

VOLUME 1 OF 4

THIS IS A TOTAL SMALL BUSINESS SET ASIDE

RFP NO: **W9127826RA012**

CADD NO: **MEF22007**

SPECIFICATIONS

FOR

LRSO HARDWARE SOFTWARE DEVELOPMENT FACILITY

EGLIN AIR FORCE BASE, FLORIDA
(OKALOOSA COUNTY)

“GOOD ENGINEERING RESULTS IN A BETTER ENVIRONMENT”



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

U.S. ARMY ENGINEER DISTRICT, MOBILE
100 Canal St
Mobile, Alabama 36602

“BUILDING STRONG®”



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CHECKLIST FOR PREPARATION OF OFFERS

Before sending your offer to us, review it for the following documents--without these, your offer could be rejected. If you have questions, confusion, or doubts, contact the Project Office of the Corps of Engineers.

This checklist is designed for your convenience to assist you in completing your offer. Its completion does not guarantee that your offer will be acceptable. A complete and acceptable offer is solely the responsibility of the Contractor.

1. Your attention is directed to the following clause:

Section 00 45 00, FARS Clause 52.204-7, "System for Award Management". **LACK OF REGISTRATION IN THE SAM DATABASE WILL RENDER BIDDER INELIGIBLE FOR AWARD.** Information on how to register and the time it takes is detailed in the clause.

2. Standard Form 1442 Titled "SOLICITATION, OFFER AND AWARD"

- a. Is it signed in Block 20B? Yes (Y)___ Not Applicable (NA) ___
- b. Have you verified with the Project Office that you have received all Amendments? Have you acknowledged all Amendments using block 19? Y___ NA___
- c. Is the complete, correct address of the company printed in Block 14? **(ALSO INCLUDE YOUR TIN, UEL, AND CAGE NUMBERS IN THIS BLOCK)** Y___ NA___
- d. Are the correct phone numbers, and fax numbers including country codes, included in Block 15? Y___ NA___
- e. If the mailing address of the company is different from the address in Block 14, is the mailing address written in Block 16? **(ALSO INCLUDE YOUR EMAIL ADDRESS IN THIS BLOCK)** Y___ NA___
- f. If you are a Partnership or Joint Venture, have all partners or joint ventures signed in Block 20; or has authority properly been delegated pursuant to the Joint Venture Agreement? Y___ NA___
- g. If you are a Joint Venture have you submitted your Joint Venture Agreement? Y___ NA___
- h. Is the time you are allowing for acceptance of the offer, the same or longer than the time set out in block 13?. Y___ NA___

3. Limitations of Subcontracting Compliance Form

- a. Is it completely filled out? Y___ NA___

4. Standard Form LLL – Disclosure of Lobbying Activities

- a. Is it completely filled out? Y___ NA___

5. Representations, Certifications, and Other Statements of the Offeror

- a. Are all of the clauses in this section completed and signed in the appropriate places and returned attached to the offer? Y___ NA___

6. The Bidding Schedule

- a. Is it completely filled out? Y___ NA___
- b. It may not be altered either as to quantities or as to items offered. Y___ NA___

- c. There can be no language of limitation either as to quantities or as to items offered. Y__ NA__
- d. If you corrected your numbers, have you initialed these corrections? Y__ NA__
- e. If the bidding schedule has been changed by Amendment, is the bidding schedule that you are submitting from the most recent amendment? Y__ NA__
- f. Do prices for each bid item include all costs, mark-ups and taxes (if any taxes are imposed)? Y__ NA__
- g. Is the cost of obtaining your bid and performance guarantee included in the total bid price specified on the bid schedule? Y__ NA__
- h. In preparing your bid, remember the Corps does not make advanced payments on its contracts Y__ NA__

7. Pre-award Information – Although not required to be submitted with the solicitation, the pre-award information is necessary for award. A detailed list of this information is found in the Pre-Award Clause in the solicitation. Submission of this information with your offer will expedite the award process.

- a. Your latest financial statement Y__ NA__
- b. Your present financial commitments Y__ NA__
- c. Your banking institutions and financial resources Y__ NA__

All your documents must be in English

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SPECIFICATIONS

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SOLICITATION, OFFER AND AWARD <i>(Construction, Alteration, or Repair)</i>	1. SOLICITATION NUMBER	2. TYPE OF SOLICITATION	3. DATE ISSUED	PAGE	OF	PAGES
	W9127826RA012	☐ SEALED BID (IFB) INVITATION FOR BID ☒ NEGOTIATED (RFP) REQUEST FOR PROPOSAL	16 MAR 2026	1		2
IMPORTANT - The "offer" section on the reverse must be fully completed by offeror.						
4. CONTRACT NO.	5. REQUISITION/PURCHASE REQUEST NO.	6. PROJECT NUMBER				
		MEF22007				
7. ISSUED BY	CODE	8. ADDRESS OFFER TO				
U.S. ARMY ENGINEER DISTRICT, MOBILE	CT	SAME AS BLOCK 7				
CONTRACTING DIVISION (CESAM-CT)						
100 CANAL STREET						
MOBILE, AL 36628-0001						
9. FOR INFORMATION CALL: 	a. NAME	b. TELEPHONE NO. (Include area code) (NO COLLECT CALLS)				
	Leigh Dedrick / Stephanie Scalise	(251) 441-5519 / (251) 690-2479				

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*):

LRSO HARDWARE SOFTWARE DEVELOPMENT FACILITY, EGLIN AIR FORCE BASE, FLORIDA

* See Section 01 00 00, Paragraph "COMMENCEMENT, PROSECUTION AND COMPLETION OF WORK".

**Block 13A. Offeror shall submit their proposal through PIEE.

11. The contractor shall begin performance within <u>8</u> calendar days and complete it within <u>*</u> calendar days after receiving ☐ award, ☒ notice to proceed. This performance period is ☒ mandatory, ☐ negotiable. (See _____.)	
12a. THE CONTRACTOR MUST FURNISH ANY REQUIRED PERFORMANCE AND PAYMENT BONDS? (If "YES," indicates 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 ** copies to perform the work required are due at the place specified in Item 8 by 1400 (**hour**) local time 21 APRIL 2026 (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) work requirements, and (2) other provisions and clauses incorporated in the solicitation in full text or by reference.

d. Offers providing less than 120 calendar days for Government acceptance after the date offers are due will not be considered and will be rejected.

OFFER (Must be fully completed by offeror)

14. NAME AND ADDRESS OF OFFEROR (Include ZIP Code)

15. TELEPHONE NO. (Include area code)

16. REMITTANCE ADDRESS (Include only if different than 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. (Insert any number equal to or greater than the minimum requirement stated in Item 13d. Failure to insert any number means the offeror accepts the minimum in Item 13d.)

AMOUNTS



18. The offeror agrees to furnish any required performance and payment bonds.

19. ACKNOWLEDGMENT OF AMENDMENTS

(The offeror acknowledges receipt of amendments to the solicitation - give number and date of each)

AMENDMENT NUMBER										
DATE										

20a. NAME AND TITLE OF PERSON AUTHORIZED TO SIGN OFFER
(Type or print)

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
(4 copies unless otherwise specified)

ITEM

25. OTHER THAN FULL AND OPEN COMPETITION PURSUANT TO

☐ 10 U.S.C. 3204(a) ()☐ 41 U.S.C. 3304(a) ()26. ADMINISTERED BY
CODE

27. PAYMENT WILL BE MADE BY

CONTRACTING OFFICER WILL COMPLETE ITEM 28 OR 29 AS APPLICABLE

☐ 28. NEGOTIATED AGREEMENT (Contractor is required to sign this document and return _____ copies to issuing office.) 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 incorporated by reference in or attached to this contract.

☐ 29. AWARD (Contractor is not required to sign this document.) Your offer on this solicitation is hereby accepted as to the items listed. This award consummates 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 (Type or print)

31a. NAME OF CONTRACTING OFFICER (Type or print)

30b. SIGNATURE

30c. DATE

31b. UNITED STATES OF AMERICA
BY31c. AWARD
DATE

BIDDING SCHEDULE

BIDDER'S NAME: _____

Item No.	Description	Estimated Quantity	Unit	Unit Price	Estimated Amount
<u>BASE BID</u>					
1.	LRSO Hardware/Software Facility	1	Job	XXX	_____
2.	Construction of Site Work	1	Job	XXX	_____
3.	CHELCO (Privatized Electrical Utility) Site Electrical Work	1	Job	XXX	<u>\$392,657.90</u>
4.	ASUS (Privatized Water Utility) Water and Wastewater Work	1	Job	XXX	<u>\$335,050.00</u>
5.	Fire Pump and Fire Pump Enclosure	1	Job	XXX	_____
<u>Total Base Bid</u>					_____

BID OPTIONS

Bid Option No.1

6.	Furniture, Fixtures, and Equipment (FF&E)	1	Job	XXX	_____

Bid Option No.2

7.	Uninterrupted Power Systems (UPS)	1	Job	XXX	_____

Total Base Bid and ALL Options

NOTES FOR BIDDING SCHEDULE

NOTE NO. 1. To better facilitate the receipt and proposal process, all modifications to proposals are to be submitted on copies of the latest bid schedules as published in the solicitation or the latest amendment thereto. In lieu of indicating additions/deductions to bid items, all bidders should state their revised prices for each item. The company name should be indicated on the face of the bidding schedule to preclude being misplaced.

NOTE NO. 2. Bidders must insert a price on all numbered items of the Bidding Schedule. Failure to do so will disqualify the bid.

NOTE NO. 3. CONDITIONS GOVERNING EVALUATION OF BIDS AND AWARD OF TASK ORDERS.

In accordance with the source selection criteria established in this solicitation, only one task order will be awarded on the bid schedule and award will be made on the Base Bid and selected Options. Evaluation of Base Bid and all Options shall be in accordance with Section 00 12 00 and the following clause:

52.217-5 EVALUATION OF OPTIONS (JUL 1990)

Except when it is determined in accordance with FAR 17.206(b) not to be in the Government's best interests, the Government will evaluate offers for award purposes by adding the total price for all options to the total price for the basic requirement. Evaluation of options will not obligate the Government to exercise the option(s).

(End of clause)

The Government may require the delivery of the numbered line items, identified in the schedule as option items, in the quantity and at the price stated in the schedule. Subject to the availability of funds, the Contracting Officer may exercise Bid Options as follows;

Bid Option 1 by written notice to the Contractor within 365 days of Notice to Proceed;

Bid Option 2 by written notice to the Contractor within 150 days of Notice to Proceed;

NOTE NO. 4. The construction budget for this project is \$20,000,000. Construction duration is 547 days.

NOTE NO. 5. ADDITIONAL SUBMISSION REQUIREMENTS:

a. Upon the Government's request, the offeror shall submit a price breakdown of the bid items directly to the Mobile District Office. Details on where and how to send the breakdown will be provided by the requesting official making the request on behalf of the Government. The format of the breakdown will be left up to the offeror. However, as a minimum, the offeror shall provide pricing for the major categories of work under each bid item, for example: site improvements, landscaping, electrical, mechanical, etc. This information will not be needed sooner than three (3) working days after the proposal submission due date.

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b. This information may be required for the initial and, if requested, for any revised proposals.

END OF BIDDING SCHEDULE

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EXPLANATION OF BID ITEMS

GENERAL: This section comprises an explanation of the bid items identified in the bid schedule. This section is a general scope of work for the bid items described in the bid schedule and is not intended to be all encompassing in the descriptions. All work specified herein shall be accomplished in accordance with the procedures prescribed in the technical provisions of the specifications and the plans/details as shown on the contract drawings. The Contractor shall bid each type of work under the applicable bid item. Measurement for payment will not be made. Payment described for the various bid items will be full compensation for all labor, materials, and equipment required to complete the work. Compensation for any item of work described in the contract but not listed in the bid schedule shall be included in the payment for the item of work to which it is made subsidiary.

BASE BID

BID ITEM NO. 1: LRSO Hardware/Software Facility

Includes all costs for labor, materials, equipment, special inspection services, etc., and all other items necessary and incidental to the complete construction of the Long-Range Standoff (LRSO) Hardware/Software Facility, Eglin AFB, Florida, in general accordance with the drawings and project specifications.

BID ITEM NO. 2: Construction of Site Work

Includes all costs for labor, materials, equipment, etc., and all other items necessary and incidental to the preparation and completion of all sitework for the Long-Range Standoff (LRSO) facility, Eglin AFB, Florida, in general accordance with the drawings and project specifications. Item includes all clearing, removals, earthwork, gravel roads, drainage, sidewalks, fencing, and other site improvements, erosion control, water service, septic sewer system, other utilities, and the Long-Range Standoff (LRSO) Hardware/Software Facility as described herein and indicated on the drawings and any other work not specifically named but identified on the drawings or specifications.

BID ITEM NO. 3: CHELCO (Privatized Electrical Utility) Site Electrical Work

Payment shall constitute full compensation for a set payment to CHELCO for the Privatized Electrical Utility work for the exterior primary power related work as defined in the solicitation drawings and specifications, to include providing and installing medium voltage cable, terminations, conduit, and all related clearing and grubbing to the proposed work. All erosion control measures, and finish grading of the site impacted by utility installation will be completed by the Contractor. Contractor to coordinate with CHELCO to schedule the installation of this work to be completed within the required Construction Completion duration.

BID ITEM NO. 4: ASUS (Privatized Water Utility) Water and Wastewater Work

Payment shall constitute full compensation for a set payment to ASUS for the Privatized Water Utility work for the water and wastewater related work as defined in the solicitation drawings and specifications, to include domestic water distribution and appurtenances and sanitary sewer from the building connection to the upstream side of the existing sanitary system connection point. All erosion control measures, and finish grading of the site impacted by utility installation will be completed by the Contractor. Contractor to coordinate with ASUS to schedule the installation of this work to be completed within the required Construction Completion duration.

BID ITEM NO. 5: Fire Pump and Fire Pump Enclosure

Includes all costs for labor, materials, equipment, special inspection services, etc., and all other items necessary and incidental to the complete installation of a fire pump and packaged fire pump house for the Long-Range Standoff (LRSO) Hardware/Software Facility, Eglin AFB, Florida, in general accordance with the drawings and project specifications.

BID OPTIONS

BID OPTION NO. 1

BID ITEM NO. 6: Furniture, Fixtures, and Equipment (FF&E)

Work under this item includes all the labor, material and equipment, necessary and incidental to the Furniture, Fixtures, and Equipment Package for the Long-Range Standoff (LRSO) Hardware/Software Facility Eglin AFB, Florida. Item includes all furniture, fixtures, equipment, etc. as described herein and indicated on the criteria drawings and any other associated improvements not specifically named but identified on the criteria drawings or specifications. The Long-Range Standoff (LRSO) Facility, Eglin AFB, Florida, is in general accordance with the criteria drawings and project specifications.

BID OPTION NO. 2

BID ITEM NO. 7: Uninterrupted Power Systems (UPS)

Work under this item includes all the labor, material and equipment, necessary and incidental to the Uninterruptible Power Supply (UPS) Equipment for the Long-Range Standoff (LRSO) Hardware/Software Facility Eglin AFB, Florida. Item includes all UPS equipment as described herein and indicated on the criteria drawings and any other associated improvements not specifically named but identified on the criteria drawings or specifications. The Long-Range Standoff (LRSO) Facility, Eglin AFB, Florida, is in general accordance with the criteria drawings and project specifications.

LIMITATIONS ON SUBCONTRACTING COMPLIANCE FORM - CONSTRUCTION (25 May 2023)
MUST BE INCLUDED WITH OFFEROR'S PROPOSAL

A. Clearly describe the work to be self performed by the Prime Contractor:

B. Calculation of Self-Performed Work:

Total Contract Value

\$ 0.00

Total cost of all materials purchased by the Prime Contractor. *Enter a negative number for this value.*

\$ 0.00

Corrected Contract Value

B1

\$ 0.00

Identify and give the dollar value of all work being done on the Site by the prime contractor's own organization and it's forces and similarly situated entities as defined by FAR 19.001.

B2

\$ 0.00

Percentage of work done by Prime = B2/B1 X 100%

(B2) / (B1) X 100%=

Prime contractors self performance percentage must be equal to or greater than 15% in accordance with FAR clause 52.219-14(e)(3)

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Bid Bond (See Instructions on Page 3)		Date Bond Executed (Must Not Be Later Than Bid Opening Date)	OMB Control Number: 9000-0001 Expiration Date: 1/31/2027
Principal (Legal Name And Business Address)		Type Of Organization ("X" One) ☐ Individual ☐ Partnership ☐ Joint Venture ☐ Corporation ☐ Other (Specify)	
		State Of Incorporation	
Surety(ies) (Name And Business Address)			

Penal Sum Of Bond					Bid Identification	
Percent Of Bid Price	Amount Not To Exceed				Bid Date	Invitation Number
	Million(s)	Thousand(s)	Hundred(s)	Cents		
					For (Construction, Supplies Or Services)	

Obligation:

We, the Principal and Surety(ies) are firmly bound to the United States of America (hereinafter called the Government) in the above penal sum. For payment of the penal sum, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally. However, where the Sureties are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sum "jointly and severally" as well as "severally" only for the purpose of allowing a joint action or actions against any or all of us. For all other purposes, each Surety binds itself, jointly and severally with the Principal, for the payment of the sum shown opposite the name of the Surety. If no limit of liability is indicated, the limit of liability is the full amount of the penal sum.

Conditions:

The Principal has submitted the bid identified above.

Therefore:

The above obligation is void if the Principal - (a) upon acceptance by the Government of the bid identified above, within the period specified therein for acceptance (sixty (60) days if no period is specified), executes the further contractual documents and gives the bond(s) required by the terms of the bid as accepted within the time specified (ten (10) days if no period is specified) after receipt of the forms by the Principal; or (b) in the event of failure to execute such further contractual documents and give such bonds, pays the Government for any cost of procuring the work which exceeds the amount of the bid.

Each Surety executing this instrument agrees that its obligation is not impaired by any extension(s) of the time for acceptance of the bid that the Principal may grant to the Government. Notice to the Surety(ies) of extension(s) is waived. However, waiver of the notice applies only to extensions aggregating not more than sixty (60) calendar days in addition to the period originally allowed for acceptance of the bid.

Witness:

The Principal and Surety(ies) executed this bid bond and affixed their seals on the above date.

Principal

Signature(s)	1. (Seal)	2. (Seal)	3. (Seal)	Corporate Seal
Name(s) And Title(s) (Typed)	1.	2.	3.	

Individual Surety(ies)

Signature(s)	1. (Seal)	2. (Seal)
Name(s) (Typed)	1.	2.

Corporate Surety(ies)

Surety A	Name And Address		State Of Incorporation	Liability Limit (\$)	Corporate Seal
	Signature(s)	1.	2.		
	Name(s) And Title(s) (Typed)	1.	2.		
Surety B	Name And Address		State Of Incorporation	Liability Limit (\$)	Corporate Seal
	Signature(s)	1.	2.		
	Name(s) And Title(s) (Typed)	1.	2.		
Surety C	Name And Address		State Of Incorporation	Liability Limit (\$)	Corporate Seal
	Signature(s)	1.	2.		
	Name(s) And Title(s) (Typed)	1.	2.		
Surety D	Name And Address		State Of Incorporation	Liability Limit (\$)	Corporate Seal
	Signature(s)	1.	2.		
	Name(s) And Title(s) (Typed)	1.	2.		

Surety E	Name And Address		State Of Incorporation	Liability Limit (\$)	Corporate Seal
	Signature(s)	1.	2.		
	Name(s) And Title(s) (Typed)	1.	2.		
Surety F	Name And Address		State Of Incorporation	Liability Limit (\$)	Corporate Seal
	Signature(s)	1.	2.		
	Name(s) And Title(s) (Typed)	1.	2.		
Surety G	Name And Address		State Of Incorporation	Liability Limit (\$)	Corporate Seal
	Signature(s)	1.	2.		
	Name(s) And Title(s) (Typed)	1.	2.		

Instructions

1. This form is authorized for use when a bid guaranty is required. Any deviation from this form will require the written approval of the Administrator of General Services.
2. Insert the full legal name and business address of the Principal in the space designated "Principal" on the face of the form. An authorized person shall sign the bond. Any person signing in a representative capacity (e.g., an attorney-in-fact) must furnish evidence of authority if that representative is not a member of the firm, partnership, or joint venture, or an officer of the corporation involved.
3. The bond may express penal sum as a percentage of the bid price. In these cases, the bond may state a maximum dollar limitation (e.g., 20% of the bid price but the amount not to exceed _____ dollars).
4. (a) Corporations executing the bond as sureties must appear on the Department of the Treasury's list of approved sureties and must act within the limitations listed therein. The value put into the Liability Limit block is the penal sum (i.e., the face value) of the bond, unless a co-surety arrangement is proposed.

(b) When multiple corporate sureties are involved, their names and addresses shall appear in the spaces (Surety A, Surety B, etc.) headed "Corporate Surety(ies)." In the space designated "Surety(ies)" on the face of the form, insert only the letter identifier corresponding to each of the sureties. Moreover, when co-surety arrangements exist, the parties may allocate their respective limitations of liability under the bond, provided that the sum total of their liability equals 100% of the bond penal sum.

(c) When individual sureties are involved, a completed [Affidavit of Individual Surety \(Standard Form 28\)](#) for each individual surety, shall accompany the bond. The Government may require the surety to furnish additional substantiating information concerning its financial capability.

5. Corporations executing the bond shall affix their corporate seals. Individuals shall execute the bond opposite the word "Corporate Seal"; and shall affix an adhesive seal if executed in Maine, New Hampshire, or any other jurisdiction requiring adhesive seals.
6. Type the name and title of each person signing this bond in the space provided.
7. In its application to negotiated contracts, the terms "bid" and "bidder" shall include "proposal" and "offeror."

Paperwork Reduction Act Statement - This information collection meets the requirements of 44 USC § 3507, as amended by section 2 of the Paperwork Reduction Act of 1995. You do not need to answer these questions unless we display a valid Office of Management and Budget (OMB) control number. The OMB control number for this collection is 9000-0001. We estimate that it will take 1 hour to read the instructions, gather the facts, and answer the questions. Send only comments relating to our time estimate, including suggestions for reducing this burden, or any other aspects of this collection of information to: General Services Administration, Regulatory Secretariat Division (MVCB), 1800 F Street, NW, Washington, DC 20405.

Affidavit Of Individual Surety (See instructions on page 4)		OMB Control Number: 9000-0001 Expiration Date: 1/31/2027
State Of	County Of	ss.

I, the undersigned, being duly sworn, depose and say that I am: (1) the surety to the attached bond(s); (2) a citizen of the United States; and of full age and legally competent. Where the sureties are acting as co-sureties, we, the Sureties, bind ourselves in such sum "jointly and severally" as well as "severally" only for the purpose of allowing a joint action or actions against any or all of us. For all other purposes, each Surety binds itself, jointly and severally with the Principal. I recognize that statements contained herein concern a matter within the jurisdiction of an agency of the United States and the making of a false, fictitious or fraudulent statement may render the maker subject to prosecution under Title 18, United States Code Sections 1001 and 494. This affidavit is made to induce the United States of America to accept me as surety on the attached bond.

1. Name (First, Middle, Last) (Type or Print)	2A. Home Address (Number, Street, City, State, ZIP Code)	
3. Type And Duration Of Occupation		
	2B. Telephone Number	2C. Email Address
4A. Name And Address Of Employer (Number, Street, City, State, ZIP Code) (If self-employed, so state)	5A. Name And Address Of Individual Surety Broker Used (Number, Street, City, State, ZIP Code)	
	5B. Surety Broker Email Address	
4B. Employer Email Address	5C. Home Telephone Number	5D. Business Telephone Number
6A. Name And Address Of Financial Institution Submitting The Pledge Of Securities On Behalf Of Individual Surety (Number, Street, City, State, ZIP Code)	6B. Financial Institution Email Address	6C. Routing Transit Number (RTN)
	6D. Contact Person Name	6E. Contact Person Telephone Number
	6F. Contact Person Email Address	

7. The Following Is A True Representation Of The Assets I Have Pledged To The United States In Support Of The Attached Bond. (List The Committee On Uniform Securities Identification Procedures (CUSIP) Number And Par (Face) Amount Of Each Security).

-
8. Identify All Liens, Judgements, Or Any Other Encumbrances Involving Subject Assets.

9. Identify All Bonds, Including Bid Guarantees, For Which The Subject Assets Have Been Pledged Within Three Years Prior To The Date Of Execution Of This Affidavit.

Documentation Of The Pledged Asset Must Be Attached.

10. Signature	11. Bond And Contract To Which This Affidavit Relates (where appropriate)

12. Subscribed And Sworn To Before Me As Follows:			Official Seal
a. Date Oath Administered	b. City And State (or other jurisdiction)		
Month Day Year			
c. Name And Title Of Official Administering Oath (type or print)	d. Signature	e. My Commission Expires	

Instructions

1. Individual sureties on bonds executed in connection with Government contracts must complete and submit this form with the bond. (See Federal Acquisition Regulation (FAR) 28.203, 53.228(e).) The surety must have the completed form notarized.
2. No corporation, partnership, or other unincorporated association or firm, as such, is acceptable as an individual surety (i.e. must be a natural person). Likewise, members of a partnership are not acceptable as sureties on bonds that a partnership or an association, or any co-partner or member thereof, is the principal obligor. An individual surety will not include any financial interest in assets connected with the principal on the bond that this affidavit supports.
3. United States citizenship is a requirement for individual sureties for contracts and bonds when the contract is awarded in the United States. However, when the Contracting Officer is located in an outlying area or a foreign country, the individual surety is only required to be a permanent resident of the area or country in which the contracting officer is located.
4. All signatures of the affidavit submitted must be originals. Affidavits bearing reproduced signatures are not acceptable. An authorized person must sign the bond. Any person signing in a representative capacity (e.g., an attorney-in-fact) must furnish evidence of authority if that representative is not a member of a firm, partnership, or joint venture, or an officer of the corporation involved.

Paperwork Reduction Act Statement

This information collection meets the requirements of 44 USC § 3507, as amended by section 2 of the Paperwork Reduction Act of 1995. You do not need to answer these questions unless we display a valid Office of Management and Budget (OMB) control number. The OMB control number for this collection is 9000-0001. We estimate that it will take 0.3 hours to read the instructions, gather the facts, and answer the questions. Send only comments relating to our time estimate, including suggestions for reducing this burden, or any other aspects of this collection of information to: U.S. General Services Administration, Regulatory Secretariat Division (MVCB), 1800 F Street, NW, Washington, DC 20405.

Approved by OM
0348-0046

1. Type of Federal Action: ☐ a. contract ☐ b. grant ☐ c. cooperative agreement ☐ d. loan ☐ e. loan guarantee ☐ f. loan insurance		2. Status of Federal Action: ☐ a. bid/offer/application ☐ b. initial award ☐ c. post-award		3. Report Type: ☐ a. initial filing ☐ b. material change For Material Change Only: year _____ quarter _____ date of last report _____	
4. Name and Address of Reporting Entity: ☐ Prime ☐ Subawardee Tier _____, if known: Congressional District, if known:			5. If Reporting Entity in No. 4 is Subawardee, Enter Name and Address of Prime: Congressional District, if known:		
6. Federal Department/Agency:			7. Federal Program Name/Description: CFDA Number, if applicable: _____		
8. Federal Action Number, if known:			9. Award Amount, if known: \$ _____		
10. a. Name and Address of Lobbying Entity (if individual, last name, first name, MI):			b. Individuals Performing Services (including address if different from No. 10a) (last name, first name, MI):		
(attach Continuation Sheet(s) SF-LLL-A, if necessary)					
11. Amount of Payment (check all that apply): \$ _____ ☐ actual ☐ planned			13. Type of Payment (check all that apply): ☐ a. retainer ☐ b. one-time fee ☐ c. commission ☐ d. contingent fee ☐ e. deferred ☐ f. other; specify: _____		
12. Form of Payment (check all that apply): ☐ a. cash ☐ b. in-kind; specify: nature _____ value _____					
14. Brief Description of Services Performed or to be Performed and Date(s) of Service, including officer(s), employee(s), or Member(s) contacted, for Payment indicated in Item 11:					
(attach Continuation Sheet(s) SF-LLL-A, if necessary)					
15. Continuation Sheet(s) SF-LLL-A attached: ☐ Yes ☐ No					
16. Information requested through this form is authorized by title 31 U.S.C section 1352. This disclosure of lobbying activities is a materia representation of fact upon which reliance was placed by the tier above when this transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.			Signature: _____ Print Name: _____ Title: _____ Telephone No.: _____ Date: _____		
Federal Use Only:			Authorized for Local Reproduction Standard Form - LLL		

INSTRUCTIONS FOR COMPLETION OF SF-LLL, DISCLOSURE OF LOBBYING ACTIVITIES

This disclosure form shall be completed by the reporting entity, whether subawardee or prime Federal recipient, at the initiation or receipt of a covered Federal action, or a material change to a previous filing, pursuant to title 31 U.S.C. section 1352. The filing of a form is required for each payment or agreement to make payment to any lobbying entity for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with a covered Federal action. Use the SF-LLL-A Continuation Sheet for additional information if the space on the form is inadequate. Complete all items that apply for both the initial filing and material change report. Refer to the implementing guidance published by the Office of Management and Budget for additional information.

1. Identify the type of covered Federal action for which lobbying activity is and/or has been secured to influence the outcome of a covered Federal action.
2. Identify the status of the covered Federal action.
3. Identify the appropriate classification of this report. If this is a followup report caused by a material change to the information previously reported, enter the year and quarter in which the change occurred. Enter the date of the last previously submitted report by this reporting entity for this covered Federal action.
4. Enter the full name, address, city, state and zip code of the reporting entity. Include Congressional District, if known. Check the appropriate classification of the reporting entity that designates if it is, or expects to be, a prime or subaward recipient. Identify the tier of the subawardee, e.g., the first subawardee of the prime is the 1st tier. Subawards include but are not limited to subcontracts, subgrants and contract awards under grants.
5. If the organization filing the report in item 4 checks "Subawardee", then enter the full name, address, city, state and zip code of the prime Federal recipient. Include Congressional District, if known.
6. Enter the name of the Federal agency making the award or loan commitment. Include at least one organizational level below agency name, if known. For example, Department of Transportation, United States Coast Guard.
7. Enter the Federal program name or description for the covered Federal action (item 1). If known, enter the full Catalog of Federal Domestic Assistance (CFDA) number for grants, cooperative agreements, loans, and loan commitments.
8. Enter the most appropriate Federal identifying number available for the Federal action identified in item 1 (e.g., Request for Proposal (RFP) number; Invitation for Bid (IFB) number; grant announcement number; the contract, grant, or loan award number; the application/proposal control number assigned by the Federal agency). Include prefixes, e.g., "RFP-DE-90-001."
9. For a covered Federal action where there has been an award or loan commitment by the Federal agency, enter the Federal amount of the award/loan commitment for the prime entity identified in item 4 or 5.
10. (a) Enter the full name, address, city, state and zip code of the lobbying entity engaged by the reporting entity identified in item 4 to influence the covered Federal action.

(b) Enter the full names of the individuals(s) performing services, and include full address if different from 10 (a). Enter Last Name, First Name, and Middle Initial (MI).
11. Enter the amount of compensation paid or reasonably expected to be paid by the reporting entity (item 4) to the lobbying entity (item 10). Indicate whether the payment has been made (actual) or will be made (planned). Check all boxes that apply. If this is a material change report, enter the cumulative amount of payment made or planned to be made.
12. Check the appropriate box(es). Check all boxes that apply. If payment is made through an in-kind contribution, specify the nature and value of the in-kind payment.
13. Check the appropriate box(es). Check all boxes that apply. If other, specify nature.

Provide a specific and detailed description of the services that the lobbyist has performed, or will be expected to perform, and the date(s) of any services rendered. Include all preparatory and related activity, not just time spent in

Public reporting burden for this collection of information is estimated to average 30 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0046), Washington, D.C. 20503.

**DISCLOSURE OF LOBBYING ACTIVITIES
CONTINUATION SHEET**

Approved by OM
0348-0046

Reporting Entity: _____ Page _____ of _____

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SECTION 00 11 00
PROPOSAL SUBMISSION REQUIREMENTS

1.0 GENERAL REQUIREMENTS.

1.1 This is a Federal Acquisition Regulation (FAR) Part 15, small business set-aside, design-bid-build source selection. This solicitation requires the construction of an 11,000 square-foot single-story facility to provide multiple laboratories and administrative spaces to conduct hardware and software research and development, testing, evaluation and validation of LRSO advanced subsystems at Eglin AFB, FL. A competing prime construction contractor, hereinafter referred to as the "Offeror", shall submit a proposal that includes the required submission information as indicated below that demonstrates the Offeror's ability to perform the work described in this solicitation. By submission of a proposal, the Offeror agrees to all the terms of this RFP.

1.2 The period of performance is as indicated in Section 01 00 00. The approximate construction cost range for this contract is \$10,000,000-\$25,000,000. It is the intent of the Government to award a single Firm Fixed-Price contract.

1.3 The project is for the construction of an 11,000 square-foot single story facility that will provide multiple laboratories and administrative spaces to conduct hardware and software research and development, testing, evaluation and validation of LRSO advanced subsystems. This laboratory is essential to providing hardware validation and software certification for LRSO advanced subsystems for immediate and future fielding to the warfighter. This facility will be designed to support 24-hour operations when required. The facility must meet ICD/ICS 705 standards for Sensitive Compartmented Information Facilities (SCIF).

1.4 The Government reserves the right to reject any and/all offers.

2.0 WHO MAY SUBMIT.

2.1 Any responsible, interested self-certified small-business construction contractors may submit a proposal.

2.2 Any design firm that participated in preparation of this solicitation, whether as a Government contractor or as a subcontractor to a Government contractor, is not eligible to participate in this solicitation as a prime contractor or subcontractor due to a conflict of interest. The Government considers such firms to have an unfair competitive advantage, and therefore will not consider such firms.

3.0 PROPOSAL SUBMISSION REQUIREMENTS.

3.1 Submit the electronic proposal package to the U.S. Army Corps of Engineers via Procurement Integrated Enterprise Environment (PIEE) website (<https://piee.eb.mil/xhtml/unauth/home/login.xhtml> -OR- <https://piee.eb.mil>) as indicated on the Standard Form 1442 (SF 1442) in this solicitation. Emailed submissions of proposals are not permitted and will not be accepted under any circumstances. The Government must receive your proposal no later than the time and date specified in Block 13 of SF 1442. The PIEE system notification must show the proposal submission was prior to the specified time. Any and all amendments to the solicitation shall be acknowledged by signing on each amendment (SF30) and by completing Block 19 of the SF 1442.

Offerors shall confirm proposal receipt by emailing the Points of Contact listed on the SF1442.

3.2 Submit your proposal as follows:

- Submit one (1) electronic copy of the entire proposal ("Volume I and II") in Portable Document File (PDF) format. Label the pdf "26RA012- OfferorName-Vol I-II".
- Submit one (1) electronic copy of Volume II in Portable Document File (PDF) format. Label the pdf "26RA012-OfferorName-Vol II".
- Hard copies of Volumes I and II are not required to be submitted and will not be accepted or evaluated. However, when formatting the PDF files the page size shall be 8-1/2" x 11" (or 11" x 8-1/2") for all pages except schedules and organizational charts, as applicable, which shall be 11" x 17" (or 17" x 11") and count as one sheet toward page limitation.
- Preliminary pages, such as Table of Contents and Cover Pages, are excluded from page counts.

3.3 To effectively and equitably evaluate proposals, the Source Selection Evaluation Board (SSEB) must receive information, in the order described below, that clearly describes an Offeror's capabilities to successfully execute construction in support of this project. It is therefore an Offeror's responsibility to submit proposal information that is fully responsive to the submission requirements of this section. Offerors are responsible for organizing material sequentially by factor to facilitate evaluation. Materials that are not properly organized may easily be overlooked during evaluations, possibly affecting an Offeror's rating. Offers should be concise, addressing only the information outlined in this section.

3.4 Volume I - Administrative Requirements (Including Price). Prior to making an award, the Contracting Officer must determine that any offeror is responsible both financially and technically and has the capability to properly manage the contract during performance and complete the work on time. In Volume I, offerors are required to submit the required pre-award information, which includes but is not limited to:

(a) Offerors submitting proposals as a Joint Venture (JV) shall obtain a Unique Entity Identifier (UEI) number and be registered in the System for Award Management (SAM) as a JV. Include a fully executed Joint Venture Agreement.

(b) Standard Form 1442, acknowledgement of all amendments, and a completed and signed Proposal Data Sheet (See Attachment 1).

(c) Pricing (Proposal Bid Schedule(s)).

(d) A list of present commitments, including the dollar value thereof. For a newly formed Joint Venture (JV), each JV partner must submit a list of present commitments.

(e) The bid on this solicitation exceeds \$1,000,000.00; therefore, the Offeror shall also submit a certified statement listing: (1) each contract awarded to the Offeror within the preceding three-month period exceeding \$10,000,000.00 in value with a brief description of the contract; and (2) each contract awarded to the Offeror within the preceding three-year period not already physically completed and exceeding \$50,000,000.00 in value with a brief description of the contract.

(f) Bid Bonds as required.

(g) Representations and Certifications as required.

(h) Self-Performance Compliance Form as required by Far Clause 52.236-1. If the Offeror is a certified HUBZone and it has not waived its HUBZone price preference, it is required to complete the Limitations on Subcontracting (LoS) Form in accordance with FAR Clause 52.219-14(c)(6). The LoS Form shall be completed in lieu of the 52.236-1 Self-Performance Compliance Form. The Offeror is reminded that in accordance with FAR Clause 52.219-4 (c) "A HUBZone joint venture agrees that, in the performance of the contract, at least 40 percent of the aggregate work performed by the joint venture shall be completed by the HUBZone small business parties to the joint venture. Work performed by the HUBZone small business parties to the joint venture must be more than administrative functions."

(i) Financial Statement. Submit a copy of your most recent financial statement. The statements must include a Balance Sheet and Income Statement. If the financial statement is more than 60 days old, attach a certificate stating that the financial condition is substantially the same, or if not the same, describe the changes that have taken place since the financial statement was prepared. Provide evidence of adequate financing arrangements, such as commitments from lending institutions, etc., to perform this contract. Include the names of banks or other financial institutions with which business is conducted (mailing addresses, points of contact and phone number). Reference letters should include, but is not limited to, the following information: (1) the date the offeror's account was open with the financial institution, (2) the average balance for the last 12 months on the offeror's account (i.e., balance in the xx digits), (3) if there is a credit line established with the financial institution, what is the credit amount and how much is available at this time? If not, would the financial institution be willing to establish a line of credit for the offeror? And if so, for how much (i.e., low xx figure range), (4) how the financial institution evaluates the offeror as a customer (i.e., poor, fair, very good, excellent, etc.), and (5) the financial institution should declare whether the offeror's account is in good standings. This information will be treated confidentially but may be checked for verification.

3.4.1 Price Breakdown Requirements. The Government may request a "price breakdown" of the bid items, even when discussions are not going to be held. The price breakdown information is not required to be submitted with the initial proposal; however, may be requested by the Government after initial proposal submission.

4.0 EVALUATION CRITERIA.

4.1 There are two volumes required in response to this solicitation. Volume I includes certain administrative requirements that are not rated. Volume II has two (2) rated non-priced evaluation factors.

EVALUATION FACTORS AND ORDER OF RELATIVE IMPORTANCE

Volume	Factor - Description	Relative Importance
Volume I	Administrative Requirements	Not Rated
Volume II	Factor 1 - Past Performance Information of the Prime Contractor	1 st in relative importance; more important than Factor 2
Volume II	Factor 2 - Technical Approach	2 nd in relative importance; least important factor.

The non-priced evaluation factors, when combined, are significantly more important than price.

4.2 Volume II - Factor 1 - Past Performance Information of the Prime Contractor. The Past Performance of the Prime Contractor (Offeror) consists of (a) Relevant Company Effort and (b) Quality of Past Performance. The Government will review recent, relevant company efforts and quality information provided by the owners of those efforts to assess the Offeror's past experience and probability of successfully performing the work described in this solicitation. For this factor, a recent, relevant project is a construction project:

(a) Performed under a contract or task order, as those terms are defined in FAR 2.101, for the Federal Government, or similar contractual agreements for State or Local Governments, or the commercial or private sector. Multiple items of work performed under a single contract or task order are considered one project. However, do not combine multiple projects under separate contracts or task orders to create a single project. For example, individual task orders completed under an IDIQ contract should be submitted as single, separate project(s); an IDIQ contract will not be accepted or evaluated as a project.

(b) That is "recent"; one that has been completed within six (6) years of the solicitation issue date, or one where the construction is at least 50% complete (measured by performance period days) as of the solicitation issue date. Offerors are responsible for providing start and completion dates for each completed project, or the start and scheduled completion dates for projects currently under construction.

(c) That is "relevant"; one that is similar in scope (type, size, complexity and dollar value) to the project types described in this solicitation. In terms of dollar value, a relevant project is one ranging from \$10M to \$25M; however, projects outside of this dollar range may be considered when similar in scope and complexity.

4.2.1 Relevant Company Effort and Quality of Past Performance.

a) Relevant Company Effort: The Offeror shall provide no more than five (5) examples of recent, relevant construction projects that demonstrate the company's ability to perform work similar in scope and magnitude to that required by this solicitation. Offerors are encouraged to submit multiple, relevant projects up to the stated maximum of five (5).

For each project, the Offeror shall furnish the information specified below. Attachment 2, at the end of this section, may be used to present the information. The construction effort shown does not have to be a task order under an IDIQ contract, but where it is, clearly indicate so. If more than five (5) projects are submitted for evaluation, only the first five (5) projects presented will be evaluated. Offerors who submit fewer than (5)

projects to demonstrate the company's ability to perform may be rated lower as the Government may have a higher level of confidence in the abilities of Offerors that provide multiple examples of successful performance of recent, relevant projects. The Relevant Company Effort portion of Factor 1 shall not exceed ten (10) pages.

- (1) Company Name
- (2) Name of Project/Project Type (DB/DBB/Other)
- (3) Location of Project
- (4) Project Owner
- (5) General Scope of Project
- (6) Your Role and Construction Type Work Your Company Self-Performed on site other than Construction Management Services
- (7) Construction Cost of the single project
- (8) Extent and Type of Work Subcontracted Out
- (9) Construction Period - Start and Completion/Scheduled Completion Dates (Provide Month/Year)
- (10) Termination or Liquidated Damages Information; Comments regarding
- (11) any known performance deemed unacceptable to the customer, or not in accordance with the contract terms and conditions.

b) Quality of Past Performance. Does not count against the limitation for the Relevant Company Effort portion of Factor 1.

(1) The Offeror shall submit evidence of the quality of their past performance for each project. For Federal Government projects, the Offeror shall provide a completed contractor performance evaluation found in the Contractor Performance Assessment Reporting System (www.cpars.gov/). Whether interim or final assessment, the report provided shall be the latest report available in the system at the time of the proposal due date. If a proper evaluation does not exist in CPARS, because it has not been completed or the project is a non-Federal Government project, the Offeror shall provide a completed Past Performance Questionnaire (PPQ) (see Attachment 3). If, at time of evaluation, a contractor performance evaluation exists in CPARS, and yet the Offeror submits a PPQ, only the evaluation in CPARS will be considered. If, at time of evaluation, a final contractor performance evaluation exists in CPARS, and yet the Offeror submits an interim evaluation, the final evaluation in CPARS will be considered.

(2) Past performance surveys/assessment/evaluation forms other than CPARS or PPQs, or that do not contain the entirety of the information required in the PPQ provided (Attachment 3), are unacceptable and will not be considered or evaluated.

(3) Completed PPQs that were submitted in response to previous solicitations may be used in this source selection. However, Offerors shall not incorporate such PPQs by reference. The Offeror must resubmit PPQs for each submitted project within their proposal as evidence of quality of past performance. The burden of providing current, detailed and complete past performance information rests with the Offeror.

(4) If the CPARS or PPQs for each submitted project within the proposal indicate that the Offeror was required to take corrective action for any substandard performance or experienced other performance problems such as extended performance periods, numerous warranty calls, etc., the Offeror should explain the circumstances and the corrective actions taken within their proposal.

- (5) If an Offeror's client/customer will only provide completed PPQs

directly to the U.S. Army Corps of Engineers, Mobile District, Offerors must ensure the client/customer submits the PPQ by the proposal due date to the Points of Contact indicated on the SF1442. The solicitation number shall be included on the PPQ form. PPQs received after the proposal due date will be considered untimely and will not be considered during the evaluation.

4.2.2 Joint Venture Submission Requirements.

4.2.2.1 Like other Offerors, a JV Offeror shall provide no more than five (5) examples of recent, relevant projects performed by the JV Offeror that reflect the JV Offeror's ability to perform the work required in this solicitation.

4.2.2.2 If the JV Offeror does not have five (5) recent, relevant projects performed as the JV Offeror itself, the JV Offeror may supplement those projects with recent, relevant projects performed by the members of the JV Offeror in their individual capacities. If the JV Offeror does not have any examples of recent, relevant projects performed by the JV Offeror itself, then each partner may submit at least one (1) project demonstrating recent, relevant experience performed by the JV partner in their individual capacity. Offerors failing to demonstrate project experience of the JV Offeror itself or of both JV partners may be rated lower as the Government may have a higher level of confidence in Offerors demonstrating past experience of the JV Offeror itself or of both JV partners in their individual capacities. For information pertaining to small business JV partner submission requirements, refer to Paragraph 4.2.3 Small Business Submission Requirements. The total number of projects submitted by the JV Offeror, whether demonstrating experience as the JV Offeror itself or in the JV partner's individual capacities, may not exceed five (5).

4.2.3 Small Business Submission Requirements.

4.2.3.1 For a small business Offeror (or a small business JV partner), if the small business' capabilities, past performance, and experience do not independently demonstrate capabilities and past performance necessary for award, then the Government may also consider the past performance experience performed as a member of a JV or by a first-tier subcontractor, when specifically identified in the proposal. Offerors are advised that the Government may assign a higher confidence rating to Offerors that submit projects performed by the Offeror itself (i.e., the corporate entity listed on the SF 1442), rather than projects performed as a member of a JV or by a first-tier subcontractor. Further, if a small business Offeror (or small business JV partner) elects to submit past performance experience performed as a member of a JV or by a first-tier subcontractor, the total number of projects may not exceed five (5).

4.2.3.1.1 For a project performed as a member of a JV to be considered as past performance experience of the small business Offeror (or small business JV partner), the Offeror must identify what duties and responsibilities the small business Offeror (or small business JV partner) carried out as part of the JV. This information shall be included within the project narrative. Failure to provide this information may result in a rating of "Not Relevant" as the Government may not have sufficient information to determine whether the JV partner's effort involved any of the scope and magnitude of effort and complexities this solicitation requires.

4.2.3.1.2 For a first-tier subcontractor's experience to be considered as past performance experience of the small business Offeror (or small business

JV partner), the Offeror must include within Volume II of the proposal (1) a letter of intent for this project from the first-tier subcontractor, and (2) demonstrate how such entity or entities will contribute to work of the project. This information does not count against the page limitation for the Relevant Company Effort portion of Factor 1. Failure to provide this information will result in the project not being evaluated.

4.2.3.2 For a small business Offeror (or a small business JV partner), the Government may also consider the past performance experience performed by an affiliate when specifically identified in the proposal. Offerors are advised that the Government may assign a higher confidence rating to Offerors that submit projects performed by the Offeror itself (i.e., the corporate entity listed on the SF 1442), rather than projects performed by an affiliate. Further, if a small business Offeror (or small business JV partner) elects to submit past performance experience performed by an affiliate, the total number of projects may not exceed five (5).

4.2.3.2.1 For an affiliate's experience to be considered as past performance of the small business Offeror, the Offeror must include (1) a description of their relationship with the affiliate, and (2) demonstrate how such entity or entities will contribute to work of the project. This information does not count against the page limitation for the Relevant Company Effort portion of Factor 1. Failure to provide this information will result in the project not being evaluated.

4.2.4 All Business Entities: Unless otherwise specified in Paragraphs 4.2.2 and 4.2.3, to satisfy Paragraph 4.2.1 subparagraphs (a) and (b), only information pertaining to the corporate entity listed on the SF 1442 will be considered in the evaluation. Information related to a parent company, divisions, other related entities, subcontractors, or the individual experience of key personnel will not be considered.

4.3 Volume II - Factor 2 - Technical Approach. In Factor 2, the Offeror must submit a technical approach narrative, and a preliminary construction schedule, to explain their company's understanding of the project requirements and their capabilities to execute the construction work required by the solicitation. Offerors should reference drawings and specifications for project information. Factor 2 shall not exceed ten (10) pages. Address the following items, in a narrative format:

a) Provide a narrative of the project requirements and a general work plan describing how the contractor will meet those requirements, to include the methods to be employed, any logistical/site limitations under which work must be performed, type(s) of work the Offeror intends to self-perform and what quality control measures the offeror will implement to coordinate with the Government. The narrative shall also include identification of the major features of work, and shall include site conditions and constraints, and logistics planning and constraints.

b) Provide a description of your company's capabilities and plan to meet the solicitation requirements for key personnel. Describe the home office organizational structure, allocation of responsibilities, and show the lines of authority to support the execution of this contract. At a minimum, discuss key management positions and departments, project team composition for construction to include subcontractors, etc. Include an organizational chart and ensure the information fully supports the narrative.

c) Provide a preliminary construction schedule to demonstrate an understanding of the entire scope. At a minimum, include key tasks with

durations for such activities as material procurement, the construction effort, closeout, and turnover activities. Ensure the project duration meets the project requirements in calendar days starting from the Government's notice to proceed (NTP) to Closeout Documents approval. State the scheduling software including version to be used that is compatible with the QCS software. The traditional CPM schedule does not count against the Factor 2 page limitation.

(Attachment 1)

PROPOSAL DATA SHEET

Also include the required, completed and signed SF 1442 in addition to this Proposal Data Sheet.

1.	Name of Solicitation:
2.	Offering Firm's Name as it appears on the SF 1442: Offering Firm's UEI number as it appears on the SF 1442: Offering Firm's Lead Design Firm Name and UEI number:
2.a.	If applicable, Offering Firm's Joint Venture (JV) Individual Member Information: JV Member 1 Name & UEI: JV Member 2 Name & UEI:
3.	Mailing Address:
4.	Telephone Number:
5.	Fax Number:
6.	E-mail Address to use for all correspondence:
7.	AUTHORIZED NEGOTIATORS. Far 52.215-11. The Offeror represents that the following person(s) are authorized to negotiate on its behalf with the Government in connection with this solicitation. List name(s), title, and telephone numbers of authorized negotiator(s). Name of Person(s) Authorized to Negotiate: Negotiator's Address: Negotiator's Telephone: Negotiator's E-mail:

End of Attachment 1

(Attachment 2)

RELEVANT COMPANY EFFORT - Prime Contractor

The Offeror shall provide the following information for each project submitted for Factor 1, Past Performance Information of the Prime Contractor. Use separate sheets for each project.

1. Company Name: _____
2. Name of Project: _____
Type of Project (DB/DBB/Other): _____
3. Location of Project: _____
4. Project Owner: _____
5. General Scope of Construction Project: _____

6. Your Role (Prime, Joint Venture Partner, or Subcontractor, etc.) and construction type work your company self-performed other than construction management services: _____

7. Construction cost for this project: _____
8. Extent and type of work you subcontracted: _____

9. Construction Period: Start Date _____
Completion/Scheduled Completion Date _____
(Provide Month/Year)
10. Were You Terminated or Assessed Liquidated Damages?
(If either is "Yes", attach an explanation) _____

End of Attachment 2

(Attachment 3)

Part 1 of 2

NAVFAC/USACE PAST PERFORMANCE QUESTIONNAIRE (Form PPQ-0)	
CONTRACT INFORMATION (Contractor to complete Blocks 1-4)	
1. Contractor Information Firm Name: CAGE Code: Address: UEI Number: Phone Number: Email Address: Point of Contact: Contact Phone Number:	
2. Work Performed as: ☐ Prime Contractor ☐ Sub Contractor ☐ Joint Venture ☐ Other (Explain) Percent of project work performed: If subcontractor, who was the prime (Name/Phone #):	
3. Contract Information Contract Number: Delivery/Task Order Number (if applicable): Contract Type: ☐ Firm Fixed Price ☐ Cost Reimbursement ☐ Other (Please specify): Contract Title: Contract Location: Award Date (mm/dd/yy): Contract Completion Date (mm/dd/yy): Actual Completion Date (mm/dd/yy): Explain Differences: Original Contract Price (Award Amount): Final Contract Price (to include all modifications, if applicable): Explain Differences:	
4. Project Description: Complexity of Work ☐ High ☐ Med ☐ Routine How is this project relevant to project of submission? (Please provide details such as similar equipment, requirements, conditions, etc.)	
CLIENT INFORMATION (Client to complete Blocks 5-8)	
5. Client Information Name: Title: Phone Number: Email Address:	
6. Describe the client's role in the project:	
7. Date Questionnaire was completed (mm/dd/yy):	
8. Client's Signature:	

Must be signed by Client to be considered complete

NOTE: USACE REQUESTS THAT THE CLIENT COMPLETES THIS QUESTIONNAIRE AND SUBMITS DIRECTLY BACK TO THE OFFEROR. THE OFFEROR WILL SUBMIT THE COMPLETED QUESTIONNAIRE TO USACE WITH THEIR PROPOSAL, AND MAY DUPLICATE THIS QUESTIONNAIRE FOR FUTURE SUBMISSION ON USACE SOLICITATIONS. CLIENTS ARE HIGHLY ENCOURAGED TO SUBMIT QUESTIONNAIRES DIRECTLY TO THE OFFEROR. HOWEVER, QUESTIONNAIRES MAY BE SUBMITTED DIRECTLY TO USACE. PLEASE CONTACT THE OFFEROR FOR USACE POC INFORMATION. THE GOVERNMENT RESERVES THE RIGHT TO VERIFY ANY AND ALL INFORMATION ON THIS FORM.

*ADJECTIVE RATINGS AND DEFINITIONS TO BE USED TO BEST REFLECT
 YOUR EVALUATION OF THE CONTRACTOR'S PERFORMANCE*

RATING	DEFINITION	NOTE
(E) Exceptional	Performance meets contractual requirements and exceeds many to the Government/Owner's benefit. The contractual performance of the element or sub-element being assessed was accomplished with few minor problems for which corrective actions taken by the contractor was highly effective.	An Exceptional rating is appropriate when the Contractor successfully performed multiple significant events that were of benefit to the Government/Owner. A singular benefit, however, could be of such magnitude that it alone constitutes an Exceptional rating. Also, there should have been NO significant weaknesses identified.
(VG) Very Good	Performance meets contractual requirements and exceeds some to the Government /Owner's benefit. The contractual performance of the element or sub-element being assessed was accomplished with some minor problems for which corrective actions taken by the contractor were effective.	A Very Good rating is appropriate when the Contractor successfully performed a significant event that was a benefit to the Government/Owner. There should have been no significant weaknesses identified.
(S) Satisfactory	Performance meets minimum contractual requirements. The contractual performance of the element or sub-element contains some minor problems for which corrective actions taken by the contractor appear or were satisfactory.	A Satisfactory rating is appropriate when there were only minor problems, or major problems that the contractor recovered from without impact to the contract. There should have been NO significant weaknesses identified. Per DOD policy, a fundamental principle of assigning ratings is that contractors will not be assessed a rating lower than Satisfactory solely for not performing beyond the requirements of the contract.

(M) Marginal	Performance does not meet some contractual requirements. The contractual performance of the element or sub-element being assessed reflects a serious problem for which the contractor has not yet identified corrective actions. The contractor's proposed actions appear only marginally effective or were not fully implemented.	A Marginal is appropriate when a significant event occurred that the contractor had trouble overcoming which impacted the Government/Owner.
(U) Unsatisfactory	Performance does not meet most contractual requirements and recovery is not likely in a timely manner. The contractual performance of the element or sub-element contains serious problem(s) for which the contractor's corrective actions appear or were ineffective.	An Unsatisfactory rating is appropriate when multiple significant events occurred that the contractor had trouble overcoming and which impacted the Government/Owner. A singular problem, however, could be of such serious magnitude that it alone constitutes an unsatisfactory rating.
(N) Not Applicable	No information or did not apply to your contract	Rating will be neither positive nor negative.

(Attachment 3 continued)
 Part 2 of 2
TO BE COMPLETED BY CLIENT

PLEASE CIRCLE THE ADJECTIVE RATING WHICH BEST REFLECTS YOUR EVALUATION OF THE CONTRACTOR'S PERFORMANCE			
1. QUALITY:			
a) Quality of technical data/report preparations	E M	VG U	S N
b) Ability to meet quality standards specified for technical performance	E M	VG U	S N
c) Timeliness/effectiveness of contract problem resolution without extensive customer guidance	E M	VG U	S N
d) Adequacy/effectiveness of quality control program and adherence to contract quality assurance requirements (without adverse effect on performance)	E M	VG U	S N
2. SCHEDULE/TIMELINESS OF PERFORMANCE:			
a) Compliance with contract delivery/completion schedules including any significant intermediate milestones. <i>(If liquidated damages were assessed or the schedule was not met, please address below)</i>	E M	VG U	S N
b) Rate the contractor's use of available resources to accomplish tasks identified in the contract	E M	VG U	S N
3. CUSTOMER SATISFACTION:			
a) To what extent were the end users satisfied with the project?	E M	VG U	S N
b) Contractor was reasonable and cooperative in dealing with your staff (including the ability to successfully resolve disagreements/disputes; responsiveness to administrative reports, businesslike and communication)	E M	VG U	S N
c) To what extent was the contractor cooperative, businesslike, and concerned with the interests of the customer?	E M	VG U	S N
d) Overall customer satisfaction	E M	VG U	S N
4. MANAGEMENT/ PERSONNEL/LABOR			
a) Effectiveness of on-site management, including management of subcontractors, suppliers, materials, and/or labor force?	E M	VG U	S N
b) Ability to hire, apply, and retain a qualified workforce to this	E M	VG U	S N
c) Government Property Control	E M	VG U	S N
d) Knowledge/expertise demonstrated by contractor personnel	E M	VG U	S N
e) Utilization of Small Business concerns	E M	VG U	S N
f) Ability to simultaneously manage multiple projects with multiple disciplines	E M	VG U	S N
g) Ability to assimilate and incorporate changes in requirements and/or priority, including planning, execution and response to Government changes	E M	VG U	S N
h) Effectiveness of overall management (including ability to effectively lead, manage and control the program)	E M	VG U	S N

5. COST/FINANCIAL MANAGEMENT			
a) Ability to meet the terms and conditions within the contractually agreed price(s)?	E M	VG U	S N
b) Contractor proposed innovative alternative methods/processes that reduced cost, improved maintainability or other factors that benefited the client	E M	VG U	S N
c) If this is/was a Government cost type contract, please rate the Contractor's timeliness and accuracy in submitting monthly invoices with appropriate back-up documentation, monthly status reports/budget variance reports, compliance with established budgets and avoidance of significant and/or unexplained variances (under runs or overruns)	E M	VG U	S N
d) Is the Contractor's accounting system adequate for management and tracking of costs? <i>If no, please explain in Remarks section.</i>	Yes No		
e) If this is/was a Government contract, has/was this contract been partially or completely terminated for default or convenience or are there any pending terminations? <i>Indicate if show cause or cure notices were issued, or any default action in comment section below.</i>	Yes No		
f) Have there been any indications that the contractor has had any financial problems? <i>If yes, please explain below.</i>	Yes No		
6. SAFETY/SECURITY			
a) To what extent was the contractor able to maintain an environment of safety, adhere to its approved safety plan, and respond to safety issues? (Includes: following the users rules, regulations, and requirements regarding housekeeping, safety, correction of noted deficiencies, etc.)	E M	VG U	S N
b) Contractor complied with all security requirements for the project and personnel security requirements.	E M	VG U	S N
7. GENERAL			
a) Ability to successfully respond to emergency and/or surge situations (including notifying COR, PM or Contracting Officer in a timely manner regarding urgent contractual issues).	E M	VG U	S N
b) Compliance with contractual terms/provisions (<i>explain if specific issues</i>)	E M	VG U	S N
c) Would you hire or work with this firm again? (<i>If no, please explain below</i>)	Yes No		
d) In summary, provide an overall rating for the work performed by this contractor.	E M	VG U	S N
Client Signature:	Date:		

Please provide responses to the questions above (*if applicable*) and/or additional remarks. Furthermore, please provide a brief narrative addressing specific strengths, weaknesses, deficiencies, or other comments which may assist our office in evaluating performance risk (*please attach additional pages if necessary*)

****Must be signed by Client to be considered complete****

End of Attachment 3
 END OF SECTION

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Section 00 12 00
SELECTION PROCEDURES AND BASIS OF AWARD

1.0 GENERAL REQUIREMENTS.

1.1 Section 00 11 00 describes the proposal instructions for submission requirements and instructions. This section outlines the evaluation process and basis of award.

2.0 EVALUATION PROCESS.

2.1 A Source Selection Evaluation Board (SSEB) composed of U.S. Army Corps of Engineers personnel, Using Activity representative, and, as necessary, technical advisors will conduct the evaluation. The number and identities of Offerors are not revealed to anyone not involved in the evaluation and award process or to other Offerors. The SSEB will evaluate proposals, using the factors and evaluation criteria described in this section.

2.2 The evaluation process consists of four (4) parts: Proposal Compliance Review, Non-Price Factor Evaluation, Price Evaluation, and Non-Price/Price Trade-off Analysis.

2.2.1 Proposal Compliance Review. This is an initial check by Contracting Division to ensure that all required forms are complete, and in compliance with all administrative and submission criteria. Proposals failing to provide all required administrative and submission criteria may be deemed non-compliant and excluded from further evaluation.

2.2.2 Non-Price Factor Evaluation. In accordance with the solicitation, each member of the SSEB will conduct an independent review of the proposals. The review will be an in-depth, systematic evaluation of the proposal against the submission criteria and evaluation factors. After these reviews, the SSEB, by consensus, will provide a rating for each evaluation factor supported by a justifying narrative. The Offeror's ratings are confidential and will remain in the Contracting Officer's files. Upon completion of the evaluations, the results will be provided to the Contracting Officer in the form of a Proposal Analysis Report.

2.2.3 Price Evaluation. The Government will initially review pricing independently from the factor evaluation. Price is not rated but will be analyzed for fairness and reasonableness through the use of cost and/or price analysis. The price analysts will also check for appearance of unbalanced pricing. Per FAR 15.404-1(g), unbalanced pricing exists when, despite an acceptable total evaluated price, the price of one or more contract line items is significantly over or understated as indicated by the application of cost or price analysis techniques. The Government may reject an offer as non-responsive if it is materially unbalanced. The price evaluation will document the fairness and reasonableness of the proposed bid. If adequate price competition exists, no additional cost information will be requested. However, if at any time during this competition the Contracting Officer determines that further analysis is needed, detailed cost breakdowns may be requested.

2.2.4 Non-Price/Price Trade-Off Analysis. In determining the awardee for the firm fixed price contract, the factor ratings will be used during the non-price/price tradeoff analysis. After price analysis of the Bid Schedules and the factor evaluations are completed, the Government will then consider the

prices in connection with the factor ratings, comparing the relative advantages and disadvantages of the proposals and prices. If the Contracting Officer determines discussions are not required, the Contracting Officer, relying on the Board's report and independent business judgment, will decide which offeror is to be awarded the contract. This decision, reflected in the Source Selection Decision Document (SSDD), will be based on the proposal that offers the best value to the Government in terms of their combined factor ratings and price. This may result in an award being made to higher rated, yet higher price offeror where the decision is consistent with the solicitation's evaluation factors and the Contracting Officer reasonably determines that the superiority of the non-price factor ratings of the higher priced offeror justifies the additional costs.

3.0 EVALUATION CRITERIA.

3.1 There are two volumes required in response to this solicitation. Volume I includes certain administrative requirements that are not rated. Volume II has two (2) rated non-priced evaluation factors.

EVALUATION FACTORS AND ORDER OF RELATIVE IMPORTANCE

Volume	Factor - Description	Relative Importance
Volume I	Administrative Requirements	Not Rated
Volume II	Factor 1 - Past Performance Information of the Prime Contractor	1 st in relative importance; more important than Factor 2
Volume II	Factor 2 - Technical Approach	2 nd in relative importance; least important factor.

The non-priced evaluation factors, when combined, are significantly more important than price.

3.2 Volume II - Evaluation of Factor 1 - Past Performance Information of the Prime Contractor. Factor 1 will be rated with relevancy ratings and a confidence rating applied as described below.

(1) An Offeror's "Relevant Company Effort" information will be evaluated to determine if the construction projects submitted are "recent", and "relevant". For this solicitation, the Government will assign more relevance for: projects located on a military installation; projects demonstrating new construction with multiple laboratories for research and development, testing, evaluation, and validation of advanced systems; projects demonstrating ICD/ICS 705 standards for Sensitive Compartmented Facilities (SCIF); projects demonstrating RF Shielding boundaries, sound masking, and STC acoustic protection; projects of a dollar value similar to those anticipated under this solicitation; and projects where the Offeror performed as the prime contractor, as opposed to a subcontractor. Offerors demonstrating a project portfolio with more "relevant" projects may be given more consideration; and therefore, a higher confidence rating as identified below.

(2) Upon completion of its evaluation of each project, the SSEB, by consensus, will assign each project one of the following ratings:

Past Performance Relevancy Ratings
• Very Relevant - Present/Past effort involved essentially the same scope and magnitude, effort and complexities this solicitation requires.

• Relevant - Present/Past effort involved similar scope and magnitude of effort and complexities this solicitation requires.
• Somewhat Relevant - Present/Past effort involved some scope and magnitude of effort and complexities this solicitation requires.
• Not Relevant - Present/Past effort involved little or none of the scope and magnitude of effort and complexities this solicitation requires.

No overall relevancy rating is assigned to an Offeror's portfolio of projects. Rather, after checking compliance and assigning each project a relevancy rating, the SSEB will then determine an overall Performance Confidence Assessment rating. The overall Performance Confidence Assessment rating takes into consideration the degree of relevancy of each project, and the quality ratings of those projects.

(3) The Government will then assess how well an Offeror performed on their projects. The Government will, as necessary, confirm quality of past performance data provided by the Offeror and, at its discretion, obtain additional past performance information, if available, from other sources. When the relevant performance record indicates performance problems, the Government will consider the number and severity of the problems and the appropriateness and effectiveness of any corrective action taken (not just planned or promised). The Government may review more recent contracts or performance evaluations to ensure corrective actions have been implemented and evaluate their effectiveness.

(4) If the Offeror is submitting as a Joint Venture (JV), the SSEB will utilize the information submitted to conduct the relevancy and performance confidence assessment ratings of the JV, as previously indicated. Based on the information submitted by the JV Offeror, the SSEB will evaluate and assess:

- (i) The JV's "Past Performance Information", and/or
- (ii) Either JV partners' "Past Performance Information"

(5) The overall Performance Confidence Assessment Rating reflects the degree of probability that the Offeror will be able to meet the solicitation's requirements. Upon completion of the evaluation, one of the following ratings will be assigned:

Performance Confidence Assessment Ratings and Description	
Substantial Confidence	Based on the Offeror's recent/relevant performance record, the Government has a high expectation that the Offeror will successfully perform the required effort.
Satisfactory Confidence	Based on the Offeror's recent/relevant performance record, the Government has a reasonable expectation that the Offeror will successfully perform the required effort.
Neutral Confidence	No recent/relevant performance record is available or the Offeror's performance record is so sparse that no meaningful confidence assessment rating can be reasonably assigned. The offeror may not be evaluated favorably or unfavorably on the factor of past performance.
Limited Confidence	Based on the Offeror's recent/relevant performance record, the Government has a low expectation that the Offeror will successfully perform the required effort.
No Confidence	Based on the Offeror's recent/relevant performance record, the Government has no expectation that the Offeror will

	successfully perform the required effort.

(6) Offerors with little or no relevant past performance will not be evaluated favorably or unfavorably for Factor 1. However, such a proposal will be rated neutral confidence, and thus may not represent the most advantageous proposal to the Government when compared to the proposals of other Offerors with recent/relevant past performance.

3.3 Volume II - Evaluation of Factor 2 - Technical Approach. The SSEB will evaluate the technical approach narrative to assess the Offeror's understanding of the requirements of the solicitation. The Government will evaluate the narrative to assess the Offeror's overall understanding of the project requirements, complexity and constraints to ensure it reflects an understanding of the requirements of the solicitation. The Government will evaluate the preliminary construction schedule to assess the Offeror's understanding of the overall duration of the project and the construction activities that are necessary to meet the requirements of the project. The schedule will be assessed for its logic, reasonableness of scheduled activities/tasks, and task durations necessary to complete construction within the required performance period.

The SSEB will determine the strengths, weaknesses and deficiencies, if any, in the approach presented, and then assign an overall combined technical/risk ratings as listed below. The technical rating reflects the degree to which the proposed approach meets or does not meet the minimum technical requirements.

Ratings	Combined Technical/Risk Rating Definitions
OUTSTANDING	Proposal indicates an exceptional approach and understanding of the requirements and contains multiple strengths, and risk of unsuccessful performance is low.
GOOD	Proposal indicates a thorough approach and understanding of the requirements and contains at least one strength, and risk of unsuccessful performance is low to moderate.
ACCEPTABLE	Proposal meets requirements and indicates an adequate approach and understanding of the requirements, and risk of unsuccessful performance is no worse than moderate.
MARGINAL	Proposal has not demonstrated an adequate approach and understanding of the requirements, and/or risk of unsuccessful performance is high.
UNACCEPTABLE	Proposal does not meet requirements of the solicitation, and thus, contains one or more deficiencies, and/or risk of unsuccessful performance is unacceptable. Proposal is unawardable.

The technical risk rating reflects the degree to which the proposed approach meets or does not meet the minimum technical requirements. The technical risk rating definitions in support of the above referenced table are as follows:

- a) Low - Low risk means the proposal may contain weakness(es) which have little potential to cause disruption of schedule, increased cost or degradation of performance. Normal contractor effort and normal Government monitoring will likely be able to overcome any difficulties.

- b) Moderate - Moderate risk means the proposal contains a significant weakness or combination of weaknesses which may potentially cause disruption of schedule, increased cost or degradation of performance. Special contractor emphasis and close Government monitoring will likely be able to overcome difficulties.
- c) High - High risk means the proposal contains a significant weakness or combination of weaknesses which is likely to cause significant disruption of schedule, increased cost or degradation of performance. Is unlikely to overcome any difficulties, even with special contractor emphasis and close Government monitoring.
- d) Unacceptable - Unacceptable risk means the proposal contains a material failure or a combination of significant weaknesses that increases the risk of unsuccessful performance to an unacceptable level.

3.4 Additional definitions used in all factors.

3.4.1 Deficiency.

a) A material failure of a proposal to meet a Government requirement or combination of significant weaknesses in a proposal that increases the risk of unsuccessful contract performance to an unacceptable level (FAR 15.001).

b) The evaluators will identify the RFP requirement and describe why a deficiency or deficiencies exist in the proposal. All deficiencies discovered will be identified to the Offeror during discussions, if conducted, and in the debriefing. Failure by an Offeror to rectify deficiencies will preclude award action to that Offeror.

c) The Contract requirements take precedence over deficiencies (or deviations) discovered after award.

d) Deviation. Proposal implies or specifically offers something below specified criteria. The Offeror may or may not have called the deviation to the Government's attention. A deviation is a deficiency. The technical reviewers will identify any deviations.

3.4.2 Clarification. Means limited exchanges, between the Government and Offerors that may occur when award without discussions is contemplated. Offeror may be given the opportunity to clarify certain aspects of the proposals or to resolve minor or clerical errors. Clarification does not give the Offeror an opportunity to revise or modify its proposal, except to the extent that corrections of apparent clerical mistakes results in a revision. Clarifications do not require "discussions" or submission of another proposal.

3.4.3 Weakness.

a) Means a flaw in the proposal that increases the risk of unsuccessful contract performance. A "significant weakness" in the proposal is a flaw that appreciably increases the risk of unsuccessful contract performance.

b) All weaknesses, significant weaknesses, and deficiencies will be identified to the Offeror during discussions, if conducted, and in the debriefing. Failure by an Offeror to rectify multiple significant weaknesses

deemed essential will preclude award action to that Offeror.

3.4.4 Strength. Any aspect of a proposal that, when judged against a stated evaluation criterion, enhances the merit of the proposal or increase the probability of successful performance of the contract. A "significant strength" appreciably enhances the merit of a proposal or appreciably increases the probability of successful contract performance.

4.0 DISCUSSIONS. The Government reserves the right to conduct discussions, and allow proposal revisions, if the Contracting Officer determines that discussions are in the Government's best interest. Offerors are cautioned that discussions may not be conducted and offerors should not assume that they will have an opportunity to revise their proposals after submission.

4.1 If discussions are deemed necessary, the Contracting Officer will include only those firms determined to be the most highly rated; those whose proposals are reasonably susceptible to being made acceptable; but not those that are so deficient as to essentially require major revisions or a total re-write of their proposal. In certain circumstances, the Government may limit offers in the competitive range to a number that will permit an efficient competition. If discussions are required, the SSEB will follow the evaluation process herein until discussions are closed. Upon the conclusion of discussions, those Offerors still within the competitive range will be afforded an opportunity to revise their proposals and submit a Final Proposal Revision for evaluation. If discussions are held, Offerors are required to submit their responses to comments electronically. Electronic submissions shall meet the submission deadline set forth by the Contracting Officer during discussions or indicated in the Amendment requesting the Final Proposal Revisions. Regardless of the submittal process used, the Contracting Officer will notify all the Offerors in the competitive range, in writing, how and when interim revisions and final proposals revisions are to be submitted.

4.2 Upon conclusion of discussions, those offerors still within the competitive range will be afforded an opportunity to revise their proposal and to submit their final proposal revisions for evaluation.

5.0 THE SELECTION PROCESS.

5.1 The Contracting Officer will perform the previously discussed Non-Price/Price Trade-Off Analysis considering non-price evaluation factors and price. The Contracting Officer, independently exercising prudent business judgement, will make the Source Selection Decision based on the Offeror whose proposal offers the best value to the Government. This may result in an award being made to a higher rated, higher price Offeror where the decision is consistent with the solicitation's evaluation factors and the Contracting Officer reasonably determines that the technical superiority and/or overall business approach and/or superior past performance of the higher priced Offeror outweigh the price differences. This may also result in rejection of all offers and re-evaluation and/or cancellation of the solicitation.

6.0 BASIS OF AWARD.

6.1 It is the Government's intent to award a firm-fixed price contract to the responsible Offeror whose proposal, conforming to the solicitation, is fair and reasonable, and has been determined to be the most advantageous to

the Government, non-price, price and other factors considered.

6.2 All evaluation factors other than price, when combined, are significantly more important than price. A contract will not be awarded to an offeror with a deficiency as defined in FAR 15.001.

6.3 The Government reserves the right to accept other than the lowest priced offer. The Government also reserves the right to reject any and all offers. The basis of award will be conforming offer, the price of which may or may not be the lowest.

END OF SECTION

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Section 00 21 16 - Instructions, Conditions, & Notices to Offerors

FAR Provisions Incorporated by Reference

Number	Title	Effective Date	Alternate Deviation	Variation Effective Date
52.204-7	System for Award Management-Registration.	2026-02		
52.215-1	Instructions to Offerors-Competitive Acquisition.	2026-02		
52.222-5	Construction Wage Rate Requirements-Secondary Site of the Work.	2026-02		
52.228-17	Individual Surety-Pledge of Assets (Bid Guarantee).	2021-02		
52.233-2	Service of Protest.	2026-02		

DFARS Provisions Incorporated by Reference

Number	Title	Effective Date	Alternate Deviation	Variation Effective Date
252.204-7019	Notice of NIST SP 800-171 DoD Assessment Requirements.	2023-11		
252.204-7024	Notice on the Use of the Supplier Performance Risk System.	2023-03		
252.215-7013	Supplies and Services Provided by Nontraditional Defense Contractors.	2023-01		
252.215-7016	Notification to Offerors-Postaward Debriefings.	2025-10		

FAR Provisions Incorporated by Full Text

Number	Title	Effective Date	Alternate Deviation	Variation Effective Date
52.216-1	Type of Contract.	2026-02		

Type of Contract (Feb 2026)

The Government contemplates award of a Firm-Fixed Price contract resulting from this solicitation.

(End of provision)

52.228-1	Bid Guarantee.	1996-09		

Bid Guarantee (Sept 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 clause)

52.252-1 Solicitation Provisions 1998-02
Incorporated by Reference.

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

(End of provision)

52.252-3 Alterations in Solicitation. 1984-04

Alterations in Solicitation (Apr 1984)

Portions of this solicitation are altered as follows:

(End of clause)

52.252-5 Authorized Deviations in 2020-11
Provisions.

Authorized Deviations in Provisions (Nov 2020)

(a) The use in this solicitation of any Federal Acquisition Regulation (48 CFR Chapter 1) provision with an authorized deviation is indicated by the addition of "(DEVIATION)" after the date of the provision.

(b) The use in this solicitation of any DFARS (48 CFR Chapter 2) provision with an authorized deviation is indicated by the addition of "(DEVIATION)" after the name of the regulation.

(End of provision)

DFARS Provisions Incorporated by Full Text

Number	Title	Effective Date	Alternate Deviation	Variation Effective Date
252.204-7025	Notice of Cybersecurity Maturity Model Certification Level Requirements.	2025-11		

NOTICE OF CYBERSECURITY MATURITY MODEL CERTIFICATION LEVEL REQUIREMENTS (NOV 2025)

(a) *Definitions.* As used in this provision, "controlled unclassified information (CUI)," "current," "Cybersecurity Maturity Model Certification (CMMC) status," "Cybersecurity Maturity Model Certification unique identifier (CMMC UID)," "Federal contract information (FCI)", and "plan of action and milestones" have the meaning given in the Defense Federal Acquisition Regulation Supplement 252.204-7021, Contractor Compliance With the Cybersecurity Maturity Model Certification Level Requirements, clause of this solicitation.

(b)(1) *Cybersecurity Maturity Model Certification (CMMC) level.* The CMMC level required by this solicitation is: CMMC Level I. This CMMC level, or higher (see 32 CFR part 170), is required prior to award for each contractor information system that will process, store, or transmit Federal contract information (FCI) or controlled unclassified information (CUI) during performance of the contract.

(2) The Offeror will not be eligible for award of a contract, task order, or delivery order resulting from this solicitation if the Offeror does not have, for each of the contractor information systems that will process, store, or transmit FCI or CUI and that will be used in performance of a contract resulting from this solicitation-

(i) The current CMMC status entered in the Supplier Performance Risk System (SPRS) (<https://piee.eb.mil>) at the CMMC level required by paragraph (b)(1) of this provision; and

(ii) A current affirmation of continuous compliance with the security requirements identified at 32 CFR part 170 in SPRS.

(c) *Plan of action and milestones.* If the Offeror has a CMMC Status of Conditional, the Offeror shall successfully close out a valid plan of action and milestones (32 CFR 170.21) to achieve a CMMC Status of Final.

(d) *CMMC unique identifiers.* The Offeror shall provide, in the proposal, the CMMC unique identifier(s) (CMMC UIDs) issued by SPRS for each contractor information system that will process, store, or transmit FCI or CUI during performance of a contract, task order, or delivery order resulting from this solicitation. The Offeror also shall update the list when new CMMC UIDs are generated in SPRS. The CMMC UIDs are provided in SPRS after the Offeror enters the results of self-assessment(s) for each such information system.

(End of provision)

252.215-7008 Only One Offer.

2022-12

ONLY ONE OFFER (DEC 2022)

(a) Cost or pricing data requirements. After initial submission of offers, if the Contracting Officer notifies the Offeror that only one offer was received, the Offeror agrees to-

(1) Submit any additional cost or pricing data that is required in order to determine whether the price is fair and reasonable (10 U.S.C. 3705) or to comply with the statutory requirement for certified cost or pricing data (10 U.S.C. 3702 and FAR 15.403-3); and

(2) Except as provided in paragraph (b) of this provision, if the acquisition exceeds the certified cost or pricing data threshold and an exception to the requirement for certified cost or pricing data at FAR 15.403-1(b)(2) through (5) does not apply, certify all cost or pricing data in accordance with paragraph (c) of DFARS provision 252.215-7010, Requirements for Certified Cost or Pricing Data and Data Other Than Certified Cost or Pricing Data, of this solicitation.

(b) Canadian Commercial Corporation. If the Offeror is the Canadian Commercial Corporation, certified cost or pricing data are not required. If the Contracting Officer notifies the Canadian Commercial Corporation that additional data other than certified cost or pricing data are required in accordance with DFARS 225.870-4(c), the Canadian Commercial Corporation shall obtain and provide the following:

(1) Profit rate or fee (as applicable).

(2) Analysis provided by Public Works and Government Services Canada to the Canadian Commercial Corporation to determine a fair and reasonable price (comparable to the analysis required at FAR 15.404-1).

(3) Data other than certified cost or pricing data necessary to permit a determination by the U.S. Contracting Officer that the proposed price is fair and reasonable ____ [U.S. Contracting Officer to provide description of the data required in accordance with FAR 15.403-3(a)(1) with the notification].

(4) As specified in FAR 15.403-3(a)(4), an offeror who does not comply with a requirement to submit data that the U.S. Contracting Officer has deemed necessary to determine price reasonableness or cost realism is ineligible for award unless the head of the contracting activity determines that it is in the best interest of the Government to make the award to that offeror.

(c) Subcontracts. Unless the Offeror is the Canadian Commercial Corporation, the Offeror shall insert the substance of this provision, including this paragraph (c), in all subcontracts exceeding the simplified acquisition threshold defined in FAR part 2.

(End of provision)

252.215-7010	Requirements for Certified Cost or Pricing Data and Data Other Than Certified Cost or Pricing Data. (DEVIATION 2024-O0007)	2024-05	Deviation 2024-O0007	2024-02

REQUIREMENTS FOR CERTIFIED COST OR PRICING DATA AND DATA OTHER THAN CERTIFIED COST OR PRICING DATA (DEVIATION 2024-O0007)(FEB 2024)

(a) Definitions. As used in this provision-

“Market prices” means current prices that are established in the course of ordinary trade between buyers and sellers free to bargain and that can be substantiated through competition or from sources independent of the offerors.

“Non-Government sales” means sales of the supplies or services to non-Governmental entities for purposes other than governmental purposes.

“Relevant sales data” means information provided by an offeror on sales of the same or similar items that can be used to establish price reasonableness taking into consideration the age, volume, and nature of the transactions (including any related discounts, refunds,

rebates, offsets, or other adjustments).

“Sufficient non-Government sales” means relevant sales data that reflects market pricing and contains enough information to make adjustments covered by FAR 15.404-1(b)(2)(ii)(B).

“Uncertified cost data” means the subset of “data other than certified cost or pricing data” (see FAR 2.101) that relates to cost.

(b) Exceptions from certified cost or pricing data.

(1) In lieu of submitting certified cost or pricing data, the Offeror may submit a written request for exception by submitting the information described in paragraphs (b)(1)(i) and (ii) of this provision. The Contracting Officer may require additional supporting information, but only to the extent necessary to determine whether an exception should be granted and whether the price is fair and reasonable.

(i) Exception for price set by law or regulation - Identification of the law or regulation establishing the price offered. If the price is controlled under law by periodic rulings, reviews, or similar actions of a governmental body, attach a copy of the controlling document, unless it was previously submitted to the contracting office.

(ii) Commercial item exception. For a commercial item exception, the Offeror shall submit, at a minimum, information that is adequate for evaluating the reasonableness of the price for this acquisition, including prices at which the same item or similar items have been sold in the commercial market. Such information shall include-

(A) For items previously determined to be commercial, the contract number and military department, defense agency, or other DoD component that rendered such determination, and if available, a Government point of contact;

(B) For items priced based on a catalog-

(1) A copy of or identification of the Offeror’s current catalog showing the price for that item; and

(2) If the catalog pricing provided with this proposal is not consistent with all relevant sales data, a detailed description of differences or inconsistencies between or among the relevant sales data, the proposed price, and the catalog price (including any related discounts, refunds, rebates, offsets, or other adjustments);

(C) For items priced based on market pricing, a description of the nature of the commercial market, the methodology used to establish a market price, and all relevant sales data. The

description shall be adequate to permit DoD to verify the accuracy of the description;

(D) For items included on an active Federal Supply Service Multiple Award Schedule contract, proof that an exception has been granted for the schedule item; or

(E) For items provided by nontraditional defense contractors, a statement that the entity is not currently performing and has not performed, for at least the 1-year period preceding the solicitation of sources by DoD for the procurement or transaction, any contract or subcontract for DoD that is subject to full coverage under the cost accounting standards prescribed pursuant to 41 U.S.C. 1502 and the regulations implementing such section.

(2) The Offeror grants the Contracting Officer or an authorized representative the right to examine, at any time before award, books, records, documents, or other directly pertinent records to verify any request for an exception under this provision, and to determine the reasonableness of price.

(c) Requirements for certified cost or pricing data. This acquisition is accomplished under the authority of section 890 of the National Defense Authorization Act (NDAA) for Fiscal Year (FY) 2019 (Pub. L. 115-232), as amended by section 825 of the NDAA for FY 2020 (Pub. L. 116-92), section 818 of the NDAA for FY 2023 (Pub. L. 117-263), and section 841 of the NDAA for FY 2024 (Pub. L. 118-31). The intent of this pilot program is to test the efficacy of basing price reasonableness determinations primarily on actual costs of performance for prior purchases of the same or similar products for the Department of Defense. If the Offeror is not granted an exception from the requirement to submit certified cost or pricing data, the following applies:

(1) In lieu of providing complete cost or pricing data, as defined in FAR 2.101, the Offeror shall submit a subset of cost or pricing data and supporting attachments as follows: _____ [Contracting Officer shall list the specific cost or pricing data deemed necessary to establish price reasonableness for this acquisition, and describe the required submission format for each type of data. At a minimum, the Contracting Officer shall identify the specific prior DoD purchases of the same or similar products for which the Offeror is required to submit the actual cost of performance. The Offeror is not required to submit cost or pricing data that is not listed within this provision. If the Contracting Officer finds that additional cost or pricing data are needed in order to determine that the price is fair and reasonable, the Contracting Officer shall issue an amendment to the solicitation, revising this paragraph as needed to require the submission of the additional data.]

(2)(i) As soon as practicable after agreement on price, but before contract award (except for unpriced actions such as letter contracts), the Offeror shall submit a Certificate of Current Cost or Pricing Data, using the following language:

Certificate of Current Cost or Pricing Data for Acquisitions Accomplished under the Authority of Section 890 of the National Defense Authorization Act (NDAA) for Fiscal Year (FY) 2019, as amended by Section 825 of the NDAA for FY 2020, Section 818 of the NDAA for 2023, and Section 841 of the NDAA for FY 2024

This is to certify that, to the best of my knowledge and belief, the cost or pricing data required by the provision at 252.215-7010, Requirements for Certified Cost or Pricing Data and Data Other Than Certified Cost or Pricing Data (DEVIATION 2024-O0007) of the Request for Proposal for this action, and submitted either actually or by specific identification in writing, to the Contracting Officer or to the Contracting Officer's Representative in support of ____* are accurate, complete, and current as of ____**. This certification includes the cost or pricing data supporting any advance agreements and forward pricing rate agreements between the Offeror and the Government that are part of the proposal.

Firm ____

Signature ____

Name ____

Title ____

Date of execution*** ____

*Identify the proposal involved, giving the appropriate identifying number (e.g., RFP No.).

**Insert the day, month, and year when price negotiations were concluded and price agreement was reached or, if applicable, an earlier date agreed upon between the parties that is as close as practicable to the date of agreement on price.

***Insert the day, month, and year of signing, which should be as close as practicable to the date when the price negotiations were concluded and the contract price was agreed to.

(ii) The certificate does not constitute a representation as to the accuracy of the Offeror's judgment on the estimate of future costs or projections. It applies to the data upon which the judgment or estimate was based. This distinction between fact and judgment should be clearly understood. With respect to the certified cost or pricing data required by paragraphs (c)(1) or (e) of this provision (as revised by solicitation amendment, if applicable), if the Offeror had information reasonably available at the time of agreement showing that the negotiated price was not based on accurate, complete, and current data, the Offeror's responsibility is not limited by any lack of personal knowledge of the information on the part of its negotiators.

(iii) The Contracting Officer and Offeror are encouraged to reach a prior agreement on criteria for establishing closing or cutoff dates when appropriate in order to minimize delays associated with proposal updates. Closing or cutoff dates applicable to the certified cost or pricing data required by paragraphs (c)(1) or (e) of this provision should be included as part of the data submitted with the proposal and, before agreement on price, data should be updated by the contractor to the latest closing or cutoff dates for which the data are available. Use of cutoff dates coinciding with reports is acceptable, as certain data may not be reasonably available before normal periodic closing dates (e.g., actual indirect costs). Data within the Offeror's or a subcontractor's organization on matters significant to contractor management and to the Government will be treated as reasonably available, if that data was required to be submitted by paragraph (c)(1) or (e) of this provision. What is significant depends upon the circumstances of each acquisition.

(iv) Possession of a Certificate of Current Cost or Pricing Data is not a substitute for examining and analyzing the Offeror's proposal.

(v) If certified cost or pricing data are requested by the Government and submitted by the Offeror, but an exception is later found to apply, the data shall not be considered certified cost or pricing data and shall not be certified in accordance with this subsection.

(3) The Offeror is responsible for determining whether a subcontractor qualifies for an exception from the requirement for submission of certified cost or pricing data on the basis of adequate price competition, i.e., two or more responsible offerors, competing independently, submit priced offers that satisfy the Government's expressed requirement in accordance with FAR 15.403-1(c)(1).

(d) Requirements for data other than certified cost or pricing data.

(1) Data other than certified cost or pricing data submitted in accordance with this provision shall include all data necessary to permit a determination that the proposed price is fair and reasonable, to include the requirements in DFARS 215.402(a)(i) and 215.404-1(b).

(2) In cases in which uncertified cost data is required, the information shall be provided in the form in which it is regularly maintained by the Offeror or prospective subcontractor in its business operations.

(3) The Offeror shall provide information described as follows: ____ [Insert description of the data and the format that are required, including access to records necessary to permit an adequate evaluation of the proposed price in accordance with FAR 15.403-3].

(4) Within 10 days of a written request from the Contracting Officer for additional information

to support proposal analysis, the Offeror shall provide either the requested information, or a written explanation for the inability to fully comply.

(5) Subcontract price evaluation.

(i) The Offeror shall obtain from subcontractors the minimum information necessary to support a determination of price reasonableness, as described in FAR part 15 and DFARS part 215.

(ii) No cost information may be required from a prospective subcontractor in any case in which there are sufficient non-Government sales of the same item to establish reasonableness of price.

(iii) If the Offeror relies on relevant sales data for similar items to determine the price is reasonable, the Offeror shall obtain only that technical information necessary—

(A) To support the conclusion that items are technically similar; and

(B) To explain any technical differences that account for variances between the proposed prices and the sales data presented, but excluding paragraph (c), in all subcontracts exceeding the simplified acquisition threshold defined in FAR part 2.

(e) Subcontracts.

(1) For subcontracts above the threshold for submission of certified cost or pricing data in FAR 15.403-4 to which the authority of the Section 890 pilot has been flowed down, in lieu of the requirements in paragraphs (a) and (b) of the clause at 52.215-12, Subcontractor Certified Cost or Pricing Data, of this solicitation, the Offeror shall require the subcontractor to submit a subset of cost or pricing data (actually or by specific identification in writing) as follows:

(i) _____

[Contracting Officer shall add paragraphs as necessary to identify each first-tier subcontract to which the authority of the Section 890 pilot has been flowed down, and the specific certified cost or pricing data required for each subcontract. Contracting Officer shall list the specific cost or pricing data deemed necessary to determine that the price is fair and reasonable for each subcontract, and describe the required submission format for each type of data. The type and extent of data required may differ based on the dollar value of the subcontract proposal, or other appropriate considerations. At a minimum, the Contracting Officer shall identify the specific prior subcontracts awarded in support of the DoD purchases

of the same or similar products for which the subcontractor is required to submit the actual cost of performance. The Contracting Officer shall specify whether the authority of the Section 890 pilot is further flowed down to any lower-tier subcontract pertaining to each first-tier subcontract. Where the pilot authority is flowed down to lower-tier subcontracts, the Contracting Officer shall describe the specific certified cost or pricing data that is to be provided by each affected lower-tier subcontractor. The subcontractor and lower tier subcontractors to which the pilot authority is flowed down are not required to submit certified cost or pricing data that is not listed within this provision. If the Contracting Officer finds that additional certified cost or pricing data are needed in order to determine that the price is fair and reasonable, the Contracting Officer shall issue an amendment to the solicitation, revising this paragraph as needed to require the submission of the additional data.]

(ii) In the event a subcontractor denies the Offeror access to the data described in paragraph (e)(1)(i) of this provision, the data may be provided directly to the Contracting Officer.

(iii) If a subcontractor is unable to provide the extent of historical actual cost experience required by paragraph (e)(1)(i), then the Offeror shall require the subcontractor to provide certified cost or pricing data in accordance with paragraph (e)(2) of this clause.

(iv) The Offeror shall require the subcontractor to certify in substantially the form prescribed in paragraph (c)(2) of this provision that, to the best of its knowledge and belief, the data submitted under paragraph (e)(1)(i) of this provision were accurate, complete, and current as of the date of agreement on the negotiated price of the subcontract.

(2) For subcontracts above the threshold for submission of certified cost or pricing data in FAR 15.403-4 to which the authority of the Section 890 pilot has not been flowed down, the Offeror shall require the subcontractor to provide certified cost or pricing data in accordance with the clause at 52.215-12, Subcontractor Certified Cost or Pricing Data, of this solicitation and shall require the subcontractor to certify in substantially the form prescribed in FAR 15.406-2 that, to the best of its knowledge and belief, the data submitted under paragraph (a) of the clause at 52.215-12 were accurate, complete, and current as of the date of agreement on the negotiated price of the subcontract.

(End of provision)

252.215-7012	Requirements for Submission of Proposals via Electronic Media.	2018-01

REQUIREMENTS FOR SUBMISSION OF PROPOSALS VIA ELECTRONIC MEDIA (JAN 2018)

The Offeror shall submit the cost portion of the proposal via the following electronic media:

PIEE Solicitation Module <https://piee.eb.mil/>

(End of provision)

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Section 00 22 16 - Evaluation Factors for Award

FAR Provisions Incorporated by Reference

Number	Title	Effective Date	Alternate Deviation	Variation Effective Date
52.217-5	Evaluation of Options.	2026-02		
52.225-12	Notice of Buy American Requirement- Construction Materials Under Trade Agreements.	2014-05		

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Section 00 45 00 - Representations, Certification, & Other Statements

FAR Provisions Incorporated by Reference

Number	Title	Effective Date	Alternate Deviation	Variation Effective Date
52.203-11	Certification and Disclosure Regarding Payments to Influence Certain Federal Transactions.	2024-09		
52.240-90	Security Prohibitions and Exclusions Representations and Certifications.	2026-02		

DFARS Provisions Incorporated by Reference

Number	Title	Effective Date	Alternate Deviation	Variation Effective Date
252.203-7005	Representation Relating to Compensation of Former DoD Officials.	2022-09		
252.204-7008	Compliance with Safeguarding Covered Defense Information Controls.	2016-10		
252.225-7055	Representation Regarding Business Operations with the Maduro Regime.	2022-05		
252.225-7057	Preaward Disclosure of Employment of Individuals Who Work in the People's Republic of China.	2022-08		
252.225-7059	Prohibition on Certain Procurements from the Xinjiang Uyghur Autonomous Region-Representation.	2023-06		
252.225-7966	Prohibition Regarding Russian Fossil Fuel Business Operations-Representation (Deviation 2024-	2024-03	Deviation 2024-00006	2024-03

O0006, Revision 1)

252.225-7973	Prohibition on the Procurement of Foreign-Made Unmanned Aircraft Systems—Representation. (DEVIATION 2024-O0014)	2024-08	Deviation 2024-O0014	2024-08

FAR Provisions Incorporated by Full Text

Number	Title	Effective Date	Alternate Deviation	Variation Effective Date
52.204-8	Annual Representations and Certifications. (DEVIATION 2025-O0003 and 2025-O0004)	2025-03	Deviation 2025-O0004	2025-03

Annual Representations and Certifications (MAR 2025)(DEVIATION 2025-O0003 and 2025-O0004)

(a)

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

(2) The small business size standard is \$45,000,000.00.

(3) The small business size standard for a concern that submits an offer, other than on a construction or service acquisition, but proposes to furnish an end item that it did not itself manufacture, process, or produce is 500 employees, or 150 employees for information technology value-added resellers under NAICS code 541519 if the acquisition-

(i) Is set aside for small business and has a value above the simplified acquisition threshold;

(ii) Uses the HUBZone price evaluation preference regardless of dollar value, unless the offeror waives the price evaluation preference; or

(iii) Is an 8(a), HUBZone, service-disabled veteran-owned, economically disadvantaged women-owned, or women-owned small business set-aside or sole-source award regardless of dollar value.

(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, System for Award Management, is not included in this solicitation, and the Offeror has an active registration in the System for Award Management (SAM), 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:

(i) Paragraph (d) applies.

(ii) 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) 52.204-26, Covered Telecommunications Equipment or Services-Representation. This provision applies to all solicitations.

(vii) 52.209-2, Prohibition on Contracting with Inverted Domestic Corporations-Representation.

(viii) 52.209-5, Certification Regarding Responsibility Matters. This provision applies to solicitations where the contract value is expected to exceed the simplified acquisition threshold.

(ix) 52.209-11, Representation by Corporations Regarding Delinquent Tax Liability or a Felony Conviction under any Federal Law. This provision applies to all solicitations.

(x) 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.

(xi) 52.215-6, Place of Performance. This provision applies to solicitations unless the place of performance is specified by the Government.

(xii) 52.219-1, Small Business Program Representations (Basic, Alternates I, and II). This provision applies to solicitations when the contract is for supplies to be delivered or services to be performed in the United States or its outlying areas, or when the contracting officer has applied part 19 in accordance with 19.000(b)(1)(ii).

(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.

(C) The provision with its Alternate II applies to solicitations that will result in a multiple-award contract with more than one NAICS code assigned.

(xiii) 52.219-2, Equal Low Bids. This provision applies to solicitations when contracting by sealed bidding and the contract is for supplies to be delivered or services to be performed in the United States or its outlying areas, or when the contracting officer has applied part 19 in accordance with 19.000(b)(1)(ii).

(xiv) [Reserved]

(xv) [Reserved]

(xvi) 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 products or commercial services.

(xvii) 52.223-1, Biobased Product Certification. This provision applies to solicitations that require the delivery or specify the use of biobased products in USDA-designated product categories; or include the clause at 52.223-2, Reporting of Biobased Products Under Service and Construction Contracts.

(xviii) 52.223-4, Recovered Material Certification. This provision applies to solicitations that are for, or specify the use of, EPA-designated items.

(xix) [Reserved]

(xx) 52.225-2, Buy American Certificate. This provision applies to solicitations containing the clause at 52.225-1.

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

(A) If the acquisition value is less than \$50,000, the basic provision applies.

(B) If the acquisition value is \$50,000 or more but is less than \$100,000, the provision with its Alternate II applies.

(C) If the acquisition value is \$100,000 or more but is less than \$102,280, the provision with its Alternate III applies.

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

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

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

(xxv) 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:

[Contracting Officer check as appropriate.]

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

(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) 52.227-6, Royalty Information.

(A) Basic.

(B) Alternate I.

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

(d) The offeror has completed the annual representations and certifications electronically in SAM website accessed through <https://www.sam.gov>. After reviewing the SAM 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)

52.209-5 Certification Regarding Responsibility 2026-02
Matters.

Certification Regarding Responsibility Matters (Feb 2026)

(a)

(1) The Offeror certifies, to the best of its knowledge and belief, that-

(i) The Offeror and/or any of its Principals-

(A) Are [] are not [] presently debarred, suspended, proposed for debarment, or declared

ineligible for the award of contracts by any Federal agency;

(B) Have [] have not [], within a three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) contract or subcontract; violation of Federal or State antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, violating Federal criminal tax laws, or receiving stolen property (if offeror checks "have", the offeror shall also see 52.209-7, if included in this solicitation);

(C) Are [] are not [] presently indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses enumerated in paragraph (a)(1)(i)(B) of this provision; and

(D) Have [], have not [], within a three-year period preceding this offer, been notified of any delinquent Federal taxes in an amount that exceeds the threshold at 9.104-5(a)(2) for which the liability remains unsatisfied. Federal taxes are considered delinquent if both of the following criteria apply:

(1) The tax liability is finally determined. The liability is finally determined if it has been assessed. A liability is not finally determined if a pending administrative or judicial challenge remains. In the case of a judicial challenge to the liability, the liability is not finally determined until all judicial appeal rights have been exhausted.

(2) The taxpayer is delinquent in making payment. A taxpayer is delinquent if the taxpayer has failed to pay the tax liability when full payment was due and required. A taxpayer is not delinquent in cases where enforced collection action is precluded.

(ii) The Offeror has [] has not [], within a 3-year period preceding this offer, had one or more contracts terminated for default by any Federal agency.

(2) "Principal," for the purposes of this certification, 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 shall provide immediate written notice to the Contracting Officer if, at any time prior to contract award, the Offeror learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

(c) A certification that any of the items in paragraph (a) of this provision exists will not

necessarily result in withholding of an award under this solicitation. However, the Government will consider the certification in connection with a determination of the Offeror's responsibility. Failure of the Offeror to furnish a certification or provide such additional information as requested by the Contracting Officer may render the Offeror nonresponsible.

(d) This provision does not require establishment of a system of records in order to render, in good faith, the certification required by paragraph (a). The knowledge and information of an Offeror is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

(e) The certification in paragraph (a) of this provision is a material representation of fact upon which reliance was placed when making award. If the Government later determines that the Offeror knowingly rendered an erroneous certification, in addition to other remedies available to the Government, the Contracting Officer may terminate the contract resulting from this solicitation for default.

(End of provision)

52.209-7 Information Regarding Responsibility 2026-02
Matters.

Information Regarding Responsibility Matters (Feb 2026)

(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 FAPIS as required through maintaining an active registration in the System for

Award Management, which can be accessed via <https://www.sam.gov> (see 52.204-7).

(End of provision)

52.209-11 Representation by Corporations 2026-02
Regarding Delinquent Tax Liability or a
Felony Conviction under any Federal Law.

Representation by Corporations Regarding Delinquent Tax Liability or a Felony Conviction
under any Federal Law (Feb 2026)

(a) The Government will not enter into a contract with any corporation that-

(1) Has any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability, where the awarding agency is aware of the unpaid tax liability, unless an agency has considered suspension or debarment of the corporation and made a determination that suspension or debarment is not necessary to protect the interests of the Government; or

(2) Was convicted of a felony criminal violation under any Federal law within the preceding 24 months, where the awarding agency is aware of the conviction, unless an agency has considered suspension or debarment of the corporation and made a determination that this action is not necessary to protect the interests of the Government.

(b) The Offeror represents that-

(1) It is [] is not [] a corporation that has any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability; and

(2) It is [] is not [] a corporation that was convicted of a felony criminal violation under a Federal law within the preceding 24 months.

(End of provision)

52.209-13 Violation of Arms Control Treaties or Agreements-Certification. 2026-02

Violation of Arms Control Treaties or Agreements-Certification (Feb 2026)

(a) This provision does not apply to acquisitions at or below the simplified acquisition threshold or to acquisitions of commercial products and commercial services as defined in Federal Acquisition Regulation 2.101.

(b) Certification. [Offeror shall check either (1) or (2).]

☐ (1) The Offeror certifies that-

(i) It does not engage and has not engaged in any activity that contributed to or was a significant factor in the President's or Secretary of State's determination that a foreign country is in violation of its obligations undertaken in any arms control, nonproliferation, or disarmament agreement to which the United States is a party, or is not adhering to its arms control, nonproliferation, or disarmament commitments in which the United States is a participating state. The determinations are described in the most recent unclassified annual report provided to Congress pursuant to section 403 of the Arms Control and Disarmament Act (22 U.S.C. 2593a). The report is available at <https://www.state.gov/bureaus-offices/under-secretary-for-arms-control-and-international-security-affairs/bureau-of-arms-control-verification-and-compliance/>; and

(ii) No entity owned or controlled by the Offeror has engaged in any activity that contributed to or was a significant factor in the President's or Secretary of State's determination that a foreign country is in violation of its obligations undertaken in any arms control, nonproliferation, or disarmament agreement to which the United States is a party, or is not adhering to its arms control, nonproliferation, or disarmament commitments in which the United States is a participating state. The determinations are described in the most recent unclassified annual report provided to Congress pursuant to section 403 of the Arms Control and Disarmament Act (22 U.S.C. 2593a). The report is available at <https://www.state.gov/bureaus-offices/under-secretary-for-arms-control-and-international-security-affairs/bureau-of-arms-control-verification-and-compliance/>; or

☐ (2) The Offeror is providing separate information with its offer in accordance with paragraph (d)(2) of this provision.

(c) Procedures for reviewing the annual unclassified report (see paragraph (b)(1) of this

provision). For clarity, references to the report in this section refer to the entirety of the annual unclassified report, including any separate reports that are incorporated by reference into the annual unclassified report.

(1) Check the table of contents of the annual unclassified report and the country section headings of the reports incorporated by reference to identify the foreign countries listed there. Determine whether the Offeror or any person owned or controlled by the Offeror may have engaged in any activity related to one or more of such foreign countries.

(2) If such activity might have occurred, review all findings in the report associated with those foreign countries to determine whether or not each such foreign country was determined to be in violation of its obligations undertaken in an arms control, nonproliferation, or disarmament agreement to which the United States is a party, or to be not adhering to its arms control, nonproliferation, or disarmament commitments in which the United States is a participating state. For clarity, in the annual report an explicit certification of non-compliance is equivalent to a determination of violation. However, the following statements in the annual report are not equivalent to a determination of violation:

- (i) An inability to certify compliance.
- (ii) An inability to conclude compliance.
- (iii) A statement about compliance concerns.

(3) If so, determine whether the Offeror or any person owned or controlled by the Offeror has engaged in any activity that contributed to or is a significant factor in the determination in the report that one or more of these foreign countries is in violation of its obligations undertaken in an arms control, nonproliferation, or disarmament agreement to which the United States is a party, or is not adhering to its arms control, nonproliferation, or disarmament commitments in which the United States is a participating state. Review the narrative for any such findings reflecting a determination of violation or non-adherence related to those foreign countries in the report, including the finding itself, and to the extent necessary, the conduct giving rise to the compliance or adherence concerns, the analysis of compliance or adherence concerns, and efforts to resolve compliance or adherence concerns.

(4) The Offeror may submit any questions with regard to this report by email to NDAA1290Cert@state.gov. To the extent feasible, the Department of State will respond to such email inquiries within 3 business days.

(d) Do not submit an offer unless-

(1) A certification is provided in paragraph (b)(1) of this provision and submitted with the

offer; or

(2) In accordance with paragraph (b)(2) of this provision, the Offeror provides with its offer information that the President of the United States has

(i) Waived application under 22 U.S.C. 2593e(d) or (e); or

(ii) Determined under 22 U.S.C. 2593e(g)(2) that the entity has ceased all activities for which measures were imposed under 22 U.S.C. 2593e(b).

(e) Remedies. The certification in paragraph (b)(1) of this provision is a material representation of fact upon which reliance was placed when making award. If the Government later determines that the Offeror knowingly submitted a false certification, in addition to other remedies available to the Government, such as suspension or debarment, the Contracting Officer may terminate any contract resulting from the false certification.

(End of provision)

52.229-11 Tax on Certain Foreign Procurements- 2020-06
Notice and Representation.

Tax on Certain Foreign Procurements-Notice and Representation (Jun 2020)

(a) Definitions. As used in this provision-

Foreign person means any person other than a United States person.

Specified Federal procurement payment means any payment made pursuant to a contract with a foreign contracting party that is for goods, manufactured or produced, or services provided in a foreign country that is not a party to an international procurement agreement with the United States. For purposes of the prior sentence, a foreign country does not include an outlying area.

United States person as defined in 26 U.S.C. 7701(a)(30) means

(1) A citizen or resident of the United States;

(2) A domestic partnership;

(3) A domestic corporation;

(4) Any estate (other than a foreign estate, within the meaning of 26 U.S.C. 701(a)(31)); and

(5) Any trust if-

(i) A court within the United States is able to exercise primary supervision over the administration of the trust; and

(ii) One or more United States persons have the authority to control all substantial decisions of the trust.

(b) Unless exempted, there is a 2 percent tax of the amount of a specified Federal procurement payment on any foreign person receiving such payment. See 26 U.S.C. 5000C and its implementing regulations at 26 CFR 1.5000C-1 through 1.5000C-7.

(c) Exemptions from withholding under this provision are described at 26 CFR 1.5000C-1(d)(5) through (7). The Offeror would claim an exemption from the withholding by using the Department of the Treasury Internal Revenue Service Form W-14, Certificate of Foreign Contracting Party Receiving Federal Procurement Payments, available via the internet at www.irs.gov/w14. Any exemption claimed and self-certified on the IRS Form W-14 is subject to audit by the IRS. Any disputes regarding the imposition and collection of the 26 U.S.C. 5000C tax are adjudicated by the IRS as the 26 U.S.C. 5000C tax is a tax matter, not a contract issue. The IRS Form W-14 is provided to the acquiring agency rather than to the IRS.

(d) For purposes of withholding under 26 U.S.C. 5000C, the Offeror represents that

(1) It ☐ is ☐ is not a foreign person; and

(2) If the Offeror indicates "is" in paragraph (d)(1) of this provision, then the Offeror represents that-I am claiming on the IRS Form W-14 ☐ a full exemption, or ☐ partial or no exemption [Offeror shall select one] from the excise tax.

(e) If the Offeror represents it is a foreign person in paragraph (d)(1) of this provision, then-

(1) The clause at FAR 52.229-12, Tax on Certain Foreign Procurements, will be included in any resulting contract; and

(2) The Offeror shall submit with its offer the IRS Form W-14. If the IRS Form W-14 is not submitted with the offer, exemptions will not be applied to any resulting contract and the

Government will withhold a full 2 percent of each payment.

(f) If the Offeror selects "is" in paragraph (d)(1) and "partial or no exemption" in paragraph (d) (2) of this provision, the Offeror will be subject to withholding in accordance with the clause at FAR 52.229-12, Tax on Certain Foreign Procurements, in any resulting contract.

(g) A taxpayer may, for a fee, seek advice from the Internal Revenue Service (IRS) as to the proper tax treatment of a transaction. This is called a private letter ruling. Also, the IRS may publish a revenue ruling, which is an official interpretation by the IRS of the Internal Revenue Code, related statutes, tax treaties, and regulations. A revenue ruling is the conclusion of the IRS on how the law is applied to a specific set of facts. For questions relating to the interpretation of the IRS regulations go to <https://www.irs.gov/help/tax-law-questions>.

(End of provision)

DFARS Provisions Incorporated by Full Text

Number	Title	Effective Date	Alternate Deviation	Variation Effective Date
252.204-7016	Covered Defense Telecommunications Equipment or Services-Representation.	2019-12		

COVERED DEFENSE TELECOMMUNICATIONS EQUIPMENT OR SERVICES-REPRESENTATION (DEC 2019)

(a) Definitions. As used in this provision, "covered defense telecommunications equipment or services" has the meaning provided in the clause 252.204-7018, Prohibition on the Acquisition of Covered Defense Telecommunications Equipment or Services.

(b) Procedures. The Offeror shall review the list of excluded parties in the System for Award Management (SAM) (<https://www.sam.gov>) for entities excluded from receiving federal awards for "covered defense telecommunications equipment or services".

(c) Representation. The Offeror represents that it [] does, [] does not provide covered defense telecommunications equipment or services as a part of its offered products or

services to the Government in the performance of any contract, subcontract, or other contractual instrument.

(End of provision)

252.204-7017 Prohibition on the Acquisition of 2021-05
Covered Defense Telecommunications
Equipment or Services-Representation.

PROHIBITION ON THE ACQUISITION OF COVERED DEFENSE TELECOMMUNICATIONS EQUIPMENT OR SERVICES-REPRESENTATION (MAY 2021)

The Offeror is not required to complete the representation in this provision if the Offeror has represented in the provision at 252.204-7016, Covered Defense Telecommunications Equipment or Services-Representation, that it "does not provide covered defense telecommunications equipment or services as a part of its offered products or services to the Government in the performance of any contract, subcontract, or other contractual instrument."

(a) Definitions. "Covered defense telecommunications equipment or services," "covered mission," "critical technology," and "substantial or essential component," as used in this provision, have the meanings given in the 252.204-7018 clause, Prohibition on the Acquisition of Covered Defense Telecommunications Equipment or Services, of this solicitation.

(b) Prohibition. Section 1656 of the National Defense Authorization Act for Fiscal Year 2018 (Pub. L. 115-91) prohibits agencies from procuring or obtaining, or extending or renewing a contract to procure or obtain, any equipment, system, or service to carry out covered missions that uses covered defense telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system.

(c) Procedures. The Offeror shall review the list of excluded parties in the System for Award Management (SAM) at <https://www.sam.gov> for entities that are excluded when providing any equipment, system, or service to carry out covered missions that uses covered defense telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system, unless a waiver is granted.

(d) Representation. If in its annual representations and certifications in SAM the Offeror has represented in paragraph (c) of the provision at 252.204-7016, Covered Defense Telecommunications Equipment or Services-Representation, that it "does" provide covered defense telecommunications equipment or services as a part of its offered products or services to the Government in the performance of any contract, subcontract, or other contractual instrument, then the Offeror shall complete the following additional representation:

The Offeror represents that it ☐ will ☐ will not provide covered defense telecommunications equipment or services as a part of its offered products or services to DoD in the performance of any award resulting from this solicitation.

(e) Disclosures. If the Offeror has represented in paragraph (d) of this provision that it "will provide covered defense telecommunications equipment or services," the Offeror shall provide the following information as part of the offer:

(1) A description of all covered defense telecommunications equipment and services offered (include brand or manufacturer; product, such as model number, original equipment manufacturer (OEM) number, manufacturer part number, or wholesaler number; and item description, as applicable).

(2) An explanation of the proposed use of covered defense telecommunications equipment and services and any factors relevant to determining if such use would be permissible under the prohibition referenced in paragraph (b) of this provision.

(3) For services, the entity providing the covered defense telecommunications services (include entity name, unique entity identifier, and Commercial and Government Entity (CAGE) code, if known).

(4) For equipment, the entity that produced or provided the covered defense telecommunications equipment (include entity name, unique entity identifier, CAGE code, and whether the entity was the OEM or a distributor, if known).

(End of provision)

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Section 00 70 00 - Contract Clauses

FAR Clauses Incorporated by Reference

Number	Title	Effective Date	Alternate Deviation	Variation Effective Date
52.203-3	Gratuities.	1984-04		
52.203-5	Covenant Against Contingent Fees.	2014-05		
52.203-6	Restrictions on Subcontractor Sales to the Government.	2020-06		
52.203-7	Anti-Kickback Procedures.	2020-06		
52.203-8	Cancellation, Rescission, and Recovery of Funds for Illegal or Improper Activity.	2014-05		
52.203-10	Price or Fee Adjustment for Illegal or Improper Activity.	2014-05		
52.203-12	Limitation on Payments to Influence Certain Federal Transactions.	2020-06		
52.203-13	Contractor Code of Business Ethics and Conduct.	2021-11		
52.203-19	Prohibition on Requiring Certain Internal Confidentiality Agreements or Statements.	2017-01		
52.204-9	Personal Identity Verification of Contractor Personnel.	2011-01		
52.204-10	Reporting Executive Compensation and First-Tier Subcontract Awards.	2026-02		
52.204-13	System for Award Management-Maintenance.	2026-02		
52.204-19	Incorporation by Reference of Representations and Certifications.	2014-12		

52.209-6	Protecting the Government's Interest When Subcontracting With Contractors Debarred, Suspended, Proposed for Debarment, or Voluntarily Excluded.	2026-02		
52.209-9	Updates of Publicly Available Information Regarding Responsibility Matters.	2026-02		
52.209-10	Prohibition on Contracting With Inverted Domestic Corporations.	2026-02		
52.210-1	Market Research.	2026-02		
52.215-2	Audit and Records-Negotiation.	2026-02		
52.215-11	Price Reduction for Defective Certified Cost or Pricing Data -- Modifications (DEVIATION 2022-O0001)	2026-02	Deviation 2022-O0001	2021-10
52.215-13	Subcontractor Certified Cost or Pricing Data -- Modifications (Deviation 2022-O0001)	2026-02	Deviation 2022-O0001	2021-10
52.215-21	Requirements for Certified Cost or Pricing Data and Data Other Than Certified Cost or Pricing Data-Modifications.	2026-02		
52.215-21	Requirements for Certified Cost or Pricing Data and Data Other Than Certified Cost or Pricing Data-Modifications. (Alternate II)	2026-02	Alternate II	1997-10
52.219-6	Notice of Total Small Business Set-Aside.	2026-02		
52.219-8	Utilization of Small Business Concerns.	2026-02		
52.222-3	Convict Labor.	2026-02		
52.222-4	Contract Work Hours and Safety Standards-Overtime Compensation.	2026-02		
52.222-6	Construction Wage Rate Requirements.	2026-02		
52.222-7	Withholding of Funds.	2026-02		

52.222-8	Payrolls and Basic Records.	2026-02		
52.222-9	Apprentices and Trainees.	2026-02		
52.222-9	Apprentices and Trainees. (DEVIATION 2025-O0003)	2026-02	Deviation 2025-O0003	2025-03
52.222-10	Compliance with Copeland Act Requirements.	2026-02		
52.222-11	Subcontracts (Labor Standards).	2026-02		
52.222-12	Contract Termination-Debarment.	2014-05		
52.222-13	Compliance with Construction Wage Rate Requirements and Related Regulations.	2014-05		
52.222-14	Disputes Concerning Labor Standards.	2026-02		
52.222-15	Certification of Eligibility.	2014-05		
52.222-30	Construction Wage Rate Requirements-Price Adjustment (None or Separately Specified Method).	2018-08		
52.222-35	Equal Opportunity for Veterans.	2026-02		
52.222-36	Equal Opportunity for Workers with Disabilities.	2026-02		
52.222-37	Employment Reports on Veterans.	2026-02		
52.222-40	Notification of Employee Rights Under the National Labor Relations Act.	2010-12		
52.222-50	Combating Trafficking in Persons.	2026-02		
52.222-54	Employment Eligibility Verification.	2025-01		
52.222-55	Minimum Wages for Contractor Workers Under Executive Order 14026.	2026-02		

52.222-62	Paid Sick Leave Under Executive Order 13706.	2022-01		
52.223-2	Reporting of Biobased Products Under Service and Construction Contracts.	2026-02		
52.223-5	Pollution Prevention and Right-to-Know Information.	2024-05		
52.223-23	Sustainable Products and Services. (DEVIATION 2025-O0004)	2026-02	Deviation 2025-O0004	2025-03
52.224-3	Privacy Training.	2017-01		
52.224-3	Privacy Training. (Alternate I)	2017-01	Alternate I	2017-01
52.226-7	Drug-Free Workplace.	2024-05		
52.226-8	Encouraging Contractor Policies to Ban Text Messaging While Driving.	2024-05		
52.227-1	Authorization and Consent.	2020-06		
52.227-2	Notice and Assistance Regarding Patent and Copyright Infringement.	2020-06		
52.227-4	Patent Indemnity-Construction Contracts.	2007-12		
52.228-2	Additional Bond Security.	1997-10		
52.228-5	Insurance-Work on a Government Installation.	1997-01		
52.228-11	Pledges of Assets (DEVIATION 2020-O0016)	2021-02	Deviation 2020-O0016	2020-04
52.228-12	Prospective Subcontractor Requests for Bonds.	2022-12		
52.228-14	Irrevocable Letter of Credit.	2014-11		

52.229-3	Federal, State, and Local Taxes.	2013-02
52.229-12	Tax on Certain Foreign Procurements.	2021-02
52.232-8	Discounts for Prompt Payment.	2002-02
52.232-17	Interest.	2014-05
52.232-23	Assignment of Claims.	2014-05
52.232-27	Prompt Payment for Construction Contracts.	2017-01
52.232-33	Payment by Electronic Funds Transfer-System for Award Management.	2018-10
52.232-39	Unenforceability of Unauthorized Obligations.	2013-06
52.232-40	Providing Accelerated Payments to Small Business Subcontractors.	2023-03
52.233-1	Disputes.	2026-02
52.233-3	Protest after Award.	2026-02
52.233-4	Applicable Law for Breach of Contract Claim.	2026-02
52.236-2	Differing Site Conditions.	2026-02
52.236-3	Site Investigation and Conditions Affecting the Work.	2026-02
52.236-5	Material and Workmanship.	2026-02
52.236-6	Superintendence by the Contractor.	2026-02
52.236-7	Permits and Responsibilities.	2026-02
52.236-8	Other Contracts.	2026-02
52.236-9	Protection of Existing Vegetation, Structures, Equipment, Utilities, and	2026-02

Improvements.

52.236-10	Operations and Storage Areas.	2026-02		
52.236-11	Use and Possession Prior to Completion.	2026-02		
52.236-12	Cleaning Up.	2026-02		
52.236-13	Accident Prevention.	2026-02		
52.236-13	Accident Prevention. (Alternate I)	2026-02	Alternate I	1991-11
52.236-15	Schedules for Construction Contracts.	2026-02		
52.236-17	Layout of Work.	2026-02		
52.236-21	Specifications and Drawings for Construction.	2026-02		
52.240-91	Security Prohibitions and Exclusions.	2026-02		
52.240-93	Basic Safeguarding of Covered Contractor Information Systems.	2026-02		
52.242-13	Bankruptcy.	1995-07		
52.242-14	Suspension of Work.	1984-04		
52.243-4	Changes.	2026-02		
52.244-6	Subcontracts for Commercial Products and Commercial Services.	2026-02		
52.244-6	Subcontracts for Commercial Products and Commercial Services. (DEVIATION 2025-O0003)	2026-02	Deviation 2025-O0003	2025-03
52.246-21	Warranty of Construction.	1994-03		
52.248-3	Value Engineering-Construction. (Alternate I)	2025-10	Alternate I	1984-04
52.249-2	Termination for Convenience of the	2012-04		

Government (Fixed-Price).

52.249-2	Termination for Convenience of the Government (Fixed-Price). (Alternate I)	2012-04	Alternate I	1996-09
52.249-10	Default (Fixed-Price Construction).	1984-04		
52.253-1	Computer Generated Forms.	1991-01		

DFARS Clauses Incorporated by Reference

Number	Title	Effective Date	Alternate Deviation	Variation Effective Date
252.203-7000	Requirements Relating to Compensation of Former DoD Officials.	2011-09		
252.203-7001	Prohibition on Persons Convicted of Fraud or Other Defense-Contract-Related Felonies.	2023-01		
252.203-7002	Requirement to Inform Employees of Whistleblower Rights.	2022-12		
252.203-7003	Agency Office of the Inspector General.	2019-08		
252.203-7004	Display of Hotline Posters.	2023-01		
252.204-7000	Disclosure of Information.	2016-10		
252.204-7003	Control of Government Personnel Work Product.	1992-04		
252.204-7004	Antiterrorism Awareness Training for Contractors.	2023-01		
252.204-7012	Safeguarding Covered Defense Information and Cyber Incident Reporting. (DEVIATION 2024-O0013)	2024-05	Deviation 2024-O0013	2024-05

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252.204-7018	Prohibition on the Acquisition of Covered Defense Telecommunications Equipment or Services.	2023-01		
252.205-7000	Provision of Information to Cooperative Agreement Holders.	2024-10		
252.209-7004	Subcontracting with Firms that are Owned or Controlled by the Government of a Country that is a State Sponsor of Terrorism.	2019-05		
252.222-7006	Restrictions on the Use of Mandatory Arbitration Agreements.	2023-01		
252.223-7006	Prohibition on Storage, Treatment, and Disposal of Toxic or Hazardous Materials.	2014-09		
252.223-7008	Prohibition of Hexavalent Chromium.	2023-01		
252.225-7012	Preference for Certain Domestic Commodities.	2022-04		
252.225-7048	Export-Controlled Items.	2013-06		
252.225-7056	Prohibition Regarding Business Operations with the Maduro Regime.	2023-01		
252.225-7058	Postaward Disclosure of Employment of Individuals Who Work in the People's Republic of China.	2023-01		
252.225-7060	Prohibition on Certain Procurements from the Xinjiang Uyghur Autonomous Region.	2023-06		
252.225-7967	Prohibition Regarding Russian Fossil Fuel Business Operations (Deviation 2024-O0006, Revision 1)	2024-02	Deviation 2024-O0006	2024-02

252.225-7972	Prohibition on the Procurement of Foreign-Made Unmanned Aircraft Systems. (DEVIATION 2024-O0014)	2024-08	Deviation 2024-O0014	2024-08
252.226-7003	Drug-Free Work Force.	2024-08		
252.227-7033	Rights in Shop Drawings.	1966-04		
252.232-7010	Levies on Contract Payments.	2006-12		
252.236-7005	Airfield Safety Precautions.	1991-12		
252.236-7013	Requirement for Competition Opportunity for American Steel Producers, Fabricators, and Manufacturers.	2023-01		
252.243-7001	Pricing of Contract Modifications.	1991-12		
252.243-7002	Requests for Equitable Adjustment.	2022-12		
252.246-7004	Safety of Facilities, Infrastructure, and Equipment for Military Operations.	2010-10		
252.247-7023	Transportation of Supplies by Sea.	2024-10		

FAR Clauses Incorporated by Full Text

Number	Title	Effective Date	Alternate Deviation	Variation Effective Date
52.211-12	Liquidated Damages-Construction.	2000-09		

Liquidated Damages-Construction (Sept 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 See Section 01 00 00 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)

52.215-21	Requirements for Certified Cost or Pricing Data and Data Other Than Certified Cost or Pricing Data-Modifications. (Alternate I)	2026-02	Alternate I	2026-02

Alternate I-(Feb 2026). As prescribed in 15.110(u)(1), substitute the following paragraph (b)(1) for paragraph (b)(1) of the basic clause.

(b)(1) The Contractor shall submit certified cost or pricing data, data other than certified cost or pricing data, and supporting attachments prepared in the following format: _____
[Insert description of the data and format that are required and include access to records necessary to permit an adequate evaluation of the proposed price in accordance with 15.408-2, Table 15-1, Note 2. The description may be inserted at the time of issuing the request for proposals, or the Contracting Officer may specify that the offeror's format will be acceptable, or the description may be inserted as the result of negotiations.]

52.215-21	Requirements for Certified Cost or Pricing Data and Data Other Than Certified Cost or Pricing Data-Modifications. (Alternate III)	2026-02	Alternate III	1997-10

Alternate III (Oct 1997). As prescribed in 15.408 (m), add the following paragraph (c) to the basic clause (if Alternate II is also used, redesignate the following paragraph as paragraph (d)):

(c) Submit the cost portion of the proposal via the following electronic media: ____ [Insert media format]

52.219-14	Limitations on Subcontracting (DEVIATION 2021-O0008)	2026-02	Deviation 2021- O0008	2023-02

LIMITATIONS ON SUBCONTRACTING (FEB 2023) (DEVIATION 2021-O0008)

(a) This clause does not apply to the unrestricted portion of a partial set-aside.

(b) Definition. Similarly situated entity, as used in this clause, means a first-tier subcontractor, including an independent contractor, that--

(1) Has the same small business program status as that which qualified the prime contractor for the award (e.g., for a small business set-aside contract, any small business concern, without regard to its socioeconomic status); and

(2) Is considered small for the size standard under the North American Industry Classification System (NAICS) code the prime contractor assigned to the subcontract.

(c) Applicability. This clause applies only to--

(1) Contracts that have been set aside for any of the small business concerns identified in 19.000(a)(3);

(2) Part or parts of a multiple-award contract that have been set aside for any of the small business concerns identified in 19.000(a)(3);

(3) Contracts that have been awarded on a sole-source basis in accordance with subparts 19.8, 19.13, 19.14, and 19.15;

(4) Orders expected to exceed the simplified acquisition threshold and that are--

(i) Set aside for small business concerns under multiple-award contracts, as described in 8.405-5 and 16.505(b)(2)(i)(F); or

(ii) Issued directly to small business concerns under multiple-award contracts as described in 19.504(c)(1)(ii);

(5) Orders, regardless of dollar value, that are--

(i) Set aside in accordance with subparts 19.8, 19.13, 19.14, or 19.15 under multiple-award

contracts, as described in 8.405-5 and 16.505(b)(2)(i)(F); or

(ii) Issued directly to concerns that qualify for the programs described in subparts 19.8, 19.13, 19.14, or 19.15 under multiple-award contracts, as described in 19.504(c)(1)(ii); and

(6) Contracts using the HUBZone price evaluation preference to award to a HUBZone small business concern unless the concern waived the evaluation preference.

(d) Independent contractors. An independent contractor shall be considered a subcontractor.

(e) Limitations on subcontracting. By submission of an offer and execution of a contract, the Contractor agrees that in performance of a contract assigned a North American Industry Classification System (NAICS) code for--

(1) Services (except construction), it will not pay more than 50 percent of the amount paid by the Government for contract performance, excluding certain other direct costs and certain work performed outside the United States (see paragraph (e)(1)(i)), to subcontractors that are not similarly situated entities. Any work that a similarly situated entity further subcontracts will count towards the prime contractor's 50 percent subcontract amount that cannot be exceeded. When a contract includes both services and supplies, the 50 percent limitation shall apply only to the service portion of the contract. The following services may be excluded from the 50 percent limitation:

(i) Other direct costs, to the extent they are not the principal purpose of the acquisition and small business concerns do not provide the service. Examples include airline travel, work performed by a transportation or disposal entity under a contract assigned the environmental remediation NAICS code 562910), cloud computing services, or mass media purchases.

(ii) Work performed outside the United States on awards made pursuant to the Foreign Assistance Act of 1961, or work performed outside the United States required to be performed by a local contractor.

(2) Supplies (other than procurement from a nonmanufacturer of such supplies), it will not pay more than 50 percent of the amount paid by the Government for contract performance, excluding the cost of materials, to subcontractors that are not similarly situated entities. Any work that a similarly situated entity further subcontracts will count towards the prime contractor's 50 percent subcontract amount that cannot be exceeded. When a contract includes both supplies and services, the 50 percent limitation shall apply only to the supply portion of the contract;

(3) General construction, it will not pay more than 85 percent of the amount paid by the Government for contract performance, excluding the cost of materials, to subcontractors that

are not similarly situated entities. Any work that a similarly situated entity further subcontracts will count towards the prime contractor's 85 percent subcontract amount that cannot be exceeded; or

(4) Construction by special trade contractors, it will not pay more than 75 percent of the amount paid by the Government for contract performance, excluding the cost of materials, to subcontractors that are not similarly situated entities. Any work that a similarly situated entity further subcontracts will count towards the prime contractor's 75 percent subcontract amount that cannot be exceeded.

(f) The Contractor shall comply with the limitations on subcontracting as follows:

(1) For contracts, in accordance with paragraphs (c)(1), (2), (3) and (6) of this clause--

[Contracting Officer check as appropriate.]

☒ By the end of the base term of the contract and then by the end of each subsequent option period; or

☐ By the end of the performance period for each order issued under the contract.

(2) For orders, in accordance with paragraphs (c)(4) and (5) of this clause, by the end of the performance period for the order.

(g) A joint venture agrees that, in the performance of the contract, the applicable percentage specified in paragraph (e) of this clause will be performed by the aggregate of the joint venture participants.

(1) In a joint venture comprised of a small business protégé and its mentor approved by the Small Business Administration, the small business protégé shall perform at least 40 percent of the work performed by the joint venture. Work performed by the small business protégé in the joint venture must be more than administrative functions.

(2) In an 8(a) joint venture, the 8(a) participant(s) shall perform at least 40 percent of the work performed by the joint venture. Work performed by the 8(a) participants in the joint venture must be more than administrative functions.

(End of clause)

52.219-28 Postaward Small Business Program 2026-02
Rerepresentation.

Postaward Small Business Program Rerepresentation (Feb 2026)

(a) Definitions. As used in this clause-

Long-term contract means a contract of more than five years in duration, including options. However, the term does not include contracts that exceed five years in duration because the period of performance has been extended for a cumulative period not to exceed six months under the clause at 52.217-8, Option to Extend Services, or other appropriate authority.

Small business concern-

(1) Means a concern, including its affiliates, that is independently owned and operated, not dominant in its field of operation, and qualified as a small business under the criteria in 13 CFR part 121 and the size standard in paragraph (c) of this clause.

(2) Affiliates, as used in this definition, means business concerns, one of whom directly or indirectly controls or has the power to control the others, or a third party or parties control or have the power to control the others. In determining whether affiliation exists, consideration is given to all appropriate factors including common ownership, common management, and contractual relationships. SBA determines affiliation based on the factors set forth at 13 CFR 121.103.

(b) If the Contractor represented that it was a small business concern, a small disadvantaged business concern, or a joint venture that was any of the small business concerns identified in 19.000(a)(3) prior to award of this contract, the Contractor shall rerepresent its size and socioeconomic status according to paragraph (e) of this clause or, if applicable, paragraph (g) of this clause, upon occurrence of any of the following:

(1) Within 30 days after execution of a novation agreement or within 30 days after modification of the contract to include this clause, if the novation agreement was executed prior to inclusion of this clause in the contract.

(2) Within 30 days after a merger or acquisition that does not require a novation or within 30 days after modification of the contract to include this clause, if the merger or acquisition occurred prior to inclusion of this clause in the contract.

(3) For long-term contracts-

- (i) Within 60 to 120 days prior to the end of the fifth year of the contract; and
 - (ii) Within 60 to 120 days prior to the date specified in the contract for exercising any option thereafter.
- (c) The Contractor shall rerepresent its size status in accordance with the size standard in effect at the time of this rerepresentation that corresponds to the North American Industry Classification System (NAICS) code(s) assigned to this contract. The small business size standard corresponding to this NAICS code(s) can be found at <https://www.sba.gov/document/support-table-size-standards>.
- (d) The small business size standard for a Contractor providing an end item that it does not manufacture, process, or produce itself, for a contract other than a construction or service contract, is 500 employees, or 150 employees for information technology value-added resellers under NAICS code 541519, if the acquisition-
- (1) Was set aside for small business and has a value above the simplified acquisition threshold;
 - (2) Used the HUBZone price evaluation preference regardless of dollar value, unless the Contractor waived the price evaluation preference; or
 - (3) Was an 8(a), HUBZone, service-disabled veteran-owned, economically disadvantaged women-owned, or women-owned small business set-aside or sole-source award regardless of dollar value.
- (e) Except as provided in paragraph (g) of this clause, the Contractor shall make the representation(s) required by paragraph (b) of this clause by validating or updating all its representations in the Representations and Certifications section of the System for Award Management (SAM) and its other data in SAM, as necessary, to ensure that they reflect the Contractor's current status. The Contractor shall notify the contracting officer in writing within the timeframes specified in paragraph (b) of this clause, that the data have been validated or updated, and provide the date of the validation or update.
- (f) If the Contractor represented that it was other than a small business concern prior to award of this contract, the Contractor may, but is not required to, take the actions required by paragraphs (e) or (g) of this clause.
- (g) If the Contractor does not have representations and certifications in SAM, or does not have a representation in SAM for the NAICS code applicable to this contract, the Contractor is required to complete the following rerepresentation and submit it to the contracting office,

along with the contract number and the date on which the rerepresentation was completed:

(1) The Contractor represents that it ☐ is, ☐ is not a small business concern under _____NAICS Code assigned to _____contract number.

(2) [Complete only if the Contractor represented itself as a small business concern in paragraph (g)(1) of this clause.] The Contractor represents that it ☐ is, ☐ is not, a small disadvantaged business concern as defined in 13 CFR 124.1001.

(3) Women-owned small business (WOSB) joint venture eligible under the WOSB Program. The Contractor represents that it ☐ is, ☐ is not a joint venture that complies with the requirements of 13 CFR 127.506(a) through (c). [____The Contractor shall enter the name and unique entity identifier of each party to the joint venture: ____.]

(4) Economically disadvantaged women-owned small business (EDWOSB) joint venture. The Contractor represents that it ☐ is, ☐ is not a joint venture that complies with the requirements of 13 CFR 127.506(a) through (c). [____The Contractor shall enter the name and unique entity identifier of each party to the joint venture: ____.]

(5) Service-disabled veteran-owned small business (SDVOSB) joint venture eligible under the SDVOSB Program. The Contractor represents that it ☐ is, ☐ is not an SDVOSB joint venture eligible under the SDVOSB Program that complies with the requirements of 13 CFR 128.402. [____The Contractor shall enter the name and unique entity identifier of each party to the joint venture: ____.]

(6) HUBZone joint venture eligible under the HUBZone Program.[Complete only if the offeror is a HUBZone small business concern.] The offeror represents, as part of its offer, that It ☐ is, ☐ is not a HUBZone joint venture that complies with the requirements of 13 CFR 126.616(a) through (c). [____The Contractor shall enter the name and unique entity identifier of each party to the joint venture: .] Each HUBZone small business concern participating in the HUBZone joint venture must be certified as a HUBZone concern. [____Contractor to sign and date and insert authorized signer's name and title.]

(End of clause)

52.225-11 Buy American-Construction Materials 2026-02
under Trade Agreements.

Buy American-Construction Materials under Trade Agreements (Feb 2026)

(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 product (as defined in paragraph (1) of the definition of "commercial product" at Federal Acquisition Regulation (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.

Critical component means a component that is mined, produced, or manufactured in the United States and deemed critical to the U.S. supply chain. The list of critical components is at FAR 25.105.

Critical item means a domestic construction material or domestic end product that is deemed critical to U.S. supply chain resiliency. The list of critical items is at FAR 25.105.

Designated country means any of the following countries:

- (1) A World Trade Organization Government Procurement Agreement (WTO GPA) country (Armenia, Aruba, Australia, 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, North Macedonia, 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, 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) For construction material that does not consist wholly or predominantly of iron or steel or a combination of both-

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

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

(A) The cost of its components mined, produced, or manufactured in the United States exceeds 60 percent of the cost of all its components, except that the percentage will be 65 percent for items delivered in calendar years 2024 through 2028 and 75 percent for items delivered starting in calendar year 2029. Components of foreign origin of the same class or kind for which nonavailability determinations have been made are treated as domestic. Components of unknown origin are treated as foreign; or

(B) The construction material is a COTS item; or

(2) For construction material that consists wholly or predominantly of iron or steel or a combination of both, a construction material manufactured in the United States if the cost of foreign iron and steel constitutes less than 5 percent of the cost of all components used in such construction material. The cost of foreign iron and steel includes but is not limited to the cost of foreign iron or steel mill products (such as bar, billet, slab, wire, plate, or sheet), castings, or forgings utilized in the manufacture of the construction material and a good faith estimate of the cost of all foreign iron or steel components excluding COTS fasteners. Iron or steel components of unknown origin are treated as foreign. If the construction material contains multiple components, the cost of all the materials used in such construction material is calculated in accordance with the definition of "cost of components".

Fastener means a hardware device that mechanically joins or affixes two or more objects together. Examples of fasteners are nuts, bolts, pins, rivets, nails, clips, and screws.

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

Foreign iron and steel means iron or steel products not produced in the United States. Produced in the United States means that all manufacturing processes of the iron or steel must take place in the United States, from the initial melting stage through the application of coatings, except metallurgical processes involving refinement of steel additives. The origin of the elements of the iron or steel is not relevant to the determination of whether it is domestic or foreign.

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.

Predominantly of iron or steel or a combination of both means that the cost of the iron and steel content exceeds 50 percent of the total cost of all its components. The cost of iron and steel is the cost of the iron or steel mill products (such as bar, billet, slab, wire, plate, or sheet), castings, or forgings utilized in the manufacture of the product and a good faith estimate of the cost of iron or steel components excluding COTS fasteners.

Steel means an alloy that includes at least 50 percent iron, between 0.02 and 2 percent carbon, and may include other elements.

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 domestic content test of the Buy American statute is waived for construction material that is a COTS item, except that for construction material that consists wholly or predominantly of iron or steel or a combination of both, the domestic content test is applied only to the iron and steel content of the construction material, excluding COTS fasteners. 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 product or to the construction materials or components listed by the Government as follows:

_____ [Contracting Officer is to list applicable excepted materials or indicate "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.

(A) For domestic construction material that is not a critical item or does not contain critical components.

(1) 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 20 percent;

(2) [Reserved]

(3) [Reserved]

(B) For domestic construction material that is a critical item or contains critical components.

(1) The cost of a particular domestic construction material that is a critical item or contains

critical components, subject to the requirements of the Buy American statute, is unreasonable when the cost of such material exceeds the cost of foreign material by more than 20 percent plus the additional preference factor identified for the critical item or construction material containing critical components listed at FAR 25.105.

(2) [Reserved]

(3) [Reserved]

(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)*		
Item 1:			
	Foreign construction material.	_____	_____
	Domestic construction material.	_____	_____
Item 2:			
	Foreign construction material.	_____	_____
	Domestic construction material.	_____	_____

[* 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)

52.228-15	Performance and Payment Bonds- Construction (Deviation 2020-O0016)	2020-06	Deviation 2020- O0016	2020-04

PERFORMANCE AND PAYMENT BONDS-CONSTRUCTION (APR 2020) (DEVIATION 2020-O0016)

(a) Definitions. As used in this clause-

Original contract price means the award price of the contract; or, for requirements contracts, the price payable for the estimated total quantity; or, for indefinite-quantity contracts, the price payable for the specified minimum quantity. Original contract price does not include the price of any options, except those options exercised at the time of contract award.

(b) Amount of required bonds. Unless the resulting contract price is \$150,000 or less, the successful offeror shall furnish performance and payment bonds to the Contracting Officer as follows:

(1) Performance bonds (Standard Form 25, except that no seal is required). The penal amount of performance bonds at the time of contract award shall be 100 percent of the original contract price.

(2) Payment bonds (Standard Form 25A, except that no seal is required). The penal amount of payment bonds at the time of contract award shall be 100 percent of the original contract price.

(3) Additional bond protection.

(i) The Government may require additional performance and payment bond protection if the contract price is increased. The increase in protection generally will equal 100 percent of the increase in contract price.

(ii) The Government may secure the additional protection by directing the Contractor to increase the penal amount of the existing bond or to obtain an additional bond.

(c) Furnishing executed bonds. The Contractor shall furnish all executed bonds, including

SECTION 00 70 00 Page 25

(ii) A listing of the amount included for work performed by each subcontractor under the contract.

(iii) A listing of the total amount of each subcontract under the contract.

(iv) A listing of the amounts previously paid to each such subcontractor under the contract.

(v) Additional supporting data in a form and detail required by the Contracting Officer.

(2) In the preparation of estimates, the Contracting Officer may authorize material delivered on the site and preparatory work done to be taken into consideration. Material delivered to the Contractor at locations other than the site also may be taken into consideration if-

(i) Consideration is specifically authorized by this contract; and

(ii) The Contractor furnishes satisfactory evidence that it has acquired title to such material and that the material will be used to perform this contract.

(c) Contractor certification. Along with each request for progress payments, the Contractor shall furnish the following certification, or payment shall not be made: (However, if the Contractor elects to delete paragraph (c)(4) from the certification, the certification is still acceptable.)

I hereby certify, to the best of my knowledge and belief, that-

(1) The amounts requested are only for performance in accordance with the specifications, terms, and conditions of the contract;

(2) All payments due to subcontractors and suppliers from previous payments received under the contract have been made, and timely payments will be made from the proceeds of the payment covered by this certification, in accordance with subcontract agreements and the requirements of Chapter 39 of Title 31, United States Code;

(3) This request for progress payments does not include any amounts which the prime contractor intends to withhold or retain from a subcontractor or supplier in accordance with the terms and conditions of the subcontract; and

(4) This certification is not to be construed as final acceptance of a subcontractor's performance.

_____(Name)

_____(Title)

_____(Date)

(d) Refund of unearned amounts. If the Contractor, after making a certified request for progress payments, discovers that a portion or all of such request constitutes a payment for performance by the Contractor that fails to conform to the specifications, terms, and conditions of this contract (hereinafter referred to as the "unearned amount"), the Contractor shall-

(1) Notify the Contracting Officer of such performance deficiency; and

(2) Be obligated to pay the Government an amount (computed by the Contracting Officer in the manner provided in paragraph (j) of this clause) equal to interest on the unearned amount from the 8 thday after the date of receipt of the unearned amount until-

(i) The date the Contractor notifies the Contracting Officer that the performance deficiency has been corrected; or

(ii) The date the Contractor reduces the amount of any subsequent certified request for progress payments by an amount equal to the unearned amount.

(e) Retainage. If the Contracting Officer finds that satisfactory progress was achieved during any period for which a progress payment is to be made, the Contracting Officer shall authorize payment to be made in full. However, if satisfactory progress has not been made, the Contracting Officer may retain a maximum of 10 percent of the amount of the payment until satisfactory progress is achieved. When the work is substantially complete, the Contracting Officer may retain from previously withheld funds and future progress payments that amount the Contracting Officer considers adequate for protection of the Government and shall release to the Contractor all the remaining withheld funds. Also, on completion and acceptance of each separate building, public work, or other division of the contract, for which the price is stated separately in the contract, payment shall be made for the completed work without retention of a percentage.

(f) Title, liability, and reservation of rights. All material and work covered by progress payments made shall, at the time of payment, become the sole property of the Government, but this shall not be construed as-

(1) Relieving the Contractor from the sole responsibility for all material and work upon which payments have been made or the restoration of any damaged work; or

(2) Waiving the right of the Government to require the fulfillment of all of the terms of the contract.

(g) Reimbursement for bond premiums. In making these progress payments, the Government shall, upon request, reimburse the Contractor for the amount of premiums paid for performance and payment bonds (including coinsurance and reinsurance agreements, when applicable) after the Contractor has furnished evidence of full payment to the surety. The retainage provisions in paragraph (e) of this clause shall not apply to that portion of progress payments attributable to bond premiums.

(h) Final payment. The Government shall pay the amount due the Contractor under this contract after-

(1) Completion and acceptance of all work;

(2) Presentation of a properly executed voucher; and

(3) Presentation of release of all claims against the Government arising by virtue of this contract, other than claims, in stated amounts, that the Contractor has specifically excepted from the operation of the release. A release may also be required of the assignee if the Contractor's claim to amounts payable under this contract has been assigned under the Assignment of Claims Act of 1940 (31 U.S.C.3727 and 41 U.S.C.6305).

(i) Limitation because of undefinitized work. Notwithstanding any provision of this contract, progress payments shall not exceed 80 percent on work accomplished on undefinitized contract actions. A "contract action" is any action resulting in a contract, as defined in FAR subpart 2.1, including contract modifications for additional supplies or services, but not including contract modifications that are within the scope and under the terms of the contract, such as contract modifications issued pursuant to the Changes clause, or funding and other administrative changes.

(j) Interest computation on unearned amounts. In accordance with 31 U.S.C.3903(c)(1), the amount payable under paragraph (d)(2) of this clause shall be-

(1) Computed at the rate of average bond equivalent rates of 91-day Treasury bills auctioned at the most recent auction of such bills prior to the date the Contractor receives the unearned amount; and

(2) Deducted from the next available payment to the Contractor.

(End of clause)

52.248-3 Value Engineering-Construction. 2025-10

Value Engineering-Construction (Oct 2025)

(a) General. The Contractor is encouraged to develop, prepare, and submit value engineering change proposals (VECP's) voluntarily. The Contractor shall share in any instant contract savings realized from accepted VECP's, in accordance with paragraph (f) of this clause.

(b) Definitions. "Collateral costs," as used in this clause, means agency costs of operation, maintenance, logistic support, or Government-furnished property.

Collateral savings, as used in this clause, means those measurable net reductions resulting from a VECP in the agency's overall projected collateral costs, exclusive of acquisition savings, whether or not the acquisition cost changes.

Contractor's development and implementation costs, as used in this clause, means those costs the Contractor incurs on a VECP specifically in developing, testing, preparing, and submitting the VECP, as well as those costs the Contractor incurs to make the contractual changes required by Government acceptance of a VECP.

Government costs, as used in this clause, means those agency costs that result directly from developing and implementing the VECP, such as any net increases in the cost of testing, operations, maintenance, and logistic support. The term does not include the normal administrative costs of processing the VECP.

Instant contract savings, as used in this clause, means the estimated reduction in Contractor cost of performance resulting from acceptance of the VECP, minus allowable Contractor's development and implementation costs, including subcontractors' development and implementation costs (see paragraph (h) of this clause).

Value engineering change proposal (VECP) means a proposal that-

- (1) Requires a change to this, the instant contract, to implement; and
- (2) Results in reducing the contract price or estimated cost without impairing essential

functions or characteristics; provided, that it does not involve a change-

(i) In deliverable end item quantities only; or

(ii) To the contract type only.

(c) VECP preparation. As a minimum, the Contractor shall include in each VECP the information described in paragraphs (c)(1) through (7) of this clause. If the proposed change is affected by contractually required configuration management or similar procedures, the instructions in those procedures relating to format, identification, and priority assignment shall govern VECP preparation. The VECP shall include the following:

(1) A description of the difference between the existing contract requirement and that proposed, the comparative advantages and disadvantages of each, a justification when an item's function or characteristics are being altered, and the effect of the change on the end item's performance.

(2) A list and analysis of the contract requirements that must be changed if the VECP is accepted, including any suggested specification revisions.

(3) A separate, detailed cost estimate for (i) the affected portions of the existing contract requirement and (ii) the VECP. The cost reduction associated with the VECP shall take into account the Contractor's allowable development and implementation costs, including any amount attributable to subcontracts under paragraph (h) of this clause.

(4) A description and estimate of costs the Government may incur in implementing the VECP, such as test and evaluation and operating and support costs.

(5) A prediction of any effects the proposed change would have on collateral costs to the agency.

(6) A statement of the time by which a contract modification accepting the VECP must be issued in order to achieve the maximum cost reduction, noting any effect on the contract completion time or delivery schedule.

(7) Identification of any previous submissions of the VECP, including the dates submitted, the agencies and contract numbers involved, and previous Government actions, if known.

(d) Submission. The Contractor shall submit VECP's to the Resident Engineer at the worksite, with a copy to the Contracting Officer.

(e) Government action.

(1) The Contracting Officer will notify the Contractor of the status of the VECP within 45 calendar days after the contracting office receives it. If additional time is required, the Contracting Officer will notify the Contractor within the 45-day period and provide the reason for the delay and the expected date of the decision. The Government will process VECP's expeditiously; however, it will not be liable for any delay in acting upon a VECP.

(2) If the VECP is not accepted, the Contracting Officer will notify the Contractor in writing, explaining the reasons for rejection. The Contractor may withdraw any VECP, in whole or in part, at any time before it is accepted by the Government. The Contracting Officer may require that the Contractor provide written notification before undertaking significant expenditures for VECP effort.

(3) Any VECP may be accepted, in whole or in part, by the Contracting Officer's award of a modification to this contract citing this clause. The Contracting Officer may accept the VECP, even though an agreement on price reduction has not been reached, by issuing the Contractor a notice to proceed with the change. Until a notice to proceed is issued or a contract modification applies a VECP to this contract, the Contractor shall perform in accordance with the existing contract. The decision to accept or reject all or part of any VECP is a unilateral decision made solely at the discretion of the Contracting Officer.

(f) Sharing-

(1) Rates. The Government's share of savings is determined by subtracting Government costs from instant contract savings and multiplying the result by-

(i) 45 percent for fixed-price contracts; or

(ii) 75 percent for cost-reimbursement contracts.

(2) Payment. Payment of any share due the Contractor for use of a VECP on this contract shall be authorized by a modification to this contract to-

(i) Accept the VECP;

(ii) Reduce the contract price or estimated cost by the amount of instant contract savings; and

(iii) Provide the Contractor's share of savings by adding the amount calculated to the contract price or fee.

(g) Collateral savings. If a VECP is accepted, the Contracting Officer will increase the instant contract amount by 20 percent of any projected collateral savings determined to be realized in a typical year of use after subtracting any Government costs not previously offset. However, the Contractor's share of collateral savings will not exceed the contract's firm-fixed-price or estimated cost, at the time the VECP is accepted, or \$100,000, whichever is greater. The Contracting Officer is the sole determiner of the amount of collateral savings.

(h) Subcontracts. The Contractor shall include an appropriate value engineering clause in any subcontract of \$90,000 or more and may include one in subcontracts of lesser value. In computing any adjustment in this contract's price under paragraph (f) of this clause, the Contractor's allowable development and implementation costs shall include any subcontractor's allowable development and implementation costs clearly resulting from a VECP accepted by the Government under this contract, but shall exclude any value engineering incentive payments to a subcontractor. The Contractor may choose any arrangement for subcontractor value engineering incentive payments; provided, that these payments shall not reduce the Government's share of the savings resulting from the VECP.

(i) Data. The Contractor may restrict the Government's right to use any part of a VECP or the supporting data by marking the following legend on the affected parts:

These data, furnished under the Value Engineering-Construction clause of contract _____, shall not be disclosed outside the Government or duplicated, used, or disclosed, in whole or in part, for any purpose other than to evaluate a value engineering change proposal submitted under the clause. This restriction does not limit the Government's right to use information contained in these data if it has been obtained or is otherwise available from the Contractor or from another source without limitations.

If a VECP is accepted, the Contractor hereby grants the Government unlimited rights in the VECP and supporting data, except that, with respect to data qualifying and submitted as limited rights technical data, the Government shall have the rights specified in the contract modification implementing the VECP and shall appropriately mark the data. (The terms "unlimited rights" and "limited rights" are defined in part 27 of the Federal Acquisition Regulation.)

(End of clause)

52.252-2 Clauses Incorporated by Reference. 1998-02

Clauses Incorporated By Reference (Feb 1998)

This contract incorporates one or more clauses 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. Also, the full text of a clause may be accessed electronically at this/these address (es):

www.acquisition.gov

(End of clause)

52.252-4 Alterations in Contract. 1984-04

Alterations in Contract (Apr 1984)

Portions of this contract are altered as follows:

(End of clause)

52.252-6 Authorized Deviations in Clauses. 2020-11

Authorized Deviations in Clauses (Nov 2020)

(a) The use in this solicitation or contract of any Federal Acquisition Regulation (48 CFR Chapter 1) clause with an authorized deviation is indicated by the addition of "(DEVIATION)" after the date of the clause.

(b) The use in this solicitation or contract of any DFARS (48 CFR Chapter 2) clause with an authorized deviation is indicated by the addition of "(DEVIATION)" after the name of the regulation.

(End of clause)

DFARS Clauses Incorporated by Full Text

Number	Title	Effective Date	Alternate Deviation	Variation Effective Date
252.204-7021	Contractor Compliance with the Cybersecurity Maturity Model Certification Level Requirements.	2025-11		

CONTRACTOR COMPLIANCE WITH THE CYBERSECURITY MATURITY MODEL CERTIFICATION LEVEL REQUIREMENTS (NOV 2025)

(a) Definitions. As used in this clause-

"Controlled unclassified information" means information the Government creates or possesses, or information an entity creates or possesses for or on behalf of the Government, that a law, regulation, or Governmentwide policy requires or permits an agency to handle using safeguarding or dissemination controls (32 CFR 2002.4(h)).

"Current" means-

(1) With regard to Conditional Cybersecurity Maturity Model Certification (CMMC) Status-

(i) Not older than 180 days for Conditional Level 2 (Self) assessments and Conditional Level 2 (certified third-party assessment organization (C3PAO)) assessments, with-

(A) No changes in compliance with the requirements at 32 CFR part 170 since the Conditional CMMC Status date (see 32 CFR 170.16 and 170.17); and

(B) A corresponding affirmation of continuous compliance by an affirming official (see 32 CFR 170.4); and

(ii) Not older than 180 days for Conditional Level 3 (Defense Industrial Base Cybersecurity Assessment Center (DIBCAC)) assessments, with-

(A) No changes in compliance with the requirements at 32 CFR part 170 since the Conditional CMMC Status date (see 32 CFR 170.18); and

(B) A corresponding affirmation of continuous compliance by an affirming official;

(2) With regard to Final CMMC Status-

(i) Not older than 1 year for Final Level 1 (Self), with-

(A) No changes in compliance with the requirements at 32 CFR part 170 since the Final CMMC Status date (see 32 CFR 170.15); and

(B) A corresponding affirmation of continuous compliance, not older than 1 year, by an affirming official;

(ii) Not older than 3 years for Final Level 2 (Self) assessments and Final Level 2 (C3PAO) assessments, with-

(A) No changes in compliance with the requirements at 32 CFR part 170 since the Final CMMC Status date (see 32 CFR 170.16 and 170.17); and

(B) A corresponding affirmation of continuous compliance, not older than 1 year, by an affirming official; and

(iii) Not older than 3 years for Final Level 3 (DIBCAC) assessments, with-

(A) No changes in compliance with the requirements at 32 CFR part 170 since the Final CMMC Status date (see 32 CFR 170.18); and

(B) A corresponding affirmation of continuous compliance, not older than 1 year, by an affirming official; and

(3) With regard to affirmation of continuous compliance (32 CFR 170.22), not older than 1 year with no changes in compliance with the requirements at 32 CFR part 170.

"Cybersecurity Maturity Model Certification (CMMC) status" means the result of meeting or exceeding the minimum required score for the corresponding assessment. The potential statuses are as follows:

(1) Final Level 1 (Self).

(2) Conditional Level 2 (Self).

(3) Final Level 2 (Self).

(4) Conditional Level 2 (C3PAO).

(5) Final Level 2 (C3PAO).

(6) Conditional Level 3 (DIBCAC).

(7) Final Level 3 (DIBCAC).

"Cybersecurity Maturity Model Certification unique identifier (CMMC UID)" means 10 alphanumeric characters assigned to each CMMC assessment and reflected in the Supplier Performance Risk System (SPRS) for each contractor information system.

"Federal contract information (FCI)" means information, not intended for public release, that is provided by or generated for the Government under a contract to develop or deliver a product or service to the Government. It does not include information provided by the Government to the public, such as on public websites, or simple transactional information, such as information necessary to process payments.

"Plan of action and milestones" means a document that identifies tasks to be accomplished. It details resources required to accomplish the elements of the plan, any milestones in meeting the tasks, and scheduled completion dates for the milestones, as defined in National Institute of Standards and Technology Special Publication 800-115 (32 CFR 170.21).

(b) Framework. The Cybersecurity Maturity Model Certification (CMMC) is a framework for assessing a contractor's compliance with applicable information security protections (see 32 CFR part 170).

(c) Duplication. The CMMC assessments will not duplicate efforts from any other comparable DoD assessment, except for rare circumstances when a reassessment may be necessary, for example, when there are indications of issues with cybersecurity and/or compliance with CMMC requirements.

(d) Requirements. The Contractor shall-

(1)(i) Have and maintain for the duration of the contract a current CMMC status at the following CMMC level, or higher: _____ Contracting Officer insert: CMMC Level 1 (Self); CMMC Level 2 (Self); CMMC Level 2 (C3PAO); or CMMC Level 3 (DIBCAC) for all information systems used in performance of the contract, task order, or delivery order that process, store, or transmit FCI or CUI; and

(ii) Consult 32 CFR 170.23 related to the flowdown of the CMMC requirements, and flow down the correct CMMC level to subcontracts and other contractual instruments;

(2) Only process, store, or transmit FCI or CUI on contractor information systems that have a CMMC status at the CMMC level required in paragraph (d)(1) of this clause, or higher;

(3) Complete on an annual basis, and maintain as current, an affirmation, by the affirming official (see 32 CFR 170.4), of continuous compliance with the requirements associated with the CMMC level required in paragraph (d)(1) of this clause in the Supplier Performance Risk System (SPRS) (<https://piee.eb.mil>) for each CMMC UID applicable to each of the contractor information systems that process, store, or transmit FCI or CUI and that are used in performance of the contract;

(4) Ensure all subcontractors and suppliers complete prior to subcontract award, and maintain on an annual basis, an affirmation, by the affirming official (see 32 CFR 170.4), of continuous compliance with the requirements associated with the CMMC level required for the subcontract or other contractual instrument for each of the subcontractor information systems that process, store, or transmit FCI or CUI and that are used in performance of the subcontract; and

(5) If the Contractor has a CMMC Status of Conditional, successfully close out a valid plan of action and milestones (32 CFR 170.21) to achieve a CMMC Status of Final.

(e) Reporting. The Contractor shall-

(1) Submit to the Contracting Officer-

(i) The CMMC UID(s) issued by SPRS for contractor information systems that will process, store, or transmit FCI or CUI during performance of the contract; and

(ii) Any changes in the CMMC UIDs generated in SPRS throughout the life of the contract, task order, or delivery order, if applicable;

(2) Enter into SPRS the results of a current self-assessment for each CMMC UID, not covered by a C3PAO assessment or DIBCAC assessment, applicable to each of the contractor information systems that process, store, or transmit FCI or CUI and that are used in performance of the contract; and

(3) Complete in SPRS on an annual basis and maintain as current an affirmation of continuous compliance by the affirming official (see 32 CFR 170.4) for each self-assessment, C3PAO assessment, or DIBCAC assessment required under the contract in SPRS.

(f) Subcontracts. The Contractor shall-

(1) Insert the substance of this clause, including this paragraph (f) and excluding paragraph (e)(1), in subcontracts and other contractual instruments, including those for the acquisition of commercial products or commercial services, excluding commercially available off-the-shelf items, if the subcontract or other contractual instrument will contain a requirement to process, store, or transmit FCI or CUI; and

(2) Prior to awarding a subcontract or other contractual instrument, ensure that the subcontractor has a current CMMC certificate or current CMMC status at the CMMC level that is appropriate for the information that is being flowed down to the subcontractor based on the requirements at 32 CFR 170.23.

(End of clause)

252.236-7001 Contract Drawings and Specifications. 2000-08

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:

Title	File	Drawing No.
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
(End of clause)		

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Section 00 73 00 Supplementary Conditions

FAR Clauses Incorporated by Reference

Number	Title	Effective Date	Alternate Deviation	Variation Effective Date
52.246-12	Inspection of Construction.	1996-08		

DFARS Clauses Incorporated by Reference

Number	Title	Effective Date	Alternate Deviation	Variation Effective Date
252.201-7000	Contracting Officer's Representative.	1991-12		
252.232-7003	Electronic Submission of Payment Requests and Receiving Reports.	2018-12		
252.236-7000	Modification Proposals--Price Breakdown.	1991-12		

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1. SITE VISIT INFORMATION

A Contractor Site Visit has been scheduled for 1100 hrs on Thursday, 26 March 2026. All interested contractors are invited and strongly encouraged to attend and meet at the project site. The purpose of the site visit is to enhance your understanding of the task order requirements. See Section 01 00 00, Paragraph 1.20 for Contractor Site Access requirements. Interested offerors should contact Lisa Marie Duerst at Eglin Air Force Base, Florida at 850-631-1198 or lisa-marie.r.duerst@usace.army.mil for additional information. Questions asked of government personnel at the conference and government personnel responses shall be non-binding. Official responses will only be made to questions formally submitted to the Bidder's Inquiry Portal in ProjNet at website <http://www.projnet.org/projnet>.

End of Paragraph

2. REQUESTS FOR INFORMATION (MAR 2013)

Any questions about this solicitation, including technical questions about plans and specifications, shall be submitted via the Bidder Inquiry Portal in ProjNet at <https://www.projnet.org>. To submit and review inquiry items, prospective vendors will need to use the Bidder Inquiry Key presented below and follow the instructions listed below the key for access. A prospective vendor who submits a comment /question will receive an acknowledgement of their comment/question via email, followed by an answer to the comment/question after it has been processed by our technical team. All timely questions and approved answers will be made available through ProjNet.

Questions shall be submitted no later than **02 April 2026, 2:00 PM Central Time** to allow time for a response, and amendment to the solicitation if necessary. On this date and time, the portal will be closed.

For technical questions, no other means of communication, e-mail, fax, or telephone will be accepted. Oral exchanges between Offerors or Bidders and the Government prior to award of the contract will not be binding. In addition to information available to Offerors or Bidders on the Bidder Inquiry Portal, any information concerning this solicitation will be furnished to all Offerors or Bidders as an amendment to

the solicitation if the information is necessary to the submittal of offers or bids.

The Solicitation Number is: **W9127826RA012**

The Bidder Inquiry Key is: **5Q7IXU-Y36F69**

Specific Instructions for ProjNet Bid Inquiry Access:

1. From the ProjNet home page linked above, click on Quick Add on the upper right side of the screen.
2. Identify the Agency. This should be marked as USACE.
3. Key. Enter the Bidder Inquiry Key listed above.
4. Email. Enter the email address you would like to use for communication.
5. Click Continue. A page will then open saying that a user account was not found and will ask you to create one using the provided form.
6. Enter your First Name, Last Name, Company, City, State, Phone, Email, Secret Question, Secret Answer, and Time Zone. Make sure to remember your Secret Question and Answer as they will be used from this point on to access the ProjNet system.
7. Click Add User. Once this is completed you are now registered within ProjNet and are currently logged into the system.

Specific Instructions for Future ProjNet Bid Inquiry Access:

1. For future access to ProjNet, you will not be emailed any type of password. You will utilize your Secret Question and Secret Answer to log in.
2. From the ProjNet home page linked above, click on Quick Add on the upper right side of the screen.
3. Identify the Agency. This should be marked as USACE.
4. Key. Enter the Bidder Inquiry Key listed above.
5. Email. Enter the email address you used to register previously in ProjNet.
6. Click Continue. A page will then open asking you to enter the answer to your Secret Question.
7. Enter your Secret Answer and click Login. Once this is completed you are now logged into the system.

Note: Questions/comments should be entered in the system one at a time. List of questions uploaded into ProjNet, regardless of the format, will not be answered.

Note: Questions/comments should be classified as "Public."

Offerors or Bidders are requested to review the solicitation and amendments in their entirety, as well as to review the Bidder Inquiry Portal for previous questions and responses, prior to submission of a new inquiry on the Portal.

CAUTION: ANY INQUIRY SUBMITTED AND ANSWERED WITHIN THIS SYSTEM, WILL BE ACCESSIBLE TO VIEW BY ALL INTERESTED OFFERORS OR BIDDERS ON THIS SOLICITATION.

The call center for the ProjNet operates weekdays from 8 AM to 5 PM U.S. Central Time Zone. The telephone number is 1-800-428-HELP.

End of Paragraph

3. 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.usace.army.mil/Safety-and-Occupational-Health/EM-385-1-1-2008-Being-Revised/>. 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.)

End of Paragraph

4. LABOR REPORTS

The Contractor shall promptly furnish and shall cause any subcontractors to furnish in like manner within seven (7) days after the regular payment date of each weekly payroll to the Contracting Officer, a copy of such payroll together with a statement of compliance with respect to the wages paid each of its employees (which shall not be deemed to apply to persons in classifications higher than laborers and mechanics and those who are the immediate supervisors of such employees) engaged on the work. If the Contractor or any of his subcontractors fail to furnish copies of such payrolls, the Contracting Officer may disapprove all or part of any progress payment estimate for the period covered by such payrolls until they are received by him. The Contractor shall also prepare and furnish such labor reports as may be required by the Department of Labor.

End of Paragraph

5. REQUIRED INSURANCE

The Contractor shall procure and maintain during the entire period of his performance under this contract, the following minimum insurance in accordance with the Contract Clause entitled "Insurance-Work on a Government Installation." Workmen's Compensation and Employers' liability Insurance:

Workmen's Compensation and Occupational Disease Coverage in accordance with statutory limits.
Employers' Liability Coverage with a minimum limit of \$100,000.

Comprehensive Automobile Liability Insurance:

Bodily injury coverage with minimum limits of \$200,000 per person and \$500,000 per occurrence.
Property Damage Coverage with a minimum limit of \$20,000 per occurrence.

Comprehensive General Liability Insurance:

Bodily injury coverage with minimum limits of \$500,000 per occurrence.

End of Paragraph

6. PROHIBITION AGAINST CONTRACTING WITH INDIVIDUALS OR ENTITIES DESIGNATED AS SIGNIFICANT NARCOTICS TRAFFICKERS

Pursuant to Executive Order 12978 entitled "Blocking Assets and Prohibiting Transactions with Significant Narcotic Traffickers" dated October 21, 1995, the offeror certifies that it has not and will not be involved in business transactions with individuals or business entities designated as significant narcotics traffickers under this Executive Order. For a current listing of specially designated nationals and blocked persons, contact the Office of Foreign Assets Control, Department of the Treasury, Washington, DC 22201; telephone 202/622-2420.

End of Paragraph

7. PAYMENT FOR MATERIALS DELIVERED OFF-SITE

Pursuant to Federal Acquisition Regulation 52.232-5, Payments Under Fixed-Price Construction Contracts, materials delivered to the contractor at locations other than the site of the work may be taken into consideration in making payments, if included in the payment estimates and all the conditions of the General Provisions are fulfilled. Payment for items delivered to locations other than the worksite shall be limited to:

- (1) Materials required by the technical provisions; or
- (2) Materials that have been fabricated to the point where they are identifiable to an item of work required under this contract; or
- (3) Items specifically listed in the paragraph below.

Payment for materials delivered off-site shall be made only after receipt of paid invoices listing the value of material and labor incorporated in the items along with a canceled check showing the prime contractor's title to the items delivered off-site. Payment for materials delivered off-site shall be limited to the following items:

[Get from PM]

End of Paragraph

8. CONTRACTOR PAYMENT REQUEST

A copy of CESAM Form 1151 entitled Prompt Payment Certification and Supporting Data for Contractor Progress Payment Invoice is included hereinafter, with instructions, following the Wage Rates. This form will be used in conjunction with the contract clause entitled PAYMENTS UNDER FIXED-PRICE CONSTRUCTION CONTRACTS. The contracting Officer will provide copies of the form to the Contractor upon request. The Contractor shall complete the form, sign the certification and submit it with each progress payment invoice.

End of Paragraph

9. U.S. ARMY CORPS OF ENGINEERS, PARTNERING WITH US

<https://www.usace.army.mil/Business-With-Us/Partnering/>

End of Paragraph

10. TWO PERCENT TAX ON CERTAIN FOREIGN PROCUREMENTS

FAR provision 52.229-11 and FAR clause 52.229-12

FAR provision 52.229-11 and FAR clause 52.229-12 are included in this solicitation. This provision and clause concern the imposition of a 2 percent Federal excise tax withholding on any resultant contract award or payment request. This rule applies to Federal Government contracts for goods or services that are awarded to foreign persons – such as foreign contractors. It implements the Department of the Treasury’s final regulations published in the Federal Register at 81 FR 55133 on August 18, 2016, under section 5000C of the Internal Revenue Code relating to the 2 percent tax on payments made by the U.S. Government to foreign persons pursuant to certain contracts.

Pursuant to the FAR 52.229-3 Federal, State, and Local Taxes, taxes imposed under 26 U.S.C. 5000 C may not be included in the contract price or reimbursed.

Exemptions from this excise tax must be claimed by an Offeror when it submits, with its offer, a U.S. Department of Treasury Internal Revenue Service (IRS) Form W-14, Certificate of Foreign Contracting Party Receiving Federal Procurement Payments, available via the internet at www.irs.gov/W14. If not submitted with the offer, exemptions will not be applied to any resulting contract and the Government will withhold a full 2 percent on each contract payment. Failure to submit an IRS Form W-14 with each payment request will also result in an automatic withholding of 2 percent from the payment request.

When filling out the IRS Form W-14 the following information may be used to complete Part I, Lines 6 and 7.

Line 6 Contract/reference number: *W9127826RA012*

Line 7 “Name and address of the acquiring agency”: *USACE-MOBILE District, 100 Canal St, Mobile Alabama, 36602*

Any exemption claimed and self-certified is subject to audit by the IRS. Any disputes concerning this tax are adjudicated by the IRS because the Section 5000C tax is a tax matter not a contract issue.

Offerors are encouraged to seek guidance from their own tax professionals for advice concerning the provision, clause, and exclusions exclusion/submission of IRS Form W-14. Additional information is also available at:

Notwithstanding the above, the USACE does not have a means of withholding this excise tax at this time. As a result, contractors are expected to comply with the instructions above and to properly complete and return the W-14 at proposal submission, and with each pay application. Whether the contractor sets the money aside for future payment to the IRS, or makes payment to the IRS, is the contractor’s discretion, based on its analysis of the regulations regarding the excise tax. In the event that USACE is able to withhold during contract performance, it will notify the contractor and make such a withholding (including any catch up withholdings); no advance notice is required to the contractor prior to the withholding. Under no circumstances is USACE liable for any tax not paid by the contractor. The contractor is liable for the tax, to the extent required by law, regardless of whether USACE makes a withholding.

FAR 29.204 expressly states that “[a]gencies merely withhold the tax (section 5000C tax) for the Internal Revenue Service (IRS). All substantive issues regarding the underlying section 5000C tax, e.g., the imposition of, and exemption from the tax, are matters under the jurisdiction of the IRS.” Therefore, we cannot help you determine how the tax law applies to you. We strongly recommend that you contact the IRS and/or a tax professional should you have any questions of this nature. To be clear, this

information does not constitute tax advice or a representation of your tax liability. Furnishing this information does not create liability for the USACE for any Federal, state, or local taxes applicable to the above-referenced contract or any other contract.

For submission requirements and basis of evaluation:

Executed FAR Provision 52.229-11.

Completed IRS Form W-14, Certificate of Foreign Contracting Party Receiving Federal Procurement Payments, if applicable. If not submitted with the offer, exemptions will not be applied to any resulting contract and the Government will withhold a full 2 percent on each payment.

End of Paragraph

PROMPT PAYMENT CERTIFICATION AND SUPPORTING DATA FOR CONTRACTOR PROGRESS PAYMENT INVOICE

Contractor Name and Address	Contract No.	Est. No.	Date	Discount Terms
Description and Location of Work	Designated Contractor Official and Address for Payment		Defective Invoice Notification (Name, Title, Telephone)	
Subcontractor Name	Total Amount Subcontracted	Subcontractor Amount Included This Payment Est	Previous Subcontractor Payments	Subcontractor Earnings Deducted by Contractor (Total to Date)
\$ _____				

I hereby certify, to the best of my knowledge and belief, that:

- (1) The amounts requested are only for performance in accordance with the specifications, terms and conditions of the contract;
- (2) Payments to subcontractors and suppliers have been made from previous payments received under the contract, and timely payments will be made from the proceeds of the payment covered by this certification, in accordance with subcontract agreements and the requirements of Chapter 39 of Title 31, United States Code; and
- (3) This request for progress payments does not include any amounts which the prime contractor intends to withhold or retain from a subcontractor or supplier in accordance with the terms and conditions of the subcontract.

(NAME)
(TITLE)

(DATE)

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SECTION 01 00 00

ADDITIONAL SPECIAL CONTRACT REQUIREMENTS
EGLIN AFB

PART 1 GENERAL

1.1 COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK

The Contractor shall be required to (1) commence work under this contract within 8 calendar days after the date the Contractor receives Notice To Proceed (NTP), (2) prosecute the work diligently, and (3) complete the entire work ready for use not later than 547 calendar days after receipt of Notice To Proceed (NTP). This time stated for completion shall include final cleanup of the premises. Provisions stipulated for planting and maintenance of grass are excluded from the completion time.

1.2 LIQUIDATED DAMAGES - CONSTRUCTION

(a) If the Contractor fails to complete the work within the time specified in the contract, or any extension, the Contractor shall pay to the Government as liquidated damages, the sum of \$1,082.00 for each calendar day of delay.

(b) If the Government terminates the Contractor's right to proceed, the resulting damage will consist of liquidated damages until such reasonable time as may be required for final completion of the work together with any increased costs occasioned the Government in completing the work.

(c) If the Government does not terminate the Contractor's right to proceed, the resulting damage will consist of liquidated damages until the work is completed or accepted.

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-01 Preconstruction Submittals

Hazard Analysis; G, R0

AF Form 103, Base Civil Engineering Work Clearance Request; G, R0

Contractor's Area Use Plan; G, R0.

SD-07 Certificates

Asbestos and Lead Based Paint Certification Letter; G, R0

SD-11 Closeout Submittals

Redlined As-Built Drawings; G, R0

Progress As-Built Building Information Model (BIM); G, R0

Final As-Built BIM; G, R0

As-Built Drawings; G, R0

1.4 JOINT OCCUPANCY

The Contractor is hereby made aware that Joint Occupancy will be required for 90 calendar days prior to the construction completion date for example: "to allow the installation of the following Government Furnished/Government Installed (GFGI) systems and equipment by Base personnel and other Contractors; intrusion detection system (IDS), and access control system (ACS). Contractor shall cooperate to enable the GFGI work to be installed during the construction contract duration."

1.5 GOVERNMENT FIELD OFFICE

FOR EXAMPLE: The contractor shall provide an on the jobsite temporary office facility with appropriate square footage and useful floor area for the exclusive use of ##### (#) USACE personnel. Provide a weathertight structure with adequate heating and cooling, toilet facilities, lighting and ventilation. Provide an exterior door with a cylinder lock and windows with locking hardware. Contractor shall provide temporary utility services (water, electricity and sewage), as required. Within the USACE Field Office, provide four private offices, approximately 200 square feet in floor area. Include a standard size office desk and chair, 4 by 8 foot table, one visitor chair, and one file cabinet in each private office. Within the remaining office facility, provide two 4 by 8 foot plan table with 14 chairs and 2 file cabinets. 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.

1.6 CONTRACTOR RESPONSIBILITY

The Contractor is responsible for the construction of all work. In order to ensure quality, the Contractor shall develop a Quality Control Plan in accordance with Section: 01 45 00 QUALITY CONTROL. In order to allow the Government to monitor the Contractor's progress and review his work, the Contractor shall develop a submittal register as specified in Section: 01 33 00 SUBMITTAL PROCEDURES.

1.7 FACTORY EQUIPMENT TESTS

All pieces of equipment that require factory testing will be witnessed by the Contracting Officer representative (COR). The Contractor shall notify the COR prior to any tests.

1.8 CONTRACT DRAWINGS, MAPS AND SPECIFICATIONS

a) The Contractor will be furnished on CD ROM/DVD one electronic set of: a reproducible set of the advertised solicitation, including contract clauses, plans, and specifications; solicitation drawing and model file(s); and all amendments. The work shall conform to the specifications and the contract drawings listed in the technical provisions. The solicitation drawings serve as the Contract Documents that such functions shall be based upon.

b) The building design was developed using Autodesk Revit and civil/sitework design was developed using AutoCAD Civil 3D. The Government BIM model was utilized to develop the contract drawings. Model elements were generally developed to a minimum "Level of Development 200" which is defined as "graphically represented within the BIM as a system, object, or assembly in terms of quantity, size, shape, location, and orientation. Non-Graphic information may also be attached to the model elements." Level of Development may vary slightly for some elements. The model elements were developed using the basis of design systems and do not reflect actual systems that were selected, procured, and installed by the Contractor. The models were the Government's instruments of service and as such no guarantee or warranty is provided as to the accuracy or level of development contained therein. The Government furnished BIM model shall not be utilized for shop drawings, fabrication, coordination studies, layout or relied upon or utilized for any other design or construction related purposes. The site and facility shall be constructed as required by the contract documents; 2D drawings and specifications.

c) Omissions from the drawings or specifications, the mis-description of details of work which are manifestly necessary to carry out the intent of the drawings and specifications which are customarily performed shall not relieve the Contractor from performing such omitted or mis-described details of the work but they shall be performed as if fully and correctly set forth and described in the drawings and specifications.

d) The Contractor shall check all drawings furnished him immediately upon their receipt and shall promptly notify the Contracting Officer's Representative of any discrepancies. Figures marked on drawings shall in general be followed in preference to scale measurements. Large scale drawings shall in general govern small scale drawings. The Contractor shall compare all drawings and verify the figures before laying out the work and will be responsible for any errors which might have been avoided thereby.

e) The drawings and maps for this solicitation are hereby incorporated by reference into these specifications. Any schedules included in the drawings are for the purpose of defining requirements other than quantities.

1.9 HAZARD ANALYSIS

A hazard analysis plan, as described in Section 1, Article 01.A.11 of the Corps of Engineers Safety and Health Requirements Manual, EM 385-1-1, latest edition, is required for this contract and shall be submitted within ten (10) days after Notice To Proceed (NTP).

1.10 PHYSICAL DATA

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.

(1) The indications of physical conditions on the drawings and in the specifications are the result of site investigations by surveys.

(2) Weather Conditions. The location is subject to atmospheric temperature ranging from plus 7 degrees to plus 103 degrees Fahrenheit as determined from the U.S. Weather Bureau Station at Pensacola, Florida. The mean annual precipitation at Niceville, Florida is 58.85 inches and the mean monthly precipitation varies from a low of 3.12 inches in May to a high of 8.05 inches in July.

(3) Transportation facilities.

(a) Railroads. The Seaboard System Railroad and the Burlington Northern Railroad serve Pensacola, Florida, the nearest railhead. The Contractor shall investigate the availability of sidings, and shall make all arrangements for use of any sidings for the delivery of any materials and equipment to be used on the work.

(b) Highways. The site is served by U.S. Highway 85. Highway 85 connects the City of Crestview, Interstate 10, and finally the City of Fort Walton Beach. U.S. Highway No. 98 connects Pensacola and Fort Walton Beach, Florida, and runs along the mainland adjacent and parallel to Santa Rosa Island. The site of the work is accessible from Crestview and Fort Walton Beach by bridge and paved road. The Contractor shall make his own investigation of available roads for transportation, load limits for bridges and roads, and other conditions affecting the transportation of materials and equipment to the site. Highway 85 is the main north/south corridor for Crestview/Eglin/ Fort Walton Beach. As such, traffic will be extremely heavy between 6:00-8:00 AM, and 4:00 to 6:00 PM. This could delay access to the site during these periods.

(c) Waterways. The Fort Walton Beach, FL. area is served by the Gulf Intracoastal Waterway. If the Contractor desires to use barge transportation for materials shipment, he shall make his own arrangements with commercial concerns for loading/off loading facilities. Government barge facilities at Eglin Air Force Base are not available for Contractor use.

1.11 TIME EXTENSIONS FOR UNUSUALLY SEVERE WEATHER

a. This provision specifies the procedure for 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. Unusually severe weather is defined as hurricanes, floods, tornados, or earthquakes.

(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.

(3) The Contractor's progress schedule must reflect completion of the project within the specified contract duration including all weather except that as defined as unusually severe in (a)(1).

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
WORK DAYS BASED ON (5) DAY WORK WEEK

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
5	5	5	3	3	5	8	6	5	3	4	5

c. Upon acknowledgement of the Notice to Proceed and continuing throughout the contract, the Contractor will record on its 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 work day.

d. 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 of 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 work days, and issue a modification in accordance with the Contract Clause entitled "Default (Fixed Price Construction)".

1.12 INTERRUPTION OF UTILITY SERVICES

a. Planned interruptions of utility services (electrical power, water, natural gas, etc.) shall be detailed and coordinated by the Contractor. Requests for interruptions shall be submitted in writing by the Contractor to the Contracting Officer's Representative at least 10 (ten) working days before the planned outage. This request shall also be shared with the U.S. Army Corps of Engineers project representative.

Contractor shall not interrupt service(s) until approval has been granted. Requests shall include facility/facilities affected, date of scheduled outage, and duration. Requests for interruption of service(s) will not be approved until all equipment and materials required for that particular phase of work are on the job site. Interruptions will be allowed Monday through Friday for the following times: 7:15 A.M. until 11:00 A.M. and 12:30 P.M. until 4:00 P.M. and will be limited to 4 hours. If weekend (Saturday and Sunday) outages are required or are preferred, they shall be coordinated as specified above and may result in additional charges by the utility provider.

1.13 CONTRACTOR INITIATED ROAD CLOSURES

Planned road closures shall be detailed and coordinated by the Contractor. Requests for road closures shall be submitted in writing by the Contractor to the Contracting Officer's Representative at least 10 (ten) working days before the planned closure. When it becomes necessary to close roads for construction, the Contractor shall immediately put in place the necessary signs and barricades required. All traffic control devices (signs, barricades, pavement markings, traffic signals, intersection control beacons, delineators, etc.) shall conform to the FHWA Manual on Uniform Traffic Control Devices and the FHWA publication Standard Highway Signs, most current edition. These include, but are not limited to, begin/end

construction signs, standard traffic control signs, including clearly marked detours and barricades with yellow flashing caution lights. Hand painted plywood signs (or other materials) are not allowed or acceptable. Upon completion of road work, all signs and barricades shall be immediately removed and all normal traffic control devices and signs returned to their original condition. Signs and barricades shall not be left along sides of roadways.

1.14 CONTRACTOR PREPARED AS-BUILT BUILDING INFORMATION MODELING (BIM) AND DRAWINGS

a. Redlined As-Built Drawings: Copies of the drawings will be the responsibility of the Contractor. The as-built drawings shall be a record of the construction as installed and completed by the Contractor. They shall include all the information shown on the contract set of drawings and a record of all deviations, modifications, or changes from those drawings which were incorporated in the work; all additional work not appearing on the contract drawings; and all changes which are made after final inspection of the contract work. In the event the Contractor accomplishes additional work which changes the as-built conditions of the facility after submission of the as-built drawings, the Contractor shall furnish revised and/or additional drawings as required to depict as-built conditions. The requirements for these additional drawings will be the same as for the as-built drawings included in the original submittal.

The Contractor shall have on his staff, personnel to mark up a set of paper copy construction drawings to show the as-built conditions. These as-built marked copies shall be kept current and available on the job site at all times. All changes from the contract plans which are made in the work or additional information which might be uncovered in the course of construction shall be accurately and neatly recorded, as the events occur, by means of details and notes. The Contractor shall call attention to entries by redlining areas affected. The red line as-built will be jointly inspected for accuracy and completeness by the Contracting Officer's representative and a responsible representative of the Contractor prior to submittal of each request for payment. The Contracting Officer's approval of the current status of the as-built drawings shall be a prerequisite to the Contracting Officer's approval of request for progress payment and request for final payment under the contract. The drawings shall show the following information, but not be limited thereto:

(1) The location and description of any utility lines or other installations of any kind or description known to exist within the construction area. The location includes dimensions to permanent features.

(2) The location and dimensions of any changes within the building or structures.

(3) Correct grade or alignment of roads, structures or utilities if any changes were made from contract plans.

(4) 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.

(5) All changes or modifications which result from the final

inspection.

(6) Options: Where contract drawings or specifications allow options, only the option selected for construction shall be shown on the as-built drawings.

(7) Extensions of Design: Although Fire suppression and fire alarm systems shall be added to the BIM model and subject to all of the submission requirements below (including native file submission on CD-ROM), shop Drawings such as structural fabrication and erection drawings and fire alarm systems that will require extensive redrafting effort in order to create an electronic set will not be required to be incorporated into the electronic set. They will be included as an Appendix to the paper copy set and scanned into .PDF format for inclusion on the same CD-ROM as the other electronically submitted set of drawings.

The Contractor shall participate in monthly review meetings with the Contracting Officer's Representative to show the progress made the preceding month and make all required changes. Prior to final construction inspection, the Contractor shall submit one copy of the red lined as-built drawings to the Contracting Officer's Representative for review and approval. The as-built drawings shall be certified as to their correctness by the signature of an authorized representative of the Contractor.

b. AS-BUILT BIM AND DRAWINGS: During construction, the BIMs (in their native format) shall be updated with the contractor provided extensions of design and changes made during construction. Upon Government approval of the Contractor's redlined copy of the as-built drawings, the revisions indicated on the approved paper set of red-lined construction drawings shall be finalized into the BIMs in addition to 2D AutoCAD drawings. Revise/redraft BIMs and AutoCAD drawings for each solicitation drawing and/or amendment drawing to reflect all changes made during construction as indicated by the approved paper red lined notations on the construction drawings. The information contained with the BIMs and AutoCAD drawings must be consistent.

Revisions/redrafting shall match the font styles, sizes, and formats; line weights/thicknesses and styles/types; and all other drafting elements used on the solicitation drawing/amendments. BIMs and AutoCAD drawings shall be updated per the red-lined construction drawings.

Although the contractor is allowed to independently update the model and drawings, the as-built model shall include all necessary intelligence to produce the as-built construction drawings (including but not limited to accurate plans, elevations, building/wall sections and schedules). Contractor shall utilize the original native BIM applications to generate the as-built models. All submitted BIM Models and associated Facility Data shall be fully compatible with the originally furnished model and its corresponding version (e.g., Autodesk Revit 2016). Reference files ARE permitted for BIM models to ensure manageable file sizes.

BIM submittals and content shall conform to the following criteria:

U.S. AIR FORCE BUILDING INFORMATION MODELING MINIMUM REQUIREMENTS
VERSION 2.1. Available at:
https://www.wbdg.org/FFC/AF/AFBIM/AF_Minimum_BIM_Requirements_V2.1.pdf.

The following BIM reviews and BIM and drawing submittals are required:

(1) Progress As-Built Building Information Model (BIM): Periodic quality control meetings or construction progress review meetings shall occur, at a minimum, prior to construction of extension of design elements and draft final model submission 60 days prior to construction completion. Submittal requirements include: 3-D interactive visualization from the Model in Navisworks, Adobe 3D PDF 7.0 (or later), Google Earth KMZ or equivalent format; Contractor-certified written report confirming that consistency checks have been completed, and shall include contract change tracking information; and progress updated BIM model(s). At the review meetings, perform a review of the development of the Model components and Facility Data via a 3-D interactive visualization demonstration from the Model to the user, USACE, and BCE personnel using data format of choice. The redlined drawings shall be available at the review meeting for identification of the changes to clearly demonstrate that the as-built changes have been made in the model. Updated drawing files shall be available for review at progress review meeting as well to illustrate conformance with final as-built requirements.

(2) Final As-Built BIM: Submit two (2) sets of electronic copies (CD-ROM/DVD) of the final Model(s) files reflecting as-built conditions for Government Approval. Submittal shall be provided to the Contracting Officer's Representative not later than ten (10) calendar days after project completion date. Final 3-D visualization submittal in Navisworks shall be provided on the CD-ROM/DVD as part of this submittal.

(3) As-Built Drawings: The contractor shall provide 1 hard copy of as-built construction drawings on Mylar on an ANSI D sheet size and 2 CD ROMs in AutoCAD and PDF. Submittals are to be to the Contracting Officer's Representative not later than ten (10) calendar days after project completion date.

The Contractor shall coordinate with the Eglin AFB 96 CEG drafting section, through the COR, for the version of AutoCAD to provide. All elements shall be incorporated into each as-built drawing file; the use of reference files shall not be permitted for DWG sheet files. Scaled drawings shall provide a bar scale and shall be in Imperial units and not metric. The as-built DWG files shall have the Design model physical features such as floor plans and civil site plans in Model Space. Sheet features such as title blocks, notes, north arrows and scale bar will be in the Layout View (Paper Space). In addition, the Contractor shall include the assigned building number issued by Eglin AFB in the title block and AF FTFA number beneath the word "AS-BUILT" on each sheet.

AutoCAD drawings shall have correct geometry. Segmented lines and arcs shall be made continuous and free of self-overlapping sections, thus decreasing the file size and increasing efficiency within the AutoCAD platform. All AutoCAD data shall be free of topological errors such as slivers, undershoots, overshoots dangles, overlaps, intersections, etc. Area features such as building footprints, parking lots, roadways, and airfield pavements shall be true polyline polygons. Adjacent polygons shall not have gaps or overlaps.

AutoCAD drawings shall be checked for correct spatial projection to one of the following: North American Datum 1983 Florida State Plane North FIPS 0903 Feet (AutoCAD Code FL83-NF) or Universal Transverse Mercator 1984, Zone 16 North (AutoCAD Code UTM84-16N).

Drawings submitted for approval as-builts shall have all changes incorporated into the final drawings. Drawings shall be free of revision

clouds, hand-written notes, scanned in change orders, etc. Each sheet shall be annotated in bold letters near the title block with the date the as-builts were accepted (i.e. AS-BUILT DRAWING 12 APR 2012).

The Contractor shall also furnish a revised index of drawings to match the actual design drawings. The drawing title blocks shall be in a uniform format to match the requirements as presented in the solicitation drawings.

A copy of the final contract specifications shall be provided, in PDF format, on final as-built CDs.

c. Payment: Reference Section 01 32 01.00 10 for as-built cost loading requirements. As-built requirements shall include all requirements of this Appendix, to include all drawing files, BIM Models, and Facility Data.

1.15 CONTRACTOR'S AREA USE PLAN

The Contractor shall submit an Area Use Plan to the Contracting Officer's Representative, for approval, within ten (10) days after receipt of Notice to Proceed. The Area Use Plan shall show the following:

- a. Location of Contractor's sheds and trailers.
- b. Location of all Contractor storage areas.
- c. Location of Contractor staging areas.
- d. Temporary utility tie-ins.
- e. Location of Contractor security fencing.
- f. Location of project sign.
- g. Required telephone service and locations.

1.16 AIR FORCE PROJECT SIGN

The Contractor shall furnish and install a project sign at the location designated by the Contracting Officer's Representative within thirty (30) days after notice to proceed in accordance with EP310-1-6a, attached following this section. Example sign provided, final sign layout to be coordinated with the Contracting Officer's Representative through the Submittal Process.

1.17 SHOP DRAWINGS

Shop Drawings shall be submitted in accordance with Specification Section 01 33 00. Unless otherwise stated, all documents shall be printed or scanned to Portable Document Format (PDF) files of a size suitable for emailing. Files shall be named in accordance with the Unified Guide Specification (UGS) numbering system. All information including drawings, manufacturer's data, catalog cut sheets, and calculations output from computer program software shall be printed or scanned to be clearly legible, and capable of being reproduced using a standard desktop or office printer. Manufacturer's data, catalog cut sheets, and calculations output from computer program software shall be configured to print to 8 1/2" x 11" paper. Scaled drawings shall be configured to print half-size to 11" x 17". The scale for drawings generated from floor plans shall be no

less than 1/8" per foot (1/16" per foot when printed half-size).

1.18 SCHEDULE OF AVAILABLE UTILITIES

Existing utilities are available in the Project area. The utilities are privatized at Eglin AFB. For water, sewer, and power, the Contractor shall provide temporary service back to the connection to the water and sewer, or transformer for power, and the privatization Contractor will connect and later disconnect the temporary utility to the existing system. If medium voltage line extension is required, the Privatization Contractor will perform at a cost to the Contractor. The Privatization Contractor would later retire any pole or transformer that was just for temporary use.

As such, the Contractor is responsible for formally requesting temporary service connection 30 days in advance from the privatization contractors through the COR to obtain these temporary utility connections until permanent utility connections are made. The Contractor is required to provide certified backflow preventers for the water and meters for all utilities, as well as pay all connection charges for temporary utilities and notify each utility provider through the COR when the Contractor is ready to remove the temporary connections distribution lines, meters, and associated paraphernalia. The contact information for connection pricing from these utility providers is as follows:

- a. Water/Sewer: ASUS - POC: Roger Ivison; Telephone (850) 377-0924; Email: roger.ivison@asusinc.com.
- b. Electric: CHELCO - POC: Chris Eddy; Telephone: (850) 307-1229; Email: ceddy@chelco.com.

Once utility connections are made, the amount of each utility service consumed shall be charged to or paid for by the Contractor at prevailing rates charged to the Government, as indicated herein or, where the utility is produced by the Government, at reasonable rates determined by the Contracting Officer. The current utility rates are as follows:

- a. Electric: \$0.0953 per KWh.
- b. Natural Gas: \$6.37 per Dekatherms.
- c. Sewer: \$5.04 per kilo gallons.
- d. Water: \$2.733 per kilo gallons.

1.19 CONTRACTOR SITE ACCESS

All contractors and their employees that require access to any Eglin Air Force Base property, to include all ranges, D51/NAVSCOLEOD, site C-6, Camp Rudder, Duke Field, and 7th Special Forces Group complex, will be required to obtain a picture ID from the Base Pass and ID Office, and wear the ID at all times.

Eglin has implemented a requirement for background checks for all contractors and their employees to obtain Base Passes. Background checks will be performed by 96 Security Forces Squadron (SFS) at the Visitor's Center when the individual arrives to pick up their base pass.

The prime contractor will be required to submit the attached memorandum and unescorted access request of personnel indicating days and hours of access, date of birth and country, driver's license number and state to the US Army Corps of Engineers - Eglin AFB Resident Office. This must be accomplished a minimum of 7 (seven) calendar days before access is required. Contractors may use DoD SAFE to submit base passes to USACE and this is preferred, or via email to the project email address. This process will take a full 7 (seven) days and cannot be expedited in any manner.

For individuals that are not local to the Panhandle area, a background check can be performed by 96 SFS prior to arriving to Eglin AFB. Additional information will need to be provided to USACE/96 SFS and an additional 7 calendar days should be anticipated for performing background checks prior to arrival. Coordinate with USACE Eglin Resident Office for information required.

Sample forms are found at the end of this section.

Note: These procedures are subject to change at the directive of the 96 Security Forces command.

All deliveries, to include concrete, asphalt, and construction material, will be subject to inspection and are required to enter the installation and ranges through the Commercial Vehicle Inspection Gate.

1.20 CONSTRUCTION AND DIG PERMITS

A local permitting procedure is in effect at Eglin AFB for any work which may disrupt aircraft or vehicular traffic flow, base utility services, routine activities of the installation or which may involve subsurface excavation. Contractor must plan and detail any work of this nature sufficiently in advance of the proposed work. An AF Form 103, Base Civil Engineering Work Clearance Request (Appendix U), must be submitted at least 10 (ten) working days in advance of the proposed performance date to the Contracting Officer. Work will not begin until approval has been granted. Forms will be made available to the Contractor at Building 696 on Eglin AFB. This includes soil borings.

1.21 SAFETY MARKINGS ON CRANE BOOMS

All cranes shall have a red strobe light and two flags attached to the end of the boom. The flags shall be 18-inches square and international orange in color. The strobe does not need to be flashing during daylight hours or when the boom is lowered to the ground at night. The strobe shall be flashing when operating during weather in which visibility is reduced or when operating at night. The strobe shall remain flashing if the boom remains elevated at night.

1.22 REQUIREMENTS FOR TEMPORARY CRANES

All cranes used by the Contractor for construction purposes will require written acceptance for their use by the Contracting Officer's Representative. All requests shall be made seven (7) days in advance of the crane's arrival on the job site and shall include such information as latitude and longitude of the crane location, total operating height, mode of transportation and delivery to the project site, period of use and methods of conforming to all safety and airfield operations procedures.

Cranes operating at night shall require a red blinking light at the highest point on the crane boom which conforms to Federal Aviation Administration (FAA) requirements and the SPECIAL CONTRACT REQUIREMENT CLAUSE: AIRFIELD SAFETY PRECAUTIONS. FAA Form 7460-1 shall be completed by the Contractor and filed with the FAA. A copy of Form 7460-1 shall also be submitted to the Contracting Officer's representative.

An FAA Form 7460-1 may be required to be completed by the Contractor and filed with the FAA. If required, a copy of Form 7460-1 shall also be submitted to the Contracting Officer's representative. Contractor is responsible for obtaining all necessary FAA Permits for erection of temporary structures.

Address to submit FAA Form 7460-1 is:

Federal Aviation Administration
Southern Regional Office
Air Traffic Division, ASO-530
P.O. Box 20636
Atlanta, GA 30320

Address of the Southern Region Office is:

Southern Region Office
Air Traffic Division, ASO-530
1710 Columbia Avenue
College Park, GA 30337
Tel. 404-305-5585

1.23 CONSTRUCTION MATERIALS

All construction materials shall remain in the designated staging area until ready for use. Storage of materials in areas other than the designated area will not be allowed.

1.24 EQUIPMENT LAYOUT DRAWINGS

The Contractor shall submit "layout drawings" in plan and necessary elevation, of all mechanical, electrical, heating, and ventilating equipment space(s) showing the proposed equipment, ductwork, piping, conduits, etc., with clearances, for approval of the Contracting Officer, whether or not such layout drawings are specified under the various technical sections of the specifications. In spaces having more than one type of equipment, the layout drawings shall indicate the composite arrangement of all types of equipment and all associated work with all clearances. The layouts of equipment and associated work shall provide adequate and acceptable clearances for entry, servicing, and maintenance. The submittal and approval of equipment layout drawings shall conform to the requirements as herein before specified for shop drawings. Should the Contractor propose to furnish any equipment or standard products requiring allocations of space, or electrical, mechanical, or piping connections thereto, or supports different from those shown or indicated on the plans or in the specifications, he shall prepare and submit full detail drawings to the Contracting Officer for approval showing all changes. The approved detailed drawings shall become a part of the contract and any changes in the construction resulting from revisions in the details and dimensions on the drawings which are required by the substitution of alternate equipment and/or products shall be made at the expense of the Contractor.

1.25 CERTIFICATES OF COMPLIANCE

Each certificate shall be signed by an official authorized to certify on 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 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.

1.26 EQUIPMENT DATA

(a) Major Equipment. The Contractor shall be required to make a list of all installed new equipment furnished under this contract. This list shall include but not be limited to each piece of equipment which has a serial number. This list shall include all information usually listed on the manufacturer's name plate, so as to positively identify the piece of property. This list shall also include the cost of each piece of installed property (less installation costs) F.O.B. construction site. The above referenced list shall be furnished as soon as possible after equipment is purchased. The list shall be furnished as one (1) electronic copy and shall be furnished to Contracting Officer not later than thirty calendar days prior to completion of any segment of the contract work which has an incremental completion date. Listing will be on Government furnished MOB Form 897, available from the Contracting Officer.

(b) Other Equipment. The Contractor will be required to furnish a brochure, catalog cut, parts list, manufacturer's data sheet or other publication (including the manufacturer's name and address) which will show detailed parts data on all other equipment, such as hardware, plumbing and lighting fixtures, etc., subject to repair and maintenance procedures. The data shall be furnished in one (1) electronic copy to the Contracting Officer not later than thirty calendar days prior to completion of any segment of the contract work which has an incremental completion date.

1.27 FACILITY ENVIRONMENTAL REQUIREMENTS

Acceptable environmental conditions shall be established prior to installation of any temperature or humidity sensitive finishes, such as but not limited to drywall, paint, casework, carpet and tile, acoustical ceiling tile, etc. Acceptable environmental conditions shall be established at least 24 hours prior to the start of finish installation. Monitor, document, and maintain environmental conditions daily, or more frequently as needed, throughout the remainder of construction to ensure that there is no damage to installed work due to unacceptable temperature or humidity levels. Where requirements vary for different finishes the most stringent shall be maintained. Minimum standards shall be maintained to ensure that mold growth does not occur. Finishes damaged due to unacceptable temperature or humidity levels shall be replaced in their entirety at no additional cost to the Government.

1.28 27 ASBESTOS MATERIALS AND LEAD BASED PAINTS

The Contractor shall not use materials containing Asbestos or Lead Based Paints in the construction of this facility. Upon completion of the

construction, the Contractor shall submit one (1) electronic copy of an Asbestos and Lead Based Paint Certification Letter to the Contracting Officer's Representative (COR) stating that no lead based paints or materials containing asbestos were used in the construction of the new facilities.

1.29 ELECTRONIC MAIL SYSTEM

The Contractor shall provide and maintain for the life of this contract an electronic mail system which shall interface, connect to and be compatible with the existing electronic mail system in the Corps of Engineers Resident Office at Eglin AFB, FL. The Contractors electronic mail system shall transfer and receive correspondence between the Resident Office without loss or modification of formatting codes or special characters.

The Resident Office is currently utilizing Exchange/MS Outlook for Windows and is Internet accessible. The Corps Internet E-mail gateway accepts binary files in uuencoded format. Any files that cannot be sent via email due to file size should be sent via DoD Safe. .

During construction, all Requests For Information (RFIs) and contract correspondence including field sketched drawings shall be transmitted to the Corps of Engineers Resident Office at Eglin AFB, FL. in an electronic format. The RFIs shall be saved into a ".pdf" format using Adobe Acrobat software, latest version. A project-specific email inbox will be provided at the beginning of the contract. All official email traffic should be sent to this inbox.

The Contractor's electronic mail system shall have the capability of sending and receiving text, graphic, and drawing files developed on the following software:

- 1) Microsoft Word, Version 2003 or newer
- 2) WordPerfect, Version 12.0
- 3) AutoCAD, Version 2008 or newer
- 4) Adobe Acrobat, Version 6.0 or newer

The Contractor shall bear the responsibility to ensure total hardware and software compatibility with the Government's system when transferring and receiving information.

1.30 TESTING AND BALANCING FOR HVAC SYSTEMS

The Construction Contractor shall retain the services of an Independent Firm for Testing and Balancing (TAB) HVAC Systems as specified in SECTION: TESTING, ADJUSTING, AND BALANCING. Firm shall be either a member of the Associated Air Balance Council (AABC) or certified by the National Environmental Balancing Bureau (NEBB). The TAB Firm shall be a subcontractor of the prime contractor, and shall report to and be paid by the prime contractor.

1.31 LAYOUT OF WORK

The Contractor shall lay out its work from Government-established base lines and bench marks indicated on the drawings, and shall be responsible for all measurements in connection with the layout. The Contractor shall furnish, at its own expense, all stakes, templates, platforms, equipment, tools, materials, and labor required to lay out any part of the work. The Contractor shall be responsible for executing the work to the lines and

grades that may be established or indicated by the Contracting Officer. The Contractor shall also be responsible for maintaining and preserving all stakes and other marks established by the Contracting Officer until authorized to remove them. If such marks are destroyed by the Contractor or through its negligence before their removal is authorized, the Contracting Officer may replace them and deduct the expense of the replacement from any amounts due or to become due to the Contractor.

1.32 PAYMENT FOR MATERIALS DELIVERED OFFSITE

a. Pursuant to FAR Clause 52.232-5, "Payment Under Fixed-Price Construction Contracts," materials delivered to the Contractor at locations other than the site of the work may be taken into consideration in making payments if included in payment estimates and if all the conditions of the contract clauses are fulfilled. Payment for items delivered to locations other than the work site will be limited to (1) materials required by the technical provisions; or (2) materials that have been fabricated to the point where they are identifiable to an item of work required under this contract.

b. Such payment will be made only after receipt of paid or receipted invoices or invoices with canceled check showing title to the items in the prime contractor and including the value of materials and labor incorporated into the item. Petroleum products, including fuel, will be considered for payment as a material delivered offsite.

1.33 COORDINATION CONFERENCES

Weekly coordination conferences will be held by the Contracting Officer's Representative and the Contractor throughout the life of this contract. Coordination conferences will be held to discuss contract administration, Contractor quality control, phasing, scheduling, and other aspects relating to this construction. The Using Agency, Corps of Engineers and the Contractor will be represented at each of these meetings. Similar information concerning replacement personnel shall be forwarded to the Contracting Officer's Representative, should any replacement be required at any time during the life of this contract. Coordination conferences will be scheduled to occur on a weekly basis. The Contractor shall develop the Meeting Minutes for each Coordination conference. A copy of the meeting minutes shall be provided to the Corps and all attendees via e-mail no later than 48 hours after each meeting. The Contractor shall develop and maintain a list of action items that arise during construction or at each Coordination Conference. The Action Items list shall describe each Issue/Action Item and state what organization/person is tasked with its resolution. Blanks, or cells, shall be provided for dates when the Issue/Action Item was first raised, the due date for its resolution, and the date of actual resolution.

1.34 PERMITS AND RESPONSIBILITIES

The Government has obtained the following applicable permits/permit applications related to the design and construction of this project:

a). FDEP 10-2 Stormwater Permit.

b). Joint Application for Individual and Conceptual Environmental Resource Permit/Authorization to Use State-Owned Submerged Lands/Federal Dredge and Fill Permit, submitted to FDEP/Water Management Districts/U.S. Army Corps of Engineers.

The contractor will be required to obtain the as-built certifications for the permits identified above and submitting to the district/FDEP for permit closeout/transfer. The Contractor shall utilize a professional engineer to monitor the construction activities for stormwater improvements per the conditions of the approved permit. A professional engineer is required by permit conditions to submit the construction completion permits to the permitting agency. Accordingly, the contractor will be responsible for fully coordinating with the Contracting Officer regarding information for as-built certifications, properly executed, as required by each individual permit.

ASUS will obtain and close-out, upon completion, the following permits/permit applications related to the design and construction of this permit:

a) Notice of Intent to Use the General Permit for Construction of Water Main Extensions for PWSs.

b) Notification/Application for Constructing a Domestic Wastewater Collection/Transmission System.

The construction contractor will obtain and close-out, upon completion, the following applicable permits/permit applications related to the design and construction of this project:

a) NPDES Notice of Intent

1.35 CONSTRUCTION DEBRIS DISPOSALS

Cleared trees, limbs and other vegetation shall be disposed of at an approved disposal site off Government controlled lands.

All other construction debris shall be disposed of at an approved disposal site off Government controlled lands.

1.36 HAZARDOUS MATERIALS AND WASTES MANAGEMENT

All hazardous materials and waste resulting from the construction of this project shall be managed in accordance with local, state, federal and Eglin AFB rules and regulations. All universal waste such as spent fluorescent lamps, batteries, mercury thermostats, smoke detectors, and mercury switches must be managed and handled in accordance with the above-mentioned directives. Hazardous materials and waste such as fuels and oils of all types, used tires, computer monitors, all electronic devices, aerosol spray cans (including empties), paints, adhesives, corrosives, nonflammable and noncorrosive cleaners, hydraulic fluid, antifreeze, etc. must be managed in accordance with above-mentioned compliance agencies. The Contractor's Quality Control Manager shall contact COR and 96 CEG/CEV if handling procedures for hazardous waste and materials is unclear.

The use of fuel storage tanks on Base must be approved by the 96 CEG/CEV. Temporary gasoline storage will NOT be permitted on Base. Any tank, container, or equipment with an oil or fuel capacity of 55 gallons or more approved for use on Eglin AFB shall have a means of secondary containment, spill containment (spill kits), and/or spill procedures in place that prevents the flow of spilled oil or hazardous materials into navigable waters.

Contractor vehicle and heavy equipment maintenance (including oil changing, lubrication, and vehicle washing) is not authorized on base.

1.37 HAZARDOUS OR TOXIC MATERIAL SPILLS

Within ten (10) days of Notice To Proceed (NTP), the Contractor shall prepare a Spill Prevention Control and Countermeasures (SPCC) Plan in accordance with CFR 40 Part 112 to address spill prevention and countermeasures for tanks and heavy equipment used on Base.

Any fuel, oil, hydraulic fluid, chemical, or other hazardous or toxic material spill on Eglin AFB shall be reported to the Base Fire Department by phoning "911", or to 96 CEG/CEV through the Contracting Officer's Representative regardless of the amount.

1.38 RECYCLING OF HAZARDOUS OR TOXIC MATERIALS

All fluorescent, metal halide, mercury, or high pressure sodium lighting bulbs or tubes, fluorescent ballasts, smoke detectors, and mercury switches/thermostats identified for disposal shall be turned in to 96 CEG/CEV for recycling. The contractor shall call 96 CEG/CEV for a turn-in appointment (normally Tuesdays and Thursdays). Each type of the items listed above shall be separated and placed in containers capable of being closed properly. Fluorescent tubes shall not be taped together. If the original container is not available, the Contractor shall use a box as close as possible to the size of the original container. A stick-on label must be placed on each box describing the contents. The labels can be hand-written or computer generated. The Contractor shall refrain from breaking lamps, however, broken lamps should be collected as well.

1.39 BURIED PIPING AND UTILITIES

The Contractor shall provide a tracer wire on the top of all non-metallic piping, conduit or other underground utilities buried 6-inches below finished grade or deeper. The tracer wire shall be magnetic detectable conductor, brightly colored plastic covering, imprinted with the type of service in large letters. Contractor shall submit for approval product data on the tracer wire to be used.

1.40 EXISTING ROADWAYS

The construction contractor shall limit construction loads as necessary to avoid damaging the existing roads. Prior to starting construction, the Contractor shall make a joint inspection of existing roads with Contracting Officer's Representative and document the condition of these roads in a report and a video tape. Video tape shall be provided to COR within 10 days of inspection. Damage to existing roads caused by contractor equipment during construction shall be repaired by the construction contractor at the conclusion of construction at no additional cost to the Government.

1.41 PROTECTION OF ENVIRONMENTALLY SENSITIVE AREAS/ENDANGERED SPECIES

The construction site, as well as the surrounding area, contains species currently considered endangered. These include, but are not limited to Red Cockaded Woodpeckers. The contractor's project manager, superintendent, quality control manager and back-up to the Q/C manager shall attend a briefing at the Jackson Guard to learn to identify these endangered

species. Points of Contact are Mr. Jeremy Preston, (850)883-1153, and Ms. Amanda Robydek, (850) 882-8395, or the Contracting Officer.

1.41.1 Gopher Tortoise Survey

A gopher tortoise survey shall be required. The General Contractor shall contact Eglin Natural Resources (Jackson Guard) to arrange for the survey to take place within 30 days of ground disturbing activities. The Survey shall be conducted by Eglin Natural Resources staff. Point of Contact is Wayne Pittman, 96 CEG/CEIEA, 978-1260 or Rodney Felix, 96 CEG/CEIEA, 883-1153. If contact cannot be made, consult with the Contracting Officer's Representative. If tortoise burrows are found to conflict with the proposed project site, and burrows cannot be avoided by at least 25 feet, the tortoise(s) must be relocated. Note that tortoises cannot be relocated if the forecasted low temperature is below 50 degrees for 3 consecutive days. The actual tortoise relocation will be executed by Eglin Natural Resources staff.

1.42 TESTING AND INSPECTING

The following statement replaces paragraphs found in the technical specifications for all buildings and aspects of the project calling for the Government or Owner to engage and pay for Testing and Inspecting:

Contractor will engage and pay for qualified independent testing and inspecting agencies to perform field tests and inspections and prepare reports as required in specification sections that require such tests. The Contracting Officer or their Representative shall not be responsible for engaging the services.

1.43 BRAND NAMES OR EQUAL PRODUCTS

The Contractor may provide alternate products equal to those specifically referenced by brand name in the specifications. The alternate products shall fully meet the salient characteristics of the brand name products as described in the specifications to be considered equal. The Contractor shall submit the alternate products showing the salient characteristics for Government Approval after award in accordance with Section 01 33 00 Submittal Procedures.

1.44 RED ZONE MEETINGS

The contractor shall have a series of pre-final construction Red Zone Meetings to discuss, define and achieve consensus on the construction and financial status of the project. The ultimate goal is to build a schedule of events necessary to achieve project completion and financial closeout in keeping with Air Force Execution Goals. These goals are to complete projects within original budget, complete projects within original schedule, physical completion within 90 days of BOD and financial closeout within 180 days of BOD.

a. Red Zone Meetings shall be started 90 days prior to the expected completion of a facility, or when the facility reaches 80% completion.

b. The Red Zone process initiates the Enterprise Business Process (EBP), which the Corps of Engineers utilizes for the closeout of MILCON projects (USACE MILCON Project Closeout, Enterprise Business Process, October 2007, Final Version.).

c. Completion Milestones. The red zone meeting establishes milestone estimated completion dates and OPRs for all the actions necessary to complete the project. It indicates all remaining activities including the Action Officer, the date due, the status, the actual completion date and any comments.

1.45 SUBMISSION OF INTERIM DD FORM 1354 - TRANSFER AND ACCEPTANCE OF MILITARY REAL PROPERTY

Using the blank DD Form 1354 provided at the end of this section, the Contractor shall submit an Interim DD Form 1354. Using this Interim DD Form 1354, the Contractor shall submit the Interim DD Form 1354 for the project no later than thirty (30) days prior to the Beneficial Occupancy Date (BOD). Category Code numbers found on the DD Form 1354 Checklist provided at the end of this section shall be used in completing the Final DD Form 1354. Additional Category Codes can be found in the publication entitled "Air Force Real Property Category Code Descriptions" which can be obtained from the Directorate of Technical Support, Air Force Civil Engineer Support Agency, Tyndall AFB, FL 32403-5319.

1.46 CORRESPONDENCE AND ELECTRONIC COMMUNICATION

For ease and speed of communications, both the Government and Contractor shall exchange correspondence and all other documents in electronic format unless otherwise stated in the specifications. Electronic submission will be accomplished by the following methods: email and through the Resident Management System - Contractor Mode (RMS-CM) software. Format for electronic submissions will be in portable document format (.pdf). Documents include all general correspondence, administrative plans, all material submittals including shop drawings, progress schedules, submittal registers, requests for information (RFIs), Quality Control (QC) test results, pay requests, etc. Anything submitted via RMS-CM shall be emailed to the corresponding project email inbox.

Where effective receipt dates are required, the date the submission is received in the project email inbox and through RMS-CM will be the receipt date. Correspondence, submittals, pay requests, etc. will not be marked received until it is received in both locations.

1.47 RATES OF WAGES

Wage rates are included at the end of this section.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

-- End of Section --

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The use of signs to identify Corps managed or supervised design, construction, and rehabilitation projects - both for military and civil works - is an important part of efforts to keep the public informed of Corps work. For this purpose, a construction project sign package has been adopted. This package consists of two signs: one for project identification and the other to show on-the-job safety performance of the contractor.

These two signs are to be displayed side by side and mounted for reading by passing viewers. Exact placement location will be designated by the contracting officer's representative.

The panel sizes and graphic formats have been standardized for visual consistency throughout all Corps operations.

Panels are fabricated using HDO plywood or aluminum with dimensional lumber uprights and bracing. The sign faces are nonreflective vinyl.

All legends are to be die-cut or computer-cut in the sizes and typefaces specified and applied to the white panel background following the graphic formats shown on pages 16-2 and 16-3. The Communication Red panel on the left side of the construction project sign with Corps Signature (reverse version) is screen-printed onto the white background.

A display of these two signs is shown on the following two pages. Mounting and fabrication details are provided on page 16-4.

Special applications or situations not covered in these guidelines should be referred to the district Sign Program Manager.

Below are two samples of the Construction Project Identification sign showing how this panel is adaptable for use to identify either military (top) or civil works projects (bottom). The graphic format for this 4'x 6' sign panel follows the legend guidelines and layout as specified below. The large 4'x 4' section of the panel on the right is to be white with black legend. The 2'x 4' section of the sign on the left

with the full Corps Signature (reverse version) is to be screen-printed Communication Red on the white background. The designation of a sponsor in the area indicated is optional with Military or Civil Works construction signs. Signs may list one sponsoring entity. If agreement on a sponsor designation cannot be achieved, the area should be left blank.

This sign is to be placed with the Safety Performance sign shown on the following page. Mounting and fabrication details are provided on page 16-4.

Special applications or situations not covered in these guidelines should be referred to the district Sign Program Manager.

Modified IAW ECB 2020-1

Legend Group 1: One- to two-line description of Corps relationship to project.
Color: White
Typeface: 1.25" Helvetica Regular
Maximum line length: 19"

Legend Group 2: Division or District Name (optional). Placed below 10.5" reverse Signature (6" Castle).
Color: White
Typeface: 1.25" Helvetica Regular

Legend Group 2a: One- to three-line identification of Military or Civil Works sponsor (optional). Place below Corps Signature to cross-align with Group 5a-b.
Color: White
Typeface: 1.25" Helvetica Regular
Maximum line length: 19"

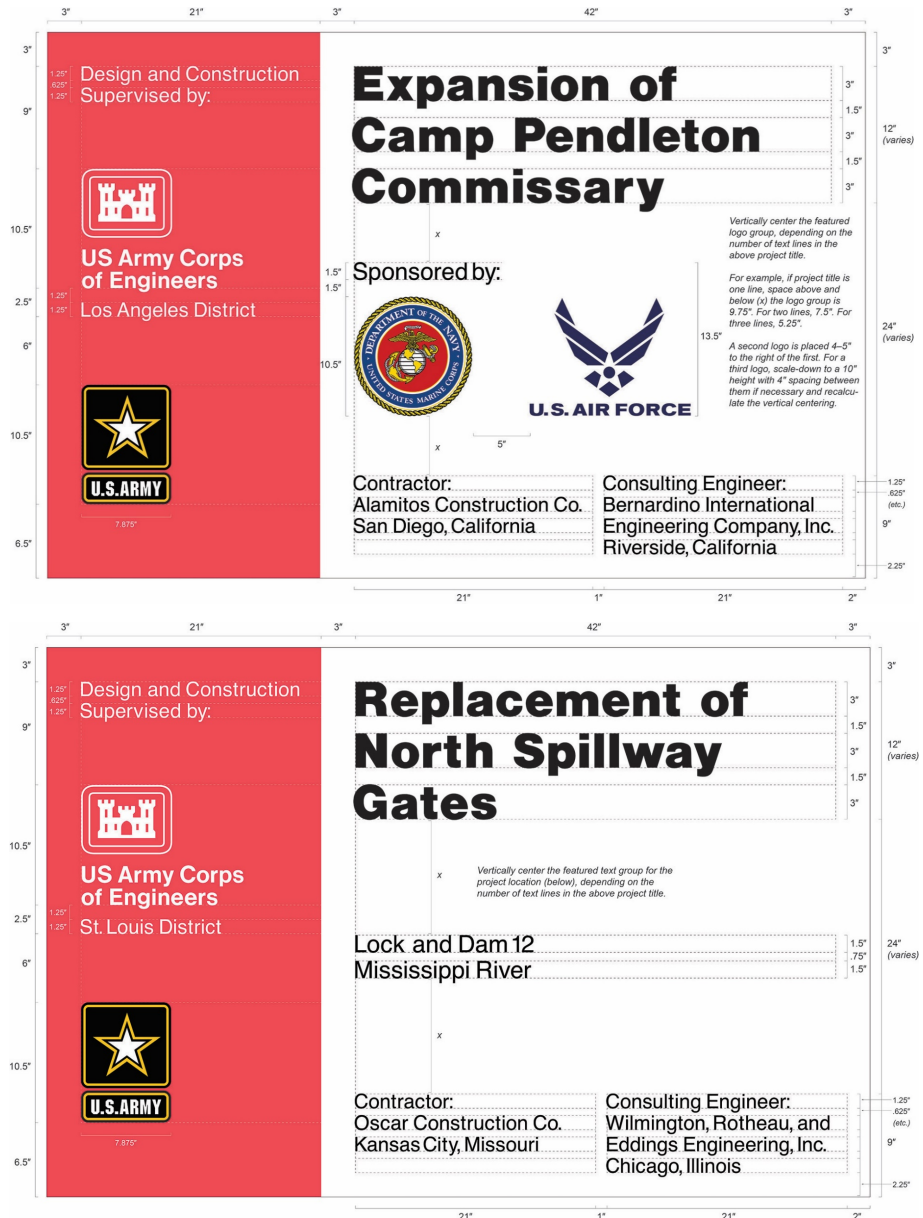
Legend Group 3: One- to three-line project title legend describes the work being done under this contract.
Color: Black
Typeface: 3" Helvetica Bold
Maximum line length: 42"

Legend Group 4: One- to two-line identification of project or facility (civil works) or name of sponsoring department (military).
Color: Black
Typeface: 1.5" Helvetica Regular
Maximum line length: 42"

Cross-align the first line of Legend Group 4 with the first line of the Corps Signature (US Army Corps) as shown.

Legend Groups 5a-b: One- to five-line identification of prime contractors including: type (architect, general contractor, etc.), corporate or firm name, city, state. Use of Legend Group 5 is optional.
Color: Black
Typeface: 1.25" Helvetica Regular
Maximum line length: 21"

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-01	various	4'x6'	4"x4"	HDO-3	48"	WH-RD/BK

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 typefaces 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

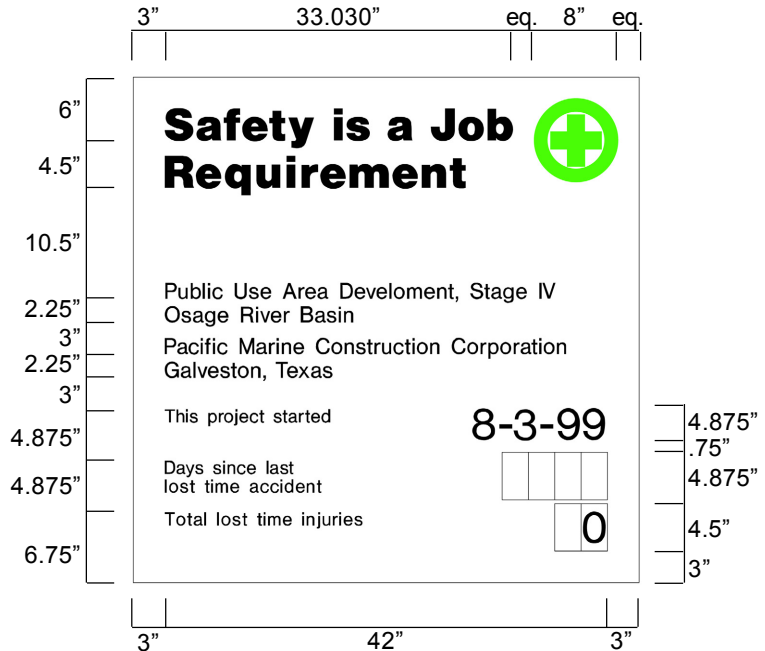
Legend Group 2: One- to two-line project title legend describes the work being done under this contract and name of host project.
Color: Black
Typeface: 1.5" Helvetica Regular
Maximum line length: 42"

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"

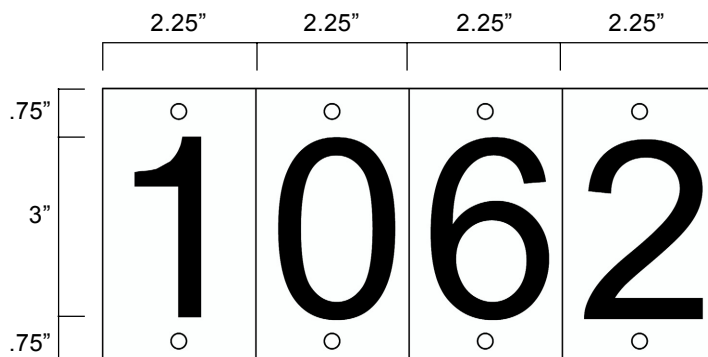
Legend Group 4: Standard safety record captions as shown.
Color: Black
Typeface: 1.25" Helvetica Regular

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.

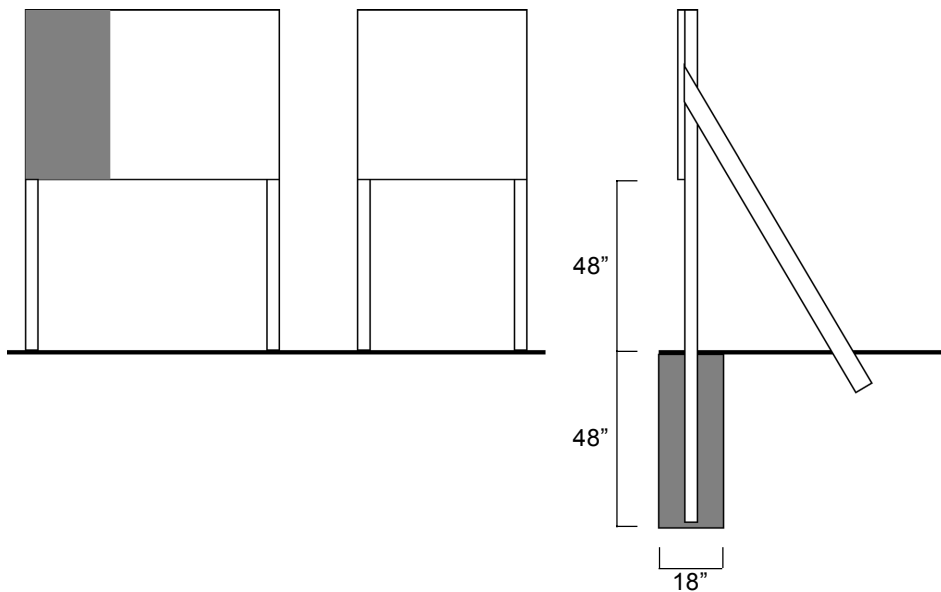
The 2'x 4' Communication Red panel (to match Pantone system 032) with full Corps Signature (reverse version) is to be screen-printed on the white background. Identification of the district or division may be applied under the signature with white cut vinyl letters prepared to Corps standards.

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. _____

TRANSFER AND ACCEPTANCE OF DoD REAL PROPERTY

Form Approved
OMB No. 0704-0188

PAGE OF PAGES

The public reporting burden for this collection of information is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, to the Department of Defense, Washington Headquarters Services, Executive Service Directorate, Information Management Division, 4800 Mark Center Drive, Alexandria, VA 22304-3100 (0704-0188). Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

PLEASE DO NOT RETURN YOUR COMPLETED FORM TO THE ABOVE ORGANIZATION.

1. FROM (Organization Name)			2. DATE PREPARED (YYYYMMDD)		3. PROJECT/JOB NUMBER		4. SERIAL NUMBER		8. TRANSACTION DETAILS							
5. TO (Organization - Installation Code and Name)			6. RPS/JID/SITENAME/INSTCODE/INSTNAME		7. CONTRACT NUMBER(S)		7a. PLACED-IN-SERVICE DATE (YYYYMMDD)		a. METHOD (X all that apply)		b. WHEN/EVENT (X one)					
									☐ ACQUISITION BY CONSTRUCTION ☐ TRANSFER BETWEEN SERVICES ☐ CAPITAL IMPROVEMENT ☐ INVENTORY ADJUSTMENT		☐ TOTAL ASSET PLACED-IN-SERVICE ☐ PARTIAL ASSET PLACED-IN-SERVICE					
									c. TYPE (X one)							
									☐ DRAFT		☐ FINAL					
											☐ INTERIM					
9. ITEM NO.	10a. FACILITY NO.	10b. RPUID	11. CATEGORY CODE	12. CATCODE DESCRIPTION	13. TYPE CODE	14. SUST. CODE	15. AREA		16. PRIMARY UM QUANTITY	17. SECONDARY UM	18. SECONDARY UM QUANTITY	19. COST	20. FUND SOURCE	21. FUND ORG	22. INTER-EST CODE	23. ITEM REMARKS
24. STATEMENT OF COMPLETION. The facilities listed hereon are in accordance with maps, drawings, and specifications and change orders approved by the authorized representative of the using agency except for the deficiencies listed on the reverse side.																
25a. ACCEPTED BY (Typed Name and Signature)																
b. DATE SIGNED (YYYYMMDD)																
c. TITLE (Area Engr./Base Engr./DPW/Construction Agent)																
26. PROPERTY VOUCHER NUMBER																

27. CONSTRUCTION DEFICIENCIES (Attach blank sheet for continuations)	28. PROJECT REMARKS (Attach blank sheet for continuations)		
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CONSTRUCTION DATA WORKSHEET DD FORM 1354

The Contractor is required, prior to the Final Inspection, to submit a completed copy of the following Construction Data Worksheet (CDS) along with an As-Built copy of the building floorplan(s). The CDS is used by the Air Force to inventory and capitalize new work. The Construction Representative will review the CDS, ensure that it is complete, and forward it to the Real Estate Office within 15 working days of the Final Inspection. This checklist includes only the basic general construction category codes. More detailed category code listing information is available through the Real Property Office, 884-6860.

I. TITLE OF PROJECT: _____

PROJECT No. _____	Work Order No. _____
Drawing No. _____	Contract No. _____
Facility No. _____	Completion Date _____

II. GENERAL DATA: (for construction to existing facilities, only provide data for the new addition).

A. Outside Dimensions:	
Main Buildings _____	Wings _____
Offsets _____	Total SF _____

B. Number of Floors: _____

C. Construction Material:	
Foundation _____	Floors _____
Outside Walls _____	Roof _____

III. UTILITIES/RELATED FACILITIES - Addition

<u>Cat Code</u>	<u>Nomenclature</u>	<u>UM</u>	<u>Amount</u>	<u>Cost</u>	<u>Descript</u>
132-133	Pad, Equip	EA	_____	_____	_____
132-134	Ant Support Structure	EA	_____	_____	_____
135-583	Tel Duct Facility	LF	_____	_____	_____
135-586	Tel Pole Facility	LF	_____	_____	_____
812-223	Prim Dist Line OH	LF	_____	_____	_____
	Transformers	KVA	_____	_____	_____
812-224	See Dist Line OH	LF	_____	_____	_____
812-225	Prim Dist Line UG	LF	_____	_____	_____
812-226	Sec Dist Line UG	LF	_____	_____	_____
812-926	Exterior Area Lighting	EA	_____	_____	_____
	(Street or Parking area Lights)				
812-928	Traffic Lights	EA	_____	_____	_____
831-157	Industrial Waste Fuel		_____	_____	_____
	Spill Collection (Oil Fuel)	KG	_____	_____	_____
831-169	Sewage Septic Tank	KG	_____	_____	_____
	(Facility It Supports)		_____	_____	_____
832-266	Sanitary Sewer Main	LF	_____	_____	_____
832-267	Sanitary Sewer Pump Station	SF	_____	_____	_____
841-166	Water Well	KG	_____	_____	_____
824-245	Water Distribution Main	LF	_____	_____	_____
842-246	Water Hydrants	EA	_____	_____	_____
843-314	Fire Protection Water Main	LF	_____	_____	_____

843-315	Fire Hydrants	EA			
<u>Cat Code</u>	<u>Nomenclature</u>	<u>UM</u>	<u>Amount</u>	<u>Cost</u>	<u>Descript</u>
844-368	Water Supply Non-Potable	KG			
851-143	Curbs & Gutters	LF			
851-145	Driveway (type material - concrete, asphalt, other)	SY			
	(Trans. betw Road & Parking Lot)				
851-147	Road (type material - concrete, asphalt, other)	SY			
852-261	Vehicle Parking (Ops)	SY			
852-262	Vehicle Parking (Non Org) (Govt. Vehicle Specs)	SY			
871-183	Storm Drain Disposal	LF			
872-245	Fence Boundary	LF			
872-247	Fence Security	LF			
872-248	Fence Interior	LF			
852-289	Sidewalk (type material - concrete, asphalt, other)	SY			
890-187	Utility Vault (4 or more transformers)	SF			
890-134	Compressor Air Plt	HP			
890-154	Load & Unload G-Crane	EA			
890-171	Misc. Storage Tank	BL			
891-181	Utility Line Duct	LF			

IV. SYSTEMS - Addition

890-269	Cathodic Protection System	EA			

A. FIRE PROTECTION:

<u>Cat Code</u>	<u>Nomenclature</u>	<u>UM</u>	<u>Amount</u>	<u>Cost</u>	<u>Descript</u>
880-211	Closed Head Auto Sprinkler	SF			
		HD			
880-212	Open Head Deluge System	SF			
		HD			
880-221	Auto Fire Detection System (include pull station)	SF			
		EA			
880-222	Manual Fire Alarm System (Int)	EA			
880-223	Manual Fire Alarm System (Ext)	BX			
880-232	Foam Fire System	EA			
880-233	Other Fire System (includes Wet Chemical Systems in range hoods)	EA			

B. SECURITY SYSTEM:

<u>Cat Code</u>	<u>Nomenclature</u>	<u>UM</u>	<u>Amount</u>	<u>Cost</u>	<u>Descript</u>
872-841	Security Alarm System	EA			

C. ENERGY MONITORING AND CONTROL SYSTEM:

<u>Cat Code</u>	<u>Nomenclature</u>	<u>UM</u>	<u>Amount</u>	<u>Cost</u>	<u>Descript</u>

890-272 EMCS Field Equipment EA _____

V. PLANTS:

<u>Cat Code</u>	<u>Nomenclature</u>	<u>UM</u>	<u>Amount</u>	<u>Cost</u>	<u>Descript</u>
811-147	Electric Emergency Power Generator	KW	_____	_____	_____
	Storage Tank for Heating Or Generator Fuel (Type Fuel)	GA	_____	_____	_____
	Storage Tank for Heating	GA	_____	_____	_____
821-113	Htg Fir Cen Pit	MB	_____	_____	_____
821-115	Heating Plt 750/3500 MB	MB	_____	_____	_____
821-116	Heating Plt over 3500 MB	MB	_____	_____	_____
	Storage Tank for Heating	GA	_____	_____	_____
890-121	A/C Pit 5 to 25 TN	TN	_____	_____	_____
826-122	A/C Pit 25 to 100 TN	TN	_____	_____	_____
826-123	A/C Pit Over 100 TN	TN	_____	_____	_____
890-125	A/C Pit less than 5 TN	TN	_____	_____	_____
890-126	A/C Window Units	TN	_____	_____	_____

VI. DEMOLITION COSTS: \$_____

VII. NARRATIVE (Provide a brief narrative of what was accomplished, including items removed - A/C Units, Fire Suppression Systems, Roads, Sidewalks, etc.)

TOTAL COST OF PROJECT \$_____

I certify that the information provided is complete and accurate to the best of my knowledge.

CONTRACTOR

CONTRACTING OFFICER'S REPRESENTATIVE

DATE

DATE

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"General Decision Number: FL20260217 01/02/2026

Superseded General Decision Number: FL20250217

State: Florida

Construction Type: Building

County: Okaloosa County in Florida.

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

Modification Number	Publication Date
0	01/02/2026

ELEV0124-002 01/01/2025

	Rates	Fringes
ELEVATOR MECHANIC.....	\$ 52.29	38.435+a+b

FOOTNOTE:

a. Employer contributions 8% of regular hourly rate to vacation pay credit for employee who has worked in business more than 5 years; Employer contributions 6% of regular hourly rate to vacation pay credit for employee who has worked in business less than 5 years.

b. Paid Holidays: New Year's Day; Memorial Day; Independence Day; Labor Day; Veterans Day; Thanksgiving Day; The Friday after Thanksgiving Day; and Christmas Day.

ENGI0487-021 07/01/2016

	Rates	Fringes
OPERATOR: Crane		
All Cranes 160 Ton		
Capacity and Over.....	\$ 33.05	9.20
All Cranes Over 15 Ton		
Capacity.....	\$ 32.05	9.20
OPERATOR: Forklift.....	\$ 23.25	9.20
OPERATOR: Mechanic.....	\$ 32.05	9.20
OPERATOR: Oiler.....	\$ 23.50	9.20

IRON0402-001 10/01/2024

	Rates	Fringes
IRONWORKER, ORNAMENTAL.....	\$ 28.90	15.66

PLUM0234-012 09/01/2025

	Rates	Fringes
PIPEFITTER (Includes HVAC		
Unit Installation).....	\$ 37.50	17.59

SUFL2014-026 08/16/2016

	Rates	Fringes

CARPENTER, Includes Form Work....	\$ 16.38	0.00
CEMENT MASON/CONCRETE FINISHER...	\$ 14.61	0.00
ELECTRICIAN.....	\$ 17.39	2.57
INSULATOR: Mechanical (Duct, Pipe and Mechanical System Insulation).....	\$ 20.78	10.89
IRONWORKER, REINFORCING.....	\$ 22.81	11.58
IRONWORKER, STRUCTURAL.....	\$ 23.79	8.74
LABORER: Common or General, Including Cement Mason Tending...	\$ 11.98	0.00
LABORER: Pipelayer.....	\$ 13.56	1.34
OPERATOR: Backhoe/Excavator/Trackhoe.....	\$ 22.07	8.80
OPERATOR: Bulldozer.....	\$ 15.40	1.90
OPERATOR: Grader/Blade.....	\$ 18.97	0.00
OPERATOR: Loader.....	\$ 14.83	1.84
OPERATOR: Roller.....	\$ 14.43	4.78
PAINTER: Brush, Roller and Spray.....	\$ 14.54	2.01
PLUMBER.....	\$ 19.40	0.36
ROOFER.....	\$ 16.99	0.00
SHEET METAL WORKER, Includes HVAC Duct Installation.....	\$ 20.05	0.00
TILE SETTER.....	\$ 18.01	0.00
TRUCK DRIVER: Dump Truck.....	\$ 13.22	2.12
TRUCK DRIVER: Lowboy Truck.....	\$ 14.24	0.00

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 <https://www.dol.gov/agencies/whd/government-contracts>.

Note: Executive Order 13658 generally applies to contracts subject to the Davis-Bacon Act that were awarded on or between January 1, 2015 and January 29, 2022, and that have not been renewed or extended on or after January 30, 2022. Executive Order 13658 does not apply to contracts subject only to the Davis-Bacon Related Acts regardless of when they were awarded. If a contract is subject to Executive Order 13658, the contractor must pay all covered workers at least \$13.30 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 2025. The applicable Executive Order minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under Executive Order 13658 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) (iii)).

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

Union Rate Identifiers

A four-letter identifier beginning with characters other than ""SU"", ""UAVG"", ?SA?, or ?SC? denotes that a union rate was prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2024. PLUM is an identifier of the union whose collectively bargained rate 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. The date, 07/01/2024 in the example, is the effective date of the most current negotiated rate.

Union prevailing wage rates are updated to reflect all changes over time that are reported to WHD in the rates in the collective bargaining agreement (CBA) governing the classification.

Union Average Rate Identifiers

The UAVG identifier indicates that no single rate prevailed for those classifications, but that 100% of the data reported for the classifications reflected union rates. EXAMPLE:

UAVG-OH-0010 01/01/2024. UAVG indicates that the rate is a weighted union average rate. OH indicates the State of Ohio. The next number, 0010 in the example, is an internal number used in producing the wage determination. The date, 01/01/2024 in the example, indicates the date the wage determination was updated to reflect the most current union average rate.

A UAVG rate will be updated once a year, usually in January, to reflect a weighted average of the current rates in the collective bargaining agreements on which the rate is based.

Survey Rate Identifiers

The ""SU"" identifier indicates that either a single non-union rate prevailed (as defined in 29 CFR 1.2) for this classification in the survey or that the rate was derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As a weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SUFL2022-007 6/27/2024. SU indicates the rate is a single non-union prevailing rate or a weighted average of survey data for that classification. FL indicates the State of Florida. 2022 is the year of the 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. The date, 6/27/2024 in the example, indicates the survey completion date for the classifications and rates under that identifier.

?SU? wage rates typically remain in effect until a new survey is conducted. However, the Wage and Hour Division (WHD) has the discretion to update such rates under 29 CFR 1.6(c)(1).

State Adopted Rate Identifiers

The ""SA"" identifier indicates that the classifications and prevailing wage rates set by a state (or local) government were adopted under 29 C.F.R 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 01/03/2024 in the example, reflects the date on which the classifications and rates under the ?SA? identifier took effect under state law in the state from which the rates were adopted.

----- WAGE DETERMINATION APPEALS PROCESS

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

- a) a survey underlying a wage determination
- b) an existing published wage determination
- c) an initial WHD letter setting forth a position on a wage determination matter
- d) an initial conformance (additional classification and rate) determination

On survey related matters, initial contact, including requests for summaries of surveys, should be directed to the WHD Branch of Wage Surveys. Requests can be submitted via email to

davisbaconinfo@dol.gov or by mail to:

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

Regarding any other wage determination matter such as conformance decisions, requests for initial decisions should be directed to the WHD Branch of Construction Wage Determinations. Requests can be submitted via email to BCWD-Office@dol.gov or by mail 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 an initial decision has been issued, then any interested party (those affected by the action) that disagrees with the decision can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Requests for review and reconsideration can be submitted via email to dba.reconsideration@dol.gov or by mail 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 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.

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END OF GENERAL DECISION

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SECTION 01 14 00

WORK RESTRICTIONS
11/22, CHG 1: 02/23

PART 1 GENERAL

1.1 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government.

1.2 CONTRACTOR ACCESS AND USE OF PREMISES

1.2.1 Activity Regulations

Ensure that Contractor personnel employed on the Activity become familiar with and obey Activity regulations including safety, fire, traffic and security regulations. Keep within the limits of the work and avenues of ingress and egress. Wear appropriate personal protective equipment (PPE) in designated areas. Do not enter any restricted areas unless required to do so and until cleared for such entry. Ensure all Contractor equipment, include delivery vehicles, are clearly identified with their company name.

1.2.1.1 Subcontractors and Personnel Contacts

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

1.2.1.2 No Smoking Policy

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

1.2.2 Working Hours

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

1.2.3 Work Outside Regular Hours

Work outside regular working hours requires Contracting Officer approval. Make application 5 calendar days prior to such work to allow arrangements to be made by the Government for inspecting the work in progress, giving the specific dates, hours, location, type of work to be performed, contract number and project title. Based on the justification provided, the Contracting Officer may approve work outside regular hours. During periods of darkness, the different parts of the work must be lighted in a manner approved by the Contracting Officer. Make utility cutovers after

normal working hours or on Saturdays, Sundays, and Government holidays
unless directed otherwise.

1.2.4 Utility Cutovers and Interruptions

- a. Make utility cutovers and interruptions after normal working hours or on Saturdays, Sundays, and Government holidays. Conform to procedures required in paragraph WORK OUTSIDE REGULAR HOURS.
- b. Ensure that new utility lines are complete, except for the connection, before interrupting existing service.
- c. Interruption to water, sanitary sewer, storm sewer, telephone service, electric service, air conditioning, heating, fire alarm, and compressed air are considered utility cutovers pursuant to the paragraph WORK OUTSIDE REGULAR HOURS.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

-- End of Section --

SECTION 01 32 01.00 10

PROJECT SCHEDULE
08/23

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
AACE 84R-13	(2015) Planning and Accounting for Adverse Weather

AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE)

ASCE 67-17	(2017) Schedule Delay Analysis

U.S. ARMY CORPS OF ENGINEERS (USACE)

ER 1-1-11	(2017) Administration -- Project Schedules

1.2 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

- Project Scheduler Qualifications; G
- Preliminary Project Schedule; G
- Initial Project Schedule; G
- Periodic Schedule Update; G

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 Designated Project Scheduler must have prepared and maintained at least three previous construction schedules for projects of similar size and complexity to this contract, using Primavera P6. 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 uses Primavera P6. Ensure exported schedule files are compatible with the version of P6 used by the Government.

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. Verify at the SEKO meeting which version of P6 is in use by the Government. Export the schedule in a version of P6 no newer than that used by the Government.

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 Schedules 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 construction is the responsibility of the Contractor. Contractor management personnel must actively participate in its development. 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).

3.1.1 Scheduling Expectations Kickoff Meeting(SEKO)

In conjunction with the pre construction conference the Government and the Contractor will hold a separate and distinct Scheduling Expectations

Kickoff Meeting(SEK0). The intent of this meeting is for the Government to review with the contractor the requirements of the scheduling specification, communicate the Government's expectations regarding schedule development and management, and answer any questions the Contractor may have regarding the schedule requirements.

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. Match the progress payment "Pay Period Thru" date in RMS to the schedule data date.

3.2.1 Activity Cost Loading

Activity cost loading must be reasonable and without front-end loading. Activities with a negative cost loading is not allowed. 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. Non-procurement activities Original Durations (OD) are not to exceed 20 workdays or 30 calendar days.

3.3.3 Procurement Activities

Include in the schedule 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.

3.3.4 Mandatory Activities

Include the following activities 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 features requiring design completion
- c. Submission of mechanical/electrical/information systems layout drawings.
- d. Submission and approval of O & M manuals.
- e. Submission and approval of as-built drawings.
- f. Submission and approval of DD1354 data and installed equipment lists.
- g. Submission and approval of testing and air balance (TAB).
- h. Submission of TAB specialist design review report.
- i. Submission and approval of fire protection specialist.
- j. Submission and approval of Building Commissioning Plan, Controls testing 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 building testing and commissioning will be completed prior to submission of building commissioning report and subsequent contract completion.

These activities may include but are not limited to: air and water balancing, building commissioning -functional performance testing, controls testing, and performance verification testing. Include other systems testing, if required. Include additional commissioning requirements noted elsewhere in the Contract as required in the schedule and discuss during the SEKO meeting, noted in paragraph SCHEDULING EXPECTATIONS KICKOFF MEETING (SEKO).

- k. Contractor's pre-final inspection.
- m. Correction of punch list from Contractor's pre-final inspection.
- n. Government's pre-final inspection.
- o. Correction of punch list from Government's pre-final inspection.
- p. Final inspection.

3.3.5 Government Activities

Show in schedule, Government and other agency activities that could impact progress. These activities include, but are not limited to approvals, environmental permit approvals by State regulators, inspections, utility

tie-in, Government Furnished Equipment (GFE) and Notice to Proceed (NTP) for phasing requirements.

3.3.6 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.

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*
*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.			

3.3.6.1 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.

3.3.6.2 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.

- 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.
- 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).

3.3.6.3 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.

3.3.6.4 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.

3.3.6.5 Bid Item Coding (BIDI)

Assign a Bid Item Code to all activities using the Contract Line Item Number (CLIN) to which the activity belongs, even when an activity is not cost loaded. An activity can have only one BIDI Code.

3.3.6.6 Phase of Work Coding (PHAS)

Assign Phase of Work Code to all activities. Examples of phase of work are 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.

3.3.6.7 Category of Work Coding (CATW)

Assign a Category of Work Code to all activities. Category of Work Codes include, but are not limited to construction submittal, 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.

3.3.6.8 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 QUALITY CONTROL. An activity can have only one Feature of Work Code.

3.3.7 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.

3.3.7.1 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.

3.3.7.2 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.

3.3.7.3 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.

3.3.7.3.1 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.

3.3.7.3.2 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.

3.3.8 Adverse Weather

Ensure anticipated adverse weather is accounted for in the Project Schedule. AACE 84R-13 provides methodologies for techniques in planning for adverse weather. The preferred methodology is the use of a weather calendar. If a method other than a weather calendar is proposed the discuss the reason during the SEKO meeting.

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 Seasonal Calendar(s) and assign to seasonally affected activities as applicable.

If a weather calendar is used its implementation and execution is to be in accordance with AACE 84R-13

3.3.10 Open Ended Logic

Only two open ended activities are allowed: the first activity "NTP Acknowledged" is to have no predecessor logic, and the last activity -"End Project" is to have no successor logic. Except as noted above all activities are to have at least a start-to-start or finish-to-start relationship with its predecessor(s) and a finish-to-finish or finish-to-start relationship with its successor(s).

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 or create 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. Budgeted cost of activity is to be reduced by the amount needed to correct deficiency. The activity referenced in paragraph COST LOADING of CLOSEOUT ACTIVITIES must have its budgeted cost increased by this amount.

3.3.18 Remaining Duration

Update the remaining duration for each activity based on the number of estimated workdays it will take to complete the activity. Remaining duration may not mathematically correlate with percentage found under paragraph entitled Percent Complete. The remaining duration for unstarted activities are not to be less than its original duration.

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 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 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, 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. No payment will be made for work items not fully detailed in the Project Schedule.

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.

- a. Update information including Actual Start Dates (AS), Actual Finish Dates (AF), Remaining Durations (RD), and Percent Complete. Updated information 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 Electronic Scheduling Data

Provide electronic scheduling data containing the current project schedule and all previously submitted schedules in the format of the scheduling software (e.g. .xer). Also include the Narrative Report and all required Schedule Reports. The electronic file is to identify the type of schedule (Preliminary, Initial, Update), full contract number, Data Date and schedule file name. Each schedule must have a unique file name and use project specific settings. The file naming convention is to be determined at SEKO meeting.

3.5.2 Narrative Report

Provide a Narrative Report with each schedule submission. The Schedule Narrative Report is a "stand alone" report in PDF or Word format. Title the report "Schedule Narrative Report". Show the Report date, schedule name, and contract number on the first page. Indicate who is responsible for the schedule update and narrative report. Provide a brief description of the Project Scope. The Narrative Report is expected to communicate to the Government the thorough analysis of the schedule output and the plans to compensate for problems, either current or potential, which are revealed through that analysis. Include the following information at a minimum in the Narrative Report:

- a. Identify and discuss the work scheduled to start in the next update period.
- b. Describe activities along the critical path in addition to activities on the next float path after the critical path.
- c. Describe current and anticipated problem areas, delaying factors and their impact, and an explanation of corrective actions taken or required to be taken. Identify the party responsible for delay, if applicable.
- 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.
- g. If the longest path changes from a monthly update to the next, provide an explanation of the factors driving the change.
- h. Respond to USACE Schedule Review Comments from the previous update(s).

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. Provide two set(s) of hardcopy reports. 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 Scheduling and Leveling Report

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 Grouping and Sorting

Group and sort activities as 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 Contractor scheduler must attend in person unless virtual attendance is approved by Contracting Officer. 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. Submit schedule file and narrative to the Government a minimum of two workdays in advance of the meeting. The Contractor's Project Manager 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

schedule update meeting, make corrections to the schedule and resubmit, following the required schedule naming convention. Include only those changes approved by the Government in the schedule review meeting. Only approved schedules may be used to generate invoices 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 workdays 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

ASCE 67-17 provides delay analysis guidelines. If there is a conflict between the contract and guidance provided in ASCE 67-17, the contract will govern. Provide 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).

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 Changes That Do Not Cause Delay

If it is determined that a change does not constitute a schedule time extension, a fragnet as described in paragraph FRAGMENTARY NETWORK, is to be created and inserted into the Project schedule.

3.8.3 Time Impact Analysis (Prospective Analysis)

Prepare a time impact analysis for approval by the Contracting Officer based on industry standard AACE 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.

3.8.4 Forensic Schedule Analysis (Retrospective Analysis)

Prepare an analysis for approval by the Contracting Officer based on methodologies identified in industry standard AACE 29R-03. Identify which methodology was chosen and explain why it is more appropriate than other methodologies available.

3.8.5 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.

3.8.6 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, are not a cause for an extension to the performance period, completion date, or any interim milestone date.

3.8.7 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 workdays, 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 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, belongs to the Project and is available for Contractor and Government use. This includes activity and project float. Activity float is the number of workdays 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 "End Project" finish.

3.11 TRANSFER OF SCHEDULE DATA INTO RESIDENT MANAGEMENT SYSTEM

Ensure schedule data is uploaded to RMS. This data is 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 versions of the application for progress payment.

3.12 PRIMAVERA P6 MANDATORY REQUIREMENTS

Ensure Primavera P6 settings provide a schedule capable of fulfilling the requirements of the contract. 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 non-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" un-selected.
- i. Activity ID's must not exceed 10 characters.
- j. Activity Names must have a verb-noun structure and contain the most defining and detailed description within the first 30 characters.
- k. The daily ending hour for all work calendars must be the same.

-- End of Section --

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SECTION 01 33 00

SUBMITTAL PROCEDURES
08/18, CHG 4: 02/21

PART 1 GENERAL

1.1 SUMMARY

1.1.1 Submittal Information

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

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

1.1.2 Project Type

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

1.1.3 Submission of Submittals

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

1.2 DEFINITIONS

1.2.1 Submittal Descriptions (SD)

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

SD-01 Preconstruction Submittals

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

For Government approved division 01 preconstruction submittals that are required prior to or commencing with the start of work must be submitted within 30 calendar days of contract award unless specified elsewhere in the specifications. For contractor approved division 01 submittals that

are required prior to or commencing with the start of work must be submitted within 45 calendar days of contract award unless specified elsewhere in the specifications.

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

Certificates Of Insurance

Surety Bonds

List Of Proposed Subcontractors

List Of Proposed Products

Baseline Network Analysis Schedule (NAS)

Submittal Register

Schedule Of Prices Or Earned Value Report

Accident Prevention Plan

Work Plan

Quality Control (QC) plan

Environmental Protection Plan Explosive Safety Submission ESS Work Plan

SD-02 Shop Drawings

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

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

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

SD-03 Product Data

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

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

SD-04 Samples

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

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

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

SD-05 Design Data

Design calculations, mix designs, analyses or other data pertaining to a part of work.

SD-06 Test Reports

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

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

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

Investigation reports

Daily logs and checklists

Final acceptance test and operational test procedure

SD-07 Certificates

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

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

Confined space entry permits

Text of posted operating instructions

SD-08 Manufacturer's Instructions

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

hazards and safety precautions.

SD-09 Manufacturer's Field Reports

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

Factory test reports.

SD-10 Operation and Maintenance Data

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

Data required by operating and maintenance personnel for the safe and efficient operation, maintenance and repair of the item.

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

SD-11 Closeout Submittals

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

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

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

1.2.2 Approving Authority

Office or designated person authorized to approve the submittal.

1.2.3 Work

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

1.3 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government.

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

SD-01 Preconstruction Submittals

Submittal Register; G

1.4 SUBMITTAL CLASSIFICATION

1.4.1 Government Approved (G)

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

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

1.4.2 For Information Only

Submittals not requiring Government approval will be for information only. Within the terms of the Contract Clause SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION, they are not considered to be "shop drawings."

1.4.3 Sustainability Reporting Submittals (S)

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

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

1.5 PREPARATION

1.5.1 Transmittal Form

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

1.5.2 Submittal Format

1.5.2.1 Format of SD-01 Preconstruction Submittals

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

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

1.5.2.2 Format for SD-02 Shop Drawings

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

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

Submit an electronic copy of drawings in PDF format.

1.5.2.2.1 Drawing Identification

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

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

Reserve a blank space, no smaller than 2 inches on the right-hand side of each sheet for the Government disposition stamp.

1.5.2.3 Format of SD-03 Product Data

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

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

1.5.2.3.1 Product Information

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

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

1.5.2.3.2 Standards

Where equipment or materials are specified to conform to industry or technical-society reference standards of such organizations as the American National Standards Institute (ANSI), ASTM International (ASTM),

National Electrical Manufacturer's Association (NEMA), Underwriters Laboratories (UL), or Association of Edison Illuminating Companies (AEIC), submit proof of such compliance. The label or listing by the specified organization will be acceptable evidence of compliance. In lieu of the label or listing, submit a certificate from an independent testing organization, competent to perform testing, and approved by the Contracting Officer. State on the certificate that the item has been tested in accordance with the specified organization's test methods and that the item complies with the specified organization's reference standard.

1.5.2.3.3 Data Submission

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

Submit the manufacturer's instructions before installation.

1.5.2.4 Format of SD-04 Samples

1.5.2.4.1 Sample Characteristics

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

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

1.5.2.4.2 Sample Incorporation

Reusable Samples: Incorporate returned samples into work only if so specified or indicated. Incorporated samples are to be in undamaged

condition at the time of use.

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

1.5.2.4.3 Comparison Sample

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

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

1.5.2.5 Format of SD-05 Design Data

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

1.5.2.6 Format of SD-06 Test Reports

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

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

1.5.2.7 Format of SD-07 Certificates

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

1.5.2.8 Format of SD-08 Manufacturer's Instructions

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

Submit the manufacturer's instructions before installation.

1.5.2.8.1 Standards

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

tested in accordance with the specified organization's test methods and that the item complies with the specified organization's reference standard.

1.5.2.9 Format of SD-09 Manufacturer's Field Reports

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

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

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

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

1.5.2.11 Format of SD-11 Closeout Submittals

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

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

1.5.3 Source Drawings for Shop Drawings

1.5.3.1 Source Drawings

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

1.5.3.2 Terms and Conditions

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

These electronic source drawing files are not construction documents. Differences may exist between the source drawing files and the corresponding construction documents. The Government makes no representation regarding the accuracy or completeness of the electronic source drawing files, nor does it make representation to the compatibility of these files with the Contractor hardware or software. The Contractor is responsible for determining if any conflict exists. In the event that a conflict arises between the signed and sealed construction documents prepared by the Government and the furnished source drawing files, the

signed and sealed construction documents govern. Use of these source drawing files does not relieve the Contractor of the duty to fully comply with the contract documents, including and without limitation the need to check, confirm and coordinate the work of all contractors for the project. If the Contractor uses, duplicates or modifies these electronic source drawing files for use in producing construction data related to this contract, remove all previous indication of ownership (seals, logos, signatures, initials and dates).

1.5.4 Electronic File Format

Provide submittals in electronic format, with the exception of material samples required for SD-04 Samples items. In addition to the electronic submittal, provide three hard copies of the submittals. Compile the submittal file as a single, complete document, to include the Transmittal Form described within. Name the electronic submittal file specifically according to its contents, and coordinate the file naming convention with the Contracting Officer. Electronic files must be of sufficient quality that all information is legible. Use PDF as the electronic format, unless otherwise specified or directed by the Contracting Officer. Generate PDF files from original documents with bookmarks so that the text included in the PDF file is searchable and can be copied. If documents are scanned, optical character resolution (OCR) routines are required. Index and bookmark files exceeding 30 pages to allow efficient navigation of the file. When required, the electronic file must include a valid electronic signature or a scan of a signature.

Submittals shall be submitted through RMS CM. No submittals will be reviewed in any other submission format.

Provide hard copies of submittals when requested by the Contracting Officer. Up to two additional hard copies of any submittal may be requested at the discretion of the Contracting Officer, at no additional cost to the Government.

1.6 QUANTITY OF SUBMITTALS

1.6.1 Number of SD-04 Samples

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

1.6.2 Number of SD-10 Operation and Maintenance Data Copies

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

1.6.3 Number of SD-11 Closeout Submittals Copies

Unless otherwise specified, submit two sets of administrative submittals.

1.7 INFORMATION ONLY SUBMITTALS

Submittals without a "G" designation must be certified by the QC manager and submitted to the Contracting Officer for information-only. Provide information-only submittals to the Contracting Officer a minimum of 14 calendar days prior to the Preparatory Meeting for the associated Definable Feature of Work (DFOW). Approval of the Contracting Officer is not required on information only submittals. The Contracting Officer will mark "receipt acknowledged" on submittals for information and will return only the transmittal cover sheet to the Contractor. Normally, submittals for information only will not be returned. However, the Government reserves the right to return unsatisfactory submittals and require the Contractor to resubmit any item found not to comply with the contract. This does not relieve the Contractor from the obligation to furnish material conforming to the plans and specifications; will not prevent the Contracting Officer from requiring removal and replacement of nonconforming material incorporated in the work; and does not relieve the Contractor of the requirement to furnish samples for testing by the Government laboratory or for check testing by the Government in those instances where the technical specifications so prescribe.

1.8 PROJECT SUBMITTAL REGISTER

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

1.8.1 Submittal Management

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

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

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

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

Thereafter, the Contractor is to track all submittals by maintaining a complete list, including completion of all data columns and all dates on

which submittals are received by and returned by the Government.

1.8.2 Preconstruction Use of Submittal Register

Submit the submittal register. Include the QC plan and the project schedule. Verify that all submittals required for the project are listed and add missing submittals. Coordinate and complete the following fields on the register submitted with the QC plan and the project schedule:

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

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

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

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

1.8.3 Contractor Use of Submittal Register

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

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

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

Column (l) Date submittal transmitted.

Column (q) Date approval was received.

1.8.4 Approving Authority Use of Submittal Register

Update the following fields:

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

Column (l) Date submittal was received.

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

Column (q) Date of return to Contractor.

1.8.5 Action Codes

1.8.5.1 Contractor Action Codes

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

1.8.6 Delivery of Copies

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

1.9 VARIATIONS

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

1.9.1 Considering Variations

Discussion of variations with the Contracting Officer before submission will help ensure that functional and quality requirements are met and minimize rejections and resubmittals. For variations that include design changes or some material or product substitutions, the Government may require an evaluation and analysis by a licensed professional engineer hired by the contractor.

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

1.9.2 Proposing Variations

When proposing variation, deliver a submittal, clearly marked as a "VARIATION" to the Contracting Officer, with documentation illustrating the nature and features of the variation including any necessary technical submittals and why the variation is desirable and beneficial to Government. If lower cost is a benefit, also include an estimate of the cost savings. In addition to documentation required for variation, include the submittals required for the item. Clearly mark the proposed variation in all documentation.

The Contracting Officer will indicate an approval or disapproval of the variation request; and if not approved as submitted, will indicate the Government's reasons therefore. Any work done before such approval is received is performed at the Contractor's risk."

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

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

1.9.3 Warranting that Variations are Compatible

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

1.9.4 Review Schedule Extension

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

1.10 SCHEDULING

Schedule and submit concurrently product data and shop drawings covering component items forming a system or items that are interrelated. Submit pertinent certifications at the same time. No delay damages or time extensions will be allowed for time lost in late submittals. Allow an additional 15 calendar days for review and approval of submittals for food service equipment and refrigeration and HVAC control systems.

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

register but does not pertain to the contract work, the Contractor is to include the submittal in the register and annotate it "N/A" with a brief explanation. Approval by the Contracting Officer does not relieve the Contractor of supplying submittals required by the contract documents but that have been omitted from the register or marked "N/A."

- c. Resubmit the submittal register and annotate it monthly with actual submission and approval dates. When all items on the register have been fully approved, no further resubmittal is required.

Contracting Officer review will be completed within 30 calendar days after the date of submission.

1.11 GOVERNMENT APPROVING AUTHORITY

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

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

Upon completion of review of submittals requiring Government approval, stamp and date submittals.

1.11.1 Review Notations

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

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

1.12 DISAPPROVED SUBMITTALS

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

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

1.13 APPROVED SUBMITTALS

The Contracting Officer's approval of submittals is not to be construed as a complete check, and indicates only that.

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

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

1.14 APPROVED SAMPLES

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

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

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

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

requirements.

1.15 WITHHOLDING OF PAYMENT

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

1.16 CERTIFICATION OF SUBMITTAL DATA

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

____NAME OF CONTRACTOR ____ SIGNATURE OF CONTRACTOR

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

-- End of Section --

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SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION

LRSO Hardware Software Development Facility

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH	GOVT CLASSIFICATION	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION		DATE FWD TO APPR AUTH/	APPROVING AUTHORITY				MAILED TO CONTR/	REMARKS
						SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION	DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION	DATE RCD FRM APPR AUTH	
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		01 00 00	SD-01 Preconstruction Submittals														
			Hazard Analysis	1.9	G RO												
			AF Form 103, Base Civil	1.20	G RO												
			Engineering Work Clearance Request														
			Contractor's Area Use Plan	1.15	G RO												
			SD-07 Certificates														
			Asbestos and Lead Based Paint Certification Letter	1.28	G RO												
			SD-11 Closeout Submittals														
			Redlined As-Built Drawings	1.14	G RO												
			Progress As-Built Building Information Model (BIM)	1.14	G RO												
			Final As-Built BIM	1.14	G RO												
			As-Built Drawings	1.14	G RO												
		01 32 01.00 10	SD-01 Preconstruction Submittals														
			Project Scheduler Qualifications	1.3	G												
			Preliminary Project Schedule	3.4.1	G												
			Initial Project Schedule	3.4.2	G												
			Periodic Schedule Update	3.6.2	G												
		01 33 00	SD-01 Preconstruction Submittals														
			Submittal Register	1.8	G												
		01 33 29	SD-05 Design Data														
			Final Design High Performance and Sustainable Building Checklist	1.5.3.2	G												

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(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		01 33 29	Final Design Sustainability eNotebook	1.5.3.2	G												
			SD-11 Closeout Submittals														
			Final High Performance and Sustainable Building Checklist	1.5.3.2	G												
			Final Sustainability eNotebook	1.5.3.2	G												
		01 35 26	SD-01 Preconstruction Submittals														
			Accident Prevention Plan (APP)	1.8.1	G												
			Final IAQ Management Plan	1.15	S												
			Indoor Air Quality (IAQ) Management Plan	1.15	G												
			SD-06 Test Reports														
			LHE Inspection Reports	1.12.2													
			Monthly Exposure Reports	1.5	G												
			SD-07 Certificates														
			Activity Hazard Analysis (AHA)	1.9	G												
			Certificate of Compliance	1.12.3													
			Hot Work Permit	1.13													
			Standard Lift Plan	1.12.3.2	G												
			Critical Lift Plan	1.12.3.2	G												
		01 45 00	SD-01 Preconstruction Submittals														
			Contractor Quality Control (CQC) Plan	1.5.2	G												
			SD-06 Test Reports														
			Verification Statement	1.12.3													
		01 45 35	SD-01 Preconstruction Submittals														

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(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		01 45 35	SIOR Letter of Acceptance	3.1.1	G												
			Project Manual	3.1.1	G												
			Project Manual	3.1.1	G												
			Contractor's Statement of Responsibility	1.2	G												
			SD-06 Test Reports														
			Daily Reports	3.1.1													
			Daily Reports	3.1.3													
			Biweekly Reports	3.1.1													
			SD-07 Certificates														
			Steel Truss Plant Quality Assurance Program	2.1													
			Certificate of Compliance	2.1													
			Special Inspector of Record	1.5.10	G												
			Special Inspector	1.5	G												
			SD-11 Closeout Submittals														
			Comprehensive Final Report	3.1.1	G												
			Comprehensive Final Report	3.1.3	G												
		01 50 00	SD-01 Preconstruction Submittals														
			Construction Site Plan	1.3	G												
			Traffic Control Plan	3.2.1	G												
			Haul Road Plan	2.2.1	G												
			Contractor Computer Cybersecurity Compliance Statements	1.6.1.4	G												

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ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH	GOVT CLASS SIF CATION OR A/E REVIEW OR	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION		DATE FWD TO APPR AUTH/	APPROVING AUTHORITY				MAILED TO CONTR/	REMARKS
						SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION	DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION	DATE RCD FRM APPR AUTH	
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		01 50 00	Contractor Temporary Network Cybersecurity Compliance Statements	1.6.6	G												
			SD-03 Product Data Backflow Preventers	1.4	G												
			SD-06 Test Reports Backflow Preventer Tests	3.3													
			SD-07 Certificates Backflow Tester	1.4.1													
			Backflow Preventers	1.4													
		01 57 19	SD-01 Preconstruction Submittals														
			UXO Recognition Plan and Training	1.6	G												
			Preconstruction Survey	1.5.1													
			Regulatory Notifications	1.5.2													
			Environmental Manager Qualifications	1.5.4													
			Employee Training Records	1.5.5													
			Environmental Protection Plan	1.7	G												
			Dirt and Dust Control Plan	1.7.9.1													
			Solid Waste Management Permit	1.9													
			Stormwater Pollution Prevention Plan	3.3.1.1	G												
			Stormwater Notice of Intent	3.3.1.2													
			Spill Prevention Control And Countermeasure (SPCC) Plan	3.16.2	G												

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(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		01 57 19	SD-06 Test Reports														
			Monthly Solid Waste Disposal Report	1.9.1	G												
			Inspection Reports	3.3.1.3													
			Laboratory Analysis	3.8.1.1.2													
			SD-07 Certificates														
			Employee Training Records	1.5.5	G												
			Erosion and Sediment Control Inspector	1.5.5													
			SD-11 Closeout Submittals														
			Regulatory Notifications	1.5.2	G												
			Assembled Employee Training Records	1.5.5	G												
			Solid Waste Management Permit	1.9	G												
			Stormwater Notice of Termination	3.3.1.4	G												
			Waste Determination Documentation	3.8.1	G												
			Project Solid Waste Disposal Documentation Report	3.8.2.1	G												
			Sales Documentation	3.8.2.1	G												
			Hazardous Waste/Debris Management	3.8.3.1	G												
			Disposal Documentation for Hazardous and Regulated Waste	3.8.3.6	G												
		01 74 19	SD-01 Preconstruction Submittals														

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						SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION	DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION		
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		01 74 19	Construction Waste Management Plan	1.7	G												
			SD-06 Test Reports														
			Quarterly Reports	1.9.2													
			Annual Report	1.9.3													
			SD-11 Closeout Submittals														
			Final Construction Waste	1.10	S												
			Diversion Report														
		01 78 00	SD-03 Product Data														
			Warranty Management Plan	1.5.1													
			Warranty Tags	1.5.5													
			Spare Parts Data	1.4													
			SD-08 Manufacturer's Instructions														
			Instructions	1.5.1													
			SD-11 Closeout Submittals														
			Certification of EPA Designated	2.1	G												
			Items														
			Certification Of USDA Designated	2.2	G												
			Items														
		01 78 23	SD-10 Operation and Maintenance														
			Data														
			Facility Data Workbook	1.4	G												
			Training Plan	3.1.1	G												
			Training Outline	3.1.3	G												
			Training Content	3.1.2	G												

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(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		01 78 23	Operation And Maintenance Manual, Progress Submittal	3.2.1	G												
			Operation And Maintenance Manual, Prefinal Submittal	3.2.2	G												
			Operation And Maintenance Manual, Final Submittal	3.2.3	G												
			SD-11 Closeout Submittals														
			Training Video Recording	3.1.4	G												
			Validation of Training Completion	3.1.6	G												
			Training Plan	3.1.1	G												
			Record Drawings And Utility Systems	1.6.6.7	G												
		01 91 00.15	SD-06 Test Reports														
			Completed Construction Observation Checklists	3.6	G												
			Design Review Report	3.1	G												
			Interim Construction Phase Commissioning Plan	3.5	G												
			Final Construction Phase Commissioning Plan	3.5	G												
			Issues Log	1.11	G												
			SD-07 Certificates														
			Commissioning Firm	1.8	G												
			SD-10 Operation and Maintenance Data														

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						SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION	DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION	DATE RCD FRM APPR AUTH	
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		01 91 00.15	Maintenance and Service Life Plan	3.10	G												
			Systems Manual	3.9	G												
			SD-11 Closeout Submittals														
			Final Commissioning Report	3.11	G												
			Final Commissioning Report (eNotebook)	3.11	S												
		03 30 00	SD-01 Preconstruction Submittals														
			Concrete Curing Plan	1.6.3.1													
			Quality Control Program	1.6.5	G												
			Quality Control Personnel Certifications	1.6.6	G												
			Quality Control Organizational Chart	1.6.6													
			Laboratory Accreditation	1.6.8	G												
			Cold Weather Plan	1.6.5.1	G												
			Hot Weather Plan	1.6.5.2	G												
			Maturity Method Data	3.3.11													
			SD-02 Shop Drawings														
			Reinforcing Steel	1.6.2.1	G												
			Placement Sequence and Jointing Plan	3.10.1	G												
			SD-03 Product Data														
			Joint Sealants	2.4.4													
			Joint Filler	2.4.3													
			Formwork Materials	2.1													

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ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH	GOVT CLASS S I F I C A T I O N A / E R E V W R	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION		DATE FWD TO APPR AUTH/ DATE RCD FROM CONTR	APPROVING AUTHORITY				MAILED TO CONTR/ DATE RCD FRM APPR AUTH	REMARKS
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		03 30 00	Cementitious Materials	2.3.1													
			Vapor Barrier	2.4.5													
			Concrete Curing Materials	2.4.1													
			Reinforcement	2.6													
			Liquid Chemical Floor Hardeners and Sealers	2.4.2.1													
			Admixtures	2.3.4													
			Mechanical Reinforcing Bar Connectors	2.6.2													
			Local/Regional Materials	1.8.1													
			Biodegradable Form Release Agent	2.2.2													
			Pumping Concrete	1.6.3.2													
			SD-04 Samples														
			Mockup	3.3.6	G												
			SD-05 Design Data														
			Concrete Mixture Proportion	1.6.1.1	G												
			SD-06 Test Reports														
			Concrete Mixture Proportion	1.6.1.1	G												
			Fly Ash	1.6.4.1													
			Pozzolans	1.6.4.1													
			Silica Fume	1.6.4.3													
			Slag Cement	1.6.4.2													
			Aggregates	1.6.4.4													
			Compressive Strength Tests	3.12.3.3	G												

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		03 30 00	Unit Weight of Structural Concrete	3.12.3.5													
			Air Content	3.12.3.4													
			Slump Tests	3.12.3.1													
			Water	2.3.2													
			SD-07 Certificates														
			Reinforcing Bars	2.6.1													
			Welder Qualifications	1.9													
			Silica Fume Manufacturer's Representative	1.6.3.3													
			VOC Content for Form Release Agents, Curing Compounds, and Concrete Penetrating Sealers	1.6.3.4													
			Safety Data Sheets	1.6.3.5													
			Ready-mixed Concrete	2.5.5													
			Manufacturer (Plant) and Trucks														
			Field Testing Technician and Testing Agency	1.6.6.2													
			SD-08 Manufacturer's Instructions														
			Liquid Chemical Floor Hardeners and Sealers	2.4.2.1													
			Joint Sealants	2.4.4	S												
			Curing Compounds	2.4.1													
		03 54 13	SD-03 Product Data														
			Product Data	2.1.1	G AE												
		04 20 00	SD-03 Product Data														

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		04 20 00	Hot Weather Procedures	1.5.1	G												
			Cold Weather Procedures	1.5.2	G												
			Clay or Shale Brick	2.2.2	G												
			Cementitious Materials	2.3.1.1	G												
			SD-04 Samples														
			Mock-Up Panel	1.3.1.1	G												
			Clay or Shale Brick	2.2.2	G												
			Concrete Masonry Units (CMU)	2.2.3.2	G												
			Admixtures for Masonry Mortar	2.3.1.4	G												
			Anchors, Ties, and Bar	2.5.1	G												
			Positioners														
			SD-05 Design Data														
			Masonry Compressive Strength	2.1.2	G												
			Stone	2.2.4	G												
			SD-06 Test Reports														
			Efflorescence Test	2.2.2.1.5													
			Field Testing of Mortar	3.6.1.1													
			SD-07 Certificates														
			Special Masonry Inspector	1.3.2													
			Qualifications														
			Clay or Shale Brick	2.2.2													
			Concrete Masonry Units (CMU)	2.2.3.2													
			Cementitious Materials	2.3.1.1													
			Anchors, Ties, and Bar	2.5.1													
			Positioners														
			SD-08 Manufacturer's Instructions														

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		04 20 00	Admixtures for Masonry Mortar	2.3.1.4													
			SD-10 Operation and Maintenance														
			Data														
			Take-Back Program	3.8													
			SD-11 Closeout Submittals														
			Clay Units	2.2.2.1.4	S												
			Recycled Content	2.2.3.2.1	S												
		05 05 20	SD-01 Preconstruction Submittals														
			Installer Qualifications	1.5.1.1	G												
			Post-Installed Anchor Special	1.5.1.2	G												
			Inspector Qualifications														
			SD-03 Product Data														
			Mechanical Anchors in Concrete	2.1.1.3	G												
			Adhesive Anchor System in	2.1.1.4	G												
			Concrete														
			Non-Shrink, Non-Metallic Grout	3.1.3	G												
			SD-06 Test Reports														
			Post-Installed Anchor Special	3.3.4	G												
			Inspections Report														
			SD-07 Certificates														
			Post-Installed Anchor	2.1.1.1	G												
			Certification														
			SD-08 Manufacturer's Instructions														
			Manufacturer's Printed	2.1.1.2	G												
			Installation Instructions														
			Non-Shrink, Non-Metallic Grout	3.1.3	G												

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		05 05 20	Manufacturer's Material Safety Data Sheets	1.5													
		05 05 23.16	SD-01 Preconstruction Submittals														
			Welding Quality Assurance Plan	3.2	G												
			SD-03 Product Data														
			Welding Procedure Qualifications	1.3	G												
			Welder, Welding Operator, and Tacker Qualification	1.3.4													
			Previous Qualifications	1.3.2													
			Pre-Qualified Procedures	1.3.3	G												
			Welding Electrodes and Rods	2.2													
			SD-06 Test Reports														
			Nondestructive Testing	3.3													
			Weld Inspection Log	3.2													
			SD-07 Certificates														
			Certified Welding Procedure Specifications (WPS)	1.3.1													
			Certified Procedure Qualification Records (PQR)	1.3.1													
			Certified Welder Performance Qualifications (WPQ)	1.3.1													
			Certified Welding Inspector	1.3.5													
			Nondestructive Testing Personnel	1.3.5													
		05 30 00	SD-02 Shop Drawings														
			Fabrication Drawings	1.3.5	G												
			SD-03 Product Data														

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		05 30 00	Accessories	2.2													
			Deck Units	2.1													
			Galvanizing Repair Paint	2.1.3													
			Galvanizing Repair Paint	3.2.4.1													
			Mechanical Fasteners	2.2.11													
			Touch-Up Paint	2.1.3													
			Welding Equipment	1.3.3													
			Welding Rods and Accessories	1.3.3													
			Recycled Content of Steel	2.1	S												
			Products														
			SD-04 Samples														
			Metal Roof Deck Units	2.1.1													
			Flexible Closure Strips	2.2.3													
			SD-05 Design Data														
			Deck Units	2.1	G												
			SD-07 Certificates														
			Powder-Actuated Tool Operator	1.3.2													
			Welder Qualifications	1.3.3													
			Welding Procedures	1.3.3													
			Fire Safety	1.3.4.1													
			Wind Storm Resistance	1.3.4.2													
			Manufacturer's Certificate	1.3.1													
		05 40 00	SD-02 Shop Drawings														
			Framing Components	1.5.1	G												
			SD-03 Product Data														
			Studs, Joists	2.1													

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		05 40 00	Recycled Content of Steel Products	2.1	S												
			SD-07 Certificates														
			Load-Bearing Cold-Formed Metal Framing	1.4													
			Welds	3.2.1													
		05 44 00	SD-02 Shop Drawings														
			Truss Design Drawings	1.8	G												
			Truss Design Drawings	3.2	G												
			Truss Placement Diagram	3.2	G												
			SD-03 Product Data														
			steel truss bracing, bridging, blocking, reinforcements, fasteners, and accessories	2.2	G												
			SD-05 Design Data														
			Truss Design Calculations	1.7	G												
			Installation Guidelines	3.2	G												
			SD-07 Certificates														
			Mill Certificates	1.8													
			Welds	2.2													
		05 50 13	SD-02 Shop Drawings														
			Structural Steel Door Frames	2.12	G												
			Cover Plates and Frames	2.5	G												
			Floor Gratings	2.6	G												
			Bollards/Pipe Guards	2.7	G												
			Angles and Plates	2.9	G												

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		05 50 13	SD-03 Product Data														
			Corner Guards	2.4													
			Cover Plates and Frames	2.5	G												
			Floor Gratings	2.6	G												
			Structural Steel Door Frames	2.12	G												
			Downspout Terminations	2.8	G												
			Recycled Content	2.1	S												
			SD-07 Certificates														
			Certificates of Compliance	2.1	G												
			Certified Mill	2.2	G												
		06 10 00	SD-03 Product Data														
			Underlayment	2.4													
			Fire-retardant Treatment	1.8													
			Structural-use and OSB Panels	1.4.3													
			Oriented Strand Board	2.3													
			Adhesives	2.5.2													
			SD-07 Certificates														
			Certificates of Grade	1.11.1													
			Certified Sustainably Harvested	2.3.1.1	S												
			Plywood for Other Uses														
			Preservative Treatment	1.7													
			Indoor Air Quality for Aerosol	2.5.2	S												
			Adhesives														
			Indoor Air Quality for Non-aerosol	2.5.2	S												
			Adhesives														
		06 12 13	SD-03 Product Data														

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		06 12 13	Product Data	2.2.1	G AE												
			SD-08 Manufacturer's Instructions														
			Material Safety Data	2.2.1	G												
			SD-10 Operation and Maintenance Data														
			Maintenance Manuals	2.2.1	G												
		06 41 16.00 10	SD-02 Shop Drawings														
			Shop Drawings	2.10	G AE												
			Installation	3.1	G												
			SD-03 Product Data														
			Wood Materials	2.1	G												
			Wood Finishes	2.9	G												
			Finish Schedule	2.10.7.3	G												
			Certification	1.5.2													
			SD-04 Samples														
			Plastic Laminates	2.3	G AE												
			Cabinet Hardware	2.6	G AE												
			SD-07 Certificates														
			Quality Assurance	1.5	G												
			Laminate Clad Casework	2.9	G												
			Laminate Clad Casework	3.1	G												
			SD-11 Closeout Submittals														
			LEED Documentation	1.3	S												
		06 61 16	SD-02 Shop Drawings														
			Installation	3.1	G												
			SD-03 Product Data														

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		06 61 16	Solid Polymer	2.1.1	G												
			Indoor air quality for solid surface	2.2.2	S												
			seam and sealant products														
			SD-04 Samples														
			Material	2.1	G												
			Counter Tops	2.3.4	G												
			SD-06 Test Reports														
			Test Report Results	2.1.1													
			SD-07 Certificates														
			Qualifications	1.5.1													
			Indoor Air Quality for solid	2.1.1	S												
			surface fabrication products														
			SD-10 Operation and Maintenance														
			Data														
			Solid Polymer	2.1.1	G												
		07 14 00	SD-03 Product Data														
			Fluid-Applied Membrane	2.1													
			Membrane Primer	2.2													
			Elastomeric Sheet	2.6													
			Flexible Foam-Backed	2.8													
			Elastomeric Sheet														
			Solvent	3.3													
			Moisture Meter	3.4.1													
			Bond Breaker	2.5													
			SD-11 Closeout Submittals														
			Warranty	1.6													

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		07 14 00	Information Card	3.5													
		07 21 16	SD-03 Product Data														
			Blanket Insulation	2.1	G												
			Recycled Content for Insulation Materials	2.1.1	S												
			Energy Star Label for Insulation Materials	2.1.2	S												
			Pressure Sensitive Tape	2.3													
			Accessories	2.4													
			SD-07 Certificates														
			Indoor Air Quality for Adhesives	2.4.1	S												
			SD-08 Manufacturer's Instructions														
			Insulation	3.3.1													
		07 22 00	SD-02 Shop Drawings														
			Insulation Board Layout	1.3	G												
			SD-03 Product Data														
			Insulation	2.1	G												
			Cover Board	1.4	G												
			Fasteners	2.3	G												
			Moisture Control	2.2	G												
			SD-06 Test Reports														
			Flame Spread Rating	1.7.1	G												
			SD-07 Certificates														
			Installer Qualifications	1.6	G												
			Acceptable Foam Blowing Agents	2.1.2	S												
			SD-08 Manufacturer's Instructions														

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		07 22 00	Fasteners	2.3	G												
			Insulation	2.1	G												
		07 27 10	SD-02 Shop Drawings														
			Air Barrier System Shop Drawings	2.1	G												
			SD-03 Product Data														
			Air Barrier System Product Data	2.1	G												
			Material Samples For Air Barrier System	2.1	G												
			Manufacturer Data Sheet	2.2	G												
			SD-05 Design Data														
			Design Data And Calculations For The Air Barrier System	1.8	G												
			SD-06 Test Reports														
			Design Review Report	1.8	G												
			Testing and Inspection	3.1.2	G												
			SD-07 Certificates														
			Air Barrier Inspector	1.7	G RO												
		07 42 13	SD-01 Preconstruction Submittals														
			Qualification of Installation Contractor	1.5.1	G												
			Warranty	1.8	G												
			SD-03 Product Data														
			Factory Color Finish	2.3.1													
			Closure Materials	1.5.2													
			Sealants and Caulking	2.4.1.1													

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		07 42 13	Accessories	1.5.2													
			Accessories	2.4													
			Soffits	2.2	G												
			Coating	2.3.1.6	G												
			SD-04 Samples														
			Wall Panels	2.1	G												
			Fasteners	2.1.2	G												
			Fasteners	2.1.2	G												
			SD-06 Test Reports														
			Leakage Tests	3.7.2	G												
			Chalking	2.3.1.6	G												
			SD-11 Closeout Submittals														
			Warranty	1.8	G												
			Maintenance Instructions	1.5.3	G												
			20 year 'No Dollar Limit' warranty for labor and material	1.8.1													
		07 60 00	SD-02 Shop Drawings														
			Exposed Sheet Metal	2.1.1	G												
			Gutters	3.1.12	G												
			Downspouts	3.1.13	G												
			Flashing at Roof Penetrations and Equipment Supports	3.1.18	G												
			Open Valley Flashing	3.1.14	G												
			Eave Flashing	3.1.15	G												
			SD-04 Samples														
			Finish Samples	1.4.2	G												

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		07 61 14.00 20	SD-02 Shop Drawings														
			Roofing	1.2.3	G												
			SD-03 Product Data														
			Roofing Panels	2.1	G												
			Energy Star Label for Steel	2.1	S												
			Roofing Product														
			Recycled Content for Steel	2.1.1	S												
			Roofing Product														
			Attachment Clips	2.3													
			Accessories	2.4													
			Fasteners	2.4.2													
			Sealants	2.4.3													
			Warranty	1.7	G												
			Downspout Terminations	2.5	G												
			SD-04 Samples														
			Panel	2.1													
			Sealants	2.4.3													
			Intermediate Support	2.2													
			SD-05 Design Data														
			Design Calculations	1.5													
			SD-06 Test Reports														
			Field Inspection	3.6													
			Structural Performance	1.3.3													
			Finish	1.6.6													
			SD-07 Certificates														

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		07 61 14.00 20	Manufacturer's Technical Representative	1.6.3													
			Installer's Qualifications	1.6.4													
			SD-08 Manufacturer's Instructions														
			Installation	3.3	G												
			SD-11 Closeout Submittals														
			Information Card	3.8													
			Warranty	1.7													
		07 84 00	SD-02 Shop Drawings														
			Firestopping System	2.1	G												
			SD-06 Test Reports														
			Inspection	3.3	G												
			SD-07 Certificates														
			Firestopping Materials	2.2													
			Installer Qualifications	1.5.1	G												
		07 92 00	SD-03 Product Data														
			Sealants	2.1	G												
			Primers	2.2	G												
			Bond Breakers	2.3	G												
			Backstops	2.4	G												
			Caulking	2.5	G												
			Cleaning Solvents	2.6	G												
			Field Adhesion	3.1	G												
			SD-07 Certificates														
			Indoor Air Quality For Interior	2.1.1	S												
			Sealants														

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		07 92 00	Indoor Air Quality For Interior Acoustical Sealants	2.1.3	S												
			Indoor Air Quality For Interior Caulking	2.5	S												
		08 11 13	SD-02 Shop Drawings														
			Doors	2.2	G AE												
			Doors	2.2	G AE												
			Frames	2.7	G AE												
			Frames	2.7	G AE												
			Accessories	2.5	G AE												
			SD-03 Product Data														
			Doors	2.2	G AE												
			Recycled Content for Steel Door Product	2.2	S												
			Frames	2.7	G AE												
			Recycled Content for Steel Frame Product	2.7	S												
			Accessories	2.5	G AE												
		08 31 00	SD-02 Shop Drawings														
			Access Doors And Panels	1.3	G												
			SD-03 Product Data														
			Access Doors And Panels	1.3	G												
			Hardware	1.3.2	G												
			Accessories	2.2.8	G												
			Power Transfer Components	1.3.1	G												
			Recycled Content	2.1	S												

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		08 31 00	SD-04 Samples														
			Finishes	2.5	G												
			SD-06 Test Reports														
			Fire-rating(s) of Assemblies	1.3.1	G												
			Acoustical Ratings of Assemblies	1.3.1	G												
		08 34 01	SD-02 Shop Drawings														
			Installation	3.5	G												
			SD-03 Product Data														
			Forced Entry Resistant Components	1.3	G												
			Installation Components	3.5 1.4	G G												
			SD-07 Certificates														
			Forced Entry Resistant Components	1.3	G												
		08 34 73	SD-02 Shop Drawings														
			Fabrication Drawings	2.1	G AE												
			SD-03 Product Data														
			Hollow Metal Sound Retardant Doors	2.1	G AE												
			Door Frames	2.1	G AE												
			Door Hardware	2.1	G AE												
			Door Frame Sound Infill	2.3.2	G AE												
			Thresholds	2.1	G AE												
			SD-06 Test Reports														
			Wind Loading Tests	2.4.4	G AE												

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ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH	GOVT CLASSIFICATION	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION		DATE FWD TO APPR AUTH/	APPROVING AUTHORITY				MAILED TO CONTR/	REMARKS
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		08 34 73	Water Leakage Tests	2.4.4	G AE												
			Acoustical Tests	2.4.4	G AE												
			Air Infiltration Tests	2.4.4	G AE												
			Positive Pressure Tests	2.4.4	G AE												
			SD-07 Certificates														
			Hollow Metal Sound Retardant	2.1	G AE												
			Doors														
			Door Frames	2.1	G AE												
			Door Hardware	2.1	G AE												
			Thresholds	2.1	G												
			Assembly Test Reports	3.3.1													
		08 71 00	SD-02 Shop Drawings														
			Manufacturer's Detail Drawings	1.3	G AE												
			Verification of Existing Conditions	1.3	G AE												
			Hardware Schedule	1.5	G AE												
			Keying System	2.3.9	G AE												
			SD-03 Product Data														
			Hardware Items	2.3	G AE												
			Recycled Content	1.4	S												
			SD-08 Manufacturer's Instructions														
			Installation	3.1													
			SD-10 Operation and Maintenance														
			Data														
			Hardware Schedule	1.5	G AE												
			SD-11 Closeout Submittals														
			Key Bitting	1.6.1	G												

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		08 91 00	SD-02 Shop Drawings														
			Wall Louvers	1.4	G AE												
			SD-03 Product Data														
			Metal Wall Louvers	2.2	G AE												
			SD-04 Samples														
			Wall Louver Samples	1.5	G AE												
		09 29 00	SD-03 Product Data														
			Cementitious Backer Units	2.1.7	G AE												
			Glass Mat Water-Resistant	2.1.4													
			Gypsum Tile Backing Board														
			Water-Resistant Gypsum Backing Board	2.1.3	G AE												
			Glass Mat Covered or Reinforced Gypsum Sheathing	2.1.5	G AE												
			Glass Mat Covered or Reinforced Gypsum Sheathing Sealant	2.1.5.1	G AE												
			Abuse Resistant Gypsum Board	2.1.6	G AE												
			Accessories	2.1.11	G AE												
			Gypsum Board	2.1.1	G AE												
			Recycled Content for Gypsum Board	2.1.1	S												
			Recycled Content for Paper Facing and Gypsum Cores	2.1.1	S												
			VOC Content of Joint Compound	2.1.8	S												
			SD-06 Test Reports														
			Asbestos Free Materials	2.1	G												

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		09 29 00	Indoor Air Quality for Gypsum Board	2.1.1	S												
			Indoor Air Quality for Non-aerosol Adhesives	2.1.10	S												
			Indoor Air Quality for Aerosol Adhesives	2.1.10	S												
			SD-08 Manufacturer's Instructions														
			Safety Data Sheets	2.1													
			SD-10 Operation and Maintenance Data														
			Manufacturer Maintenance Instructions	2.1													
		09 30 10	SD-02 Shop Drawings														
			Detail Drawings	3.2	G												
			SD-03 Product Data														
			Porcelain Tile	2.1.1	G												
			Recycled Content for Porcelain Tile	2.1.1	S												
			Mosaic Tile	2.1.2	G												
			Recycled Content for Mosaic Tile	2.1.2	S												
			Glazed Ceramic Wall Tile	2.1.3	G												
			Recycled Content for Glazed Ceramic Wall Tile	2.1.3	S												
			Transition Strips	2.1	G												
			Transition Strips	2.6.1	G												
			Metal Strips	2.6.2	G												

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		09 30 10	Setting-Bed	2.2	G												
			Mortar, Grout, and Adhesive	2.4	G												
			Cementitious Backer Units	2.5.1	G												
			Glass-Mat Gypsum	2.5.2	G												
			Water-Resistant Backing Board														
			Waterproof Membrane	2.7	G												
			Crack Isolation Membrane	2.8	G												
			SD-04 Samples														
			Tile	2.1	G												
			Accessories	2.1	G												
			Transition Strips	2.1	G												
			Transition Strips	2.6.1	G												
			Metal Strips	2.6.2	G												
			Grout	2.4.4	G												
			SD-07 Certificates														
			Indoor Air Quality for Adhesives	2.4	S												
			Indoor Air Quality for Sealants	2.4.9	S												
			Water Absorption Rates	1.3.2													
			SD-08 Manufacturer's Instructions														
			Manufacturer's Approved	3.8													
			Cleaning Instructions														
			SD-10 Operation and Maintenance														
			Data														
			Porcelain Tile	2.1.1	G												
			Mosaic Tile	2.1.2	G												
			Glazed Ceramic Wall Tile	2.1.3	G												

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		09 30 10	Transition Strips	2.1	G												
			Transition Strips	2.6.1	G												
			Metal Strips	2.6.2	G												
		09 62 38	SD-03 Product Data														
			Static-Control Resilient Flooring	2.1	G AE												
			Recycled content for Conductive Vinyl Tile	2.1.1.1	S												
			Accessories	2.4	G												
			Adhesives	2.2	G												
			Warranty	1.9													
			SD-04 Samples														
			Static-Control Resilient Flooring	2.1	G AE												
			Moldings	2.3	G												
			Accessories	2.4	G												
			SD-06 Test Reports														
			Fire Resistance	2.7													
			Moisture, Alkalinity and Bond	3.2													
			Testing	3.7													
			SD-07 Certificates														
			Indoor Air Quality for Conductive Vinyl Tile	2.1.1.1	S												
			Indoor Air Quality for Adhesives	2.2	S												
			Qualifications of Applicator	1.6													
			SD-08 Manufacturer's Instructions														
			Static-Control Resilient Flooring	2.1	G												
			Accessories	2.4	G												

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		09 62 38	SD-10 Operation and Maintenance Data														
			Static-Control Resilient Flooring Accessories	2.1 2.4	G G												
		09 65 00	SD-02 Shop Drawings														
			Resilient Flooring and Accessories	2.8	G												
			SD-03 Product Data														
			Resilient Flooring and Accessories	2.8	G												
			Adhesives	2.4													
			Luxury Vinyl Tile	2.1													
			Recycled content for Luxury Vinyl Tile	2.1	S												
			Wall Base	2.2													
			SD-04 Samples														
			Resilient Flooring and Accessories	2.8	G												
			SD-06 Test Reports														
			Moisture, Alkalinity and Bond Tests	3.3	G												
			SD-07 Certificates														
			Indoor Air Quality for Luxury Vinyl Tile	2.1	S												
			Indoor Air Quality for Wall Base	2.2	S												
			Indoor Air Quality for Adhesives	2.4	S												

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		09 65 00	SD-08 Manufacturer's Instructions														
			Surface Preparation	3.2	G												
			Installation	3.1	G												
			SD-10 Operation and Maintenance Data														
			Resilient Flooring and Accessories	2.8	G												
		09 67 23.14	SD-02 Shop Drawings														
			Flooring Systems	2.2	G												
			SD-03 Product Data														
			Sealer and Resin	2.4	G AE												
			Floor Surfacing	3.3.2	G AE												
			Conductive Sparkproof Flooring	2.3	G AE												
			Indoor Air Quality for Primer	2.1.1	S												
			Indoor Air Quality for Top Coating	2.1.5	S												
			Indoor Air Quality for Sealer And Resin	2.4	S												
			Mixing	3.2	G												
			SD-04 Samples														
			Flooring Systems	2.2	G AE												
			SD-06 Test Reports														
			Testing	3.4	G												
			SD-07 Certificates														
			Qualifications of Installer	1.3.1	G												
			SD-08 Manufacturer's Instructions														
			Application	3.3	G												

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		09 67 23.14	SD-10 Operation and Maintenance Data														
			Flooring Systems	2.2	G												
		09 68 00	SD-02 Shop Drawings														
			Installation Drawings	3.4	G												
			SD-03 Product Data														
			Carpet	2.1	G												
			Recycled Content for Carpeting	2.1.1	S												
			Moldings	2.4	G												
			Indoor Air Quality for Aerosol	2.3	S												
			Adhesives														
			Indoor Air Quality for Non-Aerosol	2.3	S												
			Adhesives														
			Indoor Air Quality for Concrete	2.3	S												
			Primer														
			SD-04 Samples														
			Carpet	2.1	G												
			Moldings	2.4	G												
			SD-06 Test Reports														
			Moisture and Alkalinity Tests	3.2	G												
			SD-07 Certificates														
			Indoor Air Quality for Carpet	2.1.2	S												
			SD-08 Manufacturer's Instructions														
			Surface Preparation	3.1													
			SD-10 Operation and Maintenance Data														

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ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH	GOVT CLASS S I F I C A T I O N A / E R E V W R	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION		DATE FWD TO APPR AUTH/ DATE RCD FROM CONTR	APPROVING AUTHORITY				MAILED TO CONTR/ DATE RCD FRM APPR AUTH	REMARKS
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		09 68 00	Cleaning and Protection	3.6													
			SD-11 Closeout Submittals														
			Warranty	1.6													
		09 69 13	SD-02 Shop Drawings														
			Detailed Installation Drawings	2.2.2	G AE												
			Fabrication Drawings	2.2.1	G AE												
			SD-03 Product Data														
			Access Flooring System	2.1	G AE												
			Recycled Content of Access	2.1.1	S												
			Flooring System														
			Indoor Air Quality For Pedestal	2.1.5	S												
			Adhesive														
			Indoor Air Quality For Adhesives	2.2.6	S												
			SD-04 Samples														
			Floor Panels	2.2													
			Floor Covering	2.2.4	G												
			Panel Support System	2.3	G AE												
			Cut Outs	2.6	G AE												
			SD-06 Test Reports														
			Factory Tests	2.4													
			Concentrated Load	2.1.1													
			Uniform Live Load	2.1.1													
			Rolling Load	2.1.1													
			Rolling Load	2.1.1													
			Impact Load	2.1.1													
			Ultimate Load	2.1.1													

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		09 69 13	Stringer Load	2.1.3													
			Pedestal Axial Load	2.1.4													
			Bonding Strength of Pedestal	2.1.5													
			Adhesive														
			Electrical Resistance	3.2.4													
			Field Tests	3.2													
			SD-07 Certificates														
			Compliance with ICC-ES AC308	2.1													
			Compliance with ICC IBC	2.1													
			Certificate of Compliance	2.1													
			Qualification of Manufacturer	1.4.1													
			SD-10 Operation and Maintenance														
			Data														
			Operation and Maintenance	3.4	G												
			Manuals														
			SD-11 Closeout Submittals														
			Lifting Device	2.2.7													
			Warranty	1.6	G												
		09 90 00	SD-02 Shop Drawings														
			Piping Identification	3.10													
			SD-03 Product Data														
			Coating	2.1	G												
			Product Data Sheets	2.1													
			SD-04 Samples														
			Color	2.2	G												
			SD-07 Certificates														

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		09 90 00	Qualification Testing	1.6.5.2	G												
			Indoor Air Quality for Paints and Primers	1.6.4													
			Indoor Air Quality for Consolidated Latex Paints	1.6.4													
			SD-08 Manufacturer's Instructions														
			Mixing	2.1													
			Manufacturer's Safety Data Sheets	1.8.1													
			SD-10 Operation and Maintenance Data														
			Coatings	2.1	G												
		10 11 00	SD-02 Shop Drawings														
			Placement Schedule	3.1	G												
			SD-03 Product Data														
			Visual Display Unit	1.2	G												
			Visual Display Unit	2.1	G												
			SD-04 Samples														
			Aluminum	2.1.1	G												
			Glass	2.1.2	G												
			SD-07 Certificates														
			Indoor air quality for markerboards	2.2.1	S												
			Certificate of Compliance	1.2													
			SD-08 Manufacturer's Instructions														

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		10 11 00	Manufacturer's Cleaning Instructions	3.3													
			Manufacturer's Printed Installation Instructions	3.2	G												
		10 14 00.10	SD-02 Shop Drawings														
			Approved Detail Drawings	3.1	G AE												
			SD-03 Product Data														
			Modular Exterior Signage System	2.1	G AE												
			Installation	3.1													
			Exterior Signage	1.2	G												
			Wind Load Requirements	1.2.1													
			SD-04 Samples														
			Exterior Signage	1.2	G AE												
			SD-10 Operation and Maintenance Data														
			Protection and Cleaning	3.1.2	G												
		10 14 00.20	SD-02 Shop Drawings														
			Detail Drawings	1.4.2	G												
			SD-03 Product Data														
			Room Identification And Directional Signage System	2.1	G												
			Exit Door Tactile Sign	2.2	G												
			Door Tags	2.3	G												
			SD-04 Samples														
			Interior Signage	1.4.1	G												
			Software	1.3	G												

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		10 14 00.20	Room Identification And Directional Signage System	2.1	G												
			Exit Door Tactile Sign	2.2	G												
			SD-10 Operation and Maintenance Data														
			Approved Manufacturer's Instructions	3.2	G												
			Protection and Cleaning	3.2.2	G												
		10 21 13	SD-02 Shop Drawings														
			Fabrication Drawings	2.1													
			Installation Drawings	3.3	G												
			SD-03 Product Data														
			Cleaning and Maintenance Instructions	2.1													
			Colors And Finishes	2.8													
			Anchoring Devices and Fasteners	2.2.2													
			Hardware and Fittings	2.2.4													
			Brackets	2.2.3													
			Door Hardware	2.2.5													
			Toilet Enclosures	2.3.1													
			Pilaster Shoes	2.6													
			Finishes	2.2.4.2	G												
			Finishes	2.8.2	G												
			Recycled content for solid phenolic partitions and screens	2.3	S												
			SD-04 Samples														

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		10 21 13	Colors and Finishes	2.8	G												
			Hardware and Fittings	2.2.4													
			Anchoring Devices and Fasteners	2.2.2													
			SD-07 Certificates														
			Warranty	1.6													
			Indoor air quality for solid	2.3	S												
			phenolic, through-color partitions														
			and screens														
		10 26 00	SD-02 Shop Drawings														
			Corner Guards	2.2	G												
			Wall Covering and Panels	2.3	G												
			SD-03 Product Data														
			Corner Guards	2.2	G												
			Wall Covering and Panels	2.3	G												
			Recycled content for aluminum	2.2.1	S												
			component of corner guards														
			Recycled content for steel	2.2.2	S												
			component of corner guards														
			SD-04 Samples														
			Corner Guards	2.2	G												
			Wall Covering and Panels	2.3	G												
			SD-06 Test Reports														
			Fire Resistance Rating	2.1.1.2													
			SD-07 Certificates														
			Indoor air quality for wall	2.3	S												
			covering/panels														

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		10 26 00	Indoor air quality for adhesives	2.6	S												
			SD-10 Operation and Maintenance Data														
			Corner Guards	2.2	G												
			Wall Covering and Panels	2.3	G												
		10 28 13	SD-02 Shop Drawings														
			Product Schedule	2.1	G												
			SD-03 Product Data														
			Recycled content for stainless steel toilet accessories	2.1	S												
			Finishes	2.1.2	G AE												
			Accessory Items	2.1	G												
			SD-10 Operation and Maintenance Data														
			Accessory Items	2.1	G												
		10 44 16	SD-02 Shop Drawings														
			Fire Extinguishers	2.1.1	G AE												
			Accessories	Part 2	G AE												
			Cabinets	Part 2	G AE												
			Wall Brackets	2.2.2	G												
			Schedule	1.5	G												
			SD-03 Product Data														
			Fire Extinguishers	2.1.1	G AE												
			Accessories	Part 2	G AE												
			Cabinets	Part 2	G												
			Wall Brackets	2.2.2	G												

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		10 44 16	Replacement Parts List	3.2.1	G												
			SD-04 Samples														
			Equipment Samples	1.3.1	G AE												
			SD-07 Certificates														
			Fire Extinguishers Certifications	2.1.1	G												
			Manufacturer's Warranty with	1.4	G												
			Inspection Tag														
		10 51 13	SD-02 Shop Drawings														
			Types	2.1	G AE												
			Location	1.4	G												
			Installation	3.1													
			Numbering system	3.2													
			SD-03 Product Data														
			Material	2.2													
			Locking Devices	2.3.1													
			Lock Control Chart	2.3.1													
			Finish	2.2.2													
			components	2.3													
			Assembly	3.1													
			SD-04 Samples														
			Color chips	1.5.1	G AE												
		11 13 19.23	SD-02 Shop Drawings														
			Dock Equipment	2.2													
			Dock Equipment	2.2.4													
			SD-03 Product Data														
			Dock Equipment	2.2													

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		11 13 19.23	Dock Equipment	2.2.4													
			Hydraulic Dock Lift	2.2													
			Remote Located Control Station	2.2.4.5.1													
			SD-05 Design Data														
			Electrical Requirements	2.2.4.5.1													
			SD-08 Manufacturer's Instructions														
			Safety Devices	2.2.4.6													
			SD-10 Operation and Maintenance														
			Data														
			Operating Manuals	2.2.4.5.1													
			Maintenance Data	2.2.4.5.1													
		12 48 13	SD-02 Shop Drawings														
			Installation Drawings	3.2	G												
			Detail Drawings	3.2	G AE												
			SD-03 Product Data														
			Entrance Floor Mats	2.1.1	G AE												
			Adhesives and Concrete Primers	2.1.2	G												
			SD-04 Samples														
			Entrance Floor Mats	2.1.1	G AE												
			SD-08 Manufacturer's Instructions														
			Manufacturer's Instructions	3.2													
			SD-10 Operation and Maintenance														
			Data														
			Protection, Maintenance, and	3.2													
			Repair Information														
		12 50 00.13 10	SD-01 Preconstruction Submittals														

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		12 50 00.13 10	Storage Location	1.7.3	G												
			SD-02 Shop Drawings														
			Installation Drawings	3.3.1	G												
			Grommet, Power and	3.3.1	G												
			Communication Units, and Wire														
			Management Locations														
			SD-03 Product Data														
			Product Data	2.3	G												
			Product Style Options	2.3	G												
			SD-04 Samples														
			Fabric and Finishes	2.3.6	G												
			SD-07 Certificates														
			Authorized Dealer	1.6	G												
			Certified Furniture Installers	1.6	G												
			Licensed Electrician	1.6	G												
			Certified Telecommunications	1.6	G												
			Installer														
			Manufacturer's Certification	2.3	G												
			Warranty	1.8	G												
			SD-10 Operation and Maintenance														
			Data														
			Furniture, Data Package 1	3.5	G												
			SD-11 Closeout Submittals														
			Energy Efficient Equipment	2.1.1	S												
			Reduced VOC's for Furniture	2.1.2	S												
			Recycled Content of Furniture	2.1.3	S												

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		12 50 00.13 10	Bio-Based Content of Furniture	2.1.4	S												
		12 59 00	SD-02 Shop Drawings														
			Detail Drawings	1.4.3	G												
			SD-03 Product Data														
			Warranty	1.6	G												
			Workstations	2.2.1													
			Power and Communications	2.11													
			Recycled Content for system furniture components	2.1	S												
			SD-04 Samples														
			Workstations	2.2.1	G												
			Samples	2.2.2													
			SD-06 Test Reports														
			Selected Components	2.2.4.1	G												
			Panel Acoustics	2.2.4.2	G												
			Fire Safety	1.4.2	G												
			SD-07 Certificates														
			Workstations	2.2.1	S												
			SD-10 Operation and Maintenance Data														
			Assembly Manuals	2.3.1	G												
			Maintenance Manuals	3.2	G												
			Cleaning	3.2	G												
			Maintenance Agreements	1.7													
			Installation	3.1	G												
		13 49 20.00 10	SD-02 Shop Drawings														

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		13 49 20.00 10	Installation	3.2	G												
			Approved Drawings	1.3.1	G												
			SD-03 Product Data														
			RF Shielding System	3.2.1	G												
			Installation	3.2	G												
			Quality Control Plan	3.6	G												
			Qualifications	1.3.6	G												
			RF Shielded Doors	1.7.2.1	G												
			Filter Assemblies	2.6.4	G												
			Penetrations	2.4.2	G												
			SD-10 Operation and Maintenance														
			Data														
			Operating and Maintenance	1.7.3	G												
			Manuals														
			Service Organization	2.2.1	G												
		21 13 13	SD-01 Preconstruction Submittals														
			Qualified Fire Protection Engineer	1.2.3	G												
			(QFPE)														
			Sprinkler System Designer	1.4.2.1	G												
			Sprinkler System Installer	1.4.2.2	G												
			SD-02 Shop Drawings														
			Shop Drawing	1.2.1.1	G												
			SD-03 Product Data														
			Pipe	2.2.1	G												
			Fittings	2.3.1.2	G												
			Valves	2.3.3	G												

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		21 13 13	Alarm Valves	2.3.4	G												
			Relief Valves	2.8.4	G												
			Sprinklers	2.7	G												
			Pipe Hangers and Supports	2.3.2	G												
			Sprinkler Alarm Switch	2.4.1	G												
			Valve Supervisory (Tamper)	2.4.2	G												
			Switch														
			Fire Department Connection	2.6	G												
			Backflow Prevention Assembly	2.5	G												
			Air Vent	2.8.5	G												
			Hose Valve	2.5.1	G												
			Seismic Bracing	2.3.2	G												
			Nameplates	2.1.2	G												
			Document Storage Cabinet	3.4.16	G												
			SD-05 Design Data														
			Seismic Bracing	2.3.2	G												
			Hydraulic Calculations	1.2.1.2	G												
			SD-06 Test Reports														
			Test Procedures	3.7.1	G												
			SD-07 Certificates														
			Verification of Compliant	3.7.2.1	G												
			Installation														
			Request for Government Final	3.7.2.2	G												
			Test														
			SD-10 Operation and Maintenance														
			Data														

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						SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION		DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION		
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		21 13 13	Operating and Maintenance (O&M) Instructions	3.9	G												
			Spare Parts	1.6	G												
			SD-11 Closeout Submittals														
			As-built drawings	3.9													
		21 22 00	SD-01 Preconstruction Submittals														
			Qualified Fire Protection Engineer	1.4.2	G												
			Manufacturer's Representative	1.4.4	G												
			SD-02 Shop Drawings														
			Clean Agent system piping layout	1.5.1	G												
			Field wiring diagrams	1.5.1	G												
			SD-03 Product Data														
			Storage cylinders	2.1.5	G												
			Discharge heads	3.7.2.1	G												
			Manifolds	2.1.5	G												
			Discharge nozzles	2.1.4	G												
			Pipe	2.1.1	G												
			Pipe hangers and supports	2.1.3	G												
			Control panel	2.2	G												
			Manual actuation stations	2.4	G												
			Pressure switches	2.1.5	G												
			Storage batteries	2.3.1	G												
			Smoke detectors	2.5	G												
			Visual alarms	2.7.2	G												
			Battery charger	2.3.2	G												
			Fittings	2.1.2	G												

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						SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION		DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION		
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		21 22 00	Audible Alarm Bells	2.7.1	G												
			Warning Signs	2.8	G												
			SD-05 Design Data														
			Clean Agent discharge calculations	1.5.2	G												
			Battery capacity calculations	1.5.2	G												
			SD-07 Certificates														
			Record of Prior Installations	1.4.1	G												
			Clean Agent fire extinguishing system	1.4.3	G												
			SD-10 Operation and Maintenance Data														
			Clean Agent fire extinguishing system	1.4.3	G												
			SD-11 Closeout Submittals														
			Remote control station operating instructions	1.6.3	G												
			Record drawings	1.5.5	G												
		21 30 10	SD-01 Preconstruction Submittals														
			Qualified Fire Protection Engineer	1.6.1	G												
			Enclosure Manufacturer Qualifications	1.6.4	G												
			SD-02 Shop Drawings														
			As-Built Drawings	3.11.3	G												
			Piping Layout	3.3.3	G												
			Pump Room	3.3.3	G												

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ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH	GOVT CLASS / FIC / REV / WORK	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION		DATE FWD TO APPR AUTH/ DATE RCD FROM CONTR	APPROVING AUTHORITY				MAILED TO CONTR/ DATE RCD FRM APPR AUTH	REMARKS
						SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION		DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION		
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		21 30 10	Enclosure Detail Drawings	3.3.1	G												
			SD-03 Product Data														
			Catalog Data	2.1	G												
			Spare Parts	1.5													
			Preliminary Tests	3.8.2													
			Field Tests	3.8	G												
			Manufacturer's Representative	1.6.7	G												
			Field Training	3.11.2	G												
			Army Final Acceptance Test	3.8.3													
			Fire Pump Enclosure - Structural	2.13.3	G												
			Requirements														
			Fire Pump Enclosure -	2.13.4	G												
			Architectural Requirements														
			Miscellaneous Building	2.13.4.3	G												
			Accessories														
			Fire Pump Enclosure -	2.13.5	G												
			Mechanical Requirements														
			Fire Pump Enclosure - Fire	2.13.6	G												
			Protection Requirements														
			Fire Pump Enclosure - Electrical	2.13.7	G												
			Requirements														
			SD-05 Design Data														
			Fire Pump Installation Drawings	3.3.2	G												
			SD-06 Test Reports														
			Preliminary Tests	3.8.2													
			Army Final Acceptance Test	3.8.3													

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						SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION	DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION	DATE RCD FRM APPR AUTH	
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		21 30 10	SD-07 Certificates														
			Qualified Fire Protection Engineer	1.6.1													
			Qualifications of Welders	1.6.2													
			Qualifications of Installer	1.6.3													
			Preliminary Test Certification	1.6.5													
			Final Test Certification	1.6.6													
			SD-10 Operation and Maintenance														
			Data														
			Operating and Maintenance	3.11.2	G												
			Instructions														
			Flow Meter	2.12													
		22 00 00	SD-02 Shop Drawings														
			Plumbing System	3.7.1	G												
			SD-03 Product Data														
			Thermostatic Mixing Valves	2.3.3	G												
			Fixtures	2.4													
			Flush Valve Urinals	2.4.1													
			WaterSense Label for Urinal	2.4.1	S												
			Flush Tank Water Closets	2.4.2													
			WaterSense Label for Flush Tank	2.4.2	S												
			Water Closet														
			Countertop Lavatories	2.4.3													
			Kitchen Sinks	2.4.4													
			Drinking-Water Coolers	2.4.5	G												
			Water Heaters	2.8	G												
			Welding	1.5.1													

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						SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION	DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION	DATE RCD FRM APPR AUTH	
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		22 00 00	Plumbing System	3.7.1													
			Electrical Heat Tracing	2.12	G												
			SD-06 Test Reports														
			Tests, Flushing and Disinfection	3.7													
			SD-10 Operation and Maintenance														
			Data														
			Plumbing System	3.7.1	G												
		23 05 93	SD-01 Preconstruction Submittals														
			TAB Firm	1.5.5.1	G												
			SD-02 Shop Drawings														
			TAB Schematic Drawings and	1.3.2	G												
			Report Forms														
			SD-03 Product Data														
			TAB Procedures	1.5.4	G												
			Systems Readiness Check	1.3.2	G												
			TAB Verification	1.5.6.3	G												
			SD-06 Test Reports														
			Completed Pre-Final DALT	3.2.5	G												
			Report														
			Certified Final DALT Report	3.2.8	G												
			TAB Report for Season 1	1.5.7.2	G												
			TAB Report for Season 2	1.5.7.2	G												
			SD-07 Certificates														
			Independent TAB Agency and	1.5.1	G												
			Personnel Qualifications														

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						SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION		DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION		
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		23 05 93	DALT and TAB Submittal and Work Schedule	1.6.2	G												
			TAB Pre-Field Engineering Report	1.6.2.1	G												
			Advanced Notice for Season 1 TAB Field Work	1.6.2	G												
			Prerequisite HVAC Work Check Out List For Season 1	1.6.2	G												
			Advanced Notice for Season 2 TAB Field Work	1.6.2	G												
			Prerequisite HVAC Work Check Out List For Season 2	1.6.2	G												
		23 07 00	SD-02 Shop Drawings														
			MICA Plates	3.2.2.4	G												
			Pipe Insulation Systems	2.3	G												
			Pipe Insulation Systems	3.2	G												
			Duct Insulation Systems	3.3													
			SD-03 Product Data														
			Pipe Insulation Systems	2.3	G												
			Pipe Insulation Systems	3.2	G												
			Duct Insulation Systems	3.3	G												
			SD-04 Samples														
			Display Samples	3.1.1	G												
			SD-07 Certificates														
			Indoor air quality for adhesives	2.2.1	S												
			SD-08 Manufacturer's Instructions														

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						SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION		DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION		
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		23 07 00	Pipe Insulation Systems	2.3	G												
			Pipe Insulation Systems	3.2	G												
			Duct Insulation Systems	3.3	G												
		23 09 00	SD-02 Shop Drawings														
			DDC Contractor Design Drawings	3.2	G												
			Draft As-Built Drawings	3.2	G												
			Final As-Built Drawings	3.2	G												
			SD-03 Product Data														
			Programming Software	1.8.3	G												
			Controller Application Programs	1.8.4	G												
			Configuration Software	1.8.1	G												
			Controller Configuration Settings	1.8.2	G												
			Manufacturer's Product Data	2.2	G												
			Niagara Framework Supervisory	1.8.5	G												
			Gateway Backups														
			Niagara Framework Engineering	1.8.6	G												
			Tool														
			Maintenance Laptop	1.8.7	G												
			SD-06 Test Reports														
			Pre-Construction Quality Control	1.9.1	G												
			(QC) Checklist														
			Post-Construction Quality Control	1.9.2	G												
			(QC) Checklist														
			Start-Up Testing Report	3.4.2	G												
			PVT Procedures	3.5.1	G												
			PVT Report	3.5.3	G												

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(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		23 09 00	SD-10 Operation and Maintenance Data														
			Operation and Maintenance (O&M) Instructions	3.6	G												
			Training Documentation	3.8.1	G												
			SD-11 Closeout Submittals														
			Enclosure Keys	2.5	G												
			Closeout Quality Control (QC) Checklist	1.9.3	G												
		23 23 00	SD-02 Shop Drawings														
			Refrigerant Piping System	2.2	G												
			SD-03 Product Data														
			Refrigerant Piping System	2.2													
			Qualifications	1.3.1													
			Refrigerant Piping Tests	3.4													
			SD-06 Test Reports														
			Refrigerant Piping Tests	3.4													
			SD-07 Certificates														
			Service Organization	2.1													
			SD-10 Operation and Maintenance Data														
			Operation and Maintenance Manuals	3.3	G												
			Demonstrations	3.3	G												
		23 30 00	SD-02 Shop Drawings														
			Detail Drawings	1.4.4	G												

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(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		23 30 00	SD-03 Product Data														
			Duct Access Doors	2.9.2	G												
			Manual Balancing Dampers	2.9.3	G												
			Automatic Smoke-Fire Dampers	2.9.4	G												
			Sound Attenuation Equipment	2.9.6	G												
			Diffusers	2.9.7.1													
			Registers and Grilles	2.9.7.2													
			In-Line Centrifugal Fans	2.10.1.1	G												
			Air Handling Units	2.11	G												
			Constant Volume, Single Duct Terminal Units	2.12.1.1	G												
			Variable Volume, Single Duct Terminal Units	2.12.1.2	G												
			Reheat Units	2.12.1.3	G												
			Indoor Air Quality for Duct Sealants	2.9.1	S												
			SD-06 Test Reports														
			Performance Tests	3.12	G												
			Damper Acceptance Test	3.10	G												
			SD-07 Certificates														
			Ozone Depleting Substances Technician Certification	1.4.3													
			SD-08 Manufacturer's Instructions														
			Manufacturer's Installation Instructions	3.2													

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(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		23 30 00	Operation and Maintenance Training	3.14.2													
			SD-10 Operation and Maintenance Data														
			Operation and Maintenance Manuals	3.14.1	G												
			Manual Balancing Dampers	2.9.3	G												
			Automatic Smoke-Fire Dampers	2.9.4	G												
			In-Line Centrifugal Fans	2.10.1.1	G												
			Air Handling Units	2.11	G												
			Constant Volume, Single Duct Terminal Units	2.12.1.1	G												
			Variable Volume, Single Duct Terminal Units	2.12.1.2	G												
			Reheat Units	2.12.1.3	G												
			SD-11 Closeout Submittals														
			Indoor Air Quality During Construction	3.13	S												
		23 81 00	SD-03 Product Data														
			Spare Parts	3.7.1													
			Posted Instructions	3.4													
			Coil Corrosion Protection	2.4.1													
			System Performance Tests	3.6													
			Training	3.4	G												
			Inventory	1.4													

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						SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION		DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION		
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		23 81 00	Manufacturer's Standard Catalog Data	2.1													
			SD-06 Test Reports														
			Refrigerant Tests, Charging, and Start-Up	3.5	G												
			System Performance Tests	3.6	G												
			SD-07 Certificates														
			Service Organizations	3.7.2													
			SD-10 Operation and Maintenance Data														
			Operation and Maintenance Manuals	3.4	G												
			SD-11 Closeout Submittals														
			Ozone Depleting Substances	2.1.2.3	S												
		23 81 23	SD-03 Product Data														
			Computer Room Air Conditioner	2.1	G												
			Space Temperature Control	2.5.2	G												
			System Drawings														
			Refrigerants	1.4	S												
			Leak Detection	2.2.1.3	G												
			SD-06 Test Reports														
			Manufacturer's Factory Test Plans	2.7.1	G												
			Factory Test Reports	2.7.4	G												
			Field Test Schedule	3.3.2	G												
			Manufacturer's Field Test Plans	3.3.1	G												

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						SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION	DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION	DATE RCD FRM APPR AUTH	
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		23 81 23	Field Test Reports	3.3.6	G												
			SD-07 Certificates														
			Credentials of the Manufacturer's	3.3.3	G												
			Field Test Representative														
			Ozone Depleting Substances	1.5.1													
			Technician Certification														
			Certified List Of Qualified	1.6.3													
			Permanent Service Organizations														
			SD-08 Manufacturer's Instructions														
			Installation Manual for Each Type	3.1.2													
			of CRAC														
			SD-10 Operation and Maintenance														
			Data														
			Computer Room Air Conditioner	3.1.3	G												
			Operation and Maintenance Data														
			SD-11 Closeout Submittals														
			Indoor Air Quality During	3.2	S												
			Construction														
		23 83 00.00 20	SD-02 Shop Drawings														
			Heater Installation Drawing	3.1													
			SD-03 Product Data														
			Electric Unit Heaters	2.1													
			SD-10 Operation and Maintenance														
			Data														
			Electric Unit Heaters	2.1													
		25 05 11.21	SD-01 Preconstruction Submittals														

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ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH	GOVT CLASS S I F I C A T I O N O R A / E R E V I W R	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION		DATE FWD TO APPR AUTH/ DATE RCD FROM CONTR	APPROVING AUTHORITY				MAILED TO CONTR/ DATE RCD FRM APPR AUTH	REMARKS
						SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION		DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION		
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		25 05 11.21	Device Account Lock Exception Request	3.3.2	G												
			Multiple Ethernet Connection Device Request	3.2.5.2	G												
			Contractor Computer Cybersecurity Compliance Statements	1.10.1.6	G												
			Contractor Temporary Network Cybersecurity Compliance Statements	1.10.6	G												
			Protection of Information At Rest Proposal	3.7.4	G												
			Proposed STIG and SRG Applicability Report	1.8.1	G												
			SD-02 Shop Drawings														
			Network Communication Report	1.8.2	G												
			Cybersecurity Riser Diagram	1.8.5	G												
			SD-03 Product Data														
			Control System Cybersecurity Documentation	1.8.7	G												
			SD-06 Test Reports														
			Control System Cybersecurity Testing Procedures	3.14.1	G												
			Control System Cybersecurity Testing Report	3.14.3	G												
			SD-07 Certificates														

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						SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION		DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION		
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		25 05 11.21	Software Licenses	1.9	G												
			SD-11 Closeout Submittals														
			Confidential Password Report	3.4.4.4	G												
			Enclosure Keys	3.3.7	G												
			Software and Configuration	1.8.4	G												
			Backups														
			Device Audit Record Upload	3.5.3.1	G												
			Software														
			System Maintenance Tool	3.9	G												
			Software														
			Control System Scanning Tools	3.11.1	G												
			STIG, SRG and Vendor Guide	1.8.6	G												
			Compliance Result Report														
			Control System Inventory Report	1.8.3	G												
			Integrity Verification Software	3.13.1	G												
		25 05 11.25	SD-01 Preconstruction Submittals														
			Device Account Lock Exception	3.3.2	G												
			Request														
			Multiple Ethernet Connection	3.2.4.2	G												
			Device Request														
			Contractor Computer	1.10.1.6	G												
			Cybersecurity Compliance														
			Statements														
			Contractor Temporary Network	1.10.6	G												
			Cybersecurity Compliance														
			Statements														

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ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH	GOVT CLASSIFICATION	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION			APPROVING AUTHORITY				MAILED TO CONTR/ DATE RCD FRM APPR AUTH	REMARKS
						SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION		DATE FWD TO APPR AUTH/ DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION	
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		25 05 11.25	Protection of Information At Rest Proposal	3.7.4	G												
			Proposed STIG and SRG Applicability Report	1.8.1	G												
			SD-02 Shop Drawings														
			Network Communication Report	1.8.2	G												
			Cybersecurity Riser Diagram	1.8.5	G												
			SD-03 Product Data														
			Control System Cybersecurity Documentation	1.8.7	G												
			SD-06 Test Reports														
			Control System Cybersecurity Testing Procedures	3.13.1	G												
			Control System Cybersecurity Testing Report	3.13.3	G												
			SD-07 Certificates														
			Software Licenses	1.9	G												
			SD-11 Closeout Submittals														
			Confidential Password Report	3.4.5.5	G												
			Enclosure Keys	3.3.7	G												
			Software and Configuration Backups	1.8.4	G												
			Auditing Front End Software	3.5.3	G												
			Device Audit Record Upload Software	3.5.4.2	G												

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(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		25 05 11.25	System Maintenance Tool Software	3.9	G												
			Control System Scanning Tools	3.11.2	G												
			STIG, SRG and Vendor Guide	1.8.6	G												
			Compliance Result Report														
			Control System Inventory Report	1.8.3	G												
			Integrity Verification Software	3.12.2	G												
		25 05 11.26	SD-01 Preconstruction Submittals														
			Device Account Lock Exception Request	3.3.2	G												
			Multiple Ethernet Connection Device Request	3.2.4.2	G												
			Contractor Computer Cybersecurity Compliance Statements	1.10.1.6	G												
			Contractor Temporary Network Cybersecurity Compliance Statements	1.10.6	G												
			Protection of Information At Rest Proposal	3.7.4	G												
			Proposed STIG and SRG Applicability Report	1.8.1	G												
			SD-02 Shop Drawings														
			Network Communication Report	1.8.2	G												
			Cybersecurity Riser Diagram	1.8.5	G												
			SD-03 Product Data														

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						SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION	DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION	DATE RCD FRM APPR AUTH	
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		25 05 11.26	Control System Cybersecurity Documentation	1.8.7	G												
			SD-06 Test Reports														
			Control System Cybersecurity Testing Procedures	3.14.1	G												
			Control System Cybersecurity Testing Report	3.14.3	G												
			SD-07 Certificates														
			Software Licenses	1.9	G												
			SD-11 Closeout Submittals														
			Confidential Password Report	3.4.4.5	G												
			Enclosure Keys	3.3.7	G												
			Software and Configuration Backups	1.8.4	G												
			Auditing Front End Software	3.5.3	G												
			Device Audit Record Upload Software	3.5.4.2	G												
			System Maintenance Tool Software	3.9	G												
			Control System Scanning Tools	3.11.2	G												
			STIG, SRG and Vendor Guide	1.8.6	G												
			Compliance Result Report														
			Control System Inventory Report	1.8.3	G												
			Integrity Verification Software	3.13.2	G												
		25 05 11.28	SD-01 Preconstruction Submittals														

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ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH	GOVT CLASS S I F I C A T I O N O R A / E R E V I W R	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION		DATE FWD TO APPR AUTH/	APPROVING AUTHORITY				MAILED TO CONTR/	REMARKS
						SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION	DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION	DATE RCD FRM APPR AUTH	
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		25 05 11.28	Device Account Lock Exception Request	3.3.2	G												
			Multiple Ethernet Connection Device Request	3.2.4.2	G												
			Contractor Computer Cybersecurity Compliance Statements	1.10.1.6	G												
			Contractor Temporary Network Cybersecurity Compliance Statements	1.10.6	G												
			Protection of Information At Rest Proposal	3.7.4	G												
			Proposed STIG and SRG Applicability Report	1.8.1	G												
			SD-02 Shop Drawings														
			Network Communication Report	1.8.2	G												
			Cybersecurity Riser Diagram	1.8.5	G												
			SD-03 Product Data														
			Control System Cybersecurity Documentation	1.8.7	G												
			SD-06 Test Reports														
			Control System Cybersecurity Testing Procedures	3.14.1	G												
			Control System Cybersecurity Testing Report	3.14.3	G												
			SD-07 Certificates														

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						SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION		DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION		
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		25 05 11.28	Software Licenses	1.9	G												
			SD-11 Closeout Submittals														
			Confidential Password Report	3.4.4.5	G												
			Enclosure Keys	3.3.7	G												
			Software and Configuration	1.8.4	G												
			Backups														
			Auditing Front End Software	3.5.3	G												
			Device Audit Record Upload	3.5.4.2	G												
			Software														
			System Maintenance Tool	3.9	G												
			Software														
			Control System Scanning Tools	3.11.2	G												
			STIG, SRG and Vendor Guide	1.8.6	G												
			Compliance Result Report														
			Control System Inventory Report	1.8.3	G												
			Integrity Verification Software	3.13.2	G												
		25 08 10	SD-06 Test Reports														
			PVT Plan	3.1.1	G												
			PVT Phase I Report	3.1.2.1	G												
			PVT Phase II Report	3.1.2.2	G												
			SD-07 Certificates														
			Test Instrumentation Calibration	1.4	G												
			Certificates														
		25 10 10	SD-02 Shop Drawings														
			UMCS Contractor Design	3.2.1	G												
			Drawings														

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(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		25 10 10	Draft As-Built Drawings	3.2.2	G												
			Final As-Built Drawings	3.2.2	G												
			SD-03 Product Data														
			Product Data Sheets	2.1.5	G												
			Computer Software	2.4	G												
			SD-06 Test Reports														
			Pre-Construction QC Checklist	1.7	G												
			Post-Construction QC Checklist	1.7	G												
			Existing Conditions Report	3.1	G												
			Start-Up and Start-Up Testing Report	3.6	G												
			PVT Phase I Procedures	3.7.1	G												
			PVT Phase I Report	3.7.2	G												
			PVT Phase II Report	3.7.3	G												
			SD-10 Operation and Maintenance Data														
			Operation and Maintenance (O&M) Instructions	1.8	G												
			Basic Training Documentation	3.9.1	G												
			SD-11 Closeout Submittals														
			Closeout QC Checklist	1.7	G												
		26 05 73	SD-01 Preconstruction Submittals														
			Field Examination Plan	3.1	G												
			Arc Flash Label Formats	3.2.8	G												
			SD-06 Test Reports														
			Field Examination	3.1.1													

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						SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION	DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION	DATE RCD FRM APPR AUTH	
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		26 05 73	SD-07 Certificates														
			System Analyzer	1.4.1	G												
			SD-11 Closeout Submittals														
			Model Files	3.3	G												
			Load Flow Study	3.2.4	G												
			Fault Current Study	3.2.5	G												
			Arc Flash Hazard Study	3.2.6	G												
		26 08 00	SD-06 Test Reports														
			Acceptance Tests and	3.1	G												
			Inspections														
			SD-07 Certificates														
			Qualifications	1.4.1	G												
			Acceptance Test and Inspections	1.4.3	G												
			Procedure														
		26 20 00	SD-02 Shop Drawings														
			Panelboards	2.12	G												
			Transformers	2.15	G												
			Cable Trays	2.3	G												
			Wireways	2.27	G												
			Marking Strips	3.1.10.1	G												
			SD-03 Product Data														
			Receptacles	2.11	G												
			Circuit Breakers	2.12.3	G												
			Switches	2.9	G												
			Transformers	2.15	G												
			Enclosed Circuit Breakers	2.13	G												

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ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH	GOVT CLASSIFICATION OR REVIEW	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION		DATE FWD TO APPR AUTH/	APPROVING AUTHORITY				MAILED TO CONTR/	REMARKS
						SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION	DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION	DATE RCD FRM APPR AUTH	
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		26 20 00	Motor Controllers	2.17	G												
			Manual Motor Starters	2.18	G												
			Metering	2.28	G												
			Secondary Bonding Busbar	2.21.3	G												
			Surge Protective Devices	2.29	G												
			Cable Trays	2.3	G												
			Conductors	2.6.1	G												
			Cable Tray Design	2.3	G												
			SD-06 Test Reports														
			600-volt Wiring Test	3.5.2	G												
			Grounding System Test	3.5.5	G												
			Transformer Tests	3.5.3	G												
			Ground-fault Receptacle Test	3.5.4	G												
			SD-07 Certificates														
			Fuses	2.10	G												
			SD-09 Manufacturer's Field Reports														
			Transformer Factory Tests	2.31.1													
			SD-10 Operation and Maintenance Data														
			Electrical Systems	1.6.1	G												
			Metering	2.28	G												
		26 27 13.10 30	SD-03 Product Data														
			Power Meters	2.1	G												
			Current	2.1.3	G												
			Potential Transformer	2.1.2	G												

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						SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION	DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION	DATE RCD FRM APPR AUTH	
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		26 27 13.10 30	Protocol Modules	1.6.1	G												
			Data Recorder	1.6.2	G												
			Modem	1.6.2	G												
			SD-06 Test Reports														
			Acceptance Checks and Tests	3.3.1	G												
			SD-10 Operation and Maintenance														
			Data														
			Power Meters	2.1	G												
			Protocol Modules	1.6.1	G												
			Data Recorder	1.6.2	G												
			Modem	1.6.2	G												
			SD-11 Closeout Submittals														
			System Function Verification	3.3.2	G												
		26 29 23	SD-02 Shop Drawings														
			Schematic Diagrams	1.5.1	G												
			Interconnecting Diagrams	1.5.2	G												
			Installation Drawings	1.5.3	G												
			As-Built Drawings	1.5.3	G												
			SD-03 Product Data														
			Adjustable Speed Drives	2.1	G												
			Wires and Cables	2.3													
			Equipment Schedule	1.5.4													
			SD-06 Test Reports														
			ASD Test	3.3.1													
			Performance Verification Tests	3.3.2													
			Endurance Test	3.3.3													

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(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		26 29 23	SD-07 Certificates														
			Testing Agency's Field Supervisor	3.3.1	G												
			SD-08 Manufacturer's Instructions														
			Installation instructions	1.5.5													
			SD-09 Manufacturer's Field Reports														
			ASD Test Plan	2.5.1	G												
			Standard Products	1.5.6													
			SD-10 Operation and Maintenance Data														
			Adjustable Speed Drives	2.1													
		26 32 15.00	SD-02 Shop Drawings														
			Engine-Generator Set and Auxiliary Equipment	2.1.1	G												
			Auxiliary Systems	1.4.9	G												
			Detailed Drawings	1.4.8	G												
			Acceptance	3.17	G												
			SD-03 Product Data														
			Harmonic Requirements	2.1.8	G												
			Engine-Generator Set	2.1.1	G												
			Efficiencies														
			Emissions	2.12	G												
			filters	2.7.2	G												
			special tools	2.14	G												

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ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH	GOVT CLASSIFICATION	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION			APPROVING AUTHORITY				MAILED TO CONTR/ DATE RCD FRM APPR AUTH	REMARKS	
						SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION	DATE FWD TO APPR AUTH/ DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION			
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)	
		26 32 15.00	Engine-Generator Parameter Schedule	2.1.1														
			Heat Exchanger	2.8.2														
			Generator	2.15														
			Manufacturer's Catalog	2.5														
			Spare Parts	1.7.2														
			Onsite Training	3.12														
			Vibration-Isolation	2.1.7														
			Posted Data and Instructions	3.16	G													
			Instructions	3.6.7.1	G													
			Experience	1.4.6														
			Field Engineer	1.4.7														
			General Installation	3.2														
			Exciter	2.16														
			SD-05 Design Data															
			Performance Criteria	2.15														
			Sound Limitations	2.9	G													
			Day Tank	2.6.1														
			Power Factor	3.6.1.2														
			Heat Exchanger	2.8.2														
			Time-Delay on Alarms	2.19.5														
			Cooling System	2.8														
			Vibration Isolation	2.1.7														
			Battery Charger	2.13.3.2														
			Capacity Calculations for Engine-Generator Set	2.1.1	G													

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ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH	GOVT CLASS S I F I C A T I O N A / E R E V I W R	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION		DATE FWD TO APPR AUTH/ DATE RCD FROM CONTR	APPROVING AUTHORITY				MAILED TO CONTR/ DATE RCD FRM APPR AUTH	REMARKS
						SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION		DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION		
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		26 32 15.00	Brake Mean Effective Pressure (BMEP) Calculations	2.1.1	G												
			Torsional Vibration Stress Analysis Computations	2.1.1	G												
			Capacity Calculations for Batteries	2.1.1	G												
			SD-06 Test Reports														
			Performance Tests	3.6.9													
			Factory Inspection and Tests	2.27													
			Factory Tests	2.27.2													
			Onsite Inspection and Tests	3.6	G												
			Acceptance Checks and Tests	3.9.2	G												
			Functional Acceptance Tests	3.10.2	G												
			Maintenance Procedures	3.12	G												
			Operation and Maintenance Manuals	3.12	G												
			Inspections	3.6.3	G												
			Functional Acceptance Test Procedure	3.9.6	G												
			SD-07 Certificates														
			Cooling System	2.8													
			Vibration Isolation	2.1.7													
			Prototype Test	2.27.2													
			Reliability and Durability	2.1.5													
			Fuel System Certification	1.4.12	G												
			Start-Up Engineer	3.8	G												

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		26 32 15.00	Instructor's Qualification Resume	3.11.1	G												
			Engine Emission Limits	2.1.2.1	G												
			Sound Limitations	2.9													
			Site Visit	3.1													
			Current Balance	2.15.1													
			Materials and Equipment	2.4													
			Factory Inspection and Tests	2.27													
			Engine Tests	3.6.4	G												
			Generator Tests	3.6.5	G												
			Assembled Engine-Generator Set Tests	3.6.6	G												
			SD-10 Operation and Maintenance Data														
			Preliminary Assembled Operation and Maintenance Manuals	3.9.5	G												
			Posted Data and Instructions	3.16	G												
			Training Plan	3.11.2	G												
		26 33 53	SD-02 Shop Drawings														
			UPS Drawings	1.5.1	G												
			UPS Installation	1.5.2	G												
			SD-03 Product Data														
			UPS Module	2.5	G												
			Technical Requirements UPS System	2.4													
			Spare Parts	1.4.2	G												
			SD-06 Test Reports														

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		26 33 53	Work Plan	1.5.3	G												
			Factory Test Plan	1.5.4	G												
			Factory Test Report	1.5.5	G												
			SD-09 Manufacturer's Field Reports														
			Initial Inspection and Tests	3.2.2	G												
			Performance Tests	3.2.3	G												
			Performance Test Plan	1.5.6	G												
			Performance Test Report	1.5.7	G												
			SD-10 Operation and Maintenance Data														
			UPS Operation and Maintenance	1.4.1	G												
			SD-11 Closeout Submittals Installation	3.1													
		26 36 23	SD-02 Shop Drawings														
			Automatic Transfer Switch Drawings	1.5.2	G												
			SD-03 Product Data														
			Automatic Transfer Switches	2.1	G												
			By-Pass/Isolation Switch (BP/IS)	2.3	G												
			SD-06 Test Reports														
			Acceptance Checks and Tests	3.3.1	G												
			Functional Acceptance Tests	3.3.2	G												
			Factory Testing	2.5	G												
			Factory Test Reports	2.5.2	G												
			SD-07 Certificates														

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		26 36 23	Proof of Listing	1.5.1	G												
			SD-10 Operation and Maintenance Data														
			Operation and Maintenance Manual	1.4	G												
		26 41 00	SD-06 Test Reports														
			Lightning Protection and Grounding System Test Plan	1.5.2	G												
			Grounding Systems Testing	3.5.2	G												
			SD-07 Certificates														
			Component UL Listed and Labeled	1.5.1	G												
			Lightning Protection System Inspection Certificate	1.5.3	G												
			Roof Manufacturer's Warranty	3.1.1.1	G												
		26 51 00	SD-02 Shop Drawings														
			Luminaire Drawings	1.5.1	G												
			Occupancy/Vacancy Sensor Coverage Layout	1.5.9	G												
			Lighting Control System One-Line Diagram	1.7.2	G												
			Sequence of Operation for Lighting Control System	2.5.1	G												
			SD-03 Product Data														
			Luminaires	2.2	G												
			Light Sources	2.3	G												

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		26 51 00	LED Drivers	2.4	G												
			Luminaire Warranty	1.6.1	G												
			Lighting Controls Warranty	1.6.2	G												
			Lighting Contactor	2.5.1.2	G												
			Switches	2.5.2.1	G												
			Digital Switch Timers	2.5.2.2	G												
			Wall Box Dimmers	2.5.2.3	G												
			Occupancy/Vacancy Sensors	2.5.2.4	G												
			Power Packs	2.5.2.4.3	G												
			Exit Signs	2.6.1	G												
			Emergency Drivers	2.6.2	G												
			SD-05 Design Data														
			Luminaire Design Data	1.5.2	G												
			Photometric Plan	1.5.8	G												
			SD-06 Test Reports														
			ANSI/IES LM-79 Test Report	1.5.3	G												
			ANSI/IES LM-80 Test Report	1.5.4	G												
			ANSI/IES TM-21 Test Report	1.5.5	G												
			ANSI/IES TM-30 Test Report	1.5.6	G												
			Occupancy/Vacancy Sensor	3.2.1.1	G												
			Verification Test														
			Photosensor Verification Test	3.2.1.1													
			SD-07 Certificates														
			LED Driver and Dimming Switch	1.5.7	G												
			Compatibility Certificate														

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		26 51 00	SD-10 Operation and Maintenance Data														
			Lighting System	1.7.1	G												
			Lighting Control System	1.7.2	G												
			Maintenance Staff Training Plan	3.3.2.1	G												
			End-User Training Plan	3.3.2.2	G												
		26 56 00	SD-02 Shop Drawings														
			Luminaire Drawings	1.5.1.1	G												
			Pole Drawings	1.5.1.2	G												
			Control System One-Line Diagram	1.8.2	G												
			Sequence of Operation for Exterior Lighting Control System	2.5.1	G												
			SD-03 Product Data														
			Luminaires	2.2	G												
			Light Sources	2.3	G												
			LED Drivers	2.4	G												
			Luminaire Warranty	1.7.1	G												
			Lighting Controls Warranty	1.7.2	G												
			Pole Warranty	1.7.3	G												
			Photosensors	2.5.2.2	G												
			Time Clock	2.5.2.1	G												
			Lighting Contactor	2.5.2.3	G												
			Poles	2.6	G												
			Brackets	2.6.2													
			SD-05 Design Data														

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		26 56 00	Luminaire Design Data	1.5.2	G												
			Photometric Plan	1.5.6	G												
			SD-06 Test Reports														
			ANSI/IES LM-79 Test Report	1.5.3	G												
			ANSI/IES LM-80 Test Report	1.5.4	G												
			ANSI/IES TM-21 Test Report	1.5.5	G												
			SD-08 Manufacturer's Instructions														
			Poles	2.6													
			SD-10 Operation and Maintenance														
			Data														
			Lighting System	1.8.1	G												
			Exterior Lighting Control System	1.8.2	G												
			Maintenance Staff Training Plan	3.3.1.1	G												
			End-User Training Plan	3.3.1.2	G												
		27 10 00	SD-02 Shop Drawings														
			Telecommunications Drawings	1.6.1.1	G												
			Telecommunications Space	1.6.1.2	G												
			Drawings														
			SD-03 Product Data														
			Telecommunications Cabling	2.3	G												
			Patch Panels	2.4.4	G												
			Telecommunications	2.5	G												
			Outlet/Connector Assemblies														
			Equipment Support Frame	2.4.2	G												
			SD-06 Test Reports														

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		27 10 00	Telecommunications Cabling Testing	3.5.1	G												
			SD-07 Certificates														
			Telecommunications Contractor	1.6.2.1	G												
			Key Personnel	1.6.2.2	G												
			Manufacturer Qualifications	1.6.2.3	G												
			Test Plan	1.6.3	G												
			SD-09 Manufacturer's Field Reports														
			Factory Reel Tests	2.10.1	G												
			SD-10 Operation and Maintenance Data														
			Telecommunications Cabling and Pathway System	1.10.1	G												
			SD-11 Closeout Submittals														
			Record Documentation	1.10.2	G												
		28 31 76	SD-01 Preconstruction Submittals														
			Qualified Fire Protection Engineer (QFPE)	1.3.2	G												
			Fire alarm system designer	1.8.2.1	G												
			Supervisor	1.8.2.2	G												
			Technician	1.8.2.3	G												
			Installer	1.8.2.4	G												
			Test Technician	1.8.2.5	G												
			Fire Alarm System Site-Specific Software Acknowledgement	1.7	G												

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		28 31 76	SD-02 Shop Drawings														
			Nameplates	1.8.1.3	G												
			Instructions	2.2.4	G												
			Wiring Diagrams	1.8.1.4	G												
			System Layout	1.8.1.5	G												
			Notification Appliances	1.8.1.6	G												
			Initiating devices	1.8.1.7	G												
			Amplifiers	1.8.1.8	G												
			Battery Power	1.8.1.9	G												
			Voltage Drop Calculations	1.8.1.10	G												
			SD-03 Product Data														
			Fire Alarm and Mass Notification Control Unit (FMCU)	2.3	G												
			Local Operating Console (LOC)	1.4.3	G												
			Amplifiers	1.8.1.8	G												
			Tone Generators	2.5	G												
			Digitalized voice generators	2.5	G												
			Manual Stations	2.6	G												
			Smoke Detectors	2.7	G												
			Duct Smoke Detectors	2.7.2	G												
			Air sampling smoke detectors	3.2.6	G												
			Addressable Interface Devices	2.9	G												
			Addressable Control Modules	2.10	G												
			Notification Appliances	1.8.1.6	G												
			Textual Display Signs	2.11.3	G												
			Batteries	2.13.1	G												

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		28 31 76	Battery Chargers	2.13.2	G												
			Supplemental Notification	2.13.1.1	G												
			Appliance Circuit Panels														
			Auxiliary Power Supply Panels	2.13.1.1	G												
			Surge Protective Devices	2.14	G												
			Alarm Wiring	2.14	G												
			Back Boxes and Conduit	3.3.4	G												
			Ceiling Bridges	3.2.8	G												
			Terminal Cabinets	3.3.2	G												
			Radio Transmitter and Interface Panels	2.17.1	G												
			Mass Notification Transceiver	2.16.1	G												
			Environmental Enclosures or Guards	2.19	G												
			Document Storage Cabinet	3.9.3	G												
			SD-05 Design Data														
			Air Sampling Smoke Detection System Calculations	1.8.1.12	G												
			SD-06 Test Reports														
			Test Procedures	3.5.1	G												
			SD-07 Certificates														
			Verification of Compliant Installation	3.5.2.1	G												
			Request for Government Final Test	3.5.2.2	G												

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		28 31 76	SD-10 Operation and Maintenance Data														
			Operation and Maintenance (O&M) Instructions	3.7	G												
			Instruction of Government Employees	3.8	G												
			SD-11 Closeout Submittals														
			As-Built Drawings	1.8.1.14													
			Spare Parts	1.10.1													
		31 00 00	SD-01 Preconstruction Submittals														
			Excavation and Trenching Plan	3.1.3	G												
			Borrow Plan	3.2	G												
			Dewatering Work Plan	3.1.2.2	G												
			Disposition of Surplus Materials	3.9	G												
			Preconstruction Meeting	1.6.4	G												
			SD-03 Product Data														
			Flowable Fill Mix Design	2.2	G												
			SD-06 Test Reports														
			Material Test Report	3.10	G												
			Borrow Site Testing	3.2.2	G												
			Pipe Inspection Report	3.6.1.7	G												
			Geotechnical Evaluation Report	1.6.1	G												
		31 11 00	SD-01 Preconstruction Submittals														
			Herbicide Application Plan	3.1.1													
			SD-03 Product Data														
			Tree Wound Paint	2.1.1													

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		31 11 00	Herbicides	1.3.2	G												
			SD-07 Certificates														
			Qualifications	1.3.2	G												
			SD-11 Closeout Submittals														
			Pest Management Report	3.5.1													
		32 01 19.61	SD-03 Product Data														
			Sealants	2.1													
			Manufacturer's	3.5.2													
			Recommendations														
			SD-04 Samples														
			Sealants	2.1													
			Blocking Media/Backup Materials	2.3.1													
			Backer Rod	3.3.3.1													
			Bond Breaking Tapes	2.3.2													
			SD-06 Test Reports														
			Sealants	2.1													
			SD-07 Certificates														
			Equipment List	3.1													
			SD-08 Manufacturer's Instructions														
			Sealants	2.1													
		32 05 33	SD-01 Preconstruction Submittals														
			Integrated Pest Management	2.3	G												
			Plan														
			SD-03 Product Data														
			Fertilizer	2.1	G												
			SD-07 Certificates														

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		32 05 33	Maintenance Inspection Report	3.4.1													
			SD-10 Operation and Maintenance Data														
			Maintenance	1.6													
		32 11 23	SD-03 Product Data														
			Plant, Equipment, and Tools	2.4	G												
			SD-06 Test Reports														
			Initial Tests	2.3.1	G												
			In-Place Tests	3.12.1	G												
		32 12 13	SD-03 Product Data														
			Local/Regional Materials	2.2.1													
			SD-06 Test Reports														
			Sampling and Testing	3.7													
		32 12 16.16	SD-02 Shop Drawings														
			Placement Plan	2.1	G												
			SD-03 Product Data														
			Diamond Grinding Plan	2.1.5	G												
			Mix Design	2.5	G												
			Contractor Quality Control	3.1	G												
			SD-04 Samples														
			Aggregates	2.2													
			Asphalt Cement Binder	2.3													
			Warm-mix Additive	2.5.1													
			SD-06 Test Reports														
			Aggregates	2.2	G												
			QC Monitoring	3.1.3.9													

SUBMITTAL REGISTER

CONTRACT NO.

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		32 12 16.16	SD-07 Certificates														
			Asphalt Cement Binder	2.3	G												
			Laboratory Accreditation and Validation	1.3.11													
			Warm-mix Additive	2.5.1													
		32 13 13.06	SD-03 Product Data														
			Curing Materials	2.1.6													
			Reinforcement	2.1.5.3													
			Epoxy Resin	2.1.9													
			Epoxy Resin	2.1.9													
			Cementitious Materials	2.1.1	G												
			Cementitious Materials	2.1.1	G												
			Albedo	2.2.1.5													
			Dowel Bars	2.1.5.1													
			Expansion Joint Filler	2.1.10.1													
			SD-04 Samples														
			Test Section	1.5.2	G												
			SD-05 Design Data														
			Mix Design Report	2.2.2	G												
			SD-06 Test Reports														
			Concrete Slump Tests	3.7.2													
			Concrete Uniformity	2.3.1													
			Flexural Strength	3.7.3													
			Air Content	3.7.4													
			SD-07 Certificates														
			Batch Tickets	1.3.3													

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		32 13 13.06	NRMCA Certificate Of Conformance	1.3.1													
			SD-08 Manufacturer's Instructions Diamond Grinding Plan	3.7.5.4													
		32 13 73.19	SD-03 Product Data Equipment	2.1													
			Manufacturer's Instructions	3.1.1													
			SD-04 Samples														
			Compression Seals	2.2	G												
			SD-06 Test Reports														
			Test Requirements	2.1.3	G												
		32 16 19	SD-03 Product Data Concrete	2.1													
			Biodegradable Form Release Agent	2.6.4													
			Biodegradable Form Release Agent	3.2													
			SD-06 Test Reports														
			Field Quality Control	3.8													
		32 17 23	SD-03 Product Data														
			Surface Preparation Equipment List	2.1.1.2	G												
			Application Equipment List	2.1.2	G												
			Exterior Surface Preparation	3.2													
			Safety Data Sheets	1.3.1	G												
			Waterborne Paint	2.2.1	G												

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(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		32 17 23	Solventborne Paint	2.2.2	G												
			SD-06 Test Reports														
			Waterborne Paint	2.2.1	G												
			Solventborne Paint	2.2.2	G												
			SD-07 Certificates														
			Qualifications	1.3.2	G												
			Waterborne Paint	2.2.1													
			Solventborne Paint	2.2.2													
			Volatile Organic Compound	1.3.1	G												
			SD-08 Manufacturer's Instructions														
			Waterborne Paint	2.2.1	G												
			Solventborne Paint	2.2.2	G												
		32 92 19	SD-03 Product Data														
			Wood Cellulose Fiber Mulch	2.5.3													
			Fertilizer	2.4													
			SD-06 Test Reports														
			Topsoil Composition Tests	2.2.3													
			SD-07 Certificates														
			Seed	2.1													
			SD-08 Manufacturer's Instructions														
			Erosion Control Materials	2.7													
		33 01 50.31	SD-02 Shop Drawings														
			Leak Detection System	2.3	G												
			Electronic Monitoring/Alarm	2.4													
			Panel														
			SD-03 Product Data														

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(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		33 01 50.31	Leak Detection System	2.3	G												
			Electronic Monitoring/Alarm	2.4													
			Panel														
			SD-06 Test Reports														
			Leak Detection System Test	3.2.1													
			SD-07 Certificates														
			Demonstrations	3.3													
			SD-08 Manufacturer's Instructions														
			Leak Detection System	2.3													
			SD-10 Operation and Maintenance														
			Data														
			Leak Detection System	2.3	G												
			Electronic Monitoring/Alarm	2.4	G												
			Panel														
		33 11 00	SD-01 Preconstruction Submittals														
			Connections	3.1.1	G												
			SD-03 Product Data														
			Pipe, Fittings, Joints and	2.1.1	G												
			Couplings														
			Valves	2.1.2	G												
			Valve Boxes	2.1.2.4	G												
			Fire Hydrants	2.1.4.1	G												
			Pipe Restraint	2.2.1	G												
			Tapping Sleeves	2.2.2	G												
			Backflow Preventer	1.4.2.1.1	G												
			Precast Concrete Thrust Blocks	2.2.1.2	G												

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		33 11 00	Disinfection Procedures	3.2.4	G												
			SD-06 Test Reports														
			Backflow Preventer Tests	3.3.1.4	G												
			Bacteriological Samples	3.3.1.3	G												
			Leakage Test	3.3.1.2													
			Hydrostatic Test	3.3.1.1													
			SD-07 Certificates														
			Pipe, Fittings, Joints and Couplings	2.1.1													
			Lining for Fittings	2.1.1.1.1.2													
			Valves	2.1.2													
			Fire Hydrants	2.1.4.1													
			Backflow Prevention Training Certificate	1.4.2.1.1.1													
			Turbine Type Meters	2.1.5.1													
			Fire Service Type Meters	2.1.5.2													
			SD-08 Manufacturer's Instructions														
			PVC Piping	2.1.1.1.1.1													
			PVC Piping For Service Lines	2.1.1.1.2													
		33 30 00	SD-01 Preconstruction Submittals														
			Contractor's License	1.3.1	G												
			SD-02 Shop Drawings														
			Installation Drawings	3.1.1	G												
			SD-03 Product Data														
			Precast Concrete Manholes	2.2.6													
			Frames, Covers, and Gratings	2.2.9													

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		33 30 00	Gravity Pipe	2.2.1													
			Pressure Pipe	2.2.2													
			SD-06 Test Reports														
			Hydrostatic Sewer Test	3.3.1.1	G												
			Infiltration Tests And Exfiltration Tests	3.3.1.2.1	G												
			Low-Pressure Air Tests	3.3.1.2.2	G												
			Tests For Pressure Lines	3.3.1.3	G												
			SD-07 Certificates														
			Portland Cement	2.2.4													
			Pre-Installation Inspection Request	3.3.2.1	G												
			Post-Installation Inspection	3.3.2.2	G												
		33 40 00	SD-06 Test Reports														
			Leakage Test	3.7.1.1	G												
			SD-07 Certificates														
			Hydrostatic Test on Watertight Joints	2.4.1	G												
			SD-08 Manufacturer's Instructions														
			Placing Pipe	3.3	G												
			SD-11 Closeout Submittals														
			Post-Installation Inspection Report	3.7.2.1.3	G												
		33 71 02	SD-02 Shop Drawings														
			Precast Underground Structures	1.4.1	G												
			SD-03 Product Data														

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(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		33 71 02	Precast Concrete Structures	2.10.2.1	G												
			Sealing Material	2.10.2.4													
			Pulling-In Irons	3.4.3													
			Manhole Frames and Covers	2.10.3	G												
			Handhole Frames and Covers	2.10.4	G												
			Composite/Fiberglass Handholes	2.10.6	G												
			Cable Supports	2.11	G												
			SD-06 Test Reports														
			Field Acceptance Checks and Tests	3.15.1	G												
			SD-07 Certificates														
			Cable Installer Qualifications	1.4.2	G												
		33 82 00	SD-02 Shop Drawings														
			Telecommunications Outside Plant	1.6.1.1	G												
			Telecommunications Entrance Facility Drawings	1.6.1.2	G												
			SD-03 Product Data														
			Wire and Cable	2.7													
			Cable Splices, and Connectors	2.4	G												
			Closures	2.3	G												
			SD-06 Test Reports														
			Pre-installation Tests	3.4.1	G												
			Acceptance Tests	3.4.2	G												
			Outside Plant Test Plan	1.6.3	G												
			SD-07 Certificates														

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[illegible]

TRANSMITTAL OF SHOP DRAWINGS, EQUIPMENT DATA, MATERIAL SAMPLES, OR MANUFACTURER'S CERTIFICATES OF COMPLIANCE <i>(Read instruction on the reverse side prior to initiating this form)</i>					DATE		TRANSMITTAL NO.	
SECTION I - REQUEST FOR APPROVAL OF THE FOLLOWING ITEMS <i>(This section will be initiated by the contractor)</i>								
TO:			FROM:		CONTRACT NO.		CHECK ONE: ☐ THIS IS A NEW TRANSMITTAL ☐ THIS IS A RESUBMITTAL OF TRANSMITTAL _____	
SPECIFICATION SEC. NO. <i>(Cover only one section with each transmittal)</i>			PROJECT TITLE AND LOCATION					

ITEM NO.	DESCRIPTION OF ITEM SUBMITTED <i>(Type size, model number/etc.)</i>	MFG OR CONTR. CAT., CURVE DRAWING OR BROCHURE NO. <i>(See instruction no. 8)</i>	NO. OF COPIES	CONTRACT REFERENCE DOCUMENT		FOR CONTRACTOR USE CODE	VARIATION <i>(See instruction No. 6)</i>	FOR CE USE CODE
				SPEC. PARA. NO.	DRAWING SHEET NO.			
<i>a.</i>	<i>b.</i>	<i>c.</i>	<i>d.</i>	<i>e.</i>	<i>f.</i>	<i>g.</i>	<i>h.</i>	<i>i.</i>

REMARKS

I certify that the above submitted items have been reviewed in detail and are correct and in strict conformance with the contract drawings and specifications except as other wise stated.

NAME AND SIGNATURE OF CONTRACTOR

SECTION II - APPROVAL ACTION		
ENCLOSURES RETURNED (List by Item No.)	NAME, TITLE AND SIGNATURE OF APPROVING AUTHORITY	DATE

INSTRUCTIONS

1. Section 1 will be initiated by the Contractor in the required number of copies.
2. Each transmittal shall be numbered consecutively in the space provided for "Transmittal No.". This number, in addition to the contract number, will form a serial number for identifying each submittal. For new submittals or resubmits mark the appropriate box; on resubmittals, insert transmittal number of last submission as well as the new submittal number.
3. The "Item No." will be the same "Item No." as indicated on ENG FORM 4288 for each entry on this form.
4. Submittals requiring expeditious handling will be submitted on a separate form.
5. Separate transmittal form will be used for submittals under separate sections of the specifications.
6. A check shall be placed in the "Variation" column when a submittal is not in accordance with the plans and specifications--also, a written statement to that effect shall be included in the space provided for "Remarks".
7. Form is self-transmittal, letter of transmittal is not required.
8. When a sample of material or Manufacturer's Certificate of Compliance is transmitted, indicate "Sample" or "Certificate" in column c, Section I.
9. U.S. Army Corps of Engineers approving authority will assign action codes as indicated below in space provided in Section I, column i to each item submitted. In addition they will ensure enclosures are indicated and attached to the form prior to return to the contractor. The Contractor will assign action codes as indicated below in Section I, column g, to each item submitted.

THE FOLLOWING ACTION CODES ARE GIVEN TO ITEMS SUBMITTED

A -- Approved as submitted.	E -- Disapproved (See attached).
B -- Approved, except as noted on drawings.	F -- Receipt acknowledge.
C -- Approved, except as noted on drawings. Refer to attached sheet resubmission required	FX -- Receipt acknowledged, does not comply as noted with contract requirements.
D -- Will be returned by separate correspondence.	G -- Other (<i>Specify</i>)
10. Approval of items does not relieve the contractor from complying with all the requirements of the contract plans and specifications.

SECTION 01 33 29

SUSTAINABILITY REQUIREMENTS AND REPORTING
02/21

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.

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

INTERNATIONAL CODE COUNCIL (ICC)

ICC IgCC	(2018) International Green Construction Code

U.S. DEPARTMENT OF AGRICULTURE (USDA)

FSRIA 9002	Farm Security and Rural Investment Act Section 9002 (USDA BioPreferred Program)

U.S. DEPARTMENT OF DEFENSE (DOD)

UFC 1-200-02	(2020; with Change 1, 2020; Change 2, 2022) High Performance and Sustainable Building Requirements

UFC 3-210-10	(2015; with Change 3, 2020) Low Impact Development

UFC 3-600-01	(2016; with Change 6, 2021) Fire Protection Engineering for Facilities

U.S. DEPARTMENT OF ENERGY (DOE)

Energy Star	(1992; R 2006) Energy Star Energy Efficiency Labeling System (FEMP)

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

40 CFR 247	Comprehensive Procurement Guideline for Products Containing Recovered Materials

1.2 SUMMARY

This section includes requirements for Sustainability documentation and reporting submittals per the federally mandated High Performance and Sustainable Building (HPSB) or HPSB "Guiding Principles" (GP), in accordance with UFC 1-200-02 High Performance and Sustainable Building

Requirements, and other identified requirements.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are for Contractor Quality Control approval. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-05 Design Data

Final Design High Performance and Sustainable Building Checklist; G, AE

Final Design Sustainability eNotebook; G, AE

SD-11 Closeout Submittals

Final High Performance and Sustainable Building Checklist; G, AE

Final Sustainability eNotebook; G, AE

1.4 GUIDING PRINCIPLES VALIDATION (GPV)

Provide the following sustainability activities and documentation to verify achievement of HPSB Guiding Principles Validation (GPV):

- a. Analysis of each Guiding Principle Requirement and how project complies. Include final government approved narrative(s) in the HPSB Checklist submittal. Multiple checklists indicate multiple buildings that require individual HPSB Checklist tracking.
- b. No changes to the HPSB Checklist are allowed without approval from the Contracting Officer, in accordance with Section 01 33 00 SUBMITTAL REQUIREMENTS 01 33 00.05 20 CONSTRUCTION SUBMITTAL PROCEDURES and Section 01 33 10.05 20 DESIGN SUBMITTAL PROCEDURES, paragraph DESIGN CHANGE AND VARIATION. Immediately bring to the attention of the Contracting Officer any project changes that impact meeting the approved HPSB Guiding Principles Requirements for this project. Demonstrate the change will not increase the life-cycle cost and maintains or improves the building performance.
- c. Documentation of all work required to incorporate the applicable HPSB Guiding Principles requirements indicated on the HPSB Checklist and in this contract, including all "S" submittals.
- d. Sustainability Action Plan.
- e. Design and construction related documentation for the project Sustainability eNotebook and keep updated with regularly-scheduled Construction Quality Control Meetings. Include design and construction related documentation containing the following components:
- f. Construction related documentation for the project Sustainability eNotebook and keep updated with regularly-scheduled Construction Quality Control Meetings. Include construction related documentation containing the following components:

- (1) HPSB Checklist(s)
- (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. Analysis of each HPSB Guiding Principles Requirement and how project will comply. Final government approved narrative(s) must be included in the HPSB Checklist submittal.
- b. Name and contact information for: Contractor's Point of Contact (POC) ensuring sustainability goals are accomplished and documentation is assembled. For TPC that include on-site visit by third party representative, provide list of required attendees.
- c. Indoor Air Quality plan.

1.4.2 Calculations

Provide all design data, calculations, product data, labels and product certifications required in this specification to demonstrate compliance with the HPSB Guiding Principles Requirements.

Provide all calculations, product data, labels and product certifications required in this specification to demonstrate compliance with the HPSB Guiding Principles Requirements.

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. Include the final HPSB Checklist(s) with the interim DD1354 Real Property Record Submittal.

1.5.2 "S" Submittals for Sustainability Documentation

"S" submittals are the sustainability documentation requirements cited in the various sections of this contract. Submit the GPV and TPC sustainability documentation required in this section as "S" submittals in all affected UFGS Sections.

- a. Highlight GPV compliance data in "S" submittal.
- b. Add "S" submittals to the Sustainability eNotebook only after

submittal approval, and bookmark them as required in paragraph SUSTAINABILITY ENOTEBOOK below.

- c. Ensure all approved "S" submittals are included in each Sustainability eNotebook submittal.

1.5.3 Sustainability eNotebook

The Sustainability eNotebook is an electronic organizational file that serves as a repository for all required sustainability submittals. To support documentation of compliance with an approved HPSB checklist, provide and maintain a comprehensive and current Sustainability eNotebook. Include all required data in Sustainability eNotebook, to support full compliance with the HPSB Guiding Principles Requirements, including:

- a. HPSB checklist
- b. Sustainability Action Plan
- c. Calculations
- d. Labels

e. "S" submittals1.5.3.1 Sustainability eNotebook Format

Provide Sustainability eNotebook in the form of an Adobe PDF file; bookmark each HPSB Guiding Principles Requirement and sub-bookmark at each document. Match format to HPSB Guiding Principles numbering system indicated herein. Maintain up-to-date information, such as spreadsheets, templates, with each current submittals.

Contracting Officer may deduct from the monthly progress payment accordingly if Sustainability eNotebook information is not current and on track per project goals.

1.5.3.2 Sustainability eNotebook Submittal Schedule

Provide Sustainability eNotebook Submittals at the following milestones of the project:

- a. Final Design Sustainability eNotebook

Submit updated Sustainability eNotebook with updated Final Design High Performance and Sustainable Building Checklist with the final design. If issues relating to achieving the sustainability goals of the project are subsequently identified, identify reasons and mitigation from DOR, and resubmit to the Contracting Officer for approval.

- b. Construction Quality Control Meetings.

Provide up-to-date GP documentation in the Sustainability eNotebook for each meeting.

- c. Final Sustainability eNotebook

Submit updated Sustainability eNotebook with updated Final High Performance and Sustainable Building Checklist at Beneficial Occupancy

Date (BOD). Final progress payment retainage may be held by Contracting Officer until Final Sustainability construction phase documentation is complete.

1.6 DOCUMENTATION REQUIREMENTS

- a. Incorporate each of the following HPSB Guiding Principles requirements into project and provide documentation that proves compliance with each listed requirement. Items below are organized by 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 Integrated Design Process

For the submittal documentation below, demonstrate compliance with UFC 1-200-02.

1.6.1.1 Design Submittal Documentation

- a. List the sustainability integrated design team, and a description of their roles in all stages of a project's planning and delivery:
 - (1) Include Contractor's Sustainability Coordinators; Architecture and Engineering disciplines involved on the project, and the DOR in charge of the overall project and each discipline; Construction Subcontractors and the company representatives that align with each architectural and engineering discipline, Planning, Public Works, Environmental Specialist and other appropriate installation personnel.
 - (2) Describe their roles and responsibilities and plan-of-action for how each team member will be involved to achieve the project sustainability requirements, and how the Contractor will coordinate with Government personnel.
 - (3) Maintain an up-to-date list with descriptions throughout the project.
- b. Provide narratives that:
 - (1) Indicate performance goals for siting, energy, water, materials, and indoor environmental quality along with other comprehensive design goals and ensures incorporation of these goals throughout the design and life cycle of the building.
 - (2) Demonstrate integration of the goals into design and construction.
 - (3) Demonstrate collaboration with other providers, such as Commissioning Authority.

1.6.2 Commissioning (Cx)

Develop and incorporate Commissioning requirements into the documents, in

accordance with Section 01 91 00.15 BUILDING COMMISSIONING.

1.6.3 Optimize Energy Performance

For the submittal documentation below, demonstrate compliance with UFC 1-200-02.

1.6.3.1 Design Submittal Documentation

a. Narrative that provides a summary of:

- (1) The decision-making process leading to the selection of at least three energy-efficient solutions (for each system contributing to the energy footprint of the building) to be analyzed; and the selected design solution(s)
- (2) The specific energy standard and version utilized; and the software used in the analysis
- (3) The calculated energy consumption and energy use intensity (EUI in kBtu/sf/yr) of the baseline building and the proposed design alternatives

b. A minimum of the following energy modeling files and summaries for the baseline and proposed alternatives:

- (1) Input, schedules and libraries; and output
- (2) Calculated energy use by energy type
- (3) Calculated energy use by building system

c. The life-cycle cost analysis input and output files for the baseline and the proposed alternatives

1.6.3.2 Construction Submittal Documentation

Provide revised energy modeling for actual system constructed.

1.6.4 Energy Efficient Products

Provide only energy-using products that are Energy Star rated or have 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://www.energy.gov/eere/femp/federal-energy-management-program> and
<http://www.energystar.gov/>.

For construction submittal documentation, provide proof that product is labeled energy efficient and complies with the cited requirements.

1.6.5 Building-level Power Metering

Provide building-level meters for electricity, natural gas, and steam where applicable.

1.6.5.1 Design Submittal Documentation

Provide design drawings that highlight meter locations on the site.

1.6.5.2 Construction Submittal Documentation

Provide manufacturer's data validating compatibility with base-wide system and component advanced meter requirements.

1.6.6 Indoor Water Use

Provide Construction Documentation proof that fixtures are labeled EPA WaterSense, for products available with EPA WaterSense labeling; for all other fixtures, proof they comply with EPA WaterSense efficiency requirements.

1.6.7 Indoor Water Metering

Provide building-level meters for potable water use. Provide the requirements cited in the following paragraphs:

1.6.7.1 Design Submittal Documentation

Provide design drawings that highlight meter locations on the site.

1.6.7.2 Construction Submittal Documentation

Provide manufacturer's data validating compatibility with base-wide system and component advanced meter requirements.

1.6.8 Stormwater Management

Develop and incorporate stormwater requirements into the documents. Submit design and construction documentation required by UFC 3-210-10 and Service processes, as proof of this tracking requirement.

1.6.9 Ventilation and Thermal Comfort

For the submittal documentation below, demonstrate compliance with UFC 1-200-02.

1.6.9.1 Design Submittal Documentation

Provide design drawings and calculations that demonstrate HVAC systems and the building envelope have been designed to meet the requirements.

1.6.10 Moisture Control

Provide the following:

1.6.10.1 Design Submittal Documentation

Provide drawings of building envelope details and HVAC humidity controls.

1.6.10.2 Construction Submittal Documentation

Ensure construction materials are separated and protected in accordance with other sections in this contract document, with adequate humidity controls during construction. In accordance with Section 01 78 23

OPERATION AND MAINTENANCE DATA, includes plan for ongoing building moisture control.

Coordinate with the moisture control requirements of Section 01 45 00 QUALITY CONTROL.

1.6.11 Reduce Volatile Organic Compounds (VOC) (Low-Emitting Materials)

Meet the requirements of Table 3-1 at the end of this specification.

For Construction submittal documentation, provide certifications or labels that demonstrate compliance with cited requirements, based on the attached TABLE 3-1.

1.6.12 Indoor Air Quality During Construction

Prior to construction, create indoor air quality plan. Develop and implement an IAQ construction management plan during construction and flush building air before occupancy.

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.

1.6.13 Recycled Content

Comply with 40 CFR 247. Refer to:
<https://www.epa.gov/smm/comprehensive-procurement-guideline-cpg-program>
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.

1.6.13.1 Construction Submittal Documentation

- a. Provide 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 for 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.
- c. In order to complete compliance with FAR 52.223-9 Estimate of Percentage of Recovered Material Content for EPA Designated Items, refer to submittal requirement for recycled/recovered material content in Section 01 78 00 CLOSEOUT SUBMITTALS.

1.6.14 Bio-Based Products

Provide products and materials composed of the highest percentage of bio-based 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 and when available at a reasonable cost. 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 www.biopreferred.gov 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:

- a. 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.
- b. In order to complete compliance with FAR 52.223-1 Biobased Product Certification, refer to submittal requirement for biobased products in Section 01 78 00 CLOSEOUT SUBMITTALS, paragraphs CERTIFICATION OF EPA DESIGNATED ITEMS and CERTIFICATION OF USDA DESIGNATED ITEMS.

1.6.15 Waste Material Management (Recycling - Design)

For the submittal documentation below, demonstrate compliance with UFC 1-200-02.

For design submittal documentation, provide drawing showing an appropriately sized and placed dedicated storage area for recyclables.

1.6.16 Waste Material Management (Recycling - Construction)

Divert demolition and construction debris in accordance with Section 01 74 19 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL.

1.6.17 Address Climate Change Risk

For design submittal documentation, provide narrative of decisions for design associated with scoped requirements.

PART 2 EXECUTION

2.1 SUSTAINABILITY COORDINATION

Provide sustainability focus and coordination at all meetings to achieve sustainability goals. Coordinate meeting requirements with other UFGS Sections meeting requirements in this project. Ensure the designated sustainability professional responsible for GP documentation participates in these meetings to coordinate documentation completion. Review GP sustainability requirements, HPSB Checklist documentation, Sustainability Action Plan, and completeness status of Sustainability eNotebook at the following meetings:

- a. Pre-Construction Conference
- b. Construction Quality Control Meetings

Refer to Section 01 00 00 ADDITIONAL SPECIAL CONTRACT REQUIREMENTS for Post Award Meetings.

- c. Post Award Meeting
- d. Design Quality Assurance Meetings

e. Design Complete Review Meetings

Conduct review no later than 60 days after final design complete submission and identify any outstanding issues that affect correct completion of all documentation requirements, and actions that will achieve requirements. Conduct corrective actions.

g. Facility Turnover Meetings

Conduct review no later than 60 days before final turnover and identify any outstanding issues that affect correct completion of all documentation and final TPC certification, assessment or validation, and actions that will achieve requirements. Conduct corrective actions prior to turnover, to ensure all requirements are achieved.

2.2 TABLE 2-1 VOLATILE ORGANIC COMPOUNDS (VOC) (LOW EMITTING MATERIALS) REQUIREMENTS

TABLE 2-1 Volatile Organic Compounds (VOC) (Low Emitting Materials) Requirements				
Source: ICC IgCC Chapter 8 (Materials) (Interior Applications Only)				
MATERIAL CATEGORY	EMISSIONS REQUIREMENT		MATERIALS WITH ADDED VOC REQUIREMENT	EMISSIONS REQUIREMENTS
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; base cove; ceramic tile; drywall and 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).

TABLE 2-1 Volatile Organic Compounds (VOC) (Low Emitting Materials) Requirements

Source: ICC IgCC Chapter 8 (Materials) (Interior Applications Only)

MATERIAL CATEGORY	EMISSIONS REQUIREMENT		MATERIALS WITH ADDED VOC REQUIREMENT	EMISSIONS REQUIREMENTS
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, nonflat high-gloss, specialty, basement specialty, fire-resistive, floor, low-solids, rust preventative, wood, reflective wall coatings; concrete/masonry sealers; primers; sealers; undercoaters; shellacs (clear and opaque); stains; varnishes; conjugated oil varnish; lacquer; clear brushing lacquer	Green Seal Standard GS-11

TABLE 2-1 Volatile Organic Compounds (VOC) (Low Emitting Materials) Requirements Source: ICC IgCC Chapter 8 (Materials) (Interior Applications Only)				
MATERIAL CATEGORY	EMISSIONS REQUIREMENT		MATERIALS WITH ADDED VOC REQUIREMENT	EMISSIONS REQUIREMENTS
Paints and Coatings	CDPH/EHLB/Standard method V1.1 (California Section 01350) (Use "office" or "classroom" space limits for all applications)	or	Concrete curing compounds; dry fog, faux finishing, graphic arts (sign paints), industrial maintenance, mastic texture, metallic pigmented, multicolor, recycled coatings; pretreatment wash primers, reactive penetrating sealers; specialty primers, wood preservatives, and zinc primers	California Air Resources Board (CARB) Suggested Control Measure for Architectural Coatings or SCAQMD Rule 1113r
Paints and Coatings	CDPH/EHLB/Standard method V1.1 (California Section 01350) (Use "office" or "classroom" space limits for all applications)	or	High-temperature 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

TABLE 2-1 Volatile Organic Compounds (VOC) (Low Emitting Materials) Requirements

Source: ICC IgCC Chapter 8 (Materials) (Interior Applications Only)

MATERIAL CATEGORY	EMISSIONS REQUIREMENT		MATERIALS WITH ADDED VOC REQUIREMENT	EMISSIONS REQUIREMENTS
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
Insulation	CDPH/EHLB/Standard method V1.1 (California Section 01350) (Use "office" or "classroom" space limits for all applications)		none	none

TABLE 2-1 Volatile Organic Compounds (VOC) (Low Emitting Materials) Requirements

Source: ICC IgCC Chapter 8 (Materials) (Interior Applications Only)

MATERIAL CATEGORY	EMISSIONS REQUIREMENT		MATERIALS WITH ADDED VOC REQUIREMENT	EMISSIONS REQUIREMENTS
Composite Wood, Wood Structural Panel, and Agrifiber Products, no added urea-formaldehyde resins including laminating adhesives for composite wood and agrifiber assemblies - particleboard, medium density fiberboard (MDF), wheatboard, strawboard, panel substrates, door cores	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	or	none	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.)
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

TABLE 2-1 Volatile Organic Compounds (VOC) (Low Emitting Materials) Requirements

Source: ICC IgCC Chapter 8 (Materials) (Interior Applications Only)

MATERIAL CATEGORY	EMISSIONS REQUIREMENT		MATERIALS WITH ADDED VOC REQUIREMENT	EMISSIONS REQUIREMENTS
Ceiling and Wall assemblies and systems including: acoustical treatments; ceiling panels and tiles; tackable wall panels and coverings; wall coverings; wall and ceiling paneling and planking	CDPH/EHLB/Standard method V1.1 (California Section 01350) (Use "office" or "classroom" space limits for all applications)		none	none

-- End of Section --

SECTION 01 35 26

GOVERNMENTAL SAFETY REQUIREMENTS

05/24, CHG 1: 05/25

PART 1 GENERAL

1.1 REFERENCES

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

AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS (ASHRAE)

ASHRAE 52.2 (2025) Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size

AMERICAN SOCIETY OF SAFETY PROFESSIONALS (ASSP)

ANSI/ASSP A10.34 (2021) Protection of the Public on or Adjacent to Construction Sites

ANSI/ASSP A10.44 (2020) Control of Energy Sources (Lockout/Tagout) for Construction and Demolition Operations

ASTM INTERNATIONAL (ASTM)

ASTM D6245 (2012) Using Indoor Carbon Dioxide Concentrations to Evaluate Indoor Air Quality and Ventilation

ASTM D6345 (2010) Standard Guide for Selection of Methods for Active, Integrative Sampling of Volatile Organic Compounds in Air

ASTM F855 (2020) Standard Specifications for Temporary Protective Grounds to Be Used on De-energized Electric Power Lines and Equipment

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)

IEEE 1048 (2016) Guide for Protective Grounding of Power Lines

IEEE C2 (2023) National Electrical Safety Code

INTERNATIONAL SAFETY EQUIPMENT ASSOCIATION (ISEA)

ANSI/ISEA Z89.1 (2014; R 2019) American National Standard for Industrial Head Protection

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 51B	(2024) Standard for Fire Prevention During Welding, Cutting, and Other Hot Work
NFPA 70	(2026) National Electrical Code
NFPA 70E	(2024) Standard for Electrical Safety in the Workplace
NFPA 241	(2022; ERTA 22-1) Standard for Safeguarding Construction, Alteration, and Demolition Operations

SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION (SMACNA)

ANSI/SMACNA 008	(2007) IAQ Guidelines for Occupied Buildings Under Construction, 2nd Edition

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1	(2024) Safety -- Safety and Occupational Health (SOH) Requirements

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

29 CFR 1910	Occupational Safety and Health Standards
29 CFR 1915	Confined and Enclosed Spaces and Other Dangerous Atmospheres in Shipyard Employment
29 CFR 1926	Safety and Health Regulations for Construction

1.2 DEFINITIONS

The following definitions are for the convenience of the reader. If there is a referenced document in the text of this specification section, that is the document that should define terms for that paragraph. If further clarification is needed, contact the Contracting Officer.

1.2.1 Site Safety and Health Officer (SSHO)

A Contractor Employee that is responsible for overseeing and ensuring implementation of the prime Contractor's Safety and Occupational Health (SOH) program according to the Contract, EM 385-1-1, applicable federal, state, and local requirements.

1.2.1.1 Level One SSHO

A designated employee with full-time SOH responsibility that meets and follows the requirements of EM 385-1-1.

1.2.1.2 Level Two SSHO

A designated employee with Level Two SSHO responsibility that meets and follows the requirements of EM 385-1-1. Level Two SSHOs cannot be

assigned to projects that have a residual Risk Assessment Code (RAC) of high or extremely high.

1.2.1.3 Level Three SSHO

A designated Qualified Person or Competent Person with SOH responsibility that meets and follows the requirements of EM 385-1-1. Level 3 SSHOs cannot be assigned to projects that have a residual RAC of high or extremely high.

1.2.1.4 Alternate SSHO

An employee that meets the definition of the contract-required level SSHO, but is not the primary SSHO.

1.2.2 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 unsanitary, hazardous, or dangerous to personnel, and who has authorization to take prompt corrective measures to eliminate them.

1.2.3 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.

1.3 SUBMITTALS

Government Acceptance or Approval does not remove responsibility from the Contractors for their actions or liability.

Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are for Contractor Quality Control approval. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Accident Prevention Plan (APP); G

Final IAQ Management Plan; S

Indoor Air Quality (IAQ) Management Plan; G

SD-06 Test Reports

LHE Inspection Reports

Monthly Exposure Reports; G

SD-07 Certificates

Activity Hazard Analysis (AHA); G

Certificate of Compliance

Hot Work Permit

Standard Lift Plan; G

Critical Lift Plan; G

1.4 PUBLIC HEALTH EMERGENCIES

In the event of a declared public health emergency, follow safety precautions as required by the Occupational Safety and Health Administration (OSHA) www.osha.gov, the Centers for Disease Control and Prevention (CDC) www.cdc.gov, and as required by federal, state and local requirements.

1.5 MONTHLY EXPOSURE REPORTS

Provide a Monthly Exposure Report by the fifth day of each month for the previous month. 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 progress payment. Exposure hours will be submitted in RMS.

1.6 REGULATORY REQUIREMENTS

In addition to the detailed requirements included in the provisions of this Contract, comply with the most recent edition of USACE EM 385-1-1, and the following federal, state, and local laws, ordinances, criteria, rules and regulations at the date of the Solicitation for this Contract. 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.

1.7 SITE QUALIFICATIONS, DUTIES, AND MEETINGS

1.7.1 Site Safety and Health Officer (SSHO)

1.7.1.1 Qualifications of SSHO

All SSHOs will have met the training, experience requirements identified in the EM 385-1-1 and this Contract.

1.7.1.2 Duties of SSHO

All SSHOs will carry out the roles and responsibilities as identified in this Contract and the EM 385-1-1. All SSHOs will be designated on an ENG Form 6282, provided by the Contracting Officer. Superintendent, QC Manager, and SSHO are subject to dismissal if their required duties are not being effectively carried out. If either the Superintendent, QC Manager, or SSHO are dismissed, project work will be stopped and will not be allowed to resume until a suitable replacement is approved and the above duties are again being effectively carried out.

1.7.1.3 Safety Meetings

Conduct safety meetings to review past activities, plan for new or changed operations, review pertinent aspects of appropriate AHA (by trade), establish safe working procedures for anticipated hazards, and provide pertinent Safety and Occupational Health (SOH) training and motivation. Conduct meetings at least once a month for all supervisors at the project location. The SSHO, supervisors, or foremen 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.

1.7.2 Roles and Responsibilities of Prime Contractor and SSHO

The Prime Contractor and SSHO must ensure that the requirements of all applicable OSHA and EM 385-1-1 are met for the project. The Prime Contractor must ensure an SSHO or an equally qualified Alternate SSHO(s) is at the worksite at all times to implement and administer the Contractor's safety program and Government accepted Accident Prevention Plan. If the required SSHO has to temporarily (that is, up to 24 hours / 1 day) leave the site of work due to unforeseen or emergency situations, a Level One, Two, or Three SSHO may be used in the interim and must be on the site of work at all times when work is being performed.

If the SSHO must be off-site for a period longer than 24 hours / 1 day, a qualified alternate that meets the contract requirements must be onsite.

a. Prime contractor must ensure all SSHOs will:

- (1) Are designated on an ENG Form 6282.
- (2) Meet minimum training and experience requirements identified in EM 385-1-1.
- (3) Execute roles and responsibilities identified in EM 385-1-1.

1.7.3 Contract Site Safety And Health Officer(s)(SSHOs) Minimum Requirements

Provide a minimum of one Level One SSHO that meets the requirements of EM 385-1-1 for this project.

1.7.4 Competent Person for Confined Space Entry

Provide a CP for Confined Space Entry who meets the requirements of EM 385-1-1 and herein. The CP for Confined Space Entry must supervise the entry into each confined space in accordance with EM 385-1-1.

1.7.5 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 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. The creation of the APP and Schedule will be created after being given Notice to Proceed.
- c. Deficiencies in the submitted APP, identified during the Contracting Officer's review, must be corrected, and the APP re-submitted for review prior to the start of construction. Work is not permitted to begin until an APP is established that is acceptable to the Contracting Officer.

1.8 ACCIDENT PREVENTION PLAN (APP)

1.8.1 Accident Prevention Plan (APP)

Submit the Accident Prevention Plan (APP) for review and acceptance by the Government at least 15 calendar days prior to the start, after being given Notice to Proceed. A competent person must prepare the written site-specific APP. Prepare the APP in accordance with the format and requirements of EM 385-1-1, ENG Form 6293, and herein. 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 occupational 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 employer" for all worksite 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 in accordance with the APP and ENG Form 6293 Accident Prevention Plan Worksheet. The SSHO must provide and maintain the APP and a log of signatures by each subcontractor foreman, attesting that they have read and understand the APP, and make the APP and log available on-site to the Contracting Officer. If English is not the foreman's primary language, the Prime Contractor must provide an interpreter.

Submit the APP to the Contracting Officer 15 calendar days prior to the date of the preconstruction conference for acceptance. Work cannot proceed without an accepted APP. Once reviewed and accepted by the Contracting Officer, the APP and attachments will be enforced as part of the Contract. Disregarding the provisions of this Contract or the accepted APP is cause for stopping of work, at the discretion of the Contracting Officer, until the matter has been rectified. Continuously review and amend the APP, as necessary, throughout the life of the Contract. Changes to the accepted APP must be made with the knowledge and concurrence of the Contracting Officer, project superintendent, SSHO and Quality Control Manager. Incorporate unusual or high-hazard activities

not identified in the original APP as they are discovered. Should any severe hazard exposure (i.e., imminent danger) become evident, stop work in the area, secure the area, and develop a plan to remove the exposure and control the hazard. Notify the Contracting Officer within 24 hours of discovery. Eliminate and remove the hazard. In the interim, take all necessary action to restore and maintain safe working conditions in order to safeguard onsite personnel, visitors, the public (as defined by ANSI/ASSP A10.34), and the environment.

1.8.2 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. As a minimum, designate and submit qualifications of Competent Persons (CP) 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. Designate and submit qualifications for additional CPs as applicable to the work performed under this Contract.

1.8.3 Plans

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

1.9 ACTIVITY HAZARD ANALYSIS (AHA)

Before beginning each activity, task or Definable Feature of Work (DFOW) involving a type of work presenting hazards not experienced in previous project operations, or where a new work crew or subcontractor is to perform the work, the Contractor(s) performing that work activity must prepare an AHA. AHAs must be developed by the Prime Contractor, subcontractor, or supplier performing the work, and provided for Prime Contractor review and approval before submitting to the Contracting Officer. AHAs must be signed by the SSHO, Superintendent, QC Manager and the subcontractor Foreman performing the work. Format the AHA in accordance with EM 385-1-1 or as directed by the Contracting Officer. Submit the AHA for review at least 5 working days prior to the start of each activity task, or DFOW. The Government reserves the right to require the Contractor to revise and resubmit the AHA if it fails to effectively identify the work sequences, specific anticipated hazards, site conditions, equipment, materials, personnel and the control measures to be implemented.

AHAs must identify competent persons required for phases involving high risk activities, including confined entry, crane and rigging, excavations, trenching, electrical work, fall protection, and scaffolding.

1.9.1 AHA Management

Review the AHA list periodically (at least monthly) at the Contractor supervisory safety meeting, and update as necessary when procedures, scheduling, or hazards change. Use the AHA during daily inspections by the SSHO to ensure the implementation and effectiveness of the required safety and health controls for that work activity.

1.9.2 AHA Signature Log

Each employee performing work as part of an activity, task or DFOV must review the AHA for that work and sign a signature log specifically maintained for that AHA prior to starting work on that activity. The SSHO must maintain a signature log on site for every AHA. Provide employees whose primary language is other than English, with an interpreter to ensure a clear understanding of the AHA and its contents.

1.10 SITE SAFETY REFERENCE MATERIALS

Maintain safety-related references applicable to the project, including those listed in paragraph REFERENCES. Maintain applicable equipment manufacturer's manuals.

1.11 EMERGENCY MEDICAL TREATMENT

Contractors must arrange for their own emergency medical treatment in accordance with EM 385-1-1. The Government has no responsibility to provide emergency medical treatment.

1.12 NOTIFICATIONS AND REPORTS

1.12.1 Accident Notification

Notify the Contracting Officer in accordance with the EM 385-1-1 Accident Reporting Timeline.

Table Accident Reporting Required Timeline		
Accident Type	Notify KO or COR	Complete Final Accident Report on ENG 3394 and provide to KO or COR
Fatality, in-patient hospitalization, amputation, eye loss, or property damage over \$600,000.	Immediately, no later than (NLT) 8 Hours	Within 7 Days
All other accidents and near misses	Immediately, no later than (NLT) 24 Hours	Within 7 Days

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 accident or near miss.

1.12.2 LHE Inspection Reports

Submit LHE inspection reports required in accordance with EM 385-1-1 and as specified herein with Daily Reports of Inspections.

1.12.3 Certificate of Compliance and Pre-lift Plan/Checklist for LHE and Rigging

1.12.3.1 Certificate of Compliance

Provide a Certificate of Compliance for LHE utilized to perform work under this Contract in accordance with Section 16-7 of the EM 385-1-1. Post completed certificate on the crane.

1.12.3.2 Pre-Lift Plans

Develop either a Standard Lift Plan (SLP) or Critical Lift Plan (CLP) as required in accordance with EM 385-1-1. Utilize the Standard Lift Plan ENG Form 6203 for routine crane lifts and use the Critical Lift Plan ENR Form 6213 for non-routine crane lifts requiring more detailed planning and additional safety precautions, as defined by Section 16-2j of the EM 385-1-1. Submit lift plans to the Contracting Officer for approval within 15 calendar days in advance of planned lift.

1.13 HOT WORK PERMIT

1.13.1 Permit and Personnel Requirements

Submit and obtain a written permit prior to performing "Hot Work" (i.e., welding or cutting) or operating other flame-producing/spark producing devices, from the Fire Marshall. A permit is required from the Explosives Safety Office for work in and around where explosives are processed, stored, or handled. Contractors are required to meet all criteria before a permit is issued. Provide at least two 20 pound 4A:20 BC rated extinguishers for normal "Hot Work". The extinguishers must be current inspection tagged, and contain an approved safety pin and tamper resistant seal. It is also mandatory to have a designated FIRE WATCH for any "Hot Work" done at this activity. The Fire Watch must be trained in accordance with NFPA 51B and remain on-site for a minimum of 1 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 Fire Marshall phone number. Report any fire, no matter how small, to the responsible Fire Marshall immediately.

1.13.2 Work Around Flammable Materials

Obtain permit approval from a NFPA Certified Marine Chemist, or Certified Industrial Hygienist for "Hot Work" within or around flammable materials (such as fuel systems or welding/cutting on fuel pipes) or confined spaces (such as sewer wet wells, manholes, or vaults) that have the potential for flammable or explosive atmospheres.

Whenever these materials, except beryllium and chromium (VI), are encountered in indoor operations, local mechanical exhaust ventilation systems that are sufficient to reduce and maintain personal exposures to within acceptable limits must be used and maintained in accordance with manufacturer's instruction and supplemented by exceptions noted in EM 385-1-1.

1.14 CONFINED SPACE ENTRY REQUIREMENTS

Confined space entry must comply with EM 385-1-1, 29 CFR 1926, and 29 CFR 1910. Any potential for a hazard in the confined space requires a permit system to be used.

1.14.1 Rescue Procedures and Coordination with Local Emergency Responders

Develop and implement an on-site rescue and recovery plan and procedures. The rescue plan must not rely on local emergency responders for rescue from a confined space.

1.15 CONSTRUCTION INDOOR AIR QUALITY (IAQ) MANAGEMENT PLAN

Submit an IAQ Management Plan within 15 calendar days after notice to proceed and not less than 10 calendar days before the preconstruction conference. Revise and resubmit Plan as required by the Contracting Officer. Make copies of the final plan available to all workers on site. Include provisions in the Plan to meet the requirements specified below and to ensure safe, healthy air for construction workers and building occupants. Submit Final IAQ Management Plan for inclusion in the Sustainability eNotebook, in accordance with Section 01 33 29 SUSTAINABILITY REQUIREMENTS AND REPORTING.

1.15.1 Requirements During Construction

Provide for evaluation of indoor Carbon Dioxide concentrations in accordance with ASTM D6245. Provide for evaluation of volatile organic compounds (VOCs) in indoor air in accordance with ASTM D6345. Use filters with a Minimum Efficiency Reporting Value (MERV) of 8 in permanently installed air handlers during construction.

1.15.1.1 Control Measures

Meet or exceed the requirements of ANSI/SMACNA 008 to help minimize contamination of the building from construction activities. The five requirements of this manual which must be adhered to are described below:

- a. HVAC protection: Isolate return side of HVAC system from surrounding environment to prevent construction dust and debris from entering the duct work and spaces.
- b. Source control: Use low emitting paints and other finishes, sealants, adhesives, and other materials as specified. When available, cleaning products must have a low VOC content and be non-toxic to minimize building contamination. Utilize cleaning techniques that minimize dust generation. Cycle equipment off when not needed. Prohibit idling motor vehicles where emissions could be drawn into building. Designate receiving/storage areas for incoming material that minimize IAQ impacts.
- c. Pathway interruption: When pollutants are generated use strategies

such as 100 percent outside air ventilation or erection of physical barriers between work and non-work areas to prevent contamination.

- d. Housekeeping: Clean frequently to remove construction dust and debris. Promptly clean up spills. Remove accumulated water and keep work areas dry to discourage the growth of mold and bacteria. Take extra measures when hazardous materials are involved.
- e. Scheduling: Control the sequence of construction to minimize the absorption of VOCs by other building materials.

1.15.1.2 Moisture Contamination

- a. Remove accumulated water and keep work dry.
- b. Use dehumidification to remove moist, humid air from a work area.
- c. Do not use combustion heaters or generators inside the building.
- d. Protect porous materials from exposure to moisture.
- e. Remove and replace items which remain damp for more than a few hours.

1.15.2 Requirements After Construction

After construction ends and prior to occupancy, conduct a building flush-out or test the indoor air contaminant levels. Flush-out must be a minimum 2 weeks with MERV-13 filtration media as determined by ASHRAE 52.2 at 100 percent outside air. Air contamination testing must be consistent with EPA's current Compendium of Methods for the Determination of Air Pollutants in Indoor Air. After building flush-out or testing and prior to occupancy, replace filtration media. Filtration media must have a MERV of 13 as determined by ASHRAE 52.2.

1.16 SEVERE STORM PLAN

Provide severe storm plan, to include a plan for tropical weather events that corresponds with Eglin AFB's HURCON system. Current HURCON checklists can be obtained from the Resident Office.

In the event of a severe storm warning, the Contractor must comply with the applicable Storm Plan and:

- a. Secure outside equipment and materials and place materials that could be damaged in protected areas.
- b. Check surrounding area, including roof, for loose material, equipment, debris, and other objects that could be blown away or against existing facilities.
- c. Ensure that temporary erosion controls are adequate.

PART 2 PRODUCTS

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. Head Protection that meets ANSI/ISEA Z89.1
- b. Long Pants
- c. Appropriate Safety Footwear
- d. Appropriate Class Reflective Vests

3.1.1 Worksite Communication

Employees working alone in a remote location or away from other workers must be provided an effective means of emergency communications (i.e., cellular phone, two-way radios, land-line telephones or other acceptable means). The selected communication must be readily available (easily within the immediate reach) of the employee and must be tested prior to the start of work to verify that it effectively operates in the area/environment. Develop an employee check-in/check-out communication procedure to ensure employee safety.

3.1.2 Hazardous Material 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 can be hazardous to human health upon disturbance are encountered during demolition, repair, renovation, or construction operations, stop portions of work that would disturb the material 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.

3.2 UTILITY OUTAGE REQUIREMENTS

Apply for utility outages at least 15 days in advance. At a minimum, the written request must include the location of the outage, utilities being affected, duration of outage, any necessary sketches, and a description of the means to fulfill energy isolation requirements in accordance with EM 385-1-1. In accordance with EM 385-1-1, where outages involve Government or Utility personnel, coordinate with the Government on all activities involving the control of hazardous energy.

These activities include, but are not limited to, a review of Hazardous Energy Control Program (HECP) and HEC procedures, as well as applicable Activity Hazard Analyses (AHAs). In accordance with EM 385-1-1 and NFPA 70E, work on energized electrical circuits must not be performed without prior Government authorization. Government permission is considered through the permit process and submission of a detailed AHA. Energized work permits are considered only when de-energizing introduces additional or increased hazard or when de-energizing is infeasible.

3.3 OUTAGE COORDINATION MEETING

After the utility outage request is approved and prior to beginning work on the utility system requiring shut-down, conduct a pre-outage coordination meeting in accordance with EM 385-1-1. This meeting must include the Prime Contractor, the Prime and subcontractors performing the work, the Contracting Officer, and the Installation representative Public Utilities representative. All parties must fully coordinate HEC activities with one another. During the coordination meeting, all parties must discuss and coordinate on the scope of work, HEC procedures (specifically, the lock-out/tag-out procedures for worker and utility protection), the AHA, assurance of trade personnel qualifications, identification of competent persons, and compliance with HECP training in accordance with EM 385-1-1. Clarify when personal protective equipment is required during switching operations, inspection, and verification.

3.4 CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT)

Provide and operate a Hazardous Energy Control Program (HECP) in accordance with EM 385-1-1, 29 CFR 1910, 29 CFR 1915, ANSI/ASSP A10.44, NFPA 70E.

3.4.1 Safety Preparatory Inspection Coordination Meeting with the Government or Utility

For electrical distribution equipment that is to be operated by Government or Utility personnel, the Prime Contractor and the subcontractor performing the work must attend the safety preparatory inspection coordination meeting, which will also be attended by the Contracting Officer's Representative, and required by EM 385-1-1. The meeting will occur immediately preceding the start of work and following the completion of the outage coordination meeting. Both the safety preparatory inspection coordination meeting and the outage coordination meeting must occur prior to conducting the outage and commencing with lockout/tagout procedures.

3.4.2 Lockout/Tagout Isolation

Where the Government or Utility performs equipment isolation and

lockout/tagout, the Contractor must place their own locks and tags on each energy-isolating device and proceed in accordance with the HECF. Before any work begins, both the Contractor and the Government or Utility must perform energy isolation verification testing while wearing required PPE detailed in the Contractor's AHA and required by EM 385-1-1. Install personal protective grounds, with tags, to eliminate the potential for induced voltage in accordance with EM 385-1-1.

3.4.3 Lockout/Tagout Removal

Upon completion of work, conduct lockout/tagout removal procedure in accordance with the HECF. In accordance with EM 385-1-1, each lock and tag must be removed from each energy isolating device by the authorized individual or systems operator who applied the device. Provide formal notification to the Government (by completing the Government form if provided by Contracting Officer's Representative), confirming that steps of de-energization and lockout/tagout removal procedure have been conducted and certified through inspection and verification. Government or Utility locks and tags used to support the Contractor's work will not be removed until the authorized Government employee receives the formal notification.

3.5 FALL 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 EM 385-1-1.

3.5.1 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 and 29 CFR 1926.

3.5.1.1 Additional Personal Fall Protection Measures

In addition to the required fall protection systems, other protective measures 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.

3.5.1.2 Personal Fall Protection Equipment

Only a full-body harness with a shock-absorbing lanyard or self-retracting lanyard is an acceptable personal fall arrest body support device. The

use of body belts is not acceptable. Harnesses must have a fall arrest attachment affixed to the body support (usually a Dorsal D-ring) and specifically designated for attachment to the rest of the system. Snap hooks and carabineers must be self-closing and self-locking, capable of being opened only by at least two consecutive deliberate actions and have a minimum gate strength of 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. Equip all full body harnesses with Suspension Trauma Preventers such as stirrups, relief steps, or similar in order to provide short-term relief from the effects of orthostatic intolerance in accordance with EM 385-1-1.

3.6 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 ELECTRICAL

Perform electrical work in accordance with EM 385-1-1.

3.7.1 Electrical Work

As described 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 footwear, 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.

3.7.2 Qualifications

Electrical work must be performed by QP with verifiable credentials who are familiar with applicable code requirements. Verifiable credentials consist of State, National and Local Certifications or Licenses that a Master or Journeyman Electrician may hold, depending on work being performed, and must be identified in the appropriate AHA. Journeyman/Apprentice ratio must be in accordance with State, Local requirements applicable to where work is being performed.

3.7.3 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, no Unqualified Person is permitted to approach nearer than the Limited Approach Boundary of energized conductors and circuit parts. Training must be administered by an electrically qualified source and documented.

3.7.4 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.

3.7.5 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.

Temporary electrical plans shall be included as part of the contractor's area use plan submitted under specification section 01 00 00 and shall be approved by the COR before installation, as well as inspected by the COR prior to energizing the temporary electrical system. Any changes to the approved temporary electrical plan shall repeat this process.

-- End of Section --

SECTION 01 42 00

SOURCES FOR REFERENCE PUBLICATIONS
02/19, CHG 1: 08/23

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
Internet: <https://web.aacei.org/>

ACOUSTICAL SOCIETY OF AMERICA (ASA)
1305 Walt Whitman Road, Suite 300
Melville, NY 11747-4300
Ph: 516-576-2360
Fax: 631-923-2875
E-mail: asa@acousticalsociety.org
Internet: <https://acousticalsociety.org/>

AIR MOVEMENT AND CONTROL ASSOCIATION INTERNATIONAL, INC. (AMCA)
30 West University Drive
Arlington Heights, IL 60004-1893
Ph: 847-394-0150
Fax: 847-253-0088
E-mail: communications@amca.org
Internet: <http://www.amca.org>

AIR-CONDITIONING, HEATING AND REFRIGERATION INSTITUTE (AHRI)
2111 Wilson Blvd, Suite 400
Arlington, VA 22201
Ph: 703-524-8800
Internet: <http://www.ahrinet.org>

ALUMINUM ASSOCIATION (AA)
1400 Crystal Drive
Suite 430
Arlington, VA 22202

Ph: 703-358-2960
E-Mail: info@aluminum.org
Internet: <https://www.aluminum.org/>

AMERICAN ARCHITECTURAL MANUFACTURERS ASSOCIATION (AAMA)
1900 E Golf Rd, Suite 1250
Schaumburg, IL 60173
Ph: 847-303-5664
E-mail: customerservice@aamanet.org
Internet: <https://aamanet.org/>

AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
(AASHTO)
444 North Capital Street, NW, Suite 249
Washington, DC 20001
Ph: 202-624-5800
Fax: 202-624-5806
E-Mail: info@ashto.org
Internet: <https://www.transportation.org/>

AMERICAN ASSOCIATION OF TEXTILE CHEMISTS AND COLORISTS (AATCC)
1 Davis Drive
P.O. Box 12215
Research Triangle Park, NC 27709-2215
Ph: 919-549-8141
Fax: 919-549-8933
Internet: <https://www.aatcc.org/>

AMERICAN BEARING MANUFACTURERS ASSOCIATION (ABMA)
330 N. Wabash Ave., Suite 2000
Chicago, IL 60611
Ph: 202-367-1155
E-mail: info@americanbearings.org
Internet: <https://www.americanbearings.org/>

AMERICAN CONCRETE INSTITUTE (ACI)
38800 Country Club Drive
Farmington Hills, MI 48331-3439
Ph: 248-848-3700
Fax: 248-848-3701
Internet: <https://www.concrete.org/>

AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS (ACGIH)
1330 Kemper Meadow Drive
Cincinnati, OH 45240
Ph: 513-742-2020
Fax: 513-742-3355
Internet: <https://www.acgih.org/>

AMERICAN FOREST FOUNDATION (AFF)
American Tree Farm System
2000 M Street, NW, Suite 550
Washington, DC 20036
Ph: 202-765-3660
Fax: 202-827-7924
Email: info@forestfoundation.org
Internet: <https://www.treefarmssystem.org>

AMERICAN HARDBOARD ASSOCIATION (AHA)
1210 West Northwest Highway
Palatine, IL 60067
Ph: 847-934-8800
Fax: 847-934-8803
E-mail: aha@hardboard.org
Internet: <http://domensino.com/AHA/>

AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)
130 East Randolph, Suite 2000
Chicago, IL 60601
Ph: 312-670-5444
Fax: 312-670-5403
Steel Solutions Center: 866-275-2472
E-mail: solutions@aisc.org
Internet: <https://www.aisc.org/>

AMERICAN IRON AND STEEL INSTITUTE (AISI)
25 Massachusetts Avenue, NW Suite 800
Washington, DC 20001
Ph: 202-452-7100
Internet: <https://www.steel.org/>

AMERICAN LUMBER STANDARDS COMMITTEE (ALSC)
7470 New Technology Way, Suite F
Frederick, MD 21703
Ph: 301-972-1700
Fax: 301-540-8004
E-mail: alsc@alsc.org
Internet: <http://www.alsc.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: <https://www.ansi.org/>

AMERICAN PETROLEUM INSTITUTE (API)
1220 L Street, NW
Washington, DC 20005-4070
Ph: 202-682-8000
Internet: <https://www.api.org/>

AMERICAN RAILWAY ENGINEERING AND MAINTENANCE-OF-WAY ASSOCIATION
(AREMA)
4501 Forbes Blvd., Suite 130
Lanham, MD 20706
Ph: 301-459-3200
E-mail: info@arema.org
Internet: <https://www.arema.org>

AMERICAN SOCIETY FOR NONDESTRUCTIVE TESTING (ASNT)
P.O. Box 28518
1711 Arlingate Lane
Columbus, OH 43228-0518
Ph: 800-222-2768 or 614-274-6003
Fax: 614-274-6899

E-mail: tjones@asnt.org
Internet: <https://www.asnt.org/>

AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE)
1801 Alexander Bell Drive
Reston, VA 20191
Ph: 800-548-2723; 703-295-6300
Internet: <https://www.asce.org/>

AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING
ENGINEERS (ASHRAE)
1791 Tullie Circle, NE
Atlanta, GA 30329
Ph: 404-636-8400 or 800-527-4723
Fax: 404-321-5478
E-mail: ashrae@ashrae.org
Internet: <https://www.ashrae.org/>

AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)
Two Park Avenue
New York, NY 10016-5990
Ph: 800-843-2763
Fax: 973-882-1717
E-mail: customercare@asme.org
Internet: <https://www.asme.org/>

AMERICAN SOCIETY OF SAFETY PROFESSIONALS (ASSP)
520 N. Northwest Highway
Park Ridge, IL 60068
Ph: 847-699-2929
E-mail: customerservice@assp.org
Internet: <https://www.assp.org/>

AMERICAN SOCIETY OF SANITARY ENGINEERING (ASSE)
18927 Hickory Creek Drive, Suite 220
Mokena, IL 60448
Ph: 708-995-3019
Fax: 708-479-6139
Internet: <http://www.asse-plumbing.org>

AMERICAN WATER WORKS ASSOCIATION (AWWA)
6666 W. Quincy Avenue
Denver, CO 80235 USA
Ph: 303-794-7711 or 800-926-7337
Fax: 303-347-0804
Internet: <https://www.awwa.org/>

AMERICAN WELDING SOCIETY (AWS)
8669 NW 36 Street, #130
Miami, FL 33166-6672
Ph: 800-443-9353
Internet: <https://www.aws.org/>

AMERICAN WOOD COUNCIL (AWC)
222 Catoctin Circle SE, Suite 201
Leesburg, VA 20175
Ph: 800-890-7732
Fax: 412-741-0609
E-mail: publications@awc.org

Internet: <https://www.awc.org/>

AMERICAN WOOD PROTECTION ASSOCIATION (AWPA)
P.O. Box 361784
Birmingham, AL 35236-1784
Ph: 205-733-4077
Fax: 205-733-4075
Internet: <http://www.awpa.com>

APA - THE ENGINEERED WOOD ASSOCIATION (APA)
7011 South 19th St.
Tacoma, WA 98466-5333
Ph: 253-565-6600
Fax: 253-565-7265
Internet: <https://www.apawood.org/>

ASM INTERNATIONAL (ASM)
9639 Kinsman Road
Materials Park, OH 44073-0002
Ph: 440-338-5151 (US), 440-462-0292 (International)
E-mail: memberservicecenter@asminternational.org
Internet: <https://www.asminternational.org/>

ASPHALT INSTITUTE (AI)
2696 Research Park Drive
Lexington, KY 40511-8480
Ph: 859-288-4960
Fax: 859-288-4999
E-mail: info@asphaltinstitute.org
Internet: <http://www.asphaltinstitute.org>

ASSOCIATED AIR BALANCE COUNCIL (AABC)
1220 19th St NW, Suite 410
Washington, DC 20036
Ph: 202-737-0202
Fax: 202-315-0285
E-mail: info@aabc.com
Internet: <https://www.aabc.com/>

ASTM INTERNATIONAL (ASTM)
100 Barr Harbor Drive, P.O. Box C700
West Conshohocken, PA 19428-2959
Ph: 610-832-9500
Fax: 610-832-9555
E-mail: service@astm.org
Internet: <https://www.astm.org/>

BACNET INTERNATIONAL (BTL)
BACnet Testing Laboratories
1827 Powers Ferry Road
Building 14, Suite 100
Atlanta, GA 30339
Ph: 770-971-6003
Fax: 678-229-2777
E-mail: info@bacnetinternational.org
Internet: <https://www.bacnetlabs.org/>

BIFMA INTERNATIONAL (BIFMA)
678 Front Ave. NW, Suite 150

Grand Rapids, MI 49504-5368
Ph: 616-285-3963
E-mail: email@bifma.org
Internet: <https://www.bifma.org/>

BUILDERS HARDWARE MANUFACTURERS ASSOCIATION (BHMA)
355 Lexington Avenue, 15th Floor
New York, NY 10017
Ph: 212-297-2122
Fax: 212-370-9047
Internet: <https://www.buildershardware.com/>

CALIFORNIA DEPARTMENT OF PUBLIC HEALTH (CDPH)
PO Box 997377, MS 0500
Sacramento, CA 95899-7377
Ph: 916-558-1784
Internet: <https://www.cdph.ca.gov/>

CARPET AND RUG INSTITUTE (CRI)
P.O. Box 2048
Dalton, GA 30722-2048
Ph: 706-278-3176
Fax: 706-278-8835
Internet: <https://carpet-rug.org/>

CAST IRON SOIL PIPE INSTITUTE (CISPI)
2401 Fieldcrest Drive
Mundelein, IL 60060
Ph: 224-864-2910
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Internet: <http://www.wwpa.org>

WINDOW AND DOOR MANUFACTURERS ASSOCIATION (WDMA)
2025 M Street, NW, Suite 800
Washington, DC 20036-3309
Ph: 202-367-1157
or
330 N Wabash Avenue, Suite 2000
Chicago, IL 60611
Ph: 312-321-6802
E-mail: membersupport@wdma.com
Internet: <https://www.wdma.com/>

WOODWORK INSTITUTE (WI)
3188 Industrial Blvd.
West Sacramento, CA 95691
Ph: 916-372-9943
Fax: 916-372-9950
E-mail: info@woodinst.com
Internet: <https://woodworkinstitute.com>

PART 2 PRODUCTS

Not used

PART 3 EXECUTION

Not used

-- End of Section --

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SECTION 01 45 00

QUALITY CONTROL
08/23

PART 1 GENERAL

1.1 REFERENCES

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

ASTM INTERNATIONAL (ASTM)

ASTM D3740 (2019) Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction

ASTM E90 (2009; R2016) Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements

ASTM E329 (2021) Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1 (2024) Safety -- Safety and Health Requirements Manual

1.2 PAYMENT

Separate payment will not be made for providing and maintaining an effective Quality Control program. Include all associated costs in the applicable Bid Schedule item.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES.

SD-01 Preconstruction Submittals

Contractor Quality Control (CQC) Plan; G

SD-06 Test Reports

Verification Statement

1.4 GENERAL REQUIREMENTS

Establish and maintain an effective quality control (QC) system that complies with FAR 52.246-12 Inspection of Construction. QC is comprised of plans, procedures, and organization necessary to produce an end product that complies with the Contract requirements. The QC system covers all construction operations, both onsite and offsite, and must be keyed to the proposed construction sequence. The Quality Control Manager, Superintendent, Site Safety and Health Officer (SSHO), and all on-site supervisors are responsible for the quality of work and are subject to removal by the Contracting Officer for non-compliance with the quality requirements specified in the Contract. The Quality Control Manager must maintain a physical presence at the work site at all times and is the primary individual responsible for all quality control.

1.5 QUALITY CONTROL (QC) PROGRAM REQUIREMENTS

Establish and maintain a QC program as described in this section. The QC program consists of a QC Organization, QC Plan, QC Plan Meeting(s), a Coordination and Mutual Understanding Meeting, QC meetings, three phases of control, submittal review and approval, testing, completion inspections, QC certifications, independent Special Inspections in accordance with Section 01 45 35 SPECIAL INSPECTIONS, and documentation necessary to provide materials, equipment, workmanship, fabrication, construction and operations that comply with the requirements of this Contract. The QC program must cover on-site and off-site work and be keyed to the work sequence. No construction work or testing may be performed unless the QC Manager is on the work site. The QC Manager must report to an officer of the firm and not be subordinate to the Project Superintendent or the Project Manager. The QC Manager, Project Superintendent and Project Manager must work together effectively. Although the QC Manager is the primary individual responsible for quality control, all individuals will be held responsible for the quality of work on the job.

1.5.1 Meetings

1.5.1.1 Quality Control Plan Meeting

Prior to submission of the QC Plan, the Contractor may request a meeting with the Contracting Officer to discuss the QC Plan requirements of this Contract.

The purpose of this meeting is to develop a mutual understanding of the QC Plan requirements prior to plan development and submission and to agree on the Contractor's list of Definable Feature of Work (DFOW).

1.5.1.2 Coordination and Mutual Understanding Meeting

After the Preconstruction Conference, before start of construction, and prior to acceptance by the Government of the CQC Plan, meet with the Contracting Officer and discuss the Contractor's quality control system. During the meeting, a mutual understanding of the system details must be developed, including the forms for recording the CQC operations, control activities, testing, administration of the system for both onsite and offsite work, and the interrelationship of Contractor's Management and control with the Government's Quality Assurance. Minutes of the meeting will be prepared by the QC Manager and signed by the Contractor and the Government. Provide a copy of the signed minutes to all attendees and

include in the QC Plan. At a minimum the Coordination and Mutual Understanding Meeting must be repeated when a new QC Manager is appointed. There can be other occasions when subsequent conferences will be called by either party to reconfirm mutual understandings or address deficiencies in the CQC system or procedures which can require corrective action by the Contractor.

1.5.1.2.1 Purpose

The purpose of this meeting is to develop a mutual understanding of the QC details, including documentation, administration for on-site and off-site work, design intent, environmental requirements and procedures, coordination of activities to be performed, Special Inspections, and the coordination of the Contractor's management, production, and QC personnel. At the meeting, the Contractor must explain in detail how three phases of control will be implemented for each DFOW, as well as how each DFOW will be affected by each management plan or requirement as listed below:

- a. Waste Management Plan.
- b. Procedures for noise and acoustics management.
- c. Environmental Protection Plan.
- d. Environmental regulatory requirements.
- e. Special Inspections.

1.5.1.2.2 Coordination of Activities

Coordinate activities included in various sections to assure efficient and orderly installation of each component. Coordinate operations included under different sections that are dependent on each other for proper installation and operation. Coordinate Special Inspections.

1.5.1.2.3 Attendees

As a minimum, the Contractor's personnel required to attend include an officer of the firm, the Project Manager, Project Superintendent, QC Manager, Alternate QC Manager, Assistant QC Manager, QC Specialists, Special Inspector, Special Inspector of Record, Environmental Manager, and subcontractor representatives. Each subcontractor who will be assigned QC responsibilities must have a principal of the firm at the meeting.

1.5.1.3 Quality Control (QC) Meetings

After the start of construction, conduct weekly QC meetings led by the QC Manager at the work site with the Project Superintendent, the QC Specialists, the Special Inspector, the Special Inspector of Record, and the other personnel as necessary. The QC Manager is to prepare the minutes of the meeting and provide a copy to the Contracting Officer within two working days after the meeting. The Contracting Officer may attend these meetings. As a minimum, accomplish the following at each meeting:

- a. Review the minutes of the previous meeting.

- b. Review the schedule and the status of work and deficiencies/rework. Review the most current approved schedule (in accordance with schedule specification) and the status of work and deficiencies/rework.
- c. Review the status of submittals and Request For Information (RFIs).
- d. Review the work to be accomplished in the next three weeks as defined by the schedule section paragraph WEEKLY PROGRESS MEETINGS in Section 01 32 01.00 10 PROJECT SCHEDULE and all documentation required for that work.
- e. Review Testing Plan and Log including status of tests performed since last QC Meeting.
- f. Resolve QC and production problems. Discuss status of pending change orders.
- g. Address items that may require revising the QC Plan.
- h. Review Accident Prevention Plan (APP) and effectiveness of the safety program.
- i. Review environmental requirements and procedures.
- j. Review Environmental Management Plan.
- k. Review Waste Management Plan.
- l. Review the status of training completion.

1.5.2 Contractor Quality Control (CQC) Plan

Submit no later than 15 days after receipt of notice to proceed, the CQC Plan proposed to implement the requirements FAR 52.246-12 Inspection of Construction. The Government will consider an interim plan for the first 30 days of operation. Construction will be permitted to begin only after acceptance of the CQC Plan and other Contract requirements 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.

1.5.2.1 Content of Contractor Quality Control (CQC) Plan

Provide a CQC Plan, prior to start of construction that includes a table of contents, with major sections identified, pages numbered sequentially, and that documents the proposed methods and responsibilities for accomplishing quality control during the construction of the project. The CQC Plan must at a minimum include the following sections:

- a. A description of the quality control organization and acknowledgment that the CQC staff will implement the three phase control system for all aspects of the work specified.
- b. An organizational chart showing the quality control organization with individual names and job titles and lines of authority up to an executive of the company at the home office.
- c. NAMES AND QUALIFICATIONS: Names and qualifications, in resume format,

(including position titles and durations for qualifying experiences) for each person in the QC organization. Include the Construction Quality Management (CQM) for Contractors course certifications for the QC personnel as required by the paragraph CONSTRUCTION QUALITY MANAGEMENT TRAINING.

- d. DUTIES, RESPONSIBILITY AND AUTHORITY OF QC PERSONNEL: Duties, responsibilities, and authorities of each person in the QC organization.
- e. OUTSIDE ORGANIZATIONS: A listing of outside organizations, such as architectural and consulting engineering firms, that will be employed by the Contractor and a description of the services these firms will provide.
- f. APPOINTMENT LETTERS: Letters signed by an officer of the firm appointing the QC Manager and Alternate QC Manager, and stating that they are responsible for implementing and managing the QC program as described in this Contract. Include in this letter the responsibility of the QC Manager and Alternate QC Manager to implement and manage the three phases of control, and their authority to stop work that is not in compliance with the Contract. Letters of direction are to be issued by the QC Manager to the Assistant QC Manager and all other QC Specialists or quality control representatives outlining their duties, authorities, and responsibilities. Include copies of the letters in the QC Plan.
- g. SUBMITTAL PROCEDURES AND INITIAL SUBMITTAL REGISTER: Procedures for reviewing, approving, scheduling, and managing submittals, including those of subcontractors, offsite fabricators, suppliers, and purchasing agents. Provide the name(s) of the person(s) in the QC organization authorized to review and certify submittals prior to approval. Provide the initial submittal of the Submittal Register as specified in Section 01 33 00 SUBMITTAL PROCEDURES.
- h. TESTING LABORATORY INFORMATION: Testing laboratory information required by the paragraph ACCREDITATION REQUIREMENTS, as applicable.
- i. TESTING PLAN AND LOG: A Testing Plan and Log that includes the tests required, associated feature of work required, referenced by the specification paragraph number requiring the test, the frequency, and the person responsible for each test.
- j. Procedures to complete construction deficiencies from identification through acceptable corrective action. Establish verification procedures that identified deficiencies have been corrected. This phase is performed prior to beginning work on each definable feature of work, after all required plans, documents, materials are approved, and after copies are at the work site.
- k. Reporting procedures, including proposed reporting formats.
- l. Procedures for submitting and reviewing design changes/variations prior to submission to the Contracting Officer.
- m. LIST OF DEFINABLE FEATURES: A Definable Feature of Work (DFOW) is a task that is separate and distinct from other tasks and has control requirements and work crews unique to that task. A DFOW is identified by different trades or disciplines, or it is work by the same trade in

a different environment. A DFOW is by definition any item or activity on the construction schedule, and the schedule specification provides direction regarding how the DFOWs are to be structured. Include in the list of DFOWs for all activities on the Construction Schedule. Although each section of the specifications can generally be considered as a definable feature of work, there are frequently more than one definable features under a particular section. Identify the specification section number and schedule activity ID for each DFOW listed. The DFOW list will be reviewed in coordination with the construction schedule and agreed upon during the Coordination of Mutual Understanding Meeting.

- n. PROCEDURES FOR PERFORMING AND TRACKING THE THREE PHASES OF CONTROL: Identify procedures used to ensure the three phases of control to manage the quality on this project. For each Definable Feature of Work (DFOW), a Preparatory and Initial phase checklist will be filled out during the Preparatory and Initial phase meetings. Conduct the Preparatory and Initial Phases and meetings with a view towards obtaining quality construction by planning ahead and identifying potential problems for each DFOW.
- o. Coordinate scheduled work with Special Inspections required by Section 01 45 35 SPECIAL INSPECTIONS, the Statement of Special Inspections and the Special Inspections Project Manual. Where the applicable code issued by the International Code Council (ICC) calls for inspections by the Building Official, the Contractor must include the inspections in the Quality Control Plan and must perform the inspections required by the applicable ICC. The Contractor must perform these inspections using independent qualified inspectors. Include the Special Inspections Project Manual requirements in the QC Plan.
- p. PROCEDURES FOR COMPLETION INSPECTION: Procedures for identifying and documenting the completion inspection process. Include in these procedures the responsible party for punch out inspection, pre-final inspection, and final acceptance inspection.
- q. TRAINING PROCEDURES AND TRAINING LOG: Procedures for coordinating and documenting the training of personnel required by the Contract.

1.5.3 Acceptance of the Quality Control (QC) Plan

The Contracting Officer's acceptance of the Contractor QC Plan is required prior to the start of construction. The Contracting Officer reserves the right to require changes in the QC Plan and operations as necessary, including removal or addition of personnel, to ensure the specified quality of work. The Contracting Officer reserves the right to interview any member of the QC organization at any time to verify the submitted qualifications. All QC organization personnel are subject to acceptance by the Contracting Officer. The Contracting Officer may require the removal of any individual for non-compliance with quality requirements specified in the Contract.

1.5.4 Notification of Changes

Notify the Contracting Officer, in writing, of any proposed changes in the QC Plan or changes to the QC organization personnel. Proposed changes are subject to acceptance by the Contracting Officer.

1.5.5 Special Inspections

Perform all required Special Inspections per Section 01 45 35 SPECIAL INSPECTIONS, the statement of Special Inspections and the Schedule of Special Inspections.

1.6 QUALITY CONTROL (QC) ORGANIZATION

1.6.1 Personnel Requirements

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

1.6.2 Quality Control (QC) Manager

1.6.2.1 Duties

Provide a QC Manager at the work site to implement and manage the QC program. The QC Manager must be employed by the Prime Contractor. The only duties and responsibilities of the QC Manager are to manage and implement the QC program on this Contract. The QC Manager must attend the Coordination and Mutual Understanding Meeting, perform the three phases of control, perform submittal review and approval, ensure testing is performed and provide QC certifications and documentation required in this Contract. The QC Manager is responsible for managing and coordinating the three phases of control and documentation performed by testing laboratory personnel and any other inspection and testing personnel required by this Contract. The QC Manager is the manager of all QC activities. The QC manager is responsible for notifying the Special Inspector and Special Inspector of Record of activities which require their review. The QC manager is responsible for coordinating the Special Inspection activities, see paragraph CONTRACTOR'S QUALITY CONTROL (QC) MANAGER, in Section 01 45 35 SPECIAL INSPECTIONS. The QC manager is responsible for the quality control for Secure Space perimeter construction.

1.6.2.2 Qualifications

The QC Manager must be a graduate engineer, graduate architect, or a graduate of construction management, with a minimum of 10 years construction experience as a Project Superintendent, QC Manager, Project Manager, Project Engineer or Construction Manager on similar size and type construction Contracts which included the major trades that are part of this Contract. The individual must have at least 4 years experience as a QC Manager. The individual must be familiar with the requirements of

EM 385-1-1 and have experience in the areas of hazard identification, safety compliance, and sustainability. The individual must have a minimum of 3 years of experience working on secure construction projects meeting ICD/ICS 705.

The QC Manager and all members of the QC organization must be capable of reading, writing, and conversing fluently in the English language.

1.6.2.3 Construction Quality Management Training

In addition to the above experience and education requirements, the QC Manager and all members of the QC team must have completed the CQM for Contractors course. If the QC 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 Systems 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 QC Manager's certificate has expired, retake the course to remain current.

1.6.3 Organizational Changes

Maintain the QC staff with personnel as required by the specification section at all times. When it is necessary to make changes to the QC staff, revise the CQC Plan to reflect the changes and submit the changes to the Contracting Officer for acceptance.

1.6.4 Alternate Quality Control (QC) Manager Duties and Qualifications

Designate an alternate for the QC Manager at the work site to serve in the event of the designated QC Manager's absence. The qualification requirements for the Alternate QC Manager must be the same as for the QC Manager.

1.6.5 Quality Control (QC) Specialists

Provide a separate QC Specialist at the work site for each of the areas as listed in the Matrix listed below, who must assist and report to the QC Manager and who must have no duties other than their assigned quality control duties. These individuals or specialized technical companies are employees of the Prime or subcontractor. A single person can cover more than one area, with the exception of the Electrical QC specialist and submittal clerk that must be directly employed by the Prime contractor only and shall be separate individuals from the QC Manager, provided that the single person is qualified to perform quality control activities in each designated and that workload allows. QC Specialists must be physically present at the work site with frequency as indicated in the Experience Matrix below, to participate in the QC Meetings, perform the three phases of control, including participation in Preparatory and Initial Phase meetings, and to perform and document Follow-up inspections as an extension of the QC Manager for each definable feature of work in their area of responsibility. QC Specialist must assist and be present for training events, and Critical System Acceptance inspections by the Government. Qualification, experience, Area of Responsibility, and frequency of QC surveillance are provided in Matrix listed herein.

Experience Matrix	
1. Area	2-1. Qualification 2-2. Experience
Civil	2-1. Graduate Civil Engineer or Construction Manager with 2-2. 2 years experience in the type of work being performed on this project or technician with 5 years related experience
Mechanical	2-1. Graduate Mechanical Engineer with 2-2. 2 years experience or person with 5 years of experience supervising mechanical features of work in the field with a construction company
Electrical	2-1. Graduate Electrical Engineer with 2-2. 2 years related experience or person 5 years of experience supervising electrical features of work in the field with a construction company
Structural	2-1. Graduate Civil Engineer (with Structural Track or Focus) or Construction Manager with 2-2. 2 years experience or person 5 years of experience supervising structural features of work in the field with a construction company

Architectural	2-1. Graduate Architect with 2-2. 2 years experience or person with 5 years related experience
Submittals	2-1. Submittal Clerk 2-2. 3 years experience
Concrete, Pavements and Soils	2-1. Materials Technician 2-2. 2 years experience for the appropriate area
Testing, Adjusting and Balancing (TAB) Personnel	2-1. TAB Team Field Leader must be a member of AABC or an experienced technician of the firm certified by the NEBB 2-2. 3 years experience immediately preceding this Contract

1.6.5.1 Quality Control (QC) for Secure Space Perimeter Construction

1.6.5.1.1 Periodic (Follow-Up Phase) Inspections

Once construction begins, perform periodic inspections of Secure Space identified in the Contract drawings at least once every two weeks. Increase frequency to weekly inspections within 30 days of planned acceptance testing. Coordinate periodic inspections with the appointed Government Site Security Manager (SSM) responsible for ensuring the assembly meets the requirements for accreditation. Inspections must verify that construction and materials comply with the Contract documents, the description of the assembly in the ASTM E90 Factory Report for acoustical testing, and the approved submittals. Focus inspections on the construction of the sound rated assemblies, perimeter penetrations, perimeter doors, electronic security system, rough-in man-bar installation, inspection ports, and TEMPEST countermeasures. Document periodic inspections in Daily QC Reports.

1.6.5.1.2 Preliminary Inspection

The Government and QC Manager will perform a joint preliminary inspection of the Secure Space after construction of the assembly is complete to verify compliance with the design requirements and other Contract

documents. The Contracting Officer and the appointed Government SSM will participate in the preliminary inspection. Provide the Contracting Officer a minimum 14 calendar days notification in advance of the preliminary inspection.

As a result of the preliminary inspection, prepare a Secure Space punch list with deficiencies identified. Include with the punch list the estimated date by which the deficiencies will be corrected. Document the preliminary inspection in the Daily QC Report and attach the punch list. Notify the Contracting Officer when deficiencies are corrected. Deficiencies from the Preliminary Inspection must be corrected prior to scheduling the Final Acceptance Inspection.

1.6.5.1.3 Acceptance Testing for Sound Attenuation

Perform acceptance testing for sound transmission loss of sound rated door assemblies as required in Section 08 34 73 SOUND CONTROL DOOR ASSEMBLIES and Section 09 29 00 GYPSUM BOARD for sound rated assemblies. Acceptance testing must be performed during the preliminary inspection. The Contracting Officer and the appointed Government SSM must witness acceptance testing. Deficiencies identified during acceptance testing must be included in the Secure Space punch list and corrected prior to the final acceptance inspection.

1.6.5.1.4 Final Inspection

Perform a final inspection of the Secure Space after required testing has been successfully completed as part of the preliminary inspection and all punch list items corrected. Testing is not permitted during the final inspection. QC Manager and Superintendent must attend the final inspection and Government attendees will include the Contracting Officer and appointed Government SSM. Request a final inspection by the Contracting Officer a minimum of 14 calendar days in advance.

1.6.6 Special Inspector and Special Inspector of Record

The Special Inspector (SI) and Special Inspector of Record (SIOR) must be an independent third party hired directly by the Prime Contractor. The SI and SIOR must not be a company employee of the Contractor or any subcontractor performing the work to be inspected. The qualifications of the SI and SIOR are defined in Section 01 45 35 SPECIAL INSPECTION.

1.7 SUBMITTAL AND DELIVERABLES REVIEW AND APPROVAL

Procedures for submission, review and approval of submittals are described in Section 01 33 00 SUBMITTAL PROCEDURES. Procedures must include field verification of relevant dimensions and component characteristics by the QC organization prior to submittal being sent to the Contracting Officer. The CQC organization is responsible for certifying that all submittals and deliverables are in compliance with the Contract.

1.8 THREE PHASES OF CONTROL

CQC enables the Contractor to ensure that the construction, including that of subcontractors and suppliers, complies with the requirements of the Contract. At least three phases of control must be conducted by the QC Manager to adequately cover both on-site and off-site work for each definable feature of the construction work as follows:

1.8.1 Preparatory Phase

Document the results of the preparatory phase actions by separate minutes prepared by the QC Manager and attach to the daily CQC report and the three phase inspection tab of RMS. Instruct applicable workers as to the acceptable level of workmanship required to meet Contract specifications.

Notify the Contracting Officer at least two business days in advance of each preparatory phase meeting. The meeting will be conducted by the QC Manager and attended by the QC Specialists, the Project Superintendent, the CxC, the Special Inspector, and the foreman responsible for the DFO. When the DFO will be accomplished by a subcontractor, that subcontractor's foreman must attend the preparatory phase meeting. 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. Perform the following prior to beginning work on each DFO:

- a. Review each paragraph of the applicable specification sections, 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 the Contract drawings.
- c. Verify that field measurements are as indicated on construction or shop drawings or both before confirming product orders, to minimize waste due to excessive materials.
- d. Verify that appropriate shop drawings and submittals for materials and equipment have been submitted and approved. Verify receipt of approved factory test results, when required.
- e. Review the testing plan and ensure that provisions have been made to provide the required QC testing.
- f. Examine the work area to ensure that the required preliminary work has been completed and complies with the Contract and ensure any deficiencies/rework items in the preliminary work have been corrected and confirmed by the Contracting Officer.
- g. Review coordination of product/material delivery to designated prepared areas to execute the work.
- h. Examine the required materials, equipment and sample work to ensure that they are on hand and conform to the approved shop drawings and submitted data and are properly stored.
- i. Check to assure that all materials and equipment have been tested, submitted, and approved.
- j. Discuss specific controls to be used, construction methods, construction tolerances, workmanship standards, and the approach that will be used to provide quality construction by planning ahead and identifying potential problems for each DFO. Ensure any portion of the plan requiring separate Contracting Officer acceptance has been approved.

- k. Review the APP and appropriate Activity Hazard Analysis (AHA) to ensure that applicable safety requirements are met, and that required Safety Data Sheets (SDS) are submitted.
- l. Discussion of procedures for controlling quality of the work including repetitive deficiencies. Document construction tolerances and workmanship standards for that feature of work.
- m. Discuss schedule and execution of the initial control phase and confirmation or construction quality compliance.
- n. Review Special Inspections required by Section 01 45 35 SPECIAL INSPECTION, the Statement of Special Inspections and the Schedule of Special Inspections.

1.8.2 Initial Phase

Notify the Contracting Officer at least two business days in advance of each initial phase. When construction crews are ready to start work on a DFW, conduct the initial phase with the QC Specialists, the Project Superintendent, the Special Inspector, and the foreman responsible for that DFW. Observe the initial segment of the DFW to ensure that the work complies with Contract requirements. Document the results of the initial phase and the three phase inspection tab of RMS in the Initial Phase Checklist. Repeat the initial phase for each new crew to work on-site when acceptable levels of specified quality are not being met. Indicate the exact location of initial phase for definable feature of work for future reference and comparison with follow-up phases. Perform the following for each DFW:

- 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 comply with the Contract.
- c. Establish level of workmanship and verify that it meets the minimum acceptable workmanship standards. Compare with required sample panels as appropriate.
- d. Resolve any workmanship issues.
- e. Ensure that testing is performed by the approved laboratory.
- f. Check work procedures for compliance with the APP and the appropriate AHA to ensure that applicable safety requirements are met.
- g. Review project specific work plans (i.e., HAZMAT Abatement, Stormwater Management) to ensure all preparatory work items have been completed and documented.
- h. 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.

1.8.3 Follow-Up Phase

Perform the following for on-going DFW daily, or more frequently as necessary, until the completion of each DFW. The Final Follow-Up for any DFW will clearly note in the daily report the DFW is completed, and all deficiencies/rework items have been completed in accordance with the paragraph DEFICIENCY/REWORK ITEMS LIST. Each DFW that has completed the Initial Phase and has not completed the Final Follow-up must be included on each daily report. If no work was performed on that DFW for the period of that daily report, it must be so noted. Document all Follow-Up activities for DFWs in the daily CQC Report:

- a. Ensure the work including control testing complies with Contract requirements until completion of that particular work feature. Record checks in the CQC documentation.
- b. Maintain the quality of workmanship required.
- c. Ensure that testing is performed by the approved laboratory.
- d. Ensure that deficiencies/rework items are being corrected. 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.
- e. Do not build upon nor conceal non-conforming work.
- f. Assure manufacturers' representatives have performed necessary inspections if required and perform safety inspections.
- g. 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.

1.8.4 Additional Preparatory and Initial Phases

Conduct additional preparatory and initial phases on the same DFW if the quality of on-going work is unacceptable, if there are changes in the applicable QC organization, if there are changes in the on-site production supervision or work crew, if work on a DFW has not started within 45 days of the initial preparatory meeting or has resumed after 45 days of inactivity, or if other problems develop.

1.8.5 Notification of Three Phases of Control for Off-Site Work

Notify the Contracting Officer at least two weeks prior to the start of the preparatory and initial phases.

1.8.6 Deficiency/Rework Items List

The QC Manager must maintain a list of work that does not comply with the Contract, identifying what items need to be corrected, the activity ID number associated with the item, the date the item was originally discovered, the date the item will be corrected by, and the date the item was corrected.

The list shall be reviewed at each weekly QC Meeting:

- a. There is no requirement to report a deficiency/rework item that is corrected the same day it is discovered.
- b. No successor task may be advanced beyond the preparatory phase meeting until all deficiencies/rework items have been cleared by the QC Manager and concurred with by the Contracting Officer. This must be confirmed as part of the Preparatory Phase activities.
- c. Attach a copy of the "Deficiency/Rework Items List" to the last daily CQC Report of each month.
- d. The Contractor is responsible for including those items identified by the Contracting Officer.
- e. All deficiencies/rework items must be confirmed as corrected by the QC Manager, and concurred by the Contracting Officer, prior to commencement of any completion inspections per paragraph COMPLETION INSPECTIONS unless specifically exempted by the Contracting Officer.
- f. Non-Compliance with these requirements shall be grounds for removal in accordance with paragraph ACCEPTANCE OF THE QUALITY CONTROL (QC) PLAN.
- g. All delays, concurrent or related to failure to manage, monitor, control, and correct deficiencies/rework items are entirely the responsibility of the Contractor and shall not be made the subject, or any component of any request for additional time or compensation.

1.9 TESTING

Perform specified or required tests to verify that control measures are adequate to provide a product which conforms to Contract requirements. Upon request, furnish to the Government duplicate samples of test specimens for possible testing by the Government. Testing includes operation and acceptance tests when specified. Procure the services of an U.S. Army Corps of Engineers approved testing laboratory or establish an approved testing laboratory at the project site or within 50 miles. 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 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 are submitted later with a reference to the test number and date taken. Provide an information copy of tests performed by an offsite or commercial test facility directly to the Contracting Officer. Failure to submit timely test reports as stated results in nonpayment for related work performed and disapproval of the test

facility for this Contract.

1.9.1 Laboratory Accreditation Authorities

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

1.9.2 Capability Check

The Contracting Officer retains the right to check laboratory equipment in the proposed laboratory and the laboratory technician's testing procedures, techniques, and other items pertinent to testing, for compliance with the standards set forth in this Contract. Laboratories utilized for testing soils, concrete, asphalt, and steel must meet criteria detailed in ASTM D3740 and ASTM E329.

1.9.2.1 Capability Recheck

If the selected laboratory fails the capability check, the Contractor will be assessed a charge to be determined by the Contracting Officer's Representative 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.

1.9.2.2 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.

1.9.3 Test Results

Cite applicable Contract requirements, tests or analytical procedures used. Provide actual results and include a statement that the item tested or analyzed conforms or fails to conform to specified requirements. If the item fails to conform, notify the Contracting Officer immediately. Conspicuously stamp the cover sheet for each report in large red letters "CONFORMS" or "DOES NOT CONFORM" to the specification requirements, whichever is applicable. Test results must be signed by a testing laboratory representative authorized to sign certified test reports. Furnish the signed reports, certifications, and other documentation to the Contracting Officer via the QC Manager.

1.10 COMPLETION INSPECTIONS

1.10.1 Punch-Out Inspection

Near the completion of all work or any increment thereof, established by a completion time stated in the Contract Clause entitled "Commencement, Prosecution, and Completion of Work," or stated elsewhere in the specifications, the QC Manager must conduct an inspection of the work and develop a "punch list" of items which do not conform to the approved drawings, specifications, and Contract. Include in the punch list any remaining items on the "Deficiency/Rework Items List", that were not corrected prior to the Punch-Out Inspection as approved by the Contracting Officer in accordance with the paragraph DEFICIENCY/REWORK ITEMS LIST.

Include within the punch list the estimated date by which the deficiencies will be corrected. Provide a copy of the punch list to the Contracting Officer.

The QC Manager, or staff, must make follow-on inspections to ascertain that all deficiencies have been corrected. All punch list items must be confirmed as corrected by the QC Manager and concurred by the Contracting Officer. Once this is accomplished, notify the Government that the facility is ready for the Government "Pre-Final Inspection".

1.10.2 Pre-Final Inspection

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

1.10.3 Final Acceptance Inspection

Notify the Contracting Officer at least 14 calendar days prior to the date a final acceptance inspection can be held. State within the notice that all items previously identified on the pre-final punch list will be corrected and acceptable, along with any other unfinished Contract work, by the date of the final acceptance inspection. The Contractor must be represented by the QC Manager, the Project Superintendent, and others deemed necessary. Attendees for the Government will include the Contracting Officer, other Government QA personnel, and personnel representing the Client. Failure of the Contractor to have all Contract work acceptably complete for this inspection will be cause for the Contracting Officer to bill the Contractor for the Government's additional inspection cost in accordance with the Contract Clause entitled "Inspection of Construction."

1.11 QUALITY CONTROL (QC) CERTIFICATIONS

1.11.1 Contractor Quality Control (CQC) Report Certification

Contain the following statement within the CQC Report: "On behalf of the Contractor, I certify that this report is complete and correct and equipment and material used, and work performed during this reporting period is in compliance with the Contract drawings and specifications to the best of my knowledge, except as noted in this report."

1.11.2 Completion Certification

Upon completion of work under this Contract, the QC Manager must furnish a certificate to the Contracting Officer attesting that "the work has been completed, inspected, tested and is in compliance with the Contract." Provide a copy of this final QC Certification for completion to the preparer of the Operation & Maintenance (O&M) documentation.

1.12 DOCUMENTATION AND INFORMATION FOR THE CONTRACTING OFFICER

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

Contact the Contracting Officer for sample forms or print from RMS-QCS as needed. Prior to commencing work on construction, the Contractor must obtain a copy set of the current report forms. The report forms will consist of the Contractor Quality Control (CQC) Report, CQC Report (Continuation Sheet), Contractor Production Report, Contractor Production Report (Continuation Sheet), Preparatory Phase Checklist, Initial Phase Checklist, Testing Plan and Log, and Rework Items List. Unless otherwise provided by the Contracting Officer, Contractor may use the forms provided as related material located at <https://www.wbdg.org/ffc/dod/unified-facilities-guide-specifications-ufgs/ufgs-01-45-00>.

1.12.1 Construction Documentation

Reports are required for each day that work is performed and must be attached to the Contractor Quality Control Report prepared for the same day. Maintain current and complete records of on-site and off-site QC program operations and activities. Reports are required for each day work is performed. Account for each calendar day throughout the life of the Contract.

The Project Superintendent and the QC Manager must prepare and sign the Contractor Production and CQC Reports, respectively. Every space on the forms must be filled in. Use N/A if nothing can be reported in one of the spaces. The reporting of work must be identified by terminology consistent with the construction schedule. In the "Remarks" sections of the reports, enter pertinent information including directions received, problems encountered during construction, work progress and delays, conflicts or errors in the drawings or specifications, field changes, safety hazards encountered, instructions given and corrective actions taken, delays encountered, a record of visitors to the work site, quality control problem areas, deviations from the QC Plan, construction deficiencies encountered, and meetings held. For each entry in the report(s), identify the Schedule Activity No. that is associated with the entered remark.

1.12.2 Quality Control Activities

CQC and Contractor Production reports will be prepared daily to maintain current records providing factual evidence that required quality control activities and tests have been performed. Include in these records the work of subcontractors and suppliers on an acceptable form that includes, as a minimum, the following information:

- a. The name and area of responsibility of the Contractors and any subcontractors.
- b. Operating plant/equipment with hours worked, idle, or down for repair.
- c. Work performed each day, giving location, description, and by whom. When a Network Analysis Schedule (NAS) is used, identify each item of work performed each day by NAS activity number.
- d. Control phase activities performed. Preparatory, and Initial phase Checklists associated with the DFOV referenced to the construction

schedule. Follow-up phase activities identified to the DFO. If testing or specific QC Specialist activities are associated with the Follow-up phase activities for a specific DFO note this and include those reports.

- e. Test and control activities performed with results and references to specifications and drawings requirements. Identify the control phase (Preparatory, Initial, Follow-up). List of deficiencies noted, along with corrective action in accordance with the paragraph DEFICIENCY/REWORK ITEMS LIST.
- f. Quantity of materials received at the site with statement as to acceptability, storage, and reference to specifications and drawings requirements.
- g. Submittals and deliverables reviewed, with Contract reference, by whom, and action taken.
- h. Offsite surveillance activities, including actions taken.
- i. Job safety evaluations stating what was checked, results, and instructions or corrective actions.
- j. Instructions given/received and conflicts in plans and specifications.

1.12.3 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 by 10:00 AM the next working day after the date covered by the report. As a minimum, prepare and submit one report for every seven days of no work and on the last day of a no work period. All calendar days need to be accounted for throughout the life of the Contract. The first report following a day of no work will be for that day only. Reports need to be signed and dated by the QC Manager. Include copies of test reports and copies of reports prepared by all subordinate quality control personnel within the QC Manager Report.

1.12.4 Reports from the Quality Control (QC) Specialist(s)

Document inspection results on a QC specialist report prepared each day work is performed in their area of responsibility. The report must include a description of the visual inspection or observation performed, a written summary of findings, a conclusion on compliance with the Contract documents, and signature of the QC Specialist. In person inspections must be documented with Video/photographs. Video/photographic documentation of deficiencies must include before and after conditions and physical measurements, as necessary. Forward the QC daily report to the QC Manager who must include the report with the submission of their daily QC Report to the Government each day. Every site visit by the QC Specialist must be documented on a QC Specialist daily report.

1.12.5 Quality Control Validation

Establish and maintain the following in an electronic folder. Divide folder into a series of tabbed sections as shown below. Ensure folder is updated at each required progress meeting.

- a. CQC Meeting minutes in accordance with paragraph QUALITY CONTROL (QC) MEETINGS.
- b. All completed Preparatory and Initial Phase Checklists, arranged by specification section, further sorted by DFOW referenced to the construction schedule. Submit each individual Phase Checklist the day the phase event occurs as part of the CQC daily report.
- c. All milestone inspections, arranged by Activity Number referenced to the construction schedule.
- d. An up-to-date copy of the Testing Plan and Log with supporting field test reports, arranged by specification section referenced to the DFOW to which individual reports results are associated. Individual field test reports will be submitted within two working days after the test is performed in accordance with the paragraph QUALITY CONTROL ACTIVITIES.
- e. Copies of all Contract modifications, arranged in numerical order. Also include documentation that modified work was accomplished.
- f. An up-to-date copy of the paragraph DEFICIENCY/REWORK ITEMS LIST.
- g. Special Inspection reports.
- h. Upon commencement of Completion Inspections of the entire project or any defined portion, maintain up-to-date copies of all punch lists issued by the QC staff to the Contractor and subcontractors and all punch lists issued by the Government in accordance with the paragraph COMPLETION INSPECTIONS.

1.12.6 Testing Plan and Log

As tests are performed, the QC Manager will record on the "Testing Plan and Log" the date the test was performed and the date the test results were forwarded to the Contracting Officer. Attach a copy of the updated "Testing Plan and Log" to the last daily CQC Report of each month. Provide a copy of the final "Testing Plan and Log" to the preparer of the Operation & Maintenance (O&M) documentation.

1.12.7 As-Built Drawings

The QC Manager must ensure the as-built drawings, required by Section 01 78 00 CLOSEOUT SUBMITTALS are kept current on a daily basis and marked to show deviations which have been made from the Contract drawings. The as-built drawings document shall commence with the QC Manager ensuring all amendments, or changes to the Contract prior to Contract award are accurately noted in the initial document set creating the accurate baseline of the Contract prior to any work starting. Ensure each deviation has been identified with the appropriate modifying documentation (e.g., PC No., Modification No., Request for Information No.). The QC Manager or QC Specialist assigned to an area of responsibility must

initial each revision. Upon completion of work, the QC Manager will furnish a certificate attesting to the accuracy of the as-built drawings prior to submission to the Contracting Officer.

1.13 NOTIFICATION ON NON-COMPLIANCE

The Contracting Officer will notify the Contractor of any detected non-compliance with the Contract. Take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, is 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 a claim for extension of time for excess costs or damages by the Contractor.

1.14 DELIVERY, STORAGE, AND HANDLING

Designate receiving/storage areas for incoming material to be delivered according to installation schedule and to be placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication. Store and handle materials in a manner as to prevent loss from weather and other damage. Keep materials, products, and accessories covered and off the ground, and store in a dry, secure area. Prevent contact with material that may cause corrosion, discoloration, or staining. Protect all materials and installations from damage by the activities of other trades.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

-- End of Section --

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SECTION 01 45 00.15 10

RESIDENT MANAGEMENT SYSTEM CONTRACTOR MODE (RMS CM)
11/23

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 (2024) Safety -- Safety and Occupational
Health (SOH) Requirements

1.2 MEASUREMENT AND PAYMENT

The work of this section is not measured for payment. The Contractor is responsible for the work of this section, without any direct compensation other than the payment received for contract items.

1.3 CONTRACT ADMINISTRATION

The Government will use the Resident Management System (RMS) to assist in its monitoring and administration of this contract. The Government accesses the system using the Government Mode of RMS (RMS GM) and the Contractor accesses the system using the Contractor Mode (RMS CM). The term RMS will be used in the remainder of this section for both RMS GM and RMS CM. The joint Government-Contractor use of RMS facilitates electronic exchange of information and overall management of the contract. The Contractor accesses RMS to record, maintain, input, track, and electronically share information with the Government throughout the contract period in the following areas:

- Administration
- Finances
- Quality Control
- Submittal Monitoring
- Scheduling
- Closeout
- Import/Export of Data

The Contractor must be prepared to transition from the Resident Management System (RMS) to the new Construction Management Platform (CMP) at any time during the period of performance of this contract, once the USACE enterprise implements this change. The Contractor's obligation to transition from RMS to the CMP system is a requirement of this contract. Therefore, additional time or cost increase to complete this transition will not be considered. In the event of the transition, RMS project information will be migrated to CMP by the government and available in the CMP system. After the transition, the Contractor must utilize the CMP system to perform all contract administration functions previously required in RMS, including all areas listed above. After the transition, "RMS" and "CMP" will be synonymous for all "Resident Management System" and "RMS" references in this contract's specification. To facilitate the

transition from RMS to CMP, online training for the CMP system will be made available to the Contractor with enough time to train staff, prior to the transition occurring.

1.3.1 Correspondence and Electronic Communications

For ease and speed of communications, exchange correspondence and other documents in electronic format to the maximum extent feasible. Some documents such as correspondence, including pay requests and payrolls, may be required in paper format with original signatures. Paper documents will govern in the event of discrepancy with the electronic version. Contracting Officer will determine which documents require submission of paper copies.

1.3.2 Other Factors

Other portions of this document have a direct relationship to the reporting accomplished through RMS. Particular attention is directed to FAR 52.236-15 Schedules for Construction Contracts; FAR 52.232-27 Prompt Payment for Construction Contracts; FAR 52.232-5 Payments Under Fixed-Price Construction Contracts; Section 01 32 01.00 10 PROJECT SCHEDULE; Section 01 33 00 SUBMITTAL PROCEDURES; Section 01 35 26 GOVERNMENTAL SAFETY REQUIREMENTS; and Section 01 45 00 QUALITY CONTROL.

1.4 RMS SOFTWARE

RMS is a web based application. Download, install and be able to utilize the latest version of RMS within 7 calendar days of receipt of the Notice to Proceed. RMS software, user manuals, access and installation instructions, program updates and training information are available from the RMS website (<https://rms.usace.army.mil>). The Government and the Contractor will have different access authorities to the same contract database through RMS. The common database will be updated automatically each time a user finalizes an entry or change.

1.5 CONTRACT DATABASE - GOVERNMENT

The Government will enter the basic contract award data in RMS prior to granting the Contractor access. The Government entries into RMS will generally be related to submittal reviews, correspondence status, and Quality Assurance(QA)comments, as well as other miscellaneous administrative information.

1.6 CONTRACT DATABASE - CONTRACTOR

Contractor entries into RMS establish, maintain, and update data throughout the duration of the contract. Contractor entries generally include prime and subcontractor information, daily reports, submittals, RFI's, schedule updates and payment requests. RMS includes the ability to import attachments and export reports in many of the modules, including submittals. The Contractor responsibilities for entries in RMS typically include the following items:

1.6.1 Administration

1.6.1.1 Contractor Information

Enter all current Contractor administrative data and information into RMS within 7 calendar days of receiving access to the contract in RMS. This

includes, but is not limited to, Contractor's name, address, telephone numbers, management staff, and other required items.

1.6.1.2 Subcontractor Information

Enter all missing subcontractor administrative data and information into RMS CM within seven calendar days of receiving access to the Contract in RMS or within seven calendar days of the signing of the subcontractor agreement for agreements signed at a later date. This includes name, trade, address, phone numbers, and other required information for all subcontractors. A subcontractor is listed separately for each trade to be performed.

1.6.1.3 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" or "RFP".

1.6.1.4 Equipment

Enter and maintain a current list of equipment planned for use or being used on the jobsite, including the most recent and planned equipment inspection dates in accordance with Section 01 45 00 QUALITY CONTROL.

1.6.1.5 Reports

Track the status of the project using the reports available in RMS. The value of these reports reflects the quality of the data input. These reports include but are not limited to the Progress Payment Request worksheet, Quality Control (QC) comments, Deficiency Tracking Log, Submittal Register Status, and Three-Phase Control worksheets in accordance with Sections 01 32 01.00 10 PROJECT SCHEDULE, 01 33 00 SUBMITTAL PROCEDURES, and 01 45 00 QUALITY CONTROL.

1.6.1.6 Request For Information (RFI)

Create and track all Requests For Information (RFI) in the RMS Administration Module for Government review and response. Provide status at weekly progress meeting in accordance with Section 01 32 01.00 10 PROJECT SCHEDULE.

1.6.2 Finances

1.6.2.1 Pay Activity Data

Develop and enter a list of pay activities in conjunction with the project schedule in accordance with Section 01 32 01.00 10 PROJECT 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 assigned to a CLIN equals the amount of each CLIN.

1.6.2.2 Payment Requests

Prepare all progress payment requests using RMS. Update the work

completed under the Contract at least monthly, measured as percent or as specific quantities. After the update, generate a payment request and prompt payment certification using RMS. Submit the signed prompt payment certification and payment request as well as supporting data, either electronically or by hard copy.

1.6.3 Quality Control (QC)

Enter and track implementation of the 3-phase QC Control System, QC testing, transferred and installed property and warranties in RMS. Link each deficiency and QC test to a pay activity. Prepare daily reports, identify and track deficiencies, document progress of work, and support other Contractor QC requirements in RMS. Maintain all data on a daily basis. Ensure that RMS reflects all quality control methods, tests and actions contained within the Contractor Quality Control (CQC) Plan and Government review comments. Provide within seven calendar days of Government acceptance of the CQC Plan.

1.6.3.1 Quality Control (QC) Reports

The Contractor's Quality Control (QC) Daily Report in RMS is the official report. The Contractor can use other supplemental formats to record QC data, but information from any supplemental formats are to be consolidated and entered into the RMS QC Daily Report. Any supplemental information may be entered into RMS as an attachment to the report. QC Daily Reports must be finalized and signed in RMS within 24 hours after the date covered by the report. Provide the Government a printed signed copy of the QC Daily Report, unless waived by the Contracting Officer.

1.6.3.2 Deficiency Tracking

Use the QC Daily Report Module to enter and track deficiencies. Deficiencies identified and entered into RMS by the Contractor or the Government will be sequentially numbered with a QC or QA prefix for tracking purposes. Enter each deficiency into RMS the same day that the deficiency is identified. Monitor, track and resolve all QC and QA entered deficiencies. A deficiency is not considered to be corrected until the Government indicates concurrence in RMS.

1.6.3.3 Three-Phase Control Meetings

Maintain scheduled and actual dates and times of preparatory and initial control meetings in RMS, and upload meeting minutes of the meetings. Worksheets for the three-phase control meetings are generated within RMS.

1.6.3.4 Labor and Equipment Hours

Enter labor and equipment exposure hours on a daily basis. Roll up the labor and equipment exposure data into a monthly exposure report.

1.6.3.5 Accident/Safety Reporting

Both the Contractor and the Government enter safety related comments in RMS as a deficiency. The Contractor must monitor, track and show resolution for safety issues in the QC Daily Report area of the RMS QC Module. In addition, follow all reporting requirements for accidents and incidents as required in EM 385-1-1, Section 01 35 26 GOVERNMENTAL SAFETY REQUIREMENTS and as required by any other applicable Federal, State or local agencies.

1.6.3.6 Definable Features of Work

Enter each feature of work, as defined in the approved CQC Plan, into the RMS QC Module. A feature of work may be associated with a single or multiple pay activities, however a pay activity is only to be linked to a single feature of work.

1.6.3.7 Activity Hazard Analysis

Import activity hazard analysis electronic document files into the RMS QC Module utilizing the document package manager. Prepare activity hazard analysis in accordance with Section 01 35 26 GOVERNMENT SAFETY REQUIREMENTS.

1.6.4 Submittal Management

Enter all current submittal register data and information into RMS within seven calendar days of receiving access to the Contract in RMS. Contractor is responsible for entering Activity Numbers for each submittal item corresponding to their Schedule. The Contractor will import the information shown in the submittal register following the specification Section 01 33 00 SUBMITTAL PROCEDURES unless otherwise directed by the Contracting Officer. Group electronic submittal documents into transmittal packages to send to the Government, except very large electronic files, samples, spare parts, mock ups, color boards, or where hard copies are specifically required. Track transmittals and update the submittal register in RMS on a daily basis throughout the duration of the Contract. Submit hard copies of all submittals unless waived by the Contracting Officer.

Contractor may request submittals to be added to RMS throughout the lifecycle of the project. Approval/disapproval of Contractor requests is at the discretion of the Contracting Officer. Submittals entry into RMS must be updated daily or as practical for performance of the Contract, as approved by the Contracting Officer.

1.6.5 Schedule

Enter and update the contract project schedule in RMS by either manually entering all schedule data or by importing the Standard Data Exchange Format (SDEF) file, based on the requirements in Section 01 32 01.00 10 PROJECT SCHEDULE.

1.6.6 Closeout

Closeout documents, processes and forms are managed and tracked in RMS by both the Contractor and the Government. Ensure that all closeout documents are entered, completed and documented within RMS.

1.7 IMPLEMENTATION

Use of RMS as described in the preceding paragraphs is mandatory. Ensure that sufficient resources are available to maintain contract data within the RMS system. RMS is an integral part of the Contractor's required management of quality control.

1.8 NOTIFICATION OF NONCOMPLIANCE

Take corrective action within seven calendar days after receipt of notice of RMS non-compliance by the Contracting Officer.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

-- End of Section --

CONTRACTOR'S QUALITY CONTROL REPORT (QCR) (ER 1180-1-6)		DATE:	REPORT NO.:
CONTRACT NUMBER AND NAME OF CONTRACTOR:		DESCRIPTION AND LOCATION OF THE WORK:	
WEATHER CLASSIFICATION: CLASS A No interruptions of any kind from weather conditions occurring on this or previous shifts. CLASS B Weather occurred during this shift that caused a complete stoppage of all work. CLASS C Weather occurred during this shift that caused a partial stoppage of work. CLASS D Weather overhead excellent or suitable during shift. Work completely stopped due to results of previous adverse weather. CLASS E Weather overhead excellent or suitable during shift but work partially stopped due to previous adverse manner. OTHER Explain.		CLASSIFICATION: CLASS _____ TEMPERATURE: MAX _____ MIN _____ PRECIPITATION: INCHES _____	
CONTRACTOR/SUBCONTRACTORS AND AREA OF RESPONSIBILITY FOR WORK PERFORMED TODAY: <i>(Attach list of items of equipment either idle or working as appropriate.)</i> a. _____ b. _____ c. _____ d. _____ e. _____ f. _____ g. _____ 1. WORK PERFORMED TODAY: (Indicate location and description of work performed. Refer to work performed by prime and/or subcontractors by letter in Table above.) PURPOSE: Contractors Daily QC Report. Revision necessitated by EIG recommendation MONTHLY USAGE: 1,500 PRESCRIBING DIRECTIVE: ER 1180-1-6 FUNCTIONAL CODE: 1180 Series - Engineer Contracts			
2. TYPE AND RESULTS OF INSPECTION: (Indicate whether: P - Preparatory, I - Initial, or F - Follow-up and include satisfactory work completed or deficiencies with action to be taken.)			
3. TESTS REQUIRED BY PLANS AND/OR SPECIFICATIONS PERFORMED AND RESULTS OF TESTS:			

4. VERBAL INSTRUCTIONS RECEIVED: (List any instructions given by Government personnel on construction deficiencies. retesting required, etc., with action to be taken.)

5. REMARKS: (Cover any conflicts in plans, specifications or instructions: acceptability of incoming materials: offsite surveillance activities; progress of work, delays, causes and extent thereof; days of no work with reasons for same.)

6. SAFETY: (Include any infractions of approved safety plan, safety manual or instructions from Government personnel. Specify corrective action taken.)

INSPECTOR

CONTRACTOR'S CERTIFICATION: I certify that the above report is complete and correct and that all material and equipment used, work performed and tests conducted during this reporting period were in strict compliance with the contract plans and specifications except as noted above.

CONTRACTOR'S APPROVED AUTHORIZED REPRESENTATIVE

D

SECTION 01 45 35

SPECIAL INSPECTIONS
11/20

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 (2021) 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.

Submit Contractor's Statement of Responsibility acknowledging awareness of the special requirements contained in the Statement of Special Inspections. See example statement included as an attachment to this specification.

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 Perform

Perform these Special Inspections tasks for each welded joint or member.

1.3.3 Observe

Observe these Special Inspections items on a periodic daily basis. Operations need not be delayed pending these inspections.

1.3.4 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.

1.3.5 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.

1.3.6 Third Party

A Special inspector must not be an employee of the Contractor or of any Sub-Contractor performing the work to be inspected.

1.3.7 Special Inspector of Record (SIOR)

A licensed engineer in responsible charge of supervision of all special inspectors for the project and approved by the Contracting Officer. The SIOR must be an independent third party entity hired directly by the Prime Contractor.

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 29 Contractor Quality Control having the overall responsibility for the Contractor's QC organization.

1.3.10 Structural Engineer of Record (SER)

A registered design professional contracted by the Government as an A/E responsible for the overall design and review of submittal documents prepared by others. The SER is registered or licensed to practice their respective design profession as defined by the statutory requirements of the professional registration laws in the state in which the design professional works. The SER 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 SER identifying the material, systems, components and work required to have Special Inspections. This statement is included at the end of this specification.

1.3.12 Schedule of Special Inspections (SSI)

A schedule which lists each of the required Special Inspections, the extent to which each Special Inspection is to be performed, and the required frequency for each in accordance with ICC IBC Chapter 17. This schedule is included at the end of this specification.

1.3.13 Definable Feature of Work (DFOW)

An inspection group that is separate and distinct from other inspection groups, having inspection requirements or inspectors that are unique.

1.4 SUBMITTALS

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

SD-01 Preconstruction Submittals

SIOR Letter of Acceptance; G

Special Inspections Project Manual; G

Contractor's Statement of Responsibility; G

SD-06 Test Reports

Special Inspections Daily Reports

Special Inspections Biweekly Reports

SD-07 Certificates

Steel Truss Plant Quality Assurance Program

Certificate of Compliance

Special Inspector of Record Qualifications; G

Special Inspector Qualifications; G

SD-11 Closeout Submittals

Comprehensive Final Report of Special Inspections; G

1.5 SPECIAL INSPECTOR QUALIFICATIONS

Submit qualifications for each special inspector and the special inspector of record.

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 three years of 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. Registered Professional Engineer with three years 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. Registered Professional Engineer with three years of 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

1.5.7 Verification of Site Soil Condition, Fill Placement and Load-Bearing Requirements

1.5.7.1 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. Geologist-In-Training with three years of related experience, or
- d. Registered Professional Engineer with three years of related experience

1.5.7.2 Associate Special Inspector

- a. NICET Soils Technician Level I Certificate in Construction Material Testing with one year of related experience, or
- b. Engineer-In-Training with one year of related experience

1.5.8 Fire-Resistant Penetrations and Joints

1.5.8.1 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

1.5.8.2 Associate Special Inspector

Engineer-In-Training with one year of related experience.

1.5.9 Smoke Control

1.5.9.1 Special Inspector

- a. AABC Technician Certification with one year of related experience, or
- b. 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 Special Inspector of Record (SIOR)

Registered Professional Engineer with five years of related experience.

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.

Truss Plate Institute (TPI) steel truss plant quality assurance program certification.

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 with 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. Prepare a Special Inspections Project Manual, which must cover the following:
 - (1) Roles and responsibilities of the following individuals during Special Inspections: SIOR, SI, ASI, General Contractor's QC Manager and SER.
 - (2) Organizational chart 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 requirements.
 - (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 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 in accordance with 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.

- f. 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.
 - g. 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 SER.
 - h. Submit a copy of the Special Inspector's daily reports to the QC Manager.
 - i. 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.
 - j. 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 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.
 - k. At the completion of the project submit a comprehensive final report of Special Inspections that documents the Special Inspections completed for the project including 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. 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. 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.
- d. Submit daily reports to the SIOR.

Each Contractor responsible for the construction of a main wind or seismic force resisting system, designated seismic system or a wind- or seismic-resisting component listed in the statement of special inspections shall submit a written Statement of Responsibility to the building official and the owner prior to the commencement of work on the system or component. The Contractor's statement of responsibility shall contain acknowledgement of awareness of the special requirements contained in the Statement of Special Inspections. The Contractor can use the Statement of Responsibility included as Attachment C to this specification or provide their own.

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.

-- End of Section --

STATEMENT OF SPECIAL INSPECTIONS

Scope

The materials, systems, components, and work required to have special inspections and the type and extent of each special inspection and/or test are identified herein in the Schedule of Special Inspections.

Periodic Walk-down Inspections

In addition to inspections identified in the Schedule of Special Inspections, periodic walk-down inspections shall be performed by inspector(s) hired by Contractor to ensure that the Designated Seismic Systems and other nonstructural elements satisfy the project requirements. The periodic walk-down inspections shall be performed by professionals who are familiar with the construction and installation of architectural, mechanical, and electrical components, and their vulnerabilities to earthquakes. The selection of the design professional(s) shall be subject to the approval of the Authority Having Jurisdiction. Periodic walk-down inspection shall include, but not necessarily limited to, the following:

- Confirm components are installed per certification requirements
- Investigate adequacy of component load paths, anchorage and bracing, and components' abilities to accommodate differential motions with respect to supporting building structure
- Particular attention shall be made to the interrelationship of components and their effect on each other so that failure of a component shall not cause the failure of a mission critical component.

Final Walk-down Inspection

A final walk-down inspection will be completed by the Structural Engineer of Record (SER) and the Nonstructural Designer Reviewer (NDR). Contractor shall submit all inspection records and completed SEWs prior to the final walk-down inspection. Inspectors will document all observations with photographs, schematic drawings, narrative discussions of apparent vulnerabilities, and mitigation recommendations. The final review shall be documented in a report prepared by the SER (or their designee) and shall include the following:

- Record/observations of final site visit
- Documentation that all required inspections were performed in accordance with the Statement of Special Inspections.
- Documentation that the Designated Seismic Systems were installed in accordance with the construction documents and the requirements of IBC 2021, Chapter 17, as modified by UFC 3-301-01, Section 2-5.

Designated Seismic Systems

The list of Designated Seismic Systems below shall be used for determining what systems are subjected to the Designated Seismic System installation and inspection requirements identified in the Schedule of Special Inspections.

None

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SCHEDULE OF SPECIAL INSPECTIONS

Reference UFGS 01 45 35 for all requirements not noted as part of this schedule.

INSPECTION DEFINITIONS:

- PERFORM:** Perform these tasks for each weld, fastener or bolted connection, and noted verification.
- OBSERVE:** Observe these items randomly during the course of each work day to insure that applicable requirements are being met. Operations need not be delayed pending these inspections at contractor's risk.
- DOCUMENT:** Document, with a report, that the work has been performed in accordance with the contract documents. This is in addition to any other reports required in the Special Inspections guide specification.
- CONTINUOUS:** Constant monitoring of identified tasks by a special inspector over the duration of performance of said tasks.

STRUCTURAL - STEEL – WELDING SECTION**ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐**

STEEL INSPECTION <u>PRIOR TO WELDING</u> – VERIFY THE FOLLOWING ARE IN COMPLIANCE 2021 IBC 1705.2.1, AISC 360-16: Table N5.4-1		
TASK	INSPECTION TYPE ¹	DESCRIPTION
1. Welder qualification records and continuity records	PERFORM	
2. Verify that the welding procedures specification (WPS) is available	PERFORM	
3. Verify manufacturer certifications for welding consumables are available	PERFORM	
4. Verify material identification	PERFORM	Type and grade.
5. Welder Identification System	PERFORM	The fabricator or erector, as applicable, shall maintain a system by which a welder who has welded a joint or member can be identified. Stamps, if used, shall be the low-stress type.
6. Fit-up of groove welds (including joint geometry)	OBSERVE	✓ Joint preparation ✓ Dimensions (alignment, root opening, root face, bevel) ✓ Cleanliness (condition of steel surfaces) ✓ Tacking (tack weld quality and location) ✓ Backing type and fit (if applicable)
7. Fit-up of CJP groove welds of HSS T-, Y-, & K-joints without backing (including joint geometry)	OBSERVE	✓ Joint preparation ✓ Dimensions (alignment, root opening, root face, bevel) ✓ Cleanliness (condition of steel surfaces) ✓ Tacking (tack weld quality and location) ✓ Backing type and fit (if applicable)
8. Configuration and finish of access holes	OBSERVE	
9. Fit-up of fillet welds	OBSERVE	✓ Dimensions (alignment, gaps at root) ✓ Cleanliness (condition of steel surfaces) ✓ Tacking (tack weld quality and location)
10. Check welding equipment	OBSERVE	

¹ **PERFORM:** Perform these tasks for each weld, fastener or bolted connection, and required verification.

OBSERVE: Observe these items on a random sampling basis daily to insure that applicable requirements are met. Operations need not be delayed pending these inspections at contractor's risk.

STRUCTURAL - STEEL – WELDING SECTION (CONTINUED)

STEEL INSPECTION <u>DURING</u> WELDING – VERIFY THE FOLLOWING ARE IN COMPLIANCE 2021 IBC 1705.2.1, AISC 360-16: Table N5.4-2		
TASK	INSPECTION TYPE	DESCRIPTION
1. Use of qualified welders	PERFORM	Welding by welders, welding operators, and tack welders who are qualified in conformance with requirements.
2. Control and handling of welding consumables	OBSERVE	✓ Packaging ✓ Electrode atmospheric exposure control
3. No welding over cracked tack welds	OBSERVE	
4. Environmental conditions	OBSERVE	✓ Wind speed within limits ✓ Precipitation and temperature
5. Welding Procedures Specification (WPS) followed	OBSERVE	✓ Settings on welding equipment ✓ Travel speed ✓ Selected welding materials ✓ Shielding gas type/flow rate ✓ Preheat applied ✓ Interpass temperature maintained (min./max.) ✓ Proper position (F, V, H, OH) ✓ Intermix of filler metals avoided
6. Welding techniques	OBSERVE	✓ Interpass and final cleaning ✓ Each pass within profile limitations ✓ Each pass meets quality requirements

STRUCTURAL - STEEL – WELDING SECTION (CONTINUED)

STEEL INSPECTION AFTER WELDING – VERIFY THE FOLLOWING ARE IN COMPLIANCE 2021 IBC 1705.2.1, AISC 360-16: Table N5.4-3		
TASK	INSPECTION TYPE ¹	DESCRIPTION
1. Welds cleaned	OBSERVE	
2. Size, length, and location of all welds	PERFORM	Size, length, and location of all welds conform to the requirements of the detail drawings.
3. Welds meet visual acceptance criteria	PERFORM AND DOCUMENT	✓ Crack prohibition ✓ Weld/base-metal fusion ✓ Crater cross section ✓ Weld profiles ✓ Weld size ✓ Undercut ✓ Porosity
4. Arc strikes	PERFORM	
5. -area	PERFORM	When welding of doubler plates, continuity plates or stiffeners has been performed in the k-area, visually inspect the web k-area for cracks within 3 in. of the weld.
6. Weld access holes in rolled heavy shapes and built-up heavy shapes	PERFORM	After rolled heavy shapes and built-up heavy shapes are welded, visually inspect the weld access hole for cracks.
7. Backing removed, and weld tabs removed (if required)	PERFORM	
8. Repair activities	PERFORM AND DOCUMENT	
9. Document acceptance or rejection of welded joint or member	PERFORM	
10. Verify no prohibited welds have been added without the approval of the EOR.	OBSERVE	

END SECTION

¹ **PERFORM:** Perform these tasks for each weld, fastener or bolted connection, and required verification.

DOCUMENT: Document in a report that the work has been performed as required. This is in addition to all other required reports.

STRUCTURAL - STEEL – BOLTING SECTION**ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐**

STEEL INSPECTION TASKS PRIOR TO BOLTING – VERIFY THE FOLLOWING ARE IN COMPLIANCE 2021 IBC 1705.2.1, AISC 360-16: Table N5.6-1		
TASK	INSPECTION TYPE ¹	DESCRIPTION
1. Manufacturer's certifications available for fastener materials	PERFORM	
2. Fasteners marked in accordance with ASTM requirements	OBSERVE	
3. Correct fasteners selected for joint detail (grade, type, bolt length if threads are to be excluded from shear plane)	OBSERVE	
4. Correct bolting procedure selected for joint detail	OBSERVE	
5. Connecting elements, including the appropriate faying surface condition and hole preparation, if specified, meet applicable requirements	OBSERVE	
6. Pre-installation verification testing by installation personnel observed and documented for fastener assemblies and methods used	PERFORM	
7. Protected storage provided for bolts, nuts, washers, and other fastener components	OBSERVE	
STEEL INSPECTION TASKS DURING BOLTING – VERIFY THE FOLLOWING ARE IN COMPLIANCE 2021 IBC 1705.2.1, AISC 360-16: Table N5.6-2		
TASK	INSPECTION TYPE ¹	DESCRIPTION
1. Fastener assemblies placed in all holes and washers (if required) are positioned as required	OBSERVE	
2. Joint brought to the snug-tight condition prior to pretensioning operation	OBSERVE	
3. Fastener component not turned by the wrench prevented from rotating	OBSERVE	
4. Fasteners are pretensioned in accordance with a method approved by RCSC and progressing systematically from the most rigid point toward free edges	OBSERVE	
STEEL INSPECTION TASKS AFTER BOLTING – VERIFY THE FOLLOWING ARE IN COMPLIANCE 2021 IBC 1705.2.1, AISC 360-16: Table N5.6-3		
TASK	INSPECTION TYPE ¹	DESCRIPTION
1. Document acceptance or rejection of all bolted connections	PERFORM AND DOCUMENT	

END SECTION

¹ **PERFORM:** Perform these tasks for each weld, fastener or bolted connection, and required verification.
OBSERVE: Observe these items on a random sampling basis daily to insure that applicable requirements are met. Operations need not be delayed pending these inspections at contractor's risk.
DOCUMENT: Document in a report that the work has been performed as required. This is in addition to all other required reports.

STRUCTURAL - STEEL - NON DESTRUCTIVE TESTING SECTION**ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED:** ☐

NONDESTRUCTIVE TESTING OF WELDED JOINTS – VERIFY THE FOLLOWING ARE IN COMPLIANCE 2021 IBC 1705.2.1, AISC 360-16: Section N5.5		
TASK	INSPECTION TYPE ¹	DESCRIPTION
1. Use of qualified nondestructive testing procedures	PERFORM AND DOCUMENT	Visual weld inspection and nondestructive testing (NDT) shall be conducted by personnel qualified in accordance with AWS D1.1 clause 6.1.4.
2. CJP groove welds	PERFORM AND DOCUMENT	- For structures in risk category III or IV, ultrasonic testing (UT) shall be performed on 100% of CJP groove welds for materials 5/16" (8mm) thick or greater. - For structures in risk category II, UT shall be performed on 10% of CJP welds for materials 5/16" (8mm) thick or greater.. Weld discontinuities shall be accepted/rejected on the basis of AWS D1.1 Table 6.2. - Magnetic particle testing (MT) shall be performed on 25% of all beam-to-column CJP groove welds.
3. Welded joints subject to fatigue	PERFORM AND DOCUMENT	Dye penetrant testing (DT), Ultrasonic testing (UT) or radiographic testing (RT) shall be performed on 100% of welded joints identified on contract drawings as being subject to fatigue to verify internal soundness. Acceptance requirements shall meet AWS D1.1 clause 6.12 or 6.13, as appropriate. (From AISC Code: When required by Appendix 3, Table A-3.1, welded joints requiring weld soundness to be established by radiographic or ultrasonic inspection shall be tested by QA as prescribed. Reduction in the rate of UT is prohibited.)
4. Reduced beam section repair	PERFORM AND DOCUMENT	MT shall be performed on any weld and adjacent area of reduced beam section (RBS) cut surfaces that have been repaired by welding, or on the base metal of the RBS cut surface if a sharp notch has been removed by grinding.
5. Weld tab removal sites	PERFORM AND DOCUMENT	At the end of welds where weld tabs have been removed, MT shall be performed on the same beam-to-column joints receiving UT as required under Item 2, CJP groove welds. The rate of MT is permitted to be reduced in accordance with Item 8 in Section STRUCTURAL - STEEL – AISC 341 REQUIREMENTS (SEISMIC PROVISIONS) SECTION, NONDESTRUCTIVE TESTING OF WELDED JOINTS (if applicable).
6. UT rejection rate	PERFORM AND DOCUMENT	The UT testing rejection rate shall be determined as the number of welds containing defects divided by the number of welds completed. Welds that contain acceptable discontinuities shall not be considered as having defects when determining the rejection rate. For continuous welds over 3ft (1m) in length, where the effective throat is 1" (25mm) or less, each 12" (300mm) increment or fraction thereof shall be considered as one weld. For continuous welds where the effective throat is over 1" (25mm), each 6" (150mm) of length or fraction thereof, shall be considered as one weld.

¹ **PERFORM:** Perform these tasks for each weld, fastener or bolted connection, and required verification.

OBSERVE: Observe these items on a random sampling basis daily to insure that applicable requirements are met. Operations need not be delayed pending these inspections at contractor's risk.

7. Reduction of percentage of UT	PERFORM AND DOCUMENT	If the project has 40 or fewer welds, no reduction in UT is allowed. The rate of UT is permitted to be reduced if approved by the EOR and the AHJ. Where the initial rate is 100%, the UT rate for an individual welder or welding operator is permitted to be reduced to 25%, provided the rejection rate, the number of welds containing unacceptable defects divided by the number of welds completed, is demonstrated to be 5% or less of the welds tested for the welder or weld operator. A sampling of at least 40 completed welds shall be made for such a reduced evaluation on the project.
8. Increase in UT rate	PERFORM AND DOCUMENT	For risk category II and higher structures, where the initial rate for UT is 10%, the NDT rate for an individual welder or welding operator shall be increased to 100% should the rejection rate (the number of welds containing unacceptable defects divided by the number of welds completed) exceeds 5% of the welds tested for the welder or weld operator. A sampling of at least 20 welds on the project shall be made prior to implementing such an increase.

END SECTION

STRUCTURAL - STEEL – AISC 341 REQUIREMENTS (SEISMIC PROVISIONS) SECTION**ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐**

STEEL INSPECTION <u>PRIOR TO WELDING</u> – VERIFY THE FOLLOWING ARE IN COMPLIANCE 2021 IBC 1705.2.1, 1705.13.1, 1705.14.1, AISC 341-16: Table J6.1		
TASK	INSPECTION TYPE ¹	DESCRIPTION
1. Verify material identification	PERFORM	Type and grade.
2. Welder Identification System	PERFORM	The fabricator or erector, as applicable, shall maintain a system by which a welder who has welded a joint or member can be identified. Stamps, if used, shall be the low-stress type.
3. Fit-up of groove welds (including joint geometry)	PERFORM/OBSERVE²	✓ Joint preparation ✓ Dimensions (alignment, root opening, root face, bevel) ✓ Cleanliness (condition of steel surfaces) ✓ Tacking (tack weld quality and location) ✓ Backing type and fit (if applicable)
4. Configuration and finish of access holes	OBSERVE	
5. Fit-up of fillet welds	PERFORM/OBSERVE²	✓ Dimensions (alignment, gaps at root) ✓ Cleanliness (condition of steel surfaces) ✓ Tacking (tack weld quality and location)
STEEL INSPECTION <u>DURING WELDING</u> – VERIFY THE FOLLOWING ARE IN COMPLIANCE 2021 IBC 1705.2.1, 1705.13.1, 1705.14.1, AISC 341-16: Table J6.2		
TASK	INSPECTION TYPE	DESCRIPTION
1. Use of qualified welders	PERFORM	Welding by welders, welding operators, and tack welders who are qualified in conformance with requirements.
2. Control and handling of welding consumables	OBSERVE	✓ Packaging ✓ Electrode atmospheric exposure control
3. No welding over cracked tack welds	OBSERVE	
4. Environmental conditions	OBSERVE	✓ Wind speed within limits ✓ Precipitation and temperature
5. Welding Procedures Specification (WPS) followed	OBSERVE	✓ Settings on welding equipment ✓ Travel speed ✓ Selected welding materials ✓ Shielding gas type/flow rate ✓ Preheat applied ✓ Interpass temperature maintained (min./max.) ✓ Proper position (F, V, H, OH) ✓ Intermix of filler metals avoided
6. Welding techniques	OBSERVE	✓ Interpass and final cleaning

¹ **PERFORM:** Perform these tasks for each weld, fastener or bolted connection, and required verification.

OBSERVE: Observe these items on a random sampling basis daily to insure that applicable requirements are met. Operations need not be delayed pending these inspections at contractor's risk.

² Following performance of this inspection task for ten welds to be made by a given welder, with the welder demonstrating understanding of requirements and possession of skills and tools to verify these items, the Perform designation of this task shall be reduced to Observe, and the welder shall perform this task. Should the inspector determine that the welder has discontinued performance of this task, the task shall be returned to Perform until such time as the Inspector has re-established adequate assurance that the welder will perform the inspection tasks listed.

		✓ Each pass within profile limitations ✓ Each pass meets quality requirements
STEEL INSPECTION AFTER WELDING – VERIFY THE FOLLOWING ARE IN COMPLIANCE 2021 IBC 1705.2.1, 1705.13.1, 1705.14.1, AISC 341-16: Table J6.3		
TASK	INSPECTION TYPE ¹	DESCRIPTION
1. Welds cleaned	OBSERVE	
2. Size, length, and location of all welds	PERFORM	Size, length, and location of all welds conform to the requirements of the detail drawings.
3. Welds meet visual acceptance criteria	PERFORM AND DOCUMENT	✓ Crack prohibition ✓ Weld/base-metal fusion ✓ Crater cross section ✓ Weld profiles ✓ Weld size ✓ Undercut ✓ Porosity
4. K-area	PERFORM AND DOCUMENT	When welding of doubler plates, continuity plates or stiffeners has been performed in the k-area, visually inspect the web k-area for cracks within 3 in. of the weld. The visual inspection shall be performed no sooner than 48 hours following the completion of the welding.
5. Placement of reinforcing or contouring fillet welds (if required)	PERFORM AND DOCUMENT	
6. Backing removed, weld tabs removed and finished, and fillet welds added (if required)	PERFORM AND DOCUMENT	
7. Repair activities	PERFORM AND DOCUMENT	

¹ **PERFORM:** Perform these tasks for each weld, fastener or bolted connection, and required verification.

DOCUMENT: Document in a report that the work has been performed as required. This is in addition to all other required reports.

STRUCTURAL - STEEL – AISC 341 REQUIREMENTS (SEISMIC PROVISIONS) SECTION (CONTINUED)

NONDESTRUCTIVE TESTING OF WELDED JOINTS – VERIFY THE FOLLOWING ARE IN COMPLIANCE 2021 IBC 1705.2.1, 1705.13.1, 1705.14.1, AISC 341-16: Section J6		
TASK	INSPECTION TYPE ¹	DESCRIPTION
1. Use of qualified nondestructive testing procedures	PERFORM AND DOCUMENT	Visual weld inspection and nondestructive testing (NDT) shall be conducted by personnel qualified in accordance with AWS D1.8 clause 7.2.
2. CJP groove welds	PERFORM AND DOCUMENT	• UT shall be performed on 100% of CJP groove welds for materials 5/16" (8mm) thick or greater. • Weld discontinuities shall be accepted/rejected on the basis of AWS D1.1 Table 6.2. • Magnetic particle testing (MT) shall be performed on 25% of all beam-to-column CJP groove welds.
3. Column splice and column to base plate PJP groove welds	PERFORM AND DOCUMENT	UT shall be performed on 100% of partial-joint-penetration (PJP) groove welds in column splices and column to base plate welds. Reduction in the rate of UT is allowed. UT shall be performed using written procedures and UT technicians qualified in accordance with AWS D1.8.
4. Base metal for lamellar tearing and laminations	PERFORM AND DOCUMENT	For base metal thicker than 1 1/2" (38mm) and containing CJP groove welds shall be ultrasonically tested for discontinuities behind and adjacent to the fusion line of such welds for joints identified on the contract drawings. Any base metal discontinuities found with t/4 of the steel surface shall be accepted/rejected based on the criteria in AWS D1.1, Table 6.2, where t is the thickness of the part subjected to through-thickness strain.
5. Beam cope and access hole	PERFORM AND DOCUMENT	At welded splices and connections, thermally cut surfaces of beam copes and access holes shall be tested using magnetic particle testing (MT) or dye penetrant testing (DT), when the flange thickness exceeds 1 1/2 in. (38mm) for rolled shapes, or when the web thickness exceeds 1 1/2 in. (38mm) for built-up shapes.
6. Reduced beam section repair	PERFORM AND DOCUMENT	MT shall be performed on any weld and adjacent area of reduced beam section (RBS) cut surfaces that have been repaired by welding, or on the base metal of the RBS cut surface if a sharp notch has been removed by grinding.
7. Reduction of percentage of UT	PERFORM AND DOCUMENT	UT reduction percentage is permitted to be reduced in accordance with Item 7, Structural – Steel – Non Destructive Testing Section. No reduction is permitted for demand critical welds.
8. Reduction of percentage of MT	PERFORM AND DOCUMENT	The rate of MT on CJP groove welds is permitted to be reduced if approved by the EOR and the AHJ. The MT rate for an individual welder or welding operator is permitted to be reduced to 10%, provided the rejection rate, the number of welds containing unacceptable defects divided by the number of welds completed, is demonstrated to be 5% or less of the welds tested for the welder or weld operator. A sampling of at least 20 completed welds shall be made for such a reduced evaluation on the project. This reduction is

¹ **PERFORM:** Perform these tasks for each weld, fastener or bolted connection, and required verification.

OBSERVE: Observe these items on a random sampling basis daily to insure that applicable requirements are met. Operations need not be delayed pending these inspections at contractor's risk.

DOCUMENT: Document in a report that the work has been performed as required. This is in addition to all other required reports.

		prohibited on welds in the k-area, at repair sites, backing removal sites and access holes.
9. K-area NDT (AISC 341)	PERFORM	Where welding of doubler plates, continuity plates or stiffeners has been performed in the k-area, the web shall be tested for cracks using magnetic particle testing (MT). The MT inspection area shall include the k-area base metal within 3-inches of the weld. The MT shall be performed no sooner than 48 hours following completion of the welding.
10. Placement of reinforcing or contouring fillet welds	DOCUMENT	

STRUCTURAL - STEEL – AISC 341 REQUIREMENTS (SEISMIC PROVISIONS) SECTION (CONTINUED)

STEEL INSPECTION TASKS <u>PRIOR TO BOLTING</u> – VERIFY THE FOLLOWING ARE IN COMPLIANCE 2021 IBC 1705.2.1, 1705.13.1, 1705.14.1, AISC 341-16: Table J7.1		
TASK	INSPECTION TYPE ¹	DESCRIPTION
1. Manufacture's certifications available for fastener materials	PERFORM	
2. Fasteners marked in accordance with ASTM requirements	OBSERVE	
3. Correct fasteners selected for joint detail (grade, type, bolt length if threads are to be excluded from shear plane)	OBSERVE	
4. Correct bolting procedure selected for joint detail	OBSERVE	
5. Connecting elements, including the appropriate faying surface condition and hole preparation, if specified, meet applicable requirements	OBSERVE	
6. Pre-installation verification testing by installation personnel observed and documented for fastener assemblies and methods used	PERFORM AND DOCUMENT	
7. Protected storage provided for bolts, nuts, washers, and other fastener components	OBSERVE	
STEEL INSPECTION TASKS <u>DURING BOLTING</u> – VERIFY THE FOLLOWING ARE IN COMPLIANCE 2021 IBC 1705.2.1, 1705.13.1, 1705.14.1, AISC 341-16: Table J7.2		
TASK	INSPECTION TYPE ¹	DESCRIPTION
1. Fastener assemblies placed in all holes and washers (if required) are positioned as required	OBSERVE	
2. Joint brought to the snug-tight condition prior to pretensioning operation	OBSERVE	
3. Fastener component not turned by the wrench prevented from rotating	OBSERVE	
4. Fasteners are pretensioned in accordance with a method approved by RCSC and progressing systematically from the most rigid point toward free edges	OBSERVE	
STEEL INSPECTION TASKS <u>AFTER BOLTING</u> – VERIFY THE FOLLOWING ARE IN COMPLIANCE 2021 IBC 1705.2.1, 1705.13.1, 1705.14.1, AISC-16: Table J7.3		
TASK	INSPECTION TYPE ¹	DESCRIPTION
1. Document acceptance or rejection of all bolted connections	PERFORM AND DOCUMENT	

END SECTION

¹ **PERFORM:** Perform these tasks for each weld, fastener or bolted connection, and required verification.
OBSERVE: Observe these items on a random sampling basis daily to insure that applicable requirements are met. Operations need not be delayed pending these inspections at contractor's risk.
DOCUMENT: Document in a report that the work has been performed as required. This is in addition to all other required reports.

STRUCTURAL - STEEL - COMPOSITE CONSTRUCTION ¹**ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐**

COMPOSITE CONSTRUCTION <u>PRIOR TO</u> CONCRETE PLACEMENT – VERIFY THE FOLLOWING ARE IN COMPLIANCE 2021 IBC 1705.2.1, AISC 341-16: Table N5.4-2 and Table J9.1		
TASK	INSPECTION TYPE ²	DESCRIPTION
1. Placement and installation of steel headed stud anchors	PERFORM	
2. Material identification of reinforcing steel (Type/Grade)	OBSERVE	
3. Determination of carbon equivalent for reinforcing steel other than ASTM A706/A706M	OBSERVE	
4. Proper reinforcing steel size, spacing, clearances, support, and orientation	OBSERVE	
5. Reinforcing steel has not been rebent in the field	OBSERVE	
6. Required reinforcing steel clearances have been provided	OBSERVE	
7. Reinforcing steel has been tied and supported as required	OBSERVE	
8. Composite member has required size	OBSERVE	
COMPOSITE CONSTRUCTION <u>DURING</u> CONCRETE PLACEMENT – VERIFY THE FOLLOWING ARE IN COMPLIANCE 2021 IBC 1705.2.1, AISC 341-16: Table J9.2		
TASK	INSPECTION TYPE ¹	DESCRIPTION
1. Concrete: Material identification	OBSERVE AND DOCUMENT	✓ Mix design ✓ Compressive strength ✓ Maximum large aggregate size ✓ Maximum slump
2. Joint brought to the snug-tight condition prior to pretensioning operation	OBSERVE	
3. Fastener component not turned by the wrench prevented from rotating	OBSERVE	
4. Fasteners are pretensioned in accordance with a method approved by RCSC and progressing systematically from the most rigid point toward free edges	OBSERVE	
COMPOSITE CONSTRUCTION <u>AFTER</u> CONCRETE PLACEMENT – VERIFY THE FOLLOWING ARE IN COMPLIANCE 2021 IBC 1705.2.1, AISC-16: Table J9.3		
TASK	INSPECTION TYPE ¹	DESCRIPTION
1. Achievement of minimum specified concrete compressive strength at specified age	DOCUMENT	

END SECTION¹ See Concrete Construction Section for all concrete related inspection of composite steel construction.

STRUCTURAL - STEEL - OTHER INSPECTIONS**ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐**

OTHER STEEL INSPECTIONS – VERIFY THE FOLLOWING ARE IN COMPLIANCE 2021 IBC 1705.2.1, AISC 341-16: Tables J8.1 & J10.1		
TASK	INSPECTION TYPE ¹	DESCRIPTION
1. Anchor rods and other embedments supporting structural steel	PERFORM	Verify the diameter, grade, type, and length of the anchor rod or embedded item, and the extent or depth of embedment prior to placement of concrete.
2. Fabricated steel or erected steel frame	OBSERVE	Verify compliance with the details shown on the construction documents, such as braces, stiffeners, member locations and proper application of joint details at each connection.
3. Reduced beam sections (RBS) where/if occurs	DOCUMENT	✓ Contour and finish ✓ Dimensional tolerances
4. Protected zone	PERFORM AND DOCUMENT	No holes and unapproved attachments made by fabricator, erector and others including those involving curtainwall, mechanical, electrical, plumbing and interior partitions, as applicable
5. H-piles where/if occurs	PERFORM AND DOCUMENT	No holes or unapproved attachments made by the responsible contractor, as applicable

END SECTION

¹ **PERFORM:** Perform these tasks for each weld, fastener or bolted connection, and required verification.
OBSERVE: Observe these items on a random sampling basis daily to insure that applicable requirements are met. Operations need not be delayed pending these inspections at contractor's risk.
DOCUMENT: Document in a report that the work has been performed as required. This is in addition to all other required reports.

STRUCTURAL - COLD-FORMED METAL DECK - PLACEMENT SECTION**ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☒**

METAL DECK INSPECTION PRIOR TO DECK PLACEMENT – VERIFY THE FOLLOWING ARE IN COMPLIANCE SDI QA/QC-2017, Appendix 1, Table 1.1		
TASK	INSPECTION TYPE ¹	DESCRIPTION
1. Verify compliance of materials (deck and all deck accessories) with construction documents, including profiles, material properties, and base metal thickness	PERFORM	
2. Document acceptance or rejection of deck and deck accessories	DOCUMENT	
METAL DECK INSPECTION AFTER DECK PLACEMENT – VERIFY THE FOLLOWING ARE IN COMPLIANCE SDI QA/QC-2017, Appendix 1, Table 1.2		
TASK	INSPECTION TYPE ¹	DESCRIPTION
3. Verify compliance of deck and all deck accessories installation with construction documents	PERFORM	
4. Verify deck materials are represented by the mill certifications that comply with the construction documents	PERFORM	
5. Document acceptance or rejection of installation of deck and deck accessories	DOCUMENT	
METAL DECK INSPECTION PRIOR TO WELDING – VERIFY THE FOLLOWING ARE IN COMPLIANCE SDI QA/QC-2017, Appendix 1, Table 1.3		
TASK	INSPECTION TYPE ¹	DESCRIPTION
6. Welding procedure specification (WPS) available	PERFORM	
7. Manufactures certifications for welding consumables available	OBSERVE	
8. Material identification (type/grade)	OBSERVE	
9. Check welding equipment	OBSERVE	

END SECTION

¹ **PERFORM:** Perform these tasks for each weld, fastener or bolted connection, and required verification.
OBSERVE: Observe these items on a random sampling basis daily to insure that applicable requirements are met. Operations need not be delayed pending these inspections at contractor's risk.
DOCUMENT: Document in a report that the work has been performed as required. This is in addition to all other required reports.

STRUCTURAL - COLD-FORMED METAL DECK – WELDING SECTION**ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☒**

METAL DECK INSPECTION <u>DURING</u> WELDING – VERIFY THE FOLLOWING ARE IN COMPLIANCE SDI QA/QC-2017, Appendix 1, Table 1.4		
TASK	INSPECTION TYPE ¹	DESCRIPTION
1. Use of qualified welders	OBSERVE	
2. Control and handling of welding consumables	OBSERVE	
3. Environmental conditions (wind speed, moisture, temperature)	OBSERVE	
4. WPS followed	OBSERVE	
METAL DECK INSPECTION <u>AFTER</u> WELDING – VERIFY THE FOLLOWING ARE IN COMPLIANCE SDI QA/QC-2017, Appendix 1, Table 1.5		
TASK	INSPECTION TYPE ¹	DESCRIPTION
5. Verify size and location of welds, including support, sidelap, and perimeter welds.	PERFORM	
6. Welds meet visual acceptance criteria	PERFORM	
7. Verify repair activities	PERFORM	
8. Document acceptance or rejection of welds	DOCUMENT	

END SECTION

¹ **PERFORM:** Perform these tasks for each weld, fastener or bolted connection, and required verification.
OBSERVE: Observe these items on a random sampling basis daily to insure that applicable requirements are met. Operations need not be delayed pending these inspections at contractor's risk.
DOCUMENT: Document in a report that the work has been performed as required. This is in addition to all other required reports.

STRUCTURAL - COLD-FORMED METAL DECK – FASTENING SECTION**ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☒**

METAL DECK INSPECTION PRIOR TO MECHANICAL FASTENING – VERIFY THE FOLLOWING ARE IN COMPLIANCE SDI QA/QC-2017, Appendix 1, Table 1.6		
TASK	INSPECTION TYPE ¹	DESCRIPTION
1. Manufacturer installation instructions available for mechanical fasteners	OBSERVE	
2. Proper tools available for fastener installation	OBSERVE	
3. Proper storage for mechanical fasteners	OBSERVE	
METAL DECK INSPECTION DURING MECHANICAL FASTENING – VERIFY THE FOLLOWING ARE IN COMPLIANCE SDI QA/QC-2017, Appendix 1, Table 1.7		
TASK	INSPECTION TYPE ¹	DESCRIPTION
4. Fasteners are positioned as required	OBSERVE	
5. Fasteners are installed in accordance with manufacturer's instructions	OBSERVE	
METAL DECK INSPECTION AFTER MECHANICAL FASTENING – VERIFY THE FOLLOWING ARE IN COMPLIANCE SDI QA/QC-2017, Appendix 1, Table 1.8		
TASK	INSPECTION TYPE ¹	DESCRIPTION
6. Check spacing, type, and installation of support fasteners	PERFORM	
7. Check spacing, type, and installation of sidelap fasteners	PERFORM	
8. Check spacing, type, and installation of perimeter fasteners	PERFORM	
9. Verify repair activities	PERFORM	
10. Document acceptance or rejection of mechanical fasteners	DOCUMENT	

END SECTION

¹ **PERFORM:** Perform these tasks for each weld, fastener or bolted connection, and required verification.
OBSERVE: Observe these items on a random sampling basis daily to insure that applicable requirements are met. Operations need not be delayed pending these inspections at contractor's risk.
DOCUMENT: Document in a report that the work has been performed as required. This is in addition to all other required reports.

STRUCTURAL - LIGHT GAUGE STEEL FRAMING AND/OR LIGHT GAUGE TRUSSES SECTION**ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☒**

LIGHT GAUGE STEEL CONSTRUCTION AND CONNECTIONS – VERIFY THE FOLLOWING ARE IN COMPLIANCE 2021 IBC 1705.2.4, 1705.12.2, 1705.13.3, UFC 4 023 03: Appendix H		
TASK	INSPECTION TYPE ¹	DESCRIPTION
1. Trusses spanning 60-feet or greater where/if applies	PERFORM	Verify that temporary and permanent truss restraint/bracing is installed in accordance with approved truss submittal package.
2. Welded connections (seismic and/or wind resisting system)	OBSERVE	Visually inspect all welds composing part of the main wind or seismic force resisting system, including shearwalls, braces, collectors (drag struts), and hold-downs.
3. Connections (seismic and/or wind resisting system)	OBSERVE	Visually inspect all screw attachment, bolting, anchoring and other fastening of components within the main wind or seismic force resisting system, including roof deck, roof framing, exterior wall covering, wall to roof/floor connections, shear walls, braces, diaphragms, collectors (drag struts) and hold-downs.
4. Cold-formed steel (progressive collapse resisting system where/if applies)	OBSERVE	Verify proper welding operations, screw attachment, bolting, anchoring and other fastening of components within the progressive collapse resisting system, including horizontal tie force elements, vertical tie force elements and bridging elements (UFC 4 023 03: Appendix H).

END SECTION**STRUCTURAL - OPEN-WEB STEEL JOISTS SECTION****ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐**

OPEN-WEB STEEL JOISTS AND JOIST GIRDERS – VERIFY THE FOLLOWING ARE IN COMPLIANCE 2021 IBC TABLE 1705.2.3		
TASK	INSPECTION TYPE ¹	DESCRIPTION
1. Installation of open-web steel joists and joist girders	OBSERVE	✓ End connections – welded or bolted ✓ Bridging – horizontal and diagonal (standard bridging and bridging that differs from the SJ specifications listed in Section 2207.1)

END SECTION

¹ **PERFORM:** Perform these tasks for each weld, fastener or bolted connection, and required verification.

OBSERVE: Observe these items on a random sampling basis daily to insure that applicable requirements are met. Operations need not be delayed pending these inspections at contractor's risk.

STRUCTURAL - CONCRETE CONSTRUCTION SECTION**ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☒**

CONCRETE CONSTRUCTION, INCLUDING COMPOSITE DECK – VERIFY THE FOLLOWING ARE IN COMPLIANCE 2021 IBC TABLE 1705.3, ACI 318-19 Section 26.7.2		
TASK	INSPECTION TYPE ¹	DESCRIPTION
1. Inspect reinforcement, including prestressing tendons, and verify placement.	OBSERVE	Verify prior to placing concrete that reinforcing is of specified type, grade and size; that it is free of oil, dirt and unacceptable rust; that it is located and spaced properly; that hooks, bends, ties, stirrups and supplemental reinforcement are placed correctly; that lap lengths, stagger and offsets are provided; and that all mechanical connections are installed per the manufacturer's instructions and/or evaluation report.
2. Reinforcing bar welding	OBSERVE	✓ Verify weldability of reinforcing bars other than ASTM A 706 ✓ Inspect single-pass fillet welds, maximum 5/16" in accordance with AWS D1.4
3. All other welding	CONTINUOUS	Visually inspect all welds in accordance with AWS D1.4
4. Inspect anchors cast in concrete	OBSERVE	✓ Verify anchors, attachments and reinforcement is securely positioned in formwork and oriented in accordance with construction documents prior to concrete placement. ✓ Concrete is consolidated around anchors and anchor reinforcement using suitable means during concrete placement.
5. Inspect adhesive anchors installed in horizontally or upwardly inclined orientations to resist sustained tension loads post-installed in hardened concrete members ⁽²⁾	CONTINUOUS AND DOCUMENT	✓ Inspect as required per approved ICC-ES report ✓ Verify anchors installed in accordance with the Manufacturer's Printed Installation Instructions (MPII) ✓ Verify that installer is certified for installation of horizontal and overhead installation applications ✓ Verify concrete has minimum age of 21 days at time of anchor installation. ✓ Inspect proof loading as required by the contract documents
6. Inspect mechanical anchors and adhesive anchors not defined in 5 post-installed in hardened concrete members ⁽²⁾	OBSERVE	✓ Verify anchors installed in accordance with manufacturer's instructions. ✓ Verify installer is qualified to install specified anchors. ✓ Verify post installed drilled anchors have proper embedment, spacing and edge distance.
7. Verify use of required mix design	OBSERVE	Verify that all mixes used comply with the approved construction documents

¹ **OBSERVE:** Observe these items on a random sampling basis daily to insure that applicable requirements are met. Operations need not be delayed pending these inspections at contractor's risk.

DOCUMENT: Document in a report that the work has been performed as required. This is in addition to all other required reports.

CONTINUOUS: Constant monitoring of identified tasks by a special inspector over the duration of performance of said tasks.

² Specific requirements for special inspection shall be included in the research report for the anchor issued by an approved source in accordance with 26.7.2 in ACI 318-19 or other qualification procedures. Where specific requirements are not provided, special inspection requirements shall be specified by the registered design professional and shall be approved by the building official prior to the commencement of the work.

8. Prior to concrete placement, fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of the concrete	CONTINUOUS	At the time fresh concrete is sampled to fabricate specimens for strength test verify these tests are performed by qualified technicians.
9. Inspect concrete and/or shotcrete placement for proper application techniques	CONTINUOUS	Verify proper application techniques are used during concrete conveyance and depositing avoids segregation or contamination. Verify that concrete is properly consolidated.
10. Verify maintenance of specified curing temperature and technique	OBSERVE	Inspect curing, cold weather protection, and hot weather protection procedures.
11. Inspect Pre-stressed concrete	CONTINUOUS	Verify application of prestressing forces and grouting of bonded prestressing tendons.
12. Inspect erection of precast concrete members	OBSERVE	Grouting of bonded prestressing tendons
13. For precast concrete diaphragm connections or reinforcement at joints classified as moderate or high deformability elements (MDE or HDE) in structures assigned to Seismic Design Category C, D, E, or F, inspect such connections and reinforcement in the field for:	CONTINUOUS	✓ Installation of the embedded parts ✓ Completion of the continuity of reinforcement across joints ✓ Completion of connections in the field
14. Inspect installation tolerances of precast concrete diaphragm connections for compliance with ACI 550.5	OBSERVE	
15. Verify in-situ concrete strength, prior to stressing of tendons in post-tensioned concrete and prior to removal of shores and forms from beams and structural slabs.	OBSERVE	
16. Inspect formwork for shape, location and dimensions of the concrete member being formed.	OBSERVE	

END SECTION

STRUCTURAL - MASONRY CONSTRUCTION SECTION (ALL RISK CATEGORIES)**ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐**

MINIMUM QUALITY ASSURANCE LEVEL 2021 IBC 1705.4, TMS 402-16: TABLE 3.1		
Designed in accordance with:	Risk Category I, II, III	Risk Category IV
Part 3 or Appendix B or Appendix C	Level 2	Level 3
Part 4	Level 1	Level 2
Appendix A	Level 1	Not permitted

MINIMUM VERIFICATION REQUIREMENTS 2021 IBC 1705.4, TMS 602-16: TABLE 3				
Minimum Verification	Required for Quality Assurance ^(a)			Reference for Criteria
	Level 1	Level 2	Level 3	TMS 602
Prior to construction, verification of compliance of submittals.	R	R	R	Art. 1.5
Prior to construction, verification of f'_m and f'_{AAC} , except where specifically exempted by the Code.	NR	R	R	Art. 1.4 B
During construction, verification of Slump flow and Visual Stability Index (VSI) when self-consolidating grout is delivered to the project site.	NR	R	R	Art. 1.5 & 1.6.3
During construction, verification of f'_m and f'_{AAC} for every 5,000 sw. ft. (465 sq. m).	NR	NR	R	Art. 1.4 B
During construction, verification of proportions of materials as delivered to the project site for premixed or preblended mortar, prestressing grout, and grout other than self-consolidating grout.	NR	NR	R	Art. 1.4 B

(a) R = Required, NR = Not Required

STRUCTURAL - MASONRY CONSTRUCTION SECTION (ALL RISK CATEGORIES) (CONTINUED)

MASONRY CONSTRUCTION IBC 1705.4, TMS 602: Table 4					
TASK	Frequency ^(a)			Reference for Criteria	
	Level 1	Level 2	Level 3	TMS 402	TMS 602
1. As masonry construction begins, verify that the following are in compliance:					
a. Proportions of site-prepared mortar	NR	P	P		Art. 2.1, 2.6A, & 2.6C
b. Grade and size of prestressing tendons and anchorages	NR	P	P		Art. 2.4B & 2.4H
c. Grade, type and size of reinforcement, connectors, anchor bolts, and prestressing tendons and anchorages	NR	P	P		Art. 3.4 & 3.6A
d. Prestressing technique	NR	P	P		Art. 3.6B
e. Properties of thin-bed mortar for AAC masonry	NR	C ^(b) /P ^(c)	C		Art. 2.1C.1
f. Sample panel construction	NR	P	C		Art. 1.6D
2. Prior to grouting, verify that the following are in compliance:					
a. Grout space	NR	P	C		Art. 3.2D & 3.2F
b. Placement of prestressing tendons and anchorages	NR	P	P	Sec. 10.8 & 10.9	Art. 2.4 & 3.6
c. Placement of reinforcement, connectors, and anchor bolts	NR	P	C	Sec. 6.1, 6.3.1, 6.3.6, & 6.3.7	Art. 3.2E & 3.4
d. Proportions of site-prepared grout and prestressing grout for bonded tendons	NR	P	P		Art 2.6B & 2.4G.1.b
3. Verify compliance of the following during construction:					
a. Materials and procedures with he approved submittals	NR	P	P		Art. 1.5
b. Placement of masonry units and mortar joint construction	NR	P	P		Art. 3.3B
c. Size and location of structural members	NR	P	P		Art. 3.3F
d. Type, size, and location of anchors, including other details of anchorage of masonry to structural members, frames, or other construction	NR	P	C	Sec. 1.2.1(e), 6.2.1, & 6.3.1	
e. Welding of reinforcement	NR	C	C	Sec. 6.1.6.1.2	
f. Preparation, construction, and protection of masonry during cold weather (temperature below 40°F (4.4°C)) or hot weather (temperature above 90°F (32.2°C))	NR	P	P		Art. 1.8C & 1.8D
g. Application and measurement of prestressing force	NR	C	C		Art. 3.6B
h. Placement of grout and prestressing grout for bonded tendons is in compliance	NR	C	C		Art. 3.5 & 3.6C
i. Placement of AAC masonry units and construction of thin-bed mortar joints	NR	C ^(b) /P ^(c)	C		Art. 3.3B.9 & 3.3F.1.b

4. Observe preparation of grout specimens, mortar specimens, and/or prisms	NR	P	C		Art. 1.4B.2.a.3, 1.4B.2.b.3, 1.4B.2.c.3, 1.4B.3, & 1.4B.4

- (a) Frequency refers to the frequency of inspection, which may be continuous during the listed task or periodically during the listed task, as defined in the table. NR = Not Required, P = Periodic, C = Continuous
- (b) Required for the first 5000 square feet (465 square meters) of AAC masonry.
- (c) Required after the first 500 square feet (465 square meters) of AAC masonry.

END SECTION

STRUCTURAL - WOOD CONSTRUCTION – SPECIALTY ITEMS SECTION**ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED:** ☐

WOOD CONSTRUCTION – VERIFY THE FOLLOWING ARE IN COMPLIANCE 2021 IBC 1705.5		
TASK	INSPECTION TYPE ¹	DESCRIPTION
1. High-load diaphragms where applicable	OBSERVE	Verify thickness and grade of sheathing, size of framing members at panel edges, nail or staple diameters and length, the number of fastener lines and that fastener spacing in each line and at edge margins is per approved contract documents.
2. Metal-plate connected wood trusses spanning 60 feet or greater	OBSERVE	Verify that the temporary installation restraint/bracing and the permanent individual truss member restraint/bracing are installed in accordance with the approved truss submittal package

END SECTION**STRUCTURAL - WOOD CONSTRUCTION - SEISMIC & WIND SECTION****THIS SECTION IS APPLICABLE IF BOX IS CHECKED:** ☐

WOOD CONSTRUCTION SEISMIC AND WIND – VERIFY THE FOLLOWING ARE IN COMPLIANCE 2021 IBC 1705.12.1 & 1705.13.2		
TASK	INSPECTION TYPE ¹	DESCRIPTION
1. Nailing, bolting, anchoring and other fastening of elements of the main wind/seismic force-resisting system	OBSERVE (CONTINUOUS FOR FIELD GLUING)	Includes connectors for: shearwall sheathing, roof/floor sheathing, drag struts/collectors (double top plates), braces, hold downs, roof connections to exterior walls.

END SECTION**STRUCTURAL – ISOLATION AND ENERGY DISSIPATION SYSTEMS SECTION****ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED:** ☐

ISOLATION AND ENERGY DISSIPATION SYSTEMS – VERIFY THE FOLLOWING ARE IN COMPLIANCE 2021 IBC 1705.13.8 & 1705.14.4		
TASK	INSPECTION TYPE ¹	DESCRIPTION
1. Fabrication and installation	OBSERVE	Verify that fabrication and installation of isolator units and energy dissipation devices conform to manufacturer's recommendations and approved construction documents
2. Testing of seismic isolation systems in seismically isolated structures		Seismic Isolation systems in seismically isolated structures shall be tested accordance with ASCE 7, Section 17.8

END SECTION

¹ **OBSERVE:** Observe these items on a random sampling basis daily to insure that applicable requirements are met. Operations need not be delayed pending these inspections at contractor's risk.

GEOTECHNICAL - SOILS INSPECTION SECTION**ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☒**

SOILS INSPECTION – VERIFY THE FOLLOWING ARE IN COMPLIANCE 2021 IBC 1705.6: Table 1705.6		
TASK	INSPECTION TYPE ¹	DESCRIPTION
1. Materials below shallow foundations are adequate to achieve the design bearing capacity.	OBSERVE	
2. Excavations are extended to proper depth and have reached proper material	OBSERVE	
3. Perform classification and testing of compacted fill materials	OBSERVE	
4. Verify use of proper materials and procedures, densities and lift thicknesses during placement and compaction of compacted fill	CONTINUOUS	During fill placement, the special inspector shall verify that proper materials and procedures are used in accordance with the provisions of the approved geotechnical report
5. Prior to placement of compacted fill, inspect subgrade and verify that site has been prepared properly.	OBSERVE	

END SECTION**GEOTECHNICAL - DRIVEN DEEP FOUNDATION ELEMENTS SECTION****ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐**

DEEP DRIVEN FOUNDATION CONSTRUCTION – VERIFY THE FOLLOWING ARE IN COMPLIANCE 2021 IBC 1705.7: Table 1705.7		
TASK	INSPECTION TYPE ¹	DESCRIPTION
1. Verify element materials, sizes and lengths comply with requirements	CONTINUOUS	
2. Inspect driving operations and maintain complete and accurate records for each element	CONTINUOUS	
3. Verify placement locations and plumbness, confirm type and size of hammer, record number of blows per foot of penetration, determine required penetrations to achieve design capacity, record tip and butt elevations and document any damage to foundation element	CONTINUOUS	
4. Determine capacities of test elements and conduct additional load tests if required.	CONTINUOUS	
5. For steel or concrete elements, perform additional special inspections in accordance with the Steel and Concrete sections in this schedule		
6. For specialty elements, perform additional inspections as determined by the registered design professional in responsible charge		Conduct in accordance with Statement of Special Inspections

END SECTION

¹ **OBSERVE:** Observe these items on a random sampling basis daily to insure that applicable requirements are met. Operations need not be delayed pending these inspections at contractor's risk.

CONTINUOUS: Constant monitoring of identified tasks by a special inspector over the duration of performance of said tasks.

GEOTECHNICAL - HELICAL PILE FOUNDATIONS SECTION**ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED:** ☐

HELICAL PILE FOUNDATIONS – VERIFY THE FOLLOWING ARE IN COMPLIANCE
2021 IBC 1705.9

TASK	INSPECTION TYPE ¹	DESCRIPTION
1. Record installation equipment used, pile dimensions, tip elevations, final depth, final installation torque and other pertinent installation data as required. The approved geotechnical report and the contract documents shall be used to determine compliance	CONTINUOUS	

END SECTION**GEOTECHNICAL - CAST IN PLACE DEEP FOUNDATION ELEMENTS SECTION****ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED:** ☐

CAST IN PLACE DEEP FOUNDATION ELEMENTS – VERIFY THE FOLLOWING ARE IN COMPLIANCE
2021 IBC 1705.8: Table 1705.8

TASK	INSPECTION TYPE ¹	DESCRIPTION
1. Inspect drilling operations and maintain complete and accurate records for each element.	CONTINUOUS	
2. Verify placement locations and plumbness, confirm element diameters, bell diameters (if applicable), lengths, embedment into bedrock (if applicable) and adequate end-bearing strata capacity. Record concrete or grout volumes	CONTINUOUS	For concrete elements, perform additional special inspections in accordance with the Concrete section in this schedule

END SECTION

¹ **CONTINUOUS:** Constant monitoring of identified tasks by a special inspector over the duration of performance of said tasks.

FIRE PROTECTION - SPRAYED FIRE-RESISTANT MATERIALS SECTION**ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED:** ☐

SPRAYED FIRE RESISTANT MATERIALS (SFRM) – VERIFY THE FOLLOWING ARE IN COMPLIANCE 2021 IBC 1705.15		
TASK	INSPECTION TYPE ¹	DESCRIPTION
1. Substrate condition	OBSERVE	Prior to application, confirm that surfaces have been prepared according to the approved fire-resistance design and manufacturer's instructions.
2. Material thickness	OBSERVE	Verify SFRM thickness according to 2021 IBC 1705.15.4
3. Material density	OBSERVE	Verify SFRM density according to 2021 IBC 1705.15.5
4. Bond strength	OBSERVE	Verify bond strength of cured SFRM according to 2021 IBC 1705.15.6

END SECTION**FIRE PROTECTION - MASTIC AND INTUMESCENT COATINGS SECTION****ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED:** ☐

MASTIC AND INTUMESCENT FIRE-RESISTANT COATINGS – VERIFY THE FOLLOWING ARE IN COMPLIANCE 2021 IBC 1705.16		
TASK	INSPECTION TYPE ¹	DESCRIPTION
1. Inspect according to AWCI 12-B and the contract documents	OBSERVE	Inspections shall be performed in accordance with AWCI 12-B, Standard Practice for the Testing and Inspection of Field Applied Thin Film Intumescent Fire-Resistive Materials.

END SECTION**FIRE PROTECTION – FIRE RESISTANT PENETRATIONS AND JOINTS SECTION****ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED:** ☒

FIRE RESISTANT PENETRATIONS AND JOINTS – VERIFY THE FOLLOWING ARE IN COMPLIANCE 2021 IBC 1705.18.1 and 1705.18.2		
TASK	INSPECTION TYPE ¹	DESCRIPTION
1. Inspections of penetration firestop systems conducted in accordance with ASTM E 2174.	OBSERVE	
2. Inspections of fire-resistant joint systems conducted in accordance with ASTM E 2393	OBSERVE	

END SECTION

¹ **OBSERVE:** Observe these items on a random sampling basis daily to insure that applicable requirements are met. Operations need not be delayed pending these inspections at contractor's risk.

FIRE PROTECTION – SMOKE CONTROL SECTION**ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED:** ☐**SMOKE CONTROL – VERIFY THE FOLLOWING ARE IN COMPLIANCE**
2021 IBC 1705.19

TASK	INSPECTION TYPE ¹	DESCRIPTION
1. Verify device locations and perform leakage testing	OBSERVE	Perform during erection of ductwork and prior to concealment
2. Pressure difference testing, flow measurements and detection and control verification	OBSERVE	Perform prior to occupancy and after sufficient completion

END SECTION

¹ **OBSERVE:** Observe these items on a random sampling basis daily to insure that applicable requirements are met. Operations need not be delayed pending these inspections at contractor's risk.

ARCHITECTURAL - EXTERIOR INSULATION AND FINISH SYSTEMS SECTION**ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED:** ☐

EXTERIOR INSULATION AND FINISH SYSTEMS (EIFS) – VERIFY THE FOLLOWING ARE IN COMPLIANCE 2021 IBC 1705.17		
TASK	INSPECTION TYPE ¹	DESCRIPTION
1. Water resistive barrier coating applied over a sheathing substrate.	OBSERVE	Verify that water resistive barrier coating complies with ASTM E 2570.

END SECTION**ARCHITECTURAL – ARCHITECTURAL COMPONENTS****ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED:** ☒

ARCHITECTURAL COMPONENTS – VERIFY THE FOLLOWING ARE IN COMPLIANCE 2021 IBC 1705.13.5, 1705.13.7: Table 1705.13.7		
TASK	INSPECTION TYPE ¹	DESCRIPTION
1. Erection and fastening of exterior cladding and interior and exterior veneer.	OBSERVE	Verify appropriate materials, fasteners and attachment at commencement of work and at completion. Inspector Note: Inspection not required if height is less than 30 feet or weight is 5psf or less
2. Interior and exterior non-load bearing walls	OBSERVE	Verify appropriate materials, fasteners and attachment at commencement of work and at completion. Inspector Note: Inspection not required if height is less than 30 feet or interior non-load bearing walls weigh 15psf or less
3. Access floors	OBSERVE	Verify that anchorage complies with approved construction documents.
4. Storage racks 8 feet in height or greater and assigned to Seismic Design Category D, E or F	OBSERVE	✓ Verify materials used comply with one or more of the material test reports in accordance with approved construction documents. ✓ Verify fabricated storage rack elements ✓ Verify storage rack anchorage installation. See other sections within this schedule for additional special inspection requirements based on the type of anchorage used. ✓ Verify completed storage rack system is in compliance with approved construction documents.

END SECTION

¹ **OBSERVE:** Observe these items on a random sampling basis daily to insure that applicable requirements are met. Operations need not be delayed pending these inspections at contractor's risk.

PLUMBING/MECHANICAL/ELECTRICAL DESIGNATED SEISMIC SYSTEMS SECTION

ALL OR PORTIONS OF THIS SECTION ARE APPLICABLE IF BOX IS CHECKED: ☐

PLUMBING, MECHANICAL AND ELECTRICAL 2021 IBC 1705.13.6		
TASK	INSPECTION TYPE ¹	DESCRIPTION
1. Anchorage of electrical equipment for emergency and standby power systems in structures assigned to Seismic Design Category C, D, E or F.	OBSERVE	✓ Check for general conformance
2. Anchorage of all other electrical equipment in Seismic Design Categories E and F only (See first page of this schedule for Seismic Design Category)	OBSERVE	✓ Check for general conformance
3. Installation and anchorage of piping systems designed to carry hazardous materials and their associated mechanical units. For Seismic Design Category C, D, E, or F.	OBSERVE	✓ Check for general conformance
4. Installation and anchorage of ductwork designed to carry hazardous materials in structures. For Seismic Design Category C, D, E, or F.	OBSERVE	✓ Check for general conformance
5. Installation and anchorage of vibration isolation systems where the construction documents require a nominal clearance of ¼" or less between support framing and restraint. For Seismic Design Category C, D, E, or F.	OBSERVE	✓ Check for general conformance
6. Installation of mechanical and electrical equipment, including duct work, piping systems and their structural supports, where automatic sprinkler systems are installed in structures assigned to Seismic Design Category C, D, E or F to verify one of the following:	OBSERVE	✓ Minimum clearances noted in Section 13.2.3, ASCE7/SEI 7 ✓ A nominal clearance of not less than 3 inches has been provided between automatic sprinkler system drops and sprigs and: structural members not used collectively or independently to support the sprinklers; equipment attached to the building structure; and other systems' piping.

END SECTION

¹ **OBSERVE:** Observe these items on a random sampling basis daily to insure that applicable requirements are met. Operations need not be delayed pending these inspections at contractor's risk.

Contractor's Statement of Responsibility

Each Fabricator or Contractor or Supplier responsible for the construction or fabrication of a system or component designated in the Statement of Special Inspections shall submit this Statement of Responsibility.

Project:

Contractor's **or** Supplier's Name:

Address:

License No.:

Description of designated building systems and components included in the Statement of Responsibility:

Acknowledgment of Special Requirements

I hereby acknowledge that I have received, read, and understand the Building Code Required Special Inspections and Tests program and the Schedule of Special Inspections.

I hereby acknowledge that control will be exercised to obtain conformance with the construction documents approved by the Authority Having Jurisdiction.

Signature

Date

Title

Provisions for Quality Control

Procedures for exercising control within the Fabricator's **or** Contractor's **or** Supplier's organization, the method and frequency of reporting and the distribution of reports are attached to this Statement.

Identification and qualifications of the person(s) exercising such control and their position(s) in the organization are attached to this Statement.

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SECTION 01 50 00

TEMPORARY CONSTRUCTION FACILITIES AND CONTROLS

11/20, CHG 2: 08/22

PART 1 GENERAL

1.1 REFERENCES

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

AMERICAN WATER WORKS ASSOCIATION (AWWA)

AWWA C511 (2017; R 2021) Reduced-Pressure Principle
Backflow Prevention Assembly

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 70 (2026) National Electrical Code

NFPA 241 (2022) Standard for Safeguarding
Construction, Alteration, and Demolition
Operations

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1 (2024) Safety -- Safety and Occupational
Health (SOH) Requirements Manual

U.S. FEDERAL HIGHWAY ADMINISTRATION (FHWA)

MUTCD (2009; Rev 2012) Manual on Uniform Traffic
Control Devices

1.2 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Construction Site Plan; G

Traffic Control Plan; G

Haul Road Plan; G

Contractor Computer Cybersecurity Compliance Statements; G

Contractor Temporary Network Cybersecurity Compliance Statements; G

SD-03 Product Data

Backflow Preventers; G

SD-06 Test Reports

Backflow Preventer Tests

SD-07 Certificates

Backflow Tester Certification

Backflow Preventers Certificate of Full Approval

1.3 CONSTRUCTION SITE PLAN

Prior to the start of work, submit for Government approval 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 any 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

1.4.1 Backflow Tester Certificate

Prior to testing, submit to the Contracting Officer certification issued by the State or local regulatory agency attesting that the backflow tester has successfully completed a certification course sponsored by the regulatory agency. Tester must not be affiliated with a company participating in other phases of this Contract.

1.4.2 Backflow Prevention Training Certificate

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 DOD CONDITION OF READINESS (COR)

DOD will set the Condition of Readiness (COR) based on the weather forecast for sustained winds 50 knots (58 mph) or greater. Contact the Contracting Officer for the current COR setting.

Monitor weather conditions a minimum of twice a day and take appropriate actions according to the approved Emergency Plan in the accepted Accident Prevention Plan, EM 385-1-1 Section 01 Emergency Planning and the instructions below.

Unless otherwise directed by the Contracting Officer, comply with:

- a. Condition FOUR (Sustained winds of 58 mph or greater expected within 72 hours): Normal daily jobsite cleanup and good housekeeping practices. Collect and store in piles or containers scrap lumber, waste material, and rubbish for removal and disposal at the close of each work day. Maintain the construction site including storage

areas, free of accumulation of debris. Stack form lumber in neat piles less than 3.3 feet high. Remove all debris, trash, or objects that could become missile hazards. Review requirements pertaining to "Condition THREE" and continue action as necessary to attain "Condition FOUR" readiness. Contact Contracting Officer for weather and COR updates and completion of required actions.

- b. Condition THREE (Sustained winds of 58 mph or greater expected within 48 hours): Maintain "Condition FOUR" requirements and commence securing operations necessary for "Condition 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. Reinforce or remove formwork and scaffolding. Secure machinery, tools, equipment, materials, or remove from the jobsite. Expend every effort to clear all missile hazards and loose equipment from general base areas. Contact Contracting Officer for weather and COR updates and completion of required actions. Review requirements pertaining to "Condition TWO" and continue action as necessary to attain "Condition THREE" readiness.
- c. Condition TWO (Sustained winds of 58 mph or greater expected within 24 hours): Secure the jobsite, and leave Government premises.
- d. Condition ONE. (Sustained winds of 58 mph or greater expected within 12 hours): Contractor access to the jobsite and Government premises is prohibited.

1.6 CYBERSECURITY DURING CONSTRUCTION

{For Reference Only: This subpart (and its subparts) relates to AC-18, SA-3, CCI-00258.} Meet the following requirements throughout the construction process.

1.6.1 Contractor Computer Equipment

Contractor owned computers may be used for construction. When used, contractor computers must meet the following requirements:

1.6.1.1 Operating System

The operating system must be an operating system currently supported by the manufacturer of the operating system. The operating system must be current on security patches and operating system manufacturer required updates.

1.6.1.2 Anti-Malware Software

The computer must run anti-malware software from a reputable software manufacturer. Anti-malware software must be a version currently supported by the software manufacturer, must be current on all patches and updates, and must use the latest definitions file. All computers used on this project must be scanned using the installed software at least once per day.

1.6.1.3 Passwords and Passphrases

The passwords and passphrases for all computers must be changed from their default values. Passwords must be a minimum of eight characters with a

minimum of one uppercase letter, one lowercase letter, one number and one special character.

1.6.1.4 Contractor Computer Cybersecurity Compliance Statements

Provide a single submittal containing completed Contractor Computer Cybersecurity Compliance Statements for each company using contractor owned computers. Contractor Computer Cybersecurity Compliance Statements must use the template published at <http://www.wbdg.org/ffc/dod/unified-facilities-guide-specifications-ufgs/forms-graphics-tables>. Each Statement must be signed by a cybersecurity representative for the relevant company.

1.6.2 Temporary IP Networks

Temporary contractor-installed IP networks may be used during construction. When used, temporary contractor-installed IP networks must meet the following requirements:

1.6.2.1 Network Boundaries and Connections

The network must not extend outside the project site and must not connect to any IP network other than IP networks provided under this project or Government furnished IP networks provided for this purpose. Any and all network access from outside the project site is prohibited.

1.6.3 Government Access to Network

Government personnel, as defined, prescribed, and identified by the Contracting Officer, must be allowed to have complete and immediate access to the network at any time in order to verify compliance with this specification. Or if there is a Government agency that's responsible, identify that agency.

1.6.4 Temporary Wireless IP Networks

In addition to the other requirements on temporary IP networks, temporary wireless IP (WiFi) networks must not interfere with existing wireless network and must use WPA2 security. Network names (SSID) for wireless networks must be changed from their default values.

1.6.5 Passwords and Passphrases

The passwords and passphrases for all network devices and network access must be changed from their default values. Passwords must be a minimum 8 characters with a minimum of one uppercase letter, one lowercase letter, one number and one special character.

1.6.6 Contractor Temporary Network Cybersecurity Compliance Statements

Provide a single submittal containing completed Contractor Temporary Network Cybersecurity Compliance Statements for each company implementing a temporary IP network. Contractor Temporary Network Cybersecurity Compliance Statements must use the template published at <http://www.wbdg.org/ffc/dod/unified-facilities-guide-specifications-ufgs/forms-graphics-tables>. Each Statement must be signed by a cybersecurity representative for the relevant company. If no temporary IP networks will be used, provide a single copy of the Statement indicating this.

PART 2 PRODUCTS

2.1 TEMPORARY SIGNAGE

2.1.1 Bulletin Board

Prior to the commencement of work activities, provide a clear weatherproof 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, Safety and Health Information as required by EM 385-1-1 Section 01 and other information approved by the Contracting Officer. Coordinate requirements herein with 01 35 26 GOVERNMENTAL SAFETY REQUIREMENTS. Locate the bulletin board at the project site in a conspicuous place easily accessible to all employees, and in location as approved by the Contracting Officer.

2.1.2 Project Identification Signs

The requirements for the signs, their content, and location are . 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.

2.1.3 Warning Signs

Post temporary signs, tags, and labels to give workers and the public adequate warning and caution of construction hazards according to the EM 385-1-1 Section 04. Attach signs to the perimeter fencing every 150 feet warning the public of the presence of construction hazards. Signs must require unauthorized persons to keep out of the construction site. Correct the data required by safety signs daily. Post signs at all points of entry designating the construction site as a hard hat area.

2.2 TEMPORARY TRAFFIC CONTROL

2.2.1 Haul Roads

Construct access and haul roads necessary for proper prosecution of the work under this Contract in accordance with EM 385-1-1 Section 04. Construct with suitable grades and widths; avoid sharp curves, blind corners, and dangerous cross traffic. Submit haul road plan for approval. 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 operation at all times. Location, grade, width, and alignment of construction and haul roads are subject to approval by the Contracting Officer. Lighting must be adequate to assure full and clear visibility for full width of haul road and work areas during any night work operations.

2.2.2 Barricades

Erect and maintain temporary barricades to limit public access to hazardous areas. Barricades are required 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. Securely place barricades clearly visible with adequate illumination to provide sufficient visual warning of the hazard during both day and night.

2.3 FENCING

Provide fencing along the construction site and at all open excavations and tunnels to control access by unauthorized personnel. Safety fencing must be highly visible to be seen by pedestrians and vehicular traffic. All fencing must meet the requirements of EM 385-1-1. Remove the fence upon completion and acceptance of the work.

2.3.1 Post-Driven Chain Link Fencing

Temporary post-driven fencing must be galvanized chain link fencing 6 feet high supported by an tightly secured to galvanized steel posts driven below grade. Fence posts must be located on minimum 10 foot centers. Posts may be set in various surfaces such as sand, soil, asphalt or concrete as necessary. Chain link fencing must remain rigid and taut with a minimum of 200 pounds of force exerted on it from any direction with less than 4 inches of deflection. Completely remove fencing and posts at the completion of construction and restore surfaces disturbed or damaged to its original condition. Locate and identify underground utilities prior to setting fence posts. Equip fence with a lockable gate. Gate must remain locked when construction personnel are not present.

2.4 TEMPORARY WIRING

Provide temporary wiring in accordance with EM 385-1-1 Section 11, NFPA 241 and NFPA 70. Include monthly inspection and testing of all equipment and apparatus.

2.5 BACKFLOW PREVENTERS

Certificate of Full Approval from FCCCHR List, University of Southern California, attesting that the design, size and make of each backflow preventer has satisfactorily passed the complete sequence of performance testing and evaluation for the respective level of approval. Certificate of Provisional Approval is not acceptable.

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

PART 3 EXECUTION

3.1 EMPLOYEE PARKING

Construction Contract employees must park privately owned vehicles in an area designated by the Contracting Officer. Employee parking must not interfere with existing and established parking requirements of the Government installation.

3.2 TRAFFIC PROVISIONS

3.2.1 Maintenance of Traffic

- a. Conduct operations in a manner that will not close a thoroughfare or interfere 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

for Government approval 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. 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 Contractor's expense, lights, barriers, signals, passageways, detours, and other items, that may be required by the Life Safety Signage, overhead protection authority having jurisdiction.
- d. Provide cones, signs, barricades, lights, or other traffic control devices and personnel required to control traffic. Do not use foil-backed material for temporary pavement marking because of its potential to conduct electricity during accidents involving downed power lines.

3.2.2 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. Provide self-illuminated (lighted) barricades during hours of darkness. Brightly-colored (orange) vests are required for all personnel working in roadways. 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 damage to roads caused by construction operations.

3.2.3 Dust Control

Dust control methods and procedures must be approved by the Contracting Officer. Coordinate dust control methods with 01 57 19 TEMPORARY ENVIRONMENTAL CONTROLS.

3.3 REDUCED PRESSURE BACKFLOW PREVENTERS

Provide an approved reduced pressure backflow prevention assembly at each location where the Contractor taps into the Government potable water supply.

Perform backflow preventer tests using test equipment, procedures, and certification forms conforming to those outlined in the latest edition of the Manual of Cross-Connection Control published by the FCCCHR Manual. Test and tag each reduced pressure backflow preventer upon initial installation (prior to continued water use) and monthly thereafter. Tag must contain the following information: make, model, serial number, dates of tests, results, maintenance performed, and signature of tester.

Record test results on certification forms conforming to requirements cited earlier in this paragraph.

3.4 CONTRACTOR'S TEMPORARY FACILITIES

Contractor is responsible for security of their property. Provide adequate outside security lighting at the temporary facilities. Trailers must be anchored to resist high winds and meet applicable state or local standards for anchoring mobile trailers. Coordinate anchoring with EM 385-1-1 Section 04. The Contract Clause entitled "FAR 52.236-10, Operations and Storage Areas" and the following apply:

3.4.1 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.

In the event a new building is constructed for the temporary project field office, it must 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. Provide approved sanitary facilities. Screen the windows and doors and provide the doors with deadbolt type locking devices or a padlock and heavy-duty hasp bolted to the door. Door hinge pins must 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, provide 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. Unless otherwise directed by the Contracting Officer, remove the building from the site upon completion and acceptance of the work.

3.4.2 Appearance of Trailers

- a. Trailers must be roadworthy and comply with all appropriate state and local vehicle requirements. Trailers which are rusted, have peeling paint or are otherwise in need of repair will not be allowed on Installation property. Trailers must present a clean and neat exterior appearance and be in a state of good repair.
- b. Maintain the temporary facilities. Failure to do so will be sufficient reason to require their removal at the Contractor's expense.

3.4.3 Safety Systems

Protect the integrity of all installed safety systems or personnel safety devices. Obtain prior approval from the Contracting Officer if entrance into systems serving safety devices is required. 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.

3.4.4 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.

3.4.4.1 Building and Site Storm Protection

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

3.5 TEMPORARY PROJECT FENCING

As soon as practicable, but not later than 15 days after the date established for commencement of work, furnish and erect temporary project safety fencing at the work site. Maintain the safety fencing during the life of the Contract and, upon completion and acceptance of the work, remove from the work site.

3.6 CLEANUP

Remove construction debris, waste materials, packaging material and the like from the work site daily. Any dirt or mud which is tracked onto paved or surfaced roadways must be cleaned away. Store all salvageable materials resulting from demolition activities within the fenced area described above or at the supplemental storage area. Neatly stack stored materials not in trailers, whether new or salvaged.

3.7 RESTORATION OF STORAGE AREA

Upon completion of the project remove the bulletin board, signs, barricades, haul roads, and all other temporary products from the site. After removal of trailers, materials, and equipment from within the fenced area, remove the fence. Restore areas used during the performance of the Contract 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.

-- End of Section --

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SECTION 01 57 19

TEMPORARY ENVIRONMENTAL CONTROLS - EGLIN STANDARD
08/22, CHG 2: 08/25

PART 1 GENERAL

1.1 REFERENCES

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

U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)

EPA SW-846 (Third Edition; Update VII) Test Methods
for Evaluating Solid Waste:
Physical/Chemical Methods

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

29 CFR 1910.1053	Respirable Crystalline Silica
29 CFR 1910.1200	Hazard Communication
29 CFR 1926.1153	Respirable Crystalline Silica
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
40 CFR 82	Protection of Stratospheric Ozone
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 262.11	Hazardous Waste Determination and Recordkeeping
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 273.2	Standards for Universal Waste Management - Batteries
40 CFR 273.3	Standards for Universal Waste Management - Pesticides
40 CFR 273.4	Standards for Universal Waste Management - Mercury Containing Equipment
40 CFR 273.5	Standards for Universal Waste Management - Lamps
40 CFR 273.6	Applicability - Aerosol Cans
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 372	Toxic Chemical Release Reporting
40 CFR 403	General Pretreatment Regulations for

Existing and New Sources of Pollution

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 172.101	Hazardous Material Regulation-Purpose and Use of Hazardous Material Table
49 CFR 173	Shippers - General Requirements for Shipments and Packagings
49 CFR 178	Specifications for Packagings

1.2 DEFINITIONS

1.2.1 Class I and II Ozone Depleting Substance (ODS)

Class I ODS is defined in Section 602(a) of The Clean Air Act. A list of Class I ODS can be found on the EPA website at the following weblink.
<https://www.epa.gov/ozone-layer-protection/ozone-depleting-substances>.

Class II ODS is defined in Section 602(s) of The Clean Air Act. A list of Class II ODS can be found on the EPA website at the following weblink.
<https://www.epa.gov/ozone-layer-protection/ozone-depleting-substances>.

1.2.2 Contractor Generated Hazardous Waste

Contractor generated hazardous waste is materials that, if abandoned or disposed of, may meet the definition of a hazardous waste. These waste streams would typically consist of material brought on site by the Contractor to execute work, but are not fully consumed during the course of construction. Examples include, but are not limited to, excess paint thinners (i.e., methyl ethyl ketone, toluene), waste thinners, excess paints, excess solvents, waste solvents, excess pesticides, and contaminated pesticide equipment rinse water.

1.2.3 Electronics Waste

Electronics waste is discarded electronic devices intended for salvage, recycling, or disposal.

1.2.4 Environmental Pollution and Damage

Environmental pollution and damage is the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human life; affect other species of importance to humankind; or degrade the environment aesthetically, culturally or historically.

1.2.5 Environmental Protection

Environmental protection is the prevention/control of pollution and habitat disruption that may occur to the environment during construction. The control of environmental pollution and damage requires consideration

of land, water, and air; biological and cultural resources; and includes management of visual aesthetics; noise; solid, chemical, gaseous, and liquid waste; radiant energy and radioactive material as well as other pollutants.

1.2.6 Hazardous Debris

As defined in paragraph SOLID WASTE, debris that contains listed hazardous waste (either on the debris surface, or in its interstices, such as pore structure) in accordance with 40 CFR 261. Hazardous debris also includes debris that exhibits a characteristic of hazardous waste in accordance with 40 CFR 261.

1.2.7 Hazardous Materials

Hazardous material is any material that: Is defined in 49 CFR 171, listed in 49 CFR 172, regulated as a hazardous material in accordance with 49 CFR 173; or requires a Safety Data Sheet (SDS) in accordance with 29 CFR 1910.1200; or during end use, treatment, handling, packaging, storage, transportation, or disposal meets or has components that meet or have potential to meet the definition of a hazardous waste as defined by 40 CFR 261 Subparts A, B, C, or D. Designation of a material by this definition, when separately regulated or controlled by other sections or directives, does not eliminate the need for adherence to that hazard-specific guidance which takes precedence over this section for "control" purposes. Such material includes ammunition, weapons, explosive actuated devices, propellants, pyrotechnics, chemical and biological warfare materials, medical and pharmaceutical supplies, medical waste and infectious materials, bulk fuels, radioactive materials, and other materials such as asbestos, mercury, and polychlorinated biphenyls (PCBs).

1.2.8 Hazardous Waste

Hazardous Waste is any material that meets the definition of a solid waste and exhibits 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, or meets a state, local, or host nation definition of a hazardous waste.

1.2.9 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.

1.2.10 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.

1.2.11 Municipal Separate Storm Sewer System (MS4) Permit

MS4 permits are those held by municipalities or installations to obtain NPDES permit coverage for their stormwater discharges.

1.2.12 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.

1.2.13 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.

1.2.14 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.

1.2.15 Pesticide Treatment Plan

A plan for the prevention, monitoring, and control to eliminate pest infestation.

1.2.16 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.

1.2.17 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.

1.2.18 Regulated Waste

Regulated waste are solid wastes that have specific additional federal, state, or local controls for handling, storage, or disposal.

1.2.19 Sediment

Sediment is soil and other debris that have eroded and have been transported by runoff water or wind.

1.2.20 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:

1.2.20.1 Debris

Debris is non-hazardous solid material generated during the construction, demolition, or renovation of a structure that exceeds 2.5-inch particle size that is: a manufactured object; plant or animal matter; or natural geologic material (for example, cobbles and boulders), broken or removed concrete, masonry, and rock asphalt paving; ceramics; roofing paper and shingles. Inert materials may be reinforced with or contain ferrous wire, rods, accessories and weldments. A mixture of debris and other material such as soil or sludge is also subject to regulation as debris if the mixture is comprised primarily of debris by volume, based on visual inspection.

1.2.20.2 Clean Construction and Demolition Debris (CCDD)

As defined by the Illinois Environmental Protection Agency, CCDD is uncontaminated broken concrete without protruding metal bars, bricks, rock, stone, or reclaimed asphalt pavement generated from construction or demolition activities. When uncontaminated soil is mixed with any of these materials, the uncontaminated soil is considered CCDD.

1.2.20.3 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.

1.2.20.4 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.

1.2.20.5 Non-Hazardous Waste

Non-hazardous waste is waste that is excluded from, or does not meet, hazardous waste criteria in accordance with 40 CFR 261.

1.2.20.6 Recyclables

Recyclables are materials, equipment and assemblies such as doors, windows, door and window frames, plumbing fixtures, glazing and mirrors

that are recovered and sold as recyclable, wiring, insulated/non-insulated copper wire cable, wire rope, and structural components. It also includes commercial-grade refrigeration equipment with Freon removed, household appliances where the basic material content is metal, clean polyethylene terephthalate bottles, cooking oil, used fuel oil, textiles, high-grade paper products and corrugated cardboard, stackable pallets in good condition, clean crating material, and clean rubber/vehicle tires. Metal meeting the definition of "lead contaminated" or "lead based paint contaminated" may be included as recyclable only if the metal is handled and transported in accordance with regulations, and the facility receiving the material is permitted and authorized to accept and process lead contaminated materials. 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.

1.2.20.7 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.

1.2.20.8 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.

1.2.20.9 Wood

Wood is dimension and non-dimension lumber, plywood, chipboard, hardboard. Treated or painted wood that meets the definition of lead contaminated or lead based contaminated paint is not included. Treated wood includes, but is not limited to, lumber, utility poles, crossties, and other wood products with chemical treatment.

1.2.21 Surface Discharge

Surface discharge means discharge of water into drainage ditches, storm sewers, or creeks meeting the definition of "waters of the United States". Surface discharges from construction sites are discrete, identifiable sources and require a permit from the governing agency. Comply with federal, state, and local laws and regulations.

1.2.22 Wastewater

Wastewater is the aqueous liquid waste generated by a project, to include both domestic wastewater (sewage) and industrial wastewater.

1.2.22.1 Stormwater

Stormwater is any precipitation in an urban or suburban area that does not evaporate or soak into the ground, but instead collects and flows into storm drains, rivers, and streams.

1.2.23 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.

1.2.24 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.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are for Contractor Quality Control approval. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

- UXO Recognition Plan and Training; G
- Preconstruction Survey
- Regulatory Notifications
- Environmental Manager Qualifications
- Employee Training Records
- Environmental Protection Plan; G,
- Dirt and Dust Control Plan
- Solid Waste Management Permit
- Stormwater Pollution Prevention Plan (SWPPP); G,
- Stormwater Notice of Intent (for NPDES coverage under the general permit for construction activities)
- Spill Prevention Control And Countermeasure (SPCC) Plan; G,

SD-06 Test Reports

- Monthly Solid Waste Disposal Report; G,
- Inspection Reports
- Laboratory Analysis

SD-07 Certificates

- Employee Training Records; G,
- Erosion and Sediment Control Inspector Qualifications

SD-11 Closeout Submittals

Regulatory Notifications; G,
Assembled Employee Training Records; G,
Solid Waste Management Permit; G,
Stormwater Notice of Termination (for NPDES coverage under the
general permit for construction activities); G,

Waste Determination Documentation; G,
Project Solid Waste Disposal Documentation Report; G,
Sales Documentation; G,
Hazardous Waste/Debris Management; G,
Disposal Documentation for Hazardous and Regulated Waste; G,

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. Special environmental requirements and additional details can be found in the attached Air Force Form 813, RCS 22-171, REQUEST FOR ENVIRONMENTAL IMPACT ANALYSIS, signed 06 JUN 2024 that is included in the Appendices of this design package.

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.

1.4.1 Conformance with the Environmental Management System

Perform work under this contract consistent with the policy and objectives identified in the installation's Environmental Management System (EMS). Perform work in a manner that conforms to objectives and targets of the environmental programs and operational controls identified by the EMS. Support Government personnel when environmental compliance and EMS audits are conducted by escorting auditors at the Project site, answering questions, and providing proof of records being maintained. Provide monitoring and measurement information as necessary to address environmental performance relative to environmental, energy, and transportation management goals. In the event an EMS nonconformance or environmental noncompliance associated with the contracted services,

tasks, or actions occurs, take corrective and preventative actions. In addition, employees must be aware of their roles and responsibilities under the installation EMS and of how these EMS roles and responsibilities affect work performed under the contract.

Coordinate with the installation's EMS coordinator to identify training needs associated with environmental aspects and the EMS, and arrange training or take other action to meet these needs. Provide training documentation to the Contracting Officer. The Installation Environmental Office will retain associated environmental compliance records. Make EMS Awareness training completion certificates available to Government auditors during EMS audits and include the certificates in the Employee Training Records. See paragraph EMPLOYEE TRAINING RECORDS.

1.5 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 at least 30 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) or equipment local requirement.

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. Ensure every employee completes a program of classroom instruction or on-the-job training that teaches them to perform their duties in a way that ensures compliance with federal, state and local regulatory requirements for RCRA Large Quantity Generator. Provide a Position Description for each employee, by subcontractor, based on the Davis-Bacon Wage Rate designation or other equivalent method, evaluating the employee's association with hazardous and regulated wastes. This Position Description will include training requirements as defined in 40 CFR 265 for a Large Quantity Generator facility. Submit these Assembled Employee Training Records to the Contracting Officer at the conclusion of the project, unless otherwise directed.

Train personnel to meet EPA and state requirements. Conduct environmental protection/pollution control meetings for personnel prior to commencing construction activities. Conduct additional meetings for new personnel and when site conditions change. Include in the training and meeting agenda: methods of detecting and avoiding pollution; familiarization with statutory and contractual pollution standards; installation and care of devices, vegetative covers, and instruments required for monitoring purposes to ensure adequate and continuous environmental protection/pollution control; anticipated hazardous or toxic chemicals or wastes, and other regulated contaminants; recognition and protection of archaeological sites, artifacts, waters of the United States, and endangered species and their habitat that are known to be in the area. Provide copy of the Erosion and Sediment Control Inspector Certification as required by the state of Florida.

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. FAR 52.242-14 Suspension of Work provides that a suspension, delay, or interruption of work due to the fault or negligence of the Contractor allows for no adjustments to the contract for time extensions or equitable adjustments. In addition to a suspension of work, the Contracting Officer may use additional authorities under the contract or law. The Prime Contractor will have the sole responsibility to ensure all their subcontractors comply with all environmental protection requirements of this specification section.

1.6 UXO Recognition Plan and Training

Reference information below and also in SECTION 01 00 00 ADDITIONAL SPECIAL CONTRACT REQUIREMENTS for specific requirements. David Lee in Eglin EOD/UXO/Explosive Safety stated in an email on October 29, 2024 the following regarding UXO. "There are no UXO hazards for the proposed site." Mr. Lee's telephone number is 850-346-6052. The Contractor shall submit a plan describing the training and response if suspect items are encountered.

1.7 ENVIRONMENTAL PROTECTION PLAN

The purpose of the EPP is to present an overview of known or potential environmental issues that must be considered and addressed during construction. Incorporate construction related objectives and targets from the installation's EMS into the EPP. Include in the EPP measures for protecting natural and cultural resources, required reports, and other measures to be taken. Meet with the Contracting Officer or Contracting Officer Representative to discuss the EPP and develop a mutual understanding relative to the details for environmental protection including measures for protecting natural resources, required reports, and other measures to be taken. Submit the EPP within 15 days after notice to proceed and not less than 10 days before the preconstruction meeting. Revise the EPP throughout the project to include any reporting requirements, changes in site conditions, or contract modifications that change the project scope of work in a way that could have an environmental impact. No requirement in this section will relieve the Contractor of any applicable federal, state, and local environmental protection laws and regulations. During Construction, identify, implement, and submit for approval any additional requirements to be included in the EPP. Maintain the current version onsite. Reference the attached Air Force Form 813, RCS 22-171, REQUEST FOR ENVIRONMENTAL IMPACT ANALYSIS, paragraph 18.0 REMARKS, for environmental issues.

The EPP includes, but is not limited to, the following elements:

1.7.1 General Overview and Purpose

1.7.1.1 Descriptions

A brief description of each specific plan required by environmental permit or elsewhere in this Contract such as stormwater pollution prevention plan, spill control plan, solid waste management plan, wastewater management plan, air pollution control plan, contaminant prevention plan, pesticide treatment plan, a historical, archaeological, cultural resources, biological resources and wetlands plan, traffic control plan Hazardous, Toxic and Radioactive Waste (HTRW) Plan Non-Hazardous Solid Waste Disposal Plan and borrowing material plan.

1.7.1.2 Duties

The duties and level of authority assigned to the person(s) on the job site who oversee environmental compliance, such as who is responsible for adherence to the EPP, who is responsible for spill cleanup and training personnel on spill response procedures, who is responsible for manifesting hazardous waste to be removed from the site (if applicable), and who is responsible for training the Contractor's environmental protection personnel.

1.7.1.3 Procedures

A copy of any standard or project-specific operating procedures that will be used to effectively manage and protect the environment on the project site.

1.7.1.4 Communications

Communication and training procedures that will be used to convey environmental management requirements to Contractor employees and subcontractors.

1.7.1.5 Contact Information

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

1.7.2 General Site Information

1.7.2.1 Drawings

Drawings showing locations of proposed temporary excavations or embankments for haul roads, stream crossings, jurisdictional wetlands, material storage areas, structures, sanitary facilities, storm drains and conveyances, and stockpiles of excess soil.

1.7.2.2 Work Area

Work area plan showing the proposed activity in each portion of the area and identify the areas of limited use or nonuse. Include measures for marking the limits of use areas, including methods for protection of features to be preserved within authorized work areas and methods to control runoff and to contain materials on site, and a traffic control plan.

Show where any fuels, hazardous substances, solvents, or lubricants will

be stored. Provide a spill plan to address any releases of those materials.

1.7.3 Management of Natural Resources

- a. Land resources
- b. Tree protection
- c. Replacement of damaged landscape features
- d. Temporary construction
- e. Stream crossings
- f. Fish and wildlife resources
- g. Wetland areas

1.7.4 Protection of Historical and Archaeological Resources

- a. Objectives
- b. Methods

1.7.5 Stormwater Management and Control

- a. Ground cover
- b. Erodible soils
- c. Temporary measures
 - (1) Structural Practices
 - (2) Temporary and permanent stabilization
- d. Effective selection, implementation and maintenance of Best Management Practices (BMPs).
- e. Stormwater Pollution Prevention Plan (SWPPP).

1.7.6 Protection of the Environment from Waste Derived from Contractor Operations

This item consists of the management procedures for hazardous waste to be generated. The elements of those procedures will coincide with the Installation Hazardous Waste Management Plan when within an installation. The Contracting Officer will provide a copy of the Installation Hazardous Waste Management Plan as applicable.

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). The contractor shall provide applicable landfill tipping fee(s) and the projected cost of disposing of all project waste in the landfill(s)
- f. Management procedures and regulatory documentation ensuring disposal of hazardous waste complies with Land Disposal Restrictions (40 CFR 268)
- g. Management procedures for recyclable hazardous materials such as lead-acid batteries, used oil, and similar
- h. Used oil management procedures in accordance with 40 CFR 279; Hazardous waste minimization procedures
- i. Plans for the disposal of hazardous waste by permitted facilities; and Procedures to be employed to ensure required employee training records are maintained.

1.7.7 Prevention of Releases to the Environment

Procedures to prevent releases to the environment

Notifications in the event of a release to the environment

1.7.8 Regulatory Notification and Permits

List what notifications and permit applications must be made. Some permits require up to 180 days to obtain. Demonstrate that those permits have been obtained or applied for by including copies of applicable environmental permits. The EPP will not be approved until the permits have been obtained.

1.7.9 Clean Air Act Compliance

1.7.9.1 Haul Route

Submit truck and material haul routes along with a Dirt and Dust Control Plan for controlling dirt, debris, and dust on Installation roadways. As a minimum, identify in the plan the subcontractor and equipment for cleaning along the haul route and measures to reduce dirt, dust, and debris from roadways.

1.7.9.2 Pollution Generating Equipment

Identify air pollution generating equipment or processes that may require federal, state, or local permits under the Clean Air Act. Determine requirements based on any current installation permits and the impacts of the project. Provide a list of all fixed or mobile equipment, machinery or operations that could generate air emissions during the project to the Installation Environmental Office (Air Program Manager). Ensure required permits are obtained prior to installing and operating applicable equipment/processes. If emergency generators, boilers, or other sources of

air pollutants will be associated with this facility, coordinate with the 96 CEG/CEIEC Air Quality Program Manager Mr. Harry Fortenberry, 882-7677 - a Title V permit revision may be required. Complete the appropriate registration form(s) at the following website, https://em.eglin.af.mil/emc/emce/emcea/aqpweb/inventory_registration_forms.asp and return completed form(s) to Mr. Fortenberry BEFORE source installation. Ensure generator engines are certified to meet 40 CFR Part 60 Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines or CFR Part 60 Subpart JJJJ - Standards of Performance for Stationary Spark Ignition Internal Combustion Engines. Comply with Eglin Title V permit (Appendix TV-34) Refrigerant Requirements. Any facility having refrigeration equipment, including air conditioning equipment, which uses a Class I or II substance (listed at 40 CFR 82, Subpart A, Appendices A and B), and any facility which maintains, services, or repairs motor vehicles using a Class I or Class II substance as refrigerant must comply with all requirements of 40 CFR 82, Subparts B and F, and with Chapter 62-281, F.A.C. Any refrigerant recycle/recovery equipment must be registered with the Air Quality Program manager. Contact Harry Fortenberry, 850-882-7677 if you have further questions.

1.7.9.3 Stationary Internal Combustion Engines

Identify portable and stationary internal combustion engines that will be supplied, used or serviced. Comply with 40 CFR 60 Subpart IIII, 40 CFR 60 Subpart JJJJ, 40 CFR 63 Subpart ZZZZ, and local regulations as applicable. At minimum, include the make, model, serial number, manufacture date, size (engine brake horsepower), and EPA emission certification status of each engine. Maintain applicable records and log hours of operation and fuel use. Logs must include reasons for operation and delineate between maintenance/testing, emergency, and non-emergency operation.

1.7.9.4 Refrigerants

Identify management practices to ensure that heating, ventilation, and air conditioning (HVAC) work involving refrigerants complies with 40 CFR 82 requirements. Technicians must be certified, maintain copies of certification on site, use certified equipment and log work that requires the addition or removal of refrigerant. Any refrigerant reclaimed is the property of the Government, coordinate with the Installation Environmental Office to determine the appropriate turn in location.

1.7.9.5 Air Pollution-engineering Processes

Identify planned air pollution-generating processes and management control measures (including, but not limited to, spray painting, abrasive blasting, demolition, material handling, fugitive dust, and fugitive emissions). Log hours of operations and track quantities of materials used.

1.7.9.6 Compliant Materials

Provide the Government a list of 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.

1.8 LICENSES AND PERMITS

Obtain licenses and permits required for the construction of the project and in accordance with FAR 52.236-7 Permits and Responsibilities. Notify the Government of all equipment that may require permits or special approvals that the Contractor plans to use on site. This paragraph supplements the Contractor's responsibility under FAR 52.236-7 Permits and Responsibilities.

1.9 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.

1.9.1 Monthly Solid Waste Disposal Report

Monthly, submit a solid waste disposal report to the Contracting Officer. For each waste, the report will state the classification (using the definitions provided in this section), amount, location, and name of the business receiving the solid waste.

1.10 FACILITY HAZARDOUS WASTE GENERATOR STATUS

Eglin AFB is designated as a Large Quantity Generator. Meet the regulatory requirements of this generator designation for any work conducted within the boundaries of this Installation. Comply with provisions of federal, state, and local regulatory requirements applicable to this generator status regarding training and storage, handling, and disposal of construction derived wastes.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.1 ENVIRONMENTAL PERMITS AND COMMITMENTS

The Contractor shall ensure that required environmental permits are obtained prior to start of construction and/or installing or operating any new or modified equipment or processes or disturbing any land area. The contractor shall coordinate with the Contracting Officer and Eglin AFB 96 CEG/CEIEA to determine when permits are required. Where environmental permits are thought to be required, the Contractor shall coordinate with the Contracting Officer and Eglin AFB 96 CEG/CEIEA, prepare any required technical documentation for the permit application, and submit to the Contracting Officer and Eglin AFB 96 CEG/CEIEA. Eglin AFB 96 CEG/CEIEA will sign and forward applications to the appropriate regulatory authority. The Contractor shall be responsible for operating within permit limits and abiding by all permit conditions. The Contracting Officer and Eglin AFB 96 CEG/CEIEA shall be notified immediately of any exceedances of permit limits or violation of permit conditions. The Contractor shall immediately notify the Contracting Officer and Eglin AFB 96 CEG/CEIEA of

any unforeseen environmental conditions, which may conflict with approved permits. Any certifications required by permits shall be the responsibility of the Contractor. Copies of all permits and certifications shall be submitted to the Contracting Officer and Eglin AFB 96 CEG/CEIEA .

The Contractor shall be responsible for obtaining and complying with all environmental permits and commitments required by Federal, State, Regional, and local environmental laws and regulations. Assurance that subcontractors comply with all environmental protection requirements of this section will be the sole responsibility of the prime Contractor. Special environmental requirements and additional details can be found in the attached Air Force Form 813, RCS 22-171, REQUEST FOR ENVIRONMENTAL IMPACT ANALYSIS, dated 06 JUN 2024 that is included in the Appendices of this design package.

3.2 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 as applicable, 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. Special environmental requirements and additional details can be found in the attached Air Force Form 813, RCS 22-171, REQUEST FOR ENVIRONMENTAL IMPACT ANALYSIS, dated 06 JUN 2024 that is included in the Appendices of this design package. This requirements include:

Gopher Tortoise Survey is required. Contact Eglin Natural Resources (Jackson Guard) to arrange for the survey to take place within 30 days of ground disturbing activities. If tortoise burrows are found to conflict with the proposed project site, and burrows cannot be avoided by at least 25 ft., the tortoise(s) must be relocated. POC: Jeremy Preston, 96 CEG/CEIEA, 883-1155, or Rodney Felix, 96 CEG/CEIEA, 883-1153. Note that tortoises cannot be relocated if the forecasted low temperature is below 50 degrees for 3 consecutive days.

Proponent will also be provided with Eastern Indigo Snake Signs. Personnel must not harass, injure, harm, or kill this species. If an indigo snake is sighted, contact Eglin Natural Resources immediately. POC: Jeremy Preston, 96 CEG/CEIEA, 883-1155. Personnel must cease any activities and allow the eastern indigo snake sufficient time to move away from the site on its own before resuming activities.

Forestry: In accordance with AFI 32-7064, "forest products may not be traded for goods or services nor used to offset contract costs associated with construction, land clearing, or other contracted activity". Merchantable trees must be vetted through the Eglin Natural Resources Forestry Office. Proponent must coordinate tree removal with Al Sutsko, 96 CEG/CEIEA, 883-1126 or Phillip Carter, CEG/CEIEA, 883-1129.

There are no cultural resources concerns with this project as currently described. If project plans change in any way, contact the Eglin AFB Cultural Resources Office. If unexpected discoveries such as Native American graves or lost historic cemeteries are encountered, guidelines set forth in Chapter 872, Florida Statute (Florida's Unmarked Burial Law) must be followed. If human remains or archaeological materials are encountered during construction, work is to cease immediately and the area secured.

Contact the Eglin AFB Cultural Resources Office within 24 hours: Catherine Nolan, catherine.nolan.3@us.af.mil, Jessica Higley, jessica.higley.1@us.af.mil, or Alex DeCaro, alexander.decaro@us.af.mil

3.2.1 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.

3.2.2 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 and critical root zones (CRZ) 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. If any trees are to be removed as a result of this project, contact Phil Carter, 96 CEG/CEIEA, 883-1129 or Al Sutsko, 96 CEG/CEIEA, 850-883-1126, prior to tree removal as trees may be merchantable. Reference the attached Air Force Form 813, REQUEST FOR ENVIRONMENTAL IMPACT ANALYSIS, paragraph 18.0 REMARKS, for details.

3.2.3 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 all 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.

3.3 STORMWATER

Do not discharge stormwater from construction sites to the sanitary sewer. Discharge of hazardous substances will not be permitted under any

circumstances. Construction site runoff will be prevented from entering any storm drain by the use of best management practices from the Florida Stormwater Erosion and Sedimentation Control Inspector's Manual. Prior to any project that disturbs greater than one acre, the contractor must complete a Notice of Intent with FDEP and have a Stormwater Pollution Prevention Plan approved by the Contracting Officer and Eglin AFB 96 CEG/CEIEA. A notice of termination must also be filed at the conclusion of the project.

3.3.1 Construction General Permit

Comply with State of Florida Department of Environmental Protection Generic Permit for Stormwater Discharge from Large and Small Construction Activities. 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.

3.3.1.1 Stormwater Pollution Prevention Plan

Submit a project-specific Stormwater Pollution Prevention Plan (SWPPP) to the Contracting Officer for approval, within 30 days of Contract Award and prior to the commencement of work. The SWPPP must meet the requirements of 40 CFR 122.26 and the Florida State General Permit for stormwater discharges from construction sites.

Include the following:

- a. Comply with terms of the state general permit for stormwater discharges from construction activities. Prepare SWPPP in accordance with state requirements. Use state
- b. Select applicable BMPs from EPA Fact Sheets located at <https://www.epa.gov/npdes/national-menu-best-management-practices-bmps-stormwater#constr> 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.

3.3.1.2 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. Create a Stormwater Pollution Prevention Plan (SWPPP) for the project meeting the Florida General Permit for Stormwater Discharge from Large and Small Construction Activities for stormwater discharges from construction sites.

Submit the approved NOI and appropriate permit fees onto the appropriate federal or state agency for approval. No land disturbing activities may commence without permit coverage. Maintain an approved copy of the SWPPP at the onsite construction office, and continually update as regulations require, reflecting current site conditions.

Comply with additional state and local requirements.

3.3.1.3 Inspection Reports

Submit "Inspection Reports" to the Contracting Officer in accordance with the State of Florida Construction General Permit. Provide Inspection Reports in accordance with local requirements.

3.3.1.4 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.

3.3.2 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.

3.3.2.1 Erosion Control

Prevent erosion by mulching, Compost Blankets, Geotextiles, temporary slope drains, etc.. Stabilize slopes by chemical stabilization, sodding, seeding, etc. or such combination of these methods necessary for effective erosion control. Use of hay bales is prohibited.

3.3.2.2 Sediment Control Practices

Implement sediment control practices to divert flows from exposed soils, temporarily store flows, or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. Implement sediment control practices prior to soil disturbance and prior to creating areas with concentrated flow, during the construction process to minimize erosion and sediment laden runoff. Include the following devices: silt fence, temporary diversion dikes, storm drain inlet protection, etc. Location and details of installation and construction are indicated on the drawings.

3.3.3 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, all markers must be visible in the dark. Personnel must be knowledgeable of the purpose for marking and protecting particular objects.

3.3.4 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.

3.3.5 Municipal Separate Storm Sewer System (MS4) Management

Comply with the Installation's MS4 permit requirements. Comply with local requirements.

3.3.6 Environmental Resource Permit

The Contractor shall comply with all Environmental Resource Permit requirements in accordance with FL Admin Code 62-330.

3.4 SURFACE AND GROUNDWATER

3.4.1 Cofferdams, Diversions, and Dewatering

Construction operations for dewatering, removal of cofferdams, tailrace excavation, and tunnel closure must be constantly controlled to maintain compliance with existing state water quality standards and designated uses of the surface water body. Comply with the State of Florida water quality standards and anti-degradation provisions. 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 or Contracting Officer. 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.

3.4.2 Waters of the United States

Do not enter, disturb, destroy, or allow discharge of contaminants into waters of the United States, except as authorized herein. 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.

3.5 PROTECTION OF CULTURAL RESOURCES

3.5.1 Archaeological Resources

If, during excavation or other construction activities, any previously unidentified or unanticipated historical, archaeological, and cultural resources are discovered or found, activities that may damage or alter such resources will be suspended. Resources covered by this paragraph include, but are not limited to: any human skeletal remains or burials; artifacts; shell, midden, bone, charcoal, or other deposits; rock or coral alignments, pavings, wall, or other constructed features; and any indication of agricultural or other human activities. Upon such discovery

or find, immediately notify the Contracting Officer so that the appropriate authorities may be notified and a determination made as to their significance and what, if any, special disposition of the finds should be made. Cease all activities that may result in impact to or the destruction of these resources. Secure the area and prevent employees or other persons from trespassing on, removing, or otherwise disturbing such resources. The Government retains ownership and control over archaeological resources.

3.6 AIR RESOURCES

Equipment operation, activities, or processes will be in accordance with 40 CFR 64 and state air emission and performance laws and standards.

3.6.1 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.

3.6.2 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.

3.6.3 Burning

Burning is prohibited on the Government premises.

3.6.4 Class I and II ODS Prohibition

Class I and II ODS are Government property and must be returned to the Government for appropriate management. Coordinate with the Installation Environmental Office to determine the appropriate location for turn in of all reclaimed refrigerant.

3.6.5 Venting of Refrigerant

Accidental venting of a refrigerant is a release and must be reported immediately to the Contracting Officer. Intentional venting of refrigerants (including most Non-ODS substitute refrigerants) is prohibited per 40 CFR 82.

3.6.6 EPA Certification Requirements

Heating and air conditioning technicians must be certified through an EPA-approved program. Maintain copies of certifications at the employees' places of business; technicians must carry certification wallet cards, as provided by environmental law.

3.6.7 Dust Control

Keep dust down at all times, including during nonworking periods. Sprinkle or treat, with dust suppressants, the soil at the site, haul roads, and other areas disturbed by operations. Dry power brooming will not be permitted. Instead, use vacuuming, wet mopping, wet sweeping, or wet power brooming. Air blowing will be permitted only for cleaning nonparticulate debris such as steel reinforcing bars. Only wet cutting will be permitted for cutting concrete blocks, concrete, and bituminous concrete. Do not unnecessarily shake bags of cement, concrete mortar, or plaster. Since these products contain Crystalline Silica, comply with the applicable OSHA standard, 29 CFR 1910.1053 or 29 CFR 1926.1153 for controlling exposure to Crystalline Silica Dust.

3.6.7.1 Particulates

Dust particles, aerosols and gaseous by-products from construction activities, and processing and preparation of materials (such as from asphaltic batch plants) must be controlled at all times, including weekends, holidays, and hours when work is not in progress. Maintain excavations, stockpiles, haul roads, permanent and temporary access roads, plant sites, spoil areas, borrow areas, and other work areas within or outside the project boundaries free from particulates that would exceed 40 CFR 50, state, and local air pollution standards or that would cause a hazard or a nuisance. Sprinkling, chemical treatment of an approved type, baghouse, scrubbers, electrostatic precipitators, or other methods will be permitted to control particulates in the work area. Sprinkling, to be efficient, must be repeated to keep the disturbed area damp. Provide sufficient, competent equipment available to accomplish these tasks. Perform particulate control as the work proceeds and whenever a particulate nuisance or hazard occurs. Comply with state and local visibility regulations.

3.6.7.2 Abrasive Blasting

Blasting operations cannot be performed without prior approval of the Installation Air Program Manager. The use of silica sand is prohibited in sandblasting.

Provide tarpaulin drop cloths and windscreens to enclose abrasive blasting operations to confine and collect dust, abrasive agent, paint chips, and other debris. Perform work involving removal of hazardous material in accordance with 29 CFR 1910.

3.6.8 Odors

Control odors from construction activities. The odors must be in compliance with state regulations and local ordinances and may not constitute a health hazard.

3.7 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.

3.7.1 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.

3.8 WASTE MANAGEMENT AND DISPOSAL

3.8.1 Waste Determination Documentation

Complete a Waste Determination form (provided at the pre-construction conference) for Contractor-derived wastes to be generated. All potentially hazardous solid waste streams that are not subject to a specific exclusion or exemption from the hazardous waste regulations (e.g., scrap metal, domestic sewage) or subject to special rules, (lead-acid batteries and precious metals) must be characterized in accordance with the requirements of 40 CFR 262.11 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 exhaustive): oil- and latex-based painting and caulking products, solvents, adhesives, aerosols, petroleum products, and containers of the original materials.

3.8.1.1 Sampling and Analysis of Waste

3.8.1.1.1 Waste Sampling

Sample waste in accordance with EPA SW-846. Clearly mark each sampled drum or container with the Contractor's identification number, and cross reference to the chemical analysis performed.

3.8.1.1.2 Laboratory Analysis

Follow the analytical procedure and methods in accordance with the 40 CFR 261. Provide analytical results and reports performed to the Contracting Officer. Coordinate all activities with Installation Hazardous Waste Manager.

3.8.1.1.3 Analysis Type

Identify hazardous waste by analyzing for the following characteristics: ignitability, corrosivity, reactivity, toxicity based on TCLP results .

3.8.2 Solid Waste Management

3.8.2.1 Project Solid Waste Disposal Documentation 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 must include the receiver's tax identification number and business, EPA or state registration number, along with the receiver's delivery and business addresses and telephone numbers. For each solid waste retained for the Contractor's own use, submit the information previously described in this paragraph on the solid waste disposal report. Prices paid or received do not have to be reported to the Contracting Officer unless required by other provisions or specifications of this Contract or public law.

3.8.2.2 Control and Management of Solid Wastes

Pick up solid wastes, and place in covered containers that are regularly emptied. Do not prepare or cook food on the project site. Prevent contamination of the site or other areas when handling and disposing of wastes. At project completion, leave the areas clean. Employ segregation measures so that no hazardous or toxic waste will become co-mingled with non-hazardous solid waste. Transport solid waste off Government property and dispose of it in compliance with 40 CFR 260, state, and local requirements for solid waste disposal. A Subtitle D RCRA permitted landfill is the minimum acceptable offsite solid waste disposal option. Verify that the selected transporters and disposal facilities have the necessary permits and licenses to operate. Segregate and separate treated wood components disposed at a lined landfill approved to accept this waste in accordance with local and state regulations. 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.

3.8.3 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 and Installation Hazardous Waste Manager.

3.8.3.1 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.

3.8.3.2 Waste Storage/Satellite Accumulation/90 Day Storage Areas

Accumulate hazardous waste at satellite accumulation points and in compliance with 40 CFR 262 and applicable state or local regulations. Individual waste streams will be limited to 55 gallons of accumulation (or one quart for acutely hazardous wastes). If the Contractor expects to generate hazardous waste at a rate and quantity that makes satellite accumulation impractical, the Contractor may request a temporary 90-day or 180-day, as appropriate, accumulation point be established. Submit a request in writing to the Contracting Officer and provide the following information (Attach Site Plan to the Request):

Contract Number	
Contractor	
Haz/Waste or Regulated Waste POC	
Phone Number	
Type of Waste	
Source of Waste	
Emergency POC	
Phone Number	
Location of the Site	

Attach a Waste Determination form for the expected waste streams. Allow 10 working days for processing this request. Additional compliance requirements (e.g., training and contingency planning) that may be required are the responsibility of the Contractor. Barricade the designated area where waste is being stored and post a sign identifying as follows:

"DANGER - UNAUTHORIZED PERSONNEL KEEP OUT"

3.8.3.3 Hazardous Waste Disposal

3.8.3.3.1 Responsibilities for Contractor's Disposal

Provide hazardous waste manifest to the Installations Environmental Office for review, approval, and signature prior to shipping waste off Government property.

3.8.3.3.1.1 Services

Provide service necessary for the final treatment or disposal of the hazardous material or waste in accordance with 40 CFR 260 - 40 CFR 279, local, and state, laws and regulations, and the terms and conditions of the Contract within 60 days after the materials have been generated. These services include necessary personnel, labor, transportation, packaging, detailed analysis (if required for disposal or transportation, include manifesting or complete waste profile sheets, equipment, and compile documentation).

3.8.3.3.1.2 Samples

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

3.8.3.3.1.3 Analysis

Analyze each sample taken and provide analytical results to the Contracting Officer. See paragraph WASTE DETERMINATION DOCUMENTATION.

3.8.3.3.1.4 Labeling

During waste accumulation label all containers in accordance with 40 CFR 262. Prior to offering a waste for off-site transport, determine the Department of Transportation's (DOT's) proper shipping names for waste in accordance with 49 CFR 172 (each container requiring disposal) and demonstrate to the Contracting Officer how this determination is developed and supported by the sampling and analysis requirements contained herein. Label all containers of hazardous waste with the words "Hazardous Waste" or other words to describe the contents of the container in accordance with 40 CFR 262 and applicable state or local regulations.

3.8.3.3.2 Contractor Disposal Turn-In Requirements

Hazardous waste generated must be disposed of in accordance with the following conditions to meet installation requirements:

- a. Drums must be compatible with waste contents and drums must meet DOT requirements for 49 CFR 173 for transportation of materials.
- b. Band drums to wooden pallets.
- c. No more than three 55 gallon drums or two 85 gallon over packs are to be banded to a pallet.
- d. Band using 1-1/4 inch minimum band on upper third of drum.
- e. Provide label in accordance with 49 CFR 172.101.
- f. Leave 3 to 5 inches of empty space above volume of material.

3.8.3.4 Universal Waste Management

Manage the following categories of universal waste in accordance with federal, state, and local requirements and installation instructions:

- a. Batteries as described in 40 CFR 273.2
- b. Lamps as described in 40 CFR 273.5
- c. Mercury-containing equipment as described in 40 CFR 273.4
- d. Aerosol cans as described in 40 CFR 273.6
- e. Pesticides as described in 40 CFR 273.3
- e. Installation specific

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.

3.8.3.5 Electronics End-of-Life Management

Recycle or dispose of electronics waste, including, but not limited to, used electronic devices such computers, monitors, hard-copy devices, televisions, mobile devices, in accordance with 40 CFR 260-262, state, and local requirements, and installation instructions.

3.8.3.6 Disposal Documentation for Hazardous and Regulated Waste

Contact the Contracting Officer or designated representative for the facility RCRA identification number that is to be used on each manifest.

Submit a copy of the applicable EPA and or state permit(s), manifest(s), or license(s) for transportation, treatment, storage, and disposal of hazardous and regulated waste by permitted facilities. Hazardous or toxic waste manifests must be reviewed, signed, and approved by the Contracting Officer before the Contractor may ship waste. To obtain specific disposal instructions, coordinate with the Installation Environmental Office. Refer to location special requirements for the Installation Point of Contact information.

3.8.4 Releases/Spills of Oil and Hazardous Substances

3.8.4.1 Response and Notifications

Exercise due diligence to prevent, contain, and respond to spills of hazardous material, hazardous substances, hazardous waste, sewage, regulated gas, petroleum, lubrication oil, and other substances regulated in accordance with 40 CFR 300. Maintain spill cleanup equipment and materials at the work site. In the event of a spill, take prompt, effective action to stop, contain, curtail, or otherwise limit the amount, duration, and severity of the spill/release. In the event of any releases of oil and hazardous substances, chemicals, or gases; immediately (within 15 minutes) notify the Installation Fire Department, the Installation Command Duty Officer, the Installation Environmental Office, the Contracting Officer.

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.

3.8.4.2 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.

3.8.5 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.

3.8.6 Wastewater

3.8.6.1 Disposal of Wastewater

Disposal of wastewater must be as specified below.

3.8.6.1.1 Treatment

Do not allow wastewater from construction activities, such as onsite material processing, concrete curing, foundation and concrete clean-up, water used in concrete trucks, and forms to enter water ways or to be discharged. Dispose of the construction- related waste water off-Government property in accordance with 40 CFR 403, state, regional, and local laws.

3.8.6.1.2 Surface Discharge

For discharge of ground water, Surface discharge in accordance with the requirements of the NPDES or state STORMWATER DISCHARGES FROM CONSTRUCTION SITES permit.

3.8.6.1.3 Land Application

Water generated from the flushing of lines after disinfection or disinfection in conjunction with hydrostatic testing must be land- applied in accordance with federal, state, and local laws and regulations for land application.

3.9 HAZARDOUS MATERIAL MANAGEMENT

Include hazardous material control procedures in the Accident Prevention Plan (APP), 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 and state and installation requirements.

3.10 Hazardous Material (HM)

For the purposes of the document, Hazardous Materials (HM) are defined as any product, material, chemical or substance listed in 49 CFR 172.101 (revised) and 40 CFR 302-304 (revised). Specifically, a HM is any substance or material, in any quantity or form that has the potential to harm human health or the environment or displays specific characteristics (reactive, corrosive, ignitable, and toxic).

Absolutely NO HM shall be brought onto Eglin AFB until that material is registered with the Hazardous Materials Pharmacy (HAZMART) per Eglin AFB. See <https://em.eglin.af.mil/emc/> for environmental compliance and pollution prevention requirements for Eglin AFB. This requirement shall apply for all HM that the Contractor intends to bring onto government property for any/all processes or applications. The Contractor shall submit a complete hazardous material inventory list including Material Safety Data Sheets and any other supporting documentation for each HM used prior to contract start or introduction of that material to Eglin AFB. The HM inventory shall include the contract number, performance period, and a Contractor point of contact for HM matters. All excess material and empty containers are the responsibility of the Contractor and shall be removed accordingly at the end of the contract. Should Contractor HM requirements change during the performance period, the Contractor shall immediately notify the HAZMART of such changes in writing. The Contractor shall observe HM storage practices in accordance with regulations, policies, plans and procedures employed by the base.

Reference EGLINAFB 32-7003 Hazardous Waste Management and AFI 32-7042 Solid and Hazardous Waste Compliance.

3.11 Hazardous Waste (Includes Special and Universal Waste)

The Contractor shall be considered the primary co-generator for all hazardous wastes generated throughout the duration of the contract. However, all hazardous waste management activities shall be coordinated and approved by the Contracting Officer and Eglin. The Contractor shall identify what wastes are hazardous using specific and technical knowledge and/or sampling and analysis. This responsibility also includes preparation of waste profile sheets, packaging, marking and labeling of wastes in accordance with 49 CFR Subchapter C.

Hazardous and special waste include, but are not limited to:

1. Fuels and oils of all types
2. Used tires
3. Computer monitors
4. Lighting ballast
5. Exit signs and lighting (batteries)
6. Asbestos (survey required)
7. Lead roof vent flashing
8. All electronic devices
9. Aerosol spray cans (including empties)
10. Paints
11. Adhesives
12. Corrosives
13. Non-flammable and non-corrosive cleaners
14. Fertilizer

15. Hydraulic fluid
16. Antifreeze

Universal waste include, but are not limited to:

1. Spent fluorescent lamps
2. High Intensity Discharge (HID) lamps
3. Batteries (except alkaline)
4. Mercury thermostats
5. Silent switches
6. Mechanical switches
7. Relays and contacts

All hazardous, special, and universal waste items mentioned-above shall be managed IAW local, state, federal, and Eglin AFB Hazardous Waste Management Plan. The CO shall contact the Eglin AFB 96 CEG/CEIEA if handling procedures for hazardous waste and materials is unclear. **Under no circumstances shall hazardous, special, or universal waste be disposed of in the dumpster.** In addition, the contractor shall ensure that all employees, including their subs, comply with the rules and procedures outlined in this specification and the Eglin AFB Hazardous Waste Management Plan.

The contractor shall be familiar with and have immediate access to the following publications and regulations:

1. Environmental Protection Agency (EPA): Title 40 Code of Federal Regulations, Parts 260-279
2. Occupational Safety and Health Administration (OSHA): 29 Code of Federal Regulations Parts 1910 and 1926
3. Department of Transportation (DOT): Title 49 Code of Federal Regulations, Parts 171-177
4. Eglin AFB Hazardous Waste Management Plan

The contractor shall manage all hazardous waste, special waste, and universal waste IAW the HFLD Hazardous Waste Management Plan. In addition, the contractor shall ensure that all employees, including their subs, comply with the rules and procedures outlined in the Eglin AFB Hazardous Waste Management Plan.

If transportation of Hazardous Wastes is required, the contractor shall possess or ensure the transportation of hazardous waste has a valid state and federal identification number and provide such identification to the Contracting Officer and Eglin AFB 96 CEG/CEIEA prior to any waste movement. The contractor shall ensure a designated representative from Eglin AFB 96 CEG/CEIEA signs the hazardous waste/non-hazardous waste manifest.

3.12 Toxic Waste

A. Asbestos: All asbestos work must be accomplished in accordance with federal, state, and local laws and the Eglin AFB Asbestos Management Plan.

1. Notice of Asbestos Renovation or Demolition, DEP Form 62-257.900(1) must be submitted to Florida Department of Environmental Protection at least 10 working days prior to any demolition and/or renovation regardless of whether asbestos is present or not. A copy of

this notification must be provided to the Contracting Officer and Eglin AFB 96 CEG/CEIEA prior to performing any work.

2. A copy of all submittals must be provided to the Contracting Officer and Eglin AFB 96 CEG/CEIEA with adequate time built in for review.

3. The use of materials, products or equipment containing asbestos is not allowed. See sample list below.

4. Prior to the commencement of construction, the prime Contractor, each subcontractor and material/equipment supplier shall provide the Contracting Officer and Eglin AFB 96 CEG/CEIEA with a Notarized statement that to the best of their knowledge, no asbestos will be used in the construction of this project. Additionally, the Contractor must have available the most current Material Data Safety Sheet proving the materials contain no asbestos.

5. Sample list of Asbestos Containing Materials (ACM):

Note: The following list does not include every product/material that may contain asbestos. It is intended as a general guide to show which types of materials may contain asbestos:

(1) Cement Pipes	(2) Cement Wallboard
(3) Cement Siding	(4) Asphalt Floor Tile
(5) Vinyl Floor Tile	(6) Vinyl Sheet Flooring
(7) Flooring Backing	(8) Construction Mastics
(9) Acoustical Plaster	(10) Decorative Plaster
(11) Textured Paints/Coatings	(12) Ceiling Tiles & Lay-in-Panels
(13) Spray-Applied Insulation	(14) Blown-in Insulation
(15) Fireproofing Materials	(16) Taping Compounds
(17) Packing Materials	(18) High Temperature Gaskets
(19) Laboratory Hoods	(20) Laboratory Gloves
(21) Fire Blankets & Table Tops	(22) Fire Curtains
(23) Elevator Equipment Panels	(24) Elevator Brake Shoes
(25) HVAC Duct Insulation	(26) Boiler Insulation
(27) Breeching Insulation	(28) Ductwork Flexible Fabric
(29) Cooling Towers	(30) Pipe Insulation
(31) Heating and Electrical	(32) Electrical Panel Partitions
(33) Electrical Cloth ducts	(34) Spackling compounds
(35) Chalkboards	(36) Roofing Shingles
(37) Roofing Felt	(38) Base Flashing
(39) Thermal Paper Products	(40) Fire doors
(41) Caulking/putties	(42) Adhesives
(43) Wallboard	(44) Joint Compounds
(45) Vinyl Wall Coverings	(46) Electrical Wiring Insulation

Caution needs to be taken to ensure materials purchased do not contain one or more % asbestos by volume.

B. Lighting Ballast: When fluorescent and mercury vapor fixtures are removed, the ballast shall be examined for PCB labeling. Ballast is presumed to contain PCBs unless they are clearly labeled "NO PCBs". Suspected ballasts shall be removed and disposed of IAW Eglin AFB directives.

C. Lead Based Paint: No paint containing lead shall be used during the

course of this contract. The Occupational Health and Safety Act (OSHA) Lead Construction Standard, 29 CFR 1926.62 is in effect whenever materials are disturbed that contain any amount of lead. Contractors disturbing lead-based paint shall institute medical surveillance, training, engineering controls, worker protection measures and employee monitoring until monitoring results per the OSHA Lead Construction Standard, 29 CFR 1926.62, in order to demonstrate that employee exposure is below the action level and permissible exposure limit. The Contractor on site shall maintain all documentation regarding lead exposure by either historical data or project data. **This data shall also be made available to the Contracting Officer and Eglin AFB 96 CEG/CEIEA upon completion of the project.**

1. Prior to the commencement of construction, the prime Contractor, each subcontractor and material/equipment supplier shall provide to the Contracting Officer and Eglin AFB 96 CEG/CEIEA with a Notarized statement that to the best of their knowledge, no lead based paint will be used in the construction of this project. Additionally, the Contractor must have available the most current *Material Data Safety Sheet* proving that the paint does not have any lead content.

2. The contractor shall be responsible for collection and disposal of all lead paint chips and lead paint-contaminated materials, and for accumulation of these chips/materials on site. The contractor shall test the paint materials, provide containers for proper disposal, and transport any resulting hazardous waste to an appropriate hazardous waste accumulation area should it test positive as hazardous waste. All necessary accumulation, disposal activities and documentation shall be coordinated with the Contracting Officer and Eglin AFB 96 CEG/CEIEA .

3. A copy of contractor's exposure assessment data shall be provided to the Contracting Officer and Eglin AFB 96 CEG/CEIEA.

4. Copies of all lead paint-related documentation generated from this project, including lead testing, air monitoring and hazardous waste manifests, shall be provided by the Contractor to the Contracting Officer. A copy shall be forwarded to Eglin AFB 96 CEG/CEIEA within 10 working days of test completion.

5. ***On Military Family Housing Projects***, there shall be in-depth coordination with the Contracting Officer and Eglin AFB 96 CEG/CEIEA to allow for resident notification and necessary arrangements.

The contractor is strongly encouraged to coordinate closely with the Contracting Officer and Eglin AFB 96 CEG/CEIEA for any required guidance on this critical issue. The Contracting Officer may request documentation for any spills or releases, environmental reports, or off-site transfers.

3.13 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.

3.14 MILITARY MUNITIONS

In the event military munitions, as defined in 40 CFR 260, are discovered or uncovered, immediately stop work in that area and immediately inform the Contracting Officer. David Lee in Eglin EOD/UXO/Explosive Safety stated in an email on October 29, 2024 the following regarding UXO. "There are no UXO hazards for the proposed site." Mr. Lee's telephone number is

850-346-6052. The Contractor shall submit a plan describing the training and response if suspect items are encountered.

3.15 INSTALLATION RESTORATION PROGRAM (IRP) SITES

Geology and Soils: This project is located approximately 300 feet east of identified Site SS-290P within the IRP Program for containing the emerging contaminated PFAS compounds related to past AFFF releases. PFAS compounds were detected in groundwater from a monitoring well located on the project site during a PFAS Phase I Remedial Investigation at the Installation. The PFAS compounds were detected at concentrations above the EPA lifetime health advisory and/or November 2023 Regional Screening Levels. The groundwater data identified PFAS in groundwater at a depth of greater than 30 feet below the ground surface. Due to the depth of groundwater, it is unlikely that construction activities will encounter groundwater or need dewatering during construction. Per the AF Form 813 dated 6 JUN 24, ensure workers utilize proper PPE to avoid skin contact with the groundwater. All PFAS compound waste must be properly disposed of. Avoid monitoring wells. Regulatory approval must be obtained with groundwater management plan if dewatering is a requirement. Stop work immediately and contact Eglin IRP Office if any stained soil, unusual odor or buried foreign materials are encountered.

3.16 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.

3.16.1 Used Oil Management

Manage used oil generated on site in accordance with 40 CFR 279. Determine if any used oil generated while onsite exhibits a characteristic of hazardous waste. Used oil containing 1,000 parts per million of solvents is considered a hazardous waste and disposed of at the Contractor's expense. Used oil mixed with a hazardous waste is also considered a hazardous waste. Dispose in accordance with paragraph HAZARDOUS WASTE DISPOSAL.

3.16.2 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 Spill Prevention Control and Countermeasure (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.

3.17 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.

3.18 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 including prevention of invasive species as applicable with the IPMC and receive concurrence from the IPMC 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.

3.18.1 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.

3.18.2 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.

3.19 CHLORDANE

Evaluate excess soils and concrete foundation debris generated during the demolition of housing units or other wooden structures for the presence of chlordane or other pesticides prior to reuse or final disposal.

3.20 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 provisions of the State of Florida rules.

3.21 POST CONSTRUCTION CLEANUP

Clean up areas used for construction in accordance with Contract Clause: "Cleaning Up". Unless otherwise instructed in writing by the Contracting Officer, remove traces of temporary construction facilities such as haul roads, work area, structures, foundations of temporary structures, stockpiles of excess or waste materials, and other vestiges of construction prior to final acceptance of the work. Grade parking area and similar temporarily used areas to conform with surrounding contours.

-- End of Section --

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REQUEST FOR ENVIRONMENTAL IMPACT ANALYSIS		Report Control Symbol RCS: 22-171	
INSTRUCTIONS: Section I to be completed by Proponent. Sections II and III to be completed by Environmental Planning Function. Continue on separate sheets as necessary. Reference appropriate item number(s).			
SECTION I – PROPONENT INFORMATION			
1. TO (Environmental Planning Function)		2. FROM (Proponent Organization and functional address symbol)	
96 CEG/CEVSP		Civ Joseph Simpson 96 CEG	
2a. TELEPHONE NO. 882-3399			
3. TITLE OF PROPOSED ACTION FY24 Hardware Software Development and Test Facility			
4. PURPOSE AND NEED FOR ACTION (Identify decision to be made and need date) (see attached)			
5. DESCRIPTION OF ACTION AND ALTERNATIVES (DOPAA) (Provide sufficient details for evaluation of the total action) (see attached)			
6. UNIT ENVIRONMENTAL COORDINATOR (Name and Grade)		6a. SIGNATURE	
UNKNOWN		\\ ELECTRONICALLY SIGNED \\	
		6b. DATE 4/29/2022	
SECTION II – PRELIMINARY ENVIRONMENTAL SURVEY (Check appropriate box and describe potential environmental effects including cumulative effects) (+=positive effect; 0=no effect; - = adverse effect; U=unknown effect)		+	0
7. AIR INSTALLATION COMPATIBLE USE ZONE/LAND USE (Noise, accident potential, encroachment, etc.)			X
8. AIR QUALITY (Emissions, attainment status, state implementation plan, etc.)			X
9. WATER RESOURCES (Quality, quantity, source, etc.)			X
10. SAFETY AND OCCUPATIONAL HEALTH (Asbestos/radiation/chemical exposure, explosives safety quantity distance, bird/wildlife aircraft hazard, etc.)			X
11. HAZARDOUS MATERIALS/WASTE (Use/storage/generation, solid waste, etc.)			X
12. BIOLOGICAL RESOURCES (Wetlands/floodplains, threatened or endangered species, etc.)			X
13. CULTURAL RESOURCES (Native American burial sites, archaeological, historical, etc.)			X
14. GEOLOGY AND SOILS (Topography, minerals, geothermal, Installation Restoration Program, seismicity, etc.)			X
15. SOCIOECONOMIC (Employment/population projections, school and local fiscal impacts, etc.)			X
16. OTHER (Potential impacts not addressed above.)			X
SECTION III – ENVIRONMENTAL ANALYSIS DETERMINATION			
17.	X	PROPOSED ACTION QUALIFIES FOR CATEGORICAL EXCLUSION (CATEX): 11 (see attached for description); OR	
		PROPOSED ACTION DOES NOT QUALIFY FOR A CATEX; FURTHER ENVIRONMENTAL ANALYSIS IS REQUIRED.	
18. REMARKS (see attached)			
19. ENVIRONMENTAL PLANNING FUNCTION CERTIFICATION (Name and Grade)		19 a. SIGNATURE	
Melinda A. Rogers, GS-13		\\ ELECTRONICALLY SIGNED \\	
		19 b. DATE 6/6/2024	

4.0 PURPOSE AND NEED FOR ACTION

Please reference previous AF813, RCS 21-371.

This AF813 updates site plan. Previous Purpose/Need remain the same.

5.0 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

5.1 Description of the Proposed Action

Please reference previous AF813, RCS 21-371.

This AF813 updates site plan. Previous Description remains the same.

5.2 Description of Alternatives

No action.

17.0 CATEX DESCRIPTION (if any)

A2.3.11. Actions similar to other actions which have been determined to have an insignificant impact in a similar setting as established in an EIS or an EA resulting in a FONSI. The EPF must document application of this CATEX on AF Form 813, specifically identifying the previous Air Force approved environmental document which provides the basis for this determination.

18.0 REMARKS

CATEX 11 based upon the Environmental Assessment completed for a similar project, RCS 18-044 "Eglin AFB Cantonment Area EA" which addresses the pertinent environmental issues. The referenced EA can be viewed at https://cs2.eis.af.mil/sites/12217/AFKN_Docs/Forms/AllItems.aspx. The proponent for this action is responsible for implementing all applicable management requirements (see attached) identified in the referenced Environmental Assessment. If the proponent is unable to accommodate these requirements, the proposed action will require additional environmental analysis and this CATEX will not apply. If you have any questions contact Wendell Thompson, 96 CEG/CEIEA, 882-4436. Therefore your AF Form 813 qualifies for this CATEX provided that:

(1) Due to changing environmental conditions and/or regulations, the assigned Categorical Exclusion for this proposed action will expire 5 years from the date that this AF Form 813 was signed. If proposed action is not implemented within 5 years, a new AF Form 813 must be submitted.

(2) Take reasonable precautions to minimize fugitive particulate (dust) emissions during any ground disturbing/construction/renovation activities IAW Eglin AFB Title V Permit Facility-Wide Condition (reference: Florida Administrative Code (FAC) (Rule 62-296.320(4)(c)). Contact the Air Program Manager, Kevin Doyle, at 882-7667 if you have further questions.

(3) The Florida Department of Environmental Protection (FDEP) agrees that the proposed action meets the requirements of the Florida Coastal Management Program. FDEP concurrence on the Cantonment Area Environmental Assessment - Coastal Zone Management Act (CZMA) determination was received 12 Feb 2020. Proponent of this action must review the attached CZMA documents to ensure Eglin's compliance with the stated project plans. Proponent must also review and comply with the attached management actions. If you have questions, please contact Rodney Felix, 96 CEG/CEIEA, 883-1153.

(4) Gopher Tortoise Survey is required. Contact Eglin Natural Resources (Jackson Guard) to arrange for the survey to take place within 30 days of ground disturbing activities. If tortoise burrows are found to conflict with the proposed project site, and burrows cannot be avoided by at least 25 ft., the tortoise(s) must be relocated. POC: Jeremy Preston, 96 CEG/CEIEA, 883-1155, or Rodney Felix, 96 CEG/CEIEA, 883-1153. **Note that tortoises cannot be relocated if the forecasted low temperature is below 50 degrees for 3 consecutive days.**

(5) Proponent will also be provided with Eastern Indigo Snake Signs. Personnel must not harass, injure, harm, or kill this species. If an indigo snake is sighted, contact Eglin Natural Resources immediately. POC: Jeremy Preston, 96 CEG/CEIEA, 883-1155. Personnel must cease any activities and allow the eastern indigo snake sufficient time to move away from the site on its own before resuming activities.

(6) Forestry: In accordance with AFI 32-7064, "forest products may not be traded for goods or services nor used to offset contract costs associated with construction, land clearing, or other contracted activity". Merchantable trees must be vetted through the Eglin Natural Resources Forestry Office. Proponent must coordinate tree removal with Al Sutsko, 96 CEG/CEIEA, 883-1126 or Phillip Carter, CEG/CEIEA, 883-1129.

(7) There are no cultural resources concerns with this project as currently described. If project plans change in any way, contact the Eglin AFB Cultural Resources Office. If unexpected discoveries such as Native American graves or lost historic cemeteries are encountered, guidelines set forth in Chapter 872, Florida Statute (Florida's Unmarked Burial Law) must be followed. If human remains or archaeological materials are encountered during construction, work is to cease immediately and the area secured.

Contact the Eglin AFB Cultural Resources Office within 24 hours: Catherine Nolan, catherine.nolan.3@us.af.mil, Jessica Higley, jessica.higley.1@us.af.mil, or Alex DeCaro, alexander.decaro@us.af.mil.

(8) All hazardous materials to be used, including those used by contract activities, must be approved, documented, and tracked in the installation hazardous materials management program. POC: Mr. Kenneth Powell, 96 CEG/CEIEC, kenneth.powell.9@us.af.mil, 882-5929.

(9) There must not be any debris/waste left onsite. It must be removed to a secure, permitted disposal site or collected and transported for approved recycling/reuse. Reuse/recycle to the maximum extent feasible. To demonstrate conformance with DOD non-hazardous solid waste goals to divert 60% of C&D debris and 40% of non-C&D waste from landfill, document and report weight and cost data to 96 CEG/CEIEC for all non-hazardous solid waste a) disposed to landfill, and b) diverted from landfill through recycling/reuse, which is outside of common support. Include vegetative debris, even if chipped and left in place, in disposal/diversion numbers. (Common support, which is already being counted, includes 96 CEG contract for dumpsters, Defense Logistics Agency Disposition Services Eglin turn-ins, on-base recycling containers, etc.). If by contract, this requirement must be included in contract wording. POC: Ailie Csaszar, 96 CEG/CEIEC, ailie.csaszar.1@us.af.mil, 882-7663.

(10) Use Environmentally Preferable Purchasing (EPP), Comprehensive Procurement Guidelines (CPG), ENERGY STAR, products for this project if economical, available and practical. POC: Mr. Michael Gilliam, michael.gilliam.1@us.af.mil, 882-7662.

(11) This project is located near an identified Site SS-290P within the IRP Program for containing the emerging contaminated PFAS compounds related to past AFFF releases. PFAS compounds were detected in groundwater at concentrations above the EPA lifetime health advisory and/or current Regional Screening Levels. Ensure workers utilize proper PPE to avoid skin contact with groundwater. All PFAS compound waste must be properly disposed of. Avoid monitoring wells. Regulatory approval must be obtained with a groundwater management plan if dewatering is a requirement. Stop work immediately and contact Eglin IRP Office 850-546-0162 if any stained soil, unusual odors, or buried foreign materials are encountered.

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SECTION 01 74 19

CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL
02/19, CHG 3: 11/21

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)

40 CFR 273	Standards for Universal Waste Management
49 CFR 173	Shippers - General Requirements for Shipments and Packagings
49 CFR 178	Specifications for Packagings

1.2 DEFINITIONS

1.2.1 Co-mingle

The practice of placing unrelated materials together in a single container, usually for benefits of convenience and speed.

1.2.2 Construction Waste

Waste generated by construction activities, such as scrap materials, damaged or spoiled materials, temporary and expendable construction materials, and other waste generated by the workforce during construction activities.

1.2.3 Demolition Debris/Waste

Waste generated from demolition activities, including minor incidental demolition waste materials generated as a result of Intentional dismantling of all or portions of a building, to include clearing of building contents that have been destroyed or damaged.

1.2.4 Disposal

Depositing waste in a solid waste disposal facility, usually a managed landfill or incinerator, regulated in the US under the Resource Conservation and Recovery Act (RCRA).

1.2.5 Diversion

The practice of diverting waste from disposal in a landfill or incinerator, by means of eliminating or minimizing waste, or reuse of materials.

1.2.6 Final Construction Waste Diversion Report

A written assertion by a material recovery facility operator identifying

constituent materials diverted from disposal, usually including summary tabulations of materials, weight in short-ton.

1.2.7 Recycling

The series of activities, including collection, separation, and processing, by which products or other materials are diverted from the solid waste stream for use in the form of raw materials in the manufacture of new products sold or distributed in commerce, or the reuse of such materials as substitutes for goods made of virgin materials, other than fuel.

1.2.8 Reuse

The use of a product or materials again for the same purpose, in its original form or with little enhancement or change.

1.2.9 Salvage

Usable, salable items derived from buildings undergoing demolition or deconstruction, parts from vehicles, machinery, other equipment, or other components.

1.2.10 Source Separation

The practice of administering and implementing a management strategy to identify and segregate unrelated waste at the first opportunity.

1.3 CONSTRUCTION WASTE (INCLUDES DEMOLITION DEBRIS/WASTE)

Divert a minimum of 60 percent by weight of the project construction waste and demolition debris/waste from the landfill or incinerator. Follow applicable industry standards in the management of waste. Apply sound environmental principles in the management of waste. (1) Practice efficient waste management when sizing, cutting, and installing products and materials and (2) use all reasonable means to divert construction waste and demolition debris/waste from landfills and incinerators and to facilitate the recycling or reuse of excess construction materials.

1.4 CONSTRUCTION WASTE MANAGEMENT

Implement a Construction Waste Management Program for the project. Take a pro-active, responsible role in the management of construction construction waste, recycling process, disposal of demolition debris/waste, and require all subcontractors, vendors, and suppliers to participate in the Construction Waste Management Program. Establish a process for clear tracking, and documentation of construction waste and demolition debris/waste.

1.4.1 Implementation of Construction Waste Management Program

Develop and document how the Construction Waste Management Program will be implemented in a Construction Waste Management Plan. Submit a Construction Waste Management Plan to the Contracting Officer for approval. Construction waste and demolition debris/waste materials include un-used construction materials not incorporated in the final work, as well as demolition debris/waste materials from demolition activities or deconstruction activities. In the management of waste, consider the availability of viable markets, the condition of materials, the ability to

provide material in suitable condition and in a quantity acceptable to available markets, and time constraints imposed by internal project completion mandates.

1.4.2 Oversight

The Quality Control Manager, as specified in Section 01 45 00 QUALITY CONTROL, is responsible for overseeing and documenting results from executing the Construction Waste Management Plan for the project.

1.4.3 Special Programs

Implement special programs involving rebates or similar incentives related to recycling of construction waste and demolition debris/waste materials. Retain revenue or savings from salvaged or recycling, unless otherwise directed. Ensure firms and facilities used for recycling, reuse, and disposal are permitted for the intended use to the extent required by federal, state, and local regulations.

1.4.4 Special Instructions

Provide on-site instruction of appropriate separation, handling, recycling, salvage, reuse, and return methods to be used by all parties at the appropriate stages of the projects. Designation of single source separating or commingling will be clearly marked on the containers.

1.4.5 Waste Streams

Delineate waste streams and characterization, including estimated material types and quantities of waste, in the Construction Waste Management Plan. Manage all waste streams associated with the project. Typical waste streams are listed below. Include additional waste streams not listed:

- a. Land Clearing Debris
- b. Asphalt
- c. Masonry and CMU
- d. Concrete
- e. Metals (Includes, but is not limited to, banding, stud trim, ductwork, piping, rebar, roofing, other trim, steel, iron, galvanized, stainless steel, aluminum, copper, zinc, bronze.)
- f. Wood (nails and staples allowed)
- g. Glass
- h. Paper
- i. Plastics (PET, HDPE, PVC, LDPE, PP, PS, Other)
- j. Gypsum
- k. Non-hazardous paint and paint cans
- l. Carpet

- m. Ceiling Tiles
- n. Insulation
- o. Beverage Containers

1.5 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Construction Waste Management Plan; G

SD-06 Test Reports

Quarterly Reports

Annual Report

SD-11 Closeout Submittals

Final Construction Waste Diversion Report; S

1.6 MEETINGS

Conduct Construction Waste Management meetings. After award of the Contract and prior to commencement of work, schedule and conduct a meeting with the Contracting Officer to discuss the proposed Construction Waste Management Plan and to develop a mutual understanding relative to the management of the Construction Waste Management Program and how waste diversion requirements will be met.

The requirements of this meeting may be fulfilled during the coordination and mutual Understanding meeting outlined in Section QUALITY CONTROL. At a minimum, discuss and document waste management goals at following meetings:

- a. Preconstruction meeting.
- b. Regular Quality Control meetings.
- c. Work safety meeting (if applicable).

1.7 CONSTRUCTION WASTE MANAGEMENT PLAN

Submit Construction Waste Management Plan within 15 days after notice to proceed. Revise and resubmit Construction Waste Management Plan as necessary, in order for construction to begin..

An approved Construction Waste Management Plan will not relieve the Contractor of responsibility for compliance with applicable environmental regulations or meeting project cumulative waste diversion requirement. Ensure all subcontractors receive a copy of the approved Construction

Waste Management Plan. The plan demonstrates how to meet the project waste diversion requirement. Also, include the following in the plan:

- a. Identify the names of individuals responsible for waste management and waste management tracking, along with roles and responsibilities on the project..
- b. Actions that will be taken to reduce solid waste generation, including coordination with subcontractors to ensure awareness and participation.
- c. Description of the regular meetings to be held to address waste management.
- d. Description of the specific approaches to be used in recycling/reuse of the various materials generated, including the areas on site and equipment to be used for processing, sorting, and temporary storage of materials.
- e. Name of landfill and incinerator to be used.
- f. Identification of local and regional re-use programs, including non-profit organizations such as schools, local housing agencies, and organization that accept used materials such as material exchange networks and resale stores. Include the name, location, phone number for each re-use facility identified, and provide a copy of the permit or license for each facility.
- g. List of specific materials, by type and quantity, that will be salvaged for resale, salvaged and reused on the current project, salvaged and stored for reuse on a future project, or recycled. Identify the recycling facilities by name, address, and phone number.
- h. Identification of materials that cannot be recycled or reused with an explanation or justification, to be approved by the Contracting Officer.
- i. Description of the means by which materials identified in item (g) above will be protected from contamination.
- j. Description of the means of transportation of the recyclable materials (whether materials will be site-separated and self-hauled to designated centers, or whether mixed materials will be collected by a waste hauler and removed from the site).
- k. Copy of training plan for subcontractors and other services to prevent contamination by co-mingling materials identified for diversion and waste materials.
- l. Identification of at least 5 construction or demolition material streams for diversion.
- m. Facilities or subcontractors offering construction waste transport on-site or off-site must ensure that proper shipping orders, bill of lading, manifests, or other shipping documents containing waste diversion information meet requirements of 40 CFR 273 Universal Waste Management, 49 CFR 173 Shippers - General Requirements for Shipments and Packagings, and 49 CFR 178 Specifications for Packaging. Individuals signing manifests or other shipping documents should meet the minimum training requirements.

- n. List each supplier who deliver construction materials, in bulk, or package products in returnable containers or returnable packaging, or have take-back programs. List each program and the applicable material to actively monitor and track to assist in meeting waste diversion requirements on the project.

Distribute copies of the waste management plan to each subcontractor, Quality Control Manager , and the Contracting Officer.

1.8 RECORDS (DOCUMENTATION)

1.8.1 General

Maintain records to document the types and quantities of waste generated and diverted through re-use, recycling and sale to third parties; through disposal to a landfill or incinerator facility. Provide explanations for materials not recycled, reused or sold. Collect and retain manifests, weight tickets, sales receipts, and invoices specifically identifying diverted project waste materials or disposed materials.

1.8.2 Accumulated

Maintain a running record of materials generated and diverted from landfill disposal, including accumulated diversion rates for the project. Make records available to the Contracting Officer during construction or incidental demolition activities. Provide a copy of the diversion records to the Contracting Officer upon completion of the construction, incidental demolitions or minor deconstruction activities.

1.9 REPORTS

1.9.1 General

Maintain current construction waste diversion information on site for periodic inspection by the Contracting Officer. Include in the quarterly reports, annual reports and final reports: the project name, contract information, information for waste generated, diverted and disposed of for the current reporting period and show cumulative totals for the project. Reports must identify quantities of waste by type and disposal method. Also include in each report, supporting documentation to include manifests, weigh tickets, receipts, and invoices specifically identifying the project and waste material type and weighted sum.

1.9.2 Quarterly Reporting

Provide cumulative reports at the end of each quarter (December, March, June, and September, corresponding with the federal fiscal year for reporting purposes). Submit quarterly reports not later than 15 calendar days after the preceding quarter has ended. Submit Quarterly Reports to the Contracting Officer's Representative and Eglin AFB Environmental Compliance Office.

1.9.3 Annual Reporting

Provide a cumulative construction waste diversion report annually. Submit annual report not later than 30 calendar days after the preceding fourth quarter has ended. Provide copy of annual construction waste diversion report to the Contracting Officer's Representative and Eglin AFB

Environmental Compliance Office.

1.10 FINAL CONSTRUCTION WASTE DIVERSION REPORT

A Final Construction Waste Diversion Report is required at the end of the project. Provide Final Construction Waste Diversion Report 60 days prior to the Beneficial Occupancy Date (BOD). The final Construction Waste Diversion Report must be included in the Sustainability eNotebook in accordance with Section 01 33 29 SUSTAINABILITY REQUIREMENTS AND REPORTING.

1.11 COLLECTION

Collect, store, protect, and handle reusable and recyclable materials at the site in a manner which prevents contamination, and provides protection from the elements to preserve their usefulness and monetary value. Provide receptacles and storage areas designated specifically for recyclable and reusable materials and label them clearly and appropriately to prevent contamination from other waste materials. Keep receptacles or storage areas neat and clean.

Train subcontractors and other service providers to either separate waste streams or use the co-mingling method as described in the Construction Waste Management Plan. Handle hazardous waste and hazardous materials in accordance with applicable regulations. Separate materials by one of the following methods described herein:

1.11.1 Source Separation Method

Separate waste products and materials that are recyclable from trash and sort as described below into appropriately marked separate containers and then transport to the respective recycling facility for further processing. Deliver materials in accordance with recycling or reuse facility requirements (e.g., free of dirt, adhesives, solvents, petroleum contamination, and other substances deleterious to the recycling process). Separate materials into the category types as defined in the Construction Waste Management Plan.

1.11.2 Other Methods

Other methods proposed by the Contractor may be used when approved by the Contracting Officer.

1.12 DISPOSAL

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

1.12.1 Reuse

Give first consideration to reusing construction and demolition materials as a disposition strategy. Recover for reuse materials, products, and components as described in the approved Construction Waste Management Plan. Coordinate with the Contracting Officer to identify onsite reuse opportunities or material sales or donation available through Government resale or donation programs. Sale of recovered materials is not allowed

on the Installation. Consider the use of surplus industrial supply broker services, who match entities with reusable or repurpose industrial materials with entities with need of such materials.

1.12.2 Recycle

Recycle non-hazardous construction and demolition/debris materials that are not suitable for reuse. Track rejection of contaminated recyclable materials by the recycling facility. Rejected recyclables materials will not be counted as a percentage of diversion calculation. Recycle all fluorescent lamps, HID lamps, mercury (Hg) -containing thermostats and ampoules, and PCBs-containing ballasts and electrical components as directed by the Contracting Officer. Do not crush lamps on site as this creates a hazardous waste stream with additional handling requirements.

1.12.3 Compost

Consider composting on site if a reasonable amount of compostable materials will be available and a utilization of compostable material can be determined and appropriately planned for. Compostable materials include plant materials, sawdust and certain food scraps. Composting as a strategy must be explicitly addressed in the Construction Waste Management Plan submitted for approval to ensure it is feasible.

1.12.4 Waste

Dispose by landfill or incineration only those waste materials with no practical use, economic benefit, or recycling opportunity.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used. -- End of Section --

SECTION 01 78 00

CLOSEOUT SUBMITTALS
05/19, CHG 1: 08/21

PART 1 GENERAL

1.1 DEFINITIONS

1.1.1 As-Built Drawings

As-built drawings are the marked-up drawings, maintained by the Contractor on-site, that depict actual conditions and deviations from the Contract Documents. These deviations and additions may result from coordination required by, but not limited to: contract modifications; official responses to submitted Requests for Information (RFI's); direction from the Contracting Officer; design that is the responsibility of the Contractor, and differing site conditions. Maintain the as-builts throughout construction as red-lined hard copies on site. These files serve as the basis for the creation of the record drawings.

1.1.2 Record Drawings

The record drawings are the final compilation of actual conditions reflected in the as-built drawings.

1.2 SOURCE DRAWING FILES

Request the full set of electronic drawings, in the source format, for Record Drawing preparation, after award and at least 30 days prior to required use.

1.2.1 Terms and Conditions

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

These electronic CAD drawing files are not construction documents. Differences may exist between the CAD files and the corresponding construction documents. The Government makes no representation regarding the accuracy or completeness of the electronic CAD files, nor does it make representation to the compatibility of these files with the Contractor hardware or software. In the event that a conflict arises between the signed and sealed construction documents prepared by the Government and the furnished Source drawing files, the signed and sealed construction documents govern. The Contractor is responsible for determining if any conflict exists. Use of these Source Drawing files does not relieve the Contractor of duty to fully comply with the contract documents, including

and without limitation, the need to check, confirm and coordinate the work of all contractors for the project. If the Contractor uses, duplicates or modifies these electronic source drawing files for use in producing construction drawings and data related to this contract, remove all previous indicia of ownership (seals, logos, signatures, initials and dates).

1.3 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-03 Product Data

Warranty Management Plan

Warranty Tags

Spare Parts Data

SD-08 Manufacturer's Instructions

Posted Instructions

SD-11 Closeout Submittals

Certification of EPA Designated Items; G

Certification Of USDA Designated Items; G

1.4 SPARE PARTS DATA

Submit two copies of the Spare Parts Data list.

- a. Indicate manufacturer's name, part number, and stock level required for test and balance, pre-commissioning, maintenance and repair activities. List those items that may be standard to the normal maintenance of the system.
- b. At acceptance of commissioning, ensure the required stock level is supplied as indicated in subparagraph a. for maintenance and repair activities through the facility's warranty period. Provision of spare parts does not relieve the Contractor of responsibilities listed under the contract guarantee provisions.

1.5 WARRANTY MANAGEMENT

1.5.1 Warranty Management Plan

Develop a warranty management plan which contains information relevant to FAR 52.246-21 Warranty of Construction. At least 30 days before the planned pre-warranty conference, submit one set of the warranty management plan. Include within the warranty management plan all required actions and documents to assure that the Government receives all warranties to which it is entitled. The plan narrative must contain sufficient detail

to render it suitable for use by future maintenance and repair personnel, whether tradesmen, or of engineering background, not necessarily familiar with this contract. The term "status" as indicated below must include due date and whether item has been submitted or was accomplished. Submit warranty information, made available during the construction phase, to the Contracting Officer for approval prior to each monthly pay estimate. Assemble approved information in a binder and turn over to the Government upon acceptance of the work. The construction warranty period must begin on the date of project acceptance and continue for the full product warranty period. Conduct a joint 4 month and 9 month warranty inspection, measured from time of acceptance; with the Contractor, Contracting Officer and the Customer Representative. The warranty management plan must include, but is not limited to, the following:

- a. Roles and responsibilities of personnel associated with the warranty process, including points of contact and telephone numbers within the organizations of the Contractors, subcontractors, manufacturers or suppliers involved.
- b. For each warranty, the name, address, telephone number, and e-mail of each of the guarantor's representatives nearest to the project location.
- c. A list and status of delivery of Certificates of Warranty for extended warranty items, including roofs, HVAC balancing, pumps, motors, transformers, and for commissioned systems, such as fire protection and alarm systems, sprinkler systems, and lightning protection systems.
- d. Warranted Equipment and Materials list for each warranted equipment, item, feature of construction or system indicating:
 - (1) Name of item.
 - (2) Model and serial numbers.
 - (3) Location where installed.
 - (4) Name and phone numbers of manufacturers or suppliers.
 - (5) Names, addresses and telephone numbers of sources of spare parts.
 - (6) Warranties and terms of warranty. Include one-year overall warranty of construction, including the starting date of warranty of construction. Items which have warranties longer than one year must be indicated with separate warranty expiration dates.
 - (7) Cross-reference to warranty certificates as applicable.
 - (8) Starting point and duration of warranty period.
 - (9) Summary of maintenance procedures required to continue the warranty in force.
 - (10) Cross-reference to specific pertinent Operation and Maintenance manuals.
 - (11) Organization, names and phone numbers of persons to call for warranty service.
 - (12) Typical response time and repair time expected for various warranted equipment.
- e. The plans for attendance at the 4 and 9 month post-construction warranty inspections conducted by the Government.
- f. Procedure and status of tagging of equipment covered by warranties longer than one year.
- g. Copies of instructions to be posted near selected pieces of equipment where operation is critical for warranty or safety reasons.

1.5.2 Performance Bond

The Performance Bond must remain effective throughout the construction and warranty period.

- a. In the event the Contractor fails to commence and diligently pursue any construction warranty work required, the Contracting Officer will have the work performed by others, and after completion of the work, will charge the remaining construction warranty funds of expenses incurred by the Government while performing the work, including, but not limited to administrative expenses.
- b. In the event sufficient funds are not available to cover the construction warranty work performed by the Government at the Contractor's expense, the Contracting Officer will have the right to recoup expenses from the bonding company.
- c. Following oral or written notification of required construction warranty repair work, respond in a timely manner. Written verification will follow oral instructions. Failure to respond will be cause for the Contracting Officer to proceed against the Contractor.

1.5.3 Pre-Warranty Conference

Prior to contract completion, and at a time designated by the Contracting Officer, meet with the Contracting Officer to develop a mutual understanding with respect to the requirements of this section. At this meeting, establish and review communication procedures for Contractor notification of construction warranty defects, priorities with respect to the type of defect, reasonable time required for Contractor response, and other details deemed necessary by the Contracting Officer for the execution of the construction warranty. In connection with these requirements and at the time of the Contractor's quality control completion inspection, furnish the name, telephone number and address of a licensed and bonded company which is authorized to initiate and pursue construction warranty work action on behalf of the Contractor. This point of contact must be located within the local service area of the warranted construction, be continuously available, and be responsive to Government inquiry on warranty work action and status. This requirement does not relieve the Contractor of any of its responsibilities in connection with other portions of this provision.

1.5.4 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 timeframe specified, the Government will perform the work and back charge 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

- (3) Recreational support.
- (4) Air conditioning leak in part of building, if causing damage.
- (5) Air conditioning system not cooling properly.

Code 1-Doors

- (6) Overhead doors not operational, causing a security, fire, or safety problem.
- (7) Interior, exterior personnel doors or hardware, not functioning properly, causing a security, fire, or safety problem.

Code 3-Doors

- (8) Overhead doors not operational.
- (9) Interior/exterior personnel doors or hardware not functioning properly.

Code 1-Electrical

- (10) Power failure (entire area or any building operational after 1600 hours).
- (11) Security lights
- (12) Smoke detectors

Code 2-Electrical

- (13) Power failure (no power to a room or part of building).
- (14) Receptacle and lights (in a room or part of building).

Code 3-Electrical

- (15) Street lights.

Code 1-Gas

- (16) Leaks and breaks.
- (17) No gas to family housing unit or cantonment area.

Code 1-Heat

- (18) Area power failure affecting heat.
- (19) Heater in unit not working.

Code 2-Kitchen Equipment

- (20) Dishwasher not operating properly.
- (21) All other equipment hampering preparation of a meal.

Code 1-Plumbing

- (22) Hot water heater failure.
- (23) Leaking water supply pipes.

Code 2-Plumbing

- (24) Flush valves not operating properly.
- (25) Fixture drain, supply line to commode, or any water pipe leaking.
- (26) Commode leaking at base.

Code 3 -Plumbing
(27) Leaky faucets.

Code 3-Interior
(28) Floors damaged.
(29) Paint chipping or peeling.
(30) Casework.

Code 1-Roof Leaks
(31) Temporary repairs will be made where major damage to property is occurring.

Code 2-Roof Leaks
(32) 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)
(33) No water to facility.

Code 2-Water (Hot)
(34) No hot water in portion of building listed.

Code 3-All other work not listed above.

1.5.5 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.	

PART 2 PRODUCTS

2.1 CERTIFICATION OF EPA DESIGNATED ITEMS

Submit the Certification of EPA Designated Items as required by FAR 52.223-9 Estimate of Percentage of Recovered Material Content for EPA Designated Items and FAR 52-223-17 Affirmative Procurement of EPA designated items in Service and Construction Contracts. Include on the certification form the following information: project name, project number, Contractor name, license number, Contractor address, and certification. The certification will read as follows and be signed and dated by the Contractor. "I hereby certify the information provided herein is accurate and that the requisition/procurement of all materials listed on this form comply with current EPA standards for recycled/recovered materials content. The following exemptions may apply to the non-procurement of recycled/recovered content materials:

- a. The product does not meet appropriate performance standards;
- b. The product is not available within a reasonable time frame;
- c. The product is not available competitively (from two or more sources);
- d. The product is only available at an unreasonable price (compared with a comparable non-recycled content product)."

Record each product used in the project that has a requirement or option of containing recycled content in accordance with SECTION 01 33 29 SUSTAINABILITY REQUIREMENTS AND REPORTING, noting total price, total value of post-industrial recycled content, total value of post-consumer recycled content, exemptions (a, b, c, or d, as indicated), and comments. Recycled content values may be determined by weight or volume percent, but must be consistent throughout.

2.2 CERTIFICATION OF USDA DESIGNATED ITEMS

Submit the Certification of USDA Designated Items as required by FAR 52-223-1 Bio-based Product Certifications and FAR 52.223-2 Affirmative Procurement of Biobased Products Under Service and Construction

Contracts. Include on the certification form the following information: project name, project number, Contractor name, license number, Contractor address, and certification. The certification will read as follows and be signed and dated by the Contractor. "I hereby certify the information provided herein is accurate and that the requisition/procurement of all materials listed on this form comply with current USDA standards for biobased materials content. The following exemptions may apply to the non-procurement of biobased content materials:

- a. The product does not meet appropriate performance standards;
- b. The product is not available within a reasonable time frame;
- c. The product is not available competitively (from two or more sources);
- d. The product is only available at an unreasonable price (compared with a comparable bio-based content product)."

Record each product used in the project that has a requirement or option of containing biobased content in accordance with SECTION 01 33 29 SUSTAINABILITY REQUIREMENTS AND REPORTING, noting total price, total value of post-industrial recycled content, total value of post-consumer recycled content, total value of biobased content, exemptions (a, b, c, or d, as indicated), and comments. Biobased content values may be determined by weight or volume percent, but must be consistent throughout.

PART 3 EXECUTION

3.1 OPERATION AND MAINTENANCE MANUALS

Provide project operation and maintenance manuals as specified in Section 01 78 23 OPERATION AND MAINTENANCE DATA.

3.2 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.

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

-- End of Section --

SECTION 01 78 23

OPERATION AND MAINTENANCE DATA
05/23

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 GUIDELINE 1.4 (2019) Preparing Systems Manuals for
Facilities

ASTM INTERNATIONAL (ASTM)

ASTM E1971 (2005; R 2011) Standard Guide for
Stewardship for the Cleaning of Commercial
and Institutional Buildings

ASTM E2166 (2016; R 2023) Standard Practice for
Organizing and Managing Building Data

1.2 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-10 Operation and Maintenance Data

Facility Data Workbook; G

Training Plan; G

Training Outline; G

Training Content; G

Operation And Maintenance Manual, Progress Submittal; G

Operation And Maintenance Manual, Prefinal Submittal; G

Operation And Maintenance Manual, Final Submittal; G

SD-11 Closeout Submittals

Training Video Recording; G

Validation of Training Completion; G

Training Plan; G

Record Drawings And Utility Systems; G

1.3 MEETINGS

To assure that Operation and Maintenance Manual and Facility Data Workbook requirements are being met through the duration of the project, organize the following meetings and discuss the subsequent topics:

1.3.1 Pre-Construction Meeting

At a minimum, discuss the following:

- a. The requirement for Operation and Maintenance Manuals and Facility Data deliverables under this contract including coordination meetings
- b. Processes and method of gathering Facility Data information during construction
- c. Primary roles and responsibilities associated with the development and delivery of the Operation and Maintenance Manuals and Facility Data deliverables, and
- d. Identify and agree upon a date and attendance list for the meetings described below:

1.3.2 Operation and Maintenance Manual and Facility Data Workbook Coordination Meeting

Facilitate a meeting after the Pre-Construction Meeting prior to the submission of the Operation and Maintenance Manual Progress Submittal. Meeting attendance must include the Contractor's Operation and Maintenance Manual and Facility Data Workbook Preparer, Quality Control Manager, the Commissioning Authority (CxA), the Government's Design Manager (DM), Contracting Officer's Representative, and Government's facility data reviewer. Include any Mechanical, Electrical, and Fire Protection Sub-Contractors.

The purpose of this meeting is to reach a mutual understanding of the scope of work concerning the contract requirements for Operation and Maintenance Manual and coordinate the efforts necessary by both the Government and Contractor to ensure an accurate collection, preparation and timely Government review of Operation and Maintenance Manual.

1.3.3 Submittal Coordination Meeting

Facilitate a meeting following submission and Government review of each design or progress submittal of the Operation and Maintenance Manual and Facility Data Workbook.

- a. Include personnel from the Coordination meeting and any additional personnel identified.
- b. The purpose of this meeting is to demonstrate ongoing compliance with the requirements identified in this specification. Discuss Government review comments and unresolved items preventing completion and Government approval of the Operation and Maintenance Manuals and

Facility Data Workbook (FDW).

- c. The applicable deliverables, along with Government remarks associated with review of these submittals serve as the primary guide and agenda for this meeting.

1.4 FACILITY DATA WORKBOOK

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 Facility Data Workbook as a list of system equipment, location installed, warranty expiration date, manufacturer, model, and serial number.

1.5 OPERATION AND MAINTENANCE MANUAL MEDIA

Assemble Operation and Maintenance Manual into an electronically bookmarked 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 bookmarked operation and maintenance directory.

1.5.1 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

1.6 O&M MANUAL CONTENT

Organize the bookmarked Operation and Maintenance Manual into the following Parts in accordance with ASHRAE GUIDELINE 1.4, and as modified and detailed below. Word template for O&M Manual is available at: <https://www.wbdg.org/ffc/dod/unified-facilities-guide-specifications-ufgs/ufgs-01-78-23>.

1.6.1 Part 1: Executive Summary

Provide a summary of the information found in the O&M manual including the purpose of the manual and a description of the manual's organization.

1.6.2 Part 2: Facility Design and Construction

1.6.2.1 General Facility and Systems Description

Provide an overview of the intent for design and use of the facility. Provide a PDF of the Record Drawings prepared in accordance with 01 78 00 CLOSEOUT SUBMITTALS and bookmarked using the sheet title and sheet number. Include uncluttered 11 by 17 inches floor plans with room numbers, type or function of space, and overall facility dimensions on the floor plans. Do not include items such as construction instructions, references, or frame numbers.

Detail the overall dimensions of the facility, number of floors, foundation type, expected number of occupants, and facility Category Code list and generally describe all the facility systems and any special building features (for example, HVAC Controls, Sprinkler Systems, Cranes, Elevators, and Generators). Include photographs marked up and labeled to show key operating components and the overall facility appearance.

1.6.2.2 Basis of Design

Provide a copy of the contract Basis of Design.

1.6.2.3 Contract Documents, RFP, Amendments, and Modifications

Provide the contract construction documents complete, to include specifications, drawings, Request for Proposal, amendments, and modifications.

1.6.3 Part 3: Facilities, Systems, and Assemblies Information

1.6.3.1 Organization

Bookmark information in this section using the current version of ASTM E2166 Uniformat II, UFGS numbers, and document type as outlined in the example below. Bookmark/tab each item to the third level for easy navigation of the manual.

Example as shown in Table below:

PARTS AND SUBPART NUMBERING	
3.1 B20 EXTERIOR CLOSURE (System)	
3.1.1 B2030 EXTERIOR DOORS (Subsystem)	
3.1.1.1 B2030110 GLAZED DOORS (Component)	
3.1.1.1.1 Applicable specifications List in UFGS Format	
3.1.1.1.2 Manufacturer's Operations and Maintenance Data	
3.1.1.1.3 Approved Submittal	
3.1.1.1.4 Coordination/Shop Drawings	
3.1.1.1.5 Sequence of Operation for Operating Equipment	
3.1.1.1.6 Testing Equipment Information and Performance Data	
3.1.1.1.7 Routine Maintenance Requirements	

PARTS AND SUBPART NUMBERING	
3.1.1.1.8	Repair Procedures
3.1.1.1.9	Emergency Procedures & Locations of Applicable Controls
3.1.1.1.10	Warranties
3.1.1.1.11	Record Drawings and Utility Systems
3.1.1.1.12	Contractor / Supplies Listing and Contact Information

1.6.3.2 Related Specifications

Reference each specification related to the subsystem in this section, and locate the actual specification section in Part 2 of the O&M Manual. List specifications in table format as shown in the below example.

UFGS Number	Specification Title	Page Spec Begins in Part 2

1.6.3.3 Manufacturer's Operations and Maintenance Data

Provide a copy of all manufacturer specifications and cutsheets. Provide text-searchable, high-quality document files from the manufacturer's online or electronic documentation. Color documents are preferred. Provide documents specific to the product(s) installed under this Contract. Provide identification and coverage for the parts of each component, assembly, subassembly, and accessory of the end items subject to replacement. Provide Unifomat II Level 3 identification for D20, D30, D40 installed equipment. When possible, do not submit document files containing multiple product catalogs from the same manufacturer, or product data from multiple manufacturers in the same files. Provide documents directly from the manufacturer whenever possible. Do not provide scanned copies of hardcopy documents. 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 part catalog.

1.6.3.4 Approved Submittals and Certificates

Provide a copy of all submittals documented with the required approval as applicable for each UFGS specification listed in the table outlined in applicable specifications. Include copies of SD-07 Certificates submittals documented with the required approval, SD-08 Manufacturer's Instructions submittals documented with the required approval, and SD-10 Operation and Maintenance Data submittals documents with the required approval.

1.6.3.5 Approved Coordination/Shop Drawings

Drawings, diagrams and schedules specifically prepared to illustrate some portion of the work. Diagrams and instructions from a manufacturer or fabricator for use in producing the product and as aids to the Contractor for integrating the product or system into the project. Drawings prepared by or for the Contractor to show how multiple systems and interdisciplinary work will be coordinated.

1.6.4 Sequence of Operation for Operating Equipment

Provide record one-line diagrams for each floor, delineating mechanical equipment location within the building. Provide specific instructions, procedures, and illustrations for the following phases of operation for the installed model and features of each system:

1.6.4.1 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 GOVERNMENTAL SAFETY REQUIREMENTS. Provide recommended safeguards for each identified hazard. Specify if any certifications or licenses are required to operate the equipment.

1.6.4.2 Operator Prestart

Provide procedures required to install, set up, and prepare each system for use.

1.6.4.3 Startup, Shutdown, and Post-Shutdown Procedures

Provide narrative description for Startup, Shutdown and Post-shutdown operating procedures including the control sequence for each procedure.

1.6.4.4 Normal Operations

Provide Control Diagrams with data to explain operation and control of systems and specific equipment. Provide narrative description of Normal Operating Procedures.

1.6.4.5 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.

1.6.4.6 Operator Service Requirements

Provide instructions for services to be performed by the operator such as lubrication, adjustment, inspection, and recording gauge readings.

1.6.4.7 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.

1.6.4.8 Operating Log

Provide forms, sample logs, and instructions for maintaining necessary operating records.

1.6.4.9 Additional Requirements for Equipment Control Systems

Provide Data Package 5 and the following for all control systems:

- a. Provide 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. Submit complete controls equipment schedules, full as-built sequence of operations, wiring and logic diagrams, Input/Output Tables, equipment schedules, copies of checkout tests and calibrations performed by the Contractor (not Cx tests), and all associates information.
- c. 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
- d. Full print out of all schedules and set points after testing and acceptance of the system.

- e. Full as-built print out of software program.
- f. Marking of system sensors and thermostats on the as-built floor plan and mechanical drawings with their control system designations.

1.6.4.10 Testing Equipment Information and Performance Data

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.

Include completed prefunctional checklists, functional performance test forms, and monitoring reports. Include recommended schedule for retesting and blank test forms. Provide final set points.

1.6.5 Routine Maintenance Requirements

1.6.5.1 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 requirements by type of activity. 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.

1.6.5.2 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. Provide procedural instructions for Oil Sampling for all equipment.

- c. A Lubrication Schedule showing service interval frequency.

1.6.6 Repair Procedures

Provide instructions and a list of tools required to repair or restore the product or equipment to proper condition or operating standards. Provide manufacturer's recommended procedures and instructions for correcting problems and making repairs for the installed model and features of each system. Include potential environmental and indoor air quality impacts of recommended maintenance procedures and materials. Specify if any certifications or licenses are required to repair the equipment.

1.6.6.1 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.

1.6.6.2 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.

1.6.6.3 Removal and Replacement Instructions

Provide step-by-step procedures and a list of required specialty 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.

1.6.6.4 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.

1.6.6.5 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. Identify if replacement of a subassembly, attachment or accessory requires the entire assembly to be replaced. Include warranty information for primary components of the system. Provide copies of warranties required by Section 01 78 00 CLOSEOUT SUBMITTALS.

1.6.6.6 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.

1.6.6.7 Record Drawings and Utility Systems

The record drawings are the final compilation of actual conditions reflected in the as-built drawings. Provide record drawings as outlined in 01 78 00 CLOSEOUT SUBMITTALS.

Using Record Source Drawings, show and document details of the actual installation of the utility systems, annotate and highlight the Operation and Maintenance information. Provide the following drawings at a large enough scale to differentiate designated isolation units from surrounding valves and switches.

1.6.6.8 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.

1.6.6.9 Contractor / Supplier Listing and Contact Information

Provide a list that includes the name, address, telephone number, email and website 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.

1.6.7 Part 4: Facility Operations

1.6.7.1 Completed Facility Operating Plan

Provide a plan that documents that procedures for the operation of systems and assemblies in the facility. The systems that should be included in the Operating Plan include, but are not limited to:

- a. Electrical systems and equipment
- b. Mechanical systems and equipment
- c. Fire Protection systems and equipment
- d. Control Systems and equipment
- e. Architectural and Structural systems, fixtures, structures, and equipment
- f. Vertical transportation such as elevators and escalators

1.6.7.2 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.

1.6.7.3 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.

1.6.7.4 Approved Field Test Reports and Manufacturer's Field Reports

Compile and provide approved Field Test Reports (SD-06) and Manufacturer's Field Reports (SD-09) submittals.

1.6.7.5 Maintenance Plans, Procedures, Checklists, Records, and Spare Parts Inventory

1.6.7.5.1 Maintenance Schedules

Include recommended maintenance schedules for systems and equipment.

1.6.7.5.2 Ongoing Commissioning Operational and Maintenance Record Keeping

Include ongoing commissioning and optimization procedures and documentation to monitor and improve the performance of facility systems.

1.6.7.5.3 Janitorial and Cleaning Plans and Procedures

Include a copy of facility cleaning and janitorial plan with procedures and intended chemicals and equipment.

Provide environmentally friendly cleaning recommendations in accordance with ASTM E1971.

1.6.7.6 Utility Record Drawings

1.6.7.6.1 Utility Schematic Diagrams

Provide a one-line schematic diagram for each utility system such as power, water, wastewater, and gas/fuel. Schematic diagram must show from the point where the utility line is connected to the mainline up to the 5 foot connection point to the facility. Indicate location or area designation for route of transmission or distribution lines; locations of duct banks, manholes/handholes or poles; isolation units such as valves and switches; and utility facilities such as pump stations, lift stations, and substations.

1.6.7.6.2 Enlarged Connection and Cutoff Plans

Provide enlarged floor plans and provide information between the 5 foot utilities connection point and where utilities connect to facility distribution. Enlarge floor plans/elevations of the rooms where the utility enters the building and indicate on these plans the locations of the main interiors and exterior connection and cutoff points for the utilities. Also enlarge floor plans/elevations of the rooms where equipment is located. Include enough information to enable someone unfamiliar with the facility to locate the connection and cutoff points. Indicate designations such as room number, panel number, circuit breaker, or valve number of each utility and equipment connection and cutoff point, and what that connection and cutoff point controls.

1.6.7.6.2.1 Description of Utility Metering and Monitoring Systems

Provide in narrative format a description of the utility metering and monitoring systems. Include locations, function, and related systems.

1.6.7.6.2.2 Procedures for Tracking Utility Use and Reporting

Procedures for usage reporting and tracking in support of establishing and monitoring utility budgets and costs, and in developing annual energy reports.

1.6.7.6.2.3 One-Line Diagrams and Meter Location of System

Provide one-line diagrams and design drawings that highlight meter locations on the site.

1.6.7.6.3 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.

1.6.8 Part 5: Training

Provide a copy of training plans used for each type of equipment along with training materials used, arranged in specification sequence. Provide a copy of training records, sign-in sheets, and agendas. Include training and documentation on the updating and continued use of the O&M Manual.

1.6.9 Part 6: Cx Project Report and TAB Report

Provide the final Cx Plan and complete Cx reports with evaluation and testing forms and records for each building system. Include relevant commissioned system assemblies test reports including installers checklists of assemblies. Provide all Cx Progress Reports, issues and resolutions logs with resolution or status of each item, and a list of any open items and seasonal or additional testing required.

1.6.10 Part 7: Regulatory Requirements

Provide information describing regulatory and policies compliance requirements or provide a reference to where it is stored.

1.6.11 Part 8: Permits

Provide information requiring frequently asked questions and associated answers or provide a reference to where it is stored.

1.6.12 Part 9: Operations and Maintenance Manual Approval

Provide a signed document stating that the project O&M Manual has been reviewed and confirming agreement with the approach it presents. Include contact information for the signer for coordination of any future changes.

1.7 SCHEDULE OF OPERATION AND MAINTENANCE DATA PACKAGES

Provide the O&M data packages specified in individual technical sections. O&M Data Packages are one of the components of the O&M Manual. The

information required in each type of data package follows:

1.7.1 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.

1.7.2 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

1.7.3 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

1.7.4 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

1.7.5 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

1.7.6 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

1.7.7 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.

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 QC or 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 assure proper size of exhibits and projections during the recording are visible and readable when viewed as training.

3.1.5 Unresolved Questions from Attendees

If, at the end of the training course, there are questions from attendees that remain unresolved, the instructor must send the answers, in writing, to the Contracting Officer for transmittal to the attendees, and the training video must be modified to include the appropriate clarifications.

3.1.6 Validation of Training Completion

Ensure that each attendee at each training session signs a class roster daily to confirm Government participation in the training. At the completion of training, submit a signed validation letter that includes a sample record of training for reporting what systems were included in the training, who provided the training, when and where the training was performed, and copies of the signed class rosters. Provide two copies of the validation to the Contracting Officer, and one copy to the Operation and Maintenance Manual Preparer for inclusion into the Manual's documentation.

3.1.7 Quality Control Coordination

Coordinate this training with the QC or CxA in accordance with Section 01 45 00 QUALITY CONTROL.

3.2 SUBMITTAL SCHEDULING

3.2.1 Operation and Maintenance Manual, Progress Submittal

Submit the Progress submittal when construction is approximately 50 percent complete, to the Contracting Officer for approval. Provide Operation and Maintenance Manual Files (Bookmarked PDF). Include the elements and portions of system construction completed up to this point. The purpose of this submittal is to verify progress is in accordance with contract requirements as discussed during the Operation and Maintenance Manual Coordination Meeting.

3.2.2 Operation and Maintenance Manual, Prefinal Submittal

Submit the 100 percent submittal of the Operation and Maintenance Prefinal

Submittal to the Contracting Officer for approval within 90 calendar days of the Beneficial Occupancy Date (BOD). This submittal must provide a complete, working document that can be used to operate and maintain the facility. Any portion of the submittal that is incomplete or inaccurate requires the entire submittal to be returned for correction. Any discrepancies discovered during the Government's review of Operation and Maintenance Progress submittal must be corrected prior to the Prefinal submission. The Prefinal Submittal must include Operation and Maintenance Manual Files (Bookmarked PDF).

3.2.3 Operation and Maintenance Manual, Final Submittal

Submit completed Operation and Maintenance Manual Files (Bookmarked PDF). The Final submittal is due at BOD. Any discrepancies discovered during the Government's review of the Prefinal submittal, including the Field Verification, must be corrected prior to the Final submission.

-- End of Section --

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SECTION 01 91 00.15

BUILDING COMMISSIONING
05/23, CHG 2: 11/23

PART 1 GENERAL

Building Commissioning is a systematic, quality-focused process for enhancing the delivery of a project that focuses on verifying and documenting that all of the commissioned systems and assemblies are planned, designed, installed, tested, operated, and maintained to meet the project requirements. The purpose is to reduce the cost and performance risks associated with delivering facilities projects, and to increase value to owners, occupants, and users.

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 90.1 - IP	(2019) Energy Standard for Buildings Except Low-Rise Residential Buildings
ASHRAE 180	(2012) Standard Practice for Inspection and Maintenance of Commercial Building HVAC Systems
ASHRAE 202	(2018) Commissioning Process for Buildings and Systems

ASSOCIATED AIR BALANCE COUNCIL (AABC)

ACG Commissioning Guideline	(2005) Commissioning Guideline

NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB)

NEBB S1110	(2019) Whole Building Technical Commissioning of New Construction; 2nd Edition

SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION
(SMACNA)

ANSI/SMACNA 014	(2013) HVAC Systems Commissioning Manual, 2nd Edition

U.S. ARMY CORPS OF ENGINEERS (USACE)

ER 25-345-1	(2019) Commissioning -- Systems Manual

1.2 DEFINITIONS

Commissioning Process (Cx) - a quality-focused process for enhancing the delivery of a project. Refer to ASHRAE 202 for a comprehensive

description of the commissioning process.

Lead Commissioning Specialist (CxC) - The entity who leads, plans, and coordinates the Commissioning Team. The terms Commissioning Provider, Commissioning Firm, Lead Commissioning Specialist, Commissioning Specialist, and Commissioning Authority (CA or CxA) when used by sustainable Third Party Certification (TPC) programs, are interchangeable.

Commissioning Authority - The Government retains the authority for oversight and assurance of the entire commissioning process, and final approval of all commissioning deliverables.

1.3 COMMUNICATION WITH THE GOVERNMENT

The Lead Commissioning Specialist (CxC) must submit all plans, schedules, reports, and documentation directly to the Contracting Officer's Representative concurrent with submission to the CQC System Manager.

The Lead Commissioning Specialist must have direct communication with the Contracting Officer's Representative regarding all elements of the commissioning process; however, the Government has no direct contract authority with the Lead Commissioning Specialist.

1.4 SYSTEMS TO BE COMMISSIONED

Coordinate commissioning and quality control activities for the following systems, equipment, and associated controls. System-specific requirements are located in the associated specification sections. Commission the following systems, equipment, and associated controls in accordance with this section and the inspection, testing, and quality control requirements of their respective sections:

- Hydronic HVAC Systems
- Airside HVAC Systems
- Electrical Systems
- DDC HVAC Control Systems
- Lighting Control Systems

1.5 COMMISSIONING TEAM

The Commissioning team will include, but is not limited to the following team members.

Ensure all Construction Activities for systems to be commissioned are coordinated with the appropriate commissioning team members.

- a. Lead Commissioning Specialist (CxC)
- b. CQC System Manager
- c. Sub-Contractor Representatives for each trade responsible for construction/installation of systems to be commissioned
- d. Contractor's Project Manager
- e. Technical Commissioning Specialists for each system to be commissioned
- f. TAB Representative

- g. Equipment manufacturer representatives
- h. Government Contracting Officer
- i. Government Representatives
- j. Installation Maintenance Representative
- k. Facility End User

1.6 PROJECT SCHEDULE

Include the following tasks in the project schedule required by Section 01 32 01.00 10 PROJECT SCHEDULE. Ensure sufficient time is scheduled to complete each item. The order of items listed below is not intended to imply a specified sequence:

- a. Submission and approval of the Commissioning Firm Qualifications
- b. Submission and approval of the Interim and Final Construction Phase Commissioning Plans
- c. Commissioning Kickoff Meeting
- d. Regular Commissioning Coordination Meetings
- e. Installation of permanent utilities (gas, water, electric, steam)
- f. Building Enclosure Construction
- g. Submission and approval of the Completed Building Enclosure Inspection Checklists
- h. Manufacturer's Equipment Start-Up for each of the systems to be commissioned
- i. Submission and approval of the Completed Commissioning Observation Checklists
- j. Submission and approval of Certificate of Readiness for each system to be commissioned
- k. Commissioning Testing, including Functional Performance Testing, for each system to be commissioned
- l. Integrated Systems Tests
- m. Post-test deficiency correction for each system to be commissioned
- n. Re-Testing
- o. Submission and approval of the Maintenance and Service Life Plans
- p. Submission and approval of the Systems Manual
- q. Training for each of the systems to be commissioned
- r. Submission and approval of the Final Commissioning Reports

1.7 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are for Contractor Quality Control approval. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-06 Test Reports

Completed Construction Observation Checklists; G

Design Review Report; G

Interim Construction Phase Commissioning Plan; G

Final Construction Phase Commissioning Plan; G; S

Issues Log; G

SD-07 Certificates

Commissioning Firm; G

SD-10 Operation and Maintenance Data

Maintenance and Service Life Plan; G

Systems Manual; G

SD-11 Closeout Submittals

Final Commissioning Report; G

Final Commissioning Report (eNotebook); S

1.8 COMMISSIONING FIRM

Employ the services of a Commissioning Firm and all Commissioning Specialists required to perform work for this project. The Commissioning Firm must be a first-tier subcontractor that is financially and corporately independent from prime contractor and all other subcontractors and the Designer of Record and that is not participating in any other work on this Contract, including design, furnishing equipment, construction, or testing, adjusting, and balancing.

- a. Submit the Commissioning Firm's and Commissioning Specialists' qualifications, including the name of the firm and each CxC and each certification, no later than 60 calendar days after notice to proceed.
- b. If, for any reason, a specialist loses a certification during this period, immediately notify the Contracting Officer and submit another Commissioning Specialist for approval. An approved successor must validate all work performed for this project by the CxC who lost a certification.

1.8.1 Commissioning Specialists (CxC)

Assign Lead Commissioning Specialist and other appropriate Commissioning Specialists for the systems to be commissioned.

1.8.1.1 Lead Commissioning Specialist (CxC)

Lead Commissioning Specialist (CxC) coordinates all aspects of the commissioning process. Duties include leading and overseeing the commissioning work and acting as the primary point of contact for the commissioning work. CxC may serve as a systems Specialist if all requirements for both designations are met. CxC must have a minimum of five years of commissioning experience, including two projects of similar size and complexity to this project.

CxC must be certified in one of the following:

NEBB Building System Commissioning Professional (CxCP)

ACG Certified Commissioning Authority (CxA)

ICB/TABB Certified Commissioning Supervisor

BCA Certified Commissioning Professional (CCP)

AEE Certified Building Commissioning Professional (CBCP)

University of Wisconsin-Madison Qualified Commissioning Process Provider (QCxP)

ASHRAE Building Commissioning Professional (BCxP).

1.8.1.2 Commissioning Specialists

Refer to the related technical commissioning specification section for additional qualifications for each Commissioning Specialist associated with each system. Include all Commissioning Specialist qualifications with the Commissioning Firm submittal:

- a. Mechanical Commissioning Specialist: The technical work associated with mechanical systems to be commissioned must be performed by a Commissioning Specialist certified by NEBB, ACG, ICB/TABB, AEE, University of Wisconsin-Madison, ASHRAE, or BCA in the commissioning of HVAC systems with five years of experience in the commissioning of HVAC systems.
- b. Electrical Commissioning Specialist: The technical work associated with electrical systems to be commissioned must be performed by an engineering technician with five years of experience inspecting, testing, and calibrating electrical distribution and generation equipment, systems, and devices. The Mechanical Commissioning Specialist may be utilized to perform the technical work associated with electrical systems to be commissioned.
- c. Building Enclosure Commissioning Specialist: The technical work associated with the Building Envelope system must be performed by a Building Enclosure Commissioning Specialist that is a registered architect or engineer, or building scientist, with five years of building enclosure design or construction experience. The commissioning provider must have the necessary training, experience, and FPT equipment.

1.9 COMMISSIONING STANDARD

Comply with ASHRAE 202 and the commissioning standards under which the Commissioning Firm and Specialists qualifications are approved, which may include ACG Commissioning Guideline, NEBB S1110, or ANSI/SMACNA 014. In a conflict, the most stringent requirements apply. In addition, comply with ASHRAE 90.1 - IP commissioning requirements for all systems. Refer to related technical commissioning specification sections for additional standards requirements. Comply with applicable International Electrical Testing Association (NETA) testing standards for electrical systems. The following requirements apply to all project commissioning and test standards:

- a. Implement all recommendations and suggested practices contained in the Commissioning Standard and test standards.
- b. Use the Commissioning Standard for all aspects of Commissioning, including calibration of instruments.
- c. Where the instrument manufacturer calibration recommendations are more stringent than those listed in the Commissioning Standard, adhere to the manufacturer calibration recommendations.
- d. All quality assurance provisions of the Commissioning Standard such as performance guarantees are part of this contract.
- e. The Commissioning Specialists must develop commissioning procedures for any systems or system components not covered in the Commissioning Standard.
- f. Use any new requirements, recommendations, and procedures published or adopted by the body responsible for the applicable Commissioning Standards at the time of project award.
- g. If there is a conflict between the requirements of the contract documents and the commissioning standard used, the contract documents take precedent.

1.10 SUSTAINABILITY THIRD PARTY CERTIFICATION (TPC)

The Commissioning Specialist must perform all commissioning activities, coordination, and submittals required by the sustainability Third Party Certification (TPC) program applied to this project, in accordance with Section 01 33 29 SUSTAINABILITY REQUIREMENTS AND REPORTING.

CxC must provide documentation or perform commissioning activities, coordination and submittals as required by Leadership in Energy and Environmental Design (LEED) Fundamental Commissioning and Verification and Enhanced Commissioning Option 1: Path 1 Enhanced Commissioning.

1.11 ISSUES LOG

The Commissioning Specialist develops and maintains an Issues Log for the systems to be commissioned. The issues log documents and tracks resolution of deficiencies identified during submittal reviews, inspection, and testing. At any point during construction, any commissioning team member finding deficiencies may communicate those deficiencies in writing to the Commissioning Specialist for inclusion into the Issues Log. For each issue, the Issues Log includes, but is not

limited to, a unique reference number, description of the issue with contract requirement referenced, location of or equipment name/tags exhibiting the issue, the initials of the individual's name whom reported the issue, the date of first observation, the proposed resolution of the issue and date proposed, the date of any subsequent observations with applicable additional information, and the date of implementation of the final resolution of the issue as confirmed by the Commissioning Specialist and Contracting Officer. Issues must not be deleted from the issues log.

CxC must submit the Issues Log monthly and within three working days from changes to the Issue Log. The CxC is responsible for distributing the Issues Log to the Commissioning Team. CQC System Manager must track construction deficiencies identified in the Issues Log using a quality management system in accordance with Section 01 45 00 QUALITY CONTROL.

1.12 CERTIFICATE OF READINESS

Prior to scheduling Commissioning Tests for each system, the Quality Control Manager must issue a Certificate of Readiness for each system, certifying that inspections have been completed, provide start-up reports; completed Pre-Functional Checklists; Testing, Adjusting, and Balancing (TAB) Report; HVAC Controls Start-Up Reports. Open issues have been resolved, and the system is ready for Commissioning Tests. Refer to each related technical commissioning specification section for additional requirements. PVTs must be completed for all equipment before functional performance testing. Performance Verification Tests of the controls systems have been completed and the Performance Verification Test Report has been submitted and approved in accordance with Section 23 09 00 INSTRUMENTATION AND CONTROL FOR HVAC.

Submit the Certificate of Readiness for each system 30 calendar days prior to Commissioning Tests of that system. Do not schedule Commissioning Tests for a system until the Certificate of Readiness is approved by the Contracting Officer. The Mechanical, Electrical, Controls, and TAB subcontractor representatives must sign and date the Certificate of Readiness.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.1 DESIGN REVIEW

The CxC and other Commissioning Specialists must review design documents.

Provide a Design Review Report identifying discrepancies or deficiencies that would prevent the systems to be commissioned from operating or performing effectively or being adequately maintained. Report must include individual list of each deficiency and corresponding corrective action necessary for proper system performance. **Submit the Design Review Report no later than 14 calendar days.** The Contracting Officer, the Contractor's Project Manager, the CxC, and the Designers of Record for the associated systems must meet, discuss, and resolve any outstanding items contained in the report no later than 14 calendar days after submission of the report.

3.2 CONSTRUCTION SUBMITTAL REVIEWS

Coordinate construction submittal document reviews for commissioned systems and assemblies with the CxC. The commissioning submittal review does not replace the Government submittal review, in accordance with Section 01 33 00 SUBMITTAL PROCEDURES.

The CxC must identify construction submittals to be provided by the contractor for the commissioned systems. The CxC must evaluate construction submittals for compliance with the contract documents. Include a copy of CxC comments with the construction submittals. Include a copy of the submittal document review transmittal and response in the Commissioning Report.

3.3 COMMISSIONING KICKOFF MEETING

Conduct a Commissioning Kickoff Meeting, led by the CxC, after approval of the Commissioning Firm and Commissioning Specialists, and no later than 60 days following construction notice to proceed. Discuss the commissioning process including contract requirements, lines of communication, roles and responsibilities, schedules, documentation requirements, inspection and test procedures, and logistics as specified in this section.

The Contractor's Project Manager, Quality Control team, Designer of Record, and the Government must attend this meeting. Invite the User and a Directorate of Public Works Representative to attend this meeting.

3.4 REGULAR COMMISSIONING COORDINATION MEETINGS

The Quality Control team, Designer of Record, and the Government must attend this meeting. Sub-Contractor Representatives for each trade responsible for construction/installation of systems to be commissioned must attend this meeting as requested by the CxC. Invite the User and the Base Civil Engineer Representative to attend this meeting.

CxC must conduct monthly commissioning coordination meetings when installation of commissioned systems begins. Provide status of commissioned systems, open issues log items, outstanding submittals, and upcoming commissioning activities. Conduct bi-weekly commissioning coordination meetings within 30 days of the scheduled date for commissioning testing.

Participate in monthly commissioning coordination meetings led by the CxC when installation of commissioned systems begins. Provide status of commissioned systems, open issues log items, outstanding submittals, and upcoming commissioning activities. Participate in bi-weekly commissioning coordination meetings within 30 days of the scheduled date for commissioning testing.

3.5 CONSTRUCTION PHASE COMMISSIONING PLANS

The Interim Construction Phase Commissioning Plan identifies the commissioning and testing standards and outline the overall commissioning process, the commissioning schedule, the commissioning team members and responsibilities, lines of communication, documentation requirements for the construction phase of the project, and Template Building Enclosure Inspection Checklists. Submit the Interim Construction Phase Commissioning Plan, prepared by the CxC, 14 calendar days after the Construction Commissioning Coordination Meeting and 14 days prior to the

start of construction of the building enclosure. Include the following items in the commissioning schedule in addition to the items in paragraph PROJECT SCHEDULE: Seasonal Testing, Warranty Phase Site Visit, Post-Construction Endurance Testing, and Updated Commissioning Report.

The Final Construction Phase Commissioning Plan includes the information provided in the Interim Construction Phase Commissioning Plan as well as commissioning construction observation checklists and test procedures such as Pre-Functional Checklists, Integrated Systems Test Checklists, and Functional Performance Test Checklists and other Commissioning Test Checklists for each building, for each system required to be commissioned, and for each component for inclusion in the Final Construction Phase Commissioning Plan. Refer to the related technical commissioning specification section for additional requirements for checklists. Submit the Final Construction Phase Commissioning Plan, prepared by the CxC, no later than 90 calendar days prior to the start of Commissioning Inspections. Once approved, file the approved plan in the Sustainability eNotebook.

3.5.1 Construction Observation Checklists

Construction Observation Checklists must include items for physical inspection or testing that demonstrate that installation and start-up of equipment and systems is complete. Refer to paragraph COMMISSIONING INSPECTIONS. Construction observation checklists must be tailored to verify the specific installation requirements and details of the construction documents and manufacturer's instructions.

3.5.2 Test Procedures and Checklists

Test procedures and checklists must include procedures that explain, step-by-step, the actions and expected results that will demonstrate that the systems perform in accordance with the contract. Refer to paragraph COMMISSIONING TESTS. Include the following sections and details appropriate to the systems being tested in the test procedures and checklists:

- a. Notable system features including information about controls to facilitate understanding of system operation
- b. Conclusions and recommendations. Conclusions must clearly indicate if system does or does not perform in accordance with contract requirements. Recommendation must clearly indicate that the system should or should not be approved by the Government.
- c. Test conditions including date, beginning and ending time, and beginning and ending outdoor air conditions
- d. Attendees
- e. Identification of the equipment involved in the test
- f. Control system feature identification
- g. As-found condition of the system operation
- h. List of test items with step numbers along with the corresponding feature or operation, intended test procedure, expected system response, and pass/fail indication.

- i. Space for comments for each test item.

3.6 COMMISSIONING INSPECTIONS

Complete inspections using Construction Observation Checklists for each individual item of equipment or system for each system required to be commissioned in accordance with the commissioning plan. Indicate commissioning team member inspection and validation of each checklist item by initials. Validation of each checklist item by each team member indicates that item conforms to the contract documents and design in their area of responsibility. Commissioning Specialist validation of each checklist item indicates that each item has been installed correctly and in accordance with contract documents and the Owner's Project Requirements (OPR). Submit the initialed and Completed Construction Observation Checklists no later than 7 calendar days after completion of inspection of all checklists items for each system.

3.7 COMMISSIONING TESTS

Demonstrate that all systems, equipment, and components have been installed correctly and that the systems operate and perform, including interactive operation between systems, in accordance with contract documents and the Owner's Project Requirements Document. Perform tests as specified in related technical commissioning specifications. Provide all materials, services, and labor required to perform all commissioning tests.

Commissioning Specialist's duties include leading and documenting all tests for the systems to be commissioned with appropriate sub-contractors performing the Tests. The representatives listed in the paragraph COMMISSIONING TEAM must attend the tests with the exception of the Contractor's Project Manager.

3.7.1 Test Scheduling and Coordination

Schedule Commissioning Tests for each system only after the Certificate of Readiness has been approved by the Government for the system. Correct all deficiencies identified through any prior review, inspection, or test activity before the start of Commissioning tests.

Commissioning Tests and Integrated Systems Tests must be performed with the CxC present. Government reserves the right to witness all tests. Coordinate test schedule with Government representatives.

3.7.2 Testing Procedures

Commissioning tests include tests such as functional performance and integrated systems tests. For electrical systems testing, include testing of sensor calibrations, control responses, safeties, interlocks, operating modes, capacity, lighting levels, and verification of all other electrical system contract performance requirements. Perform test procedures in accordance with the commissioning standards specified. In addition, comply with the testing procedures specified in the sections listed in paragraph RELATED SECTIONS.

3.7.3 Sample Strategy

3.7.4 Aborted Tests and Re-Testing

Abort any test if any deficiency prevents successful completion of the test or if any required commissioning team member is not present for the test. Re-test after all deficiencies identified during the original test have been corrected. Contracting Officer may withhold payment equivalent to lost time, re-testing, and aborted tests. These costs may include salary, travel costs, and per diem for Government team members.

3.8 TRAINING PLAN

CxC must review the training plan for training associated with the equipment and systems to be commissioned, checking that each plan has the trainer name, trainer contract information, training schedule and location. Submit review at least 30 days prior to the first training event. Incorporate CxC review comments prior to submitting training plan in accordance with Section 01 78 23 OPERATION AND MAINTENANCE DATA. Update and resubmit the training plan based on any corrective action taken.

3.9 SYSTEMS MANUAL

Prepare and submit a Systems Manual, including a signed certification or letter from the Commissioning Specialists and the CxC stating that the Systems Manual is complete, clear, and accurate. The Systems Manual, for all commissioned systems, must conform to Appendix A SYSTEMS MANUAL ORGANIZATION AND CONTENT per ER 25-345-1, available at the USACE Publications website at the following location: <https://www.publications.usace.army.mil/USACE-Publications/Engineer-Regulations/>. Submit Systems Manual no later than 30 calendar days following completion of Functional Performance Tests and Integrated Systems Tests. Update and resubmit the Systems Manual based on any corrective action taken during the warranty period.

Ensure Systems Manual is coordinated with the requirements of Section 01 78 23 OPERATION AND MAINTENANCE DATA and Quality Control requirements.

3.10 MAINTENANCE AND SERVICE LIFE PLAN

3.10.1 Maintenance Plan

Prepare and submit a Maintenance Plan for the project mechanical, electrical, plumbing, and fire protection systems. Prepare the HVAC and refrigeration sections of the Maintenance Plan in accordance with ASHRAE 180. Develop required inspection and maintenance tasks similar to Section 5 of ASHRAE 180 for the other commissioned systems and fire protection systems. Ensure Maintenance Plan is coordinated with the requirements of Section 01 78 23 OPERATION AND MAINTENANCE DATA.

Submit the Maintenance Plan no later than 30 calendar days following the completion of Functional Performance Tests and Integrated Systems Tests.

3.10.2 Service Life Plan

Prepare and submit a Service Life Plan for the building enclosure,

structural systems, and site hardscape that includes the following for each assembly or component:

- a. A description of each including the materials or products.
- b. The estimated service life, in years.
- c. The estimated maintenance frequency and description of maintenance tasks.
- d. The point of maintenance access for the components with estimated service life less than service life of the building.

Ensure Service Life Plan is coordinated with the requirements of Section 01 78 23 OPERATION AND MAINTENANCE DATA. Submit the Service Life Plan no later than 30 calendar days following the completion of Functional Performance Tests and Integrated Systems Tests.

3.11 COMMISSIONING REPORT

CxC to submit an Final Commissioning Report no later than 14 calendar days following commissioning team validation of all Commissioning Tests, including Functional Performance Tests, and Integrated Systems Tests, with the exception of Seasonal Tests. File the approved Final Commissioning Report (eNotebook) in the Sustainability eNotebook. Include the following information in the Final Commissioning Report:

- a. An executive summary describing the overall commissioning process, the results of the commissioning process, outstanding deficiencies and recommended resolutions, and seasonal testing that must be scheduled for a later date.
- b. A list of deficiencies discovered during the commissioning process and the corrective actions taken in the report.
- c. Completed Building Enclosure Inspection Checklists, Pre-Functional Checklists and other Commissioning Observation Checklists, Commissioning Test Checklists such as Functional Performance Test Checklists and Integrated Systems Test Checklists,, the Air Leakage Test Reports and Diagnostic Test Reports, the Final Construction Phase Commissioning Plan, the Issues Log, Training Attendance Rosters, the Design Review Reports, Submittal Review Report, and any other documents as specified by related technical commissioning specification sections.

-- End of Section --

SECTION 03 30 00

CAST-IN-PLACE CONCRETE
02/19, CHG 7: 02/24

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 CONCRETE INSTITUTE (ACI)

ACI 117	(2010; Errata 2011) Specifications for Tolerances for Concrete Construction and Materials and Commentary
ACI 121R	(2008) Guide for Concrete Construction Quality Systems in Conformance with ISO 9001
ACI 301	(2016) Specifications for Structural Concrete
ACI 302.1R	(2015) Guide for Concrete Floor and Slab Construction
ACI 304.2R	(2017) Guide to Placing Concrete by Pumping Methods
ACI 304R	(2000; R 2009) Guide for Measuring, Mixing, Transporting, and Placing Concrete
ACI 305.1	(2014) Specification for Hot Weather Concreting
ACI 305R	(2020) Guide to Hot Weather Concreting
ACI 306.1	(1990; R 2002) Standard Specification for Cold Weather Concreting
ACI 306R	(2016) Guide to Cold Weather Concreting
ACI 308.1	(2023) Specification for Curing Concrete
ACI CT	(2018) ACI Concrete Terminology
ACI MNL-2	(2019; Abstract: 11th Edition) ACI Manual of Concrete Inspection
ACI 318	(2019; R 2022) Building Code Requirements for Structural Concrete (ACI 318-19) and Commentary (ACI 318R-19)
ACI SP-15	(2011) Field Reference Manual: Standard Specifications for Structural Concrete ACI

301-05 with Selected ACI References

AMERICAN HARDBOARD ASSOCIATION (AHA)

AHA A135.4 (1995; R 2004) Basic Hardboard

AMERICAN WELDING SOCIETY (AWS)

AWS D1.4/D1.4M (2018) Structural Welding Code -
Reinforcing Steel

ASTM INTERNATIONAL (ASTM)

ASTM A36/A36M (2019) Standard Specification for Carbon
Structural Steel

ASTM A53/A53M (2024) Standard Specification for Pipe,
Steel, Black and Hot-Dipped, Zinc-Coated,
Welded and Seamless

ASTM A615/A615M (2022) Standard Specification for Deformed
and Plain Carbon-Steel Bars for Concrete
Reinforcement

ASTM A706/A706M (2022a) Standard Specification for
Low-Alloy Steel Deformed and Plain Bars
for Concrete Reinforcement

ASTM A934/A934M (2022) Standard Specification for
Epoxy-Coated Prefabricated Steel
Reinforcing Bars

ASTM A996/A996M (2016) Standard Specification for
Rail-Steel and Axle-Steel Deformed Bars
for Concrete Reinforcement

ASTM A1064/A1064M (2022) Standard Specification for
Carbon-Steel Wire and Welded Wire
Reinforcement, Plain and Deformed, for
Concrete

ASTM C31/C31M (2023) Standard Practice for Making and
Curing Concrete Test Specimens in the Field

ASTM C33/C33M (2024) Standard Specification for Concrete
Aggregates

ASTM C39/C39M (2023) Standard Test Method for
Compressive Strength of Cylindrical
Concrete Specimens

ASTM C42/C42M (2020) Standard Test Method for Obtaining
and Testing Drilled Cores and Sawed Beams
of Concrete

ASTM C78/C78M (2022) Standard Test Method for Flexural
Strength of Concrete (Using Simple Beam
with Third-Point Loading)

ASTM C94/C94M	(2023) Standard Specification for Ready-Mixed Concrete
ASTM C136/C136M	(2019) Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates
ASTM C138/C138M	(2023) Standard Test Method for Density (Unit Weight), Yield, and Air Content (Gravimetric) of Concrete
ASTM C143/C143M	(2020) Standard Test Method for Slump of Hydraulic-Cement Concrete
ASTM C150/C150M	(2022) Standard Specification for Portland Cement
ASTM C172/C172M	(2017) Standard Practice for Sampling Freshly Mixed Concrete
ASTM C173/C173M	(2023) Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method
ASTM C231/C231M	(2024) Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method
ASTM C260/C260M	(2010a; R 2016) Standard Specification for Air-Entraining Admixtures for Concrete
ASTM C311/C311M	(2022) Standard Test Methods for Sampling and Testing Fly Ash or Natural Pozzolans for Use in Portland-Cement Concrete
ASTM C330/C330M	(2017a) Standard Specification for Lightweight Aggregates for Structural Concrete
ASTM C494/C494M	(2019; E 2022) Standard Specification for Chemical Admixtures for Concrete
ASTM C567/C567M	(2019) Determining Density of Structural Lightweight Concrete
ASTM C595/C595M	(2023) Standard Specification for Blended Hydraulic Cements
ASTM C618	(2023; E 2023) Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete
ASTM C803/C803M	(2023) Standard Test Method for Penetration Resistance of Hardened Concrete
ASTM C845/C845M	(2018) Standard Specification for Expansive Hydraulic Cement
ASTM C873/C873M	(2015) Standard Test Method for Compressive Strength of Concrete Cylinders

Cast in Place in Cylindrical Molds

ASTM C900	(2015) Standard Test Method for Pullout Strength of Hardened Concrete
ASTM C920	(2018) Standard Specification for Elastomeric Joint Sealants
ASTM C989/C989M	(2022) Standard Specification for Slag Cement for Use in Concrete and Mortars
ASTM C1012/C1012M	(2018b) Standard Test Method for Length Change of Hydraulic-Cement Mortars Exposed to a Sulfate Solution
ASTM C1017/C1017M	(2013; E 2015) Standard Specification for Chemical Admixtures for Use in Producing Flowing Concrete
ASTM C1074	(2019) Standard Practice for Estimating Concrete Strength by the Maturity Method
ASTM C1077	(2017) Standard Practice for Agencies Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Testing Agency Evaluation
ASTM C1157/C1157M	(2023) Standard Performance Specification for Hydraulic Cement
ASTM C1218/C1218M	(2020c) Standard Test Method for Water-Soluble Chloride in Mortar and Concrete
ASTM C1240	(2020) Standard Specification for Silica Fume Used in Cementitious Mixtures
ASTM C1260	(2023) Standard Test Method for Potential Alkali Reactivity of Aggregates (Mortar-Bar Method)
ASTM C1293	(2008; R 2015) Standard Test Method for Determination of Length Change of Concrete Due to Alkali-Silica Reaction
ASTM C1567	(2023) Standard Test Method for Potential Alkali-Silica Reactivity of Combinations of Cementitious Materials and Aggregate (Accelerated Mortar-Bar Method)
ASTM C1602/C1602M	(2022) Standard Specification for Mixing Water Used in Production of Hydraulic Cement Concrete
ASTM D1751	(2018) Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types)

ASTM D1752	(2018) Standard Specification for Preformed Sponge Rubber, Cork and Recycled PVC Expansion Joint Fillers for Concrete Paving and Structural Construction
ASTM D2628	(1991; R 2016) Standard Specification for Preformed Polychloroprene Elastomeric Joint Seals for Concrete Pavements
ASTM D2835	(1989; R 2017) Standard Specification for Lubricant for Installation of Preformed Compression Seals in Concrete Pavements
ASTM D5759	(2012; R 2020) Characterization of Coal Fly Ash and Clean Coal Combustion Fly Ash for Potential Uses
ASTM D6690	(2015) Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements
ASTM E96/E96M	(2022a; E 2023) Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials
ASTM E329	(2023) Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection
ASTM E1643	(2018a) Standard Practice for Selection, Design, Installation, and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs
ASTM E1745	(2017; R 2023) Standard Specification for Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs

CONCRETE REINFORCING STEEL INSTITUTE (CRSI)

CRSI 10MSP	(2018) Manual of Standard Practice
CRSI RB4.1	(2016) Supports for Reinforcement Used in Concrete

NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY (NIST)

NIST PS 1	(2009) DOC Voluntary Product Standard PS 1-07, Structural Plywood

U.S. ARMY CORPS OF ENGINEERS (USACE)

COE CRD-C 104	(1980) Method of Calculation of the Fineness Modulus of Aggregate

1.2 DEFINITIONS

Unless otherwise defined herein or in Contract Documents, ACI CT.

- a. "Cementitious material" as used herein must include pozzolans and hydraulic cements such as portland cement, fly ash, and slag cement.
- b. "Exposed to public view" means situated so that it can be seen from eye level from a public location after completion of the structure and surrounding structures such as fences or other buildings. A public location is accessible to persons not responsible for operation or maintenance of the structure.
- c. "Chemical admixtures" are liquids, or dispersible powders, used as an ingredient in a cementitious mixture to improve its economy and/or properties in the plastic and/or hardened state.
- d. "Supplementary cementitious materials" (SCM) are inorganic materials such as coal fly ash, silica fume, slag cement, natural or calcined pozzolans, and ultra-fine coal ash when used in such proportions to replace portland cement and reacts pozzolanically or hydraulically.
- e. "Design strength" (f_c') is the specified compressive strength of concrete at time(s) specified in this section to meet structural design criteria.
- f. "Mass Concrete" (thermally-controlled concrete) is any concrete system that may approach a maximum temperature of 158 degrees F or may approach a maximum temperature difference between any two monitored locations of 36 degrees F without Contracting Officer written approval to exceed. In addition, it includes all concrete elements with a section thickness of greater than 3 feet regardless of temperature.
- g. "Mixture proportioning" is the process of designing concrete mixture proportions to enable it to meet the specified strength, service life and constructability requirements of the project using available materials while minimizing the initial and life-cycle cost.
- h. "Mixture proportions" are the masses or volumes of individual ingredients used to make a unit measure (cubic yard) of concrete.
- i. "Pozzolan" is a siliceous or silico-aluminous material that will, in finely divided form and in the presence of moisture, chemically react with calcium hydroxide at ordinary temperatures to form compounds having cementitious properties.
- j. "Workability" is the ease with which freshly mixed concrete or mortar can be mixed, placed, consolidated, and finished to a homogenous condition. Workability typically depends on water content, chemical admixtures, aggregate (shape and size distribution), cementitious materials content and age since batching (level of hydration).
- k. "Final Setting" is a degree of stiffening of a cementitious mixture where plasticity is lost sufficiently to resist the penetration of a weighted test device a specific distance; typically using a Vicat Apparatus.
- l. "Hard-troweled finish" is a finishing process which produces a hard, dense, and smooth surface by troweling in repeated right angle passes while increasing blade pressure on surface with each pass. Increased pressure is typically obtained by increasing trowel blade angle.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. Submittals with an "S" are for inclusion in the Sustainability eNotebook, in conformance with Section 01 33 29 SUSTAINABILITY REPORTING. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

- Concrete Curing Plan
- Quality Control Program; G
- Quality Control Personnel Certifications; G
- Quality Control Organizational Chart
- Laboratory Accreditation; G
- Cold Weather Plan; G
- Hot Weather Plan; G
- Maturity Method Data

SD-02 Shop Drawings

- Reinforcing Steel; G
- Placement Sequence and Jointing Plan; G

SD-03 Product Data

- Joint Sealants
- Joint Filler
- Formwork Materials
- Cementitious Materials
- Vapor Barrier
- Concrete Curing Materials
- Reinforcement
- Liquid Chemical Floor Hardeners and Sealers
- Admixtures
- Mechanical Reinforcing Bar Connectors
- Local/Regional Materials
- Biodegradable Form Release Agent

Pumping Concrete

SD-04 Samples

Mockup; G

SD-05 Design Data

Concrete Mixture Proportion; G

SD-06 Test Reports

Concrete Mixture Proportion; G

Fly Ash

Pozzolans

Silica Fume

Slag Cement

Aggregates

Compressive Strength Tests; G

Unit Weight of Structural Concrete

Air Content

Slump Tests

Water

SD-07 Certificates

Reinforcing Bars

Welder Qualifications

Silica Fume Manufacturer's Representative

VOC Content for Form Release Agents, Curing Compounds, and
Concrete Penetrating Sealers

Safety Data Sheets

Ready-mixed Concrete Manufacturer (Plant) and Trucks

Field Testing Technician and Testing Agency

SD-08 Manufacturer's Instructions

Liquid Chemical Floor Hardeners and Sealers

Joint Sealants; S

Curing Compounds

1.4 MODIFICATION OF REFERENCES

Accomplish work in accordance with ACI publications except as modified herein. Except for provisions associated with Contractor's means and methods or items delegated to the Contractor, such as formwork calculations, consider the non-mandatory, advisory or recommended provisions within ACI publications to be mandatory; where specific conflicts or options exist, request in writing a Contracting Officer determination. Interpret reference to the "Licensed Design Engineer," the "Licensed Design Professional," the "Building Official," the "Structural Engineer," and the "Architect/Engineer," or similar title to mean the Contracting Officer unless multiple roles or personnel are indicated in a specific requirement.

1.5 DELIVERY, STORAGE, AND HANDLING

Follow ACI 301, ACI 304R and ASTM A934/A934M requirements and recommendations. Do not deliver concrete until vapor barrier, forms, reinforcement, embedded items, and chamfer strips are in place and ready for concrete placement. Do not store opened containers of concrete curing compounds or sealers with materials that have a high capacity to adsorb volatile organic compound (VOC) emissions or in occupied spaces. Protect liquid admixtures and other liquid materials such as curing compounds and sealers from freezing and from temperature changes that would adversely affect their characteristics.

1.5.1 Reinforcement

Store reinforcement of different sizes and shapes in separate piles or racks raised above the ground and out of standing water to avoid excessive rusting. Protect from contaminants such as grease, oil, form release agent, and dirt. Ensure bar sizes can be accurately identified after bundles are broken and tags removed.

1.6 QUALITY ASSURANCE

1.6.1 Design Data

1.6.1.1 Concrete Mixture Proportion

Unless otherwise approved in writing by Contracting Officer, sixty days minimum prior to concrete placement, submit a mixture proportion for each class of concrete required in paragraph titled CONCRETE MIXTURE PROPORTION in PART 2. It is acceptable to submit a mixture proportion which meets multiple classes of concrete if properly identified. Submit all documentation required in ACI 301 Section 4 and as specified in this section. Submit a complete list of materials including type; brand; source and amount of cement, supplementary cementitious materials, and admixtures; and applicable reference specifications. Submit mill test and all other tests for cement, supplementary cementitious materials, aggregates, and admixtures. Provide documentation of maximum nominal aggregate size, gradation analysis, percentage retained and passing sieves, and a graph of percentage retained versus sieve size. Provide mixture proportion data using at least three different water-cementitious material ratios for each type of mixture, which produce a range of strength encompassing those required for each type of concrete required. If source material changes in quality or source, resubmit mixture proportion data using revised source material. Provide only materials that have been proven by trial

mixture studies to meet the requirements of this specification, unless otherwise approved in writing by the Contracting Officer. Indicate clearly in the submittal where each mixture proportion is used when more than one mixture proportion is submitted. Required average strength can be documented by field experience if field strength test data are available and represent a single group of at least 10 consecutive strength tests for one mixture, using materials and conditions similar to those expected for work, and encompassing a period of not less than 45 days. The average of field strength tests must equal or exceed f_{cr} . Changes in materials, conditions, and proportions within the test record shall not have been more closely restricted than those for the proposed work. Test records shall not be more than 24 months old. For previously approved concrete mixture proportions used within the past twelve months, the previous mixture proportion may be re-submitted without further trial batch testing if accompanied by material test data conducted within the last six months. Obtain mixture proportion approval from the Contracting Officer prior to concrete placement.

1.6.2 Shop Drawings

1.6.2.1 Reinforcing Steel

Indicate bending diagrams, assembly diagrams, splicing and laps of bars, shapes, dimensions, and details of bar reinforcing, accessories, and concrete cover. Do not scale dimensions from Contract Drawings to determine lengths of reinforcing bars. Reproductions of Contract Drawings are unacceptable.

1.6.3 Control Submittals

1.6.3.1 Concrete Curing Plan

Submit proposed materials, methods and duration for curing concrete elements in accordance with ACI 308.1.

1.6.3.2 Pumping Concrete

Submit proposed materials and methods for pumping concrete. Submittal must include mixture proportions, pumping equipment including type of pump and size and material for pipe, and maximum length and height concrete is to be pumped.

1.6.3.3 Silica Fume Manufacturer's Representative

The manufacturer's representative must be present at the concrete producer's plant to ensure proper mixture proportions are used, including high-range water-reducer, and batching methods during the first days of concrete mixture preparation and placement. After which the manufacturer's representative must designate a representative at the concrete producer's plant to ensure the concrete batching procedures meet the silica fume manufacturer's recommendations. Representative to attend and advise at finishing of sample slab.

1.6.3.4 VOC Content for form release agents, curing compounds, and concrete penetrating sealers

Submit certification for the form release agent, curing compounds, and concrete penetrating sealers that indicate the VOC content of each product.

1.6.3.5 Safety Data Sheets

Submit Safety Data Sheets (SDS) for all materials that are regulated for hazardous health effects. SDS must be readily accessible during each work shift for viewing.

1.6.4 Test Reports

1.6.4.1 Fly Ash and Pozzolans

Submit test results in accordance with ASTM C618 for fly ash and raw or calcined natural pozzolans. Submit test results performed within 6 months of submittal date.

1.6.4.2 Slag Cement

Submit test results in accordance with ASTM C989/C989M for slag cement. Submit test results performed within 6 months of submittal date.

1.6.4.3 Silica Fume

Submit test results in accordance with ASTM C1240 for silica fume. Submit test results performed within 6 months of submittal date.

1.6.4.4 Aggregates

Submit test results in accordance with ASTM C33/C33M, or ASTM C330/C330M for lightweight aggregate, and ASTM C1293, ASTM C1567, or ASTM C1260 as required in the paragraph titled ALKALI-AGGREGATE REACTION. As applicable, submit ASTM C1293 test results started within 5 years of submittal date on source aggregate. As applicable, submit ASTM C1567 or ASTM C1260 test results performed within 6 months of submittal date on source aggregate.

1.6.5 Quality Control Program

Develop and submit for approval a concrete quality control program in accordance with the guidelines of ACI 121R and as specified herein. The plan must include approved laboratories. Provide direct oversight for the concrete qualification program inclusive of associated sampling and testing. All quality control reports must be provided to the Contracting Officer, Quality Manager and Concrete Supplier. Maintain a hard copy or electronic copy of ACI SP-15 and CRSI 10MSP at project site.

1.6.5.1 Cold Weather Plan

Submit a Cold Weather Plan covering detailed procedures for concreting in cold weather in accordance with ACI 306.1.

1.6.5.2 Hot Weather Plan

Submit a Hot Weather Plan covering detailed procedures for concreting in hot weather in accordance with ACI 305.1.

1.6.6 Quality Control Personnel Certifications

The Contractor must submit for approval the responsibilities of the various quality control personnel, including the names and qualifications of the individuals in those positions and a quality control organizational chart defining the quality control hierarchy and the responsibility of the

various positions. Quality control personnel must be employed directly by the Contractor.

Submit American Concrete Institute certification for the following:

- a. CQC personnel responsible for inspection of concrete operations.
- b. Lead Foreman or Journeyman of the Concrete Placing, Finishing, and Curing Crews.
- c. Field Testing Technicians: ACI Concrete Field Testing Technician - Grade I.

1.6.6.1 Quality Manager Qualifications

The quality manager must hold a current license as a professional engineer in a U.S. state or territory with experience on at least five similar projects. Evidence of extraordinary proven experience may be considered by the Contracting Officer as sufficient to act as the Quality Manager.

1.6.6.2 Field Testing Technician and Testing Agency

Submit data on qualifications of proposed testing agency and technicians for approval by the Contracting Officer. Obtain approval prior to performing testing on concrete.

- a. Work on concrete under this Contract must be performed by an ACI Concrete Field Testing Technician Grade 1 qualified in accordance with ACI MNL-2 or equivalent. Equivalent certification programs must include requirements for written and performance examinations as stipulated in ACI MNL-2.
- b. Testing agencies that perform testing services on reinforcing steel must meet the requirements of ASTM E329.
- c. Testing agencies that perform testing services on concrete materials must meet the requirements of ASTM C1077.

1.6.7 Laboratory Qualifications for Concrete Qualification Testing

The concrete testing laboratory must have the necessary equipment and experience to accomplish required testing. The laboratory must meet the requirements of ASTM C1077 and be Cement and Concrete Reference Laboratory (CCRL) inspected.

1.6.8 Laboratory Accreditation

Laboratory and testing facilities must be provided by and at the expense of the Contractor. The laboratories performing the tests must be accredited in accordance with ASTM C1077, including ASTM C78/C78M and ASTM C1260. The accreditation must be current and must include the required test methods, as specified. Furthermore, the testing must comply with the following requirements:

- a. Aggregate Testing and Mixture Proportioning: Aggregate testing and mixture proportioning studies must be performed by an accredited laboratory and under the direction of a licensed design professional in a U.S. state or territory who is competent in concrete materials and must sign all reports and mixture proportion designs.

- b. Acceptance Testing: Furnish all materials, labor, and facilities required for molding, curing, testing, and protecting test specimens at the site and in the laboratory. Furnish and maintain boxes or other facilities suitable for storing and curing the specimens at the site while in the mold within the temperature range and moisture loss control stipulated by ASTM C31/C31M. Ensure uninhibited access to specimens at the site for monitoring and transportation to laboratory as needed.
- c. Contractor Quality Control: All sampling and testing must be performed by an approved, onsite, independent, accredited laboratory.

1.7 ENVIRONMENTAL REQUIREMENTS

Provide space ventilation according to material manufacturer recommendations, at a minimum, during and following installation of concrete curing compound and sealer. Maintain one of the following ventilation conditions during the curing period or for 72 hours after installation:

- a. Supply 100 percent outside air 24 hours a day.
- b. Supply airflow at a rate of 6 air changes per hour, when outside temperatures are between 55 degrees F and 84 degrees F and humidity is between 30 percent and 60 percent.
- c. Supply airflow at a rate of 1.5 air changes per hour, when outside air conditions are not within the range stipulated above.

1.7.1 Submittals for Environmental Performance

- a. Provide data indicating the percentage of post-industrial pozzolan (fly ash, slag cement) cement substitution as a percentage of the full product composite by weight.
- b. Provide data indicating the percentage of post-industrial and post-consumer recycled content aggregate.
- c. Provide product data indicating the percentage of post-consumer recycled steel content in each type of steel reinforcement as a percentage of the full product composite by weight.
- d. Provide product data stating the location where all products were manufactured
- e. For projects using FSC certified formwork, provide chain-of-custody documentation for all certified wood products.
- f. For projects using reusable formwork, provide data showing how formwork is reused.
- g. Provide SDS product information data showing that form release agents meet any environmental performance goals such as using vegetable and soy-based products.
- h. Provide SDS product information data showing that concrete adhesives meet any environmental performance goals including low emitting, low volatile organic compound products.

1.8 SUSTAINABLE DESIGN REQUIREMENTS

1.8.1 Local/Regional Materials

Use materials or products extracted, harvested, or recovered, as well as manufactured, within a 500 mile radius from the project site, if available from a minimum of three sources. See Section 01 33 29 SUSTAINABILITY REPORTING for cumulative total local material requirements. Concrete materials may be locally available. Submit documentation indicating distance between manufacturing facility and the project site. Indicate distance of raw material origin from the project site. Indicate relative dollar value of local/regional materials to total dollar value of products included in project.

1.8.2 Sustainable Strategies Compliance

This project has been designed using strategies from the USGBC's LEED® Building Design and Construction, Version 2009. The project will not be registered or go through review with the USGBC, but documentation related to credits addressed in the reference guide is required as directed in each specification section. In addition to the sustainable design requirements stated herein, refer to LEED Building Design & Construction, Version 2009 Reference guide for documentation guidance.

1.9 QUALIFICATIONS FOR WELDING WORK

Welding procedures must be in accordance with AWS D1.4/D1.4M.

Verify that Welder qualifications are in accordance with AWS D1.4/D1.4M for welding of reinforcement or under an equivalent qualification test approved in advance. Welders are permitted to do only the type of welding for which each is specifically qualified.

PART 2 PRODUCTS

2.1 FORMWORK MATERIALS

- a. Form-facing material in contact with concrete must be lumber, plywood, tempered concrete-form-grade hardboard, metal, plastic, or treated paper that creates specified appearance and texture of concrete surface. Submit product information on proposed form-facing materials if different from that specified herein.
- b. Design formwork, shores, reshores, and backshores to support loads transmitted to them and to comply with applicable building code requirements.
- c. Design formwork and shoring for load redistribution resulting from stressing of post-tensioned reinforcement. Ensure that formwork allows movement resulting from application of prestressing force.
- d. Design formwork to withstand pressure resulting from placement and vibration of concrete and to maintain specified tolerances.
- e. Design formwork to accommodate waterstop materials in joints at locations indicated in Contract Documents.
- f. Provide temporary openings in formwork if needed to facilitate

placement, cleaning and inspection.

- g. Design formwork joints to inhibit leakage of mortar.
- h. Limit deflection of facing materials for concrete surfaces exposed to view to 1/240 of center-to-center spacing of facing supports.
- i. Unless shown on Contract Drawings, do not use earth cuts as forms for vertical or sloping surfaces.
- j. Submit product information on proposed form-facing materials if different from that specified herein.
- k. Submit procedure for reshoring and backshoring, including drawings signed and sealed by a licensed design engineer. Include on shop drawings the formwork removal procedure and magnitude of construction loads used for design of reshoring or backshoring system. Indicate in procedure the magnitude of live and dead loads assumed for required capacity of the structure at time of reshoring or backshoring.
- l. Submit manufacturer's product data on form liner proposed for use with each formed surface.

2.1.1.1 Wood Forms

Provide lumber that is square edged or tongue-and-groove boards, free of raised grain, knotholes, or other surface defects. Provide plywood that complies with NIST PS 1, B-B concrete form panels or better or AHA A135.4, hardboard for smooth form lining. Submit data verifying that composite wood products contain no urea formaldehyde resins.

2.1.1.1.1 Concrete Form Plywood (Standard Rough)

Provide plywood that conforms to NIST PS 1, B-B, concrete form, not less than 5/8-inch thick.

2.1.1.1.2 Overlaid Concrete Form Plywood (Standard Smooth)

Provide plywood that conforms to NIST PS 1, B-B, high density form overlay, not less than 5/8-inch thick.

2.1.1.2 Plastic Forms

Provide plastic forms that contain a minimum of 50 percent post-consumer recycled content, or a minimum of 50 percent post-industrial recycled content.

2.1.1.3 Carton Forms (Void Forms)

Moisture resistant treated paper faces, biodegradable, structurally sufficient to support weight of fresh concrete until final setting. Provide carton forms that contain a minimum of 10 percent post-consumer recycled content, or a minimum of 20 percent post-industrial recycled content.

2.1.1.4 Steel Forms

Provide steel form surfaces that do not contain irregularities, dents, or sags.

2.2 FORMWORK ACCESSORIES

- a. Use commercially manufactured formwork accessories, including ties and hangers.
- b. Form ties and accessories must not reduce the effective cover of the reinforcement.

2.2.1 Form Ties

- a. Use form ties with ends or end fasteners that can be removed without damage to concrete.
- b. The breakback distance for ferrous ties must be at least 3/4 in. for Surface Finish-2.0 or Surface Finish-3.0, as defined in ACI 301.
- c. Submit manufacturer's data sheet on form ties.

2.2.2 Biodegradable Form Release Agent

- a. Provide form release agent that is colorless, biodegradable, and water-based, with a low (maximum of 55 grams/liter (g/l)) VOC content.
- b. Provide product that does not bond with, stain, or adversely affect concrete surfaces and does not impair subsequent treatments of concrete surfaces.
- c. Provide form release agent that reduces formwork moisture absorption, and does not contain diesel fuel, petroleum-based lubricating oils, waxes, or kerosene. Submit documentation indicating type of biobased material in product and biobased content.
- d. Submit manufacturer's product data on formwork release agent for use on each form-facing material.

2.2.3 Chamfer Materials

Unless noted otherwise, use lumber or plastic materials with dimensions of 3/4 x 3/4 in.

2.2.4 Construction and movement joints

- a. Submit details and locations of construction joints in accordance with the requirements herein.
- b. Locate construction joints within middle one-third of spans of slabs, beams, and girders. If a beam intersects a girder within the middle one-third of girder span, the distance between the construction joint in the girder and the edge of the beam must be at least twice the width of the larger member.
- c. For members with post-tensioning tendons, locate construction joints where tendons pass through centroid of concrete section.
- d. Locate construction joints in walls and columns at underside of slabs, beams, or girders and at tops of footings or slabs. Vertical joints in walls must be further away from corners and intersections than corner bars and other special reinforcement detailing.

- e. Make construction joints perpendicular to main reinforcement. Construction joint spacing must not exceed 60 feet without written approval of Contracting Officer. Slab sections must be divided into approximate squares where practicable.
- f. Provide movement joints where indicated in Contract Documents or in accepted alternate locations.
- g. Submit location and detail of movement joints if different from those indicated in Contract Documents.
- h. Submit manufacturer's data sheet on expansion joint materials.
- i. Provide keyways where indicated in Contract Documents. Longitudinal keyways indicated in Contract Documents must be at least 1-1/2 in. deep, measured perpendicular to the plane of the joint.

2.2.5 Other Embedded items

Use sleeves, inserts, anchors, and other embedded items of material and design indicated in Contract Documents. Where not indicated, use galvanized materials.

2.3 CONCRETE MATERIALS

2.3.1 Cementitious Materials

2.3.1.1 Portland Cement

- a. Unless otherwise specified, provide cement that conforms to ASTM C150/C150M Type I or II.
- b. Use one brand and type of cement for formed concrete having exposed-to-view finished surfaces.
- c. Supplier must certify that no hazardous waste is used in the fuel mix or raw materials.
- d. Submit information along with evidence demonstrating compliance with referenced standards. Submittals must include types of cementitious materials, manufacturing locations, shipping locations, and certificates showing compliance.
- e. Cementitious materials must be stored and kept dry and free from contaminants. Cementitious materials which have become caked or lumpy must not be used.
- f. High-early-strength portland cement. ASTM C150/C150M, Type III, low alkali. Use Type III cement only when approved in writing by Contracting Officer.

2.3.1.2 Blended Cements

- a. Blended cements must conform to ASTM C595/C595M Type IP, IS, or IT.
- b. Slag cement added to the Type IS blend must meet ASTM C989/C989M.
- c. The pozzolan added to the Type IS blend must meet ASTM C618 Class F

and must be interground with the cement clinker. The manufacturer must state in writing that the amount of pozzolan in the finished cement will not vary more than plus or minus 5 mass percent of the finished cement from lot-to-lot or within a lot. The percentage and type of pozzolan used in the blend must not change from that submitted for the aggregate evaluation and mixture proportioning.

2.3.1.3 Fly Ash

- a. ASTM C618, Class F, except that the maximum allowable loss on ignition must not exceed 4 percent.
- b. If fly ash is used it shall range from 15 to 30 percent by weight of cementitious material, provided the fly ash does not reduce the amount of cement in the concrete mixture below the minimum requirements of local building codes. Where the use of fly ash cannot meet the minimum level, provide the maximum amount of fly ash permissible that meets the code requirements for cement content. Report the chemical analysis of the fly ash in accordance with ASTM C311/C311M. Evaluate and classify fly ash in accordance with ASTM D5759.

2.3.1.4 Slag cement

ASTM C989/C989M, Grade 100.

2.3.1.5 Silica Fume

Silica fume must conform to ASTM C1240, including the optional limits on reactivity with cement alkalis. Silica fume may be furnished as a dry, densified material or as slurry. A high-range water-reducing admixture (HRWRA) must be used with silica fume.

2.3.1.6 Other Supplementary Cementitious Materials

Natural pozzolan must be raw or calcined and conform to ASTM C618, Class N, including the optional requirement for uniformity.

Ultra Fine Fly Ash (UFFA) and Ultra Fine Pozzolan (UFP) must conform to ASTM C618, Class F or N, and the following additional requirements:

- a. The strength activity index at 28 days of age must be at least 95 percent of the control specimens.
- b. The average particle size must not exceed 6 microns.
- c. The sum of $\text{SiO}_2 + \text{Al}_2\text{O}_3 + \text{Fe}_2\text{O}_3$ must be greater than 77 percent.

2.3.2 Water

- a. Unless from a potable source, mixing water or ice must comply with the requirements of ASTM C1602/C1602M.
- b. Minimize the amount of water in the mixture. Improve workability by adjusting the aggregate gradation and using admixtures rather than by additional water in the mixture.
- c. Water must be potable; free from injurious amounts of oils, acids, alkalis, salts, organic materials, or other substances deleterious to concrete.

- d. Protect mixing water and ice from contamination during storage and delivery.

2.3.3 Aggregate

2.3.3.1 Normal-Weight Aggregate

- a. Aggregates must conform to ASTM C33/C33M unless otherwise specified in the Contract Documents or approved by the Contracting Officer.
- b. Aggregates used in concrete must be obtained from the same sources and have the same size range as aggregates used in concrete represented by submitted field test records or used in trial mixtures.
- c. Provide sand that is at least 50 percent natural sand unless otherwise required to meet ASR requirements and approved by Contracting Officer in writing.
- d. Store and handle aggregate in a manner that will avoid segregation and prevents contamination by other materials or other sizes of aggregates. Store aggregates in locations that will permit them to drain freely. Do not use aggregates that contain frozen lumps. Do not use bottom 6 inches of an aggregate pile if not stored on concrete slab.
- e. Submit types, pit or quarry locations, producers' names, aggregate supplier statement of compliance with ASTM C33/C33M, and ASTM C1293 expansion data not more than 18 months old.

2.3.4 Admixtures

- a. Chemical admixtures must conform to ASTM C494/C494M.
- b. Air-entraining admixtures must conform to ASTM C260/C260M.
- c. Chemical admixtures for use in producing flowing concrete must conform to ASTM C1017/C1017M.
- d. Do not use calcium chloride admixtures.
- e. If approved in writing by Contracting Officer, in lieu of rejecting aggregate source, use of an ASR-inhibiting admixture for concrete containing aggregate susceptible to ASR is acceptable if submitted with ASR testing per CONCRETE MIXTURE PROPORTION paragraph.
- f. Admixtures used in concrete must be the same as those used in the concrete represented by submitted field test records or used in trial mixtures.
- g. Protect stored admixtures against contamination, evaporation, or damage.
- h. To ensure uniform distribution of constituents, provide agitating equipment for admixtures used in the form of suspensions or unstable solutions. Protect liquid admixtures from freezing and from temperature changes that would adversely affect their characteristics.
- i. Submit types, brand names, producers' names, manufacturer's technical

data sheets, and certificates showing compliance with standards required herein.

2.4 MISCELLANEOUS MATERIALS

2.4.1 Concrete Curing Materials

Provide concrete curing material in accordance with ACI 308.1 Section 2. Submit product data for concrete curing compounds and evaporation reducers, if used. Submit manufacturer's instructions for placement of curing compounds and evaporation reducers, if used.

2.4.2 Floor Finish Materials

2.4.2.1 Liquid Chemical Floor Hardeners and Sealers

- a. Hardener must be a colorless aqueous solution containing a blend of inorganic silicate or siliconate material and proprietary components combined with a wetting agent; that penetrates, hardens, and densifies concrete surfaces. Submit manufacturer's instructions for placement of liquid chemical floor hardener.
- b. Use concrete penetrating sealers with a low (maximum 100 grams/liter, less water and less exempt compounds) VOC content. Submit manufacturer's instructions for placement of sealers.

2.4.3 Expansion/Contraction Joint Filler

ASTM D1751 or ASTM D1752 Type I or Type II. Material must be 1/2 inch thick, unless otherwise indicated.

2.4.4 Joint Sealants

2.4.4.1 Horizontal Surfaces, 3 Percent Slope, Maximum

ASTM D6690 or ASTM C920, Type M, Class 25, Use T.

2.4.4.2 Vertical Surfaces Greater Than 3 Percent Slope

ASTM C920, Type M, Grade NS, Class 25, Use T.

2.4.4.3 Preformed Polychloroprene Elastomeric Type

ASTM D2628.

2.4.4.4 Lubricant for Preformed Compression Seals

ASTM D2835.

2.4.5 Vapor Barrier

ASTM E1745 Class C polyethylene sheeting, minimum 15 mil thickness or other equivalent material with a maximum permeance rating of 0.01 perms per ASTM E96/E96M.

2.5 CONCRETE MIXTURE PROPORTION

2.5.1 Properties and Requirements

- a. Use materials and material combinations listed in this section and the Contract Documents.
- b. Cementitious material content must be adequate for concrete to satisfy the specified requirements for strength, water to cementitious materials ratio (w/cm), durability, workability, and finishability described in this section and rest of the Contract Documents.
- c. Selected target slump must meet the requirements this section, the Contract Documents, and must not exceed 9 in. Concrete must not show visible signs of segregation.
- d. The target slump must be enforced for the duration of the project. Determine the slump at the point of placement after conveyance by ASTM C143/C143M. Slump tolerances must meet the requirements of ACI 117.
- e. The nominal maximum size of coarse aggregate for a mixture in a given portion of the structure must not exceed three-fourths of the minimum clear spacing between reinforcement, one-fifth of the narrowest dimension between sides of forms, or one-third of the thickness of slabs or toppings.
- f. Concrete must be air entrained for portions of the structure assigned to Exposure Class F1, F2, or F3. The total air content must be in accordance with the requirements of the paragraph titled DURABILITY.
- g. Measure air content at the point of placement after conveyance in accordance with ASTM C173/C173M or ASTM C231/C231M.
- h. Concrete for slabs to receive a hard-troweled (burnished) finish must not contain an air-entraining admixture or have a total air content greater than 3 percent.
- i. Concrete properties and requirements for each portion of the structure are specified in the table below and define the specified classes of concrete. Refer to the paragraph titled DURABILITY for more details on exposure categories and their requirements. If a portion of the structure is either not defined or could be included in multiple categories within the table, Contractor must either use the more severe requirements or request a written determination from the Contracting Officer. Transition areas within the same placement must use the more severe requirements. For differences in requirements between the following table those requirements listed in paragraph titled DURABILITY, the most stringent will control.

Concrete Class	Minimum f_c' psi [^]	Exposure Categories	Miscellaneous Requirements
Footings and , foundations; not subject to hard-troweled finish	4000 at 28 days	S1; C1; W1; F0	Max. slump:6 in. Nominal maximum aggregate size must be 1 in.
Exterior Slabs	4000 at 28 days	S1;C1;W1;F1	Max. Slump: 6 in. Nominal maximum aggregate size must be 1 in.
Walls	4000 at 28 days	S1; C1; W1; F0	Max. slump: 6in. Nominal maximum aggregate size must be 1 in.
Interior slabs-on-ground	4000 at 28 days	S1; C1; W0; F0	Max slump: 6 in. Nominal maximum aggregate size must be 3/4 in.

[^]Minimum f_c' based on cylinder test specimens as indicated in paragraph titled COMPRESSIVE STRENGTH TESTS.

2.5.2 Durability

2.5.2.1 Alkali-Aggregate Reaction

Do not use any aggregate susceptible to alkali-carbonate reaction (ACR). Use one of the three options below to qualify concrete mixtures to reduce the potential of alkali-silica reaction (ASR):

- For each aggregate used in concrete, the expansion result determined in accordance with ASTM C1293 must not exceed 0.04 percent at one year unless a pozzolan or slag cement is used, which the limit is then 0.04 percent at two years.

- b. For each aggregate used in concrete, the expansion result of the aggregate and cementitious materials combination determined in accordance with ASTM C1567 must not exceed 0.10 percent at an age of 16 days. Aggregates must be tested individually.
- c. For each aggregate used in concrete, the expansion result determined in accordance with ASTM C1260 must not exceed 0.10 percent at an age of 16 days.

2.5.2.2 Freezing and Thawing Resistance

- a. Provide concrete meeting the following requirements based on exposure class assigned to portions of the structure for freezing-and-thawing exposure in Contract Documents:

Exposure class	Maximum w/cm^*	Minimum f_c' , psi [^]	Total Air content	Additional Requirements
F0	0.45	4000		N/A
F1	0.45	4000	Depends on aggregate size	N/A
F2	0.45	4500	Depends on aggregate size	See limits on maximum cementitious material by mass
F3	0.40	5000	Depends on aggregate size	See limits on maximum cementitious material by mass
F3 plain concrete	0.45	4500	Depends on aggregate size	See limits on maximum cementitious material by mass

*The maximum w/cm limits do not apply to lightweight concrete.

[^]Minimum f_c' based on cylinder test specimens as indicated in paragraph titled COMPRESSIVE STRENGTH TESTS.

- b. Concrete must contain an air-entraining admixture for portions of the structure assigned to Exposure Class F1, F2, or F3, except slabs to receive a hard-troweled finish. The total air content must meet the requirements of the following table:

Nominal maximum aggregate size, in.	Total air content, percent*^	
	Exposure Class F2 and F3	Exposure Class F1
3/8	7.5	6.0
1/2	7.0	5.5
3/4	6.0	5.0
1	6.0	4.5
1-1/2	5.5	4.5
2	5.0	4.0
3	5.5	3.5

*Tolerance on total air content as measured in paragraph titled FIELD QUALITY CONTROL must be plus/minus 1.5 percent.

^For minimum fc' greater than 5000 psi, reducing air content by 1.0 percentage point is acceptable with Contracting Officer written approval.

- c. Submit documentation verifying compliance with specified requirements.
- d. For sections of the structure that are assigned Exposure Class F3, submit certification on cement composition verifying that mixture proportion meets the requirements of the following table:

Cementitious material	Maximum percent of total cementitious material by mass*
Fly ash or other pozzolans conforming to ASTM C618	25
Slag cement conforming to ASTM C989/C989M	50
Silica fume conforming to ASTM C1240	10
Total of fly ash or other pozzolans, slag cement, and silica fume	50^
Total of fly ash or other pozzolans and silica fume	35^

*Total cementitious material also includes ASTM C150/C150M, ASTM C595/C595M, ASTM C845/C845M, and ASTM C1157/C1157M cement. The maximum percentages above must include:

- i. Fly ash or other pozzolans present in ASTM C1157/C1157M or ASTM C595/C595M Type IP blended cement.
- ii. Slag cement present in ASTM C1157/C1157M or ASTM C595/C595M Type

IS blended cement.

iii. Silica fume conforming to ASTM C1240 present in ASTM C1157/C1157M or ASTM C595/C595M Type IP blended cement.

^Fly ash or other pozzolans and silica fume must constitute no more than 25 percent and 10 percent, respectively, of the total mass of the cementitious materials.

2.5.2.3 Corrosion and Chloride Content

- a. Provide concrete meeting the requirements of the following table based on the exposure class assigned to portions of the structure requiring protection against reinforcement corrosion in Contract Documents.
- b. Submit documentation verifying compliance with specified requirements.
- c. Water-soluble chloride ion content contributed from constituents including water, aggregates, cementitious materials, and admixtures must be determined for the concrete mixture by ASTM C1218/C1218M at age between 28 and 42 days.
- d. The maximum water-soluble chloride ion (Cl-) content in concrete, percent by mass of cement is as follows:

Exposure class	Maximum w/cm*	Minimum fc', psi^	Maximum water-soluble chloride ion (Cl-) content in concrete, percent by mass of cement
Reinforced concrete			
C0	0.45	4000	1.00
C1	0.45	4000	0.30
C2	0.4	5000	0.15
Prestressed concrete			
C0	0.45	4000	0.06
C1	0.45	4000	0.06
C2	0.4	5000	0.06

*The maximum w/cm limits do not apply to lightweight concrete.

^Minimum fc' based on cylinder test specimens as indicated in paragraph titled COMPRESSIVE STRENGTH TESTS.

- e. Concrete cast against galvanized stay-in-place forms, including permanent metal decking, must meet chloride ion limits of exposure class C1 unless more stringent limits are required in this paragraph.

2.5.2.4 Sulfate Resistance

- a. Provide concrete meeting the requirements of the following table based on the exposure class assigned to portions of the structure for sulfate exposure.

Exposure class	Maximum w/cm	Minimum fc', psi^^	Required cementitious materials-types			Calcium chloride admixture
			ASTM C150/C150M	ASTM C595/C595M	ASTM C1157/C1157M	
S0	0.45	4000	N/A	N/A	N/A	No restrictions
S1	0.45	4000	II*^	IP(MS); IS(<70)(MS); IT(MS)	MS	No restrictions
S2	0.45	4500	V^	IP(HS); IS(<70)(HS); IT(HS)	HS	Not permitted
S3	0.45	4500	V + pozzolan or slag cement**	IP(HS)+ pozzolan or slag cement^; IS (<70)(HS) + pozzolan or slag cement^; IT (HS) + pozzolan or slag cement**	HS + pozzolan or slag cement**	Not permitted
S3	0.40	5000	V***	Types with (HS) designation	HS	Not permitted

* For seawater exposure, other types of portland cements with tricalcium aluminate (C3A) contents up to 10 percent are acceptable if the w/cm does not exceed 0.40.

** The amount of the specific source of the pozzolan or slag cement to be used shall be at least the amount determined by test or service record to improve sulfate resistance when used in concrete containing Type V cement. Alternatively, the amount of the specific source of the pozzolan or slag used shall not be less than the amount tested in accordance with ASTM C1012/C1012M and meeting the requirements maximum expansion requirements listed herein.

*** If Type V cement is used as the sole cementitious material, the optional sulfate requirement of 0.040 percent maximum expansion in ASTM C150/C150M shall be required.

^ Other available types of cement, such as Type III or Type I, are

acceptable in exposure classes S1 or S2 if the C3A contents are less than 8 or 5 percent, respectively.

^^Minimum f_c' based on cylinder test specimens as indicated in paragraph titled COMPRESSIVE STRENGTH TESTS

- b. The maximum w/cm limits for sulfate exposure do not apply to lightweight concrete.
- c. Alternative combinations of cementitious materials of those listed in this paragraph are acceptable if they meet the maximum expansion requirements listed in the following table:

Exposure class	Maximum expansion when tested using ASTM C1012/C1012M		
	At 6 months	At 12 months	At 18 months
S1	0.10 percent	N/A	N/A
S2	0.05 percent	0.10 percent [^]	N/A
S3	N/A	N/A	0.10 percent

[^]The 12-month expansion limit applies only when the measured expansion exceeds the 6-month maximum expansion limit.

2.5.2.5 Concrete Temperature

The temperature of concrete as delivered must not exceed 95°F.

2.5.2.6 Concrete permeability

- a. Provide concrete meeting the requirements of the following table based on exposure class assigned to portions of the structure requiring low permeability in the Contract Documents.

Exposure class	Maximum w/cm*	Minimum f_c' , psi [^]	Additional minimum requirements
W0	0.45	4000	None
W1	0.45	4000	ACI 318 Para. 26.4.2.2(d) & Paragraph titled Alkali-Aggregate Reaction

Exposure class	Maximum w/cm*	Minimum fc', psi^	Additional minimum requirements
W2	0.4	4000	ACI 318 Para. 26.4.2.2(d) & Paragraph titled Alkali-Aggregate Reaction

*The maximum w/cm limits do not apply to lightweight concrete.

^Minimum fc' based on cylinder test specimens as indicated in paragraph titled COMPRESSIVE STRENGTH TESTS.

b. Submit documentation verifying compliance with specified requirements.

2.5.3 Contractor's Option for Material Only

At the option of the Contractor, those applicable material sections of DOT RBS for Class A strength concrete must govern in lieu of this specification for concrete. Do not change the selected option during the course of the work.

2.5.4 Trial Mixtures

Trial mixtures, as needed, must be in accordance to ACI 301.

2.5.5 Ready-Mix Concrete

Unless otherwise approved in writing by the Contracting Officer, ready-mixed concrete must be supplied by a ready-mixed concrete manufacturer (plant) and trucks which are certified by the National Ready Mixed Concrete Association's (NRMCA) Plant and Truck Certification Program. Submit current plant and truck certifications. Provide concrete that meets the requirements of ASTM C94/C94M. Contractor must coordinate with ready-mixed concrete manufacturer any adjustments required to meet requirements in paragraph titled FIELD QUALITY CONTROL for sampling at point of placement after conveyance.

Ready-mixed concrete manufacturer must provide duplicate delivery tickets with each load of concrete delivered to the project site. Provide delivery tickets with the following optional information in addition to the required information per ASTM C94/C94M:

- Type, and brand, and amount of cement
- Type, brand and, amount of other cementitious materials, if used
- Maximum size of aggregate
- Amount and brand name of admixtures, if used
- Type, brand, and amount of fiber reinforcement, if used

2.6 REINFORCEMENT

- Shop bend reinforcement cold. Fabricate reinforcement in accordance

with fabricating tolerances of ACI 117.

- b. Submit manufacturer's certified test report for reinforcement.
- c. Submit placing drawings showing fabrication dimensions and placement locations of reinforcement and reinforcement supports. Placing drawings must indicate locations of splices, lengths of lap splices, and details of mechanical and welded splices. Submission of Contract Drawings as placing drawings will not be acceptable.
- d. Submit request with locations and details of splices not indicated in Contract Documents.
- e. Submit request to place column dowels without using templates, if desired.
- f. If desired, submit request and procedure to field-bend or straighten reinforcing bars partially embedded in concrete at locations not indicated in Contract Documents. Field bending or straightening of reinforcing bars once per bend location is permitted where indicated in the Contract Documents:
- g. Submit request for field cutting, including location and type of bar to be cut and reason field cutting is required. Reinforcement must not be cut without written approval from Contracting Officer.

2.6.1 Reinforcing Bars

- a. Reinforcing bars must be deformed, except spirals, load-transfer dowels, and welded wire reinforcement, which may be plain.
- b. ASTM A615/A615M with the bars marked S, Grade 60; or ASTM A996/A996M with the bars marked R, Grade 60, or marked A, Grade 60. See Section 01 33 29 SUSTAINABILITY REQUIREMENTS AND REPORTING for cumulative total recycled content requirements.
- c. Reinforcing bars may contain post-consumer or post-industrial recycled content. Submit documentation indicating percentage of post-industrial and post-consumer recycled content per unit of product. Indicate relative dollar value of recycled content products to total dollar value of products included in project.
- d. Submit mill certificates for reinforcing bars.

2.6.2 Mechanical Reinforcing Bar Connectors

- a. Provide 125 percent minimum yield strength of the reinforcement bar.
- b. Mechanical splices for galvanized reinforcing bars must be galvanized or coated with dielectric material.
- c. Mechanical splices used with epoxy-coated or dual-coated reinforcing bars must be coated with dielectric material.
- d. Submit data on mechanical splices demonstrating compliance with this paragraph.

2.6.3 Wire

- a. See Section 01 33 29 SUSTAINABILITY REPORTING for cumulative total recycled content requirements. Wire reinforcement may contain post-consumer or post-industrial recycled content. Provide flat sheets of welded wire reinforcement. Rolls of wire reinforcement must not be used.
- b. Plain or deformed steel wire must conform to ASTM A1064/A1064M.

2.6.4 Welded Wire Reinforcement

- a. Use welded wire reinforcement specified in Contract Documents and conforming to one or more of the specifications given herein.
- b. Plain welded wire reinforcement must conform to ASTM A1064/A1064M, with welded intersections spaced no greater than 12 in. apart in direction of principal reinforcement.
- c. Deformed welded wire reinforcement must conform to ASTM A1064/A1064M, with welded intersections spaced no greater than 16 in. apart in direction of principal reinforcement.

2.6.5 Reinforcing Bar Supports

- a. Provide reinforcement support types within structure as required by Contract Documents. Reinforcement supports must conform to CRSI RB4.1. Submit description of reinforcement supports and materials for fastening coated reinforcement if not in conformance with CRSI RB4.1. Pre-soaked precast concrete blocks (dobies) of similar concrete strength or steel reinforcement standees are acceptable for slabs-on-ground.
- b. Legs of supports in contact with formwork must be plastic, hot-dip galvanized, or plastic coated after fabrication, or stainless-steel bar supports. Leg design must minimize visibility on finished surface.
- c. See Section 01 33 29 SUSTAINABILITY REPORTING for cumulative total recycled content requirements. Plastic and steel may contain post-consumer or post-industrial recycled content.

2.6.6 Dowels for Load Transfer in Floors

Provide lightly oiled dowels for load transfer in floors of the type, design, weight, and dimensions indicated in Contract Documents. Provide dowel bars that are plain-billet steel conforming to ASTM A615/A615M, Grade 40. Provide dowel pipe that is steel conforming to ASTM A53/A53M. Alternate products manufactured and sold as dowels for load transfer may be used with written approval by Contracting Officer if they provide at least an equivalent capacity.

Plate dowels must conform to ASTM A36/A36M, and must be of size and spacing equivalent to dowel bars shown in Contract Documents. Plate dowel system must minimize shrinkage restraint by using a tapered shape.

2.6.7 Welding

- a. Provide weldable reinforcing bars that conform to ASTM A706/A706M and ASTM A615/A615M and Supplement S1, Grade 60, except that the maximum

carbon content must be 0.55 percent.

- b. Comply with AWS D1.4/D1.4M unless otherwise specified. Do not tack weld reinforcing bars.
- c. Welded assemblies of steel reinforcement produced under factory conditions, such as welded wire reinforcement, bar mats, and deformed bar anchors, are allowed.
- d. After completing welds on zinc-coated (galvanized), epoxy-coated, or zinc and epoxy dual-coated reinforcement, coat welds and repair coating damage as previously specified.

PART 3 EXECUTION

3.1 EXAMINATION

- a. Do not begin installation until substrates have been properly constructed; verify that substrates are level, properly compacted, and not inundated with water. Concrete must not be placed on frozen subgrade.
- b. If substrate preparation is the responsibility of another installer, notify Contracting Officer of unsatisfactory preparation before processing.
- c. Check field dimensions before beginning installation. If variations from design dimensions do not allow proper installation, notify Contracting Officer and wait for instructions before beginning installation.

3.2 PREPARATION

Determine quantity of concrete needed and minimize the production of excess concrete. Designate locations or uses for potential excess concrete before the concrete is batched.

3.2.1 General

- a. Surfaces against which concrete is to be placed must be free of debris, loose material, standing water, snow, ice, and other deleterious substances before start of concrete placing.
- b. Remove standing water without washing it over freshly deposited concrete.

3.2.2 Subgrade Under Foundations and Footings

- a. When subgrade material is semi-porous and dry, sprinkle subgrade surface with water to a saturated surface dry condition at the time concrete is deposited, or seal subgrade surface by covering surface with specified vapor retarder if approved by Contracting Officer in writing.
- b. When subgrade material is porous, seal subgrade surface by covering surface with specified vapor retarder.

3.2.3 Subgrade Under Slabs on Ground

- a. Before construction of slabs on ground, have underground work on pipes, conduits, and other installations completed and approved.
- b. Previously constructed subgrade or fill must be cleaned of foreign materials
- c. Finish surface of capillary water barrier under interior slabs on ground must not show deviation in excess of 1/4 inch when tested with a 10-foot straightedge parallel with and at right angles to building lines.
- d. Finished surface of subgrade or fill under exterior slabs on ground must not be more than 0.02-foot above or 0.10-foot below elevation indicated.

3.2.4 Edge Forms and Screed Strips for Slabs

- a. Set edge forms or bulkheads and intermediate screed strips for slabs to obtain indicated elevations and contours in finished slab surface. Materials must be strong enough to support vibrating bridge screeds or roller pipe screeds if nature of specified slab finish requires use of such equipment.
- b. Align concrete surface to elevation of screed strips by use of strike-off templates or approved compacting-type screeds.

3.2.5 Reinforcement and Other Embedded Items

- a. Secure reinforcement, joint materials, and other embedded materials in position. Items must be inspected, and approved before start of concrete placing.
- b. When concrete is placed, reinforcement must be free of materials deleterious to bond. Reinforcement with rust, mill scale, or a combination of both will be considered satisfactory, provided minimum nominal dimensions, nominal weight, and minimum average height of deformations of a hand-wire-brushed test specimen are not less than applicable ASTM specification requirements.
- c. Contractor must not weld to embedded materials in concrete which is less than 14 days old without written Contracting Officer approval. If approved, appropriate measures must be taken during welding to avoid damage to the surrounding concrete.

3.3 FORMS

- a. Provide forms, shoring, and scaffolding for concrete placement. Set forms mortar-tight and true to line and grade.
- b. Chamfer above ground exposed joints, edges, and external corners of concrete 0.75 inch. Place chamfer strips in corners of formwork to produce beveled edges on permanently exposed surfaces. Do not bevel reentrant corners or edges of formed joints of concrete unless shown on Contract Documents.
- c. Provide formwork with clean-out openings as needed to permit inspection and removal of debris.

- d. Inspect formwork and remove foreign material before concrete is placed.
- e. At construction joints, lap form-facing materials over the concrete of previous placement. Ensure formwork is placed against hardened concrete so offsets at construction joints conform to specified tolerances.
- f. Provide positive means of adjustment (such as wedges or jacks) of shores and struts. Do not make adjustments in formwork after concrete has reached initial setting.
- g. Fasten form wedges in place after final adjustment of forms and before concrete placement.
- h. Provide anchoring and bracing to control upward and lateral movement and instability of formwork system.
- i. Construct formwork for openings to facilitate removal and to produce opening dimensions as specified and within tolerances.
- j. Provide runways for moving equipment. Support runways directly on formwork or structural members. Do not support runways on reinforcement. Loading applied by runways must not exceed capacity of formwork or structural members.
- k. Position and support expansion joint materials, waterstops, and other embedded items to prevent displacement during concrete placement. Fill voids in sleeves, inserts, and anchor slots temporarily with removable material or cover sufficiently to prevent concrete entry into voids.
- l. Clean surfaces of formwork and embedded materials of dried mortar, grout, and foreign materials before concrete placement.
- m. Concrete cast against galvanized stay-in-place forms, including permanent metal decking, must meet chloride ion limits of exposure class C1 unless more stringent limits are required in paragraph titled CONCRETE MIXTURE PROPORTION.

3.3.1 Coating

- a. Cover formwork surfaces with an acceptable material that inhibits bond with concrete.
- b. If formwork release agent is used, apply to formwork surfaces in accordance with manufacturer's recommendations before placing reinforcement. Remove excess release agent on formwork prior to concrete placement.
- c. Do not allow formwork release agent to contact reinforcement or hardened concrete against which fresh concrete is to be placed. Cleaning of materials deleterious to bond off of reinforcement must be complete prior to ordering concrete.

3.3.2 Reshoring

- a. Do not allow structural members to be loaded with combined dead and construction loads in excess of loads indicated in the accepted

procedure.

- b. Install and remove reshores or backshores in accordance with accepted procedure.
- c. For floors supporting shores under newly placed concrete, either leave original supporting shores in place, or install reshores or backshores. Shoring system and supporting slabs must resist anticipated loads. Locate reshores and backshores directly under a shore position or as indicated on formwork shop drawings.
- d. In multistory buildings, place reshoring or backshoring over a sufficient number of stories to distribute weight of newly placed concrete, forms, and construction live loads.

3.3.3 Reuse

- a. Reuse of forms is acceptable providing the structural integrity of concrete and the aesthetics of exposed concrete are not compromised.
- b. Wood forms must not be clogged with paste and must be capable of absorbing high water-cementitious material ratio paste.
- c. Remove leaked mortar from formwork joints before reuse.

3.3.4 Forms for Standard Rough Form Finish

Provide formwork in accordance with ACI 301 Section 5 with a surface finish, SF-1.0, for formed surfaces that are to be concealed by other construction, will be in an inaccessible area when construction is complete, or will be in an area which is not designed for regular human occupancy such as the inside of a liquid-filled tank or crawl space.

3.3.5 Forms for Standard Semi-Smooth Form Finish

Provide formwork in accordance with ACI 301 Section 5 with a surface finish, SF-2.0, for formed surfaces that are exposed to view but not public view. Use this surface finish if not otherwise specified.

3.3.6 Forms for Standard Smooth Form Finish

Provide formwork in accordance with ACI 301 Section 5 with a surface finish, SF-3.0, for formed surfaces that are exposed to public view. Provide a mockup of the concrete surface appearance and texture.

3.3.7 Form Ties

- a. For post-tensioned structures, do not remove formwork supports until stressing records have been accepted by the Contracting Officer.
- b. After ends or end fasteners of form ties have been removed, repair tie holes in accordance with ACI 301 Section 5 requirements.

3.3.8 Forms for Concrete Pan Joist Construction

Pan-form units for one-way or two-way concrete joist and slab construction must be factory-fabricated units of the approximate section indicated. Units must consist of steel or molded fiberglass concrete form pans. Closure units must be furnished as required.

3.3.9 Tolerances for Form Construction

- a. Construct formwork so concrete surfaces conform to tolerances in ACI 117.
- b. Position and secure sleeves, inserts, anchors, and other embedded items such that embedded items are positioned within ACI 117 tolerances.
- c. To maintain specified elevation and thickness within tolerances, install formwork to compensate for deflection and anticipated settlement in formwork during concrete placement. Set formwork and intermediate screed strips for slabs to produce designated elevation, camber, and contour of finished surface before formwork removal. If specified finish requires use of vibrating screeds or roller pipe screeds, ensure that edge forms and screed strips are strong enough to support such equipment.

3.3.10 Removal of Forms and Supports

- a. If vertical formed surfaces require finishing, remove forms as soon as removal operations will not damage concrete.
- b. Remove top forms on sloping surfaces of concrete as soon as removal will not allow concrete to sag. Perform repairs and finishing operations required. If forms are removed before end of specified curing period, provide curing and protection.
- c. Do not damage concrete during removal of vertical formwork for columns, walls, and sides of beams. Perform needed repair and finishing operations required on vertical surfaces. If forms are removed before end of specified curing period, provide curing and protection.
- d. Form-facing material and horizontal facing support members may be removed before in-place concrete reaches specified compressive strength if shores and other supports are designed to allow facing removal without deflection of supported slab or member.

3.3.11 Strength of Concrete Required for Removal of Formwork

If removal of formwork, reshoring, or backshoring is based on concrete reaching a specified in-place strength, mold and field-cure cylinders in accordance with ASTM C31/C31M. Test cylinders in accordance with ASTM C39/C39M. Alternatively, use one or more of the methods listed herein to evaluate in-place concrete strength for formwork removal.

- a. Tests of cast-in-place cylinders in accordance with ASTM C873/C873M. This option is limited to slabs with concrete depths from 5 to 12 in.
- b. Penetration resistance in accordance with ASTM C803/C803M.
- c. Pullout strength in accordance with ASTM C900.
- d. Maturity method in accordance with ASTM C1074. Submit maturity method data using project materials and concrete mixture proportions used on the project to demonstrate the correlation between maturity and compressive strength of laboratory cured test specimens to the

Contracting Officer.

3.4 PLACING REINFORCEMENT AND MISCELLANEOUS MATERIALS

- a. Unless otherwise specified, placing reinforcement and miscellaneous materials must be in accordance to ACI 301. Provide bars, welded wire reinforcement, wire ties, supports, and other devices necessary to install and secure reinforcement.
- b. Reinforcement must not have rust, scale, oil, grease, clay, or foreign substances that would reduce the bond. Rusting of reinforcement is a basis of rejection if the effective cross-sectional area or the nominal weight per unit length has been reduced. Remove loose or scaled rust prior to placing steel. Well adhered rust may remain. Tack welding is prohibited.
- c. Nonprestressed cast-in-place concrete portions of the structure must have concrete cover for reinforcement given in the following table unless noted otherwise in Contract Documents::

Concrete Exposure	Portion of Structure	Reinforcement	Specified cover, in.
Cast against and permanently in contact with ground	All	All	3
Exposed to weather, including outdoors under cover, or in contact with ground in completed construction	All	No. 6 through No. 18 bars	2
		No. 5 bar, W31 or D31 wire, and smaller	1-1/2
Not exposed to weather or in contact with ground in completed construction	Slabs, joists, and walls	No. 14 and No. 18 bars	1-1/2
		No. 11 bar and smaller	1
	Beams, columns, pedestals, and tension ties	Primary reinforcement, stirrups, ties, spirals, and hoops	1-1/2

- d. Precast nonprestressed or prestressed concrete elements manufactured under plant conditions must have concrete cover for reinforcement,

ducts, and end fittings given in the following table:

Concrete Exposure	Element	Reinforcement	Specified cover, in.
Exposed to weather, including outdoors under cover, or in contact with ground in completed construction; located in high-humidity or corrosive environments	Walls	No. 14 and No. 18 bars; tendons larger than 1-1/2 in. diameter	1-1/2
		No. 11 bars and smaller; W31 and D31 wire, and smaller; tendons and strands 1-1/2 in.	1
	All other	No. 14 and No. 18 bars; tendons larger than 1-1/2 in.	2
		No. 6 through No. 11 bars; tendons and strands larger than 5/8 in. diameter through 1-1/2 in.	1-1/2
		No. 5 bar, W31 or D31 wire, and smaller; tendons and strands 5/8 in. diameter and smaller	1-1/4

Concrete Exposure	Element	Reinforcement	Specified cover, in.
Not exposed to weather or in contact with ground	Slabs, joists, and walls	No. 14 and No. 18 bars; tendons larger than 1-1/2 in. diameter	1-1/4
		Tendons and strands 1-1/2 in. diameter and smaller	3/4
		No. 11 bar, W31 or D31	5/8
	Beams, columns, pedestals, and tension ties	Primary reinforcement	Greater of bar diameter and 5/8 and need not exceed 1-1/2
		Stirrups, ties, spirals, and hoops	3/8

3.4.1 General

Provide details of reinforcement that are in accordance with the Contract Documents.

3.4.2 Vapor Barrier

- a. Install in accordance with ASTM E1643. Provide beneath the on-ground concrete floor slab. Use the greatest widths and lengths practicable to eliminate joints wherever possible. Lap joints a minimum of 12

inches and tape.

- b. Remove torn, punctured, or damaged vapor barrier material and provide with new vapor barrier prior to placing concrete. Concrete placement must not damage vapor barrier material. Place vapor barrier directly on underlying subgrade, base course, or capillary water barrier, unless it consists of crushed material or large granular material which could puncture the vapor barrier. In this case, a thin layer of approximately 13 mm 1/2 inch of fine graded material should be rolled or compacted over the fill before installation of the vapor barrier to reduce the possibility of puncture. Control concrete placement so as to prevent damage to the vapor barrier.

3.4.3 Reinforcement Supports

Provide reinforcement support in accordance with CRSI RB4.1 and ACI 301 Section 3 requirements. Supports for coated or galvanized bars must also be coated with electrically compatible material for a distance of at least 2 inches beyond the point of contact with the bars.

3.4.4 Splicing

As indicated in the Contract Documents. For splices not indicated follow ACI 301. Do not splice at expected points of maximum stress and stagger adjacent splices. If needed, request general written guidance for expected points of maximum stress from Contracting Officer. Overlap welded wire reinforcement the spacing of the cross wires, plus 2 inches.

3.4.5 Future Bonding

Plug exposed, threaded, mechanical reinforcement bar connectors with a greased bolt. Provide bolt threads that match the connector. Countersink the connector in the concrete. Caulk the depression after the bolt is installed.

3.4.6 Setting Miscellaneous Material

Place and secure anchors and bolts, pipe sleeves, conduits, and other such items in position before concrete placement and support against displacement. Plumb anchor bolts and check location and elevation. Temporarily fill voids in sleeves with readily removable material to prevent the entry of concrete.

3.4.7 Fabrication

Shop fabricate reinforcing bars to conform to shapes and dimensions indicated for reinforcement, and as follows:

- a. Provide fabrication tolerances that are in accordance with ACI 117.
- b. Provide hooks and bends that are in accordance with the Contract Documents.

Reinforcement must be bent cold to shapes as indicated. Bending must be done in the shop. Rebending of a reinforcing bar that has been bent incorrectly is not permitted. Bending must be in accordance with standard approved practice and by approved machine methods.

Deliver reinforcing bars bundled, tagged, and marked. Tags must be metal

with bar size, length, mark, and other information pressed in by machine. Marks must correspond with those used on the placing drawings.

Do not use reinforcement that has any of the following defects:

- a. Bar lengths, depths, and bends beyond specified fabrication tolerances
- b. Bends or kinks not indicated on drawings or approved shop drawings
- c. Bars with reduced cross-section due to rusting, inadvertent cutting, or other cause

Replace defective reinforcement with new reinforcement having required shape, form, and cross-section area.

3.4.8 Placing Reinforcement

Place reinforcement in accordance with ACI 301.

For slabs on ground (over earth or over capillary water barrier) and for footing reinforcement, support bars or welded wire reinforcement on precast concrete units (dobies) or standees, spaced at intervals required by size of reinforcement, to keep reinforcement the minimum height specified above the underside of slab or footing.

For slabs other than on ground, supports for which any portion is less than 1 inch from concrete surfaces that are exposed to view or to be painted must be of plastic (designed for such use), precast concrete units (dobies), plastic-coated steel, or stainless steel protected bar supports. Precast concrete units must be wedge shaped (dog boned), not larger than 3-1/2 by 3-1/2 inches, and of dimension equal to that indicated for concrete protection of reinforcement. If used, provide precast units that have cast-in galvanized tie wire hooked for anchorage and blend with concrete surfaces after finishing is completed.

Provide reinforcement that is supported and secured together to prevent displacement by construction loads or by placing of fresh concrete, and as follows:

- a. Provide supports for reinforcing bars that are sufficient in number and have sufficient strength to carry the reinforcement they support, and in accordance with ACI 301 and CRSI 10MSP. Do not use supports to support runways for concrete conveying equipment and similar construction loads.
- b. Equip supports on ground and similar surfaces with sand-plates if needed.
- c. Support welded wire reinforcement as required for reinforcing bars.
- d. Secure reinforcements to supports by means of tie wire. Unless otherwise specified wire must be black, soft iron wire, not less than 16 gage.
- e. Reinforcement must be accurately placed, securely tied at intersections, and held in position during placing of concrete by spacers, chairs, or other approved supports. Point wire-tie ends away from the form. Unless otherwise indicated, numbers, type, and spacing of supports must conform to the Contract Documents.

- f. Bending of reinforcing bars partially embedded in concrete is permitted only as specified in the Contract Documents.

3.4.9 Spacing of Reinforcing Bars

- a. Spacing must be as indicated in the Contract Documents.
- b. Reinforcing bars may be relocated to avoid interference with other reinforcement, or with conduit, pipe, or other embedded items. If any reinforcing bar is moved a distance exceeding one bar diameter or specified placing tolerance, resulting rearrangement of reinforcement is subject to written preapproval by the Contracting Officer.

3.4.10 Concrete Protection for Reinforcement

Additional concrete protection (i.e. increased concrete cover) must be in accordance with the Contract Documents.

3.4.11 Welding

Welding must be in accordance with AWS D1.4/D1.4M.

3.5 BATCHING, MEASURING, MIXING, AND TRANSPORTING CONCRETE

In accordance with ASTM C94/C94M, ACI 301, ACI 302.1R and ACI 304R, except as modified herein. Batching equipment must be such that the concrete ingredients are consistently measured within the following tolerances: 1 percent for cement and water, 2 percent for aggregate, and 3 percent for admixtures. Furnish mandatory batch ticket information for each load of ready-mix concrete.

3.5.1 Measuring

Make measurements at intervals as specified in paragraph titled FIELD QUALITY CONTROL.

3.5.2 Mixing

- a. Mix concrete in accordance with ASTM C94/C94M, ACI 301 and ACI 304R.
- b. Machine mix concrete. Begin mixing within 30 minutes after the cement has been added to the aggregates. Place concrete within 90 minutes of either addition of mixing water to cement and aggregates or addition of cement to aggregates. If discharge is acceptable after more than 90 minutes the air content, slump, and concrete temperature shall be tested and shall be within the specified limits. A retarder shall be used to facilitate placing and finishing when concrete temperature is 85 degrees F or greater.
- c. If the total air content falls below the specified limit, add a sufficient quantity of air-entraining admixture, within the manufacturer's recommended dosage, to bring the total air content within the specified limits. Using additional drum revolutions to raise total air content percentage is not acceptable. If the total air content is above the specified limit including tolerances, the batch must be rejected. Dissolve admixtures in the mixing water and mix in the drum to uniformly distribute the admixture throughout the batch. Do not reconstitute concrete that has begun to solidify.

- d. When fibers are used, add fibers together with the aggregates and never as the first component in the mixer. Fibers must be dispensed into the mixing system using appropriate dispensing equipment and procedure as recommended by the manufacturer. Contractor quality control must visually inspect each batch of concrete at project site to ensure fibers have been added and are well dispersed prior to placement.

3.5.3 Transporting

Transport concrete from the mixer to the forms as rapidly as practicable. Prevent segregation or loss of ingredients. Clean transporting equipment thoroughly before each batch. Do not use aluminum pipe or chutes. Remove concrete which has segregated or reached initial setting in transporting and dispose of as directed.

3.6 PLACING CONCRETE

Place concrete in accordance with ACI 301 Section 5. Concrete shall be placed within 15 minutes of discharge into non-agitating equipment.

3.6.1 Pumping

ACI 304R and ACI 304.2R. Pumping must not result in separation or loss of materials nor cause interruptions sufficient to permit loss of plasticity between successive increments. Loss of slump in pumping equipment must not exceed 2 inches at discharge/placement. Do not convey concrete through pipe made of aluminum or aluminum alloy. Avoid rapid changes in pipe sizes. Limit maximum size of coarse aggregate to 33 percent of the diameter of the pipe unless well-rounded aggregate is used; if so, limit maximum coarse aggregate size to 40 percent of the pipe diameter. If Contracting Officer approval is given to sample at point of delivery to project site instead of specified point of placement, avoid extreme boom angles or truck positions which significantly alter fresh concrete properties such as total air content and slump.

3.6.2 Cold Weather

Cold weather concrete must meet the requirements of ACI 301 unless otherwise specified. Do not allow concrete temperature to decrease below 50 degrees F. Obtain approval prior to placing concrete when the ambient temperature is below 40 degrees F or when concrete is likely to be subjected to freezing ambient temperatures within 24 hours. Cover concrete and provide sufficient heat to maintain 50 degrees F minimum adjacent to both the formwork and the structure while curing. Limit the rate of cooling to 37 degrees F in any 1 hour and 50 degrees F per 24 hours after heat application.

3.6.3 Hot Weather

Hot weather concrete must meet the requirements of ACI 305.1 unless otherwise specified. Maintain required concrete temperature or use other means while following Figure 4.2 in ACI 305R to prevent the evaporation rate from exceeding 0.2 pounds of water per square foot of exposed concrete per hour. Use suitable means to control concrete temperature, prevent rapid drying of newly placed concrete, and limit plastic shrinkage cracking. In hot weather, use initial curing measures per ACI 308.1 between placement and finishing. Start final curing measures when the

surface of the fresh concrete is sufficiently hard to permit curing without damage, typically immediately following final finishing. Provide water hoses, pipes, spraying equipment, and water hauling equipment if the job site is remote to a water source and a wet curing method is used. Unless an alternate method is approved in writing by Contracting Officer, provide burlap cover or other suitable permeable material with fogging or continuous wetting of the concrete in hot weather when project conditions prevent the use of either liquid membrane curing compound or impervious sheets. For vertical surfaces in hot weather, protect forms from direct sunlight or otherwise cool them, and drip water from the top of structure once concrete is placed.

3.6.4 Bonding

Surfaces of set concrete at joints, must be roughened and cleaned of laitance, coatings, loose particles, and foreign matter. Roughen surfaces in a manner that exposes the aggregate uniformly and does not leave laitance, loosened particles of aggregate, nor damaged concrete such as micro-cracking (i.e. bruising) at the surface.

Obtain bonding of fresh concrete to concrete that has set as follows:

- a. At joints between footings and walls or columns, between walls or columns and the beams or slabs they support, and elsewhere unless otherwise specified; roughened and cleaned surface of set concrete must be dampened, but not saturated, immediately prior to placing of fresh concrete.
- b. At joints in exposed-to-view work; at vertical joints in walls; at joints near midpoint of span in girders, beams, supported slabs, other structural members; in work designed to contain liquids; the roughened and cleaned surface of set concrete must be dampened but not saturated and covered with a cement grout coating.
- c. Provide cement grout that consists of equal parts of portland cement and fine aggregate by weight with not more than 6 gallons of water per 94-pound sack of cement. Apply cement grout with a stiff broom or brush to a minimum thickness of 1/16 inch. Deposit fresh concrete before cement grout has attained its initial set.

3.7 WASTE MANAGEMENT

Provide as specified in the Waste Management Plan and as follows.

3.7.1 Mixing Equipment

Before concrete batching, designate on-site area to be paved later in project for cleaning out concrete mixing trucks. Minimize water used to wash equipment.

3.7.2 Hardened, Cured Waste Concrete

Crush and reuse hardened, cured waste concrete as fill or as a base course for pavement.

3.7.3 Reinforcing Steel

Collect waste reinforcing steel and place in designated area for recycling.

3.7.4 Other Waste

Identify concrete manufacturer's or supplier's policy for collection or return of construction waste, unused material, deconstruction waste, and/or packaging material. Return excess cement to supplier. Institute deconstruction and construction waste separation and recycling for use in manufacturer's programs. When such a program is not available, seek local recyclers to reclaim the materials.

3.8 SURFACE FINISHES EXCEPT FLOOR, SLAB, AND PAVEMENT FINISHES

3.8.1 Defects

Repair surface defects in accordance with ACI 301 Section 5.

3.8.2 Not Against Forms (Top of Walls)

Surfaces not otherwise specified must be finished with wood floats to even surfaces. Finish must match adjacent finishes.

3.8.3 Formed Surfaces

3.8.3.1 Tolerances

Tolerances in accordance with ACI 117 and as indicated.

3.8.3.2 As-Cast Rough Form

Provide for surfaces that are to be concealed by other construction, will be in an inaccessible area when construction is complete, or will be in an area which is not designed for regular human occupancy such as the inside of a liquid-filled tank or crawl space a surface finish SF-1.0 per ACI 301. Patch holes and defects in accordance with ACI 301.

3.8.3.3 Standard Semi-Smooth Finish

Provide for surfaces that are exposed to view but not public view a surface finish SF-2.0 per ACI 301. Use this surface finish for formed surfaces if not otherwise specified. Patch holes, including bug holes, and defects in accordance with ACI 301.

3.8.3.4 Standard Smooth Finish

Provide for surfaces exposed to public view a surface finish SF-3.0 per ACI 301. Patch holes, including bug holes, and defects in accordance with ACI 301.

3.9 FLOOR, SLAB, AND PAVEMENT FINISHES AND MISCELLANEOUS CONSTRUCTION

In accordance with ACI 301 and ACI 302.1R, unless otherwise specified. Slope floors uniformly to drains where drains are provided. Steel trowel and fine-broom finish concrete slabs that are to receive quarry tile, ceramic tile, or paver tile. Where straightedge measurements are specified, Contractor must provide straightedge.

3.9.1 Finish

Place, consolidate, and immediately strike off concrete to obtain proper contour, grade, and elevation before bleedwater appears. Permit concrete

to attain a set sufficient for floating and supporting the weight of the finisher and equipment. If bleedwater is present prior to floating the surface, drag the excess water off or remove by absorption with porous materials. Do not use dry cement to absorb bleedwater. Grate tampers ("jitterbugs") shall not be used.

3.9.1.1 Scratched

Use for surfaces intended to receive bonded applied cementitious applications. Finish concrete in accordance with ACI 301 Section 5 for a scratched finish.

3.9.1.2 Floated

Use for exterior slabs where not otherwise specified and as indicated in Contract Documents. Finish concrete in accordance with ACI 301 Section 5 for a floated finish.

3.9.1.3 Steel Troweled

Use for interior floors intended as walking surfaces, and for reception of floor coverings, and as indicated in Contract Documents. Finish concrete in accordance with ACI 301 Section 5 for a steel troweled finish. Do not hard-trowel, or burnish, the surface unless indicated in the Contract Documents.

3.9.1.4 Broomed

Use on surfaces of exterior walks, platforms, patios, and ramps, unless otherwise indicated. Finish concrete in accordance with ACI 301 Section 5 for a broomed finish. Direction of grooves must be consistent and orthogonal to any slope. Request written determination from Contracting Officer on direction or pattern if needed.

3.9.1.5 Pavement

Screed the concrete with a template which is advanced with a combined longitudinal and crosswise motion. Maintain a slight surplus of concrete ahead of the template. After screeding, float the concrete longitudinally. Use a straightedge to check slope and flatness; correct and refloat as necessary. Obtain final finish by a burlap drag. Drag a strip of clean, wet burlap from 3 to 10 feet wide and 2 feet longer than the pavement width across the slab. Produce a fine, granular, sandy textured surface without disfiguring marks. Round edges and joints with an edger having a radius of 1/8 inch.

3.9.2 Concrete Walks

Provide 4 inches thick minimum. Provide contraction joints spaced every 5 linear feet unless otherwise indicated. Cut contraction joints 1 inch deep, or one fourth the slab thickness whichever is deeper, with a jointing tool after the surface has been finished. Provide 0.5 inch thick transverse expansion joints at changes in direction where sidewalk abuts curb, steps, rigid pavement, or other similar structures; space expansion joints every 50 feet maximum. Give walks a broomed finish. Unless indicated otherwise, provide a transverse slope of 1/48. Limit variation in cross section to 1/4 inch in 5 feet.

3.9.3 Pits and Trenches

Place bottoms and walls monolithically or provide waterstops and shear keys.

3.9.4 Curbs and Gutters

Provide contraction joints spaced every 10 feet maximum unless otherwise indicated. Cut contraction joints 3/4 inch deep with a jointing tool after the surface has been finished. Provide expansion joints 1/2 inch thick and spaced every 100 feet maximum unless otherwise indicated. Perform pavement finish.

3.9.5 Splash Blocks

Provide at outlets of downspouts emptying at grade. Splash blocks may be precast concrete, and must be 24 inches long, 12 inches wide and 4 inches thick, unless otherwise indicated, with smooth-finished countersunk dishes sloped to drain away from the building.

3.10 JOINTS

3.10.1 Construction Joints

Submit a Placement Sequence and Jointing Plan indicating locations and types of joints and sequence of placement for each element. Make and locate joints not indicated so as not to impair strength and appearance of the structure, as approved. Joints must be perpendicular to main reinforcement. Reinforcement must be continued and developed across construction joints. Locate construction joints as follows:

3.10.1.1 Construction Joints for Constructability Purposes

- a. In walls, at top of footing; at top of slabs on ground; at top and bottom of door and window openings or where required to conform to architectural details; and at underside of deepest beam or girder framing into wall.
- b. In columns or piers, at top of footing; at top of slabs on ground; and at underside of deepest beam or girder framing into column or pier.
- c. Near midpoint of spans for supported slabs, beams, and girders unless a beam intersects a girder at the center, in which case construction joints in girder must offset a distance equal to twice the width of the beam. Make transfer of shear through construction joint by use of inclined reinforcement.

Unless otherwise detailed in Contract Documents, provide keyways at least 1-1/2-inches deep in construction joints in walls and slabs and between walls and footings; approved bulkheads may be used for slabs.

3.10.2 Isolation Joints in Slabs on Ground

- a. Provide joints at points of contact between slabs on ground and vertical surfaces, such as column pedestals, foundation walls, grade beams, and elsewhere as indicated.
- b. Fill joints with premolded joint filler strips 1/2 inch thick, extending full slab depth. Install filler strips at proper level

below finish floor elevation with a slightly tapered, dress-and-oiled wood strip temporarily secured to top of filler strip to form a groove not less than 3/4 inch in depth where joint is sealed with sealing compound and not less than 1/4 inch in depth where joint sealing is not required. Remove wood strip after concrete has set. Contractor must clean groove of foreign matter and loose particles after surface has dried.

3.10.3 Contraction Joints in Slabs on Ground

- a. Provide joints to form panels as indicated.
- b. Under and on exact line of each control joint, cut 50 percent of welded wire reinforcement and other reinforcement before placing concrete.
- c. Sawcut contraction joints into slab on ground in accordance with ACI 301 Section 5.

3.10.4 Sealing Joints in Slabs on Ground

- a. Contraction and control joints which are to receive finish flooring material must be sealed with joint sealing compound after concrete curing period. Slightly underfill groove with joint sealing compound to prevent extrusion of compound. Remove excess material as soon after sealing as possible.
- b. Sealed groove must be left ready to receive filling material that is provided as part of finish floor covering work.

3.11 CURING AND PROTECTION

Curing and protection in accordance with ACI 308.1 Section 5, unless otherwise specified and subject to approval by the Contracting Officer. Begin curing immediately following final finishing unless earlier initial curing is needed, see ACI 308.1 and paragraph titled HOT WEATHER. Avoid damage to concrete from nearby vibration created by blasting, pile driving, movement of equipment in the vicinity, disturbance of formwork or protruding reinforcement, and any other activity resulting in vibrations. Protect concrete from premature drying, excessively hot or cold temperatures, and injurious action by sun, rain, flowing water, freezing precipitation, mechanical injury, load stresses, heavy shock, tire marks, and oil stains. Do not allow concrete to dry out during placement through the expiration of the specified curing period. Do not use membrane-forming compound on surfaces where appearance would be objectionable, on any surface to be painted, where coverings are to be bonded to the concrete, or on concrete to which other concrete is to be bonded. If forms are removed prior to the expiration of the curing period, provide another curing procedure specified herein for the remaining portion of the curing period. Provide moist curing for those areas receiving liquid chemical sealer, hardener, or epoxy coating. Allow curing compound/sealer installations to cure prior to the installation of materials that adsorb VOCs.

3.11.1 Requirements for Type III, High-Early-Strength Portland Cement

The curing periods are required to be not less than one-fourth of those specified for portland cement, but in no case less than 72 hours.

3.11.2 Curing Periods

ACI 308.1, except 10 days for retaining walls, pavement or chimneys.

3.11.3 Curing Formed Surfaces

Accomplish curing of formed surfaces, including undersurfaces of girders, beams, supported slabs, and other similar surfaces by moist curing with forms in place for full curing period or until forms are removed. If forms are removed before end of curing period, accomplish final curing of formed surfaces by any of the curing methods specified above, as applicable.

3.11.4 Curing Unformed Surfaces

- a. Accomplish initial curing of unformed surfaces, such as monolithic slabs, floor topping, and other flat surfaces, by curing methods specified. Submit evaporation reducers for approval if used. Do not apply membrane curing compound prior to final finishing or work into surface during finishing. Do not use finishing aids without written approval by Contracting Officer and only then in strict adherence to manufacturer's printed instructions.
- b. Accomplish final curing of unformed surfaces by any of curing methods specified, as applicable.
- c. Accomplish final curing of concrete surfaces to receive liquid floor hardener of finish flooring by moisture-retaining cover curing.

3.11.5 Temperature of Concrete During Curing

When temperature of atmosphere is 41 degrees F and below, maintain temperature of concrete at not less than 55 degrees F throughout concrete curing period or 45 degrees F when the curing period is measured by maturity. When necessary, make arrangements before start of concrete placing for heating, covering, insulation, or housing as required to maintain specified temperature and moisture conditions for concrete during curing period.

When the ambient temperature is 80 degrees F and above or during other climatic conditions which may cause rapid drying of concrete, make arrangements before start of concrete placing for installation of wind breaks, of shading, or for fogging, wet sprinkling, or moisture-retaining covering of light color as required to protect concrete during curing period.

Changes in temperature of concrete must be uniform and not exceed 37 degrees F in any 1 hour nor 80 degrees F in any 24-hour period.

3.11.6 Protection After Curing

Protect finished concrete surfaces from damage by construction operations.

3.12 FIELD QUALITY CONTROL

3.12.1 Aggregate Testing

3.12.1.1 Fine Aggregate

At least once during each shift when the concrete plant is operating, there must be one sieve analysis and fineness modulus determination in accordance with ASTM C136/C136M and COE CRD-C 104 for the fine aggregate or for each fine aggregate if it is batched in more than one size or classification. The location at which samples are taken may be selected by the Contractor as the most advantageous for control. However, the Contractor is responsible for delivering fine aggregate to the mixer within specification limits. When the amount passing on any sieve is outside the specification limits, the fine aggregate must be immediately resampled and retested. If there is another failure on any sieve, the fact must be immediately reported to the Contracting Officer, concreting must be stopped, and immediate steps taken to correct the grading.

3.12.1.2 Coarse Aggregate

At least once during each shift in which the concrete plant is operating, there must be a sieve analysis in accordance with ASTM C136/C136M for each size of coarse aggregate. The location at which samples are taken may be selected by the Contractor as the most advantageous for production control. However, the Contractor must be responsible for delivering the aggregate to the mixer within specification limits. A test record of samples of aggregate taken at the same locations must show the results of the current test as well as the average results of the five most recent tests including the current test. The Contractor may adopt limits for control coarser than the specification limits for samples taken other than as delivered to the mixer to allow for degradation during handling. When the amount passing any sieve is outside the specification limits, the coarse aggregate must be immediately resampled and retested. If the second sample fails on any sieve, that fact must be reported to the Contracting Officer. Where two consecutive averages of 5 tests are outside specification limits, the operation must be considered out of control and reported to the Contracting Officer. Concreting must be stopped and immediate steps must be taken to correct the grading.

3.12.2 Sampling

ASTM C172/C172M. Collect samples of fresh concrete to perform tests specified. Sampling must be at point of placement after conveyance unless written approval by Contracting Officer is obtained for sampling at point of delivery to the project site, such as at the end of ready-mix concrete truck chute. If sampling at point of delivery to the project site is approved, Contractor must perform correlation testing using the most detrimental configurations between point of placement and point of delivery to project site to ensure as-placed concrete will meet this specification. ASTM C31/C31M for making test specimens.

3.12.3 Testing

3.12.3.1 Slump Tests

ASTM C143/C143M. Take concrete samples during concrete placement/discharge. The maximum slump may be increased as specified with the addition of an approved admixture provided that the approved

water-cementitious material ratio is not exceeded. Perform tests at commencement of concrete placement, when test cylinders are made, and for every 16 20 cubic yards (maximum) of concrete unless written approval for an alternate sampling frequency is obtained from the Contracting Officer.

3.12.3.2 Temperature Test

Test the concrete whenever slump testing is performed.

3.12.3.3 Compressive Strength Tests

ASTM C39/C39M. Use either 4 inch by 8 inch or 6 inch by 12 inch test cylinders, except the cylinder diameter must be at least three times the nominal maximum coarse aggregate size used. Depending on cylinder size selected, make either twelve 4 inch by 8 inch or eight 6 inch by 12 inch test cylinders for each set of tests in accordance with ASTM C31/C31M, ASTM C172/C172M and applicable requirements of ACI 305R and ACI 306R. Take precautions at project site to prevent temperatures beyond the specified range and loss of water from each specimen. Either three 4 inch by 8 inch or two 6 inch by 12 inch cylinders is considered a strength test set. Test one set at 7 days, one set at 28 days, and hold two sets in reserve to be tested at the discretion of the Contracting Officer. All tests must be performed on the same sized cylinders for the duration of the project.

Take samples for strength tests of each mixture proportion and for 100 CY concrete placed each day not less than once a day, nor less than once for each 100 cubic yards of concrete for the first 250 cubic yards placed on the project, then every 100 cubic yards thereafter if no strength tests are found to be deficient, nor less than once for each 5400 square feet of surface area for slabs or walls. If any strength test is found to be deficient within first 250 cubic yards placed on the project, continue sampling at higher rate until 250 cubic yards of concrete is tested satisfactory, unless otherwise approved by Contracting Officer. Concrete compressive strength tests must meet the requirements of this section, the Contract Documents, and ACI 301.

The compressive strength of the concrete tested will be considered satisfactory when the 28-day averages of all sets of three consecutive strength tests equal or exceed the specified compressive strength, f_c' , and no individual strength test result falls below the specified minimum compressive strength by more than 500 psi if f_c' is 5000 psi or less, or by more than $0.10f_c'$ if f_c' is greater than 5000 psi. If any 28-day compressive strength test fails to reach 70 percent of specified minimum compressive strength, immediately inform Contracting Officer and investigate cause of low strength and potential to impact future placements; make interim corrections as needed.

3.12.3.4 Air Content

ASTM C173/C173M or ASTM C231/C231M for normal weight concrete. Test air-entrained concrete or concrete to receive a hard-troweled finish for total air content at the same frequency as specified for slump tests.

3.12.3.5 Unit Weight of Structural Concrete

ASTM C567/C567M and ASTM C138/C138M. Determine unit weight of lightweight and normal weight concrete. Perform test whenever slump testing is performed.

3.12.3.6 Strength of Concrete Structure

The strength of a specific portion of the concrete structure will be considered deficient if any of the following conditions are identified within that portion of the structure:

- a. Failure to meet compressive strength tests as evaluated.
- b. Reinforcement not conforming to requirements specified.
- c. Concrete which differs from required dimensions or location in such a manner as to reduce strength.
- d. Concrete curing and protection of concrete against temperature extremes during curing not conforming to requirements specified.
- e. Concrete subjected to damaging mechanical disturbances, particularly load stresses, heavy shock, and excessive vibration.
- f. At the Contracting Officer's written determination based on documented evidence, poor workmanship likely to result in deficient strength.

Where the strength of the concrete structure is considered deficient submit a mitigation or remediation plan for review and written approval by the Contracting Officer.

3.12.3.7 Non-Conforming Materials

Factors that indicate that there are non-conforming materials include (but not limited to) excessive compressive strength, inadequate compressive strength, excessive slump, excessive voids and honeycombing, excessive segregation, significant cold joints or pour lines, concrete delivery records that indicate excessive time between mixing and placement, or excessive water was added to the mixture during delivery and placement. Any of these indicators alone are sufficient reason for the Contracting Officer to request additional sampling and testing.

Investigations into non-conforming materials must be conducted at the Contractor's expense. The Contractor must be responsible for the investigation and must make written recommendations to adequately mitigate or remediate the non-conforming material. The Contracting Officer may accept, accept with reduced payment, require mitigation, or require removal and replacement of non-conforming material at no additional cost to the Government.

3.12.3.8 Testing Concrete Structure for Strength

When there is evidence that strength of in-place concrete in a portion of the structure does not meet specification requirements or there are non-conforming materials, perform the following:

- a. Determine approximate location of suspect concrete and control work in area. Do not further build upon or conceal potentially deficient concrete. Non-destructive testing methods, such as rebound hammer or pulse-velocity, may be used to locate suspect areas but must not be used to evaluate in-place strength or determine acceptance/rejection.
- b. Review test specimen casting, storage, and testing operations to

ensure compliance with ASTM C31/C31M. Additionally, determine likelihood of deficient in-place strength. Report findings to Contracting Officer.

- c. Request written determination from Contracting Officer if structural adequacy is unacceptably reduced through a review of calculations and other structural analysis or new analysis.

If additional investigation is required as determined by the Contracting Officer based on both the likelihood of unacceptable in-place concrete strength and analysis indicating structural adequacy is significantly reduced, make cores drilled from hardened concrete for compressive strength determination in accordance with ASTM C42/C42M, and as follows:

- a. Take at least three representative cores from each portion of the in-place concrete that is considered potentially deficient. Location of cores will be determined by the Contracting Officer. Locate reinforcement where practicable and avoid cutting it when drilling.
- b. Test cores after moisture conditioning, in accordance with ASTM C42/C42M.
- c. Strength of cores from each tested portion of the structure are considered satisfactory if their average compressive strength is equal to or greater than 85 percent of the 28-day design compressive strength of the class of concrete, and if no single core strength is less than 75 percent of the specified minimum compressive strength of the class of concrete. Unless otherwise approved in writing by the Contracting Officer, erratic core test results, as defined by ASTM C42/C42M single-operator precision statement except adjusted up from 9 percent based on number of cores per ACI 214.4R Table 7.1 (i.e. 10.6 percent range from average for 3 cores), must be neglected and additional core testing performed to replace erratic core test results.
- d. Core specimens will be taken and tested by the Government. If the results of core tests indicate that the in-place concrete as placed does not conform to the Contract Documents, the cost of such tests and restoration required must be borne by the Contractor.

Fill core holes solid with patching mortar and finished to match adjacent concrete surfaces.

Correct concrete work that is found inadequate by core tests in a manner approved by the Contracting Officer. Concrete with adequate strength may still be found unacceptable by Contracting Officer due to reduced service life or other non-conforming materials, see paragraphs titled NON-CONFORMING MATERIALS and REPAIR, REHABILITATION AND REMOVAL.

3.13 REPAIR, REHABILITATION AND REMOVAL

Before the Contracting Officer accepts the structure the Contractor must inspect the structure for cracks, damage and substandard concrete placements that may adversely affect the service life of the structure. A report documenting these defects must be prepared which includes recommendations for repair, removal or remediation must be submitted to the Contracting Officer for approval before any corrective work is accomplished.

3.13.1 Repair of Weak Surfaces

Weak surfaces are defined as mortar-rich, rain-damaged, uncured, or containing exposed voids or deleterious materials. Concrete surfaces with weak surfaces less than 1/4 inch thick must be diamond ground to remove the weak surface. Surfaces containing weak surfaces greater than 1/4 inch thick must be removed and replaced or mitigated in a manner acceptable to the Contracting Officer.

3.13.2 Failure of Quality Assurance Test Results

Proposed mitigation efforts by the Contractor must be approved by the Contracting Officer prior to proceeding.

-- End of Section --

SECTION 03 54 13

GYPSUM CEMENT UNDERLAYMENT
11/24

PART 1 GENERAL

1.1 RELATED DOCUMENTS

Drawings, general provisions of the Contract, and other related construction documents such as Division 01 specifications apply to this Section

1.2 SUMMARY

A. This Section includes High Flow, Fiber Reinforced, Self-Leveling Underlayment is a blend of high-strength, fiber-reinforced gypsum and Portland cements as well as powdered polymers used to repair existing above-grade floors prior to the installation of new floor coverings. Pourable or pumpable when mixed with water, it seeks its own level and produces a smooth, flat, hard surface.

1. High Flow, Fiber Reinforced, Self-Leveling Underlayment
2. Primer
3. Low Viscosity Rigid Polyurethane Crack & Joint Repair
4. Self-Drying Cement Based Finish Underlayment
5. Rapid Plus Semi-Rigid Joint Sealant

B. Related Sections include the following:

1. Section 03 30 00, Cast-In-Place Concrete
2. Division 09 Flooring Sections

1.3 REFERENCES

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

ASTM INTERNATIONAL (ASTM)

ASTM C78/C78M	(2022) Standard Test Method for Flexural Strength of Concrete (Using Simple Beam with Third-Point Loading)
ASTM C109/C109M	(2023) Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or (50-mm) Cube Specimens)
ASTM F710	(2022) Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring

1.4 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for Contractor Quality Control approval. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-03 Product Data

Product Data; G, AE

Qualification Data

For Installer

1.5 QUALITY ASSURANCE

A. Installation of the product must be completed by a factory-trained applicator using mixing equipment and tools approved by the manufacturer.

B. Manufacturer Experience: Provide products of this section by companies which have successfully specialized in production of this type of work for not less than 10 years. Contact Manufacturer Representative prior to installation.

1.6 WARRANT

Gypsum Cement Underlayment installed as part of a floor system, shall be installed in conjunction with the recommended Flooring Adhesive, as appropriate, to provide the 10-year Limited Warranty.

1.7 DELIVERY, STORAGE AND HANDLING

A. Deliver products in original packaging, labeled with product identification, manufacturer, batch number and shelf life.

B. Store products in a dry area with temperature maintained between 50° and 85° F and Protect from direct sunlight.

C. Handle products in accordance with manufacturer's printed recommendations.

1.8 PROJECT CONDITIONS

A. Do not install in any areas subject to high moisture conditions. Never mix with cement or additives other than approved products.

B. Do not install material below 50° F surface and air temperatures. These temperatures must also be maintained during and for 48 hours after the installation of products included in this section. Install quickly if substrate is warm and follow warm weather instructions.

PART 2 PRODUCTS

2.1 GYPSUM CEMENT UNDERLAYMENT

2.1.1 Gypsum Cement Self-Leveling Underlayment

1. Acceptable Products:

Submit Product Data

- a. Gypsum cement underlayment compatible with raised access floor
 - i. Primer Standard Porous Concrete: Manufacturer recommended primer.
 - ii. Primer Non-porous substrates including, ceramic, porcelain & quarry tile, epoxy coating systems and concrete treated with silicate compounds, terrazzo and burnished concrete: Manufacturer recommended primer.
2. Performance and Physical Properties: Meet or exceed the following values for material cured at 70° F and 50 percent relative humidity:
 - a. Application: Barrel Mix or Pump
 - b. Compressive Strength: 6,000 psi at 28 days, ASTM C109/C109M.
 - c. Flexural Strength: 1,600 psi at 28 days, ASTM C78/C78M.
 - d. VOC: 0

2.2 WATER

Water shall be clean, potable, and sufficiently cool (not warmer than 70°F).

2.3 CRACK AND JOINT REPAIR

- A. Low Viscosity Rigid Polyurethane Crack and Joint Repair
- B. Semi-Rigid Joint Sealant

2.4 PATCH

Self-Drying Cement Based Finished Underlayment

PART 3 EXECUTION

3.1 PREPARATION

3.1.1 General

Prepare substrate in accordance with manufacturer's instructions.

- A. Concrete: Prior to proceeding please refer to ASTM F710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring. All concrete subfloors must be sound, solid, clean, and free of all oil, grease, dirt, curing compounds and any substance that might act as a bond breaker before priming. Mechanically clean if necessary

using shot blasting or other. Acid etching and the use of sweeping compounds and solvents are not acceptable.

3.1.2 Joint Preparation

- A. Moving Joints - honor all moving joints including, expansion and isolation joints up through the underlayment. A flexible sealing compound may be installed.
- B. Saw Cuts and Dormant Control Joints - fill all dormant control joints or dormant cracks with Joint Filler or as recommended by the manufacturer.

3.2 APPLICATION OF GYPSUM CEMENT UNDERLAYMENT

- A. Examine substrates and conditions under which materials will be installed. Do not proceed with installation until unsatisfactory conditions are corrected.
- B. Coordinate installation with adjacent work to ensure proper sequence of construction. Protect adjacent areas from contact due to mixing and handling of materials.
- C. Priming: Comply with manufacturer's printed instructions
- D. Mixing: Comply with manufacturer's printed instructions
- E. Application: Comply with manufacturer's printed instructions
- F. Curing
 - 1. Gypsum cement underlayment can be walked on in 2-3 hours. For installations up to 1/8", allow the installation to dry a minimum of 24 hours. Installations greater than 1/8", flooring installation may continue when confirmed dry via mat testing (estimated 23 days).
 - 2. Once the installation is deemed dry, prime the entire area with manufacturer recommended primer. Allow drying to a clear, thin film (min. 3 hours, max. 24 hours) prior to installing finish flooring.
 - 3. Drying time is a function of jobsite temperature and humidity conditions, as well as the installation thickness. Low substrate temperatures and/or high ambient humidity will extend the drying time. Adequate ventilation and heat will aid drying. Forced drying can dry the surface of the underlayment prematurely and is not recommended.

3.3 FIELD QUALITY CONTROL

Where specified, field sampling of the underlayment is to be done by taking an entire unopened bag of the product being installed to an independent testing facility to perform compressive strength testing in accordance with ASTM C109/C109M/modified: air-cure only. There are no in situ test procedures for the evaluation of compressive strength.

3.4 PROTECTION

Prior to the installation of the finish flooring, the surface of the underlayment should be protected from abuse by other trades by the use of plywood, Masonite or other suitable protection course.

-- End of Section --

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SECTION 04 20 00

UNIT MASONRY

11/15, CHG 2: 05/19

PART 1 GENERAL

This section includes specification for:

- a. Modular facing brick above the base that surrounds the building (see paragraph 2.2.2, Clay or Shale Brick.
- b. Exterior concrete masonry units that form the base around the entire building (see paragraph 2.2.4, Architectural Stone Veneer).
- c. Structural Concrete Masonry Units that will be used in the entry wall on the south side of the building (see paragraph 2.2.3, Concrete Units).

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 A153/A153M	(2023) Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware
ASTM A167	(2011) Standard Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip
ASTM A185/A185M	(2007) Standard Specification for Steel Welded Wire Reinforcement, Plain, for Concrete
ASTM A1064/A1064M	(2022) Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete
ASTM B370	(2022) Standard Specification for Copper Sheet and Strip for Building Construction
ASTM C67/C67M	(2023a) Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile
ASTM C90	(2022) Standard Specification for Loadbearing Concrete Masonry Units
ASTM C207	(2018) Standard Specification for Hydrated Lime for Masonry Purposes
ASTM C216	(2023) Standard Specification for Facing

	Brick (Solid Masonry Units Made from Clay or Shale)
ASTM C270	(2019a; E 2019) Standard Specification for Mortar for Unit Masonry
ASTM C641	(2023) Standard Test Method for Iron Staining Materials in Lightweight Concrete Aggregates
ASTM C652	(2022) Standard Specification for Hollow Brick (Hollow Masonry Units Made from Clay or Shale)
ASTM C780	(2023) Standard Test Method for Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry
ASTM C979/C979M	(2016) Standard Specification for Pigments for Integrally Colored Concrete
ASTM C1384	(2012a) Standard Specification for Admixtures for Masonry Mortars

THE MASONRY SOCIETY (TMS)

TMS MSJC	(2016) Masonry Standard Joint Committee's (MSJC) Book - Building Code Requirements and Specification for Masonry Structures, Containing TMS 402/ACI 530/ASCE 5, TMS 602/ACI 530.1/ASCE 6, and Companion Commentaries

1.2 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-03 Product Data

Hot Weather Procedures; G
Cold Weather Procedures; G
Clay or Shale Brick; G
Cementitious Materials; G

SD-04 Samples

Mock-Up Panel; G
Clay or Shale Brick; G

Concrete Masonry Units (CMU); G
Admixtures for Masonry Mortar; G
Anchors, Ties, and Bar Positioners; G

SD-05 Design Data

Masonry Compressive Strength; G
Architectural Stone Veneer; G

SD-06 Test Reports

Efflorescence Test
Field Testing of Mortar

SD-07 Certificates

Special Masonry Inspector Qualifications
Clay or Shale Brick
Concrete Masonry Units (CMU)
Cementitious Materials
Anchors, Ties, and Bar Positioners

SD-08 Manufacturer's Instructions

Admixtures for Masonry Mortar

SD-10 Operation and Maintenance Data

Take-Back Program

SD-11 Closeout Submittals

Recycled Content of Clay Units; S
Recycled Content of Cement; S

1.3 QUALITY ASSURANCE

1.3.1 Masonry Mock-Up Panels

1.3.1.1 Mock-Up Panel Location

After material samples are approved and prior to starting masonry work, construct a mock-up panel for each type and color of masonry required. At least 48 hours prior to constructing the panel or panels, submit written notification to the Contracting Officer. Do not build-in mock-up panels as part of the structure; locate mock-up panels where directed. Construct portable mock-up panels or locate in an area where they will not be disrupted during construction.

1.3.1.2 Mock-Up Panel Configuration

Construct mock-up panels L-shaped or otherwise configured to represent all of the wall elements. Construct panels of the size necessary to demonstrate the acceptable level of workmanship for each type of masonry represented on the project. Provide a straight panel or a leg of an L-shaped panel of minimum size 8 feet long by 6 feet high.

1.3.1.3 Mock-Up Panel Composition

Show full color range, texture, and bond pattern of the masonry work. Demonstrate mortar joint tooling; grouting of reinforced vertical cores, collar joints, bond beams, and lintels; positioning, securing, and lapping of reinforcing steel; positioning and lapping of joint reinforcement (including prefabricated corners); and cleaning of masonry work during the construction of the panels. Also include installation or application procedures for anchors, wall ties, CMU control joints, brick expansion joints, insulation, flashing, brick soldier course, and weeps.

1.3.1.4 Mock-Up Panel Construction Method

Where anchored veneer walls or cavity walls are required, demonstrate and receive approval for the method of construction; i.e., either bring up the two wythes together or separately, with appropriate ties placed within the specified tolerances across the cavity. Demonstrate provisions to preclude mortar or grout droppings in the cavity and to provide a clear open air space of the dimensions shown on the drawings. Where masonry is to be grouted, demonstrate and receive approval on the method that will be used to bring up the masonry wythes; support the reinforcing bars; and grout cells, bond beams, lintels, and collar joints using the requirements specified herein. When water-repellent is specified to be applied to the masonry, apply the approved product to the mock-up panel. Construct panels on a properly designed concrete foundation.

1.3.1.5 Mock-Up Panel Purpose

The completed panels is used as the standard of workmanship for the type of masonry represented. Do not commence masonry work until the mock-up panel for that type of masonry construction has been completed and approved. Protect panels from the weather and construction operations until the masonry work has been completed and approved. Perform cleaning procedures on the mockup and obtain approval of the Contracting Officer prior to cleaning the building. After completion of the work, completely remove the mock-up panels, including all foundation concrete, from the construction site.

1.3.2 Special Masonry Inspector Qualifications

Refer to Section 01 45 35 SPECIAL INSPECTIONS for qualifications and responsibilities of the masonry special inspector.

1.4 DELIVERY, STORAGE, AND HANDLING

Deliver, store, handle, and protect material to avoid chipping, breakage, and contact with soil or contaminating material. Store and prepare materials in already disturbed areas to minimize project site disturbance and size of project site.

1.4.1 Masonry Units

Cover and protect masonry units from precipitation. Conform to handling and storage requirements of TMS MSJC.

- a. Pack face brick and Architectural Stone Veneer masonry units in the manufacturer's standard paper cartons, trays, or shrink wrapped pallets with a divider between each unit. Do not stack pallets. Do not remove units from cartons until cartons are placed on scaffolds or in the location where units are to be laid.

1.4.2 Reinforcement, Anchors, and Ties

Store steel reinforcing bars, coated anchors, ties, and joint reinforcement above the ground. Maintain steel reinforcing bars and uncoated ties free of loose mill scale and loose rust.

1.4.3 Cementitious Materials, Sand and Aggregates

Deliver cementitious and other packaged materials in unopened containers, plainly marked and labeled with manufacturers' names and brands. Store cementitious material in dry, weathertight enclosures or completely cover. Handle cementitious materials in a manner that will prevent the inclusion of foreign materials and damage by water or dampness. Store sand and aggregates in a manner to prevent contamination and segregation.

1.5 PROJECT/SITE CONDITIONS

Conform to TMS MSJC for hot and cold weather masonry erection.

1.5.1 Hot Weather Procedures

When ambient air temperature exceeds 100 degrees F, or exceeds 90 degrees F and the wind velocity is greater than 8 mph, comply with TMS MSJC Article 1.8 D for: preparation prior to conducting masonry work; construction while masonry work is in progress; and protection for newly completed masonry.

1.5.2 Cold Weather Procedures

When ambient temperature is below 40 degrees F, comply with TMS MSJC Article 1.8 C for: preparation prior to conducting masonry work; construction while masonry work is in progress; and protection for newly completed masonry.

PART 2 PRODUCTS

2.1 SYSTEM DESCRIPTION

2.1.1 Design - Specified Compressive Strength of Masonry

The specified compressive strength of masonry, f'_m , is as indicated for each type of masonry.

2.1.2 Performance - Verify Masonry Compressive Strength

Verify specified compressive strength of masonry using the "Unit Strength Method" of TMS MSJC. Submit calculations and certifications of unit and mortar strength.

Verify specified compressive strength of masonry using the "Prism Test Method" of TMS MSJC when the "Unit Strength Method" cannot be used. Submit test results.

2.2 MANUFACTURED UNITS

2.2.1 General Requirements

Do not change the source of materials, which will affect the appearance of the finished work, after the work has started except with Contracting Officer's approval. Submit test reports from an approved independent laboratory. Certify test reports on a previously tested material as the same materials as that proposed for use in this project. Submit certificates of compliance stating that the materials meet the specified requirements.

2.2.2 Clay or Shale Brick

2.2.2.1 General

2.2.2.1.1 Basis of Design Product

Acme Brick Company, Elgin, TX. "Castle Gray" Modular Size, Velour Texture ELP188, 111747; a. Modular in size, 2 1/4 x 3 5/8 x 7 5/8 inches.

2.2.2.1.2 Sample Submittal

Submit brick samples as specified, showing the color range and texture of clay or shale brick. Limit units used on the project to those that conform to the approved sample. Submit sample of colored mortar with applicable masonry unit and color samples of three stretcher units and one unit for each type of special shape.

2.2.2.1.3 Uniformity

Manufacture bricks at one time and from the same run. Deliver clay or shale brick units factory-blended to provide a uniform appearance and color range in the completed wall.

2.2.2.1.4 Recycled Content

Provide clay units containing a minimum of 5 percent post-consumer recycled content, and a minimum of 10 percent post-industrial recycled content.

2.2.2.1.5 Efflorescence Test

Test clay brick that will be exposed to weathering for efflorescence in accordance with ASTM C67/C67M. Schedule tests far enough in advance of starting masonry work to permit retesting if necessary. Units meeting the definition of "effloresced" are subject to rejection.

2.2.2.2 Solid Clay or Shale Brick

Provide solid clay or shale brick that conforms to ASTM C216, Type FBS. Where brick cores, recesses, or deformation would be exposed to view, provide 100 percent solid units. Provide brick with texture and color range to match the brick at Building 633.

Provide brick with specified sizes.

- a. Modular size, 3-5/8 inches thick, 2-1/4 inches high, and 7-5/8 inches long and conforming to the requirements of ASTM C 216 or C 652, Grade SW.

2.2.2.3 Hollow Clay or Shale Brick

Provide hollow clay or shale brick that conforms to ASTM C652, Type HBX.

- a. Provide brick size of Modular size, 3-5/8 inches thick, 2-1/4 inches high, and 7-5/8 inches long.
- b. Provide hollow brick with minimum compressive strength of 3000 psi.

2.2.3 Concrete Units

2.2.3.1 Aggregates

Test lightweight aggregates, and blends of lightweight and heavier aggregates in proportions used in producing the units, for stain-producing iron compounds in accordance with ASTM C641, visual classification method. Do not incorporate aggregates for which the iron stain deposited on the filter paper exceeds the "light stain" classification.

2.2.3.2 Concrete Masonry Units (CMU)

2.2.3.2.1 Recycled Content

Provide units with a minimum of 10 percent post-consumer recycled content, or a minimum of 20 percent post-industrial recycled content, based on mass, cost, or volume.

2.2.3.2.2 Size

Provide units with specified dimension of 7 5/8 inches wide, 7 5/8 inches high, and 15 5/8 inches long.

2.2.3.2.3 Surfaces

Provide units with exposed surfaces that are smooth and of uniform texture.

2.2.3.2.4 Unit Types

- a. Hollow Load-Bearing Units: ASTM C90 medium weight.

2.2.4 Architectural Stone Veneer

2.2.4.1 General

- a. Basis of Design Product: Concrete Masonry Units shall be Rockcast Architectural Masonry Veneer Series manufactured by:
Reading Rock, Inc., 4600 Devitt Drive, Cincinnati, Ohio 45246
Phone (800) 482-6466 Fax (513) 874-2361
Web Site www.readingrock.com e-mail info@readingrock.com
(or approved equal).

- b. Fabricate units with beds and joints at right angles to the face, with sharp true arises and with drip grooves on the underside where units overhang walls. Form exposed-to-view surfaces free of surface voids, spalls, cracks, and chipped or broken edges and with uniform appearance and color. Unless otherwise specified, provide units with a smooth dense finish.
- c. Submit specified factory certificates.
- d. Provide architectural cast stone masonry trim that is manufactured in a plant by a producer regularly engaged in producing cast stone. Provide cast stone units that comply with ASTM C1364. Submit test reports and three exemplars of the same cast stone product installed in similar projects in similar climatic conditions.

2.3 MATERIALS

2.3.1 Mortar Materials

2.3.1.1 Cementitious Materials

Provide cementitious materials that conform to those permitted by ASTM C270.

2.3.1.2 Hydrated Lime and Alternates

Provide lime that conforms to one of the materials permitted by ASTM C207 for use in combination with portland cement, hydraulic cement, and blended hydraulic cement. Do not use lime in combination with masonry cement or mortar cement.

2.3.1.3 Colored Mortar

Use mortar pigment that conforms to ASTM C979/C979M. Add pigment to mortar to produce a uniform color matching Architect's selection from manufacturer's standard color mortar palette. Furnish pigments in accurately pre-measured and packaged units that can be added to a measured amount of cementitious materials or supply pigments via preblended cementitious materials or dry mortar mix.

- a. In masonry cement or mortar cement, do not exceed 5 percent of cement weight for mineral oxide pigment; do not exceed 1 percent of cement weight for carbon black pigment.
- b. In cement-lime mortar mix, do not exceed 10 percent of cementitious materials' weight for mineral oxide pigment; do not exceed 2 percent of cementitious materials' weight for carbon black pigment.

2.3.1.4 Admixtures for Masonry Mortar

In cold weather, use a non-chloride based accelerating admixture that conforms to ASTM C1384.

2.3.1.5 Aggregate and Water

Provide aggregate (sand) and water that conform to materials permitted by ASTM C270.

2.4 MORTAR MIXES

2.4.1 Mortar Mix

- a. Provide mortar Type N unless specified otherwise herein.
- b. For preblended mortar, follow manufacturer's mixing instructions.

2.5 ACCESSORIES

2.5.1 Anchors, Ties, and Bar Positioners

2.5.1.1 General

- a. Fabricate anchors and ties without drips or crimps. Size anchors and ties to provide a minimum of 5/8 inch mortar cover from each face of masonry.
- b. Fabricate steel wire anchors and ties from wire conforming to ASTM A1064/A1064M and hot-dip galvanize in accordance with ASTM A153/A153M.
- c. Submit two anchors, of each type used, as samples.

2.5.1.2 Wire Mesh Anchors

Provide wire mesh anchors of 1/4 inch mesh galvanized hardware cloth, conforming to ASTM A185/A185M, with length not less than 12 inches, at intersections of interior non-bearing masonry walls.

2.5.2 Flashing and Weeps

2.5.2.1 General

Provide coated copper, copper or stainless steel sheet, self-adhesive rubberized sheet, or reinforced membrane sheet flashing.

2.5.2.2 Coated-Copper Flashing

Provide 7 ounce, electrolytic copper sheet, uniformly coated on both sides with acidproof, alkaliproof, asphalt impregnated kraft paper or polyethylene sheets.

2.5.2.3 Copper or Stainless Steel Flashing

Provide copper sheet, complying with ASTM B370, minimum 16 ounce weight; or stainless steel, ASTM A167, Type 304 or 316, 0.015 inch thick, No. 2D finish. Where indicated, provide with factory-fabricated deformations that mechanically bond flashing against horizontal movement in all directions, where deformations consist of dimples, diagonal corrugations, or a combination of dimples and transverse corrugations.

2.5.2.4 Weep Ventilators

Provide Cellular Plastic Weep/Vent: One-piece, flexible extrusion made from UV-resistant polypropylene copolymer, full height and width of head joint and depth 1/8 inch (3mm) less than depth of outer width, in colors selected from manufacturer's standard. Provide weep holes of open head joints spaced 24 inches O.C. wherever the cavity is interrupted.

PART 3 EXECUTION

3.1 EXAMINATION

Prior to start of work, verify the applicable conditions as set forth in TMS MSJC, inspection.

3.2 PREPARATION

3.2.1 Stains

Protect exposed surfaces from mortar and other stains. When mortar joints are tooled, remove mortar from exposed surfaces with fiber brushes and wooden paddles. Protect base of walls from splash stains by covering adjacent ground with sand, sawdust, or polyethylene.

3.2.2 Loads

Do not apply uniform loads for at least 12 hours or concentrated loads for at least 72 hours after masonry is constructed. Provide temporary bracing as required.

3.2.3 Concrete Surfaces

Where masonry is to be placed, clean concrete of laitance, dust, dirt, oil, organic matter, or other foreign materials and slightly roughen to provide a surface texture with a depth of at least 1/8 inch. Sandblast, if necessary, to remove laitance from pores and to expose the aggregate.

3.2.4 Bracing

Provide bracing and scaffolding necessary for masonry work. Design bracing to resist wind pressure as required by OSHA and local codes. Do not remove bracing in less than 10 days.

3.3 ERECTION

3.3.1 General

- a. Coordinate masonry work with the work of other trades. Lay masonry units in the indicated bond pattern. Lay facing courses level with back-up courses, unless the use of adjustable ties has been approved in which case the tolerances is plus or minus 1/2 inch. Adjust each unit to its final position while mortar is still soft and has plastic consistency.
- b. Remove and clean units that have been disturbed after the mortar has stiffened, and relay with fresh mortar. Select units to be used in exposed masonry surfaces from those having the least amount of chipped edges or other imperfections detracting from the appearance of the finished work.
- c. When necessary to temporarily discontinue the work, step (rack) back the masonry for joining when work resumes. Tothing may be used only when specifically approved by the Contracting Officer. Before resuming work, remove loose mortar and thoroughly clean the exposed joint. Cover the top of walls subjected to rain with nonstaining waterproof covering or membrane when work is not in process. Extend

the covering a minimum of 610 mm 2 feet down on each side of the wall and hold securely in place.

- d. Ensure that units being laid and surfaces to receive units are free of water film and frost. Lay solid units in a nonfurrowed full bed of mortar. Bevel mortar for veneer wythes and slope down toward the cavity side. Shove units into place so that the vertical joints are tight. Completely fill vertical joints between solid units with mortar, except where indicated at control, expansion, and isolation joints. Place hollow units so that mortar extends to the depth of the face shell at heads and beds, unless otherwise indicated. Mortar will be permitted to protrude up to 1/2 inch into the space or cells to be grouted. Provide means to prevent mortar from dropping into the space below.

3.3.1.1 Jointing

Tool mortar joints when the mortar is thumbprint hard. Tool horizontal joints after tooling vertical joints. Brush mortar joints to remove loose and excess mortar.

3.3.1.1.1 Tooled Joints

Tool mortar joints in exposed exterior and interior masonry surfaces concave, using a jointer that is slightly larger than the joint width so that complete contact is made along the edges of the unit. Perform tooling so that the mortar is compressed and the joint surface is sealed. Use a jointer of sufficient length to obtain a straight and true mortar joint.

3.3.1.1.2 Joint Widths

- a. Construct brick masonry with mortar joint widths equal to the difference between the specified and nominal dimensions of the unit.

3.3.1.2 Cutting and Fitting

Use full units of the proper size wherever possible, in lieu of cut units. Locate cut units where they would have the least impact on the architectural aesthetic goals of the facility. Perform cutting and fitting, including that required to accommodate the work of others, by masonry mechanics using power masonry saws. Concrete masonry units may be wet or dry cut. Before being placed in the work, dry wet-cut units to the same surface-dry appearance as uncut units being laid in the wall. Provide cut edges that are clean, true and sharp.

- a. Do not reduce masonry units in size by more than one-third in height and one-half in length. Do not locate cut products at ends of walls, corners, and other openings.

3.3.1.3 Unfinished Work

Rack back unfinished work for joining with new work. Toothing may be resorted to only when specifically approved by the Contracting Officer. Remove loose mortar and thoroughly clean the exposed joints before laying new work.

3.3.2 Clay Brick Masonry

3.3.2.1 Brick Placement

Blend all brick at the jobsite from several cubes to produce a uniform appearance when installed. An observable "banding" or "layering" of colors or textures caused by improperly mixed brick is unacceptable. Lay brick facing with the better face exposed. Lay brick in running bond with each course bonded at corners, unless otherwise indicated. Lay molded brick with the frog side down. Do not lay brick that is cored, recessed, or has other deformations in a manner that allows those deformations to be exposed to view; lay 100 percent solid units in these areas. Completely fill head and bed joints of solid units with mortar.

3.3.2.2 Wetting of Units

Wet clay, shale brick, or hollow brick units having an initial rate of absorption of more than 1 gram per minute per square inch of bed surface in conformance with ASTM C67/C67M. Ensure that each unit is nearly saturated when wetted but surface dry when laid.

Test clay or shale brick daily on the job, prior to laying, as follows: Using a wax pencil, draw a circle the size of a quarter on five randomly selected bricks. Apply 20 drops of water with a medicine dropper to the surface within the circle on each brick. If the average time that the water is completely absorbed in the five bricks is less than 1-1/2 minutes, wet bricks represented by the five bricks tested.

3.3.3 ANCHORAGE

3.3.3.1 Anchorage at Intersecting Walls

Provide wire mesh anchors at maximum 16 inches spacing at intersections of interior non-bearing masonry walls.

Anchor structural masonry walls with horizontal joint reinforcement spaced no more than 16 inches O.C. vertically.

3.4 INSTALLATION

3.4.1 Flashing and Weeps

- a. Install flashing where indicated on Drawings. Ensure continuity of the flashing at laps and inside and outside corners by splicing in a manner approved by the flashing manufacturer. Ensure that the top edge of the flashing is sealed. Terminate the horizontal leg of the flashing by extending the sheet metal 1/2 inch beyond the outside face of masonry and turning downward with a hemmed drip. Provide sealant below the drip edge of through-wall flashing.
- b. Wherever through-wall flashing occurs, provide weep holes to drain flashing to exterior at acceptable locations as indicated. Provide weeps of weep ventilators. Locate weeps not more than 24 inches on centers in mortar joints of the exterior wythe directly on the horizontal leg of through-wall flashing over foundations, bond beams, and any other horizontal interruptions of the cavity. Place weep holes perfectly horizontal or slightly canted downward to encourage water drainage outward and not inward. Other methods may be used for providing weeps when spacing is reduced to 16 inches on center and

approved by the Contracting Officer. Maintain weeps free of mortar and other obstructions.

3.5 APPLICATION

3.5.1 Tolerances

Lay masonry plumb, true to line, with courses level within the tolerances of TMS MSJC, Article 3.3 F.

3.6 FIELD QUALITY CONTROL

3.6.1 Tests

3.6.1.1 Field Testing of Mortar

Perform mortar testing at the following frequency: daily. For each required mortar test, provide a minimum of three mortar samples. Perform initial mortar testing prior to construction for comparison purposes during construction.

Prepare and test mortar samples for mortar aggregate ratio in accordance with ASTM C780 Appendix A4.

3.6.1.2 Clay Brick Efflorescence Test

Test clay brick that will be exposed to weathering for efflorescence in accordance with ASTM C67/C67M. Schedule tests far enough in advance of starting masonry work to permit retesting if necessary. Units meeting the definition of "effloresced" are subject to rejection.

3.7 POINTING AND CLEANING

After mortar joints have attained their initial set, but prior to hardening, completely remove mortar daubs and splashings from masonry-unit surfaces that will be exposed or painted. Before completion of the work, rake out defects in joints of masonry to be exposed or painted, fill with mortar, and tool to match existing joints. Remove scum and stains that have percolated through the masonry work using a low pressure stream of water and a stiff bristled brush. Do not clean masonry surfaces, other than removing excess surface mortar, until mortar in joints has hardened. Leave masonry surfaces clean, free of mortar daubs, dirt, stain, and discoloration, including scum from cleaning operations, and with tight mortar joints throughout. Do not use metal tools and metal brushes for cleaning.

3.7.1 Exposed Masonry Surfaces

Clean exposed clay brick masonry surfaces to obtain surfaces free of stain, dirt, mortar daubs, efflorescence, and discoloration or scum from cleaning operations. Perform cleaning in accordance with the approved cleaning procedure demonstrated on the mockup.

After cleaning, examine the sample panel of similar material for discoloration or stain as a result of cleaning. If the sample panel is discolored or stained, change the method of cleaning to ensure that the masonry surfaces in the structure will not be adversely affected. Water-soak exposed masonry surfaces and then clean with a proprietary masonry cleaning agent specifically recommended for the color and texture

by the clay brick manufacturer and manufacturer of the cleaning product. Apply the solution with stiff fiber brushes, followed immediately by thorough rinsing with clean water. Use proprietary cleaning agents in conformance with the cleaning product manufacturer's printed recommendations. Remove efflorescence in conformance with the brick manufacturer's recommendations.

3.8 CLOSE-OUT TAKE-BACK PROGRAM

Collect information from manufacturer for take-back program options. Set aside masonry units, full and partial to be returned to manufacturer for recycling into new product. When such a service is not available, seek local recyclers to reclaim the materials. Submit documentation that includes contact information, summary of procedures, and the limitations and conditions applicable to the project. Indicate manufacturer's commitment to reclaim materials for recycling and/or reuse.

3.9 PROTECTION

Protect facing materials against staining. Cover top of walls with nonstaining waterproof covering or membrane to protect from moisture intrusion when work is not in progress. Continue covering the top of the unfinished walls until the wall is waterproofed with a complete roof or parapet system. Extend covering a minimum of 2 feet down on each side of the wall and hold securely in place. Before starting or resuming work, clean top surface of masonry in place of loose mortar and foreign material.

-- End of Section --

SECTION 05 05 20

POST-INSTALLED CONCRETE AND MASONRY ANCHORS
05/22

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 CONCRETE INSTITUTE (ACI)

ACI 355.2	(2007) Qualification of Post-Installed Mechanical Anchors in Concrete and Commentary
ACI 355.4	(2011) Qualification of Post-Installed Adhesive Anchors in Concrete (ACI 355.4) and Commentary

ASTM INTERNATIONAL (ASTM)

ASTM A153/A153M	(2023) Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware
ASTM A193/A193M	(2023) Standard Specification for Alloy-Steel and Stainless Steel Bolting Materials for High-Temperature Service and Other Special Purpose Applications
ASTM A615/A615M	(2022) Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
ASTM E488/E488M	(2022) Standard Test Methods for Strength of Anchors in Concrete Elements
ASTM F1554	(2020) Standard Specification for Anchor Bolts, Steel, 36, 55, and 105-ksi Yield Strength

INTERNATIONAL CODE COUNCIL (ICC)

ICC IBC	(2021) International Building Code

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1	(2024) Safety -- Safety and Occupational Health (SOH) Requirements Manual

1.2 APPLICABILITY

This guide specification covers the requirements for all anchors that are

post-installed into hardened concrete, concrete masonry, or brick. This guide specification does not cover through bolts, powder or pneumatic actuated nails, or cast in anchors. Refer to Section 05 50 13 MISCELLANEOUS METAL FABRICATIONS for requirements of through bolts, powder or pneumatic actuated nails, or cast in anchors.

1.3 DEFINITIONS

1.3.1 Anchor

"Anchor" includes steel elements post-installed into hardened concrete, concrete masonry, or brick and used to transmit applied loads.

1.3.2 Periodic Special Inspections

"Periodic Special Inspection" as used herein means that, as a minimum, the Post-Installed Anchor Special Inspector must perform inspections in accordance with this specification.

1.3.3 Continuous Special Inspections

"Continuous Special Inspection" as used herein means that the Post-Installed Anchor Special Inspector observes the drilling and cleaning of holes, the injection of adhesive into the holes, and the insertion of anchors into the holes. When applicable for the type of installation, or as indicated in the project drawings, "Continuous Special Inspection" also includes observation of measures to secure the anchor during the adhesive curing period.

1.4 SUBMITTALS

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

SD-01 Preconstruction Submittals

Installer Qualifications; G

Post-Installed Anchor Special Inspector Qualifications; G

SD-03 Product Data

Mechanical Anchors in Concrete; G

Adhesive Anchor System in Concrete; G

Non-Shrink, Non-Metallic Grout; G

SD-06 Test Reports

Post-Installed Anchor Special Inspections Report; G

SD-07 Certificates

Post-Installed Anchor Certification; G

SD-08 Manufacturer's Instructions

Manufacturer's Printed Installation Instructions; G

Non-Shrink, Non-Metallic Grout; G

Manufacturer's Material Safety Data Sheets

1.5 QUALITY ASSURANCE

Perform all work in accordance with EM 385-1-1 and all manufacturer's instructions and recommendations. To protect personnel from overexposure to toxic materials, conform to the applicable manufacturer's Material Safety Data Sheets (MSDS) or local regulation. Submit the MSDS for epoxies and other potentially hazardous materials.

1.5.1 Qualifications

The submittals must identify individuals who will be working on this contract and their relevant experience and training. Do not make changes in approved personnel without prior approval of the Contracting Officer.

1.5.1.1 Installer Qualifications

Each worker engaged in the installation of post-installed anchors must have satisfactorily completed an applicable certification program or equivalent instruction program through the manufacturer or manufacturer's representative for all anchoring products they will install. A manufacturer's representative must train all installers per the installation instructions as listed in the ICC-ES Evaluation Report for the anchor being installed. Training must consist of a review and performance test of the complete installation process, including but not limited to:

- (1) Hole drilling procedure
- (2) Hole preparation & cleaning technique
- (3) Adhesive injection technique & dispenser training / maintenance
- (4) Anchor/threaded rod preparation and installation
- (5) Rebar dowel preparation and installation
- (6) Proof loading/torquing
- (7) Installation in horizontal and upward orientations

Submit certification for each worker showing that they have completed the above training within three years prior to onsite work. Certification must include organization or manufacturer's name, instructor's name and qualifications, trainee's name, list of instruction received, date of instruction, and confirmation of successful performance tests.

1.5.1.2 Post-Installed Anchor Special Inspector Qualifications

The Contractor must retain the services of a third party Special Inspector independent of the installing contractor and manufacturer. The individual(s) who perform special inspections for post-installed anchors must meet all Installer Qualification requirements and have a minimum of 1

year of experience as a Special Inspector on previous projects involving similar scope of work. Submit resumes, pertinent information, past experience, and training.

1.6 DELIVERY, STORAGE, AND HANDLING

1.6.1 Packing, Shipping, Handling, and Unloading

Deliver products to job site in manufacturer's or distributor's original packaging undamaged, complete with installation instructions. Inspect materials delivered to site for damage. Unload and store with minimal handling.

1.6.2 Storage

Protect, store, and handle materials in accordance with manufacturer's recommendations to prevent damage or deterioration. Do not allow chemical materials to freeze. Remove materials that have not be stored in accordance with the manufacturer's recommendations, including expired materials, from the job site.

PART 2 PRODUCTS

2.1 MATERIALS

2.1.1 Post-Installed Anchors

Provide anchors of the type, effective embedment, and diameter indicated on contract drawings. Minimum spacing and concrete edge distances must be as shown on contract drawings. Design values listed must be as tested according to ASTM E488/E488M for the substrate type, substrate moisture condition, concrete aggregate type (normal weight or lightweight concrete), and concrete/masonry strength. If more than one type of anchor is to be used on a project, clearly indicate on the submittal where each type of anchor will be used.

2.1.1.1 Post-Installed Anchor Certification

Submit product information with recommended design values and physical characteristics for each type anchor shown on the drawings.

Provide certified test reports showing compliance with specified performance characteristics and physical properties. Anchors must have one of the following certifications:

- (1) ICC-ES Evaluation Report indicating conformance with current applicable ICC ES Acceptance Criteria
- (2) Third party Evaluation Report in conformance with ACI 355.2 or ACI 355.4, as applicable. Third party must be accredited under ISO/IEC 17025 by a recognized accreditation body conforming to the requirements of ISO/IEC 17011 in accordance with ACI 355.4."

2.1.1.2 Manufacturer's Printed Installation Instructions

Submit manufacturer's instructions for each anchor type shown on the drawings.

2.1.1.3 Mechanical Anchors in Concrete

Anchors must have been tested and qualified for performance in cracked and uncracked concrete in accordance with ACI 355.2.

Anchors must be galvanized in accordance with ASTM A153/A153M or stainless steel in accordance with ASTM A193/A193M unless otherwise indicated.

2.1.1.4 Adhesive Anchor System in Concrete

Use an adhesive to bond steel anchors to concrete. The adhesive must be a moisture insensitive, structural adhesive. Anchors must have been tested and qualified for performance in cracked and uncracked concrete, horizontal and overhead applications, and long term creep in accordance with ACI 355.4.

Threaded rod anchors must meet the requirements of ASTM F1554 Grade 36 or 55. Threaded rods must be galvanized in accordance with ASTM A153/A153M or stainless steel in accordance with ASTM A193/A193M unless otherwise indicated. Reinforcing bars must meet the requirements of ASTM A615/A615M Grade 60.

2.2 EQUIPMENT

Assemble at the site of the work, sufficient equipment that is dependable, appropriate and adequate to accomplish the work specified. Maintain the equipment in good working condition.

PART 3 EXECUTION

3.1 ANCHORING AND REINFORCING

Install anchors in accordance with the spacing and edge clearances indicated on the drawings. Anchor capacity is also highly dependent on proper installation. Follow all manufacturer and Evaluation Report installation instructions.

3.1.1 Drilling and Installing Mechanical Anchors

Drill holes for anchors using drilling equipment and bits suitable for the intended purpose, in accordance with Manufacturer's published installation instructions. Diameter of holes must be as recommended by the anchor manufacturer. Unless otherwise shown on the Drawings, all holes must be drilled perpendicular to the concrete surface. Deviations more than 6 degrees from perpendicular are not acceptable. Unless otherwise specified, do not drill holes in concrete until concrete has achieved full design strength. Mechanical anchors must not be installed in concrete that is less than 7 days old.

Clean holes, install anchors and set anchors in place in accordance with the manufacturer's recommendations. Protect threads and anchor from damage during anchor installation. Ensure proper embedment and placement in accordance with contract documents and all other work. Aim wedges away from any concrete edges that are less than 9 inches from centerline of hole.

Tighten nuts against smooth washers to the manufacturer's recommended torque, using a calibrated torque wrench. Following attainment of 10 percent of the specified torque, 100 percent of the specified torque must

be reached within 7 or less complete turns of the nut. If the specified torque is not achieved within the required number of turns, the anchor must be removed and replaced unless otherwise directed by the Engineer of Record.

3.1.2 Drilling and Installing Adhesive Anchors

Drill holes for anchors using drilling equipment and bits suitable for the intended purpose, in accordance with Manufacturer's Printed Installation Instructions and Evaluation Report installation instructions. Diameter of holes must be as recommended by the anchor manufacturer. Unless otherwise shown on the drawings, all holes must be drilled perpendicular to the concrete surface. Deviations more than 10 degrees from perpendicular are not acceptable. Unless otherwise specified, do not drill holes in concrete until concrete has achieved full design strength. Adhesive anchors must not be installed in concrete that is less than 21 days old.

Clean holes, place grout, and install anchors in accordance with anchor manufacturer's recommendations. Remove excess adhesive after the anchor has been set in place. Remove spills on adjacent surfaces. Protect threads and anchor from damage during anchor installation. Ensure proper embedment and placement in accordance with contract documents and all other work. Do not disturb or load anchors before manufacturer specified cure time has elapsed.

Adhesives must be stored at temperatures prescribed by the manufacturer and must not be used beyond the expiration date.

3.1.3 Unused or Repairs to Drilled Holes

Any holes made for anchors that are not used must be filled with non-shrink, non metallic grout suitable for the orientation and size of hole and have a minimum compressive strength of 4000 psi. Repair must completely fill hole and be flush with existing concrete. Place in accordance with manufacturer's recommended instructions. Final anchor positions must not be within 1 inch of repair patches.

3.2 EMBEDDED ITEMS

Existing reinforcing bars or other embedded items in the structure may conflict with specified anchor locations. Existing reinforcing and embedded items must not be damaged during installation of post-installed anchors.

The contractor must review the as-built drawings to accurately locate the position of existing reinforcing bars and embedded items at the locations of the anchors in the field. Notify the COR if reinforcing steel or other embedded items are encountered during drilling.

Create a template at each anchor connection location prior to fabricating holes in connection plates. Template must be made by locating existing reinforcing with an approved reinforcement detection system.

3.3 TESTS AND INSPECTIONS

3.3.1 Mechanical Anchors

For mechanical anchors, periodic special inspections are required. Inspections must be in accordance with ICC IBC and the Evaluation Report.

Mechanical Anchors must be inspected during installation, to verify anchor type, anchor dimensions, base material type, drill bit, hole dimensions, hole cleaning procedures, anchor spacing, edge distances, base material thickness, base material age, effective embedment, tightening torque, adherence to the manufacturer's printed installation instructions, and any additional items recommended in the Evaluation Report.

For mechanical anchors whose strength is dependent on a minimum installation torque, the installer under the supervision of the Special Inspector must torque test the anchors with a calibrated torque wrench. Perform torque testing immediately on the first three anchors of each type and size, for each installer, and a minimum of 5 percent of randomly selected anchors. Anchor selection will be determined by the Post-Installed Anchor Special Inspector.

For mechanical anchors whose strength is not dependent on a minimum installation torque, the Special Inspector must perform proof loading on the first three anchors of each type and size, for each installer and a minimum of 5 percent of randomly selected anchors. Anchor selection will be determined by the Post-Installed Anchor Special Inspector. Perform confined tension proof load testing in accordance with ASTM E488/E488M. Use incremental loading for tensile test. Maintain proof load for a minimum of 10 seconds. Consider anchors to have failed if displacement exceeds $0.1 \text{ inch } D/10$, where D is the nominal anchor diameter, or if any of the failure modes listed in ASTM E488/E488M occur.

Proof loads must be the minimum of the value shown on the Drawings, or 50 percent of the tension capacity of the anchor:

3.3.2 Adhesive Anchors

For adhesive anchors, periodic special inspection are required as a minimum. Where adhesive anchors are used to resist sustained tension in horizontal or upwardly inclined orientations, or where the findings of the Evaluation Report for the adhesive anchor product require it, continuous special inspection is needed. Inspections must be in accordance with ICC IBC and the Evaluation Report.

Adhesive anchors must be inspected during installation, to verify anchor type, anchor dimensions, base material type, base material age, drill bit, hole dimensions, hole cleaning procedures, anchor spacing, edge distances, base material thickness, effective embedment, tightening torque, adhesive mixing, filling of the hole with adhesive, adherence to the manufacturer's printed installation instructions, and any additional items recommended in the Evaluation Report.

The Special Inspector must perform proof loading on the first three anchors of each type and size, for each installer, and a minimum of 5 percent of randomly selected anchors. Anchor selection will be determined by the Post-Installed Anchor Special Inspector. Perform confined tension proof load testing in accordance with ASTM E488/E488M. Use incremental loading for tensile test. Maintain proof load for a minimum of 10 seconds. Consider anchors to have failed if displacement exceeds $0.1 \text{ inch } D/10$, where D is the nominal anchor diameter, or if any of the failure modes listed in ASTM E488/E488M occur.

Adhesive anchors and capsule anchors must not be torque tested.

Proof loads must be the minimum of the value shown on the Drawings, or 50 percent of the tension capacity of the anchor:

3.3.3 Action Required from Failed Tests/Inspections

Immediately report failed anchor locations and test results to the Contracting Officer. Anchors that fail to meet proof/torque load or installation requirements must be regarded as malfunctioning. Do not re-use holes unless specifically allowed by manufacturer's published instructions and approved by the Post-Installed Anchor Special Inspector.

If any of the tested anchors fail to achieve the specified torque or proof load within the limits of the contract documents, test a minimum of two adjacent anchors for each anchor that fails.

Continuously special inspect and proof load/torque test any replacement anchors.

Fill unused anchor holes and patch failed anchor locations in accordance with this specification. Prior to performing the repair, the Contractor must submit to the Contracting Officer for approval, the proposed fill and patch materials.

Additional tests, repairs, delays, or modification of work to accommodate failed tests will be at no cost to the Government.

3.3.4 Post-Installed Anchor Special Inspections Report

Report the results of all inspections daily. Submit report as an electronic PDF file to the Contracting Officer for review by the Engineer of Record. The report must include the following:

- (1) Exact locations of the inspected and tested work
- (2) Inspector's name
- (3) Date of inspection
- (4) Summary of work completed during the inspection period
- (5) Test results
- (6) Statement by the Special Inspector that clearly identifies the tested anchors as being acceptable or rejected.
- (7) Statement by the Special Inspector confirming that the materials and installation procedures conform with the approved contract documents and the manufacturer's published installation instructions.

3.4 DUST CONTROL

Control dust resulting from demolition to prevent the spread of dust and avoid creation of a nuisance in the surrounding area. Do not use water when it will result in, or create, hazardous or objectionable conditions such as ice, flooding, or pollution.

-- End of Section --

SECTION 05 05 23.16

STRUCTURAL WELDING
08/18

PART 1 GENERAL

1.1 REFERENCES

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

AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)

AISC 360 (2016) Specification for Structural Steel Buildings

AMERICAN SOCIETY FOR NONDESTRUCTIVE TESTING (ASNT)

ANSI/ASNT CP-189 (2020) ASNT Standard for Qualification and Certification of Nondestructive Testing Personnel

AMERICAN WELDING SOCIETY (AWS)

AWS A2.4 (2012) Standard Symbols for Welding, Brazing and Nondestructive Examination

AWS D1.1/D1.1M (2020; Errata 1 2021) Structural Welding Code - Steel

AWS D1.3/D1.3M (2018) Structural Welding Code - Sheet Steel

AWS D14.4/D14.4M (2012) Specification for Welded Joints for Machinery and Equipment

AWS QC1 (2016) Specification for AWS Certification of Welding Inspectors

AWS Z49.1 (2021) Safety in Welding and Cutting and Allied Processes

ASTM INTERNATIONAL (ASTM)

ASTM E165/E165M (2023) Standard Practice for Liquid Penetrant Examination for General Industry

ASTM E709 (2021) Standard Guide for Magnetic Particle Testing

1.2 SUBMITTALS

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

SD-01 Preconstruction Submittals

Welding Quality Assurance Plan; G

SD-03 Product Data

Welding Procedure Qualifications; G

Welder, Welding Operator, and Tacker Qualification

Previous Qualifications

Pre-Qualified Procedures; G

Welding Electrodes and Rods

SD-06 Test Reports

Nondestructive Testing

Weld Inspection Log

SD-07 Certificates

Certified Welding Procedure Specifications (WPS)

Certified Procedure Qualification Records (PQR)

Certified Welder Performance Qualifications (WPQ)

Certified Welding Inspector

Nondestructive Testing Personnel

1.3 QUALITY ASSURANCE

Except for pre-qualified (in accordance with AWS D1.1/D1.1M) and previously qualified procedures, each Contractor performing welding must record in detail and qualify the welding procedure specification for any welding procedure followed in the fabrication of weldments. Conform welding procedure qualifications to AWS D1.1/D1.1M and to the specifications in this section. Submit for approval copies of the welding procedure specification and the procedure qualification records for each type of welding being performed. Submission of the welder, welding operator, or tacker qualification test records is also required. Approval of any procedure, however, does not relieve the Contractor of the sole responsibility for producing a finished structure meeting all the specified requirements. Submit this information on the forms in Annex M of AWS D1.1/D1.1M. Individually identify and clearly reference on the detail drawings and erection drawings all welding procedure specifications, or suitably key them to the contract drawings. In case of conflict between this specification and AWS D1.1/D1.1M, this specification governs.

1.3.1 General Requirements

Fabricate work in an AISC Certified Fabrication Plant, Category BU. Erect work by an AISC Certified Erector, Category CSE.

- a. For Structural Projects, provide documentation of the following:
 - (1) Component Thickness 1/8 inch and greater: Qualification documents (WPS, PQR, and WPQ) in accordance with AWS D1.1/D1.1M.
 - (2) Component Thickness Less than 1/8 inch: Qualification documents (WPS, PQR, and WPQ) in accordance with AWS D1.3/D1.3M.
- b. For other applications, provide documentation of the following:
 - (1) Submit two copies of the Certified Welding Procedure Specifications (WPS) and Certified Procedure Qualification Records (PQR) to the Contracting Officer for review.
 - (2) Submit two copies of the Certified Welder Performance Qualifications (WPQ) to the Contracting Officer for review within fifteen calendar days prior to any employee welding on the project material.
 - (3) Machinery: Qualification documents (WPS, PQR, and WPQ) in accordance with AWS D14.4/D14.4M.

1.3.2 Previous Qualifications

Welding procedures previously qualified by test in accordance with AWS D1.1/D1.1M, may be accepted for this contract without re-qualification, upon receipt of the test results, if the following conditions are met:

- a. Testing was performed by an approved testing laboratory, technical consultant, or the Contractor's approved quality control organization.
- b. The qualified welding procedure conforms to the requirements of this specification and is applicable to welding conditions encountered under this contract.
- c. The welder, welding operator, and tacker qualification tests conform to the requirements of this specification and are applicable to welding conditions encountered under this contract.

1.3.3 Pre-qualified Procedures

Welding procedures which are considered pre-qualified as specified in AWS D1.1/D1.1M will be accepted without further qualification. Submit for approval a listing or an annotated drawing to indicate the joints not pre-qualified. Procedure qualification is mandatory for these joints.

1.3.4 Welder, Welding Operator, and Tacker Qualification

Each welder, welding operator, and tacker assigned to work on this contract must be qualified in accordance with the applicable requirements of AWS D1.1/D1.1M and as specified in this section. Welders, welding operators, and tackers who make acceptable procedure qualification test welds will be considered qualified for the welding procedure used within the applicable essential variables for welder qualification.

1.3.4.1 Previous Personnel Qualifications

At the discretion of the Contracting Officer, welders, welding operators, and tackers qualified by test within the previous 6 months may be accepted for this contract without re-qualification if all the following conditions are met:

- a. Copies of the welding procedure specifications, the procedure qualification test records, and the welder, welding operator, and tacker qualification test records are submitted and approved in accordance with the specified requirements for detail drawings.
- b. Testing was performed by an approved testing laboratory, technical consultant, or the Contractor's approved quality control organization.
- c. The welder, welding operator, and tacker qualification tests conform to the requirements of this specification and are applicable to welding conditions encountered under this contract.

1.3.4.2 Certificates

Before assigning any welder, welding operator, or tacker to work under this contract, submit the names and certification that each individual is qualified as specified. State in the certification the type of welding and positions for which the welder, welding operator, or tacker is qualified, the code and procedure under which the individual is qualified, the date qualified, and the name of the firm and person certifying the qualification tests. Keep the certification current, on file, and furnish 3 copies.

1.3.4.3 Renewal of Qualification

Re-qualification of a welder or welding operator is required under any of the following conditions:

- a. It has been more than 6 months since the welder or welding operator has used the specific welding process for which he is qualified.
- b. There is specific reason to question the welder or welding operator's ability to make welds that meet the requirements of these specifications.
- c. The welder or welding operator was qualified by an employer other than those firms performing work under this contract, and a qualification test has not been taken within the past 12 months. Submit as evidence of conformance all records showing periods of employment, name of employer where welder, or welding operator, was last employed, and the process for which qualified.
- d. A tacker who passes the qualification test is considered eligible to perform tack welding indefinitely in the positions and with the processes for which he/she is qualified, unless there is some specific reason to question the tacker's ability or there has been a gap greater than 6 months since he/she last used the process. In such a case, the tacker is required to pass the prescribed tack welding test.

1.3.5 Inspector Qualification

Submit certificates indicating that certified welding inspectors meet the

requirements of AWS QC1. Submit qualifications for nondestructive testing personnel in accordance with the requirements of ANSI/ASNT CP-189 for Levels I or II in the applicable nondestructive testing method. Level I inspectors must have direct supervision of a Level II inspector.

1.3.6 Symbols and Safety

Use symbols in accordance with AWS A2.4, unless otherwise indicated. Follow safe welding practices and safety precautions during welding in conformance with AWS Z49.1.

PART 2 PRODUCTS

2.1 SYSTEM DESCRIPTION

Conform the design of welded connections to AISC 360, unless otherwise indicated or specified. Material with welds will not be accepted unless the welding is specified or indicated on the drawings or otherwise approved. Perform welding as specified in this section, except where additional requirements are shown on the drawings or are specified in other sections. Do not commence welding until welding procedures, inspectors, nondestructive testing personnel, welders, welding operators, and tackers have been qualified and the submittals approved by the Contracting Officer. Perform all testing at or near the work site. Maintain records of the test results obtained in welding procedure, welder, welding operator, and tacker performance qualifications.

2.1.1 Pre-erection Conference

Hold a pre-erection conference prior to the start of the field welding, to bring all affected parties together and to gain a naturally clear understanding of the project and the Welding Procedure Specifications (WPS) (submitted for all welding, including welding done using pre-qualified procedures). Mandatory attendance is required by all Contractor's welding production and inspection personnel and appropriate Government personnel. Include as items for discussion: responsibilities of various parties; welding procedures and processes to be followed; welding sequence (both within a joint and joint sequence within the building); inspection requirements and procedures, both visual and nondestructive testing; welding schedule; and other items deemed necessary by the attendees.

2.2 WELDING EQUIPMENT AND MATERIALS

Provide all welding equipment, welding electrodes and rods, welding wire, and fluxes capable of producing satisfactory welds when used by a qualified welder or welding operator. Provide welding equipment and materials that comply with the applicable requirements of AWS D1.1/D1.1M. Submit product data on welding electrodes and rods.

PART 3 EXECUTION

3.1 WELDING OPERATIONS

3.1.1 Requirements

Conform workmanship and techniques for welded construction to the requirements of AWS D1.1/D1.1M and AISC 360. When AWS D1.1/D1.1M and the AISC 360 specification conflict, the requirements of AWS D1.1/D1.1M govern.

3.1.2 Identification

Identify all welds in one of the following ways:

- a. Submit written records to indicate the location of welds made by each welder, welding operator, or tacker.
- b. Identify all work performed by each welder, welding operator, or tacker with an assigned number, letter, or symbol to identify welds made by that individual. The Contracting Officer may require welders, welding operators, and tackers to apply their symbol next to the weld by means of rubber stamp, felt-tipped marker with waterproof ink, or other methods that do not cause an indentation in the metal. Place the identification mark for seam welds adjacent to the weld at 3 foot intervals. Identification with die stamps or electric etchers is not allowed.

3.2 QUALITY CONTROL

Perform testing using an approved inspection or testing laboratory or technical consultant; or if approved, the Contractor's inspection and testing personnel may be used instead of the commercial inspection or testing laboratory or technical consultant. A Certified Welding Inspector must perform visual inspection on 100 percent of all welds. Document this inspection in the Visual Weld Inspection Log. Randomly test 50% of all PJP and fillet welds or as indicated by magnetic particle or dye penetrant testing. Verify the welds conform to paragraph STANDARDS OF ACCEPTANCE. Conform procedures and techniques for inspection with applicable requirements of AWS D1.1/D1.1M, ASTM E165/E165M, and ASTM E709. Submit a Welding Quality Assurance Plan and records of tests and inspections.

3.3 STANDARDS OF ACCEPTANCE

Conform dimensional tolerances for welded construction, details of welds, and quality of welds with the applicable requirements of AWS D1.1/D1.1M and the contract drawings. Submit all records of nondestructive testing.

3.3.1 Nondestructive Testing

The welding is subject to inspection and tests in the mill, shop, and field. Inspection and tests in the mill or shop do not relieve the Contractor of the responsibility to furnish weldments of satisfactory quality. When materials or workmanship do not conform to the specification requirements, the Government reserves the right to reject material or workmanship or both at any time before final acceptance of the structure containing the weldment. Any indication of a defect is regarded as a defect, unless re-evaluation by nondestructive methods or by surface conditioning shows that no unacceptable defect is present. Submit all records of nondestructive testing in accordance with paragraph STANDARDS OF ACCEPTANCE.

3.3.2 Destructive Tests

Make all repairs when metallographic specimens are removed from any part of a structure. Employ only qualified welders or welding operators, and use the proper joints and welding procedures, including peening or heat treatment if required, to develop the full strength of the members and joints cut and to relieve residual stress.

3.4 GOVERNMENT INSPECTION AND TESTING

In addition to the inspection and tests performed by the Contractor for quality control, the Government will perform inspection and testing for acceptance to the extent determined by the Contracting Officer. The work may be performed by the Government's own forces or under a separate contract for inspection and testing. The Government reserves the right to perform supplemental nondestructive and destructive tests to determine compliance with paragraph STANDARDS OF ACCEPTANCE.

3.5 CORRECTIONS AND REPAIRS

If inspection or testing indicates defects in the weld joints, repair defective welds using a qualified welder or welding operator as applicable. Conduct corrections in accordance with the requirements of AWS D1.1/D1.1M and the specifications. Repair all defects in accordance with the approved procedures. Repair defects discovered between passes before additional weld material is deposited. Wherever a defect is removed and repair by welding is not required, blend the affected area into the surrounding surface to eliminate sharp notches, crevices, or corners. After a defect is thought to have been removed, and before re-welding, examine the area by suitable methods to ensure that the defect has been eliminated. Repaired welds must meet the inspection requirements for the original welds.

-- End of Section --

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SECTION 05 30 00

STEEL DECKS
05/15, CHG 2: 08/18

PART 1 GENERAL

1.1 REFERENCES

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

AMERICAN IRON AND STEEL INSTITUTE (AISI)

AISI D100 (2017) Cold-Formed Steel Design Manual

AMERICAN WELDING SOCIETY (AWS)

AWS D1.1/D1.1M (2020; Errata 1 2021) Structural Welding Code - Steel

AWS D1.3/D1.3M (2018) Structural Welding Code - Sheet Steel

ASTM INTERNATIONAL (ASTM)

ASTM A36/A36M (2019) Standard Specification for Carbon Structural Steel

ASTM A123/A123M (2024) Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products

ASTM A653/A653M (2023) Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process

ASTM A780/A780M (2020) Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings

ASTM A792/A792M (2022) Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process

ASTM A1008/A1008M (2023) Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable

ASTM D746 (2014) Standard Test Method for Brittleness Temperature of Plastics and Elastomers by Impact

ASTM D1056 (2020) Standard Specification for Flexible

Cellular Materials - Sponge or Expanded Rubber

ASTM D1149 (2007; R 2012) Standard Test Method for Rubber Deterioration - Surface Ozone Cracking in a Chamber

ASTM E84 (2023) Standard Test Method for Surface Burning Characteristics of Building Materials

FM GLOBAL (FM)

FM APP GUIDE (updated on-line) Approval Guide
<http://www.approvalguide.com/>

FM DS 1-28R (1998) Data Sheet: Roof Systems

STEEL DECK INSTITUTE (SDI)

ANSI/SDI QA/QC (2017) Standard for Quality Control and Quality Assurance for Installation of Steel Deck

SDI DDM04 (2015; Errata 1-3 2016; Add 1 2015; Add 2 2016) Diaphragm Design Manual; 4th Edition

SDI DDP (1987; R 2000) Deck Damage and Penetrations

SDI MOC3 (2016) Manual of Construction with Steel Deck (3rd Edition)

U.S. DEPARTMENT OF DEFENSE (DOD)

UFC 3-301-01 (2023; with Change 1, 2023) Structural Engineering

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

29 CFR 1926 Safety and Health Regulations for Construction

UNDERWRITERS LABORATORIES (UL)

UL 580 (2006; Reprint Mar 2019) UL Standard for Safety Tests for Uplift Resistance of Roof Assemblies

UL Fire Resistance (2014) Fire Resistance Directory

1.2 SUBMITTALS

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

SD-02 Shop Drawings

Fabrication Drawings; G

SD-03 Product Data

Accessories

Deck Units

Galvanizing Repair Paint

Mechanical Fasteners

Touch-Up Paint

Welding Equipment

Welding Rods and Accessories

Recycled Content of Steel Products; S

SD-04 Samples

Metal Roof Deck Units

Flexible Closure Strips

SD-05 Design Data

Deck Units; G

SD-07 Certificates

Powder-Actuated Tool Operator

Welder Qualifications

Welding Procedures

Fire Safety

Wind Storm Resistance

Manufacturer's Certificate

1.3 QUALITY ASSURANCE

1.3.1 Deck Units

Furnish deck units and accessory products from a manufacturer regularly engaged in manufacture of steel decking. Provide manufacturer's certificates attesting that the decking material meets the specified requirements.

1.3.2 Certification of Powder-Actuated Tool Operator

Provide manufacturer's certificate attesting that the operators are authorized to use the low velocity powder-actuated tool.

1.3.3 Qualifications for Welding Work

Follow Welding Procedures of AWS D1.3/D1.3M for sheet steel and AWS D1.1/D1.1M for stud welding. Submit qualified Welder Qualifications in accordance with AWS D1.3/D1.3M for sheet steel and AWS D1.1/D1.1M for stud welding, or under an equivalent approved qualification test. Perform tests on test pieces in positions and with clearances equivalent to those actually encountered. Test specimens shall be made in the presence of Contracting Officer and shall be tested by an approved testing laboratory at the Contractor's expense. If a test weld fails to meet requirements, perform an immediate retest of two test welds until each test weld passes. Failure in the immediate retest will require the welder be retested after further practice or training, performing a complete set of test welds.

Submit manufacturer's catalog data for Welding Equipment and Welding Rods and Accessories.

1.3.4 Regulatory Requirements

1.3.4.1 Fire Safety

Test roof deck as a part of a roof deck construction assembly of the type used for this project, listing as fire classified in the UL Fire Resistance, or listing as Class I construction in the FM APP GUIDE, and so labeled.

1.3.4.2 Wind Storm Resistance

Provide roof construction assembly capable of withstanding a nominal uplift pressure of as indicated in the Components and Cladding Wind Load Schedule on the drawings for each of the effective areas indicated when tested in accordance with the uplift pressure test described in the FM DS 1-28R or as described in UL 580 and in general compliance with UFC 3-301-01.

1.3.5 Fabrication Drawings

Show type and location of units, location and sequence of connections, bearing on supports, methods of anchoring, attachment of accessories, adjusting plate details, cant strips, ridge and valley plates, metal closure strips, size and location of holes to be cut and reinforcement to be provided, the manufacturer's erection instructions and other pertinent details.

1.4 DELIVERY, STORAGE, AND HANDLING

Deliver deck units to the site in a dry and undamaged condition. Store and handle steel deck in a manner to protect it from corrosion, deformation, and other types of damage. Do not use decking for storage or as working platform until units have been fastened into position. Exercise care not to damage material or overload decking during construction. The maximum uniform distributed storage load must not exceed the design live load. Stack decking on platforms or pallets and cover with weathertight ventilated covering. Elevate one end during storage to provide drainage. Maintain deck finish at all times to prevent formation of rust. Repair deck finish using touch-up paint. Replace damaged material.

1.5 DESIGN REQUIREMENTS FOR ROOF DECKS

1.5.1 Properties of Sections

Properties of metal roof deck sections must comply with engineering design width as limited by the provisions of AISI D100.

1.5.2 Allowable Loads

Indicate total uniform dead and live load for detailing purposes.

PART 2 PRODUCTS

2.1 DECK UNITS

Submit manufacturer's design calculations, or applicable published literature for the structural properties of the proposed deck units.

Provide products with an average recycled content of steel products so postconsumer recycled content plus one half of preconsumer recycled content not less than 25 percent.

2.1.1 Roof Deck

Conform to ASTM A792/A792M or ASTM A1008/A1008M for deck used in conjunction with insulation and built-up roofing. Fabricate roof deck units of 0.0295 inch design thickness or thicker steel zinc-coated in conformance with ASTM A653/A653M, Z275 G90 coating class or aluminum-zinc coated in accordance with ASTM A792/A792M Coating Designation AZM165 AZ55. Furnish sample of Metal Roof Deck Units used to illustrate actual cross section dimensions and configurations.

2.1.2 Length of Deck Units

Provide deck units of sufficient length to span three or more spacings where possible.

2.1.3 Touch-Up Paint

Provide a high zinc-dust content paint for regalvanizing welds in galvanized steel conforming to ASTM A780/A780M.

Provide touch-up paint for zinc-coated units of an approved galvanizing repair paint with a high-zinc dust content.

Provide accessories of same material as deck, unless specified otherwise. Provide manufacturer's standard type accessories, as specified.

2.2.1 Adjusting Plates

Provide adjusting plates, or segments of deck units, of same thickness and configuration as deck units in locations too narrow to accommodate full size units. Provide factory cut plates of predetermined size where possible.

2.2.2 End Closures

Fabricated of sheet metal by the deck manufacturer. Provide end closures minimum 0.0295 inch thick to close open ends at end walls, eaves, and

openings through deck.

2.2.3 Flexible Closure Strips for Roof Decks

Provide strips made of vulcanized, closed-cell, synthetic rubber material specified and premolded to the configuration required to provide tight-fitting closures at open ends and sides of steel roof decking. Furnish one sample of each type Flexible Closure Strips, 12 inch long.

Conforming to ASTM D1056, Grade 2A1, with the following additional properties:

Brittleness temperature of minus 40 degrees F when tested in accordance with ASTM D746.

Flammability resistance with a flame spread rating of less than 25 when tested in accordance with ASTM E84.

Resistance to ozone must be "no cracks" after exposure of a sample kept under a surface tensile strain of 25 percent to an ozone concentration of 100 parts per million of air by volume in air for 100 hours at 104 degrees F and tested in accordance with ASTM D1149.

Provide a elastomeric type adhesive as recommended by the manufacturer of the flexible closure strips.

2.2.4 Sheet Metal Collar

Where deck is cut for passage of pipes, ducts, columns, etc., and deck is to remain exposed, provide a neatly cut sheet metal collar to cover edges of deck. Do not cut deck until after installation of supplemental supports.

2.2.5 Cover Plates

Sheet metal to close panel edge and end conditions, and where panels change direction or butt. Polyethylene-coated, self-adhesive, 2 inch wide joint tape may be provided in lieu of cover plates on flat-surfaced decking butt joints.

Fabricate cover plates for abutting floor deck units from the specified structural-quality steel sheets not less than nominal 18 gage thick before galvanizing. Provide 6 inch wide cover plates and form to match the contour of the floor deck units.

2.2.6 Access Hole Covers

Sheet metal, minimum 0.0474 inch thick.

2.2.7 Cant Strips for Roof Decks

Fabricate cant strips from the specified commercial-quality steel sheets not less than nominal 0.0358 inch thick before galvanizing. Bend strips to form a 45-degree cant not less than 5 inch wide, with top and bottom flanges a minimum 3 inch wide. Length of strips 10 feet.

2.2.8 Ridge and Valley Plates for Roof Decks

Fabricate plates from the specified structural-quality steel sheets, not

less than nominal 0.0358 inch thick before galvanizing. Provide plates of minimum 4-1/2 inch wide and bent to provide tight fitting closures at ridges and valleys. Provide a minimum length of ridge and valley plates of 10 feet.

2.2.9 Metal Closure Strips for Roof Decks

Fabricate strips from the specified commercial-quality steel sheets not less than nominal 0.0358 inch thick before galvanizing. Provide strips from the configuration required to provide tight-fitting closures at open ends and sides of steel roof decking.

2.2.10 Galvanized Steel Angles for Roof Decks

Provide hot-rolled carbon steel angles conforming to ASTM A36/A36M, and hot-dip galvanized in accordance with ASTM A123/A123M.

2.2.11 Mechanical Fasteners

Provide mechanical fasteners, such as powder actuated fasteners, pneumatically driven fasteners or self-drilling screws, for anchoring the deck to structural supports and adjoining units as indicated.

2.2.12 Miscellaneous Accessories

Furnish the manufacturer's standard accessories to complete the deck installation. Furnish metal accessories of the same material as the deck and with the minimum design thickness as follows: saddles, 0.0474 inch welding washers, 0.0598 inch other metal accessories, 0.0358 inch unless otherwise indicated.

PART 3 EXECUTION

3.1 EXAMINATION

Prior to installation of decking units and accessories, examine worksite to verify that as-built structure will permit installation of decking system without modification.

3.2 INSTALLATION

Install steel deck units in accordance with 29 CFR 1926, Subpart R - Steel Erection, ANSI/SDI QA/QC, SDI DDM04 and approved shop drawings. Place units on structural supports, properly adjusted, leveled, and aligned at right angles to supports before permanently securing in place. Damaged deck and accessories including material which is permanently stained or contaminated, deformed, or with burned holes shall not be installed. Extend deck units over three or more supports unless absolutely impractical. Report inaccuracies in alignment or leveling to the Contracting Officer and make necessary corrections before permanently anchoring deck units. Locate deck ends over supports only. Lap 2 inch deck ends. Do not use unanchored deck units as a work or storage platform. Permanently anchor units placed by the end of each working day. Do not support suspended ceilings, light fixtures, ducts, utilities, or other loads by steel deck unless indicated. Distribute loads by appropriate means to prevent damage.

3.2.1 Attachment

Immediately after placement and alignment, and after correcting

inaccuracies, permanently fasten steel deck units to structural supports and to adjacent deck units fastened with screws, powder-actuated fasteners, or pneumatically driven fasteners as indicated on the design drawings and in accordance with manufacturer's recommended procedure. Clamp or weight deck units to provide firm contact between deck units and structural supports while performing. Attachment of adjacent deck units by button-punching is prohibited.

3.2.1.1 Mechanical Fastening

Anchor deck to structural supports and adjoining units with mechanical fasteners. Drive screws to properly clamp deck to supporting steel.

3.2.1.2 Sidelap Fastening

Lock sidelaps between adjacent floor deck units together by screws as indicated.

3.2.2 Openings

Cut or drill all holes and openings required and be coordinated with the drawings, specifications, and other trades. Frame and reinforce openings through the deck in conformance with SDI DDP. Reinforce holes and openings 6 to 12 inch across by 0.0474 inch thick steel sheet at least 12 inch wider and longer than the opening and be fastened to the steel deck at each corner of the sheet and at a maximum of 6 inch on center.

3.2.3 Deck Damage

SDI MOC3, for repair of deck damage.

3.2.4 Touch-Up Paint

3.2.4.1 Roof Deck

After roof decking installation, wire brush, clean, and touchup paint the scarred areas on top and bottom surfaces of metal roof decking. The scarred areas include welds, weld scars, bruises, and rust spots. Touchup galvanized surfaces with galvanizing repair paint. Touchup painted surfaces with repair paint of painted surfaces.

3.2.5 Accessory Installation

3.2.5.1 Adjusting Plates

Provide in locations too narrow to accommodate full-size deck units and install as shown on shop drawings.

3.2.5.2 End Closures

Provide end closure to close open ends of cells at columns, walls, and openings in deck.

3.3 CANT STRIPS FOR ROOF DECKS

Provide strips to be fusion welded to surface of roof decking, secured to wood nailers by galvanized screws or to steel framing by galvanized self-tapping screws. Do not exceed spacing of fasteners of 12 inch. Lap end joints a minimum 3 inch and secure with galvanized sheet metal screws

spaced a maximum 4 inch on center.

3.4 RIDGE AND VALLEY PLATES FOR ROOF DECKS

Provide plates to be fusion welded to top surface of roof decking. Lap end joints a minimum 3 inch. For valley plates, provide endlaps to be in the direction of water flow.

3.5 CLOSURE STRIPS FOR ROOF DECKS

Provide closure strips at open, uncovered ends and edges of the roof decking and in voids between roof decking and top of walls and partitions where indicated. Install closure strips in position in a manner to provide a weathertight installation.

3.6 CLEANING AND PROTECTION FOR ROOF DECKS

Upon completion of the deck, sweep surfaces clean and prepare for installation of the roofing.

3.7 FIELD QUALITY CONTROL

3.7.1 Decks Not Receiving Concrete

Inspect the decking top surface for distortion after installation. For roof decks not receiving concrete, verify distortion by placing a straight edge across three adjacent top flanges. The maximum allowable gap between the straight edge and the top flanges should not exceed manufacturing and construction tolerances of supporting members. When gap is more than the allowable, provide corrective measures or replacement. Reinspect decking after performing corrective measures or replacement.

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SECTION 05 40 00

COLD-FORMED METAL FRAMING
05/15, CHG 1: 08/18

PART 1 GENERAL

1.1 REFERENCES

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

AMERICAN IRON AND STEEL INSTITUTE (AISI)

AISI S100	(2016) North American Specification for the Design of Cold-Formed Steel Structural Members
AISI S202	(2020) Code of Standard Practice for Cold-formed Steel Structural Framing
AISI S220	North American Standard for Cold-Formed Steel Nonstructural Framing
AISI S240	(2015) North American Standard for Cold-Formed Steel Structural Framing
AISI S310	North American Standard for the Design of Profiled Steel Diaphragm Panels

AMERICAN WELDING SOCIETY (AWS)

AWS D1.1/D1.1M	(2020; Errata 1 2021) Structural Welding Code - Steel
AWS D1.3/D1.3M	(2018) Structural Welding Code - Sheet Steel

ASTM INTERNATIONAL (ASTM)

ASTM A123/A123M	(2024) Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
ASTM A153/A153M	(2023) Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware
ASTM A307	(2021) Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60 000 PSI Tensile Strength
ASTM A370	(2023) Standard Test Methods and Definitions for Mechanical Testing of Steel Products
ASTM A1003/A1003M	(2023) Standard Specification for Steel

	Sheet, Carbon, Metallic- and Nonmetallic-Coated for Cold-Formed Framing Members
ASTM C955	(2017) Standard Specification for Cold-Formed Steel Structural Framing Members
ASTM C1007	(2020) Standard Specification for Installation of Load Bearing (Transverse and Axial) Steel Studs and Related Accessories
ASTM C1513	(2018) Standard Specification for Steel Tapping Screws for Cold-Formed Steel Framing Connections
ASTM E119	(2022) Standard Test Methods for Fire Tests of Building Construction and Materials
ASTM E329	(2023) Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection
ASTM F1554	(2020) Standard Specification for Anchor Bolts, Steel, 36, 55, and 105-ksi Yield Strength
ASTM F1941	(2010) Standard Specification for Electrodeposited Coatings on Threaded Fasteners (Unified Inch Screw Threads (UN/UNR))
ASTM F2329/F2329M	(2015) Standard Specification for Zinc Coating, Hot-Dip, Requirements for Application to Carbon and Alloy Steel Bolts, Screws, Washers, Nuts, and Special Threaded Fasteners

1.2 SUBMITTALS

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

SD-02 Shop Drawings

Framing Components; G

SD-03 Product Data

Steel Studs, Joists, Tracks, Bracing, Bridging and Accessories

Recycled Content of Steel Products; S

SD-07 Certificates

Load-Bearing Cold-Formed Metal Framing

Welds

1.3 DELIVERY, STORAGE, AND HANDLING

Steel framing and related accessories shall be stored and handled in accordance with the AISI S202, "Code of Standard Practice for Cold-Formed Steel Structural Framing".

1.4 LOAD-BEARING COLD-FORMED METAL FRAMING

Include top and bottom tracks, bracing, fastenings, and other accessories necessary for complete installation. Framing members shall have the structural properties indicated. Where physical structural properties are not indicated, they shall be as necessary to withstand all imposed loads.

Submit mill certificates or test reports from independent testing agency, qualified in accordance with ASTM E329, showing that the steel sheet used in the manufacture of each cold-formed component complies with the minimum yield strengths and uncoated steel thickness specified. Test reports shall be based on the results of three coupon tests in accordance with ASTM A370.

1.5 QUALITY ASSURANCE

- a. Testing Agency Qualifications: An independent testing agency, acceptable to authorities having jurisdiction, qualified according to ASTM E329 for testing indicated.
- b. Product Tests: Mill certificates or data from a qualified independent testing agency, or in-house testing with calibrated test equipment indicating steel sheet complies with requirements, including base-metal thickness, yield strength, tensile strength, total elongation, chemical requirements, and metallic-coating thickness.
- c. Welding Qualifications: Qualify procedures and personnel according to the following:
 - (1) AWS D1.1/D1.1M, "Structural Welding Code - Steel".
 - (2) AWS D1.3/D1.3M, "Structural Welding Code - Sheet Steel".
- d. Fire-Test-Response Characteristics: Where indicated, provide cold-formed metal framing identical to that of assemblies tested for fire resistance per ASTM E119 by, and displaying a classification label from, a testing and inspecting agency acceptable to authorities having jurisdiction.
- e. AISI Specifications and Standards: Comply with:
 - (1) AISI S100, "North American Specification for the Design of Cold-Formed Steel Structural Members".
 - (2) AISI S202, "Code of Standard Practice for Cold-Formed Steel Structural Framing".
 - (3) AISI S220, North American Standard for Cold-Formed Steel Nonstructural Framing

(4) AISI S240, North American Standard for Cold-Formed Steel Structural Framing

(5) AISI S310, North American Standard for the Design of Profiled Steel Diaphragm Panels

1.5.1 Drawing Requirements

Submit framing components to show sizes, thicknesses, layout, material designations, methods of installation, and accessories including the following:

- a. Cross sections, plans, and/or elevations showing component types and locations for each framing application; including shop coatings and material thicknesses for each framing component.
- b. Connection details showing fastener type, quantity, location, and other information to assure proper installation.
- c. Drawings depicting panel configuration, dimensions, components, locations, and construction sequence if the Contractor elects to install prefabricated/prefinished frames.

PART 2 PRODUCTS

2.1 STEEL STUDS, JOISTS, TRACKS, BRACING, BRIDGING AND ACCESSORIES

Framing components shall comply with ASTM C955 and the following.

- a. Provide products with an average recycled content of steel products so postconsumer recycled content plus one half of preconsumer recycled content not less than 25 percent.
- b. Steel Sheet: ASTM A1003/A1003M, Structural Grade, Type H, metallic coated, of grade and coating weight as follows:
 - (1) Grade: As required by structural performance and as indicated on the drawings.
 - (2) Coating: G90 (Z275).
- c. Steel Studs: Manufacturer's standard C-shaped steel studs, of web depths indicated, unpunched, with stiffened flanges, and as follows:
 - (1) Minimum Base-Metal Thickness: 0.0538 inch.
 - (2) Flange Width: 2 inches.
- d. Steel Track: Manufacturer's standard U-shaped steel track, of web depths indicated, unpunched, with straight flanges, and as follows:
 - (1) Minimum Base-Metal Thickness: Matching steel studs.
 - (2) Flange Width: 1-1/2 inches minimum or as indicated on the drawings..
- e. Roof Truss Members: Manufacturer's standard C-shaped steel sections, of web depths indicated, unpunched, with stiffened flanges, and as

follows:

- (1) Minimum Base-Metal Thickness: 0.0538 inch.
- (2) Flange Width: 1-5/8 inches, minimum at top and bottom chords connecting to sheathing or directly fastened construction.

2.1.1 Sizes, Thickness, Section Modulus, and Other Structural Properties

Size and thickness as indicated.

2.2 MARKINGS

Studs and track shall have product markings stamped on the web of the section. The markings shall be repeated throughout the length of the member at a maximum spacing of 4 feet on center and shall be legible and easily read. The product marking shall include the following:

- a. An ICC number.
- b. Manufacturer's identification.
- c. Minimum delivered uncoated steel thickness.
- d. Protective coating designator.
- e. Minimum yield strength.

2.3 CONNECTIONS

2.3.1 Steel-To-Concrete Connections

- a. Anchor Rods: ASTM F1554, Grade 36 or Grade 55; galvanized per ASTM A153/A153M.
- b. Post-Installed Concrete Anchors: Refer to Section 05 05 20 POST-INSTALLED CONCRETE AND MASONRY ANCHORS.
- c. Power-Actuated Fasteners: Fabricated from corrosion-resistant materials with allowable load capacities in accordance with ICC-ES AC 70 greater than or equal to the design load as determined by testing per ASTM E1190 conducted by a qualified testing agency.

2.3.2 Steel-To-Steel Connections

- a. Screws: ASTM C1513, corrosion-resistant-coated, self-drilling, self-tapping steel screws of the type and size indicated. Provide low-profile head beneath sheathing and manufacturer's standard elsewhere. Electroplated to a minimum of 5 micron zinc coating per ASTM F1941 or hot-dipped galvanized per ASTM A123/A123M or ASTM A153/A153M.
- b. Bolts: ASTM A307 coated by hot-dip process per ASTM F2329/F2329M or zinc-coated by mechanical-deposition process per ASTM B695, Class 55.
- c. Welding Electrodes: Comply with AWS standards.

2.4 PLASTIC GROMMETS

Supply plastic grommets for stud webs as recommended by stud manufacturer, to protect electrical wires and plumbing piping. Prevent metal-to-metal contact between wiring/piping and studs.

2.5 SEALER GASKET

Closed-cell neoprene foam, 1/4-inch thick, selected from manufacturer's standard widths to match width of bottom track on concrete slab or foundation.

PART 3 EXECUTION

3.1 TRUSS FABRICATION

- a. Fabricate cold-formed steel trusses and accessories plumb, square, and true to line, and with connections securely fastened, according to referenced AISI's specifications and standards, manufacturer's written instructions, and requirements in this Section.
- b. Truss must be fabricated either on site or off site prior to erection.
- c. Fabricate trusses using jigs or templates.
- d. Splices can only occur at joints.
- e. Cut truss members by sawing or shearing: do not torch cut.
- f. Fasten cold-formed steel truss members by welding, screw fastening, clinch fastening, pneumatic pin fastening, or riveting as standard with fabricator.
- g. Fasten other materials to cold-formed steel trusses by welding, bolting, pneumatic pin fastening, or screw fastening, according to Shop Drawings.
- h. Reinforce, stiffen, and brace trusses to withstand handling, delivery, and erection stresses. Lift fabricated trusses to prevent damage or permanent distortion.

3.2 FASTENING

Fasten framing members together by welding or by using self-drilling, self-tapping screws. Electrodes and screw connections shall be as required and indicated in the design calculations.

3.2.1 Welds

All welding shall be performed in accordance with AWS D1.3/D1.3M, as modified by AISI S100. All welders, welding operations, and welding procedures shall be qualified according to AWS D1.3/D1.3M. Submit certified copies of welder qualifications test records showing qualification in accordance with AWS D1.3/D1.3M. All welds shall be cleaned and coated with rust inhibitive galvanizing paint. Do not field weld materials lighter than 43 mils.

3.2.2 Screws

Screws shall be of the self-drilling self-tapping type, size, and location as indicated. Screw penetration through joined materials shall not be less than three exposed threads. Minimum spacings and edge distances for screws shall be as specified in AISI S100. Screws covered by sheathing materials shall have low profile heads.

3.2.3 Anchors

Anchors shall be of the type, size, and location as indicated.

3.2.4 Powder-Actuated Fasteners

Powder-actuated fasteners shall be of the type, size, and location as indicated.

3.3 INSTALLATION

Install cold-formed framing in accordance with ASTM C1007 and AISI S240.

Install cold-formed steel framing according to AISI S202 and to manufacturer's written instructions unless more stringent requirements are indicated.

3.3.1 Tracks

Provide accurately aligned runners at top and bottom of studs. Install sealer gasket under bottom of track on concrete slab or foundation. Anchor tracks as indicated in design calculations. Butt weld joints in tracks or splice with stud inserts. Fasteners shall be at least 3 inches from the edge of concrete slabs.

3.3.2 Studs

Cut studs square and set with firm bearing against webs of top and bottom tracks. Position studs vertically in tracks and space as indicated in design. Do not splice studs. Provide at least two studs at jambs of doors and other openings 2 feet wide or larger. Provide jack studs over openings, as necessary, to maintain indicated stud spacing. Provide tripled studs at corners, positioned to receive interior and exterior finishes. Fasten studs to top and bottom tracks by welding or screwing both flanges to the tracks. Framed wall openings shall include headers and supporting components as shown on the drawings. Headers shall be installed in all openings that are larger than the stud spacing in a wall. In curtain wall construction, provide for vertical movement where studs connect to the structural frame. Provide horizontal bracing in accordance with the design calculations and AISI S100. Bracing shall be not less than the following:

<u>LOAD</u>	<u>HEIGHT</u>	<u>BRACING</u>
Wind load only	Up to 10 feet	One row at mid-height

<u>LOAD</u>	<u>HEIGHT</u>	<u>BRACING</u>
	Over 10 feet	Rows 5'-0" o.c. maximum
Axial load	Up to 10 feet	Two rows at 1/3 points
	Over 10 feet	Rows 3'-4" o.c. maximum

3.3.3 Joists and Trusses

- a. Provide a stud directly under each joist or truss. The maximum spacing of studs as indicated shall be maintained.
- b. Install, bridge, and brace cold-formed steel trusses according to AISI S202, AISI S240, AISI's "Code of Standard Practice for Cold-Formed Steel Structural Framing," and manufacturer's written instructions unless more stringent requirements are indicated.
- c. Install temporary bracing and supports. Maintain braces and supports in place, undisturbed, until entire integrated supporting structure has been completed and permanent connections to framing are secured.
- d. Do not alter, cut, or remove framing members or connections of trusses.

3.3.4 Erection Tolerances

- a. Framing members which will be covered by finishes such as wallboard, plaster, or ceramic tile set in a mortar setting bed, shall be within the following limits:
 - (1) Layout of walls and partitions: 1/4 inch from intended position;
 - (2) Plates and runners: 1/4 inch in 8 feet from a straight line;
 - (3) Studs: 1/4 inch in 8 feet out of plumb, not cumulative; and
 - (4) Face of framing members: 1/4 inch in 8 feet from a true plane.
- b. Framing members which will be covered by ceramic tile set in dry-set mortar, latex-portland cement mortar, or organic adhesive shall be within the following limits:
 - (1) Layout of walls and partitions: 1/4 inch from intended position;
 - (2) Plates and runners: 1/8 inch in 8 feet from a straight line;

(3) Studs: 1/8 inch in 8 feet out of plumb, not cumulative; and

(4) Face of framing members: 1/8 inch in 8 feet from a true plane.

-- End of Section --

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SECTION 05 44 00

PRE-ENGINEERED AND PRE-FABRICATED COLD-FORMED STEEL TRUSSES
03/22

PART 1 GENERAL

1.1 SUMMARY

- a. Section includes pre-engineered, pre-fabricated cold-formed steel framing elements. Work includes:
 - 1. Cold-Formed steel roof trusses.
 - 2. Anchorage, bracing and bridging.
- b. Related Specifications
 - 1. Section 05 30 00 METAL DECKING.
 - 2. Section 05 40 00 COLD-FORMED STEEL FRAMING.

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.

AMERICAN IRON AND STEEL INSTITUTE (AISI)

AISI S100	(2016) North American Specification for the Design of Cold-Formed Steel Structural Members
AISI S202	(2020) Code of Standard Practice for Cold-formed Steel Structural Framing
AISI S240	(2015) North American Standard for Cold-Formed Steel Structural Framing

AMERICAN WELDING SOCIETY (AWS)

AWS D1.1/D1.1M	(2020; Errata 1 2021) Structural Welding Code - Steel
AWS D1.3/D1.3M	(2018) Structural Welding Code - Sheet Steel

ASTM INTERNATIONAL (ASTM)

ASTM A653/A653M	(2023) Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
ASTM A780	(2009, Reapproved in 2015) Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dipped Galvanized

Coatings

ASTM C955 (2017) Standard Specification for
Cold-Formed Steel Structural Framing
Members

ASTM E329 (2023) Standard Specification for Agencies
Engaged in Construction Inspection,
Testing, or Special Inspection

STRUCTURAL BUILDING COMPONENTS ASSOCIATION (SBCA)

CFSBCSI (2019) Cold-Formed Steel Building
Component Safety Information

INTERNATIONAL CODE COUNCIL (ICC)

ICC IBC (2021) International Building Code

U.S. DEPARTMENT OF DEFENSE (DOD)

UFC 3-301-01 (2023; with Change 1, 2023) Structural
Engineering

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

1.3 SUSTAINABLE STRATEGIES COMPLIANCE

This project has been designed to be compliant with the High Performance and Sustainable Building or HPSB Guiding Principles. In addition to the sustainable design requirements stated herein, refer to additional requirements found in Section 01 33 29 SUSTAINABILITY REPORTING.

1.4 DEFINITIONS

- a. Structural Component Manufacturer: The maker of the components that will be assembled into trusses by the Truss Manufacturer. See MANUFACTURERS for acceptable Structural Component Manufacturer.
- b. Truss Manufacturer: An individual or organization engaged in the manufacturing of shop fabricated trusses.
- c. Truss Design Drawing: Written, graphic and pictorial depiction of an individual truss.
- d. Truss Design Engineer: Person who is licensed to practice engineering as defined by the legal requirements of the jurisdiction in which the building is to be constructed and who supervises the preparation of the Truss Design Drawings.
- e. Truss Placement Diagram: Illustration identifying the assumed location of each truss.

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. Submittals with an "S" are for inclusion in the Sustainability eNotebook, in conformance to Section 01 33 29, SUSTAINABILITY REPORTING. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Truss Design Drawings; G

Truss Placement Diagram; G

SD-03 Product Data/ Sustainable Design Requirements

steel truss bracing, bridging, blocking, reinforcements,
fasteners, and accessories; G

SD-05 Design Data

Truss Design Calculations; G

Installation Guidelines; G

SD-07 Certificates

Mill Certificates

Welds

1.6 DELIVERY, STORAGE, AND HANDLING OF STEEL TRUSSES

- a. Pack, ship, handle, unload, lift, store, and protect shop fabricated trusses in accordance with CFSBCSI recommendations and in manner necessary to prevent damage, distortion, and moisture buildup.
- b. Deliver materials in manufacturer's unopened containers or bundles, fully identified by name, brand, type and grade. Exercise care to avoid damage during unloading, storing and erection.
- c. Store trusses on blocking, pallets, platforms or other supports off the ground and in an upright position sufficiently braced to avoid damage from excessive bending.
- d. Protect trusses and accessories from corrosion, deformation, damage and deterioration when stored at job site. Keep trusses free of dirt and other foreign matter.

1.7 PERFORMANCE REQUIREMENTS

- a. AISI Specifications: Calculate structural characteristics of cold-formed steel truss members according to AISI S100. Cold-formed steel trusses shall be designed in accordance with AISI S240 and ICC IBC Sections 2210 and 2211.
- b. Structural Performance: Design, fabricate, and erect cold-formed

steel trusses to withstand specified design loads within limits and under conditions required. Provide Truss Design Calculations designed to the following criteria:

1. Design Loads: As specified on Contract Documents.
 2. Deflections: Not to exceed the more restrictive of the limitations of ICC IBC and UFC 3-301-01.
 3. Camber: Shall be added to limit total dead load deflections to 0 inches to +0.25 inches for trusses with a span exceeding 30 feet.
- c. Design framing systems to provide for movement of framing members without damage or overstressing, sheathing failure, connection failure, undue strain on fasteners and anchors, or other detrimental effects when subject to a maximum ambient temperature change (range) of 120 degrees F (67 degrees C).

1.8 QUALITY ASSURANCE

- a. Provide design of trusses by Structural Component Manufacturer, using design methodologies recommended in AISI references.
1. Fabrication shall be performed in a quality-controlled manufacturing environment by a cold-formed steel truss fabricator with experience fabricating cold-formed steel trusses equal in material, design, and scope to the trusses required for this Project.
 2. Provide Truss Manufacturer's Truss Design Drawings and Truss Design Calculations. Truss Design Drawings and Truss Design Calculations shall be submitted to the Engineer of Record (EOR) for approval.
 3. Truss Design Drawings shall be prepared by a Registered Design Professional licensed in the State in which project is to be constructed.
 4. Registered Design Professional shall provide proof of professional liability insurance.
 5. Truss Members: Submit Mill Certificates or test report data from an independent testing agency, qualified in accordance with ASTM E329, indicating steel sheet used in the manufacture of each cold-formed component complies with the requirements, including base-steel thickness, yield strength, tensile strength, total elongation, chemical requirements, and metallic-coating thickness.
- b. Installer Qualifications: Installation of cold-formed steel truss roof assembly shall be performed by an installer with experience installing cold-formed steel trusses equal in material, design and scope to the trusses required for this Project.
- c. Pre-Installation Meeting: If applicable, coordinate prior to scheduled beginning of installation to review requirements.
1. Attendees: Require attendance by representatives of the following:
 - (a) Installer of this section.

(b) Other entities directly affecting, or affected by, construction activities of this section, including but not limited to, the following:

- (1) Installer of truss support framing.
- (2) Installer of mechanical systems.
- (3) Installer of fire sprinkler systems.
- (4) Installer of electrical systems.

2. Review potential interface conflicts; coordinate layout and support provisions.

- d. Welding Standards: Comply with applicable provisions of AWS D1.1/D1.1M and AWS D1.3/D1.3M, as modified by AISI S100. Qualify welding processes and welding operators in accordance with AWS "Standard Qualification Procedure."

PART 2 PRODUCTS

2.1 MANUFACTURERS

- a. Field fabrication of trusses is strictly prohibited. Scissor type trusses are strictly prohibited.
- b. Acceptable Truss Manufacturers: Truss components shall be fabricated into completed trusses by fabricators that have at least 5 years worth of experience in the design and supply of Cold-Formed Steel Trusses.
- c. Substitutions: Not permitted.
- d. Truss manufacturer shall confirm maximum truss heights and lengths for shipping. If trusses exceed these values, field splices shall be allowed. The field splice locations and connections shall be designed by the truss engineer.
- e. Truss Design Drawings shall indicate locations of splices and splice connection details necessary to allow field assembly of truss components. Provide additional components to act as alignment guides for field assembly of truss components at splices. Final assembled trusses shall maintain specified tolerances.

2.2 COMPONENTS

- a. Pre-Engineered, Pre-Fabricated Cold-Formed Steel Trusses:
 1. Truss Type, Span, and Height: As indicated on drawings.
 2. Comply with requirements of ASTM C955.
 3. Deflection Under All Loads: Not to exceed the more restrictive of the limitations of ICC IBC and UFC 3-301-01.
 4. Deflection Under Live Loads: Not to exceed the more restrictive of the limitations of ICC IBC and UFC 3-301-01.

5. Shop fabricate trusses in accordance with Truss Design Drawings, using jiggling systems to ensure consistent component placement and alignment of components, and to maintain specified tolerances.
 6. Trusses exceeding 30 feet in span shall be designed and fabricated with camber to limit deflection under Dead Loads to 0 inches to +0.25 inches.
 7. Shop fabrication of other cold-formed Steel Framing components into assemblies prior to erection is permitted; fabricate assemblies in accordance with shop drawings.
 8. Fasten connections within truss assembly with Structural Component Manufacturer's screws only for easy identification and as shown on the Truss Design Drawings; Welds and other fasteners are prohibited unless approved by the Truss Design Engineer.
 9. Fabricate straight, level, and true, without rack, and to the tolerances specified in AISI S240 Section E5.3.
- b. Truss Chord and Web Structural Components: All truss structural components to be symmetrical in profile and loading orientation, with rolled or closed edges to minimize the danger of cutting during handling. Chord and web structural components without rolled edges are prohibited.
1. Shapes, Sizes, and Thicknesses: As required to suit design and as indicated on shop drawings.
 2. Chords: Cold-formed from ASTM A653/A653M galvanized steel sheet, minimum G60 coating; minimum 55,000 psi (380 MPa) yield strength for 22, 20, 18, and 16 GA structural components; minimum 50,000 psi (345 MPa) yield strength for 14 and 12 GA structural components.
 - (a) Material thickness:
 - (1) 28 mil (22 GA) - Minimum bare metal thickness: 0.0284 inch (0.72 mm).
 - (2) 33 mil (20 GA) - Minimum bare metal thickness: 0.0329 inch (0.84 mm).
 - (3) 43 mil (18 GA) - Minimum bare metal thickness: 0.0428 inch (1.09 mm).
 - (4) 54 mil (16 GA) - Minimum bare metal thickness: 0.0538 inch (1.37 mm).
 - (5) 68 mil (14 GA) - Minimum bare metal thickness: 0.0677 inch (1.72 mm).
 - (6) 97 mil (12 GA) - Minimum bare metal thickness: 0.0966 inch (2.46 mm).
 - (b) Top Chords: Truss top chords shall have a minimum thickness of 0.0538 inches.
 3. Tube Webs: Cold-formed ASTM A500 steel structural tubing; minimum

yield strength of 45,000 psi (310 MPa); minimum tensile strength of 55,000 psi (380 MPa).

(a) Material thickness:

(1) 33 mil (20 GA) - Minimum bare metal thickness: 0.035 inch (0.89 mm).

(2) 47 mil (18 GA) - Minimum bare metal thickness: 0.047 inch (1.19 mm).

(3) 63 mil (16 GA) - Minimum bare metal thickness: 0.063 inch (1.6 mm).

4. Rolled formed Webs: Cold-formed from ASTM A653/A653M galvanized steel sheet, minimum G60 coating; minimum 40,000 psi (276 MPa) yield strength for 20 and 18 GA structural components; minimum 50,000 psi (345 MPa) yield strength for 16 GA structural components.

(a) Material thickness:

(1) 33 mil (20 GA) - Minimum bare metal thickness: 0.0329 inch (0.84 mm).

(2) 43 mil (18 GA) - Minimum bare metal thickness: 0.0428 inch (1.09 mm).

(3) 54 mil (16 GA) - Minimum bare metal thickness: 0.0538 inch (1.37 mm).

- c. Provide manufacturer's standard steel truss bracing, bridging, blocking, reinforcements, fasteners, and accessories with each type of steel framing required, as recommended by the manufacturer for the applications indicated and as needed to provide a complete cold-formed steel truss roof assembly.

d. Fastenings:

1. Manufacturer recommended self-drilling screws with corrosion-resistant plated finish. Fasteners shall be of sufficient size and number to ensure the strength of the connection.
2. Welds: Comply with AWS D1.1/D1.1M when applicable and AWS D1.3/D1.3M for welding base metals less than 1/8 inch thick.

2.3 FABRICATION

- a. Fabricate cold-formed steel trusses plumb, square, true to line, and with connections securely fastened, according to manufacturer's recommendations and the requirements of this Section.

1. Fabricate truss assemblies in jig templates.
2. Cut truss members by sawing or shearing or plasma cutting.
3. Fasten cold-formed steel truss members by screw fastening or other methods as standard with fabricator. Locate mechanical fasteners

and install according to cold-formed steel truss component manufacturer's instructions with screw penetrating joined members by not less than 3 exposed screw threads.

- b. Care shall be taken during handling, delivery, and erection. Brace, block, or reinforce the truss as necessary to minimize member and connection stresses. Refer to CFSBCSI.

- c. Fabrication Tolerances:

- 1. Overall Length: Fabricate each cold-formed steel truss to the maximum allowable tolerances as follows:

- (a) Truss length up to 30 ft - 1/4" tolerance.

- (b) Truss length over 30 ft - 1/2" tolerance.

- 2. Overall Height: Fabricate each cold-formed steel truss to the maximum allowable tolerances as follows:

- (a) Truss height up to 5 ft - 1/4" tolerance.

- (b) Truss height over 5 ft - 1/2" tolerance.

PART 3 EXECUTION

3.1 EXAMINATION

- a. The installer shall examine areas and conditions under which the truss framing is to be installed. Work shall not proceed until unsatisfactory conditions have been corrected by those responsible.
- b. The contractor shall coordinate installation drawings, resolution of dimensional problems, compatibility of various trades and installation.
- c. Installation constitutes acceptance of existing conditions and responsibility for satisfactory performance.

3.2 INSTALLATION

- a. Erection of trusses, including proper handling, safety precautions, installation bracing, and other safeguards or procedures is the responsibility of the contractor and contractor's installer. Refer to CFSBCSI, or contact qualified Registered Professional Engineer.

- b. Erection Tolerances:

- 1. Limit overall bow or bow in any chord member to the lesser of L/200 or 2 inches, with L equal to the length of the truss or member.

- 2. Limit out-of-plane plumb to the lesser of L/50 or 2 inches, with L equal to the height of the truss.

- 3. Space individual trusses no more than plus or minus 1/8 inch from plan location. Cumulative error shall not exceed minimum fastening requirements of sheathing or other finishing materials.

- c. Install trusses in accordance with Structural Component Manufacturer's

Installation Guidelines and Truss Manufacturer's Truss Design Drawings and Truss Placement Diagram. Use correct fasteners as previously described. Truss Placement Diagram shall be submitted to the Engineer of Record (EOR) for approval.

- d. Provide proper lifting equipment, including spreader bar, suited to sizes and types of trusses required, applied at lift points recommended by Truss Manufacturer. Exercise care to avoid damage to truss members during erection and to keep horizontal bending of the trusses to a minimum.
- e. Install trusses in one-piece lengths, unless splice connections are indicated. Place trusses at spacings indicated on the Truss Design Drawings.
- f. Install all erection bracing (temporary installation) to prevent collapse of trusses during erection and prior to installing permanent bracing. Install permanent bracing and bridging before application of any loads; follow recommendations of the CFSBCSI.
 - 1. Provide bracing that holds trusses straight and plumb and in safe condition until decking and permanent truss bracing has been fastened to form a structurally sound framing system.
 - 2. All sub-contractors shall employ proper construction procedures to ensure adequate distribution of temporary construction loads so that the carrying capacity of any single truss or group of trusses is not exceeded.
- g. Install permanent bracing and bridging as developed in accordance with AISI S202 Section I1.6 and in the locations shown on the Truss Manufacturer's Truss Design Drawings.
- h. Provide framing anchors as indicated or accepted on the Truss Design Drawings or Truss Placement Diagram. Anchor trusses securely at bearing points.
- i. Removal, cutting, or alteration of any truss chord, web or bracing member in the field is prohibited, unless approved in advance in writing by the Architect/Building Designer and the Truss Design Engineer.
- j. Repair or replace damaged chords, webs, and complete trusses as directed and approved in writing in advance by the Architect/Building Designer and the Structural Component Manufacturer.

3.3 FIELD QUALITY CONTROL

Owner will provide inspection service to inspect field connections; see Section 01 45 00 QUALITY CONTROL.

3.4 REPAIRS AND PROTECTION

- a. Galvanizing repairs: Prepare and repair damaged galvanized coatings on fabricated and installed cold-formed steel trusses with galvanized repair paint according to ASTM A780 and Structural Component Manufacturer's written guidelines.
- b. Provide final protection and maintain conditions in a manner

acceptable to the manufacturer and installer, that ensure the cold-formed steel trusses are without damage or deterioration at the time of substantial completion.

-- End of Section --

SECTION 05 50 13

MISCELLANEOUS METAL FABRICATIONS
05/17, CHG 1: 08/18

PART 1 GENERAL

1.1 REFERENCES

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

ALUMINUM ASSOCIATION (AA)

AA DAF45 (2003; Reaffirmed 2009) Designation System
for Aluminum Finishes

AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)

AISC 303 (2016) Code of Standard Practice for Steel
Buildings and Bridges

AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)

ASME B18.2.1 (2012; Errata 2013) Square and Hex Bolts
and Screws (Inch Series)

ASME B18.2.2 (2022) Nuts for General Applications:
Machine Screw Nuts, and Hex, Square, Hex
Flange, and Coupling Nuts (Inch Series)

ASME B18.6.2 (2020) Square Head Set Screws and Slotted
Headless Set Screws (Inch Series)

ASME B18.6.3 (2013; R 2017) Machine Screws, Tapping
Screws, and Machine Drive Screws (Inch
Series)

ASME B18.21.1 (2009; R 2016) Washers: Helical
Spring-Lock, Tooth Lock, and Plain Washers
(Inch Series)

ASME B18.21.2M (1999; R 2014) Lock Washers (Metric Series)

ASME B18.22M (1981; R 2017) Metric Plain Washers

AMERICAN SOCIETY OF SAFETY PROFESSIONALS (ASSP)

ASSP A10.3 (2020) Safety Requirements for
Powder-Actuated Fastening Systems American
National Standard for Construction and
Demolition Operations

AMERICAN WELDING SOCIETY (AWS)

AWS D1.1/D1.1M (2020; Errata 1 2021) Structural Welding
Code - Steel

ASTM INTERNATIONAL (ASTM)

ASTM A36/A36M	(2019) Standard Specification for Carbon Structural Steel
ASTM A47/A47M	(1999; R 2022; E 2022) Standard Specification for Ferritic Malleable Iron Castings
ASTM A48/A48M	(2022) Standard Specification for Gray Iron Castings
ASTM A53/A53M	(2024) Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless
ASTM A123/A123M	(2024) Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
ASTM A153/A153M	(2023) Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware
ASTM A283/A283M	(2013) Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates
ASTM A307	(2021) Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60 000 PSI Tensile Strength
ASTM A467/A467M	(2020) Standard Specification for Machine Coil Chain
ASTM A500/A500M	(2021a) Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes
ASTM A653/A653M	(2023) Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
ASTM A780/A780M	(2020) Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings
ASTM A786/A786M	(2015; R 2021) Standard Specification for Hot-Rolled Carbon, Low-Alloy, High-Strength Low-Alloy, and Alloy Steel Floor Plates
ASTM A924/A924M	(2022a) Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process

ASTM B26/B26M	(2018; E 2018) Standard Specification for Aluminum-Alloy Sand Castings
ASTM B108/B108M	(2019) Standard Specification for Aluminum-Alloy Permanent Mold Castings
ASTM B209	(2014) Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate
ASTM B209M	(2014) Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate (Metric)
ASTM B221	(2021) Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes
ASTM B221M	(2021) Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric)
ASTM C1513	(2018) Standard Specification for Steel Tapping Screws for Cold-Formed Steel Framing Connections
ASTM D1187/D1187M	(1997; R 2018) Standard Specification for Asphalt-Base Emulsions for Use as Protective Coatings for Metal
ASTM F1554	(2020) Standard Specification for Anchor Bolts, Steel, 36, 55, and 105-ksi Yield Strength

MASTER PAINTERS INSTITUTE (MPI)

MPI 79	(2016) Primer, Alkyd, Anti-Corrosive for Metal

NATIONAL ASSOCIATION OF ARCHITECTURAL METAL MANUFACTURERS (NAAMM)

NAAMM MBG 531	(2017) Metal Bar Grating Manual
NAAMM MBG 532	(2019) Heavy Duty Metal Bar Grating Manual

SOCIETY FOR PROTECTIVE COATINGS (SSPC)

SSPC SP 3	(2018) Power Tool Cleaning
SSPC SP 6/NACE No.3	(2007) Commercial Blast Cleaning

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1	(2024) Safety -- Safety and Occupational Health (SOH) Requirements Manual

1.2 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are for information only. When used, a code following the "G" classification

identifies the office that will review the submittal for the Government.
Submit the following in accordance with Section 01 33 00 SUBMITTAL
PROCEDURES:

SD-02 Shop Drawings

Structural Steel Door Frames, Fabrication Drawings; G
Cover Plates and Frames, Installation Drawings; G
Floor Gratings, Installation Drawings; G
Bollards/Pipe Guards; G
Embedded Angles and Plates, Installation Drawings; G

SD-03 Product Data

Corner Guards
Cover Plates and Frames; G
Floor Gratings; G
Structural Steel Door Frames; G
Each Downspout Terminations Type; G
Recycled Content; S

SD-07 Certificates

Certificates of Compliance; G
Certified Mill Test Reports for Chemistry and Mechanical
Properties; G

1.3 QUALIFICATION OF WELDERS

Qualify welders in accordance with AWS D1.1/D1.1M. Use procedures,
materials, and equipment of the type required for the work.

1.4 DELIVERY, STORAGE, AND PROTECTION

Protect from corrosion, deformation, and other types of damage. Store
items in an enclosed area free from contact with soil and weather. Remove
and replace damaged items with new items.

1.5 MISCELLANEOUS REQUIREMENTS

1.5.1 Fabrication Drawings

Submit fabrication drawings showing layout(s), connections to structural
system, and anchoring details as specified in AISC 303.

1.5.2 Installation Drawings

Submit templates, erection, and installation drawings indicating
thickness, type, grade, class of metal, and dimensions. Show construction

details, reinforcement, anchorage, and installation in relation to the building construction.

PART 2 PRODUCTS

2.1 RECYCLED CONTENT

Provide products with recycled content. Provide certificates of compliance for recycled content.

2.2 MATERIALS

Provide exposed fastenings of compatible materials (avoid contact of dissimilar metals). Coordinate color and finish with the material to which fastenings are applied. Submit the manufacturer's certified mill reports which clearly show the applicable ASTM mechanical and chemical requirements together with the actual test results for the supplied materials.

2.2.1 Structural Carbon Steel

Provide in accordance with ASTM A36/A36M.

2.2.2 Structural Tubing

Provide in accordance with ASTM A500/A500M.

2.2.3 Steel Pipe

Provide in accordance with ASTM A53/A53M, Type E or S, Grade B.

2.2.4 Fittings for Steel Pipe

Provide standard malleable iron fittings in accordance with ASTM A47/A47M.

2.2.5 Gratings

- a. Provide gray cast iron in accordance with ASTM A48/A48M, Class 40.
- b. Provide metal plank grating, non-slip requirement, steel in accordance with ASTM A653/A653M, Z275 G90.
- c. Provide metal bar type grating in accordance with NAAMM MBG 531 and NAAMM MBG 532.

2.2.6 Floor Plates, Patterned

Provide floor plate in accordance with ASTM A786/A786M. Provide steel plate not less than 14 gage.

2.2.7 Anchor Bolts

Provide in accordance with ASTM F1554. Where exposed, provide anchor bolts of the same material, color, and finish as the metal to which they are applied.

2.2.7.1 Lag Screws and Bolts

Provide in accordance with ASME B18.2.1, type and grade best suited for

the purpose.

2.2.7.2 Toggle Bolts

Provide in accordance with ASME B18.2.1.

2.2.7.3 Bolts, Nuts, Studs and Rivets

Provide in accordance with ASME B18.2.2 or ASTM A307.

2.2.7.4 Powder Actuated Fasteners

Follow safety provisions in accordance with ASSP A10.3.

2.2.7.5 Screws

Provide in accordance with ASME B18.2.1, ASME B18.6.2, ASME B18.6.3 and ASTM C1513.

2.2.7.6 Washers

Provide plain washers in accordance with ASME B18.22M, ASME B18.21.1. Provide beveled washers for American Standard beams and channels, square or rectangular, tapered in thickness, and smooth. Provide lock washers in accordance with ASME B18.21.2M, ASME B18.21.1.

2.2.8 Aluminum Alloy Products

Provide in accordance with ASTM B209M, ASTM B209 for sheet plate, ASTM B221M, ASTM B221M, ASTM B221 for extrusions and ASTM B26/B26M or ASTM B108/B108M for castings. Provide aluminum extrusions at least 1/8 inch thick and aluminum plate or sheet at least 0.050 inch thick.

2.3 FABRICATION FINISHES

2.3.1 Galvanizing

Hot-dip galvanize items specified to be zinc-coated, after fabrication where practicable. Provide galvanizing in accordance with ASTM A123/A123M, ASTM A153/A153M, ASTM A653/A653M or ASTM A924/A924M, Z275 G90.

2.3.2 Galvanize

Anchor bolts, grating fasteners, washers, and parts or devices necessary for proper installation, unless indicated otherwise.

2.3.3 Repair of Zinc-Coated Surfaces

Repair damaged surfaces with galvanizing repair method and paint in accordance with ASTM A780/A780M or by application of stick or thick paste material specifically designed for repair of galvanizing, as approved by Contracting Officer. Clean areas to be repaired and remove slag from welds. Heat, with a torch, surfaces to which stick or paste material will be applied. Heat to a temperature sufficient to melt the metals in the stick or paste. Spread molten material uniformly over surfaces to be coated and wipe off excess material.

2.3.4 Shop Cleaning and Painting

2.3.4.1 Surface Preparation

Blast clean surfaces in accordance with SSPC SP 6/NACE No.3. Surfaces that will be exposed in spaces above ceiling or in attic spaces, crawl spaces, furred spaces, and chases may be cleaned in accordance with SSPC SP 3 in lieu of being blast cleaned. Wash cleaned surfaces which become contaminated with rust, dirt, oil, grease, or other contaminants with solvents until thoroughly clean. Steel to be embedded in concrete must be free of dirt and grease prior to embed. Do not paint or galvanize bearing surfaces, including contact surfaces within slip critical joints. Shop coat these surfaces with rust prevention.

2.3.4.2 Pretreatment, Priming and Painting

Apply pre-treatment, primer, and paint in accordance with manufacturer's printed instructions. On surfaces concealed in the finished construction or not accessible for finish painting, apply an additional prime coat to a minimum dry film thickness of 1.0 mil. Tint additional prime coat with a small amount of tinting pigment.

2.3.5 Nonferrous Metal Surfaces

Protect by plating, anodic, or organic coatings.

2.3.6 Aluminum Surfaces

2.3.6.1 Surface Condition

Before finishes are applied, remove roll marks, scratches, rolled-in scratches, kinks, stains, pits, orange peel, die marks, structural streaks, and other defects which will affect uniform appearance of finished surfaces.

2.3.6.2 Aluminum Finishes

Unexposed sheet, plate and extrusions may have mill finish as fabricated. Sandblast castings' finish, medium, AA DAF45. Unless otherwise specified, provide all other aluminum items with a standard mill finish. Provide a coating thickness not less than that specified for protective and decorative type finishes for items used in interior locations or architectural Class I type finish for items used in exterior locations. Provide in accordance with AA DAF45. Provide a polished satin finish on items to be anodized.

2.4 CORNER GUARDS

For jambs and sills of openings and edges of platforms provide steel shapes and plates anchored in masonry or concrete with welded steel straps or end-weld stud anchors. Form corner guards for use with glazed or ceramic tile finish on walls with 0.0625 inch thick corrosion-resisting steel with satin finish, extend 5 feet above the top of cove base or to the top of the wainscot, whichever is less, and securely anchor to the supporting wall. Provide galvanized G90 corner guards on exterior. Provide interior corner guards as indicated in Section 10 26 00 WALL AND DOOR PROTECTION.

2.5 COVER PLATES AND FRAMES

Fabricate cover plates of 1/4 inch thick rolled steel weighing not more than 100 pounds per plate with a slip-resistant, carbon steel in accordance with ASTM A283/A283M. Provide aluminum oxide or silicon carbide on wearing surfaces. Provide galvanized plate. Reinforce to sustain a live load of 150 pounds per square foot. Provide structural steel shapes and plates for frames, securely fastened to the structure as indicated. Miter and weld all corners. Butt joint straight runs. Allow for expansion on straight runs over 15 feet. Provide holes and openings with 1/2 inch clearance for pipes and equipment. Remove sharp edges and burrs from cover plates and exposed edges of frames. Weld all connections and grind top surface smooth. Weld bar stops every six inches. Provide 1/8 inch clearance at edges and between cover plates.

2.6 FLOOR GRATINGS

Design steel grating in accordance with NAAMM MBG 531 for bar type gratings, or in accordance with manufacturer's charts for plank grating. Galvanize steel floor gratings.

- a. Design floor gratings to support a stress live load of 150 pounds per square foot for the spans indicated, with maximum deflection of $L/240$.
- b. In accordance with NAAMM MBG 531, band edges of grating with bars of the same size as the bearing bars. Weld banding in accordance with the manufacturer's standard for trim. Design tops of bearing bars, cross or intermediate bars to be in the same plane and to match grating finish.
- c. Anchor gratings to structural members with bolts, toggle bolts, or expansion shields and bolts.
- d. Provide slip resistant surface finishes.

2.7 BOLLARDS/PIPE GUARDS

Provide 6 inch prime coated extra strong weight steel pipe in accordance with ASTM A53/A53M. Anchor posts in concrete as indicated and fill solidly with concrete with minimum compressive strength of 2500 psi.

2.8 DOWNSPOUT TERMINATIONS

Provide 4x6 inch aluminum downspout tile adapter with manufacturer's standard powder coated finish. Units shall have all seams welded.

2.9 MISCELLANEOUS PLATES AND SHAPES

Provide items that do not form a part of the structural steel framework, such as lintels, sill angles, miscellaneous mountings and frames. Provide lintels fabricated from structural steel shapes over openings in masonry walls and partitions as indicated and as required to support wall loads over openings. Provide with connections and fasteners. Construct to have at least 4 in bearing on masonry at each end.

Provide angles and plates in accordance with ASTM A36/A36M, for embedment as indicated. Galvanize embedded items exposed to the elements in accordance with ASTM A123/A123M.

2.10 SAFETY CHAINS

Construct safety chains of galvanized steel, straight link type, minimum 3/16 inch diameter, with a minimum of twelve links per one foot, and snap hooks on each end. Test safety chain in accordance with ASTM A467/A467M, Class CS. Provide boat type snap hooks. Provide galvanized 3/8 inch bolt with 3/4 inch eye diameter for attachment of chain, anchored as indicated. Supply two chains, 4 inches longer than the anchorage spacing, for each guarded area.

2.11 SECURITY GRILLES

Fabricate of channel frames with not less than two masonry anchors at each jamb and 1/2 inch hardened steel bars spaced not over 4 inches both ways and welded to frame. Provide 18 by 16 mesh screen and two layers of 1/4 inch hardware cloth clamped to frame.

2.12 STRUCTURAL STEEL DOOR FRAMES

Provide frames of rolled shapes as indicated. Miter and weld heads to jambs, or provide riveted clip angle connections concealed in the finished work. Provide frames for swinging doors with 5/8 by 1-1/2 inch solid bar stops secured to the frame by welding or by 1/4 inch diameter countersunk machine screws spaced not more than 12 inches on centers. Stiffen head openings greater than 3 feet as necessary to limit deflection to not more than 1/16 inch. Secure frames to masonry with zinc-coated metal anchors spaced not more than 30 inches on centers. Where necessary to engage the threads of machine screws for fastening hardware, back frames on inside faces with steel plates of suitable thickness. Tap frames and reinforcing plates as necessary for the installation of hardware and other work. Countersink rivets and screw heads where they will be exposed in the finished work. Grind welds smooth.

PART 3 EXECUTION

3.1 GENERAL INSTALLATION REQUIREMENTS

Install items at locations indicated in accordance with manufacturer's instructions. Verify all field dimensions prior to fabrication. Include materials and parts necessary to complete each assembly, whether indicated or not. Miss-alignment and miss-sizing of holes for fasteners is cause for rejection. Conceal fastenings where practicable. Joints exposed to weather must be watertight.

3.2 WORKMANSHIP

Provide miscellaneous metalwork that is true and accurate in shape, size, and profile. Make angles and lines continuous and straight. Make curves consistent, smooth and unfaceted. Provide continuous welding along the entire area of contact except where tack welding is permitted. Do not tack weld exposed connections. Unless otherwise indicated and approved, provide a smooth finish on exposed surfaces. Provide countersunk rivets where exposed. Provide coped and mitered corner joints aligned flush and without gaps.

3.3 ANCHORAGE, FASTENINGS, AND CONNECTIONS

Provide anchorage as necessary, whether indicated or not, for fastening miscellaneous metal items securely in place. Include slotted inserts,

expansion shields, powder-driven fasteners, toggle bolts (when approved for concrete), through bolts for masonry, headed shear studs, machine and carriage bolts for steel, through bolts, lag bolts, and screws for wood. Do not use wood plugs. Provide non-ferrous attachments for non-ferrous metal. Provide exposed fastenings of compatible materials (avoid contact of dissimilar metals), that generally match in color and finish the surfaces to which they are applied. Conceal fastenings where practicable. Provide all fasteners flush with the surfaces they fasten, unless indicated otherwise. Test a minimum of 2 bolt, nut, and washer assemblies from each certified mill batch in a tension measuring device at the job site prior to the beginning of bolting start-up.

3.4 BUILT-IN WORK

Where necessary and not otherwise indicated, form built-in metal work for anchorage with concrete or masonry. Provide built-in metal work in ample time for securing in place as the work progresses.

3.5 WELDING

Perform welding, welding inspection, and corrective welding in accordance with AWS D1.1/D1.1M. Use continuous welds on all exposed connections. Grind visible welds smooth in the finished installation. Provide welded headed shear studs in accordance with AWS D1.1/D1.1M, Clause 7, except as otherwise specified. Provide in accordance with the safety requirements of EM 385-1-1.

3.6 DISSIMILAR METALS

Where dissimilar metals are in contact, protect surfaces with a coating in accordance with MPI 79 to prevent galvanic or corrosive action. Where aluminum is in contact with concrete, plaster, mortar, masonry, wood, or absorptive materials subject to wetting, protect in accordance with ASTM D1187/D1187M, asphalt-base emulsion. Clean surfaces with metal shavings from installation at the end of each work day.

3.7 COVER PLATES AND FRAMES

Provide tops of cover plates and frames flush with finished surface. Test for trip hazards and adjust for any encountered lippage.

3.8 DOOR GUARD FRAME

Mount door guard frames over glazed openings using 1/4 inch lag bolts on the interiors of wood doors or tamperproof through bolts on the interiors of metal doors.

3.9 INSTALLATION OF BOLLARDS/PIPE GUARDS

Set bollards/pipe guards vertically in concrete piers. Fill hollow cores with concrete having a compressive strength of 3000 psi.

3.10 INSTALLATION OF DOWNSPOUT TERMINATIONS

Secure downspouts terminations to downspouts and substrate per manufacturer's instructions.

3.11 STRUCTURAL STEEL DOOR FRAMES

Secure door frames to the floor slab by means of angle clips and expansion bolts. Provide any necessary reinforcements and drill and tap frames as required for hardware. Clean metal shavings from finished surfaces at the end of each work day.

For freight elevator hoistway entrances, include a non-skid metal sill installed in accordance with the elevator manufacturer's written installation instructions.

3.12 INSTALLATION MISCELLANEOUS PLATES AND SHAPES

Provide lintels fabricated from structural steel shapes over openings in masonry walls and partitions as indicated and as required to support wall loads over openings. Provide with connections and fasteners. Construct to have at least 4 inches bearing on masonry at each end.

-- End of Section --

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SECTION 06 10 00

ROUGH CARPENTRY
08/16, CHG 2: 11/18

PART 1 GENERAL

1.1 REFERENCES

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

AMERICAN FOREST FOUNDATION (AFF)

ATFS STANDARDS (2015) American Tree Farm System Standards of Sustainability 2015-2020

AMERICAN HARDBOARD ASSOCIATION (AHA)

AHA A135.4 (1995; R 2004) Basic Hardboard

AMERICAN LUMBER STANDARDS COMMITTEE (ALSC)

ALSC PS 20 (2015) American Softwood Lumber Standard

AMERICAN RAILWAY ENGINEERING AND MAINTENANCE-OF-WAY ASSOCIATION (AREMA)

AREMA Eng Man (2017) Manual for Railway Engineering

AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)

ASME B18.2.1 (2012; Errata 2013) Square and Hex Bolts and Screws (Inch Series)

ASME B18.2.2 (2022) Nuts for General Applications: Machine Screw Nuts, and Hex, Square, Hex Flange, and Coupling Nuts (Inch Series)

ASME B18.5.2.1M (2006; R 2011) Metric Round Head Short Square Neck Bolts

ASME B18.5.2.2M (1982; R 2010) Metric Round Head Square Neck Bolts

ASME B18.6.1 (2016) Wood Screws (Inch Series)

AMERICAN WOOD COUNCIL (AWC)

AWC NDS (2015) National Design Specification (NDS) for Wood Construction

AWC WFCM (2012) Wood Frame Construction Manual for One- and Two-Family Dwellings

AMERICAN WOOD PROTECTION ASSOCIATION (AWPA)

AWPA B00K	(2015) AWP Book of Standards
AWPA M6	(2013) Brands Used on Preservative Treated Materials
AWPA P5	(2015) Standard for Waterborne Preservatives
AWPA P18	(2014) Nonpressure Preservatives
AWPA P49	(2015; R 2021) Standard for Fire Retardant FR-1
AWPA T1	(2023) Use Category System: Processing and Treatment Standard
AWPA U1	(2023) Use Category System: User Specification for Treated Wood

APA - THE ENGINEERED WOOD ASSOCIATION (APA)

APA E445	(2002) Performance Standards and Qualification Policy for Structural-Use Panels (APA PRP-108)
APA F405	(19) Product Guide: Performance Rated Panels
APA L870	(2010) Voluntary Product Standard, PS 1-09, Structural Plywood
APA S350	(2014) PS 2-10, Performance Standard for Wood-Based Structural-Use Panels

ASTM INTERNATIONAL (ASTM)

ASTM A153/A153M	(2023) Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware
ASTM A307	(2021) Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60 000 PSI Tensile Strength
ASTM A653/A653M	(2023) Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
ASTM D2898	(2010; R 2017) Standard Practice for Accelerated Weathering of Fire-Retardant-Treated Wood for Fire Testing
ASTM F547	(202) Standard Terminology of Nails for Use with Wood and Wood-Base Materials

ASTM F1667/F1667M (2021a) Standard Specification for Driven
Fasteners: Nails, Spikes, and Staples

CALIFORNIA DEPARTMENT OF PUBLIC HEALTH (CDPH)

CDPH SECTION 01350 (2017; Version 1.2) Standard Method for
the Testing and Evaluation of Volatile
Organic Chemical Emissions from Indoor
Sources using Environmental Chambers

CSA GROUP (CSA)

CSA Z809-08 (R2013) Sustainable Forest Management

FOREST STEWARDSHIP COUNCIL (FSC)

FSC STD 01 001 (2015) Principles and Criteria for Forest
Stewardship

GREEN SEAL (GS)

GS-36 (2013) Adhesives for Commercial Use

INTERNATIONAL CODE COUNCIL (ICC)

ICC IBC (2021) International Building Code

NATIONAL HARDWOOD LUMBER ASSOCIATION (NHLA)

NHLA Rules (2015) Rules for the Measurement &
Inspection of Hardwood & Cypress

NORTHEASTERN LUMBER MANUFACTURERS ASSOCIATION (NELMA)

NELMA Grading Rules (2013) Standard Grading Rules for
Northeastern Lumber

PROGRAMME FOR ENDORSEMENT OF FOREST CERTIFICATION (PEFC)

PEFC ST 2002:2013 (2015) PEFC International Standard Chain
of Custody of Forest Based Products
Requirements

REDWOOD INSPECTION SERVICE (RIS) OF THE CALIFORNIA REDWOOD
ASSOCIATION (CRA)

RIS Grade Use (1998) Redwood Lumber Grades and Uses

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT (SCAQMD)

SCAQMD Rule 1168 (2017) Adhesive and Sealant Applications

SOUTHERN CYPRESS MANUFACTURERS ASSOCIATION (SCMA)

SCMA Spec (1986; Supple. No. 1, Aug 1993) Standard
Specifications for Grades of Southern
Cypress

SOUTHERN PINE INSPECTION BUREAU (SPIB)

SPIB 1003 (2014) Standard Grading Rules for Southern
Pine Lumber

SUSTAINABLE FOREST INITIATIVE (SFI)

SFI 2015-2019 (2015) Standards, Rules for Label Use,
Procedures and Guidance

U.S. GENERAL SERVICES ADMINISTRATION (GSA)

CID A-A-1923 (Rev A; Notice 1; Notice 2; Notice 3;
Notice 4) Shield, Expansion (Lag, Machine
and Externally Threaded Wedge Bolt Anchors)

CID A-A-1924 (Rev A; Notice 3) Shield, Expansion (Self
Drilling Tubular Expansion Shell Bolt
Anchors)

CID A-A-1925 (Rev A; Notice 1; Notice 2; Notice 3;
Notice 4) Shield Expansion (Nail Anchors)

UNDERWRITERS LABORATORIES (UL)

UL 2818 (2022) GREENGUARD Certification Program
For Chemical Emissions For Building
Materials, Finishes And Furnishings

WEST COAST LUMBER INSPECTION BUREAU (WCLIB)

WCLIB 17 (2015) Standard Grading Rules

WESTERN WOOD PRODUCTS ASSOCIATION (WWPA)

WWPA G-5 (2017) Western Lumber Grading Rules

1.2 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-03 Product Data

Underlayment

Fire-retardant Treatment

Structural-use and OSB Panels

Oriented Strand Board

Adhesives

SD-07 Certificates

Certificates of Grade

Certified Sustainably Harvested Plywood for Other Uses; S

Preservative Treatment

Indoor Air Quality for Aerosol Adhesives; S

Indoor Air Quality for Non-aerosol Adhesives; S

1.3 DELIVERY AND STORAGE

Deliver materials to the site in an undamaged condition. Store, protect, handle, and install prefabricated structural elements in accordance with manufacturer's instructions and as specified. Store materials off the ground to provide proper ventilation, with drainage to avoid standing water, and protection against ground moisture and dampness. Store materials with a moisture barrier at both the ground level and as a cover forming a well ventilated enclosure. Adhere to requirements for stacking, lifting, bracing, cutting, notching, and special fastening requirements. Do not use materials that have visible moisture or biological growth. Remove defective and damaged materials and provide new materials. Store separated reusable wood waste convenient to cutting station and area of work.

1.4 GRADING AND MARKING

1.4.1 Lumber

Mark each piece of framing and board lumber or each bundle of small pieces of lumber with the grade mark of a recognized association or independent inspection agency. Such association or agency must be certified by the Board of Review, American Lumber Standards Committee, to grade the species used. Surfaces that are to be exposed to view must not bear grademarks, stamps, or any type of identifying mark. Hammer marking will be permitted on timbers when all surfaces will be exposed to view.

1.4.2 Plywood

Mark each sheet with the mark of a recognized association or independent inspection agency that maintains continuing control over the quality of the plywood. The mark must identify the plywood by species group or span rating, exposure durability classification, grade, and compliance with APA L870. Surfaces that are to be exposed to view must not bear grademarks or other types of identifying marks.

1.4.3 Structural-Use and OSB Panels

Mark each panel with the mark of a recognized association or independent inspection agency that maintains continuing control over the quality of the panel. The mark must indicate end use, span rating, and exposure durability classification. Oriented Strand Board (OSB), APA F405.

1.4.4 Fire-Retardant Treated Lumber

Mark each piece in accordance with AWP M6, except pieces that are to be natural or transparent finished. In addition, exterior fire-retardant lumber must be distinguished by a permanent penetrating blue stain.

Labels of a nationally recognized independent testing agency will be accepted as evidence of conformance to the fire-retardant requirements of AWP A M6.

1.4.5 Hardboard, Gypsum Board, and Fiberboard

Mark each sheet or bundle to identify the standard under which the material is produced and the producer.

1.5 SIZES AND SURFACING

ALSC PS 20 for dressed sizes of yard and structural lumber. Lumber must be surfaced four sides. Size references, unless otherwise specified, are nominal sizes, and actual sizes must be within manufacturing tolerances allowed by the standard under which the product is produced. Other measurements are IP or SI standard.

1.6 MOISTURE CONTENT

Air-dry or kiln-dry lumber. Kiln-dry treated lumber after treatment. Maximum moisture content of wood products must be as follows at the time of delivery to the job site:

- a. Framing lumber and board, 19 percent maximum
- b. Timbers 5 inches and thicker, 25 percent maximum
- c. Materials other than lumber; moisture content must be in accordance with standard under which the product is produced

1.7 PRESERVATIVE TREATMENT

Treat wood products with waterborne wood preservatives conforming to AWP A P5. Pressure treatment of wood products must conform to the requirements of AWP A BOOK Use Category System Standards U1 and T1. Pressure-treated wood products must not contain arsenic, chromium, or other agents classified as carcinogenic, probably carcinogenic, or possibly carcinogenic to humans (compounds in Groups 1, 2A, or 2B) by the International Agency for Research on Cancer (IARC), Lyon, France. Pressure-treated wood products must not exceed the limits of the U.S. EPA's Toxic Characteristic Leaching Procedure (TCLP), and must not be classified as hazardous waste. Submit certification from treating plant stating chemicals and process used and net amount of preservatives retained are in conformance with specified standards. In accordance with AWP A U1 provide non-copper preservative treatment such as EL2, PTI or SBX, DOT for products in direct contact with sheet metal.

- a. 0.25 pcf intended for above ground use.
- b. 0.40 pcf intended for ground contact and fresh water use. 0.60 pcf intended for Ammoniacal Copper Quaternary Compound (ACQ)-treated foundations. 0.80 to 1.00 pcf intended for ACQ-treated pilings. All wood must be air or kiln dried after treatment. Specific treatments must be verified by the report of an approved independent inspection agency, or the AWP A Quality Mark on each piece. Minimize cutting and avoid breathing sawdust. Brush coat areas that are cut or drilled after treatment with either the same preservative used in the treatment or with a 2 percent copper naphthenate solution. The following items must be preservative treated:

- (1) Wood framing, woodwork, and plywood up to and including the subflooring at the first-floor level of structures having crawl spaces when the bottoms of such items are 24 inches or less from the earth underneath.

1.7.1 New Construction

Use a boron-based preservative conforming to AWPAC P18, sodium silicate wood mineralization process, or Ammoniacal Copper Quaternary Compound to treat wood. Use boron-based preservatives for above-ground applications only.

1.8 FIRE-RETARDANT TREATMENT

Fire-retardant treated wood must be pressure treated with fire retardants conforming to AWPAC P49. Fire retardant treatment of wood products must conform to the requirements of AWPAC U1, Commodity Specification H and AWPAC T1, Section H. Treatment and performance inspection must be by an independent and qualified testing agency that establishes performance ratings. Each piece or bundle of treated material must bear identification of the testing agency to indicate performance in accordance with such rating. Treated materials to be exposed to rain wetting must be subjected to an accelerated weathering technique in accordance with ASTM D2898 prior to being tested. Such items which will not be inside a building, and such items which will be exposed to heat or high humidity, must receive exterior fire-retardant treatment. Fire-retardant-treated wood products must be free of halogens, sulfates, ammonium phosphate, and formaldehyde. Items to be treated include the following:

- a. Blocking.
- b. Components within structural bearing or shear walls.

1.9 QUALITY ASSURANCE

1.9.1 Humidity Requirements

Sequence work to minimize use of temporary HVAC to dry out building and control humidity.

1.10 ENVIRONMENTAL REQUIREMENTS

During and immediately after installation of treated wood, engineered wood products, and laminated wood products at interior spaces, provide temporary ventilation.

1.11 CERTIFICATIONS

1.11.1 Certified Wood Grades

Provide certificates of grade from the grading agency on graded but unmarked lumber or plywood attesting that materials meet the grade requirements specified herein.

1.11.2 Certified Sustainably Harvested Wood

Provide wood certified as sustainably harvested by FSC STD 01 001, ATFS STANDARDS, CSA Z809-08, SFI 2015-2019, or other third party program

certified by PEFC ST 2002:2013. Provide a letter of Certification of Sustainably Harvested Wood signed by the wood supplier. Identify certifying organization and their third party program name and indicate compliance with chain-of-custody program requirements. Submit sustainable wood certification data; identify each certified product on a line item basis. Submit copies of invoices bearing certification numbers.

1.11.3 Indoor Air Quality Certifications

Submit required indoor air quality certifications in one submittal package.

1.11.3.1 Adhesives and Sealants

Provide products certified to meet indoor air quality requirements by UL 2818 (Greenguard) Gold, SCS Global Services Indoor Advantage Gold or provide certification or validation by other third-party programs that products meet the requirements of this Section. Provide current product certification documentation from certification body. When product does not have certification, provide validation that product meets the indoor air quality product requirements cited herein.

PART 2 PRODUCTS

2.1 MATERIALS

2.1.1 Virgin Lumber

Lumber fabricated from old growth timber is not permitted. Avoid companies who buy, sell, or use old growth timber in their operations, when possible.

2.2 LUMBER

2.2.1 Framing Lumber

Table of Grades for Framing and Board Lumber			
Grading Rules	Species	Framing	Board Lumber
WWPA G-5 standard grading rules	Aspen, Douglas Fir-Larch, Douglas Fir South, Engelmann Spruce-Lodgepole Pine, Engelmann Spruce, Hem-Fir, Idaho White Pine, Lodgepole Pine, Mountain Hemlock, Mountain Hemlock-Hem-Fir, Ponderosa Pine-Sugar Pine, Ponderosa Pine-Lodgepole Pine, Subalpine Fir, White Woods, Western Woods, Western Cedars, Western Hemlock	All Species: Standard Light Framing or No. 3 Structural Light Framing (Stud Grade for 2x4 nominal size, 10 feet and shorter)	All Species: No. 3 Common
WCLIB 17 standard grading rules	Douglas Fir-Larch, Hem-Fir, Mountain Hemlock, Sitka Spruce, Western Cedars, Western Hemlock	All Species: Standard Light Framing or No. 3 Structural Light Framing (Stud Grade for 2x4 nominal size, 10 feet and shorter)	All Species: Standard

<u>Table of Grades for Framing and Board Lumber</u>			
<u>Grading Rules</u>	<u>Species</u>	<u>Framing</u>	<u>Board Lumber</u>
SPIB 1003 standard grading rules	Southern Pine	All Species: Standard Light Framing or No. 3 Structural Light Framing (Stud Grade for 2x4 nominal size, 10 feet and shorter)	No. 2 Boards
SCMA Spec standard specifications	Cypress	No. 2 Common	No. 2 Common
NELMA Grading Rules standard grading rules	Balsam Fir, Eastern Hemlock-Tamarack, Eastern Spruce, Eastern White Pine, Northern Pine, Northern Pine-Cedar	All Species: Standard Light Framing or No. 3 Structural Light Framing (Stud Grade for 2x4 nominal size, 10 feet and shorter)	All Species: No. 3 Common except Standard for Eastern White and Northern Pine
RIS Grade Use standard specifications	Redwood	All Species: Standard Light Framing or No. 3 Structural Light Framing (Stud Grade for 2x4 nominal size, 10 feet and shorter)	Construction Heart

<u>Table of Grades for Framing and Board Lumber</u>			
<u>Grading Rules</u>	<u>Species</u>	<u>Framing</u>	<u>Board Lumber</u>
NHLA Rules rules for the measurement and inspection of hardwood and cypress lumber	Cypress	No. 2 Dimension	No. 2 Common

2.3 PLYWOOD, STRUCTURAL-USE, AND ORIENTED STRAND BOARD (OSB) PANELS

APA L870, APA S350, APA E445, and APA F405 respectively.

2.3.1 Other Uses

2.3.1.1 Plywood

Plywood for other uses. C-D Grade, Exposure 1. Provide certified sustainably harvested plywood for other uses.

2.4 UNDERLAYMENT

Underlayment must conform to one of the following:

2.4.1 Hardboard

AHA A135.4 service class, sanded one side, 1/4 inch thick, 4 feet wide.

2.5 OTHER MATERIALS

2.5.1 Miscellaneous Wood Members

2.5.1.1 Nonstress Graded Members

Members must include bridging, corner bracing, furring, grounds, and nailing strips. Members must be in accordance with TABLE I for the species used. Sizes must be as follows unless otherwise shown:

Member	Size inch
Bridging	1 x 3 or 1 x 4 for use between members 2 x 12 and smaller; 2 x 4 for use between members larger than 2 x 12.
Corner bracing	1 x 4.
Furring	1 x 2

Member	Size inch
Grounds	Plaster thickness by 38.
Nailing strips	1 x 3 or 1 x 4 when used as shingle base or interior finish, otherwise 2 inch stock.

2.5.1.2 Wood Bumpers

AREMA Eng Man, Industrial grade cross ties.

2.5.1.3 Blocking

Blocking must be standard or number 2 grade.

2.5.1.4 Rough Bucks and Frames

Rough bucks and frames must be straight standard or number 2 grade.

2.5.2 Adhesives

Comply with applicable regulations regarding toxic and hazardous materials and as specified. Provide non-aerosol adhesive products used on the interior of the building (defined as inside of the weatherproofing system) meeting either emissions requirements of CDPH SECTION 01350 (limit requirements for either office or classroom spaces regardless of space type) or VOC content requirements of SCAQMD Rule 1168. Provide aerosol adhesives used on the interior of the building meeting either emissions requirements of CDPH SECTION 01350 (limit requirements for either office or classroom spaces regardless of space type) or VOC content requirements of GS-36. Provide certification or validation of indoor air quality for non-aerosol adhesives applied on the interior of the building (inside of the weatherproofing system). Provide certification or validation of indoor air quality for aerosol adhesives used on the interior of the building (inside of the weatherproofing system).

2.6 ROUGH HARDWARE

Unless otherwise indicated or specified, rough hardware must be of the type and size necessary for the project requirements. Sizes, types, and spacing of fastenings of manufactured building materials must be as recommended by the product manufacturer unless otherwise indicated or specified. Rough hardware exposed to the weather or embedded in or in contact with preservative treated wood, exterior masonry, or concrete walls or slabs must be hot-dip zinc-coated in accordance with ASTM A153/A153M. Nails and fastenings for fire-retardant treated lumber and woodwork exposed to the weather must be copper alloy or hot-dipped galvanized fasteners as recommended by the treated wood manufacturer.

2.6.1 Bolts, Nuts, Studs, and Rivets

ASME B18.2.1, ASME B18.5.2.1M, ASME B18.5.2.2M and ASME B18.2.2.

2.6.2 Anchor Bolts

ASTM A307, size as indicated, complete with nuts and washers.

2.6.3 Expansion Shields

CID A-A-1923, CID A-A-1924, and CID A-A-1925. Except as shown otherwise, maximum size of devices must be 3/8 inch.

2.6.4 Lag Screws and Lag Bolts

ASME B18.2.1.

2.6.5 Wood Screws

ASME B18.6.1.

2.6.6 Nails and Staples

ASTM F547, size and type best suited for purpose; staples must be as recommended by the manufacturer of the materials to be joined. For sheathing and subflooring, length of nails must be sufficient to extend 1 inch into supports. In general, 8-penny or larger nails must be used for nailing through 1 inch thick lumber and for toe nailing 2 inch thick lumber; 16-penny or larger nails must be used for nailing through 2 inch thick lumber. Nails used with treated lumber and sheathing must be hot-dipped galvanized in accordance with ASTM A153/A153M. Nailing must be in accordance with the recommended nailing schedule contained in AWC WFCM. Where detailed nailing requirements are not specified, nail size and spacing must be sufficient to develop an adequate strength for the connection. The connection's strength must be verified against the nail capacity tables in AWC NDS. Reasonable judgment backed by experience must ensure that the designed connection will not cause the wood to split. If a load situation exceeds a reasonable limit for nails, a specialized connector must be used.

2.6.7 Wire Nails

ASTM F1667/F1667M.

2.6.8 Metal Bridging

Where not indicated or specified otherwise, No. 16 U.S. Standard gage, cadmium-plated or zinc-coated.

2.6.9 Metal Framing Anchors

Construct anchors to the configuration shown using hot dip zinc-coated steel conforming to ASTM A653/A653M, G90. Except where otherwise shown, Steel must be not lighter than 18 gage. Special nails supplied by the manufacturer must be used for all nailing.

PART 3 EXECUTION

3.1 INSTALLATION

Do not install building construction materials that show visual evidence of biological growth.

Conform to AWC WFCM and install in accordance with the National Association of Home Builders (NAHB) Advanced Framing Techniques: Optimum Value Engineering, unless otherwise indicated or specified. Select lumber sizes to minimize waste. Fit rough carpentry, set accurately to the required lines and levels, and secure in place in a rigid manner. Provide adequate support as appropriate to the application, climate, and modulus of elasticity of the product. Spiking and nailing not indicated or specified otherwise must be in accordance with the Nailing Schedule contained in ICC IBC; perform bolting in an approved manner. Spikes, nails, and bolts must be drawn up tight.

3.1.1 Underlayment

Install underlayment over subfloor just prior to laying of RF shielding and protect from water and physical damage. Stagger end joints of underlayment with respect to each other, and stagger all joints with respect to paralleling panel joints in subfloor. Space panels 1/16 inch apart at ends and 1/8 inch apart at edges and at least 1/2 inch from concrete or masonry walls. Nail panels 6 inches o.c. along edges and 6 inches o.c. each way throughout panel, but not closer than 3/8 inch to panel edges. Nails must be 4-penny annular ring or screw type and must be countersunk 1/16 inch. Lightly sand all joints to receive RF Shielding.

3.1.2 Wall Sheathing

3.1.2.1 Gypsum Sheathing Board

Apply gypsum sheathing board either horizontally or vertically. Butt joints and locate over the centerlines of supports. Horizontally applied sheathing must be T&G, applied with tongued edge up. Stagger vertical joints and abut sheet closely to frames of openings. Nail sheathing with 11 gage, 3/8 inch head, zinc-coated nails 1-1/2 inches long for 1/2 inch sheathing and 1-3/4 inches long for 5/8 inch sheathing, spaced 3/8 inch minimum from edges. Provide 2 by 4 blocking for horizontal edges of 4 foot wide panels not otherwise supported.

- a. Gypsum Sheathing Board Used with Diagonal-Braced Framing: Sheathing must be either 2 or 4 feet wide. Apply sheathing 2 feet wide horizontally. Nail 4 inches maximum o.c. at edges and over intermediate bearings. Apply sheathing 4 feet wide either horizontally or vertically. Nail 4 inches maximum o.c. at edges and 8 inches maximum o.c. at intermediate bearings.
- b. Gypsum Sheathing Board Used with Unbraced Frames: Sheathing must be 4 feet wide and applied vertically. Extend sheathing over and nail to both sill and top plates. Nail 4 inches maximum o.c. at edges and 8 inches maximum o.c. at intermediate bearings.

3.2 MISCELLANEOUS

3.2.1 Rough Wood Bucks

Size as indicated. Set wood bucks true and plumb. Anchor bucks to concrete or masonry with steel straps extending into the wall 8 inches minimum. Place anchors near the top and bottom of the buck and space uniformly at 2 foot maximum intervals.

3.2.2 Wood Blocking

Provide proper sizes and shapes at proper locations for the installation and attachment of wood and other finish materials, fixtures, equipment, and items indicated or specified.

3.2.3 Temporary Closures

Provide with hinged doors and padlocks and install during construction at exterior doorways and other ground level openings that are not otherwise closed. Cover windows and other unprotected openings with polyethylene or other approved material, stretched on wood frames. Provide dustproof barrier partitions to isolate areas as directed.

3.3 WASTE MANAGEMENT OF WOOD PRODUCTS

In accordance with the Waste Management Plan and as specified. Separate and reuse scrap sheet materials larger than 2 square feet, and multiple offcuts of any size larger than 12 inches. Clearly separate damaged wood and other scrap lumber for acceptable alternative uses on site, including bracing, blocking, cripples, ties, and shims.

Fold up metal banding, flatten, and recycle.

Separate treated, stained, painted, and contaminated wood and place in designated area for hazardous materials. Dispose of according to local regulations. Do not leave any wood, shavings, sawdust, or other wood waste buried in fill or on the ground. Prevent sawdust and wood shavings from entering the storm drainage system. Do not burn scrap lumber that has been pressure treated, or lumber that is less than one year old.

-- End of Section --

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SECTION 06 12 13

SUBFLOOR PANEL
11/24

PART 1 GENERAL

1.1 SUMMARY

Description of Work: Work of this Section includes, but is not limited to, the following:

1. Framing
2. Fasteners
3. Underlayment and floor coverings
4. Sound attenuation materials

1.2 RELATED WORK SPECIFIED ELSEWHERE

See Section 05 40 00, Cold-Formed Metal Framing

See Section 06 10 00, Rough Carpentry

1.3 SYSTEM DESCRIPTION

Structural Panels are a high-strength reinforced concrete panel typically for use in noncombustible construction, as required by the applicable building codes. Adhesives are not recommended, nor required. Panels are compatible with raised access floor system.

1.4 REFERENCES

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

ICC EVALUATION SERVICE, INC. (ICC-ES)

ICC-ES AC318	Acceptance Criteria for Structural Cementitious Floor and Roof Sheathing Panels

ASTM INTERNATIONAL (ASTM)

ASTM C1185	(2016)Standard Test Methods for Sampling and Testing Non-Asbestos Fiber-Cement Flat Sheet, Roofing and Siding Shingles, and Clapboards

ASTM D1037	(2012; R 2020) Standard Test Methods for Evaluating Properties of Wood-Base Fiber and Particle Panel Materials

ASTM D3273	(2021) Standard Test Method for Resistance to Growth of Mold on the Surface of

Interior Coatings in an Environmental Chamber

ASTM E84	(2023) Standard Test Method for Surface Burning Characteristics of Building Materials
ASTM E119	(2022) Standard Test Methods for Fire Tests of Building Construction and Materials
ASTM E136	(2024b) Standard Test Method for Assessing Combustibility of Materials Using a Vertical Tube Furnace at 750 Degrees C

1.5 SYSTEM REQUIREMENTS

1.5.1 Performance Requirements

Fabricate and install systems as indicated:

1. Panel Layout:

- a. Follow the 3/4" Panels application described in the current ICC-ES Evaluation Report ESR-1792.

1.5.2 Fire Resistance Ratings

Where fire resistance classifications are indicated, provide materials and application procedures identical to those listed by UL or tested according to ASTM E119 for type of construction shown.

1.5.3 Noncombustible Ratings

Where noncombustible assemblies are required, provide materials and application procedures identical to those tested according to ASTM E136, "Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750 °C.

1.6 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for Contractor Quality Control approval. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-03 Product Data

Product Data; G, AE

SD-08 Manufacturer's Instructions

Material Safety Data; G

SD-10 Operation and Maintenance Data

Maintenance Manuals; G

1.7 DELIVERY, STORAGE AND HANDLING

1.7.1 Delivery

- A. Deliver material to site promptly without undue exposure to weather.
- B. Deliver in manufacturer's unopened containers, pallets, or panels fully identified with name, Brand, type, and grade.

1.7.2 Storage

- A. Store above ground in dry, ventilated space.
- B. Protect materials from soiling, exposure, and damage.
- C. If stored outside, material shall be covered with waterproof tarps.
- D. Panels must be stored over stable soil or other surface. Soil or surface must be able to carry the load of the stored pallet(s). Each 20-piece pallet weights 3,500 lbs. It is recommended that the load carrying capacity of the floor or surface be verified before storing panels.
- E. Pallets must not be stacked out of alignment by more than +/- 1/2", measured on any side of the pallet.

1.8 PROJECT CONDITIONS

Environmental Requirements:

- 1. When mechanically fastened, do not install 3/4" Panels when ambient or conditioned temperature is below 0 °F.
- 2. Prior to the application of finished flooring, 3/4" Panels must be conditioned at the same temperature as required for the finished flooring for at least 48 hours.
- 3. Do not apply finished flooring over 3/4" Panels when wet, frozen or with surface frost.

PART 2 PRODUCTS

2.1 PRODUCTS AND MANUFACTURERS

Structural Concrete Panel: Listed products establish standard of quality.

2.2 MATERIALS

2.2.1 Structural Concrete Panel

3/4" Structural Panels, a noncombustible structural subfloor panel manufactured in accordance with Acceptance Criteria ICC-ES AC318. Submit Product Data, Material Safety Data, and Maintenance Manuals for structural panels.

- A. Panel Dimensions:

- i. Thickness: 3/4"
- ii. Width: 4'
- iii. Lengths: 8'
- iv. Long Edges: Tongue and Groove

B. Panel Properties:

- i. Density: 75 lb/ft³ tested in accordance with ASTM C1185
- ii. Weight: 5.0 lbs/ft² tested in accordance with ASTM D1037 at a thickness of 3/4"
- iii. Noncombustibility: Pass tested in accordance with ASTM E136
- iv. Surface Burning Characteristics: 0 Flame Spread / 0 Smoke Developed tested in accordance with ASTM E84
- v. Mold Resistance: 10 tested in accordance with ASTM D3273
0 tested in accordance with G21.

2.2.2 Floor Coverings and Underlayment

Follow floor covering manufacturers' installation procedures.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine substrates, adjoining construction and conditions under which Work is to be installed. Do not proceed with Work until unsatisfactory conditions are corrected.

3.2 GENERAL INSTALLATION REQUIREMENTS

3.2.1 3/4" Panels

- 1. This product may contain respirable crystalline silica. Refer to OSHA Rule 29 CFR 1926.1153 for specific details about limiting worker exposure to respirable silica.
- 2. The panels shall be cut to size with a circular saw equipped with carbide-tipped cutting blade and a dry dust industrial HEPA vacuum collection device for control of dust and silica. Wear safety glasses and a NIOSH-approved dust mask when cutting the panel. Collected dust shall be disposed in a safe manner and in compliance with local, state, and federal ordinances.
- 3. Coordinate panel layout with raised access floor pedestal layout.
- 4. Ensure that substrate are free of debris before placing panels. Cut panels to length as needed.
- 5. In accordance with raised access floor manufacturer instructions, panels are not to be fastened or adhered. Avoid penetration through panel to prevent damage to RF Foil and substrate below.

6. Construction Traffic Protection - prior to floor finishing, place minimum 3/8" thick plywood sheathing materials on the floor in high traffic areas over newly installed 3/4" Panels (i.e., additional 3/4" Panels or plywood). 1/4" plywood may be used in lieu of 3/8" material provided it is fastened at all four corners to prevent shifting and curling. Thicker protecting material may be required if heavier loads are expected or work is to be performed that may damage installed 3/4" Panels.

3.2.2 Floor Finish

1. Leftover material shall be removed from the job site.
2. Remove all foreign material from the floor surface and vacuum all dust from the surface.
3. If required butt joints and T&G joints shall be filled with an elastomeric patching compound .
4. If 3/4" Panels are left bare in extremely light traffic areas, it is recommended that you seal the panels with a concrete sealer to seal the porous surface.

-- End of Section --

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SECTION 06 41 16.00 10

PLASTIC-LAMINATE-CLAD ARCHITECTURAL CABINETS

08/10, CHG 1: 11/18

PART 1 GENERAL

1.1 REFERENCES

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

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI A161.2 (1998) Decorative Laminate Countertops,
Performance Standards for Fabricated High
Pressure

ASTM INTERNATIONAL (ASTM)

ASTM F547 (202) Standard Terminology of Nails for
Use with Wood and Wood-Base Materials

BUILDERS HARDWARE MANUFACTURERS ASSOCIATION (BHMA)

ANSI/BHMA A156.9 (2020) Cabinet Hardware

COMPOSITE PANEL ASSOCIATION (CPA)

CPA A208.2 (2016) Medium Density Fiberboard (MDF) for
Interior Applications

GREEN SEAL (GS)

GS-36 (2013) Adhesives for Commercial Use

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

ANSI/NEMA LD 3 (2005) Standard for High-Pressure
Decorative Laminates

SCIENTIFIC CERTIFICATION SYSTEMS (SCS)

SCS SCS Global Services (SCS) Indoor Advantage

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT (SCAQMD)

SCAQMD Rule 1168 (2017) Adhesive and Sealant Applications

U.S. GREEN BUILDING COUNCIL (USGBC)

LEED BD+C (2009; R 2010) Leadership in Energy and
Environmental Design(tm) Building Design
and Construction (LEED-NC)

UL ENVIRONMENT (ULE)

ULE Greenguard

UL Greenguard Certification Program

WINDOW AND DOOR MANUFACTURERS ASSOCIATION (WDMA)

ANSI/WDMA I.S.1A

(2013) Interior Architectural Wood Flush
Doors

WOODWORK INSTITUTE (WI)

NAAWS 3.1

(2017; 2018 Errata Edition) North American
Architectural Woodwork Standards

1.2 SYSTEM DESCRIPTION

Work in this section includes laminate clad custom casework cabinets and vanities as shown on the drawings and as described in this specification. This Section includes high-pressure laminate surfacing and cabinet hardware. Comply with EPA requirements in accordance with Section 01 33 29 SUSTAINABILITY REQUIREMENTS AND REPORTING. Sand smooth and apply a clear finish of polyurethane to all exposed and semi-exposed surfaces, whose finish is not otherwise noted on the drawings or finish schedule. Wood finish may be shop finished or field applied in accordance with Section 09 90 00 PAINTS AND COATINGS.

1.3 SUSTAINABILITY REPORTING

Materials in this technical specification may contribute towards contract compliance with sustainability requirements. See Section 01 33 29 SUSTAINABILITY REQUIREMENTS AND REPORTING for project LEED BD+C local/regional materials, low-emitting materials, recycled content, certified wood and rapidly renewable materials LEED documentation requirements.

1.4 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Shop Drawings; G, AE
Installation; G

SD-03 Product Data

Wood Materials; G
Wood Finishes; G
Finish Schedule; G
Certification

SD-04 Samples

Plastic Laminates; G, AE

Cabinet Hardware; G, AE

SD-07 Certificates

Quality Assurance; G
Laminate Clad Casework; G

SD-11 Closeout Submittals

LEED Documentation; S

1.5 QUALITY ASSURANCE

1.5.1 General Requirements

Unless otherwise noted on the drawings, furnish all materials, construction methods, and fabrication conforming to and complying with the premium grade quality standards as outlined in NAAWS 3.1, Section for laminate clad cabinets. These standards apply in lieu of omissions or specific requirements in this specification. Contractors and their personnel engaged in the work must be able to demonstrate successful experience with work of comparable extent, complexity and quality to that shown and specified. Submit a quality control statement which illustrates compliance with and understanding of NAAWS 3.1 requirements, in general, and the specific NAAWS 3.1 requirements provided in this specification. The quality control statement must also certify a minimum of ten years Contractor's experience in laminate clad casework fabrication and construction. Provide a list of a minimum of five successfully completed projects of a similar scope, size, and complexity in the quality control statement.

1.5.2 Sustainable Design Certification

Product must be third party certified in accordance with ULE Greenguard Gold, SCS Scientific Certification Systems Indoor Advantage Gold or equal. Perform certification annually and keep current.

1.6 DELIVERY, STORAGE, AND HANDLING

Casework may be delivered knockdown or fully assembled. Deliver all units to the site in undamaged condition, stored off the ground in fully enclosed areas, and protected from damage. Ventilate the storage area and do not subject to extreme changes in temperature or humidity.

1.7 SEQUENCING AND SCHEDULING

Coordinate work with other trades. Do not install units in any room or space until painting, and ceiling installation are complete within the room where the units are located. Install floor cabinets before finished flooring materials are installed.

PART 2 PRODUCTS

2.1 WOOD MATERIALS

2.1.1 Lumber

- a. Provide kiln-dried Grade III framing lumber to dimensions as shown on the drawings. Frame front, where indicated on the drawings, must be

nominal 3/4 inch hardwood.

2.1.2 Panel Products

2.1.2.1 Plywood

Use veneer core hardwood plywood, NAAWS 3.1 Grade AA panels for framing purposes. Indicate nominal thickness of plywood panels in this specification and on the drawings.

2.1.2.2 Medium Density Fiberboard

Medium density fiberboard (MDF) must be an acceptable panel substrate where noted on the drawings. Provide medium density fiberboard meeting the minimum standards listed in CPA A208.2.

2.2 SOLID POLYMER MATERIAL

Provide solid surfacing casework components in conformance to the requirements of Section 06 61 16 SOLID SURFACING FABRICATIONS.

2.3 HIGH PRESSURE DECORATIVE LAMINATE (HPDL)

Provide plastic laminates meeting the requirements of ANSI/NEMA LD 3 and ANSI A161.2 for high-pressure decorative laminates. Indicate design, colors, surface finish and texture, and locations on the drawings. Submit two samples of each plastic laminate pattern and color. Samples less than 5 by 7 inches in size are not acceptable. Provide plastic laminate types and nominal minimum thicknesses for casework components as indicated in the following paragraphs.

2.3.1 Vertical General Purpose Standard (VGS) Grade

Provide vertical general purpose standard grade plastic laminate that is 0.028 inches (plus or minus 0.004 inches) in thickness. This laminate grade is intended for exposed exterior vertical surfaces of casework components where postforming is not required.

2.3.2 Cabinet Liner Standard (CLS) Grade

Provide cabinet liner standard grade plastic laminate that is 0.020 inches in thickness. This laminate grade is intended for light duty semi-exposed interior surfaces of casework components.

2.3.3 Backing Sheet (BK) Grade

Undecorated backing sheet grade laminate is formulated specifically to be used on the backside of plastic laminated panel substrates to enhance dimensional stability of the substrate. Backing sheet thickness must be 0.020 inches. Provide backing sheets for all laminated casework components where plastic laminate finish is applied to only one surface of the component substrate.

2.4 THERMOSET DECORATIVE OVERLAYS (MELAMINE)

Use thermoset decorative overlays (melamine panels) for casework cabinet interior, and drawer interior surfaces.

2.5 EDGE BANDING

Provide PVC vinyl, 0.125 inch thick, edge banding for casework doors and drawer fronts. Material width must be 15/16 inches. Color and pattern must match exposed door and drawer front laminate pattern and color.

2.6 CABINET HARDWARE

Provide hardware conforming to ANSI/BHMA A156.9, unless otherwise noted, and consisting of the following components:

2.6.1 Door Hinges

Concealed type, Hinge Type 13, nickel plated finish.

2.6.2 Cabinet Pulls

Stainless Steel Bar Pulls, see material finish drawing.

2.6.3 Drawer Slide

Side mounted zinc coated, 12 inch ball bearing drawer slides with full extension and a minimum 100 pound load capacity. Include an integral stop to avoid accidental drawer removal.

2.6.4 Adjustable Shelf Support System

Recessed (mortised) metal standards, BHMA No. B04071, finish: Nickel-plated. Support clips for the standards must be open type, BHMA No. B04091, finish: Nickel-plated.

2.7 FASTENERS

Provide nails, screws, and other suitable fasteners that are the size and type best suited for the purpose and conforming to ASTM F547 where applicable.

2.8 ADHESIVES, CAULKS, AND SEALANTS

2.8.1 Adhesives

Use formula and type of adhesives recommended by AWI. Select adhesives for their ability to provide a durable, permanent bond and take into consideration such factors as materials to be bonded, expansion and contraction, bond strength, fire rating, and moisture resistance. Meet local regulations regarding VOC emissions and off-gassing. All adhesives shall meet SCAQMD Rule 1168 and GS-36.

2.8.1.1 Wood Joinery

Use Type II for interior use urea-formaldehyde resin formula or polyvinyl acetate resin emulsion adhesives to bond wood members. Adhesives must withstand a bond test as described in ANSI/WDMA I.S.1A.

2.8.1.2 Laminate Adhesive

Adhesive used to join high-pressure decorative laminate to wood must be adhesive consistent with AWI and laminate manufacturer's recommendations. Adhere PVC edgebanding using a polymer-based hot melt glue.

2.8.2 Caulk

Use clear, 100 percent silicone caulk to fill voids and joints between laminated components and between laminated components and adjacent surfaces.

2.8.3 Sealant

Use sealant recommended by the substrate manufacturer to provide a moisture barrier at sink cutouts and all other locations where unfinished substrate edges may be subjected to moisture.

2.9 WOOD FINISHES

Paint, stain, varnish and perform applications required for laminate clad casework components as indicated on the material finish schedule drawing. Indicate color and location on the drawings.

2.10 FABRICATION

Verify field measurements as indicated in the shop drawings before fabrication. Accomplish fabrication and assembly of components at the shop site to the maximum extent possible. Meet or exceed the requirements for AWI premium grade unless otherwise indicated in this specification. Make cabinet style, in accordance with NAAWS 3.1, Section 400-G descriptions, and as indicated on the drawings.

2.10.1 Base and Wall Cabinet Case Body

2.10.1.1 Cabinet Components

Use frame members that are glued-together, kiln-dried hardwood lumber. Brace top corners, bottom corners, and cabinet bottoms with either hardwood blocks or water-resistant glue and nailed in place metal or plastic corner braces. Construct cabinet components from the following materials and thicknesses:

2.10.1.1.1 Body Members (Ends, Divisions, Bottoms, and Tops)

3/4 inch plywood or medium density fiberboard (MDF) panel product

2.10.1.1.2 Face Frames and Rails

3/4 inch hardwood lumber or panel product

2.10.1.1.3 Shelving

3/4 inch medium density fiberboard (MDF) or veneer core plywood panel product

2.10.1.1.4 Cabinet Backs

1/4 inch plywood or medium density fiberboard (MDF) panel product

2.10.1.1.5 Drawer Sides, Backs, and Subfronts

1/2 inch panel product

2.10.1.1.6 Drawer Bottoms

1/4 inch plywood or medium density fiberboard (MDF) panel product

2.10.1.1.7 Door and Drawer Fronts

3/4-inch plywood or medium density fiberboard (MDF) panel product

2.10.1.2 Joinery Method for Case Body Members

2.10.1.2.1 Tops, Exposed Ends, and Bottoms

- a. Steel "European" assembly screws (1-1/2 inch from end, 5 inch on center, fasteners will not be visible on exposed parts).
- b. Doweled, glued under pressure (approx. 4 dowels per 12 inches of joint).

2.10.1.2.2 Exposed End Corner and Face Frame Attachment

2.10.1.2.2.1 Mitered Joint

lock miter or spline or biscuit, glued under pressure (no visible fasteners)

2.10.1.2.2.2 Non-Mitered Joint (90 degree)

butt joint glued under pressure (no visible fasteners)

2.10.1.2.3 Cabinet Backs (Wall Hung Cabinets)

Wall hung cabinet backs must not be relied upon to support the full weight of the cabinet and its anticipated load for hanging/mounting purposes. Method of back joinery and hanging/mounting mechanisms should transfer the load to case body members. Use the following fabrication method:

2.10.1.2.3.1 Full Overlay

Full overlay, plant-on backs with minimum back thickness of 1/2 inch and minimum No. 12 plated (no case hardened) screws spaced a minimum 3 inches on center. Do not expose edge of back on finished sides. Anchor strips are not required when so attached.

2.10.1.2.4 Cabinet Backs (Floor Standing Cabinets)

2.10.1.2.4.1 Side Bound

Side bound, captured in grooves; glued and fastened to top and bottom.

2.10.1.2.4.2 Full Overlay

Full overlay, plant-on backs with minimum back thickness of 1/2 inch and minimum No. 12 plated (no case hardened) screws spaced a minimum 3 inches on center. Do not expose edge of back on finished sides. Anchor strips are not required when so attached.

2.10.2 Cabinet Floor Base

Mount floor cabinets on a base constructed of 3/4 inch fiberboard or 3/4

inch veneer core exterior plywood. Provide base assembly components that are treated lumber or a moisture-resistant panel product. Make finished height for each cabinet base as indicated on the drawings. Make bottom edge of the cabinet door or drawer face flush with top of base as indicated on the drawings.

2.10.3 Cabinet Door and Drawer Fronts

Fabricate door and drawer fronts from 3/4 inch medium density plywood or 3/4 inch medium density fiberboard (MDF). Surface all door and drawer front edges with high pressure plastic laminate and PVC edgebanding, color and pattern to match exterior face laminate as indicated on the material finish schedule drawing.

2.10.4 Drawer Assembly

2.10.4.1 Drawer Components

Provide drawer components consisting of a removable drawer front, sides, backs, and bottom. Construct drawer components of the following materials and thicknesses:

2.10.4.1.1 Drawer Sides and Backs For Transparent Finish

1/2 inch thick 7-ply hardwood veneer core plywood (no voids), any species

2.10.4.1.2 Drawer Sides and Backs For Laminate Finish

1/2 inch thick 7-ply hardwood veneer core substrate

2.10.4.1.3 Drawer Sides and Back For Thermoset Decorative Overlay (Melamine) Finish

1/2 inch thick plywood or MDF fiberboard substrate

2.10.4.1.4 Drawer Bottom

1/4 inch thick veneer core panel product for transparent or plastic laminate finish or thermoset decorative overlay melamine panel product

2.10.4.2 Drawer Assembly Joinery Method

- a. Multiple dovetail (all corners) or French dovetail front/dadoed back, glued under pressure.
- b. Doweled, glued under pressure.

Set bottoms into sides, front, and back, 1/4 inch deep groove with a minimum 3/8 inch standing shoulder.

2.10.5 Shelving

2.10.5.1 General Requirements

Fabricate shelving from 3/4 inch medium density fiberboard (MDF or 3/4 inch veneer core plywood). Finish all shelving top and bottom surfaces with HPDL plastic laminate. Finish shelf edges in a HPDL plastic laminate or PVC edgebanding.

2.10.5.2 Shelf Support System

The shelf support system is as follows:

2.10.5.2.1 Recessed (Mortised) Metal Shelf Standards

Mortise standards flush with the finishes surface of the cabinet interior side walls, two per side. Position and space standards on the side walls to provide a stable shelf surface that eliminates tipping when shelf front is weighted. Install and adjust standards vertically to provide a level, stable shelf surface when clips are in place.

2.10.6 Laminate Application

Apply laminate to substrates following the recommended procedures and instructions of the laminate manufacturer and ANSI/NEMA LD 3, using tools and devices specifically designed for laminate fabrication and application. Provide a balanced backer sheet (Grade BK) wherever only one surface of the component substrate requires a plastic laminate finish. Apply required grade of laminate in full uninterrupted sheets consistent with manufactured sizes using one piece for full length only, using adhesives specified herein or as recommended by the manufacturer. Fit corners and joints hairline. Machined flush, file, sand, or buff all laminate edges to remove machine marks and ease (sharp corners removed). Clean up at easing must be such that no overlap of the member eased is visible. Perform fabrication in conformance to ANSI A161.2. Provide laminate types and grades for component surfaces as follows unless otherwise indicated on the drawings:

2.10.6.1 Base/Wall Cabinet Case Body

- a. Exterior (exposed) surfaces to include exposed and semi-exposed face frame surfaces: HPDL Grade VGS.
- b. Interior (semi-exposed) surfaces to include interior back wall, bottom, and side walls: HPDL Grade CLS or Thermoset Decorative Overlay (melamine).

2.10.6.2 Adjustable Shelving

2.10.6.2.1 Top and Bottom Surfaces

HPDL Grade HGS or Thermoset Decorative Overlay (melamine)

2.10.6.3 Fixed Shelving

2.10.6.3.1 Top and Bottom Surfaces

HPDL Grade HGS or Thermoset Decorative Overlay (melamine)

2.10.6.3.2 Exposed Edges

HPDL Grade VGS or PVC edgebanding

2.10.6.4 Door, Drawer Fronts, Access Panels

2.10.6.4.1 Exterior (Exposed) and Interior (Semi-Exposed) Faces

HPDL Grade VGS

2.10.6.5 Drawer Assembly

All interior and exterior surfaces: HPDL Grade CLS or Thermoset Decorative Overlay (melamine).

2.10.6.6 Tolerances

Meet the NAAWS 3.1 premium grade requirements for flushness, flatness, and joint tolerances of laminated surfaces.

2.10.7 Finishing

2.10.7.1 Filling

Do not expose fasteners on laminated surfaces. Make all nails, screws, and other fasteners in non-laminated cabinet components countersunk and fill the holes with wood filler consistent in color with the wood species.

2.10.7.2 Sanding

Prepare all surfaces requiring coatings by sanding with a grit and in a manner that scratches will not show in the final system.

2.10.7.3 Coatings

Types, method of application and location of casework finishes must be in accordance with the finish schedule, drawings and Section 09 90 00 PAINTS AND COATINGS. Paint all cabinet reveals. Submit descriptive data which provides narrative written verification of all types of construction materials and finishes, methods of construction, etc. not clearly illustrated on the submitted shop drawings. Provide written verification of conformance with NAAWS 3.1 for the quality indicated to include materials, tolerances, and types of construction. Both the manufacturer of materials and the fabricator must submit available literature which describes re-cycled product content, operations and processes in place that support efficient use of natural resources, energy efficiency, emissions of ozone depleting chemicals, management of water and operational waste, indoor environmental quality, and other production techniques supporting sustainable design and products.

PART 3 EXECUTION

3.1 INSTALLATION

Installation must comply with applicable requirements for NAAWS 3.1 premium quality standards. Install countertops and fabricated assemblies level, plumb, and true to line, in locations shown on the drawings. Attach and securely anchor cabinets and other laminate clad casework assemblies to the floor and walls with mechanical fasteners that are appropriate for the wall and floor construction.

3.1.1 Anchoring Systems

3.1.1.1 Floor

Utilize a floor anchoring system as detailed on the drawings for base cabinets. Anchoring and mechanical fasteners must not be visible from the finished side of the casework assembly. Attach cabinet assemblies to

anchored bases without visible fasteners as indicated in the drawings. Where assembly abuts a wall surface, include a minimum 1/2 inch thick lumber or panel product hanging strip, minimum 2-1/2 inch width; securely attached to the top of the wall side of the cabinet back.

3.1.1.2 Wall

Utilize minimum 1/2 inch thick lumber or panel product hanging strips, minimum 2-1/2 inch width to wall mount cabinet and vanity; securely attach to the wall side of the cabinet back, both top and bottom.

3.1.2 Countertops

Install countertops in locations as indicated on the drawings. Countertops shall be installed in accordance with the requirements of Section 06 61 16 SOLID SURFACING FABRICATIONS.

3.1.3 Hardware

Install casework hardware in types and locations as indicated on the drawings. Where fully concealed European-style hinges are specified to be used with particleboard or fiberboard doors, use plastic or synthetic insertion dowels to receive 3/16 inch "Euroscrews". The use of wood screws without insertion dowels is prohibited.

3.1.4 Doors, Drawers and Removable Panels

Accomplish the fitting of doors, drawers and removable panels within target fitting tolerances for gaps and flushness in accordance with NAAWS 3.1 premium grade requirements.

3.1.5 Plumbing Fixtures

Install sinks, sink hardware, and other plumbing fixtures in locations as indicated on the drawings and in accordance with Section 22 00 00 PLUMBING, GENERAL PURPOSE.

-- End of Section --

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SECTION 06 61 16

SOLID SURFACING FABRICATIONS
08/20

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 C920	(2018) Standard Specification for Elastomeric Joint Sealants
ASTM D570	(1998; E 2010; R 2010) Standard Test Method for Water Absorption of Plastics
ASTM D638	(2014) Standard Test Method for Tensile Properties of Plastics
ASTM D696	(2016) Standard Test Method for Coefficient of Linear Thermal Expansion of Plastics Between -30 degrees C and 30 degrees C With a Vitreous Silica Dilatometer
ASTM D790	(2017) Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials
ASTM D2583	(2013a) Indentation Hardness of Rigid Plastics by Means of a Barcol Impressor
ASTM E84	(2023) Standard Test Method for Surface Burning Characteristics of Building Materials
ASTM G21	(2015; R 2021; E 2021) Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi

CALIFORNIA DEPARTMENT OF PUBLIC HEALTH (CDPH)

CDPH SECTION 01350	(2017; Version 1.2) Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources using Environmental Chambers

CSA GROUP (CSA)

CSA B45.5-17/IAPMO Z124	(2017; Errata 2017; Errata 2018) Plastic Plumbing Fixtures

INTERNATIONAL CAST POLYMER ASSOCIATION (ICPA)

ICPA SS-1 (2001) Performance Standard for Solid
Surface Materials

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

ANSI/NEMA LD 3 (2005) Standard for High-Pressure
Decorative Laminates

NSF INTERNATIONAL (NSF)

NSF/ANSI 51 (2023) Food Equipment Materials

1.2 SYSTEM DESCRIPTION

- a. Work under this section includes items utilizing solid surfacing material fabrications as indicated on the drawings and as described in this specification. Do not change source of supply for materials after work has started, if the appearance of finished work would be affected.
- b. In most instances, installation of solid surfacing material fabricated components and assemblies requires strong correctly located structural support provided by other trades. To provide a stable, sound, secure installation, close coordination is required between the solid surfacing material fabricator/installer and other trades to ensure that necessary structural wall support, cabinet counter top structural support, proper clearances, and other supporting components are provided for the installation of wall panels, counter tops, shelving, and all other solid surfacing material fabrications to the degree and extent recommended by the solid surfacing material manufacturer.
- c. Provide appropriate staging areas for solid surfacing material fabrications. Allow variation in component size and location of openings of plus or minus 1/8 inch.

1.3 SYSTEM DESCRIPTION

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- c. Provide appropriate staging areas for solid surfacing material fabrications. Allow variation in component size and location of openings of plus or minus 1/8 inch.

1.4 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Installation; G

SD-03 Product Data

Solid Polymer; G

Indoor air quality for solid surface seam and sealant products; S

SD-04 Samples

Material; G

Counter Tops; G

SD-06 Test Reports

Test Report Results

SD-07 Certificates

Qualifications

Indoor Air Quality for solid surface fabrication products; S

SD-10 Operation and Maintenance Data

Solid Polymer, Data Package 1; G

1.5 QUALITY ASSURANCE

1.5.1 Qualifications

To ensure warranty coverage, provide manufacturer certified solid surfacing fabricators to fabricate the solid surfacing material being utilized. Mark all fabrications with the fabricator's certification label affixed in an inconspicuous location. Minimum of 5 years of experience working with solid surfacing materials is required of fabricators. Submit solid surfacing material manufacturer's certification attesting to fabricator qualification approval.

1.6 DELIVERY, STORAGE, AND HANDLING

Do not deliver materials to project site until areas are ready for installation. Deliver components and materials to the site undamaged, in containers clearly marked and labeled with manufacturer's name. Store materials indoors and take adequate precautions to prevent damage to finished surfaces. Provide protective coverings to prevent physical

damage or staining following installation, for duration of project.

1.7 WARRANTY

Provide manufacturer's warranty to repair or replace defective materials, excluding damages caused by physical or chemical abuse or excessive heat, and workmanship for a period of 10 years from date of final acceptance of the work.

PART 2 PRODUCTS

2.1 MATERIAL

Submit detail fabrication drawings and installation drawings of each solid surfacing fabrication indicated. Include elevations, dimensions, clearances, details of construction and anchorage, and details of joints and connections.

Submit manufacturers' descriptive product data for each type of solid polymer fabrication indicated. Include manufacturers' literature, finishes, profiles and thicknesses of materials.

Submit manufacturers' operations and maintenance data for each type of solid polymer fabrication in accordance with Section 01 78 23 OPERATIONS AND MAINTENANCE DATA.

2.1.1 Solid Surfacing Material

Provide solid polymer that is a homogeneous filled solid polymer; not coated, laminated or of a composite construction, complying with ICPA SS-1. Provide material that meets or exceeds the minimum physical and performance properties specified. Superficial damage to a depth of 0.01 inch must be repairable by sanding or polishing. Material thickness is as indicated on the drawings; required minimum thickness is 1/4 inch. Submit a minimum 4 inch by 4 inch sample of each color and pattern for approval; include full range of color and pattern variation. Retain approved samples as a standard for this work. Submit test report results from an independent testing laboratory attesting that the submitted solid surfacing materials meet or exceed each of the specified performance requirements.

a. Horizontal Surfaces: 1/2 inch thick material

Provide materials that meet the emissions requirements of CDPH SECTION 01350 (limit requirements for either office or classroom spaces regardless of space type). Provide certification or validation of indoor air quality for solid surface fabrication products.

2.1.2 Acrylic-modified Polymer Solid Surfacing Material

Cast, solid polymer material composed of a formulation containing acrylic and polyester polymers, mineral fillers, and pigments. Provide acrylic polymer content not less than 5 percent and not more than 10 percent in order to meet the following minimum performance requirements:

PROPERTY	REQUIREMENT (min. or max.)	TEST PROCEDURE
Tensile Strength	4100 psi (max.)	ASTM D638
Hardness	50-Barcol Impressor (min.)	ASTM D2583
Thermal Expansion	.000023 in/in/F (max.)	ASTM D696
Boiling Water Surface Resistance	No Change	ANSI/NEMA LD 3-3.05
High Temperature Resistance	No Change	ANSI/NEMA LD 3-3.06
Impact Resistance (Ball drop)		ANSI/NEMA LD 3-303
1/4 inch sheet	36 inches, 1/2 lb ball, no failure	
1/2 inch sheet	140 inches, 1/2 lb ball, no failure	
3/4 inch sheet	200 inches, 1/2 lb ball, no failure	
Mold & Mildew Growth	No growth	ASTM G21
Bacteria Growth	No growth	ASTM G21
Liquid Absorption (Weight in 24 hrs.)	0.6 percent max.	ASTM D570
Flammability		ASTM E84
Flame Spread	25 max.	
Smoke Developed	100 max.	
Sanitation	"Food Contact" approval	NSF/ANSI 51
Flexural Strength	6,800 psi (min.)	ASTM D790

2.1.3 Material Patterns and Colors

Provide pattern and color for all solid surfacing material components and fabrications as indicated on the material finish schedule drawing; colors listed are not intended to limit the selection of equal colors from other manufacturers. Provide products with consistent patterned color throughout thickness of the product.

2.1.4 Surface Finish

Provide a uniform appearance on exposed finished surfaces and edges. Exposed surface finish is matte; gloss rating of 5-20.

2.2 ACCESSORY PRODUCTS

Provide accessory products, as specified below, as manufactured by the solid surfacing material manufacturer or as approved by the solid surfacing material manufacturer for use with the solid surfacing materials being specified.

2.2.1 Adhesives

Provide a two-part seam adhesive kit to create permanent, inconspicuous, non-porous, hard seams and joints by chemical bond between solid surfacing materials and components to create a monolithic appearance of the fabrication. Provide adhesive approved by the solid surfacing material manufacturer. Color-match adhesive to the surfaces being bonded where solid-colored, solid surfacing materials are being bonded together. Provide clear or color matched seam adhesive where particulate patterned, solid surfacing materials are being bonded together.

2.2.2 Seam and Sealant Emissions

Provide seam and other accessory materials that meet the emissions requirements of CDPH SECTION 01350 (limit requirements for either office or classroom spaces regardless of space type). Provide validation of indoor air quality for solid surface seam and sealant products.

2.2.3 Silicone Sealant

Provide silicone sealant, mildew-resistant, single-component, nonsag, plus 25 percent and minus 25 percent movement capability, acid-curing; ASTM C920, Type S, Grade NS, Class 25, Use NT; clear formulation; approved for use by the solid surfacing material manufacturer.

2.2.4 Conductive Tape

Provide manufacturer's standard conductive foil tape, 4 mils thick, applied around the edges of cut outs containing hot or cold appliances.

2.2.5 Insulating Tape

Provide manufacturer's standard insulating tape for use with drop-in food wells used in commercial food service applications to insulate solid surfacing material from hot or cold appliances.

2.2.6 Heat Reflective Tape

Provide heat reflective tape as recommended by the solid surfacing material manufacturer for use with cutouts for heat sources.

2.2.7 Mounting Hardware

Provide mounting hardware, including sink/bowl clips, inserts and fasteners for attachment of undermount sinks and lavatories.

2.3 FABRICATIONS

Provide factory or shop fabricate components to sizes and shapes indicated, to the greatest extent practical, in accordance with approved Shop Drawings and manufacturer's requirements. Provide factory cutouts for sinks, lavatories, and plumbing fixtures where indicated on the drawings. Contours and radii must be routed to template, with edges smooth. Defective and inaccurate work will be rejected. Submit product data indicating product description, fabrication information, and compliance with specified performance requirements for solid surfacing material, joint adhesive, sealants, and heat reflective tape. Both the manufacturer of materials and the fabricator are required to submit a detailed description of operations and processes in place that support efficient use of natural resources, energy efficiency, emissions of ozone depleting chemicals, management of water and operational waste, indoor environmental quality, and other production techniques supporting sustainable design and products.

2.3.1 Joints and Seams

Form joints and seams between solid surfacing material components using manufacturer's approved seam adhesive. Provide inconspicuous joints in appearance without voids to create a monolithic appearance.

2.3.2 Edge Finishing

Rout and finish component edges to a smooth, uniform appearance and finish. Provide edge shapes and treatments, including any inserts, as detailed on the drawings. Rout all cutouts, then sand all edges smooth. Repair or reject defective or inaccurate work.

2.3.3 Counter Top Splashes

Fabricate backsplashes and end splashes from 1/2 inch thick solid surfacing material to be 4 inches high in conformance with dimensions and shapes as indicated on the drawings. Provide backsplashes and end splashes at locations indicated on the drawings. Shop fabricate backsplashes and provide loose, to be field attached.

2.3.3.1 End Splashes

Provide end splashes loose for installation at the jobsite after horizontal surfaces to which they are to be attached have been installed.

2.3.4 Counter Tops

Fabricate all solid surfacing material, counter top components from 3/4 inch thick material. Indicate details, dimensions, locations, and quantities on the drawings. Provide counter tops with 4 inch high loose as indicated on the drawings. Attach 2 inch wide reinforcing strip of solid surfacing material under each horizontal counter top seam. Submit a minimum 1 foot wide by 6 inch deep, full size sample for each type of counter top shown on the project drawings; include the edge profile and backsplash as detailed on the drawings and at least one seam. Retain approved sample as standard for this work. Provide bullnose edge profile.

2.3.4.1 Counter Tops with Sinks

Provide manufacturer's standard solid polymer sinks, pre-molded product

specifically designed for attachment to solid surfacing material counter tops. See paragraph SOLID POLYMER SINKS for additional requirements.

2.3.5 Solid Polymer Bowls

Provide solid polymer bowls that are a standard product of the solid polymer manufacturer, in compliance with CSA B45.5-17/IAPMO Z124 requirements, designed specifically to be installed in solid surfacing material counter tops. Provide bowls of the same polymer composition as the adjoining counter top. Bowl design must support a seam adhesive undermount or seam adhesive flush installation method. Bowl dimensions must be as indicated on the drawings.

PART 3 EXECUTION

3.1 INSTALLATION

3.1.1 Components

Install all components and fabricated units plumb, level, and rigid. Make field joints between solid surfacing material components using solid surfacing material manufacturer's approved seam adhesives, to provide a monolithic appearance with joints inconspicuous in the finished work. Attach metal or vitreous china sinks and lavatory bowls to counter tops using solid surfacing material manufacturer's recommended clear silicone sealant and mounting hardware. Install solid polymer sinks and bowls using a color-matched seam adhesive.

3.1.1.1 Loose Counter Top Splashes

Mount loose splashes in the locations noted on the drawings. Adhere loose splashes to the counter top with a color matched silicone sealant when the solid surfacing material components are solid colors. Use a clear silicone sealant to provide adhesion of particulate patterned solid surfacing material splashes to counter tops.

3.1.2 Silicone Sealant

Use specified silicone sealant to seal all expansion joints between solid surfacing material components and all joints between solid surfacing material components and other adjacent surfaces such as walls, floors, ceiling, and plumbing fixtures. Provide sealant bead smooth and uniform in appearance and minimum size necessary to bridge any gaps between the solid surfacing material and the adjacent surface. Provide continuous bead and run the entire length of the joint being sealed.

3.1.3 Plumbing

Make plumbing connections to sinks and lavatories in accordance with Section 22 00 00 PLUMBING, GENERAL PURPOSE.

3.2 CLEAN-UP

Components must be cleaned after installation and covered to protect against damage during completion of the remaining project items. Damaged components must be repaired or replaced at the Contractor's sole expense.

-- End of Section --

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