to all solicitations expected to result in contracts of \$150,000 or more.

(vii) 252.229-7012, Tax Exemptions (Italy)--Representation. Applies to solicitations when contract performance will be in Italy.

(viii) 252.229-7013, Tax Exemptions (Spain)--Representation. Applies to solicitations when contract performance will be in Spain.

(ix) 252.247-7022, Representation of Extent of Transportation by Sea. Applies to all solicitations except those for direct purchase of ocean transportation services or those with an anticipated value at or below the simplified acquisition threshold.

(2) The following representations or certifications in SAM are applicable to this solicitation as indicated by the Contracting Officer: [Contracting Officer check as appropriate.]

___ (i) 252.209-7002, Disclosure of Ownership or Control by a Foreign Government.

___ (ii) 252.225-7000, Buy American--Balance of Payments Program Certificate.

___ (iii) 252.225-7020, Trade Agreements Certificate.

___ Use with Alternate I.

___ (iv) 252.225-7031, Secondary Arab Boycott of Israel.

___ (v) 252.225-7035, Buy American--Free Trade Agreements--Balance of Payments Program Certificate.

___ Use with Alternate I.

___ Use with Alternate II.

___ Use with Alternate III.

___ Use with Alternate IV.

___ Use with Alternate V.

(e) The offeror has completed the annual representations and certifications electronically via the SAM Web site at <https://www.acquisition.gov/>. After reviewing the SAM database information, the offeror verifies by submission of the offer that the representations and certifications currently posted electronically that apply to this solicitation as indicated in FAR 52.204-8(c) and paragraph (d) of this provision have been entered or updated within the last 12 months, are current, accurate, complete, and applicable to this solicitation (including the business size standard applicable to the NAICS code referenced for this solicitation), as of the date of this offer, and are incorporated in this offer by reference (see FAR 4.1201); except for the changes identified below ___ [offeror to insert changes, identifying change by provision number, title, date]. These amended representation(s) and/or certification(s) are also incorporated in this offer and are current, accurate, and complete as of the date of this offer.

FAR/DFARS Clause #	Title	Date	Change

Any changes provided by the offeror are applicable to this solicitation only, and do not result in an update to the representations and certifications located in the SAM database.

(End of provision)

252.223-7001 HAZARD WARNING LABELS (DEC 1991)

(a) "Hazardous material," as used in this clause, is defined in the Hazardous Material Identification and Material Safety Data clause of this contract.

(b) The Contractor shall label the item package (unit container) of any hazardous material to be delivered under this contract in accordance with the Hazard Communication Standard (29 CFR 1910.1200 et seq). The Standard requires that the hazard warning label conform to the requirements of the standard unless the material is otherwise subject to the labeling requirements of one of the following statutes:

- (1) Federal Insecticide, Fungicide and Rodenticide Act;
- (2) Federal Food, Drug and Cosmetics Act;
- (3) Consumer Product Safety Act;
- (4) Federal Hazardous Substances Act; or
- (5) Federal Alcohol Administration Act.

(c) The Offeror shall list which hazardous material listed in the Hazardous Material Identification and Material Safety Data clause of this contract will be labeled in accordance with one of the Acts in paragraphs (b)(1) through (5) of this clause instead of the Hazard Communication Standard. Any hazardous material not listed will be interpreted to mean that a label is required in accordance with the Hazard Communication Standard.

MATERIAL (If None, Insert "None.")

ACT

(d) The apparently successful Offeror agrees to submit, before award, a copy of the hazard warning label for all hazardous materials not listed in paragraph (c) of this clause. The Offeror shall submit the label with the Material Safety Data Sheet being furnished under the Hazardous Material Identification and Material Safety Data clause of this contract.

(e) The Contractor shall also comply with MIL-STD-129, Marking for Shipment and Storage (including revisions adopted during the term of this contract).

(End of clause)

Section 00 70 00 - Conditions of the Contract

CLAUSES INCORPORATED BY REFERENCE

52.202-1	Definitions	NOV 2013
52.203-3	Gratuities	APR 1984
52.203-5	Covenant Against Contingent Fees	MAY 2014
52.203-6	Restrictions On Subcontractor Sales To The Government	SEP 2006
52.203-7	Anti-Kickback Procedures	MAY 2014
52.203-8	Cancellation, Rescission, and Recovery of Funds for Illegal or Improper Activity	MAY 2014
52.203-10	Price Or Fee Adjustment For Illegal Or Improper Activity	MAY 2014
52.203-12	Limitation On Payments To Influence Certain Federal Transactions	OCT 2010
52.203-13	Contractor Code of Business Ethics and Conduct	OCT 2015
52.204-2	Security Requirements	AUG 1996
52.204-2 Alt II	Security Requirements (Aug 1996) - Alternate II	APR 1984
52.204-4	Printed or Copied Double-Sided on Postconsumer Fiber Content Paper	MAY 2011
52.204-7	System for Award Management	OCT 2016
52.204-9	Personal Identity Verification of Contractor Personnel	JAN 2011
52.204-10	Reporting Executive Compensation and First-Tier Subcontract Awards	OCT 2016
52.209-6	Protecting the Government's Interest When Subcontracting With Contractors Debarred, Suspended, or Proposed for Debarment	OCT 2015
52.209-9	Updates of Publicly Available Information Regarding Responsibility Matters	JUL 2013
52.211-15	Defense Priority And Allocation Requirements	APR 2008
52.215-2	Audit and Records--Negotiation	OCT 2010
52.215-8	Order of Precedence--Uniform Contract Format	OCT 1997
52.215-11	Price Reduction for Defective Certified Cost or Pricing Data-- Modifications	AUG 2011
52.215-13	Subcontractor Certified Cost or Pricing Data--Modifications	OCT 2010
52.215-21	Requirements for Certified Cost or Pricing Data and Data Other Than Certified Cost or Pricing Data -- Modifications	OCT 2010
52.219-4	Notice of Price Evaluation Preference for HUBZone Small Business Concerns	OCT 2014
52.219-8	Utilization of Small Business Concerns	NOV 2016
52.219-9	Small Business Subcontracting Plan	JAN 2017
52.219-9 Alt II	Small Business Subcontracting Plan (JAN 2017) Alternate II	NOV 2016
52.219-16	Liquidated Damages-Subcontracting Plan	JAN 1999
52.219-28	Post-Award Small Business Program Rerepresentation	JUL 2013
52.222-3	Convict Labor	JUN 2003
52.222-4	Contract Work Hours and Safety Standards- Overtime Compensation	MAY 2014
52.222-7	Withholding of Funds	MAY 2014
52.222-8	Payrolls and Basic Records	MAY 2014
52.222-9	Apprentices and Trainees	JUL 2005
52.222-10	Compliance with Copeland Act Requirements	FEB 1988
52.222-11	Subcontracts (Labor Standards)	MAY 2014
52.222-12	Contract Termination-Debarment	MAY 2014
52.222-13	Compliance With Construction Wage Rate Requirements and Related Regulations	MAY 2014

52.222-14	Disputes Concerning Labor Standards	FEB 1988
52.222-15	Certification of Eligibility	MAY 2014
52.222-21	Prohibition Of Segregated Facilities	APR 2015
52.222-26	Equal Opportunity	SEP 2016
52.222-27	Affirmative Action Compliance Requirements for Construction	APR 2015
52.222-37	Employment Reports on Veterans	FEB 2016
52.222-40	Notification of Employee Rights Under the National Labor Relations Act	DEC 2010
52.222-50	Combating Trafficking in Persons	MAR 2015
52.222-54	Employment Eligibility Verification	OCT 2015
52.223-1	Biobased Product Certification	MAY 2012
52.223-2	Affirmative Procurement of Biobased Products Under Service and Construction Contracts	SEP 2013
52.223-3	Hazardous Material Identification And Material Safety Data	JAN 1997
52.223-4	Recovered Material Certification	MAY 2008
52.223-5	Pollution Prevention and Right-to-Know Information	MAY 2011
52.223-6	Drug-Free Workplace	MAY 2001
52.223-11	Ozone-Depleting Substances and High Global Warming Potential Hydrofluorocarbons.	JUN 2016
52.223-15	Energy Efficiency in Energy-Consuming Products	DEC 2007
52.223-16	Acquisition of EPEAT (R) - Registered Personal Computer Products	OCT 2015
52.223-17	Affirmative Procurement of EPA-Designated Items in Service and Construction Contracts	MAY 2008
52.223-18	Encouraging Contractor Policies To Ban Text Messaging While Driving	AUG 2011
52.225-13	Restrictions on Certain Foreign Purchases	JUN 2008
52.225-25	Prohibition on Contracting with Entities Engaging in Certain Activities or Transactions Relating to Iran-- Representation and Certifications.	OCT 2015
52.226-1	Utilization Of Indian Organizations And Indian-Owned Economic Enterprises	JUN 2000
52.227-1	Authorization and Consent	DEC 2007
52.227-2	Notice And Assistance Regarding Patent And Copyright Infringement	DEC 2007
52.227-4	Patent Indemnity-Construction Contracts	DEC 2007
52.228-2	Additional Bond Security	OCT 1997
52.228-5	Insurance - Work On A Government Installation	JAN 1997
52.228-11	Pledges Of Assets	JAN 2012
52.228-12	Prospective Subcontractor Requests for Bonds	MAY 2014
52.228-15	Performance and Payment Bonds--Construction	OCT 2010
52.229-2	North Carolina State and Local Sales and Use Tax	APR 1984
52.229-3	Federal, State And Local Taxes	FEB 2013
52.232-5	Payments under Fixed-Price Construction Contracts	MAY 2014
52.232-17	Interest	MAY 2014
52.232-18	Availability Of Funds	APR 1984
52.232-23	Assignment Of Claims	MAY 2014
52.232-27	Prompt Payment for Construction Contracts	JAN 2017
52.232-33	Payment by Electronic Funds Transfer--System for Award Management	JUL 2013
52.233-1	Disputes	MAY 2014
52.233-1 Alt I	Disputes (May 2014) - Alternate I	DEC 1991
52.233-3	Protest After Award	AUG 1996
52.233-4	Applicable Law for Breach of Contract Claim	OCT 2004

52.236-2	Differing Site Conditions	APR 1984
52.236-3	Site Investigation and Conditions Affecting the Work	APR 1984
52.236-5	Material and Workmanship	APR 1984
52.236-6	Superintendence by the Contractor	APR 1984
52.236-7	Permits and Responsibilities	NOV 1991
52.236-8	Other Contracts	APR 1984
52.236-9	Protection of Existing Vegetation, Structures, Equipment, Utilities, and Improvements	APR 1984
52.236-10	Operations and Storage Areas	APR 1984
52.236-11	Use and Possession Prior to Completion	APR 1984
52.236-12	Cleaning Up	APR 1984
52.236-13	Accident Prevention	NOV 1991
52.236-14	Availability and Use of Utility Services	APR 1984
52.236-15	Schedules for Construction Contracts	APR 1984
52.236-17	Layout of Work	APR 1984
52.236-21	Specifications and Drawings for Construction	FEB 1997
52.236-26	Preconstruction Conference	FEB 1995
52.242-13	Bankruptcy	JUL 1995
52.242-14	Suspension of Work	APR 1984
52.243-4	Changes	JUN 2007
52.244-6	Subcontracts for Commercial Items	NOV 2017
52.245-1	Government Property	JAN 2017
52.245-1 Alt I	Government Property (JAN 2017) Alternate I	APR 2012
52.245-9	Use And Charges	APR 2012
52.248-3	Value Engineering-Construction	OCT 2015
52.249-2	Termination For Convenience Of The Government (Fixed- Price)	APR 2012
52.249-2 Alt I	Termination for Convenience of the Government (Fixed- Price) (Apr 2012) - Alternate I	SEP 1996
52.249-10	Default (Fixed-Price Construction)	APR 1984
52.253-1	Computer Generated Forms	JAN 1991
252.201-7000	Contracting Officer's Representative	DEC 1991
252.203-7001	Prohibition On Persons Convicted of Fraud or Other Defense- Contract-Related Felonies	DEC 2008
252.203-7002	Requirement to Inform Employees of Whistleblower Rights	SEP 2013
252.203-7003	Agency Office of the Inspector General	DEC 2012
252.203-7005	Representation Relating to Compensation of Former DoD Officials	NOV 2011
252.204-7000	Disclosure Of Information	OCT 2016
252.204-7003	Control Of Government Personnel Work Product	APR 1992
252.204-7007	Alternate A, Annual Representations and Certifications	JAN 2015
252.205-7000	Provision Of Information To Cooperative Agreement Holders	DEC 1991
252.215-7000	Pricing Adjustments	DEC 2012
252.222-7006	Restrictions on the Use of Mandatory Arbitration Agreements	DEC 2010
252.223-7001	Hazard Warning Labels	DEC 1991
252.223-7004	Drug Free Work Force	SEP 1988
252.223-7006	Prohibition On Storage, Treatment, and Disposal of Toxic or Hazardous Materials	SEP 2014
252.225-7012	Preference For Certain Domestic Commodities	DEC 2017
252.227-7022	Government Rights (Unlimited)	MAR 1979
252.227-7023	Drawings and Other Data to become Property of Government	MAR 1979
252.227-7033	Rights in Shop Drawings	APR 1966
252.231-7000	Supplemental Cost Principles	DEC 1991
252.232-7003	Electronic Submission of Payment Requests and Receiving Reports	JUN 2012

252.232-7010	Levies on Contract Payments	DEC 2006
252.236-7000	Modification Proposals-Price Breakdown	DEC 1991
252.243-7001	Pricing Of Contract Modifications	DEC 1991
252.243-7002	Requests for Equitable Adjustment	DEC 2012
252.245-7001	Tagging, Labeling, and Marking of Government-Furnished Property	APR 2012
252.245-7002	Reporting Loss of Government Property	DEC 2017
252.245-7003	Contractor Property Management System Administration	APR 2012
252.247-7023	Transportation of Supplies by Sea	APR 2014
252.247-7024	Notification Of Transportation Of Supplies By Sea	MAR 2000

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52.203-14 DISPLAY OF HOTLINE POSTER(S) (OCT 2015)

(a) Definition.

United States, as used in this clause, means the 50 States, the District of Columbia, and outlying areas.

(b) Display of fraud hotline poster(s). Except as provided in paragraph (c)--

(1) During contract performance in the United States, the Contractor shall prominently display in common work areas within business segments performing work under this contract and at contract work sites--

(i) Any agency fraud hotline poster or Department of Homeland Security (DHS) fraud hotline poster identified in paragraph (b)(3) of this clause; and

(ii) Any DHS fraud hotline poster subsequently identified by the Contracting Officer.

(2) Additionally, if the Contractor maintains a company website as a method of providing information to employees, the Contractor shall display an electronic version of the poster(s) at the website.

(3) Any required posters may be obtained as follows:

Poster(s) Obtain from

http://www.dhs.gov/xoig/about/gc_1163703329805.htm

(i) Appropriate agency name(s) and/or title of applicable Department of Homeland Security fraud hotline poster); and

(ii) The website(s) or other contact information for obtaining the poster(s).)

(c) If the Contractor has implemented a business ethics and conduct awareness program, including a reporting mechanism, such as a hotline poster, then the Contractor need not display any agency fraud hotline posters as required in paragraph (b) of this clause, other than any required DHS posters.

(d) Subcontracts. The Contractor shall include the substance of this clause, including this paragraph (d), in all subcontracts that exceed \$5.5 million , except when the subcontract--

(1) Is for the acquisition of a commercial item; or

(2) Is performed entirely outside the United States.

(End of clause)

52.217-7 OPTION FOR INCREASED QUANTITY--SEPARATELY PRICED LINE ITEM (MAR 1989)

The Government may require the delivery of the numbered line item, identified in the Schedule as an option item, in the quantity and at the price stated in the Schedule. The Contracting Officer may exercise optional bid item 1 (CLINS 0005) within 90 days after the award. Optional bid items 1 through 10 (CLIN's 0006-0016) may be exercised within 360 days after Notice to Proceed. The Contracting Officer may exercise optional bid item 10 (CLINS 0017) prior to final acceptance of the HPTC. Delivery of added items shall continue at the same rate that like items are called for under the contract, unless the parties otherwise agree.

(End of clause)

52.222-5 CONSTRUCTION WAGE RATE REQUIREMENTS--SECONDARY SITE OF THE WORK (MAY 2014)

(a)(1) The offeror shall notify the Government if the offeror intends to perform work at any secondary site of the work, as defined in paragraph (a)(1)(ii) of the FAR clause at 52.222-6, Construction Wage Rate Requirements, of this solicitation.

(2) If the offeror is unsure if a planned work site satisfies the criteria for a secondary site of the work, the offeror shall request a determination from the Contracting Officer.

(b)(1) If the wage determination provided by the Government for work at the primary site of the work is not applicable to the secondary site of the work, the offeror shall request a wage determination from the Contracting Officer.

(2) The due date for receipt of offers will not be extended as a result of an offeror's request for a wage determination for a secondary site of the work.

(End of provision)

52.222-6 CONSTRUCTION WAGE RATE REQUIREMENTS (MAY 2014)

(a) Definition.—“Site of the work”—

(1) Means—

(i) *The primary site of the work.* The physical place or places where the construction called for in the contract will remain when work on it is completed; and

(ii) *The secondary site of the work, if any.* Any other site where a significant portion of the building or work is constructed, provided that such site is—

(A) Located in the United States; and

(B) Established specifically for the performance of the contract or project;

(2) Except as provided in paragraph (3) of this definition, includes any fabrication plants, mobile factories, batch plants, borrow pits, job headquarters, tool yards, etc., provided—

(i) They are dedicated exclusively, or nearly so, to performance of the contract or project; and

(ii) They are adjacent or virtually adjacent to the “primary site of the work” as defined in paragraph (a)(1)(i), or the “secondary site of the work” as defined in paragraph (a)(1)(ii) of this definition;

(3) Does not include permanent home offices, branch plant establishments, fabrication plants, or tool yards of a Contractor or subcontractor whose locations and continuance in operation are determined wholly without regard to a particular Federal contract or project. In addition, fabrication plants, batch plants, borrow pits, job headquarters, yards, etc., of a commercial or material supplier which are established by a supplier of materials for the project before opening of bids and not on the Project site, are not included in the “site of the work.” Such permanent, previously established facilities are not a part of the “site of the work” even if the operations for a period of time may be dedicated exclusively or nearly so, to the performance of a contract.

(b)(1) All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, or as may be incorporated for a secondary site of the work, regardless of any contractual relationship which may be alleged to exist between the Contractor and such laborers and mechanics. Any wage determination incorporated for a secondary site of the work shall be effective from the first day on which work under the contract was performed at that site and shall be incorporated without any adjustment in contract price or estimated cost. Laborers employed by the construction Contractor or construction subcontractor that are transporting portions of the building or work between the secondary site of the work and the primary site of the work shall be paid in accordance with the wage determination applicable to the primary site of the work.

(2) Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Construction Wage Rate Requirements statute on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (e) of this clause; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such period.

(3) Such laborers and mechanics shall be paid not less than the appropriate wage rate and fringe benefits in the wage determination for the classification of work actually performed, without regard to skill, except as provided in the clause entitled Apprentices and Trainees. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein; provided that the employer’s payroll records accurately set forth the time spent in each classification in which work is performed.

(4) The wage determination (including any additional classifications and wage rates conformed under paragraph (c) of this clause) and the Construction Wage Rate Requirements statute poster (WH-1321) shall be posted at all times by the Contractor and its subcontractors at the primary site of the work and the secondary site of the work, if any, in a prominent and accessible place where it can be easily seen by the workers.

(c)(1) The Contracting Officer shall require that any class of laborers or mechanics which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The Contracting Officer shall approve an additional classification and wage rate and fringe benefits therefor only when all the following criteria have been met:

- (i) The work to be performed by the classification requested is not performed by a classification in the wage determination.
 - (ii) The classification is utilized in the area by the construction industry.
 - (iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.
- (2) If the Contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the Contracting Officer agree on the classification and wage rate (including the amount designated for fringe benefits, where appropriate), a report of the action taken shall be sent by the Contracting Officer to the Administrator of the:

Wage and Hour Division
Employment Standards Administration
U.S. Department of Labor
Washington, DC 20210

The Administrator or an authorized representative will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the Contracting Officer or will notify the Contracting Officer within the 30-day period that additional time is necessary.

(3) In the event the Contractor, the laborers or mechanics to be employed in the classification, or their representatives, and the Contracting Officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the Contracting Officer shall refer the questions, including the views of all interested parties and the recommendation of the Contracting Officer, to the Administrator of the Wage and Hour Division for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the Contracting Officer or will notify the Contracting Officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits, where appropriate) determined pursuant to paragraphs (c)(2) and (c)(3) of this clause shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(d) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the Contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(e) If the Contractor does not make payments to a trustee or other third person, the Contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program; provided, That the Secretary of Labor has found, upon the written request of the Contractor, that the applicable standards of the Construction Wage Rate Requirements statute have been met. The Secretary of Labor may require the Contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

(End of clause)

52.222-35 EQUAL OPPORTUNITY FOR VETERANS (OCT 2015)

(a) Definitions. As used in this clause--

``Active duty wartime or campaign badge veteran," ``Armed Forces service medal veteran," ``disabled veteran," ``protected veteran," ``qualified disabled veteran," and ``recently separated veteran" have the meanings given at FAR 22.1301.

(b) Equal opportunity clause. The Contractor shall abide by the requirements of the equal opportunity clause at 41 CFR 60-300.5(a), as of March 24, 2014. This clause prohibits discrimination against qualified protected veterans, and requires affirmative action by the Contractor to employ and advance in employment qualified protected veterans.

(c) Subcontracts. The Contractor shall insert the terms of this clause in subcontracts of \$150,000 or more unless exempted by rules, regulations, or orders of the Secretary of Labor. The Contractor shall act as specified by the Director, Office of Federal Contract Compliance Programs, to enforce the terms, including action for noncompliance. Such necessary changes in language may be made as shall be appropriate to identify properly the parties and their undertakings.

(End of clause)

52.222-36 EQUAL OPPORTUNITY FOR WORKERS WITH DISABILITIES (JUL 2014)

(a) Equal opportunity clause. The Contractor shall abide by the requirements of the equal opportunity clause at 41 CFR 60-741.5(a), as of March 24, 2014. This clause prohibits discrimination against qualified individuals on the basis of disability, and requires affirmative action by the Contractor to employ and advance in employment qualified individuals with disabilities.

(b) Subcontracts. The Contractor shall include the terms of this clause in every subcontract or purchase order in excess of \$15,000 unless exempted by rules, regulations, or orders of the Secretary, so that such provisions will be binding upon each subcontractor or vendor. The Contractor shall act as specified by the Director, Office of Federal Contract Compliance Programs of the U.S. Department of Labor, to enforce the terms, including action for noncompliance. Such necessary changes in language may be made as shall be appropriate to identify properly the parties and their undertakings.

(End of clause)

52.223-9 ESTIMATE OF PERCENTAGE OF RECOVERED MATERIAL CONTENT FOR EPA-DESIGNATED ITEMS (MAY 2008)

(a) Definitions. As used in this clause--

Postconsumer material means a material or finished product that has served its intended use and has been discarded for disposal or recovery, having completed its life as a consumer item. Postconsumer material is a part of the broader category of "recovered material."

Recovered material means waste materials and by-products recovered or diverted from solid waste, but the term does not include those materials and by-products generated from, and commonly reused within, an original manufacturing process.

(b) The Contractor, on completion of this contract, shall--

(1) Estimate the percentage of the total recovered material content for EPA-designated item(s) delivered and/or used in contract performance, including, if applicable, the percentage of post-consumer material content; and

(2) Submit this estimate to :

US Army Corps of Engineers
ATTN: John T. Hill
69 Darlington Ave
Wilmington NC 28403
john.t.hill@usace.army.mil

(End of clause)

52.225-11 BUY AMERICAN--CONSTRUCTION MATERIALS UNDER TRADE AGREEMENTS (OCT 2016)

(a) Definitions. As used in this clause--

Caribbean Basin country construction material means a construction material that--

(1) Is wholly the growth, product, or manufacture of a Caribbean Basin country; or

(2) In the case of a construction material that consists in whole or in part of materials from another country, has been substantially transformed in a Caribbean Basin country into a new and different construction material distinct from the materials from which it was transformed.

Commercially available off-the-shelf (COTS) item—

(1) Means any item of supply (including construction material) that is--

(i) A commercial item (as defined in paragraph (1) of the definition at FAR 2.101);

(ii) Sold in substantial quantities in the commercial marketplace; and

(iii) Offered to the Government, under a contract or subcontract at any tier, without modification, in the same form in which it is sold in the commercial marketplace; and

(2) Does not include bulk cargo, as defined in 46 U.S.C. 40102(4) such as agricultural products and petroleum products.

Component means an article, material, or supply incorporated directly into a construction material.

Construction material means an article, material, or supply brought to the construction site by the Contractor or subcontractor for incorporation into the building or work. The term also includes an item brought to the site preassembled from articles, materials, or supplies. However, emergency life safety systems, such as emergency lighting, fire alarm, and audio evacuation systems, that are discrete systems incorporated into a public building or work and that are produced as complete systems, are evaluated as a single and distinct construction material regardless of when or how the individual parts or components of those systems are delivered to the construction site. Materials purchased directly by the Government are supplies, not construction material.

Cost of components means--

(1) For components purchased by the Contractor, the acquisition cost, including transportation costs to the place of incorporation into the construction material (whether or not such costs are paid to a domestic firm), and any applicable duty (whether or not a duty-free entry certificate is issued); or

(2) For components manufactured by the Contractor, all costs associated with the manufacture of the component, including transportation costs as described in paragraph (1) of this definition, plus allocable overhead costs, but excluding profit. Cost of components does not include any costs associated with the manufacture of the construction material.

Designated country means any of the following countries:

(1) A World Trade Organization Government Procurement Agreement (WTO GPA) country (Armenia, Aruba, Austria, Belgium, Bulgaria, Canada, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hong Kong, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea (Republic of), Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Moldova, Montenegro, Netherlands, New Zealand, Norway, Poland, Portugal, Romania, Singapore, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Taiwan, Ukraine, or United Kingdom);

(2) A Free Trade Agreement (FTA) country (Australia, Bahrain, Canada, Chile, Colombia, Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, Korea (Republic of), Mexico, Morocco, Nicaragua, Oman, Panama, Peru, or Singapore);

(3) A least developed country (Afghanistan, Angola, Bangladesh, Benin, Bhutan, Burkina Faso, Burundi, Cambodia, Central African Republic, Chad, Comoros, Democratic Republic of Congo, Djibouti, Equatorial Guinea, Eritrea, Ethiopia, Gambia, Guinea, Guinea-Bissau, Haiti, Kiribati, Laos, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mozambique, Nepal, Niger, Rwanda, Samoa, Sao Tome and Principe, Senegal, Sierra Leone, Solomon Islands, Somalia, South Sudan, Tanzania, Timor-Leste, Togo, Tuvalu, Uganda, Vanuatu, Yemen, or Zambia); or

(4) A Caribbean Basin country (Antigua and Barbuda, Aruba, Bahamas, Barbados, Belize, Bonaire, British Virgin Islands, Curacao, Dominica, Grenada, Guyana, Haiti, Jamaica, Montserrat, Saba, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Sint Eustatius, Sint Maarten, or Trinidad and Tobago).

Designated country construction material means a construction material that is a WTO GPA country construction material, an FTA country construction material, a least developed country construction material, or a Caribbean Basin country construction material.

Domestic construction material means--

(1) An unmanufactured construction material mined or produced in the United States;

(2) A construction material manufactured in the United States, if--

(i) The cost of its components mined, produced, or manufactured in the United States exceeds 50 percent of the cost of all its components. Components of foreign origin of the same class or kind for which nonavailability determinations have been made are treated as domestic; or

(ii) The construction material is a COTS item.

Foreign construction material means a construction material other than a domestic construction material.

Least developed country construction material means a construction material that--

(1) Is wholly the growth, product, or manufacture of a least developed country; or

(2) In the case of a construction material that consists in whole or in part of materials from another country, has been substantially transformed in a least developed country into a new and different construction material distinct from the materials from which it was transformed.

“Free Trade Agreement country construction material” means a construction material that—

(1) Is wholly the growth, product, or manufacture of a Free Trade Agreement (FTA) country; or

(2) In the case of a construction material that consists in whole or in part of materials from another country, has been substantially transformed in a FTA country into a new and different construction material distinct from the materials from which it was transformed.

“Least developed country construction material” means a construction material that—

(1) Is wholly the growth, product, or manufacture of a least developed country; or

(2) In the case of a construction material that consists in whole or in part of materials from another country, has been substantially transformed in a least developed country into a new and different construction material distinct from the materials from which it was transformed.

United States means the 50 States, the District of Columbia, and outlying areas.

WTO GPA country construction material means a construction material that--

(1) Is wholly the growth, product, or manufacture of a WTO GPA country; or

(2) In the case of a construction material that consists in whole or in part of materials from another country, has been substantially transformed in a WTO GPA country into a new and different construction material distinct from the materials from which it was transformed.

(b) Construction materials.

(1) This clause implements 41 U.S.C. chapter 83, Buy American, by providing a preference for domestic construction material. In accordance with 41 U.S.C. 1907, the component test of the Buy American statute is waived for construction material that is a COTS item. (See FAR 12.505(a)(2)). In addition, the Contracting Officer has determined that the WTO GPA and Free Trade Agreements (FTAs) apply to this acquisition. Therefore, the Buy American restrictions are waived for designated country construction materials.

(2) The Contractor shall use only domestic or designated country construction material in performing this contract, except as provided in paragraphs (b)(3) and (b)(4) of this clause.

(3) The requirement in paragraph (b)(2) of this clause does not apply to information technology that is a commercial item or to the construction materials or components listed by the Government as follows: None

(4) The Contracting Officer may add other foreign construction material to the list in paragraph (b)(3) of this clause if the Government determines that--

(i) The cost of domestic construction material would be unreasonable. The cost of a particular domestic construction material subject to the restrictions of the Buy American statute is unreasonable when the cost of such material exceeds the cost of foreign material by more than 6 percent;

(ii) The application of the restriction of the Buy American statute to a particular construction material would be impracticable or inconsistent with the public interest; or

(iii) The construction material is not mined, produced, or manufactured in the United States in sufficient and reasonably available commercial quantities of a satisfactory quality.

(c) Request for determination of inapplicability of the Buy American statute.

(1)(i) Any Contractor request to use foreign construction material in accordance with paragraph (b)(4) of this clause shall include adequate information for Government evaluation of the request, including--

(A) A description of the foreign and domestic construction materials;

(B) Unit of measure;

(C) Quantity;

(D) Price;

(E) Time of delivery or availability;

(F) Location of the construction project;

(G) Name and address of the proposed supplier; and

(H) A detailed justification of the reason for use of foreign construction materials cited in accordance with paragraph (b)(3) of this clause.

(ii) A request based on unreasonable cost shall include a reasonable survey of the market and a completed price comparison table in the format in paragraph (d) of this clause.

(iii) The price of construction material shall include all delivery costs to the construction site and any applicable duty (whether or not a duty-free certificate may be issued).

(iv) Any Contractor request for a determination submitted after contract award shall explain why the Contractor could not reasonably foresee the need for such determination and could not have requested the determination before contract award. If the Contractor does not submit a satisfactory explanation, the Contracting Officer need not make a determination.

(2) If the Government determines after contract award that an exception to the Buy American statute applies and the Contracting Officer and the Contractor negotiate adequate consideration, the Contracting Officer will modify the contract to allow use of the foreign construction material. However, when the basis for the exception is the unreasonable price of a domestic construction material, adequate consideration is not less than the differential established in paragraph (b)(4)(i) of this clause.

(3) Unless the Government determines that an exception to the Buy American statute applies, use of foreign construction material is noncompliant with the Buy American statute.

(d) Data. To permit evaluation of requests under paragraph (c) of this clause based on unreasonable cost, the Contractor shall include the following information and any applicable supporting data based on the survey of suppliers:

Foreign and Domestic Construction Materials Price Comparison

Construction material description	Unit of measure	Quantity	Price (dollars) \1\
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Item 1:

Foreign construction material.... ..

Domestic construction material... ..
 Item 2:
 Foreign construction material... ..
 Domestic construction material... ..

 \1\ Include all delivery costs to the construction site and any applicable duty (whether or not a duty-free entry certificate is issued).
 List name, address, telephone number, and contact for suppliers surveyed. Attach copy of response; if oral, attach summary.
 Include other applicable supporting information.

(End of clause)

52.228-1 BID GUARANTEE (SEP 1996)

(a) Failure to furnish a bid guarantee in the proper form and amount, by the time set for opening of bids, may be cause for rejection of the bid.

(b) The bidder shall furnish a bid guarantee in the form of a firm commitment, e.g., bid bond supported by good and sufficient surety or sureties acceptable to the Government, postal money order, certified check, cashier's check, irrevocable letter of credit, or, under Treasury Department regulations, certain bonds or notes of the United States. The Contracting Officer will return bid guarantees, other than bid bonds, (1) to unsuccessful bidders as soon as practicable after the opening of bids, and (2) to the successful bidder upon execution of contractual documents and bonds (including any necessary coinsurance or reinsurance agreements), as required by the bid as accepted.-

(c) The amount of the bid guarantee shall be **20** percent of the bid price or **\$3,000,000.00**, whichever is less.-

(d) If the successful bidder, upon acceptance of its bid by the Government within the period specified for acceptance, fails to execute all contractual documents or furnish executed bond(s) within 10 days after receipt of the forms by the bidder, the Contracting Officer may terminate the contract for default.-

(e) In the event the contract is terminated for default, the bidder is liable for any cost of acquiring the work that exceeds the amount of its bid, and the bid guarantee is available to offset the difference.

(End of provision)

52.228-14 IRREVOCABLE LETTER OF CREDIT (NOV 2014)

(a) "Irrevocable letter of credit" (ILC), as used in this clause, means a written commitment by a federally insured financial institution to pay all or part of a stated amount of money, until the expiration date of the letter, upon presentation by the Government (the beneficiary) of a written demand therefor. Neither the financial institution nor the offeror/Contractor can revoke or condition the letter of credit.

(b) If the offeror intends to use an ILC in lieu of a bid bond, or to secure other types of bonds such as performance and payment bonds, the letter of credit and letter of confirmation formats in paragraphs (e) and (f) of this clause shall be used.

(c) The letter of credit shall be irrevocable, shall require presentation of no document other than a written demand and the ILC (including confirming letter, if any), shall be issued/confirmed by an acceptable federally insured financial institution as provided in paragraph (d) of this clause, and--

(1) If used as a bid guarantee, the ILC shall expire no earlier than 60 days after the close of the bid acceptance period;

(2) If used as an alternative to corporate or individual sureties as security for a performance or payment bond, the offeror/Contractor may submit an ILC with an initial expiration date estimated to cover the entire period for which financial security is required or may submit an ILC with an initial expiration date that is a minimum period of one year from the date of issuance. The ILC shall provide that, unless the issuer provides the beneficiary written notice of non-renewal at least 60 days in advance of the current expiration date, the ILC is automatically extended without amendment for one year from the expiration date, or any future expiration date, until the period of required coverage is completed and the Contracting Officer provides the financial institution with a written statement waiving the right to payment. The period of required coverage shall be:

(i) For contracts subject to 40 U.S.C. chapter 31, subchapter III, Bonds, the later of--

(A) One year following the expected date of final payment;

(B) For performance bonds only, until completion of any warranty period; or

(C) For payment bonds only, until resolution of all claims filed against the payment bond during the one-year period following final payment.

(ii) For contracts not subject to the Miller Act, the later of--

(A) 90 days following final payment; or

(B) For performance bonds only, until completion of any warranty period.

(d)(1) Only federally insured financial institutions rated investment grade by a commercial rating service shall issue or confirm the ILC.

(2) Unless the financial institution issuing the ILC had letter of credit business of at least \$25 million in the past year, ILCs over \$5 million must be confirmed by another acceptable financial institution that had letter of credit business of at least \$25 million in the past year.

(3) The Offeror/Contractor shall provide the Contracting Officer a credit rating that indicates the financial institutions have the required credit rating as of the date of issuance of the ILC.

(4) The current rating for a financial institution is available through any of the following rating services registered with the U.S. Securities and Exchange Commission (SEC) as a Nationally Recognized Statistical Rating Organization (NRSRO). NRSRO's can be located at the Web site <http://www.sec.gov/answers/nrsro.htm> maintained by the SEC.

(e) The following format shall be used by the issuing financial institution to create an ILC:

[Issuing Financial Institution's Letterhead or Name and Address]

Issue Date _ ____

IRREVOCABLE LETTER OF CREDIT NO. ____

Account party's name ____ _

Account party's address ____ _

For Solicitation No. ____ (for reference only)

TO: [____ U.S. Government agency]

[____ U.S. Government agency's address]

1. We hereby establish this irrevocable and transferable Letter of Credit in your favor for one or more drawings up to United States \$ ____ . This Letter of Credit is payable at [issuing financial institution's and, if any, confirming financial institution's] office at [____ issuing financial institution's address and, if any, confirming financial institution's address] and expires with our close of business on ____ , or any automatically extended expiration date.

2. We hereby undertake to honor your or the transferee's sight draft(s) drawn on the issuing or, if any, the confirming financial institution, for all or any part of this credit if presented with this Letter of Credit and confirmation, if any, at the office specified in paragraph 1 of this Letter of Credit on or before the expiration date or any automatically extended expiration date.

3. [This paragraph is omitted if used as a bid guarantee, and subsequent paragraphs are renumbered.] It is a condition of this Letter of Credit that it is deemed to be automatically extended without amendment for one year from the expiration date hereof, or any future expiration date, unless at least 60 days prior to any expiration date, we notify you or the transferee by registered mail, or other receipted means of delivery, that we elect not to consider this Letter of Credit renewed for any such additional period. At the time we notify you, we also agree to notify the account party (and confirming financial institution, if any) by the same means of delivery.

4. This Letter of Credit is transferable. Transfers and assignments of proceeds are to be effected without charge to either the beneficiary or the transferee/assignee of proceeds. Such transfer or assignment shall be only at the written direction of the Government (the beneficiary) in a form satisfactory to the issuing financial institution and the confirming financial institution, if any.

5. This Letter of Credit is subject to the Uniform Customs and Practice (UCP) for Documentary Credits, International Chamber of Commerce Publication No. ____ -- (Insert version in effect at the time of ILC issuance, e.g., ``Publication 600, 2006 edition") and to the extent not inconsistent therewith, to the laws of ____ --[State of confirming financial institution, if any, otherwise State of issuing financial institution].

6. If this credit expires during an interruption of business of this financial institution as described in Article 17 of the UCP, the financial institution specifically agrees to effect payment if this credit is drawn against within 30 days after the resumption of our business.

Sincerely,

[____ Issuing financial institution]

(f) The following format shall be used by the financial institution to confirm an ILC:

____ [Confirming Financial Institution's Letterhead or Name and Address]

(Date) ____

Our Letter of Credit Advice Number ____

Beneficiary: ____ [U.S. Government agency]

Issuing Financial Institution: ____

Issuing Financial Institution's LC No.: ____

Gentlemen:

1. We hereby confirm the above indicated Letter of Credit, the original of which is attached, issued by ____ [name of issuing financial institution] for drawings of up to United States dollars ____ /U.S. \$ ____ and expiring with our close of business on ____ [the expiration date], or any automatically extended expiration date.

2. Draft(s) drawn under the Letter of Credit and this Confirmation are payable at our office located at ____ .

3. We hereby undertake to honor sight draft(s) drawn under and presented with the Letter of Credit and this Confirmation at our offices as specified herein.

4. [This paragraph is omitted if used as a bid guarantee, and subsequent paragraphs are renumbered.] It is a condition of this confirmation that it be deemed automatically extended without amendment for one year from the expiration date hereof, or any automatically extended expiration date, unless:

(a) At least 60 days prior to any such expiration date, we shall notify the Contracting Officer, or the transferee and the issuing financial institution, by registered mail or other receipted means of delivery, that we elect not to consider this confirmation extended for any such additional period; or

(b) The issuing financial institution shall have exercised its right to notify you or the transferee, the account party, and ourselves, of its election not to extend the expiration date of the Letter of Credit.

5. This confirmation is subject to the Uniform Customs and Practice (UCP) for Documentary Credits, International Chamber of Commerce Publication No. ____ -- (Insert version in effect at the time of ILC issuance, e.g., ``Publication 600, 2006 edition") and to the extent not inconsistent therewith, to the laws of ____ --[State of confirming financial institution].

6. If this confirmation expires during an interruption of business of this financial institution as described in Article 17 of the UCP, we specifically agree to effect payment if this credit is drawn against within 30 days after the resumption of our business.

Sincerely,

[Confirming financial institution]

(g) The following format shall be used by the Contracting Officer for a sight draft to draw on the Letter of Credit:

SIGHT DRAFT

[City, State]

(Date) ____

[Name and address of financial institution]

Pay to the order of ____ [Beneficiary Agency] ____ the sum of United States ____ This draft is drawn under Irrevocable Letter of Credit No. ____

____ [Beneficiary Agency]

By: ____

(End of clause)

252.219-7003 SMALL BUSINESS SUBCONTRACTING PLAN (DOD CONTRACTS) (APR 2018)

This clause supplements the Federal Acquisition Regulation 52.219-9, Small Business Subcontracting Plan, clause of this contract.

(a) Definitions. As used in this clause--

Historically black colleges and universities means institutions determined by the Secretary of Education to meet the requirements of 34 CFR Section 608.2. The term also means any nonprofit research institution that was an integral part of such a college or university before November 14, 1986.

Minority institutions means institutions meeting the requirements of Section 1046(3) of the Higher Education Act of 1965 (20 U.S.C. 1135d-5(3)). The term also includes Hispanic-serving institutions as defined in Section 316(b)(1) of such Act (20 U.S.C. 1059c(b)(1)).

Summary Subcontract Report (SSR) Coordinator, as used in this clause, means the individual at the department or agency level who is registered in eSRS and is responsible for acknowledging receipt or rejecting SSRs in the Electronic Subcontracting Reporting System (eSRS) for the department or agency.

(b) Subcontracts awarded to workshops approved by the Committee for Purchase from People Who are Blind or Severely Disabled (41 U.S.C. 8502-8504), may be counted toward the Contractor's small business subcontracting goal.

(c) A mentor firm, under the Pilot Mentor-Protege Program established under section 831 of Public Law 101-510, as amended, may count toward its small disadvantaged business goal, subcontracts awarded to--

(1) Protege firms which are qualified organizations employing the severely disabled; and

(2) Former protege firms that meet the criteria in section 831(g)(4) of Public Law 101-510.

(d) The master plan is approved by the Contractor's cognizant contract administration activity.

(e) In those subcontracting plans which specifically identify small businesses, the Contractor shall notify the Administrative Contracting Officer of any substitutions of firms that are not small business firms, for the small business firms specifically identified in the subcontracting plan. Notifications shall be in writing and shall occur within a reasonable period of time after award of the subcontract. Contractor-specified formats shall be acceptable.

(f)(1) For DoD, the Contractor shall submit reports in eSRS as follows:

(i) The Individual Subcontract Report (ISR) shall be submitted to the contracting officer at the procuring contracting office, even when contract administration has been delegated to the Defense Contract Management Agency.

(ii) An SSR for other than a commercial subcontracting plan, or construction and related maintenance repair contracts, shall be submitted in eSRS to the department or agency within DoD that administers the majority of the Contractor's individual subcontracting plans. An example would be Defense Finance and Accounting Service or Missile Defense Agency.

(2) For DoD, the authority to acknowledge receipt or reject reports in eSRS is as follows:

(i) The authority to acknowledge receipt or reject the ISR resides with the contracting officer who receives it, as described in paragraph (f)(1)(i) of this clause.

(ii) Except as provided in (f)(2)(iii), the authority to acknowledge receipt or reject SSRs in eSRS resides with the SSR Coordinator at the department or agency that administers the majority of the Contractor's individual subcontracting plans.

(iii) The authority to acknowledge receipt or reject SSRs for construction and related maintenance and repair contracts resides with the SSR Coordinator for each department or agency.

(g) Include the clause at 252.219-7004, Small Business Subcontracting Plan (Test Program), in subcontracts with subcontractors that participate in the Test Program described in DFARS 219.702-70, where the subcontract is expected to exceed \$700,000 (\$1.5 million for construction of any public facility) and to have further subcontracting opportunities.

(End of clause)

252.236-7001 CONTRACT DRAWINGS AND SPECIFICATIONS (AUG 2000)

(a) The Government will provide to the Contractor, without charge, one set of contract drawings and specifications, except publications incorporated into the technical provisions by reference, in electronic or paper media as chosen by the Contracting Officer.

(b) The Contractor shall--

- (1) Check all drawings furnished immediately upon receipt;
- (2) Compare all drawings and verify the figures before laying out the work;
- (3) Promptly notify the Contracting Officer of any discrepancies;
- (4) Be responsible for any errors that might have been avoided by complying with this paragraph (b); and
- (5) Reproduce and print contract drawings and specifications as needed.

(c) In general--

- (1) Large-scale drawings shall govern small-scale drawings; and
- (2) The Contractor shall follow figures marked on drawings in preference to scale measurements.

(d) Omissions from the drawings or specifications or the misdescription of details of work that are manifestly necessary to carry out the intent of the drawings and specifications, or that are customarily performed, shall not relieve the Contractor from performing such omitted or misdescribed details of the work. The Contractor shall perform such details as if fully and correctly set forth and described in the drawings and specifications.

(e) The work shall conform to the specifications and the contract drawings identified on the following index of drawings:

As provided in the Award Plans and Specifications

(End of clause)

Section 00 73 00 - Supplementary Conditions

GOVERNMENT FURNISHED SPECS**Government-Furnished Specifications and Drawings for Construction (JUL 2003)**

This is to clarify FAR 52.236-21, Specifications and Drawings for Construction, refers to any specifications and drawings furnished in the Request for Proposal (RFP). The term "specifications" refers to the design criteria or scope of work, in addition to any attached specifications.

CLAUSES INCORPORATED BY REFERENCE

52.211-13	Time Extensions	SEP 2000
52.246-12	Inspection of Construction	AUG 1996
52.246-21	Warranty of Construction	MAR 1994

CLAUSES INCORPORATED BY FULL TEXT

52.211-10 COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK (APR 1984)

The Contractor shall be required to (a) commence work under this contract within **Ten (10)** calendar days after the date the Contractor receives the notice to proceed, (b) prosecute the work diligently, and (c) complete the entire work ready for use not later than. **Five Hundred and Forty (540) Calendar Days.** The time stated for completion shall include final cleanup of the premises.

(End of clause)

52.211-12 LIQUIDATED DAMAGES--CONSTRUCTION (SEP 2000)

(a) If the Contractor fails to complete the work within the time specified in the contract, the Contractor shall pay liquidated damages to the Government in the amount of **\$1,415.80** for each calendar day of delay until the work is completed or accepted.

(b) If the Government terminates the Contractor's right to proceed, liquidated damages will continue to accrue until the work is completed. These liquidated damages are in addition to excess costs of repurchase under the Termination clause.

(End of clause)

52.219-4002 REPORTING REQUIREMENTS--SUBCONTRACTING PLAN (CESAD-CT JUL 1993)

(a) Retainage will be withheld from progress payments in an amount sufficient to protect the Government's ability to assess Liquidated Damages in accordance with FAR clause 52.219-0016 for failure to submit timely SF 294 and SF 295 Reports. The amount of retainage will be determined in accordance with the following formula:

(b) Total dollar amount proposed for subcontracting to small business multiplied by percentage of actual progress on the contract, up to a maximum of 10% of the given progress payment, shall be withheld from the next progress payment due after a contractor fails to submit a required report. If one or more reports have been submitted before such failure, formula for determining the amount of retainage will be adjusted by deducting any amounts reported as subcontracted to small business from the total dollar amount proposed to be subcontracted and the difference multiplied by the percent of actual progress, up to a maximum of 10% of the given progress payment.

(End of clause)

52.223-4002 U.S. ARMY CORPS OF ENGINEERS SAFETY AND HEALTH REQUIREMENTS MANUAL, EM 385-1-1

This paragraph applies to contracts and purchase orders that require the contractor to comply with EM 385-1-1 (e.g., contracts that include the Accident Prevention clause at FAR 52.236-13 and/or other safety provisions). EM 385-1-1 and its changes are available at <http://www.publications.usace.army.mil/usacepublications/engineermanuals.aspx> . The Contractor shall be responsible for complying with the current edition and all changes posted on the web through the date that is 10 calendar days prior to the date offers are due. If the solicitation is amended to extend the time set for receipt of offers, the 10 calendar days rule stated above shall be applied against the amended date. (For example, if offers are due on 10 April, all changes posted on or before 31 March shall apply to the contract. If the time for receipt of offers is extended from 10 April to 20 April, all changes posted on or before 10 April shall apply to the contract.)

52.228-4002 REQUIRED INSURANCE (Oct 2012 SAW) (Ref. FAR 28.307)

(a) The Contractor shall procure and maintain during the entire period of his performance under this contract the following minimum insurance:

1. Comprehensive and Employer's Liability Insurance: Coverage in an amount not less \$100,000 or in the amount required by the State law in which the work is to be performed under this contract, whichever is greater.
2. Comprehensive General Liability Insurance: Coverage in an amount not less than \$500,000 per occurrence.
3. Automobile Liability Insurance: \$200,000 per person and \$500,000 per occurrence for bodily injury liability and \$20,000 property damage liability.
4. Vessel liability: When contract performance involves use of vessels, the contracting officer shall require vessel collision liability and protection and indemnity liability insurance.

(b) Prior to the commencement of work hereunder, the Contractor shall furnish to the Contracting Officer a certificate or written statement of the above-required insurance. The policies evidencing required insurance shall contain an endorsement to the effect that cancellation, or any material change in the policies adversely affecting the interests of the Government in such insurance, shall not be effective for such period as may be prescribed by the laws of the State in which this contract is to be performed and in no event less than 30 days after written notice thereof to the Contracting Officer.

(c) The Contractor agrees to insert the substance of this clause, including this subparagraph (c), in all subcontracts hereunder.

52.236-4 PHYSICAL DATA (APR 1984)

(a) Data and information furnished or referred to below is for the Contractor's information. The Government shall not be responsible for any interpretation of or conclusion drawn from the data or information by the Contractor.

(b) Weather conditions are reported by the U.S. Department of Commerce, National Oceanic and Atmospheric Administration (NOAA) Environmental Data Service, Asheville, North Carolina and information about weather conditions is available through the following internet site:

<http://www.nws.noaa.gov/>

(c) Transportation facilities – US Highways 74, 76, Owen Road, and All American Highway, as well as North Carolina Highways 87 and 95 serve the general area where the work will be performed at Fort Bragg, North Carolina

(End of clause)

UAI CLAUSES

UAI 5152.222-9000 Contractor Supply and Use of Electronic Software for Processing Wage Rate Requirements Statute Certified Labor Payrolls.

As prescribed in 5122.407(i), insert the following clause:

CONTRACTOR SUPPLY AND USE OF ELECTRONIC SOFTWARE FOR PROCESSING WAGE RATE REQUIREMENTS STATUTE CERTIFIED LABOR PAYROLLS (APR 2011)

(a) The contractor is encouraged to use a commercially-available electronic system to process and submit certified payrolls electronically to the Government. The requirements for preparing, processing and providing certified labor payrolls are established by the Wage Rate Requirements statute.

(b) If the contractor elects to use an electronic payroll processing system, then the contractor shall be responsible for obtaining and providing for all access, licenses, and other services required to provide for receipt, processing, certifying, electronically transmitting to the Government, and storing weekly payrolls and other data required for the contractor to comply with the Wage Rate Requirements statute. When the contractor uses an electronic payroll system, the electronic payroll service shall be used by the contractor to prepare, process, and maintain the relevant payrolls and basic records during all work under this construction contract and the electronic payroll service shall be capable of preserving these payrolls and related basic records for the required 3 years after contract completion. If the contractor chooses to use an electronic payroll system, then the contractor shall obtain and provide electronic system access to the Government, as required to comply with the Wage Rate Requirements over the duration of this construction contract. The access shall include electronic review access by the Government contract administration office to the electronic payroll processing system used by the contractor.

(c) The contractor's provision and use of an electronic payroll processing system shall meet the following basic functional criteria:

(1) commercially available;

- (2) compliant with appropriate Wage Rate Requirements statute payroll provisions in the Federal Acquisition Regulation (FAR);
- (3) able to accommodate the required numbers of employees and subcontractors planned to be employed under the contract
- (4) capable of producing an Excel spreadsheet-compatible electronic output of weekly payroll records for export in an Excel spreadsheet to be imported into the contractor's Quality Control System (QCS) version of Resident Management System (RMS), that in turn shall export payroll data to the Government's RMS; USACE Acquisition Instruction (UAI) Version 4 dated 25 JAN 2017
- (5) demonstrated security of data and data entry rights;
- (6) ability to produce contractor-certified electronic versions of weekly payroll data;
- (7) ability to identify erroneous entries and track the date/time of all versions of the certified Wage Rate Requirements statute payrolls submitted to the government over the life of the contract;
- (8) capable of generating a durable record copy, that is, a CD or DVD and PDF file record of data from the system database at end of the contract closeout. This durable record copy of data from the electronic payroll processing system shall be provided to the Government during contract closeout.

(d) All contractor-incurred costs related to the contractor's provision and use of an electronic payroll processing service shall be included in the contractor's price for the overall work under the contract. The costs for compliance with the Wage Rate Requirements statute by using electronic payroll processing services shall not be a separately bid or reimbursed item under this contract.

(End of clause)

5152.231-9000 Equipment Ownership and Operating Expense Schedule (MAR 1995)

- (a) This special contract requirement does not apply to terminations. See 52.249-5000, Basis for Settlement of Proposals, and [FAR Part 49](#).
- (b) Allowable cost for construction and marine plant and equipment in sound workable condition owned or controlled and furnished by a contractor or subcontractor at any tier shall be based on actual cost data for each piece of equipment or groups of similar serial and series for which the Government can determine both ownership and operating costs from the contractor's accounting records. When both ownership and operating costs cannot be determined for any piece of equipment or groups of similar serial or series equipment from the contractor's accounting records, costs for that equipment shall be based upon the applicable provisions of [EP 1110-1-8](#), [Construction Equipment Ownership and Operating Expense Schedule](#), [Region III](#) Working conditions shall be considered to be average for determining equipment rates using the schedule unless specified otherwise by the contracting officer. For equipment not included in the schedule, rates for comparable pieces of equipment may be used or a rate may be developed using the formula provided in the schedule. For forward pricing, the schedule in effect at the time of negotiations shall apply. For retroactive pricing, the schedule in effect at the time the work was performed shall apply.
- (c) Equipment rental costs are allowable, subject to the provisions of [FAR 31.105\(d\)\(ii\)](#) and [FAR 31.205-36](#), [Rental Costs](#). Rates for equipment rented from an organization under common control, lease-purchase arrangements, and sale-leaseback arrangements, will be determined using the schedule, except that actual rates will be used for equipment leased from an organization under common control that has an established practice of leasing the same or similar equipment to unaffiliated lessees.
- (d) When actual equipment costs are proposed and the total amount of the pricing action exceeds the SAT, the contracting officer shall request the contractor to submit either certified cost or pricing data, or partial/limited data, as appropriate. The data shall be submitted on Standard Form 1411, Contract Pricing Proposal Cover Sheet.

(End of special contract requirement)

UAI 5152.236-9000 Design-Build Contract Order of Precedence

As prescribed in 5136.570-100(a), insert the following clause:

DESIGN-BUILD CONTRACT ORDER OF PRECEDENCE (AUG 1997)

(a) The contract includes the standard contract clauses and schedules current at the time of contract award. It entails (1) the solicitation in its entirety, including all drawings, cuts, and illustrations, and any amendments, and (2) the successful offeror's accepted proposal. The contract constitutes and defines the entire agreement between the Contractor and the Government. No documentation shall be omitted which in any way bears upon the terms of that agreement.

(b) In the event of conflict or inconsistency between any of the provisions of this contract, precedence shall be given in the following order:

(1) Betterments: Any portions of the accepted proposal, which both conform to and exceed the provisions of the solicitation.

(2) The provisions of the solicitation.

(3) All other provisions of the accepted proposal.

(4) Any design products including, but not limited to, plans, specifications, engineering studies and analyses, shop drawings, equipment installation drawings, etc. These are "deliverables" under the contract and are not part of the contract itself. Design products must conform to all provisions of the contract, in the order of precedence herein

(End of clause)

UAI 5152.236-9004 Responsibility of the Contractor for Design

As prescribed in 5136.570-100(e), insert the following clause:

RESPONSIBILITY OF THE CONTRACTOR FOR DESIGN (MAY 2002)

(a) The Contractor shall be responsible for the professional quality, technical accuracy, and the coordination of all designs, drawings, specifications, and other non-construction services furnished by the Contractor under this contract. The Contractor shall, without additional compensation, correct or revise any errors or deficiency in its designs, drawings, specifications, and other non-construction services and perform any necessary rework or modifications, including any damage to real or personal property, resulting from the design error or omission.

(b) The standard of care for all design services performed under this agreement shall be the care and skill ordinarily used by members of the architectural or engineering professions practicing under similar conditions at the same time and locality. Notwithstanding the above, in the event that the contract specifies that portions of the Work be performed in accordance with a performance standard, the design services shall be performed so as to achieve such standards.

(c) Neither the Government's review, approval or acceptance of, nor payment for, the services required under this contract, shall be construed to operate as a waiver of any rights under this contract or of any cause of action arising out of the performance of this contract. The Contractor shall be and remain liable to the Government in accordance with applicable law for all damages to the Government caused by the Contractor's negligent performance of any of these services furnished under this contract.

(d) The rights and remedies of the Government provided for under this contract are in addition to any other rights and remedies provided by law.

(e) If the Contractor is comprised of more than one legal entity, each entity shall be jointly and severally liable hereunder.

(End of clause)

UAI 5152.236-9005 Warranty of Design

As prescribed in 5136.570-100(f), insert the following clause:

WARRANTY OF DESIGN (MAY 2002)

(a) The Contractor warrants that the design shall be performed in accordance with the contract requirements. Design and design related construction not conforming to the Contract requirements shall be corrected at no additional cost to the Government. The standard of care for design is defined in paragraph (b) of special contract requirement UAI 5152.236-9004, Responsibility of the Contractor for Design.

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Version 4 dated 25 JAN 2017

(a) The period of this warranty shall commence upon final completion and the Government's acceptance of the work, or in the case of the Government's beneficial occupancy of all or part of the work for its convenience, prior to final completion and acceptance, at the time of such occupancy.

(b) This design warranty shall be effective from the above event through the Statute of Limitations and Statute of Repose or host nation law, as applicable to the place of performance.

(c) The rights and remedies of the Government provided for under this clause are in addition to any other rights and remedies provided in this contract or by law.

(End of clause)

UAI 5152.236-9006 Deviating from the Accepted Design

As prescribed in 5136.570-100(g), insert the following clause:

DEVIATING FROM THE ACCEPTED DESIGN (JUN 2002)

(d) The Contractor must obtain the approval of the Designer of Record and the Government's concurrence, in the form of supplemental agreement to the contract, for any Contractor-proposed revision to the professionally stamped-and-sealed and Government-reviewed design before proceeding with the revision. The Government reserves the right to disapprove such a revision.

(e) The Government reserves the right to non-concur with any revision to the design, which may impact furniture, furnishings, equipment selections or operations decisions that were made, based on the reviewed design.

(f) Any Contractor-proposed revision to the design which deviates from the contract requirements (i.e., the Request for Proposal (RFP) and the accepted proposal), will require a bilateral modification (e.g. supplemental agreement) to the contract before any work commences.

(g) Unless the Government initiates a change to the contract requirements, or the Government determines that the Government furnished design criteria are incorrect and must be revised, any Contractor initiated proposed change to the contract requirements, which results in additional cost, shall strictly be at the Contractor's expense.

(h) The Contractor shall track all approved revisions to the reviewed and accepted design and shall incorporate them into the as-built design documentation, in accordance with agreed procedures. The Designer of Record shall document its professional concurrence on the as-builts for any revisions in the stamped and sealed drawings and specifications.

(End of clause)

UAI 5152.236-9009 Partnering

As prescribed in 5136.570-100(j) , insert the following clause:

PARTNERING (FEB 2000)

In order to most effectively accomplish this contract, the Government proposes to form a partnership with the Contractor to develop a cohesive building team. It is anticipated that this partnership would involve the Contractor, primary subcontractors and designers, and the Corps of Engineers. This partnership would strive to develop a cooperative management team drawing on the strengths of each team member in an effort to achieve a quality project within budget and on schedule. This partnership would be bilateral in membership and participation will be completely voluntary. Any cost associated with effectuating this partnership, excluding travel and lodging cost of Government personnel, will be borne by each party. The partnering meetings shall be held at **a Date, Time, Place TBD.**

(End of clause)

UAI 5152.249-9000 Basis for Settlement of Proposals (MARCH 2009)

Actual costs will be used to determine equipment costs for a settlement proposal submitted on the total cost basis under Federal Acquisition Regulation (FAR) 49.206-2(b). In evaluating a termination settlement proposal using the total cost basis, the following principles will be applied to determine allowable equipment costs:

- (a) Actual costs for each piece of equipment, or groups of similar serial or series equipment, need not be available in the contractor's accounting records to determine total actual equipment costs.
- (b) If equipment costs have been allocated to a contract using predetermined rates, those charges will be adjusted to actual costs.
- (c) Recorded job costs adjusted for unallowable expenses will be used to determine equipment operating expenses.
- (d) Ownership costs (depreciation) will be determined using the contractor's depreciation schedule (subject to the provisions of Federal Acquisition Regulation (FAR) 31.205-11).
- (e) License, taxes, storage and insurance costs are normally recovered as an indirect expense and unless the contractor charges these costs directly to contracts, they will be recovered through the indirect expense rate.

(End of clause)

COMPUTER SOFTWARE

COMPUTER PAYROLL SOFTWARE

CONTRACTOR SUPPLY AND USE OF ELECTRONIC SOFTWARE FOR PROCESSING DAVIS-BACON ACT CERTIFIED LABOR PAYROLLS (APRIL 2011)

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

If the contractor elects to use an electronic Davis-Bacon payroll processing system, then the contractor shall be responsible for obtaining and providing for all access, licenses, and other services required to provide for receipt, processing, certifying, electronically transmitting to the Government, and storing weekly payrolls and other data required for the contractor to comply with Davis-Bacon and related Act regulations. When the contractor uses an electronic Davis-Bacon payroll system, the electronic payroll service shall be used by the contractor to prepare, process, and maintain the relevant payrolls and basic records during all work under this construction contract and the electronic payroll service shall be capable of preserving these payrolls and related basic records for the required 3 years after contract completion. If the contractor chooses to use an electronic Davis-Bacon payroll system, then the contractor shall obtain and provide electronic system access to the Government, as required to comply with the Davis-Bacon and related Act regulations over the duration of this construction contract. The access shall include electronic review access by the Government contract administration office to the electronic payroll processing system used by the contractor.

The contractor's provision and use of an electronic payroll processing system shall meet the following basic functional criteria: commercially available; compliant with appropriate Davis Bacon Act payroll provisions in the FAR; able to accommodate the required numbers of employees and subcontractors planned to be employed under the contract; capable of producing an Excel spreadsheet-compatible electronic output of weekly payroll records (format at <http://www.rmssupport.com/guides.aspx>) for export in an Excel spreadsheet to be imported into the contractor's Quality Control System (QCS) version of Resident Management System (RMS), that in turn shall export payroll data to the Government's Resident Management System (RMS); demonstrated security of data and data entry rights; ability to produce contractor-certified electronic versions of weekly payroll data; ability to identify erroneous entries and track the data/time of all versions of the certified Davis Bacon payrolls submitted to the government over the life of the contract; capable of generating a durable record copy, that is, a CD or DVD and PDF file record of data from the system database at end of the contract closeout. This durable record copy of data from the electronic Davis-Bacon payroll processing system shall be provided to the Government during contract closeout.

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

ATOPSEC

ATOPSEC

A REVIEW OF CONTRACT REQUIREMENTS FOR ANTITERRORISM/OPERATIONS SECURITY FOR THIS SOLICITATION PACKAGE INCLUDE:

1. **Access and General Protection/Security Policy and Procedures.** This standard language text is for contractor employees with an area of performance within an Army controlled installation, facility or area. Contractor and all associated sub-contractors employees shall comply with applicable installation, facility and area commander installation/facility access and local security policies and procedures (provided by government representative). The contractor shall also provide all information required for background checks to meet installation access requirements to be accomplished by installation Provost Marshal Office, Director of Emergency Services or Security Office. Contractor workforce must comply with all personal identity verification requirements as directed by DOD, HQDA and/or local policy. In addition to the changes otherwise authorized by the changes clause of this contract, should the Force Protection Condition (FPCON) at any individual facility or installation change, the Government may require changes in contractor security matters or processes.
2. **iWATCH Training.** This standard language is for contractor employees with an area of performance within an Army controlled installation, facility or area. The contractor and all associated sub-contractors shall brief all employees on the local iWATCH program (training standards provided by the requiring activity ATO). This local developed training will be used to inform employees of the types of behavior to watch for and instruct employees to report suspicious activity to the COR. This training shall be completed within 30 calendar days of contract award and within YY calendar days of new employees commencing performance with the results reported to the COR NLT X5 calendar days after contract award.
3. **Eligibility Verification for Employment.** E-Verify is an Internet-based system that compares information from an employee's Form I-9, Employment Eligibility Verification, to data from U.S. Department of Homeland Security and Social Security Administration records to confirm employment eligibility. The U.S. Department of Homeland Security is working to stop unauthorized employment. By using E-Verify to determine the employment eligibility of their employees, companies become part of the solution in addressing this problem. All U.S. employers must complete and retain a Form I-9 for each individual they hire for employment in the United States. This includes citizens and noncitizens. On the form, the employer must examine the employment eligibility and identity document(s) an employee presents to determine whether the document(s) reasonably appear to be genuine and relate to the individual and record the document information on the Form I-9. The list of acceptable documents can be found on the last page of the form. **E-Verify is mandatory for employers with federal contracts or subcontracts that contain the Federal Acquisition Regulation E-Verify clause.**

SEVERE WEATHER

TIME EXTENSIONS FOR UNUSUALLY SEVERE WEATHER (APR 1991 OCE)

(a) This provision specifies the procedure for the determination of time extensions for unusually severe weather in accordance with the contract clause entitled DEFAULT (FIXED PRICE CONSTRUCTION). In order for the Contracting Officer to award a time extension under this clause, the following conditions must be satisfied:

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

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

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

**MONTHLY ANTICIPATED ADVERSE WEATHER DELAY
Workdays Base on 5-Day Work Week**

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
10	9	6	4	4	6	8	7	4	4	5	9

c) Upon acknowledgment of the Notice to Proceed and continuing through-out the contract, the Contractor will record on the daily Contractor Quality Control report the occurrence of adverse weather and resultant impact to normally scheduled work. Actual adverse weather delay days must prevent work on critical activities for 50 percent or more of the Contractor's scheduled workday. The number of actual adverse weather delay days shall include days impacted by actual adverse weather (even if adverse weather occurred in previous month), be calculated chronologically from the first to the last day in each month, and be recorded as full days. If the number of actual adverse weather delay days exceeds the number of days anticipated in paragraph (b) above, the Contracting Officer will convert any qualifying delays to calendar days, giving full consideration for equivalent fair weather workdays, and issue a modification in accordance with the contract clause entitled DEFAULT (FIXED PRICE CONSTRUCTION).

SUBCONTRACTING PLAN

REPORTING REQUIREMENTS--SUBCONTRACTING PLAN (CESAD-CT JUL 1993)

(a) Retainage will be withheld from progress payments in an amount sufficient to protect the Government's ability to assess Liquidated Damages in accordance with FAR clause 52.219-0016 for failure to submit timely SF 294 and SF 295 Reports. The amount of retainage will be determined in accordance with the following formula:

(b) Total dollar amount proposed for subcontracting to small business multiplied by percentage of actual progress on the contract, up to a maximum of 10% of the given progress payment, shall be withheld from the next progress payment due after a contractor fails to submit a required report. If one or more reports have been submitted before such failure, formula for determining the amount of retainage will be adjusted by deducting any amounts reported as subcontracted to small business from the total dollar amount proposed to be subcontracted and the difference multiplied by the percent of actual progress, up to a maximum of 10% of the given progress payment.

SAFETY MANUAL

U.S. ARMY CORPS OF ENGINEERS SAFETY AND HEALTH REQUIREMENTS MANUAL, EM 385-1-1

This paragraph applies to contracts and purchase orders that require the contractor to comply with EM 385-1-1 (e.g., contracts that include the Accident Prevention clause at FAR 52.236-13 and/or other safety provisions). EM 385-1-1 and its changes are available at

<http://www.publications.usace.army.mil/usacepublications/engineermanuals.aspx> . The Contractor shall be responsible for complying with the current edition and all changes posted on the web through the date that is 10 calendar days prior to the date offers are due. If the solicitation is amended to extend the time set for receipt of offers, the 10 calendar days rule stated above shall be applied against the amended date. (For example, if offers are due on 10 April, all changes posted on or before 31 March shall apply to the contract. If the time for receipt of offers is extended from 10 April to 20 April, all changes posted on or before 10 April shall apply to the contract.)

REQUIRED INSURANCE

REQUIRED INSURANCE

(a) The Contractor shall procure and maintain during the entire period of his performance under this contract the following minimum insurance:

1. Comprehensive and Employer's Liability Insurance: Coverage in an amount not less \$100,000 or in the amount required by the State law in which the work is to be performed under this contract, whichever is greater.
2. Comprehensive General Liability Insurance: Coverage in an amount not less than \$500,000 per occurrence.
3. Automobile Liability Insurance: \$200,000 per person and \$500,000 per occurrence for bodily injury liability and \$20,000 property damage liability.
4. Vessel liability: When contract performance involves use of vessels, the contracting officer shall require vessel collision liability and protection and indemnity liability insurance.

(b) Prior to the commencement of work hereunder, the Contractor shall furnish to the Contracting Officer a certificate or written statement of the above-required insurance. The policies evidencing required insurance shall contain an endorsement to the effect that cancellation, or any material change in the policies adversely affecting the interests of the Government in such insurance, shall not be effective for such period as may be prescribed by the laws of the State in which this contract is to be performed and in no event less than 30 days after written notice thereof to the Contracting Officer.

(c) The Contractor agrees to insert the substance of this clause, including this subparagraph (c), in all subcontracts hereunder.

KEY PERSONNEL

PERSONNEL, SUBCONTRACTORS AND OUTSIDE ASSOCIATES OR CONSULTANTS –
NOV 2006

In connection with this contract, any in-house personnel, subcontractors, and outside associates or consultants will be limited to the individuals or firms that were specifically identified in the Contractor's accepted proposal. The Contractor shall obtain the Contracting Officer's written consent before making any substitution for these designated in-house personnel, subcontractors, associates, or consultants. If the Contractor proposes a substitution, it shall submit the same type of information that was submitted in the accepted proposal to the Contracting Officer for

experience submitted in the accepted proposal or that required by the Solicitation, which ever is greater is the minimum standard for any substitution.

WAGE DETERMINATIONS

DB WAGE DETERMINATIONS

IAW 52.222-6 – Construction Wage Rate Requirements, the following Wage Determinations apply to this solicitations and any resulting contract award:

NC180025 - 7/13/2018 *This wage determination applies to CLIN's 0002*

NC180103 - 01/05/2018 *This wage determination applies to CLIN's 0003 & 0005*

SERVICE CONTRACT ACT WD 15-4377 (Rev.- 7) *This wage determination applies to CLIN's 0006AB - 0009AB, 0011, 0013, 0015 & 0016*

General Decision Number: NC180025 07/13/2018 NC25

Superseded General Decision Number: NC20170025

State: North Carolina

Construction Type: Building

County: Cumberland County in North Carolina.

BUILDING CONSTRUCTION PROJECTS (does not include single family homes or apartments up to and including 4 stories).

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.35 for calendar year 2018 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.35 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2018. The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/05/2018
1	07/13/2018

CARP0312-001 06/01/2017

Rates

Fringes

CARPENTER, Excludes Drywall Hanging, and Form Work.....	\$ 23.35	9.15

IRON0848-005 02/01/2017		
	Rates	Fringes
IRONWORKER, STRUCTURAL.....	\$ 24.50	13.25

* PLUM0421-001 07/01/2017		
	Rates	Fringes
PLUMBER/PIPEFITTER.....	\$ 28.65	10.45

SUNC2011-006 08/24/2011		
	Rates	Fringes
BRICKLAYER.....	\$ 19.00	0.00
CARPENTER (Drywall Hanging Only).....	\$ 13.83	0.00
CARPENTER (Form Work Only).....	\$ 13.38	1.80
CEMENT MASON/CONCRETE FINISHER...	\$ 15.80	0.00
ELECTRICIAN.....	\$ 20.64	6.68
HVAC MECHANIC (HVAC Duct Installation Only).....	\$ 17.37	1.82
LABORER: Common or General.....	\$ 10.54	0.52
LABORER: Landscape & Irrigation.....	\$ 9.13	0.28
LABORER: Pipelayer.....	\$ 13.35	2.80
LABORER: Mason Tender-Brick/Cement/Concrete.....	\$ 12.00	0.00
OPERATOR: Backhoe/Excavator/Trackhoe.....	\$ 18.47	2.41
OPERATOR: Bulldozer.....	\$ 16.00	1.87
OPERATOR: Crane.....	\$ 19.77	4.48
OPERATOR: Forklift.....	\$ 13.86	0.00
OPERATOR: Grader/Blade.....	\$ 15.72	1.49
OPERATOR: Loader.....	\$ 16.17	0.25

PAINTER: Brush, Roller and Spray.....	\$ 12.35	0.00
ROOFER.....	\$ 11.75	1.06
SHEET METAL WORKER, Excludes HVAC Duct Installation.....	\$ 15.81	1.40
TRUCK DRIVER.....	\$ 13.38	1.48

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or

"UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

General Decision Number: NC180103 01/05/2018 NC103

Superseded General Decision Number: NC20170103

State: North Carolina

Construction Type: Highway

Counties: Brunswick, Cumberland, Currituck, Edgecombe, Franklin, Greene, Hoke, Johnston, Nash, New Hanover, Onslow, Pender, Pitt, Wake and Wayne Counties in North Carolina.

HIGHWAY CONSTRUCTION PROJECTS (excluding tunnels, building structures in rest area projects & railroad construction; bascule, suspension & spandrel arch bridges designed for commercial navigation, bridges involving marine construction; and other major bridges).

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.35 for calendar year 2018 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.35 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2018. The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/05/2018

* SUNC2014-005 11/17/2014

	Rates	Fringes
BLASTER.....	\$ 21.04	

CARPENTER.....	\$ 13.72	
CEMENT MASON/CONCRETE FINISHER...	\$ 14.48	
ELECTRICIAN		
Electrician.....	\$ 17.97	
Telecommunications		
Technician.....	\$ 16.79	.63
IRONWORKER.....	\$ 16.02	
LABORER		
Asphalt Raker and Spreader..	\$ 12.46	
Asphalt Screed/Jackman.....	\$ 14.33	
Carpenter Tender.....	\$ 12.88	
Cement Mason/Concrete		
Finisher Tender.....	\$ 12.54	
Common or General.....	\$ 10.20	
Guardrail/Fence Installer...	\$ 12.87	
Pipelayer.....	\$ 12.17	
Traffic Signal/Lighting		
Installer.....	\$ 14.89	
PAINTER		
Bridge.....	\$ 24.57	
POWER EQUIPMENT OPERATOR		
Asphalt Broom Tractor.....	\$ 11.85	
Bulldozer Fine.....	\$ 17.04	
Bulldozer Rough.....	\$ 14.34	
Concrete Grinder/Groover....	\$ 20.34	2.30
Crane Boom Trucks.....	\$ 20.54	
Crane Other.....	\$ 20.08	
Crane Rough/All Terrain.....	\$ 20.67	
Drill Operator Rock.....	\$ 14.38	
Drill Operator Structure....	\$ 21.14	
Excavator Fine.....	\$ 16.60	
Excavator Rough.....	\$ 14.00	
Grader/Blade Fine.....	\$ 18.47	
Grader/Blade Rough.....	\$ 14.62	
Loader 2 Cubic Yards or		
Less.....	\$ 13.76	
Loader Greater Than 2		
Cubic Yards.....	\$ 14.14	
Material Transfer Vehicle		
(Shuttle Buggy).....	\$ 15.18	
Mechanic.....	\$ 17.55	
Milling Machine.....	\$ 15.36	
Off-Road Hauler/Water		
Tanker.....	\$ 11.36	
Oiler/Greaser.....	\$ 13.55	
Pavement Marking Equipment..	\$ 12.11	
Paver Asphalt.....	\$ 15.59	
Paver Concrete.....	\$ 18.20	
Roller Asphalt Breakdown....	\$ 12.45	
Roller Asphalt Finish.....	\$ 13.85	

Roller Other.....\$ 11.36
 Scraper Finish.....\$ 12.71
 Scraper Rough.....\$ 11.35
 Slip Form Machine.....\$ 16.50
 Tack Truck/Distributor
 Operator.....\$ 14.52

TRUCK DRIVER

GVWR of 26,000 or Less.....\$ 11.12
 GVWR of 26,001 Lbs or
 Greater.....\$ 12.37

 WELDERS - Receive rate prescribed for craft performing
 operation to which welding is incidental.

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 Note: Executive Order (EO) 13706, Establishing Paid Sick Leave
 for Federal Contractors applies to all contracts subject to the
 Davis-Bacon Act for which the contract is awarded (and any
 solicitation was issued) on or after January 1, 2017. If this
 contract is covered by the EO, the contractor must provide
 employees with 1 hour of paid sick leave for every 30 hours
 they work, up to 56 hours of paid sick leave each year.
 Employees must be permitted to use paid sick leave for their
 own illness, injury or other health-related needs, including
 preventive care; to assist a family member (or person who is
 like family to the employee) who is ill, injured, or has other
 health-related needs, including preventive care; or for reasons
 resulting from, or to assist a family member (or person who is
 like family to the employee) who is a victim of, domestic
 violence, sexual assault, or stalking. Additional information
 on contractor requirements and worker protections under the EO
 is available at www.dol.gov/whd/govcontracts.

Unlisted classifications needed for work not included within
 the scope of the classifications listed may be added after
 award only as provided in the labor standards contract clauses
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A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

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200 Constitution Avenue, N.W.
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2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

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The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

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U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

WD 15-4377 (Rev.-7) was first posted on www.wdol.gov on 07/17/2018

REGISTER OF WAGE DETERMINATIONS UNDER		U.S. DEPARTMENT OF LABOR
THE SERVICE CONTRACT ACT		EMPLOYMENT STANDARDS ADMINISTRATION
By direction of the Secretary of Labor		WAGE AND HOUR DIVISION
		WASHINGTON D.C. 20210
		Wage Determination No.: 2015-4377
Daniel W. Simms	Division of	Revision No.: 7
Director	Wage Determinations	Date Of Revision: 07/11/2018

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.35 for calendar year 2018 applies to all contracts subject to the Service Contract Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.35 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2018. The EO minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts

State: North Carolina

Area: North Carolina Counties of Cumberland, Hoke

Fringe Benefits Required Follow the Occupational Listing

OCCUPATION CODE - TITLE	FOOTNOTE	RATE
01000 - Administrative Support And Clerical Occupations		
01011 - Accounting Clerk I		13.92
01012 - Accounting Clerk II		15.63
01013 - Accounting Clerk III		17.49
01020 - Administrative Assistant		23.70
01035 - Court Reporter		18.11
01041 - Customer Service Representative I		11.95
01042 - Customer Service Representative II		13.43
01043 - Customer Service Representative III		14.65
01051 - Data Entry Operator I		12.14
01052 - Data Entry Operator II		13.24
01060 - Dispatcher, Motor Vehicle		19.75
01070 - Document Preparation Clerk		14.42
01090 - Duplicating Machine Operator		14.42
01111 - General Clerk I		12.43
01112 - General Clerk II		13.56
01113 - General Clerk III		15.22
01120 - Housing Referral Assistant		20.19

01141 - Messenger Courier	11.75
01191 - Order Clerk I	13.49
01192 - Order Clerk II	14.72
01261 - Personnel Assistant (Employment) I	15.50
01262 - Personnel Assistant (Employment) II	17.34
01263 - Personnel Assistant (Employment) III	19.33
01270 - Production Control Clerk	21.58
01290 - Rental Clerk	11.84
01300 - Scheduler, Maintenance	16.19
01311 - Secretary I	16.19
01312 - Secretary II	18.11
01313 - Secretary III	20.19
01320 - Service Order Dispatcher	15.36
01410 - Supply Technician	23.70
01420 - Survey Worker	14.48
01460 - Switchboard Operator/Receptionist	12.08
01531 - Travel Clerk I	11.60
01532 - Travel Clerk II	12.35
01533 - Travel Clerk III	13.17
01611 - Word Processor I	14.42
01612 - Word Processor II	16.19
01613 - Word Processor III	18.11
05000 - Automotive Service Occupations	
05005 - Automobile Body Repairer, Fiberglass	19.71
05010 - Automotive Electrician	19.33
05040 - Automotive Glass Installer	17.76
05070 - Automotive Worker	17.76
05110 - Mobile Equipment Servicer	15.82
05130 - Motor Equipment Metal Mechanic	19.71
05160 - Motor Equipment Metal Worker	17.76
05190 - Motor Vehicle Mechanic	19.71
05220 - Motor Vehicle Mechanic Helper	14.83
05250 - Motor Vehicle Upholstery Worker	16.17
05280 - Motor Vehicle Wrecker	17.76
05310 - Painter, Automotive	18.99
05340 - Radiator Repair Specialist	17.76
05370 - Tire Repairer	12.85
05400 - Transmission Repair Specialist	19.71
07000 - Food Preparation And Service Occupations	
07010 - Baker	13.08
07041 - Cook I	11.98
07042 - Cook II	13.52
07070 - Dishwasher	8.89
07130 - Food Service Worker	9.68
07210 - Meat Cutter	14.56
07260 - Waiter/Waitress	9.32
09000 - Furniture Maintenance And Repair Occupations	
09010 - Electrostatic Spray Painter	19.53
09040 - Furniture Handler	12.97
09080 - Furniture Refinisher	19.53
09090 - Furniture Refinisher Helper	15.17
09110 - Furniture Repairer, Minor	17.32
09130 - Upholsterer	19.53
11000 - General Services And Support Occupations	
11030 - Cleaner, Vehicles	9.85
11060 - Elevator Operator	9.85
11090 - Gardener	13.82
11122 - Housekeeping Aide	10.15
11150 - Janitor	10.15
11210 - Laborer, Grounds Maintenance	11.00
11240 - Maid or Houseman	10.34
11260 - Pruner	10.12

11270 - Tractor Operator	12.87
11330 - Trail Maintenance Worker	11.00
11360 - Window Cleaner	11.03
12000 - Health Occupations	
12010 - Ambulance Driver	19.26
12011 - Breath Alcohol Technician	19.42
12012 - Certified Occupational Therapist Assistant	28.42
12015 - Certified Physical Therapist Assistant	26.60
12020 - Dental Assistant	18.27
12025 - Dental Hygienist	33.38
12030 - EKG Technician	29.11
12035 - Electroneurodiagnostic Technologist	29.11
12040 - Emergency Medical Technician	19.26
12071 - Licensed Practical Nurse I	17.36
12072 - Licensed Practical Nurse II	19.42
12073 - Licensed Practical Nurse III	21.65
12100 - Medical Assistant	13.68
12130 - Medical Laboratory Technician	20.94
12160 - Medical Record Clerk	16.80
12190 - Medical Record Technician	18.80
12195 - Medical Transcriptionist	18.67
12210 - Nuclear Medicine Technologist	33.19
12221 - Nursing Assistant I	10.97
12222 - Nursing Assistant II	12.34
12223 - Nursing Assistant III	13.46
12224 - Nursing Assistant IV	15.11
12235 - Optical Dispenser	18.86
12236 - Optical Technician	17.36
12250 - Pharmacy Technician	17.56
12280 - Phlebotomist	14.54
12305 - Radiologic Technologist	25.49
12311 - Registered Nurse I	22.96
12312 - Registered Nurse II	28.09
12313 - Registered Nurse II, Specialist	28.09
12314 - Registered Nurse III	33.98
12315 - Registered Nurse III, Anesthetist	33.98
12316 - Registered Nurse IV	40.72
12317 - Scheduler (Drug and Alcohol Testing)	24.05
12320 - Substance Abuse Treatment Counselor	17.51
13000 - Information And Arts Occupations	
13011 - Exhibits Specialist I	16.51
13012 - Exhibits Specialist II	20.44
13013 - Exhibits Specialist III	25.01
13041 - Illustrator I	16.51
13042 - Illustrator II	20.44
13043 - Illustrator III	25.01
13047 - Librarian	22.64
13050 - Library Aide/Clerk	12.61
13054 - Library Information Technology Systems Administrator	20.44
13058 - Library Technician	16.77
13061 - Media Specialist I	14.75
13062 - Media Specialist II	16.51
13063 - Media Specialist III	18.40
13071 - Photographer I	14.75
13072 - Photographer II	16.51
13073 - Photographer III	20.44
13074 - Photographer IV	25.01
13075 - Photographer V	30.26
13090 - Technical Order Library Clerk	16.28
13110 - Video Teleconference Technician	16.35
14000 - Information Technology Occupations	

14041 - Computer Operator I	15.62
14042 - Computer Operator II	17.47
14043 - Computer Operator III	19.87
14044 - Computer Operator IV	21.65
14045 - Computer Operator V	23.97
14071 - Computer Programmer I	(see 1) 22.75
14072 - Computer Programmer II	(see 1)
14073 - Computer Programmer III	(see 1)
14074 - Computer Programmer IV	(see 1)
14101 - Computer Systems Analyst I	(see 1)
14102 - Computer Systems Analyst II	(see 1)
14103 - Computer Systems Analyst III	(see 1)
14150 - Peripheral Equipment Operator	15.62
14160 - Personal Computer Support Technician	21.65
14170 - System Support Specialist	35.42
15000 - Instructional Occupations	
15010 - Aircrew Training Devices Instructor (Non-Rated)	30.58
15020 - Aircrew Training Devices Instructor (Rated)	36.99
15030 - Air Crew Training Devices Instructor (Pilot)	43.18
15050 - Computer Based Training Specialist / Instructor	30.58
15060 - Educational Technologist	33.76
15070 - Flight Instructor (Pilot)	43.18
15080 - Graphic Artist	21.52
15085 - Maintenance Test Pilot, Fixed, Jet/Prop	43.18
15086 - Maintenance Test Pilot, Rotary Wing	43.18
15088 - Non-Maintenance Test/Co-Pilot	43.18
15090 - Technical Instructor	22.33
15095 - Technical Instructor/Course Developer	27.31
15110 - Test Proctor	18.02
15120 - Tutor	18.02
16000 - Laundry, Dry-Cleaning, Pressing And Related Occupations	
16010 - Assembler	9.78
16030 - Counter Attendant	9.78
16040 - Dry Cleaner	12.03
16070 - Finisher, Flatwork, Machine	9.78
16090 - Presser, Hand	9.78
16110 - Presser, Machine, Drycleaning	9.78
16130 - Presser, Machine, Shirts	9.78
16160 - Presser, Machine, Wearing Apparel, Laundry	9.78
16190 - Sewing Machine Operator	12.75
16220 - Tailor	13.47
16250 - Washer, Machine	10.45
19000 - Machine Tool Operation And Repair Occupations	
19010 - Machine-Tool Operator (Tool Room)	22.01
19040 - Tool And Die Maker	27.00
21000 - Materials Handling And Packing Occupations	
21020 - Forklift Operator	15.57
21030 - Material Coordinator	21.58
21040 - Material Expediter	21.58
21050 - Material Handling Laborer	11.81
21071 - Order Filler	11.16
21080 - Production Line Worker (Food Processing)	15.57
21110 - Shipping Packer	15.07
21130 - Shipping/Receiving Clerk	15.07
21140 - Store Worker I	12.16
21150 - Stock Clerk	15.99
21210 - Tools And Parts Attendant	15.57
21410 - Warehouse Specialist	15.57
23000 - Mechanics And Maintenance And Repair Occupations	
23010 - Aerospace Structural Welder	22.99
23019 - Aircraft Logs and Records Technician	18.34
23021 - Aircraft Mechanic I	21.85

23022 - Aircraft Mechanic II	22.99
23023 - Aircraft Mechanic III	24.10
23040 - Aircraft Mechanic Helper	16.13
23050 - Aircraft, Painter	20.68
23060 - Aircraft Servicer	18.34
23070 - Aircraft Survival Flight Equipment Technician	20.68
23080 - Aircraft Worker	19.46
23091 - Aircrew Life Support Equipment (ALSE) Mechanic I	19.46
23092 - Aircrew Life Support Equipment (ALSE) Mechanic II	21.85
23110 - Appliance Mechanic	19.53
23120 - Bicycle Repairer	16.29
23125 - Cable Splicer	27.34
23130 - Carpenter, Maintenance	17.05
23140 - Carpet Layer	18.38
23160 - Electrician, Maintenance	20.76
23181 - Electronics Technician Maintenance I	24.12
23182 - Electronics Technician Maintenance II	25.62
23183 - Electronics Technician Maintenance III	27.08
23260 - Fabric Worker	17.32
23290 - Fire Alarm System Mechanic	17.96
23310 - Fire Extinguisher Repairer	16.29
23311 - Fuel Distribution System Mechanic	20.64
23312 - Fuel Distribution System Operator	16.29
23370 - General Maintenance Worker	17.52
23380 - Ground Support Equipment Mechanic	21.85
23381 - Ground Support Equipment Servicer	18.34
23382 - Ground Support Equipment Worker	19.46
23391 - Gunsmith I	16.29
23392 - Gunsmith II	18.38
23393 - Gunsmith III	20.64
23410 - Heating, Ventilation And Air-Conditioning Mechanic	20.24
23411 - Heating, Ventilation And Air Contidioning Mechanic (Research Facility)	21.36
23430 - Heavy Equipment Mechanic	22.85
23440 - Heavy Equipment Operator	18.32
23460 - Instrument Mechanic	20.64
23465 - Laboratory/Shelter Mechanic	19.53
23470 - Laborer	11.81
23510 - Locksmith	19.53
23530 - Machinery Maintenance Mechanic	22.88
23550 - Machinist, Maintenance	21.60
23580 - Maintenance Trades Helper	13.34
23591 - Metrology Technician I	20.64
23592 - Metrology Technician II	21.71
23593 - Metrology Technician III	22.77
23640 - Millwright	20.64
23710 - Office Appliance Repairer	17.19
23760 - Painter, Maintenance	17.05
23790 - Pipefitter, Maintenance	22.25
23810 - Plumber, Maintenance	21.05
23820 - Pneudraulic Systems Mechanic	20.64
23850 - Rigger	20.64
23870 - Scale Mechanic	18.38
23890 - Sheet-Metal Worker, Maintenance	18.40
23910 - Small Engine Mechanic	18.38
23931 - Telecommunications Mechanic I	25.03
23932 - Telecommunications Mechanic II	26.33
23950 - Telephone Lineman	21.89
23960 - Welder, Combination, Maintenance	20.24

23965 - Well Driller	20.64
23970 - Woodcraft Worker	20.64
23980 - Woodworker	16.29
24000 - Personal Needs Occupations	
24550 - Case Manager	15.77
24570 - Child Care Attendant	11.68
24580 - Child Care Center Clerk	14.58
24610 - Chore Aide	9.59
24620 - Family Readiness And Support Services Coordinator	15.77
24630 - Homemaker	16.20
25000 - Plant And System Operations Occupations	
25010 - Boiler Tender	20.64
25040 - Sewage Plant Operator	21.65
25070 - Stationary Engineer	20.69
25190 - Ventilation Equipment Tender	15.17
25210 - Water Treatment Plant Operator	21.65
27000 - Protective Service Occupations	
27004 - Alarm Monitor	17.01
27007 - Baggage Inspector	16.06
27008 - Corrections Officer	15.50
27010 - Court Security Officer	16.56
27030 - Detection Dog Handler	17.97
27040 - Detention Officer	15.50
27070 - Firefighter	15.64
27101 - Guard I	16.06
27102 - Guard II	17.97
27131 - Police Officer I	19.72
27132 - Police Officer II	21.91
28000 - Recreation Occupations	
28041 - Carnival Equipment Operator	11.58
28042 - Carnival Equipment Repairer	12.44
28043 - Carnival Worker	9.11
28210 - Gate Attendant/Gate Tender	15.11
28310 - Lifeguard	13.46
28350 - Park Attendant (Aide)	16.91
28510 - Recreation Aide/Health Facility Attendant	12.34
28515 - Recreation Specialist	19.95
28630 - Sports Official	13.46
28690 - Swimming Pool Operator	18.94
29000 - Stevedoring/Longshoremen Occupational Services	
29010 - Blocker And Bracer	18.38
29020 - Hatch Tender	18.38
29030 - Line Handler	18.38
29041 - Stevedore I	17.32
29042 - Stevedore II	19.53
30000 - Technical Occupations	
30010 - Air Traffic Control Specialist, Center (HFO) (see 2)	39.52
30011 - Air Traffic Control Specialist, Station (HFO) (see 2)	27.25
30012 - Air Traffic Control Specialist, Terminal (HFO) (see 2)	30.01
30021 - Archeological Technician I	18.28
30022 - Archeological Technician II	20.53
30023 - Archeological Technician III	25.80
30030 - Cartographic Technician	25.80
30040 - Civil Engineering Technician	23.60
30051 - Cryogenic Technician I	28.57
30052 - Cryogenic Technician II	31.56
30061 - Drafter/CAD Operator I	18.28
30062 - Drafter/CAD Operator II	20.53
30063 - Drafter/CAD Operator III	22.97
30064 - Drafter/CAD Operator IV	27.72
30081 - Engineering Technician I	15.07

30082 - Engineering Technician II	16.92
30083 - Engineering Technician III	18.93
30084 - Engineering Technician IV	23.45
30085 - Engineering Technician V	28.69
30086 - Engineering Technician VI	34.70
30090 - Environmental Technician	23.87
30095 - Evidence Control Specialist	25.80
30210 - Laboratory Technician	24.67
30221 - Latent Fingerprint Technician I	25.97
30222 - Latent Fingerprint Technician II	28.69
30240 - Mathematical Technician	25.80
30361 - Paralegal/Legal Assistant I	17.92
30362 - Paralegal/Legal Assistant II	22.19
30363 - Paralegal/Legal Assistant III	27.15
30364 - Paralegal/Legal Assistant IV	32.84
30375 - Petroleum Supply Specialist	31.56
30390 - Photo-Optics Technician	25.80
30395 - Radiation Control Technician	31.56
30461 - Technical Writer I	25.80
30462 - Technical Writer II	31.56
30463 - Technical Writer III	38.17
30491 - Unexploded Ordnance (UXO) Technician I	25.12
30492 - Unexploded Ordnance (UXO) Technician II	30.39
30493 - Unexploded Ordnance (UXO) Technician III	36.42
30494 - Unexploded (UXO) Safety Escort	25.12
30495 - Unexploded (UXO) Sweep Personnel	25.12
30501 - Weather Forecaster I	28.57
30502 - Weather Forecaster II	34.75
30620 - Weather Observer, Combined Upper Air Or	(see 2) 22.97
Surface Programs	
30621 - Weather Observer, Senior	(see 2) 25.04
31000 - Transportation/Mobile Equipment Operation Occupations	
31010 - Airplane Pilot	30.39
31020 - Bus Aide	11.41
31030 - Bus Driver	15.48
31043 - Driver Courier	13.73
31260 - Parking and Lot Attendant	10.94
31290 - Shuttle Bus Driver	14.74
31310 - Taxi Driver	11.79
31361 - Truckdriver, Light	14.74
31362 - Truckdriver, Medium	15.67
31363 - Truckdriver, Heavy	17.41
31364 - Truckdriver, Tractor-Trailer	17.41
99000 - Miscellaneous Occupations	
99020 - Cabin Safety Specialist	14.82
99030 - Cashier	8.98
99050 - Desk Clerk	9.83
99095 - Embalmer	26.27
99130 - Flight Follower	25.12
99251 - Laboratory Animal Caretaker I	13.41
99252 - Laboratory Animal Caretaker II	14.74
99260 - Marketing Analyst	26.60
99310 - Mortician	26.27
99410 - Pest Controller	17.05
99510 - Photofinishing Worker	13.20
99710 - Recycling Laborer	16.26
99711 - Recycling Specialist	19.02
99730 - Refuse Collector	14.95
99810 - Sales Clerk	11.08
99820 - School Crossing Guard	13.55
99830 - Survey Party Chief	21.34
99831 - Surveying Aide	12.63

99832 - Surveying Technician	17.31
99840 - Vending Machine Attendant	13.63
99841 - Vending Machine Repairer	16.43
99842 - Vending Machine Repairer Helper	13.63

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors, applies to all contracts subject to the Service Contract Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is the victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

ALL OCCUPATIONS LISTED ABOVE RECEIVE THE FOLLOWING BENEFITS:

HEALTH & WELFARE: \$4.48 per hour or \$179.20 per week or \$776.53 per month

HEALTH & WELFARE EO 13706: \$4.18 per hour, or \$167.20 per week, or \$724.53 per month*

*This rate is to be used only when compensating employees for performance on an SCA-covered contract also covered by EO 13706, Establishing Paid Sick Leave for Federal Contractors. A contractor may not receive credit toward its SCA obligations for any paid sick leave provided pursuant to EO 13706.

VACATION: 2 weeks paid vacation after 1 year of service with a contractor or successor; 3 weeks after 8 years, and 4 weeks after 20 years. Length of service includes the whole span of continuous service with the present contractor or successor, wherever employed, and with the predecessor contractors in the performance of similar work at the same Federal facility. (Reg. 29 CFR 4.173)

HOLIDAYS: A minimum of ten paid holidays per year: New Year's Day, Martin Luther King Jr.'s Birthday, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Columbus Day, Veterans' Day, Thanksgiving Day, and Christmas Day. (A contractor may substitute for any of the named holidays another day off with pay in accordance with a plan communicated to the employees involved.) (See 29 CFR 4.174)

THE OCCUPATIONS WHICH HAVE NUMBERED FOOTNOTES IN PARENTHESES RECEIVE THE FOLLOWING:

1) COMPUTER EMPLOYEES: Under the SCA at section 8(b), this wage determination does not apply to any employee who individually qualifies as a bona fide executive, administrative, or professional employee as defined in 29 C.F.R. Part 541. Because most Computer System Analysts and Computer Programmers who are compensated at a rate not less than \$27.63 (or on a salary or fee basis at a rate not less than \$455 per week) an hour would likely qualify as exempt computer professionals, (29 C.F.R. 541.400) wage rates may not be listed on this wage determination for all occupations within those job families. In addition, because this wage determination may not list a wage rate for some or all occupations within those job families if the survey data indicates that the prevailing wage rate for the occupation equals or exceeds \$27.63 per hour conformances may be necessary for certain nonexempt employees. For

example, if an individual employee is nonexempt but nevertheless performs duties within the scope of one of the Computer Systems Analyst or Computer Programmer occupations for which this wage determination does not specify an SCA wage rate, then the wage rate for that employee must be conformed in accordance with the conformance procedures described in the conformance note included on this wage determination.

Additionally, because job titles vary widely and change quickly in the computer industry, job titles are not determinative of the application of the computer professional exemption. Therefore, the exemption applies only to computer employees who satisfy the compensation requirements and whose primary duty consists of:

(1) The application of systems analysis techniques and procedures, including consulting with users, to determine hardware, software or system functional specifications;

(2) The design, development, documentation, analysis, creation, testing or modification of computer systems or programs, including prototypes, based on and related to user or system design specifications;

(3) The design, documentation, testing, creation or modification of computer programs related to machine operating systems; or

(4) A combination of the aforementioned duties, the performance of which requires the same level of skills. (29 C.F.R. 541.400).

2) AIR TRAFFIC CONTROLLERS AND WEATHER OBSERVERS - NIGHT PAY & SUNDAY PAY: If you work at night as part of a regular tour of duty, you will earn a night differential and receive an additional 10% of basic pay for any hours worked between 6pm and 6am.

If you are a full-time employed (40 hours a week) and Sunday is part of your regularly scheduled workweek, you are paid at your rate of basic pay plus a Sunday premium of 25% of your basic rate for each hour of Sunday work which is not overtime (i.e. occasional work on Sunday outside the normal tour of duty is considered overtime work).

**** HAZARDOUS PAY DIFFERENTIAL ****

An 8 percent differential is applicable to employees employed in a position that represents a high degree of hazard when working with or in close proximity to ordnance, explosives, and incendiary materials. This includes work such as screening, blending, dying, mixing, and pressing of sensitive ordnance, explosives, and pyrotechnic compositions such as lead azide, black powder and photoflash powder.

All dry-house activities involving propellants or explosives. Demilitarization, modification, renovation, demolition, and maintenance operations on sensitive ordnance, explosives and incendiary materials. All operations involving re-grading and cleaning of artillery ranges.

A 4 percent differential is applicable to employees employed in a position that represents a low degree of hazard when working with, or in close proximity to ordnance, (or employees possibly adjacent to) explosives and incendiary materials which involves potential injury such as laceration of hands, face, or arms of the employee engaged in the operation, irritation of the skin, minor burns and the like; minimal damage to immediate or adjacent work area or equipment being used. All operations involving, unloading, storage, and hauling of ordnance, explosive, and incendiary ordnance material other than small arms ammunition. These differentials are only applicable to work that has been specifically designated by the agency for ordnance, explosives, and incendiary material differential pay.

**** UNIFORM ALLOWANCE ****

If employees are required to wear uniforms in the performance of this contract (either by the terms of the Government contract, by the employer, by the state or local law, etc.), the cost of furnishing such uniforms and maintaining (by laundering or dry cleaning) such uniforms is an expense that may not be borne by an employee where such cost reduces the hourly rate below that required by the wage

determination. The Department of Labor will accept payment in accordance with the following standards as compliance:

The contractor or subcontractor is required to furnish all employees with an adequate number of uniforms without cost or to reimburse employees for the actual cost of the uniforms. In addition, where uniform cleaning and maintenance is made the responsibility of the employee, all contractors and subcontractors subject to this wage determination shall (in the absence of a bona fide collective bargaining agreement providing for a different amount, or the furnishing of contrary affirmative proof as to the actual cost), reimburse all employees for such cleaning and maintenance at a rate of \$3.35 per week (or \$.67 cents per day). However, in those instances where the uniforms furnished are made of "wash and wear" materials, may be routinely washed and dried with other personal garments, and do not require any special treatment such as dry cleaning, daily washing, or commercial laundering in order to meet the cleanliness or appearance standards set by the terms of the Government contract, by the contractor, by law, or by the nature of the work, there is no requirement that employees be reimbursed for uniform maintenance costs.

** SERVICE CONTRACT ACT DIRECTORY OF OCCUPATIONS **

The duties of employees under job titles listed are those described in the "Service Contract Act Directory of Occupations", Fifth Edition (Revision 1), dated September 2015, unless otherwise indicated.

** REQUEST FOR AUTHORIZATION OF ADDITIONAL CLASSIFICATION AND WAGE RATE, Standard Form 1444 (SF-1444) **

Conformance Process:

The contracting officer shall require that any class of service employee which is not listed herein and which is to be employed under the contract (i.e., the work to be performed is not performed by any classification listed in the wage determination), be classified by the contractor so as to provide a reasonable relationship (i.e., appropriate level of skill comparison) between such unlisted classifications and the classifications listed in the wage determination (See 29 CFR 4.6(b)(2)(i)). Such conforming procedures shall be initiated by the contractor prior to the performance of contract work by such unlisted class(es) of employees (See 29 CFR 4.6(b)(2)(ii)). The Wage and Hour Division shall make a final determination of conformed classification, wage rate, and/or fringe benefits which shall be paid to all employees performing in the classification from the first day of work on which contract work is performed by them in the classification. Failure to pay such unlisted employees the compensation agreed upon by the interested parties and/or fully determined by the Wage and Hour Division retroactive to the date such class of employees commenced contract work shall be a violation of the Act and this contract. (See 29 CFR 4.6(b)(2)(v)). When multiple wage determinations are included in a contract, a separate SF-1444 should be prepared for each wage determination to which a class(es) is to be conformed.

The process for preparing a conformance request is as follows:

- 1) When preparing the bid, the contractor identifies the need for a conformed occupation(s) and computes a proposed rate(s).
- 2) After contract award, the contractor prepares a written report listing in order the proposed classification title(s), a Federal grade equivalency (FGE) for each proposed classification(s), job description(s), and rationale for proposed wage rate(s), including information regarding the agreement or disagreement of the authorized representative of the employees involved, or where there is no authorized representative, the employees themselves. This report should be submitted to the contracting officer no later than 30 days after such unlisted class(es) of employees performs any contract work.

3) The contracting officer reviews the proposed action and promptly submits a report of the action, together with the agency's recommendations and pertinent information including the position of the contractor and the employees, to the U.S. Department of Labor, Wage and Hour Division, for review (See 29 CFR 4.6(b)(2)(ii)).

4) Within 30 days of receipt, the Wage and Hour Division approves, modifies, or disapproves the action via transmittal to the agency contracting officer, or notifies the contracting officer that additional time will be required to process the request.

5) The contracting officer transmits the Wage and Hour Division's decision to the contractor.

6) Each affected employee shall be furnished by the contractor with a written copy of such determination or it shall be posted as a part of the wage determination (See 29 CFR 4.6(b)(2)(iii)).

Information required by the Regulations must be submitted on SF-1444 or bond paper.

When preparing a conformance request, the "Service Contract Act Directory of Occupations" should be used to compare job definitions to ensure that duties requested are not performed by a classification already listed in the wage determination. Remember, it is not the job title, but the required tasks that determine whether a class is included in an established wage determination. Conformances may not be used to artificially split, combine, or subdivide classifications listed in the wage determination (See 29 CFR 4.152(c)(1)).

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SUPPLEMENTARY SPECIAL CONTRACT REQUIREMENTS
06/18

PART 1 GENERAL

1.1 REFERENCES

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

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (NCDOT)

NCDOT Standard Specifications For Roads And Structures

U.S. ARMY CORPS OF ENGINEERS (USACE)

ER 1110-1-5 Plant Pest Quarantined Area and Foreign Soil Sample

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

29 CFR 1910.134 Respiratory Protection

29 CFR 1910.1001 Asbestos

29 CFR 1926.55 Gases, Vapors, Fumes, Dusts, and Mists

40 CFR 61.40 General Provisions

49 CFR 172 Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements

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

SD-01 Preconstruction Submittals

List of Subcontractors

Progress Chart; G, A

Quality Control Plan; G, A

Certificate of Insurance

Within 24 hours of conclusion of physical tests, 5 copies of test results including calibration curves and results of calibration tests.

SD-03 Product Data

WORK PLAN

PROGRESS SCHEDULE

SD-07 Certificates

U.S. Coast Guard Certification

Completion of Corps CQC Course

Letter Appointing Superintendent

Qualifications of the commercial testing laboratory or Contractor's testing laboratory/facilities G, A

1.3 PERFORMANCE AND PAYMENT BONDS

Each bidder shall include in his bid premiums for performance and payment bonds. Payment shall be made in accordance with the Contract Clause entitled "PAYMENTS UNDER FIXED-PRICE CONSTRUCTION CONTRACTS." Any additional amount bid in excess of the actual bond premium will be included in the final pay estimate for this contract.

(End of Clause)

1.4 WATER CONSERVATION

Water is one of our valuable natural resources. Accordingly, the Contractor shall be judicious in its use in the performance of the work as specified. Water needed for compaction of roadway and/or foundation materials, and dust control shall be obtained from uncontrolled stream flow instead of potable supply sources to the extent available and suitable as determined by the Contracting Officer or his/her designated representative.

(End of Clause)

1.5 BULLETIN BOARD

Within one (1) calendar day after commencement of work under this contract, the Contractor shall provide at the job site a weatherproof, glass-covered bulletin board for displaying the Fair Employment poster, wage rates, posters and safety bulletins as noted in Section 01 35 26, paragraph DISPLAY OF SAFETY INFORMATION. The bulletin board shall be located in a conspicuous place, easily accessible to all employees, and legible copies of the aforementioned data shall be displayed until work under the contract is complete. No direct payment will be made for the bulletin board.

(End of Clause)

1.6 PROGRESS SCHEDULE

Pursuant to the Contract Clause FAR 52.236-15, SCHEDULES FOR CONSTRUCTION

CONTRACTS, a project schedule as described in this paragraph PROGRESS SCHEDULE shall be prepared and submitted. The Contractor shall provide the project schedule in the Precedence Diagram Method (PDM) using the Standard Data Exchange Format (SDEF). The project schedule shall be used to measure progress of the work, to evaluate potential time extensions and to provide a basis for all progress payments. It shall be in sufficient detail to properly monitor and manage the work and as a minimum shall include the following:

- a. the work shall be divided into activities by acceptance section and phase of work (e.g. preconstruction structure and property condition surveys, blasting, dredging)
- b. separate activities shall reflect each mobilization and demobilization of each major plant
- c. activities shall be identified by associated bid item
- d. all required and proposed submissions shall be included in the progress schedule
- e. Government and other agency activities that could impact progress shall be shown (e.g. Government surveys, navigation aid relocations, etc.)

The schedule shall extend from NTP to the established contract completion date.

The initial progress schedule shall be included with the solicitation proposal and demonstrate that the proposed plant and resources are capable of performing the work as scheduled. Periodic schedule updates shall be provided monthly with each payment request, and whenever there is a change in logic or time extension. Each submission shall include the data disks containing the project schedule adhering to the SDEF format specified in ER 1-1-11, Appendix A; the earnings report indicating monthly and cumulative earnings; a narrative report with a description of the activities identifying the critical path(s), current or anticipated problems of delays and their impact, and proposed corrective actions; and the schedule reports containing activity number, activity description, original duration, remaining duration, early start date, early finish date, late start date, late finish date and total float. The schedule reports shall be sorted as activity report, logic report listing preceding and succeeding activities for each activity, total float report listed in ascending order by early state date, early state sort and earning report. A network diagram shall be submitted with the initial submission and each update. The network diagram shall depict the order, sequence and interdependence of activities, shall clearly indicate milestone dates and projected early and late earnings.

1.7 RETAINAGE FOR UNTIMELY SUBMISSION OF SUBCONTRACTING REPORTS

(a) In accordance with Contract Clause 52.219-9, Small Business Subcontracting Plan, and 52.219-16, Liquidated Damages - Subcontracting Plan, retainage will be withheld from progress payments in an amount sufficient to protect the Government's ability to assess liquidated damages in accordance with Clause 52.219-16 for the contractor's failure to timely submit Standard Form 294, Subcontracting Report for Individual Contracts, and Standard Form 295, Summary Subcontract Report, reports.

(b) The retainage will be determined in accordance with the

following formula:

Total dollar amount for subcontracting to small business multiplied by percentage of actual progress on the contract shall be withheld from the next progress payment due after the Contractor fails to submit a required report. If one or more reports have been submitted before such failure, formula for determining the amount of retainage will be adjusted by deducting any amounts reported as subcontracted to small business from the total dollar amount proposed to be subcontracted and the difference multiplied by the percentage of actual progress.

(c) Subcontracting plans are not required--

(1) For contracts or contract modifications that will be performed entirely outside of any State, territory, or possession of the United States, the District of Columbia, and the Commonwealth of Puerto Rico; or

(2) For modifications to contracts that do not contain the clause 52.219-8, Utilization of Small Business Concerns (or equivalent prior DAR, FPR, or NASA clauses); e.g., contracts awarded before Pub. L. 95-507 and which are within the scope of the contract.

(End of Clause)

1.8 SHOP DRAWINGS AND MATERIALS SUBMITTAL

(a) Five (5) days prior to the preconstruction conference (see paragraph REQUIRED CONSTRUCTION MEETINGS), the Contractor shall complete and submit to the Contracting Officer or his/her designated representative, in duplicate, Submittal Register, listing all submittals and dates. In addition to those items listed on the Submittal Register, the Contractor will furnish submittals for any deviation from the plans or specifications. The scheduled need dates must be recorded on the document for each item for control purposes. In preparing the document, adequate time (minimum of 15 days) will be allowed for review and approval and possible resubmittal. Scheduling shall be coordinated with the approved progress schedule. The Contractor's Quality Control System Manager shall review the listing at least every 30 days and take appropriate action to maintain an effective system. Copies of updated or corrected listings shall be submitted to the Contracting Officer or his/her designated representative at least every 60 days in the quantity specified. Payment will not be made for any material or equipment which does not comply with contract requirements.

(b) Contractor submittals required by the Technical Provisions are indicated in those provisions and are listed on the Submittal Register furnished in Section 01 33 00 SUBMITTAL PROCEDURES. The list does not relieve the Contractor from furnishing submittals required elsewhere in the specifications, those inadvertently omitted from the listing; or from furnishing other submittals that the Government may deem necessary as the work progresses.

(c) Normal review levels for required approvals are indicated by letter designations as follows:

Contractor Quality Control System Manager --- (CQC)
Area or Resident Engineer ----- (R)
Engineering Branch ----- (E)

The Government reserves the right to vary the review levels for (R) and (E) to its convenience.

(d) The Contractor shall use ENG Form 4025, furnished in Section 01 33 00 SUBMITTAL PROCEDURES, to transmit Shop Drawings, Equipment Data, Material Samples or Manufacturer's Certificate of Compliance to the Government.

(End of Clause)

1.9 SAMPLING, CERTIFICATES, AND TESTING

(a) General. Within 30 days after acknowledgment of Notice to Proceed, the Contractor shall submit to the Contracting Officer or his/her designated representative five (5) copies of a list of the items for which he proposes to furnish manufacturer's certificates and/or samples for inspection and testing. The list shall include, but is not limited to the following information:

- (1) Name of item
- (2) Specification paragraph covering this item
- (3) Date sample will be furnished
- (4) Delivery date of product
- (5) Items for which a certificate will be furnished

(b) Submittals. Any product or item mentioned in these specifications and required to meet Federal, ASTM, AASHTO, U. S. Army or Navy, AREMA, AWWA, and UL Specifications or Codes, specified herein with certain limiting or qualifying requirements, or any product or item which is required to be similar and equal to a specified product or item may require the submission, before delivery of the product or item to the job site, of one or more of the following:

- (1) Certificate by the manufacturer that the item meets the contract requirements.
- (2) Samples for inspection, comparison, and testing, including destructive tests.

(c) Sample delivery. Unless otherwise specified or authorized, all samples shall be delivered (without cost to the Government) to:

U.S. Army Engineer District, Wilmington
Corps of Engineers
ATTENTION: Military Construction Section
69 Darlington Avenue
Wilmington, North Carolina 28403

If required by the Contracting Officer or his/her designated representative, duplicate samples shall be shipped to the Wilmington District Office at no expense to the Government.

(d) Testing. All tests required in the Technical Provisions shall be made by and at the expense of the Contractor except those material tests

specifically excluded which will be made by and at the expense of the Government. All instruments and personnel required for the required tests shall be furnished by the Contractor. The Government reserves the right to interrupt the work to make tests on all facets of concreting and other operations. These tests will be made as necessary to insure conformance to applicable specifications and drawings and will be made by and at the expense of the Government except Contractor sampling support as required by the Technical Provisions. In those instances where testing is specified to be made at the Government's expense, the cost of the initial testing will be at the Government's expense; however, any retesting due to failure of the materials to meet the requirements in the initial test shall be performed at the Contractor's expense. The retests shall be made at laboratories approved by the Contracting Officer or his/her designated representative. The costs of retests made at Government laboratories will be deducted from the total amount due the Contractor, at actual cost to the Government, unless otherwise specified.

(End of Clause)

1.10 CERTIFICATES OF COMPLIANCE
(1969 MAY OCE)

Any certificates required for demonstrating proof of compliance of materials with specification requirements shall be executed in 3 copies. Each certificate shall be signed by an official authorized to certify in behalf of the manufacturing company and shall contain the name and address of the Contractor, the project name and location, and the quantity and date or dates of shipment or delivery to which the certificates apply. Copies of laboratory test reports submitted with certificates shall contain the name and address of the [testing laboratory](#) and the date or dates of the tests to which the report applies. Certification shall not be construed as relieving the Contractor from furnishing satisfactory material, if, after tests are performed on selected samples, the material is found not to meet the specific requirements.

(End of Clause)

1.11 REQUIRED CONSTRUCTION MEETINGS

(a) In addition to meetings required elsewhere in the specifications, the Contractor and any Subcontractors identified by the Contracting Officer's Representative shall be required to attend a preconstruction meeting (after award of the contract but before Commencement of Work) and a post construction meeting (after final acceptance of the work but before final payment is made). The Contractor and identified Subcontractors shall meet with Corps of Engineers personnel at a time and place determined by the Contracting Officer's Representative.

(b) At the preconstruction conference, the Contractor shall be oriented with respect to Government procedures and line of authority in contractual, administrative, and construction matters. Additionally, a schedule of required submittals will be discussed.

(c) Five (5) days prior to the preconstruction conference, the Contractor shall submit the following items:

[Certificate of Insurance](#)
[Quality Control Plan](#) (see Section [01 45 00.00 10](#)
QUALITY CONTROL, for additional information)

Certificate of [Completion of Corps CQC Course](#)
Preliminary Submittal Register (ENG Form 4288 exclusive of
[Contractor](#) submittal dates)
[Letter Appointing Superintendent](#) (see Contract Clause
entitled Superintendence by the Contractor, 52.236-6)
[List of Subcontractors](#)

(d) The letter of record will be written documenting all items discussed at the conference and a copy will be furnished by the Contracting Officer's Representative to all in attendance.

(End of Clause)

1.12 SURVEY DATA

The Contractor shall maintain complete and accurate field notes, sketches, recordings and computations required in establishing the necessary horizontal and vertical control. All survey data shall be recorded in accordance with accepted standards and as approved by the Contracting Officer or his/her designated representative. All the above data shall be available at all times during the progress of the work for ready examination and use by the Contracting Officer or his/her designated representative. Upon request of the Contracting Officer or his/her designated representative, the Contractor shall furnish a copy of above survey data.

(End of Clause)

1.13 "AS-BUILT" RECORD DRAWINGS

(a) The Contractor shall be responsible for maintaining in good condition one set of reproducible as-built drawings and five copy sets, including system layout drawings and field wiring diagrams. Drawings shall be "D" [34 by 22 inches](#), drawn to the same scale as the contract drawings, with title block similar to the contract drawings. Reproducible drawings shall be on mylar film. The Contractor shall keep a careful and neat record of all deviations, field changes and modifications from the original contract drawings which are made to each phase of construction as the work progresses. The Contractor is responsible for noting all changes and corrections on these prints promptly as in-place construction activities occur, but in no case less often than on a weekly basis. In addition to the above, the following shall be included:

(1) Actual location of all Contractor installed subsurface utility lines. Type of materials actually installed, major sizes of lines, etc. In order that the location of these lines and appurtenances may be determined in the event the surface openings or indicators become covered or obscured, the record drawings shall show, by offset dimensions to two permanently fixed surface features, both ends of each run and each change in direction. Valves, splice boxes and similar appurtenances shall be located by dimensions along the utility run from a reference point. The average depth below the surface of each run shall also be recorded.

(2) Any shop drawings which constitute part of the design shall be included with the record drawings.

(3) The manufacturer and model number of all major items of equipment shall be shown on the record drawings.

(4) Upon completion of all construction, the Contractor will delete by notation all references to features not constructed.

(b) These annotated prints shall be certified as to their correctness by the signature of the Contractor and turned over to the Contracting Officer or his/her designated representative not later than ten (10) days after final acceptance of the work by the Government. Marked up prints shall be reviewed for approval by the Contracting Officer or his/her designated representative and returned for corrections as necessary.

(End of Clause)

1.14 FINISH MATERIAL SUBMITTALS

All finish items requiring submittal for approval shall be packaged by the Contractor to form one coordinated submittal for interior finishes and one coordinated and separate submittal for exterior finishes. Each submittal shall clearly convey colors, textures and finishes proposed to permit a complete review on how the finishes interact.

(End of Clause)

1.15 ASBESTOS PERMIT AND NOTIFICATION

Prior to beginning any demolition or renovation of existing buildings, the Contractor shall submit notification to the appropriate state agency by completing there "Asbestos Permit Application and Notification for Demolition/Renovation" form. State law requires notification whether or not asbestos is present. A copy of the state response shall be submitted to the Government for information.

The following state agencies require notification:

State of North Carolina
Department of Health and Natural Resources
Asbestos Hazard Management Branch
Post Office box 27687
Raleigh, North Carolina 27611-7687
(919) 773-0820

(End of Clause)

1.16 WORK IN QUARANTINED AREA

USACE and the U.S. Department of Agriculture (USDA) have a compliance agreement requiring measures to prevent the spread of certain plant pests that may be present in the soil (USACE ER 1110-1-5). Major portions of all southeastern states are in a quarantine area for such pests, including the imported fire ant. In addition, adjacent states to the north have introduced infestations resulting from movement of soil from infested southeastern states. The Contractor shall thoroughly clean all construction equipment and tools at the previous job site in a manner that ensures that these implements are free from residual soil, egg deposits from plant pests, noxious weeds, and plant seeds. Equipment shall be cleaned using water under pressure, and hand tools shall be thoroughly cleaned by brushing or other means to remove all soil. In addition, all construction equipment and hand tools used for this USACE contract shall be thoroughly cleaned by the Contractor before they are removed from this job site. The Contractor shall consult with the USDA jurisdictional office for

additional cleaning requirements that may be necessary.

(End of Clause)

1.17 FINAL AND CONDITIONAL ACCEPTANCE OF GRASSING

When, upon completion of the final construction inspection, the work is found to comply fully with contract plans, specifications, change orders, and modifications, the Contracting Officer or his/her designated representative will give final acceptance, provided a satisfactory stand of grass has been obtained. If, due to the season, satisfactory life and growth of grass cannot be determined when all work is completed, the Contracting Officer or his/her designated representative shall give the Contractor written notice of conditional acceptance. This notice of conditional acceptance will relieve the Contractor of further construction or maintenance work except as noted until the next growing season, at which time he will be required to produce a living and satisfactory stand of grass and apply water and/or fertilizer as required by the Contracting Officer or his/her designated representative to produce a grass cover in full compliance with the intent of these specifications. The Contractor shall maintain adequate erosion control measures during periods of conditional acceptance of grassing.

(End of Clause)

1.18 NCDOT SPECIFICATIONS

The North Carolina Department of Transportation (NCDOT) "Standard Specifications for Roads and Structures English," (hereinafter referred to as the Standard Specifications) applies to this work when so referenced.

(End of Clause)

1.19 DEFINITIONS FOR NCDOT SPECIFICATIONS

Wherever in the North Carolina Department of Transportation "Standard Specifications for Roads and Structures" or on the drawings the following terms are used, the intent shall be as indicated below unless otherwise modified within the specifications:

State - - - - -	U. S. Government
Department or Department of	
Transportation - - - - -	Corps of Engineers
Engineer or Chief Engineer- - - - -	Contracting Officer,
	Corps of Engineers
Materials and Test Unit - - - - -	Corps of Engineers
Division of Highways- - - - -	Corps of Engineers
Board or Board of Transportation- - - - -	Corps of Engineers

Where NCDOT materials and test unit requirements are referenced in these specifications, they shall be taken as such and not Corps of Engineers Standards unless otherwise stated.

(End of Clause)

1.20 PUBLIC CONVENIENCE AND SAFETY

1.20.1 Roads To Be Closed

No road shall be closed to the public by the Contractor until construction of the new facilities infringe upon the public safety or until construction of the new facilities obliterate the existing facilities. The Contractor shall obtain the Contracting Officer's approval before closing any roads. Barricades, danger, warning and detour signs, as required, shall be erected before closing any roads.

1.20.2 Storage of Materials

Materials and equipment shall not be stored within roadway rights-of-way or in such a manner as to pose possible danger or obstruction to the traveling public.

(End of Clause)

1.21 MAINTENANCE DURING CONSTRUCTION

From the first day any work is done, the Contractor shall maintain in an equally satisfactory condition all of the items of work covered by the contract until they are finished, placed in service unfinished, or until all of the work is finally accepted. This maintenance shall be continuous and effective work prosecuted day by day with adequate equipment to the end that roadway and structures are kept in satisfactory and acceptable condition. The Contractor shall be responsible for maintaining all barricades, danger, warning, and detour signs and lights as specified hereinafter. When no pay item for such maintenance is shown in the Bidding Schedule, the cost of maintenance shall be included in the price bid for other pay items, and no separate payment will be made.

1.21.1 Maintenance When Work is Suspended

Maintenance when work is suspended. If construction is suspended for any reason, the Contractor shall place the work in a condition satisfactory to the Contracting Officer or his/her designated representative prior to the initiation of the suspension. The Contractor shall maintain the suspended work in that condition throughout the period of the suspension. The Contractor shall cease further construction work on the suspended work during the period of the suspension.

1.21.2 Final Mowing

When the work is otherwise completed, and before it is finally accepted, the Contractor shall give the seeded areas a final mowing, as directed by the Contracting Officer or his/her designated representative.

1.21.3 Spilled Materials

The Contractor shall not allow spilled materials to remain on the highways. Spillage sufficient to create a traffic hazard shall be removed immediately. Other light spillage shall be removed daily.

(End of Clause)

1.22 PARTNERING

In order to most effectively accomplish this contract, the Government proposes to form a cohesive partnership with the Contractor and its subcontractors. This partnership would strive to draw on the strengths of each organization in an effort to achieve a quality project done right the first time, within budget and on schedule. Integral to the partnership would be a joint Contractor/Government effort to settle any disputes that may arise without costly and time consuming litigation. To that end, a non-binding procedure such as the Alternate Dispute Resolution process could be developed and agreed upon by both parties when it is determined to be necessary. This partnership would be bilateral in make-up and participation will be totally voluntary. Any cost associated with developing this partnership will be agreed to by both parties and will be shared equally with no change in contract price.

(End of Clause)

1.23 LOAD RESTRICTIONS

The Contractor shall comply with all legal load restrictions in the hauling of materials on public roads beyond the limits of the project. A special permit will not relieve the Contractor of liability for damage which may result from such hauling. The Contractor shall not operate equipment of such weight or so loaded as to cause damage to drainage structures or the roadway, or to any other type of improvement, either completed or under construction. Hauling of materials over the existing surface shall be limited as directed, and in no case shall legal load limits be exceeded unless permitted in writing. The Contractor shall repair, at his own expense, all damage to the work caused by his equipment.

(End of Clause)

1.24 BARRICADES, DANGER, WARNING, AND DETOUR SIGNS

The Contractor shall provide, erect, and maintain all necessary traffic control devices in substantial conformance to Part VI of the 1988 "Manual on Uniform Traffic Control Devices for Streets and Highways" as published by the U.S. Department of Transportation, Federal Highway Administration, and available from AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO), U. S. DEPARTMENT OF TRANSPORTATION (DOT). This requirement shall include flagman as shown in the manual when necessary and the use of electric flashers as conditions of construction may require during hours of darkness. The Contractor shall take all necessary precautions for protection of the work and for the safety of the public at or near the site of construction. Signing, barricades, lights, and other devices shall be well maintained and repositioned or removed as the progress of the work requires. No substandard, poorly maintained device will be acceptable. Particular attention shall be given to the following:

1.24.1 Removal of Barricades And Warning Signs

As soon as construction advances to the extent that temporary barricades, and signs such as "Detour", "One Way Traffic," etc. are no longer needed to inform the traveling public, such signs shall be removed promptly.

1.24.2 Replacement of Signs

When new work is necessary during any period of construction or

maintenance, necessary signs shall be replaced as are needed to adequately warn and protect the public in accordance with the provisions outlined above. As soon as the project has been accepted for maintenance, all temporary barricades and warning signs shall be removed promptly.

1.24.3 Cost of Protective Devices

Unless otherwise shown in the Bidding Schedule, the cost of furnishing, erecting, maintaining, and removing protective devices will not be paid for as separate bid items. Where the Contractor is required to perform any of these functions, the cost thereof shall be included in the overall bid submitted. Ownership of the temporary warning devices shall remain with the Contractor provided the devices are removed promptly after completion of the work as specified above. If such warning devices are left in place for more than 30 days after the specified time for removal, the Government shall have the right to remove such devices and to claim possession thereof.

(End of Clause)

1.25 PROTECTION OF EXISTING FACILITIES

The Contractor will not be responsible for any alterations to existing structures or utilities except those made by him for his convenience. The Contractor shall protect all existing structures, including bridges, roadway embankments, utilities and improvements from damage, and, in the event of damage as a result of his operations, the Contractor shall be responsible for their repair, restoration, or for all cost of damage resulting therefrom. In addition, the Contractor shall be responsible for any damage to bridge or culvert structures or railway embankments or track caused by the unauthorized excavation or excavation beyond the project dimensions shown on the plans. If the Contractor elects to have alterations made to any existing structure, utility or other improvements for his convenience, he shall make arrangements with the owner of the facility for such alterations and the agreement shall be reviewed and approved by the Contracting Officer or his/her designated representative prior to their alteration.

(End of Clause)

1.26 HAUL ROADS (1985 HQ USACE)

Whenever practical, one-way haul roads shall be used on this contract. Haul roads built and maintained for this work shall comply with the following:

(a) One-way haul roads for off-the road equipment; e.g., belly bumps, scrapers, and off-the-road trucks shall have a minimum usable width of 25 ft. One-way haul roads for over-the-road haulage equipment only (e.g., dump trucks, etc.) may be reduced to a usable width of 15 ft.

When the Contracting Officer or his/her designated representative determines that it is impractical to obtain the required width for one-way haul roads (e.g., a road on top of a levee), a usable width of not less than 10 ft. may be approved by the Contracting Officer or his/her designated representative, provided a positive means of traffic control is implemented. Such positive means shall be signs, signals, and/or signalman and an effective means of speed control.

(b) Two-way haul roads for off-the-road haulage equipment shall have usable width of 60 ft. Two-way haul roads for over-the-road haulage equipment only may be reduced to a usable width of 30 ft.

(c) Haul roads shall be graded and otherwise maintained to keep the surface free from potholes, ruts, and similar conditions that could result in unsafe operation.

(d) Grades and curves shall allow a minimum sight distance of 200 ft. for one-way roads and 300 ft. for two-way roads. Sight distance is defined as the centerline distance an equipment operator (4.5 ft. above the road surface) can see an object 4.5 ft. above the road surface. When conditions make it impractical to obtain the required sight distance (e.g., ramps over levees), a positive means of traffic control shall be implemented.

(e) Dust abatement shall permit observation of objects on the roadway at a minimum distance of 300 ft.

(f) Haul roads shall have the edges of the usable portion marked with posts at intervals of 50 ft. on curves and 200 ft. maximum elsewhere. Such markers shall extend 6 ft. above the road surface and, for nighttime haulage, be provided with reflectors in both directions.

(End of Clause)

1.27 ASBESTOS - (Occupational Health and Environment)

(a) THE CONTRACTOR IS WARNED THAT EXPOSURE TO AIRBORNE ASBESTOS HAS BEEN ASSOCIATED WITH FOUR DISEASES: LUNG CANCER, CERTAIN GASTROINTESTINAL CANCERS, PLURAL OR PERITONEAL MESOTHELIOMA AND ASBESTOS. Studies indicate there are significantly increased health dangers to persons exposed to asbestos who smoke and further, to family members and other persons who become indirectly exposed as a result of the exposed worker bringing asbestos-laden work clothing home to be laundered.

(b) The Contractor is advised that friable and/or nonfriable asbestos containing material has been identified in area(s) where contract work is to be performed. Friable asbestos containing material means any material that contains more than 1 percent asbestos by weight that hand pressure can crumble, pulverize or reduce to powder when dry. Nonfriable asbestos containing materials do not release airborne asbestos fiber during routine handling and end-use. However, excessive fiber concentrations may be produced during uncontrolled abrading, sanding, drilling, cutting, machining, removal, demolition or other similar activities.

(c) Care must be taken to avoid releasing, or causing to be released, asbestos fibers into the atmosphere where they may be inhaled or ingested. The Occupational Safety and Health Administration (OSHA) has set standards at [29 CFR 1910.1001](#), for exposure to airborne concentrations of asbestos fibers, methods of compliance, medical surveillance, housekeeping procedures and other measures that must be taken when working with or around asbestos containing materials which release airborne asbestos fibers at concentrations in excess of those established. [29 CFR 1926.58](#) has been identified as applicable to construction ([29 CFR 1926.55](#) gases, vapors, fumes, dusts and mists). The Environmental Protection Agency (EPA) has established standards at [40 CFR 61.40-40 CFR 61.156](#) for the control of asbestos emissions to the environment and the handling and disposal of asbestos wastes.

(d) When contract work activities are carried out in locations where the potential exists for exposure to airborne asbestos fibers as described in (b) or where asbestos waste will be generated, the contractor shall assure that all measures necessary to provide effective protection to persons from exposure to asbestos fibers and prevention of contamination to property, materials, supplies, equipment and the internal and external environment are effectively instituted.

(e) As a minimum, the contractor shall comply with the provisions of 29 CFR 1926.58 and 1926.55; 49 CFR 172.101, 172.200-204, 172.316, 173.1090; 40 CFR 61.40-61.156; any state implementing hazardous waste regulation that regulates asbestos as a hazardous waste under the Resources Conservation and Recovery Act (RCRA) requirements and any other applicable federal, state or local requirements.

(f) In addition to the information required in Section 01 35 26, the Contractors Accident Prevention Plan must also fully address the following topics, and at the Contractor's option may include additional information as applicable.

(1) Medical Surveillance: (29 CFR 1926.58(m)).

(2) Employee training: Prior to beginning work in asbestos containing material area(s) (29 CFR 1926.58 and 29 CFR 1910.134).

(3) Respiratory protection: (29 CFR 1926.58(h) and 29 CFR 1910.134).

(4) Personal protective clothing and equipment: (29 CFR 1926.58(i)).

The use of compressed air to remove asbestos from workers' clothing is prohibited. The contractor shall specify the type of change room, wash facilities and laundering facilities as applicable.

(5) Airborne asbestos monitoring: (29 CFR 1926.58(f)). Specify the monitoring and analytical procedures to be used prior to, during, and after completion of contract in areas where asbestos containing materials are located. All asbestos monitoring shall be conducted under the guidance of an industrial hygienist certified by the American board of Industrial Hygiene. Samples shall be analyzed by an American Industrial Hygiene Association (AIHA) accredited laboratory proficient in the analysis of asbestos and asbestos containing materials. Turn around time from end of sampling period to review of results of analyses by Contractor shall be no longer than 72 hours.

(6) Housekeeping: (29 CFR 1926.58(l)). Dry sweeping of contract work areas contaminated with asbestos containing material is prohibited. The Contractor shall specify methods and materials used to package asbestos containing waste and plan to control any accidental airborne release or spill of asbestos containing material.

(7) Methods of Compliance: (29 CFR 1926.58(g)). Contractor shall include procedures relating to engineering controls, local exhaust ventilation, particular tools to be used and work practices (1926.58(g)). Specify methods, materials and equipment to be used to prevent asbestos contamination to property, materials, supplies, equipment and the internal and external environment during maintenance, renovation or other contract

activities. Local exhaust ventilation equipment including power operated tools equipped with local exhaust ventilation shall conform with the Standard Fundamentals Governing the Design and operation of Local Exhaust Systems ANSI Z9.2 latest revised edition. Describe the type of high-efficiency filtered (HEPA) vacuum cleaners that shall be used to vacuum asbestos containing materials. Describe methods and materials to be used to assure all asbestos containing material will be thoroughly wetted by use of a wetting agent and water before removal and that airborne asbestos dust will be kept to a minimum.

(8) Methods and materials to be used to decontaminate any property, materials, supplies, equipment and the environment if asbestos contamination results. (29 CFR 1926.58(g)).

(9) Recordkeeping procedures. (29 CFR 1926.58(n) and 1910.20).

(10) Specific description of type of packaging, marking and shipping conveyances to be used to transport asbestos containing waste from the generation point to a storage or disposal facility in compliance with Department of Transportation requirements. (49 CFR 172.101, 172.200-204, 176.316, 173-1090).

(11) Emergency procedures that would be taken if an accident or spill of asbestos containing materials occurs during the transport of asbestos containing waste. (40 CFR 61.140-61.156).

(12) Methods and equipment used to off load and bury asbestos containing waste to control airborne emissions at the burial site. (40 CFR 61.140-61.156).

(g) The Contractor shall complete and return to the Contracting Officer or his/her designated representative within 15 working days after the completion of all airborne asbestos monitoring conducted under this contract, a "Summarization of Airborne Asbestos Sampling Results" form provided by the Government (see Attachment 1). NOTE: This completed summarization form is to be used by the US Army Corps of Engineers for statistical information purposes and does not relieve the contractor from his recordkeeping requirements as described in 29 CFR 1926.58(n) and 1910.20.

(End of Clause)

1.28 RESPONSIBILITY FOR BORROW AREA ACCESS ROAD

Borrow pit locations are shown on the plans. The Contractor shall construct and maintain any access roads required to the pit and when directed by the Contracting Officer or his/her designated representative, obliterate same. No separate payments will be made for construction, maintenance or obliteration of any access roads to, or haul roads from, the pits. All cost shall be included in cost of material removed from the pit and acceptably placed in the project.

(End of Clause)

1.29 CONTRACT AREA AND TRESPASSING

Property owners have signed easements which will allow the Contractor to enter and perform the work required by these specifications upon all land lying within the right-of-way limits shown on the drawings. The Contractor's operation shall be confined solely to those areas for which

permission has been granted by the owners to enter. The Contractor shall cut only such timber as may be necessary for the prosecution of the work. The Contractor shall not inflict damage upon land outside the contract area by unwarranted entry upon, passage through, or disposal of material on such land. The Contractor may make a separate agreement with any other party, regarding the use of, or right to, lands or facilities outside the contract area. If such an agreement is made, it shall be in writing and a copy shall be furnished the Contracting Officer or his/her designated representative. The Contractor shall hold and save the Government, its officers, and agents free from liability of any nature or kind arising from any trespassing or damage occasioned by his operations.

(End of Clause)

1.30 COORDINATION WITH OTHER CONTRACTORS

Other Contractors may be working in the vicinity during the time period of this contract. The Contractor shall coordinate the contract operations with other Contractors in the area as needed to avoid conflicts and delays.

(End of Clause)

1.31 CONTRACT DRAWINGS AND SPECIFICATIONS (AUG 2000)

(a) The Government will provide to the Contractor, without charge, 2 CDs and two (2) sets of full-size contract drawings, one (1) set of half size contract drawings and three sets of contract specifications, except publications incorporated into the technical provisions by reference, in electronic or paper media as chosen by the Contracting Officer or his/her designated representative.

(b) The Contractor shall-

- (1) Check all drawings furnished immediately upon receipt;
- (2) Compare all drawings and verify the figures before laying out the work;
- (3) Promptly notify the Contracting Officer or his/her designated representative of any discrepancies;
- (4) Be responsible for any errors that might have been avoided by complying with this paragraph (b); and
- (5) Reproduce and print contract drawings and specifications as needed.

(c) In general--

- (1) Large-scale drawings shall govern small-scale drawings; and
- (2) The Contractor shall follow figures marked on drawings in preference to scale measurements.

(d) Omissions from the drawings or specifications or the misdescription of details of work that are manifestly necessary to carry out the intent of the drawings and specifications, or that are

customarily performed, shall not relieve the Contractor from performing such omitted or misdescribed details of the work. The Contractor shall perform such details as if fully and correctly set forth and described in the drawings and specifications.

(e) The work shall conform to the specifications and the contract drawings identified in the drawings Index of Drawings.

(End of clause)

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

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SECTION 01 11 00

SUMMARY OF WORK
08/11

PART 1 GENERAL

1.1 REFERENCES

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

AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS (ASHRAE)

ASHRAE 189.1 (2014; ERTA 1-2 2015; ERTA 3-4 2017)
Standard for the Design of
High-Performance Green Buildings Except
Low-Rise Residential Buildings

ASHRAE Guideline 0 (2013) The Commissioning Process

ASHRAE Guideline 1.1 (2007) HVAC&R Technical Requirements for
The Commissioning Process

ASTM INTERNATIONAL (ASTM)

ASTM E2114 (2008) Standard Terminology for
Sustainability Relative to the Performance
of Buildings

INTERNATIONAL CODE COUNCIL (ICC)

ICC IBC (2018) International Building Code

U.S. ARMY CORPS OF ENGINEERS SAVANNAH DISTRICT (CESAS)

Ft. Bragg IDG Fort Bragg Installation Design Guide

SAS Des Manl (2015) Savannah District Design Manual for
Military Construction

U.S. DEPARTMENT OF DEFENSE (DOD)

UFC 1-200-01 (2016) General Building Requirements

UFC 1-200-02 (2016, with Change 1) High Performance and
Sustainable Building Requirements

UFC 3-101-01 (2011; with Change 3) Architecture

U.S. GREEN BUILDING COUNCIL (USGBC)

LEED NC (v4) Leadership in Energy and
Environmental Design(tm) New Construction
Rating System

1.2 DEFINITIONS

Definitions pertaining to sustainable development are as defined in [ASTM E2114](#), Section 01 57 19 TEMPORARY ENVIRONMENTAL CONTROLS, and this Section.

a. "Environmentally preferable products" have a lesser or reduced effect on the environment in comparison to conventional products and services. This comparison may consider raw materials acquisition, production, manufacturing, packaging, distribution, reuse, operation, maintenance, or disposal of the product.

b. "Indoor environmental quality" is the physical characteristics of the building interior that impact occupants, including air quality, illumination, acoustics, occupant control, thermal comfort, daylighting, and views.

c. "Operational performance" is the functional behavior of the building as a whole or of the building components.

d. "Sustainability" is the balance of environmental, economic, and societal considerations.

1.3 WORK COVERED BY CONTRACT DOCUMENTS

1.3.1 Project Description

a. The work consists of the design and construction of a Special Operations Forces (SOF) Large Human Performance Training Center (HPTC) for the 3rd Special Forces Group (Airborne) (3rd SGF (A)) and 95th Civil Affairs Brigade (Airborne) (95th CAB (A)). This project type is to provide facilities to support HPTC missions and functions and also incorporates the latest training and rehabilitation protocols to increase combat performance, prevent injuries, and decrease recovery time of Army Special Operations Forces. Total authorized operators in unit or geographic area is 1500 personnel, assume 12 percent of personnel are female unless otherwise indicated.

b. The project will include SOF HPTC for 3rd SGF(A) and 95th CAB(A)units (Joint Use). The maximum allowable gross square footage for each item included in the project is:

HPTC size: SOF Two-Story Large

The maximum gross area for this facility is limited to 57,050 square feet (sf)calculated in accordance with UFC 3-101-01.

Privately Owned Vehicle (POV) Parking is required.

c. Base Bid Design shall include the complete designs for the Furniture, Fixtures, and Equipment (FF&E), Audio Video (AV), and Electronic Security System (ESS) necessary to support the HPTC building. These designs shall include, but are not limited to, all required building infrastructure, detailed equipment lists, and equipment wiring diagrams required to support optional bid item specific requirements found in various technical sections of this Request for Proposal.

d. Provide the site design and construction within the HPTC limits of construction necessary to support the new building facilities. Supporting

facilities include, but are not limited to, utilities, communications, electric service, exterior and security lighting, fire protection and alarm systems, security fencing and gates, water, gas, sewer, oil water separators, storm drainage, and site improvements. Provide accessibility for individuals with disabilities. Include Antiterrorism/Force Protection measures in the facility design in accordance with applicable criteria.

e. Approximate area available for this facility is shown on the Drawings.

f. Project will also include, as Optional Bid Item, the demolition of existing building E-4128. Total square footage to be demolished is approximately 7,000 square feet. This building will be operational and occupied during construction. This Option will have a separate period of performance if exercised. The Option can be exercised prior to Final Acceptance of the base building. The Notice to Proceed for demolition will be provided no later than 180 days after Final Acceptance. The Period of Performance for this Option will be 60 days after NTP. E-4128 is outside the SOF HPTC limits of construction, reference RFP Drawings for location. Preliminary Asbestos Survey Reports for Demolition are included at Appendix U.

1.3.2 Design Requirements

Design shall be in accordance with the ICC IBC as adopted and modified by the Unified Facilities Criteria, UFC 1-200-01, SAS Des Manl, referenced design standards, Ft. Bragg IDG, and applicable industry codes for the particular material involved. In the event of conflict, consult the COR for guidance.

Design shall be in accordance with UFC 1-200-02. Specific requirements found in various technical sections of this Request for Proposal are not intended to preclude the Contractor from complying with UFC 1-200-02, other than the requirements for realignment of the facilities on the site plan and major revision to the exterior fenestration to achieve daylighting by sidelighting. Provide, as part of the Request for Proposal response, ASHRAE 189.1 Compliance Forms to demonstrate which requirements will be met by the proposal.

1.3.3 Location

The work shall be located at Yarborough Complex (old ammunitions Supply Point), Ft. Bragg, NC. Refer to RFP Drawings for location. Adhere to site plans provided in RFP other than to make revisions to meet applicable codes and project criteria, subject to Government approval.

1.3.4 Accessibility Requirements

The HPTC building shall be handicapped accessible.

1.4 BUILDING AREAS

a. GROSS AREA: Gross areas of facilities shall be computed according to UFC 3-101-01. Maximum gross area limits indicated in Paragraph "Project Description", above, may not be exceeded. A smaller overall gross area is permissible if all established net area program requirements are met.

For compliance with the National Fire Protection Association (NFPA) 101, calculate areas in accordance with the requirements of NFPA 101.

For compliance with International Building Code (IBC) calculate areas in accordance with the requirements of (IBC).

b. NET AREA: Minimum net area requirements for functional spaces shall not be less than those indicated in the RFP Drawings. If net area requirements are not indicated, the space shall be sized to accommodate the required function, comply with code requirements, and comply with overall gross area limitations (e.g., area requirements for corridors, stairs, and mechanical rooms will typically be left to the discretion of the Designer of Record (DOR)).

1.4.1 Human Performance Training Center (HPTC)

a. The HPTC is composed of the following types of functional areas: Strength and Conditioning, Hydrotherapy, Sports Medicine, Multipurpose Space, and Administrative Areas. Refer to the Drawings for all required functional and operational spaces and required adjacencies. Core area eave heights shall be determined by building components and systems. Two-story multi-purpose area eave height shall be determined by building systems, components, overhead door clearances, and shall not be less than the height indicated on the RFP drawings.

b. HPTC first floor open areas will be designed to accommodate the use of a government furnished 4000 lb capacity electric fork-lift. Forklift is not stationed or stored at this facility.

1.5 PROJECT ENVIRONMENTAL GOALS

Distribute copies of the Environmental Goals to each subcontractor. Submit the same information to Contracting Officer for approval prior to inclusion in Environmental Protection Plan. The overall goal for design, construction, and operation is to produce a building that meets the functional program needs and incorporates the principles of sustainability. Environmental goals include:

a. Preserve and restore the site ecosystem and biodiversity; avoid site degradation and erosion. Minimize offsite environmental impact.

b. Use the minimum amount of energy, water, and materials feasible to meet the design intent. Select energy and water efficient equipment and strategies.

c. Use environmentally preferable products and decrease toxicity level of materials used.

d. Use renewable energy and material resources.

e. Optimize operational performance (through commissioning efforts) in order to ensure energy efficient equipment operates as intended. Consider the durability, maintainability, and flexibility of building systems.

f. Manage construction site and storage of materials to ensure no negative impact on the indoor environmental quality.

1.5.1 LEED Silver Rating

Complete the project in compliance with LEED NC, level silver requirements. Contractor is not required to pay registration or

certification fees to obtain independent verification through USGBC, but shall provide the documentation necessary to verify compliance. See Sections 01 33 16 DESIGN DATA (DESIGN AFTER AWARD) and 01 33 29.10 LEED (TM) DOCUMENTATION for additional information.

1.5.2 EPA Energy Performance Rating

Provide work consistent to meet Energy Star requirements.

1.6 COMMISSIONING

The Government will retain the services of a commissioning agent, at the beginning of the design process, to perform complete, detailed commissioning services including system startup services, control of shop drawings, and operation and maintenance training, documentation, and manuals, as required to meet LEED certification. Systems and equipment including controls (HVAC and lighting) shall be commissioned in accordance with ASHRAE Guideline 1.1. The Commissioning Authority as described in ASHRAE Guideline 1.1 shall be certified as a Commissioning Authority by AABC, NEBB, or TABB. The Commissioning Agent shall not be hired by the Contractor but shall be a third party in accordance with LEED requirements. The Contracting Officer will act as the Government's representative in performance of duties spelled out under OWNER in Annex F of ASHRAE Guideline 0 -2005. The Commissioning agent shall also provide enhanced commissioning of systems, to meet LEED requirements. UFGS Section 01 91 00.15 TOTAL BUILDING COMMISSIONING shall be edited as applicable by the Designer of Record during design.

1.7 EXISTING WORK

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

- a. Remove or alter existing work in a manner that prevents injury and damage to the portions of the existing work which remain.
- b. Repair or replace portions of existing work which have been altered during construction operations to match existing or adjoining work, as approved by the Contracting Officer. At the completion of operations, existing work shall be in a condition equal to or better than that which existed before new work started.

1.8 LOCATION OF UNDERGROUND UTILITIES

- a. Obtain digging permits prior to start of excavation by calling in a DPW Service order at 910-396-0325, 30 calendar days in advance. Contracting Officer shall also be notified at least 15 days prior to starting excavation work.
- b. Scan the construction site with electromagnetic or sonic equipment, and mark the surface of the ground or paved surface where existing underground utilities are discovered.
- c. Verify the elevations of existing piping, utilities, and underground or encased obstructions indicated or discovered during scanning in locations to be traversed by piping, ducts, and other work to be conducted or installed.
- d. Verify elevations before installing new work closer than nearest manhole

or other structure at which an adjustment in grade can be made.

e. See Section 01 11 00.01 SITE, CIVIL, UTILITIES, AND LANDSCAPING SUMMARY OF WORK for additional information. Permits shall be added to submittal register.

1.9 GOVERNMENT-PROVIDED WORK

If the bid options are not exercised the Government will provide the items described in the Furniture, Fixtures, and Equipment (FF&E) package, Audio Video (AV) package, Electronic Security System (ESS) Package, and Section 01 33 16 DESIGN DATA (DESIGN AFTER AWARD), Attachment B. The Government will provide these as separate follow on contracts utilizing the Contractor's prepared FF&E, AV, and ESS design packages as required in the base bid. In addition, the permits shall be added to project schedule indicating permit drafting, date received by approving authority, date approved, and date submitted to Government. Permits shall be available for the initial phase inspection and maintained on-site in a 3-ring binder for inspection by local, state, and federal agencies.

1.10 TREE HARVESTING

Mark the trees to be removed within the limits of construction; the Government may harvest the trees and remove them within 60 days after marking. After the 60 days, remove tree waste left on the ground and stumps. If the Government elects not to harvest trees, tree removal shall be the responsibility of the Contractor.

1.11 IDENTIFICATION OF EMPLOYEES

Provide to each employee and require each employee engaged on the work site to display identification as approved and directed by the Contracting Officer. Deliver prescribed identification to the Contracting Officer for cancellation upon release of employees. When required, obtain and provide fingerprints of persons employed on the project. Personnel shall wear identifying markings on hard hats to clearly identify the company for whom the employee works.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

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- 1.13 STORM DRAINAGE SYSTEM
 - 1.13.1 Storm Water Management & Erosion Control
 - 1.13.2 Layout
 - 1.13.3 Hardstands

- 1.13.4 Culverts
- 1.13.5 Sizing of Inlets
- 1.13.6 Sizing of Pipes
- 1.13.7 Roof Drainage
- 1.14 NATURAL GAS
- 1.15 PERMITS
- 1.16 DEMOLITION
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- 1.18 TERMITE TREATMENT
- 1.19 LANDSCAPING
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SECTION 01 11 00.01

SITE, CIVIL, UTILITIES, AND LANDSCAPING SUMMARY OF WORK
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PART 1 GENERAL

1.1 REFERENCES

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

ASTM INTERNATIONAL (ASTM)

- ASTM D1140 (2017) Standard Test Methods for Determining the Amount of Material Finer than 75- μ m (No. 200) Sieve in Soils by Washing
- ASTM D1556/D1556M (2015; E 2016) Standard Test Method for Density and Unit Weight of Soil in Place by Sand-Cone Method
- ASTM D1557 (2012; E 2015) Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³) (2700 kN-m/m³)
- ASTM D2216 (2010) Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass
- ASTM D422 (1963; R 2007; E 2014; E 2014) Particle-Size Analysis of Soils
- ASTM D4318 (2017) Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils

CONSUMER ELECTRONICS ASSOCIATION (CEA)

- CEA-709.1-D (2014) Control Network Protocol Specification

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (NCDOT)

- NCDOT Std Specs (2012) Standard Specifications for Roads and Structures

U.S. ARMY CORPS OF ENGINEERS (USACE)

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

U.S. ARMY CORPS OF ENGINEERS SAVANNAH DISTRICT (CESAS)

- Ft. Bragg IDG Fort Bragg Installation Design Guide

U.S. DEPARTMENT OF DEFENSE (DOD)

UFC 3-201-01	(2013) Civil Engineering
UFC 3-250-01	(2016) Pavement Design for Roads and Parking Areas
UFC 3-600-01	(2016; with Change 1) Fire Protection Engineering for Facilities
UFC 4-010-01	(2012; with Change 1) DoD Minimum Antiterrorism Standards for Buildings

U.S. FEDERAL HIGHWAY ADMINISTRATION (FHWA)

MUTCD	(2015) Manual on Uniform Traffic Control Devices
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U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

29 CFR 1910.146	Permit-required Confined Spaces
29 CFR 1926	Safety and Health Regulations for Construction

1.2 EXISTING CONDITIONS

Topographic survey data has been collected for the site and is included with the RFP drawings. This information is a combination of field work and proposed designs from adjacent projects and should be confirmed by the contractor. Validate this information and obtain additional survey information as necessary to complete the design and construction of the facility.

Coordinate with Ft Bragg DPW, Environmental for results of Ground Penetrating Radar survey in Areas of Disturbance during design process and take appropriate measures. DPW has designated the project site as Low Potential risk for discovery of Munitions and Explosive Concerns (MEC).

1.3 SITE DESCRIPTION

The SOF HTPC shall be located South of Eagle Talon Drive, East of the proposed parking lot of the headquarters building, West of parking lot of PN 79454, and North of the proposed headquarters building in the Yarborough Complex development.

The site is is approximately 6 feet higher in elevation than the existing parking lot to the east and level with Eagle Talon to the north. The site is currently vegetated with a gravel road down the middle dividing the drainage to the east and west. There are approximate 5 acres within the site. The Contractor shall adhere to the site plans provided in this RFP. This site layout provides a conceptual solution for the site development which shall comply will all applicable local and national codes as well as UFC and Fort Bragg requirements. Verify the applicable codes, and make revisions to the layout as needed to meet applicable code and criteria subject to Government approval. Provide the necessary site improvements within the limits of construction to support the new buildings and facilities.

1.4 GENERAL SITE DESIGN REQUIREMENTS

Site, civil, utilities and landscaping design shall conform to the requirements of Section 01 33 16 DESIGN DATA (DESIGN AFTER AWARD), the Army Corps of Engineers Architectural and Engineering Instructions Manual, the Fort Bragg Installation Design Guide, Savannah District Design Manual for Military Construction and the publications and UFGS Guide specifications referenced herein. In the case of conflict, the most stringent criteria shall apply.

1.5 SITE FEATURES

1.5.1 Access Drives, Hardstand Parking and Bicycle Parking

a. Geometric design shall conform to the Unified Facilities Criteria (UFC) and Fort Bragg Installation Design Guide. Access drives shall provide service to the trash enclosure, building utility rooms and other building access points as required.

b. Contractor shall stripe the vehicle parking spaces. The layout and configuration is shown on the layout drawings.

c. Design emergency vehicle access with NFPA, UFC 3-600-01, and as required by the Installation (Fort Bragg Fire Dept. is AHJ). The rear service/fire access drive shall have access control in accordance with UFC 4-010-01.

d. The minimum radii for roadway connections shall be 45 feet.

1.5.2 Vehicle Circulation

Apply design vehicle templates provided by the American Association of State Highway and Transportation Officials (AASHTO) to the site design. Provide vehicle clearances required to meet traffic safety for emergency vehicles, service vehicles, and moving vans. Provide required traffic control signage, including restricted access signage.

1.5.3 Curbing

Provide curbing around hardstand as needed to control runoff.

1.5.4 Trash Enclosure

The trash enclosure shall be sized for one standard dumpster and one standard dumpster for cardboard recycling bin. The enclosure shall be constructed to compliment the building architecture and comply with the Installation Design Guide. The trash enclosure shall be located in accordance with UFC 4-010-01.

A concrete pad shall be provided for the enclosures and shall be a minimum 8 inches thick on 4-inch base course and 24 feet wide by 20 feet deep. It shall be designed to accommodate a front loading refuse truck. A 6-foot high masonry screen wall to enclose the dumpster shall be provided with additional planting to soften its overall impact. Bollards shall be provided to protect the exterior enclosure walls from vehicles and guard rails or bollards shall be provided to protect the interior walls from the dumpsters. Exposed areas of dumpster enclosure interior wall shall be

painted mission brown.

1.5.5 Bollards

a. Provide bollards 8-inch diameter by 5-foot high, concrete-filled, schedule 80 galvanized steel pipe bollards, 4-foot O.C. spacing, painted mission brown and located no further than 5 feet from the edge of the post indicator valves, above ground backflow devices, electrical, mechanical equipment and located no further than 5 feet from the edge of containment wall around perimeter of above-ground tank areas. Bollards may be placed greater than 4 feet O.C. but no greater than 10 feet O.C. spacing if portion of structure being protected is not high volume traffic area.

b. Bollards shall not be fastened directly to column footings.

1.5.6 Vehicle Crash Barriers

a. Locate vehicle crash barrier at the firetruck/maintenance access drive in accordance with UFC 4-010-01.

b. The vehicular crash barriers shall be a swing gate pad lockable in the open and closed position and meet the minimum crash certification of K1.1/L3. Swing gate surface shall have rust inhibiting painted surface and shall be furnished with 4-inch wide reflective tape spaced at every 20 inches.

c. Provide an Installation-approved Knox Locks at manual gates and vehicle barriers.

d. The swing gate shall be weighted for ease of lifting by a single person.

e. The use of removable, bollards-type barriers is not allowed. Locate the AT/FP measures in accordance with the applicable criteria.

1.5.7 Sidewalks

Pedestrian sidewalks shall be included for the proposed facility. Sidewalks shall connect the parking lot to the facility entrance and the delivery drives to the storage rooms. Additional sidewalks shall be provided as required for personnel flow to and from the facility. Design of pedestrian walks shall be in compliance with the UFC and Ft. Bragg IDG. Walks subject to use by the physically handicapped shall meet the requirements of the Uniform Federal Accessibility Standards. Walks shall be constructed of concrete unless otherwise directed. Sidewalks shall be a minimum of 6 feet wide and 4 inches thick unless otherwise noted on the Drawings. Provide pedestrian crossing stripping at all drives and crossings within the parking area.

1.5.8 Anti-Terrorism Force Protection (ATFP)

The SOF HPTC has been determined to be a Primary Gathering facility per UFC 4-010-01. The facility shall be located and designed in accordance with UFC 4-010-01 for a controlled perimeter.

1.6 GRADING

Limit cut and fill slopes to no steeper than 3 horizontal to 1 vertical. Retaining or segmented walls are an option to limit the cut and fill. These slopes include the borrow pit.

1.6.1 Finished Floor Elevations

The building's finished floor elevation shall be established by the Designer of Record and shall be set at a minimum of 5 feet above the 100-year flood elevation and a minimum of 8 inches above the highest point of the adjacent outside finished grade. Exterior grading shall be sloped away from the building a minimum of 5 percent for the first 10 feet.

1.6.2 Roads, Streets, Access Drives and Parking Lots

Gradients for access drives shall be designed in accordance with UFC 3-250-01. Gradients for the parking lots and other areas adjacent to the new facility shall be in accordance with UFC 3-201-01.

1.6.3 Finish Grade Contours and Spot Elevations

Finish grade contours shall be developed at 1-foot intervals. Spot elevations shall be provided such that all site features can be constructed. Spot elevations on the drawings shall be sufficient so that interpolation between contours is not required for structures, grading or paved areas. Examples are: corners of paved areas, low points, high points, flow lines of swells or ditches, changes in degree of slope and grading at corners of buildings to ensure positive drainage away from the building. The use of cut or fill symbols in lieu of finish grade contours is not permitted.

1.7 EARTHWORK

The Savannah District Guide shall be referenced when developing Specification Section 31 00 00 EARTHWORK.

1.7.1 Subsurface Report

A Preliminary Subsurface Exploration and Geotechnical Engineering Report has been prepared by the government to characterize the subsurface conditions at the project site and is appended to these specifications as Appendix A. The report provides a general overview of the soil and geologic conditions with detailed descriptions at discrete boring locations. The Contractor's team shall include a licensed geotechnical engineer to interpret the report and to develop earthwork and foundation recommendations and design parameters on which to base the contractor's design. If any additional subsurface investigations or laboratory analyses are required to better characterize the site or develop the final design, they shall be performed by the Contractor under the direction of a licensed geotechnical engineer at no additional cost to the Government. If differences between the Contractor's additional subsurface investigation(s) and the appended soils report provided by the Government and/or the reasonably expected soil conditions require material revisions in the design, an equitable adjustment may be made in accordance with the provisions of the Differing Site Conditions clause. The basis for the adjustment would be the design and construction appropriate for the conditions described in the Government-furnished report or the reasonably expected conditions, in comparison with any changes required by material differences in the actual conditions encountered, in accordance with the terms of contract clause "Differing Site Conditions".

1.7.2 Unexploded Ordnance

DPW has designated the project site as Low Potential risk for discovery of Munitions and Explosive Concerns (MEC). The Contractor may encounter these during earthwork activities, and is required to have the support of an Ordnance & Explosive Safety Specialist (OESS). Coordinate with the US Army Corps of Engineers Savannah District (CESAS) for OESS construction support. Provide a minimum of 30 days notice to CESAS in coordination of OESS support.

1.7.3 Soil Compaction

Soil compaction shall be achieved by equipment approved by the consulting Geotechnical Engineer. Soil materials shall be moistened or aerated as necessary to provide the moisture content that shall readily facilitate obtaining the compaction specified with the compaction equipment used. Each layer of structural fill and sub grades shall be compacted to the following minimum percent of the modified Proctor maximum density, determined in accordance with ASTM D1557 (Modified Proctor). The licensed geotechnical engineer or their authorized representative shall inspect, evaluate and approve all subgrades (pavements, floor slab, or foundation) prior to placement of overlying construction materials.

Ensure that the licensed project design geotechnical engineer oversees and directs proof rolling operations (for subgrade suitability); fill placement and compaction operations, including associated soil properties, compaction, and field density testing; and footing inspections on a full time basis. A Corps of Engineers validated geotechnical testing firm shall inspect, test, and document earthwork construction.

Beneath structures and building slabs, to 5 feet beyond building and structure line, around footings and in trenches, top 12 inches	95 percent
Beneath structures and building slabs, to 5 feet beyond building and structure line, around footings and in trenches, except top 12 inches	92 percent
Beneath paved areas, except top 12 inches	92 percent
Beneath paved areas, top 12 inches	95 percent
Beneath shoulders	90 percent
Beneath sidewalks and grassed areas	85 percent
Base course beneath paved areas	100 percent

The requirements shall be verified or modifications recommended by the consulting professional Geotechnical Engineer wherever engineering, soils, or climatic factors indicate the necessity. Any modification to the specified compaction requirements shall require the approval of the Contracting Officer.

1.7.4 Groundwater

Ground water must be sampled for explosives using EPA Test Method 8330. Method 8330 is intended for testing for trace analysis of explosives residues by high performance liquid chromatography using a UV detector. The sample results will be part of the permit request.

1.8 CONSTRUCTION QUALITY CONTROL TESTING

a. Prior to initiating fill placement and compaction operations, representative samples of the soils which are to be used as structural fill or sub grade, both suitable on-site soils and borrow material (borrow on the installation) shall be obtained and tested to determine their classification and compaction characteristics. The samples shall be carefully selected to represent the full range of soil types to be used. The moisture content, maximum dry density, optimum moisture content, grain size and plasticity characteristics shall be determined. These tests are required to determine if the fill and sub grade soils are acceptable and for compaction quality control of the sub grades and structural fill. A minimum of 9 compaction tests shall be performed on materials classified as satisfactory for use. Tests for the soil properties shall be in accordance with the following:

Moisture Content	ASTM D2216
Maximum Dry Density and Optimum Moisture	ASTM D1557
Grain Size (Wash No. 200, w/o Hydrometer)	ASTM D422 and ASTM D1140
Plasticity	ASTM D4318

b. A representative number of in-place field density tests shall be performed in the sub grade of compacted on-site soils and in the structural fill and backfill to confirm that the required degree of compaction has been obtained. In-place density tests shall be performed in accordance with the sand cone method prescribed in ASTM D1556/D1556M; the use of nuclear gauges for density testing is not permitted. In-place density tests shall be performed in the material and at the minimum frequency specified below:

Material Type	Location of Material	Minimum Test Frequency
Fill, embankment and backfill	Beneath structures to 5-foot building line	One test per lift, per each increment or fraction of 5,000 square feet (sf)
Fill, embankment and backfill	Beneath paved areas	Once test per lift per backfill each increment or fraction of 12,500 sf

Material Type	Location of Material	Minimum Test Frequency
Fill, embankment and backfill	Areas compacted by hand-operated compaction equipment other than utility	One test per foot of depth per each increment or fraction of 250 sf, or for each 100 linear feet (lf) of long narrow (less than 3 ft wide) fills
Fill, embankment and backfill	All other areas	One test per lift per each increment or fraction of 10,000 sf
Subgrade	Under building slabs	One test per each increment or fraction of 5,000 sf
Subgrade	Under paved areas, excluding roads	One test per each increment or fraction of 12,000 sf
Subgrade	Roads	One test per each increment or fraction of 200 lf
Subgrade	Under footings	One test per every fifth column footing and for each increment or fraction of 100 lf of wall footing
Backfill	Utility trenches beneath roads and paved areas	One test per each increment or fraction of 150 lf per ft of depth of backfill
Backfill	Utility trenches beneath grassed areas	One test per each increment or fraction of 150 lf per 2 ft of depth of backfill

c. Any area that does not meet the required compaction criteria shall be reworked and retested. If the moisture content of the soil is within the recommended range, additional compaction may be all that is necessary to increase the density. If the moisture content is not within the recommended range, then, the moisture content shall be adjusted to within the range, and the area re-compacted.

d. All laboratory and field density testing shall be performed by a commercial testing laboratory which has been validated by the Engineer Research and Development Center Materials Testing Center (MTC) under the Corps of Engineers laboratory inspection and validation program. The laboratory shall be listed on the list of Corps of Engineers Validated Laboratories. <http://gsl.erdc.usace.army.mil/SL/MTC/ValidatedLabsList.htm>.

1.9 PAVEMENTS

a. A Professional Engineer (PE) licensed in the State of North Carolina, shall design all rigid pavements. The Savannah District Design Manual outlines general engineering criteria for designing pavements for facilities at military installations (<http://en.sas.usace.army.mil/enweb/httproot/ae/index.htm>).

b. Design procedures and materials shall conform to **NCDOT Std Specs**.

c. Minimum rigid pavement thickness shall be 6 inches concrete over 6 inches of aggregate base course. Pedestrian concrete sidewalk pavement thickness may be 4 inches concrete over 8 inches compacted subgrade. The pavement design thickness shall be the larger of the calculated design thickness and the minimum design thickness. Refer to Appendix A for preliminary geotechnical information that may assist in designing pavements. Rigid pavement design shall be in accordance with Pavement Transportation Computer assisted Structural Engineering (PCASE) software available at <https://transportation.wes.army.mil/pcase/>.

d. Hardstand slopes shall be between 0.5 percent and 2.0 percent. Slope hardstands away from buildings and covered hardstands.

e. Pavement designs over cohesive soil subgrades require under-drain systems. The flexible pavement design shall be larger of the calculated flexible design thickness and the minimum flexible design thickness.

1.9.1 Rigid Pavement

Design the rigid pavements to support:

- a. one fire apparatus (one 23-kip tandem axle and one 54-kip single axle) per week,
- b. one front-loading refuse truck (one 46-kip tandem axle and one 20-kip single axle) per week

Provide a concrete joint layout plan for the concrete pavements. Show joint spacing, joint types, and joint grading.

1.9.2 Flexible Pavement

Light duty flexible pavements shall be designed to support 500 (two 5 kip axles) passes per day and one fire apparatus (one 23 kip tandem axle and one 54 kip single axle) per week.

Pavement designs over cohesive soil subgrades require under-drain systems. The flexible pavement design shall be larger of the calculated flexible design thickness and the minimum flexible design thickness.

1.9.3 Pavement Marking

Pavement marking shall be designed in compliance with MUTCD and NCDOT Std Specs. Pavement markings on roads, drives, parking areas, and paved surfaces shall be reflective Thermo Plastic (Extruded) material or heated in place Thermo Plastic material in compliance with NCDOT Std Specs. The product must be on the NCDOT Qualified Products List (QPL) for asphalt surface courses. Polurea material shall be used on concrete roadways per NCDOT Std Specs and on the NCDOT approved QPL. Comply with the NCDOT time limitations for placement and replacement of pavement markings. Pavement markers shall be in conformance with MUTCD and NCDOT Std Specs. The project shall specify the use of "snow plowable" pavement markers of a type approved on the NCDOT QPL.

1.9.4 Signage

Signage shall be in compliance with MUTCD and NCDOT Std Specs. Materials must be on the NCDOT approved QPL. High Intensity Type III or greater reflective material shall be provided for the signage. Do not provide concrete footing on traffic sign posts.

1.9.5 Safety

All construction work imposing a roadway safety hazard shall be in compliance with the Fort Bragg IDG policy for Work Zone Safety and Traffic Control.

1.10 GENERAL UTILITIES

Meter the utilities (gas, water, and electric, as applicable) to each facility. Utility meters shall report their data to the base-wide Utility Monitoring and Control System (UMCS). The utility meters must provide data at least daily and measure at least hourly consumption of electricity. The means for meter data transmission will be by using [CEA-709.1-D](#) (LONWorks). Wireless is not an approved means of communication at Fort Bragg. Integrate these systems with the Installation's UMCS. The utility meters shall be compatible with and must communicate with Fort Bragg's DDC/UMCS monitoring system. Coordinate type of metering required for DDC monitoring with Energy Manager (POC: Scott Gallaher - UMCS System Manager, scott.a.gallaher@jci.com, 254-681-0354). Contact the DPW for more detailed specifications. For Government-owned utilities, provide meters that communicate with Fort Bragg monitoring systems as well as have a continuous manual reading option. All meters will be capable of at least hourly data logging and transmission and provide consumption data for gas, water, and electricity. Gas and electric meters will also provide demand readings based on consumption over a maximum of any 15 minute period. Configure all meters to transmit at least daily even if no receiver for the data is currently available at the time of project acceptance. For privatized utilities, coordinate with the privatization utility(ies) for the proper meter base and meter installation. The natural gas system is privatized. The utility provider is Piedmont Natural Gas. Piedmont will provide the gas meter/regulator under separate contract with the Government. The privatized utility provider, Old North Utility Services, Inc. (ONUS) will provide the water meter under separate contract with the Government. Provide electrical connections to the meter, under this Contract. Refer to Section [01 11 00.06](#) ELECTRICAL AND ELECTRONIC SYSTEMS SUMMARY OF WORK for electrical and electronic system requirements and work to be completed by Sandhill's Utility Service (SUS).

1.10.1 Road Crossings

Utilities crossing roads and driveways shall be installed via bore unless otherwise approved for open cut by the Contracting Officer in writing 14 calendar days prior to commencement of work. Contractor shall provide steel matting sufficient to carry traffic loading over the excavated area. Utility structures shall be designed to accommodate the traffic loadings for the area in which the structures are placed. Provide steel casing sleeves a minimum of [5 feet](#) beyond the pavement edge for utilities (sewer, water and gas) installed under existing and future roadway expansion.

1.10.2 Excavations

Excavations, trenches, open manholes, etc., shall be properly shored, braced, barricaded, or guarded. For excavations adjacent to pedestrian or vehicle thoroughfares, warning lights or other illumination devices shall be utilized and shall be maintained from sunset to sunrise.

1.10.3 Safety and Traffic Control

Contractor personnel shall not enter manholes, tunnels, tanks, and confined spaces until such entry complies with 29 CFR 1926.21, EM 385-1-1, and 29 CFR 1910.146. Government personnel will not enter manholes, tunnels, tanks, and confined spaces until a confined space entry permit has been obtained from a government representative, i.e. OC-ALC Safety Office, Bio-Environmental Engineers, or the Installation Fire Department.

Maintain traffic during construction and provide and maintain traffic control devices in accordance with project guidelines, NCDOT Std Specs, and MUTCD. Coordinate with Director of Public Works (DPW) 10 days prior to beginning work for approvals to proceed and Installation-specific policy and procedures.

1.10.4 Marktape

Every linear foot of underground metallic piping shall be identified with plastic marking tape specifying the type of pipe buried under it. Every linear foot of underground non-metallic piping shall be identified with detectable magnetic plastic tape manufactured specifically for warning and identification of underground utilities. The magnetic plastic tape shall be detectable by electronic detection instruments and shall indicate the type of pipe buried under it. The tape shall be buried 12 inches above the pipe.

Red:	Electric
Orange:	Telephone, Television, Police, and Fire Communications
Blue:	Water Systems
Green:	Sewer Systems
Yellow:	Gas, Dangerous Materials

1.10.5 Tracer Wire

In addition to the plastic marking tape, provide tracer wire for new underground utilities. Tracer wire shall be provided for all pipelines, including force mains. Tracer wire shall be provided for all electrical and communication conduits and direct buried cables. Tracer wire shall be in the trench directly above the pipe or conduit. The wire shall run continuously between and terminate at valve boxes on water and gas lines, regulator stub-ups on gas lines, sprinkler heads and valve boxes on sprinkler system lines, panel boxes on electrical lines, and other such aboveground appurtenances. Each end of the wire shall have an additional length of at least 0.6 m (2 feet) coiled up in the appurtenance. Tracer wire shall be insulated No. 12 AWG solid copper and of a type specifically manufactured for locating underground utilities. Insulation shall be solid yellow in color. Tracer wire shall be subject to approval by the Contracting Officer. Tracer wire for communications shall be provided with orange insulation in color, single strand, solid copper with minimum of 12 AWG coated with a 30 mil PE jacket for buried use and shall be located in the trench directly above the communications conduit run from the tie-in manhole to the Main NIPR TR and terminate in the Main NIPR TR.

1.10.6 Outages

Outages to tie into existing utilities and all construction work must be accomplished in such a manner to minimize the impact to existing facilities. Any utilities or equipment that needs to be relocated to construct the facility shall be accomplished in such a manner as to minimize the impact on the existing facilities.

1.10.7 Cathodic Protection

Provide cathodic protection for underground ferrous piping as required by subsurface conditions. The cathodic protection system shall be designed by a licensed professional engineer with a minimum of 3 years' experience in the design and installation of cathodic protection systems and meet NACE certification. Provide cathodic soil testing.

1.10.8 Wetlands and Stream Crossings

a. Do not enter, disturb, or allow any discharge (soil, sediment, and/or pollutants) into any wetlands.

b. Comply with all local, state, and federal laws and regulations pertaining to the protection of wetlands under the CWA Section 404/401 regulatory program and North Carolina DENR Division of Water Quality Water Certification Program.

c. If wetland impacts are unavoidable, abide by CWA Section 404 regulatory program and apply for applicable wetland permits. All wetland permit costs, delineations, and compensatory mitigation costs will be the contractor's responsibility.

d. Comply with avoidance, minimization strategies prior to approval of any wetland impact in accordance with CWA Section 404 (CWA 33 USC 1344). See CWA 401(b) Guidelines.

e. All stream crossings will avoid impacts to navigable waters and wetlands. Do not enter, disturb, destroy, or allow discharge (fill) of soil, sediment, or contaminants into the stream.

f. Comply with all local, State, and Federal laws and regulations pertaining to the protection of surface waters to include but not limited to lakes, ponds, streams, creeks, rivers, and bayous.

1.11 WATER UTILITIES

ONUS is responsible for permitting, designing, and installing water service lines up to a distance of 5 feet outside the buildings with design flow information provided by this Contractor. Provide remaining service line. The Contractor is responsible for costs associated with connecting to the water service lines provided by ONUS. Coordinate with ONUS Project Manager (910-495-1311 x109) regarding design and installation of water service. Verify the locations of existing utilities and tie-in locations. Provide ONUS with the locations of the fire hydrants and necessary fire water lines for the site development to meet codes. One hydrant shall be located within 150 linear feet of Fire Department connection provided by contractor. ONUS will provide the hydrants and mains for site development. The Contractor is responsible for the coordination with ONUS's utility design and is also responsible for resolving any and all conflicts.

a. Provide concrete-filled steel bollards around the hydrants, post indicator valves, and backflow hot boxes for protection from vehicles.

b. Domestic water and fire protection water will enter the buildings independently. For domestic water, ONUS will provide a meter and backflow preventer in hot box outside of building. For fire protection, ONUS will provide a post indicator valve (PIV) and backflow preventer (BFP) in hot

box. See site plan for locations.

c. ONUS will provide the tamper switches for each backflow preventer unit. Contractor shall provide electrical power to each exterior heated enclosure and also controls conduit for the PIV and/or meters location in the enclosure to the final endpoint locations in the buildings. The Contractor will be responsible for alarm connection and set-up, including all conduit, wiring, etc. Contractor to provide a dedicated 20 Amp, 120 Volt, GFCI weatherproof receptacle and heat trace wire for each enclosure and all necessary conduit, wiring and appurtenances to keep the backflow devices from freezing. The circuit for the tamper switch for the PIV: Conduit, wiring, appurtenances and installation are provided by the DB Contractor. ONUS will provide tamper switches for each RPZ unit. Contractor will be responsible for alarm connection and set-up, including all conduit, wiring, etc.

d. Use of existing fire hydrants and new hydrants prior to turn-over of Facility for temporary construction water is not allowed. Coordinate with Contracting Officer Representative for use of non-potable water point off of Butner Road. The use of fire hydrants is prohibited without a permit. In order to request consideration for a permit, contact Eric Torres (eric.m.torres24.ctr@mail.mil, 910-432-8450).

e. Design and construction shall be subject to the approval of the installation and ONUS. The facility fire water loop shall be supplied from the domestic water system and will support the fire hydrants and the fire suppression system for the building. One Fire Department Connection (FDC) is required for each of the buildings.

f. Hydrant flow tests have not been performed, since utility infrastructure has not yet been installed in this area. Static water line pressures are anticipated to be greater than 80 psi and to require pressure-reducing valves on domestic service lines. After award of Contract, coordinate with ONUS for a new flow test to verify capacity of the existing system and for sizing of building systems. For bidding purposes, assume that a fire pump will not be required for the project. See Section 01 11 00.04 MECHANICAL AND PLUMBING SUMMARY OF WORK for additional criteria.

1.12 SANITARY SEWER SYSTEMS

Field-verify the location of the existing sanitary sewer lines. The sanitary sewer system shall connect to the nearest gravity sewer line to the facility as indicated by ONUS. ONUS is responsible for permitting, designing, and installing sanitary sewer service lines up to 10 feet outside the buildings with design flow information provided by this Contractor. The Contractor shall provide remaining service lines. The Contractor is responsible for costs associated with connecting to the sewer service lines provided by ONUS. Coordinate with the ONUS Project Manager Jimmy Coats (910-495-1311 x109), regarding design and installation of sanitary service (paid by Government). Verify the location of existing utilities and tie-in locations. The Contractor is responsible for the coordination with ONUS's utility design and is also responsible for resolving any and all conflicts.

a. All sanitary sewer system materials shall comply with ONUS specifications. Unless otherwise required by ONUS, the minimum size pipe provided shall be 6 inches for building connections and 8 inches for all other sewers. Adequate manholes and clean-outs shall be provided for maintainability.

b. Use of existing or new sanitary sewer system prior to turn-over of Facility for temporary construction is not allowed.

c. The Contractor is responsible for the connections required for tying into ONUS sanitary sewer system.

1.13 STORM DRAINAGE SYSTEM

1.13.1 Storm Water Management & Erosion Control

a. The Contractor shall evaluate the flow of stormwater runoff to and from the site and ensure that the flow of water will be properly moved from the site to the stormwater sewer system. All new facilities shall be designed so that the finished floor elevation (FFE) is a minimum of 5 feet above the 100-year flood elevation. Rainfall intensity shall be based on local intensity-duration-frequency data. The Contractor shall analyze the effects of additional runoff before tying into an existing system at any particular location. If additional runoff is generated, sufficient precautions, such as detention ponds, shall be constructed to prevent the additional runoff from increasing the flood potential downstream. A detention basin may be required to contain the difference between the pre-development and the post-development water sheds.

b. All storm water design shall follow the North Carolina Stormwater Best Management Practices Manual. This can be located at <http://portal.ncdenr.org/web/wq/ws/su/bmp-manual>. The state storm water permit for this project falls under the NCDENR "High Density Projects" for post construction phase II requirements.

c. The erosion and sediment control shall follow the North Carolina Department of Environmental and Natural Resources (NCDENR) "Erosion and Sediment Control Planning and Design Manual", latest edition. Erosion control must comply with all the requirements set forth in the Fort Bragg "Installation Design Guide". The Erosion Control Package will be per state requirements. The Contractor will submit an Erosion Control Package for approval by the NCDENR prior to construction that meets all State and local requirements and will obtain Erosion Control Permits for all construction in this project. Any violation to such permits will result in the immediate shutdown of work until corrective measures have been taken at the Contractor's expense. The Contractor will implement any additional erosion and sediment control measures necessary to retain sediment within the boundaries of the project sites during all phases of construction. The erosion and sediment controls will be inspected by the Contractor daily and after periods of rain and repaired where needed. The Contractor will remove accumulated silt periodically. Coordinate the new construction activities and erosion control measures with the adjacent facilities and erosion control measures.

d. The Fort Bragg Water Management Branch must approve sediment and erosion control plans prior to submittal to the North Carolina Department of Environment and Natural Resources (NCDENR). Sediment and Erosion control plans must bear the Fort Bragg Storm Water Management Branch stamp prior to acceptance by NCDENR. Both agencies will review the plan(s) to ensure that all measures to retain sediment on the site during construction and all measures to prevent erosion after construction have been designed into the construction drawings. Agencies will review sediment control measures such as silt fence, temporary sediment traps, and construction entrances/exits

for the proper sizing and installation.

e. Prior to any revision or deviation from the approved set of Sediment and Erosion control plans, submit new plans to Fort Bragg Storm Water Management Branch for approval prior to submission to NCDENR following the same process as outlined above.

f. In addition to NCDENR requirements, design the permanent measures to keep the post construction rate of storm water discharge for the 10 year, 24 hour storm at or below the pre- developed discharge rate. Storm water basins of BMP's as selected shall not overtop from a 100 year, 24 hour storm. Design the permanent storm water measures to accommodate the 100 year, 24 hour storm without significant flooding or damage to the stormwater system and facilities/improvements in the surrounding area. All storm drainage piping systems shall be designed to the 10-year storm, Rational Method.

g. This project is subject to Section 438 of the Energy Independence and Security Act (EISA) of 2007. The Fort Bragg 95th percentile storm is 1.8 inches in 24 hours.

h. Calculate the pre-developed discharge rate and quantity of discharge as if the site was completely undeveloped forest land. See Appendix W for entire Yarborough Complex hydrology analysis.

i. Do not use the following structural storm water management measures without prior approval of the Fort Bragg Water Management Branch, Directorate of Public Works: permeable/pervious pavements, green roofs, subsurface infiltration chambers, curb inlets and sand filters.

j. All pond type trash racks shall be solid walled, anti-vortex devices. Bar-type trash racks are unacceptable.

k. All ponds shall be provided a gravel access road.

l. The Contractor shall be responsible for all necessary stormwater management and erosion control permits and fees. The Contractor shall follow Fort Bragg Erosion Control policy and submittal procedure. Refer to Appendices B "SOCOM Resident Office Erosion And Sediment Control Policies" and C " Environmental" for Corps of Engineers SAS Fort Bragg Area Office Erosion and Sediment Control Policies and Responsibilities.

m. The existing storm water from this site is going through an existing pond to the southeast. Pond was sized for a proposed development of the site but was not sized for this development. Appendix W has the calculation done by the Timmons Group for the Yarborough Complex. The contractor shall determine that ponds installed under the Yarborough Complex infrastructure project is not over loaded during any flow condition required by the state of North Carolina.

n. In addition to the Erosion Control Permit, the Contractor shall submit to the state of North Carolina the Water Quality Permit.

1.13.2 Layout

The drainage system layout shall be designed to best meet the operational requirements of the facility. The system shall be as economical as practicable, taking into consideration topography, ultimate development of drainage area, possible future extension, outfall locations, and

coordination with existing drainage systems and other existing or future underground utilities.

The storm water management facilities shall be sited around the facility, inside the parking areas, as well as in the front of the facility. The facility lies within the cantonment, therefore parking islands will be landscaped allowing for additional infiltration. The Contractor shall site the facilities such that they have minimal impact on the existing utilities.

1.13.3 Hardstands

Design hardstands to avoid ponding in any given area. Runoff shall sheet flow into drainage structures such that it does not affect circulation throughout the area.

1.13.4 Culverts

The preferred gradient of culverts shall be 0.5 percent with an absolute minimum of 0.3 percent. Concrete headwalls or end sections will be provided for all culverts. Culverts shall be designed in accordance with [UFC 3-201-01](#).

1.13.5 Sizing of Inlets

The design of surface inlets shall be in accordance with [UFC 3-201-01](#).

1.13.6 Sizing of Pipes

The sizing of the storm water pipes shall be in accordance with [UFC 3-201-01](#).

1.13.7 Roof Drainage

Storm water shall be discharged from downspouts and tied into the underground storm system.

1.14 NATURAL GAS

Natural gas distribution is privatized, and the utility provider is Piedmont Natural Gas (PNG). The Contractor is responsible for the coordination of gas distribution work required to serve the buildings. The Contractor shall coordinate with, and procure the services of PNG and incur their costs to design, tie-in, furnish and install exterior gas distribution up to each building, and including the meter/regulator set assembly. The Contractor is responsible for the coordination with PNG's utility design and is also responsible for resolving any and all conflicts. PNG is not responsible for gas piping system downstream of the meter set assembly or within the facility. The meter/regulator set assembly will be considered as the point of demarcation for gas distribution. PNG will design and install the gas distribution in accordance with their gas specifications (Natural Gas Utility System Pipeline Specifications), which is located in Appendix N. The Contractor is responsible for coordinating gas utility information and design features (e.g. location, size, orientation, etc.) with PNG. The Contractor is required to coordinate the required location of the new gas service and meter-set assembly with PNG. The Contractor shall show the location of the meter set assembly on the drawings, and indicate that the installation is by PNG. Gas meter shall be connected to the UMCS Energy Monitoring System (EMS). The Contractor will be responsible for tie-in to the new gas meter/pressure regulator assembly and provide all downstream piping and other materials required to install a

complete and functioning gas system for each building/facility. All utility connections shall be coordinated through Base DPW (see point of contacts below) and with PNG. The Contractor shall give prior notification (minimum of 30 days) to the Contracting Officer's Representative before any utility connection is performed or required. A gas site plan drawing (MS100) is provided that shows a "proposed" routing that PNG may possibly utilize to provide gas service to each of the buildings.

Determine the preferred location of the gas service entrance, and provide building heating loads (including the meter outlet pressure) to PNG for their use in the evaluation of gas supply requirements to each building. Determine the total BTU demand and gas pressure requirements of the building. Provide the required meter outlet pressure to serve the building to PNG.

Coordinate with PNG to determine and share the following information concerning the service lines:

Estimated overall building heating loads
Location of the gas meter/regulator set assembly
Estimated meter downstream outlet pressure.

The following is contact information for gas utilities:

Piedmont Natural Gas

Clayton Parker
Clayton.Parker@piedmontng.com
910-624-7992 (mobile)
910-321-2957 (phone)

DPW Civil Engineer

Eric Legg, (eric.s.legg.civ@mail.mil
910-908-3962)

DPW Natural Gas Utility Privatization COR

Emily Stewart
Emily.a.stewart8.civ@mail.mil
910-432-8470 (phone)
910-578-3608 (mobile)

1.15 PERMITS

Determine permit requirements as part of the design process and shall submit permit draft applications as part of the submittal process. The contractor is wholly responsible for acquiring, submitting and complying with all permits (local, state and federal) required for this project. The Contractor shall pay all permitting fees associated with this project at no additional expense to the Government.

a. The Government has not obtained permits/licenses related to this project.

b. The borrow pit on Ft. Bragg is currently closed. All borrow material shall be obtained off of Government property.

c. A Fort Bragg Excavation (Dig) Permit is required prior to any excavation. Present and Excavation Permit, FB Form 1605, to the Resident Engineer for approval by the Facilities Engineer prior to any excavation that penetrates the ground by more than 6 inches. All utility lines shall be spotted using an independent spotting service prior to beginning

excavation. Keep a signed copy of the digging permit on the site at all times. Fort Bragg may conduct back check spotting excavation during the excavation portion of this contract.

d. Title V Air Permits shall be coordinated with Fort Bragg's Environmental Branch, Air Program Manager, in obtaining all required and applicable permits as part of the design process. Secure all permits necessary for construction of this project to include the purchase of any add-on emission devices (if applicable) associated with this project, and at no additional cost to the Government.

1.16 DEMOLITION

a. Remove existing features as necessary to facilitate the construction of the building and to provide for site drainage. See the site plans for anticipated demolition associated with this project. Comply with Federal, State and local statutes, ordinances, agreements and as described in this RFP.

b. If fuel contaminated soils are found during the demolition or cut/fill operations, cease work immediately and notify either the Contracting Officer representative or the Contracting Officer for resolution that can include removal of contaminated soil, filling and capping area with clean, uncontaminated soil.

c. Asbestos/Hazardous Material is not anticipated as part of the demolition for this project. If asbestos/lead based paint/hazardous materials are positively identified during building or site demolition, cease work immediately and notify either the Contracting Officer Representative or the Contracting Officer for resolution.

1.17 HAUL ROUTES AND STAGING AREA

a. See the Contract Drawings for the haul routes. Use only those haul routes identified in the Drawings.

b. Construction traffic, any temporary office, parking, fencing or laydown areas shall not impact access or operations of any of the buildings and shall be generally located within the area depicted as "Limits of Construction" shown on the plans when possible. The laydown area shall not impact access or operations of any buildings, roadways, etc. that may be located near the provided laydown area.

c. Maintain the construction site. Repair/replace damage to existing sidewalks, pavements, curb and gutter, utilities, and/or landscaping within the construction limit and adjacent to the construction site at no additional cost to the Government. Prior to construction activities, the Contractor and Contracting Officer Representative shall perform an existing condition survey. At the completion of the Task Order, the Contractor and Contracting Officer representative shall perform a final condition survey to determine repair/replacement requirements.

1.18 TERMITE TREATMENT

Provide termite prevention treatment in accordance with Installation and local building code requirements, using licensed chemicals and licensed applicator firms. Coordinate design and construction with DPW POC Wilfredo Rivera Hernandez (wilfredo.riverahernandez.civ@mail.mil, 910-907-2419) for termite treatment work.

1.19 LANDSCAPING

The facility is located within the cantonment and shall follow the cantonment standards. Landscaping for the project shall be kept to a minimum and shall be limited to the building entrance, perimeter, and primary access roads as needed to achieve related LEED credits. New plant materials, trees, and grasses shall be indigenous or native to the Fayetteville, North Carolina area and shall be selected based on their resistance to drought. Permanent irrigation is prohibited. If a temporary irrigation system is used, its use shall be limited to one year, be placed above ground, be equipped with reduced pressure backflow prevention, have a meter installed and be removed by the Contractor after the one-year period is reached or when sod is established. Provide Zoysia sod for the first 5 feet outside sidewalks and from the face of the building. No pine straw shall be along the face of the building. Seed shall be placed in remaining areas. Landscaping shall conform to the Fort Bragg Installation Design Guide. Fort Bragg preferred planting list can be found within the IDG. Plant species require approval from the Installation DPW EMB SMEs and the Fort Bragg Arbor Board.

The use of existing fire hydrants or new hydrants for temporary irrigation requires a permit from ONUS. ONUS may deny use of hydrant for irrigation purposes. Coordinate with Contracting Officer Representative for use of non-potable water point at McFayden Road off of Butner Road.

1.20 ADDITIONAL SITE REQUIREMENTS

1.20.1 Height Restrictions

Verify construction activities do not interfere with Simmons Army Airfield or Pope Army Airfield aircraft glide slopes and FAA height restrictions. Submit FAA Form 7460-1, for the cranes to be used on each building and for each building in the project, to the FAA a minimum of 60 days before the cranes arrive on site and the vertical construction of the buildings start. FAA Form 7460-1 is available from the Contracting Officer's Representative (COR) at the area office.

1.20.2 Coordination With other Contractors

The Government may undertake or award other contracts for additional work at or near the site of the work under this Contract. Fully cooperate with other contractors and with Government employees and carefully adapt scheduling and performing the work under this Contract to accommodate the additional work, heeding directions provided by the Contracting Officer. Do not commit or permit work that will interfere with the performance of work by other contractors and Government employees.

1.21 SPECIFICATIONS

The following preliminary list of Unified Facility Guide Specifications (UFGS) are incorporated by reference and shall be edited as applicable by the Contractor during design as required to conform to the project, Installation requirements, and RFP with Government approval, prior to the first design package. The Designer of Record (DOR) shall provide additional specifications or remove specifications from the list as necessary to define the scope of work or as required by the Government. The DOR shall not remove specifications that are necessary to effectuate the design intent and requirements of the RFP.

DIVISION 02 - EXISTING CONDITIONS

02 41 00 DEMOLITION AND DECONSTRUCTION

DIVISION 03 - CONCRETE

03 40 00.00 10 PLANT-PRECAST CONCRETE PRODUCTS FOR BELOW GRADE CONSTRUCTION

DIVISION 31 - EARTHWORK

31 00 00 EARTHWORK

31 11 00 CLEARING AND GRUBBING

31 32 11 SOIL SURFACE EROSION CONTROL

31 31 16 SOIL TREATMENT FOR SUBTERRANEAN TERMITE CONTROL

DIVISION 32 - EXTERIOR IMPROVEMENTS

32 05 33 LANDSCAPE ESTABLISHMENT

32 11 16.16 BASE COURSE FOR RIGID AND SUBBASE COURSE FOR FLEXIBLE PAVING

32 11 23 AGGREGATE AND/OR GRADED-CRUSHED AGGREGATE BASE COURSE

32 12 10 BITUMINOUS TACK AND PRIME COATS

32 12 17 HOT MIX BITUMINOUS PAVEMENT

32 13 13.06 PORTLAND CEMENT CONCRETE PAVEMENT FOR ROADS AND SITE FACILITIES

32 16 13 CONCRETE SIDEWALKS AND CURBS AND GUTTER

32 17 23.00 20 PAVEMENT MARKINGS

32 92 19 SEEDING

32 92 23 SODDING

32 93 00 EXTERIOR PLANTS

DIVISION 33 - UTILITIES

33 11 00 WATER DISTRIBUTION

33 30 00 SANITARY SEWERS

33 40 00 STORM DRAINAGE UTILITIES

33 51 00 NATURAL GAS DISTRIBUTION

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SECTION 01 11 00.02

ARCHITECTURAL AND INTERIOR DESIGN SUMMARY OF WORK
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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 ARCHITECTURAL MANUFACTURERS ASSOCIATION (AAMA)

AAMA/WDMA/CSA 101/I.S.2/A440 (2011; Update 1 2014) North American Fenestration Standard/Specification for Windows, Doors, and Skylights

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI A108/A118/A136.1 (2013) Installation of Ceramic Tile

ANSI A137.1 (2012) American National Standards Specifications for Ceramic Tile

AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS (ASHRAE)

ASHRAE 189.1 (2014; ERTA 1-2 2015; ERTA 3-4 2017) Standard for the Design of High-Performance Green Buildings Except Low-Rise Residential Buildings

ASHRAE 90.1 - IP (2013) Energy Standard for Buildings Except Low-Rise Residential Buildings

ASHRAE FUN IP (2017) Fundamentals Handbook, I-P Edition

ARCHITECTURAL WOODWORK INSTITUTE (AWI)

AWI AWS (2nd Edition) Architectural Woodwork Standards

ASTM INTERNATIONAL (ASTM)

ASTM A653/A653M (2017) Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process

ASTM C1060 (2015) Standard Practice for Thermographic Inspection of Insulation Installations in Envelope Cavities of Frame Buildings

ASTM C1396/C1396M (2017) Standard Specification for Gypsum Board

ASTM C475/C475M	(2017) Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board
ASTM C645	(2014; E 2015) Nonstructural Steel Framing Members
ASTM C840	(2017) Standard Specification for Application and Finishing of Gypsum Board
ASTM E1186	(2017) Standard Practices for Air Leakage Site Detection in Building Envelopes and Air Barrier Systems
ASTM E1264	(2014) Acoustical Ceiling Products
ASTM E1827	(2011; R 2017) Standard Test Methods for Determining Airtightness of Buildings Using an Orifice Blower Door
ASTM E2178	(2013) Standard Test Method for Air Permeance of Building Materials
ASTM E492	(2009; R 2016) Standard Test Method for Laboratory Measurement of Impact Sound Transmission Through Floor-Ceiling Assemblies Using the Tapping Machine
ASTM E779	(2010) Standard Test Method for Determining Air Leakage Rate by Fan Pressurization
ASTM E90	(2009) Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements
ASTM F1861	(2016) Standard Specification for Resilient Wall Base

BUILDERS HARDWARE MANUFACTURERS ASSOCIATION (BHMA)

ANSI/BHMA A156.1	(2016) Butts and Hinges
ANSI/BHMA A156.13	(2017) Mortise Locks & Latches Series 1000
ANSI/BHMA A156.16	(2013) Auxiliary Hardware
ANSI/BHMA A156.2	(2017) Bored and Preassembled Locks and Latches
ANSI/BHMA A156.21	(2014) Thresholds
ANSI/BHMA A156.22	(2017) Door Gasketing and Edge Seal Systems
ANSI/BHMA A156.3	(2014) Exit Devices
ANSI/BHMA A156.4	(2013) Door Controls - Closers
ANSI/BHMA A156.6	(2015) Architectural Door Trim

ANSI/BHMA A156.9 (2015) Cabinet Hardware
CENTERS FOR DISEASE CONTROL AND PREVENTION (CDC)

CDC MAHC (2018) Model Aquatic Health Code
INTERNATIONAL CODE COUNCIL (ICC)

ICC IBC (2018) International Building Code
NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

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

NFPA 101 (2018; TIA 18-1) Life Safety Code

NFPA 80 (2016; TIA 16-1) Standard for Fire Doors
and Other Opening Protectives
STEEL DOOR INSTITUTE (SDI/DOOR)

SDI/DOOR A250.8 (2003; R2008) Recommended Specifications
for Standard Steel Doors and Frames
TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA)

TIA-569 (2015d) Commercial Building Standard for
Telecommunications Pathways and Spaces
U.S. ARMY (DA)

DA AR 190-11 (2013) Physical Security Of Arms,
Ammunition, And Explosives

DA AR 190-13 (2011) The Army Physical Security Program

DA AR 380-5 (2000) Department Of The Army Information
Security Program

DA AR 405-70 (2006) Utilization Of Real Property

DA TB MED 575 (2015) Recreational Water Facilities
U.S. ARMY CORPS OF ENGINEERS (USACE)

COE TC PFF (2016) Technical Criteria for U.S. Army
Physical Fitness Facilities
U.S. ARMY CORPS OF ENGINEERS SAVANNAH DISTRICT (CESAS)

Ft. Bragg IDG Fort Bragg Installation Design Guide

SAS Des Manl (2015) Savannah District Design Manual for
Military Construction

U.S. ARMY INFORMATION SYSTEMS ENGINEERING COMMAND (USAISEC)

TC I3A (2012) Technical Criteria for the
Installation Information Infrastructure
Architecture

U.S. DEPARTMENT OF DEFENSE (DOD)

UFC 1-200-01 (2016) General Building Requirements
UFC 1-200-02 (2016, with Change 1) High Performance and
Sustainable Building Requirements
UFC 3-101-01 (2011; with Change 3) Architecture
UFC 3-120-10 (2006; Change 1 2007) Interior Design
UFC 3-110-03 (2012; with Change 2) Roofing
UFC 3-600-01 (2016; with Change 1) Fire Protection
Engineering for Facilities
UFC 4-010-01 (2012; with Change 1) DoD Minimum
Antiterrorism Standards for Buildings

U.S. GENERAL SERVICES ADMINISTRATION (GSA)

FED-STD-595 (Rev C; Notice 1) Colors Used in
Government Procurement

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

36 CFR 1191 Americans with Disabilities Act (ADA)
Accessibility Guidelines for Buildings and
Facilities; Architectural Barriers Act
(ABA) Accessibility Guidelines

U.S. NAVAL FACILITIES ENGINEERING COMMAND (NAVFAC)

ITG 2013-01 (2013) Iterim Technical Guidance (ITG) -
Elevator Design Guide

UNDERWRITERS LABORATORIES (UL)

UL 305 (2012) Panic Hardware

WINDOW AND DOOR MANUFACTURERS ASSOCIATION (WDMA)

ANSI/WDMA I.S.1A (2013) Interior Architectural Wood Flush
Doors

PART 2 ARCHITECTURAL SUMMARY

This Section provides general architectural criteria to be utilized for proposal and design purposes. Architectural detail, materials, and finishes are paramount to the success of this project. Exterior materials and finishes shall be compatible with other existing facilities at the Yarborough Complex. All efforts have been made to specify compatible products and construction materials. Design shall be in accordance with

UFC 1-200-01 and the

ICC IBC as adopted and modified by Unified Facilities Criteria,

NFPA 101, the referenced design standards, and applicable industry codes for the particular material involved. In the event of conflict, the more stringent requirement applies and the Contracting Officer's Representative (COR) can provide guidance.

Exterior colors and materials shall be as indicated in the Fort Bragg Architectural Colors and Materials Exterior Building Colors Patriot Point document located in Appendix G. The conceptual elevations of the buildings are "For Information Only", to establish the desired architectural theme for the area. These elevations identify the desired project look and feel based on Fort Bragg's Installation Architectural Theme, i.e. building exterior skin, roof lines, delineation of entrances, proportions of fenestration in relation to elevations, materials, textures, and organizational layout. The designer of record (DOR) may offer minor variations that remain within the acceptable aesthetic theme illustrated.

2.1 GOALS AND OBJECTIVES

The goal for this project is to design and construct a quality SOF Human Performance Training Center(HPTC) . Total gross square footage for all buildings in this complex shall be calculated as identified in Section 01 11 00 SUMMARY OF WORK and shall not exceed the limits stated in that section. The floor plans are conceptual and shall be followed for room sizes and adjacencies. DOR may adjust plan as required to accommodate structure, utility chases, wall thickness, etc.

a. Included in the program for the HPTC are spaces for the following functions:

Strength and Conditioning Areas: Multi-Purpose Training Area, Cardio Training Area, Strength Training Area, Strength Staff Offices;

Recovery/Rehabilitation Areas: Physical Therapy Room, Hydrotherapy Room, Physical Therapist/Athletic Trainer Offices, Sports Medicine/Physical Assessment Area;

Performance Nutrition: Nutrition Education Room, Performance Dietitian Offices;

Mental Performance Areas: Performance Area, Sports Psychologist Offices;

Break Room and Classroom/Conference Room, Group Toilet rooms with Showers, Common Areas, Utilities, Laundry and Circulation.

2.2 ARCHITECTURAL DESIGN

It is required that the new facilities provide a design that addresses the use of scale, massing, form, color, texture, materials, and fenestration to produce an architecturally compatible complex. The Ft. Bragg IDG must be used for achieving this goal (see Appendix F).

The design and construction shall incorporate quality materials and promote energy conservation that will be of value to the Army in the foreseeable future. The Contractor shall adhere to the floor plans, schedules, and conceptual elevations provided in this RFP to the fullest extent practical.

The Contractor shall make revisions as needed to meet applicable Codes, Regulations (including DA AR 405-70), and Criteria listed under Part 1 References subject to Government approval and as required for building systems and structure.

2.3 INTERIOR DESIGN - STRUCTURAL INTERIOR DESIGN (SID)

Refer to Section 01 33 16 DESIGN AFTER AWARD Attachment A for complete SID requirements.

The SID shall achieve the requirements found in both the UFC 3-120-10 and SAS Des Man1, Chapter A-15 Interior Design. All UFC Specifications shall be utilized with the exception of the UFC Carpet Tile specification. The Interior Designer shall utilize the UFGS Section 09 68 00 CARPETING as found in Ft. Bragg IDG for all carpet requirements.

The Interior Designer shall prepare and submit for approval the building finishes (interior and exterior finishes) in the format detailed in UFC 3-120-10. Provide on each sample board (in each 3 ring binder) the physical samples of each exterior and interior finish that are large enough to show the floor finish patterns. Identify below each physical sample the following descriptions: finish code, manufacturers name, material style, and color name as detailed in UFC 3-120-10. These descriptions, with the material samples aid the later field coordination of materials, drawings and specifications.

As referenced in UFC 3-120-10, the SID Design Submittal requirements for the SID Binders shall include, but are not limited to:

- a. the Narrative of the Structural Interior Design Objectives
- b. the Interior and Exterior Material Sample Boards
- c. the UFGS Section 09 06 90 Color Schedule (required in addition to the architectural room finish schedules and finish key index on the drawings)
- d. Interior Finish Location Plans
- e. Interior Elevations, Sections and Details
- f. the Interior Signage & Directories Location Plans
- g. Signage illustrations, Details and Placement Sign Schedules

The new HPTC SID shall address the interior architectural forms, finishes, and materials to use scale, form, color, and texture in producing an interior environment that celebrates the history of Ft. Bragg. The SID includes the building interior and exterior finishes, interior and exterior signage, and window treatments. The Interior Designer shall recommend interior finishes that are durable, functionally suited for their placement, easy to maintain, aesthetically pleasing, and which visually transition seamlessly throughout the building.

The Interior Designer shall develop and present for approval a minimum of three finish schemes, coordinated with FF&E color schemes. The interior finishes shall be indicated for all building related elements and components including but not limited to: wall finishes, ceiling finishes, floor finishes, window treatment, interior signage, specialty and standard casework. These interior finish schemes shall include one neutral color scheme with two variations of neutrals accented with two variations of accent colors to signify areas or architectural features of importance. Variations in flooring finishes and accent colors in restrooms and other areas shall support this assignment of finishes. The SID color paint shall be selected either from FED-STD-595, from paint manufacturers' equivalent

color, or as directed. See the finish schedule included in this RFP for the location of the interior finishes required for this project.

The SID is an internal document used only by Government personnel during construction in review of Contract submittals.

Assume that the finish standards and assignments provided in Paragraph STRUCTURAL INTERIOR DESIGN (SID) below are the minimum level of quality to be provided. Make revisions as needed to meet applicable code and criteria, subject to Government approval. The Contractor may also make revisions to enhance the plans, subject to Government approval.

Millwork shall be constructed to the requirements of AWI AWS Custom Grade level. Casework finishes include plastic laminate casework with solid surface counters and splashes.

Make every effort to implement aspects of sustainability to the greatest extent possible for the interior finish selections for the SID package. Consider material chemistry and safety of inputs, recyclability, and disassembly.

2.4 ELECTRICAL, COMMUNICATIONS, AND AUDIO COORDINATION

Reference Section 01 11 00.06 ELECTRICAL AND ELECTRONIC SYSTEMS SUMMARY OF WORK for all electrical and electronic systems, telecommunications and data systems, and audio/visual systems requirements, including but not limited to: NIPR printers, NIPR digital senders, fax machines/copiers, flat panel displays/TVs, outlets/receptacles, and all other telecommunication, power, and lighting systems.

2.5 FURNITURE, FIXTURES, & EQUIPMENT (FF&E) PROCUREMENT PACKAGE AND AUDIO/VISUAL COORDINATION REQUIREMENTS

The Government has provided in the RFP drawing set preliminary furniture plans which identify the approved and documented Furniture, Fixtures, and Equipment (FF&E). In addition, the Government-approved FF&E manufacturers and products have been provided in preliminary specifications for establishment of minimum quality standards. Refer to Section 01 33 16 DESIGN AFTER AWARD for FF&E requirements.

As part of the Base Bid, provide the Final FF&E procurement specifications and installation plans coordinated with the Contractor's Construction Drawings, updating the FF&E specifications reflecting necessary changes, confirming and updating the quantity and location of FF&E on the FF&E specification sheets, and updating the FF&E finishes sheets in coordination with SID color schemes. Provide three FF&E color schemes compatible with three required SID color schemes for Government selection.

As part of the Base Bid, provide blocking and structural support behind wall-mounted and ceiling-mounted FF&E including digital clocks, overhead shelving, and other furniture found in the FF&E specifications and installation plans, both Government-furnished and Contractor-furnished.

The Contractor shall provide as a Bid Option pricing to purchase, deliver, and install the FF&E indicated in this preliminary FF&E package documentation. At the option of the Government, the FF&E package may be purchased, furnished, and installed by the Contractor based on the Final FF&E procurement package provided by the Contractor.

Update the preliminary FF&E budget and other FF&E package sections to provide a complete FF&E procurement package that will be either used by the Government for procurement and installation of the FF&E or for procurement and installation by the Contractor, if the FF&E Bid Option is accepted.

As part of the Base Bid, provide the required infrastructure, mounting, blocking, and structural support for the audio/visual (AV) equipment including but not limited to: projection screens, flat panel displays/TVs, computer monitors, speakers, interior and/or exterior cameras/CCTV, and ceiling-mounted projectors, both Government-furnished and Contractor-furnished. Also provide detailed equipment lists and equipment wiring diagrams. Refer to Section 01 11 00.06 ELECTRICAL AND ELECTRONIC SYSTEMS SUMMARY OF WORK and the audio/visual drawings for the audio/visual equipment scope. The complete design and building infrastructure of the AV system shall be part of the Base Bid. Procurement and installation of these systems shall be a Bid Option.

Coordinate the architecture, building systems, AV designs, and SID with the FF&E electrical and telecommunications requirements, including electrical outlets, switches, J-boxes, communication outlets, connections, thermostats, floor boxes, and architectural elements and lighting as appropriate. Dimensioned locations of all floor boxes (including power, NIPR, and AV) shall be clearly shown on plans, coordinated between all disciplines, and approved by the DOR prior to construction. Lack of coordination during design may result in field corrections or rework which shall be at no additional cost to the government. Reference Section 01 11 00.06 ELECTRICAL AND ELECTRONIC SYSTEMS SUMMARY OF WORK for all telecommunication, security, and electrical requirements.

The Interior Designer of Record shall be NCIDQ certified and have experience in projects of this scale and complexity. The Interior DOR shall not change or modify the approved preliminary furniture plan other than to coordinate with floor plan revisions that occur due to finalization of the design, unless directed to do so by the Government. The DOR shall provide the FF&E procurement package as defined in Section 01 33 16 DESIGN AFTER AWARD Attachment B, for procurement by the Government.

Submit 3 FF&E color schemes compatible with the 3 required SID color schemes for Government selection.

PART 3 CRITERIA

3.1 GENERAL ARCHITECTURAL DESIGN REQUIREMENTS

Building design and construction shall comply with requirements of UFC 1-200-01, UFC 1-200-02, UFC 3-101-01, UFC 3-600-01, UFC 4-010-01, ICC IBC, NFPA 101, DA TB MED 575, COE TC PFF, and CDC MAHC.

3.1.1 General Facility Descriptions

The Functional and Conceptual Floor Plans are provided as part of the RFP drawings. The new facilities shall incorporate the following design concepts:

- a. Buildings shall incorporate energy conservation through the use of efficient wall and roof insulation systems.
- b. Buildings shall meet ABA requirements for each area.

c. The HPTC shall meet the U.S. Green Building Council (USGBC) requirements for a Silver LEED achievement level. Recyclable collection areas will be a designated area in the Break/Conference room and an exterior area within the trash dumpster area.

d. All buildings shall promote low maintenance by utilizing durable interior finish and building materials for construction.

e. The Fort Bragg Installation Design Guide as referenced in Appendix F shall be used.

3.1.2 Space Requirements

The minimum areas indicated on the drawings and the specific requirements provided in Section 3.1.3 of this document shall be used to design the facility. The Designer of Record (DOR) shall be responsible for determining the actual amounts of space required for each area based on specific equipment and construction methods proposed for the project.

The building and room sizes are indicated on the conceptual Architectural Floor Plans. The room sizes for offices, conference rooms, and classrooms are Government-provided requirements and per DA AR 405-70. NIPR Telecommunication room sizes shall be per TC I3A and Appendix M. Other room sizes indicated on conceptual plans are estimated sizes based on room functions, building systems and components, the "Planning Tool Baseline" document in Appendices, and available square footage within the maximum programmed square footage of the building.

3.1.3 Functional and Operational Requirements

The following is a general description of the facility functional areas. Reference FF&E drawings and package for quantity and location of FF&E requirements in areas described below.

3.1.3.1 Human Performance Training Center (HPTC)

The HPTC is composed of 5 main types of functional areas: Strength Training and Conditioning areas, Recovery / Rehabilitation areas, Educational areas, Office Areas, and the Core Areas, in addition to circulation spaces. This project will provide areas in support of resilience programs dealing with mental, spiritual, and social well-being with an aim to reduce stress and associated psychological challenges for Soldiers. Adhere to the floor plans, schedules, and elevations. Accommodate building systems and structural requirements, as provided in RFP.

A. STRENGTH TRAINING AND CONDITIONING AREAS: These areas are located on the first floor directly off the main entry vestibule and are comprised of: Cardio Training Area, Multi-Purpose Training Area, Strength Training Area, Performance Area, Rock/Climbing Wall area, Training Ramps and Stairs.

(1)This space shall have a large open volume with a varied ceiling height that follows the slope of the roof above allowing as much Northern light in as possible, and to the greatest extent possible, open and without structural columns interrupting the space. Provide two 10'-0" wide by 10'-0" high exterior overhead coiling doors leading out onto the lawn along the north wall. Provide an exterior 12'-0" wide by 10'-0" high overhead coiling door accessed from southern side of building to bring equipment into the building by use of a forklift. The forklift will be electric, 4000

lb capacity furnished by the user for equipment moves. The forklift will not be stationed/stored at this facility.

(2) Flooring throughout these spaces is to be code compliant rubber or synthetic/resilient flooring material. Provide a 45' wide indoor synthetic turf along the northern wall, the full length of the space with striped areas as indicated in the plans. This area is utilized for agility and conditioning exercises. The synthetic turf and base shall be designed for this use. In the center of the synthetic turf field shall be a 96 inch by 96 inch logo to be coordinated with the user. Design basis for the synthetic turf is Field Turf.

(3) Provide 8'-0" wide 7 degree and 20 degree incline ramps, as well as a set of 4'- 0" wide training steps. Training Steps shall have 13 treads at 18" wide and 14 risers at 18" high. These shall be made of steel pans/treads/stringers, with a similar or same resilient material to match the main area flooring material. Support for these elements will be painted structural tubular steel. These stairs and ramps stop at a dedicated landing above. Provide tempered laminate glass guardrail systems in order to maintain visibility from above into these spaces, as well as from the PT Common Area, across into these areas.

(4) BID OPTION_- Provide 40 foot tall Rock/Climbing Wall in the northwest corner of the facility. Provide a belay system. At the rock/climbing wall area provide a flush floor system with a depressed slab that will safely attenuate a minimum of a ten foot fall.

(5) This space will also include a reinforced concrete masonry (CMU) wall for medicine balls work exercises.

(6) The entry, elevator Lobby, PT common Area, toilet rooms with showers for both Men and Women/Hydrotherapy room will be directly adjacent.

(7) Storage: Storage is provided in a dedicated storage room.

(8) Lighting. For safety reasons, primarily indirect lighting must be used in the free-weight area.

(9) A/V. Televisions are located in the floor plan. Provide power, cable connections. This space in addition to the multi-purpose training area and cardio area will have audio capabilities for playing music.

1) Multi-Purpose Training Area:

(a) Function. Large open volume, directly adjacent to the entry lobby, to accommodate multiple activities and various performance training requirements. Structural height as required for equipment and training. Overhead coiling door shall be provided one end for direct access to exterior. Directly adjacent to the Strength Training Area.

(b) Equipment. As indicated Appendix R Equipment.

(c) Power. Refer to Section 01 11 00.06 ELECTRICAL AND ELECTRONIC SYSTEMS SUMMARY OF WORK for power requirements.

(d) Data. Refer to Section 01 11 00.06 ELECTRICAL AND ELECTRONIC SYSTEMS SUMMARY OF WORK for data requirements.

2) STRENGTH TRAINING AREA:

(a) Function. This is an area dedicated for three separate functions: Cardiovascular (Cardio) workout, Circuit (Selectorized), and Free Weights. Cardiovascular: training equipment such as treadmills,

stationary bicycles, stair climbers, ellipticals, etc. Free Weight: free weight and plate loaded equipment, benches, and storage racks. Circuit: equipment with pin selected weights. Provide air circulation and ceiling fans in these spaces.

(b) Equipment. As indicated Appendix R Equipment.

Equipment will be moved in and out of the building through the overhead coiling doors in Storage Room 112.

(c) Power. Refer to Section 01 11 00.06 ELECTRICAL AND ELECTRONIC SYSTEMS SUMMARY OF WORK for power requirements.

(d) Data. Refer to Section 01 11 00.06 ELECTRICAL AND ELECTRONIC SYSTEMS SUMMARY OF WORK for data requirements.

3) PERFORMANCE AREA:

(a) Function. This area is for structured activities such as Combatives.

(b) Equipment. Provide pull up bars in this space. As indicated Appendix R Equipment. Equipment will be moved in and out of the building through the overhead coiling doors in Storage Room 112.

(c) Power. Refer to Section 01 11 00.06 ELECTRICAL AND ELECTRONIC SYSTEMS SUMMARY OF WORK for power requirements.

(d) Data. Refer to Section 01 11 00.06 ELECTRICAL AND ELECTRONIC SYSTEMS SUMMARY OF WORK for data requirements.

4) ROCK/CLIMBING WALL AREA(Bid-Option):

(a) Function. Provide 40 foot tall Rock/Climbing Wall in the northwest corner of the facility. Provide a belay system. At the rock/climbing wall area provide a flush floor system with a depressed slab that will safely attenuate a minimum of a ten foot fall.

(b) Equipment. As indicated Appendix R Equipment. Equipment will be moved in and out of the building through the overhead coiling doors in Storage Room 112.

(c) Power. Refer to Section 01 11 00.06 ELECTRICAL AND ELECTRONIC SYSTEMS SUMMARY OF WORK for power requirements.

(d) Data. Refer to Section 01 11 00.06 ELECTRICAL AND ELECTRONIC SYSTEMS SUMMARY OF WORK for data requirements.

5) TRAINING RAMPS AND TRAINING STEPS:

(a) Function. This area is to have 2 sets of 8' wide ramps, one at 7 degree incline, one at 20 degree incline, and a set of training stairs that are 48" wide.

(b) Power. None.

(c) Data. None.

B. RECOVERY & REHABILITATION AREAS: These areas are comprised of: Physical therapy Common Area and Hydrotherapy Room. Hydrotherapy Room shall have direct access to the PT common area room 113, toilet rooms 116 and 117, storage room 122 , laundry room 120 and hydromechanical room 119.

(a) Function. Physical Therapy Common Area to have tables and equipment per Appendix R. This space will be utilized by the 3rd SFG and 95th CA. Provide ample glazing from the Common Area out towards the training areas. Drinking Fountain nearby.

Hydrotherapy room shall have the following:

1) One in ground hot plunge pool (small 4-6 persons capacity)for aquatic rehabilitation. Pool size is 7'-9" x 7'-9" with a 3'-6" water depth. Provide with staninless steel handrails,integral bench and steps. Elevated platforms are not permitted. Access to all equipment and piping shall be provided for service and maintenance. Access via in floor hatch panels are not permitted. Design Basis is SwimEx or Architect approved equal. Provide a commercial handicapped accessible lift with a weight capacity of 450 pounds. Lift should be of a type that does not require the assistance of another person and should be operated by rechargeable batteries.

2) One in ground cold plunge pool (small 4-6 persons capacity)for recovery after exercise. Pool size is 7'-9" x 7'-9" with a 3'-6" water depth. Provide with staninless steel handrails,integral bench and steps. Elevated platforms are not permitted. Access to all equipment and piping shall be provided for service and maintenance. Access via in floor hatch panels are not permitted. Design Basis is SwimEx or Architect approved equal. Provide a commercial handicapped accessible lift with a weight capacity of 450 pounds. Lift should be of a type that does not require the assistance of another person and should be operated by rechargeable batteries.

3) One in ground therapy pool for rehabilitation, recovery and exercise. Pool size is 11'-5" x 21'-0" x 7'-0" high, water dimensions are 10'-0" x 14'-0". Pool includes three water depths 48", 60" and 72". Provide in pool fiberglass steps with stainless steel handrail, stainless steel front and side handrails, underwater lights,underwater observation windows, exterior video camera system and associated monitor and integrated motorized treadmill. Elevated platforms are not permitted. Access to all equipment and piping shall be provided for service and maintenance. Access via in floor hatch panels are not permitted.Design Basis is SwimEx model 1000T or Architect approved equal. Provide a commercial handicapped accessible lift with a weight capacity of 450 pounds. Lift should be of a type that does not require the assistance of another person and should be operated by rechargeable batteries.

4)Provide two separate curbless rinse showers. Each rinse shower shall have the floor sloped to a floor drain.

Hydrotherapy Mechanical room shall have direct access to the hydrotherapy room with two 6'0" x 7'-0" tall hollow metal doors. Direct access to the exterior shall be provided to the exterior of the building with two 6'-0" x 7'-0" hollow metal doors.

(b) Equipment. As indicated Appendix R Equipment.

(c) Power. Refer to Section 01 11 00.06 ELECTRICAL AND ELECTRONIC SYSTEMS SUMMARY OF WORK for power requirements.

(d) Data. Refer to Section 01 11 00.06 ELECTRICAL AND ELECTRONIC SYSTEMS SUMMARY OF WORK for data requirements.

C. EDUCATIONAL AREAS: These areas are comprised of: Nutrition Education Room, Breakroom/Class/Conference Room.

(a) Function. Locate these rooms on the second floor. These spaces are directly adjacent to each other. In the Breakroom/Class/Conference Room an operable partition divider separates the Break room from the Classroom which can be left open for cooking demonstration classes utilizing hot plates, and disposing of foods cooked after demonstration. Within the Nutrition Education space, testing by the Dietitian will occur. These rooms shall not have columns within the usable floor area and shall have a sound isolation rating of STC 45. Recyclable materials shall be collected in a designated recycle area within the Break Area. Recycle area shall comply with ASHRAE 189.1.

(b) Millwork. Provide kitchen, base and wall cabinets, and 30-inch deep countertop approximately 12 feet long. Countertops shall be comprised of impact resistant materials.

(c) Fixtures. Provide stainless steel two-compartment sink. Provide water line(s) as necessary, including for 18 cu. ft. refrigerators and ice maker, with required drainage.

(d) Additional Space. Allow space and hookups, including necessary waterline(s) for (2) two large standard refrigerators, a free-standing ice maker, a coffee pot, and (2) two microwaves.

(e) Mobile furnishing. The break room side of this space will be the focal point when the conference room is opened to the break room with the operable wall partition in the folded, compact position. In addition to the millwork, provide 1 or more mobile tables for demonstration purposes of cooking techniques. These tables may require power to be supplied from floor boxes. See Section 01 11 00.06 ELECTRICAL AND ELECTRONIC SYSTEMS SUMMARY OF WORK for power/data requirements. The conference room FF&E will be furnished with mobile tables and chairs.

(f) Equipment. As indicated Appendix R Equipment.

(g) Power. Refer to Section 01 11 00.06 ELECTRICAL AND ELECTRONIC SYSTEMS SUMMARY OF WORK for power requirements.

(h) Data. Refer to Section 01 11 00.06 ELECTRICAL AND ELECTRONIC SYSTEMS SUMMARY OF WORK for data requirements.

(i) Storage. Storage is available by the second floor toilets.

D. OFFICE AREAS: These areas are comprised of: Offices serving the PT Common Area room 113 on the first floor. Located on the second floor are the Strengths Training Offices, Dietitian Offices, and Sports Psychologist Offices.

(a) Function. On the First Floor, in the PT common area room 113 six Physical Therapist Offices are provided for the 3rd SFG and four Physical Therapist Offices are provided for the 95th CA. Space is provided along the east wall in the southeast corner of the room for two future offices.

On the Second Floor, two Dietitian Offices are provided in a suite with direct access to the circulation balcony. Access to the Nutrition Education and Testing Room will be through the dietitian office suite.

The Strengths Training Office is comprised of two offices, one for each unit, and a separate "Team Room" that functions as a small conference room. The remainder of the space contains Modular Systems Furniture accommodating ten users as shown on the drawing I-121. Two separate Sports Psychologists offices 205 and 206 are provided on the second floor with each office accessed from a common hallway.

(b) Equipment. As indicated Appendix R Equipment.

(c) Power. Refer to Section 01 11 00.06 ELECTRICAL AND ELECTRONIC SYSTEMS SUMMARY OF WORK for power requirements.

(d) Data. Refer to Section 01 11 00.06 ELECTRICAL AND ELECTRONIC SYSTEMS SUMMARY OF WORK for data requirements.

(e) Storage. In the physical therapy spaces, storage shall be provided within the space by way of stand alone furniture. Storage for the second floor offices above and beyond what can normally be accommodated with office furniture is provided by the storage rooms on the second floor by the bathrooms.

(f) Fenestration. On the First Floor, the PT Common area room 113 shall have glazing/windows all along the northern wall, for visibility into the training areas. Windows shall also be provided along the southern exterior wall to provide daylighting. On the Second Floor, the Strengths Training office suite shall have glazing/windows for visibility into the first floor exercise spaces. Windows shall also be provided along the second floor southern exterior wall to provide daylighting.

E. CORE AREAS: Core areas are arranged in one and two story configurations (refer to the RFP floor plans for layout). Internal walls within the core should be non-load bearing to the extent possible to allow future rearrangement of spaces. Provide flat panel displays, power/data, etc. in accordance with Section 01 11 00.06 ELECTRICAL AND ELECTRONIC SYSTEMS SUMMARY OF WORK.

(a) Fenestration. Provide inoperable exterior windows or translucent panels.

1) Latrine, Shower and Locker Rooms. Provide toilet accessories for latrines and shower/locker rooms in accordance with Fort Bragg Installation Design Guide (see Appendix F).

(a) Latrines. Provide separate latrines for men and women on each floor. Provide water closets, urinals, lavatories, and drinking fountains as indicated in the floor plans. Vanities and countertops shall be composed of impact resistant materials.

(b) Shower and Locker Rooms. Provide a Men's Shower and Locker Room and a Women's Shower and Locker Room as indicated in the floor plans. Provide (24) 18" Lockers and (6) 24" lockers in the men's room, and (6) double tier, 18" lockers in the women's. Provide individual shower compartments (3 feet by 3 feet clear dimensions) in the quantity indicated on the Drawings.

2) Telecommunications Rooms. Telecommunications rooms shall be provided for voice and data. There shall be a minimum of one room on each floor.

Each room shall be designed in accordance with **TC I3A** and **TIA-569**. Due to Ft. Bragg NEC security requirements, Mass Notification, Fire Alarm, and CATV panels cannot be located in the Telecommunications Rooms; these panels will be located in the Electrical Room.

3) Non-Assignable Spaces and Gross Area. The items below account for additional gross area within the core that is not specifically listed in the spaces above. These items may also vary in size contingent on site, climate, type, and use.

(a) Stairwells. Design in accordance with life safety, model, and local building codes.

(b) Elevator. Provide one passenger elevator sized to accommodate a gurney or equipment meant for the second floor in each two-story building. Elevator machine room is also part of the gross area of the core.

(c) Common Circulation Corridors. All circulation corridors shall be a minimum of **6 feet** wide, unless noted otherwise.

(d) Janitorial Spaces. Provide one janitorial space on the first floor as shown on drawings with mop sink and heavy duty shelving with mop rack (CFCI).

(e) Mechanical Room. Utility space shall be provided for heating and cooling equipment. Locate first floor mechanical rooms adjacent to exterior walls for external maintenance access and ventilation. See Section **01 11 00.04** MECHANICAL AND PLUMBING SUMMARY OF WORK, for additional requirements. Walls and floor/ceiling assemblies enclosing the mechanical room shall have a sound transmission class (STC) rating of not less than 50 (45 if field tested) for air-borne noise when tested in accordance with **ASTM E90**, and an impact insulation class (IIC) rating of 50 (45 if field tested) when tested in accordance with **ASTM E492**. Hydrotherapy Room to receive its own dedicated Mechanical equipment and room.

(f) Electrical Room. Locate first floor electrical rooms adjacent to exterior walls for external maintenance access and ventilation.

(g) Laundry. Provide space for no less than (2) each stackable heavy-use industrial washing machine and dryer. Dryer shall be located to have direct venting to exterior. Provide infrastructure for each machine; machines themselves shall be part of the FF&E package. Provide hookups and space for two commercial washers and two commercial dryers. Machines shall be stackable units. Provide a commercial freezer in this space.

3.1.4 Fixtures, Furnishings, & Equipment (FF&E) Electrical/Data Coordination

3.1.4.1 Contractor Responsibilities

Pull, terminate, label, and test the NIPR drops and power connections that are installed for the furniture, such as at work benches where floor boxes occur. Provide the test results to the Government and the Fort Bragg USASNEC.

Install the furniture as shown and coordinate fully with electrical and telecommunication floor box and outlet locations. No power poles shall be provided; power shall be accessed from the wall when possible or core-drilled in floors. Flush-mounted floor boxes shall be utilized where access to tables or workstations is not adjacent to walls. Floor boxes shall comply with NIPR separation requirements.

Provide coordination so the furniture installation can be completed after the pulling, terminating, labeling, testing of power/NIPR drops and the floor box installation and connections are completed. After furniture installation, ensure the power/NIPR drops are operational and not damaged

during the furniture installation.

3.1.4.2 Government Responsibilities

The Government will coordinate other Government-provided equipment, such as printers, copiers, shredders, digital senders, FAX Machines, and artwork, with the Contractor and associated electrical and telecommunications subcontractors. It is expected that the furniture subcontractor shall work closely with the Government to complete the furniture installation after the Contractor installs the building electrical and data connections into the FF&E.

3.2 EXTERIOR ARCHITECTURAL SYSTEM AND CONSTRUCTION

3.2.1 Exterior Wall Assemblies

Select exterior materials to be attractive, economical, durable, and low maintenance. All metal wall panel systems shall have a manufacturer's no-dollar-limit warranty for labor and materials (including finishes), with a warranty period of no less than 20 years from the date of acceptance of the work.

3.2.1.1 HPTC Building

The exterior walls of the HPTC shall be pre-finished vertical metal wall panel system (minimum 24 gauge steel) above a (minimum) 4-ft high brick veneer, with brick soldier course accent bands. The exterior wall system shall be insulated as required to meet energy code requirements including [UFC 1-200-02](#) and [ASHRAE 189.1](#) and be designed to achieve maximum energy efficiency and thermal and moisture protection. The wall support system supporting the exterior finish may be a pre-engineered metal building system, metal stud framing, CMU, formed or poured in place reinforced insulated concrete form system, or other type of system as Designer of Record deems appropriate to meet current ATFP structural and standoff requirements. Designer of Record shall submit a wall assembly detail and rating specifying compliance. Building fenestration, consisting of doors, windows, translucent panels, louvers, accents, skylights, etc., shall be located in an articulate manner that is functional with interior spaces and creates an appealing aesthetic appearance. The conceptual elevations indicate an acceptable exterior appearance. Designer of Record may modify to accommodate structure, utility chases, and wall thickness, etc., as well as offer other variations (patterns) of the design theme that utilizes the identified materials.

3.2.2 Roof System

All roof systems shall comply with the requirements of [UFC 3-110-03](#). Visible roof systems materials shall be attractive, economical, durable, and low maintenance. Insulated metal panel roof systems shall have a manufacturer's no-dollar-limit materials and installation workmanship warranty (to include finishes), with a warranty period of no less than 20 years from the date of acceptance of the work. It shall also have an installer's 2-year weathertight roof system assembly warranty.

3.2.2.1 HPTC Building

Roof shall be as indicated in RFP drawings unless noted otherwise. Roof system shall have minimum R-30 insulation and shall comply with [UFC 1-200-02](#) and [ASHRAE 90.1 - IP](#) requirements. The roof shall be drained utilizing a

sloped roof towards downspout drain system to be connected into underground storm sewer system.

3.2.3 Exterior Doors And Frames

All exterior doors and frames shall be hollow metal and shall comply with ANSI A250.8/SDI 100. Doors shall be Level 3, physical performance Level A, Model 2; insulated; top edge closed flush. Frames shall be Level 3, 14-gauge, with continuously welded mitered corners and seamless face joints. Doors and frames shall be constructed of hot-dipped zinc coated steel sheet, complying with ASTM A653/A653M, Commercial Steel, Type B, minimum A40 coating weight; factory primed. Provide exterior personnel doors as shown on the drawings. Minimum size for personnel doors is 3-feet wide by 7-feet high.

Anchors and accessories shall be zinc coated. Frames in masonry shall have bituminous back-coating, plaster guards, and shall be grouted solid. All exterior personnel doors shall be protected with a steel or aluminum canopy.

3.2.4 Exterior Personnel Door Finish Hardware

a. Hinges: ANSI/BHMA A156.1; template, full mortise, heavy duty, ball bearing, minimum size 4-1/2" by 4-1/2", non-ferrous base metal, non-removable pins. Minimum 4 on each door leaf over 7'-2" tall.

b. Locksets on Entry Doors, Exterior Hollow Metal Doors, and Interior Doors in circulation areas: ANSI/BHMA A156.13; series 1000, mortise lockset with removable core; non-ferrous base metal; Grade 1. Provide lever handles.

c. Exit (Panic) Devices: ANSI/BHMA A156.3; heavy-duty touch-pad type, through-bolted mounting. Listed and labeled for panic protection based on UL 305, and for fire/egress in accordance with NFPA 101 and NFPA 80.

d. Closers: ANSI/BHMA A156.4; series C02000, Grade 1, hydraulic, factory-sized, adjustable to meet field conditions. Provide for exterior doors, entry doors opening to corridors, stair doors, and as required by code. At exterior doors to mechanical/electrical rooms provide overhead holders or closers with hold-open capability. Provide overhead holders or closers with hold-open capability at all doors with closers unless prohibited by code.

e. Auxiliary Hardware: ANSI/BHMA A156.16. Provide wall stops for exterior doors that do not have overhead holder/stops. Provide other hardware as necessary for a complete installation.

f. Thresholds: ANSI/BHMA A156.21; non-ferrous metal. Provide at exterior doors and doors penetrating air barrier envelope. Set in full sealant bed.

g. Weather-stripping: ANSI/BHMA A156.22. Provide at exterior doors, all sides, gasketing on top and at jambs, sweep on door bottom, rain drip on head jamb.

h. Kick, Mop, & Armor Plates: ANSI/BHMA A156.6; non-ferrous metal. Provide at doors with closers and as applicable.

i. Cores: Removable cores shall be compatible with Ft. Bragg keying system requirements.

3.2.5 Aluminum Storefront and Curtain Wall Systems

Aluminum storefront and curtain wall systems shall be designed to meet Anti-Terrorism Force Protection Requirements per [UFC 4-010-01](#). Windows and storefronts shall be minimum performance class heavy, commercial (HC) grade aluminum, thermally improved to achieve a minimum Condensation Resistance Factor (CRF) of 45. Comply with [AAMA/WDMA/CSA 101/I.S.2/A440](#). All exterior mullions are to be finished with a full strength Kynar 500 Fluoropolymer coating applied by the manufacturer. Color shall be as indicated in the Fort Bragg Architectural Colors and Materials Exterior Building Colors Patriot Point document located in Appendix G. All windows shall be fixed.

Window elevation/appearance (such as mullion spacing, muntin pattern, in-set depth, etc.) shall be similar to surrounding buildings. DOR shall determine the actual size of the exterior windows in accordance with surrounding facilities and Installation Design Guidelines. All windows shall be punched type. Storefront and Curtain wall systems shall be capable of withstanding wind and earthquake loads as well as thermal and structural movement required by location and project requirements without failure.

3.2.6 Glass and Glazing

Glass and glazing shall be designed to meet Anti-Terrorism Force Protection Requirements per [UFC 4-010-01](#). All glass and glazing shall receive tinted, reflective, sealed edge insulating glazed units (Solar Gray). A low-E type coating is required for all glass and glazing units. Units shall be composed of [1/4 inch](#) thick tinted, heat strengthened glass on the outside, [1/2 inch](#) air space, and [1/4 inch](#) thick laminated glass on the inside. These are minimum requirements. DOR shall ensure glazing and glazing assemblies comply with building energy requirements. Where exterior windows are needed for exterior aesthetics, and interfere with structure, etc., tinted ceramic spandrel panels (color matching glass) may be utilized.

3.2.7 Skylights and Translucent Panel Systems

Translucent panel systems shall comply with [UFC 1-200-02](#) and [UFC 4-010-01](#). Panels shall be UV-stabilized, shatterproof, and energy efficient with non-combustible grid. Elevation/appearance shall be similar to surrounding buildings. DOR shall determine actual size of exterior fenestration. Translucent panel systems shall have a manufacturer's complete warranty for materials, workmanship, and installation for a warranty period of no less than 5 years from the date of project completion.

3.2.8 Insulated Doors

Exterior overhead coiling doors shall be insulated doors for thermal resistance and noise control.

3.2.8.1 Weatherproofing

Install weatherstripping/seals on all sides of overhead door openings to provide a weather-tight fit. To deter wind driven rain at thresholds, depress the slab [1/2-inch](#) below finished floor (slope away from building) and support edge of finished floor slab with a continuous steel angle. Bottom door seal shall extend to [1/2-inch](#) depression.

3.2.9 Exterior Signage

Provide exterior identification signage as required by Installation Design Guideline standards for all buildings, including installation building number (Type F1) and 'no smoking' signage. Exterior Signage for the HPTC building shall include signage at each entrance (Type B1) and street address sign (Type F2), in addition to the sign types listed for all buildings.

3.2.10 Natural Lighting

Training Areas, Breakroom/Classroom/Conference room, and administrative areas shall be illuminated using hybrid lighting systems that include electric lighting with electronic daylight controls in combination with the following: a) clerestory windows, b) translucent wall panels, and/or c) skylights with a reflective tube that channels natural light into work areas and a lens that diffuses the light. Provide inoperable windows for natural lighting in administrative/office areas (where possible), and circulation areas. Preference will be given for designs providing vision panels in overhead doors.

3.3 INTERIOR ARCHITECTURAL SYSTEMS AND CONSTRUCTION

3.3.1 Interior Partitions and Walls

Fixed walls are required to separate training areas and support areas from the core areas, along corridors, and surrounding fixed areas such as latrines, and storage areas. Administrative and break room walls shall be non-loadbearing to the greatest extent possible except around latrines to allow future rearrangement of spaces.

Interior partitions shall be constructed of gypsum board assemblies using conventional cold-formed metal studs and/or concrete masonry units (normal weight). Non-loadbearing steel stud framing shall be galvanized studs, rigid channels, resilient furring channels, C-H studs, or Z-furring channels as required by design conditions spaced at 16" on centers. Comply with [ASTM C645](#). Stud gauge shall be as required by height and loading, but shall not be less than 25 GA for interior walls, 20 GA for exterior perimeter walls. Use fire rated, Type X, water-resistant, or glass reinforced board as conditions/ criteria dictate All interior columns, except in the main, 2-story training areas shall be wrapped to match walls as required. Paint any exposed columns in main training areas. Comply with [ASTM C1396/C1396M](#).

Minimum panel thickness: 5/8-inch. Use fiberglass reinforced cement backer board at all wet locations where tile is installed. Joint treatment: [ASTM C475/C475M](#). Installation: [ASTM C840](#). Use high impact resistant gypsum wallboard in all corridors, circulation areas, high traffic areas, storage rooms, and all areas on first floor where gypsum board is provided. If gypsum board is used on exterior walls, glass-mat or moisture/mold resistant type shall be used per [UFC 3-101-01](#).

Provide sound insulation and wall and floor/ceiling assemblies to meet the following Sound Transmission Class (STC) ratings: STC 42 in all administration areas and private offices; STC 45 in break/training/conference room areas. In addition to the sound insulation required, training areas shall meet a Noise Criteria (NC) 30 rating in accordance with [ASHRAE FUN IP](#).

3.3.2 Interior Floors

Provide a 45 foot wide indoor synthetic turf along the northern wall, the full length of the building. Provide rubber/synthetic/resilient floors in strengths training/fitness areas, on the training steps, ramps, and throughout the 2nd floor balcony and elevator lobby. Provide porcelain tile in lobby entrances, carpet in administrative areas and offices, resilient flooring in conference room and break room, and ceramic tile in wet rooms such as the bathrooms, custodial and hydrotherapy. See Installation Design Guide for additional information.

3.3.3 Ceilings

Interior ceiling finishes shall conform to the requirements of UFC 3-600-01, NFPA 101, and the Installation Design Guide.

3.3.4 Interior Doors and Frames

a. Interior Hollow Metal Doors: Interior hollow metal doors shall comply with SDI/DOOR A250.8, and the Installation Design Guide. Doors shall be Level 2, physical performance Level B, Model 2; factory primed. Anchors and accessories shall be zinc-coated. All doors shall be 3 feet (or pair) by 6 feet 8 inches minimum, or as required for special requirements (elevator room equipment, mechanical, electrical room, etc.) Interior personnel doors shall be hollow metal unless specified otherwise.

b. Interior Metal Door Frames: Interior metal door frames shall comply with SDI/DOOR A250.8. Frames shall be Level 2, 16 gauge, with continuously welded mitered corners and seamless face joints; factory primed. Anchors and accessories shall be zinc coated. Frames in masonry shall have bituminous back-coating, plaster guards, and shall be grouted solid.

c. Interior Window Frames And Glazing: All interior windows (borrowed lights) shall be fabricated from the same frame sections as the door frames, safety glazed from the inside of the room.

d. Wood Doors: Provide premium grade doors, 1-3/4" thick, solid core, 5-ply minimum wood doors conforming to ANSI/WDMA I.S.1A to be used throughout administrative areas, private offices, conference rooms, and training rooms. Stiles, rails, and cross bands are to be bonded to the core. Hardwood veneers shall be rift cut, slip matched. Door veneers shall have factory finish applied to plain sliced premium faces and edge strips. Provide factory pre-fit and pre-machined doors in hollow metal frames. All doors shall be 3 feet (or pair) by 6 feet 8 inches minimum or as required for special requirements (elevator room equipment, mechanical, electrical room, etc.)

e. Access Doors: Provide #4 satin finish stainless steel doors. Provide flange suitable for adjacent material. Doors shall be flush panel #4 satin finish stainless steel. Provide cylinder or tamper proof locks and fire ratings as conditions dictate. Where access doors occur on the interior they shall be finished to match the predominant adjacent surface.

f. Acoustical Doors: Acoustical doors shall be a fully-tested, factory-assembled unit in accordance with UFGS 08 34 73 to match the STC requirement of the wall in which they occur, except for the Electronic Maintenance area. Doors for the Electronic Maintenance shall have minimum rating of STC 33. If door is to have wood appearance, provide wood or plastic laminate laminated to steel acoustical door, matching wood doors

grain, etc.

3.3.5 Finish Hardware

Provide heavy duty commercial type hardware that complies with all ADA requirements. Keying and key control system shall comply with Fort Bragg keying requirements. Provide electric or magnetic locks for restricted access areas. Closers, door controllers, and exit devices shall be high frequency type. Provide Knox box at exterior of main entrance door for Fire Department convenience and secure key cabinet for building keys control and storage.

Exterior doors shall have closer with hold open feature or separate hold open device unless prohibited by code. Hardware for doors shall be per industry standards.

3.3.5.1 Keying and Key Control

Prior to the submission of the key shop drawings, the Contracting Officer, Contractor, Door Hardware subcontractor, using Activity, and Base Locksmith shall meet to discuss keying requirements for the facility. Unless noted otherwise, comply with the Fort Bragg keying standards and below requirements:

- a. All doors shall be keyed differently. Where a room or area has multiple entrance doors, these doors may be keyed alike.
- b. All mechanical, electrical, telecommunications, and elevator machine rooms shall be keyed separately to the Fort Bragg X-24 and X-25 key system.
- c. Furnish three (3) change keys for each lock. No master or grand master keys shall be furnished. Furnish a quantity of key blanks equal to **20-percent** of the total number of file keys. Stamp each key with appropriate key control symbol and "U.S. Property - Do Not Duplicate." Do not permanently place room number on keys.
- d. Furnish one (1) key control cabinet. Key control cabinet shall have a capacity of hooks to match the number of doors in the facility plus 10%. The key control cabinets shall be located per direction of the Contracting Officer in coordination with the using Activity.

3.3.6 Interior Door Finish Hardware

3.3.6.1 Hinges

ANSI/BHMA A156.1; template, full mortise; heavy duty, ball bearing on doors with closers; standard duty anti-friction bearing on doors without closers. Minimum size 4-1/2" by 4-1/2". Provide NRP hinges for reverse bevel doors and controlled access doors. Provide cam lift hinges for STC 50 or higher sound rated doors.

3.3.6.2 Locksets

See Fort Bragg IDG for required hardware specification, mandatory use of a registered locksmith to install permanent cores, and other requirements. All locks shall be compatible with "Best" or "Falcon" locks with 7-pin tumbler and comply with requirements of the Fort Bragg Key Shop.

- a. Unless noted otherwise, all interior doors shall be provided

ANSI/BHMA A156.2; series 1000, Grade 1, non-ferrous base metal, removable core.

b. Interior Doors in circulation areas: ANSI/BHMA A156.13; series 1000, mortise lockset with removable core; non-ferrous base metal; Grade 1. Provide lever handles.

c. Doors for administrative areas, training rooms, and offices shall be provided with electro-mechanical combination locksets with twelve (12) push buttons and standard-sized levers for high frequency use.

3.3.6.3 Closers

ANSI/BHMA A156.4; series C02000, Grade 1, hydraulic, factory-sized, adjustable to meet field conditions. Provide for all doors opening to corridors, stairs, and as required by codes. Closers are required at all Secure Area doors. Provide overhead holders or closers with hold-open capability at all doors with closers unless prohibited by code.

3.3.6.4 Auxiliary Hardware

ANSI/BHMA A156.16. Provide wall or floor stops for doors that do not have overhead holder/stops. Provide other hardware as necessary for a complete installation.

3.3.6.5 Kick Plates

ANSI/BHMA A156.6; non-ferrous metal. Provide at doors with closers.

3.3.7 Miscellaneous Wood

Wood furring, grounds, nailers, blocking, and rooftop equipment support bases used on this project are to be fire or preservative treated dimensional lumber as required for the intended location and use. All rough carpentry not in fire rated assemblies or locations requiring treated wood shall be standard lumber.

3.3.8 Elevator

Elevator and Elevator Machine Room shall comply with requirements of ITG 2013-01 and UFC 3-600-01.

Elevator shall be holeless hydraulic, 2500 pound capacity, 125 feet per minute speed with battery-powered lowering system. Interior front panel shall be stainless steel and sides/rear shall be plastic laminate. Hand rail shall be stainless steel on back wall. Provide stainless steel interior hooks and removable pads for three sides.

The design of the elevator and hoistway must provide a minimum horizontal clearance of 20-inches between the side of the elevator platform / cab and any one wall of the elevator hoistway. The horizontal clearance of 20-inches must be maintained from the pit floor to the top of the hoistway.

3.3.9 Interior Specialties

a) Provide interior signage and directories in accordance with Fort Bragg Installation Design Guide (see Appendix F).

b) All storage shelving shall be heavy duty metal and included in FF&E.

c) Fire Extinguishers, Cabinets, and Brackets: Fire Extinguisher cabinets and brackets shall be provided when fire extinguishers are required by **UFC 3-600-01** and **NFPA 101**. Placement of cabinets and brackets shall be in accordance with **NFPA 10**. Semi-recessed cabinets shall be provided in circulation and finished areas, and brackets shall be provided in non-finished areas (such as utility rooms, storage rooms, shops, and vehicle bays). Fire extinguishers shall be provided in the FF&E package.

d) Provide marker boards and tackboards in accordance with Section 3.5.4 below, the locations shown on the drawings and as stated in FF&E package.

3.4 STRUCTURAL INTERIOR DESIGN (SID)

3.4.1 Interior Finishes

Interior finish materials shall be selected to meet the required LEED credits, to maximize the use of recycled and regionally available resources and to improve the indoor environmental quality. Use products that comply with indoor environmental quality LEED credits.

Reference **Ft. Bragg IDG**, interior finishes as assigned to the Brigade Enhanced Warm Gray Colorway. Provide these finishes or equivalent finishes in quality and color family where indicated, reference section 3.2.7 Interior Materials and Finishes Specifications which are intended to provide guidance in the interior design of the new building. The intent of the guidelines is to promote uniformity, quality, cohesiveness, sustainability, and reduce interior maintenance. Permission to vary from the specifications and color ways indicated in **Ft. Bragg IDG** must be obtained from the Government. Refer also to room finish schedule provided with RFP drawing package which indicates recommended placement of these finishes as listed below.

3.4.2 Finish Assignment

3.4.2.1 Flooring

a. Recessed Entry Mat (RM): Match width of entry doors and the depth of the vestibule at main entry and as indicated on the room finish schedule. Provide recessed entry mat system with Aluminum construction slats for ease of maintenance.

b. Sealed Concrete (SC): Floors in Elevator Equipment Room, Mechanical Rooms, Compressor, Electrical Rooms, most storage/supply rooms, telecommunication rooms, and as listed in the finish schedule.

c. Resilient Tile: Located in breakroom, and as indicated in the finish schedule. An accent color tile shall be used with the neutral color only in the corridors and breakrooms, all other areas shall receive the neutral color. Size: **12 inches by 12 inches by 3/32-inch thick** from manufacturer's standard product line.

d. Ceramic Tile (CT). Provide for all latrines, toilets, locker rooms, and janitor closets.

e. Porcelain Tile (PT). Provide for Vestibule where entry mat not provided.

f. Showers with solid surface shower pan (SP). Provide for all showers, solid surface formed shower pans.

3.4.2.2 Wall Base

- a. Resilient Base (RB): Conform to [ASTM F1861](#), Type TS (vulcanized thermoset rubber), [4 inches](#) high, [1/8 inch](#) thick cove base style. Located with all floor finishes except resinous epoxy troweled flooring system.
- b. Ceramic Tile (CT): in all spaces to receive ceramic tile flooring, provide ceramic tile base.
- c. Porcelain Tile (PT): in all spaces to receive porcelain tile flooring, provide porcelain tile base.

3.4.2.3 Grout, Accessories, and Stair Treads

- a. Grout (GR): Comply with [ANSI A108/A118/A136.1](#) for Latex-Portland cement Grout with Mildew Resistant Silicone Sealant. Floor grout shall be darker color than field tile.
- b. Resilient Accessories (RA): Provide as required on flooring resilient transition accessories; reducer strips or edge trim when two adjoining floor materials of different heights abut, or when floor material is adjoining sealed concrete for a seamless transition between different floor material heights, or flooring material need finished edge.
- c. Stair Tread (ST): Provide on stairs, resilient stair treads (RST) with integral nosing and riser in one piece construction for ease of maintenance and greater durability at all stairs. The finish on the Training Steps and Training Ramps shall be the same material as the flooring on the training level (first floor) and the balcony on the second floor.

3.4.2.4 Wall

- a. Paint (PT): Paint colors shall be referenced to [FED-STD-595](#) as applicable. All interior wall paints to be acrylic latex eggshell finish. Apply one coat of tinted primer and two coats of paint. Apply block filler primer at CMU walls.
- b. Ceramic Wall Tile (CWT): Comply with [ANSI A137.1](#). Wall tile shall be glazed tile only, Size [4-1/4 inches](#) by [4-1/4 inches](#) by [5/16-inch](#). Provide one field color and one accent color. Colors shall be from manufacturer's standard colors. Locate accent tiles above [7 feet](#) along water closet walls. Wainscot height shall be [5 feet](#) minimum. Provide full wall height ceramic tile at showers (in lieu of solid surface panels if chosen), and at wet walls. Use of accent wall tiles shall be in a simple pattern application.
- c. Shower walls may be ceramic wall tile or solid surface panels.
- d. Corner Guard (CG): Acrovyn Corner Guards shall have color to match adjacent wall color. Provide stainless steel corner guards as specified.

3.4.2.5 Ceilings

- a. Painted (PT): All gypsum board ceilings and exposed ceiling structures shall be inherently white or painted Fed Std 37886 flat finish. All ceilings in wet areas, break rooms, and latrines shall use semi-gloss finish. No epoxy paint shall be used except in medical or food preparation areas.
- b. Acoustical Ceiling Tile System (ACT): Comply with [ASTM E1264](#) for general usage, comply with local fire code regulations. Ceiling tile shall

be non-regular, fissured pattern, Omni Directional, humidity/sag resistant, and white in color. Ceiling tile size shall be 2 feet by 2 feet by 5/8-inch. Ceiling Suspension System Grid shall be centered in ceiling spaces, use White aluminum Grid 2 feet by 2 feet by 1-inch, rust proof in wet areas.

c. Ceiling Diffusers, grilles, access panels: All diffusers, grilles and access panels shall be white, matching adjacent ceiling system. Coordinate with requirements of Section 01 11 00.04 MECHANICAL AND PLUMBING SUMMARY OF WORK.

3.4.2.6 Lighting

Exit light fixtures shall have white frames. Coordinate with requirements of Section 01 11 00.06 ELECTRICAL AND ELECTRONIC SYSTEMS SUMMARY OF WORK.

3.4.2.7 Plumbing

Fixtures shall be white in color; fittings shall be polished chrome. Coordinate with requirements of Section 01 11 00.04 MECHANICAL AND PLUMBING SUMMARY OF WORK.

3.4.2.8 Doors

Wood interior doors shall be veneer factory stained and finished to complement surrounding materials. All hardware finish shall be satin stainless steel.

Hollow metal interior doors shall be factory primed and painted, and as otherwise noted in Section 01 11 00.02.

3.4.2.9 Special Wall Features

Provide wall blocking as required in walls designated to receive wall-mounted objects, such as flat panel displays, marker boards, tackboards, toilet fixtures, grab bars, wall stops, and other heavy objects.

3.4.2.10 Window Blinds

Perimeter windows shall receive 1-inch horizontal blinds or window shades for sun control.

3.4.3 Architectural Millwork - Break/Class/Conference Room

Provide double sink in counter. Provide counter space for 1 coffee pot, and 2 microwave ovens. Provide electrical outlets required for equipment and as indicated in Section 01 11 00.06 ELECTRICAL AND ELECTRONIC SYSTEMS SUMMARY OF WORK. Kitchenette Cabinets: Premium grade. Solid wood fronts. Solid wood face edging for shelving and door edges recommended. Counters: Solid 3/4" thick counters. The counter must be a durable solid surface material such as quartz/recycled material, granite, concrete, or solid plastic/polymer; laminate is not permitted. Drawer glides to use nylon wheels or ball-bearing drawer guides, rated for 50 lbs. minimum.

3.4.4 Signage

Provide Interior Signage that matches the Base standards for finish, style, and color. Provide signs that meet the requirements of the building codes, facilitate way finding with directional signage, enhanced lobby directory

(LD) and 2nd floor directory (FD) signs located by elevator, conference room signage, and standard room identification signage. Room identification signage should include: room number, room name, and 2 window slots for additional changeable messages. Conference room signage should include a slider message bar indicating if conference room is in use. Provide software and additional message slots for users to make future signage inserts.

Provide special intrusion detection system and restricted area signage as required complying with DA AR 190-11, DA AR 190-13, and DA AR 380-5 for the Entry Vestibule. Signage warning about the use of portable electronic devices are required at secure area perimeter doors.

3.4.5 Wall And Ceiling Finishes

Provide manufacturer's best quality paint material of various coating types for the proposed condition. Paint material containers not displaying the manufacturer's product identification are not acceptable. All paints and associated material are to be single sourced. Block fillers, primers, and undercoat products for each coating system are to be obtained from the same manufacturer. Materials shall be ready-mixed except for field catalyzed coatings. Field tinting of materials is not acceptable. Accessory materials, such as putty, spackle, thinners, reducers, and shellacs shall be of the highest quality and fully compatible with each other and with primary coating materials. Unused paint shall be turned over to Government at the end of the project.

Protective Coating Systems are as noted below:

SURFACE	PROTECTIVE COATING SYSTEM TYPE
Steel: Alkyd Primer	Shop Applied Primer - 1
Bar Joists: Mfgr Primer	A-6
Nonferrous/Galvanized Steel	B-4
Concrete/CMU: Latex Block Filler/Acrylic	F-2 (exposed)
Gyp. Board: WB Acrylic Latex Eggshell	J-4
Wood (doors): Alkyd Stain/Varnish	K-3

3.5 ARCHITECTURAL SPECIALTIES & EQUIPMENT

3.5.1 Interior Architectural Millwork

All millwork shall comply with AWI AWS Custom Grade or Premium Grade, depending on location of Millwork per Ft. Bragg IDG and as indicated in other Sections. Cabinets with high-pressure decorative laminate finish shall meet LD3 standards. Vertical laminate: Nominal 0.05 inch thick; Semi-exposed interior laminate: Nominal 0.028 inch thick. Cabinetry shall include base cabinets, wall mounted overhead cabinets, and full height storage units and post formed or solid surface countertops. Provide full overlay doors and drawers with concealed hardware. Door and drawer pulls shall meet 36 CFR 1191 and Ft. Bragg IDG finishes. Countertops with laminate casework shall be solid surface material with matching back and side splashes. Countertops or work surfaces with wood casework shall be solid surface material with matching back and side splashes. See below for

cabinetry quality and finish standards per Ft. Bragg IDG:

a. High Traffic Areas: Comply with AWI AWS Custom Grade for millwork in kitchens, workrooms, and break rooms. Hardware shall be brushed stainless steel. Counter tops shall be post-formed.

3.5.2 Cabinet Hardware

BHMA numbers are used below to designate hardware requirements, except as otherwise indicated.

a. Concealed (European Type) Hinges: B01602

b. Catches: Ball Friction Catches: B03013

c. Adjustable Shelf Standards: B04071. Shelf Rests for Standards: B04081

d. Shelf Rests: B04013

e. Drawer Slides: Side-mounted, full-extension, zinc-plated steel drawer slides with steel ball bearings, complying with ANSI/BHMA A156.9, Grade 1 and rated for 100 lbf

f. Door Locks: E07121

g. Drawer Locks: E07041

h. Grommets for cable passage through countertops: 1-inch OD, molded-plastic grommets with 3/4 inch hole and plastic cap with slot for wire passage

3.5.3 Solid Surface Counter Tops

Provide smooth, clean exposed tops and edges in uniform plane free of defects. Make exposed edges and corners uniformly beveled. Provide front and end overhang of 1-inch over base cabinets, formed with continuous drip groove on underside 1/2-inch from edge. Provide 3/4" X 4" high backsplash to be same material as counter top. Provide side splashes at all adjacent walls, typical, unless otherwise noted.

3.5.4 Marker boards and Tackboards

Provide a mix of markerboards and fabric covered bulletin boards wall mounted in Break/Class/Conference room, PT Common Area, Entry Lobby, Nutrition Education Room, Strengths Training Office Team Room, Hydrotherapy Room, the Sports Psychologist offices, and Dietitian Offices. Provide white porcelain enamel marker boards with aluminum frame, aluminum marker rail, and map rail above as stated in FF&E package. Coordinate all quantities, sizes, and locations with building occupants.

3.5.5 Wall and Corner Guards

Provide full height corner guards on exposed corners in all corridors and other areas exposed to high risk of damage. Provide Acrovyn material corner guards. Corner guard construction shall be recessed flush to the face of the wall with proper concealed attachments at time of installation.

3.5.6 Toilet Compartments

Per **Ft. Bragg IDG**, toilet partitions shall be floor-mounted with lateral cross bracing. Toilet partitions shall be solid phenolic or stainless steel partitions.

3.5.7 Toilet and Bath Accessories

Toilet/latrines, locker, and shower rooms are to receive a full range of premium stainless steel, Type 304, satin finish accessories, fully recessed with 18 gage doors and 20 gage back boxes. Accessories shall include mirrors, large roll paper towel dispensers, large roll toilet tissue dispensers, robe hooks and towel bars, grab bars, napkin disposal units, shower curtain rods and curtains, mop and broom holder with utility shelf, shower stall grab bars, and folding shower seats.

3.5.8 Horizontal Louver Blinds

Per **Ft. Bragg IDG**, perimeter windows shall receive horizontal mini-blinds 1" tempered aluminum slat, color to match Levelor 112 Alabaster. Equip mini-blinds with drawstrings and acrylic wand extensions.

Per **Ft. Bragg IDG**, window stools shall be constructed of solid surface materials.

3.5.9 Equipment Supports

Provide fire retardant blocking and manufacturer required supports for architectural specialties and equipment, and wall-mounted hardware. Supports are also required for Government supplied equipment including flat panel display monitors, marker boards, tackboards, ceiling mounted projectors, and other audio-visual equipment.

3.6 BUILDING ENVELOPE PERFORMANCE REQUIREMENTS

Building envelope performance and testing shall be conform to **UFC 1-200-02**, **UFC 3-101-01**, and as noted below.

- a. Design and construct the building envelope for the HPTC with a continuous air barrier to control air leakage. Clearly identify all air barrier components of each envelope assembly on construction documents and detail the joints, interconnections, and penetrations of the air barrier system. Clearly identify the boundary limits of the building air barriers and of the zone or zones to be tested for building air tightness on the drawings.
- b. Trace a continuous plane of air-tightness throughout the building envelope and make flexible and seal all moving joints.
- c. The air barrier materials shall have an air permeance not to exceed **0.004 cfm/sf at 0.3" wg** when tested in accordance with **ASTM E2178**.
- d. Join and seal the air barrier material of each assembly in a flexible manner to the air barrier material of adjacent assemblies, allowing for the relative movement of these assemblies and components.
- e. Support the air barrier so as to withstand the maximum positive and negative air pressure to be placed on the building without displacement, or damage, and transfer the load to the structure.

f. Seal all penetrations of the air barrier. If unavoidable penetrations of the air barrier by electrical boxes, plumbing fixture boxes, and other assemblies are not airtight, make them airtight by sealing the assembly and the interface between the assembly and the air barrier or by extending the air barrier over the assembly.

g. The air barrier shall be durable to last the anticipated service life of the assembly. Do not install lighting fixtures with ventilation holes through the air barrier.

h. Provide a motorized damper in the closed position and connected to the fire alarm system to open on call and fail in the open position for any fixed open louvers such as at elevator shafts.

i. Damper and control to close all ventilation or make-up air intakes and exhausts, atrium smoke exhausts and intakes, etc. when leakage can occur during inactive periods.

j. Compartmentalize spaces under negative pressure such as boiler rooms and provide make-up air for combustion.

k. Performance Criteria and Substantiation: Submit the qualifications and experience of the testing entity for approval. Demonstrate performance of the continuous air barrier for the testing boundary / envelope by the following tests:

(1) Test the completed testing boundary and demonstrate that the air leakage rate of the envelope does not exceed 0.25cfm/ft² at a pressure differential of 0.3" w.g. (75 Pa) in accordance with [ASTM E779](#) or [ASTM E1827](#). Accomplish tests using either pressurization or depressurization or both. Do not test until verifying that the continuous air barrier is in place and installed without failures in accordance with installation instructions so that repairs to the continuous air barrier, if needed to comply with the required air leakage rate, can be done in a timely manner.

(2) Test the completed testing boundary using Infrared Thermography testing. Use infrared cameras with a thermal sensitivity (Noise Equivalent Temperature Difference) of 0.1 deg C at 30 degrees C or better. Perform testing in accordance with [ASTM C1060](#). Determine air leakage pathways using [ASTM E1186](#) Standard Practices for Air Leakage Site Detection in Building Envelopes and Air Barriers Systems, and perform corrective work as necessary to achieve the required air leakage rate.

(3) Notify the Government at least three working days prior to the tests to provide the Government the opportunity to witness the tests. Provide the Government written test results confirming the results of all tests.

PART 4 SPECIFICATIONS

The following preliminary list of UFGS Guide Specifications are incorporated by reference and will be edited as applicable by the Designer of Record during design as required to conform to the project, installation requirements, and RFP with Government approval prior to the first design package. The Designer of Record (DOR) shall provide additional specifications or remove specifications from the list as necessary to

define the scope of work or as required by the Government. The DOR shall not remove any specifications that are necessary to effectuate the design intent and requirements of the RFP.

	DIVISION 4 - MASONRY
04 20 00	UNIT MASONRY
	DIVISION 5 - METALS
05 50 13	MISCELLANEOUS METAL FABRICATIONS
05 51 00	METAL STAIRS
05 52 00	METAL RAILINGS
	DIVISION 6 - WOOD, PLASTICS, AND COMPOSITES
06 10 00	ROUGH CARPENTRY
06 41 16.00 10	PLASTIC-LAMINATE-CLAD ARCHITECTURAL CABINETS
06 61 16	SOLID SURFACING FABRICATIONS
	DIVISION 7 - THERMAL AND MOISTURE PROTECTION
07 05 23	PRESSURE TESTING AN AIR BARRIER SYSTEM FOR AIR TIGHTNESS
07 21 13	BOARD AND BLOCK INSULATION
07 21 16	MINERAL FIBER BLANKET INSULATION
07 22 00	ROOF AND DECK INSULATION
07 27 10.00 10	BUILDING AIR BARRIER SYSTEM
07 42 13	COMPOSITE METAL WALL PANELS
07 60 00	FLASHING AND SHEET METAL
07 84 00	FIRESTOPPING
07 92 00	JOINT SEALANTS
	DIVISION 8 - OPENINGS
08 11 13	STEEL DOORS AND FRAMES
08 14 00	WOOD DOORS
08 33 23	OVERHEAD COILING DOORS
08 34 73	SOUND CONTROL DOOR ASSEMBLIES
08 51 13	ALUMINUM WINDOWS
08 60 45	SKYLIGHTS AND TRANSLUCENT PANELS
08 71 00	DOOR HARDWARE
08 81 00	GLAZING
08 91 00	METAL WALL AND DOOR LOUVERS
	DIVISION 9 - FINISHES
09 06 90	SCHEDULES FOR PAINTING AND COATING
09 22 00	SUPPORTS FOR PLASTER AND GYPSUM BOARD
09 29 00	GYPSUM BOARD
09 30 00	CERAMIC TILE
09 51 00	ACOUSTICAL CEILINGS
09 65 00	RESILIENT FLOORING
09 90 00	PAINTS AND COATINGS
	DIVISION 10 - SPECIALTIES
10 11 00	VISUAL DISPLAY UNITS
10 14 00.10	EXTERIOR SIGNAGE
10 14 00.20	INTERIOR SIGNAGE
10 21 13	TOILET COMPARTMENTS
10 22 13	WIRE MESH PARTITIONS
10 26 00	WALL AND DOOR PROTECTION
10 28 13	TOILET ACCESSORIES

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PN 79443

10 44 16	FIRE EXTINGUISHER CABINETS/BRACKETS (ONLY)
10 51 13	METAL LOCKERS
10 56 13	STEEL SHELVING

DIVISION 12 - FURNISHINGS

12 21 00	WINDOW BLINDS
12 36 00	COUNTERTOPS
12 48 13	ENTRANCE FLOOR MATS AND FRAMES

DIVISION 14 - CONVEYING EQUIPMENT

14 24 00	HYDRAULIC ELEVATORS
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SECTION 01 11 00.03

STRUCTURAL SUMMARY OF WORK
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PART 1 STRUCTURAL ENGINEERING

1.1 REFERENCES

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

AMERICAN CONCRETE INSTITUTE INTERNATIONAL (ACI)

- ACI 117 (2010; Errata 2011) Specifications for Tolerances for Concrete Construction and Materials and Commentary
- ACI 301 (2016) Specifications for Structural Concrete
- ACI 318 (2014; Errata 1-2 2014; Errata 3-5 2015; Errata 6 2016; Errata 7-9 2017) Building Code Requirements for Structural Concrete (ACI 318-14) and Commentary (ACI 318R-14)
- ACI 530/530.1 (2013) Building Code Requirements and Specification for Masonry Structures and Related Commentaries
- ACI 302.1R (2015) Guide for Concrete Floor and Slab Construction
- ACI 360R (2010; Errata 2016) Guide to Design of Slabs-on-Ground

AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)

- AISC 325 (2017) Steel Construction Manual
- AISC 341 (2016) Seismic Provisions for Structural Steel Buildings
- AISC 360 (2016) Specification for Structural Steel Buildings
- AISC DESIGN GUIDE 11 (2016) Vibrations of Steel-Framed Structural Systems Due to Human Activity, 2nd Edition

AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE)

- ASCE 7 (2017) Minimum Design Loads for Buildings and Other Structures

AMERICAN WELDING SOCIETY (AWS)

AWS D1.1/D1.1M (2015; Errata 1 2015; Errata 2 2016)
Structural Welding Code - Steel

ASTM INTERNATIONAL (ASTM)

ASTM A653/A653M (2017) Standard Specification for Steel
Sheet, Zinc-Coated (Galvanized) or
Zinc-Iron Alloy-Coated (Galvannealed) by
the Hot-Dip Process

ASTM E1300 (2016) Standard Practice for Determining
Load Resistance of Glass in Buildings

ASTM E1592 (2005; R 2012) Structural Performance of
Sheet Metal Roof and Siding Systems by
Uniform Static Air Pressure Difference

ASTM F2248 (2012) Standard Practice for Specifying an
Equivalent 3-Second Duration Design
Loading for Blast Resistant Glazing
Fabricated with Laminated Glass

INTERNATIONAL CODE COUNCIL (ICC)

ICC IBC (2018) International Building Code

STEEL DECK INSTITUTE (SDI)

ANSI/SDI C (2017) Standard for Composite Steel Floor
Deck - Slabs

SDI DDM04 (2015; Errata 1-3 2016; Add 1 2015; Add 2
2016) Diaphragm Design Manual (4th Edition)

SDI FDDM (2014; Errata 1-2 2014; Appendix A 2014;
Errata 3 2015) Floor Deck Design Manual

SDI MOC3 (2016) Manual of Construction with Steel
Deck (3rd Edition)

SDI RDDM (2013; Errata 1-2 2014) Roof Deck Design
Manual

SDI SPD2 (2001; Add 1 2017) Standard Practice
Detail (2nd Edition)

STEEL JOIST INSTITUTE (SJI)

SJI COMPOSITE JOISTS (2007; Supplement 1 2010) Standard
Specifications for Composite Steel Joist
Catalog

SJI LOAD TABLES (2010; Errata 1 2011; Errata 2 2012) 42nd
Edition Catalog of Standard Specifications
Load Tables and Weight Tables for Steel
Joists and Joist Girders

U.S. ARMY CORPS OF ENGINEERS SAVANNAH DISTRICT (CESAS)

SAS Des Manl (2015) Savannah District Design Manual for
Military Construction

U.S. DEPARTMENT OF DEFENSE (DOD)

UFC 1-200-01 (2016) General Building Requirements

UFC 3-110-03 (2012; with Change 2) Roofing

UFC 3-301-01 (2013; with Change 3) Structural
Engineering

UFC 4-010-01 (2012; with Change 1) DoD Minimum
Antiterrorism Standards for Buildings

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

29 CFR 1910 Occupational Safety and Health Standards

29 CFR 1926 Safety and Health Regulations for
Construction

UNDERWRITERS LABORATORIES (UL)

UL 580 (2006; Reprint Oct 2013) Tests for Uplift
Resistance of Roof Assemblies

1.2 DESIGN REQUIREMENTS

1.2.1 PROJECT DESCRIPTION

The work consists of the design and construction of a Human Performance Training Center (HPTC). Design shall be in accordance with ICC IBC as adopted and modified by the Unified Facilities Criteria, SAS Des Manl, referenced design standards, and applicable industry codes for the particular material involved. In the event of conflict, consult with the Contracting Officer's Representative (COR) for guidance.

1.2.2 STRUCTURAL BUILDING SYSTEM

The Structural Engineer shall be responsible for design of a complete structural building system. A complete structural system for the building shall include foundations, walls, floor and roof framing, floor and roof diaphragms, lateral force resisting system, framing and connection of any architectural features, such as foldable partition walls, receiving doors, etc., and the support of mechanical and electrical equipment. In addition, the Structural Engineer is responsible for the design of all lesser related structures such as retaining walls, dumpster screen walls, equipment support pads, etc., although they may be shown on other disciplines' drawings. Structural design of the building shall be compatible with architectural design. Structural design shall be in accordance with ICC IBC, as modified by UFC 1-200-01, and UFC 3-301-01. The structural design calculations and drawings shall be sealed by a professional engineer licensed in the state of North Carolina.

1.2.3 STRUCTURAL SYSTEM

The structural system and components shall be compatible with the intended functions and allow for future flexibility, renovation, and reconfigurations of the interior space. Do not locate columns, for instance, in rooms requiring visibility, circulation or open space, including, but not limited to entries, hallways, common area, classrooms, private offices and conference rooms. Columns shall not be placed in large open area on first floor.

The structural clear heights of each floor and the openings in each floor shall be coordinated with the architectural ceiling height in addition to mechanical/electrical equipment.

1.2.4 ECONOMICAL STRUCTURAL SYSTEM

Select an economical structural system based upon facility size, projected load requirements and local availability of materials and labor. Base the structural design on accurate, site specific geographical information and anticipated loads for the building and geographical location.

1.2.5 TERMITE TREATMENT

Provide termite prevention treatment in accordance with installation and local building code requirements, using licensed chemicals and licensed applicator firm.

PART 2 STRUCTURAL LOADING

2.1 LOAD REQUIREMENTS

Structural designs and loading shall be in accordance with ICC IBC as adopted and modified by Unified Facilities Criteria, the referenced design standards, SAS Des Man1, and applicable industry codes for the particular material involved.

2.2 BUILDING CLASSIFICATION

Building Occupancy is Category II for the Human Performance Training Center (HPTC) building per UFC 3-301-01. The building is classified as an Inhabited Building for ATFP criteria per UFC 4-010-01.

The building shall fully comply with UFC 4-010-01. Building structure shall be designed to meet Force Protection requirements for building material type and setback distance.

2.3 DEAD LOAD

Include weight of structure, coverings, and permanent contents, plus 5% of steel member weights to account for connections.

2.4 COLLATERAL LOAD

Provide a minimum 10 pounds per square foot (psf) on roof and floor to account for suspended construction. Structural design shall coordinate with other disciplines and provide support for finishes, mechanical equipment and ducts, plumbing and piping, electrical equipment and races, moveable partitions or other loads in excess of that amount as required.

2.5 ROOF LIVE AND SNOW LOADS

2.5.1 Minimum Roof Live Load

The minimum roof live load shall be 20 psf, reducible for structural members in accordance with ICC IBC. Provisions due to concentrated loads from moveable folding type partitions hung from the structure shall be incorporated in the structural design. Bottom chord of roof trusses shall be designed for a live load of 10 psf. Concurrent with the uniform roof live load, a 300-pound concentrated load shall be located anywhere at roof level hung from beams, trusses or joists top or bottom chords.

2.5.2 Snow Load

Roof snow load shall be applied in accordance with ASCE 7. The ground snow load, listed below, shall be used in determining the roof snow loads. Snow drift, sliding, balanced and unbalanced loads shall be taken into consideration. Other factors used in determining snow loads are:

Ground snow load (Pg):	10 psf
Exposure factor:	0.9 for fully exposed roof
Thermal factor:	1.1 for roof insulation R-value > 25
Terrain Category:	Exposure C
Snow Importance Factor, Is:	1.0

2.5.3 Rain-On-Snow Load

A rain-on-snow load, if applicable, shall be applied in accordance with ICC IBC and ASCE 7.

2.6 FLOOR LIVE LOAD

The floor live loads shall be in accordance with ICC IBC and the following.

Area	Live Load (psf)
Strength Training	150
Multipurpose Training	150
Cardio Training	100
Performance	100

2.7 WIND LOAD

Wind loads for both main wind force resisting system and for components and cladding shall be determined in accordance with ASCE 7 using the following parameters:

Basic wind speed:	119 mph (three-second gust) per UFC 3-301-01
Exposure category:	C for open terrain with scattered obstructions
Wind Importance Factor: Iw:	1.0

The design wind pressures will be shown on an isometric or 2D view of the building on one of the structural plates and shall be accompanied by a table that identifies the component and cladding wall and roof pressure for each zone.

2.8 INTERIOR PARTITION LATERAL LOADS

Interior partitions shall be designed for a horizontal load of not less than 10 psf normal to the partition. The deflection of interior partitions shall not exceed 1/360 the span for walls with brittle finishes and 1/240 for walls with flexible finishes. Other design requirements such as seismic may be more restrictive and control the design of the partitions.

2.8.1 Thermal Loads

The design shall consider changes of temperature that the structure will experience and the expansion and contraction caused by these thermal changes. Joints shall be provided to limit the amount of thermal movement.

2.8.2 Roof Structure

Roof structure supports shall be designed for anchor loads in accordance with 29 CFR 1910, 29 CFR 1926, and UFC 3-301-01.

2.8.3 Load Combinations

Load combinations shall be in accordance with the ICC IBC and ASCE 7 and used in combination with AISC Specifications and ACI 318.

2.9 SEISMIC LOADS

Seismic Loads shall be in accordance with ASCE 7:

MCE Ground Motion response coefficients: $S_s = 0.21g$, $S_1 = 0.10g$
Site class as determined by contractor's geotechnical engineer

2.10 ANTITERRORISM FOR BUILDINGS

a. Windows and doors: Equivalent 3-Second Duration Design Pressure will be determined in accordance with ASTM E1300 in conjunction with ASTM F2248 based on the applicable explosive weight and actual stand-off distance to the glazing.

b. Framing Members: Member Stress < Code Allowable Stress
Member Deflection < L/60

c. Connection to Supporting Structure: Fastener Shear < Manufacturers Recommended Allowable

d. Supporting Structure: Member Stresses < Nominal Strength
Connection Forces < Nominal Strength

e. Anchorage Forces for Overhead Mounted Architectural Features and Equipment. (Aside from seismic forces):

Feature and Equipment Weights < 31 lbs: Exempt
Feature and Equipment Weight > 31 lbs:
Horizontal: 0.5 x Weight
Vertical: 1.5 x Weight

f. Building shall be designed for blast loads if conventional construction standoff distances are not met.

g. Progressive collapse is not required.

2.11 SERVICEABILITY CRITERIA

Structural design for serviceability criteria shall be consistent with the foundation and structural systems provided. However, the following shall be used as the minimum criteria and are based on the un-factored loads. Criteria for wind loads are to be determined for the 50 year recurrence. Do not reduce to 10 year recurrence.

- a. Roof Beams, Joists and Purlins supporting non-plaster ceiling:
 - L/240 maximum vertical deflection under Live, Snow, or Wind Loads
 - L/180 maximum vertical deflection under Dead + (Live or Snow)
- b. Floor Beams and Girders:
 - L/360 maximum vertical deflection under Live Load
 - L/240 maximum vertical deflection under Dead + Live
- c. Building Drift (Bare frame deflection): Lateral drift is not to exceed **ASCE 7** limits.
- d. Cold-Formed Wall Studs **backing** masonry veneer: L/600 under Wind Load.
The minimum thickness of cold-formed metal wall studs shall be 18 gage.
- e. Roof Deck: Vertical deflection of L/360 under Live or Wind Loads
- f. Wall Panels: Horizontal deflection of L/360 under Wind Loads
- g. Expansion and Contraction: Design joints in building structure and exterior shell to accommodate thermal and moisture changes.
- h. Floor System Vibration: **AISC DESIGN GUIDE 11**.
 - (1) Acceleration Limit: $a_0/g < 0.5\%$ (Office)
 - (2) Natural Frequency: $f_n > 3$ Hz
 - (3) Natural Frequency: $f_n > 9$ Hz
 - (4) Stiffness > 5.7 kips/in. (Office)

PART 3 BUILDING SUBSTRUCTURE

3.1 FOUNDATIONS AND FLOOR SLAB

The following recommendations are based upon assumptions which shall be verified by a Geotechnical Engineering Study to be completed on site. They are for preliminary information only and the Contractor shall be responsible for the proposed design of the foundations.

Foundation, floors and slabs shall be designed and constructed in accordance with **ACI 318**, **ACI 360R**, **ACI 302.1R** and reinforced with steel reinforcing. **Slabs on grade may be reinforced with synthetic fibers at Contractor's option.**

The proposed building is **anticipated** to be founded on reinforced concrete spread foundations in accordance with the **preliminary** Geotechnical Engineering Report **dated March 2018**. A 10 mil polyethylene vapor retarder,

with a maximum permeance rating of 0.3 perms, over a 4-inch crusher run capillary water barrier shall be placed beneath the slabs-on-grade. The slab on grade shall float independent from spread foundation supported elements and contain control/construction joints at approximately 15 ft o/c maximum. All exposed concrete joints shall be sealed with appropriate joint sealant. Spread foundations shall extend a minimum of 24 inches below final grade.

The flatness and levelness of floors shall be carefully controlled and the tolerances shall be measured by the F-Number system of ACI 117. The floor flatness (Ff) and levelness (Fl) overall values shall meet the following criteria:

Floor Flatness Overall Value (Ff) 35 minimum/local value 24 minimum
Floor Levelness Overall Value (FL) 20 minimum/local value 15 minimum

The following geotechnical parameters are assumed for preliminary design and shall be verified by the final Geotechnical Engineering Report:

Assumed allowable net bearing pressure = 2500 psf

Proper drainage around the facility is an important consideration. Exterior grading shall be sloped away from the building a minimum of 5 percent for the first 10 feet.

Minimum factors of safety for foundations:

Overturning	1.5
Uplift and Floatation	1.5
Sliding	1.5

3.2 SETTLEMENT OF FOUNDATIONS

Maximum permissible settlement criteria, unless otherwise approved by the Government and unless detrimental to the structural system and materials designed by the Contractor shall be:

Differential settlement 1/2 inch across building footprint
Total settlement 1 inch

PART 4 SPECIAL INSPECTIONS

Special inspections, in accordance with UFC 3-301-01 and ICC IBC, are required for this project.

PART 5 GEOTECHNICAL ENGINEERING DATA & REQUIREMENTS

A preliminary Geotechnical Report has been prepared for this project; however, development of the final foundation design is the responsibility of the Contractor. Hire a registered geotechnical engineer to evaluate the subsurface data provided and determine if additional site investigations are needed. If additional investigations are needed, the investigations shall be the responsibility of the Contractor and its Geotechnical Engineer. The Geotechnical Engineer shall evaluate the information provided and provide a final Geotechnical Design Report.

The Contractor and the professional geotechnical engineer consultant shall certify in writing that the design of the project has been developed consistent with the Contractor's Geotechnical Engineer's Foundation and

Pavement Design Analysis and Report. The certification shall be stamped by the consulting professional geotechnical engineer and shall be submitted with the first design submission. If revisions are made to the initial design submission, a new certification shall be provided with the final design submission.

PART 6 BUILDING SUPERSTRUCTURE

6.1 ROOF STRUCTURAL FRAMING

The roof shall be a metal deck diaphragm with roof system(s) as described in Section 01 11 00.02 ARCHITECTURAL AND INTERIOR DESIGN SUMMARY OF WORK. The roof system shall meet requirements for wind uplift resistance of UL 580, Class I-90 and the recommendations of UFC 3-110-03. In addition, the roof system shall have been tested and certified in accordance with ASTM E1592.

Lateral loads at roof level must be transferred by the roof deck diaphragm to vertical bracing, moment frames, or shear wall locations. The lateral resistance system shall transfer the lateral loads to the building foundation.

6.2 FLOOR STRUCTURAL FRAMING

Floor vibration caused by human activity shall be limited to that for an office environment as described in AISC DESIGN GUIDE 11. The first floor slab-on-grade must be placed on vapor barrier and shall be no less than 4 inches thick.

6.3 WALL SYSTEMS

The HPTC building exterior wall system shall be insulated as required to meet energy code requirements and be designed to achieve maximum energy efficiency and thermal and moisture protection. The wall support system supporting exterior façade finish may be pre-engineered metal building system, metal stud framing, CMU, autoclaved aerated concrete (AAC) masonry, formed or poured in place reinforced insulated concrete form system or other type of system as Designer of Record deems appropriate to meet current code requirements and ATFP structural requirements.

PART 7 STRUCTURAL MATERIALS DESIGN DATA

Materials for structural elements shall be as indicated and as shown.

7.1 REINFORCED CONCRETE

7.1.1 Design

Reinforced concrete shall be designed and detailed in accordance with the ICC IBC as modified by ACI 318, ACI 301, and other ACI publications that are applicable to the design. All concrete elements, including slabs-on-grade, shall be reinforced with temperature and shrinkage reinforcement as recommended by ACI as a minimum.

7.1.2 Concrete Strength

The required 28-day concrete compressive strength (f'c) shall be left to the Contractor's discretion but shall not be less than 3000 pounds per square inch (psi).

7.1.3 Reinforcing Steel

Reinforcing steel must meet industry approved standards.

7.2 STRUCTURAL STEEL

7.2.1 Design

Structural steel shall be designed in accordance with ICC IBC, AISC 325, AISC 341 and AISC 360. All structural steel members shall be designed by the structural engineer to support all applicable loads. Structural drawings shall clearly show all structural members and their locations.

7.2.2 Connections

Types of connections shall be consistent with the design assumptions for the basic type of steel construction used. Connections shall be designed and detailed to provide adequate capacities for the applied forces and moments. Connection design shall be the responsibility of a licensed structural engineer and shall not be delegated to the steel fabricator. Welding shall be in accordance with AWS D1.1/D1.1M. Bolted connections shall be in accordance with AISC 325, AISC 341, and AISC 360.

7.3 STEEL JOISTS

The design and selection of steel joists shall be governed by the Steel Joist Institute (SJI) standards SJI COMPOSITE JOISTS, SJI LOAD TABLES, AISC 325, AISC 341 and AISC 360. The wind uplift requirements shall be clearly delineated on the design drawings or in the specifications. Joists requiring special design to resist wind uplift and non-uniform loads shall be designated as such on the drawings, and the required design loads provided. The designer shall provide joist-loading diagrams on the drawings for all joists with geometric configurations outside the scope of the SJI standards. Joist end supports and anchorage to resist uplift shall be designed to accommodate the applied forces, including those resulting from wind and seismic loading. Joists shall be anchored to steel supports by bolting or field welding. Provide steel insert plates in concrete work. Where top chords are extended, provide top chord extension designation per SJI of extensions on the drawings. Bridging shall conform to the requirements of SJI.

7.4 STEEL DECKING

The design and selection of steel deck shall be in accordance with ANSI/SDI C. The designation of the steel roof decking type and gauge shall conform to SDI standards. Steel roof deck manufacturer's designations shall not be used. The minimum required section properties of the steel roof deck shall be required to be specified or noted on the design drawings and shall be determined as prescribed by SDI FDDM, SDI RDDM, SDI SPD2, and SDI MOC3. Steel deck designed to function as a shear diaphragm shall be designed in accordance with the provisions of SDI DDM04.

7.5 Cold-Formed Metal Framing (CFMF)

7.5.1 Design

Design and detailing of wall systems using cold-formed metal framing (CFMF) members to anchor masonry veneers shall be in accordance with the provisions of ICC IBC. Wall systems shall be specified using UFGS 05 40 00

COLD-FORMED METAL FRAMING. Wind load deflection of wall systems to which masonry veneer is anchored shall be no more than 1/600 of the span of the wall. Metal panel deflection shall be limited to 1/240. Top chords of roof trusses shall be 16 gage minimum.

7.5.2 Cold-Formed Metal Framing Material

Cold-formed steel framing shall be formed from steel that conforms to the requirements of ASTM A653/A653M, Grade 33 or higher, having a minimum yield of 33 ksi. Minimum uncoated steel thickness (design thickness times 0.95) shall be 0.043 inch (18 gage). All cold-formed steel framing shall receive a G-60 galvanized coating. All cold-formed steel framing connectors shall receive a G-90 galvanized coating.

7.6 Concrete Masonry

7.6.1 Design

Masonry design shall be in accordance with ACI 530/530.1 (as modified by ICC IBC and UFC 3-301-01 (as noted below)). Concrete masonry crack control measures comprised of masonry control joints, joint reinforcement, and bond beams shall be incorporated in the design of concrete masonry walls and partitions. Masonry control joints shall not be placed closer than 2 feet from openings. Brick expansion joints for brick faced buildings 50 feet and longer, shall be located as recommended by UFC 3-301-01. Masonry control joint (MCJ) locations shall be shown on the architectural plan sheets. Brick expansion joints (BEJ) locations shall be shown on the architectural exterior wall elevations and floor plans.

7.6.2 Control Joints

Concrete masonry walls shall have vertical control joints as follows:

- a. Exterior and interior walls: 24 feet maximum
- b. At changes in wall height or thickness
- c. Near wall intersections
- d. At points of stress concentration
- e. At control joints in foundation walls and in floors that support masonry walls

7.6.3 Miscellaneous

Foundations for all power and light poles, exterior steel support structures shall be rated for 135 miles per hour winds.

PART 8 SPECIFICATIONS

The following preliminary list of UFGS Guide Specifications are incorporated by reference and will be edited as applicable by the Designer of Record during design as required to conform to the project, installation requirements and RFP with Government approval, prior to the first design package. The Designer of Record (DOR) shall provide additional specifications or remove specifications from the list as necessary to define the scope of work or as required by the Government. The DOR shall not remove any specifications that are necessary to effectuate the design

intent and requirements of the RFP.

DIVISION 03 - CONCRETE

03 11 13.00 10 STRUCTURAL CAST-IN-PLACE CONCRETE FORMING
03 15 00.00 10 CONCRETE ACCESSORIES
03 20 00.00 10 CONCRETE REINFORCING
03 30 00.00 10 CAST-IN-PLACE CONCRETE

DIVISION 04 - MASONRY

04 20 00 MASONRY
04 21 13.13 NONBEARING MASONRY VENEER/STEEL STUD WALLS

DIVISION 05 - METALS

05 05 23 WELDING, STRUCTURAL
05 05 23.13 10 ULTRASONIC INSPECTION OF WELDMENTS
05 12 00 STRUCTURAL STEEL
05 21 13 DEEP LONGSPAN STEEL JOIST FRAMING
05 21 16 LONGSPAN STEEL JOIST FRAMING
05 21 19 OPEN WEB STEEL JOIST FRAMING
05 21 23 STEEL JOIST GIRDER FRAMING
05 30 00 STEEL DECKS
05 40 00 COLD-FORMED METAL FRAMING
05 50 13 MISCELLANEOUS METAL FABRICATIONS

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SOF HPTC
Fort Bragg, NC

W912PM18R0003
PN 79443

PART 9 SPECIFICATIONS

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SECTION 01 11 00.04

MECHANICAL AND PLUMBING SUMMARY OF WORK
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PART 1 GENERAL

1.1 REFERENCES

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

AIR-CONDITIONING, HEATING AND REFRIGERATION INSTITUTE (AHRI)

AHRI DCAACP (Online) Directory of Certified Applied Air-Conditioning Products

AMERICAN GAS ASSOCIATION (AGA)

AGA Z223.1 (2012) National Fuel Gas Code

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI Z21.13/CSA 4.9 (2017; Errata 2018) Gas-Fired Low Pressure Steam and Hot Water Boilers

ANSI Z21.22/CSA 4.4 (2015) Relief Valves for Hot Water Supply Systems

AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS (ASHRAE)

ASHRAE Guideline 0 (2013) The Commissioning Process

ASHRAE Guideline 1.1 (2007) HVAC&R Technical Requirements for The Commissioning Process

ANSI/ASHRAE 15 & 34 (2016) ANSI/ASHRAE Standard 15-Safety Standard for Refrigeration Systems and ANSI/ASHRAE Standard 34-Designation and Safety Classification of Refrigerants

ASHRAE 189.1 (2014; ERTA 1-2 2015; ERTA 3-4 2017) Standard for the Design of High-Performance Green Buildings Except Low-Rise Residential Buildings

ASHRAE 55 (2016) Thermal Environmental Conditions for Human Occupancy

ASHRAE 62.1 (2013, w/all Interpretations and Erratas) Ventilation for Acceptable Indoor Air Quality

ASHRAE 90.1 - IP (2013) Energy Standard for Buildings Except Low-Rise Residential Buildings

- ASHRAE EQUIP IP HDBK (2012) Handbook, HVAC Systems and Equipment (IP Edition)
- ASHRAE FUN IP (2017) Fundamentals Handbook, I-P Edition
- ASHRAE HVAC APP IP HDBK (2016) HVAC Applications Handbook, I-P Edition

AMERICAN SOCIETY OF SANITARY ENGINEERING (ASSE)

- ASSE 1003 (2009) Performance Requirements for Water Pressure Reducing Valves for Domestic Water Distribution Systems - (ANSI approved 2010)

ASME INTERNATIONAL (ASME)

- ASME A112.19.2/CSA B45.1 (2013) Standard for Vitreous China Plumbing Fixtures and Hydraulic Requirements for Water Closets and Urinals
- ASME A13.1 (2015) Scheme for the Identification of Piping Systems
- ASME B16.34 (2017) Valves - Flanged, Threaded and Welding End
- ASME A17.1/CSA B44 (2016) Safety Code for Elevators and Escalators
- ASME BPVC SEC IV (2010) BPVC Section IV-Rules for Construction of Heating Boilers
- ASME CSD-1 (2016) Control and Safety Devices for Automatically Fired Boilers

ASTM INTERNATIONAL (ASTM)

- ASTM B88 (2016) Standard Specification for Seamless Copper Water Tube
- ASTM C547 (2017) Standard Specification for Mineral Fiber Pipe Insulation
- ASTM C552 (2017) Standard Specification for Cellular Glass Thermal Insulation

CAST IRON SOIL PIPE INSTITUTE (CISPI)

- CISPI 310 (2012) Coupling for Use in Connection with Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Applications

CONSUMER ELECTRONICS ASSOCIATION (CEA)

- CEA-709.1-D (2014) Control Network Protocol Specification

CEA-709.3 (1999; R 2004) Free-Topology Twisted-Pair
Channel Specification

INTERNATIONAL CODE COUNCIL (ICC)

ICC IBC (2018) International Building Code

ICC IMC (2018) International Mechanical Code

ICC IPC (2018) International Plumbing Code

MANUFACTURERS STANDARDIZATION SOCIETY OF THE VALVE AND FITTINGS
INDUSTRY (MSS)

MSS SP-110 (2010) Ball Valves Threaded,
Socket-Welding, Solder Joint, Grooved and
Flared Ends

MSS SP-58 (1993; Reaffirmed 2010) Pipe Hangers and
Supports - Materials, Design and
Manufacture, Selection, Application, and
Installation

MSS SP-67 (2017; Errata 1 2017) Butterfly Valves

MSS SP-70 (2011) Gray Iron Gate Valves, Flanged and
Threaded Ends

MSS SP-71 (2011; Errata 2013) Gray Iron Swing Check
Valves, Flanged and Threaded Ends

MSS SP-78 (2011) Cast Iron Plug Valves, Flanged and
Threaded Ends

MSS SP-80 (2013) Bronze Gate, Globe, Angle and Check
Valves

MSS SP-85 (2011) Gray Iron Globe & Angle Valves
Flanged and Threaded Ends

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 54 (2018) National Fuel Gas Code

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

NFPA 90A (2018) Standard for the Installation of
Air Conditioning and Ventilating Systems

NFPA 101 (2018; TIA 18-1) Life Safety Code

PLUMBING AND DRAINAGE INSTITUTE (PDI)

PDI WH 201 (2010) Water Hammer Arresters Standard

NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY (NIST)

NIST HB 135 (1995; Annual Suppl 2010) Life Cycle Costing Manual for the Federal Energy Management Program

SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION (SMACNA)

SMACNA 1966 (2005) HVAC Duct Construction Standards Metal and Flexible, 3rd Edition

U.S. ARMY (DA)

DA AR 190-11 (2013) Physical Security Of Arms, Ammunition, And Explosives

DA AR 380-5 (2000) Department Of The Army Information Security Program

U.S. ARMY CORPS OF ENGINEERS SAVANNAH DISTRICT (CESAS)

Ft. Bragg IDG Fort Bragg Installation Design Guide

SAS Des Manl (2015) Savannah District Design Manual for Military Construction

U.S. DEPARTMENT OF ENERGY (DOE)

BLCC Program Building Life-Cycle Costing) Program

U.S. DEPARTMENT OF DEFENSE (DOD)

DODI 8500.01 (2014) Cybersecurity

DODI 8510.01 (2014) Risk Management Framework (RMF) for DoD Information Technology (IT)

UFC 1-200-01 (2016) General Building Requirements

UFC 1-200-02 (2016, with Change 1) High Performance and Sustainable Building Requirements

UFC 3-310-04 (2013; with Change 1) Seismic Design for Buildings

UFC 3-400-02 (2003) Design: Engineering Weather Data

UFC 3-410-01 (2013; Change 2 2015) Heating, Ventilating, and Air Conditioning Systems

UFC 3-420-01 (2004; Change 8 2009) Plumbing Systems

UFC 3-450-01 (2003) Noise and Vibration Control

UFC 3-600-01 (2016; with Change 1) Fire Protection Engineering for Facilities

UFC 4-010-01 (2012; with Change 1) DoD Minimum

Antiterrorism Standards for Buildings

UFC 4-010-06 (2016; with Change 1) Cybersecurity of Facility-Related Control Systems

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

10 CFR 436 Methodology and Procedures for Life Cycle Cost Analyses

PL 109-58 Energy Policy Act of 2005 (EPAct05)

PL 110-140 Energy Independence and Security Act of 2007

UNDERWRITERS LABORATORIES (UL)

UL 795 (2016) UL Standard for Safety Commercial-Industrial Gas Heating Equipment

1.2 APPLICABLE CODES, STANDARDS AND CRITERIA

The design and construction shall conform to the following. All references cited shall be incorporated in their entirety.

Ft. Bragg IDG
DODI 8500.01
DODI 8510.01
ANSI/ASHRAE 15 & 34
ASHRAE 55
ASHRAE 62.1
ASHRAE 90.1 - IP
ASHRAE 189.1
ASHRAE FUN IP
ASHRAE EQUIP IP HDBK
ASHRAE Guideline 0
ASHRAE Guideline 1.1
ASHRAE HVAC APP IP HDBK
PL 109-58
PL 110-140
ICC IBC
ICC IPC
ICC IMC
NFPA 54
NFPA 70
NFPA 90A
NFPA 101
SMACNA 1966
SAS Des Manl
DODI 8500.01
DODI 8510.01
UFC 1-200-01
UFC 1-200-02
UFC 3-310-04
UFC 3-400-02
UFC 3-410-01
UFC 3-420-01
UFC 3-450-01
UFC 3-600-01

UFC 4-010-01
UFC 4-010-06
PL 109-58
10 CFR 436
NIST HB 135
BLCC Program
PDI WH 201

PART 2 DESIGN REQUIREMENTS

Mechanical and plumbing systems design shall conform to the requirements of Section 01 33 16 DESIGN DATA (DESIGN AFTER AWARD), SAS Des Manl, ICC IBC, NFPA Standards, applicable UFC Codes, the Installation Design Guide for a Sustainable Ft. Bragg (IDG), and UFGS Guide specifications referenced herein. In the case of conflict, the Contracting Officer's Representative can provide guidance.

The facility systems shall be selected based on a Life Cycle Cost Analysis. The LCCA shall be performed in accordance with UFC 1-200-02. The building, including the building envelope, HVAC systems, service water heating, power, and lighting systems shall be designed to achieve an energy consumption that is at least 30 percent below the consumption of a baseline building meeting the minimum requirements of ASHRAE 90.1 - IP in accordance with EPA 2005 and UFC 1-200-02. This 30 percent reduction is mandatory as specified in UFC 1-200-02. For utility rates to be used in LCCA, refer to Appendix I "Utility Rates and Charges".

The facility systems shall meet the requirements of ASHRAE 189.1 to the extend required in UFC 1-200-02.

Provide Energy Star for FEMP designated products. The term "Energy Star product" means a product that is rated for energy efficiency under an Energy Star program. The term "FEMP designated product" means a product that is designated under the Federal Energy Management Program of the Department of Energy as being among the highest 25 percent of equivalent products for energy efficiency. In the case of an electric motor of 1 to 500 horsepower, select only a premium efficient motor.

Ensure the penetrations through secure rated walls and STC rated walls are in accordance with DA AR 190-11 and DA AR 380-5.

PART 3 SYSTEM MAINTAINABILITY

a. All equipment located in Mechanical room must fit through mechanical room doorway, or must be capable of being disassembled and reassembled to fit through doorway. Coordinate with mechanical room door size. Provide adequate clearances around all equipment for periodic maintenance, inspection, and cleaning. Service of one piece of equipment shall not require disturbance of adjacent equipment. This shall be coordinated with all systems (for example it is unacceptable planning to install lights, then block access to them with pipes and conduit). System maintainability has 3 broad categories. The design analysis and Operation & Maintenance manuals shall address these in detail:

(1) Routine Maintenance (filters, inspection, etc.): This requires the most frequent and easiest access. The need for portable or fixed ladders (no more than 12 feet) shall be minimized and, where needed, ensure that space is available to use them properly.

(2) Component Replacement (coils, fans, motors, etc.): This requires less frequent access, but when the need arises, this work must be done quickly and efficiently, due to its impact on the user. Everything needed to perform these tasks shall be provided (work platforms, equipment access hatches/panels, hoists, etc.).

(3) Equipment Replacement (air handling unit, boilers, heat pumps, etc.): This occurs so rarely that permanent equipment to support these tasks is not required. However, equipment replacement shall be accommodated and the facility shall include items such as removable wall sections, access routes, removable louvers on exterior wall of mechanical rooms, etc. to allow replacement with the least amount of collateral damage, and shall not require tearout of permanent walls or removal of other equipment piping, ductwork, conduit, etc.

b. Ensure that the equipment, including filters, controls, control valves, backflow preventers, and coils are easily accessible and have ample room for servicing, inspection, and cleaning. Provide isolation valves for each HVAC unit, zone, branch, long runs, etc. as necessary for proper isolation and maintenance. Coils shall be fully removable without requiring demolition of building components. Piping configuration at the coils shall include unions to facilitate easy removal.

c. Ensure that the maintenance and repair activities can be performed safely and efficiently without the need for extensive material handling (e.g. A-frames) or extensive use of access equipment (e.g. ladders).

d. Locate valves, pumps, strainers, controls, sensors, and other items requiring regular service so they may be maintained from floor level, where possible. If floor level access is not possible, then provide permanent maintenance access.

e. Ensuring maintainability requires careful coordination of piping, conduit, etc., to avoid blocking access. This coordination shall be a priority, recognizing that this will generally result in longer runs of pipe/conduit.

f. Above-ceiling utilities (ductwork, utility piping and valving, etc.) shall be accessible for a worker to reach two (2) sides plus the service side with a minimum three (3) feet clearance (greater if required for component maintenance/disassembly).

g. Provide maintenance access for suspended mechanical equipment. All suspended equipment mounted over 12 feet above floor will be provided with a permanent means of access such as service platforms, railings, catwalk with railings, and a permanent ladder or stairs for access of maintenance, repair and replacement. Coordinate requirements with all trades.

h. Water treatment systems for boiler systems shall be designed and provided such that chemical handling is accomplished at the floor level.

PART 4 PLUMBING SYSTEM

Plumbing system shall be designed and installed in accordance with **ICC IPC**. Inspection and testing of the plumbing system shall be performed as prescribed in the IPC. The plumbing system shall conform to the applicable rules of **ICC IPC**, governing venting of plumbing fixtures, sizing of waste, vents, drains, and water systems.

4.1 Water Supply System

Domestic water shall be routed from the Fort Bragg water supply and enter the building in the main Mechanical room located on the first floor. Coordinate with ONUS for connection to the Installation distribution system. See site utility plan and Section 01 11 00.01 SITE, CIVIL, UTILITIES, AND LANDSCAPING SUMMARY OF WORK for additional information. The domestic water supply shall include piping from 10 feet outside the building and the connection to the water service provided by ONUS located outside of the building; see Section 01 11 00.01 SITE, CIVIL, UTILITIES, AND LANDSCAPING SUMMARY OF WORK for details. The backflow preventer and water meter shall be provided by ONUS. Ensure the meter shall be monitored by the DDC system. Maximum allowable water pressure at building entrance shall be 80 psig; provide pressure reducing valve in water line at building entrance for water pressures above 80 psi.

Domestic water systems serving the facility shall serve plumbing fixtures and appliances in the restroom and shower areas, janitorial rooms, laundry areas, hydrotherapy areas, and break areas such as vending machines, ice machines, and coffee makers.

The size of domestic water utility line, piping system, and associated plumbing water demand shall be sized in accordance with ICC IPC. Utilize low flow shower heads and flush valves to minimize water usage. Piping shall be sized to maintain a minimum pressure of 25 psig at the furthest flush valve, 30 psig at the hydraulically most remote safety shower. Water velocity in the distribution system piping shall not exceed 6 feet per second and provisions shall be made to reduce water hammer with water hammer arresters.

4.2 Domestic Hot Water Heating

The domestic hot water heating system selection shall be based on a LCCA. A central hot water heater, located in the main Mechanical Room, shall provide hot water to all plumbing fixtures requiring hot water in the building. Hot water shall be re-circulated via a hot water recirculation pump, located adjacent to the hot water heater.

Solar hot water shall be used if LCCA determines that system is cost effective. If provided, roof access shall be provided for the solar panels.

Water heater shall be sized for the building hot water demand. The water heater shall comply with the thermal efficiency, standby loss, and all other requirements of ASHRAE 90.1 - IP. Hot water shall be stored at a minimum of 140 degrees F and mixed down to 110 degrees F delivery temperature prior to leaving the mechanical room. Provide thermostatic mixing stations as required. Hot water heating equipment shall be located in the 1st floor Mechanical Room.

4.3 Plumbing Fixtures

Fixtures shall be industrial grade and water conservation type. Fixture count shall be as required by ICC IBC. Plumbing fixtures shall be selected for water conservation, maintainability, and durability. All fittings shall be polished chrome. Fixtures requiring handicap accessibility shall be mounted at ADA approved heights above finished floor. Wall hydrants, hose bibs, spigots, and service sinks shall have integral vacuum breakers.

- a. Provide refrigerator locations with Ice Maker boxes with integral

cut-off valve and water hammer arrestor

b. Provide mechanical Rooms with floor drains adjacent to boilers, pumps, water heater and air handling units.

c. Provide freeze-proof wall hydrants on the exterior of each facility at intervals of 100 feet.

d. Provide a floor-mounted janitor's sink and wall-mounted mop sink faucet in each janitor's closet. Each janitor's closet shall also have one floor drain with a 4-inch deep seal trap and trap guard.

4.3.1 Lavatories

Provide enameled cast-iron lavatories with 2 cast-iron or steel brackets secured to the underside of the apron and drilled for bolting to the wall in a manner similar to the hanger plate. Exposed brackets shall be porcelain enameled. Faucets shall be cast brass body, polished or brushed chrome finish. General operation shall be electronic (no battery) IR Infra-red) type with adjustable temperature settings and adjustable sensitivity settings. Faucets shall be low flow (0.5 (gpm)) type. Wheelchair lavatories shall have 2-handled wrist blade type, center set faucet with gooseneck spout.

4.3.2 Water Closets

Water closets shall be vitreous china, conforming to ASME A112.19.2/CSA B45.1, elongated bowl, siphon jet style, water saving type with white open lid. Top of toilet seat height above floor shall be 14 to 15 inches, except 17 to 19 inches for wheelchair water closets. Water closet shall be floor-mounted type. Flush valve shall be electronic (no battery) IR type with individual shut off valve and manual override flush button. Flush valves shall be low flow (1.28 gpf) type.

4.3.3 Urinals

Urinals shall be wall-mounted back outlet, siphon jet, integral trap, and extended side shields with white vitreous china, conforming to ASME A112.19.2/CSA B45.1. Provide urinal with the rim 24 inches above the floor and 17 inches for wheelchair water urinal. Flush valve shall be electronic (no battery) IR type with individual shut off valve and manual override flush button. Flush valve shall be low flow (0.125 GPF) type. Waterless urinals are not allowed.

4.3.4 Showers

Provide personnel showers equipped with potable hot and cold water supply. Shower heads shall be mounted not less than 76 inches above finished floor.

Provide shower pans where ceramic stalls are installed. Showers shall be provided with combination thermostatic mixing and pressure balancing valves. Provide shower valve with ball type control handle. Showers shall be low flow (1.5 gpm) type.

Provide showerhead in hydrotherapy room for rinse off purposes.

Wheelchair Shower: Wall mounted detachable spray assembly, 24-inch wall bar, elevated vacuum breaker, supply elbow and flange and valve. External trim shall be chrome-plated metal. Plastic shower head with flow control

to limit discharge to maximum 1.75 gpm, 60- foot length of rubber-lined corrosion-resistant steel, chrome-plated metal flexible, or white vinyl reinforced hose and supply wall elbow. Provide corrosion-resistant steel or chrome-plated metal wall bar with an adjustable swivel hanger for showerhead. Combination thermostatic and pressure anti-scald balancing valve, with chrome-plated metal lever type operating handle adjustable for rough-in variations and chrome-plated metal or corrosion-resistant steel face plate. Provide external screwdriver check stops, vacuum breaker, and temperature limit stops. Set stops for a maximum temperature of 110 degrees F.

4.3.5 Kitchen (Break Room) Sinks

Provide stainless steel double bowl sinks with sound-deadening bowls, commercial faucet blade handles, and swivel neck for hot and cold water. Sinks shall be low flow (1.5 gpm) type.

4.3.6 Service Sinks

Floor mop sinks shall be enameled cast iron with stainless steel rim guard. Faucet shall be industrial gooseneck style with bucket hook, hose-end connection complete with vacuum breakers, and rough chrome finish.

4.3.7 Drains

a. Floor drains shall be cast iron with 4-inch deep seal trap where allowed by local code and trap seal device (i.e. trap guard) or trap primer. Cast-in-place floor drains shall be provided with pans or liners. Floor drains shall have square strainers.

b. Trench drains shall be provided with removable basket strainers.

4.3.8 Electric Water Coolers

Electric water coolers shall be wall-hung, full stainless steel construction, ADA-approved, dual fountain with extended receptor and front push bar and shall have non-CFC refrigerants. One water cooler per pair of water coolers to be provided with a bottle filling station.

4.3.9 Laundry

Provide one exposed hot and cold water manifold with taps at each washing machine, to serve washing machines. Provide one individual floor drain for each machine, located to the back right corner. Manifold and drains should fall within a 2'0" alleyway created behind and bank of machines. Pipe manifold shall be 36" high at individual taps. Insulate all cold and water lines. Provide a laundry sink.

Provide 2 additional wall hookups for future expansion in the number of washing machines.

4.3.10 Ice Maker

Provide self-contained, free standing, air-cooled ice maker with ice storage bin. Refrigerants shall have an Ozone Depletion Factor (ODF) of 0.05 or less. Unit shall produce up to nominal 300 pounds (lbs) of regular (1 1/8" x 1 1/8" x 7/8") ice cube daily. Unit shall have a minimum 100 lbs storage capacity and shall have a drain.

4.3.11 Water Hammer Arrestors

Provide water hammer arrestors to absorb hydrostatic shock pressure in the domestic and laboratory/process water piping system equipment utilizing quick closing valves. Arrestors shall be provided with service valve and access panel.

4.3.12 Backflow Preventers

Provide reduced-pressure backflow preventers on make-up water supply to boiler water, chiller water systems, other process water equipment, make-up water to systems that may contain chemical treatment additives, and systems that have the potential for contamination of the main water supply system. Provide cup drains for reduced-pressure backflow assembly overflow, hard piped to a nearby floor drain. Backflow pressure assemblies shall conform to ASSE requirements for the type used.

4.4 Storm Drainage

The storm drainage system is provided in the form of gutters and exterior downspouts to drain the roof area. The drainage system shall be designed to handle a rainfall rate of 4 inches per hour in accordance with ICC IPC.

4.5 Piping Installation

Type L copper pipe shall be used for water supplies above grade. Type K copper shall be used for water supply under floor slabs. Sleeve all concrete slab penetrations and center copper piping with foam or fiberglass insulation to ensure copper does not contact concrete. Piping shall be concealed, properly supported with allowances for expansion and contraction. Interior water distribution piping shall not be buried under concrete floors. Piping systems shall be drainable. Interior hot and cold water piping systems shall be insulated. Water piping systems (including sprinkler piping) shall not be routed or located where subjected to freezing and shall be located within the insulated building envelope. Heat tracing (to prevent freezing) of interior piping systems shall not be allowed. Individual shutoff or stop valves shall be provided on water supply lines to all plumbing fixtures. Where shutoff valves are not accessible at the fixture (i.e. lavatories) provide an isolation ball valve located above ceiling. Individual stops shall also be furnished at all equipment connections such as dishwashers, washing machines, etc. Isolation shutoff valves shall be provided for each toilet room group shower area, or other area with more than two fixtures to allow isolation shutoff for maintenance purposes while continuing service to the remainder of the restrooms. Water hammer arrestors shall be installed on branch lines to absorb hydrostatic shock pressures that may occur in piping. Consolidate fixture vents through one common vent whenever possible. Vent penetrations through the roof shall be made through a roof jack designed for use with the roofing system furnished and color-matched to the roof.

Shutoff/isolation valves and water hammer arrestors shall be accessible from the floor level and be labeled. If installed above hard ceilings, access doors shall be provided.

Piping shall be labeled; color coded, titled, and indicating direction of flow.

Pipe penetrations through secure walls shall be protected in accordance with applicable criteria. Pressurized piping shall be grounded in lieu of

non-conductive sections to minimize leaks.

4.6 Disinfection

Prior to use, the distribution system shall be sanitized with a hypochlorite solution in accordance with ICC IPC and local plumbing codes.

4.7 Waste And Vent Piping

The sanitary system shall collect waste from plumbing fixtures in toilet rooms, showers, service sinks, floor drains and other fixtures that discharge to the sanitary sewer. The system shall be designed and sized in accordance with the requirements of ICC IPC. Each fixture trap shall be vented and connected to common vents which extend and terminate above the roof not less than 25 feet from outside air intakes.

All stationary drainage, waste and vent piping shall be located either below floor slabs, above ceilings, in pipe chases, or in wall cavities as required. All sewer lines shall be provided with exterior clean-out. Complete accessibility shall be available to all cleanouts in the piping system.

Underground waste and vent piping shall be Schedule 40 PVC. Aboveground waste and vent piping shall be not less than service weight cast iron with hubless connectors. Hubless connectors shall conform to CISPI 310. Install the sanitary waste piping at a minimum slope of 1/4 inch per foot (2 percent) for piping 2 inches and smaller; 1/8 inch per foot (1 percent) for piping larger than 2 inches.

4.8 Natural Gas Piping

Exterior natural gas distribution, including the meter/pressure regulator assembly, will be designed, installed and provided by the privatized utility provider Piedmont Natural Gas (PNG). See Section 01 11 00.01 SITE, CIVIL, UTILITIES, AND LANDSCAPING SUMMARY OF WORK for details.

Natural gas piping within the building shall be above grade. Gas line connections to each item of equipment shall have a shut off valve, dirt leg, and pressure regulator. Piping of natural gas systems shall conform to NFPA 54 and AGA Z223.1. Pipe joining methods shall conform to NFPA 54.

Gas meter shall be located outside the building at the service entrance to each building. A pulse- output capable meter (compatible with the current energy monitoring system used at Ft Bragg) shall be provided for trending building energy usage.

4.9 Elevator Pit Sump Pump

Sump pump assembly shall be provided for the elevator sump pit along with float switch assembly and discharge piping. Elevator pit sump shall discharge to an oil water separator or shall be equipped with an oil sensor to shut-down pump if oil products are in pit. The minimum capacity of the sump pump shall be 3000 gal/hr per ASME A17.1/CSA B44.

4.10 Special Plumbing System Human Performance Training Center (HPTC)

4.10.1 Therapy Pool

Install below grade therapy pool in Hydrotherapy room. The installation

shall comply with Model Aquatics Health Code (MAHC), TM 5-662, TB Med 575, and American College of Sports Medicine (ACSM) Health/Fitness Facility Standard.

The pool shall be capable of creating a current throughout its length.

An overflow system shall be provided as recommended by the manufacture.

The pool must have its own circulation and filtration system. All portions of the water distribution system serving the pool shall be protected against backflow. Water introduced into pool, either directly or into the circulation system, shall be supplied through air gap fittings. There shall be no direct physical connection between the sanitary or storm sewer system and any drain from the pool recirculation system. Provisions shall be made for complete, continuous circulation of water through all parts of the pool. The valves and draining system for the pool shall be sized to prevent flooding (surcharging) of the sanitary or storm sewer drainage system. Circulation piping shall be designed to recommended manufacture specification. A hair and lint filter of stainless steel with removable basket shall be provided to filter and remove hair and other solids entering the drainage system. All pumps shall be provided of sufficient capacity to provide the turnover rate to the pool as specified by the manufacture. For the Therapy Pool, the maximum turnover rate is 2 hours.

Under normal operating conditions, water shall be re-circulated according to manufacture specification.

Circulation systems shall be according to packaged manufacture specification.

All pumps designed for special uses, such as draining pools, should be self-priming pumps. Other pumps for pool operation shall be according to packaged manufacture specification.

Utilize mesh-bucket filters immediately in front of circulation pumps to protect the internal components of the pump from larger, solid objects and to strain hair and lint from the re-circulating water.

A pump pit may be required adjacent to the pool.

Provide a flow meter in each main line serving a pool. Install flow meters on a straight, uninterrupted section of pipe at least 10 pipe diameters down-stream from the last fitting with 5 pipe diameters distance clean run beyond so that the smooth, linear flow is not disturbed to ensure accurate readings. Ensure a flow control valve is provided so that the circulation rate of the pump maintains the turnover rate throughout a filter cycle from clean to dirty.

Filters shall be according to manufacture specification. Filters must be backwashed periodically according to manufacturer's specifications and discharged directly into sanitary or storm sewer where allowed by code.

All remote pool equipment shall be located in the hydro-mechanical room separate from the building mechanical room. Building user shall have access to the hydro-mechanical room.

Heaters are necessary for therapy pool. The selected water heater shall have the capacity to bring the pool up to the desired temperature within 24 hours. Pool heaters are to meet the requirement of APAct05 and ASHRAE 90.1.

If multiple pools are provided in the facility, each pool must have its own separate heater system. The recommended Therapy Pool temperature is 85 - 90 degrees farenheit.

The design and method for pool disinfection must be coordinated with the installation. Use of chlorine gas is not allowed. An Ultra Violet (UV) system is required for supplemental disinfection/sanitation. Each pool circulation and filtration system shall be provided with an automated UV Supplemental Sanitization system and an automatic water level control system. UV units shall operate within the UVC electromagnetic spectrum, emitting wave lengths in the range of 200nm to 400 nm, must be NSF-50 listed, equipped with an automatic internal wiper, UV monitor, and enrgy control.

The Therapy Pool will be a salt water type pool to maintian sanitation during use.

All dimensions, utility requirements, and all related items shall be provided for a complete and functional installation.

4.10.2 Hot Plunge Pool

Install below grade hot plunge pool in Hydrotherapy room. The installation shall comply with Model Aquatics Health Code (MAHC), TM 5-662, TB Med 575, and American College of Sports Medicine (ACSM) Health/Fitness Faciltiy Standard.

An overflow system shall be provided as recommended by the manufacture.

The pool must have its own circulation and filtration system. All portions of the water distribution system serving the pool shall be protected against backflow. Water introduced into pool, either directly or into the circulation system, shall be supplied through air gab fittings. There shall be no direct physical connection between the sanitary or storm sewer system and any drain from the pool recirculation system. Provisions shall be made for complete, contiuous circulation of water through all parts of the pool. The valves and and draining system for the pool shall be sized to prevent flooding (surcharging) of the sanitary or storm sewer drainage system. Circulation piping shall be designed to recommended manfuacture specification. A hair and lint filter of stainless steel with removable basket shall be provided to filter and remove hair and other solids entering the drainage system. All pumps shall be provided of sufficient capacity to provide the turnover rate to the pool as specified by the manufacture. For the Hot Plunge Pool, the maximum turnover rate is 1 hour.

Under normal operating conditions, water shall be re-circulated according to manufacture specifiation.

Circulation systems shall be according to packaged manufacture specification.

All pumps designed for special uses, such as draining pools, should be self-priming pumps. Other pumps for pool operation shall be according to packaged manufacture specification.

Utilize mesh-bucket filters immediately in front of circulation pumps to protect the internal components of the pump from larger, solid objects and to strain hair and lint from the re-circulating water.

A pump pit may be required adjacent to the pool.

Provide a flow meter in each main line serving a pool. Install flow meters on a straight, uninterrupted section of pipe at least 10 pipe diameters down-stream from the last fitting with 5 pipe diameters distance clean run beyond so that the smooth, linear flow is not disturbed to ensure accurate readings. Ensure a flow control valve is provided so that the circulation rate of the pump maintains the turnover rate throughout a filter cycle from clean to dirty.

Filters shall be according to manufacture specification. Filters must be backwashed periodically according to manufacturer's specifications and discharged directly into sanity or storm sewer where allowed by code.

All remote pool equipment shall be located in the hydro-mechanical room separate from the building mechanical room. Building user shall have access to the hydro-mechanical room.

Heaters are necessary for hot plunge pool. The selected water heater shall have the capacity to bring the pool up to the desired temperature within 24 hours. Pool heaters are to meet the requirement of APAct05 and ASHRAE 90.1. If multiple pools are provided in the facility, each pool must have its own separate heater system. The recommended Hot Plunge Pool temperature is 98 - 104 degrees fahrenheit.

The design and method for pool disinfection must be coordinated with the installation. Use of chlorine gas is not allowed. An Ultra Violet (UV) system is required for supplemental disinfection/sanitation. Each pool circulation and filtration system shall be provided with an automated UV Supplemental Sanitization system and an automatic water level control system. UV units shall operate within the UVC electromagnetic spectrum, emitting wave lengths in the range of 200nm to 400 nm, must be NSF-50 listed, equipped with an automatic internal wiper, UV monitor, and energy control.

The Hot Plunge Pool will be a salt water type pool to maintain sanitation during use.

All dimensions, utility requirements, and all related items shall be provided for a complete and functional installation.

4.10.3 Cold Plunge Pool

Install below grade cold plunge pool in Hydrotherapy room. The installation shall comply with Model Aquatics Health Code (MAHC), TM 5-662, TB Med 575, and American College of Sports Medicine (ACSM) Health/FITness Facility Standard.

An overflow system shall be provided as recommended by the manufacture.

The pool must have its own circulation and filtration system. All portions of the water distribution system serving the pool shall be protected against backflow. Water introduced into pool, either directly or into the circulation system, shall be supplied through air gap fittings. There shall be no direct physical connection between the sanitary or storm sewer system and any drain from the pool recirculation system. Provisions shall be made for complete, continuous circulation of water through all parts of the pool. The valves and draining system for the pool shall be sized to prevent

flooding (surcharging) of the sanitary or storm sewer drainage system. Circulation piping shall be designed to recommended manufacture specification. A hair and lint filter of stainless steel with removable basket shall be provided to filter and remove hair and other solids entering the drainage system. All pumps shall be provided of sufficient capacity to provide the turnover rate to the pool as specified by the manufacture. For the Cold Plunge Pool, the maximum turnover rate is 1 hour.

Under normal operating conditions, water shall be re-circulated according to manufacture specification.

Circulation systems shall be according to packaged manufacture specification.

All pumps designed for special uses, such as draining pools, should be self-priming pumps. Other pumps for pool operation shall be according to packaged manufacture specification.

Utilize mesh-bucket filters immediately in front of circulation pumps to protect the internal components of the pump from larger, solid objects and to strain hair and lint from the re-circulating water.

A pump pit may be required adjacent to the pool.

Provide a flow meter in each main line serving a pool. Install flow meters on a straight, uninterrupted section of pipe at least 10 pipe diameters down-stream from the last fitting with 5 pipe diameters distance clean run beyond so that the smooth, linear flow is not disturbed to ensure accurate readings. Ensure a flow control valve is provided so that the circulation rate of the pump maintains the turnover rate throughout a filter cycle from clean to dirty.

Filters shall be according to manufacture specification. Filters must be backwashed periodically according to manufacturer's specifications and discharged directly into sanity or storm sewer where allowed by code.

All remote pool equipment shall be located in the hydro-mechanical room separate from the building mechanical room. Building user shall have access to the hydro-mechanical room.

Chillers are necessary for cold plunge pool. The selected chiller shall have the capacity to bring the pool down to the desired temperature within 24 hours. Pool chillers are to meet the requirement of APAct05 and ASHRAE 90.1. If multiple pools are provided in the facility, each pool must have its own separate chiller system. The recommended Cold Plunge Pool temperature is 48 - 60 degrees fahrenheit.

The design and method for pool disinfection must be coordinated with the installation. Use of chlorine gas is not allowed. An Ultra Violet (UV) system is required for supplemental disinfection/sanitation. Each pool circulation and filtration system shall be provided with an automated UV Supplemental Sanitization system and an automatic water level control system. UV units shall operate within the UVC electromagnetic spectrum, emitting wave lengths in the range of 200nm to 400 nm, must be NSF-50 listed, equipped with an automatic internal wiper, UV monitor, and enrgy control.

The Hot Plunge Pool will be a salt water type pool to maintian sanitation during use.

All dimensions, utility requirements, and all related items shall be provided for a complete and functional installation.

4.10.4 Compressed Air System

Provide compressed air outlets with quick disconnect couplings in each required area. Provide 25 compressed air outlet in the Strength Training Area and 12 compressed air outlets in the Cardio Training Area for a total of 37 drops. Coordinate final locations with the users of the facility. Each drop shall include an isolation valve, lubricator, filter and pressure regulator, condensate trap with drain cock.

Provide 4 air compressors with receiver, refrigerated air dryer, filtration and pressure regulation. The air compressor shall be user furnished and installed. Coordinate with user for size and required pressures of the system.

4.11 Plumbing Calculations

The Plumbing Designer of Record shall, at a minimum, submit the following calculations for information and review and approval by the Government prior to finalizing design and equipment selections:

- a. Detailed LCCA calculations for all systems analyzed including:
 - (1) Input and Output data
 - (2) Detailed cost estimate of each system analyzed and compared
 - (3) Equipment selection cut sheets along with their published manufacturer's efficiencies and the necessary energy data
- b. Pump head calculations
- c. Water service sizing calculation
- d. Water heater sizing calculation
- e. Sanitary main sizing calculation
- f. Gas pipe sizing calculation

PART 5 HEATING, VENTILATING, AND AIR CONDITIONING SYSTEM

Cooling and heating system for the facility shall be selected based on a Life Cycle Cost Analysis (LCCA).

5.1 LCCA Analysis

For the LCCA, analyze a minimum of 3 systems. Systems to be analyzed shall include a four-pipe system (chiller, boiler); DX cooling with central VAV AHU system; and other systems the Contractor may propose, provided they meet the performance requirements serving the air conditioned areas. Comparisons can also evaluate the chilled water operating temperatures.

5.1.1 Four-Pipe Heating/Cooling System

A four-pipe system (chilled water supply/return, heating water supply/return) shall be evaluated by the Contractor in the LCCA.

In this system, chilled water for cooling shall be supplied from an

air-cooled scroll type chiller (R-134a, R410A or R-407c refrigerant). Dedicated, variable speed primary 100 percent capacity chilled water pumps (one main and one stand-by) for chiller shall be located in the main mechanical room. Each pump shall have a variable frequency drive (VFD). Pumps shall circulate chilled water through the chiller and throughout the facility to the air-handling units (AHUs). Chilled water shall be supplied at 44 degrees F and returned at 56 degrees F. If required, for freeze protection, a 30 percent glycol solution shall be utilized. Chilled water pumps shall be base mounted end-suction type. The scroll chiller of energy efficient design shall meet the minimum requirements of ASHRAE 90.1 - IP.

Hot water for heating shall be supplied by a natural gas-fired, pulse type, copper-tube high efficiency (94 percent minimum) water heating boilers with combustion air assembly provided in accordance with Air for Combustion and Ventilation, of AGA Z223.1. Boilers shall be located in the Mechanical room. Flues and combustion air intake shall be ducted to exterior wall of the mechanical room. Hot water 100 percent capacity circulation pumps (one primary and one stand-by) shall be variable speed base mounted end-suction type. Hot water pumps shall circulate hot water through the boilers and throughout the facility to the air-handling units (AHUs), reheat coils for each VAV (variable Air Volume) Box, and hot water unit heaters. The Heating water system shall be designed for a maximum supply temperature of 140 degrees F and return temperature of 100 degrees F to maximize boiler efficiency. Use a 15 percent glycol solution if freeze protection is required.

5.1.2 DX Central VAV AHU System

The LCCA shall include a central VAV AHU system with variable frequency drives (VFD's) utilizing DX cooling and gas or hot water heating. Variable refrigerant flow systems are not allowed and shall not be used.

5.1.3 Contractor-Selected System

Select an additional heating/cooling system to be analyzed in the LCCA. The selected system must meet the performance and design criteria dictated in this specification, and must meet the same level of redundancy provided by the other systems.

5.1.4 Electric Heating

Electric resistance heating shall not be used for heating or reheat.

5.2 Air Side Systems and Ventilation

If a Dedicated Outside Air Unit is not used, outside air shall be introduced to the AHU's through the outside air intake louvers with an interlocked motorized control damper to satisfy ASHRAE 62.1 outside air ventilation requirements. If justified by the LCCA or if beneficial to meet energy conservation requirements, a central energy recovery unit (ERU) shall be provided to pre-condition the outside air with exhaust air utilizing an energy wheel. All AHU's and ERU's shall be located in the mechanical rooms.

The use of multi-zone air handling units is not allowed at this facility, and shall not be used.

All air intakes for heating, ventilating, and air-conditioning shall be located at least ten feet above the ground, all exhaust and outside air

opening must be equipped with low leakage motor operated dampers, emergency shut-offs must be installed at all entrance/exits and all equipment (31 Lbs and above) must be braced to resist forces of 0.5 times the equipment weight in any horizontal direction and 1.5 times the equipment weight in the downward direction per [UFC 4-010-01](#).

[If VAVs are used](#), VAV boxes with hot water heating shall be used for each thermal zone. All coils in this unit shall be aluminum fins mechanically bonded to copper tubes. Minimum airflow to the space shall be measured at the intake of each pressure independent variable air volume box with an air velocity measuring station to validate the minimum airflow furnished to the space under all operating conditions of the system. VAV terminal units with reheat coils shall be provided for all zones.

AHUs, FCUs(if used) and ERUs shall include MERV 13 final filter section and MERV 8 Pre- filter sections.

Fire dampers shall be provided for all rated walls and corridors as required by [ICC IBC](#).

Ceiling plenum return are not allowed and shall not be used.

All ductwork shall be wrapped and protected when on site, to prevent contamination. This shall be in accordance with LEED requirement for Construction IAQ Credit.

[All rooms shall be conditioned in accordance with UFC 3-410-01, unless otherwise specified.](#)

5.3 [Telecom/Comm Rooms](#)

Rooms shall be shall be independently conditioned by DX Cooling Only, non-CFC refrigerant, split-system air conditioning units. Contractor shall size air conditioning units for each room according to its load. The RFP shall provide estimated heat loads for NEC and USASOC Voice / Data LAN equipment. The contractor shall verify loads with the actual equipment to be installed. Condensing units shall be located outside the building; evaporator coils shall be elevated in the respective communication rooms (they shall not utilize floor space). Each unit's condensate drain shall be provided with deep seal P-traps at each evaporator unit. Unit shall auto-start after power failure. Contractor shall maintain clear pathways for telecommunications systems with no utilities other than those serving the communication rooms passing through communication rooms.

5.4 [Multi-purpose Training Area](#)

[The Multi-purpose Traing Area shall be conditioned \(heated and cooled\). The space shall be maintained at 68 to 74 degrees farenheit year round at 50% relative humidity or less. The space shall meet or exceed ASHRAE 62.1 for the ventilation rate according to the "Health Club/Weight Room" occupant category. Area shall be exhausted via a common exhaust system and energy recovered via energy recover unit, if justified by the LCCA. Natural \(non-mechanically driven\) ventilation is not allowed. The supply must be fully ducted. Multi-speed high volume, low velocity fans shall be provided throughout the area.](#)

5.5 [PT Common Area](#)

[The PT Common Area Area shall be conditioned \(heated and cooled\). The space](#)

shall be maintained at 66 to 72 degrees farenheit year round at 60% relative humidity or less. The space shall meet or exceed ASHRAE 62.1 for the ventilation rate according to the "Health Club/Aerobics Room" occupant category. Area shall be exhausted via a common exhaust system and energy recovered via energy recover unit, if justified by the LCCA. Natural (non-mechanically driven) ventilation is not allowed. The supply and return must be fully ducted..

5.6 Nutrition Education Room

The Nutrition Education Room shall be heated, ventilated and air conditioned as a classroom area.

5.7 Hydrotherapy Room

The Hydrotherapy Room shall be conditioned (heated and cooled). The space shall be maintained at 3 degrees farenheit higher than the water temperature at 60% relative humidity or less. Pool water temperature shall be monitored and be provided as an input to the HVAC Control System in order to maintain the indoor air temperature 3 degrees higher than the water temperature. The ventilation requirement is at least 6 complete air changes per hour during occupancy. Area shall be exhausted via a common exhaust system and energy recovered via energy recover unit, if justified by the LCCA. Natural (non-mechanically driven) ventilation is not allowed. The supply and return must be fully ducted. Return air from the Hydrotherapy Room shall not mix with return air from the rest of the building. Air velocity in the immediate pool area should be minimal. Provide heating, ventilation, and air conditioning (HVAC) systems in compliance with UFC 3-410-01FA, Design: Heating, Ventilating, and Air Conditioning and UFC 3-410-02A, Design: Heating, Ventilating, and Air Conditioning (HVAC) Control Systems. The HVAC system shall be suitable for high humidity environments.

5.8 Hydro-Mechanical Room

The Hydro-Mechanical Room shall be heated, ventilated and air conditioned as a mechanical room.

5.9 Laundry Room

The Laundry Room shall be conditioned (heated and cooled). The space shall be maintained at 68 to 78 degrees farenheit year round at 60% relative humidity or less. Outside air is not recommended. VAV boxes recommended for thermostatic control. The space shall meet or exceed ASHRAE 62.1 for the ventilation rate according to the "Laundry Room" occupant category. Natural (non-mechanically driven) ventilation is not allowed. The supply and return must be fully ducted. Dryer exhaust shall be directly exhausted to the outside.

5.10 Stairwells

Stairwells shall be heated to 40 degrees F for freeze protection.

5.11 Elevator Machine Rooms

Elevator Machine Rooms shall be independently conditioned. The use of a branch line from a building's HVAC system, VAV boxes, or building make-up air via transfer from adjacent spaces is not independent conditioning. In the event of a fire and HVAC shutdown, the elevator machine room shall

continue to be conditioned to control the temperature in the space in order for the elevator to continue to operate for the personnel.

5.12 Exhaust Air System and Freeze Protection Requirements

Locker Rooms, showers and latrines shall be ventilated to provide exhaust air of 0.5 cfm/sf for locker area, 1.0 cfm/sf for shower and drying areas and 70 cfm minimum per water closet and urinal. Areas shall be exhausted via a common exhaust system and energy recovered via energy recovery unit, if justified by the LCCA.

Mechanical and Electrical Rooms shall be exhausted by in-line belt type fan discharging to the exterior through the exterior building wall louver with interlocked motor operated control damper. Outside air shall be introduced to the room through a ducted wall louver with an interlocked motor operated control damper. These rooms shall be heated to 40 degrees F for freeze protection.

For electrical rooms that house the fire alarm control panel, air conditioning shall be utilized.

The Compressor Room shall be provided with ventilation in accordance with manufacturer's guidelines and requirements. The room shall be heated to 40 F for freeze protection.

PART 6 UTILITY MANAGEMENT AND CONTROL SYSTEM

Fort Bragg currently has a LCS-8520 that utilizes the LonWorks® Technology to integrate LNS databases into a single front-end. All Building Automation Systems (BAS) shall be LonWorks and shall meet specifications as required in UFGS 23 09 23 and be capable of integrating into Fort Bragg's UMCS.

Integration of a building's BAS will be performed by Fort Bragg's System Integration (SI) Contractor and in accordance with UFGS 25 10 10 and the Fort Bragg UMCS Integration SOW as part of this project, but outside of the Contractor's scope of work. All coordination shall be through Fort Bragg's UMCS System Manager, Scott Gallaher, scott.a.gallaher@jci.com, 254-681-0354.

Provide emergency shutoff switch(es) in accordance with UFC 4-010-01 in the HVAC control system that can immediately shut down the air distribution system(s) throughout the building except where interior pressure and airflow control would more efficiently prevent the spread of airborne contaminants and/or ensure the safety of egress pathways. Locate the shutoff switch (or switches) to be easily accessible by building occupants by locating them similarly to manual fire alarm boxes in accordance with NFPA 72 and with at least one shutoff switch per floor and so that the travel distance to the nearest shutoff switch will not be in excess of 200 feet. Ensure that the shutoff switches are well labeled, a different color than fire alarm pull stations, and include a transparent, non-lockable cover. Providing such a capability will allow for limiting the distribution of airborne contaminants that may be introduced into the building. The emergency stop shall be monitored for activation by the building HVAC DDC system. All communications rooms are considered "critical areas".

Include cybersecurity (per UFC 4-010-06) in the design of control systems in order to address appropriate Risk Management Framework (RMF) security controls during design and subsequent construction. Include cybersecurity

requirements (UFGS Section 25 50 00.00 20, Cybersecurity of Facility-Related Control Systems) in the project specifications.

PART 7 GENERAL REQUIREMENTS

7.1 Mechanical Identification Systems

All piping, plumbing, fire protection and HVAC systems shall be clearly marked for identification with permanent color coded markers. Identification scheme shall be per ASME A13.1. Pipes and ducts shall be labeled at each valve or damper, control device, tee and elbow and also regular interval not greater than 20 feet between markers. Valves shall be tagged and a laminated valve schedule shall be mounted in the mechanical room. All mechanical equipment shall be tagged.

7.2 Valves

Valves shall be provided on supplies to equipment and fixtures. Valves 2 inches and smaller shall be bronze ball valves with threaded bodies for pipe and solder type connections for tubing. Valves 2-1/2 inches and larger shall have butterfly valves with flanged bodies and bronze trim. Valves shall conform to the following standards:

Description	Standard
Butterfly Valves	MSS SP-67
Cast-Iron Gate Valves	MSS SP-70
Cast-Iron Swing Check Valves	MSS SP-71
Ball Valves, Threaded, Socket-Welding, Solder Joint and Flared ends	MSS SP-110
Cast-Iron Plug Valves	MSS SP-78
Bronze Gate, Globe, Angle and Check Valves	MSS SP-80
Steel Valves, Socket-Welding and Threaded Ends	ASME B16.34
Cast-Iron Globe and Angle Valves	MSS SP-85
Vacuum Relief Valves	ANSI Z21.22/CSA 4.4
Water Pressure Reducing Valves	ASSE 1003
Water Heater Drain Valves	ASME BPVC SEC IV, Part HLW-810
Temperature and Pressure Relief Valves for Hot Water Supply System	ANSI Z21.22/CSA 4.4
Temperature and Pressure Relief Valves for Automatically Fired Hot Water Boilers	ASME CSD-1 Safety Code No., Part CW, Art. 5

7.3 Meters And Gauges

Provide meters, thermometers and gauges for mechanical systems. Provide

temperature and pressure gauges at all pumps, chillers, air handlers, heat exchangers, boilers and other similar devices. Provide pressure gauges at all pressure reducing devices, fire sprinkler risers, gas service, and water service entrances.

7.4 Hangers And Supports

Hangers and supports shall be factory fabricated according to **MSS SP-58**. A licensed engineer shall design all hanger and supports for the project. Lateral supports shall be provided to prevent piping and ductwork from swaying in accordance with **UFC 4-010-01**. Mount all overhead utilities and other fixtures weighing 31 pounds or more (excluding distributed systems such as piping networks that collectively exceed that weight) to minimize the likelihood that they will fall and injure building occupants.

Design all equipment mountings to resist forces of 0.5 times the equipment weight in any horizontal direction and 1.5 times the equipment weight in the downward direction. This does not preclude the need to design equipment mountings for forces required by other criteria such as seismic standards.

7.5 Mechanical Vibration And Seismic Control

All vibrating equipment shall be isolated with vibration isolators and flexible connections according to ASHRAE standards. Design calculations, isolation base designs and seismic restraint designs shall be certified by a qualified professional engineer.

7.6 Insulation

All piping and ductwork subject to sweating shall be insulated including but not limited to chilled water piping, supply air ductwork, outside air ductwork, storm water piping, refrigerant piping, condensate piping, and domestic cold water piping. All hot water piping and other heat conveying systems shall be insulated. Exposed insulation in finished areas below 8'-0" shall be metal or PVC jacketed. All valves, tanks, pumps, and other similar devices contained in these systems shall be insulated. All exposed ductwork shall have rigid board insulation with factory aluminum vapor barrier and all service jacket.

7.7 Mechanical Room Access

All equipment located in Mechanical room must fit through mechanical room double doorway, or must be capable of being disassembled and reassembled to fit through doorway. Coordinate with mechanical room door size.

7.8 Mechanical Calculations

The Mechanical Designer of Record shall, at a minimum, submit the following calculations for information and review and approval by the government prior to finalizing design and equipment selections:

Detailed LCCA calculations for all systems analyzed including:

Input and Output data

Detailed cost estimate of each system analyzed and compared

Equipment selection cut sheets along with their published manufacturer's efficiencies and the necessary energy data

Building envelope libraries for all systems analyzed

ASHRAE 90.1 - IP compliance forms

Heating and Cooling load calculations

ASHRAE 62.1 Ventilation compliance calculation

Duct static pressure

Pump head calculations

Water service sizing calculation

Water heater sizing calculation

Sanitary main sizing calculation

Gas pipe sizing calculation

PART 8 HVAC SYSTEM

8.1 General Design Criteria

a. Outdoor Design Conditions

Summer 94 Degrees F, Dry Bulb (DB)
78.1 Degrees F, Wet Bulb(WB)

Winter 21 Degrees F, DB

b. Location: Fort Bragg/Simmons Fayetteville, North Carolina

N. Latitude 35.13 degrees
W. Longitude 78.93 degrees
Elevation 243 feet

c. Indoor spaces shall be designed to the following conditions:

Office/Administrative Areas, Classrooms, Break/Conference/Training	Summer: 78 F and 50 percent relative humidity (rh) Winter: 68 F

Storage rooms greater than 50 sf	Summer: 78 F and 50 percent rh Winter: 68 F
Electrical Rooms (Exception: Electrical rooms that house the fire alarm control panel shall be air conditioned per A/V rooms	Summer: Cooling via ventilation (max. 10 deg F dT) Winter: 40 F
Mechanical Rooms	Summer: Cooling via ventilation (max. 10 deg F dT) Winter: 40 F
Communication Rooms (SIPR, NIPR, ESS TR)	Constant conditions of 72 F 20-60 percent rh
Locker Rooms	Summer: 78 F and 50 percent rh Winter: 68 F
Multi-Purpose Training Area	Summer: 74 F and 30-50 percent rh Winter: 68 F
PT Common Area	Summer: 72 F and 30-60 percent rh Winter: 66 F
Hydrotherapy Room	Summer: 81 F and 30-60 percent rh Winter: 81 F
Laundry	Summer: 76 F and 60 percent rh Winter: 68 F
Elevator Machine Rooms	Summer: 78 F and 50 percent rh Winter: 68 F
Compressor Room	Summer: Cooling via ventilation (max. 10 deg F dT) Winter: 40 F
Stairwells	Summer: N/A Winter: 40 F

8.2 HVAC System Selection Criteria

HVAC system for the facility shall be selected based on the LCCA.

HVAC systems to be evaluated are included in Paragraph "LCCA Analysis", above. Evaluation shall include a comparison of three or more of these system types based on the region, building design features and available energy sources. The final design shall include the detailed LCCA analysis.

The Contractor shall utilize either TRANE Trace version 700 or Carrier Hourly Analysis Program (HAP), latest editions to provide system energy consumptions. Provide reasonably detailed cost estimates for each systems studied as part of the design analysis. This shall be the cooling system that is being proposed for the facility. The life cycle analysis shall be performed and documented by utilizing the free computer program BLCC that is available via the US Dept. of Energy web sites. The programs reports shall document all input and output. The actual site utility costs at the installation shall be input into the BLCC program for the LCC equipment selection. Refer to the RFP Appendices for further detail for the current site specific utility rates. The life cycle cost analysis shall be calculated using 40 year building life and shall include any final salvage values and annual costs for operation and maintenance based upon ASHRAE estimation methods for those costs. Salvage costs shall be documented in cost estimates and shall generally be restricted to larger equipment items such as boilers, chillers, pumps, and large air handlers, for example.

LCCA Documentation: Detailed documentation is not required at the proposal phase but shall include at a minimum, narrative describing all of the system alternatives studied, energy modeling for each alternative, and single line layout sketch for each alternative in sufficient detail to show approximate system zoning and major system components. System zoning and dedicated air-side equipment configurations shall meet the minimum requirements stated herein. System Manufacturers catalog cuts of all major equipment (AHU's, ERV's, DOAS's, heat exchangers, FCU's, VAV units, boilers, etc.) shall be provided for all alternatives. Fuel cost/utility rate info for use in LCCA is available in Appendix L. Backup data related to LCCA (i.e. cost estimates, estimated OandM costs, replacement costs, etc.) shall be provided for each LCCA. Complete input and output data for energy consumption, HVAC loads, and BLCC computer programs shall be provided. Printouts of I/O (input/output) data for LCCA simulations shall be submitted. The LCCA should consider all of the system alternatives indicated.

Documentation of LCCA for the Contractor shall be a more comprehensive, detailed, systematic evaluation and analysis complying with the requirement in Subpart A of Title 10 Code of Federal Regulations (CFR) Part 436 (which establishes Methodology and Procedures for Life Cycle Cost Analyses). Preliminary and final LCCA documentation for the successful proposer will include all assumptions and documented to a level of detail sufficient to be used by a third party or audit team to duplicate the results of the LCCA. All LCCA's shall be completed using the same matrix of baseline information consistently across alternatives to ensure a fair comparison is made between alternatives. The follow factors are critical and have significant influence in LCCA outcomes and shall be include in calculations for analysis:

- a. First Costs: Capital cost of new equipment: Pricing must be based on quotations received from manufacturers. Where quotations from manufacturers are not available pricing will be based on RS Means data. Costs must include all components required for a complete and usable system.
- b. Maintenance Costs:
 - (1) Required Maintenance: Costs shall be based on manufacturer provided component and system maintenance requirements. If this data is not available, the use of RS Means is an acceptable alternative. Components and/or systems that are recommended to be replaced within the 40 year study period the manufacturer's

recommendations must be accounted for in the LCCA. The ASHRAE HVAC Applications Handbook shall be utilized for estimated service life.

(2) Labor Rates: Pricing is allowed to be based on RS Means data.

c. Operations Costs:

(1) Energy and fuel used by system: Usage data will be estimated using engineering analysis, and the energy and fuel usage data shall be taken directly from the energy model.

(2) Labor: Pricing is allowed to be based on RS Means data.

d. Additional Factors:

(1) End-of-Life Removal: Pricing will be based on escalated demolition costs, as appropriate; to include any surcharge for material recycling, and reuse.

(2) Salvage value at end of useful life: Pricing will be based on RS Means data.

(3) Discount and escalation rates: Data will come from the most current edition of Appendix C of OMB Circular A-94.

(4) Differential escalation rate for energy: As instructed in NIST Guidelines, the differential escalation rates must be obtained from the DOE Energy Information Administration (EIA).

8.3 Hydronic Systems

Hydronic systems (chilled water cooling, hot water heating) piping shall be installed to distribute cooling and heating water to air handling units, unit heaters, and terminal reheat coils for space cooling and heating. The repair bays shall be heated by some form of radiant heating; overhead gas infrared, in-floor hydronic, or some combination thereof. Piping shall be sized to have head pressure loss of less than 5 feet per 100 feet of pipe and velocity less than 8 feet per second (f/s). Provide 2-way independent pressure control valves of modulation to all equipment. 3-way valves shall be strategically placed at the ends of long runs to provide a minimum by pass equal to 15 percent of the maximum pump flow. Provide taps for flow measurement at each coil and at the end of each loop. Provide pressure gages and thermometers at inlet and outlet of each air handling unit coil and all other heat exchanging devices. Pipe hangers and supports shall conform to referenced MSS Standards. Provide manual air vents at high point in systems. Provide piping identification to conform to ASME A13.1.

Aboveground piping shall be schedule 40 black steel for piping 4" and larger with welded, screwed, flanged or grooved fittings and copper, ASTM B88, type "L" with wrought copper fittings for piping 3-1/2" and smaller. Grooved fittings shall be allowed for above ground piping only.

Provide full thermal insulation and pipe identification system for hydronic piping systems. For hot water systems, use mineral fiber insulation conforming to ASTM C547, cellular glass insulation conforming to ASTM C552, or polyisocyanurate. For chilled water systems, use cellular glass or polyisocyanurate; mineral fiber insulation is not allowed. Provide thickness as recommended by the manufacturer for the application to meet

ASHRAE 90.1 - IP. Provide with vapor-barrier, all-purpose jacket and PVC covers for fittings. Exposed insulation in finished areas below 8 feet shall be metal or PVC jacketed. All valves, tanks, pumps, and other similar devices contained in these systems shall be insulated.

For each hydronic system, provide an air separator, bladder type compression tank, chemical pot feeder, automatic air vents, low point drains, chemical treatment system, and make-up water system. If system contains glycol, provide an automatic glycol fill station.

Each hydronic system shall be designed to operate continuously year round. Isolation valves and piping shall be provided at pumps and coils such that maintenance to individual components shall not require the system to be offline. Isolation valves and balancing valves shall be provided for all coils and equipment.

8.3.1 Hydronic pumping system

Primary and secondary pumps (if provided) shall be base mounted or inline centrifugal pumps with shut-off valves at suction and discharge, check valve at discharge, pressure gauges at suction and discharge, flexible connectors and balancing valve with memory stop. Triple duty type valves shall not be used. End suction pumps shall be mounted on a 6-inch high chamfer edge housekeeping pad and be provided with suction diffusers. Base mounted pumps shall be provided on spring isolation with neoprene pads.

8.3.2 Boilers

Heating for the building, if determined to be LCCA, shall be provided by two (94 percent minimum efficiency) gas-fired condensing hot water boilers. The boiler shall be a sealed combustion down-fired, vertical steel firetube condensing medium mass boiler. The condensing boiler shall be protected with acid-inert polymers and stainless steel components in areas where condensation of flue products will occur. The boiler shall be capable of 85 percent efficiency, and the heating water return temperature shall be designed to maximize this efficiency. The condensing boiler shall employ a two-stage burner with low-fire equal to 50 percent of full rate. Gas burner controls shall be UL or FM approved modulating type. NOx levels shall be below that required by national, state, and local codes. The boiler shall have an independent laboratory safety certification and listing to the UL 795 or ANSI Z21.13/CSA 4.9 standard. Provide temperature and pressure gauges at boiler and pumps inlet and outlet piping. Boilers shall each be sized for 60 percent of the design load, and shall have a 10-year limited warranty against failure due to thermal shock.

Isolation valves and piping shall be provided such that maintenance to the heating water system shall never require the system to be offline to service a pump or boiler.

8.3.3 Chiller

Chilled water shall be provided by one variable speed high efficiency air-cooled centrifugal chiller. Chiller shall be sized such that chiller will handle the full load of the building, including block load and process load. High efficiency chiller shall be provided where the efficiency is in the upper 15 percent for similar equipment manufactured. Chiller shall be equipped with water flow switch. Chiller shall be listed in AHRI DCAACP.

Chilled water baffled buffer tank shall be provided if needed to meet the

manufacturer's recommended water volume plus 20 percent to avoid chiller short cycling.

8.4 Ventilation and Air Distribution

Ventilation shall be provided as required by [ASHRAE 62.1](#). HVAC systems shall provide uniform and consistent interior space temperature while using equipment that is energy efficient and easily maintained. Mechanical ventilation shall be provided for all areas. Central air handling units with ducted air distribution shall be provided.

8.4.1 Supply Air

Components and equipment shall be standard products of a manufacturer regularly engaged in the manufacturing of products that are of a similar material, design and workmanship.

8.4.1.1 Zoning

The HVAC systems shall be zoned to provide maximum year-round comfort and to provide adequate flexibility for utilizing areas of the facility during non-work hours. Zoning shall consider building orientation, internal loads, function, location, and use of rooms. Each Operating Team room shall be a separate zone. Each conference room and private office shall be a separate zone.

8.5.1.2 Air Distribution

Air distribution system shall maintain a minimum Air Diffusion Performance Index (ADPI) of 70 under all load conditions. See [ASHRAE EQUIP IP HDBK Handbook of Fundamentals](#).

8.4.2 Air Handlers

Design of air handling systems shall include fully ducted supply and exhaust air. Return air system inside mechanical rooms shall be fully ducted. Provide smoke detectors (supply and return) in air handling systems per NFPA 90 and connect to fire alarm system and building automation system to sound alarm shut equipment down in the event products of combustion are detected. Air handlers shall have insulated double wall construction. Supply and return fans(if required) shall be mounted on vibration isolation bases. Variable volume control of fans shall be provided by the use of variable frequency drives (VFD's). VFD's shall be mounted within 50 feet of air handling unit. Air handlers shall have stainless steel drain pans and frames for the cooling coils. Provide an outside air monitor to ensure minimum occupant outside air is being provided. Fans shall be licensed products in the AMCA Certified Ratings Program.

8.4.3 Ductwork

Ducts shall be galvanized steel with G90 coating. Ducts shall be designed and constructed in accordance with SMACNA Standards. Provide external FSK, foil-faced wrap insulation or rigid duct insulation for supply and outside air ducts to provide an R-value that meets or exceeds [ASHRAE 90.1 - IP](#). Duct systems shall not be installed underground. Round ductwork shall be factory-fabricated "spiral" wound type ductwork. Flexible ducts shall comply with [NFPA 90A](#) and be limited to 5-foot maximum length and flexible elbows will not be used. All 90 degree elbows shall be constructed from hard duct. Turning vanes shall be provided in duct changes of direction

where the duct cross-sectional area exceeds 144 square inches. All exposed ductwork shall have rigid board duct insulation with factory aluminum vapor barrier and all service jacket.

Transfer air shall be transferred through internally lined metal ductwork connected to diffusers or grilles.

Provide access doors in ducts to allow access to fire dampers, coils, dampers and other items requiring service.

The HVAC system shall be designed to provide Noise Criterion (NC) Ranges no higher than the following:

Private Offices: NC 30-35
Classroom Space: NC 20-30
General Offices: NC 35-40

This requirement may include sound attenuation measures that would affect: ductwork design, airside equipment design, and architectural design. The contractor shall also provide sound attenuators if needed to meet the above criteria. Lined ductwork is not permitted, and interior lining for VAV boxes shall be non-fibrous.

The following materials shall be used for ductwork:

Ductwork System	System Material
Office Supply and Return	Galvanized Steel -Insulated
Outside air intake	Galvanized Steel - Insulated
Office Exhaust	Galvanized Steel - No insulation
Hydrotherapy Supply and Return	Corrosion Resistant Steel - Insulated
Hydrotherapy Exhaust	Corrosion Resistant Steel - No insulation

Relief air shall be provided by transferring air to areas being exhausted (restrooms, etc.).

Outside air for conditioned spaces shall be monitored and measured using air flow monitoring stations.

8.4.4 Ductwork Accessories

For low-pressure rectangular duct systems, use 45° entries into branches from the main duct. Provide manual volume dampers in each branch take-off from the main duct to control air quantity. Dampers shall conform to SMACNA Duct Construction Standards. Provide outdoor air intake and exhaust louvers of aluminum designed to prevent the entry of rain or snow. Louvers shall be designed to meet the wind load rating for the building as indicated in the structural chapter. Intake plenums shall have bottom panel sloped towards the louver opening to drain any water that comes through the louver. Intakes shall be a minimum of 25 feet from the nearest exhaust outlet and exterior mechanical equipment. Provide bird screens at all louvers. Provide a low-leakage motorized damper at each outside air intake.

Duct balancing devices shall be heavy duty, opposed blade dampers with

sleeved bearings. The manual actuator shall extend through the insulation with extension standoff. Actuator shall have locking quadrant for setting. Provide balancing dampers at each branch takeoff from a main duct in supply, return and exhaust systems.

All duct penetrations through secure walls shall be protected in accordance with applicable criteria. Duct penetrations shall require acoustical treatment, security bars, non-conductive sections and inspection ports.

8.4.5 Diffusers, Registers and Grilles

Provide diffusers, registers, and grilles appropriate for the application and consistent throughout the building. Ensure noise levels are maintained below specified criteria. Ductwork behind registers and grilles shall not be visible or the ductwork shall be painted black. Diffusers and grilles shall be aluminum to prevent corrosion and shall be painted to match interior finishes. Layout and installation of diffusers, grilles and registers in each space shall be consistent with the criteria used in calculating the Air Diffusion Performance Index (see Paragraph "Air Distribution", above).

8.4.6 Variable Air Volume Boxes

VAV terminals shall be pressure independent type. Box shall be fully insulated and shall include sound attenuators. Locate boxes to be accessible (with a 12 foot ladder) for maintenance and replacement.

Access panel shall be provided for reheat coils maintenance and cleaning. Each VAV terminal shall have DDC controller with Utility Monitoring and Control System (UMCS) interface. Where VAV boxes server rooms with occupancy sensors, VAV controls shall be tied into occupancy sensor to operate in an unoccupied mode when the room is not occupied.

Terminal units may be variable-air-volume terminals with reheat coils, constant volume boxes with reheat coils, or other system that shall provide uniform, consistent and comfortable space conditions.

8.4.7 Energy Recovery Systems

Energy recovery shall be utilized where required by **ASHRAE 90.1 - IP** If a dedicated outside air AHU is provided, the outside air AHU shall supply varying amounts of constant temperature outside air to each area based on a DDC programmed operating schedule defining the estimated number of occupants in the facility.

8.5 LONWorks DDC for HVAC and Other Local Building Systems

Note: Where this supplement fails to address, UFGS 23 09 23.01 LONWORKS DIRECT DIGITAL CONTROL FOR HVAC AND OTHER BUILDING CONTROL SYSTEMS requirement applies. <http://wbdg.org/>.

8.5.1 Building Control Network

The building control network shall be a single complete non-proprietary Direct Digital Control (DDC) system for control of the heating, ventilating and air conditioning (HVAC) systems. The building control network shall be an Open implementation of LonWorks® technology using **CEA-709.1-D** as the only communications protocol and shall use only LonMark Standard Network Variable Types (SNVTs), as defined in the LonMark® Resource Files, for

communication between DDC Hardware devices to allow multi-vendor interoperability. All control wiring shall be installed in conduit when in concealed spaces or above ceiling. All control wiring conduit penetrations through secure walls shall be protected in accordance with applicable criteria. Include cybersecurity (per [UFC 4-010-06](#)) in the design of control systems in order to address appropriate Risk Management Framework (RMF) security controls during design and subsequent construction.

The building automation system shall be open in that it is designed and installed such that the Government or its agents are able to perform repair, replacement, upgrades, and expansions of the system without further dependence on the Contractor. This includes, but is not limited to:

Install hardware such that individual control equipment can be replaced by similar control equipment from other equipment manufacturers with no loss of system functionality.

Necessary documentation (including rights to documentation and data), configuration information, configuration tools, programs, drivers, and other software shall be licensed to and otherwise remain with the Government such that the Government or its agents are able to perform repair, replacement, upgrades, and expansions of the system without subsequent or future dependence on the Contractor.

The following systems are prohibited for new installation:

- a. BACNet
- b. Proprietary DDC systems
- c. Pneumatic systems or combination Direct Digital Control (DDC)/Pneumatic systems

Gateways may be used provided that each gateway communicates with and performs protocol translation for control hardware controlling a single major component (chiller, boiler, etc)

8.5.2 DDC Hardware (controllers) Requirements

DDC Hardware shall:

- a. Be connected to a TP/FT-10 [CEA-709.3](#) control network.
- b. Communicate over the control network via [CEA-709.1-D](#) exclusively.
- c. Communicate with other DDC hardware using only SNVTs
- d. Conform to the LonMark® Interoperability Guidelines.
- e. Be locally powered; link power (over the control network) is not acceptable.
- f. Be fully configurable via standard or user-defined configuration parameter types (SCPT or UCPT), standard network variable type (SNVT) network configuration inputs (nci), or hardware settings on the controller itself to support the application. All settings and parameters used by the application shall be configurable via standard or user-defined configuration parameter types (SCPT or UCPT), standard network variable type (SNVT) network configuration inputs (nci), or hardware settings on the controller itself.

g. Provide input and output SNVTs required to support monitoring and control (including but not limited to scheduling, alarming, trending and overrides) of the application. Required SNVTs include but are not limited to: SNVT outputs for all hardware I/O, SNVT outputs for all setpoints. SNVT inputs for overrides of all setpoints, and SNVT inputs for overrides of all hardware Outputs.

Application Specific Controllers (ASCs) have a fixed factory-installed application program (i.e. ProgramID) with configurable settings and do not have the ability to be programmed for custom applications. In addition to the above requirements, ASCs shall also:

Be LonMark Certified unless otherwise approved.

Be configurable via an LNS plug-in unless otherwise approved

Application Generic Controllers (AGCs) have a fixed application program which includes the ability to be programmed for custom applications. In addition to the requirements for DDC Hardware, AGCs shall:

have a fixed ProgramID and fixed XIF file

be fully programmable and configurable for the application through one or more LNS plug-in unless otherwise approved

General Purpose Programmable Controllers (GPPCs) are not installed with a fixed factory- installed application program and shall be programmed for the application.

Local Display Panels (LDPs) shall be installed at a minimum in each mechanical room where an AHU or Hydronic equipment exist and programmed as per the Point Schedules. Do not rely on the control network to perform DDC sequence applications unless otherwise approved.

Where multiple pieces of DDC Hardware are used to execute one sequence, all DDC Hardware executing that sequence shall be on a common segment and isolated from all other DDC Hardware via a [CEA-709.1-D](#) Router.

Each scheduled system shall accept a network variable of type SNVT_occupancy (which will be provided by the UMCS outside the scope of this work) and shall use this network variable to determine the occupancy mode. If the system has not received a value to this network variable for more than 60 minutes it shall default to a configured occupancy schedule.

Fort Bragg currently has an Open LonWorks technology Utility Monitoring Control System (UMCS) manufactured by Johnson Controls, Inc. Integration of building DDC system are performed by Fort Bragg's System Integration contractor. This shall be coordinated with the UMCS System Manager.

8.5.3 Submittals

Prior to DDC system installation, submit the following for Government approval:

Points Schedules: Submit Points Schedules using the Points Schedule template located at <https://eko.usace.army.mil/fa/bas/> for each piece of DDC Hardware. Points Schedules shall be submitted in hard copy (11 inches by 17 inches) and electronic format. Electronic submission shall be in AutoCAD or Microstation (as approved per Ft. Bragg

Standard) format and submitted on CD or DVD. All points are mandatory unless deviation is approved by Government.

Control System Schematic diagram and Sequence of Operation for each HVAC system.

8.5.4 Deliverables

Upon completion of project, deliver the following to the Government for approval:

- a. Final (as-built) commissioned Turbo LonWorks® Network Services (LNS®) database with Lon Credits transferred to the Government.
- b. External Information Files (XIF), Resource files and Plug-ins for the completed system.
- c. Point Schedules: Final (as-built) Points Schedules using the Points Schedule template located at <https://eko.usace.army.mil/fa/bas/> for each piece of DDC Hardware. Points Schedules shall be submitted in hard copy (11"x17") and electronic format. Electronic submission shall be in AutoCAD or Microstation format and submitted on CD or DVD.
- d. Control System Schematic diagram and Sequence of Operation for each HVAC system.
- e. Programming Software: All software, including licensing information and user manuals, necessary to program GPPCs installed under this contract.
- f. GPPC and AGC Application Source Code: Copies of the installed application programs (all software that is not common to every controller of the same manufacturer and model) as source code compatible with the supplied programming software.
- g. Operation and Maintenance Instructions including procedures for system start-up, operation and shut-down, a routine maintenance checklist, and a qualified service organization list.
- h. Quality Control (QC) checklist (below) completed by the Contractor's Chief Quality Control (QC) Representative.

Perform a Performance Verification Test (PVT) prior to system acceptance. During the PVT, demonstrate to a Government representative that the system performs as specified, including but not limited to demonstrating that the system is Open and correctly performs the Sequences of Operation.

Provide a 1 year unconditional warranty on the installed system and on all service call work. The warranty shall include labor and material necessary to restore the equipment involved in the initial service call to a fully operable condition. Subsequent integration of the building control system into a basewide Utility Monitoring and Control System by the Government or its agents shall not void warranty.

Provide a minimum of 8 hours training in 2 complete cycles of 4-hour blocks conducted on separate days (Tuesday through Thursday) at the project site on the installed building systems. Training shall not be completed on Monday or Friday. Upon completion of this training, each student, using appropriate documentation, shall be able to start the system, operate the

system, recover the system after a failure, perform routine maintenance, and describe the specific hardware, architecture and operation of the system.

Initial each item, sign and date verifying that the requirements have been met.		
#	Description	Initials
1	All DDC Hardware is installed on a TP/FT-10 local control bus.	
2	Communication between DDC Hardware is only via CEA-709.1-D, using SNVTs. Other protocols and network variables other than SNVTs have not been used.	
3	All sequences are performed using DDC Hardware.	
4	XIF files, Resource files and Plug-in's are up-to-date and accurately represents the final installed system	
5	Commissioned Turbo LNS database with the understanding that the Lon Credits will be transferred to the Government as a complete system.	
6	All software has been licensed to the Government	
7	Local Display Panels (LDPs) have been created for all building systems, including all override and display points indicated on Points Schedule drawings.	
8	Final As-built Drawings accurately represent the final installed system.	
9	O&M Instructions have been completed and submitted.	
10	LonWorks Network Services (LNS) based M&C software was provided	
By signing below I verify that all requirements of the contract, including but not limited to the above, been met.		
Signature _____		Date _____

8.6 Test And Balance

Building systems shall be tested, balanced and adjusted in accordance with LEED requirements for mandatory basic commissioning and for measurement and verification credits to ensure that the systems are designed, installed, and calibrated to operate effectively. The test and balance firm shall return on a quarterly basis for the period of one year to re-adjust systems on a seasonal basis and to trouble shoot any operational problems discovered during the commissioning process or regular operation during the first year of operation.

Testing and balancing of air and hydronic systems shall be accomplished by a firm certified for testing and balancing by the Associated Air Balance Council (AABC), National Environmental Balancing Bureau (NEBB), or Testing and Balancing Bureau (TABB).

TAB shall be performed in accordance with the requirements of the standard under which the TAB Firm's qualifications are approved, i.e., AABC MN-1, NEBB TABES, or SMACNA HVACTAB unless otherwise specified herein.

All recommendations and suggested practices contained in the TAB Standard shall be considered mandatory. The provisions of the TAB Standard, including checklists, report forms, etc., shall, as nearly as practical, be used to satisfy the Contract requirements. The TAB Standard shall be used for all aspects of TAB, including qualifications for the TAB Firm and Specialist and calibration of TAB instruments. Where the instrument manufacturer calibration recommendations are more stringent than those listed in the TAB Standard, the manufacturer's recommendations shall be adhered to.

All quality assurance provisions of the TAB Standard such as performance guarantees shall be part of this contract. For systems or system components not covered in the TAB Standard, TAB procedures shall be developed by the TAB Specialist. Where new procedures, requirements, etc., applicable to the Contract requirements have been published or adopted by the body responsible for the TAB Standard used (AABC, NEBB, or TABB), the requirements and recommendations contained in these procedures and requirements shall be considered mandatory.

8.7 Maintenance Features/Procedures

Ensure that all equipment, including filters, controls, control valves, backflow preventers, and coils are easily accessible and have ample room for servicing, inspection, and cleaning. Isolation valves shall be provided for each terminal unit, zone, branch, long runs, etc. as necessary for proper isolation and maintenance. Coils shall be fully removable without requiring demolition of any building components. Piping configuration at all coils shall include unions or flanges to facilitate easy coil removal.

The Contractor shall ensure that all maintenance and repair activities can be performed safely and efficiently without needing to bring in extensive material handling (i.e. A-frames), access equipment or remove other equipment.

Locate all valves, pumps, strainers, controls, sensors, and other items requiring regular service such that they may be maintained from floor level when possible. If not accessible from floor level, then Contractor shall ensure that access is not blocked by other equipment or structural components.

Ensuring maintainability requires careful coordination of piping, conduit, etc., to avoid blocking access by cranes, hoists, ladders, etc. The contractor shall make this a priority, recognizing that this will generally result in longer runs of pipe/conduit.

All above ceiling utilities (cable trays, ductwork, junction boxes, utility piping, etc.) shall be accessible for a worker to reach two sides plus the service side with a minimum 3 feet of clearance (greater if required for

component maintenance/disassembly).

Water treatment systems for boilers/chillers and cooling towers (if provided) shall be designed and installed such that chemical handling is accomplished at floor level.

8.8 Training

Training by factory certified technicians shall be required for all HVAC/Plumbing systems. Training in a classroom type setting shall include proper operating and maintenance procedures, troubleshooting procedures, routine and overhaul maintenance, testing and balancing, and calibration.

8.9 Commissioning

A commissioning agent shall be retained at the beginning of the design process by the government and shall perform complete, detailed commissioning services including system startup services, operation and maintenance training and documentation control of shop drawings and operation and maintenance manuals as required to meet LEED certification.

All systems and equipment including controls (HVAC and Lighting) shall be commissioned in accordance with ASHRAE Guideline 1.1. The Commissioning Authority as described in Guideline 1 shall be hired by the Contractor and shall be certified as a Commissioning Authority by AABC, NEBB, or TABB. The Contracting Officer will act as the Government's representative in performance of duties spelled out in ASHRAE Guideline 0.

The Contractor shall also provide enhanced commissioning, to meet the LEED requirement for enhanced commissioning of systems.

8.10 Operation and Maintenance Manuals

Operations and Maintenance Manuals - Contractor shall provide Operation Manuals, Maintenance Manuals and spare parts inventory lists for each piece of mechanical equipment. Contractor shall furnish control diagrams as part of as-built documentation. Operation and Maintenance Manuals for all components of the HVAC systems shall be required by the design. Manuals shall be submitted for approval 60 days prior to the scheduled completion date for the project. The design shall include requirements for a minimum of 8-hours to train operating personnel in the operation and maintenance of the complete HVAC system. Training shall be conducted in two 4-hour blocks on separated days Tuesday, Wednesday or Thursday only. All manuals to be submitted on searchable PDF file on CD/DVD. Provide 2 copies plus original of CD/DVD. All training shall be videotaped and provided on CD/DVD (3 copies) to DPW.

8.10.1 Cybersecurity

Cybersecurity shall be included and integrated into the design of the BAS and similar control systems in order to address appropriate Risk Management Framework (RMF) security controls during design and subsequent construction. Cybersecurity design shall comply with UFC 4-010-06, Dept. of Defense Instruction (DoDI) 8500.01 Cybersecurity 14 March 2014, and DoDI 8510.01 Risk Management Framework (RMF) for DoD Information Technology (IT) 12 March 2014. Cybersecurity documentation is required and shall be submitted and provided as part control system design package. This documentation is in addition to the documentation required by the relevant control system design criteria. Include cybersecurity requirements (UFGS

Section 25 50 00.00 20, Cybersecurity of Facility-Related Control Systems)in the project specifications.

8.10.2 Basic Cybersecurity Requirements

Passwords: For all devices with a password, change the password from the default password. Do not use the same password for more than one device. Coordinate selection of passwords with the UMCS manager. Provide a Password Summary Report documenting the password for each device and describing the procedure to change the password for each device.

Wireless Capability: Unless otherwise indicated, disable wireless capability (including but not limited to radio frequency (RF), infrared and optical) for all devices with wireless capability. Optical and infrared capabilities may be disabled via a permanently affixed opaque cover plate. Password protecting a wireless connections does not meet this requirement; the wireless capability must be disabled.

IP Network Physical Security: Install all IP Network media in conduit. Install all IP devices including but not limited to IP-enabled DDC hardware and IP Network Hardware in lockable enclosures.

PART 9 SPECIFICATIONS

The following preliminary list of UFGS Guide Specifications are incorporated by reference and will be edited as applicable by the Designer of Record during design as required to conform to the project, installation requirements and RFP with Government approval, prior to the first design package. The Designer of Record (DOR) shall provide additional specifications or remove specifications from the list as necessary to define the scope of work or as required by the Government. The DOR shall not remove any specifications that are necessary to effectuate the design intent and requirements of the RFP.

01 91 00.00 37	COMMISSIONING
13 48 00	SEISMIC PROTECTION FOR MISCELLANEOUS EQUIPMENT
13 48 00.00 10	SEISMIC PROTECTION FOR MECHANICAL EQUIPMENT
22 00 00	PLUMBING, GENERAL PURPOSE
22 05 48.00 20	MECHANICAL SOUND, VIBRATION AND SEISMIC CONTROL
23 00 00	AIR SUPPLY, DISTRIBUTION, VENTILATION, AND EXHAUST SYSTEMS
23 03 00 00 20	BASIC MECHANICAL MATERIALS AND METHODS
23 05 15	COMMON PIPING FOR HVAC SYSTEMS
23 05 48.00 40	VIBRATION AND SEISMIC CONTROLS FOR HVAC PIPING AND EQUIPMENT
23 05 93	TESTING, ADJUSTING, AND BALANCING FOR HVAC

23 07 00	THERMAL INSULATION FOR MECHANICAL SYSTEM
23 09 00	INSTRUMENTATION AND CONTROL FOR HVAC
23 09 13	INSTRUMENTATION AND CONTROL DEVICES FOR HVAC
23 09 23.01	LONWORKS DIRECT DIGITAL CONTROL FOR HVAC AND OTHER BUILDING CONTROL SYSTEMS
23 09 93	SEQUENCES OF OPERATION FOR HVAC CONTROL
23 11 25	FACILITY GAS PIPING
23 23 00	REFRIGERANT PIPING
23 25 00	CHEMICAL TREATMENT OF WATER FOR MECHANICAL SYSTEMS
23 52 00	HEATING BOILERS
23 54 16.00 10	HEATING SYSTEMS: GAS -FIRED HEATERS
23 64 10	WATER CHILLERS, VAPOR COMPRESSION TYPE
23 82 02.00 10	UNITARY HEATING AND COOLING EQUIPMENT
25 50 00.00 20	CYBERSECURITY OF FACILITY-RELATED CONTROL SYSTEMS

-- End of Section --

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DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01 11 00.05

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SECTION 01 11 00.05

FIRE PROTECTION SUMMARY OF WORK
11/15

PART 1 FIRE PROTECTION

1.1 REFERENCES

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

ASME INTERNATIONAL (ASME)

ASME A17.1/CSA B44 (2016) Safety Code for Elevators and Escalators

FM GLOBAL (FM)

FM APP GUIDE (updated on-line) Approval Guide
<http://www.approvalguide.com/>

INTERNATIONAL CODE COUNCIL (ICC)

ICC IBC (2018) International Building Code

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

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

NFPA 101 (2018; TIA 18-1) Life Safety Code

NFPA 13 (2016; TIA 16-1; TIA 16-2; TIA 16-3 2016; Errata 17-1; Errata 17-2) Standard for the Installation of Sprinkler Systems

NFPA 14 (2016) Standard for the Installation of Standpipes and Hose Systems

NFPA 24 (2016; ERTA 2016) Standard for the Installation of Private Fire Service Mains and Their Appurtenances

NFPA 25 (2017) Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems

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

NFPA 72 (2016) National Fire Alarm and Signaling Code

NFPA 90A (2018) Standard for the Installation of
Air Conditioning and Ventilating Systems

NFPA 90B (2018) Standard for the Installation of
Warm Air Heating and Air Conditioning
Systems

U.S. ARMY CORPS OF ENGINEERS SAVANNAH DISTRICT (CESAS)

SAS Des Manl (2015) Savannah District Design Manual for
Military Construction

U.S. DEPARTMENT OF DEFENSE (DOD)

UFC 1-200-01 (2016) General Building Requirements

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

UFC 3-600-01 (2016; with Change 1) Fire Protection
Engineering for Facilities

UFC 4-021-01 (2008; with Change 1) Design and O&M: Mass
Notification Systems

U.S. GENERAL SERVICES ADMINISTRATION (GSA)

FED-STD-795 (Basic) Uniform Federal Accessibility
Standards

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

36 CFR 1191 Americans with Disabilities Act (ADA)
Accessibility Guidelines for Buildings and
Facilities; Architectural Barriers Act
(ABA) Accessibility Guidelines

UNDERWRITERS LABORATORIES (UL)

UL 268 (2016; Reprint Jul 2016) UL Standard for
Safety Smoke Detectors for Fire Alarm
Systems

1.2 SUBMITTALS

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

SD-05 Design Data

Fire Protection And Life Safety Analysis

SD-07 Certificates

Fire Protection Engineer; G, RO

1.3 APPLICABLE CODES, STANDARDS AND CRITERIA

The project shall conform to the following applicable Codes, Standards and Criteria for the design and construction of the project. All references cited herein shall be incorporated in their entirety. Certain design impacts and features due to these criteria are noted for the benefit of the offeror; however, all requirements of the referenced criteria will be applicable, whether noted or not, unless otherwise specified.

FM APP GUIDE
ICC IBC
NFPA 10
NFPA 101
NFPA 13
NFPA 24
NFPA 25
NFPA 70
NFPA 72
NFPA 90A
NFPA 90B
SAS Des Man1
UFC 1-200-01
UFC 3-520-01
UFC 3-600-01
UFC 4-021-01
FED-STD-795
36 CFR 1191
UL 268

1.4 QUALIFICATIONS OF FIRE PROTECTION ENGINEER

The design of the fire protection features shall be by a qualified fire protection engineer meeting one of the following conditions:

- a. A registered professional engineer who has passed the National Council of Examiners for Engineering and Surveying (NCEES) fire protection engineering written examination.
- b. A registered P.E. in a related engineering discipline with a minimum of 5 years' experience dedicated to fire protection engineering.

The name and credentials (education, registration, experience) of the fire protection engineer shall be submitted with the initial Contract documents and approved by the District fire protection engineer prior to proceeding with fire protection design.

1.5 FIRE PROTECTION AND LIFE SAFETY ANALYSIS

The fire protection engineer shall perform a fire protection and life safety design analysis of the proposed facility design in accordance with SAS Des Man1. The analysis shall be submitted with the preliminary design submittal. The analysis shall include:

- a. type of construction
- b. height and area limitations (including calculations for allowable area increases)
- c. classification of occupancy (both per ICC IBC and NFPA 101)
- d. building separation or exposure protection
- e. specific compliance with NFPA codes and ICC IBC

- f. life safety provisions (including exit travel distances, common path distances, dead end distances, exit unit width required and provided)
- g. requirements for fire-rated walls, doors, fire dampers, etc.
- h. analysis of automatic suppression systems and protected areas
- i. water supplies; smoke control systems
- j. fire alarm system, including connection to the Base-wide system
- k. fire detection system
- l. standpipe systems
- m. fire extinguishers
- n. interior finish ratings
- o. other pertinent fire protection data

The submittal shall include a life safety floor plan showing:

- a. occupant loading
- b. occupancy classifications and construction type
- c. egress travel distances
- d. exit capacities
- e. areas with sprinkler protection
- f. fire extinguisher locations
- g. ratings of fire-resistive assemblies
- h. other data necessary to exhibit compliance with life safety code requirements

The Fire Protection Engineer shall certify the final design via a written letter with the 100 percent design submittal. The Fire Protection Engineer shall certify the final construction via a written letter and witness the fire testing and preliminary and final acceptance.

1.6 FIRE ALARM AND DETECTION

Please refer to SECTION 01 11 00.06 ELECTRICAL AND ELECTRONIC SYSTEMS SUMMARY OF WORK for details regarding the design and installation of the fire alarm and detection system.

1.7 MASS NOTIFICATION SYSTEM

Please refer to SECTION 01 11 00.06 ELECTRICAL AND ELECTRONIC SYSTEMS SUMMARY OF WORK for details regarding the design and installation of the Mass Notification System.

1.8 FIRE WATER SUPPLY

The domestic water infrastructure in the Yarbrough area is not yet complete, and fire flow testing for the project cannot be conducted. However, modeling of the proposed new system has been performed by Dewberry Engineers, Inc. on behalf of Old North Utilities Services. *The results of this modeling are provided in Appendix D.*

1.9 WET PIPE SPRINKLER SYSTEM

The sprinkler system shall be designed by a professional fire protection engineer registered in the state of North Carolina. Design calculations and shop drawings of completed sprinkler system shall be submitted for approval. *The contractor is responsible for obtaining all permits required for sprinkler work and for coordinated sprinkler testing with local fire marshals and USACE officials.*

The Human Performance Training Center shall be protected throughout by automatic wet pipe sprinkler systems. The sprinkler systems shall be designed and installed according to UFC 3-600-01 and the additional criteria referenced there-in. Sprinkler systems shall be zoned in accordance with NFPA 13. All fire protection equipment, devices, and materials shall be Underwriters Laboratories (UL) listed and/or Factory Mutual (FM) approved for fire protection service as applicable.

Dry pendent-type sprinklers shall be used in rooms or areas where the design temperature will drop below 40°F (canopies, etc.) Piping for this sprinkler system shall be Schedule 40 black steel. All piping, fittings, devices, and their installation shall comply with the requirements of NFPA 13, NFPA 14 and applicable local codes and standards

Location of sprinkler heads and sprinkler piping must be coordinated with other trades. Sprinkler heads shall be symmetrically placed in ceiling tiles. Provide architecturally coordinated, single-piece trim rings in occupied spaces. Sprinkler system must be installed to be completely drainable. Main drains and end of line drains shall be extended to the building exterior. Cast in place splash blocks or similar method shall be provided to control runoff and erosion at the building exterior. Provide flow switches, valve tamper switches and other equipment required for interface with the building fire alarm system. Fire protection piping shall not be installed over or within three lateral feet of electrical panels, transformers or other electrical equipment.

Water-flow detection devices shall transmit an alarm signal to the building fire alarm control panel upon detection of water flow. Valves controlling water supplies to the sprinkler system shall be provided with "tamper" detection switches. A trouble signal will be transmitted to the building fire alarm control panel upon detection of an unauthorized valve closure. Exposed sprinkler piping in finished area shall be painted to match. Provide systems identification with direction of flow.

Facilities with multiple floors shall be provided with floor control valves for each floor. The floor control valve assembly shall be in accordance with UFC 3-600-01.

1.10 EXTERIOR HOSE STREAM

Exterior hose stream demand shall be in accordance with UFC 3-600-01 and the additional criteria referenced therein.

1.11 SPRINKLER SERVICE MAIN AND RISER

Provide a dedicated fire service entrance into the mechanical room. Service entrance piping shall be sleeved and sealed through the facility floor or shall enter below grade through foundation into a concrete service pit area. Provide thrust blocks on underground piping at each change of direction. Use of cleated (screw type) flanges on service piping is prohibited. Use only threaded or welded and flanged connections on the service side of facility alarm and isolation valve. Use of mechanical couplings (e.g. Victaulic) connections upstream of the backflow preventer is prohibited. The utility contractor shall be licensed for the installation of underground fire service mains.

The flush type dual wall hydrant with OS&Y valve connected by a full size

line from the fire department connection line shall be provided to allow full flow testing of backflow preventer per NFPA 13.

1.12 FIRE DEPARTMENT CONNECTION

The fire department connection may be either wall-mounted or free-standing depending on the location preference of the Fort Bragg Fire Department and proximity to the nearest fire hydrant.

1.13 BACKFLOW PREVENTER

Backflow preventer assemblies shall be reduced-pressure zone type and shall be located outside of the building within heated enclosures. Old North Utilities Services (O.N.U.S.) shall provide the backflow preventer assemblies and their associated tamper switches as well as the heated enclosure. The contractor shall be responsible for providing the alarm circuits to connect the tamper switches to the fire alarm control panel (FACP), as well as the 120 volt power circuit to the heaters.

1.14 FIRE PUMPS

Based on the water system modelling data provided by Dewberry Engineers, Inc., it is currently believed that a fire pump will not be necessary for this facility.

1.15 PROTECTION OF PIPING AGAINST EARTHQUAKE DAMAGE

The Contractor shall determine the seismic requirements for the project based on the requirements of the relevant codes and results of the geotechnical investigation. If required, sprinkler and fire pump (if needed) piping systems shall be protected against damage from earthquakes. Seismic protection shall include flexible and rigid couplings, sway bracing, seismic separation assemblies where piping crosses building seismic separation joints, and other features as required by NFPA 13.

1.16 FIRE EXTINGUISHER CABINETS AND BRACKETS

Fire Extinguisher cabinets and brackets shall be provided when fire extinguishers are required by UFC 3-600-01 and NFPA 101. Size and placement of cabinets and brackets shall be in accordance with NFPA 10. Semi-recessed cabinets shall be provided in finished areas and brackets shall be provided in non-finished areas (such as utility rooms, shops, and vehicle bays). The contractor shall determine and indicate the required extinguisher rating (size and class) for each cabinet and bracket.

1.17 FIRE HYDRANTS

The Contractor shall be responsible for providing ONUS the location of all fire hydrants and necessary fire water lines for the site development to meet codes. One hydrant needs to be located within 150 linear feet of the Fire Department connection provided by contractor. ONUS will provide all hydrants and mains for site development.

1.18 CATALOG CUTS

Provide catalog cuts and manufacturer's data sheets for all materials and equipment intended for use in the fire protection system(s).

1.19 ELEVATORS

The fire protection features of elevators, hoist ways, machine rooms and lobbies shall be in accordance with [UFC 1-200-01](#), [UFC 3-600-01](#), [ASME A17.1/CSA B44](#), [NFPA 13](#), [NFPA 72](#), and [ICC IBC Chapter 30](#).

1.20 INTERIOR FINISH

Interior wall and ceiling finishes and movable partitions shall conform to the requirements of [UFC 3-600-01](#) and [NFPA 101](#).

1.21 SITE INVESTIGATION

Perform required site investigations to gather information necessary for completing fire protection system design for the project.

1.22 SYSTEM TESTING AND ACCEPTANCE

Provide field acceptance tests and startup services for all fire protection systems.

1.23 OPERATOR TRAINING

Provide operator training for the systems for which an operation or maintenance manual is provided. In addition, provide both videotapes and DVD's of the training sessions, as specifically requested by Installation maintenance personnel or the Contracting Officer. Use a professional videography firm that specializes in commercial or professional training videography. Training shall include individual equipment training on each piece of equipment.

1.24 SPECIFICATIONS

The following preliminary list of UFGS Guide Specifications are incorporated by reference and will be edited as applicable by the Designer of Record during design as required to conform to the project, installation requirements and RFP with Government approval, prior to the first design package. The Designer of Record (DOR) shall provide additional specifications or remove specifications from the list as necessary to define the scope of work or as required by the Government. The DOR shall not remove specifications that are necessary to effectuate the design intent and requirements of the RFP.

DIVISION 21 - FIRE SUPPRESSION

21 13 13.00 10 WET PIPE SPRINKLER SYSTEM, FIRE PROTECTION

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ELECTRICAL AND ELECTRONIC SYSTEMS SUMMARY OF WORK
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PART 1 ELECTRICAL DESIGN

1.1 REFERENCES

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

AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS (ASHRAE)

ASHRAE 189.1 (2014; ERTA 1-2 2015; ERTA 3-4 2017)
Standard for the Design of
High-Performance Green Buildings Except
Low-Rise Residential Buildings

ASHRAE 90.1 - IP (2013) Energy Standard for Buildings
Except Low-Rise Residential Buildings

AMERICAN WATER WORKS ASSOCIATION (AWWA)

AWWA C203 (2008) Coal-Tar Protective Coatings and
Linings for Steel Water Pipelines - Enamel
and Tape - Hot-Applied

ILLUMINATING ENGINEERING SOCIETY (IES)

IES HB-10 (2011; Errata 2015) IES Lighting Handbook

IES RP-1 (2012) American National Standard Practice
for Office Lighting

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)

IEEE 1100 (2005) Emerald Book IEEE Recommended
Practice for Powering and Grounding
Electronic Equipment

IEEE 519 (2014) Recommended Practices and
Requirements for Harmonic Control in
Electrical Power Systems

NACE INTERNATIONAL (NACE)

NACE SP0169 (2015) Control of External Corrosion on
Underground or Submerged Metallic Piping
Systems

NATIONAL ELECTRICAL CONTRACTORS ASSOCIATION (NECA)

NECA 1 (2015) Standard for Good Workmanship in
Electrical Construction

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

NEMA AB 1	(2002) Molded-Case Circuit Breakers, Molded Case Switches, and Circuit-Breaker Enclosures
NEMA PB 1	(2011) Panelboards
NEMA PB 2	(2011) Deadfront Distribution Switchboards
NEMA VE 2	(2013; ERTA 2016) Cable Tray Installation Guidelines

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 101	(2018; TIA 18-1) Life Safety Code
NFPA 70	(2017; ERTA 1-2 2017; TIA 17-1; TIA 17-2; TIA 17-3; TIA 17-4; TIA 17-5; TIA 17-6; TIA 17-7; TIA 17-8; TIA 17-9; TIA 17-10; TIA 17-11; TIA 17-12; TIA 17-13; TIA 17-14) National Electrical Code
NFPA 72	(2016) National Fire Alarm and Signaling Code
NFPA 75	(2017) Standard for the Protection of Information Technology Equipment
NFPA 76	(2016) Standard for the Fire Protection of Telecommunications Facilities
NFPA 780	(2017) Standard for the Installation of Lightning Protection Systems
NFPA 90A	(2018) Standard for the Installation of Air Conditioning and Ventilating Systems
NFPA 90B	(2018) Standard for the Installation of Warm Air Heating and Air Conditioning Systems

SOCIETY FOR PROTECTIVE COATINGS (SSPC)

SSPC SP 6/NACE No.3	(2007) Commercial Blast Cleaning
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TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA)

TIA-568 Set	(2018) Commercial Building Telecommunications Cabling Standard Set
TIA-568-C.0	(2009; Add 1 2010; Add 2 2012) Generic Telecommunications Cabling for Customer Premises
TIA-568-C.3	(2008; Add 1 2011) Optical Fiber Cabling Components Standard
TIA-569	(2015d) Commercial Building Standard for

Telecommunications Pathways and Spaces

- TIA-606 (2017c) Administration Standard for the Telecommunications Infrastructure
- TIA-607 (2015c) Generic Telecommunications Bonding and Grounding (Earthing) for Customer Premises
- TIA-758 (2012b) Customer-Owned Outside Plant Telecommunications Infrastructure Standard
- TIA-1152 (2009) Requirements for Field Test Instruments and Measurements for Balanced Twisted-Pair Cabling

U.S. ARMY (DA)

- Bragg NEC IDC (2017) Installation Design Criteria (IDC) For Fort Bragg Specific Communications Infrastructure Requirements
- DA TM 5-618 (1981) Paints And Protective Coatings
- U.S. ARMY CORPS OF ENGINEERS (USACE)
- ETL 1110-3-403 (1989) Electrical Power Systems For Nonlinear Loads

U.S. ARMY CORPS OF ENGINEERS SAVANNAH DISTRICT (CESAS)

- SAS Des Manl (2015) Savannah District Design Manual for Military Construction

U.S. ARMY INFORMATION SYSTEMS ENGINEERING COMMAND (USAISEC)

- TC I3A (2012) Technical Criteria for the Installation Information Infrastructure Architecture

U.S. DEPARTMENT OF DEFENSE (DOD)

- DoDD 8100.02 (2004) Use of Wireless Devices, Services and Technologies in the Department of Defense (DoD) Global Information Grid (GIG)
- MIL-HDBK-419 (1987; Rev A) Grounding, Bonding, and Shielding for Electronic Equipments and Facilities Volumes 1 of 2 Basic Theory
- MIL-STD-188-124 (1998; Rev B; Notice 2 1998; Notice 3 2000; Notice 4 2013) Grounding, Bonding and Shielding for Common Long Haul/Tactical Communications Systems, Including Ground Based Communications - Electronics Facilities and Equipments
- UFC 1-200-02 (2016, with Change 1) High Performance and Sustainable Building Requirements

UFC 3-520-01	(2015) Interior Electrical Systems
UFC 3-530-01	(2015) Interior and Exterior Lighting Systems and Controls
UFC 3-570-02A	(2005) Cathodic Protection
UFC 3-580-01	(2016; Change 1 2016) Telecommunications Interior Infrastructure Planning and Design
UFC 3-600-01	(2016; with Change 1) Fire Protection Engineering for Facilities
UFC 4-010-06	(2016; with Change 1) Cybersecurity of Facility-Related Control Systems
UFC 4-021-01	(2008; with Change 1) Design and O&M: Mass Notification Systems

UNDERWRITERS LABORATORIES (UL)

UL 1449	(2014; Reprint Jul 2017) UL Standard for Safety Surge Protective Devices
UL 489	(2016) UL Standard for Safety Molded-Case Circuit Breakers, Molded-Case Switches and Circuit-Breaker Enclosures
UL 5	(2016) UL Standard for Safety Surface Metal Raceways and Fittings
UL 62	(2014) Flexible Cords And Cables
UL 67	(2009; Reprint Nov 2017) UL Standard for Safety Panelboards
UL 891	(2005; Reprint Oct 2012) Switchboards

1.2 DESIGN REQUIREMENTS

1.2.1 General

a. The design and installation of electrical, lighting, telecommunications, fire alarm systems, mass notification systems, and other special systems described shall conform to the requirements of Section 01 33 16 DESIGN AFTER AWARD, Savannah District Design Manual, NECA 1, applicable International Building Codes, NFPA Standards, applicable UFC Codes, Installation Design Guide for a Sustainable Ft. Bragg (IDG), codes, criteria, references, and standards referenced, and the Unified Facility Guide Specifications (UFGS) referenced herein. Refer to the Drawings and the appendices for further details. Energy Star and FEMP-designated products and equipment shall be used when available. Equipment shall be installed in accordance with the manufacturer's recommendations.

b. The electrical design will provide an electrical system, complete in place, tested and approved, as specified herein, and needed for a complete, proper, and usable installation. The design and construction will incorporate quality materials and promote energy conservation that will be

of value to the Government in the foreseeable future.

c. The electrical design shall include all calculations required by USACE Savannah District Design Manual. They shall also include grounding calculations, voltage drop calculations, motor starting voltage drop calculations, short-circuit calculations, load flow calculations, pulling calculations, lighting calculations, arc flash calculations, power factor calculations, and load summary calculations.

d. Design shall be coordinated with the other disciplines involved with the facility design and provide wiring for the equipment connections and extensions including, but not necessarily limited to, HVAC equipment and plumbing systems and equipment, Government-Furnished Contractor-Installed (GFCI) equipment, Government-Furnished Government-Installed (GFGI) equipment, Contractor-Furnished Government-Installed (CFG I) equipment, and Contractor-Furnished Contractor-Installed (CFCI) equipment. (regardless of who furnishes or installs the equipment and systems).

e. Electrical design will include a load tabulation for sizing the building service transformer. Electrical design will meet ADA requirements for the following spaces: restrooms, break room, corridors, and administrative areas, unless indicated otherwise. The facility design will incorporate energy conservation and promote low maintenance. The building will promote low maintenance by utilizing durable materials for construction.

f. Provide new electrical equipment, unless specifically indicated otherwise. Material and equipment shall be a standard product by a manufacturer regularly engaged in the manufacture of the product and shall essentially duplicate items that have been in satisfactory use for at least 2 years prior to award of Contract. Materials in the same category will be by a single manufacturer (i.e. panelboards, switchgear, transformers, etc.)

g. Incorporate Cyber Security requirements per [UFC 4-010-06](#)

h. Furnish 6 instruction manuals and spare parts inventory requirements for each piece of electrical equipment.

i. Provide Operation and Maintenance Manuals for electrical equipment requiring periodic maintenance or inspections.

j. Ensure that equipment items have sufficient manufacturer's identification data permanently affixed. Provide copies of parts identification manuals and installation and maintenance instructions, customarily furnished with the equipment.

k. Provide training for each electrical system (VFDs, electronic systems, etc.) installed. Training shall be conducted on-site in two 4-hour blocks on separate days from Tuesday through Thursday or until training is complete.

1.2.2 Qualifications

1.2.2.1 General Design

Professional Engineer (PE), registered in the state of North Carolina for Electrical Engineering, shall be required for the electrical design and specifications preparation for this Contract. The PE shall stamp all electrical drawings..

1.2.2.2 Communications Design

A Registered Communications Distribution Designer (RCDD) shall be required for the communication cabling infrastructure design and specification preparation for this construction contract. The RCDD shall stamp all telecommunications drawings.

1.2.2.3 Electrical Wiring

Only certified journeymen electricians or apprentices under the direct supervision of journeymen shall be permitted to install, alter, or repair electrical systems.

1.2.2.4 Communications Wiring

The communications shall be installed by Building Industry Consulting Service International (BICSI) registered cabling installer Level 1 or above. General electrical trade staff (electricians) shall not be used for the installation of the premise distribution system cables, pathways and associated hardware unless they are under direct supervision of a BICSI Certified Technician for the Telecommunications Contractor. All supervisors assigned to the installation of this system or any of its components shall have a minimum Technician certification from BICSI and installers assigned to the installation of this system or any of its components shall have a minimum Level 1 installer certification from BICSI. All supervisors and installers shall also have factory certification from each equipment manufacturer that they are qualified to install and test.

1.2.3 Equipment Clearance

Ensure adequate clear space around electrical equipment in accordance with [NFPA 70](#).

1.2.3 Fire Stops

Provide fire stops where electrical equipment and systems penetrate fire-rated walls and floors. Fire stops shall be rated equal to or greater than the wall penetrated.

1.2.4 Equipment Pads

Provide a [4-inch](#) thick concrete housekeeping pad for new floor-mounted electrical equipment unless noted otherwise. The concrete housekeeping pad shall have chamfered edges and extend [4 inches](#) from face and sides of electrical equipment.

1.2.5 Spare Capacity

Provide at least 20 percent spare capacity for the electrical equipment including transformers, motor control centers, switchboards, and conductors. Provide minimum 20 percent spare breakers and 15 percent open spaces in lighting panelboards, and 208Y/120V power panelboards.

1.2.6 Restrictions

Do not use Asbestos-Containing Materials and lead-based paint in the work.

1.2.7 Maintenance Provisions

Locate electrical equipment to allow reasonable access for maintenance. Provisions shall be made for removal of equipment for maintenance. Ensure that proper distances between system components and walls are maintained to ensure ability to clean, repair, or replace system components.

Provide disconnect switches for remote-controlled equipment such as air handlers and exhaust fans.

1.2.8 Construction Over Buried Utilities

New construction shall not be placed over existing buried water, sewer, heating, electric, compressed air, or telephone utilities, except in extraordinary situations, and only if special provision is made for maintenance access. Construction shall not be placed over existing natural gas lines.

PART 2 ELECTRICAL DISTRIBUTION SYSTEM

2.1 EXTERIOR DISTRIBUTION SYSTEM

The Contractor shall make field verification of the site location and electrical utility routing. Existing as-built drawings may be used as guidelines, but information must be verified by field investigation. The Designer shall be responsible for the verification of all dimensions, measurements, and location of existing facilities, utilities, equipment and other existing conditions that may affect the design.

2.1.1 Building Service

Primary electrical service to the facilities will be designed and provided by Sandhills Utility Service (SUS). Electrical distribution in the area is served at 12.47 kV. Sandhills Utility Service will install the primary electrical service to the building's main transformer. The primary service will originate from an existing underground line in the area and be routed underground in duct to a 12.47 kV- 480Y/277V transformer located on the side of the facility in close proximity to the electrical room. The transformer shall be provided with a secure lockable enclosure Sandhills Utility Service's work shall NOT be included in this contract. SUS shall be paid by the government under a separate contract. Sandhills Utility Service will provide:

- a. Underground primary electrical service duct bank
- b. Underground primary cable through duct lines
- c. Pad-mounted transformer (Allow for truck access and 10 feet clearance on each side of transformer)
- d. Primary connections to the transformer
- e. Electric Meter can and Electric Meter
- f. Current Transformers (CTs) on transformer secondary
- g. Terminations of secondary cables

The Contractor shall:

- a. provide the service entrance conductors extending from the service transformer to the 480Y/277V main switchboard in the main electrical equipment room. Conductors shall be in Schedule 40 PVC conduit encased in concrete.
- a. Coordinate Sandhills Utility Service work with Fort Bragg DPW and the Contracting Officer's Representative (COR)
- d. Perform other work as specified and described herein.

Sandhills Utility Service's work shall NOT be included in this contract. SUS shall be paid by the government under a separate contract. The Contractor shall be responsible for the secondary duct lines and conductors and for all work not identified as being provided by SUS.

2.1.2 Crossings

When crossing existing roads and driveways, crossings shall be bored and sleeved with galvanized rigid steel conduit. Roads and driveways shall not be crossed by open cut unless approved.

Where boring is impractical, street crossings shall be limited to 3 days maximum for utility crossing roadway (including trenching, compaction, and replacement of existing pavements). Provide steel matting sufficient to carry traffic loading over excavated area.

2.1.3 Manholes/Handholes

Electrical concrete manholes, handholes and pull boxes shall be of the precast type.

2.1.4 Temporary Connections

The Contractor shall obtain temporary power for construction from Sand Hills Utility Services at the contractor's expense. Temporary wiring around the site shall be in accordance with [NFPA 70](#). Temporary outlets shall be Ground-Fault Circuit Interrupter (GFCI) protected.

2.2 SECONDARY POWER DISTRIBUTION

2.2.1 Service

Service entrance conductors shall extend from the service transformer in concrete encased schedule 40 PVC conduit duct bank to a main breaker in the main 480Y/277V switchboard located in the 1st floor electrical equipment room. Installation shall conform to [NFPA 70](#).

The main switchboard shall be service entrance rated with a main insulated case circuit breaker with electronic trip and metering. Main circuit breakers rated at 1,000A or more shall be provided with GFI and zone interlocking. Provide a [UL 1449](#)-listed SPD (surge protective device) at the service entrance with 20kA nominal discharge current rating and 200kA per phase peak surge current rating. The SPD shall be UL-listed for use at the service entrance and qualified to be included in UL-certified Lightning Protection Systems with Master Label. The SPD device shall be mounted

outside the equipment being protected. Provide metering for interfacing into the Installation's Energy Management System (EMS).

Coordinate with DPW through the COR on additional parameters that need to be monitored through sub metering. Submetering shall conform to the [ASHRAE 90.1 - IP](#) requirements, and shall interface with the UMCS system.

Feeders shall be extended from the 480Y/277V main switchboard to distribution panels, lighting panels, Mechanical Equipment panels, and 480:208Y/120V, 3-phase, dry-type transformers feeding receptacle load panels, located throughout the facility.

Transformers, panelboards and associated feeders shall be sized for the load plus 20 percent spare capacity unless noted otherwise. Panelboard main circuit, transformer primary overcurrent protection, transformer primary and secondary feeder sizes shall be sized for continuous nameplate rating of the transformer. Voltage drop shall be limited to 2 percent from the service transformer to circuit panelboards and 3 percent for branch circuits to loads for a maximum total voltage drop of 5 percent. For feeder circuits, the maximum load based on overcurrent protection devices shall be used to calculate voltage drops. For receptacle circuits, maximum circuit ampacity shall be used to calculate voltage drops.

2.2.2 Switchboards

Switchboards shall conform to [UL 891](#) and [NEMA PB 2](#). Provide metal-enclosed, freestanding, general-purpose switchboard with front and/or rear access. Busses shall be copper with silver plated joints. Assembly shall be approximately [90 inches](#) high. The withstand rating and interrupting capacity of the switchboards and circuit breakers shall be based on the maximum fault current available. Provide stationary, molded-case circuit breakers conforming to [NEMA AB 1](#) and [UL 489](#). Provide switchboard with digital metering

2.2.3 Panelboards

- a. Panelboards shall conform to [NEMA PB 1](#) and [UL 67](#). Panelboards shall have copper buses. Circuit breakers shall be the bolt-in type. A grounding bus, separate from the neutral bus, shall be provided in the panel boards.
- b. Panelboard directories shall be typewritten, indicate loads served by each circuit, and be mounted in a holder behind a clear protective covering.
- c. Provide four [1.25-inch](#) conduits from each recessed panelboard to above accessible ceiling space.
- d. Panelboards serving computer equipment and dedicated electronics loads shall be provided with [UL 1449](#)-listed SPD with 20kA nominal discharge current rating and 160kA per phase peak surge current rating. SPD devices shall be mounted outside the equipment being protected.
- e. Panelboards serving non-linear loads shall have 200 percent rated neutrals.
- f. Dedicated panelboards (per [UFC 3-580-01](#)) shall be provided in each telecommmunications rooms in accordance with [UFC 3-580-01](#).

2.2.4 Motor and Controllers

2.2.4.1 General

Provide NEMA-rated motor starters as required for the application. Provide Full-Voltage Non- Reversing (FVNR), Reduced Voltage Autotransformer when motor starting will cause excessive voltage drop, and Variable Frequency Drives (VFDs) for speed control.

2.2.4.2 VFD Starters

Provide IGBT pulse width modulated design utilizing a three-phase, full-wave, diode bridge with 6kHz minimum output modulation frequency. Provide minimum 12-pulse unit. Provide integral main motor circuit protector with AIC RMS Symmetrical rating at rated voltage. Provide 3 mechanically and electrically interlocked contactors as a bypass for that equipment serving equipment that is critical to facility operation and mission. Provide phase reversal and phase loss relays in accordance with Mechanical Technical Design Criteria. Surge protection shall be provided. The VFD's shall be supplied by a single manufacturer.

2.2.4.3 Pushbuttons and Selector Switches

Provide 1.25-inch diameter, round, heavy-duty type with integral legend plate. Provide NEMA 13, oil-tight, for dry indoor applications. Provide NEMA 4, watertight, for outdoor and indoor wet applications.

2.2.4.4 Indicating Lights

Indicating lights shall be standard 1.25-inch diameter, LED style. Provide integral legend plate. Provide red lens for "run" and green lens for "stop". Provide NEMA type 13, oil-tight, for dry indoor applications. Provide NEMA 4, watertight, for outdoor and indoor wet locations.

2.2.4.5 Disconnects

Disconnects for mechanical and other equipment on the outside of buildings shall be mounted in accordance with NFPA 70. Disconnects rated for the environment shall be served from the rear or bottom with liquid-tight, flexible, metal conduit extended to equipment, unless noted otherwise. Disconnects shall be positioned to allow flex conduit to be routed with mechanical lines. Electrical service to the building shall be underground.

Disconnects for mechanical and other equipment on the inside of the building shall be mounted in accordance with NFPA 70. Disconnects shall be lockable in the off position, heavy-duty and rated for the space where disconnect is located.

2.2.5 Spare Parts

a. Fuses: For types and ratings required, furnish additional fuses, amounting to one unit for every 10 installed units, but not less than 3 units of each.

b. Lamps: Furnish one spare lamp for each indicating light.

c. Variable Frequency Drive: Complete set of recommended start-up spare parts including 2 complete sets of power fuses for each unit.

2.2.6 Raceways and Conduit

Conduit shall be Electrical Metallic Tubing (EMT), Galvanized Rigid Steel (GRS), Intermediate Metallic Conduit (IMC), or Schedule 40 PVC (not to be used for telecommunication or CATV cables for ISP). GRS shall be used where exposed in mechanical support spaces less than 8 feet above finished floor (AFF), exterior applications and interior applications where conduits are exposed to damage or conditions within the space are damp, moist, or hazardous. EMT shall be used for the 600 V and below power, lighting, and control circuits unless dictated otherwise.

In a 3-phase system, no more than 3 branch circuit phase conductors shall be contained in a branch circuit conduit and each shall be of opposite phases. In a single-phase system, no more than 2 branch circuit phase conductors shall be contained in a branch circuit conduit and shall be of opposite phases. All branch circuits shall have dedicated neutrals.

2.2.6.1 Conduit Under Slabs

Schedule 40 PVC conduit shall be used under slabs. All Horizontal or Backbone conduit pathways installed in or under concrete slabs or under a building shall stub up into the building or thru the concrete slab using a Galvanized Rigid Steel Conduit 90 degree sweeping bend. When 2" conduits or larger are used there must use spacers shall be used to provide integrity of orientation of the ducts even when not encased in concrete. Conduit in duct banks shall have a minimum 3 inches of concrete in all directions. There shall be a minimum of 2 inches of concrete separation between the conduits. Duct banks shall be a minimum of 24 inches below grade.

2.2.6.2 Conduit in Slabs

Place conduits between bottom reinforcing steel and top reinforcing steel. Place conduits at either parallel or 90 degrees to main reinforcing steel. Separate conduits by not less than the outside diameter of the largest conduit to ensure proper concrete bond. The COR will review conduits crossing in slab for proper cover. Embedded conduit outside diameter shall not exceed 1/3 of slab thickness.

Where telecommunications floor boxes are required, a second spare conduit is to be installed in accordance with TIA standards.

2.2.6.3 Flexible Conduit

Flexible metal conduit shall only be used in moveable partitions, from outlet boxes to interior recessed lighting fixtures, and for final 18 inches of connection to motors, transformers, and other equipment requiring adjustment or subject to vibration in dry non-hazardous, interior locations. Flexible conduit shall not be used for communication cables without prior approval from the Fort Bragg NEC.

Liquid-tight flexible conduit shall be used in non-hazardous locations (no longer than 6 feet) where subjected to movement and vibration where connections are subject to one or more of the following conditions:

- a. Exterior location
- b. Moist or humid atmosphere
- c. Corrosive atmosphere

- d. Subject to water spray or dripping oil, water or grease
- e. Motor driving a non-submerged pump

2.2.6.4 Exposed Conduit and Raceways

Conduit to roof-mounted equipment shall be routed beneath the roof structure to a penetration immediately adjacent to the equipment. Where multiple roof penetrations are required, coordination with other trades shall be accomplished and grouped through prefabricated roof assemblies.

Exposed raceways shall be installed parallel or perpendicular to walls, structural members, or intersections of vertical planes and ceilings. Wiring above lay-in ceilings is considered exposed (as applied to wiring methods). Exposed raceway shall only be run vertical below 8'-6" unless noted otherwise or approved by the Government. Exposed conduit and raceways shall be grounded in accordance with [UFC 3-580-01](#), [TIA-607](#), and manufacturers' specifications.

Exterior metallic raceways shall have conduit threads painted with corrosion inhibiting compound before couplings are assembled.

2.2.6.5 Surface Metal Raceways and Wireways

Surface metal raceways shall include architecturally matching colors and shall comply with [UL 5](#). Provide steel wireways in sizes required with hinged covers.

Mechanically assemble metal enclosures and surface metal raceways to form a continuous electrical conductor and connect to electrical boxes, fittings, and cabinets.

Provide expansion fittings where structural expansion joints are crossed.

No field bends of surface metal raceways shall be permitted, use factory joints.

Use boxes supplied by surface metal raceway manufacture where junction, pull, and device boxes are required.

Ground wireways at 10-foot intervals.

2.2.6.6 Cable Tray

Cable tray design and installation shall comply with [UFC 3-580-01](#), [TIA-569](#) standards, [NEMA VE 2](#), [NFPA 70](#), and Appendix T "USASOC INFORMATION TECHNOLOGY (IT) TECHNICAL DESIGN GUIDE". Provide a NIPRNET network system in the facility. The system shall be distributed via conduit and/or cable tray. Provide ladder rack cable runway in telecommunications rooms. Metal wire basket cable tray shall be used for distribution outside telecommunications rooms. Indicate tray depth, width, and rung spacing on drawings. Provide horizontal and vertical elbows, horizontal and vertical tees, horizontal cross, reducers, expansion joints, bonding jumpers, and supports. Cable trays maximum calculated fill ratio shall be as indicated per [UFC 3-580-01](#), and TIA Standards and shall be designed for 25% fill; maximum fill shall not exceed 50%. Cable tray shall not be used to support other items, conduit, cable tray, piping or utilities. Provide support per [NEMA VE 2](#). Provide grounding per [NFPA 70](#), [UFC 3-580-01](#), [TIA-607](#), and

MIL-STD-188-124. The design and installation shall maintain the minimum ceiling clearances and clear space requirements above cable trays required by UFC 3-580-01, and TIA-569. Cable tray pathways shall not run through lavatories.

2.2.7 Wires and Cables

Building wiring systems shall use 480Y/277 volts to the maximum extent possible. Wiring (including, but not limited to, power, fire alarm, telephone, communications, control, etc.) shall be in metal conduit, and conduit shall be concealed above ceiling, under floor, or in walls, to the maximum extent possible. No exposed conduit or piping shall be permitted on exterior building surfaces.

Wire shall be copper, except for conductors No. 4 AWG and larger diameter where aluminum conductors AA-8000 series electrical grade aluminum alloy conductors may be used. Type EC/1350 aluminum is not acceptable. If the Contractor chooses to provide aluminum conductors, Contractor shall be responsible for increasing conductor size to have same ampacity as copper size required; increasing conduit and pull box sizes to accommodate larger size aluminum conductors in accordance with NFPA 70; ensuring that pulling tension rating of aluminum conductor is sufficient; providing panelboards and motor control centers that are UL-listed for use with aluminum, and so labeled; relocating equipment, modifying equipment terminations, resizing equipment; and resolving problems that are direct results of providing aluminum conductors in lieu of copper. Terminations shall be certified to be in accordance with the manufacturer's recommendations as to type and connector torque. No metal-clad cable, Type MC, shall be permitted. Branch circuits, lighting circuits, and feeder circuits shall be THWN/THHN. Wire shall be solid for #10 and smaller and stranded for #8 and larger (except stranded will be used for luminaire connections). No. 14, 12, and 10 AWG conductors shall be twisted together before installing twist-on pressure connectors (wirenuts). Minimum size for branch circuits shall be No. 12 AWG. Multiwire branch circuits shall not be allowed.

Conductors for Class 1 remote-control and signal circuits, No. 14 AWG; for Class 2 low-energy, remote-control and signal circuits, No. 16 AWG; and for Class 3 low-energy, remote-control, alarm and signal circuits, No. 22 AWG. Conductors No. 18 AWG and No. 16 AWG shall be Type TFF or Type TFN conforming to UL 62. Wiring for fire alarm systems shall be solid conductors.

Underground transformer secondary wiring shall be made of copper conductors at least as large as required by NFPA 70, with thermoplastic insulation rated for 600V and 90-degree heat rating in wet locations. Sandhills Utility Services is responsible for the transformer, as well as conduits and conductors to the primary side of transformer. Transformer to be sized based on building load.

Electrical conduits shall not cross telecommunications conduits within walls. Cable trays shall be in accordance with NEMA VE 2.

2.2.8 Wiring Devices

a. Power, lighting, receptacle, and communication wiring devices and switch cover plates shall be nylon and shall be the same color throughout the facility, except for plated steel in support areas. Electrical devices shall be flush-mounted, except where noted otherwise and in support rooms.

Receptacle outlets shall be the same ampere rating as the breakers that feed them to prevent receptacle overload without breaker trip. Provide an electrical outlet at each water cooler, located behind access covers, if applicable. Provide receptacle outlet locations and quantities as indicated in [UFC 3-520-01](#) and [NFPA 70](#). Provide additional outlets as indicated below.

b. Provide dedicated circuits with receptacles for the equipment requiring power shown on the architectural drawings, furniture drawings, civil drawings, fire alarm drawings, mechanical drawings, security drawings, telecommunications drawings, and for equipment requiring power in the Specifications Sections of the RFP.

c. During design, coordinate with the user through the COR and certify that power and receptacles (dedicated or non-dedicated) are being provided for all User equipment.

d. Provide a duplex receptacle within [6 inches](#) of each telecommunications outlet, cable tv outlet, and multimedia outlet required by this RFP.

e. Provide at least one 120-volt duplex receptacle for maintenance purposes within [25 feet](#) of heating, air-conditioning, and refrigeration equipment and do not connect the receptacle to the load side of the equipment disconnecting means. This outlet shall be GFCI-protected for outdoor and roof-mounted equipment. Provide no less than one receptacle per wall in the utility, storage, and supply rooms.

f. Furnish workstation (each seat shown on the furniture plans shall be treated as a workstation) with quadruplex receptacles in accordance with [UFC 3-520-01](#) and [NFPA 70](#). A maximum of 2 workstations shall be connected to a 20-ampere 120V circuit. 50 percent of the receptacles shall be switched per [ASHRAE 90.1 - IP](#).

g. Provide dedicated circuits for microwaves, freezers, ice machines, refrigerators, fax machines, copy equipment, laser printers, vending machines, TV's, AV equipment, office automation equipment, control panels, and other equipment, including GFCI equipment. During design, confirm the equipment locations indicated above with the Government and furnish additional dedicated circuits as required per coordination. Coordinate the location of dedicated receptacles with the Contracting Officer and applicable agencies.

h. Receptacles in breakrooms, restrooms, locker rooms, for vending machines, water coolers, and receptacles within [6 feet](#) of the edge of sinks shall be GFCI type. Exterior receptacles shall be GFCI type with in-use, metal weatherproof covers. Receptacles shall be of the grounding type.

i. Special Power Requirements: Electrical power outlets for special power shall be coordinated with exercise and testing machinery locations throughout the facility. Coordinate with the User for the electrical characteristics of the equipment to be provided by the Government.

j. Roll-Up Doors

Provide power connections for motorized Roll--up doors. :

2.2.8.1 Administrative Areas

Provide general outlets and power for personal computers. Power and communications shall be delivered to the furniture units through recessed

in-floor duct and box systems, recessed raised floor system, or wall connections. Utilizing the interior drawings and furniture layout plans, coordinate during design with the Contracting Officer, the user, and other applicable agencies for locations of the devices and power and telecommunications floor boxes. Where workstations are not adjacent to walls, power and communications shall be provided by recessed floor boxes. The recessed duct shall be sized for future expansion in accordance with [UFC 3-580-01](#). Surface-mounted floor boxes will not be acceptable.

2.2.8.2 Workout Areas

Provide power receptacles for exercise, monitoring, and testing equipment. Provide additional power floor boxes spaced throughout workout areas. Provide general purpose wall receptacles every [20 feet](#) in workout areas.

2.2.8.3 Break/Training/Conference Room (BTC)

Provide a receptacle on each wall with a minimum of one receptacle for every [12 feet](#) of wall space at the floor line. Provide quadruplex receptacles for AV/VTC equipment rack and a duplex receptacle for the flat screen display. Provide one receptacle on the ceiling to support video projector and extend circuit to wall location for connection to motorized screen (where applicable). Provide one quadruplex in a floor box with communications outlets in the conference rooms underneath conference room tables. Provide the final electrical and telecom connections for the conference room tables.

2.2.8.4 Floor Boxes

Floor boxes shall be recessed mounted with duplex or quadruplex receptacles and partitioned for NIPR communication outlets (may be combination power and NIPR communication outlets). Add a spare conduit per [UFC 3-580-01](#).

Coordinate exact floor boxes location with FF&E designer and AV designer and refer to Section [01 33 16](#) DESIGN DATA (DESIG AFTER AWARD). Conference tables with enclosed pedestals shall have the floor boxes located underneath the pedestals to maximize cable management. (Floor boxes shall not be located within the feet area of chairs for desk/workstations, student tables, or conference tables.) Flat panels display located in the training rooms shall be centered on the student table arrangement.

2.2.9 Supports

All conduit and boxes shall be securely fastened in place by means of clamps, clips, hangers, etc. designed for that purpose; no "tie-wire" shall be permitted. Provide conduit and boxes in a neat and workmanlike manner in accordance with local industry standards, military regulations, and guidelines acceptable to the Government.

Support conduits within [24 inches](#) of each end of each bend, or each termination, and at intervals along the run that will maintain true raceway alignment without sag or deformation (minimum [10 feet](#) on center). On exposed raceways, provide supports at a minimum of [6 feet](#) on centers and on each side of each bend. Two hole straps shall be used on flat surface for conduit [1 inch](#) and larger. Conduit shall not be supported by suspended ceiling or suspended ceiling support wires except where allowed by [NFPA 70](#).

2.2.10 Identification

a. Conductors shall be color-coded; colored tape may be used on conductors #6 and larger at manholes, handholes, terminations, and junction boxes. Provide a green equipment grounding conductor in each receptacle circuit and where noted. Circuit conductors shall be factory color coded as follows:

120 Volt, 2-wire circuit: Grounded Neutral, White; Ungrounded Leg, Black

208Y/120-volt, 3-phase, 4-wire circuit: Grounded Neutral, White; Phase A, Black; Phase B, Red; Phase C, Blue

480/277-volt, 3-phase, 4-wire circuit: Grounded Neutral, Gray; Phase A, Brown; Phase B, Orange; Phase C, Yellow

b. Major items of electrical equipment shall be permanently marked with an identification name to identify the equipment by type or function and specific unit number as indicated. Unless otherwise specified, identification nameplates shall be made of laminated plastic with the following layers:

208Y/120V equipment: White outer layers and a black core

480Y/277V equipment: Yellow outer layers and a black core

c. Edges shall be chamfered. Plates shall be fastened with round-head drive screws or approved non-adhesive metal fasteners. The following equipment, as a minimum, shall be provided with identification nameplates: Switchboards, panelboards, transfer switches, safety switches, transformers, and major electrical equipment and control devices. Letters shall be a minimum of 1/4 inch in height.

d. Provide a 5 mil, brightly colored, plastic tape at least 3 inches in width and suitably inscribed at not more than 10 feet on centers with a continuous metallic backing and a corrosion resistant 2 mil metallic foil core to permit easy location of underground utility. The warning tape shall be placed approximately 1 foot below finished grade levels of duct banks or conduit runs. Warning tape shall identify the services routed in the duct bank or conduit.

2.3 GROUNDING

2.3.1 Facility

Each maintenance building shall have a ground counterpoise around the building perimeter for grounding incoming service, building steel, lightning protection, telephone service, piping, and internal grounding requirements. Equipment grounding shall be in accordance with the recommendations of MIL-HDBK-419. This includes, but is not limited to, the earth electrode subsystem should exhibit a resistance to earth of 10 ohms or less and multiple ground rods should be interconnected using 1/0 AWG bare copper cable. Additional grounding may be provided based on project requirements. Systems shall conform to NFPA 70, NFPA 780, local codes, TIA-607, and UFC 3-580-01.

2.3.2 Grounding Equipment

The size of the grounding conductor from the Building main service ground bus to the TMGB shall be sized according to TIA 607-C table 1 and shall be no smaller than the largest Telecommunications Back Bone(TBB) Conductor. Conductor shall be copper and shall be designed and installed in accordance with [UFC 3-580-01](#), and [MIL-STD-188-124](#). The grounding system shall create an equipotential plane or equivalent complying with [MIL-HDBK-419](#). The grounding system shall have a resistance of 10 ohms or less. See Paragraphs "Telecommunication Rooms" and "Grounding", below, for additional information.

2.3.3 Lightning Protection System And Transient Voltage Surge Protection

Design shall be in accordance with [NFPA 780](#) and other referenced criteria. Provide transient voltage surge protection.

2.4 NONLINEAR LOADS

In office areas where nonlinear load type equipment is predominant, such as computers, printers, motors with variable speed drives, electronic ballasts and dimmers and other similar loads, use [ETL 1110-3-403](#), [IEEE 1100](#), and [IEEE 519](#) as design guides.

The effect of nonlinear loads such as computers and other electronic devices shall be considered and accommodated as necessary. These loads generate harmonics, which can overload conventionally sized conductors or equipment and thereby cause safety hazards and premature failures. Circuits serving such devices shall be equipped with a separate neutral conductor not shared with other circuits. Panelboards and dry type transformers shall be rated accordingly.

The use of 75- or 90-degree C (minimum) terminal and insulated conductor temperature ratings shall be required. Use of 75-degree C conductors on circuits with protective device terminals rated for 60 degrees C shall not be acceptable.

Follow [NFPA 70](#) and UL rules and instructions in applying the ampacity tables in [NFPA 70](#). Provide electrical equipment that meets the approval required by [NFPA 70](#) in accordance with UL instructions. The termination provisions shall be based on the use of 140 degree F ampacities for wire sizes No. 14-1 AWG, and 167 degree F ampacities for wire sizes Nos. 1/0 AWG and larger. Higher rated conductors than specified may be used if the size is based upon the previous statements.

2.5 FACILITY EQUIPMENT AND REQUIREMENTS

Provide electrical connections for the following equipment:

Quantity	Equipment
18	Woodway Pro XL Treadmill 208/230 Vac, 1-Phase, 20 amps, NEMA 6-20R Outlet
4	Keiser Air Compressor 110/220 Vac 1-Phase, 1HP. 1200 watts, 12 Amps
18	Versa Versaclimber SM 110 Vac 1-Phase

Quantity	Equipment
4	Cybex Stepmill 110 Vac 1-Phase
2	Traction Table 110 Vac 1-Phase
18	Adjustable Hi/Lo Tables 110 Vac 1-Phase
1	Ice Machine 220 Vac 1-Phase
2	Alter G P200 220 Vac 1-Phase NEMA 6-20P 20 amp

2.6 UTILITY SUPPORT

Provide an empty conduit for the water meter located outside the building.

Provide a 20 ampere, 120 volt circuit from each facility to the backflow preventer heated cover.

Provide power and access control equipment for new security access gate(s).

2.7 LIGHTING SYSTEMS

2.7.1 General Lighting

Provide lighting design in compliance with LEED standards, ASHRAE 90.1 - IP, EPACT 2005, and UFC 3-530-01 and UFC 1-200-02. Compliance with ASHRAE 189.1 shall be as required in UFC 1-200-02 and UFC 3-530-01.

General illumination levels shall be as recommended by IES HB-10 and UFC 3-530-01 unless noted otherwise. Each room shall have lighting fixtures.

LED lighting shall be used where possible. Fluorescent lighting may be used in utility and storage areas.

Lighting shall utilize 277 volts, except 120-volt lighting may be used as required.

2.7.2 Interior Lighting

Lighting and lighting controls shall comply with the recommendations of the Illumination Engineering Society (IES) and the requirements of ASHRAE 90.1 - IP.

Lighting design shall incorporate the latest techniques of energy savings applied to lighting systems. Lighting design and fixture selection shall be based on energy efficiency, high reliability, longevity, and minimum maintenance. Minimum rating shall be L7 at 50,000 hours. Provide task lighting where appropriate.

a. Office, break, training and Conference Room Lighting: Interior ambient illumination shall provide a generally glare free, high quality lighting environment conforming to IES RP-1. Break room, training rooms, and conference rooms shall have dimmable circuits providing general lighting without glare on audio-video displays. Dimming drivers shall be capable of dimming to 1 percent.

b. Illumination Levels: Maintained Illumination levels shall be in accordance with UFC 3-530-01 and IES HB-10.

Provide lighting controls in accordance with UFC 3-530-01 and ASHRAE 90.1-2013. Occupancy sensors shall be dual technology (US and PIR) specified by performance. Manufacturer's shop drawings shall show type and coverage with a performance guarantee. Place sensors in smaller rooms on the wall with the door to minimize sensor activation from hallway activity. Coordinate occupancy sensor layout with furniture layout to ensure proper function.

Areas that have natural light shall utilize daylighting to harvest the available sunlight and reduce electrical power consumption as required by ASHRAE 90.1-2013. In these spaces dimmable fixtures and lighting control zones shall be used to reduce artificial lighting when adequate daylighting is available. Daylight photo sensors shall be optimally located as required for each space controlled.

2.7.2.1 Interior Lighting Fixtures

a. Solid state light fixtures (LED) shall be used throughout the facility, except in instances where no LED fixture is available for the application.

Fluorescent fixtures with T5, or T8 lamps, electronic ballast with high power factor (greater than 0.9) and low harmonic distortion (less than 10 percent) may be used if required for storage and utility areas or other areas subject to COR approval; T5 lamps may be used for recessed indirect fixtures; T8 lamps may be used for other light fixture types. Provide dimming ballasts as required. Lamps shall be 4100K, tri-phosphor type unless noted otherwise. Lamps shall comply with the efficiency standards of the Energy Act of 2005 (EPACT).

b. Full distribution, volumetric, or similar LED fixtures shall be used to the maximum extent possible in administrative areas.

c. LED shall be used in place of incandescent lamps. Incandescent and HID lamps shall not be permitted.

d. Lay-In light fixtures shall be securely fastened to ceiling framing members by mechanical means (4 clips per fixture). Recessed light fixtures or other electrical devices shall be supported independently of lay-in ceiling tile by means of bar hangers or other structural means. Surface-mounted fixtures shall be securely fastened to ceiling supporting structure. No toggle bolts in gypsum board or plaster shall be permitted. Surface-mounted fixtures shall not be used on suspended tile ceilings.

e. Lay-in light fixtures shall be individually served from an individual junction box directly over light fixture with 3/4-inch flexible metal conduit between 4 feet and 6 feet in length.

f. Interior lighting shall be industrial type with 10 percent uplight in building support areas; commercial configurations in administrative, offices and corridors. Panelboards shall not provide switching duty. Recessed lay-in type light fixtures shall be provided in all ceilings with suspended metal grid. Lighting for general office areas, corridors, conference rooms, and lobbies shall be provided by 2-foot by 2-foot or

2-foot by 4-foot recessed fixtures.

g. Provide shower-type polycarbonate lensed fixtures for shower and locker areas. Fixtures shall be listed for the location/condition in which they are used.

2.7.2.2 Emergency Egress Lighting

Exit lights shall be of the diffused LED type with Red Lettering. Exit lighting will include self- diagnostic battery backup and be connected ahead of any local switching.

Emergency lighting shall be provided in accordance with [UFC 3-530-01](#), [UFC 3-600-01](#), and [NFPA 101](#). Interior rooms and windowless rooms shall require emergency lighting. Provide electrical rooms and mechanical rooms with emergency powered equipment with emergency lighting. Individual unit equipment for emergency illumination shall be circuited to comply with [NFPA 70](#).

An un-switched lighting circuit phase conductor shall be provided and installed to serve exit and emergency lighting. This un-switched phase conductor shall be on the same lighting branch circuit serving fixtures with switched lamps and installed in the lighting branch circuit conduit system for battery backed emergency lights.

The emergency lighting system shall be designed so that the failure of any individual lighting element cannot leave space in total darkness.

Control of emergency light circuits shall not be connected in series with 3-way or 4-way switches. Exit discharges shall have emergency lighting.

2.7.3 Exterior Lighting

Provide building-mounted light fixtures on the building perimeter. Building-mounted light fixtures shall be LED. Illumination levels shall be 5 foot-candles within 10 feet of the doors for maintenance areas.

Sandhill Utility Services (SUS) will provide exterior lighting not mounted to the building. Exterior lighting power and circuits shall be also be by SUS.

2.8 LIGHTNING PROTECTION

Design for lightning protection system and transient voltage surge protection shall be in accordance with [NFPA 780](#) and other referenced criteria. Provide transient voltage surge protection. Roof/Down conductors shall be concealed. Coordinate with roof manufacturer for installation procedures that will maintain roof warentee. A UL Master label is required and shall be provided on the completed installation.

2.9 CATHODIC PROTECTION

Design of Cathodic Protection and coatings are required. Take readings at the locations of structures and paths of utilities being cathodically protected. Design analysis shall contain a map showing the sites of such readings, type of instrument used, and a table containing location designation and soil resistivity. Cathodic protection design shall be a complete design and not a performance specification.

Metals installed underground or in contact with the ground shall have cathodic protection for control of corrosion. Provide cathodic protection and protective coatings for but not limited to the following buried or submerged ferrous metallic structures, regardless of soil or water resistivity:

- a. Natural gas and propane piping
- b. Fire protection piping
- c. Ductile or cast iron pressurized piping under floor (slab on grade) in soil
- d. Underground heat distribution and chilled water piping in ferrous metallic conduit in soils with resistivity of 30,000 ohm-cm or less
- e. Other structures with hazardous products
- f. Steel casing for underground hydraulic elevator jack

Cathodic protection for buried metallic structures shall be designed in accordance with [UFC 3-570-02A](#).

2.10 PROTECTIVE COATINGS

Coating specifications for high value metallic structures shall be prepared in accordance with [DA TM 5-618](#). Underground piping systems shall conform to either [DA TM 5-618](#), Type II (except tape and primer conform to [AWWA C203](#)) for epoxy or to [DA TM 5-618](#), Type I (Federal Specifications) for continuously extruded polyethylene. On metallic structures where the surface is blasted to white or near white finish, no blasted surface shall be left unprimed beyond the normal workday. Coatings specified for underground or submerged use shall be those specifically designed for those types of environmental conditions. Do not use thin plastic film tapes, such as electrical tape, to coat underground structures or wiring. Reference [NACE SP0169](#) for coating information.

Ferrous underground piping shall be cathodically protected using a sacrificial anode system. The system shall be designed for a minimum life of 20 years. Piping with a cathodic protection system shall have a cathodic protection coating with at least 90 percent coverage efficiency. The coating system shall consist of 1 of the following coatings:

- a. Coal Tar Coating: This shall consist of a coal tar primer, an outer wrap of non-woven, glass fiber mat that has been impregnated with coal tar enamel (thickness not less than 30 mils), and a polyethylene Kraft paper wrap (thickness not less than 4 mils). Provide this coating on the metallic pipe in accordance with [AWWA C203](#).
- b. Epoxy Coating System: Coating system shall conform to [DA TM 5-618](#), Part 2. Fittings, valves, and joints shall be factory-coated with materials identical to those used on the pipe, or may be field-coated with a 2-part epoxy system recommended by the manufacturer of the pipe coating system. Field protection may also be provided for joints and fittings with a tar tape hot-applied over a compatible primer.
- c. Thermoplastic Resin Coating System: Coating system shall conform to [DA TM 5-618](#), Part 3. Exterior of piping shall be cleaned to a commercial grade blast cleaning finish in accordance with

SSPC SP 6/NACE No.3. Apply adhesive compound to pipe. Immediately after adhesion is applied, a seamless tube of polyethylene shall be extruded over the adhesive to produce a bonded seamless coating. Normal thickness of pipe coating system shall be **10 mils** (plus or minus 10 percent) of adhesive and **40 mils** (plus or minus 10 percent) of polyethylene. Joint coating and field repair material shall be applied as recommended by coating manufacturer and shall be a of the following:

Heat shrinkable polyethylene sleeves

Polyvinyl chloride pressure-sensitive adhesive tape

High density/bituminous rubber compound tape

Coating system shall be inspected for holes, void, cracks, and other damage during installation. Testing shall be performed using a holiday tester set to the appropriate voltage as recommended by the coating manufacturer.

Pre-design surveys, cathodic protection designs, and acceptance surveys and testing shall be performed by a NACE Accredited Corrosion Specialist, a NACE certified CP Specialist, or a registered professional engineer with education and experience in corrosion control of buried or submerged metallic piping and tank systems. Certifications must verify that designer has had experience in cathodic protection design, installation, and testing as per **UFC 3-570-02A**.

2.11 UTILITIES SUPPORT

Provide an empty conduit from UMCS panel to water meter located outside the building. Provide a 20 ampere, 120 volt circuit from each facility to the backflow preventer heated cover.

PART 3 STRUCTURED CABLING SYSTEMS

3.1 SYSTEM DESCRIPTION

The communication/data distribution system shall consist of both outside (OSP) and inside-plant (ISP) horizontal and backbone cables, connecting hardware and associated telecommunications rooms (TR) and wire pathways to support "inter" (between) and "intra" (within) building systems and networks. Telecommunications distribution inside the facility shall include distribution for NIPRNET (Black) systems. Provide identification, testing, and reporting. Provide complete systems, including all interior and exterior infrastructure. Exterior OSP infrastructure shall be as shown below and on the drawings. See **Bragg NEC IDC**, Appendix K, and the G6 Design Package, Appendix M for Telecommunications Room layout, Rack equipment, elevations and layout, and distribution requirements. Coordinate communication systems design with the Fort Bragg NEC Network Enterprise Center, and USASOC G-6. Coordinate manhole location with NEC.

Provide the following OSP systems:

- a. Provide a new **4-inch**, 4-way concrete-encased ductline from existing manhole MH10G4 to the new manhole located southwest the of building, as shown. One 4" duct shall contain Three 3", 3-cell non-detectable fabric mesh inner-duct.
- b. (Copper OSP) a splice new 200 pair OSP copper cable to existing copper OSP cable in existing manhole MH10G2. Extend new 200-pair cable

in existing ductlines via manholes MH10G3, MH10G4, and the new ductline to a new manhole located southeast of the building, as shown.

c. Splice a new 48-strand single-mode fiber optic cable to an existing fiber OSP cable in existing manhole MH10G1. Extend new 48 strand fiber optic cable in existing ductlines via manholes MH10G2, MH10G3, MH10G4, and the new ductline to a new manhole located southeast of the building, as shown.

d. Building Service Ductline: Provide a new 4-inch, 3-way concrete encased ductline from new manhole (located southeast the of building) to the building's main telecommunications room. One duct shall have a 3-way mesh fiber innerduct. It is preferred that the MH system duct banks in this Yarborough Complex be kept at a depth level to the lowest Maintenance Hole(MH) window(approx.7 ft. below finished grade) to allow overbuilding in the future if necessary. This does not include the EUB conduits. These would be the conduits going to the building from the last MH

e. Data Service: (Backbone Fiber): Connect to new 48-strand single-mode fiber optic cable in new manhole located southeast of building, as shown. Provide new 12-strand single-mode fiber optic service cable from new manhole in 3-cell non-detectable fabric mesh inner-duct to the building's main telecommunications room. Terminate the new fiber optic cables on new fiber optic patch panel.

f. Telephone Service: (Copper OSP) Connect to new 200-pair copper OSP cable in new manhole located southeast of the building, as shown. Provide new 25-pair copper OSP cable from new manhole through new dutline to the building's main telecommunications room. Terminate the cables on new protector blocks in the telecommunications room. (This building shall be using VOIP for telephone service).

Provide the following ISP systems:

a. Data (copper): Copper cable shall be UTP Category 6, 4-pair with RJ- 45 jacks (568A) in all areas.

b. Data (Backbone Fiber): Single-mode fiber.

c. A Registered Communication Distribution Designer (RCDD) shall perform the voice and data communication design.

3.1.1.1 Design, Accreditation, Certification

OSP and ISP systems shall be designed and provided in accordance with , TIA-606, TIA-607, Bragg NEC IDC, NFPA 70, NFPA 75, NFPA 76, UFC 3-580-01, TIA-758, and other applicable industry standards.

During design, verify the copper and fiber tie-in locations with the Fort Bragg NEC and USASOC G-6, coordinate OSP routing with other existing and proposed exterior utilities in the area and along the proposed route, and survey and visually verify that there is space and capacity in the proposed existing manhole and ductbank system for the routing and extension of copper and fiber cables. Where necessary, provide a telecommunications surveyor to survey the existing manholes and ductbank systems to verify capacity. Provide a minimum of 48 hours notice before entering manholes.

Provide both electronic and hard copies of the test results to the USASOC

G-6 and Fort Bragg NEC. See Paragraph "Testing", below, for additional test requirements. Provide an as-built electronic and hardcopy of the telecommunications pathways to the USASOC G-6 and Fort Bragg NEC at the time the building is certified for occupancy to accommodate the accreditation process. Provide electronic copies on a compact disc (CD). Provide hardcopies in a 3-ring binder, with a professionally printed cover and spine. ALL recessed floor boxes and under slab conduit shall be inspected by NEC and G-6 prior to placing concrete.

Telecommunications designs that deviate from the criteria and standards require Government approval before implementation.

Assign Telecommunications Quality Control personnel to provide assistance with quality control.

Telecommunications cable in slab floors shall be outdoor rated.

3.1.2 Identification

Telecommunications systems shall be labeled in accordance with the Fort Bragg Labeling Scheme and TIA-606. Labeling of USASOC data networks shall comply with Bragg NEC IDC. Prior to purchase of labeling, review the labeling scheme with Fort Bragg NEC and the USASOC G-6 to obtain approval.

3.2 OSP SYSTEMS

3.2.1 General

The OSP shall include installation of new communication ducts and cabling. Cables shall be provided to and terminated in the building's main distribution frame. Duct banks shall be concrete-encased. Conduits transitioning from the lower manhole duct window to nominal trench depth shall be accomplished at least 30 feet from the manhole. When crossing existing roads and driveways, horizontal directional drill is the preferred method. (see Paragraph "Crossings", above.) Where duct enters a building and sweeps up through a floor slab, galvanized conduit shall be used. Permanent orange tracer wire shall be provided in new ductbanks, including laterals to building main TR's. Tracer wire shall be insulated, single strand, minimum of #12 solid copper conductor with a minimum 30-mil PE jacket designed specifically for buried use. No utilities, including closed circuit television (CCTV), CATV, commercial phone, security systems, and satellite TV shall share or run through the Fort Bragg NEC outside plant manhole, handholes, and duct bank system without prior approval from the Fort Bragg NEC.

Provide innerduct in one of the 3-way 4-inch ducts with a minimum of three 3-inch, three cell, non-detectable, fabric mesh inner-ducts for fiber optic cable in the ductline section between the last manhole and the facility entrance room. Provide pull string in the empty innerducts. The multi-cell fabric mesh shall be cut off at each end, leaving a minimum of 2 feet of slack in the material and a minimum of 5 feet of pull string. The Fiber optic building service OSP cable shall be installed within the innerduct.

3.2.2 Outside Cables

Outside plant copper cables shall meet Rural Development Utilities Program (RDUP) PE-89 and shall consist of #24 AWG twisted telephone copper cable.

Copper cable entering the facility shall be terminated on wall-mounted 110

punch down blocks via wall-mounted protection modules as indicated per [UFC 3-580-01](#). The 110 punch down blocks shall be mounted on backboards with legs used next to or between wiring blocks to arrange jumper wire running between adjacent blocks. Place the 110 jumper trough with legs between each 100-pair wiring block and at the top of each column of 100 blocks. Fiber optic cable entering the facility shall be terminated on rack-mounted patch panels per [UFC 3-580-01](#) and [Bragg NEC IDC](#).

3.2.3 Duct Lines

Mandrel and brush existing and new ducts before installing cables and innerduct. This shall be coordinated with the Fort Bragg NEC project manager through the COR.

- a. Encase the conduits in concrete. Concrete-encased duct banks for telecommunications shall be installed to a minimum depth of [30 inches](#) below finished grade.
- b. Minimum concrete-encased duct size shall be [4 inches](#) for telecommunications circuits. Provide non-detectable textile innerduct system in fiber optic ducts. Provide separation from other utilities (i.e. sanitary, storm, etc.) for easier access.

3.3 ISP SYSTEMS

3.3.1 General

a. Interior building communications systems shall include a complete pathway/raceway system for each building communication system from backboards or racks to outlet devices. Provide cables for the communications. Active electronic equipment including UPS's and switches shall be provided by the Government. Provide drawings indicating complete riser diagrams and equipment locations. SIPRNET is not required in this project. NIPRNET systems shall be designed in accordance with:

[Bragg NEC IDC](#)

Appendix T

[DoDD 8100.02](#)

[TIA-606](#)

[TIA-568 Set](#)

[TIA-569](#)

[NFPA 70](#)

[NFPA 75](#)

[NFPA 76](#)

3.3.2 Telecommunication Rooms

a. Telecommunication rooms (TRs) shall be provided with adequate space to allow for the mounting and maintenance of equipment to support the

systems. The MTR's shall be sized in accordance with [UFC 3-580-01](#) and [TIA-569](#) to accommodate the quantity of racks and other associated equipment. Prior to installation of plywood, obtain approval of location from the Fort Bragg NEC. See Paragraph "Backboards", below, for plywood backboard specifications. Plywood shall cover a minimum of 2 adjacent walls from 6 inches to 8'-6" above the finished floor (AFF) in accordance with [UFC 3-580-01](#). Telecommunication rooms shall be air-conditioned 24 hours a day, 365 days a year. Provide MTR and TRs with positive pressure to exclude dust. See Section 01 11 00.04 MECHANICAL AND PLUMBING SUMMARY OF WORK for additional HVAC requirements. Core the NIPRNET room doors with special NEC X-24 cores.

b. The quantity of equipment racks for NIPR shall meet the requirements of G6, and USASOC TR layout. G6 will provide documentation noting the number of racks required, along with the power requirements needed to support the LAN equipment. Copper telephone cable shall be connected to a protected entrance terminal. The copper and fiber backbone cable originating in the main TR or main cross-connect shall be terminated in each TR on 110-type, insulation-displacement wiring blocks mounted on the telephone backboard and then terminated to rack-mounted patch panels. The Yarborough Complex projects will be using VOIP for telephone service. Verify cable size with Ft. Bragg NEC and refer to Appendix T.

c. Design a telecommunications grounding system in accordance with [UFC 3-580-01](#) for classified and unclassified systems, [Bragg NEC IDC](#), [TIA-607](#), [MIL-HDBK-419](#), and [MIL-STD-188-124](#). In general, the grounding system shall consist of the following major components: telecommunications bonding conductor, telecommunications main grounding busbar (TMGB), telecommunications grounding busbar (TGB), and a telecommunications bonding backbone (TBB). Other components may be required per [TC I3A](#) and [UFC 3-580-01](#). Grounding for red/black systems shall comply with [MIL-HDBK-419](#). The grounding system shall create an equipotential plane or equivalent complying with [MIL-HDBK-419](#). The grounding system shall have a resistance of 10 ohms or less. See Paragraph GROUNDING, above, for additional information.

d. Provide lighting in accordance with [UFC 3-580-01](#). See Paragraph "Equipment Rack", below, for receptacle requirements. Receptacle quantity and location shall comply with [UFC 3-520-01](#). Provide additional receptacles as required for compliance. Provide dedicated panelboards per [UFC 3-580-01](#).

e. The MTR and TR's shall not be used to house other vendor/system equipment including but not limited to: CATV, fire alarm, mass notification, intrusion detection, CCTV, and access control (except for MTR and TR protection systems). The MTR and TR's shall not be used to originate, terminate, or pass cabling through for other vendor/system equipment.

3.3.3 Telecommunication Rooms and Systems

a. Provide a dedicated telecommunication room (TR) in a pattern such that no Category 6 cable is longer than 295 feet. The TR's shall be sized in accordance with the [UFC 3-580-01](#), and [TIA-569](#) to accommodate the racks and associated equipment to be installed in the room. Provide dedicated telecommunications rooms for red and black data systems. See [UFC 3-580-01](#) and [Bragg NEC IDC](#), Appendix K, for room sizing, layout, and specific information on clearance requirements. See Paragraph "Backboards", below, for plywood backboard requirements and Paragraph "Telecommunication Rooms",

above, for plywood backboard mounting locations.

b. The quantity of equipment racks shall be as indicated for each TR. Copper telephone cable shall be connected to a protected entrance terminal and then terminated to rack-mounted patch panels. Fiber optic cable shall be terminated to separate rack-mounted patch panels.

c. Provide bonding and grounding of telecommunication systems in accordance with EIA/TIA standards and regulations. See Paragraph "Telecommunication Rooms", above, for additional information.

d. Telecommunications Minimum Room Sizes - Telecommunication Pathways, Outlets and Cabling. Telecommunications cabling shall be Category 6 for all voice and data connections unless length of run warrants need for multimode fiber optic cable. Provide number and type of connectors as defined by the User. Telecommunications outlets and conduits shall be provided in core areas and supply administration areas with a minimum of one outlet in each work area. Each Training Room shall have a voice outlet. Each Training Room shall have a data connection for each seat and for an instructor. In administration areas provide a voice and data outlet for every workstation. A data outlet shall be provided at each copier location. Provide a single jack outlet for wall-mounted GFGI phones in mechanical, electrical, vaults, telecommunications room and corridors. For controlled access facilities, provide outlets for wall-mounted GFGI phones at primary entrance. Additional outlet locations may be provided based on coordination with the facility User and where required for HVAC equipment or other equipment. Provide outlets per [Bragg NEC IDC](#), Appendix K, [UFC 3-580-01](#).

e. In administrative areas, follow [UFC 3-580-01](#) for outlet density.

- (1) Each NIPR outlet shall consist of 1 x Data / 1 x Voice.
- (2) Each workstation shall have 1 NIPR outlet.
- (3) Each private office shall have 2 NIPR outlets.
- (4) Outlets shall be installed per Appendix T.

3.3.4 Backboards

Provide a [3/4-inch](#) thick, fire rated, AC grade plywood backboard for the telecommunication room walls. The backboards shall be void-free, unpainted, and fire-rated. The plywood shall be installed with the "A" rated side out after NEC approval. Fort Bragg NEC QA personnel will inspect and initial the plywood prior to installation.

3.3.5 Grounding

All bonding and grounding of telecommunication systems shall be furnished in accordance with EIA/TIA standards and regulations. The grounding system shall comply with [MIL-STD-188-124](#), [MIL-HDBK-419](#), [TIA-607](#), and [UFC 3-580-01](#). See "Grounding" Paragraphs for additional information. The grounding test shall be submitted to the Ft. Bragg NEC, USASOC G-6, and USASOC G-2. The grounding tester specs and test plan shall be a part of the Contractor's telecomm submittal.

3.3.6 Equipment Rack

Provide [19-inch wide by 7-foot high](#) open equipment racks. The quantity of equipment racks for NIPR shall meet the requirements of G6, and the USASOC G6 Design Package (Appendix M). This documentation identifies the number of racks required, along with the power requirements needed to support the LAN

equipment. Equipment racks shall be furnished in accordance with [UFC 3-580-01](#), USASOC G6, and [Bragg NEC IDC](#). Provide power and receptacles (including quantities) for TR's, racks, and cabinets in accordance with [UFC 3-580-01](#), Appendix T, and [Bragg NEC IDC](#). Provide front, rear, horizontal and vertical cable management. Velcro wraps shall be used to dress and secure Cat 6 cables. Provide horizontal grounding bars at the top of each rack of each as dictated in [Bragg NEC IDC](#), Appendix K, and [TIA-607](#).

For convenience, provide a minimum of 2 dedicated 120 volt, 20-ampere quadruplex receptacles in each TR. Each quadruplex receptacle shall be on a separate 20-ampere branch circuit serving only that receptacle. Additional convenience receptacles shall be provided at 6 feet intervals around the perimeter walls on a different circuit with no more than six receptacles per circuit.

For each rack, dedicated power and receptacles shall be installed on the floor to the rear of the racks, centered on, and 12 inches from the vertical cable management units. Refer to the USASOC G6 Design Package (Appendix M) for location and quantity of equipment rack being installed, as well as power requirements and heat loads for both NEC and USASOC G6 equipment rack while meeting [UFC 3-580-01](#) requirements.

3.3.7 Patch Panels

For copper telephone cable, the patch panel shall be a 110 style with rear terminations and front accessible Cat 6, RJ-45 jacks in 48 port patch panels.

Fiber optic patch panels shall be a complete system of components by a single manufacturer and must provide termination, splice storage, routing, radius limiting, cable fastening, storage, and cross-connections. Patch panels shall be 19" rack-mounted panels. Patch panel connection and couplers shall be the same type and configuration as used elsewhere in the system.

Patch panels utilize 568 LC duplex connectors. A 3 foot slack loop of fiber shall be provided within each panel, and panels shall provide strain relief for cables. Patch panels shall properly provide termination, splice storage, routing, radius limiting, cable fastening, storage, and cross-connection.

3.3.8 Standardization

Telecommunications termination equipment, cabling, termination, end equipment, and all other related parts shall be standardized.

3.3.9 Telecommunication Outlets

Telecommunication outlets shall be placed evenly along walls. Furnish one outlet (NIPR) per workstation (each classroom student table or office seat is considered a workstation) plus additional outlets as required to meet area calculations in [UFC 3-580-01](#). Provide additional telecommunication outlets in accordance with the [UFC 3-580-01](#). Provide telecommunication outlets for all Building Automation Systems (BAS). Furnish telecommunication outlets at all seating and waiting areas in the building including seating and waiting areas in corridors. Additional NIPRNET outlets shall be provided for printer locations and other office automation equipment. Provide a NIPRNET outlet at each printer, copier, fax machine and digital sender at the ratio of one Office Automation Workstation for

every ten workstations per [UFC 3-580-01](#). The Contractor shall certify that all the user required outlets have been accommodated for during design phase. Furnish additional outlets as required by the user. Telecommunications cabling shall be separated from electrical power wiring by a minimum of [2 inches](#) in accordance with Appendix T and TIA-569. Wall-mounted outlets for NIPR shall be mounted at 72" above finished floor, unless they are supporting systems furniture designed to host cabling.

- a. Break/Training/Conference Rooms: Provide one NIPR outlet at the A/V equipment cabinet location. Provide additional NIPR outlets along each wall with spacing not to exceed 12 feet (minimum of one NIPR and outlet per wall). An additional set of outlets shall be provided to support teleconferencing.
- b. Floor Box/Outlets: Floor boxes shall be recessed flush mounted. NIPR outlets and power receptacles may share a partitioned floor box, however, a 6 inch separation between power and communications shall be maintained. Add a spare conduit to each floor box per [UFC 3-580-01](#). Location of the floor boxes shall be dimension and approved by the interior designer and AV designer to be compatible with the furniture selected or AV Equipment where the access to the floor boxes are not blocked by FF&E or within the chair and feet area of the table or desk. Failure to comply may result in tear out and correction by the contractor at no additional expense to the government.
- c. Provide a NIPR outlet at the each TV location for connection to VBrick since CATV is not available.

3.3.9.1 Voice/Data Outlets

a. Administrative, Break/conference and training, office, and reception areas require general voice and data outlets for phones and personal computers. All areas including electrical, mechanical, and telecommunication rooms shall require one 8-pin modular (RJ45 type) connector in a single gang outlet faceplate with mounting lugs, labeled for voice use. Each workstation (each seat) shall require at least one four connector combination Voice/Data outlet for NIPRNET. The four connector outlet shall consist of 1-telephone connector, and 2-data NIPRNET connectors and one spare connector. Telecommunications cable shall not be pulled to the connectors indicated as spare for the NIPRNET indicated above.

b. Additional voice/data outlets shall be provided for:

- (1) Building Automation System Panels
- (2) Fire Alarm Panel/Mass Notification Panel
- (3) Security Access Control and CCTV devices when the systems are internet protocol based
- (4) Voice only for telephone located in Elevator, Mechanical and Electrical rooms, all TR's.

c. Each voice, data connector shall be UL-listed, snap-in type, high-impact thermoplastic modular information connector with front changeable color bezels. Connectors shall be 8-position/8-conductor CAT 6, power sum rated capable of highest possible data rates, non-keyed type. Connectors shall meet or exceed the transmission requirements for connecting hardware specified in [TIA-568 Set](#). All NIPR jacks shall be green in color.

Otherwise, telecommunication jack color codes shall be as indicated in [UFC 3-580-01](#), and [Bragg NEC IDC](#).

d. Outlet boxes shall be sized in accordance with [UFC 3-580-01](#). J-boxes shall not have more than one conduit entering or exiting the box in accordance with [UFC 3-580-01](#). J-boxes shall not have shared utilities.

e. Dedicated telecommunication outlets required for building systems such as Special telecom circuits/outlets that are routed to building systems such as fire alarm control panel, DDC or direct digital control systems, UMCS or utility monitoring and control systems, etc, shall be terminated in the main telecommunications room and terminated on the last 6 ports on the first data patch panel in the main TR. Provide a biscuit box for the Fire Alarm Control Panel.

3.3.10 Cable Installation

Horizontal distribution shall be via above ceiling cable trays in accordance with [NEMA VE 2](#). Conduits installed from cable tray to work area outlets shall be a minimum of 1 inch EMT. Floor boxes shall contain a minimum of two conduit pathways. Conduit fill shall not exceed 40 percent for over two cables. All conduit pathways shall be sized, designed and installed per the most current addition of the [UFC 3-580-01](#).

J-hooks shall not be allowed for cable installation.

3.3.11 Backbone Cabling

Consult with the COR and Fort Bragg NEC for inside plant copper distribution count between the MTR and each TR. The final copper and fiber optic cabling counts between the MTR and TR will be determined by the Fort Bragg NEC, USASOC G6, and installed by the Contractor. The conduit counts, pathways and number of fiber optic strand between the MTR and NIPR TR's shall be installed in accordance with Fort Bragg NEC, and [UFC 3-580-01](#). The fiber counts, conduit counts and sizes shall continue in the amounts indicated for each additional type of TR. At a minimum all TR's shall have 12 single mode fiber optic strands installed to cross-connect classified and unclassified TR's. A 3-cell Plenum riser innerduct shall be installed in each conduit used for fiber optic distribution, if needed. Coordinate all work with the Fort Bragg NEC, USASOC G6, Contracting Officer and applicable agencies.

3.3.11.1 Unshielded Twisted Pair Cable System

Cable shall meet the requirements of [TIA-568-C.0](#) Category 6 100-ohm unshielded twisted pair. Cable shall be rated CMP per [NFPA 70](#). Category 6 wiring shall not exceed 295 feet in accordance with EIA/TIA standards. Cable jacket shall be factory marked at regular intervals indicating verifying organization.

Voice Cable and Data/NIPR Cable shall be green.

Provide modular jack wiring configuration per [TIA-568 Set](#) and the following:

- a. Pins 1,2 : Pair 2, White-Green, Green
- b. Pins 3,6 : Pair 3, White-Orange, Orange
- c. Pins 4,5: Pair 1, Blue, White-Blue

d. Pins 7,8: Pair 4: White-Brown, Brown

3.3.11.2 Fiber Optic Cable

Fiber optic cable shall meet the requirements of [TIA-568-C.0](#). Cables in plenums (environmental air) shall be listed Nonconductive Fiber Plenum Cable (OFNP). Cables enclosed in metallic raceways shall be listed nonconductive optical fiber general-purpose cable (OFNG). All fiber shall be single mode.

Unless stated otherwise, tests shall be performed from both ends of each circuit. Connectors shall be visually inspected for scratches, pits or chips and shall be re-terminated if any of these conditions exist. Each circuit leg and complete circuit shall be tested using the same source (LED or Laser) for insertion loss at 1300nm and 1550nm. High-resolution optical time domain reflectometer (OTDR) testing shall be performed in both directions on each fiber strand. Scale of the OTDR trace shall be such that the entire circuit appears over a minimum of 80 percent of the X-axis. All single mode fiber optic testing shall be in compliance with [TIA-568-C.3](#), [UFC 3-580-01](#), [TIA-1152](#), and [Bragg NEC IDC](#). A Power Meter Test shall be performed in both directions on each fiber strand. All telecommunications cable in slab floors shall be outdoor-rated and shall be in compliance with [TIA-568-C.3](#), [UFC 3-580-01](#), [TIA-1152](#) and [Bragg NEC IDC](#). Conduits containing cables rated for a wet location shall be home run to the telecommunications rooms.

Fiber ISP: 2 bundles of 12 strands SM FOC shall be installed between the Main NIPR TR and each subordinate NIPR TR.

3.3.12 Wi-Fi

Provide a wireless network distribution system throughout the entire facility in accordance with [DoDD 8100.02](#).

3.3.13 Testing

Unshielded Twisted Pair Tests: All metallic cable pairs shall be tested for proper identification and continuity. All opens, shorts, crosses, grounds, and reversals shall be corrected. Correct color coding and termination of each pair shall be verified in the communication room and at the outlet. All testing shall be in compliance with [UFC 3-580-01](#), [TIA-1152](#), Appendix T, and [Bragg NEC IDC](#).

Provide documentation that the test equipment has been calibrated within the last year.

3.3.13.1 Category 6 Circuits

All Category 6 circuits shall be tested using a test set that meets the Class III accuracy requirements of a Class III Tester. Testing shall use the Basic/Permanent Link Test procedure of [TIA-1152](#). A Fail or star pass/marginal pass test result will NOT be accepted by the FBNEC. Cables and connecting hardware that contains failed circuits shall be replaced and retested to verify the standards are met. Installed CAT 6 cable shall be tested for attenuation loss at 100/250 (6) megahertz and results reported in dB.

Installed CAT 6 cable shall be tested in both directions (TC to outlet,

outlet to TC) for near end cross talk (NEXT) and far end cross talk (FEXT) at 250 megahertz and results reported. All of the pairs in each installed copper backbone cable shall be tested for continuity.

Conduit:

- a. A minimum of four 4-inch (103 mm) sleeves shall be installed between stacked closets on successive floors in accordance with TIA-569.
- b. Two 2-in conduits shall be installed between the Main NIPR TR and each subordinate NIPR TR.

3.3.13.2 Test Reports

Provide test report in hardcopy booklet and electronic forms with witness signatures verifying execution of tests in accordance with UFC 3-580-01. Reports shall show the field tests performed to verify compliance with the specified performance criteria. Test reports shall include record of the physical parameters verified during testing. Test report shall be submitted within 7 days after completion of testing to the Fort Bragg NEC, USASOC G6, Contracting Officer, Corp of Engineers, and DPW.

PART 4 FIRE ALARM SYSTEM

4.1 GENERAL

- a. A fire alarm and detection system shall be provided for this facility. It shall comply with the requirements of UFC 3-600-01 and NFPA 72. The system shall be addressable and fully compatible with and integrated with the local installation wide central monitoring system. Coordinate fire alarm system requirements with the Fire Department's representative during design.
- b. Fire alarm control panels shall be addressable and have a class "A" supervised fire alarm circuit that provides a trouble signal and continues to operate as an alarm circuit after one fault has occurred in the wiring. All alarm, trouble and supervisory signals shall be able to transmit to the fire department independent of any other signal. All signals shall be able to transmit an alarm directly to the fire department and shall not "lock-out" other signals. A LCD display annunciator shall be provided at the front entrance of the building.
- c. Alarm and trouble signals shall be transmitted to the installation's Integrated Incident Management Center (I2MC) via direct IP connection or an RF signal. Provide all necessary equipment to interface with the existing fire alarm systems at the installation including cable, brackets, antennas, etc.
- d. Notification of evacuation of personnel shall be by both audible and visual alarms. All rooms, corridors, and public spaces except private offices shall have at least 1 visual fire alarm. The sprinkler system shall have tamper switches on all valves that would disable the sprinkler system, and shall transmit all trouble, tamper, and flow alarms to the central station. Upon the detection of flow of water in sprinkler lines, a water gong shall sound and the fire alarm panel shall signal an alarm.
- e. Provide spare boards for alarm panels, main board, zone boards, and motherboard. Provide drawings and schematics of fire alarm panels, recommended spare parts list, and special tools/test equipment required.

f. The fire alarm control panel shall have a battery back-up for 72 hours of stand-by and 15 minutes of active use at the end of the 72 hours.

4.2 FIRE ALARM SYSTEM DEVICES

a. All devices shall be addressable and comply with NFPA requirements.

b. Initiating devices shall be connected, Class A, Style 6, to signal line circuits (SLC). All alarm appliances shall be connected to notification appliance circuits (NAC), Class A. A looped conduit system shall be provided so that if the conduit and all conductors within are severed at any point, all NAC and SLC shall remain functional.

c. The fire alarm panel shall be located the electrical room and easily accessible by the Fire Department. The fire alarm control panel (FACP) shall be connected to Ft. Bragg's emergency response system. A smoke detector shall be provided to protect the panel.

d. Include duct smoke detectors in air handling units to comply with [NFPA 90A](#) and all air handling units that deliver more than 2000 CFM (with additional duct smoke detectors on the return side of units delivering more than 15000 CFM). Interlock all required HVAC fans and equipment with the fire alarm system panel. All fans (supply and exhaust) within a zone shall de-energize when notified by the fire alarm panel that an alarm conditions exists in that zone.

e. Double Action manual pull stations for evacuation of personnel and transmission of fire alarms to the Base Fire Department shall be located at each exit and spaced to meet NFPA requirements.

f. Breakglass manual fire alarm stations shall not be used.

g. All fire alarm system acceptance tests shall be performed in the presence of the Base Fire Department, to demonstrate operation of all newly installed fire alarm devices.

h. Provide a Knox box on the exterior of the building at the main entrance to the building.. Coordinate exact type and location with the Fort Bragg Fire Department.

4.3 MASS NOTIFICATION

a. A mass notification system shall be provided with the capability to provide real-time information to all building occupants or personnel in the immediate vicinity of a building during emergency situations in accordance with the latest version of [UFC 4-021-01](#). The system must comply with [UFC 4-021-01](#). Provide Local Operating Consoles as required by [UFC 4-021-01](#).

b. A local operating console shall be provided where personnel in the building can initiate delivery of pre-recorded voice messages, provide live voice messages and instructions, and initiate visual strobe and textual message notification appliances. The local operating console shall temporarily deactivate all audible and visual fire alarm notification circuits while delivering voice messages to ensure they are intelligible. The Local Operating Console shall have the ability to initiate emergency HVAC shutdown in case of a biological attack. This function shall also be available at the combined fire alarm/mass notification control panel.

c. Dedicated manual HVAC shutdown stations shall be located similarly to

standard manual fire alarm pull stations throughout the facility.

d. The mass notification system shall have an appliance network consisting of a set of audio speakers, LED display boards and strobes located to alert occupants and provide intelligible voice instructions. Speakers and strobes (where required) shall be provided at all locations in the building and around the building at entrances, exits, and other outdoor areas (such as courtyards) commonly used by the building occupants. Important design considerations for the audio speakers shall include intelligibility and audio intensity.

e. A high gain buffer amplifier shall be provided for devices located in the secured area in accordance with the Intelligence Community Standards.

f. The mass notification shall be combined with the fire alarm system. A radio transceiver and antenna system shall be furnished and installed to communicate with the Directorate of Emergency Services. The current system in use at Ft Bragg is the UltraVoice system by Federal Signal Corporation. The mass notification system shall connect to the basewide mass notification system at Fort Bragg, also known as 'giant voice'. The Contractor shall be responsible for integrating the in-building mass notification system with the base-wide mass notification system and programming the system with the approved standard emergency messages that are required by Ft Bragg. The equipment furnished and installed shall be compatible with the existing systems in use at Ft Bragg.

4.4 QUALIFICATIONS OF FIRE PROTECTION SPECIALISTS

Fire detection and alarm system design shall be performed by a certified Fire Protection Engineer as defined by [UFC 3-600-01](#). A NICET IV individual shall prepare the shop drawings, supervise the installation, and witness the testing with the Fire Protection Engineer of Record. The shop drawings shall be stamped by the fire protection engineer. A Minimum NICET II certified individual shall terminate the field devices and program the panels. The building shall be protected with a fire detection and alarm system installed in accordance with [NFPA 72](#). Fire detection and alarm systems shall also be designed in accordance with Fort Bragg's Installation Design Guide (IDG), [UFC 3-600-01](#), [SAS Des Manl](#), [NFPA 72](#), [NFPA 70](#), [NFPA 90A](#), [NFPA 90B](#) and other applicable NFPA Standards and Codes.

PART 6 AUDIO-VISUAL SYSTEMS, CONFERENCING, AND SOUND SYSTEMS

a. The systems provided for this facility will utilize the latest equipment and capabilities that are determined to best meet the functional requirements.

b. The Base Bid will include design and construction of the building infrastructure and design of the AV equipment package including a detailed equipment list, manufacturers cut sheet, floor and wall plate details, equipment wiring riser diagrams, and detailed cost estimate by room. The Bid option will include the Purchase, delivery, and installation of the AV equipment.

c. Private Offices, Open Offices, and Break/ Conference/ Training Rooms shall each have a minimum of One flat panel display with native resolution of 1920x1080, remote control, and integral ATSC/NTSC/QAM tuner, surface-mounted to the wall.

d. All sound systems shall silenced during an activation of the Fire

Alarm/Mass Notification System.

d. All AV monitors shall be capable of displaying centralized AV inputs as well as local inputs such as DVD, etc. AV equipment shall be permanently installed on ceilings, walls and within cabinets in each room to minimize system setup time and enable ease of operation.

e. When possible, spaces in the facility shall use identical AV system equipment and/or controls to provide a common platform for users moving between rooms. Integrated AV control systems with touch screen or push button controllers are recommended to simplify the control of complex equipment and/or functions, while providing the flexibility to support future changes in system operation.

f. To provide for a consistent design approach and meet anticipated future requirements, AV displays for the facility should be native 16:9 wide-screen aspect ratio devices. In order to meet all current and future video needs, digital video systems shall be provided. Flat screen monitors are desired over projector systems due to re-lamping costs. Flat screen monitor size and mounting height shall be determined by AV qualified professional. (However, provisions for future ceiling mounted projectors also shall be included).

g. Design and provide the infrastructure for system capabilities as described in this section. The Contractor shall closely coordinate the design of this infrastructure with the design of the systems. The supporting infrastructure shall include power connections, NIPRNET outlets, and conduits and device boxes to support the systems including but not limited to the head-end equipment, speakers, cameras, projectors, flat panels, microphones, and equipment racks. All supporting infrastructure shall be provided to install a fully functional system. Provide controlled lighting levels per IESNA to support the VTC environment.

h. Projection screens provided in all instruction/training and conference areas and shall be ceiling-mounted, motorized screens with tab tensioning, black masking borders, native 16:9 aspect ratio (unless noted otherwise), and flexible vinyl viewing surface (1.0 gain, unless noted otherwise). Bottom of screens shall be located at 48" above finished floor. Provide extra black drop as required. Provide projection screens with low voltage wall controllers and interfaces for AV control system control where required. Placement of flat panel displays, projection screens, and projectors shall be coordinated with the alignment of the FF&E package. off center alignment will not be acceptable.

i. Provisions (consisting of a power receptacle and conduit for signal wiring) for a GFGI projector shall be provided in the instruction/training and conference areas.

j. Audio Systems: A high fidelity audio sound system shall be provided in all workout areas. In addition, a paging system shall be provided for the building with the microphone located in the administration area. The system shall be zoned and shall have input from the telephone system. This system shall be integrated with and may be part of other AV systems. All AV systems shall be silenced when then mass notification system is active.

k. Elevations of the display wall of conference and instruction/training rooms and areas shall be provided and each power receptacle, telecommunication outlet, and AV outlet; locations shall be dimensioned. Locations of thermostats, fire alarm/mass notification fixtures, or other

devices shall also be shown. The center-line of the conference table or classroom FF&E shall also be shown.

1. AV system design and equipment selection shall be by a USASOC-approved professional AV designer.

PART 7 SPECIFICATIONS

The following preliminary list of UFGS Guide Specifications are incorporated by reference and will be edited as applicable by the Designer of Record during design as required to conform to the project, installation requirements and RFP with Government approval, prior to the first design package. The Designer of Record (DOR) shall provide additional specifications or remove specifications from the list as necessary to define the scope of work or as required by the Government. The DOR shall not remove any specifications that are necessary to effectuate the design intent and requirements of the RFP.

DIVISION 13 - SPECIAL CONSTRUCTION

13 48 00 SEISMIC PROTECTION FOR MISCELLANEOUS EQUIPMENT

DIVISION 25 - INTEGRATED AUTOMATION

25 05 11 CYBER SECURITY FOR FACILITY-RELATED CONTROL SYSTEMS

26 00 00.00 20 BASIC ELECTRICAL MATERIALS AND METHODS

26 05 00.00 40 COMMON WORK RESULTS FOR ELECTRICAL

26 05 19.00 10 INSULATED WIRE AND CABLE

26 05 48.00 10 SEISMIC PROTECTION FOR ELECTRICAL EQUIPMENT

26 08 00 APPARATUS INSPECTION AND TESTING

26 20 00 INTERIOR DISTRIBUTION SYSTEM

26 24 13 SWITCHBOARDS

26 28 01.00 10 COORDINATED POWER SYSTEM PROTECTION

26 29 23 VARIABLE FREQUENCY DRIVE SYSTEMS UNDER 600 VOLTS

26 41 01.00 10 LIGHTNING PROTECTION SYSTEM

26 42 13.00 20 CATHODIC PROTECTION BY GALVANIC ANODES

26 42 14.00 10 CATHODIC PROTECTION SYSTEM (SACRIFICIAL ANODE)

26 51 00 INTERIOR LIGHTING

26 56 00 EXTERIOR LIGHTING

DIVISION 27 - COMMUNICATIONS

27 05 14.00 10 CABLE TELEVISION PREMISES DISTRIBUTION SYSTEM

27 10 00 BUILDING TELECOMMUNICATIONS CABLING SYSTEM

27 51 16 RADIO AND PUBLIC ADDRESS SYSTEMS

SOF HPTC
Fort Bragg, NC

W912PM18R0003
PN 79443

28 10 05 DIVISION 28 - ELECTRONIC SAFETY AND SECURITY
 ELECTRONIC SECURITY SYSTEM (ESS), COMMERCIAL

28 31 76 INTERIOR FIRE ALARM AND MASS NOTIFICATION SYSTEM

 DIVISION 33 - UTILITIES

33 70 02.00 10 ELECTRICAL DISTRIBUTION SYSTEM, UNDERGROUND

33 82 00 TELECOMMUNICATIONS OUTSIDE PLANT (OSP)

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SECTION 01 32 01

PROJECT SCHEDULE
02/15

PART 1 GENERAL

1.1 REFERENCES

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

AACE INTERNATIONAL (AACE)

- AACE 29R-03 (2011) Forensic Schedule Analysis
AACE 52R-06 (2006) Time Impact Analysis - As Applied
in Construction

U.S. ARMY CORPS OF ENGINEERS (USACE)

- ER 1-1-11 (1995) Administration -- Progress,
Schedules, and Network Analysis Systems

1.2 SUBMITTALS

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

SD-01 Preconstruction Submittals

- Project Scheduler Qualifications; G, RO
Preliminary Project Schedule; G, RO
Initial Project Schedule; G, RO
Periodic Schedule Update; G, RO

1.3 PROJECT SCHEDULER QUALIFICATIONS

Designate an authorized representative to be responsible for the preparation of the schedule and all required updating and production of reports. The authorized representative must have a minimum of 2-years experience scheduling construction projects similar in size and nature to this project with scheduling software that meets the requirements of this specification. Representative must have a comprehensive knowledge of CPM scheduling principles and application.

PART 2 PRODUCTS

2.1 SOFTWARE

The scheduling software utilized to produce and update the schedules required herein must be capable of meeting all requirements of this specification.

2.1.1 Government Default Software

The Government intends to use Primavera P6.

2.1.2 Contractor Software

Scheduling software used by the contractor must be commercially available from the software vendor for purchase with vendor software support agreements available. The software routine used to create the required sdef file must be created and supported by the software manufacturer.

2.1.2.1 Primavera

If Primavera P6 is selected for use, provide the "xer" export file in a version of P6 importable by the Government system.

2.1.2.2 Other Than Primavera

If the contractor chooses software other than Primavera P6, that is compliant with this specification, provide for the Government's use two licenses, two computers, and training for two Government employees in the use of the software. These computers will be stand-alone and not connected to Government network. Computers and licenses will be returned at project completion.

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

Prepare for approval a Project Schedule, as specified herein, pursuant to FAR Clause 52.236-15, SCHEDULE FOR CONSTRUCTION CONTRACTS. Show in the schedule the proposed sequence to perform the work and dates contemplated for starting and completing all schedule activities. The scheduling of the entire project is required. The scheduling of **design and construction** is the responsibility of the Contractor. Contractor management personnel must actively participate in its development. **Designers, Subcontractors and suppliers** working on the project must also contribute in developing and maintaining an accurate Project Schedule. Provide a schedule that is a forward planning as well as a project monitoring tool. Use the Critical Path Method (CPM) of network calculation to generate all Project Schedules. Prepare each Project Schedule using the Precedence Diagram Method (PDM).

3.2 BASIS FOR PAYMENT AND COST LOADING

The schedule is the basis for determining contract earnings during each update period and therefore the amount of each progress payment. The aggregate value of all activities coded to a contract CLIN must equal the value of the CLIN.

3.2.1 Activity Cost Loading

Activity cost loading must be reasonable and without front-end loading. Provide additional documentation to demonstrate reasonableness if requested by the Contracting Officer.

3.2.2 Withholdings / Payment Rejection

Failure to meet the requirements of this specification may result in the

disapproval of the preliminary, initial or periodic schedule updates and subsequent rejection of payment requests until compliance is met.

In the event that the Contracting Officer directs schedule revisions and those revisions have not been included in subsequent Project Schedule revisions or updates, the Contracting Officer may withhold 10 percent of pay request amount from each payment period until such revisions to the project schedule have been made.

3.3 PROJECT SCHEDULE DETAILED REQUIREMENTS

3.3.1 Level of Detail Required

Develop the Project Schedule to the appropriate level of detail to address major milestones and to allow for satisfactory project planning and execution. Failure to develop the Project Schedule to an appropriate level of detail will result in its disapproval. The Contracting Officer will consider, but is not limited to, the following characteristics and requirements to determine appropriate level of detail:

3.3.2 Activity Durations

Reasonable activity durations are those that allow the progress of ongoing activities to be accurately determined between update periods. Less than 2 percent of all non-procurement activities may have Original Durations (OD) greater than 20 work days or 30 calendar days.

3.3.3 Design and Permit Activities

Include design and permit activities with the necessary conferences and follow-up actions and design package submission dates. Include the design schedule in the project schedule, showing the sequence of events involved in carrying out the project design tasks within the specific contract period. Provide at a detailed level of scheduling sufficient to identify all major design tasks, including those that control the flow of work. Also include review and correction periods associated with each item.

3.3.4 Procurement Activities

Include activities associated with the critical submittals and their approvals, procurement, fabrication, and delivery of long lead materials, equipment, fabricated assemblies, and supplies. Long lead procurement activities are those with an anticipated procurement sequence of over 90 calendar days. In addition to the activities previously mentioned, these shall also include award of Bid Options for Furniture, Fixtures and Equipment (FF&E), Audio Video (AV), and Electronic Security System (ESS) packages.

3.3.5 Mandatory Tasks

Include the following activities/tasks in the initial project schedule and all updates.

- a. Submission, review and acceptance of SD-01 Preconstruction Submittals (individual activity for each).
- b. Submission, review and acceptance of design packages.
- c. Submission of mechanical/electrical/information systems layout drawings.

- d. Long procurement activities
- e. Submission and approval of O & M manuals.
- f. Submission and approval of as-built drawings.
- g. Submission and approval of DD1354 data and installed equipment lists.
- h. Submission and approval of testing and air balance (TAB).
- i. Submission of TAB specialist design review report.
- j. Submission and approval of fire protection specialist.
- k. Submission and approval of Building Commissioning Plan, test data, and reports: Develop the schedule logic associated with testing and commissioning of mechanical systems to a level of detail consistent with the contract commissioning requirements. All tasks associated with all building testing and commissioning will be completed prior to submission of building commissioning report and subsequent contract completion.
- l. Air and water balancing.
- m. Building commissioning - Functional Performance Testing.
- n. Controls testing plan submission.
- o. Controls testing.
- p. Performance Verification testing.
- q. Other systems testing, if required.
- r. Installation of FF&E, AV and ESS
- s. Contractor's pre-final inspection.
- t. Correction of punch list from Contractor's pre-final inspection.
- u. Government's pre-final inspection.
- v. Correction of punch list from Government's pre-final inspection.
- w. Final inspection.

3.3.6 Government Activities

Show Government and other agency activities that could impact progress. These activities include, but are not limited to: [acceptance](#), [design reviews](#), environmental permit approvals by State regulators, inspections, utility tie-in, Government Furnished Equipment (GFE) and Notice to Proceed (NTP) for phasing requirements.

3.3.7 Standard Activity Coding Dictionary

Use the activity coding structure defined in the Standard Data Exchange

Format (SDEF) in [ER 1-1-11](#). This exact structure is mandatory. Develop and assign all Activity Codes to activities as detailed herein. A template SDEF compatible schedule backup file is available on the QCS web site: <http://rms.usace.army.mil>.

The SDEF format is as follows:

Field	Activity Code	Length	Description
1	WRKP	3	Workers per day
2	RESP	4	Responsible party
3	AREA	4	Area of work
4	MODF	6	Modification Number
5	BIDI	6	Bid Item (CLIN)
6	PHAS	2	Phase of work
7	CATW	1	Category of work
8	FOW	20	Feature of work*
<p>*Some systems require that FEATURE OF WORK values be placed in several activity code fields. The notation shown is for Primavera P6. Refer to the specific software guidelines with respect to the FEATURE OF WORK field requirements.</p>			

3.3.7.1 Workers Per Day (WRKP)

Assign Workers per Day for all field construction or direct work activities, if directed by the Contracting Officer. Workers per day is based on the average number of workers expected each day to perform a task for the duration of that activity.

3.3.7.2 Responsible Party Coding (RESP)

Assign responsibility code for all activities to the Prime Contractor, Subcontractor(s) or Government agency(ies) responsible for performing the activity.

- a. Activities coded with a Government Responsibility code include, but are not limited to: Government approvals, Government design reviews, environmental permit approvals by State regulators, Government Furnished Property/Equipment (GFP) and Notice to Proceed (NTP) for phasing requirements.
- b. Activities cannot have more than one Responsibility Code. Examples of acceptable activity code values are: DOR (for the designer of record); ELEC (for the electrical subcontractor); MECH (for the mechanical subcontractor); and GOVT (for USACE).

3.3.7.3 Area of Work Coding (AREA)

Assign Work Area code to activities based upon the work area in which the

activity occurs. Define work areas based on resource constraints or space constraints that would preclude a resource, such as a particular trade or craft work crew from working in more than one work area at a time due to restraints on resources or space. Examples of Work Area Coding include different areas within a floor of a building, different floors within a building, and different buildings within a complex of buildings. Activities cannot have more than one Work Area Code.

Not all activities are required to be Work Area coded. A lack of Work Area coding indicates the activity is not resource or space constrained.

3.3.7.4 Modification Number (MODF)

Assign a Modification Number Code to any activity or sequence of activities added to the schedule as a result of a Contract Modification, when approved by Contracting Officer. Key all Code values to the Government's modification numbering system. An activity can have only one Modification Number Code.

3.3.7.5 Bid Item Coding (BIDI)

Assign a Bid Item Code to all activities using the Contract Line Item Schedule (CLIN) to which the activity belongs, even when an activity is not cost loaded. An activity can have only one BIDI Code.

3.3.7.6 Phase of Work Coding (PHAS)

Assign Phase of Work Code to all activities. Examples of phase of work are [design phase](#), [procurement phase](#), and [construction phase](#). Each activity can have only one Phase of Work code.

- a. Code proposed fast track design and construction phases proposed to allow filtering and organizing the schedule by fast track design and construction packages.
- b. If the contract specifies phasing with separately defined performance periods, identify a Phase Code to allow filtering and organizing the schedule accordingly.

3.3.7.7 Category of Work Coding (CATW)

Assign a Category of Work Code to all activities. Category of Work Codes include, but are not limited to [design](#), [design submittal](#), [design reviews](#), [review conferences](#), [permits](#), [construction submittals](#), procurement, fabrication, weather sensitive installation, non-weather sensitive installation, start-up, and testing activities. Each activity can have no more than one Category of Work Code.

3.3.7.8 Feature of Work Coding (FOW)

Assign a Feature of Work Code to appropriate activities based on the Definable Feature of Work to which the activity belongs based on the approved QC plan.

Definable Feature of Work is defined in Section [01 45 00.00 10](#) QUALITY CONTROL. An activity can have only one Feature of Work Code.

3.3.8 Contract Milestones and Constraints

Milestone activities are to be used for significant project events including, but not limited to, project phasing, project start and end activities, or interim completion dates. The use of artificial float constraints such as "zero free float" or "zero total float" are prohibited.

Mandatory constraints that ignore or effect network logic are prohibited. No constrained dates are allowed in the schedule other than those specified herein. Submit additional constraints to the Contracting Officer for approval on a case by case basis.

3.3.8.1 Project Start Date Milestone and Constraint

The first activity in the project schedule must be a start milestone titled "NTP Acknowledged," which must have a "Start On" constraint date equal to the date that the NTP is acknowledged.

3.3.8.2 End Project Finish Milestone and Constraint

The last activity in the schedule must be a finish milestone titled "End Project."

Constrain the project schedule to the Contract Completion Date in such a way that if the schedule calculates an early finish, then the float calculation for "End Project" milestone reflects positive float on the longest path. If the project schedule calculates a late finish, then the "End Project" milestone float calculation reflects negative float on the longest path. The Government is under no obligation to accelerate Government activities to support a Contractor's early completion.

3.3.8.3 Interim Completion Dates and Constraints

Constrain contractually specified interim completion dates to show negative float when the calculated late finish date of the last activity in that phase is later than the specified interim completion date.

3.3.8.3.1 Start Phase

Use a start milestone as the first activity for a project phase. Call the start milestone "Start Phase X" where "X" refers to the phase of work.

3.3.8.3.2 End Phase

Use a finish milestone as the last activity for a project phase. Call the finish milestone "End Phase X" where "X" refers to the phase of work.

3.3.9 Calendars

Schedule activities on a Calendar to which the activity logically belongs. Develop calendars to accommodate any contract defined work period such as a 7-day calendar for Government Acceptance activities, concrete cure times, etc. Develop the default Calendar to match the physical work plan with non-work periods identified including weekends and holidays. Develop sSeasonal Calendar(s) and assign to seasonally affected activities as applicable.

If an activity is weather sensitive it should be assigned to a calendar showing non-work days on a monthly basis, with the non-work days selected

at random across the weeks of the calendar, using the anticipated days provided in the contract clause TIME EXTENSIONS FOR UNUSUALLY SEVERE WEATHER. Assign non-work days over a seven-day week as weather records are compiled on seven-day weeks, which may cause some of the weather related non-work days to fall on weekends.

3.3.10 Open Ended Logic

Only two open ended activities are allowed: the first activity "NTP Acknowledged" may have no predecessor logic, and the last activity -"End Project" may have no successor logic.

Predecessor open ended logic may be allowed in a time impact analyses upon the Contracting Officer's approval.

3.3.11 Default Progress Data Disallowed

Actual Start and Finish dates must not automatically update with default mechanisms included in the scheduling software. Updating of the percent complete and the remaining duration of any activity must be independent functions. Disable program features that calculate one of these parameters from the other. Activity Actual Start (AS) and Actual Finish (AF) dates assigned during the updating process must match those dates provided in the Contractor Quality Control Reports. Failure to document the AS and AF dates in the Daily Quality Control report will result in disapproval of the Contractor's schedule.

3.3.12 Out-of-Sequence Progress

Activities that have progressed before all preceding logic has been satisfied (Out-of-Sequence Progress) will be allowed only on a case-by-case basis subject to approval by the Contracting Officer. Propose logic corrections to eliminate out of sequence progress or justify not changing the sequencing for approval prior to submitting an updated project schedule. Address out of sequence progress or logic changes in the Narrative Report and in the periodic schedule update meetings.

3.3.13 Added and Deleted Activities

Do not delete activities from the project schedule or add new activities to the schedule without approval from the Contracting Officer. Activity ID and description changes are considered new activities and cannot be changed without Contracting Officer approval.

3.3.14 Original Durations

Activity Original Durations (OD) must be reasonable to perform the work item. OD changes are prohibited unless justification is provided and approved by the Contracting Officer.

3.3.15 Leads, Lags, and Start to Finish Relationships

Lags must be reasonable as determined by the Government and not used in place of realistic original durations, must not be in place to artificially absorb float, or to replace proper schedule logic.

- a. Leads (negative lags) are prohibited.
- b. Start to Finish (SF) relationships are prohibited.

3.3.16 Retained Logic

Schedule calculations must retain the logic between predecessors and successors ("retained logic" mode) even when the successor activity(s) starts and the predecessor activity(s) has not finished (out-of-sequence progress). Software features that in effect sever the tie between predecessor and successor activities when the successor has started and the predecessor logic is not satisfied ("progress override") are not be allowed.

3.3.17 Percent Complete

Update the percent complete for each activity started, based on the realistic assessment of earned value. Activities which are complete but for remaining minor punch list work and which do not restrain the initiation of successor activities may be declared 100 percent complete to allow for proper schedule management.

3.3.18 Remaining Duration

Update the remaining duration for each activity based on the number of estimated work days it will take to complete the activity. Remaining duration may not mathematically correlate with percentage found under paragraph entitled Percent Complete.

3.3.19 Cost Loading of Closeout Activities

Cost load the "Correction of punch list from Government pre-final inspection" activity(ies) not less than 1 percent of the present contract value. Activity(ies) may be declared 100 percent complete upon the Government's verification of completion and correction of all punch list work identified during Government pre-final inspection(s).

3.3.19.1 As-Built Drawings

If there is no separate contract line item (CLIN) for as-built drawings, cost load the "Submission and approval of as-built drawings" activity not less than \$35,000 or 1 percent of the present contract value, which ever is greater, up to \$200,000. Activity will be declared 100 percent complete upon the Government's approval.

3.3.19.2 O & M Manuals

Cost load the "Submission and approval of O & M manuals" activity not less than \$20,000. Activity will be declared 100 percent complete upon the Government's approval of all O & M manuals.

3.3.20 Anticipated Adverse Weather

Paragraph applicable to contracts with clause entitled TIME EXTENSIONS FOR UNUSUALLY SEVERE WEATHER. Reflect the number of anticipated adverse weather delays allocated to a weather sensitive activity in the activity's calendar.

3.3.21 Early Completion Schedule and the Right to Finish Early

An Early Completion Schedule is an Initial Project Schedule (IPS) that indicates all scope of the required contract work will be completed before the contractually required completion date.

- a. No IPS indicating an Early Completion will be accepted without being fully resource-loaded (including crew sizes and manhours) and the Government agreeing that the schedule is reasonable and achievable.
- b. The Government is under no obligation to accelerate work items it is responsible for to ensure that the early completion is met nor is it responsible to modify incremental funding (if applicable) for the project to meet the contractor's accelerated work.

3.4 PROJECT SCHEDULE SUBMISSIONS

Provide the submissions as described below. The data CD/DVD, reports, and network diagrams required for each submission are contained in paragraph SUBMISSION REQUIREMENTS. If the Contractor fails or refuses to furnish the information and schedule updates as set forth herein, then the Contractor will be deemed not to have provided an estimate upon which a progress payment can be made.

Review comments made by the Government on the schedule(s) do not relieve the Contractor from compliance with requirements of the Contract Documents.

3.4.1 Preliminary Project Schedule Submission

Within 15 calendar days after the NTP is acknowledged submit the [Preliminary Project Schedule](#) defining the planned operations detailed for the first 90 calendar days for approval. The approved Preliminary Project Schedule will be used for payment purposes not to exceed 90 calendar days after NTP. Completely cost load the Preliminary Project Schedule to balance the contract award CLINS shown on the Price Schedule. The Preliminary Project Schedule may be summary in nature for the remaining performance period. It must be early start and late finish constrained and logically tied as specified. The Preliminary Project Schedule forms the basis for the Initial Project Schedule specified herein and must include all of the required plan and program preparations, submissions and approvals identified in the contract (for example, Quality Control Plan, Safety Plan, and Environmental Protection Plan) as well as design activities, planned submissions of all early design packages, permitting activities, design review conference activities, and other non-construction activities intended to occur within the first 90 calendar days. Government acceptance of the associated design package(s) and all other specified Program and Plan approvals must occur prior to any planned construction activities. Activity code any activities that are summary in nature after the first 90 calendar days with Bid Item (CLIN) code (BIDI), Responsibility Code (RESP) and Feature of Work code (FOW).

3.4.2 Initial Project Schedule Submission

Submit the [Initial Project Schedule](#) for approval within 42 calendar days after notice to proceed is issued. The schedule must demonstrate a reasonable and realistic sequence of activities which represent all work through the entire contract performance period. [Include in the design-build schedule detailed design and permitting activities, including but not limited to identification of individual design packages, design submission, reviews and conferences; permit submissions and any required Government actions; and long lead item acquisition prior to design completion.](#) Also cover in the preliminary design-build schedule the entire construction effort with as much detail as is known at the time but, as a minimum, include all construction start and completion milestones, and

detailed construction activities through the dry-in milestone, including all activity coding and cost loading. Include the remaining construction, including cost loading, but it may be scheduled summary in nature. As the design proceeds and design packages are developed, fully detail the remaining construction activities concurrent with the monthly schedule updating process. Constrain construction activities by Government acceptance of associated designs. When the design is complete, incorporate into the then approved schedule update all remaining detailed construction activities that are planned to occur after the dry-in milestone. If applicable, include in the design-build schedule detailed design and permitting activities, including but not limited to identification of individual design packages, design submission, reviews and conferences, permit submissions and any required Government actions, and long lead item acquisition prior to design completion. Also cover in the preliminary design-build schedule the entire construction effort with as much detail as is known at the time but, as a minimum, include all construction start and completion milestones, and detailed construction activities through the dry-in milestone, including all activity coding and cost loading. Include the remaining construction, including cost loading, but it may be scheduled summary in nature. As the design proceeds and design packages are developed, fully detail the remaining construction activities. No payment will be made for work items not fully detailed in the Project Schedule.

3.4.2.1 Design Package Schedule Submission

With each design package submitted to the Government, submit a fragnet schedule extracted from the then current Preliminary, Initial or Updated schedule which covers the activities associated with that Design Package including construction, procurement and permitting activities.

3.4.3 Periodic Schedule Updates

Update the Project Schedule on a regular basis, monthly at a minimum. Provide a draft Periodic Schedule Update for review at the schedule update meetings as prescribed in the paragraph PERIODIC SCHEDULE UPDATE MEETINGS. These updates will enable the Government to assess Contractor's progress. Update the schedule to include detailed construction activities as the design progresses, but not later than the submission of the final un-reviewed design submission for each separate design package. The Contracting Officer may require submission of detailed schedule activities for any distinct construction that is started prior to submission of a final design submission if such activity is authorized.

- a. Update information including Actual Start Dates (AS), Actual Finish Dates (AF), Remaining Durations (RD), and Percent Complete is subject to the approval of the Government at the meeting.
- b. AS and AF dates must match the date(s) reported on the Contractor's Quality Control Report for an activity start or finish.

3.5 SUBMISSION REQUIREMENTS

Submit the following items for the Preliminary Schedule, Initial Schedule, and every Periodic Schedule Update throughout the life of the project:

3.5.1 Data CD/DVDs

Provide two sets of data CD/DVDs containing the current project schedule and all previously submitted schedules in the format of the scheduling

software (e.g. .xer). Also include on the data CD/DVDs the Narrative Report and all required Schedule Reports. Label each CD/DVD indicating the type of schedule (Preliminary, Initial, Update), full contract number, Data Date and file name. Each schedule must have a unique file name and use project specific settings.

3.5.2 Narrative Report

Provide a Narrative Report with each schedule submission. The Narrative Report is expected to communicate to the Government the thorough analysis of the schedule output and the plans to compensate for any problems, either current or potential, which are revealed through that analysis. Include the following information as minimum in the Narrative Report:

- a. Identify and discuss the work scheduled to start in the next update period.
- b. A description of activities along the two most critical paths where the total float is less than or equal to 20 work days.
- c. A description of current and anticipated problem areas or delaying factors and their impact and an explanation of corrective actions taken or required to be taken.
- d. Identify and explain why activities based on their calculated late dates should have either started or finished during the update period but did not.
- e. Identify and discuss all schedule changes by activity ID and activity name including what specifically was changed and why the change was needed. Include at a minimum new and deleted activities, logic changes, duration changes, calendar changes, lag changes, resource changes, and actual start and finish date changes.
- f. Identify and discuss out-of-sequence work.

3.5.3 Schedule Reports

The format, filtering, organizing and sorting for each schedule report will be as directed by the Contracting Officer. Typically, reports contain Activity Numbers, Activity Description, Original Duration, Remaining Duration, Early Start Date, Early Finish Date, Late Start Date, Late Finish Date, Total Float, Actual Start Date, Actual Finish Date, and Percent Complete. Provide the reports electronically in .pdf format and hard copies as directed in Section 01 33 00 SUBMITTAL PROCEDURES. The following lists typical reports that will be requested:

3.5.3.1 Activity Report

List of all activities sorted according to activity number.

3.5.3.2 Logic Report

List of detailed predecessor and successor activities for every activity in ascending order by activity number.

3.5.3.3 Total Float Report

A list of all incomplete activities sorted in ascending order of total

float. List activities which have the same amount of total float in ascending order of Early Start Dates. Do not show completed activities on this report.

3.5.3.4 Earnings Report by CLIN

A compilation of the Total Earnings on the project from the NTP to the data date, which reflects the earnings of activities based on the agreements made in the schedule update meeting defined herein. Provided a complete schedule update has been furnished, this report serves as the basis of determining progress payments. Group activities by CLIN number and sort by activity number. Provide a total CLIN percent earned value, CLIN percent complete, and project percent complete. The printed report must contain the following for each activity: the Activity Number, Activity Description, Original Budgeted Amount, Earnings to Date, Earnings this period, Total Quantity, Quantity to Date, and Percent Complete (based on cost).

3.5.3.5 Schedule Log

Provide a Scheduling/Leveling Report generated from the current project schedule being submitted.

3.5.4 Network Diagram

The Network Diagram is required for the Preliminary, Initial and Periodic Updates. Depict and display the order and interdependence of activities and the sequence in which the work is to be accomplished. The Contracting Officer will use, but is not limited to, the following conditions to review compliance with this paragraph:

3.5.4.1 Continuous Flow

Show a continuous flow from left to right with no arrows from right to left. Show the activity number, description, duration, and estimated earned value on the diagram.

3.5.4.2 Project Milestone Dates

Show dates on the diagram for start of project, any contract required interim completion dates, and contract completion dates.

3.5.4.3 Critical Path

Show all activities on the critical path. The critical path is defined as the longest path.

3.5.4.4 Banding

Organize activities using the WBS or as otherwise directed to assist in the understanding of the activity sequence. Typically, this flow will group activities by major elements of work, category of work, work area and/or responsibility.

3.5.4.5 Cash Flow / Schedule Variance Control (SVC) Diagram

With each schedule submission, provide a SVC diagram showing 1) Cash Flow S-Curves indicating planned project cost based on projected early and late activity finish dates, and 2) Earned Value to-date.

3.6 PERIODIC SCHEDULE UPDATE

3.6.1 Periodic Schedule Update Meetings

Conduct periodic schedule update meetings for the purpose of reviewing the proposed Periodic Schedule Update, Narrative Report, Schedule Reports, and progress payment. Conduct meetings at least monthly within five days of the proposed schedule data date. Provide a computer with the scheduling software loaded and a projector which allows all meeting participants to view the proposed schedule during the meeting. The Contractor's authorized scheduler must organize, group, sort, filter, perform schedule revisions as needed and review functions as requested by the Contractor and/or Government. The meeting is a working interactive exchange which allows the Government and Contractor the opportunity to review the updated schedule on a real time and interactive basis. The meeting will last no longer than 8 hours. Provide a draft of the proposed narrative report and schedule data file to the Government a minimum of two workdays in advance of the meeting. The Contractor's Project Manager and scheduler must attend the meeting with the authorized representative of the Contracting Officer. Superintendents, foremen and major subcontractors must attend the meeting as required to discuss the project schedule and work. Following the periodic schedule update meeting, make corrections to the draft submission. Include only those changes approved by the Government in the submission and invoice for payment.

3.6.2 Update Submission Following Progress Meeting

Submit the complete [Periodic Schedule Update](#) of the Project Schedule containing all approved progress, revisions, and adjustments, pursuant to paragraph SUBMISSION REQUIREMENTS not later than 4 work days after the periodic schedule update meeting.

3.7 WEEKLY PROGRESS MEETINGS

Conduct a weekly meeting with the Government (or as otherwise mutually agreed to) between the meetings described in paragraph entitled PERIODIC SCHEDULE UPDATE MEETINGS for the purpose of jointly reviewing the actual progress of the project as compared to the as planned progress and to review planned activities for the upcoming two weeks. Use the current approved schedule update for the purposes of this meeting and for the production and review of reports. At the weekly progress meeting, address the status of RFIs, RFPs and Submittals.

3.8 REQUESTS FOR TIME EXTENSIONS

Provide a justification of delay to the Contracting Officer in accordance with the contract provisions and clauses for approval within 10 days of a delay occurring. Also prepare a time impact analysis for each Government request for proposal (RFP) to justify time extensions.

3.8.1 Justification of Delay

Provide a description of the event(s) that caused the delay and/or impact to the work. As part of the description, identify all schedule activities impacted. Show that the event that caused the delay/impact was the responsibility of the Government. Provide a time impact analysis that demonstrates the effects of the delay or impact on the project completion date or interim completion date(s). Evaluate multiple impacts chronologically; each with its own justification of delay. With multiple

impacts consider any concurrency of delay. A time extension and the schedule fragnet becomes part of the project schedule and all future schedule updates upon approval by the Contracting Officer.

3.8.2 Time Impact Analysis (Prospective Analysis)

Prepare a time impact analysis for approval by the Contracting Officer based on industry standard [AAACE 52R-06](#). Utilize a copy of the last approved schedule prior to the first day of the impact or delay for the time impact analysis. If Contracting Officer determines the time frame between the last approved schedule and the first day of impact is too great, prepare an interim updated schedule to perform the time impact analysis. Unless approved by the Contracting Officer, no other changes may be incorporated into the schedule being used to justify the time impact.

3.8.3 Forensic Schedule Analysis (Retrospective Analysis)

Prepare an analysis for approval by the Contracting Officer based on industry standard [AAACE 29R-03](#).

3.8.4 Fragmentary Network (Fragnet)

Prepare a proposed fragnet for time impact analysis consisting of a sequence of new activities that are proposed to be added to the project schedule to demonstrate the influence of the delay or impact to the project's contractual dates. Clearly show how the proposed fragnet is to be tied into the project schedule including all predecessors and successors to the fragnet activities. The proposed fragnet must be approved by the Contracting Officer prior to incorporation into the project schedule.

3.8.5 Time Extension

The Contracting Officer must approve the Justification of Delay including the time impact analysis before a time extension will be granted. No time extension will be granted unless the delay consumes all available Project Float and extends the projected finish date ("End Project" milestone) beyond the Contract Completion Date. The time extension will be in calendar days.

Actual delays that are found to be caused by the Contractor's own actions, which result in a calculated schedule delay will not be a cause for an extension to the performance period, completion date, or any interim milestone date.

3.8.6 Impact to Early Completion Schedule

No extended overhead will be paid for delay prior to the original Contract Completion Date for an Early Completion IPS unless the Contractor actually performed work in accordance with that Early Completion Schedule. The Contractor must show that an early completion was achievable had it not been for the impact.

3.9 FAILURE TO ACHIEVE PROGRESS

Should the progress fall behind the approved project schedule for reasons other than those that are excusable within the terms of the contract, the Contracting Officer may require provision of a written recovery plan for approval. The plan must detail how progress will be made-up to include which activities will be accelerated by adding additional crews, longer

work hours, extra work days, etc.

3.9.1 Artificially Improving Progress

Artificially improving progress by means such as, but not limited to, revising the schedule logic, modifying or adding constraints, shortening activity durations, or changing calendars in the project schedule is prohibited. Indicate assumptions made and the basis for any logic, constraint, duration and calendar changes used in the creation of the recovery plan. Any additional resources, manpower, or daily and weekly work hour changes proposed in the recovery plan must be evident at the work site and documented in the daily report along with the Schedule Narrative Report.

3.9.2 Failure to Perform

Failure to perform work and maintain progress in accordance with the supplemental recovery plan may result in an interim and final unsatisfactory performance rating and/or may result in corrective action directed by the Contracting Officer pursuant to FAR 52.236-15 Schedules for Construction Contracts, FAR 52.249-10 Default (Fixed-Price Construction), and other contract provisions.

3.9.3 Recovery Schedule

Should the Contracting Officer find it necessary, submit a recovery schedule pursuant to FAR 52.236-15 Schedules for Construction Contracts.

3.10 OWNERSHIP OF FLOAT

Except for the provision given in the paragraph IMPACT TO EARLY COMPLETION SCHEDULE, float available in the schedule, at any time, may not be considered for the exclusive use of either the Government or the Contractor including activity and/or project float. Activity float is the number of work days that an activity can be delayed without causing a delay to the "End Project" finish milestone. Project float (if applicable) is the number of work days between the projected early finish and the contract completion date milestone.

3.11 TRANSFER OF SCHEDULE DATA INTO RMS/QCS

Import the schedule data into the Quality Control System (QCS) and export the QCS data to the Government. This data is considered to be additional supporting data in a form and detail required by the Contracting Officer pursuant to FAR 52.232-5 - Payments under Fixed-Price Construction Contracts. The receipt of a proper payment request pursuant to FAR 52.232-27 - Prompt Payment for Construction Contracts is contingent upon the Government receiving both acceptable and approvable hard copies and matching electronic export from QCS of the application for progress payment.

3.12 PRIMAVERA P6 MANDATORY REQUIREMENTS

If Primavera P6 is being used, request a backup file template (.xer) from the Government, if one is available, prior to building the schedule. The following settings are mandatory and required in all schedule submissions to the Government:

- a. Activity Codes must be Project Level, not Global or EPS level.

- b. Calendars must be Project Level, not Global or Resource level.
- c. Activity Duration Types must be set to "Fixed Duration & Units".
- d. Percent Complete Types must be set to "Physical".
- e. Time Period Admin Preferences must remain the default "8.0 hr/day, 40 hr/week, 172 hr/month, 2000 hr/year". Set Calendar Work Hours/Day to 8.0 Hour days.
- f. Set Schedule Option for defining Critical Activities to "Longest Path".
- g. Set Schedule Option for defining progressed activities to "Retained Logic".
- h. Set up cost loading using a single lump sum labor resource. The Price/Unit must be \$1/hr, Default Units/Time must be "8h/d", and settings "Auto Compute Actuals" and "Calculate costs from units" selected.
- i. Activity ID's must not exceed 10 characters.
- j. Activity Names must have the most defining and detailed description within the first 30 characters.

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SECTION 01 33 00

SUBMITTAL PROCEDURES

02/16

PART 1 GENERAL

1.1 SUMMARY

The Contracting Officer may request submittals in addition to those specified when deemed necessary to adequately describe the work covered in the respective Sections.

Units of weights and measures used on submittals shall be the same as those used in the Contract Drawings.

Each submittal shall be complete and in sufficient detail to allow ready determination of compliance with Contract requirements.

Contractor's Quality Control (CQC) System Manager and the Designer of Record (DOR) shall check and approve items prior to submittal and stamp, sign, and date indicating action taken. Clearly identify proposed deviations from the Contract. Within the submittals, include items such as Contractor's, manufacturer's, or fabricator's drawings; descriptive literature including (but not limited to) catalog cuts, diagrams, operating charts or curves; test reports; test cylinders; samples; O&M manuals (including parts list); certifications; warranties; and other such required submittals.

Submittals requiring Government approval shall be scheduled and made prior to the acquisition of the material or equipment covered thereby. Pick up and dispose of samples not incorporated into the work in accordance with manufacturer's Material Safety Data Sheets (MSDS) and in compliance with existing laws and regulations.

1.2 DEFINITIONS

1.2.1 Submittal Descriptions (SD)

Submittals requirements are specified in the technical Sections. Submittals are identified by Submittal Description (SD) numbers and titles as follows:

[SD-01 Preconstruction Submittals](#)

Submittals which are required prior to start of construction (work) or the start of the next major phase of the construction on a multi-phase contract, includes schedules, tabular list of data, or tabular list including location, features, or other pertinent information regarding products, materials, equipment, or components to be used in the work.

Certificates of insurance

Surety bonds

List of proposed subcontractors

List of proposed products

Construction progress schedule

Network Analysis Schedule (NAS)

Submittal register

Schedule of prices

Health and safety plan

Work plan

Quality Control(QC) plan

Environmental protection plan

1.2.2 Approving Authority

Office or designated person authorized to approve submittal.

1.2.3 Work

As used in this section, on- and off-site construction required by Contract documents, including labor necessary to produce submittals, except those SD-01 Preconstruction Submittals noted above, construction, materials, products, equipment, and systems incorporated or to be incorporated in such construction.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. Submit the following in accordance with this Section.

SD-01 Preconstruction Submittals

Submittal Register; G, RO

1.4 SUBMITTAL CLASSIFICATION

Submittals are classified as follows:

1.4.1 Designer of Record Approved (DA)

DOR approval is required for extensions of design, critical materials, deviations from the solicitation, the accepted proposal, or the completed design, equipment whose compatibility with the entire system shall be checked, and other items as designated by the Contracting Officer. Within the terms of Contract Clause "Specifications and Drawings for Construction", they are considered to be "shop drawings". Provide the Government with the designated number of copies of DOR-approved submittals. The Government may review DOR-approved submittals for conformance to the Solicitation, Accepted Proposal, and the completed design. The Government will review submittals designated as deviating from the Solicitation or Accepted Proposal, as described below. Design submittals shall be in accordance with Section 01 33 16 DESIGN DATA (DESIGN

AFTER AWARD). Generally, design submittals shall be identified as SD-05 Design Data submittals.

1.4.2 Government Approved

Government approval is required for deviations from the Solicitation or Accepted Proposal and other items as designated by the Contracting Officer. Within the terms of Contract Clause "Specifications and Drawings for Construction", they are considered to be "shop drawings".

1.4.3 Government Conformance Review of Design (CR)

The Government will review intermediate and final design submittals for conformance with the technical requirements of the solicitation. Section 01 33 16 DESIGN DATA (DESIGN AFTER AWARD) covers the design submittal and review process in detail. Review will be only for conformance with the applicable codes, standards, and Contract requirements. Design data includes the design documents described in Section 01 33 16 DESIGN DATA (DESIGN AFTER AWARD). Generally, design submittals shall be identified as SD-05 Design Data submittals.

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

1.4.4.1 Deviations to the Accepted Design

DOR approval and the Government's concurrence are required for proposed deviations from the accepted design which still complies with the Contract before the Contractor is authorized to proceed with material acquisition or installation. Within the terms of Contract Clause "Specifications and Drawings for Construction", they are considered to be "shop drawings". If necessary to facilitate the project schedule, the Contractor and the DOR may discuss a submittal proposing a deviation with the Contracting Officer's Representative (COR) prior to officially submitting it to the Government. However, the Government reserves the right to review the submittal before providing an opinion. The Government will not formally agree to or provide a preliminary opinion on a deviation without the DOR's approval or recommended approval. The Government reserves the right to non-concur with deviations from the design, which may impact furniture, furnishings, equipment selections, or operations decisions that were made, based on the reviewed and concurred design.

1.4.4.2 Substitutions

Unless prohibited or provided for otherwise elsewhere in the Contract, where the accepted Contract proposal named products, systems, materials, or equipment by manufacturer, brand name, model number, or other specific identification, and the Contractor desires to substitute manufacturer or model after award, submit a requested substitution for Government concurrence. Include substantiation, identifying information, and the DOR's approval, as meeting the Contract requirements and that it is equal in function, performance, quality, and salient features to that in the accepted Contract proposal. If the Contract otherwise prohibits substitutions of equal named products, systems, materials, or equipment by manufacturer, brand name, model number, or other specific identification, the request is considered a "variation" to the Contract. Variations are discussed below in Paragraphs "Designer of Record Approved/Government Approved" and "VARIATIONS".

1.4.5 Designer of Record Approved/Government Approved (DA/GA)

In addition to the above stated requirements for proposed deviations to the accepted design, both the DOR and Government Approval and, where applicable, a contract modification are required before the Contractor is authorized to proceed with material acquisition or installation of proposed variations to the Contract (the solicitation and the accepted proposal), which constitutes a change to the Contract terms. Within the terms of Contract Clause "Specifications and Drawings for Construction", they are considered to be "shop drawings". The Government reserves the right to accept or reject such proposed deviations at its discretion.

1.4.6 For Information Only

Submittals not requiring DOR or Government approval will be for information only. For Design-build construction all submittals not requiring Designer of Record or Government approval will be for information only. They are not considered to be "shop drawings" within the terms of the Contract Clause referred to above.

Except as specified otherwise, allow FIO review period, beginning with receipt by approving authority, that includes at least 15 working days for submittals for QC Manager approval and 20 working days for submittals for Contracting Officer approval. Period of review for submittals with Contracting Officer approval begins when Government receives submittal from QC organization.

For FIO submittals for fire protection engineer and submittals requiring review by the commissioning agent, allow review period, beginning when Government receives submittal from QC organization, of 30 working days for return of submittal to the Contractor.

1.4.7 Sustainability Reporting Submittals (S)

Submittals for Guiding Principle Validation (GPV) or Third Party Certification (TPC) are indicated with an "S" designation. Submit the information required by the technical sections that demonstrates compliance with the sustainable requirement, and for inclusion in the Sustainability Notebook as required by Section 01 33 29.10 SUSTAINABILITY REPORTING. A full submittal for an item may be provided under another SD; however, for the "S" submittal, only provide that portion of the submittal that demonstrates compliance with the sustainable requirement. If the sustainable submittal does require Government Approval, it may be tagged under another SD with a "G."

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

1.4.8 Commissioning Agent (CA)

For submittals that have a "CA" suffix, concurrently furnish one copy to the CA in addition to the Government. Note: The CA designation does not appear in the submittal register but appears only in the technical specification sections.

1.5 PREPARATION

1.5.1 Transmittal Form

Use the transmittal form (ENG Form 4025) for submittals in accordance with the instructions on the form. The form is included in the Quality Control System (QCS) software required by this Contract. Properly complete this form by filling out each heading blank spaces and identifying each item submitted. Ensure proper listing of the Specification Paragraph and sheet number of the Contract Drawings pertinent to the data submitted for each item.

1.5.2 Source Drawings for Shop Drawings

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

Data contained on these electronic files shall be used only as a convenience in the preparation of construction data for the referenced project. Other use or reuse shall be at the sole risk of the Contractor and without liability or legal exposure to the Government. The Contractor shall make no claim and shall waive, to the fullest extent permitted by law, claims and causes of action against the Government, its agents, and sub-consultants that may arise out of or in connection with the use of these electronic files. The Contractor shall, to the fullest extent permitted by law, indemnify and hold the Government harmless against damages, liabilities, and costs, including reasonable attorney fees and defense costs, arising out of or resulting from the use of these electronic files.

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

1.5.3 Electronic File Format

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

is both searchable and can be copied. If documents are scanned, Optical Character Resolution (OCR) routines are required. Index and bookmark files exceeding 30 pages to allow efficient navigation of the file. When required, the electronic file shall include a valid electronic signature, or scan of a signature.

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

Provide hard copies of submittals when requested by the Contracting Officer. Up to 2 additional hard copies of a submittal may be requested at the discretion of the Contracting Officer, at no additional cost to the Government.

1.5.4 Number Of Samples SD-04 Samples

- a. Submit 2 samples, or 2 sets of samples showing range of variation, of each required item. One approved sample or set of samples will be retained by approving authority and one will be returned to Contractor.
- b. Submit one sample panel or provide one sample installation where directed. Include components listed in technical section or as directed.
- c. Submit one sample installation, where directed.
- d. Submit one sample of non-solid materials.

1.6 INFORMATION ONLY SUBMITTALS

Normally, submittals for information only will not be returned. Approval of the Contracting Officer is not required on information only submittals. The Government will require the Contractor to resubmit items that do not to comply with the Contract. This does not relieve the Contractor from the obligation to furnish material conforming to the Contract; will not prevent the Contracting Officer from requiring removal and replacement of nonconforming material incorporated in the work; and does not relieve the Contractor of the requirement to furnish samples for testing by the Government laboratory or for check testing by the Government in those instances where the technical specifications so prescribe.

1.7 VARIATIONS

Variations from Contract requirements require both DOR and Government approval pursuant to Contract Clause FAR 52.236-21 and will be considered where advantageous to Government.

1.7.1 Considering Variations

Discuss variations with the Contracting Officer after consulting with the DOR and prior to submission to ensure functional and quality requirements are met and to minimize rejections and re-submittals. When contemplating a variation which results in lower cost, consider submission of the variation as a Value Engineering Change Proposal (VECP).

Specifically point out variations from Contract requirements in transmittal

letters. Failure to point out deviations may result in the Government requiring rejection and removal of such work at no additional cost to the Government.

1.7.2 Proposing Variations

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

Check the column "variation" of ENG Form 4025 for submittals which include proposed deviations requested by the Contractor. Set forth in writing the reasons for the deviations and annotate such deviations on the submittal. The Government reserves the right to rescind inadvertent approval of submittals containing unnoted deviations.

1.7.3 Warranting That Variations Are Compatible

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

1.7.4 Review Schedule Is Modified

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

1.8 SUBMITTAL REGISTER

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

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

Column (d): Lists each submittal description (SD No. and type, e.g. SD-02 Shop Drawings) required in each specification section.

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

Thereafter, track the submittals by maintaining a complete list, including completion of each data column and the dates on which submittals are received and returned by the Government.

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

1.8.1 Use of Submittal Register

Submit submittal register with QC plan and project schedule. Verify that submittals required for the project are listed and add missing submittals. Coordinate and complete the following fields on the register submitted with the QC plan and the project schedule:

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

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

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

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

1.8.2 Contractor Use of Submittal Register

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

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

Column (j) Action Code

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

Column (l) List date of submittal transmission.

Column (q) List date approval received.

1.8.3 Approving Authority Use of Submittal Register

Update the following fields in the Government-furnished submittal register program or equivalent fields in program utilized by Contractor.

Column (b) Transmittal Number: Contractor assigned list of

consecutive numbers.

Column (l) List date of submittal receipt.

Column (m) through (p) List Date related to review actions.

Column (q) List date returned to Contractor.

1.8.4 Copies Delivered to the Government

Deliver one copy of submittal register updated by Contractor to Government with each invoice request.

1.9 SCHEDULING

Schedule and submit concurrently submittals covering component items forming a system or items that are interrelated. Include certifications to be submitted with the pertinent drawings at the same time. No delay damages or time extensions will be allowed for time lost in late submittals. An additional 5 calendar days will be allowed and shown on the register for review and approval of submittals for food service equipment and refrigeration and HVAC control systems.

- a. Coordinate scheduling, sequencing, preparing, and processing of submittals with performance of work so that work is not delayed by submittal processing. Allow for potential resubmittal of requirements.
- b. Submittals required by the Contract will be listed on the register. If a submittal is listed, but does not pertain to the Contract work, include the submittal in the register and annotate it "N/A" with a brief explanation. Approval by the Contracting Officer does not relieve the Contractor of supplying submittals required by the Contract documents but which have been omitted from the register or marked "N/A".
- c. Re-submit register and annotate monthly with actual submission and approval dates. When the items on the register have been fully approved, no further re-submittal is required.
- d. Carefully control procurement operations to ensure that each submittal is made on or before the submittal date shown on the approved Submittal Register.

1.9.1 Government Reviewed Design

The Government will review design submittals for conformance with the technical requirements of the solicitation. Section 01 33 16 DESIGN DATA (DESIGN AFTER AWARD) covers the design submittal and review process in detail. Government review is required for deviation from the completed design. Review will be only for conformance with the Contract requirements. Include only those construction submittals for which the DOR design documents do not include enough detail to ascertain Contract compliance. The Government may, but is not required to, review extensions of design such as structural steel or reinforcement shop drawings.

1.10 GOVERNMENT APPROVING AUTHORITY

When approving authority is Contracting Officer, the Government will:

- a. Note date on which submittal was received.

- b. Review submittals for approval within scheduling period specified and only for conformance with project design concepts and compliance with Contract documents.
- c. Identify returned submittals with one of the actions defined in Paragraph "Review Notations" and with markings appropriate for action indicated.

Upon completion of review of submittals requiring Government approval, stamp and date approved submittals. 2 copies of the approved submittal will be retained by the Contracting Officer and the remaining copies of the submittal will be returned to the Contractor. [If the Government performs a conformance review of other DOR-approved submittals, the submittals will be so identified and returned, as described above.](#)

1.10.1 Review Notations

Contracting Officer review will be completed within 30 working days after date of submission. Submittals will be returned to the Contractor with the following notations:

- a. Submittals marked "approved" [or "accepted"](#) authorize the Contractor to proceed with the work covered.
- b. Submittals marked "approved as noted" or "approved except as noted, resubmittal not required," authorize the Contractor to proceed with the work covered provided he takes no exception to the corrections.
- c. Submittals marked "not approved", "disapproved," or "revise and resubmit" indicate noncompliance with the Contract requirements or design concept, or that submittal is incomplete. Resubmit with appropriate changes. No work shall proceed for this item until resubmittal is approved.
- d. Submittals marked "not reviewed" will indicate submittal has been previously reviewed and approved, is not required, does not have evidence of being reviewed and approved by Contractor, or is not complete. A submittal marked "not reviewed" will be returned with an explanation of the reason it is not reviewed. Resubmit submittals returned for lack of review by Contractor or for being incomplete, with appropriate action, coordination, or change.

1.11 [DISAPPROVED OR REJECTED](#) SUBMITTALS

Make the corrections required by the Contracting Officer. If the Contractor considers a correction or notation on the returned submittals to constitute a change to the Contract, notify the Contracting Officer as required under Contract Clause "Changes". Contractor is responsible for the dimensions, design of connection details, and construction of work. Failure to point out deviations may result in the Government requiring rejection and removal of such work at the Contractor's expense.

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

1.12 APPROVED/ACCEPTED SUBMITTALS

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

Approval or acceptance will not relieve the Contractor of the responsibility for errors which may exist, as the Contractor is responsible for design, dimensions, design extensions, such as the design of adequate connections and details, etc., and the satisfactory construction of the work.

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

1.13 APPROVED SAMPLES

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

Match the approved samples for materials and equipment incorporated in the work. If requested, approved samples, including those which may be damaged in testing, will be returned to the Contractor, at the Contractor's expense, upon completion of the Contract. Samples not approved will also be returned to the Contractor at its expense, if so requested.

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

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

Approval of the Contractor's samples by the Contracting Officer does not relieve the Contractor of its responsibilities under the Contract.

1.14 WITHHOLDING OF PAYMENT

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

PART 2 PRODUCTS

Not used.

SOF HPTC
Fort Bragg, NC

W912PM18R0003
PN 79443

PART 3 EXECUTION

Not used.

-- End of Section --

Attachment 1

Instructions for Contractors Completing
ENG FORM 4288
&
Eng Form 4288

Instructions for Contractors Completing ENG FORM 4288

1. Use electronic submittal register program furnished by the Government. See paragraph, QCS SOFTWARE of Section 01 45 01.10: USACE QUALITY CONTROL SYSTEM (QCS).

2. Prepare and maintain submittal register. Verify that all submittals required for project are listed and add missing submittals. Complete the following on the register database.

a. Column - ACTIVITY NO. Enter the Activity Number as shown on the construction schedule, which requires this item. In the case where an item applies to more than one construction activity, enter the activity number of the activity with the earliest planned start date.

b. Column - TRANSMITTAL NO. Enter the Transmittal Number under which the submittal was made. The transmittal Number shall have the following format:

A - B - C

Where: A - is the specification section.

B - is a consecutive number where 1 would be the first transmittal under the given specification section, 2 would be the second transmittal, etc.

C - is a consecutive number identifying resubmittals. Number 1 would be the first resubmittal, 2 the second. etc.

Examples of Transmittal Numbers under Specification Section 01 33 00:

01 33 00-1, and
01 33 00-2

01 33 00-1-1 (first resubmittal of 01 33 00-1)

c. Contractor Schedule Dates:

- (1) Column - SUBMIT NEEDED BY. Enter the scheduled date for submission to the Government.
- (2) Column - APPROVAL NEEDED BY. Enter the date that approval by the Government is required.
- (3) Column - MATERIAL NEEDED BY. Enter the date that material is needed at the job site.

d. Contractor Action:

- (1) Column - CODE. Enter the review code assigned by the Contractor Quality Control System Manager.
- (2) Column - CORPS RECEIVED DATE. Enter the date that the submittal item actually was submitted to the Government. All items, regardless of submittal classifications are to be submitted to the Government.

SUBMITTAL REGISTER (ER 415-1-10)					TITLE AND LOCATION: PN 79443 SOF HP Training Center-					DATE: 8/28/2018				
					CONTRACTOR: PRIM					CONTRACT NUMBER: W912PM18R0003 NA				
Activity No.	TRANS MITTAL No.	ITEM No.	SPEC PARAGRAPH No.	DESCRIPTION OF SUBMITTAL	TYPE OF SUBMITTAL	CLASSIFI CATION	REVIEWER	CONTRACTOR SCHEDULE DATES			CONTRACTOR ACTION		GOVERNMENT ACTION	
						FIO, GA, DA, CR, OR S	OFFICE / NAME	SUBMIT NEEDED BY	APPROVAL NEEDED BY	MATERIAL NEEDED BY	CODE	CORPS RECEIVED DATE	CODE	CORPS RETURNED DATE
Section 01 10 00.10 38 SUPPLEMENTARY SPECIAL CONTRACT REQUIREMENTS														
		1	01 10 00.10 38 1.11	List of Subcontractors	PRECON SUBMTL	FIO								
		2	01 10 00.10 38	Progress Chart	PRECON SUBMTL	GA								
		3	01 10 00.10 38 1.11	Quality Control Plan	PRECON SUBMTL	GA								
		4	01 10 00.10 38 1.11	Certificate of Insurance	PRECON SUBMTL	FIO								
		5	01 10 00.10 38	WORK PLAN	PRODUCT DATA	FIO								
		6	01 10 00.10 38 1.6	PROGRESS SCHEDULE	PRODUCT DATA	FIO								
		7	01 10 00.10 38	U.S. Coast Guard Certification	CERTIFICATES	FIO								
		8	01 10 00.10 38 1.11	Completion of Corps CQC Course	CERTIFICATES	FIO								
		9	01 10 00.10 38 1.11	Letter Appointing Superintendent	CERTIFICATES	FIO								
		10	01 10 00.10 38 1.10	testing laboratory	CERTIFICATES	GA								
		11	01 10 00.10 38 1.10	testing laboratory	CERTIFICATES	GA								
Section 01 11 00.05 FIRE PROTECTION SUMMARY OF WORK														
		1	01 11 00.05 1.5	Fire Protection And Life Safety Analysis	DESIGN DATA	FIO								
		2	01 11 00.05 1.4	Fire Protection Engineer	CERTIFICATES	GA								
Section 01 32 01 PROJECT SCHEDULE														
		1	01 32 01 1.3	Project Scheduler Qualifications	PRECON SUBMTL	GA								
		2	01 32 01 3.4.1	Preliminary Project Schedule	PRECON SUBMTL	GA								
		3	01 32 01 3.4.2	Initial Project Schedule	PRECON SUBMTL	GA								
		4	01 32 01 3.6.2	Periodic Schedule Update	PRECON SUBMTL	GA								
Section 01 33 00 SUBMITTAL PROCEDURES														
		1	01 33 00 1.8	Submittal Register	PRECON SUBMTL	GA								
Section 01 33 16 Design Data														
		1	01 33 16 1.7.2	Advanced Modeling Project Execution Plan	PRECON SUBMTL	GA								
		2	01 33 16 1.5.1	Design Quality Control Plan	PRECON SUBMTL	GA								
		3	01 33 16 1.5.2.2	Initial Design Conference	PRECON SUBMTL	FIO								
		4	01 33 16 1.5.2.5	Preconstruction Conference	PRECON SUBMTL	FIO								
		5	01 33 16 3.5.1	DCM Procedures	PRECON SUBMTL	GA								
		6	01 33 16 3.8.5	Submittal Register	PRECON SUBMTL	GA								
		7	01 33 16 1.7.1	Design and Code Checklists	DESIGN DATA	GA								
		8	01 33 16 3.2.1	Interim Design Submittals	DESIGN DATA	GA								
		9	01 33 16 3.7.3	Conference Documentation	DESIGN DATA	FIO								
		10	01 33 16 3.8	Final Design Submittals	DESIGN DATA	GA								
		11	01 33 16 3.9	Design Complete Documents	DESIGN DATA	GA								

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						FIO, GA, DA, CR, OR S	OFFICE / NAME	SUBMIT NEEDED BY	APPROVAL NEEDED BY	MATERIAL NEEDED BY	CODE	CORPS RECEIVED DATE	CODE	CORPS RETURNED DATE	
Section 01 33 29.10 SUSTAINABILITY REPORTING															
		1	01 33 29.10 1.5.3.1	Preliminary High Performance and Sustain	PRECON SUBMTL	GA									
		2	01 33 29.10 1.4.1	Sustainability Action Plan	PRECON SUBMTL	GA									
		3	01 33 29.10 1.5.3.1	Preliminary Sustainability eNotebook	PRECON SUBMTL	GA									
		4	01 33 29.10 1.5.3.1	Final High Performance and Sustainable B	CLOSEOUT SUBMTL	FIO									
		5	01 33 29.10 1.5.3.1	Final Sustainability eNotebook	CLOSEOUT SUBMTL	FIO									
		6	01 33 29.10 1.5.3.1	Amended Final Sustainability eNotebook	CLOSEOUT SUBMTL	FIO									
		7	01 33 29.10 1.5.3.1	Amended Final High Performance and Susta	CLOSEOUT SUBMTL	FIO									
		8	01 33 29.10 3.2	Third Party Certification Certificates o	CLOSEOUT SUBMTL	FIO									
Section 01 35 26 GOVERNMENTAL SAFETY REQUIREMENTS															
		1	01 35 26 1.7	Accident Prevention Plan (APP)	PRECON SUBMTL	GA									
		2	01 35 26 1.4	Monthly Exposure Reports	TEST REPORTS	GA									
		3	01 35 26 1.12	Notifications and Reports	TEST REPORTS	FIO									
		4	01 35 26 1.12.2	Accident Reports	TEST REPORTS	GA									
		5	01 35 26 1.12.3	LHE Inspection Reports	TEST REPORTS	GA									
		6	01 35 26 1.6.1.5	Crane Operators/Riggers	CERTIFICATES	GA									
		7	01 35 26 1.7.2.2	Standard Lift Plan	CERTIFICATES	GA									
		8	01 35 26 1.7.2.3	Critical Lift Plan	CERTIFICATES	GA									
		9	01 35 26 1.8	Activity Hazard Analysis (AHA)	CERTIFICATES	GA									
		10	01 35 26 1.9.1	Confined Space Entry Permit	CERTIFICATES	GA									
		11	01 35 26 1.9.1	Hot Work Permit	CERTIFICATES	GA									
		12	01 35 26 1.12.4	Certificate of Compliance	CERTIFICATES	FIO									
		13	01 35 26 1.14	License Certificates	CERTIFICATES	GA									
		14	01 35 26 1.14.1	Radiography Operation Planning Work Shee	CERTIFICATES	GA									
Section 01 45 00.00 10 QUALITY CONTROL															
		1	01 45 00.00 10 3.2	Contractor Quality Control (CQC) Plan	PRECON SUBMTL	GA									
		2	01 45 00.00 10 3.9	Verification Statement	TEST REPORTS	FIO									
Section 01 45 35 Special Inspection For Seismic-Resisting Systems															
		1	01 45 35 3.1.1	SIOR Letter of Acceptance	PRECON SUBMTL	GA									
		2	01 45 35 3.1.1	Project Manual	PRECON SUBMTL	GA									
		3	01 45 35 3.1.1	Project Manual	PRECON SUBMTL	GA									
		4	01 45 35 3.1.1	Written Practices	PRECON SUBMTL	FIO									
		5	01 45 35 3.1.3	Written Practices	PRECON SUBMTL	FIO									
		6	01 45 35 3.1.1	NDT Procedures and Equipment Calibration	PRECON SUBMTL	FIO									

SUBMITTAL REGISTER (ER 415-1-10)

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CONTRACTOR: PRIM

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Activity No.	TRANS MITTAL No.	ITEM No.	SPEC PARAGRAPH No.	DESCRIPTION OF SUBMITTAL	TYPE OF SUBMITTAL	CLASSIFI CATION	REVIEWER	CONTRACTOR SCHEDULE DATES			CONTRACTOR ACTION		GOVERNMENT ACTION	
						FIO, GA, DA, CR, OR S	OFFICE / NAME	SUBMIT NEEDED BY	APPROVAL NEEDED BY	MATERIAL NEEDED BY	CODE	CORPS RECEIVED DATE	CODE	CORPS RETURNED DATE
		7	01 45 35 3.1.3	NDT Procedures and Equipment Calibration	PRECON SUBMTL	FIO								
		8	01 45 35 3.1.1	Daily Reports	TEST REPORTS	FIO								
		9	01 45 35 3.1.3	Daily Reports	TEST REPORTS	FIO								
		10	01 45 35 3.1.1	Biweekly Reports	TEST REPORTS	FIO								
		11	01 45 35 3.1.2	Biweekly Reports	TEST REPORTS	FIO								
		12	01 45 35 2.1	Fabrication Plant	CERTIFICATES	FIO								
		13	01 45 35 2.1	Certificate of Compliance	CERTIFICATES	FIO								
		14	01 45 35 1.5.17	Special Inspector of Record	CERTIFICATES	GA								
		15	01 45 35 1.5	Special Inspector	CERTIFICATES	GA								
		16	01 45 35 3.1.1	Qualification Records	CERTIFICATES	FIO								
		17	01 45 35 3.1.3	Qualification Records	CERTIFICATES	FIO								
		18	01 45 35 3.1.1	Interim Final Report	CLOSEOUT SUBMTL	FIO								
		19	01 45 35 3.1.3	Interim Final Report	CLOSEOUT SUBMTL	FIO								
		20	01 45 35 2.1	Comprehensive Final Report	CLOSEOUT SUBMTL	GA								
		21	01 45 35 3.1.1	Comprehensive Final Report	CLOSEOUT SUBMTL	GA								
		22	01 45 35 3.1.3	Comprehensive Final Report	CLOSEOUT SUBMTL	GA								

Section 01 50 00 Temporary Construction Facilities And Controls

		1	01 50 00 1.3	Construction Site Plan	PRECON SUBMTL	GA								
		2	01 50 00 3.4.1	Traffic Control Plan	PRECON SUBMTL	GA								
		3	01 50 00 1.4	Backflow Preventers	CERTIFICATES	FIO								

Section 01 57 19 Temporary Environmental Controls

		1	01 57 19 1.5.1	Preconstruction Survey	PRECON SUBMTL	FIO								
		2	01 57 19 1.10	Solid Waste Management Permit	PRECON SUBMTL	GA								
		3	01 57 19 1.5.2	Regulatory Notifications	PRECON SUBMTL	GA								
		4	01 57 19 1.6	Environmental Protection Plan	PRECON SUBMTL	GA								
		5	01 57 19 3.2.1.2	Stormwater Notice of Intent	PRECON SUBMTL	GA								
		6	01 57 19 1.6.9.1	Dirt and Dust Control Plan	PRECON SUBMTL	GA								
		7	01 57 19 1.5.5	Employee Training Records	PRECON SUBMTL	GA								
		8	01 57 19 1.5.4	Environmental Manager Qualifications	PRECON SUBMTL	GA								
		9	01 57 19 3.2.1.3	Inspection Reports	TEST REPORTS	GA								
		10	01 57 19 3.7.2.1	Solid Waste Management Report	TEST REPORTS	GA								
		11	01 57 19 1.5.5	Employee Training Records	CERTIFICATES	GA								
		12	01 57 19 1.5.5	Erosion and Sediment Control Inspector	CERTIFICATES	GA								
		13	01 57 19 3.2.1.4	Stormwater Pollution Prevention Plan Com	CLOSEOUT SUBMTL	GA								
		14	01 57 19 3.2.1.5	Stormwater Notice of Termination	CLOSEOUT SUBMTL	GA								
		15	01 57 19 3.7.1	Waste Determination Documentation	CLOSEOUT SUBMTL	GA								
		16	01 57 19 3.7.3.5	Disposal Documentation for Hazardous and	CLOSEOUT SUBMTL	GA								

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						FIO, GA, DA, CR, OR S	OFFICE / NAME	SUBMIT NEEDED BY	APPROVAL NEEDED BY	MATERIAL NEEDED BY	CODE	CORPS RECEIVED DATE	CODE	CORPS RETURNED DATE	
		17	01 57 19 1.5.5	Assembled Employee Training Records	CLOSEOUT SUBMTL	GA									
		18	01 57 19 1.10	Solid Waste Management Permit	CLOSEOUT SUBMTL	GA									
		19	01 57 19 3.7.2.1	Solid Waste Management Report	CLOSEOUT SUBMTL	GA									
		20	01 57 19 3.7.3.1	Hazardous Waste/Debris Management	CLOSEOUT SUBMTL	GA									
		21	01 57 19 1.5.2	Regulatory Notifications	CLOSEOUT SUBMTL	GA									
		22	01 57 19 3.7.2.1	Sales Documentation	CLOSEOUT SUBMTL	GA									
		23	01 57 19 3.7.2.1	Contractor Certification	CLOSEOUT SUBMTL	FIO									
		24	01 57 19 3.2.1.5	As-Built Topographic Survey	CLOSEOUT SUBMTL	FIO									
Section 01 57 19.00 37 INDOOR AIR QUALITY (IAQ) MANAGEMENT															
		1	01 57 19.00 37 1.3	Indoor Air Quality (IAQ) Management Plan	PRECON SUBMTL	GA									
		2	01 57 19.00 37 1.3.2	Air Contamination Testing	TEST REPORTS	FIO									
		3	01 57 19.00 37 1.3.2	LEED	CLOSEOUT SUBMTL	FIO									
Section 01 74 19 CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT															
		1	01 74 19 1.5	Records	CLOSEOUT SUBMTL	FIO									
Section 01 78 00 CLOSEOUT SUBMITTALS															
		1	01 78 00 1.3.2	As-Built Record of Equipment and Materia	PRODUCT DATA	FIO									
		2	01 78 00 1.6.1	Warranty Management Plan	PRODUCT DATA	FIO									
		3	01 78 00 1.6.5	Warranty Tags	PRODUCT DATA	FIO									
		4	01 78 00 1.4	Spare Parts Data	PRODUCT DATA	FIO									
		5	01 78 00 1.5	Preventative Maintenance	MFRS INSTR	FIO									
		6	01 78 00 1.5	Condition Monitoring (Predictive Testing	MFRS INSTR	FIO									
		7	01 78 00 1.5	Inspection	MFRS INSTR	FIO									
		8	01 78 00 1.6.1	Instructions	MFRS INSTR	FIO									
		9	01 78 00 1.7	Operation and Maintenance Manuals	O&M DATA	FIO									
		10	01 78 00 1.3.1	Record Drawings	CLOSEOUT SUBMTL	FIO									
		11	01 78 00 1.9	Interim Form DD1354	CLOSEOUT SUBMTL	GA									
		12	01 78 00 1.9	Checklist for Form DD1354	CLOSEOUT SUBMTL	GA									
Section 01 78 23 OPERATION AND MAINTENANCE DATA															
		1	01 78 23 1.4	O&M Database	O&M DATA	GA									
		2	01 78 23 3.1.1	Training Plan	O&M DATA	GA									
		3	01 78 23 3.1.3	Training Outline	O&M DATA	GA									
		4	01 78 23 3.1.2	Training Content	O&M DATA	GA									
		5	01 78 23 3.1.4	Training Video Recording	CLOSEOUT SUBMTL	GA									
		6	01 78 23 3.1.6	Validation of Training Completion	CLOSEOUT SUBMTL	GA									
Section 02 41 00 DEMOLITION															
		1	02 41 00 1.9	Existing Conditions	PRECON SUBMTL	GA									
		2	02 41 00 1.2.1	Demolition Plan	CERTIFICATES	GA									
All															

SUBMITTAL REGISTER (ER 415-1-10)

TITLE AND LOCATION: PN 79443 SOF HP Training Center-

DATE: 8/28/2018

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CONTRACT NUMBER: W912PM18R0003 NA

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						FIO, GA, DA, CR, OR S	OFFICE / NAME	SUBMIT NEEDED BY	APPROVAL NEEDED BY	MATERIAL NEEDED BY	CODE	CORPS RECEIVED DATE	CODE	CORPS RETURNED DATE
		3	02 41 00 1.6	Notification	CERTIFICATES	GA								

Attachment 2

Instructions for Contractors Completing
ENG FORM 4025-R
&
ENG FORM 4025-R

Instructions for Contractors Completing ENG FORM 4025-R

- A. Enter date the submittal is submitted.
- B. Enter the Transmittal Number of the submittal.

The Transmittal Number shall have the following format:

A - B - C

- Where:
- A - is the specification section
 - B - is a consecutive number where 1 would be the first transmittal under the given specification section, 2 would be the second transmittal, etc.
 - C - is a consecutive number where 1 would be the first resubmittal, 2 the second, etc.

Examples of Transmittal Numbers under Specification
Section 01 33 00:

01 33 00-1
01 33 00-2
01 33 00-1-1 (first resubmittal of 01 33 00-1)
01 33 00-3

- C. Enter name and address of Corps of Engineers reviewing office.
- D. Enter name and address of Contractor.
- E. Enter contract number.
- F. If this is the first submittal of information for this item number, check the box for "New Submittal". If not, check the box for "Resubmittal".
- G. If the "Resubmittal" box is checked, enter the previous Transmittal No.
- H. Enter the specification section that applies to this Transmittal Form. A separate Transmittal Form shall be used for submittals under separate sections of the specifications.
- I. Enter name and location of project.
- J. Indicate whether the submittal is "For Information Only (FIO)" or for "Government

Approval (Gov't Approval)".

K. Enter the Item No. as identified on the Submittal Register.

L. Enter the Description of the item submitted as identified on the Submittal Register.

M. Enter information as necessary. When a sample of material or Manufacturer's Certificate of Compliance is transmitted, indicate "Sample" or "Certification" See Note 8 of ENG Form 4025-R.

N. Enter the number of copies of submittal data attached.

O. Enter the specification paragraph number as identified on the Submittal Register using the following format:

Spec. Section - Paragraph number

P. Enter information as necessary.

Q. Enter Contractor Action Code. See reverse side of ENG Form 4025 for applicable codes.

R. A check shall be placed in the "Variation" column when a submittal is not in accordance with the plans and specifications. Attach a written statement describing the variation.

S. Review code assigned by the Government reviewer.

T. Contractor or Government review comments. Government review comments may also be placed on a separate sheet of paper.

U. Print Name of Contractor reviewee.

V. Signature of Contractor reviewer.

W. Number of enclosures being returned to the Contractor by the Government reviewer.

X. Name and Title of Approving Government Employee.

Y. Signature of Government approving authority.

Z. Date of review by the Government.

Other: In submitting manufacturer's literature or similar information, the Contractor shall clearly identify the item proposed for use.

TRANSMITTAL OF SHOP DRAWINGS, EQUIPMENT DATA, MATERIAL SAMPLES, OR MANUFACTURER'S CERTIFICATES OF COMPLIANCE For use of this form, see ER 415-1-10; the proponent agency is CECW-CE.	DATE A	TRANSMITTAL NO. B
--	------------------	-----------------------------

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

TO: C	FROM: D	CONTRACT NO. E	CHECK ONE: <input type="checkbox"/> THIS IS A NEW TRANSMITTAL F <input type="checkbox"/> THIS IS A RESUBMITTAL OF TRANSMITTAL G
-----------------	-------------------	--------------------------	---

SPECIFICATION SEC. NO. <i>(Cover only one section with each transmittal)</i> H	PROJECT TITLE AND LOCATION I	THIS TRANSMITTAL IS FOR: <i>(Check one)</i> <input type="checkbox"/> FIO <input type="checkbox"/> GA <input type="checkbox"/> DA <input type="checkbox"/> CR <input type="checkbox"/> DA/CR <input checked="" type="checkbox"/> DA/GA J
--	--	---

ITEM NO. <small>(See Note 3)</small>	DESCRIPTION OF SUBMITTAL ITEM <small>(Type size, model number/etc.)</small>	SUBMITTAL TYPE CODE <small>(See Note 8)</small>	NO. OF COPIES	CONTRACT DOCUMENT REFERENCE		CONTRACTOR REVIEW CODE	VARIATION <small>Enter "Y" if requesting a variation (See Note 6)</small>	USAGE ACTION CODE <small>(Note 9)</small>
				SPEC. PARA. NO.	DRAWING SHEET NO.			
a.	b.	c.	d.	e.	f.	g.	h.	i.
K	L	M	N	O	P	Q	R	S

REMARKS T	I certify that the above submitted items had been reviewed in detail and are correct and in strict conformance with the contract drawings and specifications except as otherwise stated. <table style="width:100%;"> <tr> <td style="width:50%; text-align: center;">U NAME OF CONTRACTOR</td> <td style="width:50%; text-align: center;">✓ SIGNATURE OF CONTRACTOR</td> </tr> </table>	U NAME OF CONTRACTOR	✓ SIGNATURE OF CONTRACTOR
U NAME OF CONTRACTOR	✓ SIGNATURE OF CONTRACTOR		

SECTION II - APPROVAL ACTION

ENCLOSURES RETURNED <small>(List by item No.)</small> W	NAME AND TITLE OF APPROVING AUTHORITY X	SIGNATURE OF APPROVING AUTHORITY Y	DATE Z
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TRANSMITTAL OF SHOP DRAWINGS, EQUIPMENT DATA, MATERIAL SAMPLES, OR MANUFACTURER'S CERTIFICATES OF COMPLIANCE For use of this form, see ER 415-1-10; the proponent agency is CECW-CE.	DATE	TRANSMITTAL NO.
--	------	-----------------

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

TO:	FROM:	CONTRACT NO.	CHECK ONE: <input type="checkbox"/> THIS IS A NEW TRANSMITTAL <input type="checkbox"/> THIS IS A RESUBMITTAL OF TRANSMITTAL _____
-----	-------	--------------	--

SPECIFICATION SEC. NO. <i>(Cover only one section with each transmittal)</i>	PROJECT TITLE AND LOCATION	THIS TRANSMITTAL IS FOR: <i>(Check one)</i> <input type="checkbox"/> FIO <input type="checkbox"/> GA <input type="checkbox"/> DA <input type="checkbox"/> CR <input type="checkbox"/> DA/CR <input type="checkbox"/> DA/GA
--	----------------------------	---

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

REMARKS	I certify that the above submitted items had been reviewed in detail and are correct and in strict conformance with the contract drawings and specifications except as otherwise stated.		
	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%;">NAME OF CONTRACTOR</td> <td style="width:50%;">SIGNATURE OF CONTRACTOR</td> </tr> </table>	NAME OF CONTRACTOR	SIGNATURE OF CONTRACTOR
NAME OF CONTRACTOR	SIGNATURE OF CONTRACTOR		

SECTION II - APPROVAL ACTION

ENCLOSURES RETURNED <i>(List by item No.)</i>	NAME AND TITLE OF APPROVING AUTHORITY	SIGNATURE OF APPROVING AUTHORITY	DATE
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INSTRUCTIONS

1. Section I will be initiated by the Contractor in the required number of copies.
2. Each Transmittal shall be numbered consecutively. The Transmittal Number typically includes two parts separated by a dash (-). The first part is the specification section number. The second part is a sequential number for the submittals under that spec section. If the Transmittal is a resubmittal, then add a decimal point to the end of the original Transmittal Number and begin numbering the resubmittal packages sequentially after the decimal.
3. The "Item No." for each entry on this form will be the same "Item No." as indicated on ENG FORM 4288-R.
4. Submittals requiring expeditious handling will be submitted on a separate ENG Form 4025-R.
5. Items transmitted on each transmittal form will be from the same specification section. Do not combine submittal information from different specification sections in a single transmittal.
6. If the data submitted are intentionally in variance with the contract requirements, indicate a variation in column h, and enter a statement in the Remarks block describing the detailed reason for the variation.
7. ENG Form 4025-R is self-transmitting - a letter of transmittal is not required.
8. When submittal items are transmitted, indicate the "Submittal Type" (*SD-01 through SD-11*) in column c of Section I.
Submittal types are the following:

SD-01 - Preconstruction	SD-02 - Shop Drawings	SD-03 - Product Data	SD-04 - Samples	SD-05 - Design Data	SD-06 - Test Reports
SD-07 - Certificates	SD-08 - Manufacturer's Instructions	SD-09 - Manufacturer's Field Reports	SD-10 - O&M Data	SD-11 - Closeout	
9. For each submittal item, the Contractor will assign Submittal Action Codes in column g of Section I. The U.S. Army Corps of Engineers approving authority will assign Submittal Action Codes in column i of Section I. The Submittal Action Codes are:

A -- Approved as submitted.	F -- Receipt acknowledged.
B -- Approved, except as noted on drawings. Resubmission not required.	X -- Receipt acknowledged, does not comply with contract requirements, as noted.
C -- Approved, except as noted on drawings. Refer to attached comments. Resubmission required.	G -- Other action required (<i>Specify</i>)
D -- Will be returned by separate correspondence.	K -- Government concurs with intermediate design. (<i>For D-B contracts</i>)
E -- Disapproved. Refer to attached comments.	R -- Design submittal is acceptable for release for construction. (<i>For D-B contracts</i>)
10. Approval of items does not relieve the contractor from complying with all the requirements of the contract.

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05/16

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distribution list

-- End of Section Table of Contents --

SECTION 01 33 16

DESIGN DATA (DESIGN AFTER AWARD)
05/16

PART 1 GENERAL

1.1 SUMMARY

After award, develop the accepted proposal into the completed design, as described herein. Use a collaborative, integrated design process for all stages of project delivery with comprehensive performance goals for site development, energy, water, material selection, indoor environmental quality, and waste diversion. Ensure incorporation of these goals in project delivery. Consider all stages of the building lifecycle, including deconstruction, rehabilitation, re-purposing, or demolition.

1.2 REFERENCES

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

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO)

ISO 19005-3 (2012) Document Management -- Electronic Document File Format for Long-Term Preservation -- Part 3: Use of ISO 32000-1 with Support for Embedded Files (PDF/A-3)

ISO 32000-1 (2008) Document Management -- Portable Document Format -- Part 1: PDF 1.7

NATIONAL INSTITUTE OF BUILDING SCIENCES (NIBS)

NBIMS-US (V3) National BIM Standard - United States

NCS (V6) United States National CAD Standard

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 1110-1-2909 (2012) Geospatial Data and Systems

ERDC/ITL TR-12-1 (2015) A/E/C Graphics Standard, Release 2.0

ERDC/ITL TR-12-6 (2015) A/E/C CAD Standard - Release 6.0

U.S. ARMY CORPS OF ENGINEERS SAVANNAH DISTRICT (CESAS)

SAS Des Manl (2015) Savannah District Design Manual for Military Construction

U.S. DEPARTMENT OF DEFENSE (DOD)

UFC 4-010-06 (2016; with Change 1) Cybersecurity of Facility-Related Control Systems

1.3 DEFINITIONS

1.3.1 Designer of Record (DOR)

Professional Registered members of the Contractor's Design-Build team that check, approve, sign, date, and certify, prior to submitting the deliverables to the Government, that the D-B design submittals comply with the contract requirements.

The DOR's stamp, sign, and date each design drawing and other design deliverables under their responsible discipline at each design submittal stage. The DOR(s) are responsible for maintaining the integrity of the design and for compliance with the contract requirements through construction and documentation of the as-built condition by coordination, review and approval of extensions of design, material, equipment and other construction submittals, review and approval or disapproval of requested deviations to the accepted design or to the contract, coordination with the Government of the above activities, and by performing other typical professional design responsibilities.

1.3.2 Government Furnished Material (GFM)

Government material that may be incorporated into, or attached to, an end item to be delivered under a contract or which may be consumed in the performance of a contract. It includes, but is not limited to, raw and processed material, parts, components, assemblies, and small tools and supplies.

1.3.3 Advanced Modeling

A subset of geospatial technologies as defined in [EM 1110-1-2909](#) to include BIM, CIM, GIS, and CAD. Advanced Modeling is comprised of models and drawings that form a digital representation of the project, or part thereof, that are comprised of model elements with facility data.

1.3.4 Model Element

A self-contained graphical element with a unique identification that is used to populate a model, and whose behavior and properties are defined by facility/site data and software processes. Model elements can represent a physical entity, such as a pump, a concrete wall, or a utility vault and range from the simple to the complex and can be custom modified.

1.3.5 USACE Minimum Modeling Matrix (M3)

The USACE Minimum Modeling Matrix (M3) describes the minimum modeling and data requirements by defining the level of development (LOD) and element grade.

1.3.6 Facility Data

Non-graphical data attached to surface and subsurface components for both building and site model elements that describe various facility characteristics such as parametric values that drive physical sizes, material definitions (e.g. wood, metal), manufacturer data, industry standards (e.g. AISC steel properties), location, and project identification numbers. Facility data can also define supplementary physical entities that are not shown graphically in the model, such as the system of a duct, hardware on a door, content of conduit, site surface,

alignment, levee, channel or transformer properties.

1.3.7 Industry Foundation Class (IFC)

IFC are a standard and file format used for the exchange of model elements and data; see <http://www.iai-tech.org>. In the context of this Section, IFC does not mean "Issued For Construction".

1.3.8 Model Uses

A Model Use is a method or strategy of applying modeling during a facility's life cycle to achieve one or more specific objectives. Reference [NBIMS-US](#) for the definitive list of Model Uses and definitions.

1.3.9 USACE BIM/CIM Platform Configuration Standards - Templates, Workspaces, Catalogs, and Environments

1.3.9.1 Bentley AECOsims and InRoads Workspace

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

1.3.9.2 USACE Revit Templates

The USACE Revit templates are discipline specific and include family content pertinent to that discipline. The templates share standard symbology such as annotation families, line styles, and text styles. The templates include pre-defined shared parameters.

1.3.10 USACE CAD/BIM Technology Center

The USACE CAD/BIM Technology Center hosts all standard content for USACE. This content can be accessed through the CAD/BIM Technology Center website, <https://cadbim.usace.army.mil>.

1.4 ORDER OF PRECEDENCE

In the event of a conflict or inconsistency between any of the requirements within the Contract, precedence is applied:

- a. Any portions of the accepted proposal which both conform to and exceed the requirements of the solicitation.
- b. The provisions of the solicitation.
- c. All other provisions of the accepted proposal.
- d. Any design products including, but not limited to, plans, specifications, engineering studies and analyses, shop drawings, and equipment installation drawings. These are "deliverables" under the contract are not part of the contract itself. Design products must conform to all provisions of the contract, in the order of precedence.

1.5 PRECONSTRUCTION ACTIVITIES

1.5.1 Design Quality Control Plan

Submit a Design Quality Control Plan in accordance with Section 01 45 00.00 10 QUALITY CONTROL before design may proceed.

1.5.2 Meetings and Conferences

1.5.2.1 Post Award Conference

The Government will conduct a post award conference at the project site, as soon as possible after Contract award, coordinated with issuance of the notice to proceed (NTP). Participation by the Contractor and major subcontractor representatives is mandatory. All designers need not attend this first meeting. The government will provide an agenda, meeting goals, meeting place, and meeting time to participants prior to the meeting.

As a minimum the following will be addressed during the conference: determination and introduction of contact person and their authorities; contract administration requirements; discussion of expected project progress processes; and coordination of subsequent meeting.

- a. The government will introduce the Government project delivery team members, facility users, facility command representatives, and installation representatives.
- b. Introduce key personal, major subcontractors and other needed staff.
- c. Define expectations and duties of each participant.
- d. Develop a meeting roster with complete contact information including name, office, project role, phone, mailing and physical address, and e-mail address for distribution to all participants. Also, provide minutes of the meeting to all participants.

1.5.2.2 Initial Design Conference

After Contract award, conduct the initial design conference, and provide a record of the meeting. All Designers of Record must participate in the conference. The primary purpose of the meeting is to make sure any needs are assigned and due dates established, as well as points of contact identified. The initial design conference may be scheduled and conducted at the project installation after the Post Award Conference and prior to initiation of significant preliminary design development, although it is recommended that the partnering process be initiated at the time of or before the initial design conference. Limit any design work conducted after award and prior to this conference to site work.

1.5.2.3 Advanced Modeling Kick-Off Meeting

Conduct an Advanced Modeling Kick-Off Meeting prior to submission of the Advanced Modeling PxP, within 45 days after Notice to Proceed. Required meeting attendance includes, at a minimum, the DOR, the design drawing and modeling specialist and the Geographic District BIM Manager or delegate.

The intent of this meeting is to coordinate the expectations for the Advanced Modeling PxP.

1.5.2.4 Advanced Modeling PxP Demonstration Meeting

Within 30 days after the acceptance of the Advanced Modeling PxP and M3, conduct a demonstration to review the Plan for clarification, and to verify the functionality of planned Model technology workflow and processes. If modifications are required, complete the modifications and resubmit the Advanced Modeling PxP performing a subsequent demonstration for Government acceptance.

1.5.2.5 Pre-Construction Conference

Before starting any construction activities, jointly conduct an administrative conference with the Government to discuss any outstanding requirements and to review local installation requirements. It is possible there will be multiple Pre-Construction Conferences based on the configuration of the design packages. Provide minutes of the meeting(s) to all participants.

1.6 SUBMITTALS

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

Approval Level Designation	Definition
G	Government approval
no designation	for information only
D	Designer of Record approval
C	Government Conformance Review of Design
R	Designer of Record Approval and Government Conformance Review
A	Designer of Record Approval and Government Approval
S	inclusion in the Sustainability Notebook, in conformance to Section 01 33 29.10 SUSTAINABILITY REPORTING

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

SD-01 Preconstruction Submittals

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

Design Quality Control Plan; G, RO

Initial Design Conference

Preconstruction Conference

DCM Procedures; G, RO

Submittal Register; G, RO

SD-05 Design Data

Design and Code Checklists; G, C

Interim Design Submittals; G, R

Conference Documentation

Final Design Submittals; G, R

Design Complete Documents; G, C

1.7 DESIGN QUALITY CONTROL

1.7.1 Design And Code Checklists

Develop and utilize appropriate discipline-specific checklists during the design and quality control of each submittal. Submit these completed checklists with each design submittal, as applicable, as part of the project documentation. See Section 01 45 00.00 10 Contractor Quality Control and paragraph FIRE PROTECTION AND LIFE SAFETY CODE REVIEW for a sample Fire Protection and Life Safety Code Review checklist.

1.7.2 Advanced Modeling Project Execution Plan (PxP)

Develop an Advanced Modeling Project Execution Plan ("Plan" or "PxP") documenting mandatory and Contractor-elected BIM Uses, analysis technologies and workflows. Submit the PxP within 45 days after issuance of Notice to Proceed.

Use the USACE ADVANCED MODELING PROJECT EXECUTION PLAN (PxP) Template located at the USACE CAD/BIM Technology Center website to develop an acceptable Plan and update to include platforms and processes to meet the requirements of the project.

1.7.2.1 M3 Template

Use the M3 Template located at the USACE CAD/BIM Technology Center website and submit as part of the Advanced Modeling PxP.

1.7.2.2 Model Uses

Mandatory Model Uses are predefined in the Project Execution Plan (PxP) and cannot be modified. Identify additional elected Model Uses in the PxP.

1.8 DELIVERY, STORAGE, AND HANDLING

1.8.1 Electronic Design Submittal

Provide identical copies of discs for approval, for each submittal required. Provide quantities and sizes indicated in the distribution list at the end of this specification section.

1.8.1.1 Malicious Content

Scan all electronic files for malicious viruses using commercially available scanning program that is routinely updated to identify and remove

current virus threats.

1.8.1.2 Storage Media

Provide project data on disc-based (DVD±R/RW) media. Provide the full submittal on one single disc whenever possible. When separation of the submittal is required separate deliverables onto separate media. Document any media divisions in the PXP for approval by the Contracting Officer.

- a. Directly print identification of contents onto storage media. Do not provide adhesived labels. Include the name of the submittal, project, project location, Contract number, Designer of Record firm/Prime Contractor company's name, title of submission, and security classification (in accordance with the applicable security classification labeling regulations) on the label. If multiple discs are provided, clearly document the contents of each disc on the label.
- b. Include the name and contact information of the individual who produced the final data disc to ensure that any problems with the data or media can be easily resolved.
- c. When browsed on any computer, the disc displays the following folders and their associated content:
 - (1) Submittal files (containing all submittal data)
 - (2) All supporting documents associated with the submittal
 - (3) Readme containing one TXT, PDF, or HTML file with general use information, organizational instructions, and basic preparer contact information.

1.8.2 Advanced Model File Packaging

Execute the following actions for all design drawing and modeling files:

1.8.2.1 Bentley AECOsims, InRoads, MicroStation

Compress files with all options.

1.8.2.2 Autodesk Revit, Civil3D, AutoCAD

- a. Purge unused
- b. Audit
- c. Compress

1.8.3 PDF File Packaging

Utilize PDF file format in accordance with [ISO 32000-1](#) and [ISO 19005-3](#). Provide files from original sources, text-searchable, and saved in "Standard" (uncompressed) resolution whenever possible.

1.8.3.1 Bookmarking

- a. Bookmark drawing submittal PDF sets to include one Parent Bookmark per Discipline and one Child Bookmark per sheet within each Discipline. Format Parent Bookmarks as "Discipline" (e.g. Architectural). Format

Child Bookmarks as "Sheet ID Sheet Title" (e.g. A-101 First Floor Plan).

- b. Bookmark specification submittal PDF sets using the SpecsIntact Print Processing PDF Print/Publish feature, combining processed sections into one PDF document. Insert the Submittal Register into the file where specified by Section 01 33 00 SUBMITTAL PROCEDURES and bookmark.
- c. Bookmark design analysis and calculation submittal PDF sets to include one Parent Bookmark per design analysis section and one Child Bookmark per major paragraph per section. Format Parent Bookmarks as "Section" (e.g. Architectural). Format Child Bookmarks as "major paragraph designation Sheet Title" (e.g. 2.1 Primary Facility Functions).

1.8.3.2 Hyperlinking

Hyperlink all reference annotation symbology (e.g. section cut symbology, detail callout symbology, elevation callout symbology) to the sheet referenced by the annotation.

1.8.4 Encryption

Encrypt deliverable data as directed by Resident Office Engineer. Document the encryption in the PXP.

1.8.5 Hardcopy Design Submittal

Print hard copy submittals directly from the electronically packaged PDF files. Provide quantities and sizes as indicated in the distribution list at the end of this specification section.

The Designer(s) of Record stamps and signs the original full size hard copy sheets as Released For Construction. Provide distribution from this set.

PART 2 PRODUCTS

2.1 ADVANCED MODELING DOCUMENTS

Provide all of the following documents with each design submittal.

2.1.1 Submitted Files List

Provide list of all submitted electronic files including a description, directory, and file name for each file submitted. Identify which files have been produced from the Model and Facility Data. For all Sheet files, include a list of the sheet titles and sheet numbers.

2.1.2 Advanced Modeling Submittal Checklist

Complete the USACE BIM/CIM Advanced Modeling Submittal Checklist and include with each submittal. Download the Checklist from the USACE CAD/BIM Technology Center website.

2.1.3 Advanced Modeling Electronic Files

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

2.1.3.1 3D Interactive Review Model

Provide a copy of each BIM and CIM Model in an approved interactive review format. Use Autodesk Navisworks, Autodesk Design Review Form (DWFx), Bentley Navigator, Adobe 3D PDF, Google Earth (KMZ), or other Government Approved format documented in the PxP for the 3D Interactive Review Model format. Software shall be most recent version at Contract award unless noted otherwise.

2.1.3.2 Industry Foundation Class (IFC) Coordination View

Provide an IFC Coordination View for all deliverables. Provide exported property set data for all IFC supported named building elements. Submit all IFC models in the IFC2x3 Coordination View V2.0 schema.

2.1.3.3 Quality Control (QC) Reports

As a minimum, include the following reports:

2.1.3.3.1 Model Standards Checks and Reports

Provide QC checks demonstrating adherence to the NCS v6.0 BIM Implementation section. Identify and report non-compliant elements and submit a corrective action plan. Provide the Government with detailed justification and request Government acceptance for any non-compliant elements that the Contractor proposes to be allowed to remain in the Model. Verify the following for the Model(s) and Facility Data set:

- a. No undefined, incorrectly defined, or duplicated elements.
- a. No errors when opening.
- c. No broken Links, References, or X-References.
- d. Minimized extraneous information.
- e. Content uses the coordinate system defined in the approved PxP.
- f. Models share a common alignment point.
- g. For a Design Complete or Record Submittal; no unloaded Links, References, or X-References exist.

2.1.3.3.2 Graphics Standards Checks and Report

Provide QC checks on all graphic deliverables demonstrating that the fonts, dimensions, symbology and other construction document formatting are compliant with the requirements of this specification. Identify and report non-compliant content.

2.1.3.3.3 CAD Standards Checks and Report

Provide QC checks on CAD Output demonstrating that filenames, sheet borders, layer/level names, and symbology are compliant with the requirements of this specification. Identify and report non-compliant content.

2.1.3.3.4 Interference Management (3D Coordination) Checks and Report

Execute Interference Management checks and provide a summary of the results noting total hard interferences (e.g., mechanical vs. structural, or mechanical vs. mechanical, overlaps in the same location) and soft interferences (e.g., conflicts regarding equipment clearance, service access, fireproofing, insulation, code space requirements).

2.1.3.3.5 Additional Parameters

Additional QC parameters as deemed appropriate for the Project may be developed and documented in the Advanced Modeling PxP.

2.1.4 Advanced Modeling Re-Submittals

If components of an Advanced Modeling submittal are rejected, provide the following for each Advanced Modeling Re-Submittal, in addition to re-submittal information required by Section 01 33 00 SUBMITTAL PROCEDURES:

- a. Re-submit all components required under paragraph ADVANCED MODELING PACKAGE, including a new Advanced Modeling Checklist and updated content in response to Government comments.
- b. Provide a copy of all Government review comments.
- c. Provide a response to each Government review comment for back check.

2.2 DESIGN DRAWINGS

From advanced model files, produce design drawings that describe the scope of the Contract for all required submittals including all interim and final deliverables.

2.2.1 Electronic Drawing Files

Provide electronic drawing files in PDF format for each project drawing in the design set.

2.2.2 Drawing Index

Provide an index of drawings sheet as part of the drawing set, and an electronic table of all drawings submitted. Include the electronic file name, the sheet reference number, the sheet number, and the sheet title containing the data for each drawing.

2.2.3 Shop Drawings Used as Design Drawings

Design drawings may be prepared similar to shop drawings to minimize construction submittals after the Design Complete Submittals. Prepare and submit with the design drawings, appropriate connection, fabrication, layout, and product specific drawings.

2.2.3.1 Drawing Format For Shop Drawings Used as Design Drawings

Use the Contractor-originated drawings as the basis for the record drawings. Conform shop drawings included as design documents with the same drawing requirements such as drawing format, sheet size, layering, lettering, and title block used in design drawings.

2.2.3.2 Identification of Shop Drawings Used as Design Drawings

Indicate which shop drawings are being submitted as design drawings in the transmittal letter.

2.2.4 Seal on Documents

Sign, date and seal all Contractor-originated design drawings by the registered architect or the registered engineer of the respective discipline. This is the seal of the Designer of Record for that drawing. Application of the electronic seal and signature accepts responsibility for the work shown thereon.

2.3 SPECIFICATIONS

Provide design specifications in accordance with the Savannah District Design Manual ([SAS Des Manl](#)). Submit a bundled specification package in PDF format for each design package. As a minimum, bookmark each specification section in the bundled package. Also, submit the source files used to create the PDF.

2.4 DESIGN ANALYSIS

Prepare, organize, and present a design analysis in accordance with the Savannah District Design Manual.

2.4.1 Design Requirements and Provisions

Include subparts for each major design discipline and basic project design requirements for each discipline that justify and validate design decisions to include, but not limited to: life cycle cost effectiveness

2.4.1.1 Civil

Include soil analysis and survey data, site design, site improvements, planting and landscaping, paving, grading and drainage, water, waste-water and soil treatment, contaminant containment, utilities systems analysis and design, and provisions for airfields, ports and railroads, if required.

2.4.1.2 Environmental

Include an impact assessment checklist covering air, water and noise effects from the project and construction; worker health and safety; HTRW remediation cleanup and action levels; transportation and disposal regulation requirements; quality control for chemical sampling/analysis; wetlands determination (tidal and nontidal); special wildlife, plant, and endangered species considerations; ground water, waterway and floodplain protection assessment; pollution prevention control requirements; and design measures to be implemented (i.e., construction site sediment and erosion control requirements by Federal, state and local governments); and hazardous material management, natural and cultural resources, and environmental permits.

2.4.1.3 Architectural

Include space allowance, functional layout, unique features, interior design, furniture planning, signage, accessibility, security, air barriers, energy conservation and sustainable design to include site analysis focusing on orientation, space-mass composition, materials used and details

with respect to image, safety, maintenance and cost effectiveness, and historical context.

2.4.1.4 Structural

Include foundation, structural, seismic, hardened structure, nuclear radiation and blast protection systems analysis and design.

2.4.1.5 Mechanical

Include heating, ventilation and air conditioning systems, refrigeration, plumbing, elevators and cranes, energy conservation, pollution control, noise and vibration control, heating and chilled water distribution, gas distribution, fuel storage and dispensing, and process systems design.

2.4.1.6 Electrical

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

2.4.1.7 Fire Protection and Life Safety

Include building construction, exit requirements, fire extinguishing systems, fire protection water supplies, surge analysis, and alarm and detection systems analysis and design.

2.4.1.8 Physical Security

Include fencing, vaults, protective lighting, security systems, locks, arms rooms, controlled substances, entrances, guard facilities, classified material, patrol roads, clear zones, restricted areas, surveillance and penetration resistance.

2.4.1.9 Cybersecurity

Include Cybersecurity documentation for control system design for the security controls and Control Correlation Identifier (CCIs) applied to the control system along with assumptions made regarding CCI implementation and information required by others. Cybersecurity documentation requirements shall be in accordance with paragraph 5.2 of [UFC 4-010-06](#), Cybersecurity of the Facility-Related Control Systems.

2.4.2 Operations and Maintenance (O&M) Provisions

Identify design provisions made to enhance and to reduce the cost of operating and maintaining the facility when completed. Identify any special safety considerations or occupational health related considerations that may affect operation and maintenance activities as a result of the final design.

2.4.3 Design Analysis Packaging

Assemble design analysis in a single volume with a table of contents if possible. Include a cover page in the basis of design for each discipline indicating the project title and locations, contract number, table of contents, and tabbed separations or bookmarks for quick reference. At a

minimum tab or bookmark for each discipline.

2.4.4 Calculations

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

PART 3 EXECUTION

3.1 DESIGN SUBMITTALS

Include all deliverable products and associated support documents described in Part 2 of this specification with each design submittal. For items that the designer feels are not applicable, show the item - NA.

3.2 DESIGN SUBMITTALS PHASES

The stages of design submittals described below define requirements with respect to process and content. Determine how to best plan and execute the design and review process for the project, within the parameters listed below. As a minimum, provide at least one interim design submittal, at least one final design submittal before construction of a design package may proceed, and at least one Design Complete submittal that documents the accepted design.

3.2.1 Interim Design Submittals

Submit either a single interim design for review, representing a complete package with all design disciplines, or split the interim design into smaller, individual design packages as deemed necessary for fast-track construction purposes. This is not necessarily a hold point for the design process; the Contractor may designate the interim design submittal(s) as a snapshot and proceed with design development at its own risk.

3.2.1.1 Interim Design Development Management

Maintain a fully functional configuration management system as described herein to track design revisions, regardless of whether or not there is a need for a formal interim design development review.

3.2.1.2 Fast-Tracking

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

3.2.1.3 Over-the-Shoulder Progress Review

There will be no over-the-shoulder progress reviews or electronic-only formats submitted for review as these are not permitted on this project.

3.2.2 Final Design Submissions

After acceptance of the interim design package, revise the design package to incorporate the Projnet, DrChecks comments generated and resolved, perform and document a back-check review and submit the final design package.

3.2.3 Design Complete Submittals

After the final design submission and review conference for a design package, revise the design package to incorporate the Projnet, DrChecks comments generated and resolved in the final review conferences, perform and document a back-check review and submit the final, design complete documents, which represents released for construction documents.

3.3 DESIGN PLATFORM AND FILE FORMATS

Design the project using the systems and platforms defined below:

3.3.1 BIM

The BIM submittal format is Bentley Systems AECOsim, Autodesk Revit. Provide the BIM submittals as fully operable, compatible, and editable within the native BIM/CIM tools.

3.3.2 CIM

The CIM submittal format is Bentley Systems InRoads, Autodesk Civil 3D. Provide the CIM submittals as fully operable, compatible, and editable within the native BIM/CIM tools.

3.3.3 CAD

3.3.3.1 Native CAD Authoring Content

All content produced through CAD authoring software outside of any object/element based BIM or CIM platform must be compliant with [ERDC/ITL TR-12-1](#) and [ERDC/ITL TR-12-6](#). Bentley MicroStation Seed Files and Autodesk AutoCAD Template Files, most recent version at the time of Contract award. Download from the CAD/BIM Technology Center website as part of the A/E/C Work Structure.

3.3.3.2 CAD Extracted From BIM/CIM Authoring Platforms

Provide editable CAD sheet files extracted from the BIM or CIM files. CAD content exported from a BIM or CIM modeling platform must comply with [ERDC/ITL TR-12-1](#) and [NCS BIM Implementation](#) section, "2.0 Clarifications".

3.4 ADVANCED MODELING REQUIREMENTS

3.4.1 BIM and CIM Modeling Requirements

3.4.1.1 Minimum Modeling Requirements

Model to the requirements of the USACE M3 as identified in the approved Advanced Modeling PxP.

3.4.1.2 Graphics and Layer Standards

- a. All content produced with object/element based BIM and CIM authoring software platforms must be compliant with [ERDC/ITL TR-12-1](#).
- b. All content produced with layer-centric BIM or CIM authoring software must be compliant with [ERDC/ITL TR-12-6](#) and [ERDC/ITL TR-12-1](#).

3.4.1.3 USACE Platform Configuration Standards

USACE Bentley Workspace, most recent version at the time of Contract award. Download from the USACE CAD/BIM Technology Center website as part of the A/E/C Work Structure. USACE Revit Templates, most recent version at the time of Contract award. Download from the USACE CAD/BIM Technology Center website and, if required, upgrade to the Contract approved software version.

3.4.1.4 Classification

Include Facility Data referencing one or more classification system(s) identified in the M3 for all modeled elements.

3.4.1.5 Space/Room Data

In the model, include spatial data defining actual net square footage and data to develop the room finish schedule, including room names and numbers. Include program information to verify design space against programmed space, using this information to validate area quantities.

3.4.1.6 BIM Coordinate System

- a. Coordinate System: Geographic
- b. Zone (for State Plane or UTM):
- c. Horizontal Units of Measure: US Survey Feet
- d. Vertical Units of Measure: Feet
- e. Horizontal Datum: NAD 83/2011

3.4.1.7 CIM Coordinate System

- a. Coordinate System: Geographic
- b. Zone (for State Plane or UTM):
- c. Horizontal Units of Measure: US Survey Feet
- d. Vertical Units of Measure: Feet
- e. Horizontal Datum: NAD 83/2011
- f. Vertical Datum: NAVD 88

3.4.1.8 Modeling Schedules

Comply with the **NCS** BIM Implementation section, part "2.4 Schedules". Produce schedules from, and link to, the Facility/Site Data within the Model. Document any exceptions in the PxB and submit for review.

3.4.1.9 Details and Enlarged Sections

Comply with the **NCS** BIM Implementation section, part "3.2 Model Coordination and Delivery". Derive all details and enlarged sections necessary for construction from the Model when possible. For those details and enlarged sections not derived directly from the Model, verify that

geometry and data depicting the details and enlarged sections are consistent with Model elements. Details with significant drafted content such as 'standard' and 'typical' details cannot contradict the model and must utilize the model as an underlay when possible for the purposes of verification and coordination. Three dimensional, isometric, and section isometric details derived from the model are preferred. Create details and enlarged sections that are not derived from the Model using native authoring tools within the Model or be embedded within the Model.

3.4.1.10 Drawing Indices

Comply with the [NCS](#) BIM Implementation section, part "2.3 Sheet Organization". Where BIM authoring platform supports it, derive drawing indices from a model-driven schedule.

3.4.2 CAD

All content produced through layer-centric CAD authoring software outside of any object/element based BIM or CIM platform must be compliant with [ERDC/ITL TR-12-6](#) and [ERDC/ITL TR-12-1](#).

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

3.5 DESIGN CONFIGURATION MANAGEMENT (DCM)

3.5.1 Procedures

Develop and maintain effective, DCM procedures to control and track all revisions to the design documents subsequent to the Interim Design Submission and continuing through submission of the As-Built documents. After the final design is accepted, this process provides control of and documents revisions to the accepted design (See Document 00 73 00 Special Contract Requirement: Deviating From the Accepted Design). Submit the [DCM procedures](#) within the Design Quality Control Plan.

- a. Include authorities and concurrences in the DCM system to authorize revisions, including documentation as to why the revision is required.
- b. An internal system may be used with interactive Government concurrences or the Government's "DrChecks Design Review and Checking System" may be used.
- c. Make the DCM data available to the Government reviewers at all times.

3.5.2 Tracking Design Review Comments

Although an internal system for overall design configuration management is allowed, use the DrChecks Design Review and Checking System to initiate, respond to, resolve and track Government design review comments.

The Government will set up the project in DrChecks. Throughout the design process parties enter, track, and back-check comments using the DrChecks system. Designers of Record annotate comments timely and specifically to indicate exactly the action to be taken or why the action is not required. After the design review conference and prior to the next design submittal for the package, the DORs annotate those comments that require DOR action or design revision to show how and where it has been addressed in the

design documents. These procedures are part of the required design configuration management plan. Flag comments considered critical by the conference participants.

3.5.2.1 DrChecks Initial Account Set-Up

Identify a contact person within the office to act as the administrator for all Contractor personnel, including subcontractors, that will be accessing the PROJNET DrChecks system. Through the Contracting Officer, coordinate with the Project Manager and the District PROJNET administrator for system access, system instruction and comment process instructions.

PROJNET contains an introductory file and other tutorial material that can be accessed once user accounts have been established. Upon log in, select Portals/User Documentation.

3.5.2.2 DrChecks Review Comments

Annotate and resolve all comments prior to the next submittal. Include the DrChecks comments and responses in the design analysis for record in the next design submittal for the package.

- a. Upon review of comments prior to the design review conference, the DOR(s) evaluate the comments. Include exactly what action will be taken or why action is not required.
- b. After the review conference, the DOR(s) formally respond to each applicable comment in DrChecks a second time, prior to the next submittal, clearly indicating what action was taken and what drawing/spec/analysis changed. Designers of Record are encouraged to directly contact reviewers to discuss and agree to the formal comment responses rather than relying only on DrChecks and review meetings to discuss comments. With the next design submittal, reviewers will back-check answers to the comments against the new submittal, in addition to reviewing additional design work.
- c. Clearly annotate in DrChecks those comments that require effort outside the requirements of the contract. Do not proceed with work outside the contract until a modification to the contract is properly executed.

3.6 DISCIPLINE DESIGN REQUIREMENTS

Provide interim design deliverables that comply with requirements of the Savannah District Design Manual ([SAS Des Man1](#)). In addition to compliance with SAS Design Manual, submittals shall include specific items listed below.

- a. Interim Design Submittal: Architectural wall types, wall tags, and wall details; AV and ESS infrastructure design on floor plan, minimum
- b. Final Design Submittal: complete door and hardware schedules/sets; equipment packages for AV and ESS equipment; locations of all floor boxes (power, NIPR, SIPR, and AV) dimensioned on plans and fully coordinated

Complete designs of the FF&E, AV, and ESS packages shall be included in the Base Bid. These designs shall include but not be limited to complete building infrastructure, specific equipment listings, manufacturer's cut sheets, equipment riser wiring diagrams, and elevations/details of the wall

and floor cover plate connections. Refer to technical sections of this Request for Proposal for additional information.

3.7 INTERIM DESIGN REQUIREMENTS

At least one interim design submittal, review and review conference is required for each design package (except that the Contractor may, upon Government approval, skip the interim design submission and proceed directly to final design of the sitework and utilities package). Additional interim design conferences may be scheduled, as needed, to ensure continued Government concurrence with the design work. Include the interim submittal review periods and conferences in the Section 01 32 01 PROJECT SCHEDULE and indicate in periodic schedule updates what part of the design work is at what percentage of completion. See also paragraph INTERIM DESIGN DEVELOPMENT REVIEW WAIVER for a waiver to the formal interim design review.

3.7.1 Submission Review

After receipt of an Interim Design submission, the Government requires 21 calendar days after receipt of the submission to review and comment on the interim design submittal. For smaller design packages, especially those that involve only one or a few separate design disciplines, the parties may agree on a shorter review period or alternative review methods through the partnering process.

- a. For each interim design review submittal, the Contracting Officer will furnish a single consolidated, validated set of comments from the various design sections and from other concerned agencies involved in the review process using the DrChecks Design Review and Checking System. The review will be for conformance with the technical requirements of the Contract.
- b. The Government reserves the right to reject design document submittals if comments are deemed significant.
- c. Furnish disposition of all comments, in writing, through DrChecks. If there are technical disagreements with any comments, clearly outline, with justification, the reasons for disagreement and noncompliance within five calendar days after receipt of these comments.
- d. The Contractor is cautioned that if it believes the action required by any comment exceeds the requirements of this contract, that it should take no action and notify the Contracting Officer in writing immediately.

3.7.2 Interim Review Conference

Hold an Interim Review conference for each design submittal at either the installation or as agreed upon as part of the partnering process. Attendees include, at a minimum, the DOR(s) involved in development of the design submittal. Schedule the conference to take place the week after the receipt of the comments. Notify the Contracting Officer of any comments that with concurrence would require further design development.

3.7.3 Conference Documentation

3.7.3.1 Minutes and Comment Process

Provide meeting minutes within two work days after the conference adjourns, and enter final resolution of all comments into DrChecks. Include copies of comments, annotated with comment action agreed on, with the minutes.

- a. Resolve issues remaining open after the conference adjourns by immediate follow-on action to close the issue within 30 calendar days.
- b. Incorporate comments as agreed upon during the conference.

3.7.3.2 Availability

In order to facilitate the Government code and contract conformance reviews, identify, track resolution of, and maintain all comments and action items generated during the design review process. Make this available to the designers and reviewers prior to the subsequent design reviews.

3.8 FINAL DESIGN REQUIREMENTS

Provide [final design submittals](#) that comply with requirements of the Savannah District Design Manual for Government review and acceptance.

- a. The Government requires 21 calendar days after receipt of the submission to review and comment on the final design submittal.
- b. Hold a Final Review conference at either the installation or as agreed upon as part of the partnering process. Attendees include, at a minimum, the DOR(s) involved in development of the design submittal. Schedule the conference to take place the week after the receipt of the comments. Notify the Contracting Officer of any comments that with concurrence would require further design development.
- c. Include any permits required by the contract for each package submitted.
- d. In order to expedite the final design review, prior to the conference, ensure that the design configuration management data and all review comment resolutions are up-to-date.
- e. Perform independent technical reviews and back-checks of previous comment resolutions, as required by Section 01 45 00.00 10 QUALITY CONTROL.

3.8.1 Design Drawings

Submit drawings complete with all contract requirements incorporated into the documents to provide a 100 percent design for each package submitted. In addition to all native Advanced Modeling files, provide separate electronic files in a PDF format.

3.8.2 Geo-Referenced Data

Capture geo-referenced coordinates of all changes that will be made to the existing site (facility footprint, utility line installations and alterations, roads, parking areas, etc) as a result of this contract.

Close-out requirements at the as-built stage, require final geo-referenced GIS Database of the new facility along with all exterior modifications. The Government will incorporate this data set into the Installation's GIS Masterplan or Enterprise GIS System. See also, Section 01 78 00 CLOSEOUT SUBMITTALS.

3.8.3 Design Analysis

Provide a design analysis with calculations necessary to validate and support all design work submitted. Expand and advance calculations and information presented in the interim design stage to the current level of design. The responsible DOR(s) stamp, sign and date the design analysis.

3.8.4 Specifications

Provide specifications 100 percent complete and in final form.

3.8.5 Submittal Register

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

3.8.6 Final Framed Rendering and Copies

Provide the final original color rendering, one full size photographic reproduction(s) of the original rendering, and the photographic negative. Mount original and reproductions on acid free board, matted with metal frames, and utilizing non-glare glass. Print the project name, location, and Architect/Engineer/Contractor firm's name on the matting.

Ship the rendering, the photographic copies, and the negative in resilient packaging to ensure damage-free delivery. Deliver to the party identified by the Contracting Officer.

3.9 DESIGN COMPLETE - ISSUED FOR CONSTRUCTION (IFC) DOCUMENT REQUIREMENTS

After the Final Design Submission and Review Conference, revise the design documents for the design package to incorporate the comments generated and resolved in the final review conference. Perform and document a back-check review and submit the final, [design complete documents](#). The deliverable includes all documentation and supporting design analysis in final form, as well as the final review comments, disposition and the back-check. As part of the quality assurance process, the Government may perform a review of the released for construction documentation. Promptly correct any errors or omissions found during the Government review.

3.10 ACCEPTANCE AND RELEASE FOR CONSTRUCTION

After acceptance of the Design Complete Construction Document(s) the Contracting Officer will allow construction to start for that design package.

Government review and acceptance of design submittals is for contract conformance only and does not relieve the Contractor from responsibility to fully adhere to the requirements of the contract, including the Contractor's accepted proposal, or limit the Contractor's responsibility of design as prescribed under Special Contract Requirement: "Responsibility of the Contractor for Design" or limit the Government's rights under the terms

of the contract. The Government reserves the right to rescind inadvertent acceptance of design submittals containing contract deviations not separately and expressly identified in the submittal for Government consideration and approval.

3.11 SUBMITTAL DISTRIBUTION, MEDIA AND QUANTITIES

3.11.1 Submittal Distribution and Quantities

Submittals to the Government during design shall be mailed using overnight mailing service. The addresses to where each copy shall be emailed are listed below, these are in addition to the copies being sent to the SOCOM Resident Office, COE, per Specification 01 33 00 - SUBMITTAL PROCEDURES. Each submittal shall be accompanied by a transmittal letter which indicates the date, design percentage, type of submittal, list of items submitted, transmittal number, and point of contact with telephone number.

1	Deputy Chief of Staff, Engineer U.S. Army Special Operations Command ATTN: AOEN/ Rick Bryant Building E-2929, Desert Storm Dr. Fort Bragg, North Carolina 28310-9110
2	US Army 3rd Special Forces Group (A) ATTN: Daniel Fox / LT Hall 111 Enduring Freedom Dr. Fort Bragg, North Carolina 28310-9110
3	Deputy Chief of Staff, G-6 U.S. Army Special Operations Command ATTN: AOIM/Steve English/Jose De Jesus Building E-2929, Desert Storm Dr. Fort Bragg, North Carolina 28310-9110
4	S4, 95th Civil Affairs Brigade (A) ATTN: AOCA, S-4/Mr. Alphonso Epps Building 3-1828, 2900 Bravo St Fort Bragg, North Carolina 28310-9110
5	1st Special Forces Command ATTN: Engineers, Erick Hume Building H-2313, 9th Infantry Street Stop A Fort Bragg, North Carolina 28310-9110
6	Commander, US Army Corps of Engineers, Wilmington ATTN: Chris Moore (CESAW-PM-C) 69 Darlington Ave Wilmington, North Carolina 28403

7	SOCOM Resident Office ATTN: CESAW-ECP-CC (Paul Cudney) Building 2-2414 Woodruff Street Fort Bragg, North Carolina 28307-0069
8	Directorate of Public Works ATTN: Laura Mathieu (Master Planning) 4300 Butner Rd. (Building 3-1634) Fort Bragg, North Carolina 28310-5000
9	U.S. Army Signal Network Enterprise Center ATTN: Mr. Sherman Huff Building 1-1356 Macomb St. Fort Bragg, North Carolina 28310
10	Sandhills Utility Services (SUS) ATTN: Mr. David Keith Building 2-6503 Butner Road Fort Bragg, North Carolina 28307-2858
11	Old North Utility Services, Inc. (ONUS) ATTN: Larry Knoerl 2941 Logistics Street, Bldg N-6307 Fort Bragg, North Carolina 28310
12	Piedmont Natural Gas (PNG) ATTN: Mr. L. Dennis Ivey 1069 Wilkes Rd Fayetteville, NC 28306
13	U.S. Army Corps of Engineers, Savannah ATTN: CESAS-EN-EP (Samuel Hong) 100 West Oglethorpe Ave. Savannah, GA 31401-3640

The following table lists the number of copies of design submittal requirements for this project. CD's indicated below shall include electronic files of each portion of the submittal.

Agency	Drawings (Full-Size Full Sets)	Drawings (Half-Size Full Sets)	Design Analysis & Specs (Full Sets)	Data CD-ROM or DVD as necessary (PDF & DGN Extensions)	FF&E Submittal	Structural Interior Design Submittal	AV/ESS Submittal
1	0	1	0	1	1 + CD	1 + CD	1 + CD
2	0	2	0	2	2 + CD	2 + CD	2 + CD

Agency	Drawings (Full-Size Full Sets)	Drawings (Half-Size Full Sets)	Design Analysis & Specs (Full Sets)	Data CD-ROM or DVD as necessary (PDF & DGN Extensions)	FF&E Submittal	Structural Interior Design Submittal	AV/ESS Submittal
3	0	0	0	1	0	0	CD
4	0	0	0	1	0	0	0
5	0	1	0	1	CD	CD	CD
6	0	2	2	2	1	1	1
7	2	5	4	3	2	2	2
8	0	5	1	5	1	1	1
9	0	1	1	1	0	0	0
10	0	1	1	1	0	0	0
11	0	1	1	1	0	0	0
12	0	1	1	1	0	0	0
13	0	6	6	6	1	1	1

3.11.2 Web-based Design Submittals

Web-based design submittals will not be acceptable.

3.12 AS-BUILT DOCUMENTS

Provide as-built drawings and specifications in accordance with Section
01 78 00 CLOSEOUT SUBMITTALS.

-- End of Section --

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DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01 33 29.10

SUSTAINABILITY REPORTING

02/17

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SECTION 01 33 29.10
SUSTAINABILITY REPORTING
02/17

PART 1 GENERAL

1.1 REFERENCES

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

AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS (ASHRAE)

ASHRAE 189.1 (2014; ERTA 1-2 2015; ERTA 3-4 2017)
Standard for the Design of
High-Performance Green Buildings Except
Low-Rise Residential Buildings

COUNCIL ON ENVIRONMENTAL QUALITY (CEQ) (WHITE HOUSE)

HPSB Guiding Principles (2016) Guiding Principles for Sustainable
Federal Buildings and Determining
Compliance with the Guiding Principles for
Sustainable Federal Buildings

U.S. DEPARTMENT OF AGRICULTURE (USDA)

FSRIA 9002 Farm Security and Rural Investment Act
Section 9002 (USDA Biopreferred Program)

U.S. DEPARTMENT OF ENERGY (DOE)

Energy Star (1992; R 2006) Energy Star Energy
Efficiency Labeling System (FEMP)

U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)

SNAP (2016) EPA's Significant New Alternatives
Policy Program

U.S. GREEN BUILDING COUNCIL (USGBC)

LEED BDC Ref Guide (2013) USGBC LEED Reference Guide for
Building Design and Construction, v4

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

10 CFR 433.300 Subpart C - Green Building Certification
for Federal Buildings

40 CFR 247 Comprehensive Procurement Guideline for
Products Containing Recovered Materials

1.2 SUMMARY

This specification includes general requirements and procedures for this project to be constructed and documented per the federally mandated High Performance and Sustainable Building or HPSB Guiding Principles (GP), Third Party Certification (TPC) requirements, UFC 1-200-02, High Performance and Sustainable Building Requirements, and other requirements identified in this specification.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. Submittals with an "S" are for inclusion in the Sustainability eNotebook, in conformance to this section. Submit the following in accordance with Section 01 33 00
SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Preliminary High Performance and Sustainable Building Checklist;
G, RO

Sustainability Action Plan; G, RO

Preliminary Sustainability eNotebook; G, RO

SD-11 Closeout Submittals

Final High Performance and Sustainable Building Checklist; S

Final Sustainability eNotebook; S

Amended Final Sustainability eNotebook; S

Amended Final High Performance and Sustainable Building Checklist;
S

Third Party Certification Certificates or Validation; S

1.4 GUIDING PRINCIPLES VALIDATION (GPV)

Provide construction related sustainability documentation to verify achievement of HPSB Guiding Principles Validation (GPV). Provide the following for GPV:

- a. Refer to Attachment 1, HPSB Checklist at the end of this specification section. (Multiple checklists indicate multiple buildings that require HPSB tracking.)
- b. Obtain approval of any changes to the HPSB Checklist from the Contracting Officer at the Preconstruction Conference. Contracting Officer's approval establishes identified HPSB Guiding Principles Requirements as the project's sustainability goals.

No variations or substitutions to the HPSB Checklist are allowed without written consent from the Contracting Officer. Immediately bring to the attention of the Contracting Officer any changes that

impact meeting the approved **HPSB Guiding Principles** Requirements for this project and demonstrate that change will not incur additional construction cost or increase the life cycle cost.

- c. Provide all work, including "S" submittals, required to incorporate the applicable **HPSB Guiding Principles** Requirements indicated on the HPSB Checklist and in this contract.
- d. Provide Sustainability Action Plan
- e. Provide construction related documentation for the project Sustainability eNotebook, and keep updated with regularly-scheduled construction meetings. Include construction related documentation containing the following components;
 - (1) HPSB Checklist
 - (2) Sustainability Action Plan
 - (3) Documentation illustrating HPSB Guiding Principles Requirements compliance (including "S" submittals)

1.4.1 Sustainability Action Plan

Include the following information in the Sustainability Action Plan:

- a. Planned method to achieve each construction related GP requirement.
- b. For each designated construction related **HPSB Guiding Principles** Requirements that is not achieved, provide narrative explaining how mission or activity precludes achieving specific sustainability requirement or goal. Provide analysis of particular requirement and level to which project is able to comply. Final government-approved narrative(s) must be included with the HPSB Checklist submittal.
- c. Name and contact information for: POC responsible for ensuring sustainability goals are accomplished and documentation is assembled.
- d. Include the Indoor Air Quality plan with the Sustainability Action Plan.

1.4.2 Costs

Bear all costs associated with constructing and demonstrating that project complies with approved **HPSB Guiding Principles** Requirements.

1.4.3 Calculations

Provide calculations, product data, labels and certifications required in this section to demonstrate compliance with the **HPSB Guiding Principles** Requirements.

1.4.4 Third Party Certification (TPC) Documentation

This project has been designed for, and must be constructed to attain an **equivalent** sustainability rating of **Silver based on the LEED BDC Ref Guide**. Project **will not be** registered with the TPC Organization. Provide

construction related sustainability documentation, in the format required by the TPC Organization, to the Contracting Officer for approval, and for final approval by the TPC organization. Third Party Certification is met when the Government receives and approves TPC organization documentation or validation. Include the following:

- a. Refer to Attachment 2, TPC Checklist at the end of this specification section. (Multiple checklists indicate multiple buildings that require TPC.)
- b. Obtain approval of the TPC Checklist from the Contracting Officer at the Pre-Construction Conference.

No variations or substitutions to the approved TPC checklist are allowed without written consent from the Contracting Officer. Immediately bring to the attention of the Contracting Officer any project changes that impact meeting the approved TPC Requirements for this project. Demonstrate that change will not: incur additional construction cost; increase the life cycle cost; impact previous TPC Design Review; impact required TPC level.

- c. Complete all work required to incorporate the applicable TPC Requirements.
- d. Maintain the construction related information, and provide replacement pages, in the Sustainability eNotebook pertaining to additions and changes to the approved sustainability requirements. Maintain the Sustainability eNotebook in electronic format. For more explanation, refer to paragraph SUSTAINABILITY eNOTEBOOK. Provide the following components in the Sustainability eNotebook, in addition to the GPV components above:

(1) TPC Checklist

(2) Completed TPC documentation for each identified requirement.
Forward to the Contracting Officer for approval

- e. Provide the following information in the Sustainability Action Plan. Provide this TPC information in addition to the GPV Action Plan items above:

(1) Planned method to achieve each TPC requirement.

(2) For each TPC requirement that is attempted but not achieved, provide narrative explaining how mission or activity precludes achieving specific sustainability requirement or goal. Provide analysis of particular requirement and level to which project is able to comply.

(3) Provide name and contact information for: Sustainability POC and other names of sustainability professionals responsible for ensuring TPC sustainability goals are accomplished and documentation is assembled. Sustainability POCs are also responsible for ensuring GPV required in paragraph GUIDING PRINCIPLES VALIDATION (GPV) above.

- f. Bear all costs associated with constructing and demonstrating that project complies with approved TPC requirements, including but not limited to:
and management for construction related documentation.

- (2) Construction work required to incorporate TPC requirements.
- (3) Submittals required to demonstrating compliance with Government approved TPC checklists.
- (4) Documentation illustrating compliance with TPC requirements.

g. Provide all calculations, product data, and certifications required in this contract to demonstrate compliance with the TPC Requirements of this section.

1.4.5 Third Party Certification (TPC)

1.4.5.1 TPC Registration NOT Required

Achieve Third Party Certification (TPC), by meeting all TPC and project requirements for a level of LEED BDC Ref Guide v4, GBCI GP Assessment, GBI GP Compliance, GBI Green Globes for NC, or Government-approved equivalent TPC sustainability certification or validation. An equivalent TPC organization must demonstrate equivalency for Government consideration and meet the requirements of 10 CFR 433.300, prior to use on the project. Third Party Certification is met when Government receives and has approved TPC organization certificate or validation.

Do not Register project with TPC organization, but provide all documentation to the government LEED/SDD POC using the following format and content:

- a. Project Title First Line: Building Owner (US Army, US Air Force, US Navy or US Marine Corps), Building Name (if known)
- b. Project Title Second Line: MILCON P#, DD1391 Project Name
- c. Project Address: UIC (Installation code), Category code, RPUID (Real Property Unique Identifier) Number
- d. Project Owner Organization: US Army, US Air Force, US Navy or US Marine Corps
- e. Primary Contact, Owner: Agency Project Manager
- f. Building Owner Organization: US Army, US Air Force, US Navy or US Marine Corps
- g. Additional Contact, Building Owner: Public Works Officer, Base Civil Engineer, or Designee

1.4.5.2 TPC Management and Certification

The TPC Certification or validation requires the following:

- a. Refer to Attachment 2, TPC Checklist at the end of this specification section. (Multiple checklists indicate multiple buildings that require TPC.)
- b. Obtain approval of the TPC Checklist from the Contracting Officer at the Pre-Construction Conference.

No variations or substitutions to the approved TPC checklist are allowed without written consent from the Contracting Officer. Immediately bring to the attention of the Contracting Officer any project changes that impact meeting the approved TPC Requirements for this project. Demonstrate that change will not: incur additional construction cost; increase the life cycle cost; impact previous TPC Design Review; impact required TPC certification or validation level.

- c. Complete all work required to incorporate the applicable TPC Requirements.
- d. Maintain the construction related information, and provide replacement pages, in the Sustainability eNotebook pertaining to additions and changes to the approved sustainability requirements. Maintain the Sustainability eNotebook in electronic format. For more explanation, refer to paragraph SUSTAINABILITY eNOTEBOOK. Provide the following components in the Sustainability eNotebook, in addition to the GPV components above:
 - (1) TPC Checklist
 - (2) Completed TPC Online forms for each identified requirements
 - (3) Copy of all correspondence with the TPC organization including proof of TPC registration
 - (4) Documentation illustrating compliance with TPC requirements and additional documentation as requested by the TPC
 - (5) TPC Award Certificate or validation
- e. Provide the following information in the Sustainability Action Plan. Provide this TPC information in addition to the Sustainability Action Plan items above:
 - (1) Planned method to achieve each TPC requirement.
 - (2) For each TPC requirement that is attempted but not achieved, provide narrative explaining how mission or activity precludes achieving specific sustainability requirement or goal. Provide analysis of particular requirement and level to which project is able to comply.
 - (3) Provide name and contact information for: Sustainability POC and other names of sustainability professionals responsible for ensuring TPC sustainability goals are accomplished and documentation is assembled. Sustainability POCs are also responsible for ensuring GPV required in paragraph GUIDING PRINCIPLES VALIDATION (GPV) above.
- f. Bear all costs associated with constructing and demonstrating that project complies with approved TPC requirements, including but not limited to:
 - (1) Final TPC review, certification or validation fees
 - (2) Online (or offline with secure facilities) TPC management and documentation.

- (3) Obtaining TPC certification or validation based on Government-approved sustainability goals.
- (4) Construction work required to incorporate TPC requirements.
- (5) Submittals required to demonstrate compliance with Government approved TPC checklists.
- g. Provide all calculations, product data, and certifications required in this specification to demonstrate compliance with the TPC Requirements.
- h. Provide all online (or offline, with secure facilities) TPC management and documentation.
- i. Provide all required responses to TPC.
- j. Provide TPC Certificates or validation. Use format below to create the Certificate or validation and Letter of Congratulations (when provided). Forward to parties designated by Contracting Officer:
 - (1) Plaque:

Name: Final Building Name. If unknown, provide Form DD1391 Project Name.
 - (2) Certificate or Validation:

Project Title, first line: P-(X); Form DD1391 (Project Name).
Project Title, second line: UIC (Installation code)
 - (3) Letter Congratulations (when provided):

Address letter to Facility's Installation commander Name *or as other wise directed by the government.*
- k. Once Final TPC is achieved, turn over Administrative rights to online TPC to the Public Works Office, Base Civil Engineer, or designee, provided by the Contracting Officer.

1.5 SUSTAINABILITY SUBMITTALS

Provide HPSB Checklist and other documentation in the Sustainability eNotebook to indicate compliance with the sustainability requirements of the project.

1.5.1 High Performance Sustainable Building (HPSB) Checklist

Provide construction documentation that provides proof of and supports compliance with the completed HPSB Checklist.

1.5.1.1 HPSB Checklist Submittals

Submit updated HPSB Checklist with each Sustainability eNotebook submittal. Attach final HPSB Checklist to draft final DD1354 Real Property Record Submittal.

1.5.2 "S" Submittals for Sustainability Documentation

Submit the GPV and TPC sustainability documentation required in this specification as "S" submittals in all affected UFGS Sections. Highlight GPV and TPC compliance data in "S" submittal.

1.5.3 Sustainability eNotebook

Provide and maintain a comprehensive Sustainability eNotebook to document compliance with the sustainability requirements identified in the approved HPSB and TPC Checklist. Sustainability eNotebook must contain all required data to support full compliance with the [HPSB Guiding Principles Requirements](#), including HPSB checklist, Sustainable Action Plan, calculations, labels, certifications and TPC requirements. Sustainability eNotebook is in the form of an Adobe PDF file; bookmarked at each [HPSB Guiding Principles Requirement](#), TPC requirement, and sub-bookmarked at each document. Match format to [HPSB Guiding Principles](#) numbering system indicated herein. Maintain up to date information, spreadsheets, templates, and other required documentation with each current submittal. For TPC projects, provide a second Table of contents using TPC numbering system, for maintaining documentation unique to TPC

Contracting Officer may deduct from the monthly progress payment accordingly if Sustainability eNotebook information is not current, until information is updated and on track per project goals.

1.5.3.1 Sustainability eNotebook Submittal Schedule

Provide Sustainability eNotebook Submittals at the following milestones of the project:

a. [Preliminary Sustainability eNotebook](#)

Submit preliminary Sustainability eNotebook for approval at the Pre-construction conference. Include [Preliminary High Performance and Sustainable Building Checklist](#) and TPC checklist.

b. Construction Progress Meetings. Update GP and TPC documentation in the Sustainability eNotebook and TPC Online tool for each meeting.

c. [Final Sustainability eNotebook](#)

Submit updated Sustainability eNotebook at the Beneficial Occupancy Date (BOD). Final progress payment retainage may be held by Contracting Officer until final sustainability documentation is complete. Submit three electronic copies of the Final Sustainability eNotebook on DVDs to the Government. Include [Final High Performance and Sustainable Building Checklist](#).

d. [Amended Final Sustainability eNotebook](#)

Amend and resubmit the Final Sustainability eNotebook to include post-occupancy corrections, updates, and requirements. Include [Amended Final High Performance and Sustainable Building Checklist](#). Final progress payment retainage may be held by Contracting Officer until amended final sustainability documentation is complete. Submit [three\(3\)](#) final electronic copies of the Amended Final Sustainability eNotebook Submittal on DVDs to the Government no longer than 30 days after the GP, TPC designated data collection period.

1.6 DOCUMENTATION REQUIREMENTS

- a. Incorporate each of the following **HPSB Guiding Principles** Requirements into project construction; and provide documentation that proves compliance with each listed requirement. Items below are organized according to the **HPSB Guiding Principles**. For life-cycle cost analysis requirements, one document with all analyses is acceptable, with Contracting Officer approval.
- b. For each of the following paragraphs that require the use of products listed on Government-required websites, provide documentation of the process used to select products, or process used to determine why listed products do not meet project performance requirements.

1.6.1 Energy Efficient Products

Provide only energy-using products that are **Energy Star** rated, or have the Federal Energy Management Program (FEMP) recommended efficiency. Where **Energy Star** or FEMP recommendations have not been established, provide most efficient products that are life-cycle cost effective. Provide only energy using products that meet FEMP requirements for low standby power consumption. Energy efficient products can be found at: <https://energy.gov/eere/femp/federal-energy-management-program> and <https://www.energystar.gov/>. Provide the following documentation:

Proof that products are labeled energy efficient and comply with the cited requirements.

1.6.2 Indoor Water Use

Provide only water-consuming products that are EPA WaterSense labeled, or the most efficient water fixtures available that meet the requirements of **ASHRAE 189.1** Section 6.3.2, when EPA Watersense products are not available. Provide the following documentation:

For products available with EPA WaterSense labeling, proof that fixtures are labeled EPA WaterSense or **Energy Star**; for all other fixtures, proof they comply with the cited efficiency requirements.

1.6.3 Reduce Volatile Organic Compounds (VOC) (Low Emitting Materials)

Meet the requirements of Table 3-1 at the end of this specification. Provide the following documentation:

Provide certifications or labels that demonstrate compliance with cited requirements.

1.6.4 Indoor Air Quality During Construction

Prior to construction, create indoor air quality plan. Implement IAQ plan during construction and flush building air before occupancy.

For new construction and for renovation of unoccupied existing buildings, indoor air quality plan must meet the requirements of **ASHRAE 189.1** Section 10.3.1.4. (Indoor Air Quality (IAQ) Construction Management), with maximum outdoor air consistent with achieving relative humidity no greater than 60 percent.

Provide documentation showing that after construction ends and prior to occupancy, HVAC filters were replaced and building air was flushed out in accordance with the cited standard.

1.6.5 Recycled Content

Comply with [40 CFR 247](#). Refer to

<https://www.epa.gov/smm/comprehensive-procurement-guidelines-construction-products>

for assistance identifying products cited in [40 CFR 247](#). Selected products must comply with non-proprietary requirements of the Federal Acquisition Regulation, and must meet performance requirements. Provide the following documentation:

- a. Manufacturers' documents stating the recycled content by material, or written justification for claiming one of the exceptions allowed on the cited website.
- b. Substitutions: Submit for Government approval, proposed alternative products or systems that provide equivalent performance and appearance and have greater contribution to project recycled content requirements. For all such proposed substitutions, submit with the Sustainability Action Plan accompanied by product data demonstrating equivalence.

1.6.6 Bio-Based Products

Provide products and material composed of the highest percentage of biobased materials (including rapidly renewable resources and certified sustainably harvested products), consistent with [FSRIA 9002](#) USDA Biopreferred Program, to the maximum extent possible without jeopardizing the intended end use or detracting from the overall quality delivered to the end user. Use only supplies and materials of a type and quality that conform to applicable specifications and standards.

Comply with [FSRIA 9002](#) USDA Biopreferred Program. Refer to <https://www.biopreferred.gov/BioPreferred/> for the product categories and Biopreferred Catalog. Selected products must comply with non-proprietary requirements of the Federal Acquisition Regulation, and must meet performance requirements. Provide the following documentation:

USDA Biopreferred label for each product; for bio-based products used on project but not listed with Biopreferred program, provide bio-based content and percentage.

1.6.7 Ozone Depleting Substances

Meet the requirements of [ASHRAE 189.1](#) Section 9.3.3 Refrigerants for no CFC-based refrigerants in heating ventilation, air conditioning and refrigeration systems (except for fire suppression system requirements, covered elsewhere in this specification). Where feasible, use products from U.S. EPA Significant New Alternatives Policy (SNAP) (<https://www.epa.gov/snap>) or meet the criteria of [SNAP](#). Provide the following documentation:

- a. MSDS sheets for all refrigerants.
- b. Provide label for each product meeting the cited standards.

1.6.8 Waste Material Management (Recycling - Construction)

Divert construction debris from landfill disposal where markets or on-site recycling exists, and provide documentation in accordance with Section 01 74 19 CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.1 SUSTAINABILITY COORDINATION

3.1.1 Coordinating Sustainability Documentation Progress

Provide sustainability focus and coordination at the following meetings to achieve sustainability goals. The designated TPC accredited sustainability professional responsible for GP and TPC documentation must participate in the following meetings to coordinate documentation completion.

- a. Pre-Construction Conference: Discuss the following: TPC and HPSB Checklists, Sustainability Action Plan, Construction submittal requirements and schedule, individuals responsible for achieving each Guiding Principle Requirement and TPC prerequisite and credit.
- b. Construction Progress Meetings: Review GP and TPC sustainability requirements with project team including contractor and sub-contractor representatives. Demonstrate GP and TPC documentation is being collected and updated to the Sustainability eNotebook and TPC Online tool.
 - (1) Facility Turnover Meetings: Review Sustainability eNotebook, and TPC Online submission for completeness and identify any outstanding issues relating to final documentation requirements.
 - (2) Final Sustainability eNotebook Review

3.2 THIRD PARTY CERTIFICATION CERTIFICATES OR VALIDATION

Finalize the sustainability certification or validation process and obtain the TPC Certificate or validation, indicating completion of the projects sustainability goals.

Provide one original framed copy of the certificate or validation, mounted in 1 inch deep metal frames, with double matt, and wire hangers, in location approved by Contracting Officer. Provide two (2) copies of original certificate or validation, and deliver to Contractor Officer, unless otherwise instructed. Provide and hang Plaque in a prominent interior location approved by the Contracting Officer.

3.3 TABLE 3-1 VOLATILE ORGANIC COMPOUNDS (VOC) (LOW EMITTING MATERIALS) REQUIREMENTS

Refer to following table, based on ASHRAE 189.1 section 8.4.2 (Materials), for compliance criteria.

TABLE 3-1 Volatile Organic Compounds (VOC) (Low Emitting Materials) Requirements				
UFGS 01 33 29, Para 1.6.5 Submittal Requirements (Interior Applications Only)				
MATERIAL CATEGORY	EMISSIONS REQUIREMENT		MATERIALS WITH ADDED VOC REQUIREMENT	MATERIAL CATEGORY
Adhesives and Sealants	CDPH/EHLB/Standard method V1.1 (California Section 01350) (Use "office" or "classroom" space limits for all applications)	or	Adhesives (carpet, resilient, wood flooring; panel; primers) Sealants (acoustical; firestop; HVAC Air duct; primers) Caulks	SCAQMD Rule 1168 (Use "other" category for HVAC duct sealant) (for firestop adhesive, UFC 3-600-01 overrides conflicting requirements)
			Aerosol adhesives	Section 3 of Green Seal Standard GS-36 (except: cleaners, solvent cements, and primers used with plastic piping and conduit in plumbing, fire suppression, and electrical systems; HVAC air duct sealants when the application space air temp is less than 40 F (4.5 C).
Paints and Coatings	CDPH/EHLB/Standard method V1.1 (California Section 01350) (Use "office" or "classroom" space limits for all applications)	or	Flat and nonflat topcoats, primers, undercoaters, and anti-corrosive coatings	Green Seal Standard GS-11

TABLE 3-1 Volatile Organic Compounds (VOC) (Low Emitting Materials) Requirements
UFGS 01 33 29, Para 1.6.5 Submittal Requirements (Interior Applications Only)

MATERIAL CATEGORY	EMISSIONS REQUIREMENT		MATERIALS WITH ADDED VOC REQUIREMENT	MATERIAL CATEGORY
Paints and Coatings	CDPH/EHLB/Standard method V1.1 (California Section 01350) (Use "office" or "classroom" space limits for all applications)	or	Concrete/masonry sealers (waterproofing concrete/masonry sealers), concrete curing compounds, dry fog coatings, faux finishing coatings, fire resistive coatings, floor coatings, graphic arts (sign) coatings, industrial maintenance coatings, mastic texture coatings, metallic pigmented coatings, multicolor coatings, pretreatment wash primers, reactive penetrating sealers, recycled coatings, shellacs (clear and opaque), specialty primers, stains, wood coatings (clear wood finishes), wood preservatives, and zinc primers	California Air Resources Board (CARB) Suggested Control Measure for Architectural Coatings or SCAQMD Rule 1113

TABLE 3-1 Volatile Organic Compounds (VOC) (Low Emitting Materials) Requirements UFGS 01 33 29, Para 1.6.5 Submittal Requirements (Interior Applications Only)				
MATERIAL CATEGORY	EMISSIONS REQUIREMENT		MATERIALS WITH ADDED VOC REQUIREMENT	MATERIAL CATEGORY
Paints and Coatings	CDPH/EHLB/Standard method V1.1 (California Section 01350) (Use "office" or "classroom" space limits for all applications)	or	Basement specialty coatings, high-temperature coatings, low solids coatings, stone consolidants, swimming-pool coatings, tub- and tile-refining coatings, and waterproofing membranes	California Air Resources Board (CARB) Suggested Control Measure for Architectural Coatings
Floor Covering Materials	For carpet, all locations: CDPH/EHLB/Standard Method V1.1 (California Section 01350) or label for Section 9 of CDPH/EHLB/Standard Method V1.1 (California Section 01350)		none	none

TABLE 3-1 Volatile Organic Compounds (VOC) (Low Emitting Materials) Requirements UFGS 01 33 29, Para 1.6.5 Submittal Requirements (Interior Applications Only)			
MATERIAL CATEGORY	EMISSIONS REQUIREMENT	MATERIALS WITH ADDED VOC REQUIREMENT	MATERIAL CATEGORY
Composite Wood, Wood Structural Panel, and Agrifiber Products particleboard medium density fiberboard (MDF) wheatboard strawboard panel substrates door cores no added urea-formaldehyde resins including laminating adhesives for composite wood and agrifiber assemblies	Third-party certification (approved by CARB) of California Air Resource Board's (CARB) regulation , Airborne Toxic Control Measure to Reduce Formaldehyde Emissions from Composite Wood Products CDPH/EHLB/Standard method V1.1 (California Section 01350) (Use "office" or "classroom" space limits for all applications) (except: Structural panel components such as plywood, particle board, wafer board, and oriented strand board identified as "EXPOSURE 1," "EXTERIOR," or "HUD-APPROVED" are considered acceptable for interior use.)	none	none

TABLE 3-1 Volatile Organic Compounds (VOC) (Low Emitting Materials) Requirements				
UFGS 01 33 29, Para 1.6.5 Submittal Requirements (Interior Applications Only)				
MATERIAL CATEGORY	EMISSIONS REQUIREMENT		MATERIALS WITH ADDED VOC REQUIREMENT	MATERIAL CATEGORY
Office Furniture Systems and Seating installed prior to occupancy	ANSI/BIFMA X7.1 ANSI/BIFMA X7.1: (95 percent of installed office furniture system workstations and seating units) Section 7.6.2 of ANSI/BIFMA e3 (50 percent of office furniture system workstations and seating units)		none	none
Ceiling and Wall Systems ceiling and wall insulation acoustical ceiling panels tackable wall panels gypsum wall board and panels wall coverings	CDPH/EHLB/Standard method V1.1 (California Section 01350) (Use "office" or "classroom" space limits for all applications)		none	none

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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 A10.34	(2001; R 2012) Protection of the Public on or Adjacent to Construction Sites
ASSE/SAFE A10.44	(2014) Control of Energy Sources (Lockout/Tagout) for Construction and Demolition Operations
ASSE/SAFE Z244.1	(2003; R 2014) Control of Hazardous Energy Lockout/Tagout and Alternative Methods
ASSE/SAFE Z359.0	(2012) Definitions and Nomenclature Used for Fall Protection and Fall Arrest
ASSE/SAFE Z359.1	(2016) The Fall Protection Code
ASSE/SAFE Z359.11	(2014) Safety Requirements for Full Body Harnesses
ASSE/SAFE Z359.12	(2009) Connecting Components for Personal Fall Arrest Systems
ASSE/SAFE Z359.13	(2013) Personal Energy Absorbers and Energy Absorbing Lanyards
ASSE/SAFE Z359.14	(2014) Safety Requirements for Self-Retracting Devices for Personal Fall Arrest and Rescue Systems
ASSE/SAFE Z359.15	(2014) Safety Requirements for Single Anchor Lifelines and Fall Arresters for Personal Fall Arrest Systems
ASSE/SAFE Z359.2	(2017) Minimum Requirements for a Comprehensive Managed Fall Protection Program
ASSE/SAFE Z359.3	(2017) Safety Requirements for Lanyards and Positioning Lanyards
ASSE/SAFE Z359.4	(2013) Safety Requirements for Assisted-Rescue and Self-Rescue Systems, Subsystems and Components

ASSE/SAFE Z359.6 (2016) Specifications and Design
Requirements for Active Fall Protection
Systems

ASSE/SAFE Z359.7 (2011) Qualification and Verification
Testing of Fall Protection Products

ASME INTERNATIONAL (ASME)

ASME B30.20 (2013; INT Oct 2010 - May 2012)
Below-the-Hook Lifting Devices

ASME B30.22 (2016) Articulating Boom Cranes

ASME B30.26 (2015; INT Jun 2010 - Jun 2014) Rigging
Hardware

ASME B30.3 (2016) Tower Cranes

ASME B30.5 (2014) Mobile and Locomotive Cranes

ASME B30.8 (2015) Floating Cranes and Floating
Derricks

ASME B30.9 (2014; INT Feb 2011 - Nov 2013) Slings

ASTM INTERNATIONAL (ASTM)

ASTM F855 (2015) Standard Specifications for
Temporary Protective Grounds to Be Used on
De-energized Electric Power Lines and
Equipment

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)

IEEE 1048 (2003) Guide for Protective Grounding of
Power Lines

IEEE C2 (2017; Errata 1-2 2017; INT 1 2017)
National Electrical Safety Code

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

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

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

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

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

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

U.S. ARMY CORPS OF ENGINEERS (USACE)

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

U.S. 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 1910.333 Selection and Use of Work Practices

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

29 CFR 1915.89 Control of Hazardous Energy
(Lockout/Tags-Plus)

29 CFR 1926 Safety and Health Regulations for
Construction

29 CFR 1926.1400 Cranes and Derricks in Construction

29 CFR 1926.16 Rules of Construction

29 CFR 1926.21 Safety Training and Education

29 CFR 1926.450 Scaffolds

29 CFR 1926.500 Fall Protection

49 CFR 173 Shippers - General Requirements for
Shipments and Packagings

CPL 2.100 (1995) Application of the Permit-Required
Confined Spaces (PRCS) Standards, 29 CFR
1910.146

1.2 DEFINITIONS

1.2.1 Competent Person (CP)

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

1.2.2 Competent Person, Confined Space

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

1.2.3 Competent Person, Cranes and Rigging

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

1.2.4 Competent Person, Excavation/Trenching

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

1.2.5 Competent Person, Fall Protection

The CP, Fall Protection, is a person meeting the competent person requirements as defined in EM 385-1-1, Section 21.c.04 and in accordance with ASSE/SAFE Z359.0, who has been designated in writing by the employer to be responsible for immediate supervising, implementing and monitoring of the fall protection program, who through training, knowledge and experience in fall protection and rescue systems and equipment, is capable of identifying, evaluating and addressing existing and potential fall hazards and, who has the authority to take prompt corrective measures with regard to such hazards.

1.2.6 Competent Person, Scaffolding

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

frame), in accordance with EM 385-1-1.

1.2.7 Competent Person (CP) Trainer

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

1.2.8 High Risk Activities

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

1.2.9 High Visibility Accident

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

1.2.10 Load Handling Equipment (LHE)

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

1.2.11 Medical Treatment

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

1.2.12 Near Miss

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

1.2.13 Operating Envelope

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

1.2.14 Qualified Person (QP)

The QP is a person designated in writing, who, by possession of a recognized degree, certificate, or professional standing, or extensive knowledge, training, and experience, has successfully demonstrated their

ability to solve or resolve problems related to the subject matter, the work, or the project.

1.2.15 Qualified Person, Fall Protection (QP for FP)

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

1.2.16 Recordable Injuries or Illnesses

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

- a. Death, regardless of the time between the injury and death, or the length of the illness;
- b. Days away from work (any time lost after day of injury/illness onset);
- c. Restricted work;
- d. Transfer to another job;
- e. Medical treatment beyond first aid;
- f. Loss of consciousness; or
- g. A significant injury or illness diagnosed by a physician or other licensed health care professional, even if it did not result in (a) through (f) above.

1.2.17 USACE Property and Equipment

Interpret "USACE" property and equipment specified in USACE [EM 385-1-1](#) as Government property and equipment.

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

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

1.3 SUBMITTALS

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

SD-01 Preconstruction Submittals

Accident Prevention Plan (APP); G, RO

SD-06 Test Reports

Monthly Exposure Reports ; G, RO
Notifications and Reports
Accident Reports; G, RO
LHE Inspection Reports; G, RO

SD-07 Certificates

Crane Operators/Riggers; G, RO
Standard Lift Plan; G, RO
Critical Lift Plan ; G, RO
Activity Hazard Analysis (AHA); G, RO
Confined Space Entry Permit; G, RO
Hot Work Permit; G, RO
Certificate of Compliance
License Certificates; G, RO
Radiography Operation Planning Work Sheet; G, RO

1.4 MONTHLY EXPOSURE REPORTS

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

1.5 REGULATORY REQUIREMENTS

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

1.6 SITE QUALIFICATIONS, DUTIES, AND MEETINGS

1.6.1 Personnel Qualifications

1.6.1.1 Site Safety and Health Officer (SSHO)

Provide an SSHO that meets the requirements of EM 385-1-1. The SSHO must ensure that the requirements of 29 CFR 1926.16 are met for the project. Provide a Safety oversight team that includes a minimum of one (1) person at each project site to function as the Site Safety and Health Officer

(SSHO). The SSHO or an equally-qualified Alternate SSHO must be at the work site at all times to implement and administer the Contractor's safety program and government-accepted Accident Prevention Plan. The SSHO and Alternate SSHO must have the required training, experience, and qualifications in accordance with EM 385-1-1.

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

1.6.1.2 Contractor Quality Control (QC) Manager:

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

1.6.1.3 Competent Person Qualifications

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

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

1.6.1.3.1 Competent Person for Confined Space Entry

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

1.6.1.3.2 Competent Person for Scaffolding

Provide a Competent Person for Scaffolding who meets the requirements of EM 385-1-1 and this Section.

1.6.1.3.3 Competent Person for Fall Protection

Provide a Competent Person for Fall Protection who meets the requirements of EM 385-1-1 and this Section.

1.6.1.4 Qualified Trainer Requirements

Individuals qualified to instruct the 40 hour contract safety awareness course, or portions thereof, must meet the definition of a Competent Person Trainer, and, at a minimum, possess a working knowledge of the following subject areas: EM 385-1-1, Electrical Standards, Lockout/Tagout, Fall

Protection, Confined Space Entry for Construction; Excavation, Trenching and Soil Mechanics, and Scaffolds in accordance with 29 CFR 1926.450, Subpart L.

Instructors are required to:

- a. Prepare class presentations that cover construction-related safety requirements.
- 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 are required to answer 80 percent correctly to pass.
- e. Request, review and incorporate student feedback into a continuous course improvement program.

1.6.1.5 Crane Operators/Riggers

Provide Operators meeting the 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 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.

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

The SSHO must:

- a. Conduct daily safety and health inspections and maintain a written log which includes area/operation inspected, date of inspection, identified hazards, recommended corrective actions, estimated and actual dates of corrections. Attach safety inspection logs to the Contractors' daily production report.
- b. Conduct mishap investigations and complete required accident reports. Report mishaps and near misses.
- c. Use OSHA's Form 300 to log work-related injuries and illnesses occurring on the project site for Prime Contractors and subcontractors. Post and maintain the Form 300 on the site Safety Bulletin Board.
- d. Maintain applicable safety reference material on the job site.
- e. Attend the pre-construction conference, pre-work meetings including preparatory meetings, and periodic in-progress meetings.

- f. Review the APP and AHAs for compliance with EM 385-1-1, and approve, sign, implement and enforce them.
- g. Establish a Safety and Occupational Health (SOH) Deficiency Tracking System that lists and monitors outstanding deficiencies until resolution.
- h. Ensure subcontractor compliance with safety and health requirements.
- i. Maintain a list of hazardous chemicals on site and their material Safety Data Sheets (SDS).
- j. Maintain a weekly list of high hazard activities involving energy, equipment, excavation, entry into confined space, and elevation, and be prepared to discuss details during QC Meetings.
- k. Provide and keep a record of site safety orientation and indoctrination for Contractor employees, subcontractor employees, and site visitors.

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

1.6.3 Meetings

1.6.3.1 Preconstruction Conference

- a. Contractor representatives who have a responsibility or significant role in accident prevention on the project must attend the preconstruction conference. This includes the project superintendent, Site Safety and Occupational Health officer, quality control manager, or any other assigned safety and health professionals who participated in the development of the APP (including the Activity Hazard Analyses (AHAs) and special plans, program and procedures associated with it).
- b. Discuss the details of the submitted APP to include incorporated plans, programs, procedures and a listing of anticipated AHAs that will be developed and implemented during the performance of the contract. This list of proposed AHAs will be reviewed at the conference and an agreement will be reached between the Contractor and the Contracting Officer as to which phases will require an analysis. In addition, establish a schedule for the preparation, submittal, and Government review of AHAs to preclude project delays.
- c. Deficiencies in the submitted APP, identified during the Contracting Officer's review, must be corrected, and the APP re-submitted for review prior to the start of construction. Work is not permitted to begin until an APP is established that is acceptable to the Contracting Officer.
- d. The functions of a Preconstruction conference may take place at the Post-Award Kickoff meeting for Design Build Contracts.

1.6.3.2 Safety Meetings

Conduct safety meetings to review past activities, plan for new or changed operations, review pertinent aspects of appropriate AHA (by trade),

establish safe working procedures for anticipated hazards, and provide pertinent Safety and Occupational Health (SOH) training and motivation. Conduct meetings at least once a month for all supervisors on the project location. The SSHO, supervisors, foremen, or CDSOs must conduct meetings at least once a week for the trade workers. Document meeting minutes to include the date, persons in attendance, subjects discussed, and names of individual(s) who conducted the meeting. Maintain documentation on-site and furnish copies to the Contracting Officer on request. Notify the Contracting Officer of all scheduled meetings 7 calendar days in advance.

1.7 ACCIDENT PREVENTION PLAN (APP)

A qualified person must prepare the written site-specific APP. Prepare the APP in accordance with the format and requirements of EM 385-1-1 and this Section. Cover all paragraph and subparagraph elements in EM 385-1-1. The APP must be job-specific and address any unusual or unique aspects of the project or activity for which it is written. The APP must interface with the Contractor's overall safety and health program referenced in the APP in the applicable APP element, and made site-specific. Describe the methods to evaluate past safety performance of potential subcontractors in the selection process. Also, describe innovative methods used to ensure and monitor safe work practices of subcontractors. The Government considers the Prime Contractor to be the "controlling authority" for all work site safety and health of the subcontractors. Contractors are responsible for informing their subcontractors of the safety provisions under the terms of the contract and the penalties for noncompliance, coordinating the work to prevent one craft from interfering with or creating hazardous working conditions for other crafts, and inspecting subcontractor operations to ensure that accident prevention responsibilities are being carried out. The APP must be signed by an officer of the firm (Prime Contractor senior person), the individual preparing the APP, the on-site superintendent, the designated SSHO, the Contractor Quality Control Manager, and any designated Certified Safety Professional (CSP) or Certified Health Physicist (CIH). The SSHO must provide and maintain the APP and a log of signatures by each subcontractor foreman, attesting that they have read and understand the APP, and make the APP and log available on-site to the Contracting Officer. If English is not the foreman's primary language, the Prime Contractor must provide an interpreter.

Submit the APP to the Contracting Officer 21 calendar days prior to the date of the preconstruction conference for acceptance. Work cannot proceed without an accepted APP. Once reviewed and accepted by the Contracting Officer, the APP and attachments will be enforced as part of the contract. Disregarding the provisions of this contract or the accepted APP is cause for stopping of work, at the discretion of the Contracting Officer, until the matter has been rectified. Continuously review and amend the APP, as necessary, throughout the life of the contract. Changes to the accepted APP must be made with the knowledge and concurrence of the Contracting Officer, project superintendent, SSHO and Quality Control Manager. Incorporate unusual or high-hazard activities not identified in the original APP as they are discovered. Should any severe hazard exposure (i.e. imminent danger) become evident, stop work in the area, secure the area, and develop a plan to remove the exposure and control the hazard. Notify the Contracting Officer within 24 hours of discovery. Eliminate and remove the hazard. In the interim, take all necessary action to restore and maintain safe working conditions in order to safeguard onsite personnel, visitors, the public (as defined by ASSE/SAFE A10.34), and the environment.

1.7.1 Names and Qualifications

Provide plans in accordance with the requirements outlined in [EM 385-1-1](#), including the following:

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

1.7.2 Plans

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

1.7.2.1 Confined Space Entry Plan

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

1.7.2.2 [Standard Lift Plan](#) (SLP)

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

1.7.2.3 [Critical Lift Plan](#) - Crane or Load Handling Equipment

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

In addition to the requirements of [EM 385-1-1](#), the critical lift plan must include the following:

- a. For lifts of personnel, demonstrate compliance with the requirements of 29 CFR 1926.1400 and EM 385-1-1.
- c. Multi-purpose machines, material handling equipment, and construction equipment used to lift loads that are suspended by rigging gear, require proof of authorization from the machine OEM that the machine is capable of making lifts of loads suspended by rigging equipment. Demonstrate that the operator is properly trained and that the equipment is properly configured to make such lifts and is equipped with a load chart.

1.7.2.4 Fall Protection and Prevention (FP&P) Plan

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

1.7.2.5 Rescue and Evacuation Plan

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

1.7.2.6 Hazardous Energy Control Program (HECP)

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

1.7.2.7 Excavation Plan

Identify the safety and health aspects of excavation, and provide and prepare the plan in accordance with EM 385-1-1 and Section 31 00 00 EARTHWORK.

1.7.2.8 Site Demolition Plan

Identify the safety and health aspects, and prepare in accordance with

Section 02 41 00 DEMOLITION and referenced sources.

1.8 ACTIVITY HAZARD ANALYSIS (AHA)

Before beginning each activity, task or Definable Feature of Work (DFOW) involving a type of work presenting hazards not experienced in previous project operations, or where a new work crew or subcontractor is to perform the work, the Contractor(s) performing that work activity must prepare an AHA. AHAs must be developed by the Prime Contractor, subcontractor, or supplier performing the work, and provided for Prime Contractor review and approval before submitting to the Contracting Officer. AHAs must be signed by the SSHO, Superintendent, QC Manager and the subcontractor Foreman performing the work. Format the AHA in accordance with EM 385-1-1 or as directed by the Contracting Officer. Submit the AHA for review at least 15 working days prior to the start of each activity task, or DFOW. The Government reserves the right to require the Contractor to revise and resubmit the AHA if it fails to effectively identify the work sequences, specific anticipated hazards, site conditions, equipment, materials, personnel and the control measures to be implemented.

AHAs must identify competent persons required for phases involving high risk activities, including confined entry, crane and rigging, excavations, trenching, electrical work, fall protection, and scaffolding. Documentation of proof of training shall be attached to AHA.

1.8.1 AHA Management

Review the AHA list periodically (at least monthly) at the Contractor supervisory safety meeting, and update as necessary when procedures, scheduling, or hazards change. Use the AHA during daily inspections by the SSHO to ensure the implementation and effectiveness of the required safety and health controls for that work activity.

1.8.2 AHA Signature Log

Each employee performing work as part of an activity, task or DFOW must review the AHA for that work and sign a signature log specifically maintained for that AHA prior to starting work on that activity. The SSHO must maintain a signature log on site for every AHA. Provide employees whose primary language is other than English, with an interpreter to ensure a clear understanding of the AHA and its contents.

1.9 DISPLAY OF SAFETY INFORMATION

1.9.1 Safety Bulletin Board

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

- a. Confined space entry permit.
- b. Hot work permit.

1.9.2 Safety and Occupational Health (SOH) Deficiency Tracking System

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

- a. Date deficiency identified;
- b. Description of deficiency;
- c. Name of person responsible for correcting deficiency;
- d. Projected resolution date;
- e. Date actually resolved.

1.10 SITE SAFETY REFERENCE MATERIALS

Maintain safety-related references applicable to the project, including those listed in paragraph REFERENCES. Maintain applicable equipment manufacturer's manuals.

1.11 EMERGENCY MEDICAL TREATMENT

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

1.12 NOTIFICATIONS and REPORTS

1.12.1 Mishap Notification

Notify the Contracting Officer as soon as practical, but no more than 24 hours, after mishaps, including recordable accidents, incidents, and near misses, as defined in EM 385-1-1, report of injury, illness, load handling equipment (LHE) or rigging mishaps, and property damage. Obtain appropriate medical and emergency assistance and notify fire, law enforcement, and regulatory agencies. Immediate reporting is required for electrical mishaps, to include Arc Flash; shock; uncontrolled release of hazardous energy (includes electrical and non-electrical); load handling equipment or rigging; fall from height (any level other than same surface); and underwater diving. These mishaps will be investigated in depth to identify causes and to recommend hazard control measures.

Within notification include Contractor name; contract title; type of contract; name of activity, installation or location where accident occurred; date and time of accident; names of personnel injured; extent of property damage, if any; extent of injury, if known, and brief description of accident (for example, type of construction equipment used and PPE used). Preserve the conditions and evidence on the accident site until the Government investigation team arrives on-site and Government investigation is conducted. Assist and cooperate fully with the Government's investigation(s) of any mishap.

1.12.2 Accident Reports

- a. Conduct an accident investigation for recordable injuries and illnesses, property damage, and near misses as defined in EM 385-1-1, to establish the root cause(s) of the accident. Complete the applicable USACE Accident Report Form 3394, and provide the report to the Contracting Officer within 5 calendar day(s) of the accident. The Contracting Officer will provide copies of required or special forms.
- b. Near Misses: For Army projects, report all "Near Misses" to the GDA, using local mishap reporting procedures, within 24 hrs. The Contracting Officer will provide the Contractor the required form for LHEs. All other near misses are to be reported on the ENG 3394 form. Near miss reports are considered positive and proactive Contractor safety management actions.
- c. Conduct an accident investigation for any load handling equipment accident (including rigging gear accidents) to establish the root cause(s) of the accident. Complete the LHE 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.

1.12.3 LHE Inspection Reports

Submit LHE inspection reports, required in accordance with EM 385-1-1 and as specified, with Daily Reports of Inspections.

1.12.4 Certificate of Compliance and Pre-lift Plan/Checklist for LHE and Rigging

Provide a FORM 16-1 Certificate of Compliance for LHE entering an activity under this contract and in accordance with EM 385-1-1. Post certifications on the crane.

Develop a Standard Lift Plan (SLP) in accordance with EM 385-1-1 using Form 16-2 Standard Pre-Lift Crane Plan/Checklist for each lift planned. Submit SLP to the Contracting Officer for approval within 15 calendar days in advance of planned lift.

1.13 HOT WORK

1.13.1 Permit and Personnel Requirements

Submit and obtain a written permit prior to performing "Hot Work" (i.e. welding or cutting) or operating other flame-producing/spark producing devices, from the Ft. Bragg Fire Division. A permit is required from the Explosives Safety Office for work in and around where explosives are processed, stored, or handled. A permit will not be issued until requirements are met. Provide at least two 20-pound 4A:20 BC rated extinguishers for normal "Hot Work". The extinguishers must have a current inspection tag, an approved safety pin, and tamper resistant seal. Designate a Fire Watch for "Hot Work". The Fire Watch must be trained in accordance with NFPA 51B and remain on-site for a minimum of one hour after completion of the task or as specified on the hot work permit.

When starting work in the facility, require personnel to familiarize themselves with the location of the nearest fire alarm boxes and place in

memory the emergency phone number. Report fires, no matter how small, to the Ft. Bragg Fire Department immediately.

1.13.2 Work Around Flammable Materials

Obtain services from a NFPA Certified Marine Chemist for "HOT WORK" within or around flammable materials (such as fuel systems or welding/cutting on fuel pipes) or confined spaces (such as sewer wet wells, manholes, or vaults) that have the potential for flammable or explosive atmospheres.

Whenever these materials, except beryllium and chromium (VI), are encountered in indoor operations, local mechanical exhaust ventilation systems that are sufficient to reduce and maintain personal exposures to within acceptable limits must be used and maintained in accordance with manufacturer's instruction and supplemented by exceptions noted in [EM 385-1-1](#).

1.14 RADIATION SAFETY REQUIREMENTS

Submit [License Certificates](#), employee training records, and Leak Test Reports for radiation materials and equipment to the Contracting Officer and Radiation Safety Office (RSO) for all specialized and licensed material and equipment proposed for use on the construction project. Maintain on-site records whenever licensed radiological materials or ionizing equipment are on government property.

Protect workers from radiation exposure in accordance with [10 CFR 20](#), ensuring any personnel exposures are maintained As Low As Reasonably Achievable.

1.14.1 [Radiography Operation Planning Work Sheet](#)

Submit a Radiography Operation Planning Work Sheet to Contracting Officer 14 days prior to commencement of operations involving radioactive materials or radiation generating devices. The Contracting Officer will review this worksheet and submit questions and comments.

Contractors must use primary dosimeters process by a National Voluntary Laboratory Accreditation Program (NVLAP) accredited laboratory.

1.14.2 Site Access and Security

Coordinate site access and security requirements with the Contracting Officer for all radiological materials and equipment containing ionizing radiation that are proposed for use on a government facility. The authorized representative will meet the Contractor at a designated location, ensure safety of the materials being transported, and will escort the Contractor to the job site and return upon completion of the work.

Provide a copy of all calibration records, and utilization records for radiological operations performed on the site.

1.14.3 Loss or Release and Unplanned Personnel Exposure

Loss or release of radioactive materials, and unplanned personnel exposures must be reported immediately to the Contracting Officer, RSO, and Base Security Department Emergency Number.

1.14.4 Site Demarcation and Barricade

Properly demark and barricade an area surrounding radiological operations to preclude personnel entrance, in accordance with EM 385-1-1, Nuclear Regulatory Commission, and Applicable State regulations and license requirements, and in accordance with requirements established in the accepted Radiography Operation Planning Work Sheet.

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

1.14.5 Security of Material and Equipment

Properly secure the radiological material and ionizing radiation equipment at all times, including keeping the devices in a properly marked and locked container, and secondarily locking the container to a secure point in the Contractor's vehicle or other approved storage location during transportation and while not in use. While in use, maintain a continuous visual observation on the radiological material and ionizing radiation equipment. In instances where radiography is scheduled near or adjacent to buildings or areas having limited access or one-way doors, make no assumptions as to building occupancy. Where necessary, the Contracting Officer will direct the Contractor to conduct an actual building entry, search, and alert. Where removal of personnel from such a building cannot be accomplished and it is otherwise safe to proceed with the radiography, position a fully instructed employee inside the building or area to prevent exiting while external radiographic operations are in process.

1.14.6 Transportation of Material

Comply with 49 CFR 173 for transportation of regulated quantities of radioactive material. Notify local fire authorities and the site Radiation Safety Officer (RSO) of any radioactive material use.

1.14.7 Schedule for Exposure or Unshielding

Actual exposure of the radiographic film or unshielding the source must not be initiated until after 5 p.m. on weekdays.

1.14.8 Transmitter Requirements

Adhere to the base policy concerning the use of transmitters, such as radios and cell phones. Obey Emissions control (EMCON) restrictions.

1.15 CONFINED SPACE ENTRY REQUIREMENTS.

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

1.15.1 Entry Procedures

Contractor personnel shall not enter manholes, tunnels, tanks, or confined spaces until such entry complies with the requirements of 29 CFR 1926.21. Government personnel will not enter manholes, tunnels, tanks, or confined spaces until a confined space entry permit has been obtained from the Base Fire Department.

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

1.15.2 Forced Air Ventilation

Forced air ventilation is required for all confined space entry operations and the minimum air exchange requirements must be maintained to ensure exposure to any hazardous atmosphere is kept below its action level.

1.15.3 Sewer Wet Wells

Sewer wet wells require continuous atmosphere monitoring with audible alarm for toxic gas detection.

1.15.4 Rescue Procedures and Coordination with Local Emergency Responders

Develop and implement an on-site rescue and recovery plan and procedures. The rescue plan must not rely on local emergency responders for rescue from a confined space.

SEVERE STORM PLAN

In the event of a severe storm warning, the Contractor must:

- a. Secure outside equipment and materials and place materials that could be damaged in protected areas.
- b. Check surrounding area, including roof, for loose material, equipment, debris, and other objects that could be blown away or against existing facilities.
- c. Ensure that temporary erosion controls are adequate.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.1 CONSTRUCTION AND OTHER WORK

Comply with EM 385-1-1, NFPA 70, NFPA 70E, NFPA 241, the APP, the AHA, Federal and State OSHA regulations, and other related submittals and activity fire and safety regulations. The most stringent standard prevails.

PPE is governed in all areas by the nature of the work the employee is performing. Use personal hearing protection at all times in designated noise hazardous areas or when performing noise hazardous tasks. Safety glasses must be worn or carried/available on each person. Mandatory PPE includes:

- a. Hard Hat
- b. Long Pants

- c. Appropriate Safety Shoes
- d. Appropriate Class Reflective Vests

3.1.1 Worksite Communication

Employees working alone in a remote location or away from other workers must be provided an effective means of emergency communications (i.e., cellular phone, two-way radios, land-line telephones or other acceptable means). The selected communication must be readily available (easily within the immediate reach) of the employee and must be tested prior to the start of work to verify that it effectively operates in the area/environment. An employee check-in/check-out communication procedure must be developed to ensure employee safety.

3.1.2 Hazardous Material Exclusions

Notwithstanding any other hazardous material used in this contract, radioactive materials or instruments capable of producing ionizing/non-ionizing radiation (with the exception of radioactive material and devices used in accordance with EM 385-1-1 such as nuclear density meters for compaction testing and laboratory equipment with radioactive sources) as well as materials which contain asbestos, mercury or polychlorinated biphenyls, di-isocyanates, lead-based paint, and hexavalent chromium, are prohibited. The Contracting Officer, upon written request by the Contractor, may consider exceptions to the use of any of the above excluded materials. Low mercury lamps used within fluorescent lighting fixtures are allowed as an exception without further Contracting Officer approval. Notify the Radiation Safety Officer (RSO) prior to excepted items of radioactive material and devices being brought on base.

3.1.3 Unforeseen Hazardous Material

Contract documents identify materials such as PCB, lead paint, and friable and non-friable asbestos and other OSHA regulated chemicals (i.e. 29 CFR Part 1910.1000). If material(s) that may be hazardous to human health upon disturbance are encountered during construction operations, stop that portion of work and notify the Contracting Officer immediately. Within 14 calendar days the Government will determine if the material is hazardous. If material is not hazardous or poses no danger, the Government will direct the Contractor to proceed without change. If material is hazardous and handling of the material is necessary to accomplish the work, the Government will issue a modification pursuant to FAR 52.243-4, "Changes" and FAR 52.236-2, "Differing Site Conditions."

3.2 PRE-OUTAGE COORDINATION MEETING

Apply for utility outages at least 30 days in advance. As a minimum, the request must 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 and the Installation representative and Public Utilities representative 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.

3.3 CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT)

Provide and operate a Hazardous Energy Control Program (HECP) in accordance with EM 385-1-1, 29 CFR 1910.333, 29 CFR 1915.89, and Paragraph HAZARDOUS ENERGY CONTROL PROGRAM (HECP).

3.4 FALL PROTECTION PROGRAM

Establish a fall protection program, for the protection of all employees exposed to fall hazards. Within the program include company policy, identify roles and responsibilities, education and training requirements, fall hazard identification, prevention and control measures, inspection, storage, care and maintenance of fall protection equipment and rescue and evacuation procedures in accordance with ASSE/SAFE Z359.2 and EM 385-1-1.

3.4.1 Training

Institute a fall protection training program. As part of the Fall Protection Program, provide training for each employee who might be exposed to fall hazards. Provide training by a competent person for fall protection in accordance with EM 385-1-1. Document training and practical application of the competent person in accordance with EM 385-1-1 and ASSE/SAFE Z359.2 in the AHA.

3.4.2 Fall Protection Equipment and Systems

Enforce use of personal fall protection equipment and systems designated (to include fall arrest, restraint, and positioning) for each specific work activity in the Site Specific Fall Protection and Prevention Plan and AHA at all times when an employee is exposed to a fall hazard. Protect employees from fall hazards as specified in EM 385-1-1.

Provide personal fall protection equipment, systems, subsystems, and components that comply with EM 385-1-1, 29 CFR 1926.500 Subpart M, ASSE/SAFE Z359.0, ASSE/SAFE Z359.1, ASSE/SAFE Z359.2, ASSE/SAFE Z359.3, ASSE/SAFE Z359.4, ASSE/SAFE Z359.6, ASSE/SAFE Z359.7, ASSE/SAFE Z359.11, ASSE/SAFE Z359.12, ASSE/SAFE Z359.13, ASSE/SAFE Z359.14, and ASSE/SAFE Z359.15.

3.4.2.1 Additional Personal Fall Protection

In addition to the required fall protection systems, other protection such as safety skiffs, personal floatation devices, and life rings, are required when working above or next to water in accordance with EM 385-1-1. Personal fall protection systems and equipment are required when working from an articulating or extendible boom, swing stages, or suspended platform. In addition, personal fall protection systems are required when operating other equipment such as scissor lifts. The need for tying-off in such equipment is to prevent ejection of the employee from the equipment during raising, lowering, travel, or while performing work.

3.4.2.2 Personal Fall Protection Harnesses

Only a full-body harness with a shock-absorbing lanyard or self-retracting lanyard is an acceptable personal fall arrest body support device. The use of body belts is not acceptable. Harnesses must have a fall arrest attachment affixed to the body support (usually a Dorsal D-ring) and specifically designated for attachment to the rest of the system. Snap hooks and carabiners must be self-closing and self-locking, capable of

being opened only by at least two consecutive deliberate actions and have a minimum gate strength of 3,600 lbs in all directions. Use webbing, straps, and ropes made of synthetic fiber. The maximum free fall distance when using fall arrest equipment must not exceed 6 feet, unless the proper energy absorbing lanyard is used. Always take into consideration the total fall distance and any swinging of the worker (pendulum-like motion), that can occur during a fall, when attaching a person to a fall arrest system. All full body harnesses must be equipped with Suspension Trauma Preventers such as stirrups, relief steps, or similar in order to provide short-term relief from the effects of orthostatic intolerance in accordance with EM 385-1-1.

3.4.3 Fall Protection for Roofing Work

Implement fall protection controls based on the type of roof being constructed and work being performed. Evaluate the roof area to be accessed for its structural integrity including weight-bearing capabilities for the projected loading.

a. Low Sloped Roofs:

- (1) For work within 6 feet of an edge, on a roof having a slope less than or equal to 4:12 (vertical to horizontal), protect personnel from falling by use of personal fall arrest/restraint systems, guardrails, or safety nets. A safety monitoring system is not adequate fall protection and is not authorized. Provide in accordance with 29 CFR 1926.500.
- (2) For work greater than 6 feet from an edge, erect and install warning lines in accordance with 29 CFR 1926.500 and EM 385-1-1.

- ##### b. Steep-Sloped Roofs:
- Work on a roof having a slope greater than 4:1 (vertical to horizontal) requires a personal fall arrest system, guardrails with toe-boards, or safety nets. This requirement also applies to residential or housing type construction.

3.4.4 Horizontal Lifelines (HLL)

Provide HLL in accordance with EM 385-1-1. Commercially manufactured horizontal lifelines (HLL) must be designed, installed, certified and used, under the supervision of a qualified person, for fall protection as part of a complete fall arrest system which maintains a safety factor of 2 (29 CFR 1926.500). The competent person for fall protection may (if deemed appropriate by the qualified person) supervise the assembly, disassembly, use and inspection of the HLL system under the direction of the qualified person. Locally manufactured HLLs are not acceptable unless they are custom designed for limited or site specific applications by a Registered Professional Engineer who is qualified in designing HLL systems.

3.4.5 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.

3.4.6 Rescue and Evacuation Plan and Procedures

When personal fall arrest systems are used, ensure that the mishap victim can self-rescue or can be rescued promptly should a fall occur. Prepare a Rescue and Evacuation Plan and include a detailed discussion of the

following: methods of rescue; methods of self-rescue or assisted-rescue; equipment used; training requirement; specialized training for the rescuers; procedures for requesting rescue and medical assistance; and transportation routes to a medical facility. Include the Rescue and Evacuation Plan within the Activity Hazard Analysis (AHA) for the phase of work, in the Fall Protection and Prevention (FP&P) Plan, and the Accident Prevention Plan (APP). The plan must comply with the requirements of EM 385-1-1, ASSE/SAFE Z359.2, and ASSE/SAFE Z359.4.

3.5 WORK PLATFORMS

3.5.1 Scaffolding

Provide employees with a safe means of access to the work area on the scaffold. Climbing of any scaffold braces or supports not specifically designed for access is prohibited. Comply with the following requirements:

- a. Scaffold platforms greater than 20 feet in height must be accessed by use of a scaffold stair system.
- b. Ladders commonly provided by scaffold system manufacturers are prohibited for accessing scaffold platforms greater than 20 feet maximum in height.
- c. An adequate gate is required.
- d. Employees performing scaffold erection and dismantling must be qualified.
- e. Scaffold must be capable of supporting at least four times the maximum intended load or without appropriate fall protection as delineated in the accepted fall protection and prevention plan.
- f. Stationary scaffolds must be attached to structural building components to safeguard against tipping forward or backward.
- g. Special care must be given to ensure scaffold systems are not overloaded.
- h. Side brackets used to extend scaffold platforms on self-supported scaffold systems for the storage of material are prohibited. The first tie-in must be at the height equal to 4 times the width of the smallest dimension of the scaffold base.
- i. Scaffolding other than suspended types must bear on base plates upon wood mudsills (2 in x 10 in x 8 in minimum) or other adequate firm foundation.
- j. Scaffold or work platform erectors must have fall protection during the erection and dismantling of scaffolding or work platforms that are more than six feet.
- k. Delineate fall protection requirements when working above six feet or above dangerous operations in the Fall Protection and Prevention (FP&P) Plan and Activity Hazard Analysis (AHA) for the phase of work.

1. When scaffolding is in use, they will be inspected daily by the CP, prior to each shift. The inspection will be recorded on the daily safety inspection required by EM 385-1-1, Section 01.A.13 and on the

scaffold tag according to EM 385-1-1, Section 22.B.05.

3.5.2 Elevated Aerial Work Platforms (AWPs)

Workers must be anchored to the basket or bucket in accordance with manufacturer's specifications and instructions (anchoring to the boom may only be used when allowed by the manufacturer and permitted by the CP). Lanyards used must be sufficiently short to prohibit worker from climbing out of basket. The climbing of rails is prohibited. Lanyards with built-in shock absorbers are acceptable. Self-retracting devices are not acceptable. Tying off to an adjacent pole or structure is not permitted unless a safe device for 100 percent tie-off is used for the transfer.

Use of AWPs must be operated, inspected, and maintained as specified in the operating manual for the equipment and delineated in the AHA. Operators of AWPs must be designated as qualified operators by the Prime Contractor. Maintain proof of qualifications on site for review and include in the AHA.

3.6 EQUIPMENT

3.6.1 Material Handling Equipment (MHE)

- a. Material handling equipment such as forklifts must not be modified with work platform attachments for supporting employees unless specifically delineated in the manufacturer's printed operating instructions. Material handling equipment fitted with personnel work platform attachments are prohibited from traveling or positioning while personnel are working on the platform.
- b. The use of hooks on equipment for lifting of material must be in accordance with manufacturer's printed instructions. Material Handling Equipment Operators must be trained in accordance with OSHA 29 CFR 1910, Subpart N.
- c. Operators of forklifts or power industrial trucks must be licensed in accordance with OSHA.

3.6.2 Load Handling Equipment (LHE)

- a. Equip cranes and derricks as specified in EM 385-1-1.
- b. Notify the Contracting Officer 15 working days in advance of any LHE entering the activity, in accordance with EM 385-1-1, so that necessary quality assurance spot checks can be coordinated. Contractor's operator must remain with the crane during the spot check. Rigging gear must comply with OSHA, ASME B30.9 Standards safety standards.
- c. Comply with the LHE manufacturer's specifications and limitations for erection and operation of cranes and hoists used in support of the work. Perform erection under the supervision of a designated person (as defined in ASME B30.5). Perform all testing in accordance with the manufacturer's recommended procedures.
- d. Comply with ASME B30.5 for mobile and locomotive cranes, ASME B30.22 for articulating boom cranes, ASME B30.3 for construction tower cranes, ASME B30.8 for floating cranes and floating derricks, ASME B30.9 for slings, ASME B30.20 for below the hook lifting devices and ASME B30.26 for rigging hardware.

- e. Under no circumstance must a Contractor make a lift at or above 90 percent of the cranes rated capacity in any configuration.
 - f. When operating in the vicinity of overhead transmission lines, operators and riggers must be alert to this special hazard and follow the requirements of [EM 385-1-1](#), and [ASME B30.5](#) or [ASME B30.22](#) as applicable.
 - g. Do not use crane suspended personnel work platforms (baskets) unless the Contractor proves that using any other access to the work location would provide a greater hazard to the workers or is impossible. Do not lift personnel with a line hoist or friction crane. Additionally, submit a specific AHA for this work to the Contracting Officer. Ensure the activity and AHA are thoroughly reviewed by all involved personnel.
 - h. Inspect, maintain, and recharge portable fire extinguishers as specified in [NFPA 10](#), Standard for Portable Fire Extinguishers.
 - i. All employees must keep clear of loads about to be lifted and of suspended loads.
 - j. Use cribbing when performing lifts on outriggers.
 - k. The crane hook/block must be positioned directly over the load. Side loading of the crane is prohibited.
 - l. A physical barricade must be positioned to prevent personnel access where accessible areas of the LHE's rotating superstructure poses a risk of striking, pinching or crushing personnel.
 - m. Maintain inspection records in accordance by [EM 385-1-1](#), including shift, monthly, and annual inspections, the signature of the person performing the inspection, and the serial number or other identifier of the LHE that was inspected. Records must be available for review by the Contracting Officer.
 - n. Maintain written reports of operational and load testing in accordance with [EM 385-1-1](#), listing the load test procedures used along with any repairs or alterations performed on the LHE. Reports must be available for review by the Contracting Officer.
 - o. Certify that all LHE operators have been trained in proper use of all safety devices (e.g. anti-two block devices).
 - p. Take steps to ensure that wind speed does not contribute to loss of control of the load during lifting operations. At wind speeds greater than [20 mph](#), the operator, rigger and lift supervisor must cease all crane operations, evaluate conditions and determine if the lift may proceed. Base the determination to proceed or not on wind calculations per the manufacturer and a reduction in LHE rated capacity if applicable. Include this maximum wind speed determination as part of the activity hazard analysis plan for that operation.
- 3.6.3 Machinery and Mechanized Equipment
- a. Proof of qualifications for operator must be kept on the project site for review.
 - b. Manufacture specifications or owner's manual for the equipment must be

on-site and reviewed for additional safety precautions or requirements that are sometimes not identified by OSHA or USACE EM 385-1-1. Incorporate such additional safety precautions or requirements into the AHAs.

3.6.4 USE OF EXPLOSIVES

Explosives must not be used or brought to the project site without prior written approval from the Contracting Officer. Such approval does not relieve the Contractor of responsibility for injury to persons or for damage to property due to blasting operations.

Storage of explosives, when permitted on Government property, must be only where directed and in approved storage facilities. These facilities must be kept locked at all times except for inspection, delivery, and withdrawal of explosives.

3.7 EXCAVATIONS

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

3.7.1 Utility Locations

Provide a third party, independent, private utility locating company to positively identify underground utilities in the work area in addition to any station locating service and coordinated with the station utility department.

3.7.2 Utility Location Verification

Physically verify underground utility locations, including utility depth, by hand digging using wood or fiberglass handled tools when any adjacent construction work is expected to come within three feet of the underground system.

3.7.3 Utilities Within and Under Concrete, Bituminous Asphalt, and Other Impervious Surfaces

Utilities located within and under concrete slabs or pier structures, bridges, parking areas, and the like, are extremely difficult to identify. Whenever contract work involves chipping, saw cutting, or core drilling through concrete, bituminous asphalt or other impervious surfaces, the existing utility location must be coordinated with station utility departments in addition to location and depth verification by a third party, independent, private locating company. The third party, independent, private locating company must locate utility depth by use of Ground Penetrating Radar (GPR), X-ray, bore scope, or ultrasound prior to the start of demolition and construction. Outages to isolate utility systems must be used in circumstances where utilities are unable to be positively identified. The use of historical drawings does not alleviate the Contractor from meeting this requirement.

3.8 ELECTRICAL

Perform electrical work in accordance with EM 385-1-1.

3.8.1 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 is allowed in the space during the actual operation. Plan so that work near energized parts is minimized to the fullest extent possible. Use of electrical outages clear of any energized electrical sources is the preferred method.

When working in energized substations, only qualified electrical workers are permitted to enter. When work requires work near energized circuits as defined by [NFPA 70](#), high voltage personnel must use personal protective equipment that includes, as a minimum, electrical hard hat, safety 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](#).

3.8.2 Qualifications

Electrical work must be performed by QP personnel with verifiable credentials who are familiar with applicable code requirements. Verifiable credentials consist of State, National and Local Certifications or Licenses that a Master or Journeyman Electrician may hold, depending on work being performed, and must be identified in the appropriate AHA. Journeyman/Apprentice ratio must be in accordance with State and Local requirements applicable to where work is being performed.

3.8.3 Arc Flash

Conduct a hazard analysis/arc flash hazard analysis whenever work on or near energized parts greater than 50 volts is necessary, in accordance with [NFPA 70E](#).

All personnel entering the identified arc flash protection boundary must be QPs and properly trained in [NFPA 70E](#) requirements and procedures. Unless permitted by [NFPA 70E](#), unqualified persons are not allowed to approach nearer than the Limited Approach Boundary of energized conductors and circuit parts. Training must be administered by an electrically qualified source and documented.

3.8.4 Grounding

Ground electrical circuits, equipment and enclosures in accordance with [NFPA 70](#) and [IEEE C2](#) to provide a permanent, continuous and effective path to ground unless otherwise noted by [EM 385-1-1](#).

Check grounding circuits to ensure that the circuit between the ground and a grounded power conductor has a resistance low enough to permit sufficient

current flow to allow the fuse or circuit breaker to interrupt the current.

3.8.5 Testing

Temporary electrical distribution systems and devices must be inspected, tested and found acceptable for Ground-Fault Circuit Interrupter (GFCI) protection, polarity, ground continuity, and ground resistance before initial use, before use after modification and at least monthly. Monthly inspections and tests must be maintained for each temporary electrical distribution system, and signed by the electrical CP or QP.

-- End of Section --

Attachment **1**

Safety Performance Sign

Each contractor's safety record is to be posted on Corps managed or supervised construction projects and mounted with the Construction Project Identification sign specified on page 16-2.

The graphic format, color, size and typeface used on the sign are to be reproduced exactly as specified below. The

title with First Aid logo in the top section of the sign, and the performance record captions are standard for all signs of this type. Legend groups 2 and 3 below identify the project and the contractor and are to be placed on the sign as shown.

Safety record numbers are mounted on individual metal plates and are screw-

mounted to the background to allow for daily revisions to posted safety performance record.

Special applications or situations not covered in these guidelines should be referred to the district Sign Program Manager.

Legend Group 1: Standard two-line title "Safety is a Job Requirement" with 8" (outside diameter) Safety Green first aid logo.
Color: To match Pantone system 347
Typeface: 3" Helvetica Bold
Color: Black

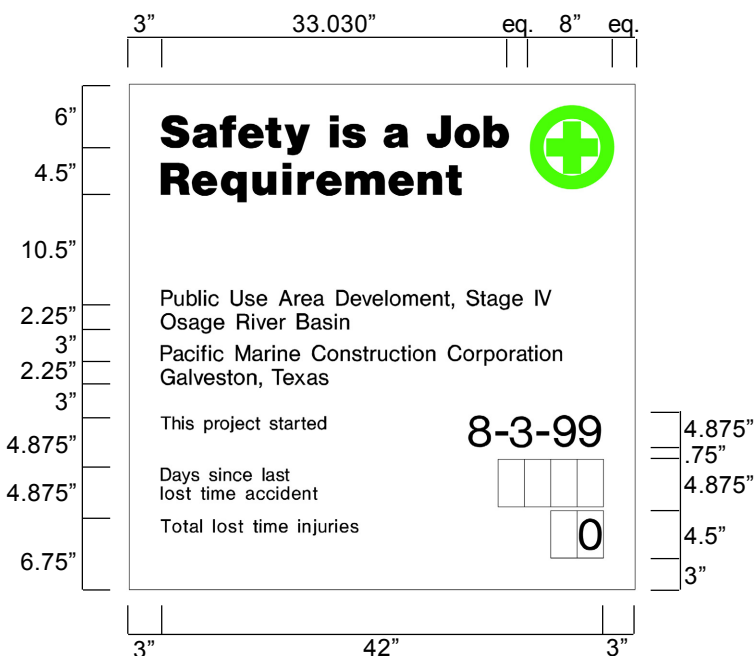
Legend Group 2: One- to two-line project title legend describes the work being done under this contract and name of host project.
Color: Black
Typeface: 1.5" Helvetica Regular
Maximum line length: 42"

Legend Group 3: One- to two-line identification: name of prime contractor and city, state address. Color: Black
Typeface: 1.5" Helvetica Regular
Maximum line length: 42"

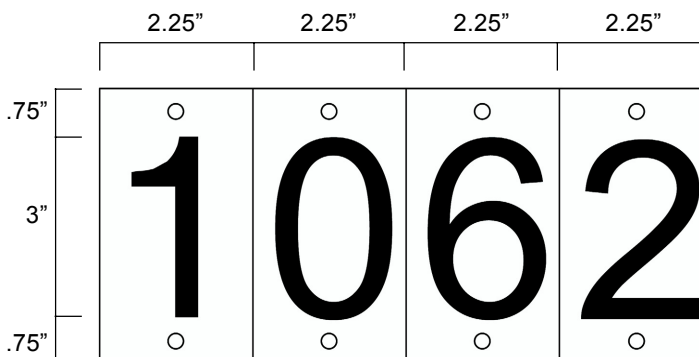
Legend Group 4: Standard safety record captions as shown.
Color: Black
Typeface: 1.25" Helvetica Regular

Replaceable numbers are to be mounted on white .060 aluminum plates and screw-mounted to background.
Color: Black
Typeface: 3" Helvetica Regular
Plate size: 2.5" x 4.5"

All typography is flush left and rag right, upper and lower case with initial capitals only as shown. Letter- and word-spacing to follow Corps standards as specified in Appendix D.



Sign Type	Legend Size (A)	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
CID-02	various	4'x4'	4"x4"	HDO-3	48"	WH/BK-SG



All Construction Project Identification signs and Safety Performance signs are to be fabricated and installed as described below. The signs are to be erected at a location designated by the contracting officer representative and shall conform to the size, format, and typographic standards shown on pages 16-2 and 16-3. Detailed specifications for HDO plywood panel preparation are provided in Appendix B.

Shown below the mounting diagram is a panel layout grid with spaces provided for project information. Photocopy this page and use as a worksheet when preparing sign legend orders.

For additional information on the proper method to prepare sign panel graphics, contact the district Sign Program Manager.

The sign panels are to be fabricated from .75" High Density Overlay Plywood. Panel preparation to follow HDO specifications provided in Appendix B.

Sign graphics to be prepared on a white nonreflective vinyl film with positionable adhesive backing.

All graphics except for the Communication Red background with Corps Signature on the project sign are to be die-cut or computer-cut nonreflective vinyl, prespaced legends prepared in the sizes and typefaces specified and applied to the background panel following the graphic formats shown on pages 16-2 and 16-3.

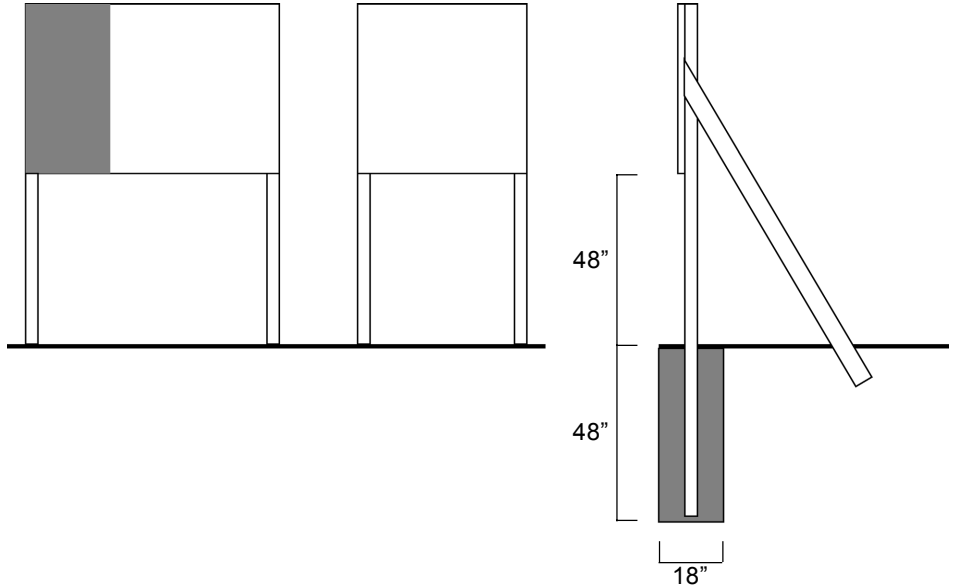
The 2'x 4' Communication Red panel (to match Pantone system 032) with full Corps Signature (reverse version) is to be screen-printed on the white background. Identification of the district or division may be applied under the signature with white cut vinyl letters prepared to Corps standards.

Drill and insert six (6) .375" T-nuts from the front face of the HDO sign panel. Position holes as shown. Flange of T-nut to be flush with sign face.

Apply graphic panel to prepared HDO plywood panel following manufacturers' instructions.

Sign uprights to be structural grade 4" x 4" treated Douglas Fir or Southern Yellow Pine, No.1 or better. Post to be 12' long. Drill six (6) .375" mounting holes in uprights to align with T-nuts in sign panel. Countersink (.5") back of hole to accept socket head cap screw (4" x .375").

Assemble sign panel and uprights. Imbed assembled sign panel and uprights in 4' hole. Local soil conditions and/or wind loading may require bolting additional 2" x 4" struts on inside face of uprights to reinforce installation as shown.



Construction Project Identification Sign
Legend Group 1: Corps Relationship

1. _____
2. _____

Legend Group 2: Division/District Name

1. _____
2. _____

Legend Group 2a: Military/Civil Works Sponsor

1. _____
2. _____

Legend Group 3: Project Title

1. _____
2. _____
3. _____

Legend Group 4: Facility Name

1. _____
2. _____

Legend Group 5: Contractor/A&E

1. _____
2. _____
3. _____
4. _____
5. _____

Legend Group 5b: Contractor/A&E

1. _____
2. _____
3. _____
4. _____
5. _____

Safety Performance Sign

Legend Group 2: Project Title

1. _____
2. _____

Legend Group 3: Contractor/A&E

1. _____
2. _____

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- 1.2 ORDERING INFORMATION

PART 2 PRODUCTS

PART 3 EXECUTION

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SOURCES FOR REFERENCE PUBLICATIONS

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PART 1 GENERAL

1.1 REFERENCES

Various publications are referenced in other sections of the specifications to establish requirements for the work. These references are identified in each section by document number, date and title. The document number used in the citation is the number assigned by the standards producing organization (e.g. ASTM B564 Standard Specification for Nickel Alloy Forgings). However, when the standards producing organization has not assigned a number to a document, an identifying number has been assigned for reference purposes.

1.2 ORDERING INFORMATION

The addresses of the standards publishing organizations whose documents are referenced in other sections of these specifications are listed below, and if the source of the publications is different from the address of the sponsoring organization, that information is also provided.

AACE INTERNATIONAL (AACE)
1265 Suncrest Towne Centre Drive
Morgantown, WV 26505-1876 USA
Ph: 304-296-8444
Fax: 304-291-5728
E-mail: info@aacei.org
Internet: <http://www.aacei.org>

AIR-CONDITIONING, HEATING AND REFRIGERATION INSTITUTE (AHRI)
2111 Wilson Blvd, Suite 500
Arlington, VA 22201
Ph: 703-524-8800
Fax: 703-562-1942
Internet: <http://www.ahrinet.org>

AMERICAN ARCHITECTURAL MANUFACTURERS ASSOCIATION (AAMA)
1827 Walden Office Square, Suite 550
Schaumburg, IL 60173-4268
Ph: 847-303-5664
Fax: 847-303-5774
E-mail: customerservice@aamanet.org
Internet: <http://www.aamanet.org>

AMERICAN CONCRETE INSTITUTE INTERNATIONAL (ACI)
38800 Country Club Drive
Farmington Hills, MI 48331-3439
Ph: 248-848-3700
Fax: 248-848-3701
E-mail: bkstore@concrete.org
Internet: <http://www.concrete.org>

AMERICAN GAS ASSOCIATION (AGA)
400 North Capitol Street N.W.

Suite 450
Washington, D.C. 20001
Ph: 202-824-7000
Internet: <http://www.aga.org>

AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)
One East Wacker Drive, Suite 700
Chicago, IL 60601-1802
Ph: 312-670-2400
Fax: 312-670-5403
Bookstore: 800-644-2400
E-mail: aisc@ware-pak.com
Internet: <http://www.aisc.org>

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)
1899 L Street, NW, 11th Floor
Washington, DC 20036
Ph: 202-293-8020
Fax: 202-293-9287
E-mail: storemanager@ansi.org
Internet: <http://www.ansi.org/>

AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE)
1801 Alexander Bell Drive
Reston, VA 20191
Ph: 703-295-6300; 800-548-2723
E-mail: member@asce.org
Internet: <http://www.asce.org>

AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING
ENGINEERS (ASHRAE)
1791 Tullie Circle, NE
Atlanta, GA 30329
Ph: 800-527-4723 or 404-636-8400
Fax: 404-321-5478
E-mail: ashrae@ashrae.org
Internet: <http://www.ashrae.org>

AMERICAN SOCIETY OF SAFETY ENGINEERS (ASSE/SAFE)
1800 East Oakton Street
Des Plaines, IL 60018
Ph: 847-699-2929
Internet: <http://www.asse.org>

AMERICAN SOCIETY OF SANITARY ENGINEERING (ASSE)
18927 Hickory Creek Drive, Suite 220
Mokena, IL 60448
Ph: 708-995-3019
Fax: 708-479-6139
E-mail: staffengineer@asse-plumbing.org
Internet: <http://www.asse-plumbing.org>

AMERICAN WATER WORKS ASSOCIATION (AWWA)
6666 West Quincy Avenue
Denver, CO 80235-3098
Ph: 303-794-7711
E-mail: distribution@awwa.org
Internet: <http://www.awwa.org>

AMERICAN WELDING SOCIETY (AWS)
13301 NW 47 Ave
Miami, FL 33054

Ph: 888-WELDING, 305-824-1177, 305-826-6192
Fax: 305-826-6195
E-mail: customer.service@awspubs.com
Internet: <http://www.aws.org>

ARCHITECTURAL WOODWORK INSTITUTE (AWI)
46179 Westlake Drive, Suite 120
Potomac Falls, VA 20165
Ph: 571-323-3636
Fax: 571-323-3630
E-mail: info@awinet.org
Internet: <http://www.awinet.org>

ASME INTERNATIONAL (ASME)
Two Park Avenue, M/S 10E
New York, NY 10016-5990
Ph: 800-843-2763
Fax: 973-882-1717
E-mail: customercare@asme.org
Internet: <http://www.asme.org>

ASTM INTERNATIONAL (ASTM)
100 Barr Harbor Drive, P.O. Box C700
West Conshohocken, PA 19428-2959
Ph: 877-909-2786
Internet: <http://www.astm.org>

BUILDERS HARDWARE MANUFACTURERS ASSOCIATION (BHMA)
355 Lexington Avenue, 15th Floor
New York, NY 10017
Ph: 212-297-2122
Fax: 212-370-9047
Internet: <http://www.buildershardware.com>

CAST IRON SOIL PIPE INSTITUTE (CISPI)
3008 Preston Station Drive
Hixson, TN 37343
Ph: 423-842-2122
Internet: <http://www.cispi.org>

CENTERS FOR DISEASE CONTROL AND PREVENTION (CDC)
1600 Clifton Road
Atlanta, GA 30333
Ph: 800-232-4636
TTY: 888-232-6348
Internet: <http://www.cdc.gov>

CONSUMER ELECTRONICS ASSOCIATION (CEA)
1919 South Eads St.
Arlington, VA 22202
Ph: 866-858-1555 or 703-907-7634
Fax: 866-858-2555 or 703-907-7693
E-mail: standards@CE.org
Internet: <http://www.CE.org>

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

FM GLOBAL (FM)
270 Central Avenue
P.O. Box 7500
Johnston, RI 02919-4923
Ph: 877-364-6726
Fax: 401-275-3029
E-mail: servicedesk.myrisk@fmglobal.com
Internet: <http://www.fmglobal.com>

FOUNDATION FOR CROSS-CONNECTION CONTROL AND HYDRAULIC RESEARCH
(FCCCHR)
University of South California
Research Annex 219
3716 South Hope Street
Los Angeles, CA 90089-7700
Ph: 213-740-2032 or 866-545-6340
Fax: 213-740-8399
E-mail: fccchr@usc.edu
Internet: <http://www.usc.edu/dept/fccchr>

ILLUMINATING ENGINEERING SOCIETY (IES)
120 Wall Street, 17th Floor
New York, NY 10005-4001
Ph: 212-248-5000
Fax: 212-248-5018
E-mail: IES@IES.org
Internet: <http://www.IES.org>

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)
445 and 501 Hoes Lane
Piscataway, NJ 08854-4141
Ph: 732-981-0060 or 800-701-4333
Fax: 732-562-9667
E-mail: onlinesupport@ieee.org
Internet: <http://www.ieee.org>

INTERNATIONAL CODE COUNCIL (ICC)
500 New Jersey Avenue, NW
6th Floor, Washington, DC 20001
Ph: 800-786-4452 or 888-422-7233
E-mail: order@iccsafe.org
Internet: www.iccsafe.org

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO)
1, ch. de la Voie-Creuse
Case Postale 56
CP 56 - CH-1211 Geneva 20
Switzerland
Ph: 41-22-749-01-11
Fax: 41-22-733-34-30
E-mail: central@iso.ch
Internet: <http://www.iso.org>

MANUFACTURERS STANDARDIZATION SOCIETY OF THE VALVE AND FITTINGS
INDUSTRY (MSS)
127 Park Street, NE
Vienna, VA 22180-4602
Ph: 703-281-6613
E-mail: info@mss-hq.com
Internet: <http://mss-hq.org/Store/index.cfm>

NACE INTERNATIONAL (NACE)
Houston, TX 77084-4906
Ph: 281-228-6223
Fax: 281-228-6300
E-mail: firstservice@nace.org
Internet: <http://www.nace.org>

NATIONAL ELECTRICAL CONTRACTORS ASSOCIATION (NECA)
3 Bethesda Metro Center, Suite 1100
Bethesda, MD 20814
Ph: 301-657-3110
Fax: 301-215-4500
Internet: <http://www.necanet.org/>

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)
1300 North 17th Street, Suite 900
Arlington, VA 22209
Ph: 703-841-3200
Internet: <http://www.nema.org/>

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)
1 Batterymarch Park
Quincy, MA 02169-7471
Ph: 617-770-3000
Fax: 617-770-0700
Internet: <http://www.nfpa.org>

NATIONAL INSTITUTE OF BUILDING SCIENCES (NIBS)
1090 Vermont Avenue NW, Suite 700
Washington, DC 20005
Ph: 202-289-7800
Fax: 202-289-1092
Internet: <http://www.wbdg.org>

NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY (NIST)
100 Bureau Drive
Stop 1070
Gaithersburg, MD 20899-1070
Ph: 301-975-NIST (6478)
E-mail: inquiries@nist.gov
Internet: <http://www.nist.gov>

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (NCDOT)
1515 Mail Service Center
Raleigh, NC 27699-1515
Ph: 919-715-8718
Internet: <http://www.ncdot.org/>

PLUMBING AND DRAINAGE INSTITUTE (PDI)
800 Turnpike Street, Suite 300
North Andover, MA 01845

Ph: 978-557-0720 or 800-589-8956
E-Mail: pdi@PDIONline.org
Internet: <http://www.pdionline.org>

SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION
(SMACNA)
4201 Lafayette Center Drive
Chantilly, VA 20151-1219
Ph: 703-803-2980
Fax: 703-803-3732
Internet: <http://www.smacna.org>

SOCIETY FOR PROTECTIVE COATINGS (SSPC)
40 24th Street, 6th Floor
Pittsburgh, PA 15222
Ph: 412-281-2331
Fax: 412-281-9992
E-mail: info@sspc.org
Internet: <http://www.sspc.org>

STEEL DECK INSTITUTE (SDI)
P.O. Box 426
Glenshaw, PA 15116
Ph: 412.487.3325
Fax: 412.487.3326
E-mail: bob@sdi.org
Internet: <http://www.sdi.org>

STEEL DOOR INSTITUTE (SDI/DOOR)
30200 Detroit Road
Westlake, OH 44145
Ph: 440-899-0010
Fax: 440-892-1404
E-mail: info@steeldoors.org
Internet: <http://www.steeldoors.org>

STEEL JOIST INSTITUTE (SJI)
234 W. Cheves Street
Florence, SC 29501
Ph: 843-407-4091
Internet: <http://www.steeljoist.org>

TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA)
1320 N. Courthouse Rd., Suite 200
Arlington, VA 22201
Ph: 703-907-7700
Fax: 703-907-7727
Internet: <http://www.tiaonline.org>

U.S. ARMY (DA)
U.S. Army Publishing Directorate
Ph: 703-614-3634
Internet: <http://www.apd.army.mil>

U.S. ARMY CORPS OF ENGINEERS (USACE)
CRD-C DOCUMENTS available on Internet:
http://www.wbdg.org/ccb/browse_cat.php?c=68
Order Other Documents from:

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Fax: 301-394-0084
E-mail: pubs-army@usace.army.mil
Internet: <http://www.publications.usace.army.mil/>
or
<http://www.hnc.usace.army.mil/Missions/Engineering/TECHINFO.aspx>

U.S. ARMY CORPS OF ENGINEERS SAVANNAH DISTRICT (CESAS)
100 West Oglethorpe Avenue
Savannah, GA 31401
Ph: 912-652-5228
E-mail: Curtis.L.McKenzie@usace.army.mil
Engineering Division Publications from:
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PART 2 PRODUCTS

Not used

PART 3 EXECUTION

Not used

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QUALITY CONTROL
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PART 1 GENERAL

1.1 REFERENCES

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

ASTM INTERNATIONAL (ASTM)

- | | |
|------------|--|
| ASTM D3740 | (2012a) Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction |
| ASTM E329 | (2018) Standard Specification for Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction |

1.2 PAYMENT

Separate payment will not be made for providing and maintaining an effective Quality Control program, and all associated costs will be included in the applicable Bid Schedule prices.

1.3 SUBMITTALS

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

SD-01 Preconstruction Submittals

Contractor Quality Control (CQC) Plan; G, RO

SD-06 Test Reports

Verification Statement

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

Establish and maintain an effective quality control (QC) system that complies with the Contract Clause titled "Inspection of Construction." QC consist of plans, procedures, and organization necessary to produce an end product which complies with the contract requirements. The QC system must

cover all operations, both onsite and offsite, and be keyed to the proposed sequence. The project superintendent will be held responsible for the quality of work and is subject to removal by the Contracting Officer for non-compliance with the quality requirements specified in the contract. In this context the highest level manager responsible for the overall construction activities at the site, including quality and production is the project superintendent. The project superintendent must maintain a physical presence at the site at all times and is responsible for all construction and related activities at the site, except as otherwise acceptable to the Contracting Officer.

3.2 QUALITY CONTROL PLAN

Submit no later than 10 days after receipt of notice to proceed, the [Contractor Quality Control \(CQC\) Plan](#) proposed to implement the requirements of the Contract Clause titled "Inspection of Construction." The Government will consider an interim plan for the first 30 days of operation. will be permitted to begin only after acceptance of the CQC Plan or acceptance of an interim plan applicable to the particular feature of work to be started. Work outside of the accepted interim plan will not be permitted to begin until acceptance of a CQC Plan or another interim plan containing the additional work.

3.2.1 Content of the CQC Plan

Include, as a minimum, the following to cover all operations, both onsite and offsite, including work by :

- a. A description of the quality control organization, including a chart showing lines of authority and acknowledgment that the CQC staff will implement the three phase control system for all aspects of the work specified. Include a CQC System Manager who reports to the project superintendent.
- b. The name, qualifications (in resume format), duties, responsibilities, and authorities of each person assigned a CQC function.
- c. A copy of the letter to the CQC System Manager signed by an authorized official of the firm which describes the responsibilities and delegates sufficient authorities to adequately perform the functions of the CQC System Manager, including authority to stop work which is not in compliance with the contract. Letters of direction to all other various quality control representatives outlining duties, authorities, and responsibilities will be issued by the CQC System Manager. Copies of these letters must be furnished to the Government.
- d. Procedures for scheduling, reviewing, certifying, and managing submittals, including those of . These procedures must be in accordance with Section 01 33 00 SUBMITTAL PROCEDURES.
- e. Control, verification, and acceptance testing procedures for each specific test to include the test name, specification paragraph requiring test, feature of work to be tested, test frequency, and person responsible for each test. (Laboratory facilities approved by the Contracting Officer must be used.)
- f. Procedures for tracking preparatory, initial, and follow-up control phases and control, verification, and acceptance tests including documentation.

- g. Procedures for tracking deficiencies from identification through acceptable corrective action. Establish verification procedures that identified deficiencies have been corrected.
- h. Reporting procedures, including proposed reporting formats.
- i. A list of the definable features of work. A definable feature of work is a task which is separate and distinct from other tasks, has separate control requirements, and may be identified by different trades or disciplines, or it may be work by the same trade in a different environment. Although each section of the specifications may generally be considered as a definable feature of work, there are frequently more than one definable features under a particular section. This list will be agreed upon during the coordination meeting.
- j. Coordinate scheduled work with Special Inspections required by Section 01 45 35 SPECIAL INSPECTIONS, the Statement of Special Inspections and the Schedule of Special Inspections.

3.2.2 Acceptance of Plan

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

3.2.3 Notification of Changes

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

3.3 COORDINATION MEETING

After the and prior to acceptance by the Government of the CQC Plan, meet with the Contracting Officer or Authorized Representative and discuss the Contractor's quality control system. Submit the CQC Plan a minimum of 5 calendar days prior to the Coordination Meeting. During the meeting, a mutual understanding of the system details must be developed, including the forms for recording the CQC , control activities, testing, administration of the system for both onsite and offsite work, and the interrelationship of Contractor's Management and control with the Government's Quality Assurance. Minutes of the meeting will be prepared by the Government, signed by both the Contractor and the Contracting Officer and will become a part of the contract file. There may be occasions when subsequent conferences will be called by either party to reconfirm mutual understandings and/or address deficiencies in the CQC system or procedures which may require corrective action by the Contractor.

3.4 QUALITY CONTROL ORGANIZATION

3.4.1 Personnel Requirements

The requirements for the CQC organization are a Safety and Health Manager, and sufficient number of additional qualified personnel to ensure safety and contract compliance. The Safety and Health Manager must report directly to a senior project (or corporate) official independent from the

CQC System Manager. The Safety and Health Manager will also serve as a member of the CQC Staff. Personnel identified in the technical provisions as requiring specialized skills to ensure the required work is being performed properly shall also be included as part of the CQC organization. The Contractor's CQC staff must maintain a presence at the site at all times during progress of the work and have complete authority and responsibility to take any action necessary to ensure contract compliance. The CQC staff will be subject to acceptance by the Contracting Officer. Provide adequate office space, filing systems and other resources as necessary to maintain an effective and fully functional CQC organization. Promptly complete and furnish all letters, material submittals, shop drawing submittals, schedules and all other project documentation to the CQC organization. The CQC organization is responsible to maintain these documents and records at the site at all times, except as otherwise acceptable to the Contracting Officer.

3.4.2 CQC System Manager

Identify as CQC System Manager an individual within the onsite work organization who is responsible for overall management of CQC and have the authority to act in all CQC matters for the Contractor. The CQC System Manager shall be a graduate engineer, graduate architect, or a graduate of construction management, with a minimum of 5 years construction experience on construction similar to this contract, or a construction person with a minimum of 10 years in related work. This CQC System Manager must be on the site at all times during construction and be employed by the prime Contractor. The CQC System Manager must be assigned no other duties. Identify in the plan an alternate to serve in the event of the CQC System Manager's absence. The requirements for the alternate are the same as the CQC System Manager.

3.4.3 CQC Personnel

In addition to CQC personnel specified elsewhere in the contract, provide as part of the CQC organization specialized personnel to assist the CQC System Manager for the following areas: electrical, mechanical, civil, and architectural. These individuals or specialized technical companies may be employees of the prime or subcontractor except for the Civil QC who must be an employee of the prime; be responsible to the CQC System Manager; be physically present at the construction site during work on their areas of responsibility; have the necessary education and/or experience in accordance with the experience matrix listed herein. These individuals These individuals may perform other duties (except for the Civil QC) but must be allowed sufficient time to perform their assigned quality control duties as described in the Quality Control Plan. A single person may cover more than one area provided that they are qualified to perform QC activities in each designated and that workload allows.

Area	Qualifications
Civil	Graduate Civil Engineer or Construction Manager with 2 years experience in the type of work being performed on this project or technician with 5 yrs related experience

Area	Qualifications
Mechanical	Graduate Mechanical Engineer with 2 yrs experience or person with 5 years of experience supervising mechanical features of work in the field with a construction company
Electrical	Graduate Electrical Engineer with 2 years related experience or person 5 years of experience supervising electrical features of work in the field with a construction company
Architectural	Graduate Architect with 2 years experience or person with 5 years related experience

3.4.4 Additional Requirement

In addition to the above experience and education requirements, the CQC System Manager must have completed the Construction Quality Management (CQM) for Contractors course. If the CQC System Manager does not have a current certification, obtain the CQM for Contractors course certification within 90 days of award. This course is periodically offered by the Naval Facilities Engineering Command and the Army Corps of Engineers. Contact the Contracting Officer for information on the next scheduled class.

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

3.4.5 Organizational Changes

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

3.5 SUBMITTALS AND DELIVERABLES

Submittals, if needed, must comply with the requirements in Section 01 33 00 SUBMITTAL PROCEDURES. The CQC organization is responsible for certifying that submittals and deliverables comply with the Contract.

3.6 CONTROL

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

3.6.1 Preparatory Phase

This phase is performed prior to beginning work on each definable feature of work, after all required plans/documents/materials are approved/accepted, and after copies are at the work site. This phase includes:

- a. A review of each paragraph of applicable specifications, reference codes, and standards. Make available during the preparatory inspection a copy of those sections of referenced codes and standards applicable

to that portion of the work to be accomplished in the field. Maintain and make available in the field for use by Government personnel until final acceptance of the work.

- b. Review of the contract drawings.
- c. Check to ensure that all materials and/or equipment have been tested, submitted, and approved.
- d. Review of provisions that have been made to provide required control inspection and testing.
- e. Examination of the work area to ensure that all required preliminary work has been completed and is in compliance with the contract.
- f. Examination of required materials, equipment, and sample work to ensure that they are on hand, conform to approved shop drawings or submitted data, and are properly stored.
- g. Review of the appropriate activity hazard analysis to ensure safety requirements are met.
- h. Discussion of procedures for controlling quality of the work including repetitive deficiencies. Document construction tolerances and workmanship standards for that feature of work.
- i. Check to ensure that the portion of the plan for the work to be performed has been accepted by the Contracting Officer.
- j. Discussion of the initial control phase.
- k. The Government must be notified at least 72 hours in advance of beginning the preparatory control phase. Include a meeting conducted by the CQC System Manager and attended by the superintendent, other CQC personnel (as applicable), and the foreman responsible for the definable feature. Document the results of the preparatory phase actions by separate minutes prepared by the CQC System Manager and attach to the daily CQC report. Instruct applicable workers as to the acceptable level of workmanship required in order to meet contract specifications.

3.6.2 Initial Phase

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

- a. Check work to ensure that it is in full compliance with contract requirements. Review minutes of the preparatory meeting.
- b. Verify adequacy of controls to ensure full contract compliance. Verify required control inspection and testing are in compliance with the contract.
- c. Establish level of workmanship and verify that it meets minimum acceptable workmanship standards. Compare with required sample panels as appropriate.
- d. Resolve all differences.

- e. Check safety to include compliance with and upgrading of the safety plan and activity hazard analysis. Review the activity analysis with each worker.
- f. The Government must be notified at least 48 hours in advance of beginning the initial phase for definable feature of work. Prepare separate minutes of this phase by the CQC System Manager and attach to the daily CQC report. Indicate the exact location of initial phase for definable feature of work for future reference and comparison with follow-up phases.
- g. The initial phase for definable feature of work should be repeated for each new crew to work onsite, or any time acceptable specified quality standards are not being met.

3.6.3 Follow-up Phase

Perform daily checks to ensure control activities, including control testing, are providing continued compliance with contract requirements, until completion of the particular feature of work. Record the checks in the CQC documentation. Conduct final follow-up checks and correct all deficiencies prior to the start of additional features of work which may be affected by the deficient work. Do not build upon nor conceal non-conforming work.

3.6.4 Additional Preparatory and Initial Phases

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

3.7 TESTS

3.7.1 Testing Procedure

Perform specified or required tests to verify that control measures are adequate to provide a product which conforms to contract requirements. Upon request, furnish to the Government duplicate samples of test specimens for possible testing by the Government. Testing includes operation and/or acceptance tests when specified. Procure the services of a Corps of Engineers approved testing laboratory or establish an approved testing laboratory at the project site. Perform the following activities and record and provide the following data:

- a. Verify that testing procedures comply with contract requirements.
- b. Verify that facilities and testing equipment are available and comply with testing standards.
- c. Check test instrument calibration data against certified standards.
- d. Verify that recording forms and test identification control number system, including all of the test documentation requirements, have been prepared.
- e. Record results of all tests taken, both passing and failing on the CQC report for the date taken. Specification paragraph reference, location

where tests were taken, and the sequential control number identifying the test. If approved by the Contracting Officer, actual test reports may be submitted later with a reference to the test number and date taken. Provide an information copy of tests performed by an offsite or commercial test facility directly to the Contracting Officer. Failure to submit timely test reports as stated may result in nonpayment for related work performed and disapproval of the test facility for this contract.

3.7.2 Testing Laboratories

The listing of validated testing laboratories is available at <http://gsl.erd.c.usace.army.mil/SL/MTC/>.

3.7.2.1 Capability Check

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

3.7.2.2 Capability Recheck

If the selected laboratory fails the capability check, the Contractor will be assessed a charge to reimburse the Government for each succeeding recheck of the laboratory or the checking of a subsequently selected laboratory. Such costs will be deducted from the contract amount due the Contractor.

3.7.3 Onsite Laboratory

The Government reserves the right to utilize the Contractor's control testing laboratory and equipment to make assurance tests, and to check the Contractor's testing procedures, techniques, and test results at no additional cost to the Government.

3.8 COMPLETION INSPECTION

3.8.1 Punch-Out Inspection

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

3.8.2 Pre-Final Inspection

The Government will perform the pre-final inspection to verify that the facility is complete and ready to be occupied. A Government Pre-Final Punch List may be developed as a result of this inspection. Ensure that

all items on this list have been corrected before notifying the Government, so that a Final inspection with the customer can be scheduled. Correct any items noted on the Pre-Final inspection in a timely manner. These inspections and any deficiency corrections required by this paragraph must be accomplished within the time slated for completion of the entire work or any particular increment of the work if the project is divided into increments by separate completion dates.

3.8.3 Final Acceptance Inspection

The Contractor's Quality Control Inspection personnel, plus the superintendent or other primary management person, and the Contracting Officer's Representative must be in attendance at the final acceptance inspection. Additional Government personnel including, but not limited to, those from Base/Post Civil Facility Engineer user groups, and major commands may also be in attendance. The final acceptance inspection will be formally scheduled by the Contracting Officer based upon results of the Pre-Final inspection. Notify the Contracting Officer at least 14 days prior to the final acceptance inspection and ensure that specific items previously identified to the Contractor as being unacceptable, along with the remaining work performed under the Contract, will be complete and acceptable by the date scheduled for the final acceptance inspection. Failure of the Contractor to have all contract work acceptably complete for this inspection will be cause for the Contracting Officer to bill the Contractor for the Government's additional inspection cost in accordance with the contract clause titled "Inspection of Construction".

3.9 DOCUMENTATION

Maintain current records providing factual evidence that required quality control activities and/or tests have been performed. Include in these records the work of subcontractors and suppliers on an acceptable form that includes, as a minimum, the following information:

- a. Contractor/subcontractor and their area of responsibility.
- b. Operating plant/equipment with hours worked, idle, or down for repair.
- c. Work performed each day, giving location, description, and by whom. When Network Analysis (NAS) is used, identify each phase of work performed each day by NAS activity number.
- d. Test and/or control activities performed with results and references to specifications/drawings requirements. Identify the control phase (Preparatory, Initial, Follow-up). List of deficiencies noted, along with corrective action.
- e. Quantity of materials received at the site with statement as to acceptability, storage, and reference to specifications/drawings requirements.
- f. Submittals and deliverables reviewed, with contract reference, by whom, and action taken.
- g. Offsite surveillance activities, including actions taken.
- h. Job safety evaluations stating what was checked, results, and instructions or corrective actions.

- i. Instructions given/received and conflicts in plans and/or specifications.
- j. Contractor's [Verification Statement](#).

Indicate a description of trades working on the project; the number of personnel working; weather conditions encountered; and any delays encountered. Cover both conforming and deficient features and include a statement that equipment and materials incorporated in the work and workmanship comply with the contract. Furnish the original and one copy of these records in report form to the Government daily within 24 hours after the date covered by the report, except that reports need not be submitted for days on which no work is performed. As a minimum, prepare and submit one report for every 7 days of no work and on the last day of a no work period. All calendar days must be accounted for throughout the life of the contract. The first report following a day of no work will be for that day only. Reports must be signed and dated by the CQC System Manager. Include copies of test reports and copies of reports prepared by all subordinate quality control personnel within the CQC System Manager Report.

3.10 NOTIFICATION OF NONCOMPLIANCE

The Contracting Officer will notify the Contractor of any detected noncompliance with the foregoing requirements. Take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, will be deemed sufficient for the purpose of notification. If the Contractor fails or refuses to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to such stop orders will be made the subject of claim for extension of time or for excess costs or damages by the Contractor.

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RESIDENT MANAGEMENT SYSTEM CONTRACTOR MODE(RMS CM)

11/16

PART 1 GENERAL

1.1 REFERENCES

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

U.S. ARMY CORPS OF ENGINEERS (USACE)

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

1.2 CONTRACT ADMINISTRATION

The Government will use the Resident Management System (RMS) to assist in its monitoring and administration of this contract. The Contractor uses the Government-furnished Construction Contractor Mode of RMS, referred to as RMS CS, to record, maintain, and submit various information throughout the contract period. The Contractor mode user manuals, updates, and training information can be downloaded from the [RMS](http://rms.usace.army.mil) web site (<http://rms.usace.army.mil>). The joint Government-Contractor use of RMS facilitates electronic exchange of information and overall management of the contract. QCS provides the means for the Contractor to input, track, and electronically share information with the Government in the following areas:

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

1.2.1 Correspondence and Electronic Communications

For ease and speed of communications, exchange correspondence and other documents in electronic format to the maximum extent feasible between the Government and Contractor. Correspondence, pay requests and other documents comprising the official contract record are also be provided in paper format, with signatures and dates where necessary. Paper documents will govern, in the event of discrepancy with the electronic version.

1.2.2 Other Factors

Particular attention is directed to Contract Clause, "Schedules for Construction Contracts", Contract Clause, "Payments", Section 01 32 01 PROJECT SCHEDULE, Section 01 33 00 SUBMITTAL PROCEDURES, and Section 01 45 00.00 10 QUALITY CONTROL, which have a direct relationship to the reporting to be accomplished through RMS. Also, there is no separate payment for establishing and maintaining the RMS database; costs associated will be included in the contract pricing for the work.

1.3 RMS SOFTWARE

RMS is a Windows-based program that can be run on a Windows based PC meeting the requirements as specified in Section 1.3. The Government will make available the RMS software to the Contractor after award of the construction contract. Prior to the Pre-Construction Conference, the Contractor will be responsible to download, install and use the latest version of the RMS software from the Government's RMS Internet Website. Any program updates of RMS will be made available to the Contractor via the Government RMS Website as the updates become available.

1.3.1 RMS CONTRACTOR'S MODE (CM)

RMS Contractor's Mode or RMS CM is the replacement for Quality Control System or QCS. The database remains the same. References to RMS in this specification includes RMS CM.

1.4 SYSTEM REQUIREMENTS

The following is the minimum system configuration required to run RMS and Contractor Mode:

Minimum RMS System Requirements	
Hardware	
Windows-based PC	1.5 GHz 2 core or higher processor
RAM	8 GB
Hard drive disk	200 GB space for sole use by the QCS system
Monitor	Screen resolution 1366 x 768
Mouse or other pointing device	
Windows compatible printer	Laser printer must have 4 MB+ of RAM
Connection to the Internet	minimum 4 Mbs per user
Software	
MS Windows	Windows 7 x 64 bit (RMS requires 64 bit O/S) or newer
Word Processing software	Viewer for MS Word 2013, MS Excel 2013, or newer

Minimum RMS System Requirements	
Microsoft.NET Framework	Coordinate with Government QA Representative for free version required
Email	MAPI compatible
Virus protection software	Regularly upgraded with all issued manufacturer's updates and is able to detect most zero day viruses.

1.5 RELATED INFORMATION

1.5.1 RMS User Guide

After contract award, download instructions for the installation and use of RMS from the Government RMS Internet Website.

1.6 CONTRACT DATABASE

Prior to the pre-construction conference, the Government will provide the Contractor with basic contract award data to use for RMS. The Government will provide data updates to the Contractor as needed. These updates will generally consist of submittal reviews, correspondence status, Quality Assurance(QA) comments, and other administrative and QA data.

1.7 DATABASE MAINTENANCE

Establish, maintain, and update data in the RMS database throughout the duration of the contract at the Contractor's site office. Submit data updates to the Government (e.g., daily reports, submittals, RFI's, schedule updates, payment requests) using RMS. The RMS database typically includes current data on the following items:

1.7.1 Administration

1.7.1.1 Contractor Information

Contain within the database the Contractor's name, address, telephone numbers, management staff, and other required items. Within 7 calendar days of receipt of RMS software from the Government, deliver Contractor administrative data in electronic format in RMS.

1.7.1.2 Subcontractor Information

Contain within the database the name, trade, address, phone numbers, and other required information for all subcontractors. A subcontractor is listed separately for each trade to be performed. Assign each subcontractor/trade a unique Responsibility Code, provided in RMS. Within 7 calendar days of receipt of RMS software from the Government, deliver subcontractor administrative data in electronic format.

1.7.1.3 Correspondence

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

1.7.1.4 Equipment

Contain within the Contractor's RMS database a current list of equipment planned for use or being used on the jobsite, including the most recent and planned equipment inspection dates.

1.7.1.5 Management Reporting

RMS includes a number of reports that Contractor management can use to track the status of the project. The value of these reports is reflective of the quality of the data input, and is maintained in the various sections of RMS. Among these reports are: Progress Payment Request worksheet, Quality Assurance/Quality Control (QA/QC) comments, Submittal Register Status, Three-Phase Control checklists.

1.7.1.6 Request For Information (RFI)

Exchange all Requests For Information (RFI) using the Built-in RFI generator and tracker in RMS.

1.7.2 Finances

1.7.2.1 Pay Activity Data

Include within the RMS database a list of pay activities that the Contractor develops in conjunction with the construction schedule. The sum of pay activities equals the total contract amount, including modifications. Each pay activity must be assigned to a Contract Line Item Number (CLIN). The sum of the activities equals the amount of each CLIN. The sum of all CLINs equals the contract amount.

1.7.2.2 Payment Requests

Prepare all progress payment requests using RMS. Complete the payment request worksheet, prompt payment certification, and payment invoice in RMS. Update the work completed under the contract, measured as percent or as specific quantities, at least monthly. After the update, generate a payment request report using RMS. Submit the payment request, prompt payment certification, and payment invoice with supporting data using RMS CM. If permitted by the Contracting Officer, email or a optical disc may be used. A signed paper copy of the approved payment request is also required and will govern in the event of discrepancy with the electronic version.

1.7.3 Quality Control (QC)

RMS provides a means to track implementation of the 3-phase QC Control System, prepare daily reports, identify and track deficiencies, document progress of work, and support other Contractor QC requirements. Maintain this data on a daily basis. Entered data will automatically output to the

RMS generated daily report. Provide the Government a Contractor Quality Control (CQC) Plan within the time required in Section 01 45 00.00 10 QUALITY CONTROL. Within seven calendar days of Government acceptance, submit a RMS update reflecting the information contained in the accepted CQC Plan: schedule, pay activities, features of work, submittal register, QC requirements, and equipment list.

1.7.3.1 Daily Contractor Quality Control (CQC) Reports.

RMS includes the means to produce the Daily CQC Report. The Contractor can use other formats to record basic Quality Control(QC) data. However, the Daily CQC Report generated by RMS must be the Contractor's official report. Summarize data from any supplemental reports by the Contractor and consolidate onto the RMS-generated Daily CQC Report. Submit daily CQC Reports as required by Section 01 45 00.00 10 QUALITY CONTROL. Electronically submit reports to the Government within 24 hours after the date covered by the report. Also provide the Government a signed, printed copy of the daily CQC report.

1.7.3.2 Deficiency Tracking.

Use RMS to track deficiencies. Deficiencies identified by the Contractor will be numerically tracked using its Quality Control (QC) punch list items. Maintain a current log of its QC punch list items in the RMS database. The Government will log the deficiencies it has identified using its Quality Assurance (QA) punch list items. The Government's QA punch list items will be included in its export file to the Contractor. Regularly update the correction status of both QC and QA punch list items.

1.7.3.3 QC Requirements

Develop and maintain a complete list of QC testing and required structural and life safety special inspections required by the International Code Council (ICC), transferred and installed property, and user training requirements in RMS. Update data on these QC requirements as work progresses, and promptly provide the information to the Government via RMS.

1.7.3.4 Three-Phase Control Meetings

Maintain scheduled and actual dates and times of preparatory and initial control meetings in RMS.

1.7.3.5 Labor and Equipment Hours

Log labor and equipment exposure hours on a daily basis. The labor and equipment exposure data will be rolled up into a monthly exposure report.

1.7.3.6 Accident/Safety Reporting

The Government will issue safety comments, directions, or guidance whenever safety deficiencies are observed. The Government's safety comments will be provided via RMS CM. Regularly update the correction status of the safety comments. In addition, utilize RMS to advise the Government of any accidents occurring on the jobsite. A brief supplemental entry of an accident is not to be considered as a substitute for completion of mandatory reports, e.g., ENG Form 3394 and OSHA Form 300.

1.7.3.7 Features of Work

Include a complete list of the features of work in the RMS database. A feature of work is associated with multiple pay activities. However, each pay activity (see subparagraph "Pay Activity Data" of paragraph "Finances") will only be linked to a single feature of work.

1.7.3.8 Hazard Analysis

Use RMS CM to develop a hazard analysis for each feature of work included in the CQC Plan. The Activity Hazard Analysis will include information required by EM 385-1-1, paragraph 01.A.13.

1.7.4 Submittal Management

The Government will provide the initial submittal register in electronic format. Thereafter, maintain a complete list of submittals, including completion of data columns. Dates when submittals are received and returned by the Government will be included. Use RMS CM to track and transmit submittals. ENG Form 4025, submittal transmittal form, and the submittal register update is produced using RMS. RMS will be used to update, store and exchange submittal registers and transmittals. In addition to requirements stated in specification 01 33 00, actual submittals are to be stored in RMS CM, with hard copies also provided. Exception will be where the Contracting Officer specifies only hard copies required, where size of document cannot be saved in RMS CM, and where samples, spare parts, color boards, and full size drawings are to be provided.

1.7.5 Schedule

Develop a construction schedule consisting of pay activities, in accordance with Section 01 32 01 PROJECT SCHEDULE. Input and maintain in the RMS database the schedule either manually or by using the Standard Data Exchange Format (SDEF) (see Section 01 32 01 PROJECT SCHEDULE). Include with each pay request the updated schedule. Provide electronic copies of transmittals.

1.7.6 Import/Export of Data

RMS includes the ability to import schedule data using SDEF.

1.8 IMPLEMENTATION

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

1.9 MONTHLY COORDINATION MEETING

Update the RMS CM database each workday. At least monthly, generate and submit a schedule update. At least one week prior to submittal, meet with the Government representative to review the planned progress payment data submission for errors and omissions.

Make required corrections prior to Government acceptance of the export file and progress payment request. Payment requests accompanied by incomplete or incorrect data submittals will not be accepted. The Government will not

process progress payments until all required corrections are processed.

1.10 NOTIFICATION OF NONCOMPLIANCE

The Contracting Officer will notify the Contractor of any detected noncompliance with the requirements of this specification. Take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, will be deemed sufficient for the purpose of notification.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

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SECTION 01 45 35

SPECIAL INSPECTIONS
02/15

PART 1 GENERAL

1.1 REFERENCES

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

INTERNATIONAL CODE COUNCIL (ICC)

ICC IBC

(2018) International Building Code

1.2 GENERAL REQUIREMENTS

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

1.3 DEFINITIONS

1.3.1 Continuous Special Inspections

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

1.3.2 Periodic Special Inspections

Periodic Special Inspections is Special Inspections by the special inspector who is intermittently present where the work to be inspected has been or is being performed.

1.3.3 Perform

Perform these Special Inspections tasks for each welded joint or member.

1.3.4 Observe

Observe these Special Inspections items on a random daily basis. Operations need not be delayed pending these inspections.

1.3.5 Special Inspector (SI)

A qualified person retained by the contractor and approved by the Contracting Officer as having the competence necessary to inspect a particular type of construction requiring Special Inspections. The SI must

be an independent third party hired directly by the Prime Contractor.

1.3.6 Associate Special Inspector (ASI)

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

1.3.7 Third Party

A third party inspector must not be company employee of the Contractor or any Sub-Contractor performing the work to be inspected.

1.3.8 Contracting Officer

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

1.3.9 Contractor's Quality Control (QC) Manager

An individual retained by the prime contractor and qualified in accordance with the Section 01 45 00.00 10 QUALITY CONTROL having the overall responsibility for the contractor's QC organization.

1.3.10 Designer of Record (DOR)

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

1.3.11 Statement of Special Inspections (SSI)

A document developed by the DOR identifying the material, systems, components and work required to have Special Inspections.

1.3.12 Schedule of Special Inspections

A schedule which lists each of the required Special Inspections, the extent to which each Special Inspections is to be performed, and the required frequency for each in accordance with ICC IBC Chapter 17.

1.4 SUBMITTALS

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

SD-01 Preconstruction Submittals

SIOR Letter of Acceptance; G, RO
Special Inspections Project Manual; G, RO
Special Inspections Agency's Written Practices
NDT Procedures and Equipment Calibration Records

SD-06 Test Reports

Special Inspections Daily Reports
Special Inspections Biweekly Reports

SD-07 Certificates

Fabrication Plant
Certificate of Compliance
Special Inspector of Record Qualifications; G, RO
Special Inspector Qualifications; G, RO
Qualification Records for NDT technicians

SD-11 Closeout Submittals

Interim Final Report of Special Inspections
Comprehensive Final Report of Special Inspections; G, RO

1.5 SPECIAL INSPECTOR QUALIFICATIONS

Submit qualifications for each special inspector and the special inspector of record.

Certifying Associations	
AABC	Associated Air Balance Council
ACI	American Concrete Institute
AWCI	Association of the Wall and Ceiling Industry
AWS	American Welding Society
FM	Factory Mutual
ICC	International Code Council
NDT	Nondestructive Testing
NICET	National Institute for Certification in Engineering Technologies
PCI	Precast/Prestressed Concrete Institute
PTI	Post-Tensioning Institute
UL	Underwriters Laboratories

1.5.1 Steel Construction and High Strength Bolting

1.5.1.1 Special Inspector

- a. ICC Structural Steel and Bolting Special Inspector certificate with one year of related experience, or
- b. Registered Professional Engineer with related experience

1.5.1.2 Associate Special Inspector

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

1.5.2 Welding Structural Steel

1.5.2.1 Special Inspector

- a. ICC Structural Welding Special Inspector certificate with one year of related experience, or
- b. AWS Certified Welding Inspector

1.5.2.2 Associate Special Inspector

AWS Certified Associate Welding Inspector

1.5.3 Nondestructive Testing of Welds

1.5.3.1 Special Inspector

NDT Level III Certificate

1.5.3.2 Associate Special Inspector

NDT Level II Certificate plus one year of related experience

1.5.4 Cold Formed Steel Framing

1.5.4.1 Special Inspector

- a. ICC Structural Steel and Bolting Special Inspector certificate with one year of related experience, or
- b. ICC Commercial Building Inspector with one year of experience, or
- c. ICC Residential Building Inspector with one year of experience, or
- d. Registered Professional Engineer with related experience

1.5.4.2 Associate Special Inspector

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

1.5.5 Concrete Construction

1.5.5.1 Special Inspector

- a. ICC Reinforced Concrete Special Inspector Certificate with one year of related experience, or
- b. ACI Concrete Construction Special Inspector, or
- c. NICET Concrete Technician Level III Certificate in Construction Materials Testing, or
- d. Registered Professional Engineer with related experience

1.5.5.2 Associate Special Inspector

- a. ACI Concrete Construction Special Inspector in Training, or
- b. Engineer-In-Training with one year of related experience

1.5.6 Prestressed Concrete Construction

1.5.6.1 Special Inspector

- a. ICC Pre-stressed Special Inspector Certificate with one year of related experience, or
- b. PCI Quality Control Technician/ Inspector Level II Certificate with one year of related experience, or
- c. Registered Professional Engineer with related experience

1.5.6.2 Associate Special Inspector

- a. PCI Quality Control Technician/ Inspector Level I Certificate with one year of related experience, or
- b. Engineer-In-Training with one year of related experience

1.5.7 Post-tensioned Concrete Construction

1.5.7.1 Special Inspector

- a. PTI Level 2 Unbonded PT Inspector Certificate, or
- b. Registered Professional Engineer with related experience

1.5.7.2 Associate Special Inspector

- a. PTI Level 1 Unbonded PT Inspector Certificate with one year of related experience, or
- b. Engineer-In-Training with one year of related experience

1.5.8 Masonry Construction

1.5.8.1 Special Inspector

- a. ICC Structural Masonry Special Inspector Certificate with one year of related experience, or
- b. Registered Professional Engineer with related experience

1.5.8.2 Associate Special Inspector

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

1.5.9 Wood

1.5.9.1 Special Inspector

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

- b. ICC Residential Building Inspector with one year of experience, or
- c. Registered Professional Engineer with related experience

1.5.9.2 Associate Special Inspector

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

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

1.5.10.1 Special Inspector

- a. ICC Soils Special Inspector Certificate with one year of related experience, or
- b. NICET Soils Technician Level II Certificate in Construction Material Testing, or
- c. NICET Geotechnical Engineering Technician Level II Construction or Generalist Certificate, or
- d. Geologist-In-Training with one year of related experience, or
- e. Registered Professional Engineer with related experience

1.5.10.2 Associate Special Inspector

- a. NICET Soils Technician Level I Certificate in Construction Material Testing with one year of related experience, or
- b. NICET Geotechnical Engineering Technician Level I Construction or Generalist Certificate with one year of related experience, or
- c. Engineer-In-Training with one year of related experience

1.5.11 Deep Foundations

1.5.11.1 Special Inspector

- a. NICET Soils Technician Level II Certificate in Construction Material Testing, or
- b. NICET Geotechnical Engineering Technician Level II Construction or Generalist Certificate, or
- c. Geologist-In-Training with one year of related experience, or
- d. Registered Professional Engineer with related experience

1.5.11.2 Associate Special Inspector

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

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

1.5.12 Sprayed Fire Resistant Material

1.5.12.1 Special Inspector

- a. ICC Spray-applied Fireproofing Special Inspector Certificate, or
- b. ICC Fire Inspector I Certificate with one year of related experience,
or
- c. Registered Professional Engineer with related experience

1.5.12.2 Associate Special Inspector

Engineer-In-Training with one year of related experience

1.5.13 Mastic and Intumescent Fire Resistant Coatings

1.5.13.1 Special Inspector

- a. ICC Spray-applied Fireproofing Special Inspector Certificate, or
- b. ICC Fire Inspector I Certificate with one year of related experience,
or
- c. Registered Professional Engineer with related experience

1.5.13.2 Associate Special Inspector

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

1.5.14 Exterior Insulation and Finish System (EIFS)

1.5.14.1 Special Inspector

- a. AWCI EIFS Inspector Certificate, or
- b. Exterior Design Institute Certificate, or
- c. Registered Professional Engineer with related experience

1.5.14.2 Associate Special Inspector

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

1.5.15 Fire-Resistant Penetrations and Joints

1.5.15.1 Special Inspector

- a. Passed the UL Firestop Exam with one year of related experience, or
- b. Passed the FM Firestop Exam with one year of related experience, or
- c. Registered Professional Engineer with related experience

1.5.15.2 Associate Special Inspector

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

1.5.16 Smoke Control

1.5.16.1 Special Inspector

- a. AABC Technician Certification with one year of related experience, or
- b. Registered Professional Engineer with related experience

1.5.16.2 Associate Special Inspector

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

1.5.17 [Special Inspector of Record](#) (SIOR)

Registered Professional Engineer

PART 2 PRODUCTS

2.1 FABRICATOR SPECIAL INSPECTIONS

Special Inspections of fabricator's work performed in the fabricator's shop is required to be inspected in accordance with the Statement of Special Inspections and the Schedule of Special Inspections unless the fabricator is certified by the approved agency to perform such work without Special Inspections. Submit the following certifications to the Contracting Officer for information to allow work performed in the fabricator's shop to not be subjected to Special Inspections.

American Institute of Steel Construction (AISC) Certified [Fabrication Plant](#), Category STD.

At the completion of fabrication, submit a [certificate of compliance](#), to be included with the [comprehensive final report](#) of Special Inspections, stating that the materials supplied and work performed by the fabricator are in accordance the construction documents.

PART 3 EXECUTION

3.1 RESPONSIBILITIES

3.1.1 Special Inspector of Record

- a. Supervise all Special Inspectors required by the contract documents and the IBC.
- b. Submit a [SIOR Letter of Acceptance](#) to the Contracting Officer attesting to acceptance of the duties of SIOR, signed and sealed by the SIOR.
- c. Verify the qualifications of all of the Special Inspectors.
- d. Verify the qualifications of fabricators.
- e. Submit Special Inspections agency's [written practices](#) for the monitoring and control of the agency's operations to include the following:

- (1) The agency's procedures for the selection and administration of inspection personnel, describing the training, experience and examination requirements for qualifications and certification of inspection personnel.
 - (2) The agency's inspection procedures, including general inspection, material controls, and visual welding inspection.
- f. Submit [qualification records](#) for nondestructive testing (NDT) technicians designated for the project.
- g. Submit [NDT procedures and equipment calibration records](#) for NDT to be performed and equipment to be used for the project.
- h. Prepare a Special Inspections [Project Manual](#), which will cover the following:
- (1) Roles and responsibilities of the following individuals during Special Inspections: SIOR, SI, General Contractor, Subcontractors, QC Manager, and DOR.
 - (2) Organizational chart and/or communication plan, indicating lines of communication.
 - (3) Contractor's internal plan for scheduling inspections. Address items such as timeliness of inspection requests, who to contact for inspection requests, and availability of alternate inspectors.
 - (4) Indicate the government reporting procedures.
 - (5) Propose forms or templates to be used by SI and SIOR to document inspections.
 - (6) Indicate procedures for tracking nonconforming work and verification that corrective work is complete.
 - (7) Indicate how the SIOR and/or SI will participate in weekly QC meetings.
 - (8) Indicate how Special Inspections of shop fabricated items will be handled when the fabricator's shop is not certified per paragraph FABRICATOR SPECIAL INSPECTIONS.
 - (9) Include a section in the manual that covers each specific item requiring Special Inspections that is indicated on the Schedule of Special Inspections. Provide names and qualifications of each special inspector who will be performing the Special Inspections for each specific item. Provide detail on how the Special Inspections are to be carried out for each item so that the expectations are clear for the General Contractor and the Subcontractor performing the work.
- Make a copy of the Special Inspections Project Manual available on the job site during construction. Submit a copy of the Special Inspections [Project Manual](#) for approval.
- i. Attend coordination and mutual understanding meeting where the information in the Special Inspections Project Manual will be reviewed to verify that all parties have a clear understanding of the Special

Inspections provisions and the individual duties and responsibilities of each party.

- j. Maintain a 3- ring binder for the Special Inspector's daily and [biweekly reports](#) and the Special Inspections Project Manual. This file must be located in a conspicuous place in the project trailer/office to allow review by the Contracting Officer and the DOR.
 - k. Submit a copy of the Special Inspector's [daily reports](#) to the QC Manager.
 - l. Discrepancies that are observed during Special Inspections must be reported to the QC Manager for correction. If discrepancies are not corrected before the special inspector leaves the site the observed discrepancies must be documented in the daily report.
 - m. Submit a biweekly Special Inspections report until all work requiring Special Inspections is complete. A report is required for each biweekly period in which Special Inspections activity occurs, and must include the following:
 - (1) A brief summary of the work performed during the reporting time frame.
 - (2) Changes and/or discrepancies with the drawings, specifications that were observed during the reporting period.
 - (3) Discrepancies which were resolved or corrected.
 - (4) A list of nonconforming items requiring resolution.
 - (5) All applicable test results including nondestructive testing reports.
 - n. At the completion of each Definable Feature of Work (DFOW) requiring Special Inspections, submit an [interim final report](#) of Special Inspections that documents the Special Inspections completed for that DFOW and corrections of all discrepancies noted in the daily reports. The interim final report of Special Inspections must be signed, dated and bear the seal of the SIOR.
 - o. At the completion of the project submit a [comprehensive final report](#) of Special Inspections that documents the Special Inspections completed for the project and corrections of all discrepancies noted in the daily reports. The comprehensive final report of Special Inspections must be signed, dated and bear the seal of the SIOR.
- 3.1.2 Quality Control Manager
- a. Supervise all Special Inspectors required by the contract documents and the IBC.
 - b. Verify the qualifications of all of the Special Inspectors.
 - c. Verify the qualifications of fabricators.
 - d. Maintain a 3- ring binder for the Special Inspector's daily and [biweekly reports](#). This file must be located in a conspicuous place in the project trailer/office to allow review by the Contracting Officer

and the DOR.

- e. Maintain a rework items list that includes discrepancies noted on the Special Inspectors daily report.

3.1.3 Special Inspectors

- a. Inspect all elements of the project for which the special inspector is qualified to inspect and are identified in the Schedule of Special Inspections.
- b. Attend preparatory phase meetings related to the Definable Feature of Work (DFOW) for which the special inspector is qualified to inspect.
- c. Submit Special Inspections agency's [written practices](#) for the monitoring and control of the agency's operations to include the following:
 - (1) The agency's procedures for the selection and administration of inspection personnel, describing the training, experience and examination requirements for qualifications and certification of inspection personnel.
 - (2) The agency's inspection procedures, including general inspection, material controls, and visual welding inspection.
- d. Submit [qualification records](#) for nondestructive testing (NDT) technicians designated for the project.
- e. Submit [NDT procedures and equipment calibration records](#) for NDT to be performed and equipment to be used for the project.
- f. Submit a copy of the [daily reports](#) to the QC Manager.
- g. Discrepancies that are observed during Special Inspections must be reported to the QC Manager for correction. If discrepancies are not corrected before the special inspector leaves the site the observed discrepancies must be documented in the daily report.
- h. Submit a biweekly Special Inspection Report until all inspections are complete. A report is required for each biweekly period in which Special Inspections activity occurs, and must include the following:
 - (1) A brief summary of the work performed during the reporting time frame.
 - (2) Changes and/or discrepancies with the drawings, specifications that were observed during the reporting period.
 - (3) Discrepancies which were resolved or corrected.
 - (4) A list of nonconforming items requiring resolution.
 - (5) All applicable test result including nondestructive testing reports.
- i. At the completion of each DFOW requiring Special Inspections, submit an [interim final report](#) of Special Inspections that documents the Special Inspections completed for that DFOW. Identify the inspector

responsible for each item inspected and corrections of all discrepancies noted in the daily reports. The interim final report of Special Inspections must be signed, dated and indicate the certification of the special inspector qualifying them to conduct the inspection.

- j. At the completion of the project submit a [comprehensive final report](#) of Special Inspections that documents the Special Inspections completed for the project and corrections of all discrepancies noted in the daily reports. The comprehensive final report of Special Inspections must be signed, dated and indicate the certification of the special inspector qualifying them to conduct the inspection.

3.2 DEFECTIVE WORK

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

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TEMPORARY CONSTRUCTION FACILITIES AND CONTROLS

08/09

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.

FOUNDATION FOR CROSS-CONNECTION CONTROL AND HYDRAULIC RESEARCH
(FCCCHR)

FCCCHR List (continuously updated) List of Approved
Backflow Prevention Assemblies

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

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

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

U.S. FEDERAL AVIATION ADMINISTRATION (FAA)

FAA AC 70/7460-1 (2015; Rev L) Obstruction Marking and
Lighting

U.S. FEDERAL HIGHWAY ADMINISTRATION (FHWA)

MUTCD (2015) Manual on Uniform Traffic Control
Devices

1.2 SUBMITTALS

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

SD-01 Preconstruction Submittals

Construction Site Plan; G, RO
Traffic Control Plan; G, RO

SD-07 Certificates

Backflow Preventers Certificate of Full Approval

1.3 CONSTRUCTION SITE PLAN

Prior to the start of work, submit a site plan showing the locations and dimensions of temporary facilities (including layouts and details, equipment and material storage area (onsite and offsite), and access and haul routes, avenues of ingress/egress to the fenced area and details of the fence installation. Identify areas which may have to be graveled to prevent the tracking of mud. Indicate if the use of a supplemental or other staging area is desired. Show locations of safety and construction fences, site trailers, construction entrances, trash dumpsters, temporary sanitary facilities, and worker parking areas.

1.4 BACKFLOW PREVENTERS CERTIFICATE

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.

Submit a certificate recognized by the State or local authority that states the Contractor has completed at least 10 hours of training in backflow preventer installations. The certificate must be current.

1.5 HURRICANE CONDITION OF READINESS

Unless directed otherwise:

- a. Condition FOUR (Sustained winds of [50 knots](#) or greater expected within 72 hours): Normal daily jobsite cleanup and good housekeeping practices. Collect and store in piles or containers scrap lumber, waste material, and rubbish for removal and disposal at the close of each work day. Maintain the construction site including storage areas, free of accumulation of debris. Stack form lumber in neat piles less than [4 feet](#) high. Remove all debris, trash, or objects that could become missile hazards. Contact Contracting Officer for Condition of Readiness (COR) updates and completion of required actions.
- b. Condition THREE (Sustained winds of [50 knots](#) or greater expected within 48 hours): Maintain "Condition FOUR" requirements and commence securing operations necessary for "Condition ONE" which cannot be completed within 18 hours. Cease all routine activities which might interfere with securing operations. Commence securing and stow all gear and portable equipment. Make preparations for securing buildings. Review requirements pertaining to "Condition TWO" and continue action as necessary to attain "Condition THREE" readiness. Contact Contracting Officer for weather and COR updates and completion of required actions.
- c. Condition TWO (Sustained winds of [50 knots](#) or greater expected within 24 hours): Curtail or cease routine activities until securing operation is complete. Reinforce or remove form work and scaffolding. Secure machinery, tools, equipment, materials, or remove from the jobsite. Expend every effort to clear all missile hazards and loose equipment from general base areas. Contact Contracting Officer for weather and Condition of Readiness (COR) updates and completion of required actions.
- d. Condition ONE. (Sustained winds of [50 knots](#) or greater expected within

12 hours): Secure the jobsite, and leave Government premises.

PART 2 PRODUCTS

2.1 TEMPORARY SIGNAGE

2.1.1 Bulletin Board

Immediately upon beginning of work, provide a weatherproof glass-covered bulletin board not less than 36 by 48 inches in size for displaying the Equal Employment Opportunity poster, a copy of the wage decision contained in the contract, Wage Rate Information poster, and other information approved by the Contracting Officer.

2.1.2 Project and Safety Signs

The requirements for the signs, their content, and location are as indicated. Erect signs within 15 days after receipt of the notice to proceed. Correct the data required by the safety sign daily, with light colored metallic or non-metallic numerals.

2.2 TEMPORARY TRAFFIC CONTROL

2.2.1 Haul Routes

Construct access and haul routes necessary for proper prosecution of the work under this contract. Construct with suitable grades and widths; avoid sharp curves, blind corners, and dangerous cross traffic. Provide necessary lighting, signs, barricades, and distinctive markings for the safe movement of traffic. The method of dust control, although optional, must be adequate to ensure safe operations. Location, grade, width, and alignment of construction and haul routes are subject to approval by the Contracting Officer. Lighting must be adequate to ensure full and clear visibility for full width of haul route and work areas during night work operations.

2.2.2 Barricades

Erect and maintain temporary barricades to limit public access to hazardous areas. Whenever safe public access to paved areas such as roads, parking areas or sidewalks is prevented by construction activities or as otherwise necessary to ensure the safety of both pedestrian and vehicular traffic barricades will be required. Securely place barricades clearly visible with adequate illumination to provide sufficient visual warning of the hazard during both day and night.

2.2.3 Fencing

Provide safety fencing at temporary hazards and work site areas considered to be hazardous to the general public. This fencing shall remain the property of the Contractor. The safety fencing shall be high visibility orange, high density polypropylene grid or approved equal, a minimum of 42 inches high, supported and tightly secured to steel posts located on maximum 10-foot centers, constructed at the approved location. Maintain the safety fencing during the life of the hazard and remove the fencing upon completion and acceptance of the work.

2.2.4 Temporary Wiring

Provide temporary wiring in accordance with NFPA 241 and NFPA 70. Include frequent inspection of all equipment and apparatus.

PART 3 EXECUTION

3.1 EMPLOYEE PARKING

Contractor employees will park privately owned vehicles in an area designated by the Contracting Officer. This area will be within reasonable walking distance of the construction site. Contractor employee parking must not interfere with existing and established parking requirements of the government installation.

3.2 TEMPORARY BULLETIN BOARD

Locate the bulletin board at the project site in a conspicuous place easily accessible to all employees, as approved by the Contracting Officer.

3.3 AVAILABILITY AND USE OF UTILITY SERVICES

3.3.1 2.16.4 Temporary Utilities

Temporary utilities (water, sewer, electrical, telecommunications, etc.) shall be at the Contractor's expense and subject to Fort Bragg regulations. In the case of privatization utility Contractors, the utility cost information is at Appendix I "Utility Data For Building Life Cycle Cost (BLCC) Analysis". Negotiate and contract with the privatization utility directly without benefit of the Government. Coordinate with Sandhills Utilities Services for temporary electrical services. Sandhills Utilities Services will provide estimate for connection costs.

3.3.2 Sanitation

Provide and maintain within the construction area minimum field-type sanitary facilities approved by the Contracting Officer and periodically empty wastes into a municipal, district, or station sanitary sewage system, or remove waste to a commercial facility. Obtain approval from the system owner prior to discharge into any municipal, district, or commercial sanitary sewer system. Penalties and fines associated with improper discharge will be the responsibility of the Contractor. Coordinate with the Contracting Officer and follow station regulations and procedures when discharging into the station sanitary sewer system. Maintain these conveniences at all times without nuisance. Include provisions for pest control and elimination of odors. Government toilet facilities will not be available to Contractor's personnel.

3.3.3 Telephone

Make arrangements and pay the costs for telephone facilities desired.

3.3.4 Obstruction Lighting of Cranes

Provide a minimum of 2 aviation red or high intensity white obstruction lights on temporary structures (including cranes) over 100 feet above ground level. Light construction and installation must comply with FAA AC 70/7460-1. Lights must be operational during periods of reduced visibility, darkness, and as directed by the Contracting Officer.

3.3.5 Fire Protection

Provide temporary fire protection equipment for the protection of personnel and property during construction. Remove debris and flammable materials weekly to minimize potential hazards.

3.4 TRAFFIC PROVISIONS

3.4.1 Maintenance of Traffic

- a. Conduct operations in a manner that will not close any thoroughfare or interfere in any way with traffic on railways or highways except with written permission of the Contracting Officer at least 15 calendar days prior to the proposed modification date, and provide a [Traffic Control Plan](#) detailing the proposed controls to traffic movement for approval. The plan must be in accordance with State and local regulations and the [MUTCD](#), Part VI. Make all notifications and obtain any permits required for modification to traffic movements outside Station's jurisdiction.. Contractor may move oversized and slow-moving vehicles to the worksite provided requirements of the highway authority have been met.
- b. Conduct work so as to minimize obstruction of traffic, and maintain traffic on at least half of the roadway width at all times. Obtain approval from the Contracting Officer prior to starting any activity that will obstruct traffic.
- c. Provide, erect, and maintain, at contractors expense, lights, barriers, signals, passageways, detours, and other items, that may be required by the Life Safety Signage, overhead protection authority having jurisdiction.

3.4.2 Protection of Traffic

Maintain and protect traffic on all affected roads during the construction period except as otherwise specifically directed by the Contracting Officer. Measures for the protection and diversion of traffic, including the provision of watchmen and flagmen, erection of barricades, placing of lights around and in front of equipment the work, and the erection and maintenance of adequate warning, danger, and direction signs, will be as required by the State and local authorities having jurisdiction. Protect the traveling public from damage to person and property. Minimize the interference with public traffic on roads selected for hauling material to and from the site. Investigate the adequacy of existing roads and their allowable load limit. Contractor is responsible for the repair of any damage to roads caused by construction operations.

3.4.3 Dust Control

Dust control methods and procedures must be approved by the Contracting Officer. Treat dust abatement on access roads with applications of calcium chloride, water sprinklers, or similar methods or treatment.

3.5 CONTRACTOR'S TEMPORARY FACILITIES

Trailers, equipment, and materials shall not be open to public view with the exceptions of those items which are in support of that day's work. Do not stockpile materials outside the fence in preparation for the next day's work. Park mobile equipment, such as tractors, wheeled lifting equipment,

cranes, and trucks, within the fenced area at the end of each work day. Locate construction trailers within limits of construction. Locate the laydown yard/storage area within the limits of the construction area unless previously approved by the Contracting Officer and the Installation.

3.5.1 Safety

Protect the integrity of installed safety systems and personnel safety devices. If entrance into systems serving safety devices is required, the Contractor must obtain prior approval from the Contracting Officer. If it is temporarily necessary to remove or disable personnel safety devices in order to accomplish contract requirements, provide alternative means of protection prior to removing or disabling any permanently installed safety devices or equipment and obtain approval from the Contracting Officer.

3.5.2 Administrative Field Offices

Provide and maintain administrative field office facilities within the construction area at the designated site. Government office and warehouse facilities will not be available to the Contractor's personnel. Request the E911 Street Address for the temporary field office. DPW will coordinate the Installation building number and E911 street address. A drawing showing the temporary office trailer may be required by the County to get the E911 address.

3.5.3 Supplemental Storage Area

Upon Contractor's request, the Contracting Officer will designate another or supplemental area for the Contractor's use and storage of trailers, equipment, and materials. This area may not be in close proximity of the construction site but will be within the installation boundaries. Fencing of materials or equipment will not be required at this site; however, the Contractor is responsible for cleanliness and orderliness of the area used and for the security of material or equipment stored in this area. Utilities will not be provided to this area by the Government.

3.5.4 Appearance of Trailers

Trailers utilized by the Contractor for administrative or material storage purposes must present a clean and neat exterior appearance and be in a state of good repair. Trailers which, in the opinion of the Contracting Officer, require exterior painting or maintenance will not be allowed on installation property.

3.5.5 Maintenance of Storage Area

Keep fencing in a state of good repair and proper alignment. If the Contractor elects to traverse grassed or unpaved areas, which are not established roadways, cover the grassed or unpaved areas with a layer of gravel as necessary to prevent rutting and the tracking of mud onto paved or established roadways; gravel gradation shall be at the Contractor's discretion. Mow grass located within the boundaries of the construction site for the duration of the project. Trim grass and vegetation along fences, buildings, under trailers, and in areas not accessible to mowers and edge neatly.

3.5.6 New Building

In the event a new building is constructed for the temporary project field

office, it will be a minimum 12 feet in width, 16 feet in length and have a minimum of 7 feet headroom. Equip the building with approved electrical wiring, at least one double convenience outlet and the required switches and fuses to provide 110-120 volt power. Provide a work table with stool, desk with chair, two additional chairs, and one legal size file cabinet that can be locked. The building must be waterproof, supplied with a heater, have a minimum of two doors, electric lights, a telephone, a battery operated smoke detector alarm, a sufficient number of adjustable windows for adequate light and ventilation, and a supply of approved drinking water. Approved sanitary facilities must be furnished. Screen the windows and doors and provide the doors with dead bolt type locking devices or a padlock and heavy duty hasp bolted to the door. Door hinge pins will be non-removable. Arrange the windows to open and to be securely fastened from the inside. Protect glass panels in windows by bars or heavy mesh screens to prevent easy access. In warm weather, furnish air conditioning capable of maintaining the office at 50 percent relative humidity and a room temperature 20 degrees F below the outside temperature when the outside temperature is 95 degrees F. Any new building erected for a temporary field office must be maintained by the Contractor during the life of the contract and upon completion and acceptance of the work become the property of the Contractor and removed from the site.

3.5.7 Security Provisions

Provide adequate outside security lighting at the temporary facilities. The Contractor shall be responsible for the security of its own equipment. Notify the appropriate law enforcement agency requesting periodic security checks of the temporary field offices.

3.5.8 Weather Protection of Temporary Facilities and Stored Materials

Take necessary precautions to ensure that roof openings and other critical openings in the building are monitored carefully. Take immediate actions required to seal off such openings when rain or other detrimental weather is imminent, and at the end of each workday. Ensure that the openings are completely sealed off to protect materials and equipment in the building from damage.

3.5.9 Building and Site Storm Protection

When a warning of gale force winds is issued, take precautions to minimize danger to persons, and protect the work and nearby Government property. Precautions must include, but are not limited to, closing openings; removing loose materials, tools and equipment from exposed locations; and removing or securing scaffolding and other temporary work. Close openings in the work when storms of lesser intensity pose a threat to the work or any nearby Government property.

3.6 GOVERNMENT FIELD OFFICE

3.6.1 Resident Engineer's Office

Provide the Government Resident Engineer with an office, approximately 200 square feet in floor area, located where directed and providing space heat, electric light and power, and toilet facilities consisting of one lavatory and one water closet complete with connections to water and sewer mains. Provide a mail slot in the door or a lockable mail box mounted on the surface of the door. Include a 4 by 8 foot plan table, computer work space a standard size office desk and chair, and telephone. At completion of the

project, the office will remain the property of the Contractor and be removed from the site. Utilities will be connected and disconnected in accordance with local codes and to the satisfaction of the Contracting Officer.

3.6.2 Trailer-Type Mobile Office

The Contractor may, at its option, furnish and maintain a trailer-type mobile office acceptable to the Contracting Officer and providing as a minimum the facilities specified above. Securely anchor the trailer to the ground at all four corners to guard against movement during high winds.

3.7 PLANT COMMUNICATION

Whenever the Contractor has the individual elements of its plant so located that operation by normal voice between these elements is not satisfactory, the Contractor must install a satisfactory means of communication, such as telephone or other suitable devices and made available for use by Government personnel.

3.8 TEMPORARY PROJECT SAFETY FENCING

As soon as practical, but not later than 15 days after the date established for commencement of work, provide temporary project safety fencing around the construction site. This fencing shall remain the property of the Contractor. The safety fencing shall be 9 gauge chain link fence, a minimum of 72 inches high, supported and tightly secured to steel posts located on a maximum of 10-foot centers, constructed at the approved location. Maintain the safety fencing during the life of the Contract and upon completion and acceptance of the work remove all fencing from the work site. Prior to erection of any temporary project safety fencing, coordinate with Fort Bragg DPW Transportation Engineer, Ray Goff; 910-907-1759 to check appropriate traffic safety sight lines. Installation and locating of project safety fencing shall consider sight triangles at intersections, curves, and construction entrances.

3.9 CLEANUP

Remove construction debris, waste materials, packaging material and the like from the work site daily. Clean up dirt and mud tracked onto paved and surfaced roadways. Store materials resulting from demolition activities which are salvageable within the fenced area described or at a supplemental storage area. Neatly stack stored materials, not in trailers, whether new or salvaged.

3.10 RESTORATION OF STORAGE AREA

Upon completion of the project remove the bulletin board, signs, barricades, haul routes, and other temporary products from the site. After removal of trailers, materials, and equipment from within the fenced area, remove the fence that will become the property of the Contractor. Restore areas used by the Contractor for the storage of equipment or material, or other use to the original or better condition. Remove gravel used to traverse grassed areas and restore the area to its original condition, including top soil and seeding as necessary.

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TEMPORARY ENVIRONMENTAL CONTROLS

11/15

PART 1 GENERAL

1.1 REFERENCES

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

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

29 CFR 1910.120	Hazardous Waste Operations and Emergency Response
40 CFR 112	Oil Pollution Prevention
40 CFR 122.26	Storm Water Discharges (Applicable to State NPDES Programs, see section 123.25)
40 CFR 152	Pesticide Registration and Classification Procedures
40 CFR 152 - 186	Pesticide Programs
40 CFR 241	Guidelines for Disposal of Solid Waste
40 CFR 243	Guidelines for the Storage and Collection of Residential, Commercial, and Institutional Solid Waste
40 CFR 258	Subtitle D Landfill Requirements
40 CFR 260	Hazardous Waste Management System: General
40 CFR 261	Identification and Listing of Hazardous Waste
40 CFR 261.7	Residues of Hazardous Waste in Empty Containers
40 CFR 262	Standards Applicable to Generators of Hazardous Waste
40 CFR 263	Standards Applicable to Transporters of Hazardous Waste
40 CFR 264	Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
40 CFR 265	Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities

40 CFR 266	Standards for the Management of Specific Hazardous Wastes and Specific Types of Hazardous Waste Management Facilities
40 CFR 268	Land Disposal Restrictions
40 CFR 273	Standards For Universal Waste Management
40 CFR 273.2	Standards for Universal Waste Management - Batteries
40 CFR 273.4	Standards for Universal Waste Management - Mercury Containing Equipment
40 CFR 273.5	Standards for Universal Waste Management - Lamps
40 CFR 279	Standards for the Management of Used Oil
40 CFR 300	National Oil and Hazardous Substances Pollution Contingency Plan
40 CFR 300.125	National Oil and Hazardous Substances Pollution Contingency Plan - Notification and Communications
40 CFR 355	Emergency Planning and Notification
40 CFR 403	General Pretreatment Regulations for Existing and New Sources of Pollution
40 CFR 50	National Primary and Secondary Ambient Air Quality Standards
40 CFR 60	Standards of Performance for New Stationary Sources
40 CFR 63	National Emission Standards for Hazardous Air Pollutants for Source Categories
40 CFR 64	Compliance Assurance Monitoring
49 CFR 171	General Information, Regulations, and Definitions
49 CFR 172	Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements
49 CFR 173	Shippers - General Requirements for Shipments and Packagings
49 CFR 178	Specifications for Packagings

1.2 DEFINITIONS

1.2.1 Class I and II Ozone Depleting Substance (ODS)

Class I ODS is defined in Section 602(a) of The Clean Air Act. A list of Class I ODS can be found on the EPA website at the following weblink.

<http://www.epa.gov/ozone/science/ods/classone.html>.

Class II ODS is defined in Section 602(s) of The Clean Air Act. A list of Class II ODS can be found on the EPA website at the following weblink.

<http://www.epa.gov/ozone/science/ods/classtwo.html>.

1.2.2 Contractor Generated Hazardous Waste

Contractor generated hazardous waste is materials that, if abandoned or disposed of, may meet the definition of a hazardous waste. These waste streams would typically consist of material brought on site by the Contractor to execute work, but are not fully consumed during the course of construction. Examples include, but are not limited to, excess paint thinners (i.e. methyl ethyl ketone, toluene), waste thinners, excess paints, excess solvents, waste solvents, excess pesticides, and contaminated pesticide equipment rinse water.

1.2.3 Debris

Debris is non-hazardous solid material generated during the construction, demolition, or renovation of a structure that exceeds 2.5-inch particle size that is: a manufactured object; plant or animal matter; or natural geologic material (for example, cobbles and boulders), broken or removed concrete, masonry, and rock asphalt paving; ceramics; roofing paper and shingles. Inert materials may be reinforced with or contain ferrous wire, rods, accessories and weldments. A mixture of debris and other material such as soil or sludge is also subject to regulation as debris if the mixture is comprised primarily of debris by volume, based on visual inspection.

1.2.4 Electronics Waste

Electronics waste is discarded electronic devices intended for salvage, recycling, or disposal.

1.2.5 Environmental Pollution and Damage

Environmental pollution and damage is the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human life; affect other species of importance to humankind; or degrade the environment aesthetically, culturally or historically.

1.2.6 Environmental Protection

Environmental protection is the prevention/control of pollution and habitat disruption that may occur to the environment during construction. The control of environmental pollution and damage requires consideration of land, water, and air; biological and cultural resources; and includes management of visual aesthetics; noise; solid, chemical, gaseous, and liquid waste; radiant energy and radioactive material as well as other pollutants.

1.2.7 Green Waste

Green waste is the vegetative matter from landscaping, land clearing and grubbing, including, but not limited to, grass, bushes, scrubs, small trees and saplings, tree stumps and plant roots. Marketable trees, grasses and plants that are indicated to remain, be re-located, or be re-used are not included.

1.2.8 Hazardous Debris

As defined in paragraph SOLID WASTE, debris that contains listed hazardous waste (either on the debris surface, or in its interstices, such as pore structure) in accordance with 40 CFR 261. Hazardous debris also includes debris that exhibits a characteristic of hazardous waste in accordance with 40 CFR 261.

1.2.9 Hazardous Materials

Hazardous materials as defined in 49 CFR 171 and listed in 49 CFR 172.

Hazardous material is any material that: Is regulated as a hazardous material in accordance with 49 CFR 173; or requires a Safety Data Sheet (SDS) in accordance with 29 CFR 1910.120; or during end use, treatment, handling, packaging, storage, transportation, or disposal meets or has components that meet or have potential to meet the definition of a hazardous waste as defined by 40 CFR 261 Subparts A, B, C, or D. Designation of a material by this definition, when separately regulated or controlled by other sections or directives, does not eliminate the need for adherence to that hazard-specific guidance which takes precedence over this section for "control" purposes. Such material includes ammunition, weapons, explosive actuated devices, propellants, pyrotechnics, chemical and biological warfare materials, medical and pharmaceutical supplies, medical waste and infectious materials, bulk fuels, radioactive materials, and other materials such as asbestos, mercury, and polychlorinated biphenyls (PCBs).

1.2.10 Hazardous Waste

Hazardous Waste is any material that meets the definition of a solid waste and exhibit a hazardous characteristic (ignitability, corrosivity, reactivity, or toxicity) as specified in 40 CFR 261, Subpart C, or contains a listed hazardous waste as identified in 40 CFR 261, Subpart D.

1.2.11 Installation Pest Management Coordinator

Installation Pest Management Coordinator (IPMC) is the individual officially designated by the Installation Commander to oversee the Installation Pest Management Program and the Installation Pest Management Plan.

1.2.12 Land Application

Land Application means spreading or spraying discharge water at a rate that allows the water to percolate into the soil. No sheeting action, soil erosion, discharge into storm sewers, discharge into defined drainage areas, or discharge into the "waters of the United States" must occur. Comply with federal, state, and local laws and regulations.

1.2.13 Material not regulated as solid waste

Material not regulated as solid waste is nuclear source or byproduct materials regulated under the Federal Atomic Energy Act of 1954 as amended; suspended or dissolved materials in domestic sewage effluent or irrigation return flows, or other regulated point source discharges; regulated air emissions; and fluids or wastes associated with natural gas or crude oil exploration or production.

1.2.14 Municipal Separate Storm Sewer System (MS4) Permit

MS4 permits are those held by installations to obtain NPDES permit coverage for their stormwater discharges.

1.2.15 National Pollutant Discharge Elimination System (NPDES)

The NPDES permit program controls water pollution by regulating point sources that discharge pollutants into waters of the United States.

1.2.16 Non-Hazardous Waste

Non-hazardous waste is waste that is excluded from, or does not meet, hazardous waste criteria in accordance with [40 CFR 263](#).

1.2.17 Oily Waste

Oily waste are those materials that are, or were, mixed with Petroleum, Oils, and Lubricants (POLs) and have become separated from that POLs. Oily wastes also means materials, including wastewaters, centrifuge solids, filter residues or sludges, bottom sediments, tank bottoms, and sorbents which have come into contact with and have been contaminated by, POLs and may be appropriately tested and discarded in a manner which is in compliance with other state and local requirements.

This definition includes materials such as oily rags, "kitty litter" sorbent clay and organic sorbent material. These materials may be land filled provided that: It is not prohibited in other state regulations or local ordinances; the amount generated is "de minimus" (a small amount); it is the result of minor leaks or spills resulting from normal process operations; and free-flowing oil has been removed to the practicable extent possible. Large quantities of this material, generated as a result of a major spill or in lieu of proper maintenance of the processing equipment, are a solid waste. As a solid waste, perform a hazardous waste determination prior to disposal. As this can be an expensive process, it is recommended that this type of waste be minimized through good housekeeping practices and employee education.

1.2.18 Pesticide

Pesticide is any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest, or intended for use as a plant regulator, defoliant or desiccant.

1.2.19 Pesticide Treatment Plan

A plan for the prevention, monitoring, and control to eliminate pest infestation.

1.2.20 Pests

Pests are arthropods, birds, rodents, nematodes, fungi, bacteria, viruses, algae, snails, marine borers, snakes, weeds and other organisms (except for human or animal disease-causing organisms) that adversely affect readiness, military operations, or the well-being of personnel and animals; attack or damage real property, supplies, equipment, or vegetation; or are otherwise undesirable.

1.2.21 Project Pesticide Coordinator

The Project Pesticide Coordinator (PPC) is an individual who resides at a Civil Works Project office and who is responsible overseeing of pesticide application on project grounds.

1.2.22 Recyclables

Recyclables are materials, equipment and assemblies such as doors, windows, door and window frames, plumbing fixtures, glazing and mirrors that are recovered and sold as recyclable, and structural components. It also includes commercial-grade refrigeration equipment with Freon removed, household appliances where the basic material content is metal, clean polyethylene terephthalate bottles, cooking oil, used fuel oil, textiles, high-grade paper products and corrugated cardboard, stackable pallets in good condition, clean crating material, and clean rubber/vehicle tires. Metal meeting the definition of lead contaminated or lead based paint contaminated may be included as recyclable if sold to a scrap metal company. Paint cans that meet the definition of empty containers in accordance with 40 CFR 261.7 may be included as recyclable if sold to a scrap metal company.

1.2.23 Regulated Waste

Regulated waste are solid wastes that have specific additional federal, state, or local controls for handling, storage, or disposal.

1.2.24 Scrap Metal

This includes scrap and excess ferrous and non-ferrous metals such as reinforcing steel, structural shapes, pipe, and wire that are recovered or collected and disposed of as scrap. Scrap metal meeting the definition of hazardous material or hazardous waste is not included.

1.2.25 Sediment

Sediment is soil and other debris that have eroded and have been transported by runoff water or wind.

1.2.26 Solid Waste

Solid waste is a solid, liquid, semi-solid or contained gaseous waste. A solid waste can be a hazardous waste, non-hazardous waste, or non-Resource Conservation and Recovery Act (RCRA) regulated waste. Types of solid waste typically generated at construction sites may include:

1.2.27 Stormwater

Stormwater is any precipitation in an urban or suburban area that does not evaporate or soak into the ground, but instead collects and flows into

storm drains, rivers, and streams.

1.2.28 Surface Discharge

Surface discharge means discharge of water into drainage ditches, storm sewers, creeks or "waters of the United States". Surface discharges are discrete, identifiable sources and require a permit from the governing agency. Comply with federal, state, and local laws and regulations.

1.2.29 Surplus Soil

Surplus soil is existing soil that is in excess of what is required for this work, including aggregates intended, but not used, for on-site mixing of concrete, mortars, and paving. Contaminated soil meeting the definition of hazardous material or hazardous waste is not included and must be managed in accordance with paragraph HAZARDOUS MATERIAL MANAGEMENT.

1.2.30 Universal Waste

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

1.2.31 Wastewater

Wastewater is the used water and solids from a community that flow to a treatment plant.

1.2.32 Waters of the United States

Waters of the United States means Federally jurisdictional waters, including wetlands, that are subject to regulation under Section 404 of the Clean Water Act or navigable waters, as defined under the Rivers and Harbors Act.

1.2.33 Wetlands

Wetlands are those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

1.2.34 Wood

Wood is dimension and non-dimension lumber, plywood, chipboard, hardboard. Treated or painted wood that meets the definition of lead contaminated or lead based contaminated paint is not included. Treated wood includes, but is not limited to, lumber, utility poles, crossties, and other wood products with chemical treatment.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When

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

SD-01 Preconstruction Submittals

Preconstruction Survey
Solid Waste Management Permit; G, RO
Regulatory Notifications; G, RO
Environmental Protection Plan; G, RO
Stormwater Notice of Intent (for NPDES coverage under the general permit for construction activities); G, RO
Dirt and Dust Control Plan; G, RO
Employee Training Records; G, RO
Environmental Manager Qualifications; G, RO

SD-06 Test Reports

Inspection Reports; G, RO
Solid Waste Management Report; G, RO

SD-07 Certificates

Employee Training Records; G, RO
Erosion and Sediment Control Inspector Qualifications; G, RO

SD-11 Closeout Submittals

Stormwater Pollution Prevention Plan Compliance Notebook; G, RO
Stormwater Notice of Termination (for NPDES coverage under the general permit for construction activities); G, RO
Waste Determination Documentation; G, RO
Disposal Documentation for Hazardous and Regulated Waste; G, RO
Assembled Employee Training Records; G, RO
Solid Waste Management Permit; G, RO
Solid Waste Management Report; G, RO
Hazardous Waste/Debris Management; G, RO
Regulatory Notifications; G, RO
Sales Documentation; G, RO
Contractor Certification
As-Built Topographic Survey

1.4 ENVIRONMENTAL PROTECTION REQUIREMENTS

Provide and maintain, during the life of the contract, environmental protection as defined. Plan for and provide environmental protective measures to control pollution that develops during construction practice. Plan for and provide environmental protective measures required to correct conditions that develop during the construction of permanent or temporary environmental features associated with the project. Protect the environmental resources within the project boundaries and those affected outside the limits of permanent work during the entire duration of this Contract. Comply with federal, state, and local regulations pertaining to the environment, including water, air, solid waste, hazardous waste and substances, oily substances, and noise pollution.

Tests and procedures assessing whether construction operations comply with Applicable Environmental Laws may be required. Analytical work must be performed by qualified laboratories; and where required by law, the

laboratories must be certified.

Perform work under this contract consistent with the policy and objectives identified in the installation's Environmental Management System (EMS). Perform work in a manner that conforms to objectives and targets of the environmental programs and operational controls identified by the EMS. Support Government personnel when environmental compliance and EMS audits are conducted by escorting auditors at the Project site, answering questions, and providing proof of records being maintained. Provide monitoring and measurement information as necessary to address environmental performance relative to environmental, energy, and transportation management goals. In the event an EMS nonconformance or environmental noncompliance associated with the contracted services, tasks, or actions occurs, take corrective and preventative actions. In addition, employees must be aware of their roles and responsibilities under the installation EMS and of how these EMS roles and responsibilities affect work performed under the contract.

Coordinate with the installation's EMS coordinator to identify training needs associated with environmental aspects and the EMS, and arrange training or take other action to meet these needs. Provide training documentation to the Contracting Officer. The Installation Environmental Office will retain associated environmental compliance records. Make EMS Awareness training completion certificates available to Government auditors during EMS audits and include the certificates in the Employee Training Records. See paragraph EMPLOYEE TRAINING RECORDS.

1.5 QUALITY ASSURANCE

1.5.1 Preconstruction Survey and Protection of Features

This paragraph supplements the Contract Clause PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, AND IMPROVEMENTS. Prior to start of any onsite construction activities, perform a [Preconstruction Survey](#) of the project site with the Contracting Officer, and take photographs showing existing environmental conditions in and adjacent to the site. Submit a report for the record. Include in the report a plan describing the features requiring protection under the provisions of the Contract Clauses, which are not specifically identified on the drawings as environmental features requiring protection along with the condition of trees, shrubs and grassed areas immediately adjacent to the site of work and adjacent to the Contractor's assigned storage area and access route(s), as applicable. The Contractor and the Contracting Officer will sign this survey report upon mutual agreement regarding its accuracy and completeness. Protect those environmental features included in the survey report and any indicated on the drawings, regardless of interference that their preservation may cause to the work under the Contract.

1.5.2 [Regulatory Notifications](#)

Provide regulatory notification requirements in accordance with federal, state and local regulations. In cases where the Government will also provide public notification (such as stormwater permitting), coordinate with the Contracting Officer. Submit copies of regulatory notifications to the Contracting Officer within 21 days prior to commencement of work activities. Typically, regulatory notifications must be provided for the following (this listing is not all-inclusive): demolition, renovation, NPDES defined site work, construction, removal or use of a permitted air emissions source, and remediation of controlled substances (asbestos,

hazardous waste, lead paint).

1.5.3 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 installation; and types and quantities of wastes/wastewater that may be generated during the Contract. Discuss the results of the Preconstruction Survey at this time.

Prior to initiating any work on site, meet with the Contracting Officer and installation Environmental Office to discuss the proposed Environmental Protection Plan (EPP). Develop a mutual understanding relative to the details of environmental protection, including measures for protecting natural and cultural resources, required reports, required permits, permit requirements (such as mitigation measures), and other measures to be taken.

1.5.4 Environmental Manager

Appoint in writing an Environmental Manager for the project site. The Environmental Manager is directly responsible for coordinating contractor compliance with federal, state, local, and installation requirements. The Environmental Manager must ensure compliance with Hazardous Waste Program requirements (including hazardous waste handling, storage, manifesting, and disposal); implement the EPP; ensure environmental permits are obtained, maintained, and closed out; ensure compliance with Stormwater Program requirements; ensure compliance with Hazardous Materials (storage, handling, and reporting) requirements; and coordinate any remediation of regulated substances (lead, asbestos, PCB transformers). This can be a collateral position; however, the person in this position must be trained to adequately accomplish the following duties: ensure waste segregation and storage compatibility requirements are met; inspect and manage Satellite Accumulation areas; ensure only authorized personnel add wastes to containers; ensure Contractor personnel are trained in 40 CFR requirements in accordance with their position requirements; coordinate removal of waste containers; and maintain the Environmental Records binder and required documentation, including environmental permits compliance and close-out. Submit [Environmental Manager Qualifications](#) to the Contracting Officer.

1.5.5 Employee Training Records

Prepare and maintain [Employee Training Records](#) throughout the term of the contract meeting applicable 40 CFR requirements. Provide Employee Training Records in the Environmental Records Binder. Submit these [Assembled Employee Training Records](#) to the Contracting Officer at the conclusion of the project, unless otherwise directed.

Train personnel to meet EPA and state requirements. Conduct environmental protection/pollution control meetings for personnel prior to commencing construction activities. Contact additional meetings for new personnel and when site conditions change. Include in the training and meeting agenda: methods of detecting and avoiding pollution; familiarization with statutory and contractual pollution standards; installation and care of devices, vegetative covers, and instruments required for monitoring purposes to ensure adequate and continuous environmental protection/pollution control; anticipated hazardous or toxic chemicals or wastes, and other regulated contaminants; recognition and protection of archaeological sites, artifacts, waters of the United States, and endangered species and their habitat that are known to be in the area. Provide copy of the [Erosion and](#)

Sediment Control Inspector Qualifications as defined by EPA and Certification as required by North Carolina.

1.5.6 Non-Compliance Notifications

The Contracting Officer will notify the Contractor in writing of any observed noncompliance with federal, state or local environmental laws or regulations, permits, and other elements of the Contractor's EPP. After receipt of such notice, inform the Contracting Officer of the proposed corrective action and take such action when approved by the Contracting Officer. The Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No time extensions will be granted or equitable adjustments allowed for any such suspensions. This is in addition to any other actions the Contracting Officer may take under the contract, or in accordance with the Federal Acquisition Regulation or Federal Law.

1.6 ENVIRONMENTAL PROTECTION PLAN

The purpose of the EPP is to present an overview of known or potential environmental issues that must be considered and addressed during construction. Incorporate construction related objectives and targets from the installation's EMS into the EPP. Include in the EPP measures for protecting natural and cultural resources, required reports, and other measures to be taken. Meet with the Contracting Officer or Contracting Officer Representative to discuss the EPP and develop a mutual understanding relative to the details for environmental protection including measures for protecting natural resources, required reports, and other measures to be taken. Submit the EPP within 15 days after notice to proceed and not less than 15 days before the preconstruction meeting. Revise the EPP throughout the project to include any reporting requirements, changes in site conditions, or contract modifications that change the project scope of work in a way that could have an environmental impact. No requirement in this section will relieve the Contractor of any applicable federal, state, and local environmental protection laws and regulations. During Construction, identify, implement, and submit for approval any additional requirements to be included in the EPP. Maintain the current version onsite.

The EPP includes, but is not limited to, the following elements:

1.6.1 General Overview and Purpose

1.6.1.1 Descriptions

A brief description of each specific plan required by environmental permit or elsewhere in this Contract such as stormwater pollution prevention plan, spill control plan, solid waste management plan, wastewater management plan, air pollution control plan, contaminant prevention plan, pesticide treatment plan, a historical, archaeological, cultural resources, biological resources and wetlands plan, traffic control plan Non-Hazardous Solid Waste Disposal Plan and borrowing material plan.

1.6.1.2 Duties

The duties and level of authority assigned to the person(s) on the job site who oversee environmental compliance, such as who is responsible for adherence to the EPP, who is responsible for spill cleanup and training personnel on spill response procedures, who is responsible for manifesting

hazardous waste to be removed from the site (if applicable), and who is responsible for training the Contractor's environmental protection personnel.

1.6.1.3 Procedures

A copy of any standard or project-specific operating procedures that will be used to effectively manage and protect the environment on the project site.

1.6.1.4 Communications

Communication and training procedures that will be used to convey environmental management requirements to Contractor employees and subcontractors.

1.6.1.5 Contact Information

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

1.6.2 General Site Information

1.6.2.1 Drawings

Drawings showing locations of proposed temporary excavations or embankments for haul roads, stream crossings, jurisdictional wetlands, material storage areas, structures, sanitary facilities, storm drains and conveyances, and stockpiles of excess soil.

1.6.2.2 Work Area

Work area plan showing the proposed activity in each portion of the area and identify the areas of limited use or nonuse. Include measures for marking the limits of use areas, including methods for protection of features to be preserved within authorized work areas and methods to control runoff and to contain materials on site, and a traffic control plan.

1.6.2.3 Documentation

A letter signed by an officer of the firm appointing the Environmental Manager and stating that person is responsible for managing and implementing the Environmental Program as described in this contract. Include in this letter the Environmental Manager's authority to direct the removal and replacement of non-conforming work.

1.6.3 Management of Natural Resources

- a. Land resources
- b. Tree protection
- c. Replacement of damaged landscape features
- d. Temporary construction
- e. Stream crossings
- f. Fish and wildlife resources

- g. Wetland areas

1.6.4 Protection of Historical and Archaeological Resources

- a. Objectives

- b. Methods

1.6.5 Stormwater Management and Control

- a. Ground cover

- b. Erodible soils

- c. Temporary measures

- (1) Structural Practices

- (2) Temporary and permanent stabilization

- d. Effective selection, implementation and maintenance of Best Management Practices (BMPs).

1.6.6 Protection of the Environment from Waste Derived from Contractor Operations

Control and disposal of solid and sanitary waste. Control and disposal of hazardous waste.

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

- a. List of the types of hazardous wastes expected to be generated
- b. Procedures to ensure a written waste determination is made for appropriate wastes that are to be generated
- c. Sampling/analysis plan, including laboratory method(s) that will be used for waste determinations and copies of relevant laboratory certifications
- d. Methods and proposed locations for hazardous waste accumulation/storage (that is, in tanks or containers)
- e. Management procedures for storage, labeling, transportation, and disposal of waste (treatment of waste is not allowed unless specifically noted)
- f. Management procedures and regulatory documentation ensuring disposal of hazardous waste complies with Land Disposal Restrictions ([40 CFR 268](#))
- g. Management procedures for recyclable hazardous materials such as lead-acid batteries, used oil, and similar
- h. Used oil management procedures in accordance with [40 CFR 279](#); Hazardous

waste minimization procedures

- i. Plans for the disposal of hazardous waste by permitted facilities; and Procedures to be employed to ensure required employee training records are maintained.

1.6.7 Prevention of Releases to the Environment

Procedures to prevent releases to the environment

Notifications in the event of a release to the environment

1.6.8 Regulatory Notification and Permits

List what notifications and permit applications must be made. Some permits require up to 180 days to obtain. Demonstrate that those permits have been obtained or applied for by including copies of applicable environmental permits. The EPP will not be approved until the permits have been obtained.

1.6.9 Clean Air Act Compliance

1.6.9.1 Haul Route

Submit truck and material haul routes and a [Dirt and Dust Control Plan](#) for controlling dirt, debris, and dust on Installation roadways. As a minimum, identify in the plan the subcontractor and equipment for cleaning along the haul route and measures to reduce dirt, dust, and debris from roadways.

1.6.9.2 Pollution Generating Equipment

Identify air pollution generating equipment or processes that may require federal, state, or local permits under the Clean Air Act. Determine requirements based on any current installation permits and the impacts of the project. Provide a list of all fixed or mobile equipment, machinery or operations that could generate air emissions during the project to the Installation Environmental Office (Air Program Manager).

1.6.9.3 Stationary Internal Combustion Engines

Identify portable and stationary internal combustion engines that will be supplied, used or serviced. Comply with [40 CFR 60](#) Subpart IIII, [40 CFR 60](#) Subpart JJJJ, [40 CFR 63](#) Subpart ZZZZ, and local regulations as applicable. At minimum, include the make, model, serial number, manufacture date, size (engine brake horsepower), and EPA emission certification status of each engine. Maintain applicable records and log hours of operation and fuel use. Logs must include reasons for operation and delineate between emergency and non-emergency operation.

1.6.9.4 Refrigerants

Identify management practices to ensure that heating, ventilation, and air conditioning (HVAC) work involving refrigerants complies with [40 CFR 82](#) requirements. Technicians must be certified, maintain copies of certification on site, use certified equipment and log work that requires the addition or removal of refrigerant. Any refrigerant reclaimed is the property of the Government, coordinate with the Installation Environmental Office to determine the appropriate turn in location.

1.6.9.5 Air Pollution-engineering Processes

Identify planned air pollution-generating processes and management control measures (including, but not limited to, spray painting, abrasive blasting, demolition, material handling, fugitive dust, and fugitive emissions). Log hours of operations and track quantities of materials used.

1.6.9.6 Compliant Materials

Provide the Government a list of and SDSs for all hazardous materials proposed for use on site. Materials must be compliant with all Clean Air Act regulations for emissions including solvent and volatile organic compound contents, and applicable National Emission Standards for Hazardous Air Pollutants requirements. The Government may alter or limit use of specific materials as needed to meet installation permit requirements for emissions.

1.7 LICENSES AND PERMITS

Obtain licenses and permits required for the construction of the project and in accordance with FAR 52.236-7. Notify the Government of all general use permitted equipment the Contractor plans to use on site. This paragraph supplements the Contractor's responsibility under FAR 52.236-7.

1.8 ENVIRONMENTAL RECORDS BINDER

Maintain on-site a separate three-ring Environmental Records Binder and submit at the completion of the project. Make separate parts within the binder that correspond to each submittal listed under paragraph CLOSEOUT SUBMITTALS in this section.

1.9 PESTICIDE DELIVERY, STORAGE, AND HANDLING

1.9.1 Delivery and Storage

Deliver pesticides to the site in the original, unopened containers bearing legible labels indicating the EPA registration number and the manufacturer's registered uses. Store pesticides according to manufacturer's instructions and under lock and key when unattended.

1.9.2 Handling Requirements

Formulate, treat with, and dispose of pesticides and associated containers in accordance with label directions and use the clothing and personal protective equipment specified on the labeling for use during each phases of the application. Furnish SDSs for pesticide products.

1.10 SOLID WASTE MANAGEMENT PERMIT

Provide the Contracting Officer with written notification of the quantity of anticipated solid waste or debris that is anticipated or estimated to be generated by construction. Include in the report the locations where various types of waste will be disposed or recycled. Include letters of acceptance from the receiving location or as applicable; submit one copy of the receiving location state and local Solid Waste Management Permit or license showing such agency's approval of the disposal plan before transporting wastes off Government property.

1.11 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.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.1 PROTECTION OF NATURAL RESOURCES

Minimize interference with, disturbance to, and damage to fish, wildlife, and plants, including their habitats. Prior to the commencement of activities, consult with the Installation Environmental Office, regarding rare species or sensitive habitats that need to be protected. The protection of rare, threatened, and endangered animal and plant species identified, including their habitats, is the Contractor's responsibility.

Preserve the natural resources within the project boundaries and outside the limits of permanent work. Restore to an equivalent or improved condition upon completion of work that is consistent with the requirements of the Installation Environmental Office or as otherwise specified. Confine construction activities to within the limits of the work indicated or specified.

3.1.1 Flow Ways

Do not alter water flows or otherwise significantly disturb the native habitat adjacent to the project and critical to the survival of fish and wildlife, except as specified and permitted.

3.1.2 Vegetation

Except in areas to be cleared, do not remove, cut, deface, injure, or destroy trees or shrubs without the Contracting Officer's permission. Do not fasten or attach ropes, cables, or guys to existing nearby trees for anchorages unless authorized by the Contracting Officer. Where such use of attached ropes, cables, or guys is authorized, the Contractor is responsible for any resultant damage.

Protect existing trees that are to remain to ensure they are not injured, bruised, defaced, or otherwise damaged by construction operations. Remove displaced rocks from uncleared areas. Coordinate with the Contracting Officer and Installation Environmental Office to determine appropriate action for trees and other landscape features scarred or damaged by equipment operations.

3.1.3 Streams

Stream crossings must allow movement of materials or equipment without violating water pollution control standards of the federal, state, and local governments. Construction of stream crossing structures must be in compliance with any required permits including, but not limited to, Clean Water Act Section 404, and Section 401 Water Quality.

The Contracting Officer's approval and appropriate permits are required before any equipment will be permitted to ford live streams. In areas where frequent crossings are required, install temporary culverts or bridges. Obtain Contracting Officer's approval prior to installation. Remove temporary culverts or bridges upon completion of work, and repair the area to its original condition unless otherwise required by the Contracting Officer.

3.2 STORMWATER

Do not discharge stormwater from construction sites to the sanitary sewer. If the water is noted or suspected of being contaminated, it may only be released to the storm drain system if the discharge is specifically permitted. Obtain authorization in advance from the Installation Environmental Office for any release of contaminated water.

3.2.1 Construction General Permit

Provide a Construction General Permit as required by [40 CFR 122.26](#) or the State of North Carolina General Permit. Under the terms and conditions of the permit, install, inspect, maintain BMPs, prepare stormwater erosion and sediment control inspection reports, and submit SWPPP inspection reports. Maintain construction operations and management in compliance with the terms and conditions of the general permit for stormwater discharges from construction activities.

3.2.1.1 Stormwater Pollution Prevention Plan

Submit a project-specific Stormwater Pollution Prevention Plan (SWPPP) to the Contracting Officer for approval, prior to the commencement of work. The SWPPP must meet the requirements of [40 CFR 122.26](#) the North Carolina State General Permit for stormwater discharges from construction sites.

Include the following:

- a. Comply with terms of the state general permit for stormwater discharges from construction activities. Prepare SWPPP in accordance with North Carolina requirements. Use North Carolina <http://deq.nc.gov/about/divisions/water-resources> and EPA guide: [Developing your Stormwater Pollution Prevention Plan](http://water.epa.gov/polwaste/npdes/stormwater/Stormwater-Pollution-Prevention-Plans-for-Construction-Activities.cfm) located at <http://water.epa.gov/polwaste/npdes/stormwater/Stormwater-Pollution-Prevention-Plans-for-Construction-Activities.cfm> to prepare the SWPPP.
- b. Select applicable BMPs from EPA Fact Sheets located at <http://water.epa.gov/polwaste/npdes/swbmp/Construction-Site-StormWater-Run-Off-Control.cfm> or in accordance with applicable state or local requirements.
- c. Include a completed copy of the Notice of Intent, BMP Inspection Report Template, and Stormwater Notice of Termination, except for the effective date.

3.2.1.2 Stormwater Notice of Intent for Construction Activities

Prepare and submit the Notice of Intent for NPDES coverage under the general permit for construction activities to the Contracting Officer for review and approval.

Prepare and submit a Notice of Intent as a co-permittee to the Contracting Officer, for review and approval.

Submit the approved NOI and appropriate permit fees onto the appropriate federal or state agency for approval. No land disturbing activities may commence without permit coverage. Maintain an approved copy of the SWPPP at the onsite construction office, and continually update as regulations require, reflecting current site conditions.

3.2.1.3 [Inspection Reports](#)

Submit "Inspection Reports" to the Contracting Officer in accordance with the State of North Carolina Construction General Permit.

3.2.1.4 [Stormwater Pollution Prevention Plan Compliance Notebook](#)

Create and maintain a three ring binder of documents that demonstrate compliance with the Construction General Permit. Include a copy of the permit Notice of Intent, proof of permit fee payment, SWPPP and SWPPP update amendments, inspection reports and related corrective action records, copies of correspondence with the North Carolina State Permitting Agency, and a copy of the permit Notice of Termination in the binder. At project completion, the notebook becomes property of the Government. Provide the compliance notebook to the Contracting Officer.

3.2.1.5 [Stormwater Notice of Termination](#) for Construction Activities

Submit a Notice of Termination to the Contracting Officer for approval once construction is complete and final stabilization has been achieved on all portions of the site for which the permittee is responsible. Once approved, submit the Notice of Termination to the appropriate state or federal agency. Prepare [as-built topographic survey](#) information required by the permitting agency for certification of the stormwater management system, and provide to the Contracting Officer.

3.2.2 Erosion and Sediment Control Measures

Provide erosion and sediment control measures in accordance with state and local laws and regulations. Preserve vegetation to the maximum extent practicable.

Erosion control inspection reports may be compiled as part of a stormwater pollution prevention plan inspection reports.

3.2.2.1 Erosion Control

Prevent erosion by mulching, Compost Blankets, Geotextiles, temporary slope drains as needed. Stabilize slopes by sodding, seeding, or such combination of these methods necessary for effective erosion control. Use of hay bales is prohibited.

3.2.2.2 Sediment Control Practices

Implement sediment control practices to divert flows from exposed soils, temporarily store flows, or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. Implement sediment control practices prior to soil disturbance and prior to creating areas with concentrated flow, during the construction process to minimize erosion and sediment laden runoff. Include the following devices: silt fence, temporary diversion dikes, and/or storm drain inlet protection.

3.2.3 Work Area Limits

Mark the areas that need not be disturbed under this Contract prior to commencing construction activities. Mark or fence isolated areas within the general work area that are not to be disturbed. Protect monuments and markers before construction operations commence. Where construction operations are to be conducted during darkness, any markers must be visible in the dark. Personnel must be knowledgeable of the purpose for marking and protecting particular objects.

3.2.4 Contractor Facilities and Work Areas

Place field offices, staging areas, stockpile storage, and temporary buildings in areas designated on the drawings or as directed by the Contracting Officer. Move or relocate the Contractor facilities only when approved by the Government. Provide erosion and sediment controls for onsite borrow and spoil areas to prevent sediment from entering nearby waters. Control temporary excavation and embankments for plant or work areas to protect adjacent areas.

3.2.5 Municipal Separate Storm Sewer System (MS4) Management

Comply with the Installation's MS4 permit requirements.

3.3 SURFACE AND GROUNDWATER

3.3.1 Cofferdams, Diversions, and Dewatering

Construction operations for dewatering, must be constantly controlled to maintain compliance with existing state water quality standards and designated uses of the surface water body. Comply with the State of North Carolina water quality standards and anti-degradation provisions and the Clean Water Act Section 404. Do not discharge excavation ground water to the sanitary sewer, storm drains, or to surface waters without prior specific authorization in writing from the Installation Environmental Office. Discharge of hazardous substances will not be permitted under any circumstances. Use sediment control BMPs to prevent construction site runoff from directly entering any storm drain or surface waters.

If the construction dewatering is noted or suspected of being contaminated, it may only be released to the storm drain system if the discharge is specifically permitted. Obtain authorization for any contaminated groundwater release in advance from the Installation Environmental Officer and the federal or state authority, as applicable. Discharge of hazardous substances will not be permitted under any circumstances.

3.3.2 Waters of the United States

Do not enter, disturb, destroy, or allow discharge of contaminants into waters of the United States. The protection of waters of the United States shown on the drawings in accordance with paragraph LICENSES AND PERMITS is the Contractor's responsibility. Authorization to enter specific waters of the United States identified does not relieve the Contractor from any obligation to protect other waters of the United States within, adjacent to, or in the vicinity of the construction site and associated boundaries.

3.4 PROTECTION OF CULTURAL RESOURCES

3.4.1 Archaeological Resources

Existing archaeological resources within the work area are shown on the drawings. Protect these resources and be responsible for their preservation during the life of the Contract. If, during excavation or other construction activities, any previously unidentified or unanticipated historical, archaeological, and cultural resources are discovered or found, activities that may damage or alter such resources will be suspended. Resources covered by this paragraph include, but are not limited to: any human skeletal remains or burials; artifacts; shell, midden, bone, charcoal, or other deposits; rock or coral alignments, pavings, wall, or other constructed features; and any indication of agricultural or other human activities. Upon such discovery or find, immediately notify the Contracting Officer so that the appropriate authorities may be notified and a determination made as to their significance and what, if any, special disposition of the finds should be made. Cease all activities that may result in impact to or the destruction of these resources. Secure the area and prevent employees or other persons from trespassing on, removing, or otherwise disturbing such resources. The Government retains ownership and control over archaeological resources.

3.4.2 Historical Resources

Existing historical resources within the work area are shown on the drawings. Protect these resources and be responsible for their preservation during the life of the Contract.

3.5 AIR RESOURCES

Equipment operation, activities, or processes will be in accordance with 40 CFR 64 and state air emission and performance laws and standards.

3.5.1 Preconstruction Air Permits

Notify the Air Program Manager, through the Contracting Officer, at least 6 months prior to bringing equipment, assembled or unassembled, onto the Installation, so that air permits can be secured. Necessary permitting time must be considered in regard to construction activities. Clean Air Act (CAA) permits must be obtained prior to bringing equipment, assembled or unassembled, onto the Installation.

3.5.2 Oil or Dual-fuel Boilers and Furnaces

Provide product data and details for new, replacement, or relocated fuel fired boilers, heaters, or furnaces to the Installation Environmental Office (Air Program Manager) through the Contracting Officer. Data to be reported include: equipment purpose (water heater, building heat, process), manufacturer, model number, serial number, fuel type (oil type, gas type) size (MMBTU heat input). Provide in accordance with paragraph PRECONSTRUCTION AIR PERMITS.

3.5.3 Burning

Burning is prohibited on the Government premises.

3.5.4 Accidental Venting of Refrigerant

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

3.5.5 EPA Certification Requirements

Heating and air conditioning technicians must be certified through an EPA-approved program. Maintain copies of certifications at the employees' places of business; technicians must carry certification wallet cards, as provided by environmental law.

3.5.6 Dust Control

Keep dust down at all times, including during nonworking periods. Sprinkle or treat, with dust suppressants, the soil at the site, haul routes, 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. Silica-containing dusts must be maintained and monitored in compliance with the OSHA Silica Standard for Construction (2016)

3.5.6.1 Particulates

Dust particles, aerosols and gaseous by-products from construction activities, and processing and preparation of materials (such as from asphaltic batch plants) must be controlled at all times, including weekends, holidays, and hours when work is not in progress. Maintain excavations, stockpiles, haul routes, permanent and temporary access roads, plant sites, spoil areas, borrow areas, and other work areas within or outside the project boundaries free from particulates that would exceed 40 CFR 50, state, and local air pollution standards or that would cause a hazard or a nuisance. Sprinkling, chemical treatment of an approved type, baghouse, scrubbers, electrostatic precipitators, or other methods will be permitted to control particulates in the work area. Sprinkling, to be efficient, must be repeated to keep the disturbed area damp. Provide sufficient, competent equipment available to accomplish these tasks. Perform particulate control as the work proceeds and whenever a particulate nuisance or hazard occurs. Comply with state and local visibility regulations.

3.5.6.2 Abrasive Blasting

Blasting operations cannot be performed without prior approval of the Installation Air Program Manager. The use of silica sand is prohibited in sandblasting. All silica containing blasting media must be maintained and/or monitored in compliance with the OSHA Silica Standard for Construction (2016)

Provide tarpaulin drop cloths and windscreens to enclose abrasive blasting operations to confine and collect dust, abrasive agent, paint chips, and other debris.

3.5.7 Odors

Control odors from construction activities. The odors must be in

compliance with state regulations and local ordinances and may not constitute a health hazard.

3.6 WASTE MINIMIZATION

Minimize the use of hazardous materials and the generation of waste. Include procedures for pollution prevention/ hazardous waste minimization in the Hazardous Waste Management Section of the EPP. Obtain a copy of the installation's Pollution Prevention/Hazardous Waste Minimization Plan for reference material when preparing this part of the EPP. If no written plan exists, obtain information by contacting the Contracting Officer. Describe the anticipated types of the hazardous materials to be used in the construction when requesting information.

3.6.1 Salvage, Reuse and Recycle

Identify anticipated materials and waste for salvage, reuse, and recycling. Describe actions to promote material reuse, resale or recycling. To the extent practicable, all scrap metal must be sent for reuse or recycling and will not be disposed of in a landfill.

Include the name, physical address, and telephone number of the hauler, if transported by a franchised solid waste hauler. Include the destination and, unless exempted, provide a copy of the state or local permit (cover) or license for recycling.

3.6.2 Nonhazardous Solid Waste Diversion Report

Maintain an inventory of nonhazardous solid waste diversion and disposal of construction and demolition debris. Submit a report to the Contracting Officer on the first working day after each fiscal year quarter, starting the first quarter that nonhazardous solid waste has been generated. Include the following in the report:

Construction and Demolition (C&D) Debris Disposed	_____ tons, as appropriate
C&D Debris Recycled	_____ tons, as appropriate
Total C&D Debris Generated	_____ tons, as appropriate
Waste Sent to Waste-To-Energy Incineration Plant (This amount should not be included in the recycled amount)	_____ tons, as appropriate

3.7 WASTE MANAGEMENT AND DISPOSAL

3.7.1 Waste Determination Documentation

Complete a Waste Determination form (provided at the pre-construction conference) for Contractor-derived wastes to be generated. Potentially hazardous solid waste streams that are not subject to a specific exclusion or exemption from the hazardous waste regulations (e.g. scrap metal, domestic sewage) or subject to special rules, (lead-acid batteries and precious metals) must be characterized in accordance with the requirements of 40 CFR 261 or corresponding applicable state or local regulations. Base waste determination on user knowledge of the processes and materials used,

and analytical data when necessary. Consult with the Installation environmental staff for guidance on specific requirements. Attach support documentation to the Waste Determination form. As a minimum, provide a Waste Determination form for the following waste (this listing is not inclusive): oil- and latex -based painting and caulking products, solvents, adhesives, aerosols, petroleum products, and containers of the original materials.

3.7.2 Solid Waste Management

3.7.2.1 Solid Waste Management Report

Provide copies of the waste handling facilities' weight tickets, receipts, bills of sale, and other sales documentation. In lieu of sales documentation, a statement indicating the disposal location for the solid waste that is signed by an employee authorized to legally obligate or bind the firm may be submitted. The sales documentation Contractor certification must include the receiver's tax identification number and business, EPA or state registration number, along with the receiver's delivery and business addresses and telephone numbers. For each solid waste retained for the Contractor's own use, submit the information previously described in this paragraph on the solid waste disposal report. Prices paid or received do not have to be reported to the Contracting Officer unless required elsewhere in this Contract or by public law.

3.7.2.2 Control and Management of Solid Wastes

Pick up solid wastes, and place in covered containers that are regularly emptied. Do not prepare or cook food on the project site. Prevent contamination of the site and other areas when handling and disposing of wastes. At project completion, leave the areas clean. Employ segregation measures so that no hazardous or toxic waste will become co-mingled with non-hazardous solid waste. Transport solid waste off Government property and dispose of it in compliance with 40 CFR 260, state, and local requirements for solid waste disposal. A Subtitle D RCRA permitted landfill is the minimum acceptable offsite solid waste disposal option. Verify that the selected transporters and disposal facilities have the necessary permits and licenses to operate. Solid waste disposal offsite must comply with most stringent local, state, and federal requirements, including 40 CFR 241, 40 CFR 243, and 40 CFR 258.

Manage hazardous material used in construction, including but not limited to, aerosol cans, waste paint, cleaning solvents, contaminated brushes, and used rags, in accordance with 49 CFR 173.

3.7.3 Control and Management of Hazardous Waste

Do not dispose of hazardous waste on Government property. Do not discharge any waste to a sanitary sewer, storm drain, or to surface waters or conduct waste treatment or disposal on Government property without written approval of the Contracting Officer.

3.7.3.1 Hazardous Waste/Debris Management

Identify construction activities that will generate hazardous waste or debris. Provide a documented waste determination for resultant waste streams. Identify, label, handle, store, and dispose of hazardous waste or debris in accordance with federal, state, and local regulations, including 40 CFR 261, 40 CFR 262, 40 CFR 263, 40 CFR 264, 40 CFR 265, 40 CFR 266, and

40 CFR 268.

Manage hazardous waste in accordance with the approved Hazardous Waste Management Section of the EPP. Store hazardous wastes in approved containers in accordance with 49 CFR 173 and 49 CFR 178. Hazardous waste generated within the confines of Government facilities is identified as being generated by the Government. Prior to removal of any hazardous waste from Government property, hazardous waste manifests must be signed by personnel from the Installation Environmental Office. Do not bring hazardous waste onto Government property. Provide the Contracting Officer with a copy of waste determination documentation for any solid waste streams that have any potential to be hazardous waste or contain any chemical constituents listed in 40 CFR 372-SUBPART D.

3.7.3.2 Hazardous Waste Disposal

Provide hazardous waste manifest to the Installations Environmental Office for review, approval, and signature prior to shipping waste off Government property.

3.7.3.3 Universal Waste Management

Manage the following categories of universal waste in accordance with federal, state, and local requirements and installation instructions:

- a. Batteries as described in 40 CFR 273.2
- b. Lamps as described in 40 CFR 273.5
- c. Mercury-containing equipment as described in 40 CFR 273.4

Mercury is prohibited in the construction of this facility, unless specified otherwise, and with the exception of mercury vapor lamps and fluorescent lamps. Dumping of mercury-containing materials and devices such as mercury vapor lamps, fluorescent lamps, and mercury switches, in rubbish containers is prohibited. Remove without breaking, pack to prevent breakage, and transport out of the activity in an unbroken condition for disposal as directed.

3.7.3.4 Electronics End-of-Life Management

Recycle or dispose of electronics waste, including, but not limited to, used electronic devices such computers, monitors, hard-copy devices, televisions, mobile devices, in accordance with 40 CFR 260-262, state, and local requirements, and installation instructions.

3.7.3.5 Disposal Documentation for Hazardous and Regulated Waste

Contact the Contracting Officer for the facility RCRA identification number that is to be used on each manifest.

Submit a copy of the applicable EPA and or state permit(s), manifest(s), or license(s) for transportation, treatment, storage, and disposal of hazardous and regulated waste by permitted facilities. Hazardous or toxic waste manifests must be reviewed, signed, and approved by the Contracting Officer before the Contractor may ship waste. To obtain specific disposal instructions, coordinate with the Installation Environmental Office.

3.7.4 Releases/Spills of Oil and Hazardous Substances

3.7.4.1 Response and Notifications

Exercise due diligence to prevent, contain, and respond to spills of hazardous material, hazardous substances, hazardous waste, sewage, regulated gas, petroleum, lubrication oil, and other substances regulated in accordance with 40 CFR 300. Maintain spill cleanup equipment and materials at the work site. In the event of a spill, take prompt, effective action to stop, contain, curtail, or otherwise limit the amount, duration, and severity of the spill/release. In the event of any releases of oil and hazardous substances, chemicals, or gases; immediately (within 15 minutes) notify the Installation Fire Department, the Installation Command Duty Officer, the Installation Environmental Office, and the Contracting Officer.

Submit verbal and written notifications as required by the federal (40 CFR 300.125 and 40 CFR 355), state, local regulations and instructions. Provide copies of the written notification and documentation that a verbal notification was made within 20 days. Spill response must be in accordance with 40 CFR 300 and applicable state and local regulations. Contain and clean up these spills without cost to the Government.

3.7.4.2 Clean Up

Clean up hazardous and non-hazardous waste spills. Reimburse the Government for costs incurred including sample analysis materials, clothing, equipment, and labor if the Government will initiate its own spill cleanup procedures, for Contractor- responsible spills, when: Spill cleanup procedures have not begun within one hour of spill discovery/occurrence; or, in the Government's judgment, spill cleanup is inadequate and the spill remains a threat to human health or the environment.

3.7.5 Mercury Materials

Immediately report to the Environmental Office and the Contracting Officer instances of breakage or mercury spillage. Clean mercury spill area to the satisfaction of the Contracting Officer.

Do not recycle a mercury spill cleanup; manage it as a hazardous waste for disposal.

3.7.6 Wastewater

Dispose of wastewater as specified below.

3.7.6.1 Treatment

Do not allow wastewater from construction activities, such as onsite material processing, concrete curing, foundation and concrete clean-up, water used in concrete trucks, and forms to enter water ways or to be discharged prior to being treated to remove pollutants. Dispose of the construction- related waste water off-Government property in accordance with 40 CFR 403, state, regional, and local laws and regulations.

3.7.6.2 Surface Discharge

Surface discharge in accordance with the requirements of the NPDES or state

STORMWATER DISCHARGES FROM CONSTRUCTION SITES permit. A sediment control pond is located at a low point near Eagle Talon Drive. It will be used for the this projects. The Contractor is required to treat any 95% storm event on site and attenuate the peak flows to match the pre peak flows as required by the state including the 50 year storm since basin DA 9 drains into a wetland.

3.7.6.3 Land Application

Water generated from the flushing of lines after disinfection or disinfection in conjunction with hydrostatic testing must be discharged into the sanitary sewer with prior approval and notification to the Wastewater Treatment Plant's Operator.

3.8 HAZARDOUS MATERIAL MANAGEMENT

Include hazardous material control procedures in the Safety Plan, in accordance with Section 01 35 26 GOVERNMENTAL SAFETY REQUIREMENTS. Address procedures and proper handling of hazardous materials, including the appropriate transportation requirements. Do not bring hazardous material onto Government property that does not directly relate to requirements for the performance of this contract. Submit an SDS and estimated quantities to be used for each hazardous material to the Contracting Officer prior to bringing the material on the installation. Typical materials requiring SDS and quantity reporting include, but are not limited to, oil and latex based painting and caulking products, solvents, adhesives, aerosol, and petroleum products. Use hazardous materials in a manner that minimizes the amount of hazardous waste generated. Containers of hazardous materials must have National Fire Protection Association labels or their equivalent. Certify that hazardous materials removed from the site are hazardous materials and do not meet the definition of hazardous waste, in accordance with 40 CFR 261.

3.9 PREVIOUSLY USED EQUIPMENT

Clean previously used construction equipment prior to bringing it onto the project site. Equipment must be free from soil residuals, egg deposits from plant pests, noxious weeds, and plant seeds. Consult with the U.S. Department of Agriculture jurisdictional office for additional cleaning requirements.

3.10 MILITARY MUNITIONS

In the event military munitions, as defined in 40 CFR 260, are discovered or uncovered, immediately stop work in that area and immediately inform the Contracting Officer.

3.11 PETROLEUM, OIL, LUBRICANT (POL) STORAGE AND FUELING

POL products include flammable or combustible liquids, such as gasoline, diesel, lubricating oil, used engine oil, hydraulic oil, mineral oil, and cooking oil. Store POL products and fuel equipment and motor vehicles in a manner that affords the maximum protection against spills into the environment. Manage and store POL products in accordance with EPA 40 CFR 112, and other federal, state, regional, and local laws and regulations. Use secondary containments, dikes, curbs, and other barriers, to prevent POL products from spilling and entering the ground, storm or sewer drains, stormwater ditches or canals, or navigable waters of the United States. Describe in the EPP (see paragraph ENVIRONMENTAL PROTECTION PLAN) how POL tanks and containers must be stored, managed, and inspected

and what protections must be provided. Storage of oil, including fuel, on the project site is not allowed. Fuel must be brought to the project site each day that work is performed.

3.11.1 Used Oil Management

Manage used oil generated on site in accordance with 40 CFR 279. Determine if any used oil generated while onsite exhibits a characteristic of hazardous waste. Used oil containing 1,000 parts per million of solvents is considered a hazardous waste and disposed of at the Contractor's expense. Used oil mixed with a hazardous waste is also considered a hazardous waste. Dispose in accordance with paragraph HAZARDOUS WASTE DISPOSAL.

3.11.2 Oil Storage Including Fuel Tanks

Provide secondary containment and overfill protection for oil storage tanks. A berm used to provide secondary containment must be of sufficient size and strength to contain the contents of the tanks plus 5 inches freeboard for precipitation. Construct the berm to be impervious to oil for 72 hours that no discharge will permeate, drain, infiltrate, or otherwise escape before cleanup occurs. Use drip pans during oil transfer operations; adequate absorbent material must be onsite to clean up any spills and prevent releases to the environment. Cover tanks and drip pans during inclement weather. Provide procedures and equipment to prevent overfilling of tanks. If tanks and containers with an aggregate aboveground capacity greater than 1320 gallons will be used onsite (only containers with a capacity of 55 gallons or greater are counted), provide and implement a SPCC plan meeting the requirements of 40 CFR 112. Do not bring underground storage tanks to the installation for Contractor use during a project. Submit the SPCC plan to the Contracting Officer for approval.

Monitor and remove any rainwater that accumulates in open containment dikes or berms. Inspect the accumulated rainwater prior to draining from a containment dike to the environment, to determine there is no oil sheen present.

3.12 INADVERTENT DISCOVERY OF PETROLEUM-CONTAMINATED SOIL OR HAZARDOUS WASTES

If petroleum-contaminated soil, or suspected hazardous waste is found during construction that was not identified in the Contract documents, immediately notify the Contracting Officer. Do not disturb this material until authorized by the Contracting Officer.

3.13 PEST MANAGEMENT

In order to minimize impacts to existing fauna and flora, coordinate with the Installation Pest Management Coordinator (IPMC) or Project Pesticide Coordinator (PPC), through the Contracting Officer, at the earliest possible time prior to pesticide application. Discuss integrated pest management strategies with the IPMC or PPC and receive concurrence from the IPMC and or PPC through the Contracting Officer prior to the application of any pesticide associated with these specifications. Provide Installation Project Office Pest Management personnel the opportunity to be present at meetings concerning treatment measures for pest or disease control and during application of the pesticide. The use and management of pesticides are regulated under 40 CFR 152 - 186.

3.13.1 Application

Apply pesticides using a state-certified pesticide applicator in accordance with EPA label restrictions and recommendation. The certified applicator must wear clothing and personal protective equipment as specified on the pesticide label. The Contracting Officer will designate locations for water used in formulating. Do not allow the equipment to overflow. Inspect equipment for leaks, clogging, wear, or damage and repair prior to application of pesticide.

3.13.2 Pesticide Treatment Plan

Include and update a pesticide treatment plan, as information becomes available. Include in the plan the sequence of treatment, dates, times, locations, pesticide trade name, EPA registration numbers, authorized uses, chemical composition, formulation, original and applied concentration, application rates of active ingredient (that is, pounds of active ingredient applied), equipment used for application and calibration of equipment. Comply with 40 CFR 152-189, state, regional, and local pest management record-keeping and reporting requirements as well as any additional Installation Project Office specific requirements in conformance with DA AR 200-1 Chapter 5, Pest Management, Section 5-4 "Program requirements" for data required to be reported to the Installation.

3.14 SOUND INTRUSION

Make the maximum use of low-noise emission products, as certified by the EPA. Blasting or use of explosives are not permitted without written permission from the Contracting Officer, and then only during the designated times.

Keep construction activities under surveillance and control to minimize environment damage by noise. Comply with the State of North Carolina rules.

3.15 POST CONSTRUCTION CLEANUP

Clean up areas used for construction in accordance with Contract Clause: "Cleaning Up". Unless otherwise instructed in writing by the Contracting Officer, remove traces of temporary construction facilities such as haul routes, work area, structures, foundations of temporary structures, stockpiles of excess or waste materials, and other vestiges of construction prior to final acceptance of the work. Grade parking area and similar temporarily used areas to conform with surrounding contours.

-- End of Section --

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INDOOR AIR QUALITY (IAQ) MANAGEMENT

05/15

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INDOOR AIR QUALITY (IAQ) MANAGEMENT
05/15

PART 1 GENERAL

1.1 REFERENCES

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

AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS (ASHRAE)

ASHRAE 52.2 (2017) Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size

SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION (SMACNA)

ANSI/SMACNA 008 (2007) IAQ Guidelines for Occupied Buildings Under Construction, 2nd Edition

U.S. GREEN BUILDING COUNCIL (USGBC)

LEED GBDC Ref Guide (2009; R 2010) LEED Reference Guide for Green Building Design, Construction and Major Renovations of Commercial and Institutional Buildings including Core & Shell and K-12 Projects

1.2 SUBMITTALS

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

SD-01 Preconstruction Submittals

Indoor Air Quality (IAQ) Management Plan; G, RO

SD-06 Test Reports

Air Contamination Testing

SD-11 Closeout Submittals

LEED data for indoor air quality management during construction and before occupancy.

1.3 CONSTRUCTION INDOOR AIR QUALITY (IAQ) MANAGEMENT PLAN

Submit an IAQ Management Plan within 30 days after notice to proceed and

not less than 10 days before the preconstruction meeting. Revise and resubmit plan as required by the Contracting Officer. Make copies of the final plan available to workers on site. Include provisions in the plan to meet the requirements specified below and to ensure safe, healthy air for construction workers and building occupants.

1.3.1 Requirements During Construction

Use filters with a Minimum Efficiency Reporting Value (MERV) of 8 in permanently installed air handlers that are used during construction.

1.3.1.1 Control Measures

Meet or exceed the requirements of [ANSI/SMACNA 008](#), Chapter 3, to help minimize contamination of the building from construction activities. The 5 requirements of this manual which shall be adhered to are described below:

- a. HVAC protection: Isolate return side of HVAC system from surrounding environment to prevent construction dust and debris from entering the duct work and spaces.
- b. Source control: Use low emitting paints and other finishes, sealants, adhesives, and other materials as specified. When available, cleaning products shall have a low VOC content and be non-toxic to minimize building contamination. Utilize cleaning techniques that minimize dust generation. Cycle equipment off when not needed. Prohibit idling motor vehicles where emissions could be drawn into building. Designate receiving/storage areas for incoming material that minimize IAQ impacts.
- c. Pathway interruption: When pollutants are generated use strategies such as 100 percent outside air ventilation or erection of physical barriers between work and non-work areas to prevent contamination.
- d. Housekeeping: Clean frequently to remove construction dust and debris. Promptly clean up spills. Remove accumulated water and keep work areas dry to discourage the growth of mold and bacteria. Take extra measures when hazardous materials are involved.
- e. Scheduling: Control the sequence of construction to minimize the absorption of VOCs by other building materials.

1.3.1.2 Moisture Contamination

- a. Remove accumulated water and keep work dry.
- b. Protect porous materials from exposure to moisture.
- c. Remove and replace items which remain damp for more than a few hours.

1.3.2 Requirements After Construction

After construction ends and prior to occupancy, conduct a building flush-out or test the indoor air contaminant levels. Flush-out shall be with MERV-13 filtration media as determined by [ASHRAE 52.2](#) and in accordance with [LEED GBDC Ref Guide](#). [Air contamination testing](#) and follow-up actions shall be in accordance with EPA's current Compendium of

Methods for the Determination of Air Pollutants in Indoor Air, and with the LEED GBDC Ref Guide. After building flush-out or testing and prior to occupancy, replace filtration media. Filtration media shall have a MERV of 13 as determined by ASHRAE 52.2. LEED GBDC Ref Guide option for flush-out of occupied building is not permitted.

Submit the results of the air contamination tests to the Contracting Officer's Representative. Document LEED credit IEQ3.2 credit per Section 01 33 29.10 SUSTAINABILITY REPORTING.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.1 PREPARATION

Store and handle materials in a manner to prevent loss from weather and other damage. Keep materials, products, and accessories covered, off the ground, and in a dry, secure area. Prevent contact with material that may cause corrosion, discoloration, or staining. Protect materials and installations from damage by the activities of other trades.

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SECTION 01 74 19

CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT

05/15

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SECTION 01 74 19

CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT
05/15

PART 1 GENERAL

1.1 GOVERNMENT POLICY

Government policy is to apply sound environmental principles in the design, construction, and use of facilities. As part of the implementation of that policy: (1) practice efficient waste management when sizing, cutting, and installing products and materials and (2) use all reasonable means to divert construction and demolition waste from landfills and incinerators and to facilitate their recycling or reuse. A minimum of 95 percent by weight of total project solid waste shall be diverted from the landfill.

1.2 MANAGEMENT

Develop and implement a waste management plan. Take a pro-active, responsible role in the management of construction and demolition waste and require all subcontractors, vendors, and suppliers to participate in the effort. Construction and demolition waste includes products of demolition or removal, excess or unusable construction materials, packaging materials for construction products, and other materials generated during the construction process but not incorporated into the work. In the management of waste consideration shall be given to the availability of viable markets, the condition of the material, the ability to provide the material in suitable condition and in a quantity acceptable to available markets, and time constraints imposed by internal project completion mandates. The Contractor is responsible for implementation of any special programs involving rebates or similar incentives related to recycling of waste. Revenues or other savings obtained for salvage, or recycling accrue to the Contractor. Appropriately permit firms and facilities used for recycling, reuse, and disposal for the intended use to the extent required by federal, state, and local regulations. Also, provide on-site instruction of appropriate separation, handling, recycling, salvage, reuse, and return methods to be used by all parties at the appropriate stages of the project.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

[SD-11 Closeout Submittals](#)

[Records](#)

1.4 MEETINGS

Conduct Construction Waste Management meetings. After award of the Contract and prior to commencement of work, schedule and conduct a meeting with the Contracting Officer to discuss the proposed Waste Management Plan and to develop a mutual understanding relative to the details of waste management. The requirements for this meeting may be fulfilled during the

coordination and mutual understanding meeting outlined in Section 01 45 00.00 10 QUALITY CONTROL. At a minimum, environmental and waste management goals and issues shall be discussed at the following additional meetings:

- a. Preconstruction meeting.
- b. Regular QC meetings.
- c. Work safety meetings.

1.5 RECORDS

Maintain data of the waste disposed (C&D and MSW) and the materials recycled off Fort Bragg. A Solid Waste/Recycling Office form (see Attachment A) or a Contractor form shall be filled out with the type of waste or recycled material, the weight of the waste/material (tons or pounds), and the certified facility the waste or recyclables were delivered. Submit this information to the Resident Office through the QCS and to the Fort Bragg Solid Waste/Recycling Office by email (jeffery.w.sloop.ctr@mail.mil) or fax (910-396-4188, attn: Solid Waste Office) by the second Friday of each month. The Fort Bragg Environmental Compliance Branch, Solid Waste/Recycling Office compiles this data and submits it monthly, as required by the Department of the Army (DA) and the North Carolina Department of Environmental Quality (NC DEQ). See Section 01 33 29.10 SUSTAINABILITY for additional information and requirements.

1.6 REPORTS

Submit reports as indicated in Section 01 57 19 TEMPORARY ENVIRONMENTAL CONTROLS.

1.7 COLLECTION

Separate, store, protect, and handle at the site identified recyclable and salvageable waste products in a manner that maximizes recyclability and salvagability of identified materials. Provide the necessary containers, bins and storage areas to facilitate effective waste management and clearly and appropriately identify them. Provide materials for barriers and enclosures around recyclable material storage areas which are nonhazardous and recyclable or reusable. Locate out of the way of construction traffic. Provide adequate space for pick-up and delivery and convenience to subcontractors. Recycling and waste bin areas are to be kept neat and clean, and recyclable materials shall be handled to prevent contamination of materials from incompatible products and materials. Clean contaminated materials prior to placing in collection containers. Use cleaning materials that are nonhazardous and biodegradable. Handle hazardous waste and hazardous materials in accordance with applicable regulations and coordinate with Section 01 57 19 TEMPORARY ENVIRONMENTAL CONTROLS. Separate materials by one of the following methods:

1.7.1 Source Separated Method

Waste products and materials that are recyclable shall be separated from trash and sorted as described below into appropriately marked separate containers and then transported to the respective recycling facility for further processing.

1.7.2 Co-Mingled Method

Waste products and recyclable materials shall be placed into a single container and then transported to a recycling facility where the recyclable materials are sorted and processed.

1.7.3 Other Methods

Other methods proposed by the Contractor may be used when approved by the Contracting Officer.

1.8 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.

Waste and reable material loads shall be covered. They are also subject to inspection while present on the Installation.

Except as otherwise specified in other Sections, disposal shall be in accordance with the following:

1.8.1 Reuse

First consideration shall be given 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. Coordinate reuse with the Contracting Officer. Sale or donation of waste suitable for reuse shall be considered.

1.8.2 Recycle

Waste materials not suitable for reuse, but having value as being recyclable, shall be made available for recycling. All fluorescent lamps, HID lamps, and mercury-containing thermostats removed from the site shall be recycled. Arrange for timely pickups from the site or deliveries to recycling facilities in order to prevent contamination of recyclable materials.

Recyclable materials generated from construction or demolition are Government property, unless otherwise specified in the Contract. Transport HVAC units (Freon removed), air handlers, piping, metal beams, motors, valves, copper wire, and similar items to the Ft. Bragg DPW Recycling Senter at Butner and REilly Roads or to the Recycling Area at the Lamont Landfill Facility.

1.8.3 Waste

Materials with no practical use or economic benefit shall be disposed at a landfill or incinerator.

1.8.4 Return

Set aside and protect misdelivered and substandard products and materials and return to supplier for credit.

SOF HPTC
Fort Bragg, NC

W912PM18R0003
PN 79443

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

-- End of Section --

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SECTION 01 78 00

CLOSEOUT SUBMITTALS

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CLOSEOUT SUBMITTALS

08/11

PART 1 GENERAL

1.1 REFERENCES

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

U.S. DEPARTMENT OF DEFENSE (DOD)

UFC 1-300-08

(2009, with Change 2) Criteria for
Transfer and Acceptance of DoD Real
Property

1.2 SUBMITTALS

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

SD-03 Product Data

As-Built Record of Equipment and Materials
Warranty Management Plan
Warranty Tags
Spare Parts Data

SD-08 Manufacturer's Instructions

Preventative Maintenance
Condition Monitoring (Predictive Testing)
Inspection
Posted Instructions

SD-10 Operation and Maintenance Data

Operation and Maintenance Manuals

SD-11 Closeout Submittals

Record Drawings
Interim Form DD1354; G, RO
Checklist for Form DD1354; G, RO

1.3 PROJECT RECORD DOCUMENTS

1.3.1 Record Drawings

Drawings showing final as-built conditions of the project. This paragraph covers record drawings complete, as a requirement of the contract. The terms "drawings," "contract drawings," "drawing files," "working record

drawings" and "final record drawings" refer to contract drawings which are revised to be used for final record drawings showing as-built conditions. The final CAD record drawings must consist of one set of electronic CAD drawing files in the specified format, 2 sets of prints, and one set of the approved working Record drawings.

1.3.1.1 Government Furnished Materials

One set of electronic CADD files in the specified software and format revised to reflect all bid amendments will be provided by the Government at the preconstruction conference for projects requiring CADD file record drawings.

1.3.1.2 Working Record and Final Record Drawings

Revise 2 sets of paper drawings by red-line process to show the as-built conditions during the prosecution of the project. Keep these working as-built marked drawings current on a weekly basis and at least one set available on the jobsite at all times. Changes from the contract plans which are made in the work or additional information which might be uncovered in the course of construction must be accurately and neatly recorded as they occur by means of details and notes. Prepare final record (as-built) drawings after the completion of each definable feature of work as listed in the Contractor Quality Control Plan (Foundations, Utilities, Structural Steel, etc., as appropriate for the project). The working as-built marked prints and final record (as-built) drawings will be jointly reviewed for accuracy and completeness by the Contracting Officer and the Contractor prior to submission of each monthly pay estimate. If the Contractor fails to maintain the working and final record drawings as specified herein, the Contracting Officer will deduct from the monthly progress payment an amount representing the estimated cost of maintaining the record drawings. This monthly deduction will continue until an agreement can be reached between the Contracting Officer and the Contractor regarding the accuracy and completeness of updated drawings. Show on the working and final record drawings, but not limited to, the following information:

- a. The actual location, kinds and sizes of all sub-surface utility lines. In order that the location of these lines and appurtenances may be determined in the event the surface openings or indicators become covered over or obscured, show by offset dimensions to two permanently fixed surface features the end of each run including each change in direction on the record drawings. Locate valves, splice boxes and similar appurtenances by dimensioning along the utility run from a reference point. Also record the average depth below the surface of each run.
- b. The location and dimensions of any changes within the building structure.
- c. Correct grade, elevations, cross section, or alignment of roads, earthwork, structures or utilities if any changes were made from contract plans.
- d. Changes in details of design or additional information obtained from working drawings specified to be prepared and/or furnished by the Contractor; including but not limited to fabrication, erection, installation plans and placing details, pipe sizes, insulation material, dimensions of equipment foundations, etc.

- e. The topography, invert elevations and grades of drainage installed or affected as part of the project construction.
- f. Changes or modifications which result from the final inspection.
- g. Where contract drawings or specifications present options, show only the option selected for construction on the final as-built prints.
- h. Systems designed or enhanced by the Contractor, such as HVAC controls, fire alarm, fire sprinkler, and irrigation systems.
- i. Modifications (include within change order price the cost to change working and final record drawings to reflect modifications) and compliance with the following procedures.
 - (1) Follow directions in the modification for posting descriptive changes.
 - (2) Place a Modification Delta at the location of each deletion.
 - (3) For new details or sections which are added to a drawing, place a Modification Delta by the detail or section title.
 - (4) For minor changes, place a Modification Delta by the area changed on the drawing (each location).
 - (5) For major changes to a drawing, place a Modification Delta by the title of the affected plan, section, or detail at each location.
 - (6) For changes to schedules or drawings, place a Modification Delta either by the schedule heading or by the change in the schedule.
 - (7) The Modification Delta size shall be 1/2 inch diameter unless the area where the circle is to be placed is crowded. Smaller size circle shall be used for crowded areas.

1.3.1.3 Drawing Preparation

Modify the record drawings as may be necessary to correctly show the features of the project as it has been constructed by bringing the contract set into agreement with approved working as-built prints, and adding such additional drawings as may be necessary. These working as-built marked prints must be neat, legible and accurate. These drawings are part of the permanent records of this project and must be returned to the Contracting Officer after approval by the Government. Any drawings damaged or lost by the Contractor must be satisfactorily replaced by the Contractor at no expense to the Government.

1.3.1.4 Computer Aided Design and Drafting (CADD) Drawings

Only employ personnel proficient in the preparation of CADD drawings to modify the contract drawings or prepare additional new drawings. Additions and corrections to the contract drawings must be equal in quality and detail to that of the originals. Line colors, line weights, lettering, layering conventions, and symbols must be the same as the original line colors, line weights, lettering, layering conventions, and symbols. If additional drawings are required, prepare them using the specified electronic file format applying the same graphic standards specified for

original drawings. The title block and drawing border to be used for any new final record drawings must be identical to that used on the contract drawings. Accomplish additions and corrections to the contract drawings using CADD files. The Contractor will be furnished "as-designed" drawings in Microstation V8 format compatible with a Windows XP operating system. The electronic files will be supplied on compact disc, read-only memory (CD-ROM). Provide all program files and hardware necessary to prepare final record drawings. The Contracting Officer will review final record drawings for accuracy and return them to the Contractor for required corrections, changes, additions, and deletions.

- a. Features of work, utilities, or other illustrations of work that are deleted or relocated shall have those elements purged from the electronic CAD design file.
- b. No renaming of electronic CAD design files shall be permitted.
- c. When final revisions have been completed, show the wording "RECORD DRAWINGS / AS-BUILT CONDITIONS" followed by the name of the Contractor in letters at least 3/16 inch high on the cover sheet drawing. Mark all other contract drawings either "Record" drawing denoting no revisions on the sheet or "Revised Record" denoting one or more revisions. Date original contract drawings in the revision block.
- d. Within 20 days after Government approval of all of the working record drawings for a phase of work, prepare the final CADD record drawings for that phase of work and submit two sets of blue-lined prints of these drawings for Government review and approval. The Government will promptly return one set of prints annotated with any necessary corrections. Within 10 days revise the CADD files accordingly at no additional cost and submit one set of final prints for the completed phase of work to the Government. Within 20 days of substantial completion of all phases of work, submit the final record drawing package for the entire project. Submit one set of electronic files on compact disc, read-only memory (CD-ROM), two sets of blue-line prints and one set of the approved working record drawings. They must be complete in all details and identical in form and function to the contract drawing files supplied by the Government. Any transactions or adjustments necessary to accomplish this is the responsibility of the Contractor. The Government reserves the right to reject any drawing files it deems incompatible with the customer's CADD system. Paper prints, drawing files and storage media submitted will become the property of the Government upon final approval. Failure to submit final record drawing files and marked prints as specified will be cause for withholding any payment due the Contractor under this contract. Approval and acceptance of final record drawings must be accomplished before final payment is made to the Contractor.

1.3.1.5 Payment

No separate payment will be made for record drawings required under this contract, and all costs accrued in connection with such drawings are considered a subsidiary obligation of the Contractor.

1.3.2 As-Built Record of Equipment and Materials

Furnish one copy of preliminary record of equipment and materials used on the project 15 days prior to final inspection. This preliminary submittal will be reviewed and returned 2 days after final inspection with Government

comments. Submit Two sets of final record of equipment and materials 10 days after final inspection. Key the designations to the related area depicted on the contract drawings. List the following data:

RECORD OF DESIGNATED EQUIPMENT AND MATERIALS DATA				
Description	Specification Section	Manufacturer and Catalog, Model, and Serial Number	Composition and Size	Where Used

1.3.3 Final Approved Shop Drawings

Furnish final approved project shop drawings 30 days after transfer of the completed facility.

1.3.4 Construction Contract Specifications

Furnish final record (as-built) construction contract specifications, including modifications thereto, 30 days after transfer of the completed facility.

1.3.5 Real Property Equipment

Furnish a list of installed equipment furnished under this contract. Include all information usually listed on manufacturer's name plate. In the "EQUIPMENT-IN-PLACE LIST" include, as applicable, the following for each piece of equipment installed: description of item, location (by room number), model number, serial number, capacity, name and address of manufacturer, name and address of equipment supplier, condition, spare parts list, manufacturer's catalog, and warranty. Furnish a draft list at time of transfer. Furnish the final list 30 days after transfer of the completed facility.

1.4 SPARE PARTS DATA

Submit two copies of the Spare Parts Data list.

- a. Indicate manufacturer's name, part number, nomenclature, and stock level required for maintenance and repair. List those items that may be standard to the normal maintenance of the system.
- b. Supply two items of each part for spare parts inventory. Provision of spare parts does not relieve the Contractor of responsibilities listed under the contract guarantee provisions.

1.5 PREVENTATIVE MAINTENANCE

Submit [Preventative Maintenance](#), [Condition Monitoring \(Predictive Testing\)](#) and [Inspection](#) schedules with instructions that state when systems should be retested.

- a. Define the anticipated length of each test, test apparatus, number of personnel identified by responsibility, and a testing validation procedure permitting the record operation capability requirements within the schedule. Provide a signoff blank for the Contractor and Contracting Officer for each test feature; e.g., [gpm](#), [rpm](#), [psi](#). Include a remarks column for the testing validation procedure

referencing operating limits of time, pressure, temperature, volume, voltage, current, acceleration, velocity, alignment, calibration, adjustments, cleaning, or special system notes. Delineate procedures for preventative maintenance, inspection, adjustment, lubrication and cleaning necessary to minimize corrective maintenance and repair.

- b. Repair requirements must inform operators how to check out, troubleshoot, repair, and replace components of the system. Include electrical and mechanical schematics and diagrams and diagnostic techniques necessary to enable operation and troubleshooting of the system after acceptance.

1.6 WARRANTY MANAGEMENT

1.6.1 Warranty Management Plan

Develop a warranty management plan which contains information relevant to the clause Warranty of Construction. At least 30 days before the planned pre-warranty conference, submit one set of the warranty management plan. Include within the warranty management plan all required actions and documents to ensure that the Government receives all warranties to which it is entitled. The plan must be in narrative form and contain sufficient detail to render it suitable for use by future maintenance and repair personnel, whether tradesmen, or of engineering background, not necessarily familiar with this contract. The term "status" as indicated below must include due date and whether item has been submitted or was accomplished. Warranty information made available during the construction phase must be submitted to the Contracting Officer for approval prior to each monthly pay estimate. Assemble approved information in a binder and turn over to the Government upon acceptance of the work. The construction warranty period will begin on the date of project acceptance and continue for the full product warranty period. A joint 4 month and 9 month warranty inspection will be conducted, measured from time of acceptance, by the Contractor, Contracting Officer and the Customer Representative. Include within the warranty management plan , but not limited to, the following:

- a. Roles and responsibilities of all personnel associated with the warranty process, including points of contact and telephone numbers within the organizations of the Contractors, subContractors, manufacturers or suppliers involved.
- b. Furnish with each warranty the name, address, and telephone number of each of the guarantor's representatives nearest to the project location.
- c. Listing and status of delivery of all Certificates of Warranty for extended warranty items, to include roofs, HVAC balancing, pumps, motors, transformers, and for all commissioned systems such as fire protection and alarm systems, sprinkler systems, lightning protection systems, etc.
- d. A list for each warranted equipment, item, feature of construction or system indicating:
 - (1) Name of item.
 - (2) Model and serial numbers.
 - (3) Location where installed.
 - (4) Name and phone numbers of manufacturers or suppliers.
 - (5) Names, addresses and telephone numbers of sources of spare parts.
 - (6) Warranties and terms of warranty. Include one-year overall

warranty of construction, including the starting date of warranty of construction. Items which have extended warranties must be indicated with separate warranty expiration dates.

- (7) Cross-reference to warranty certificates as applicable.
 - (8) Starting point and duration of warranty period.
 - (9) Summary of maintenance procedures required to continue the warranty in force.
 - (10) Cross-reference to specific pertinent Operation and Maintenance manuals.
 - (11) Organization, names and phone numbers of persons to call for warranty service.
 - (12) Typical response time and repair time expected for various warranted equipment.
- e. The Contractor's plans for attendance at the 4 and 9 month post-construction warranty inspections conducted by the Government.
 - f. Procedure and status of tagging of all equipment covered by extended warranties.
 - g. Copies of **instructions** to be posted near selected pieces of equipment where operation is critical for warranty and/or safety reasons.

1.6.2 Performance Bond

The Contractor's Performance Bond must remain effective throughout the construction period .

- a. In the event the Contractor fails to commence and diligently pursue any construction warranty work required, the Contracting Officer will have the work performed by others, and after completion of the work, will charge the remaining construction warranty funds of expenses incurred by the Government while performing the work, including, but not limited to administrative expenses.
- b. In the event sufficient funds are not available to cover the construction warranty work performed by the Government at the Contractor's expense, the Contracting Officer will have the right to recoup expenses from the bonding company.
- c. Following oral or written notification of required construction warranty repair work, respond in a timely manner. Written verification will follow oral instructions. Failure of the Contractor to respond will be cause for the Contracting Officer to proceed against the Contractor.

1.6.3 Pre-Warranty Conference

Prior to contract completion, and at a time designated by the Contracting Officer, meet with the Contracting Officer to develop a mutual understanding with respect to the requirements of this section. Communication procedures for Contractor notification of construction warranty defects, priorities with respect to the type of defect, reasonable time required for Contractor response, and other details deemed necessary by the Contracting Officer for the execution of the construction warranty will be established/reviewed at this meeting. In connection with these requirements and at the time of the Contractor's quality control completion inspection, furnish the name, telephone number and address of a licensed and bonded company which is authorized to initiate and pursue construction

warranty work action on behalf of the Contractor. This point of contact will be located within the local service area of the warranted construction, be continuously available, and be responsive to Government inquiry on warranty work action and status. This requirement does not relieve the Contractor of any of its responsibilities in connection with other portions of this provision.

1.6.4 Contractor's Response to Construction Warranty Service Requirements

Following oral or written notification by the Contracting Officer, respond to construction warranty service requirements in accordance with the "Construction Warranty Service Priority List" and the three categories of priorities listed below. Submit a report on any warranty item that has been repaired during the warranty period. Include within the report the cause of the problem, date reported, corrective action taken, and when the repair was completed. If the Contractor does not perform the construction warranty within the timeframes specified, the Government will perform the work and backcharge the construction warranty payment item established.

- a. First Priority Code 1. Perform onsite inspection to evaluate situation, and determine course of action within 4 hours, initiate work within 6 hours and work continuously to completion or relief.
- b. Second Priority Code 2. Perform onsite inspection to evaluate situation, and determine course of action within 8 hours, initiate work within 24 hours and work continuously to completion or relief.
- c. Third Priority Code 3. All other work to be initiated within 3 work days and work continuously to completion or relief.
- d. The "Construction Warranty Service Priority List" is as follows:

Code 1-Life Safety Systems

- (1) Fire suppression systems.
- (2) Fire alarm system(s) in place in the building.

Code 1-Air Conditioning Systems

- (1) Recreational support.
- (2) Air conditioning leak in part of building, if causing damage.
- (3) Air conditioning system not cooling properly.

Code 1-Doors

- (1) Overhead doors not operational, causing a security, fire, or safety problem.
- (2) Interior, exterior personnel doors or hardware, not functioning properly, causing a security, fire, or safety problem.

Code 3-Doors

- (1) Overhead doors not operational.
- (2) Interior/exterior personnel doors or hardware not functioning properly.

Code 1-Electrical

- (1) Power failure (entire area or any building operational after 1600 hours).
- (2) Security lights
- (3) Smoke detectors

Code 2-Electrical

- (1) Power failure (no power to a room or part of building).
- (2) Receptacle and lights (in a room or part of building).

Code 3-Electrical
Street lights.

- Code 1-Gas
- (1) Leaks and breaks.
 - (2) No gas to family housing unit or cantonment area.

- Code 1-Heat
- (1) Area power failure affecting heat.
 - (2) Heater in unit not working.

- Code 2-Kitchen Equipment
- (1) Dishwasher not operating properly.
 - (2) All other equipment hampering preparation of a meal.

- Code 1-Plumbing
- (1) Hot water heater failure.
 - (2) Leaking water supply pipes.

- Code 2-Plumbing
- (1) Flush valves not operating properly.
 - (2) Fixture drain, supply line to commode, or any water pipe leaking.
 - (3) Commode leaking at base.

Code 3 -Plumbing
Leaky faucets.

- Code 3-Interior
- (1) Floors damaged.
 - (2) Paint chipping or peeling.
 - (3) Casework.

Code 1-Roof Leaks
Temporary repairs will be made where major damage to property is occurring.

Code 2-Roof Leaks
Where major damage to property is not occurring, check for location of leak during rain and complete repairs on a Code 2 basis.

Code 2-Water (Exterior)
No water to facility.

Code 2-Water (Hot)
No hot water in portion of building listed.

Code 3-All other work not listed above.

1.6.5 Warranty Tags

At the time of installation, tag each warranted item with a durable, oil and water resistant tag approved by the Contracting Officer. Attach each tag with a copper wire and spray with a silicone waterproof coating. Also, submit two record copies of the warranty tags showing the layout and design. The date of acceptance and the QC signature must remain blank until the project is accepted for beneficial occupancy. Show the following

information on the tag.

Type of product/material	
Model number	
Serial number	
Contract number	
Warranty period from/to	
Inspector's signature	
Construction Contractor	
Address	
Telephone number	
Warranty contact	
Address	
Telephone number	
Warranty response time priority code	
WARNING - PROJECT PERSONNEL TO PERFORM ONLY OPERATIONAL MAINTENANCE DURING THE WARRANTY PERIOD.	

1.7 OPERATION AND MAINTENANCE MANUALS

Submit 6 copies of the project operation and maintenance manuals 30 calendar days prior to testing the system involved. Update and resubmit data for final approval no later than 30 calendar days prior to contract completion.

1.7.1 Configuration

Operation and Maintenance Manuals must be consistent with the manufacturer's standard brochures, schematics, printed instructions, general operating procedures, and safety precautions. Bind information in manual format and grouped by technical sections. Test data must be legible and of good quality. Light-sensitive reproduction techniques are acceptable provided finished pages are clear, legible, and not subject to fading. Pages for vendor data and manuals must have 0.3937-inch holes and be bound in 3-ring, loose-leaf binders. Organize data by separate index and tabbed sheets, in a loose-leaf binder. Binder must lie flat with printed sheets that are easy to read. Caution and warning indications must be clearly labeled.

1.7.2 Training and Instruction

Submit classroom and field instructions in the operation and maintenance of systems equipment where required by the technical provisions. These

services must be directed by the Contractor, using the manufacturer's factory-trained personnel or qualified representatives. Contracting Officer will be given 7 calendar days written notice of scheduled instructional services. Instructional materials belonging to the manufacturer or vendor, such as lists, static exhibits, and visual aids, must be made available to the Contracting Officer.

1.8 CLEANUP

Leave premises "broom clean." Clean interior and exterior glass surfaces exposed to view; remove temporary labels, stains and foreign substances; polish transparent and glossy surfaces; vacuum carpeted and soft surfaces. Clean equipment and fixtures to a sanitary condition. Clean 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.

1.9 REAL PROPERTY RECORD

Near the completion of Project, but a minimum of 60 days prior to final acceptance of the work, update draft provided by Contracting Officer, and submit an accounting of all installed property with [Interim Form DD1354](#) "Transfer and Acceptance of Military Real Property." Include any additional assets/improvements/alterations from the Draft DD Form 1354. Contact the Contracting Officer for any project specific information necessary to complete the DD Form 1354. Refer to [UFC 1-300-08](#) for instruction on completing the DD Form 1354. For information purposes, a blank DD Form 1354 (fill-able) in ADOBE (PDF) may be obtained at the following web site:

<http://www.dtic.mil/whs/directives/infomgt/forms/eforms/dd1354.pdf>

Submit the completed [Checklist for Form DD1354](#) of Installed Building Equipment items. Attach this list to the updated DD Form 1354.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

-- End of Section --

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08/15

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SECTION 01 78 23

OPERATION AND MAINTENANCE DATA

08/15

PART 1 GENERAL

1.1 SUBMITTALS

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

SD-10 Operation and Maintenance Data

O&M Database; G, RO
Training Plan; G, RO
Training Outline; G, RO
Training Content; G, RO

SD-11 Closeout Submittals

Training Video Recording; G, RO
Validation of Training Completion; G, RO

1.2 OPERATION AND MAINTENANCE DATA

Submit Operation and Maintenance (O&M) Data for the provided equipment, product, or system, defining the importance of system interactions, troubleshooting, and long-term preventive operation and maintenance. Compile, prepare, and aggregate O&M data to include clarifying and updating the original sequences of operation to as-built conditions. Organize and present information in sufficient detail to clearly explain O&M requirements at the system, equipment, component, and subassembly level. Include an index preceding each submittal. Submit in accordance with this section and Section 01 33 00 SUBMITTAL PROCEDURES.

1.2.1 Package Quality

Documents must be fully legible. Operation and Maintenance data must be consistent with the manufacturer's standard brochures, schematics, printed instructions, general operating procedures, and safety precautions.

1.2.2 Package Content

Provide data package content in accordance with paragraph SCHEDULE OF OPERATION AND MAINTENANCE DATA PACKAGES. Comply with the data package requirements specified in the individual technical sections, including the content of the packages and addressing each product, component, and system designated for data package submission, except as follows. Use Data Package 5 for commissioned items without a specified data package requirement in the individual technical sections. Provide a Data Package 5 instead of Data Package 1 or 2, as specified in the individual technical section, for items that are commissioned.

1.2.3 Changes to Submittals

Provide manufacturer-originated changes or revisions to submitted data if a component of an item is so affected subsequent to acceptance of the O&M Data. Submit changes, additions, or revisions required by the Contracting Officer for final acceptance of submitted data within 30 calendar days of the notification of this change requirement.

1.2.4 Commissioning Authority Review and Approval

Submit the commissioned systems and equipment submittals to the Commissioning Authority (CxA) to review for completeness and applicability. Obtain validation from the CxA that the systems and equipment provided meet the requirements of the Contract documents and design intent, particularly as they relate to functionality, energy performance, water performance, maintainability, sustainability, system cost, indoor environmental quality, and local environmental impacts. The CxA communicates deficiencies to the Contracting Officer. Submit the O&M manuals to the Contracting Officer upon a successful review of the corrections, and with the CxA recommendation for approval and acceptance of these O&M manuals. This work is in addition to the normal review procedures for O&M data.

1.3 O&M DATABASE

Develop an editable, electronic spreadsheet based on the equipment in the Operation and Maintenance Manuals that contains the information required to start a preventive maintenance program. As a minimum, provide list of system equipment, location installed, warranty expiration date, manufacturer, model, and serial number.

1.4 OPERATION AND MAINTENANCE MANUAL FILE FORMAT

Assemble data packages into electronic Operation and Maintenance Manuals. Assemble each manual into a composite electronically indexed file using the most current version of Adobe Acrobat or similar software capable of producing PDF file format. Provide compact disks (CD) or data digital versatile disk (DVD) as appropriate, so that each one contains operation, maintenance and record files, project record documents, and training videos. Include a complete electronically linked operation and maintenance directory.

1.4.1 Organization

Bookmark Product and Drawing Information documents using the current version of CSI Masterformat numbering system, and arrange submittals using the specification sections as a structure. Use CSI Masterformat and UFGS numbers along with descriptive bookmarked titles that explain the content of the information that is being bookmarked.

1.4.2 CD or DVD Label and Disk Holder or Case

Provide the following information on the disk label and disk holder or case:

- a. Building Number
- b. Project Title
- c. Activity and Location

- d. Construction Contract Number
- e. Prepared For: (Contracting Agency)
- f. Prepared By: (Name, title, phone number and email address)
- g. Include the disk content on the disk label
- h. Date
- i. Virus scanning program used

1.5 TYPES OF INFORMATION REQUIRED IN O&M DATA PACKAGES

The following are a detailed description of the data package items listed in paragraph SCHEDULE OF OPERATION AND MAINTENANCE DATA PACKAGES.

1.5.1 Operating Instructions

Provide specific instructions, procedures, and illustrations for the following phases of operation for the installed model and features of each system:

1.5.1.1 Safety Precautions and Hazards

List personnel hazards and equipment or product safety precautions for operating conditions. List all residual hazards identified in the Activity Hazard Analysis provided under Section 01 35 26 GOVERNMENT SAFETY REQUIREMENTS. Provide recommended safeguards for each identified hazard.

1.5.1.2 Operator Prestart

Provide procedures required to install, set up, and prepare each system for use.

1.5.1.3 Startup, Shutdown, and Post-Shutdown Procedures

Provide narrative description for Startup, Shutdown and Post-shutdown operating procedures including the control sequence for each procedure.

1.5.1.4 Normal Operations

Provide Control Diagrams with data to explain operation and control of systems and specific equipment. Provide narrative description of Normal Operating Procedures.

1.5.1.5 Emergency Operations

Provide Emergency Procedures for equipment malfunctions to permit a short period of continued operation or to shut down the equipment to prevent further damage to systems and equipment. Provide Emergency Shutdown Instructions for fire, explosion, spills, or other foreseeable contingencies. Provide guidance and procedures for emergency operation of utility systems including required valve positions, valve locations and zones or portions of systems controlled.

1.5.1.6 Operator Service Requirements

Provide instructions for services to be performed by the operator such as lubrication, adjustment, inspection, and recording gauge readings.

1.5.1.7 Environmental Conditions

Provide a list of Environmental Conditions (temperature, humidity, and other relevant data) that are best suited for the operation of each product, component or system. Describe conditions under which the item equipment should not be allowed to run.

1.5.1.8 Operating Log

Provide forms, sample logs, and instructions for maintaining necessary operating records.

1.5.1.9 Additional Requirements for HVAC Control Systems

Provide Data Package 5 and the following for control systems:

- a. Narrative description on how to perform and apply functions, features, modes, and other operations, including unoccupied operation, seasonal changeover, manual operation, and alarms. Include detailed technical manual for programming and customizing control loops and algorithms.
- b. Full as-built sequence of operations.
- c. Copies of checkout tests and calibrations performed by the Contractor (not Cx tests).
- d. Full points list. Provide a listing of rooms with the following information for each room:
 - (1) Floor
 - (2) Room number
 - (3) Room name
 - (4) Air handler unit ID
 - (5) Reference drawing number
 - (6) Air terminal unit tag ID
 - (7) Heating or cooling valve tag ID
 - (8) Minimum cfm
 - (9) Maximum cfm
- e. Full print out of all schedules and set points after testing and acceptance of the system.
- f. Full as-built print out of software program.
- g. Marking of system sensors and thermostats on the as-built floor plan and mechanical drawings with their control system designations.

1.5.2 Preventive Maintenance

Provide the following information for preventive and scheduled maintenance to minimize repairs for the installed model and features of each system. Include potential environmental and indoor air quality impacts of recommended maintenance procedures and materials.

1.5.2.1 Lubrication Data

Include the following preventive maintenance lubrication data, in addition to instructions for lubrication required under paragraph OPERATOR SERVICE REQUIREMENTS:

- a. A table showing recommended lubricants for specific temperature ranges and applications.
- b. Charts with a schematic diagram of the equipment showing lubrication points, recommended types and grades of lubricants, and capacities.
- c. A Lubrication Schedule showing service interval frequency.

1.5.2.2 Preventive Maintenance Plan, Schedule, and Procedures

Provide manufacturer's schedule for routine preventive maintenance, inspections, condition monitoring (predictive tests) and adjustments required to ensure proper and economical operation and to minimize repairs. Provide instructions stating when the systems should be retested. Provide manufacturer's projection of preventive maintenance work-hours on a daily, weekly, monthly, and annual basis including craft requirements by type of craft. For periodic calibrations, provide manufacturer's specified frequency and procedures for each separate operation.

- a. Define the anticipated time required to perform each of each test (work-hours), test apparatus, number of personnel identified by responsibility, and a testing validation procedure permitting the record operation capability requirements within the schedule. Provide a remarks column for the testing validation procedure referencing operating limits of time, pressure, temperature, volume, voltage, current, acceleration, velocity, alignment, calibration, adjustments, cleaning, or special system notes. Delineate procedures for preventive maintenance, inspection, adjustment, lubrication and cleaning necessary to minimize repairs.
- b. Repair requirements must inform operators how to check out, troubleshoot, repair, and replace components of the system. Include electrical and mechanical schematics and diagrams and diagnostic techniques necessary to enable operation and troubleshooting of the system after acceptance.

1.5.3 Repair

Provide manufacturer's recommended procedures and instructions for correcting problems and making repairs.

1.5.3.1 Troubleshooting Guides and Diagnostic Techniques

Provide step-by-step procedures to promptly isolate the cause of typical

malfunctions. Describe clearly why the checkout is performed and what conditions are to be sought. Identify tests or inspections and test equipment required to determine whether parts and equipment may be reused or require replacement.

1.5.3.2 Wiring Diagrams and Control Diagrams

Provide point-to-point drawings of wiring and control circuits including factory-field interfaces. Provide a complete and accurate depiction of the actual job specific wiring and control work. On diagrams, number electrical and electronic wiring and pneumatic control tubing and the terminals for each type, identically to actual installation configuration and numbering.

1.5.3.3 Repair Procedures

Provide instructions and a list of tools required to repair or restore the product or equipment to proper condition or operating standards.

1.5.3.4 Removal and Replacement Instructions

Provide step-by-step procedures and a list of required tools and supplies for removal, replacement, disassembly, and assembly of components, assemblies, subassemblies, accessories, and attachments. Provide tolerances, dimensions, settings and adjustments required. Use a combination of text and illustrations.

1.5.3.5 Spare Parts and Supply Lists

Provide lists of spare parts and supplies required for repair to ensure continued service or operation without unreasonable delays. Special consideration is required for facilities at remote locations. List spare parts and supplies that have a long lead-time to obtain.

1.5.3.6 Repair Work-Hours

Provide manufacturer's projection of repair work-hours including requirements by type of craft. Identify, and tabulate separately, repair that requires the equipment manufacturer to complete or to participate.

1.5.4 Real Property Equipment

Provide a list of installed equipment furnished under this contract. Include all information usually listed on manufacturer's name plate. In the "EQUIPMENT-IN-PLACE LIST" include, as applicable, the following for each piece of equipment installed: description of item, location (by room number), model number, serial number, capacity, name and address of manufacturer, name and address of equipment supplier, condition, spare parts list, manufacturer's catalog, and warranty. Submit the final list 30 days after transfer of the completed facility.

Key the designations to the related area depicted on the contract drawings. List the following data:

RECORD OF DESIGNATED EQUIPMENT AND MATERIALS DATA				
Description	Specification Section	Manufacturer and Catalog, Model, and Serial Number	Composition and Size	Where Used

1.5.5 Appendices

Provide information required below and information not specified in the preceding paragraphs but pertinent to the maintenance or operation of the product or equipment. Include the following:

1.5.5.1 Product Submittal Data

Provide a copy of SD-03 Product Data submittals documented with the required approval.

1.5.5.2 Manufacturer's Instructions

Provide a copy of SD-08 Manufacturer's Instructions submittals documented with the required approval.

1.5.5.3 O&M Submittal Data

Provide a copy of SD-10 Operation and Maintenance Data submittals documented with the required approval.

1.5.5.4 Parts Identification

Provide identification and coverage for the parts of each component, assembly, subassembly, and accessory of the end items subject to replacement. Include special hardware requirements, such as requirement to use high-strength bolts and nuts. Identify parts by make, model, serial number, and source of supply to allow reordering without further identification. Provide clear and legible illustrations, drawings, and exploded views to enable easy identification of the items. When illustrations omit the part numbers and description, both the illustrations and separate listing must show the index, reference, or key number that will cross-reference the illustrated part to the listed part. Group the parts shown in the listings by components, assemblies, and subassemblies in accordance with the manufacturer's standard practice. Parts data may cover more than one model or series of equipment, components, assemblies, subassemblies, attachments, or accessories, such as typically shown in a master parts catalog.

1.5.5.5 Warranty Information

List and explain the various warranties and clearly identify the servicing and technical precautions prescribed by the manufacturers or contract documents in order to keep warranties in force. Include warranty information for primary components of the system. Provide copies of warranties required by Section 01 78 00 CLOSEOUT SUBMITTALS.

1.5.5.6 Extended Warranty Information

List all warranties for products, equipment, components, and sub-components whose duration exceeds one year. For each warranty listed, indicate the applicable specification section, duration, start date, end date, and the point of contact for warranty fulfillment. Also, list or reference the specific operation and maintenance procedures that must be performed to keep the warranty valid. Provide copies of warranties required by Section 01 78 00 CLOSEOUT SUBMITTALS.

1.5.5.7 Personnel Training Requirements

Provide information available from the manufacturers that is needed for use in training designated personnel to properly operate and maintain the equipment and systems.

1.5.5.8 Testing Equipment and Special Tool Information

Include information on test equipment required to perform specified tests and on special tools needed for the operation, maintenance, and repair of components. Provide final set points.

1.5.5.9 Testing and Performance Data

Include completed prefunctional checklists, functional performance test forms, and monitoring reports. Include recommended schedule for retesting and blank test forms. Provide final set points.

1.5.5.10 Field Test Reports

Provide a copy of Field Test Reports (SD-06) submittals documented with the required approval.

1.5.5.11 Contractor Information

Provide a list that includes the name, address, and telephone number of the General Contractor and each Subcontractor who installed the product or equipment, or system. For each item, also provide the name address and telephone number of the manufacturer's representative and service organization that can provide replacements most convenient to the project site. Provide the name, address, and telephone number of the product, equipment, and system manufacturers.

1.6 SCHEDULE OF OPERATION AND MAINTENANCE DATA PACKAGES

Provide the O&M data packages specified in individual technical sections. The information required in each type of data package follows:

1.6.1 Data Package 1

- a. Safety precautions and hazards
- b. Cleaning recommendations
- c. Maintenance and repair procedures
- d. Warranty information
- e. Extended warranty information

- f. Contractor information
- g. Spare parts and supply list

1.6.2 Data Package 2

- a. Safety precautions and hazards
- b. Normal operations
- c. Environmental conditions
- d. Lubrication data
- e. Preventive maintenance plan, schedule, and procedures
- f. Cleaning recommendations
- g. Maintenance and repair procedures
- h. Removal and replacement instructions
- i. Spare parts and supply list
- j. Parts identification
- k. Warranty information
- l. Extended warranty information
- m. Contractor information

1.6.3 Data Package 3

- a. Safety precautions and hazards
- b. Operator prestart
- c. Startup, shutdown, and post-shutdown procedures
- d. Normal operations
- e. Emergency operations
- f. Environmental conditions
- g. Operating log
- h. Lubrication data
- i. Preventive maintenance plan, schedule, and procedures
- j. Cleaning recommendations
- k. Troubleshooting guides and diagnostic techniques
- l. Wiring diagrams and control diagrams

- m. Maintenance and repair procedures
 - n. Removal and replacement instructions
 - o. Spare parts and supply list
 - p. Product submittal data
 - q. O&M submittal data
 - r. Parts identification
 - s. Warranty information
 - t. Extended warranty information
 - u. Testing equipment and special tool information
 - v. Testing and performance data
 - w. Contractor information
 - x. Field test reports
- 1.6.4 Data Package 4
- a. Safety precautions and hazards
 - b. Operator prestart
 - c. Startup, shutdown, and post-shutdown procedures
 - d. Normal operations
 - e. Emergency operations
 - f. Operator service requirements
 - g. Environmental conditions
 - h. Operating log
 - i. Lubrication data
 - j. Preventive maintenance plan, schedule, and procedures
 - k. Cleaning recommendations
 - l. Troubleshooting guides and diagnostic techniques
 - m. Wiring diagrams and control diagrams
 - n. Repair procedures
 - o. Removal and replacement instructions
 - p. Spare parts and supply list
 - q. Repair work-hours

- r. Product submittal data
 - s. O&M submittal data
 - t. Parts identification
 - u. Warranty information
 - v. Extended warranty information
 - w. Personnel training requirements
 - x. Testing equipment and special tool information
 - y. Testing and performance data
 - z. Contractor information
 - aa. Field test reports
- 1.6.5 Data Package 5
- a. Safety precautions and hazards
 - b. Operator prestart
 - c. Start-up, shutdown, and post-shutdown procedures
 - d. Normal operations
 - e. Environmental conditions
 - f. Preventive maintenance plan, schedule, and procedures
 - g. Troubleshooting guides and diagnostic techniques
 - h. Wiring and control diagrams
 - i. Maintenance and repair procedures
 - j. Removal and replacement instructions
 - k. Spare parts and supply list
 - l. Product submittal data
 - m. Manufacturer's instructions
 - n. O&M submittal data
 - o. Parts identification
 - p. Testing equipment and special tool information
 - q. Warranty information
 - r. Extended warranty information

- s. Testing and performance data
- t. Contractor information
- u. Field test reports
- v. Additional requirements for HVAC control systems

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.1 TRAINING

Prior to acceptance of the facility by the Contracting Officer for Beneficial Occupancy, provide comprehensive training for the systems and equipment specified in the technical specifications. The training must be targeted for the building maintenance personnel, and applicable building occupants. Instructors must be well-versed in the particular systems that they are presenting. Address aspects of the Operation and Maintenance Manual submitted in accordance with Section 01 78 00 CLOSEOUT SUBMITTALS.. Training must include classroom or field lectures based on the system operating requirements. The location of classroom training requires approval by the Contracting Officer.

3.1.1 Training Plan

Submit a written training plan to the Contracting Officer for approval at least 60 calendar days prior to the scheduled training. Training plan must be approved by the Commissioning Authority (CxA) prior to forwarding to the Contracting Officer. Also, coordinate the training schedule with the Contracting Officer and CxA. Include within the plan the following elements:

- a. Equipment included in training
- b. Intended audience
- c. Location of training
- d. Dates of training
- e. Objectives
- f. Outline of the information to be presented and subjects covered including description
- g. Start and finish times and duration of training on each subject
- h. Methods (e.g. classroom lecture, video, site walk-through, actual operational demonstrations, written handouts)
- i. Instructor names and instructor qualifications for each subject
- j. List of texts and other materials to be furnished by the Contractor that are required to support training

- k. Description of proposed software to be used for video recording of training sessions.

3.1.2 Training Content

The core of this training must be based on manufacturer's recommendations and the operation and maintenance information. The CxA is responsible for overseeing and approving the content and adequacy of the training. Spend 95 percent of the instruction time during the presentation on the OPERATION AND MAINTENANCE DATA. Include the following for each system training presentation:

- a. Start-up, normal operation, shutdown, unoccupied operation, seasonal changeover, manual operation, controls set-up and programming, troubleshooting, and alarms.
- b. Relevant health and safety issues.
- c. Discussion of how the feature or system is environmentally responsive. Advise adjustments and optimizing methods for energy conservation.
- d. Design intent.
- e. Use of O&M Manual Files.
- f. Review of control drawings and schematics.
- g. Interactions with other systems.
- h. Special maintenance and replacement sources.
- i. Tenant interaction issues.

3.1.3 Training Outline

Provide the Operation and Maintenance Manual Files (Bookmarked PDF) and a written course outline listing the major and minor topics to be discussed by the instructor on each day of the course to each trainee in the course. Provide the course outline 14 calendar days prior to the training.

3.1.4 Training Video Recording

Record classroom training session(s) on video. Provide to the Contracting Officer two copies of the training session(s) in DVD video recording format. Capture within the recording, in video and audio, the instructors' training presentations including question and answer periods with the attendees. The recording camera(s) must be attended by a person during the recording sessions to ensure proper size of exhibits and projections during the recording are visible and readable when viewed as training.

3.1.5 Unresolved Questions from Attendees

If, at the end of the training course, there are questions from attendees that remain unresolved, the instructor must send the answers, in writing, to the Contracting Officer for transmittal to the attendees, and the training video must be modified to include the appropriate clarifications.

3.1.6 Validation of Training Completion

Ensure that each attendee at each training session signs a class roster daily to confirm Government participation in the training. At the completion of training, submit a signed validation letter that includes a sample record of training for reporting what systems were included in the training, who provided the training, when and where the training was performed, and copies of the signed class rosters. Provide two copies of the validation to the Contracting Officer, and one copy to the Operation and Maintenance Manual Preparer for inclusion into the Manual's documentation.

3.1.7 Quality Control Coordination

Coordinate this training with the CxA.

-- End of Section --

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SECTION 02 41 00

DEMOLITION

05/10

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SECTION 02 41 00

DEMOLITION
05/10

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 A10.6 (2006) Safety Requirements for Demolition Operations

U.S. ARMY CORPS OF ENGINEERS (USACE)

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

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

40 CFR 61 National Emission Standards for Hazardous Air Pollutants

1.2 PROJECT DESCRIPTION

1.2.1 Demolition Plan

Prepare a [Demolition Plan](#) and submit proposed demolition, and removal procedures for approval before work is started. Include in the plan procedures for careful removal and disposition of materials specified to be salvaged, coordination with other work in progress, a disconnection schedule of utility services, and a detailed description of methods and equipment to be used for each operation and the sequence of operations. Identify components and materials to be salvaged for reuse or recycling with reference to Paragraph EXISTING FACILITIES TO BE REMOVED. Append tracking forms for the removed materials indicating type, quantities, condition, destination, and end use. Coordinate with Waste Management Plan. Provide procedures for safe conduct of the work in accordance with [EM 385-1-1](#). Plan shall be approved by Contracting Officer prior to work beginning.

1.2.2 General Requirements

Do not begin demolition or deconstruction until authorization is received from the Contracting Officer. The work of this Section is to shall be performed in a manner that maximizes the value derived from the salvage and recycling of materials. Remove rubbish and debris from Government property daily, unless otherwise directed. Store materials that cannot be removed daily in areas specified by the Contracting Officer. In the interest of occupational safety and health, perform the work in accordance with [EM 385-1-1](#), Section 23, Demolition, and other applicable Sections.

1.3 ITEMS TO REMAIN IN PLACE

1.3.1 Existing Construction Limits and Protection

Do not disturb existing construction beyond the extent indicated or necessary for installation of new construction. Provide temporary shoring and bracing for support of building components to prevent settlement or other movement. Provide protective measures to control accumulation and migration of dust and dirt in all work areas. Remove snow, dust, dirt, and debris from work areas daily.

1.3.2 Trees

Protect trees within the project site which might be damaged during demolition or deconstruction, and which are indicated to be left in place, by a 6 foot high fence. Erect and secure fence a minimum of 5 feet from the trunk of individual trees or follow the outer perimeter of branches or clumps of trees. Replace any tree designated to remain that is damaged during the work under this contract with like-kind or as approved by the Contracting Officer.

1.3.3 Utility Service

Maintain existing utilities indicated to stay in service and protect against damage during demolition and deconstruction operations. Prior to start of work, the Government will disconnect and seal utilities serving each area of alteration or removal upon written request from the Contractor.

1.3.4 Facilities

Protect electrical and mechanical services and utilities. Where removal of existing utilities and pavement is specified or indicated, provide approved barricades, temporary covering of exposed areas, and temporary services or connections for electrical and mechanical utilities. Floors, roofs, walls, columns, pilasters, and other structural components that are designed and constructed to stand without lateral support or shoring, and are determined to be in stable condition, must remain standing without additional bracing, shoring, or lateral support until demolished or deconstructed, unless directed otherwise by the Contracting Officer. Ensure that no elements determined to be unstable are left unsupported and place and secure bracing, shoring, or lateral supports as may be required as a result of any cutting, removal, deconstruction, or demolition work performed under this contract.

1.4 BURNING

The use of burning at the project site will not be permitted.

1.5 SUBMITTALS

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

SD-01 Preconstruction Submittals

Existing Conditions; G, RO

SD-07 Certificates

Demolition Plan; G, RO
Notification; G, RO

1.6 QUALITY ASSURANCE

Submit timely **notification** of demolition projects to Federal, State, regional, and local authorities in accordance with **40 CFR 61**, Subpart M. Notify the the Contracting Officer in writing 10 working days prior to the commencement of work in accordance with **40 CFR 61**, Subpart M. Comply with federal, state, and local hauling and disposal regulations. In addition to the requirements of the "Contract Clauses," conform to the safety requirements contained in **ASSE/SAFE A10.6**. Comply with the Environmental Protection Agency requirements specified. Use of explosives will not be permitted.

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

1.7 PROTECTION

1.7.1 Traffic Control Signs

Where pedestrian and driver safety is endangered in the area of removal work, use traffic barricades with flashing lights. Notify the Contracting Officer prior to beginning such work.

1.7.2 Protection of Personnel

Before, during and after the demolition work, continuously evaluate the condition of the structure being demolished and take immediate action to protect all personnel working in and around the project site. No area, section, or component of floors, roofs, walls, columns, pilasters, or other structural element will be allowed to be left standing without sufficient bracing, shoring, or lateral support to prevent collapse or failure while workmen remove debris or perform other work in the immediate area.

1.8 RELOCATIONS

Perform the removal and reinstallation of relocated items as indicated with workmen skilled in the trades involved. Repair or replace items to be relocated which are damaged by the Contractor with new undamaged items as approved by the Contracting Officer.

1.9 EXISTING CONDITIONS

Before beginning any demolition or deconstruction work, survey the site and examine the drawings and specifications to determine the extent of the work. Record existing conditions in the presence of the Contracting Officer showing the condition of structures and other facilities adjacent to areas of alteration or removal. Photographs sized **4 inch** will be acceptable as a record of existing conditions. Include in the record the elevation of the top of foundation walls, finish floor elevations, possible conflicting electrical conduits, plumbing lines, alarms systems, the location and extent of existing cracks and other damage and description of

surface conditions that exist prior to before starting work. It is the Contractor's responsibility to verify and document all required outages which will be required during the course of work, and to note these outages on the record document. Submit survey results.

PART 2 PRODUCTS

2.1 FILL MATERIAL

- a. Comply with excavating, backfilling, and compacting procedures for soils used as backfill material to fill basements, voids, depressions or excavations resulting from demolition or deconstruction of structures.
- b. Fill material shall conform to the definition of satisfactory soil material as defined in Section 31 00 00 EARTHWORK, and shall be free from roots and other organic matter, trash, debris, frozen materials, and stones larger than 2 inches in any dimension.
- c. Proposed fill material must be sampled and tested by an approved soil testing laboratory in accordance with Section 31 00 00 EARTHWORK.

PART 3 EXECUTION

3.1 EXISTING FACILITIES TO BE REMOVED

Inspect and evaluate existing structures onsite for reuse. Existing construction scheduled to be removed for reuse shall be disassembled. Dismantled and removed materials are to be separated, set aside, and prepared as specified, and stored or delivered to a collection point for reuse, remanufacture, recycling, or other disposal, as specified. Materials shall be designated for reuse onsite whenever possible.

3.1.1 Utilities and Related Equipment

3.1.1.1 General Requirements

Do not interrupt existing utilities serving occupied or used facilities, except when authorized in writing by the Contracting Officer. Do not interrupt existing utilities serving facilities occupied and used by the Government except when approved in writing and then only after temporary utility services have been approved and provided. Do not begin demolition or deconstruction work until all utility disconnections have been made. Shut off and cap utilities for future use, as indicated.

3.1.1.2 Disconnecting Existing Utilities

Remove existing utilities as indicated and terminate in a manner conforming to the nationally recognized code covering the specific utility and approved by the Contracting Officer. When utility lines are encountered but are not indicated on the drawings, notify the Contracting Officer prior to further work in that area. Remove meters and related equipment and deliver to a location in accordance with instructions of the Contracting Officer.

3.1.2 Chain Link Fencing

Remove chain link fencing, gates and other related salvaged items scheduled for removal and transport to designated areas. Remove gates as whole

units. Cut chain link fabric to 25 foot lengths and store in rolls off the ground.

3.1.3 Paving and Slabs

Remove concrete and asphaltic concrete paving and slabs including aggregate base as indicated. Provide neat sawcuts at limits of pavement removal as indicated. Pavement and slabs designated to be recycled and utilized in this project shall be moved, ground and stored as directed by the Contracting Officer. Pavement and slabs not to be used in this project shall be removed from the Installation at Contractor's expense.

3.1.4 Concrete

Saw concrete along straight lines to a depth of a minimum 2 inch. Make each cut in walls perpendicular to the face and in alignment with the cut in the opposite face. Break out the remainder of the concrete provided that the broken area is concealed in the finished work, and the remaining concrete is sound. At locations where the broken face cannot be concealed, grind smooth or saw cut entirely through the concrete.

3.1.5 Electrical Devices

Remove and salvage switches, switchgear, transformers, conductors including wire and nonmetallic sheathed and flexible armored cable, regulators, meters, instruments, plates, circuit breakers, panelboards, outlet boxes, and similar items. Box and tag these items for identification according to type and size.

3.1.6 Items With Unique/Regulated Disposal Requirements

Remove and dispose of items with unique or regulated disposal requirements in the manner dictated by law or in the most environmentally responsible manner.

3.2 CONCURRENT EARTH-MOVING OPERATIONS

Do not begin excavation, filling, and other earth-moving operations that are sequential to demolition or deconstruction work in areas occupied by structures to be demolished or deconstructed until all demolition and deconstruction in the area has been completed and debris removed. Fill holes, open basements and other hazardous openings.

3.3 DISPOSITION OF MATERIAL

3.3.1 Title to Materials

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Except for salvaged items specified in related Sections, and for materials or equipment scheduled for salvage, all materials and equipment removed and not reused or salvaged, shall become the property of the Contractor and shall be removed from Government property. Title to materials resulting from demolition and deconstruction, and materials and equipment to be removed, is vested in the Contractor upon approval by the Contracting Officer of the Contractor's demolition, deconstruction, and removal procedures, and authorization by the Contracting Officer to begin demolition and deconstruction. The Government will not be responsible for the condition or loss of, or damage to, such property after contract award. Showing for sale or selling materials and equipment on site is prohibited. Remove asbestos-containing materials, including non-friable

material, prior to demolition. Dispose of debris off Government property at Contractor's expense.

3.3.2 Disposal of Ozone-Depleting Substances (ODS)

Any ODS brought onsite shall be removed by the Contractor. To view the web site for ODS, follow the link to:

<https://www.osd.mil/denix/Public/News/DLA/ODS/sect1.html>

3.4 CLEANUP

Remove debris and rubbish from basement and similar excavations. Remove and transport the debris in a manner that prevents spillage on streets or adjacent areas. Apply local regulations regarding hauling and disposal.

3.5 DISPOSAL OF REMOVED MATERIALS

3.5.1 Regulation of Removed Materials

Dispose of debris, rubbish, scrap, and other nonsalvageable materials resulting from removal operations in accordance with the applicable federal, state and local regulations and as contractually specified.

3.5.2 Burning on Government Property

Burning of materials removed from demolished and deconstructed structures will not be permitted on Government property.

3.5.3 Removal to Spoil Areas on Government Property

Transport noncombustible materials removed from demolition and deconstruction structures to designated spoil areas on Government property.

3.5.4 Removal from Government Property

Transport waste materials removed from demolished and deconstructed structures, except waste soil, from Government property for legal disposal. Dispose of waste soil as directed.

3.6 REUSE OF SALVAGED ITEMS

Recondition salvaged materials and equipment designated for reuse before installation. Replace items damaged during removal and salvage operations or restore them as necessary to usable condition.

-- End of Section --