AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE	PAGE	OF	PAGES
J	1		2

2. AMENDMENT/MODIFICATION NUMBER	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQUISITION NUMBER	5. PROJECT NUMBER *(If applicable)*
0002	02 JUL 2026		572918

6. ISSUED BY	CODE	7. ADMINISTERED BY *(If other than Item 6)*	CODE
W076 ENDIST FT WORTH KO CONTRACTING DIVISION, 819 TAYLOR ST BOX 17300 FORT WORTH, TX 76102-6124 UNITED STATES CHRISTINE NORIEGA, EMAIL: CHRISTINE.NORIEGA@USACE.ARMY.MIL TELEPHONE: (817) 886-1104	W9126G	SCD: PAS:	

8. NAME AND ADDRESS OF CONTRACTOR *(Number, street, county, State and ZIP Code)*

CODE | FACILITY CODE

(X)

☒ 9A. AMENDMENT OF SOLICITATION NUMBER: W9126G26RA087

9B. DATED *(SEE ITEM 11)*: 17 JUN 2026

☐ 10A. MODIFICATION OF CONTRACT/ORDER NUMBER

10B. DATED *(SEE ITEM 13)*

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☒ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended. ☒ is not extended.

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing items 8 and 15, and returning 1 copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or electronic communication which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by letter or electronic communication, provided each letter or electronic communication makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA *(If required)*

SEE SECTION G - CONTRACT ADMINISTRATION DATA

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NUMBER AS DESCRIBED IN ITEM 14.

CHECK ONE	
☐	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: *(Specify authority)* THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NUMBER IN ITEM 10A.
☐	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES *(such as changes in paying office, appropriation data, etc.)* SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
☐	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
☐	D. OTHER *(Specify type of modification and authority)*

E. IMPORTANT: Contractor ☐ is not ☐ is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (*Organized by UCF section headings, including solicitation/contract subject matter where feasible.)*

Project: B90176 Hangar Door Expansion (HADES)

See SF 30 Continuation Page

Proposal due date remains unchanged: July 17, 2026., 2:00pm, CT

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER *(Type or print)*		16A. NAME AND TITLE OF CONTRACTING OFFICER *(Type or print)*	
15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA	16C. DATE SIGNED
(Signature of person authorized to sign)		*(Signature of Contracting Officer)*	

Previous edition unusable

STANDARD FORM 30 (REV. 11/2016)
Prescribed by GSA FAR (48 CFR) 53.243

SECTION SF 30 BLOCK 14 CONTINUATION PAGE

SUMMARY OF CHANGES

CHANGES TO SOLICITATION W9126G26RA087

CHANGES TO THE SPECIFICATIONS

1. New Sections - Add the following accompanying new sections, each bearing the notation W9126G26RA087-0002.

01 56 00.00 44	DUST CONTROL

2. Replacement Sections: Replace the following section with the accompanying new section of the same number and title bearing the notation W9126G26RA087-0002.

PROJECT TABLE OF CONTENTS
SUBMITTAL REGISTER

00 22 16	DESIGN-BID-BUILD SELECTION PROCEDURES
01 00 00.00 44	CONSTRUCTION SCHEDULE – (Reissuing section in its entirety to remove the duplication of the Div 00 specs, all DIV 00 requirements remain in affect.)
01 30 00	ADMINISTRATIVE REQUIREMENTS
01 35 10.00 44	SPECIAL PROJECT PROCEDURES FOR FORT HOOD FORMERLY KNOWN AS FORT CAVAZOS
01 50 00	TEMPORARY CONSTRUCTION FACILITIES AND CONTROLS
01 74 19	CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL
02 41 00	DEMOLITION
05 12 00	STRUCTURAL STEEL
05 50 13	MISCELLANEOUS METAL FABRICATIONS
05 51 33	METAL LADDERS
07 21 16	MINERAL FIBER BLANKET INSULATION
07 42 13	METAL WALL PANELS
07 60 00	FLASHING AND METAL DETAIL
07 92 00	JOINT SEALANTS
08 11 13	STEEL DOORS AND FRAMES
09 67 23.14	CHEMICAL RESISTANT RESINOUS FLOORING
26 20 00	INTERIOR DISTRIBUTION SYSTEM

2. Replacement Drawings: Replace the drawings listed below with the attached new drawings of the same number bearing notation W9126G26RA087-0002.

ALL DRAWINGS Changed the solicitation number

G-001	COVER SHEET – Revised solicitation number on sheet.
GC001	GENERAL CIVIL NOTES. update to Pollution Prevention Note 1
I-100	OVERALL FINISH FLOOR PLAN – Revision to epoxy repair to identify base contract requirements
I-114	OVERALL STRIPING PLAN – Revision to striping plan and general notes.
I-501	FINISH DETAILS - Revision to detail F1 Label
I-601	FINISH MATERIAL COLOR LEGEND – Revision to comment for CONC-1A
FP001	GENERAL FIRE PROTECTION INFORMATION – Revision Fire Protection General Note A.
PD100	DEMOLITION PLAN – PLUMBING – OVERALL - Deleted Plumbing General Note E
PD101	DEMOLITION PLAN – PLUMBING – AREA HB - Deleted Plumbing General Note E

PD102	DEMOLITION PLAN – PLUMBING – AREA HC - Deleted Plumbing General Note E
P-100	FLOOR PLAN – PLUMBING – OVERALL - Deleted Plumbing General Note E
P-101	FLOOR PLAN – PLUMBING – OVERALL - Deleted Plumbing General Note E
P-102	FLOOR PLAN – PLUMBING – OVERALL - Deleted Plumbing General Note E
P-301	PLUMBING SECTION – Deleted Plumbing General Note E
E-000	LEGEND, ABBREVIATIONS & NOTES - Revision to General Note 10
ED501	DEMO ELECTRICAL SCHEDULES – Added switchboard and panelboard information
E-101	FLOOR PLAN – POWER – OVERALL – Revision to General Note 1
E-501	ELECTRICAL SCHEDULES - Added switchboard and panelboard information
E-602	HANGAR DOOR ELECTRICAL LOAD DIAGRAM – Updated remark to Conduit & Conductor Schedule Table for Feeder 1A

3. Deleted Specifications: The sections listed below have been deleted the solicitation.

01 57 19	TEMPORARY ENVIRONMENTAL CONTROLS
01 58 00	PROJECT IDENTIFICATION
21 13 24.00 10	MILSPEC FLOURINE FREE FOAM (MFFF) FIRE PROTECTION SYSTEM

End of Summary of Changes

PROJECT TABLE OF CONTENTS

AMENDMENT 0002

DIVISION 00 - PROCUREMENT AND CONTRACTING REQUIREMENTS

00 00 01 SOLICITATION, OFFER AND AWARD, SF-1442
00 10 00 CONTRACT LINE ITEM SCHEDULE
00 21 00 INSTRUCTIONS
00 21 16 INSTRUCTIONS, CONDITIONS, AND NOTICES TO OFFERORS
00 22 00 SUPPLEMENTARY INSTRUCTIONS
00 22 16 DESIGN-BID-BUILD SELECTION PROCEDURES
00 45 00 REPRESENTATIONS AND CERTIFICATIONS
00 70 00 CONDITIONS OF THE CONTRACT
00 72 00 GENERAL CONDITIONS
00 73 00 SUPPLEMENTARY CONDITIONS

DIVISION 01 - GENERAL REQUIREMENTS

01 00 00.00 44 CONSTRUCTION SCHEDULE
01 01 10.00 44 AT/OPSEC
01 30 00 ADMINISTRATIVE REQUIREMENTS
01 32 01.00 10 PROJECT SCHEDULE
01 33 00 SUBMITTAL PROCEDURES
01 35 10.00 44 SPECIAL PROJECT PROCEDURES FOR FORT HOOD (FORMERLY KNOWN AS FORT CAVAZOS)
01 35 26 GOVERNMENTAL SAFETY REQUIREMENTS
01 42 00 SOURCES FOR REFERENCE PUBLICATIONS
01 45 00 QUALITY CONTROL
01 45 00.15 10 RESIDENT MANAGEMENT SYSTEM CONTRACTOR MODE (RMS CM)
01 45 35 SPECIAL INSPECTIONS
01 50 00 TEMPORARY CONSTRUCTION FACILITIES AND CONTROLS
<AM#0002> 01 56 00.00 44 DUST CONTROL
~~01 57 19 TEMPORARY ENVIRONMENTAL CONTROLS~~
~~01 58 00 PROJECT IDENTIFICATION~~ </AM#0002>
01 71 23.00 44 SURVEY, LAYOUT, AND OTHER DATA
01 74 19 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL
01 78 00 CLOSEOUT SUBMITTALS
01 78 23 OPERATION AND MAINTENANCE DATA

DIVISION 02 - EXISTING CONDITIONS

02 41 00 DEMOLITION

DIVISION 03 - CONCRETE

03 30 53 MISCELLANEOUS CAST-IN-PLACE CONCRETE

DIVISION 05 - METALS

05 05 23.16 STRUCTURAL WELDING
05 12 00 STRUCTURAL STEEL
05 50 13 MISCELLANEOUS METAL FABRICATIONS
05 51 33 METAL LADDERS
05 52 00 METAL RAILINGS

DIVISION 07 - THERMAL AND MOISTURE PROTECTION

07 21 16 MINERAL FIBER BLANKET INSULATION
07 27 10 BUILDING AIR BARRIER SYSTEM
07 27 19.01 SELF-ADHERING AIR BARRIERS
07 42 13 METAL WALL PANELS

07 60 00 FLASHING AND SHEET METAL
07 92 00 JOINT SEALANTS

DIVISION 08 - OPENINGS

08 11 13 STEEL DOORS AND FRAMES
08 34 16.20 VERTICAL LIFT FABRIC DOORS
08 71 00 DOOR HARDWARE

DIVISION 09 - FINISHES

09 67 23.14 CHEMICAL RESISTANT RESINOUS FLOORING
09 90 00 PAINTS AND COATINGS

DIVISION 10 - SPECIALTIES

10 14 00.10 EXTERIOR SIGNAGE
10 14 00.20 INTERIOR SIGNAGE

<AM#0002> ~~**DIVISION 21 - FIRE SUPPRESSION**~~

~~21 13 24.00 10 MILSPEC FLUORINE FREE FOAM (MFFF) FIRE PROTECTION SYSTEM~~ </AM#0002>

DIVISION 22 - PLUMBING

22 00 00 PLUMBING, GENERAL PURPOSE
22 15 26 COMPRESSED AIR PIPING SYSTEMS (UP TO 5000 PSI)

DIVISION 26 - ELECTRICAL

26 20 00 INTERIOR DISTRIBUTION SYSTEM

DIVISION 28 - ELECTRONIC SAFETY AND SECURITY

28 31 76 INTERIOR FIRE ALARM AND MASS NOTIFICATION SYSTEM, ADDRESSABLE

DIVISION 32 - EXTERIOR IMPROVEMENTS

32 01 19.61 SEALING OF JOINTS IN RIGID PAVEMENT
32 11 20 BASE COURSE FOR RIGID PAVING
32 13 14.13 CONCRETE PAVING FOR AIRFIELDS AND OTHER HEAVY DUTY PAVEMENTS
32 13 73.19 COMPRESSION CONCRETE PAVING JOINT SEALANT

DIVISION 33 - UTILITIES

33 40 00 STORMWATER UTILITIES

-- End of Project Table of Contents --

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
B90176 Hangar Door Expansion (HADES)

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH #	CLASSIFICATION	GOVT OR A/E REVWR	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)
		01 30 00	SD-01 Preconstruction Submittals																
			Field Office Overhead	1.5															
			Field Office Overhead	1.5.1															
			Field Office Overhead	1.5.2															
			Accounting Practice	1.5															
			Delegation Of Authority	1.6															
			<AM#0002>																
		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 35 10.00 44	SD-02 Shop Drawings																
			Hardware schedule		G														
			Keying system																
			Electro-Mechanical Devices		G														
			SD-03 Product Data																
			Casing Pipe	1.8.3															
			Paint Usage and Safety Data																
			Sheet (SDS)																
			Air Emission Inventory																
			Certificate of Conformity for New																
			Generators																
			SD-04 Samples																

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
B90176 Hangar Door Expansion (HADES)

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAG # PARAPH	CLASSIFICATION	GOVT OR A/E REVWR	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)
		01 35 10.00 44	Plastic Marking Tape and Tracer Wire	1.8.2	G														
			Locks and Latches		G														
			SD-07 Certificates																
			Customer Service Inspections	1.21															
			Customer Service Inspection Certificate	3.1.2															
			Digging And Water Use Permits	1.6.1															
			Army Radiation Permits (ARP)	1.6.3															
			Landfill Permit	1.17.1															
			Landfill Permit	3.1.1															
		01 35 26	SD-01 Preconstruction Submittals																
			Accident Prevention Plan (APP)	1.8	G														
			SD-06 Test Reports																
			Accident Reports	1.12.2	G														
			LHE Inspection Reports	1.12.3															
			Monthly Exposure Reports	1.5	G														
			SD-07 Certificates																
			Activity Hazard Analysis (AHA)	1.9	G														
			Certificate of Compliance	1.12.4															
			Hot Work Permit	1.13															
			License Certificates	1.14															
			Portable Gauge Operations Planning Worksheet	1.14.1	G														
			Radiography Operation Planning Work Sheet	1.14.1	G														

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
B90176 Hangar Door Expansion (HADES)

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAG # PARAPH	CLASSIFICATION	GOVT OR A/E REVWR	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION			APPROVING AUTHORITY						
							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	MAILED TO CONTR/ DATE RCD FRM APPR AUTH	REMARKS
(a)	(b)	(c)	(d)	(e)	(f)		(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		01 35 26	Standard Lift Plan	1.12.4	G													
		01 45 00	SD-01 Preconstruction Submittals															
			Contractor Quality Control (CQC)	1.5.2	G													
			Plan															
			SD-06 Test Reports															
			Verification Statement	1.12.3														
		01 45 35	SD-06 Test Reports															
			Special Inspection Daily Reports	3.1.1														
			Special Inspection Daily Reports	3.1.2														
			Special Inspection Biweekly	3.1.1														
			Reports															
			SD-07 Certificates															
			AISC Certified Steel Fabricator	2.1														
			Certificate of Compliance	2.1														
			SD-11 Closeout Submittals															
			Comprehensive Final Report	3.1.2	G													
		01 50 00	SD-01 Preconstruction Submittals															
			Construction Site Plan	1.3	G													
			Traffic Control Plan	3.3.1	G													
			Haul Road Plan	2.2.1	G													
		01 56 00.00 44	SD-01 Preconstruction Submittals															
			Dust Control	3.1	G													
			Products and Procedures	2.1	G													
			Material Safety Data Sheets	2.1	G													
			Sandblasting	3.3.2	G													
			SD-02 Shop Drawings															

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
B90176 Hangar Door Expansion (HADES)

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAG # RAPH	CLASSIFICATION	GOVT OR A/E REVWR	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)
		01 56 00.00 44	Recordkeeping	1.7															
		01 71 23.00 44	SD-01 Preconstruction Submittals																
			Survey Data	3.1															
		01 74 19	SD-01 Preconstruction Submittals																
			Construction Waste Management	1.6	G														
			Plan																
			SD-06 Test Reports																
			Monthly Reporting	1.8.2															
		01 78 00	SD-02 Shop Drawings																
			Preliminary Record Drawings	1.5.1															
			Final Record Drawings	1.5.1.1															
			Final Record Drawings	1.5.1.2															
			SD-03 Product Data																
			Warranty Management Plan	1.9.1															
			Warranty Tags	1.9.5															
			Spare Parts Data	1.7															
			warranty report	1.9.4															
			Inventory of Contractor Furnished																
			and Insttalled Equipment																
			video	3.6.1.1															
			Red Zone Meeting	3.6.5															
			SD-08 Manufacturer’s Instructions																
			Instructions	1.9.1															
			SD-10 Operation and Maintenance																
			Data																

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
B90176 Hangar Door Expansion (HADES)

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAG # PARAPH	CLASSIFICATION	GOVT OR A/E REVWR	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)
		01 78 00	Operation and Maintenance	3.6	G														
			Manuals																
			SD-11 Closeout Submittals																
			As-Built Drawings	3.1	G														
			Record Drawings	3.3	G														
			As-Built Record of Equipment	3.5															
			and Materials																
			Warranted Equipment and	1.9.1															
			Materials																
			Final Approved Shop Drawings	3.4	G														
			Certification Of USDA Designated	2.2	G														
			Items																
		01 78 23	SD-10 Operation and Maintenance																
			Data																
			Training Plan	3.1.1	G														
			Training Outline	3.1.3	G														
			Training Content	3.1.2	G														
			Operation And Maintenance	3.2.1	G														
			Manual, Progress Submittal																
			Operation And Maintenance	3.2.2	G														
			Manual, Prefinal Submittal																
			Operation And Maintenance	3.2.3	G														
			Manual, Final Submittal																
			SD-11 Closeout Submittals																
			Training Video Recording	3.1.4	G														
			Validation of Training Completion	3.1.6	G														

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
B90176 Hangar Door Expansion (HADES)

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAG # RAPH	CLASSIFICATION	GOVT OR A/E REVWR	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)
		01 78 23	Training Plan	3.1.1	G														
			Record Drawings And Utility	1.5.6.7	G														
			Systems																
		02 41 00	SD-01 Preconstruction Submittals																
			Demolition Plan	1.2.2	G CO														
			Existing Conditions	1.11															
			SD-07 Certificates																
			Notification	1.7	G CO														
		03 30 53	SD-02 Shop Drawings																
			Installation Drawings	1.4	G														
			SD-03 Product Data																
			Accelerating Admixture	2.2.3.2															
			Water-Reducing or Retarding	2.2.3.3															
			Admixture																
			Curing Materials	2.2.11															
			Expansion Joint Filler Strips,	2.2.6															
			Premolded																
			Joint Sealants - Field Molded	2.2.7															
			Sealants																
			Batching and Mixing Equipment	3.1.4.3															
			Conveying and Placing Concrete	3.2															
			Formwork	2.2.8															
			Mix Design Data	2.3	G														
			Ready-Mix Concrete	2.3															
			Curing Compound	2.4.1															
			SD-06 Test Reports																

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
B90176 Hangar Door Expansion (HADES)

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAG # RAPH	CLASSIFICATION	GOVT OR A/E REVWR	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)
		03 30 53	Aggregates	2.2.2															
			Concrete Mixture Proportions	2.1.3	G														
			Compressive Strength Testing	3.8.3	G														
			Slump	3.8.3	G														
			Air Content	3.8.3															
			Water	2.2.4															
			SD-07 Certificates																
			Cementitious Materials	2.2.1															
			Pozzolan	2.2.1.2															
			Aggregates	2.2.2															
			Delivery Tickets	2.3															
			SD-08 Manufacturer’s Instructions																
			Curing Compound	2.4.1															
		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																

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
B90176 Hangar Door Expansion (HADES)

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAG # RAPH	CLASSIFICATION	GOVT OR A/E REVWR	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)
		05 05 23.16	Certified Welding Procedure	1.3.1														
			Specifications (WPS)															
			Certified Procedure Qualification	1.3.1														
			Records (PQR)															
			Certified Welder Performance	1.3.1														
			Qualifications (WPQ)															
			Certified Welding Inspector	1.3.5														
			Nondestructive Testing Personnel	1.3.5														
		05 12 00	SD-01 Preconstruction Submittals															
			Erection and Erection Bracing	1.4.1.1	G													
			Drawings															
			SD-02 Shop Drawings															
			Fabrication Drawings	1.4.2	G													
			SD-03 Product Data															
			Shop Primer	2.6.2														
			Welding Electrodes and Rods	2.4.1														
			Direct Tension Indicator Washers	2.3.2.3														
			Non-Shrink Grout	2.4.2														
			Tension Control Bolts	2.3.3														
			SD-05 Design Data															
			Shoring and Temporary Bracing	1.4.2	G													
			SD-06 Test Reports															
			Bolts, Nuts, and Washers	2.3														
			Weld Inspection Reports	3.7.1.2														
			Direct Tension Indicator Washer	3.7.2.1														
			Inspection Reports															

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
B90176 Hangar Door Expansion (HADES)

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH #	CLASSIFICATION	GOVT OR A/E REVWR	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION			APPROVING AUTHORITY					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	MAILED TO CONTR/ DATE RCD FRM APPR AUTH	
(a)	(b)	(c)	(d)	(e)	(f)		(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		05 12 00	Bolt Testing Reports	3.7.3.1														
			SD-07 Certificates															
			Steel	2.2														
			Bolts, Nuts, and Washers	2.3														
			Galvanizing	2.5														
			AISC Structural Steel Fabricator	1.3														
			Quality Certification															
			AISC Structural Steel Erector	1.3														
			Quality Certification															
			Welding Procedures and	1.4.3.1														
			Qualifications															
			Welding Electrodes and Rods	2.4.1														
			Certified Welding Inspector	3.7.1.1														
			NDT Technician	3.7.1.2														
			Welding Procedure Specifications	3.4														
			(WPS)															
		05 50 13	SD-02 Shop Drawings															
			Floor Gratings	2.3	G													
			Bollards/Pipe Guards	2.4	G													
			Angles and Plates	2.5	G													
			SD-03 Product Data															
			Floor Gratings	2.3	G													
			SD-07 Certificates															
			Certified Mill	2.1	G													
		05 51 33	SD-02 Shop Drawings															
			Ladders	2.3														

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
B90176 Hangar Door Expansion (HADES)

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAG # RAPH	CLASSIFICATION	GOVT OR A/E REVWR	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)
		05 51 33	SD-03 Product Data																
			Ladders	2.3															
			Ladder Safety Devices	2.3.2															
			SD-07 Certificates																
			Fabricator Certification for Ladder	1.3															
			Assembly																
		05 52 00	SD-02 Shop Drawings																
			Fabrication Drawings	1.2.1	G														
			Fabrication Drawings	1.5.1	G														
			Iron and Steel Hardware	3.2	G														
			Steel Shapes, Plates, Bars and	3.2	G														
			Strips																
			SD-03 Product Data																
			Protective Coating	2.1.2	G														
			Steel Railings and Handrails	2.2.8	G														
			Anchorage and Fastening	1.2.1	G														
			Systems																
			SD-06 Test Reports																
			Welding Inspections	1.4.1	G														
			Mill Test Reports	2.3	G														
			SD-07 Certificates																
			Welder Qualification	1.4.2	G														
			SD-08 Manufacturer’s Instructions																
			Installation Instructions	3.2															
		07 21 16	SD-03 Product Data																
			Blanket Insulation	2.1	G	AE													

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
B90176 Hangar Door Expansion (HADES)

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAG # RAPH	CLASSIFICATION	GOVT OR A/E REVWR	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)
		07 21 16	Accessories	2.3															
			SD-08 Manufacturer's Instructions																
			Insulation	3.2.1															
		07 27 10	SD-02 Shop Drawings																
			Air Barrier System Shop Drawings	2.1	G	RO													
			SD-03 Product Data																
			Air Barrier System Product Data	2.1	G	AE													
			SD-04 Samples																
			Material Samples For Air Barrier System	2.1	G	AE													
			SD-06 Test Reports																
			Inspection	3.1.2	G	RO													
		07 27 19.01	SD-01 Preconstruction Submittals																
			Qualifications of Manufacturer	1.6.1	G	AE													
			Qualifications of Installer	1.6.2	G	AE													
			SD-02 Shop Drawings																
			Self-adhering Air Barrier Shop Drawings	1.4.1	G	AE													
			SD-03 Product Data																
			Self-adhering Air Barrier	2.1	G	AE													
			Primers, Adhesives, and Mastics	2.2	G	AE													
			Safety Data Sheets	1.4.2	G	AE													
			SD-04 Samples																
			Self-adhering Air Barrier System Mockup	1.4.3	G	AE													

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
B90176 Hangar Door Expansion (HADES)

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAG # RAPH	CLASSIFICATION	GOVT OR A/E REVWR	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)
		07 27 19.01	SD-06 Test Reports																
			Field Peel Adhesion Test	1.6.3	G	AE													
			Flame Propagation of Wall	1.4.4	G	AE													
			Assemblies																
			Site Inspections and Testing	3.4.1	G	AE													
			SD-08 Manufacturer's Instructions																
			Self-adhering Air Barrier	1.4.2	G	AE													
			Manufacturer's Printed Instructions																
			Primers, Adhesives, and Mastics	2.2	G	AE													
		07 42 13	SD-01 Preconstruction Submittals																
			Qualification of Manufacturer	1.4.3	G	RO													
			Qualification of Installation	1.4.4	G	RO													
			Contractor																
			Warranty	1.7	G	RO													
			SD-02 Shop Drawings																
			Installation Drawings	1.4.1.1	G	RO													
			SD-03 Product Data																
			Steel Sheet Panels	2.3.2	G	AE													
			Factory Color Finish	2.3.3															
			Closure Materials	1.4.5															
			Pressure Sensitive Tape	2.3.6.6															
			Sealants and Caulking	2.3.6.3															
			Galvanizing Repair Paint	1.4.3.1															
			Enamel Repair Paint	1.4.3.1															
			Accessories	2.3.6															
			SD-04 Samples																

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
B90176 Hangar Door Expansion (HADES)

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAG # RAPH	CLASSIFICATION	GOVT OR A/E REVWR	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)
		07 42 13	Steel Sheet Panels	2.3.2	G	AE												
			Fasteners	1.4.3.1	G	AE												
			Metal Closure Strips	2.3.6.2	G	AE												
			SD-05 Design Data															
			Wind Load Design Analysis	1.4.1.2	G	AE												
			SD-06 Test Reports															
			Leakage Tests	3.5.1	G	RO												
			Wind Load Tests	2.1.2	G	RO												
			Coating	2.3.3.6	G	RO												
			Chalking	2.3.3.6	G	RO												
			Seismic Tests	2.1.2	G	RO												
			SD-07 Certificates															
			Coil Stock	1.4.3.1	G	RO												
			Fasteners	1.4.3.1	G	AE												
			Galvanizing Repair Paint	1.4.3.1	G	AE												
			Enamel Repair Paint	1.4.3.1	G	AE												
			SD-08 Manufacturer’s Instructions															
			Installation	3.3.1	G	RO												
			SD-09 Manufacturer’s Field															
			Reports															
			Manufacturer's Field Inspection	3.5.4.1.2	G	PO												
			Reports															
			SD-11 Closeout Submittals															
			Warranty	1.7	G	RO												
			Maintenance Instructions	1.4.6	G	RO												

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
B90176 Hangar Door Expansion (HADES)

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAG # RAPH	CLASSIFICATION	GOVT OR A/E REVWR	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)
		07 42 13	20 Year 'No Dollar Limit'	1.7.1															
			Warranty for Labor and Material																
		07 60 00	SD-02 Shop Drawings																
			Exposed Sheet Metal	2.1.1	G	PO													
			Expansion Joints	3.1.17	G	AE													
			Gravel Stops and fascia	2.1.1	G	AE													
			Counterflashing	3.1.10	G	AE													
			Reglets	2.1.15	G	AE													
			Copings	3.1.19	G	AE													
			Drip Edges	3.1.14	G	AE													
			SD-04 Samples																
			Finish Samples	1.4.2	G	AE													
			SD-07 Certificates																
			Warranty on Finishes	2.1.12.1	G	AE													
			SD-08 Manufacturer’s Instructions																
			Instructions for Installation	1.4.3	G														
			SD-10 Operation and Maintenance																
			Data																
			Cleaning and Maintenance	1.4.3	G	PO													
		07 92 00	SD-03 Product Data																
			Sealants	2.1	G	AE													
			Primers	2.2	G	AE													
			Bond Breakers	2.3	G	AE													
			Backstops	2.4	G	AE													
			Cleaning Solvents	2.5	G	AE													
			SD-06 Test Reports																

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
B90176 Hangar Door Expansion (HADES)

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAG # PARAPH	CLASSIFICATION	GOVT OR A/E REVWR	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION			APPROVING AUTHORITY						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	MAILED TO CONTR/ DATE RCD FRM APPR AUTH	
(a)	(b)	(c)	(d)	(e)	(f)		(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		07 92 00	Field Adhesion	3.1	G	PO												
		08 11 13	SD-02 Shop Drawings															
			Doors	2.1	G	AE												
			Frames	2.4	G	AE												
			Accessories	2.2														
			SD-03 Product Data															
			Doors	2.1	G	AE												
			Frames	2.4	G	AE												
			Accessories	2.2														
		08 34 16.20	SD-01 Preconstruction Submittals															
			Manufacturer's Qualifications	1.4.1	G	AE												
			Installer's Qualifications	1.4.2	G	AE												
			SD-02 Shop Drawings															
			Door Design	1.3.1	G	AE												
			SD-03 Product Data															
			Electric Operator	2.3	G	AE												
			Motors	2.3.5	G	AE												
			Doors	2.2	G	AE												
			Controls	2.3.6	G	AE												
			Door Fabric	2.1.7	G	AE												
			Surge Protection Device (SPD)	2.3.6.1	G	AE												
			SD-05 Design Data															
			Calculations	1.3.2.1	G	AE												
			Door Load Diagrams	1.3.4	G	AE												
			Door Compliance Matrix	1.3.1	G	AE												
			SD-06 Test Reports															

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
B90176 Hangar Door Expansion (HADES)

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAG # RAPH	CLASSIFICATION	GOVT OR A/E REVWR	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)
		08 34 16.20	Safety Arrester Operation Test	2.3.3.1	G	AE													
			Door Fabric	2.1.7	G	AE													
			Door Fabric	2.1.7	G	AE													
			Door Fabric Connection	2.2.1	G	AE													
			Weld Inspection Report	3.2.2	G	AE													
			SD-07 Certificates																
			Manufacturer's Qualifications	1.4.1	G	AE													
			Installers Qualifications	1.4.2	G	AE													
			Welding Procedures and	1.5	G	AE													
			Qualifications																
			SD-09 Manufacturer’s Field																
			Reports																
			Acceptance Testing Procedure	3.5	G	AE													
			SD-10 Operation and Maintenance																
			Data																
			Door Operation	2.9.1	G	AE													
			Emergency and Routine	1.4.3.1	G	AE													
			Preventative Maintenance Plan																
			SD-11 Closeout Submittals																
			Acceptance Testing Procedure	3.5	G	AE													
			Warranty	1.4.3	G	AE													
		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	2.3.6	G	AE													

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
B90176 Hangar Door Expansion (HADES)

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH #	CLASSIFICATION	GOVT OR A/E REVWR	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)
		08 71 00	SD-03 Product Data															
			Hardware Items	2.3	G	AE												
			SD-08 Manufacturer's Instructions															
			Installation	3.1														
			SD-10 Operation and Maintenance															
			Data															
			Hardware Schedule	1.5	G	AE												
		09 67 23.14	SD-02 Shop Drawings															
			Flooring Systems	2.2	G													
			SD-03 Product Data															
			Sealer and Resin	2.4	G													
			Floor Surfacing	3.3.2	G													
			Conductive Sparkproof Flooring	2.3	G													
			Mixing	3.2	G													
			SD-04 Samples															
			Flooring Systems	2.2	G													
			SD-06 Test Reports															
			Testing	3.4	G													
			SD-07 Certificates															
			Qualifications of Installer	1.3.1	G													
			Certification Letter from the	1.3.1														
			Manufacturer															
			SD-08 Manufacturer's Instructions															
			Application	3.3	G													
			SD-10 Operation and Maintenance															
			Data															

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
B90176 Hangar Door Expansion (HADES)

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH #	CLASSIFICATION	GOVT OR A/E REVWR	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)
		09 67 23.14	Flooring Systems	2.2	G													
		09 90 00	SD-03 Product Data															
			Coating	2.1	G													
			Product Data Sheets	2.1														
			SD-04 Samples															
			Color	2.2	G AE													
			SD-07 Certificates															
			Indoor Air Quality for Paints and	1.5.4														
			Primers															
			Indoor Air Quality for	1.5.4														
			Consolidated Latex Paints															
			SD-08 Manufacturer’s Instructions															
			Mixing	2.1														
			Manufacturer's Safety Data	1.7.1														
			Sheets															
			SD-10 Operation and Maintenance															
			Data															
			Coatings	2.1	G													
		10 14 00.10	SD-02 Shop Drawings															
			Approved Detail Drawings	3.1	G													
			SD-03 Product Data															
			Installation	3.1														
			Exterior Signage	1.2	G													
			Wind Load Requirements	1.2.1														
			SD-04 Samples															
			Exterior Signage	1.2	G													

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
B90176 Hangar Door Expansion (HADES)

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAG # RAPH	CLASSIFICATION	GOVT OR A/E REVWR	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)
		10 14 00.10	SD-10 Operation and Maintenance															
			Data															
			Protection and Cleaning	3.1.2	G													
		10 14 00.20	SD-02 Shop Drawings															
			Detail Drawings	1.3.2	G													
			SD-03 Product Data															
			Room Identification And	2.1	G													
			Directional Signage System															
			Exit Door Tactile Sign	2.2	G													
			SD-04 Samples															
			Interior Signage	1.3.1	G													
			Exit Door Tactile Sign	2.2	G													
			SD-10 Operation and Maintenance															
			Data															
			Approved Manufacturer's	3.1	G													
			Instructions															
			Protection and Cleaning	3.1.2	G													
		22 00 00	SD-02 Shop Drawings															
			Plumbing System	3.5.1	G													
			SD-03 Product Data															
			Plumbing System	3.5.1														
			SD-06 Test Reports															
			Tests, Flushing and Disinfection	3.5														
			SD-07 Certificates															
			Materials and Equipment	1.4														
			Bolts	2.1.1														

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
B90176 Hangar Door Expansion (HADES)

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAG # RAPH	CLASSIFICATION	GOVT OR A/E REVWR	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)
		22 00 00	SD-10 Operation and Maintenance																
			Data																
			Plumbing System	3.5.1	G														
		22 15 26	SD-03 Product Data																
			Fittings	2.1.2															
			Identification Labels For Piping	2.2															
			SD-06 Test Reports																
			Leak Tightness Test	3.4.1.2															
			SD-10 Operation and Maintenance																
			Data																
			Cleaning Procedures	3.2.3	G														
			SD-11 Closeout Submittals																
			Compressed Air Systems	1.3															
		26 20 00	SD-03 Product Data																
			Switches	2.8	G														
			Receptacles	2.10	G														
			Circuit Breakers	2.11.3	G														
			Fuses	2.9	G														
			Enclosed Circuit Breakers	2.12	G														
			Motor Controllers	2.14	G														
			SD-06 Test Reports																
			600-volt Wiring Test	3.5.2	G														
			Grounding System Test	3.5.5	G														
			SD-07 Certificates																
			Fuses	2.9	G														

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
B90176 Hangar Door Expansion (HADES)

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH #	CLASSIFICATION	GOVT OR A/E REVWR	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION			APPROVING AUTHORITY						
							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	MAILED TO CONTR/ DATE RCD FRM APPR AUTH	REMARKS
(a)	(b)	(c)	(d)	(e)	(f)		(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		26 20 00	SD-10 Operation and Maintenance															
			Data															
			Electrical Systems	1.6.1	G													
		28 31 76	SD-01 Preconstruction Submittals															
			Qualified Fire Protection Engineer	1.2.2	G													
			(QFPE)															
			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	1.6	G													
			Software Acknowledgement															
			SD-02 Shop Drawings															
			Nameplates	1.8.1.3	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													
			Battery Power	1.8.1.8	G													
			Voltage Drop Calculations	1.8.1.9	G													
			SD-03 Product Data															
			Manual Stations	2.3	G													
			Addressable Interface Devices	2.4	G													
			Addressable Control Modules	2.5	G													
			Notification Appliances	1.8.1.6	G													

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
B90176 Hangar Door Expansion (HADES)

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAG # RAPH	CLASSIFICATION	GOVT OR A/E REVWR	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)
		28 31 76	Surge Protective Devices	2.7	G													
			Alarm Wiring	2.7	G													
			Back Boxes and Conduit	3.3.3	G													
			Document Storage Cabinet	3.11.3	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															
			Operation and Maintenance	3.9	G													
			(O&M) Instructions															
			Instruction of Government	3.10	G													
			Employees															
			SD-11 Closeout Submittals															
			As-Built Drawings	1.8.1.12														
			Spare Parts	1.10.1														
		32 01 19.61	SD-03 Product Data															
			Sealants	2.1														
			Manufacturer's	3.4.2														
			Recommendations															
			SD-04 Samples															
			Sealants	2.1														

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
B90176 Hangar Door Expansion (HADES)

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH #	CLASSIFICATION	GOVT OR A/E REVWR	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION			APPROVING AUTHORITY						
							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	MAILED TO CONTR/ DATE RCD FRM APPR AUTH	REMARKS
(a)	(b)	(c)	(d)	(e)	(f)		(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		32 01 19.61	Blocking Media/Backup Materials	2.3.1														
			Backer Rod	3.2.4.1														
			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 11 20	SD-03 Product Data															
			Plant, Equipment, and Tools	2.3	G													
			SD-06 Test Reports															
			Initial Tests	2.2.1	G													
			In-Place Tests	3.11.1	G													
		32 13 14.13	SD-01 Preconstruction Submittals															
			Proposed Techniques	3.1.2	G													
			Preliminary Proposed	2.13.2	G													
			Proportioning															
			Pavement Quality Control Plan	1.3.2.3	G													
			SD-03 Product Data															
			Diamond Grinding Plan	2.1.7	G													
			Dowels	2.9.1	G													
			Dowel Bar Assemblies	2.9.2	G													
			Equipment	2.11	G													
			Concrete Patching Mixture	2.1.5	G													
			SD-05 Design Data															

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
B90176 Hangar Door Expansion (HADES)

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAG # RAPH	CLASSIFICATION	GOVT OR A/E REVWR	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)
		32 13 14.13	Proportioning Studies	2.13.2	G	DO													
			SD-06 Test Reports																
			Sampling and Testing	2.1.4.1	G														
			Diamond Grinding of PCC	2.1.7	G														
			Surfaces																
			Repair Recommendations Plan	3.9.1	G														
			Paving Lot Report	3.12.5	G														
			SD-07 Certificates																
			Contractor Quality Control (CQC)	1.3.1	G														
			Staff																
			Laboratory Accreditation and	1.3.2	G														
			Validation																
			Commercial Laboratory	1.3.2	G														
		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														
		33 40 00	SD-08 Manufacturer’s Instructions																
			Placing Pipe	3.3	G														
			SD-11 Closeout Submittals																
			Post-Installation Inspection	3.6.2.1.2	G														
			Report																

SECTION 00 22 16
DESIGN-BID-BUILD SELECTION PROCEDURES
AMENDMENT# 0002

Award will be made to the Offeror whose proposal represents the best overall value through the HTR-FRP approach. The HTR-FRP approach prioritizes technical merit and forbids the tradeoff between non-price factors and price. The approach prioritizes the best possible performance, provided the price is determined to be fair and reasonable. Here, all proposals are initially evaluated based solely on the non-price factors specified in the RFP. Only the price of the highest-ranked technical proposal is then evaluated to ensure it is fair and reasonable. The non-price evaluation factors are in descending order of importance: Past Performance and Construction Schedule. Price is not an evaluation factor for the purpose of ranking proposals; it will be evaluated for fairness and reasonableness for the highest technically rated proposal in accordance with RFO 15.103-3. Relative weights among technical factors are provided in this Section. The Source Selection Evaluation Board (SSEB) reviews, evaluates, and rates the proposals against the source selection criteria in the RFP.

BASIS FOR AWARD

The Contracting Officer will award a single firm-fixed-price contract to the Offeror responsible that submits the highest technically rated proposal with a price that is determined to be fair and reasonable. This source selection will be conducted in accordance with the HTR-FRP approach described in RFO 15.103-3. Under this approach, proposals will first be evaluated and ranked based on the non-price factors only. Price is not an evaluation factor for the purpose of ranking proposals and will not be considered during the technical evaluation. After the Source Selection Authority (SSA) determines the highest technically rated proposal, the price of only that proposal will be evaluated for fairness and reasonableness in accordance with RFO Subpart 15.4. If the price of the highest technically rated proposal is determined to be fair and reasonable, that proposal will be selected for award. If the price is determined not to be fair and reasonable, the Government will reject that offer and proceed to evaluate the price of the next highest technically rated proposal. This sequential approach will continue until a contract is awarded to the highest technically rated responsible offeror with a fair and reasonable price. The Government will not award a contract to an Offeror whose proposal contains a deficiency as defined in RFO 15.001.

VOLUME I: PAST PERFORMANCE/TECHNICAL PROPOSAL			
FACTOR	**LOCATION**	**DESCRIPTION**	**RELATIVE IMPORTANCE**
FACTOR 1	Vol I, TAB A	PAST PERFORMANCE	MOST IMPORTANT FACTOR
FACTOR 2	Vol I, TAB B	TECHNICAL APPROACH	LESS IMPORTANT THAN FACTOR 1

NOTE: All evaluation factors, other than price, when combined, are considered approximately equal to price.

FACTOR 1 - PAST PERFORMANCE:

TAB A - FACTOR 1 - PAST PERFORMANCE refers to the quality of relevant and recent project experience. This tab shall contain past performance information regarding same/similar projects that demonstrate the experience of the offeror and/or proposed team. The past performance evaluation factor assesses the degree of confidence the Government has in an offeror's ability to supply products and services that meet users' needs, based on a demonstrated record of performance.

A. Submission Requirements for Factor 1:

Offerors shall submit no more than five Government and/or commercial projects for Construction which are recent and relevant to the efforts required by this solicitation as defined below. Use the attached Construction Past Performance Worksheet (Attachment 1) to submit construction experience. Limit each worksheet to no more than three pages.

Relevant: Demonstrate the experience of the offeror and/or proposed team on projects same/similar in SIZE, SCOPE, and COMPLEXITY to that described in the solicitation. Offerors shall identify and describe the relevancies for each of the projects submitted compared to the scope of this project. The Government will evaluate the information provided in making the relevancy determination.

Recent: All projects submitted for construction experience must have been completed within six years from the date of the solicitation. The Government will consider projects completed within six (6) years of the solicitation issuance date to be recent. If a project is not recent, the Government will not evaluate it further.

If any firm has multiple functions or divisions, limit the project examples to those performed by the division or unit submitting the offer. If projects were design-bid-build, identify them as such. If the Offeror is a Joint Venture (JV) and past performance cannot be provided as a JV, each partner shall submit past performance information. Combined number of projects submitted shall be no more than the number allowed.

Past Performance Assessment Questionnaire (PPQ) (Attachment 2) included in the solicitation is provided for the offeror or its team members to submit to the client for each project the offeror includes in its proposal for Factor 1: Past Performance that does not have a final Contractor Performance Assessment Reporting System (CPARS) evaluation or is a non-Federal Government project. Ensure correct phone numbers and email addresses are provided for the client point of contact. Completed PPQ's should be submitted with your proposal. If the offeror is unable to obtain a completed PPQ from a client for a project(s) before proposal closing date,

the offeror should complete and submit with the proposal the first page of the PPQ which will provide contract and client information for the respective project(s). Offerors should follow-up with clients/references to ensure timely submittal of questionnaires. If the client requests, questionnaires may be submitted directly to the Government's point of contact, Shayla J. Lucas via email at **shayla.j.lucas@usace.army.mil** prior to proposal closing date. Offerors shall not incorporate by reference into their proposal PPQs previously submitted for other RFPs. However, this does not preclude the Government from utilizing previously submitted PPQ information in the past performance evaluation. Do not request PPQs on projects that have a final CPARS evaluation. If a final CPARS evaluation exists and a PPQ is provided for the same project, the CPARS evaluation will be reviewed as the official past performance record for the project, and the PPQ will not be considered by the Source Selection Board or the SSA.

For USACE or other DoD projects which are underway but do not yet have a final CPARS evaluation, one PPQ per contract may be submitted; to be considered, the PPQ shall be signed by the Administrative Contracting Officer (ACO) or Contracting Officer for the contract.

Offerors are not required to submit any additional past performance information. The Government will utilize CPARS, and any other information deemed relevant to assess confidence in the Offeror's ability to perform.

Offerors are encouraged to submit completed CPARS for projects submitted for past performance experience.

Offerors may submit performance recognition documents received within the last six years, such as awards, award fee determinations, customer letters of commendation, and any other forms of performance recognition. There is no page limit for the performance recognition documents.

Offerors may submit information on past performance issues and corrective actions taken to prevent these issues from reoccurring. Discuss whether these corrective actions have been implemented on projects awarded subsequent to the performance issues, the effectiveness of the corrective actions, and POC information for the subsequent projects. Limit to no more than three pages, if submitted.

In addition to the above, the Government may review any other sources of information for evaluating past performance. Other sources may include, but are not limited to, past performance information retrieved through CPARS, using all CAGE/UEI numbers of team members (partnership, joint venture, teaming arrangement, or parent company/subsidiary/affiliate) identified in the offeror's proposal, inquiries of owner representative(s), Electronic Subcontract Reporting System (eSRS), and any other known sources not provided by the offeror.

While the Government may elect to consider data from other sources, the burden of providing detailed, current, accurate and complete past performance information rests with the Offeror.

B. Evaluation Criteria for Factor 1:

1. Relevancy Determination

a. The Government will evaluate the Offeror's past performance to determine how relevant each of the past performance projects is to the project under consideration. The Government may place greater value on projects performed as a prime contractor than as a subcontractor, depending upon overall role and relevancy considerations. Federal Government project past performance will not be rated inherently more important than non-Federal Government project past performance.

b. Projects completed outside the defined time period for recency will not be considered relevant to this solicitation.

c. More relevant past performance will typically be a stronger predictor of future success and have more influence on the past performance confidence assessment than past performance of lesser relevance.

d. Projects with lower degrees of relevance will not be as strong of predictors of likely future contract performance success and will typically have less influence on the final past performance confidence rating.

e. Projects that have little or no relevance typically do not influence the performance confidence rating; however, any projects with adverse past performance could reflect larger company-wide concerns and may impact upon the past performance confidence rating.

2. Confidence Determination

a. The SSEB will review the past performance information available to determine the quality and usefulness as it applies to performance confidence assessment. If the Government cannot establish the Offeror’s relevant past performance, it reserves the right to utilize the PPQ to conduct telephone interviews on any source it deems relevant to the evaluation. References may be asked to comment on items such as quality of construction, timeliness, management of the work, subcontractor management, including timely payment to subs or suppliers, safety, relations between owner and designer or contractor, level of support for such things as as-built documentation, O&M manuals, training, correcting construction errors, warranty work, etc.

b. The Government's evaluation is not limited to past performance information on the cited example projects.

c. In determining the performance confidence rating for Past Performance, the degree of relevancy/recency of each of the considered efforts; the overall performance record of the offeror on each contract assessed; number and severity of problems, the demonstrated effectiveness of corrective actions taken (not just planned or promised); recognition documents; and trend data will be evaluated. Projects with higher degrees of relevance will typically have a greater influence on the final performance confidence rating. Projects with lower degrees of relevance will typically have less influence on the final performance confidence rating however, any projects with adverse past performance could reflect larger company-wide concerns and may impact upon the past performance confidence rating. Projects which are comparatively more recent may be better predictors of likely future success than older projects. The resulting relevant/recent assessment conclusions will then be combined, along with the assessed quality of performance on prior projects, to arrive at a single performance confidence rating for the Past Performance Factor.

d. The confidence rating will be established based on the past performance of the firms or that of its predecessor, if applicable. An entity may not establish past performance based on the past performance of its key personnel apart from that of the entity. If the Government does not obtain past performance information and cannot establish a past performance record for the Offeror through other sources, a rating of "Neutral Confidence" will be assigned.

e. If adverse past performance information is received and the Government initiates discussions, the offeror will be given the chance to respond to this information. CPARS included in the official record will be treated as if the offeror has already had an opportunity to address any adverse past performance identified during the evaluation process.

f. Although the SSEB may not rate an offeror that lacks recent, relevant past performance favorably or unfavorably with regard to past performance, the SSA may determine that a "Substantial Confidence" or "Satisfactory Confidence" past performance rating is worth more than a "Neutral Confidence" past performance rating in a best value tradeoff as long as the determination is consistent with stated solicitation criteria.

C. Evaluation and Rating System

a. A single, overall confidence rating shall be assigned to Past Performance.

b. The relevancy determination will assess the Offeror's past performance on a project-by-project basis to determine how relevant a recent effort accomplished by the Offeror is to the effort to be acquired under this solicitation.

c. The confidence rating assesses the risks associated with each Offeror's likelihood of success in performing the requirements stated in the RFP based on the Offeror's demonstrated performance on recent projects. SSEB members and the SSA may use personal knowledge or information from other sources in its evaluation of an Offeror's past performance, provided such information is consistent with the established evaluation criteria of the RFP. Offerors that have no relevant performance record will be given a neutral confidence rating.

FACTOR 2 – TECHNICAL APPROACH:

TAB B - FACTOR 2 - TECHNICAL APPROACH

A. Submission Requirements for Factor 2:

Offerors shall provide a comprehensive, well-organized description of their team's approach to successfully executing the requirements outlined in the RFP. The narrative should demonstrate a clear understanding of the scope of work, illustrate the offeror's capability to meet or exceed performance expectations and describe how the work will be delivered on time and within budget.

FACTOR 2 shall be limited to 20 pages. Tables, illustrations, and drawings are excluded from this limitation.

The Technical Approach shall include, at a minimum, the following elements:

1. Project Schedule

• Provide a detailed narrative and accompanying graphic schedules (e.g., Gantt chart) that clearly outlines all major features of work, milestones, and sequencing of work. Graphic schedules shall include, as a minimum, Activity ID, Activity Description, Original Duration, early start and early finish dates, and total float for each activity.

• The schedule must reflect a logical progression of tasks and demonstrate the reasonableness and realism of the proposed duration.

• For proposal evaluation purposes only, assume Notice to Proceed (NTP) will be issued on 10 September 2026.

NOTE: The Technical Approach factor shall include a project schedule demonstrating completion of all contract work per duration identified in Section 01 00 00.00 44

2. Disruption Mitigation

This project, located at Fort Hood, Texas, presents challenges which can impact project timelines, costs, safety, and requires careful planning and innovative solutions.

• Explain your strategy for minimizing schedule delays and cost growth, and for maintaining project safety as well as disruption to ongoing operations and adjacent activities during the construction effort.

• Include any innovative methods, staging techniques, or sequencing approaches intended to reduce impacts.

3. Project Execution Plan

Provide a comprehensive work plan describing how the project will be managed and executed from start to finish. At a minimum, address the following areas:

• Site mobilization and demobilization

• Subcontractor management

• Safety management and compliance

• Environmental compliance **<AM#0002>**~~and sustainability measures~~**</AM#0002>**

• Physical and information security requirements

4. Methodology and Innovation

• Describe the specific techniques, tools, frameworks, or best practices your team will use to accomplish the work.

• Highlight any innovative solutions or value-added approaches that will improve efficiency, safety, quality, or cost-effectiveness.

5. Key Personnel

• Identify all key personnel assigned to the project.

• Include their roles, responsibilities, qualifications, and relevant experience managing similar efforts.

• Explain the structure of the project team and reporting relationships.

6. Risk Management

• Provide a risk mitigation plan that identifies potential construction-related risks and outlines proactive strategies to address them.

• Include both internal and external risk factors (e.g., weather delays, supply chain issues, subcontractor performance).

7. Quality Control

• Describe how you will comply with Section 01 45 00.

• Provide your internal quality control measures that exceed the requirements of the solicitation that will be implemented to ensure that all deliverables meet contractual, regulatory, and technical requirements.

• Discuss inspection protocols, testing methods, and corrective action processes.

8. Communication Plan

• Describe how your team will communicate with the Government throughout the project lifecycle.

• Include the frequency and format of progress updates, stakeholder coordination, points of contact, and issue escalation protocols.

B. Evaluation Criteria for Factor 2:

The Government will evaluate the offeror's Technical Approach to determine the degree to which it reflects a comprehensive understanding of the requirements and the feasibility of the proposed plan to successfully execute the work. This evaluation will consider the clarity, completeness, and logic of the overall approach, as well as the offeror's ability to deliver quality results within the required timeframe and with minimal disruption to ongoing operations.

The evaluation will assess how well the offeror demonstrates an understanding of the scope of work and project objectives. This includes the offeror's ability to articulate the tasks, constraints, and operational environment in a manner that reflects a strong grasp of the technical and logistical challenges inherent in the project. Particular emphasis will be placed on the realism and feasibility of the proposed schedule. The Government will evaluate whether the submitted narrative and graphic (e.g., Gantt chart) schedules clearly identify all major features of work, milestones, and activity sequencing. The schedule will be assessed for logic, completeness, and consistency with the assumed NTP date of 10 September 2026.

The offeror's strategy for mitigating challenges such as schedule delays, cost growth, and project safety as well as minimizing disruption to ongoing operations will also be evaluated. The Government will consider the practicality and effectiveness of proposed sequencing, staging, and work-around measures intended to reduce impacts on the installation or adjacent activities. Proposals that demonstrate innovative but realistic approaches to disruption mitigation may be evaluated more favorably.

The work plan will be reviewed for its level of detail and the adequacy of its approach to

managing and executing the construction effort. This includes evaluation of the offeror's plans for site mobilization, subcontractor management, quality control, safety management, environmental compliance, and adherence to security requirements. The Government will assess how clearly the offeror presents these elements and the degree to which they contribute to overall project success.

Additionally, the methodology and techniques proposed to execute the work will be evaluated for appropriateness and effectiveness. This includes the use of industry best practices, management frameworks, construction methods, and any value-added or innovative approaches that enhance project performance, efficiency, or cost effectiveness.

The qualifications and experience of proposed key personnel will be assessed to determine their ability to successfully manage and execute the project. The evaluation will consider the clarity of team structure, the relevance of personnel experience to the scope of work, and the definition of roles and responsibilities.

The Government will review the offeror's risk mitigation plan to assess how well potential risks are identified, analyzed, and addressed. Evaluation will consider the realism of the proposed mitigation strategies and the offeror's ability to proactively manage risk throughout the project lifecycle.

The quality control approach will be evaluated based on the offeror's proposed procedures for ensuring compliance with contract requirements, including the use of inspections, testing protocols, and corrective action measures to ensure deliverable accuracy and completeness.

Finally, the Government will assess the offeror's communication approach, including how the team will maintain effective interaction with Government stakeholders throughout the project. This includes evaluation of reporting mechanisms, issue escalation procedures, and coordination practices.

VOLUME II: PRICE PROPOSAL

TAB	CONTENTS OF THE PRICE PROPOSAL
A	Proposal Cover Sheet & Acknowledgement of Amendments
B	**Price (FACTOR 3)**
C	Section 00 45 00 – Representations and Certifications
D	Bid Guarantee (Bid Bond)
E	Joint Venture Agreement (If Applicable)
F	Supplemental Data Form

General Instructions: In accordance with RFO 15.402 and 15.403-2, certified cost or pricing data are not required based on the fact that adequate competition is expected for this procurement. If after receipt of proposals the Contracting Officer

determines that there is insufficient information available to determine price reasonableness and none of the exceptions at RFO 15.403-2 apply, the Offeror may be required to submit cost or pricing data. Additionally, in the event that adequate competition is not obtained, the Contracting Officer may incorporate RFO Clause 52.215-20 entitled, “Requirements for Cost or Pricing Data or Information Other Than Cost or Pricing Data,” into the solicitation and request a Certificate of Current Cost or Pricing Data**. There are no page limitations for this volume.** Proposal information included in this volume which is not directly related to Price will be disregarded.

TAB A - Proposal coversheet and acknowledgement of all amendments (SF30s) completed and signed by authorized individual of the offeror.

TAB B - Price - FACTOR 3. Proposed price schedule is to be completed in its entirety by all offerors to include the Subtotals and Totals section as found in Section 00 10 00 - Solicitation, CLIN Schedule.

TAB C - Section 00 45 00 – Representations and Certifications. Confirm that the Offeror’s representations and certifications have been completed in the System for Award Management (SAM). Submit the representations and certifications not entered in SAM that are included in Section 00 45 00 of this solicitation, under this tab.

TAB D - Offerors shall provide a fully executed Bid Bond as required by RFO Clause 52.228-1, Bid Guarantee electronically in Tab D. This requirement is to be completed regardless of Bid Bond requirement submission located in other parts of these instructions**. For the purposes of this Request for Proposal, please note that IAW RFO 28.001:** Bond means a written instrument executed by a bidder or contractor (the “principal”), and a second party (the “surety” or “sureties”) (except as provided in RFO 28.204), to assure fulfillment of the principal’s obligations to a third party (the “obligee” or “Government”), identified in the bond. If the principal’s obligations are not met, the bond assures payment, to the extent stipulated, of any loss sustained by the obligee.”

Bonds shall therefore be executed in the name of the legal entity, whether a joint venture, partnership, or the Prime Contractor of an informal teaming arrangement, with whom the Government would enter into a contract for a successful offeror. The entity named on the bond must be able to acquire bonding capacity on its own merits, and not as the result of indemnification from a subcontractor or third party. Compliance. Failure to comply with the RFP requirements for Price information may reduce or eliminate the offeror’s chance of being selected for award. Offerors shall ensure that the information presented in this volume is consistent and correlates with the information contained in the other proposal volumes.

TAB E - Joint Venture and LLC, if applicable. See Section 00 21 16 paragraph 7.a(4).

TAB F - Supplemental Data Form (Attachment 3) must be filled out in its entirety by all Offerors.

Price Evaluation:

Adjectival ratings shall not be used for offerors' price proposals. The Government will fully evaluate, if applicable, all priced Contract Line-Item Numbers (CLINs) for award. For award purposes, the total proposed price for all CLINs will be added together into a total sum (contract value). The Offeror's Price proposal will be evaluated as follows:

1. Firm Fixed Price Evaluation: For a price to be fair and reasonable, it must represent a price to the Government that a prudent person would pay in the conduct of competitive business. The Offeror's proposed fixed-price CLINs may be evaluated, using one or more of the techniques described in RFO 15.404-1 in order to determine if they are fair and reasonable

2. Overall Price Proposal Evaluation: The overall Price proposal will be evaluated for the following:

a. Compliance: The Price proposal submitted by the Offeror will be evaluated for compliance based upon the submission requirements contained in this Section.

b. Unbalanced Pricing: The Offeror's overall Price proposal will be evaluated for unbalanced pricing as defined in RFO 15.404-6. An offer may be rejected if the contracting officer determines that the lack of balance poses an unacceptable risk to the Government (see RFO 15.404-6 (b)(2)).

c. Errors: The Offeror's price proposal will be reviewed for errors. The Offeror may be given an opportunity to clarify certain aspects of their proposal at the sole discretion of the Contracting Officer.

d. Business Systems: The Government may verify the adequacy of the Offeror’s business systems, if applicable.

e. Total Evaluated Price: The total evaluated price consists of summing the Offeror’s proposed fixed-price CLIN prices together.

Negotiations: The Government intends to award without negotiations with offerors (except clarification as described in RFO 15.202(a)(2). Therefore, the offeror's initial proposal should contain the offeror's best possible technical solution, as price will not be used for ranking proposals. The concept of a simultaneous competitive range and a common cut-off date for Final Proposal Revisions does not apply to this acquisition methodology.

ATTACHMENT 1 - PAST PERFORMANCE ASSESSMENT WORKSHEET
(Limit each worksheet to no more than 3 pages)

CONSTRUCT/ON PROJECT#			
Offeror:			
Project Location and Contract Number:			
Was this project performed by the division or unit of the company submitting the offer for this solicitation?			
Owner:			
Owner's Point of Contact for Reference:		Telephone:	
Awarded Construction Cost:		Final Construction Cost:	
Explain Cost Growth, if any:			
Date of Award:	Original Completion Date:	Revised Completion Date:	Percent Complete:
Explain Time Growth, if any:			
General Scope of Construction and Offeror's Role:			
Work Your Company Self-Performed:		Extent and Type of Work You Subcontracted Out:	
Identify and describe the relevancies for this project compared to the scope of the solicitation. The Government will evaluate the information provided in making the relevancy determination.			
Did any members of the proposed team (firms, not individuals) have a role in this project? Identify the team members (by firm), their role in this project, and their proposed role in this solicitation.			

ATTACHMENT 2 - USACE PAST PERFORMANCE QUESTIONNAIRE (Form PPQ)

CONTRACT INFORMATION (Contractor to complete Blocks 1-4)

I. 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:

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.

USACE PAST PERFORMANCE QUESTIONAIRRE
Continued

ADJECTIVE RATINGS AND DEFINITONS 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's/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 was 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 nor negative.

Please circle the adjective rating which best reflects your evaluation of the contractor's performance.

1. QUALITY:						
a) Quality of technical data/report preparation efforts	E	VG	S	M	U	N
b) Ability to meet quality standards specified for technicalperformance	E	VG	S	M	U	N
c) Timeliness/effectiveness of contract problem resolutionwithout extensive customer guidance	E	VG	S	M	U	N
d) Adequacy/effectiveness of quality control program and adherence to contract quality assurance requirements (withoutadverse effect on performance)	E	VG	S	M	U	N
2. SCHEDULE/TIMELINESS OF PERFORMANCE:						
a) Compliance with contract delivery/completion schedulesincluding any significant intermediate milestones. *(If liquidated damages were assessed or the schedule was not met, please address below)*	E	VG	S	M	U	N
b) Rate the contractor's use of available resources toaccomplish tasks identified in the contract	E	VG	S	M	U	N
3. CUSTOMER SATISFACTION:						
a) To what extent were the end users satisfied with theproject?	E	VG	S	M	U	N
b) Contractor was reasonable and cooperative in dealing withyour staff (including the ability to successfully resolve disagreements/disputes; responsiveness to administrative reports, businesslike and communication)	E	VG	S	M	U	N
c) To what extent was the contractor cooperative, businesslike,and concerned with the interests of the customer?	E	VG	S	M	U	N
d) Overall customer satisfaction	E	VG	S	M	U	N
4. MANAGEMENT/ PERSONNEL/LABOR						
a) Effectiveness of on-site management, including management of subcontractors, suppliers, materials, and/orlabor force?	E	VG	S	M	U	N
b) Ability to hire, apply, and retain a qualified workforce tothis effort	E	VG	S	M	U	N
c) Government Property Control	E	VG	S	M	U	N
d) Knowledge/expertise demonstrated by contractorpersonnel	E	VG	S	M	U	N
e) Utilization of Small Business concerns	E	VG	S	M	U	N
f) Ability to simultaneously manage multiple projectswith multiple disciplines	E	VG	S	M	U	N
g) Ability to assimilate and incorporate changes in requirements and/or priority, including planning, executionand response to Government changes	E	VG	S	M	U	N
h) Effectiveness of overall management (including ability toeffectively lead, manage and control the program)	E	VG	S	M	U	N

5. COST/FINANCIAL MANAGEMENT						
a) Ability to meet the terms and conditions within thecontractually agreed price(s)?	E	VG	S	M	U	N
b) Contractor proposed innovative alternative methods/processes that reduced cost, improved maintainabilityor other factors that benefited the client	E	VG	S	M	U	N
c) If this is/was a Government cost type contract, please ratethe 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	VG	S	M	U	N
d) Is the Contractor's accounting system adequate for management and tracking of costs? *If no, please explain inRemarks section.*		Yes			No	
e) If this is/was a Government contract, has/was this contractbeen partially or completely terminated for default or convenience or are there any pending terminations? *Indicateif show cause or cure notices were issued, or any default action in comment section below.*		Yes			No	
f) Have there been any indications that the contractor has hadany financial problems? *If yes, please explain below.*		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, andrespond to safety issues? (Includes: following the users rules, regulations, and requirements regarding housekeeping, safety,correction of noted deficiencies, etc.)	E	VG	S	M	U	N
b) Contractor complied with all security requirements for theproject and personnel security requirements.	E	VG	S	M	U	N
7. GENERAL						
a) Ability to successfully respond to emergency and/or surgesituations (including notifying COR, PM or Contracting Officer in a timely manner regarding urgent contractual issues).	E	VG	S	M	U	N
b) Compliance with contractual terms/provisions (explain ifspecific issues)	E	VG	S	M	U	N
c) In summary, provide an overall rating for the workperformed by this contractor.	E	VG	S	M	U	N

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 *(pleaseattach additional pages if necessary)***:**

_____

_____

_____

Supplemental Data Form

Purpose: This form collects information to assess responsibility in accordance with (IAW) RFO 9.104-1 and to support the overall evaluation of the proposal. The information provided will help the Government determine whether the prospective contractor is responsible and will be used exclusively for that purpose.

Instructions: The form must be completed and returned with the proposal. If there are any questions about how to complete this form, they should be submitted in ProjNet.

If submitting a proposal as a JV and/or Mentor/Protégé, one copy of this form using the JV/Mentor/Protégé information must be provided, as well as a completed form for each of the partners. Specific sections of the form will provide additional instructions regarding what must be completed by the JV and/or individual partners.

A. Contractor General Information

Company Name	
Address (Street, City, and State)	
UEI	
Parent Company Name & UEI (if applicable)	

Small Business Status (mark all that apply with an X)			
	8(a)		Veteran-Owned
	Alaskan Native Corporation/Indian Tribe		Native Hawaiian Organization
	Small Disadvantaged Business		HUBZone
	Woman-Owned		Joint Venture
	Economically Disadvantaged Woman-Owned		Mentor/Protégé
	Service-Disabled Veteran Owned		Other than Small Business

B. Points of Contact for Current Proposal

For JVs: POCs must be populated in at least one of the forms (JV and/or individual partners), with partner-specific POCs identified based on the roles performed by each partner in creating the proposal. A financial POC must be provided for the JV if populated, or a POC must be provided for each partner if the JV is unpopulated.

Supplemental Data Form

Primary Proposal POC - this person is the primary liaison and can answer general questions about the proposal

Name	
Title	
Phone	
Email	

C. **Organizational Personnel:**

For JVs: only populated JVs must provide this information at the JV level, and it must be populated for the individual partners regardless of whether the JV is populated or unpopulated.

Total Current Key Personnel	
Total Current Permanent Personnel (not including Key)	
Max Personnel at any time	

D. Financial Data:

For JVs: only populated JVs must provide this information at the JV level, and it must be populated for the individual partners regardless of whether the JV is populated or unpopulated.

Fiscal Year start/end (e.g. January 1 – December 31):

For the prior three completed fiscal years, provide the following, as applicable:

Description	Current Year to Date	Prior Year	Two Years Prior	Three Years Prior
Total Revenue				
Net Income				
Total Assets (less equipment)				
Equipment (carrying value)				
Current Assets			N/A	N/A
Total Liabilities				
Current Liabilities			N/A	N/A
Payroll Expense				
Fringe Rate				
Overhead Rate				
G&A Rate				

E. Government Sales Data:

For JVs: this must be completed by both the JV and all partners.

Please place an “X” in the box in the table below associated with the average percentage of total revenue provided from Federal Government customers over the last three years.

Less than 10%	
10% - 25%	
26% - 50%	
51% -75%	
75% or more	

What was the dollar value of the largest Federal Government contract received in the last five years?

If different from above, what is the dollar value of the largest contract ever performed (to include commercial efforts)?

Supplemental Data Form
Schedule A – Existing Commitments

List below the construction projects ***currently in progress*** over $7___M. Also list construction projects for which your firm has submitted a bid, providing the solicitation number, offer/bid value, description and location, and POC information for the person that issued the solicitation (Percent Complete will be N/A). Please do not include information for bids that have expired or where a solicitation was cancelled.

For JVs: this must be completed by both the JV and all partners.

Contract or Solicitation Number	Contract or Offer Amount	Description & Location	Point of Contact Name, email, and Phone Number	Percent Complete

Supplemental Data Form
Schedule A – Existing Commitments

Contract or Solicitation Number	Contract or Offer Amount	Description & Location	Point of Contact Name, email, and Phone Number	Percent Complete

Supplemental Data Form
Schedule B – Completed Projects

List below the principal construction projects your firm has completed within the past six years, including all DoD contracts, with a total value exceeding 5% of the most recently completed year's revenue. The POC provided should be a Contracting Officer or any DoD/federal contracts and the equivalent role for any private efforts. The description should highlight scopes relevant to the current project proposed. Projects under this 5% threshold may be included if they provide specific experience relevant to the currently proposed efforts.

For JVs: this must be completed by both the JV and all partners.

Contract Number	Contract Amount	Description & Location	Point of Contact Name, email, and Phone Number	Percent Sub-contracted

Supplemental Data Form
Schedule B – Completed Projects

Contract Number	Contract Amount	Description & Location	Point of Contact Name, email, and Phone Number	Percent Sub-contracted

Supplemental Data Form
Schedule C – Construction and/or Technical Equipment

List total equipment and facilities owned for performing the prospective contract and present status as to whether it is currently committed to existing contracts. If an asset is currently being used but is expected to be available for use on this effort, provide the estimated date the equipment will be available.

Acceptable descriptions for Condition are “New,” “Good,” or “Fair”

Acceptable entries for Present Status are “in use” or “available”

For JVs: this must be completed by both the JV and all partners. If an equipment listing is already provided as part of the JV Agreement or an addendum has been submitted specifically identifying the equipment to be provided for this effort, any of the fields in the table below that are not included in that list may be added to it and submitted in that format.

Quantity	Description	Condition	Purchase Price	Accumulated Depreciation	Present Status	Available Date

Supplemental Data Form
Schedule C – Construction and/or Technical Equipment

Quantity	Description	Condition	Purchase Price	Accumulated Depreciation	Present Status	Available Date

SECTION 01 00 00.00 44

CONSTRUCTION SCHEDULE

Amendment 0002

PART 1 GENERAL

1.1 SCHEDULE

Commence, prosecute, and complete the work under this contract in accordance with the following schedule:

	Item of Work	Commencement of Work (Calendar days)	Completion of Work (Calendar days)	Liquidated Damages per calendar days
(1)	All work for Hangar Door Expansion, including O&M Manuals and Final Record Drawings.	Upon receipt of Notice to Proceed.	336	$ 1,390.38

NOTE: All work on this project shall be completed within the number of calendar days stated in Item of Work (1) above, inclusive of all review periods and Government phasing requirements specified. If the Government accepts a proposal for a completion period of lesser duration, and such proposal alters the time periods for review and phasing, the Contract shall be read to include the original periods for review and phasing. If a completion period of lesser duration is proposed and accepted by the Government, the accepted completion period will replace the original construction schedule listed above in the Schedule. If an alternate completion period is proposed, the Bid Schedule must reflect pricing information for the alternate proposed completion period. The liquidated damages stated above will be applied for each calendar day the Contractor exceeds the Contract scheduled duration.

Operation and Maintenance Manuals: See Section 01 78 00 CLOSEOUT SUBMITTALS, paragraph OPERATION AND MAINTENANCE MANUALS for requirements and to ensure completion of O&M Manuals.

Record Drawings: See Section 01 78 00 CLOSEOUT SUBMITTALS, paragraph titled RECORD DRAWINGS for requirements and to ensure completion of record drawings.

1.2 TIME EXTENSIONS FOR UNUSUALLY SEVERE WEATHER (OCT 1989)
(ER 415-1-15)(52.0001-4038 1/96)

a. This provision establishes the procedure for evaluating requests for time extensions resulting from unusually severe weather. Applicable contract clauses are contained in Section 00 72 00 GENERAL CONDITIONS. In order for the Contracting Officer to award a time extension under this clause, the following conditions must be satisfied:

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

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

b. The following schedule of monthly anticipated adverse weather delays due to precipitation and temperature 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. Wind is not considered in the Monthly Anticipated Adverse Weather Calendar Day Schedule.

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
4	4	4	4	6	4	3	3	4	4	3	4

c. Upon receipt of the Notice to Proceed (NTP) and continuing throughout the contract, the contractor will record on the daily CQC 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)."

1.3 WORK RESTRICTIONS

1.3.1 Working Hours

Normal working hours are Monday through Friday, 0700 to 1700 hours. Requests to work at times other than the stated working hours, including scheduled utility outages discussed below, shall be submitted to the Contracting Officer for approval. Contractor shall not work outside of

the above stated working hours without prior written approval of the Contracting Officer.

1.3.2 Security Requirements

1.3.2.1 Installation Entrance Requirements

Entrance requirements to the Installation are specified in Section 01 35 10.00 44 SPECIAL PROJECT PROCEDURES FOR FORT HOOD (FORMERLY KNOWN AS FORT CAVAZOS).

In addition to the requirements specified in Section 01 35 10.00 44 and for the duration of this Contract, access to Fort Hood will be delayed between 5 minutes to 30 minutes or more due to increased security precautions, including the checking of vehicle occupants' IDs, vehicle manifests, and the searching of all vehicles. Any general or specific threat to the safety of those working or living at the Installation could result in longer waiting times at the access points to the Installation.

The following are the minimum requirements for contractor employees entering Fort Hood:

a. One form of picture ID.

b. A memo from the construction company on their letterhead stating the reason for entry, contract number, and the location at Fort Hood where the jobsite is located.

c. All delivery trucks must have a bill of lading and delivery truck drivers must have a picture ID.

1.3.3 Identification of Employees

The Contractor shall be responsible for furnishing to each employee, and for requiring each employee engaged on the work to display, identification as approved and directed by the Contracting Officer. Prescribed identification shall immediately be delivered to the Contracting Officer for cancellation upon release of any employee. When required, the Contractor shall obtain and provide fingerprints of persons employed on the project. Contractor and subcontractor personnel shall wear identifying markings on hard hats clearly identifying the company for whom the employee works.

Contractor personnel shall wear visible Contractor-furnished employee identification badges while physically on the Installation. Each badge shall include, as a minimum, the company name, employee name, photograph, Contract Title, Contract Number, and the expiration date of the badge.

1.4 UTILITIES

1.4.1 Payment for Utility Services

Water, sewer, gas, electricity, and refuse services are available for use during contract performance. The Contractor shall be responsible for coordinating, obtaining, and paying for utility services required for construction operations, unless otherwise specified in the contract. Charges for utility services shall be at the rates established by the applicable utility provider.

Electricity and gas utility systems are privately owned and operated by Dominion Privatization Texas LLC. Water and sewer utility systems are privately owned and operated by American Water Enterprises (AWE).

For additional requirements, refer to Section 01 35 10.00 44 SPECIAL PROJECT PROCEDURES FOR FORT HOOD (FORMERLY KNOWN AS FORT CAVAZOS).

Applicable contract clauses are contained in Section 00 72 00 GENERAL CONDITIONS.

1.4.2 Coordination

The Contractor shall coordinate with local phone company for contractor telephone and internet service during construction.

1.4.3 Outages

The Contractor shall coordinate all requests for utility outages with the Contracting Officer in writing 14 days prior to date of requested outage:

a. Water and sewer outages shall be held to a maximum duration of 4 hours unless otherwise approved in writing.

b. Gas and electrical outages are prohibited. Connections to gas and electrical lines shall be connected Hot without an outage. The Contractor shall submit a Work Plan for Electrical Connections 14 calendar days before the requested connections.

c. All utility outages shall be scheduled only on Saturdays, Sundays, or holidays unless specific approval is otherwise received.

1.5 PAPERLESS CONTRACT SUBMISSION

a. GENERAL INFORMATION ON PAPERLESS CONTRACT SUBMISSION

The goal is to reduce waste, decrease time, decrease associated costs, and to streamline most file transmission procedures.

b. METHODS OF DIGITAL SUBMISSION

This contract shall use digital submission methods to the greatest extent practicable. Acceptable methods are as follows, in order of precedence:

1. RMS - will be used to the greatest extent practicable. Some items may not be submittable via RMS due to program constraints. Those items shall use an alternate method. All ENGR 4025’s shall be generated and submitted in RMS.

2. Secure, Password Protected Web-Based System Access must be allowed and approved by the Government Representative. This method shall not be used for security sensitive documents.

3. E-mail – Items not submitted via RMS, as discussed above, shall be submitted via e-mail, if possible. E-mail limitations for file size must be considered prior to submission.

4. CD/DVD – Will be accepted if no other method is possible and upon prior approval.

c. ITEMS TO BE SUBMITTED VIA HARDCOPY

Product samples, color boards, and any other item not feasible to submit digitally, shall be submitted hard copy. ENGR 4025 shall be submitted digitally always. The Government reserves the right to request hard copy submission on any item, if deemed necessary. Contractor shall be prepared to provide requested hard copy at any time.

1.6 CONTRACTOR PERFORMANCE EVALUATIONS

In accordance with ER 415-1-17, Construction Contractor Performance Evaluations, the Government will evaluate the Contractor's performance throughout contract execution and upon completion of the work. Applicable contract clauses are contained in Section 00 72 00 GENERAL CONDITIONS. For construction contracts awarded at or above $750,000.00, the USACE will evaluate contractor’s performance and prepare a performance report using the Contractor Performance Assessment Reporting System (CPARS), which is now a web-based system. After an evaluation (interim or final) is written up by the USACE, the contractor will have the ability to access, review and comment on the evaluation for a period of 60 days. Accessing and using CPARS requires specific software, called PKI certification, which is installed on the user’s computer. The certification is a Department of Defense requirement and was implemented to provide security in electronic transactions. The certification software could cost approximately $110 - $125 per certificate per year and is purchased from an External Certificate Authorities (ECA) vendor. Current information about the PKI certification process and for contacting vendors can be found on the web site: http://www.cpars.csd.disa.mil/. If the Contractor wishes to participate in the performance evaluation process, access to CPARS and PKI certification is the sole responsibility of the Contractor.

1.7 CONTRACTOR PAYROLL RECORD

Contractor shall be required to log payrolls for all their own employees and subcontractors utilizing ENG Form 3180. Each subcontractor requires a separate ENG 3180 for their payrolls. The Contractor shall maintain the ENG 3180, along with the payrolls, on site and available for review by the Contracting Officer's Representative. The ENG 3180's shall be updated weekly as payrolls are submitted. After making copies for their files, the Contractor is required to submit the originals of each week’s payrolls to the Resident Office. Before final payment, the Contractor shall provide the completed ENG 3180’s to the Contracting Officer's Representatives.

1.8 CONTRACTOR SUPPLY and USE OF ELECTRONIC SOFTWARE FOR PROCESSING WAGE RATE REQUIREMENTS CERTIFIED LABOR PAYROLLS

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

(b) The contractor shall be responsible for obtaining and providing for all access, licenses, and other services required to provide for receipt, processing, certifying, electronically transmitting to the Government, and storing weekly payrolls and other data required for the contractor to comply with the Wage Rate Requirements statute. When the contractor uses an electronic payroll system, the electronic payroll service shall be used by the contractor to prepare, process, and maintain the relevant payrolls and basic records during all work under this construction contract and the

electronic payroll service shall be capable of preserving these payrolls and related basic records for the required 3 years after contract completion. The contractor shall obtain and provide electronic system access to the Government, as required to comply with the Wage Rate Requirements over the duration of this construction contract. The access shall include electronic review access by the Government contract administration office to the electronic payroll processing system used by the contractor.

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

(1) commercially available;

(2) compliant with appropriate Wage Rate Requirements statute payroll provisions ;

(3) able to accommodate the required numbers of employees and subcontractors planned to be employed under the contract

(4) capable of producing an Excel spreadsheet-compatible electronic output of weekly payroll records for export in an Excel spreadsheet;

(5) demonstrated security of data and data entry rights;

(6) ability to produce contractor-certified electronic versions of weekly payroll data;

(7) ability to identify erroneous entries and track the date/time of all versions of the certified Wage Rate Requirements statute payrolls submitted to the government over the life of the contract;

(8) capable of generating a durable record copy, that is, a CD or DVD and PDF file record of data from the system database at end of the contract closeout. This durable record copy of data from the electronic payroll processing system shall be provided to the Government during contract closeout.

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

1.9 ADDITIONAL CONTRACTOR PAYROLL RECORD

(1) The Fort Worth District requires the contractor and all sub-contractors to use an electronic payroll system meeting the requirements above referenced and the following.

(a) The Certified Labor Payrolls must be tracked electronically via WEB-based software and all data must be submitted via WEB. Payroll guidelines, "Instructions to Contractors on Contract Labor Requirements, published as "Appendix A, SWFP 1185-1-1" (also known as the Green book), will be provided to advise/inform contractors how these labor provisions will be administered and enforced.

(b) The WEB-based software must be capable of downloading data directly

from existing electronic payrolls, track workers to ensure that overtime is being paid when overtime status is reached on Government contracts whether on one or multiple contracts or different sub-contractors. The software must track apprentices and journeyman ratios, create and track SF-1444 "Request for Authorization of Additional Classification and Rate", track workers by name/address/with or without Social Security Numbers, allow automated redaction of information appearing on payroll statements for agency response to Freedom of Information Act (FOIA requests), and provide free online training by the software provider to any user of the software.

(c) The software must allow fringe benefit statement to track fringe benefits "whether cash or into an approved plan, fund, or program. If the fringe benefits are paid into a plan, fund, or program the company's name (receiving benefits), phone number, and address shall be listed on the Statement of Compliance Form (DD Form 879 or WH-347).

(d) Software must provide a method of tracking standard and non-standard deductions such as restitution, alimony, child support, and allow for custom entries. Method of tracking must list the deductions on the statement of compliance or be listed as an attachment.

(e) The Contractor is required to provide the updated 3180's and notify the Contracting Officer's Representatives weekly by email when the current payrolls are complete and ready for inspection/review on the WEB. Before final payment, the Contractor shall provide the completed ENG For 3180's and 3 disks (CD/DVD) which include complete copies of the Contractor and sub-contractor's payrolls/attachments, to the Contracting Officer's Representatives.

(2) Electronic copies of electronically/manually signed forms/memos/letters such as SF 1413 Statement of Acknowledgement (sub-contractor agreement), SF-1444 "Request for Authorization of Additional Classification and Rate", employee deduction authorization, certification of apprentices and trainees shall be provided to the Contracting Officer's Representative .

1.10 STREET CLOSINGS

The Contractor shall coordinate all requests for street closings with the Contracting Officer in writing 21 days prior to date of requested outage:

a. One lane traffic shall be maintained at all times (except that a total closing may be allowed for specific 8-hour periods).

b. The final street repair shall be completed within 14 days after the start of any street crossing. Any part of the street returned to service prior to final repair shall be maintained smooth with hot-mix cold-lay surface course.

c. Open cuts across paved roads and streets for utility crossings will not be allowed. Utility crossings will be accomplished by boring or jacking procedures only.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

-- End of Section --

SECTION 01 30 00

ADMINISTRATIVE REQUIREMENTS

Amendment 0002

PART 1 GENERAL

1.1 REFERENCES

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

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1 (2024) Safety -- Safety and Occupational Health (SOH) Requirements

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

<AM#0002> ~~View Location Map~~

~~Progress and Completion Pictures~~ </AM#0002>

Field Office Overhead

Accounting Practice

Delegation Of Authority

<AM#0002> ~~SD-11 Closeout Submittals~~

~~High-Resolution Exterior Panoramic Photographs~~

~~1.3 VIEW LOCATION MAP~~

~~Submit, prior to or with the first digital photograph submittals, a sketch or drawing indicating the required photographic locations. Update as required if the locations are moved.~~

~~1.4 PROGRESS AND COMPLETION PICTURES~~

~~Photographically document site conditions prior to start of construction operations. Provide monthly, and within one month of the completion of work, digital photographs, 1600x1200x24 bit true color minimum resolution in JPEG file format showing the sequence and progress of work. Take a minimum of 20 digital photographs each week throughout the entire project from a minimum of ten different viewpoints selected by the Contractor~~

~~unless otherwise directed by the Contracting Officer. Submit with the monthly invoice one set of digital photographs in the agency construction management system of record, cumulative of all photos to date. Indicate photographs demonstrating environmental procedures. Provide photographs for each month in a separate monthly directory and name each file to indicate its location on the view location sketch. Also provide the view location sketch on the CD or DVD as a digital file. Include a date designator in file names. Photographs provided are for unrestricted use by the Government.~~

~~1.4.1 High-Resolution Exterior Panoramic Photographs~~

~~Construction Contractor shall provide high resolution, brochure quality construction completion photos with a panoramic view of the entire facility exterior. Photos shall be clear of construction caution tape, debris, vehicles, trash cans, dumpsters etc. Photos shall be provided in electronic file and delivered to National Program Manager prior to BOD or Construction Completion Date, whichever is earlier~~

</AM#0002>

1.3 MINIMUM INSURANCE REQUIREMENTS

Provide the minimum insurance coverage required by FAR 28.307-2 Liability, during the entire period of performance under this contract. Provide other insurance coverage as required by State law.

1.4 SUPERVISION

1.4.1 Superintendent Qualifications

Provide project superintendent with a minimum of 10 years experience in construction with at least 5 of those years as a superintendent on projects similar in size and complexity. The individual must be familiar with the requirements of EM 385-1-1 and have experience in the areas of hazard identification and safety compliance. The individual must be capable of interpreting a critical path schedule and construction drawings. The qualification requirements for the alternate superintendent are the same as for the project superintendent. The Contracting Officer may request proof of the superintendent's qualifications at any point in the project if the performance of the superintendent is in question.

1.4.2 Minimum Communication Requirements

Have at least one qualified superintendent, or competent alternate, capable of reading, writing, and conversing fluently in the English language, on the job-site at all times during the performance of Contract work. In addition, if a Quality Control (QC) representative is required on the Contract, then that individual must also have fluent English communication skills.

1.4.3 Duties

The project superintendent is primarily responsible for managing subcontractors and coordinating day-to-day production and schedule adherence on the project. The superintendent is required to attend Red Zone meetings, partnering meetings, and quality control meetings. The superintendent or qualified alternative must be on-site at all times

during the performance of this contract until the work is completed and accepted. The project superintendent may not serve as the SSHO or the QC Manager.

1.4.4 Non-Compliance Actions

The Project Superintendent is subject to removal by the Contracting Officer for non-compliance with requirements specified in the contract and for failure to manage the project to ensure timely completion. Furthermore, 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 is acceptable as the subject of claim for extension of time or excess costs or damages by the Contractor.

1.5 Field Office Overhead

Notice to Offerors: You must declare below the accounting practice that you apply to contracts to calculate field office overhead for all change orders, modifications, and requests for equitable adjustment. Pursuant to Federal Acquisition Regulation (FAR) Parts 31.105(d)(3) and 31.203(d)(1), an accounting practice that varies from modification to modification is not allowable. Select one of the following:

a. If you use Time Distribution Base for Per Diem Rate practice, see "Field Office Overhead - Per Diem Rate" listed below.

b. If you use Direct Cost Distribution Base for a Percentage Mark-up practice, see "Field Office Overhead - Percentage Markup", listed below.

c. If you choose Other Accounting Practice That is Allowed Under the FAR and That Uses a Single Distribution Base, you must describe the accounting practice in sufficient detail below to allow the Contracting Officer to determine what accounting practice is being utilized by your company and that it complies with the criteria for acceptable accounting practices as set out in FAR Parts 31.105(d)(3) and 31.203(d)(1).

d. Contractor must declare the Accounting Practice to apply to this contract, in writing, within 10 days after Notice to Proceed is received.

1.5.1 Field Office Overhead - Per Diem Rate

The Contracting Officer shall make an equitable adjustment and modify the contract in writing for any change to the contract, issued pursuant to the Changes clause or otherwise, for which the Government is responsible, and which causes either an increase or decrease in the Contractor's costs as to time or performance under the contract. Under such an equitable adjustment, the Contractor's field office overhead shall be an allowable cost, in accordance with the Contractor's accounting practice as identified by the Contractor.

The Contractor shall declare which standard form of accounting practice it applies to field overhead costs: if a contractor indicates that it follows a per diem basis, no overhead percentage markup rate for office overhead costs shall be allowed.

Under such an equitable adjustment, the Contractor shall be reimbursed for

field office overhead on a per diem basis when the completion of the contract is extended by reason of the change issued under any clause, except the Default clause, subject to the Contractor substantiating the variable expense by providing a detailed breakdown of its proposed increase or decrease of costs as required by the Contract. Applicable contract clauses are contained in Section 00 72 00 CONTRACT CLAUSES. No payment of field office overhead on a per diem basis shall be allowed for any change when the completion of the contract is not extended by reason of the change.

1.5.2 Field Office Overhead - Percentage Markup

The Contracting Officer shall make an equitable adjustment and modify the contract in writing for any change to the contract, issued pursuant to the Changes clause or otherwise, for which the Government is responsible, and which causes either an increase or decrease in the Contractor's costs as to time or performance under the contract. Under such an equitable adjustment, the Contractor's field office overhead shall be an allowable cost, in accordance with the Contractor's accounting practice as identified by the Contractor.

The Contractor shall declare which standard form of accounting practice it applies to field overhead costs: if a contractor indicates that it follows a percentage basis, no per diem rate for office overhead costs shall be allowed.

Under such an equitable adjustment, payment of office overhead costs shall be allowed for any change on a percentage markup basis regardless of whether the completion of the contract is, or, is not, extended by reason of the change, except for modifications issued pursuant to the Default Clause. The Contractor shall provide a detailed breakdown of its proposed increase or decrease of costs as required by Contract Clause. Applicable contract clauses are contained in Section 00 72 00 GENERAL CONDITIONS.

1.6 Delegation of Authority

Submit separate letters of authority for each individual with delegated authority to negotiate and/or sign documents on behalf of the contractor for this contract. Provide name, title, telephone number, and email address for each individual and state their delegated authorities, to include authority limits where applicable, for the following items:

a. Serial Letters
b. Price Proposals
c. Authority to Negotiate (time and/or cost)
d. Contract Modifications
e. Prompt Payment Certification
f. Certified Payroll Documents
g. Safety incident notices and forms
h. CPARS performance evaluations
i. Release of Claims
j. Delegation of Competent Person and/or Qualified Person

Each letter submitted shall include the individual's acknowledgement of their delegated authority and shall include the individual's handwritten signature and electronic signature.

Submit the letters within 10 days after receipt of Notice to Proceed.

Update the authority delegations, in writing, when changes in personnel or delegated authority occur.

1.7 PRECONSTRUCTION CONFERENCE

Immediately after award, prior to commencing any work at the site, coordinate with the Contracting Officer a time and place to meet for the Preconstruction Conference. The conference must take place within 35 calendar days after award of the contract, but prior to commencement of any work at the site. The purpose of this conference is to discuss and develop a mutual understanding of the administrative requirements of the Contract including but not limited to: daily reporting, invoicing, value engineering, safety, base-access, outage requests, hot work permits, schedule requirements, quality control, schedule of prices or earned value report, shop drawings, submittals, cybersecurity, prosecution of the work, government acceptance, final inspections and contract close-out and the processes for joint risk management between the Contractor and Government. Contractor must present and discuss their basic approach to scheduling the construction work and any required phasing.

<AM#0002>

~~## 1.8 PARTNERING~~

~~To most effectively accomplish this Contract, the Contractor and Government must form a cohesive partnership with the common goal of drawing on the strength of each organization in an effort to achieve a successful project that includes joint risk management, is without safety mishaps, conforming to the Contract, within budget and on schedule. The partnering team must consist of personnel from both the Government and Contractor including project level and corporate level leadership positions. Key Personnel from the supported command, end user, , Contractor, key subcontractors and the Designer of Record (DOR) (regardless of whether the contract is a design-build or a design-bid-build) are required to participate in the Partnering process.~~

~~### 1.8.1 Team-Led (Informal) Partnering~~

~~a. The Contracting Officer will coordinate the initial Team-Led (Informal) Partnering Session with key personnel of the project team, including Contractor and Government personnel. The Partnering Session will be co-led by the Resident Engineer or Project Engineer and Contractor's Project Manager.~~

~~b. The Initial Team-led Partnering session may be held concurrently with the Pre-Construction meeting. Partnering sessions will be held at a location mutually agreed to by the Contracting Officer and the Contractor, typically at a conference room on-base or at the Contractor's temporary trailer.~~

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

~~d. Participants will bear their own costs for meals, lodging and transportation associated with Partnering.~~

</AM#0002>PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

-- End of Section --

SECTION 01 35 10.00 44
Amendment 0002
SPECIAL PROJECT PROCEDURES FOR FORT HOOD (FORMERLY KNOWN AS FORT CAVAZOS)

PART 1 GENERAL

There are documents that are still referred to under the Fort Cavazos name while the Installation name has been updated to Fort Hood. There are places throughout the document where the name may not be updated as those document names have not been changed or no current version with the name change exist to date.

This Section covers the project requirements unique to Fort Hood, Texas. These unique requirements relate to items such as the digging permit process;tracer wire and marking tape specifications for the location of utility systems; Fort Hood landfill operations and permit requirements; local jacking, boring, and tunneling requirements; backflow prevention assembly documentation; and Customer Service Inspection certifications.

1.1 Installation Entrance Requirements

All personnel accessing Fort Hood must have DOD affiliation or be vetted at the Visitors' Welcome Center and issued a pass before being allowed onto Fort Hood. Contractor employees working at Fort Hood will be issued an extended pass once they have been vetted.

1.1.1 Vetting Requirements

Entry Requirements for person without a Valid DOD ID Card requesting unescorted access:
•A valid purpose for entering the installation; (Attend Meeting, visit Museum, Job interview, etc.)
•Valid driver's license
•Current vehicle registration (If operating a vehicle)
•Proof of current insurance (If operating a vehicle)
•License plate number
•Provide the destination, name of facility, building number, street address, or unit name/designation

Upon satisfying the above criteria and vetting requirements an Installation access pass/badge will be issued to the person.

NOTE: All unescorted visitors and all vehicle passengers (riding in these vehicles) will proceed to the Visitors Welcome Center (VWC) and receive a security screening. All vehicle occupant names will be included on an Installation Visitors Pass. Security personnel will verify all occupants ID with names on visitor passes at Installation Access Control Points (IACP) prior to providing installation access.

1.2 REFERENCES

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

AMERICAN WATER OPERATIONS AND MAINTENANCE

AWO&M — American Water Operations & Maintenance, Inc. (AWO&M) Design Guide http://www.amwater.com/products-and-services/military-services/specifications-and-details/hood/index.html#designguide

AMERICAN WATER WORKS ASSOCIATION (AWWA)

AWWA C651 — (2014) Standard for Disinfecting Water Mains

ASTM INTERNATIONAL (ASTM)

ASTM A53/A53M — (2024) Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless

BUILDERS HARDWARE MANUFACTURERS ASSOCIATION (BHMA)

ANSI/BHMA A156.4 — (2024) Door Controls - Closers

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-02 Shop Drawings

Hardware schedule; G

Submit a door hardware schedule, similar to Door Hardware Institute's (DHI)"Vertical Hardware Schedule for Typical Openings"), listing all items to be furnished.

Keying system

Electro-Mechanical Devices and Accessories; G

Detail drawings for hardware devices for computerized keying systems, magnetic cards, keyless push button access control systems, and other electrical hardware devices showing complete wiring and schematic diagrams and other details required to demonstrate proper function of units.

SD-03 Product Data

Casing Pipe

10 days prior to jacking, boring, and tunneling activity, furnish catalog data for casing pipe.

Paint Usage and Safety Data Sheet (SDS)

Submit two copies of all paint systems for this contract and the associated SDS. One copy for the Contracting Officer Representative (COR) and the other copy for the Air Quality Manager (telephone, 254-287-5284), DPW Environmental Division.

Air Emission Inventory

Submit a copy of air emission inventory Clean Air Act Program Office on each type of mechanical equipment and the number of units to be installed for the new facility to facilitate annual revision of Federal Air Permit Title V. The Contractor should use the manufacturer equipment information to prepare submittal of Air Emission Inventory

Certificate of Conformity for New Generators

Submit a copy of Environmental Protection Agency issued Certificate of Conformity for all new generators to the Clean Air Act Team to be installed to facilitate annual revision of Federal Title V Air Permit.

Door hardware manufacturer's descriptive data, technical literature, catalog cuts, installation instructions, manufacturer warranties, and spare parts data. Spare parts data for locksets, exit devices, closers, electric locks, electric strikes, electro-magnetic closer holder release devices, and electric exit devices, after approval of the detail drawings, and not later than 3 months prior to the date of acceptance of the facility by the Contracting Officer. The data shall include a complete list of parts and supplies, with current unit prices and source of supply.

SD-04 Samples

Plastic Marking Tape and Tracer Wire; G

10 days prior to installation of utilities, furnish 12 inch long samples of marking tape for each applicable utility. Furnish 12 inch long sample of the tracer wire.

Locks and Latches; G.

Furnish samples of the locksets, cylinders, cores, and keys to be furnished this project. Notify the Contracting Officer and base personnel for a meeting demonstrating that the locksets to be furnished are fully compatible with the project requirements and, if applicable, the existing keying system. An existing base core and/or cylinder and key will be fitted to the sample lockset.

SD-07 Certificates

Customer Service Inspections

The Contractor shall supply a "Customer Service Inspection" (CSI) certificate for the water supply in accordance with the Texas Commission on Environmental Quality (TCEQ) regulations. Prior to final inspection and acceptance of new construction or after any material improvement or addition to drinking water systems, furnish the completed and signed certificate to American Water

Operations & Maintenance, Inc. (AWO&M) (Bldg. 49002, 254-213-0382), through the Contracting Officer, for review and final approval. The ORIGINAL of the signed and dated form shall be delivered to AWO&M (Bldg. 49002). A blank certificate is located at the end of this section. See paragraph CUSTOMER SERVICE INSPECTIONS for additional information.

Customer Service Inspection Certificate

Digging And Water Use Permits

Digging permits must be obtained prior to any digging, drilling or excavation. See paragraph DIGGING PERMITS for additional information.

Army Radiation Permits (ARP)

Landfill Permit

Contractor shall obtain permission from Fort Hood Directorate of Public Works (DPW) to use the Fort Hood landfill. Submit documentation granting permission and a completed landfill permit to the Contracting Officer prior to start of construction. A blank permit form is located at the end of this section. See paragraph CONDITIONS FOR USE OF FORT HOOD LANDFILL for additional information.

1.4 FORT HOOD CADD AND GIS DELIVERABLES

1.4.1 Data Standards

Spatial Data Standard for Facilities, Infrastructure and Environment (SDSFIE) current release shall be followed for Geospatial database structure and attributes to allow for data integration. CADD data shall be documented according to the current release of the Architecture, Engineering and Construction (AEC)/CADD standards. All GIS and CADD data will be documented in accordance with the Federal Geographic Data Committee (FGDC) Content Standards for Digital Geospatial Metadata. Deviations from the standard described above will be rejected.

1.4.2 Coordinate System Projection And Datum

All GIS data shall use the Universal Transverse Mercator Zone 14 North projection, World Geodetic System of 1984 (WGS84) datum, and the North American Vertical Datum of 1988 (NAVD88) using Metric as the working units to ensure data alignment and accuracy.

CADD data shall be geo-referenced in the State Plane Coordinate System 1983, using the North American 1983 Geodetic Datum with Survey Feet as the working units.

The projection, datum and coordinate system must be defined and then documented in the metadata for both CADD and GIS and provided whenever the data is distributed.

1.4.3 CADD And GIS Deliverables

All CADD deliverables of As-built drawings shall be delivered in a MicroStation V8.DGN compatible format.

All CADD references shall be removed from the submitted DGN file.

Files with raster's attached as the sole contents of the file are not acceptable. DGN files with vector edits made over an attached raster will be accepted.

Individual as-built sheets have one to one correspondences to individual dgn files.

Each dgn file will be named in such a way to easily reflect the order and As-Built sheet it represents.

A seed file can be obtained from the Fort Hood DPW CADD/GIS Center. If a seed file other than the Fort Hood seed file is used, the contractor must provide a copy of the file with the submittal.

GIS deliverables shall be delivered in current Bentley file format or an ArcGIS shape file format.

<AM#0002>

~~1.8 ENVIRONMENTAL PROTECTION PLAN~~

~~The environmental protection plan shall include all elements addressed in Section 01 57 19 TEMPORARY ENVIRONMENTAL CONTROLS ENVIRONMENTAL PROTECTION, paragraph "Content." Include the following:~~

~~(a) List of all on-site regulated materials, Safety Data Sheet (SDS), List of Construction Materials and Products (mastic, sealants, etc.), and SDS shall be submitted through the Contracting Officer to the installation DPW-Environmental Office.~~

~~(b) All required pre-construction permits, registration, notifications, certifications applicable to the Contract.~~

</AM#0002>

1.5 SURFACE WATER MANAGEMENT

1.5.1 Temporary Water Use Permit

All construction that requires the storage, obtaining, and diversion surface water flow, except potable water, requires a Temporary Water Use Permit per Texas Water Code (TWC) Chapter 11. The Contractor shall obtain the permit, provide a copy of the permit and monthly reports of total surface water usage to the installation environmental office until project completion and acceptance.

1.5.2 Riparian Buffer Zones

All construction to include woody vegetation removal shall remain at least 50 meters from streams in order to maintain riparian buffer zones and reduce erosion. A reduced buffer zone may be approved on a case-by-case basis by DPW Environmental Division, Natural and Cultural Resources Management Branch.

1.6 PERMITS

1.6.1 Digging And Water Use Permits

1.6.1.1 Digging Permits

The Contractor shall obtain digging permits directly from the Fort Hood Post DPW before any drilling, digging, or excavation is undertaken (254-287-6499). Provide a completed form FC 200-10 via usarmy.Cavazos.id-readiness.mbx.dpw-env-dig-permits@army.mil, Coordination for Land Excavation & Water Use, to the DPW Building 4622 , Fort Hood, Texas for each permit. A map with aerial imagery of the site must be attached to the excavation permit. Allow 30 days for Government review of digging permit requests. A digging permit for a specified area of excavation expires 15 days after the issue date; Contractor must re-apply for a new permit to perform excavation in the area if the excavation was not started within the 15-day period. Permits will identify all underground utilities within 5 feet of the designated area. Contractor shall be responsible for all repairs, costs, and damages due to excavating without permit or damaging an identified utility. Unidentified utilities shall be repaired by the Contractor at Government expense.

All personnel performing the digging, including all subcontractor personnel must be present at the digging permit inspection. Subcontractors must submit and obtain their own dig permit.

All personnel performing the digging, including all subcontractor personnel must be present at the digging permit inspection.

1.6.1.2 Water Use Permit

Contractor shall obtain a Fort Hood Water Use Permit directly from Fort Hood post DPW prior to any use of surface or ground water on Fort Hood. All usage of surface water or ground water must be coordinated in writing also using FC 200-10 with both the DPW Environmental Management Branch and Natural and Cultural Resources Management Branch, at least 30 days in advance of such a need. The information required includes the proposed use for the water, estimated dates of the operation, estimated amount of water to be used, and desired locations of the water source.

A temporary water use permit from the TCEQ will also be required (). Such permits can be anticipated to take a minimum of 30 days and require a $100 application fee plus other minor application-related expenses.

Any alteration to the stream such as dikes or other modifications involving placing fill in the stream would require a Section 404 Permit application and approval. This process is elaborate, and 180 days should be allowed for the process. Contact DPW Environmental Division, Natural and Cultural Resources Management Branch for assistance with this type of permit.

1.6.2 Clean Water Act Section 404 Permit

A Section 404 permit is required for any alteration to the stream such as dikes or other modifications which involve placing fill, excavation, or otherwise changing the bottom elevation in the stream. Depending on the activity and extent of impacts to the stream, coordination with and approval from USACE Fort Worth District Regulatory Branch may be required. If coordination with the USACE Fort Worth

District Regulatory Branch is necessary, acquiring approval may take 3-12 months depending on the level of permitting and coordination required. Contact DPW Environmental Division, Natural and Cultural Resources Management Branch early in the planning process for assistance with Section 404 permitting.

1.6.3 Army Radiation Permits (ARP)

Non-Army agencies (including other military services, vendors, and civilian contractors) require an ARP to use, store, or possess ionizing radiation sources on an Army installation (see 32 CFR 655). Non-Army applicants will apply by letter with supporting documentation (see para 2-4a, below) to the garrison commander. The letter should be submitted such that the garrison commander receives the application at least 30 days before the requested start date of the permit (see AR 385-10, chap 7).

a. The ARP application will specify start and stop dates for the ARP and describe the intended use of the radioactive material. For sealed sources, an affirmation that leak test requirements are current shall be included in the application. The garrison commander will approve the application only if the applicant provides evidence to show that one of the following is true:

(1) For installations that maintain exclusive Federal jurisdiction, and installations in NRC non-agreement states, the ARP applicant must possess one of the following that allows the applicant to use the source as specified in the ARP application:

(a) A valid NRC license.
(b) A Department of Energy (DOE) radiological work permit (for work performed under DOE regulations).
(c) A State radioactive material license with an NRC reciprocity agreement. The ARP applicant establishes reciprocity by submitting an NRC Form 241 (Report of Proposed Activities in Non-Agreement States, Areas of Exclusive Federal Jurisdiction or Offshore Waters) to the NRC in accordance with 10 CFR 150.20. The NRC limits work performed under a reciprocity agreement to 180 days in a calendar year. Otherwise, an NRC license is required.

1.7 OBSTRUCTION EVALUATION/AIRPORT AIRSPACE ANALYSIS (OE/AAA)

The project is located in proximity to Class D Airspace and therefore shall meet the requirements of 14 CFR Part 77.9. The Contractor shall utilize the obstruction Evaluation/Airport Airspace Analysis (OE/AAA) website and ensure all requirements for notices to the FAA are met.

The contractor shall provide a Notice to Air Missions (NOTAMs) if any crane(s) will be used during construction. The NOTAMs shall be submitted to DAO Air Traffic and Airspace Officer.

1.8 UTILITY INSTALLATION REQUIREMENTS

1.8.1 American Water and Dominion Electric Requirements

The following utilities on Fort Hood are owned and operated by the following Government Contractors, identified as the System Owner; Dominion Privatization Texas, LLC for natural gas, electrical, and site lighting features, and American Water (AW) Enterprises Military Service Group for water and sanitary sewer. The Government will issue separate contracts to

the system owners for utility services for the project site, up to the point of demarcation for each utility, and the work may be performed concurrently with this construction contract. The contractor shall plan for and be prepared to share the construction site with system owners and/or their contractors. The Prime Contractor shall be responsible for finalizing a schedule with the System Owner(s) and include in activities for utility work (by others) in their project schedule. Work completed by the Systems Owner will not be included in project cost. Prime contractor will coordinate with the Privatized Utility COR to ensure proper coordination with the privatized utilities.

COR may be contacted at:

Dominic Miles
DLA Privatized Utilities COR
Ft Hood, TX
254-535-3188
Email: dominic.q.miles.civ@army.mil

Charlene Crawford
DLA Privatized Utilities COR
Ft Hood, TX
254-535-5170
Email:Charlene.r.crawford.civ@army.mil

Nimsi Carey
DLA Privatized Utilities COR
Ft Hood, TX
254-402-9397
E-mail: Nimsi.a.carey.civ@army.mil

DLA Privatized Utilities Inbox
Fort Hood, Texas
usarmy.cavazos.id-readiness.mbx.dpw-utility-privatization@army.mil

The System Owners may be contracted at:

Dominion Privatization Texas, LLC

Olivia Chee-Martin
Designer
Dominion Energy - Privatization Fort Hood, TX
49005 Santa Fe Avenue
Fort Hood, TX 76544
Cell: (254) 217-1242
Email: olivia.r.chee-martin@dominionenergy.com

Walter Ezell
Designer
Dominion Energy - Privatization Fort Hood, TX
49005 Santa Fe Avenue
Fort Hood, TX 76544
Cell: (757)-585-1407
Email: walter.j.ezell@dominionenergy.com

Brian Esplin
Supervisor
Designer
Dominion Energy - Privatization, Fort Hood, Tx

49005 Santa Fe Avenue
Fort Hood, TX 76544
Cell: 757-645-7296
Email: bryan.esplin@dominionenergy.com

American Water Enterprises Military Service Group

Nicole Torralva, P.E.
Capital Program Manager
American Water - Military Services Group
49002 Santa Fe Avenue
Fort Hood, TX 76544
Office Tel: (254) 213-0382
Cell: (254) 213-0382
Email: nicole.torralva@amwater.com

Ghazi A. Dakik, P.E., MSCE
Senior Engineer
American Water - Military Services Group
49002 Santa Fe Ave
Fort Hood, Texas 76544
Office Tel: (254) 213-0382
Cell: (254) 383-7756
Email: ghazi.dakik@amwater.com

1.8.2 Plastic Marking Tape and Tracer Wire

Marking tape to be manufactured with integral wires or foil backing. Furnish and install the following marking tape and tracer wire:

a. Plastic Marking Tape

Plastic marking tape shall be acid and alkali-resistant polyethylene film, 6 inches wide with minimum thickness of 0.004 inch. Tape shall have a minimum strength of 1750 psi lengthwise and 1500 psi crosswise. The tape shall be of a type specifically manufactured for marking underground utilities. Tape shall be color as specified in Table 1 and bear a continuous printed inscription describing the specific utility.

TABLE 1. Tape Color

Orange:	Telephone, Telegraph, Television, Police, and Fire Communications

b. Tracer Wire

For communications, place No.10 AWG, THWN, CU, Direct burial in trench bottom prior to sand bedding, and brought up in manholes, with 12 inches minimum leads above finished grade. Only direct -burial splices shall be used.

1.8.3 Jacking, Boring, and Tunneling

Conduct boring and jacking in a manner which does not interfere with the operation of the railroad or street or weakens or damages the embankment or structure. Bore or jack from the low or downstream end wherever possible. Unless otherwise shown or specified, the top of the casing pipe shall be a minimum of 3 feet below the finished road surface and 4 feet below the bottom of the railroad track ballast.

a. Utilities

Excavate where possible and verify the location and depth of buried utilities which will be crossed.

b. Casing Pipe

Smooth wall steel pipe, ASTM A53/A53M with welded joints. Minimum wall thickness of 3/16 inch unless otherwise shown or specified.

c. Casing

Unless otherwise indicated or specified, install a casing pipe of a diameter which provides a minimum of 2 inches clearance between the outside diameter of the carrier pipe joint and the inside wall of the casing. Upon installation of the carrier pipe, sand grout the entire annular space between the casing and carrier pipe walls.

1.9 POLLUTION PREVENTION OF POTABLE WATER SUPPLY SYSTEM

Verification of water line disinfection shall be performed per AWWA C651. The samples shall be analyzed by an analytical lab that holds the current state license and certification. Repeating disinfection protocols are required until satisfactory results are obtained -- that being two consecutive sets of acceptable samples taken 24 hours apart. The water sample analytical results shall be provided to American Water for record-keeping. One water sample at each 1000 linear feet of disinfected water line shall be obtained. Water sample shall be placed in proper sterilized containers and a bacterial examination shall be performed in accordance with state approved methods. The water supply system shall not approve for service until each test result is negative for bacteria examination.

NOTE: In the State of Texas, new water supply system Certification and drinking water well certification are required. The potable water supply system and water quality shall be in accordance with 30 TAC Chapter 290, subchapter D. In compliance with 30 TAC 290.39, the Contractor shall submit to Texas Commission on Environmental Quality (TCEQ) a written application (with plans, specifications, and related document) for review. The revision period could be 60-day in duration. In addition, the Contractor shall submit the post construction water system completion notification to TCEQ after completion of the new water supply system.

1.10 SPILL CONTROL

POL storage greater than 55 gallons requires secondary containment and possible modification to the Installation's existing spill prevention control and countermeasures plan, and are subject to review and approval by the Installation's DPW Environmental Division. All activities that store or use POL or hazardous substances and have the potential of spilling those products must take into consideration secondary containment of the storage container and must have compatible spill cleanup materials on hand at all times. The site environmental protection plan should address the POL or hazardous substances, their storage containers, secondary containment, and how you will immediately respond to and cleanup spills of those substances in any amount. It also will include notification to the Fort Hood Fire Department (254-287-3908) and Contracting Officer of any spills of five gallons or greater to the land

and any amount into a water body such as a creek, pond, river or lake. The contractor will not report any spills to state or federal regulatory agencies. DPW Environmental will assess the spill and conduct regulatory reporting if necessary.

1.11 AIR POLLUTION CONTROL

Provide certifications from equipment manufacturers verifying that the small combustion equipment emission (i.e. with rated capacity less than 2.0 MMBtu/hr) is in compliance with the Texas Commission on Environmental Quality (TCEQ), per 30 TAC 117.3205 (Texas Administrative Code (TAC), Title 30, Chapter 117 Control of Pollution From Nitrogen Compounds, Subchapter E Small Combustion Sources, Division 3 Water Heaters, Small Boilers, and Process Heaters, Rule 117.465 Emission Specifications) and Rule 117.3210 Certification Requirements along with Rule 117.3215 Notifications and Labeling Requirements.

Document all equipment emission data from combustion devices to be used in this Contract per 30 TAC 106.183. All equipment air emission data shall be provided to the Installation Clean Air Act Team to ensure compliace with and, assist with any required revisions of the TITLE V Federal Air Permit. An Emission Inventory is included with the Environmental Design Analysis for information only. The Contractor shall use the manufacturer equipment information to prepare an Emission Inventory based on equipment from the manufacturer, the emission inventory form is attached at the end of this Section. Provide generator USEPA issued Certificates of Conformity for all generators. Provide a Refrigerant Report for all air-conditioning equipment to Fort Hood DPW-ENV, Clean Air Act Team.

1.12 WASTE WATER MANAGEMENT

In the waste water management plan, identify the source of wastewater at job site such as sanitary and construction derived waste waters. Address methods and procedures for management and/or discharge of waste waters which are from construction activities such as concrete curing water, clean-up water, dewatering of ground water, disinfection water, hydrostatic test water, and water used in flushing of lines (i.e. new main disinfection (or hyper-chlorinated water), concrete wash water, hydrostatic test water, vehicle wash water, etc.).

Wastewater from water main disinfection shall be de-chlorinated to less than 4 ppm residual chlorine prior to discharge to the sediment pond or the sanitary sewer system when approved by the Contracting Officer with prior approval and/or notification to the local Waste Water Treatment Plant. A chlorine residual test is required to submit to COR prior to land disposal of wastewater from disinfection of water supply system. . If there are any questions about potential harmful consequences of a specific discharge due to proximity to a sensitive environmental area (e.g., creek, wetlands, etc.) or the volume of the discharge (i.e. wastewater from disinfecting water storage tank), the Contractor shall contact area office Contracting Officer for further guidance. Disinfection of water lines and water storage tank required in Section 33 11 00 WATER DISTRIBUTION SYSTEM and Section 22 00 00 PLUMBING, GENERAL requires de-chlorination. Submit the method of de-chlorination for approval.

No foreign items, construction debris, chemicals, oils, etc., shall be introduced into the sanitary sewer collection system. Storm water runoff shall be directed away from the sanitary sewer collection system and storm water shall not be disposed into the sanitary collection system.

Wastewater discharge permit is required, except for the following:

- fire fighting activities,
- fire hydrants flushing,
- vehicle wash waters which do not contain detergent or leaked fluids
- minimal dust control runoff to minimize off-site tracking of vehicles,
- potable water from uncontaminated waterline flushing,
- routine external building wash down which does not use detergents and the exterior paint that does not contain mercury, lead, cadmium, and mildewcides,
- pavement wash waters where spills or leaks do not contain hazardous, toxic, radiological material or detergent,
- air conditioning condensate,
- uncontaminated spring or ground water,
- foundation and footing drains which do not contain contaminated process materials such as solvents.
- lawn watering and similar irrigation drainage, provided that all pesticides, herbicides, and fertilizer have been applied in accordance with the approved labeling
- Incidental windblown mist from cooling towers that collects on rooftops or adjacent portion of the facility, but excluding intentional discharges from the cooling tower (e.g., "piped" cooling tower blowdown or drains); and other discharges described in Part V of the Multi Sector General Permit (TPDES General Permit TXR050000) that are subject to effluent guidelines and effluent limitations.

1.13 RECYCLING AND SOLID WASTE MINIMIZATION

Army military construction, renovation, and demolition projects shall achieve a minimum of 60 percent diversion of construction and demolition (C&D) waste, by weight, from landfill disposal.

In accordance with Fort Hood Regulation 420-6 (Recycling), all Contractors must participate in the Installation's recycling program.

Source Separation Method. Waste products and materials that are recyclable will be separated from trash and debris and sorted into appropriately marked separate containers and then transported to the respective recycling facility. 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.

The Fort Hood Recycle Center will support recycling efforts and provide roll off container service for paper, plastic, cardboard, and metal. The Fort Hood Recycle Center is located in Building 4626, at 72nd Street and Railhead Drive. The Recycle Center can be reached at 254.287.2336 and is open from 0730 - 1630, Monday - Friday and on the 2nd Saturday of each month. The Contractor can contact the Recycle Center for these support services. Fort Hood Recycle has a certified scale and can help provide weights, reporting, and other diversion information. These services are provided free of charge to the contractor. Please contact the recycle center for specific questions and scheduling.

The Contractor shall contact the Fort Hood Sanitary Landfill concerning

wood recycling for trees removed from site clearing and grubbing. The trees may be shredded on-site and the shredded material spread over adjacent vegetative areas for "soil amendments". Do not spread the material to exceed 2.5 inches 63.5 mm in depth, unless otherwise approved by the Contracting Officer. Trees may be loaded and hauled to the Fort Hood Sanitary Landfill (telephone 254-532-2256) where they will be weighed and dumped in the recycle yard for processing.

At Fort Hood range training areas, or areas where erosion rates are known to exceed tolerable limits, the trees identified to be removed shall be cut and shredded on-site and the residue spread over construction areas for temporary soil stabilization. The shredded material shall be spread to not exceeding 6 inches in depth.

Conserve natural resources during site clearing and grubbing operations. Trees identified to remain shall be preserved in accordance with applicable notes and specifications.

Avoid using organic material for temporary stabilization in areas that are to be paved.

Shredded material used for soil stabilization and erosion control shall be no more than ½-inch diameter and no more than 3-inch in length. Trees to be used for soil amendments and/or as mulch may be shredded and the material stockpiled in an area pre-determined and pre-approved by the Contracting Officer.

A copy of each pre-construction and post construction notification, registrations, certifications, and recycling/reuse waste diversion report with disposal receipts, shall be provided to both the Contracting Officer and the Installation's environmental authorized personnel at project completion with other close-out documents.

1.14 CERTIFICATION OF NON-ASBESTOS CONTAINING MATERIALS AND PRODUCTS

The construction Contractor shall provide a Certification of Non-Asbestos Containing Materials and Products in construction. A signed statement by a corproate officer, an architect, engineer or State Department of Health Inspector identifying presence or absence of asbestos containing material in all construction building materials. The Contractor shall submit a Certification and Safety Data Sheet (SDS) on each construction material and products (i.e. interior & exterior material of construction including mastic, sealant, roofing felt, roofing coating, non-roofing coating, floor tile and mastic, pipeline wrap, any type of friction material, etc.) and equipment. If SDS of product or material does not have asbestos containing material data, a state licensed analytical lab shall obtain three bulk samples of from the same material or product for analytical analyses. The SDS can be kept as a separate binder at the job site. A copy of the SDS binder shall submit with the Certification at project closeout.

1.15 CERTIFICATION OF NATURAL GAS HEATING EQUIPMENT

a. The construction Contractor shall provide a Certification of Natural Gas Heating Equipment. (Note: The Contractor shall comply with the Texas Commission on Environmental Quality (TCEQ) air emission requirement for water heaters, small boilers and process heaters. Submit a document or certificate to verify that the natural gas-fired heating equipment having a maximum rated rating capacity of 2.0 million British Thermal Units per hour (MBtu/hr) or less is in compliance with the Nitrogen Oxide

limits as specified in 30 Texas Administrative Code (TAC), Part 1, Chapter 117, Subchapter E, Division 3, Rule 117.3205.)

b. The construction Contractor shall provide data of HVAC Units and initial HVAC Service and Maintenance Record. It shall include all new HVAC units and related data of each unit (i.e. name of manufacturer, model number, type of refrigerants and total charge amount (in pounds). At least a copy of the log shall be provided to the Clean Air Act Team for the new/renovated facility to capture refrigerants which contribute to greenhouse gas emissions.

1.16 ENVIRONMENTAL SUSTAINABLE PAINT SYSTEM

The Contractor shall provide statement of proof on environmental sustainable paint system to verify interior and exterior paint systems have met the low volatile organic compounds (VOC) criteria per CAA permit #24538 and lead concentration on proposed facilities shall not exceed Consumer Safety Act criteria https://www.cpsc.gov/Regulations-Laws--Standards.

1.17 CONDITIONS FOR USE OF FORT HOOD LANDFILL

Use of the Fort Hood Municipal Solid Waste Landfill, located at the intersection of Turkey Run Road and Clark Road, by the Contractor is subject to the operating requirements imposed on the landfill by the Landfill Operating Permit (TCEQ MSW Permit #1866). All waste delivered to the landfill will be secured and covered and will be inspected by the landfill operating Contractor for materials that are not authorized for disposal in the landfill before entry into the landfill is allowed. Containers that contain unauthorized waste will be diverted for removal of unauthorized material before entry into the landfill. Landfill operating hours are 0730-1700 Monday through Friday and 0730-1400 on Saturday. Questions concerning landfill policy and procedures shall be directed to the landfill at 254-532-2256.

The following classes of materials are NOT authorized in the Fort Hood Municipal Solid Waste Landfill and shall be diverted as described below:

Recyclable Materials: Cardboard and paperboard, various metals, aluminum and steel, paper, 1-7 plastics, and serviceable pallets shall be delivered to the Fort Hood Recycle center. Contact the Recycle Center for roll off support and other questions regarding disposal of these items. In general, roll off support is provided free of charge to the contractor.

Compost Materials: Untreated wood, branches, shrubs, grass, wood chips, unserviceable or odd sized pallets shall be separated from the refuse load and delivered to the Fort Hood Compost Center. The Compost Center is located in the vicinity of the Landfill (corner of Clarke Road and Turkey Run Road). All materials must go through the landfill scales for inspection and weight measurements. Solid Waste Contractor personnel will direct disposition of compost materials. Cedar trees may not be composted and must be delivered to an area designated by the Government for deposition.

Inert Constructions and Demolition Debris: Inert C&D debris includes: clean fill; sand; sod; rock; clean masonry; brick; concrete; and asphalt. The Contractor shall transport these materials off Government property and dispose of them in compliance with Federal, State, and local requirements. The Contractor shall submit non-hazardous waste disposal reports to the

Contracting Officer IAW 01 57 20.00 10-1.7.2(h). The Installation prefers these materials are recycled and a weight ticket provided for the diversion. Diversion reports are to be submitted on a monthly basis to the DPW-ENV Net Zero Manager, 254-287-8712. Some clean fill, sand, or sod may be needed on the Installation; however it is not a guaranteed disposal method. Contact the DPW Natural and Cultural Resources Management Branch to coordinate (254-287-2885).

Salvageable Items: Engine and machine parts shall be delivered to the Defense Logistics Agency Disposition Services office (DLADS). The DLADS is located in building 25030 Ivy Division Rd. The phone number is 254-287-8822. Call for hours of operation and turn-in procedures.

Serviceable Pallets: Serviceable pallets are to be delivered to the Fort Hood Recycling Center Bldg. 4621, located at 72th St. and Railhead Dr. Phone 287-2336, Monday-Friday, 0730-1600 and on the 2nd Saturday of each month.

Refrigerant: As per the HFC Phase Down Policy dated 15 December 2022, Army activities will ensure installed HFCs be recovered and made available for reclamation and reuse for mission critical military end uses. Refrigerants shall be collected in designated recovery cylinders/drums (R-123) and separately labeled. Recovered refrigerants shall be turned in to DPW- Classification Unit (CU) Building 1342 for processing. Each container shall be labeled (i.e.R-12, R-22, etc.) and shall not be mixed. The Contractor shall be responsible for all associated fees and disposal cost. For more information on Refrigerant turn-in call the DPW-CU at 254-288-7627 .

Regulated Waste: Liquid waste, fluorescent light bulbs, oil filters, ordinance, explosives, pressurized gases, PCB (TCB, DEPH or fluid-typed) ballasts, paints, solvents, antifreeze, pesticides, herbicides, radioactive materials, and biohazardous materials are prohibited from disposal at the Fort Hood landfill. All turn-ins to the DPW Classification Unit are by appointment only. For more information on the management of regulated wastes on Fort Hood, call the DPW-CU at 254.288.7627 (SNAP). The DPW Classification Unit can assist Contractors with packing procedures, waste classifications, and the proper disposal method. The Contractor shall be responsible for all associated fees and disposal cost.

Asbestos Containing Materials (ACM): The management of asbestos on Fort Hood requires special procedures mandated by the Texas Department of State Health Services. Contact the Fort Hood Asbestos Program Champion prior to the start of work activities for guidance on asbestos waste management IAW the installation's Asbestos Management Program. The Contractor shall be responsible for all associated fees and disposal cost. A complete survey, abatement, and any documentation that is sent to the State of Texas on abetment must also be forwarded to the DPW Environmental Division, Clean Air Act Team. If ACM is to be disposed at the Fort Hood Landfill the manifest must be signed by a the Asbestos Abatement Contractor's authorized representative. If ACM is disposed off post a copy of the manifest must be provided to the DPW-ENV Solid waste representative and Clean Air Act Team located at Building 4622.

Special Wastes: POL contaminated soil and demolition debris contaminated with lead paint are considered special wastes in the State of Texas. These special wastes require special handling procedures mandated by the State of Texas. Contact the Fort Hood Environmental Division prior to the start of work activities for guidance on special waste management. The

Contractor shall be responsible for all associated fees and disposal cost.

Wastewater from Water Line Disinfection: Initial and subsequent wastewater discharge from water main or storage tank disinfection (or flushing) shall be de-chlorinated to less than 4 ppm residual chlorine prior to discharge to the sediment pond or the sanitary sewer system when approved by Contracting Officer Representative (COR). There is a large volume of the discharge from disinfecting water storage tank, the Contractor shall contact COR and DPW for further guidance. De-chlorinate super-chlorinated wastewater from water line and water storage tank disinfection in accordance with AWWA C651 for Section 33 11 00 WATER DISTRIBUTION SYSTEM and AWWA C651 and C652 in Section 22 00 00 PLUMBING, GENERAL. The Contractor is responsible for labor, equipment, all associated fees of for testing, and cost of treatment to meet this requirement.

Verification of water line disinfection shall be performed per AWWA C651-05. The samples shall be analyzed by an analytical lab that holds the current state license and certification. Repeating disinfection protocols per AWWA C651 are required until satisfactory results are obtained -- that being two consecutive sets of acceptable samples taken 24 hours apart. The water sample analytical results shall be provided to AWO&M, Inc. (Bldg. 49002, 254-213-0382) for record-keeping. One water sample at each 1000 linear feet of disinfected water line shall be obtained. Water sample shall be placed in proper sterilized containers and a bacterial examination shall be performed in accordance with state approved methods. The water supply system shall not approve for service until each test result is negative for bacteria examination.

Water Main or Storage Tank Disinfection: The disinfection of new or repaired water mains must be done in accordance with state requirements, currently presented in 30 TAC 290.46(g). Wastewater discharges from water main or storage tank disinfection (or flushing) shall be de-chlorinated to less than 4 ppm total chlorine residual prior to discharge to the environment or the sanitary sewer system, and when approved by Contracting Officer Representative (COR). Care must be taken to not cause erosion during the discharge of this wastewater. In addition, water with any detectable total chlorine residual may not be discharged in such a manner that it enters any surface water body. The de-chlorination of super-chlorinated water shall be done in accordance with current AWWA guidance. The Contractor is responsible for all labor, equipment, and costs or fees associated with the testing, treatment or disposal of wastewater to meet this requirement.

The sample results must indicate that the water main or storage tank is free of microbiological contamination before it is placed into service. A copy of the bacteriological sample results shall be provided to the water distribution system operator, AWO&M, Inc. The American Water POC may be contacted at 254-213-0382.

1.17.1 Landfill Permit

Contractor shall complete the attached Landfill Permit and give copies, laminated or inserted in page protectors, to drivers so that the drivers could leave them in their trucks. Drivers can just hand the permit to the scale operator at the landfill rather than having to remember all information.

1.18 HVAC REFRIGERANTS

For new HVAC equipment installation or replacement, provide the make, model, serial number, refrigerant type, total refrigerant charge and date of installation of the equipment to the Contracting Officer Representative (COR) and the Clean Air Act Team (use the Emission Inventory Form from Submittals).

For air conditioning equipment replacement, remove refrigerant prior to the removal of the air conditioning unit (removal shall be accomplished by an EPA-certified technician). Refrigerant recovery units shall be registered by completing the EPA Refrigerant Recovery Form and returning these to the Clean Air Act Team instead of EPA. Recovered R-12, R-22, R-134a and R-123 and R-410Arefrigerant shall be turned in to the DPW Classification Unit, Building 1342 at Ivy Division Rd and 37th St, (254) 288-7627. Technicians performing A/C work must be certified by an approved EPA program and carry their certification card with them at all times while performing work on Fort Hood. The COR shall also obtain a copy of the technician certification card and provide that, as well as the contract company information to the Clean Air Act Team along with other submittals.

All HVAC equipment installation, replacement, or service work conducted on units that contain 15 pounds or greater of refrigerant shall be documented on the Refrigerant Service Log and submitted to the COR within 7 days of completing the work. The form shall be filled out completely and thoroughly and must include total refrigerant charge to the system per circuit. This includes amount of refrigerant in the appliance itself and refrigerant downstream in any accumulators, driers, coils etc. to bring the system to a full operating charge.

Because the phaseout of Class II (HCFC) refrigerants such as R-22 began in January 2010 and phasedown of HFCs, any new cooling system installed shall operate EPA SNAP Program approved alternative, etc.

1.19 SOLID WASTE AND CHEMICAL MATERIALS MANAGEMENT AND WASTE DISPOSAL

The Contractor shall transport solid waste which is not permitted in the Fort Hood Municipal Landfill off Government property and dispose of it in compliance with Federal, State, and local requirements for solid waste disposal. A Subtitle D RCRA permitted landfill shall be the minimum acceptable off-site solid waste disposal option. The Contractor shall verify that the selected transporters and disposal facilities have the necessary permits and licenses to operate. Waste materials shall be hauled to the Government landfill site designated by the Contracting Officer. Authorized waste materials may be hauled to the Fort Hood Sanitary landfill site shown on the drawings or designated by the Contracting Officer; see paragraph CONDITIONS FOR USE OF FORT HOOD LANDFILL, this Section.

1.19.1 Fuel and Lubricants

All above ground POL storage tanks installed shall be designed for aboveground storage of flammable and combustible liquids at atmospheric pressure and must comply with the latest edition of National Fire Protection Association NFPA 30 Flammable and Combustible Liquids Code. Tanks shall be of double wall construction and provide complete secondary containment of the primary storage tank's contents by an impervious outer wall. The double wall meets the EPA's secondary containment requirements

and does not require an external berm. Thermal insulation that provides a minimum two-hour fire rating shall be installed at the factory within the interstitial space between the inner and outer wall. The tank's primary and secondary containment must be tested for tightness in the factory and in the field before commissioning. Inner and Outer Tank shall be manufactured in accordance with UL-142 Standard for Steel Aboveground Tanks for Flammable and Combustible Liquids. Entire tank shall be labeled for Underwriters Laboratories UL 2085 Standard for Insulated Secondary Containment Aboveground Tank for Flammable Liquids. The tank design shall comply with UL 2085 "Protected" Tank standard and shall be tested for Ballistics, Impact, Hose Stream, and Pool Fire UL-2085 performance standards. Each tank shall be delivered as a complete UL-listed assembly with two factory supplied, welded-on saddles to keep tanks off the ground and to permit viewing underneath the tank. Tanks to be set level on a solid foundation. Tank exterior must be chalk white or white in color and protected with a non corrosive coating. Each tank shall be grounded and bonded as specified in NFPA 30. The exterior of all POL storage tanks must be clearly labeled with the contents of the tank and the NFPA 704 hazard identification label. For used product tanks the labels must use the term "Used" rather than "Waste". Lifting lugs shall be provided at balancing points to facilitate handling and installation where applicable. Tanks shall be installed according to manufacturer's recommendations. Tanks shall be supplied with all components necessary to operate and required by NFPA and EPA as listed below:

. One 2" - Interstitial Monitoring Port
. One 2" - Normal Working Vent, Primary Tank; top must be at least 12 feet above ground
. One 4", 6", or 8" - Emergency Vent, Primary Tank
. One 4", 6", or 8" - Emergency Vent, Secondary Tank
. One 2", 4" or 6" - Product Fill with 7 gal. Spill/Overfill Container designed so liquids will automatically flow into fill port. Top of fill tube should be flush with bottom of spill container
. One 2" or 4" - Product Pump or Supply
. One 2" or 4" - Direct Read Liquid Level Gauge

A single walled tank will only be allowed temporarily for construction sites and must be equipped with secondary containment in accordance with provisions of 40 CFR 112, 302 and 30 TAC 334. Storage tanks must have a secondary means of containment for the entire capacity of the largest single container and sufficient freeboard to contain precipitation, usually 110% of the largest container. Basin materials must be compatible with the products stored in the tanks. Single walled tanks will not be allowed for permanent installation on Fort Hood.

1.20 INTEGRATED PEST MANAGEMENT AND PESTICIDE USE

The contractor shall submit a proposed treatment plan and update the treatment plan, as information becomes available. Include in the plan: names and qualifications of the applicators, proposed control methods and procedures to include: control equipment, pesticides, application rates, and the sequence of treatment dates, times, and locations.

A Copy of the applicator license must be provided to DPW Installation Pest Management Coordinator (IPMB) through the COR before pesticide or herbicide application begins. Applicators must a have valid commercial certification in the category of work being performed as required by Texas Department of Agriculture (TDA). Individuals must have a license in their name and may not work under another individual's license. Pesticide quantities must be

reported to the IPMC when project is completed.

Use only pesticides that that have been installation approved for the contract use (Pesticide List available from IPMB upon request).

1.21 CUSTOMER SERVICE INSPECTIONS

1.21.1 Certification Requirements

A Customer Service Inspection and Certification must be performed in accordance with the Texas Administrative Code, Title 30, Part 1, Chapter 290, Subchapter D, Rule 290.46 before providing continuous water service to new construction; on any existing service when the water purveyor has reason to believe that cross-connections or other potential contaminant hazards exist; or after any material improvement, correction, or addition to the private water distribution facilities.

1.21.2 Inspection

The Customer Inspection certifies that all performed work meets the requirements of the Texas Administrative Code, Title 30, Part 1, Chapter 290, Subchapter D, Rule 290.46.

1.21.3 Inspection Personnel

Customer Service Inspections must be performed by personnel meeting the requirements described in the Texas Administrative Code, Title 30, Part 1, Chapter 290, Subchapter D, Rule 290.46.

1.21.4 Inspection Certification Form

Original copies of the Customer Service Inspection Certification shall be provided to the Contracting Officer's Representative prior to final inspection and acceptance. Certification forms will be maintained by the by AWO&M, Inc. (Bldg. 49002, 254-213-0382). A sample form is provided at the end of this section. The form submitted shall meet all provisions of Rule 290.46.

1.22 PROTECTION OF NATURAL RESOURCES

1.22.1 Migratory Bird Treaty Act

The Migratory Bird Treaty Act states that, "Unless and except as permitted by regulations it shall be unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, kill, attempt to take, capture, or kill any migratory bird, any part, nest, or eggs of any such bird concluded November 19, 1976." Therefore, tree removal must be limited to dates outside MBTA nesting season, 15 March through 15 August annually. During the nesting season, any tree or standing vegetation must be cleared by a Fort Hood MBTA biologist no more than 48 hours before the tree is to be trimmed or removed. If a nest is found, the nest shall be flagged and a 100 foot buffer will be observed around the tree, including ground around the treee, until the nest has fledged. No take of nest, eggs, or hatchlings will be allowed under any circumstances.

1.22.2 Endangered Species

The management and monitoring of federally listed species on Fort Hood is a natural resource management obligation for the Army and Fort Hood. In

accordance with the Endangered Species Act (ESA) 1973, as amended, the Army must assist in recovery of all listed threatened and endangered (T&E) species and their habitats under the Army's Endangered Species Management Component (ESMC) of the Installation's Natural and Cultural Resources Management Plan, for all listed T&E and candidate proposed T&E species. The U.S. Fish and Wildlife Service Biological Opinion for Fort Hood provides terms and conditions for endangered species management on Fort Hood. The objective of the ESMP is to provide a comprehensive plan for conserving and protecting populations and habitats of federally listed species and species of concern on Fort Hood while maintaining mission readiness in a manner consistent with Army and Federal environmental regulations. No tree removal or tree trimming is allowed withing T&E habitat between 15 March through 15 August annually.

1.23 PROCEDURE FOR RECEIPT OF MECHANICAL DOOR KEYS FROM CONTRACTORS (MAY 2005)

1.23.1 Attachment

The attachment "PROCEDURE FOR RECEIPT OF MECHANICAL KEYS FROM CONTRACTORS" is located at the end of the section.

1.23.2 Keyway

For all projects, the keyway will be a single bitted, 5 disc keyway based on the Fort's Lock KS00V key blank key coded to CAT 15.

Disassembly of knob or lockset shall not be required to remove core from lockset. All locksets, exit devices, and padlocks shall accept same interchangeable cores. Cores shall fit locksets without the use of adaptors and without play. The key shall easily lock and unlock the lockset without binding or other difficulties. Control key shall easily remove and install cores.

1.24 DOOR HARDWARE REQUIREMENTS FOR FORT HOOD

1.24.1 Closers:

ANSI/BHMA A156.4, Surface type closers shall be Grade 1, Series C02000 Full Cover with options PT-4H, Size 1 or 2 through Size 6, and PT-4D with back check position valve. Provide with brackets, arms, mounting devices, fasteners, full size covers, except at storefront mounting, pivots, cement cases, and other features necessary for the particular application. Provide manufacturer's 10 year warranty.

(1) Closers for out swinging exterior doors shall have parallel arms or shall be top jamb mounted. Provide narrow projection closers for doors close to a wall so as not to strike the wall at the 90-degree open position.

(2) Closers on doors accessible to the physically handicapped shall have the closing force set for a push-pull of 2.27 kg (5 pounds) applied at the knob or handle for interior doors; for exterior doors, set to the minimum required to re-latch the door.

1.25 POST CONSTRUCTION CLEANUP

The Contractor shall clean up all areas used for construction in accordance with Contract Clause: "Cleaning Up". The Contractor shall,

unless otherwise instructed in writing by the Contracting Officer, obliterate all signs 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. The disturbed area shall be graded, filled and the entire area stibalized unless otherwise indicated.

Excavation, filling, and plowing of roadways will be required to restore the area to near normal conditions and permit the growth of vegetation thereon. The disturbed areas shall be graded and filled. Sufficient topsoil shall be spread to - provide a minimum depth of 100-mm (4 inches) of suitable soil for the growth of grass. The entire area seeded, and a uniform perennial vegetative cover with a density of 70 percent established. Restoration to original contours is not required.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.1 FORMS
3.1.1 Landfill Permit

LANDFILL PERMIT
US ARMY Corps of Engineers

COE POC and telephone phone number: _____

Contract Name: _____

Contract Number: _____

Contract completion date or end of authorization date: _____

Building or areas affected (i.e., Soldier's Development Center):

_____

_____

_____

Prime Contractor's Name: _____

Contractor POC and phone (i.e. someone on site that can get immediate action): _____

3.1.2 Appendix D. Customer Service Inspection Certificate
Figure: 30 TAC §290.47(d) Page 1 of 2

Figure: 30 TAC §290.47(d)

Appendix D: Customer Service Inspection Certificate

Customer Service Inspection Certificate

Name of PWS

US Army South Fort Hood	I.D.# 0140107 ( )
US Army North Fort Hood	I.D.# 0500037 ( )
US Army Belton Lake Outdoor Recreation Area	I.D.# 0140156 ( )

Reason for Inspection: New construction. ( )
Existing service where contaminant hazards are suspected ( )
Major renovation or expansion of distribution facilities ( )

I _____, upon inspection of the private water distribution facilities connected to the aforementioned public water supply do hereby certify that, to the best of my knowledge:

	Compliance	Non-Compliance
(1) No direct connection between the public drinking water supply and a potential source of contamination exists. Potential sources of contamination are isolated from the public water system by an air gap or an appropriate backflow prevention assembly in accordance with Commission regulations.	( )	( )
(2) No cross-connection between the public drinking water supply and a private water system exists. Where an actual air gap is not maintained between the public water supply and a private water supply, an approved reduced pressure-zone backflow prevention assembly is properly installed and a service agreement exists for annual inspection and testing by a certified backflow prevention assembly tester.	( )	( )
(3) No connection exists which would allow the return of water used for condensing, cooling or industrial processes back to the public water supply.	( )	( )
(4) No pipe or pipe fitting which contains more than 8.0% lead exists in private water distribution facilities installed on or after July 1, 1988.	( )	( )
(5) No solder or flux which contains more than 0.2% lead exists in private water distribution facilities installed on or after July 1, 1988.	( )	( )

I further certify that the following materials were used in the installation of the private water distribution facilities:

Figure: 30 TAC §290.47(d) Page 2 of 2

Service lines Lead ( ) Copper ( ) PVC ( ) Other ( )
Solder Lead ( ) Lead Free ( ) Solvent Weld ( ) Other ( )

I recognize that this document shall become a permanent record of the aforementioned Public Water System and that I am legally responsible for the validity of the information I have provided.

Remarks:

Signature of Inspector	Registration Number
Title	Type of Registration
Date	

3.1.3 AFCM Certification Letter

Asbestos Free Construction Material
Certification Letter

Project Name: _____

Name of Contractor: _____

Project Delivery Order Number: _____

Facility Number: _____

Date: _____

To Whom It May Concern:

This letter is to certify that the project indicated above has been constructed using no asbestos containing materials in accordance with the design requirements.

Sincerely,

Typed Name: _____

Written / Typed Name _____

01 35 10.00 44 ATTACHMENTS

STANDARD OPERATING PROCEDURES FOR ARMS ROOM LOCKOUT AND RECEIPT OF MECHANICAL KEYS

INSTALLATION OF ELECTRONIC LOCKS AND UTILIZATION OF PLASTIC CARD KEYS STANDARD OPERATING PROCEDURES (SOP) OPERATIONS AND MAINTENANCE DIVISION (OMD)

PROPOSED PROJECT EMISSIONS INVENTORY QUESTIONNAIRE FOR NEW SOURCE

FORT HOOD REFRIGERANT EQUIPMENT SERVICE LOG

-- End of Section --

SECTION 01 50 00

TEMPORARY CONSTRUCTION FACILITIES AND CONTROLS

Amendment 0002

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.

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 70	(2023) 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

U.S. FEDERAL HIGHWAY ADMINISTRATION (FHWA)

MUTCD	(2023) 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,

<AM#0002>
~~Contractor Computer Cybersecurity Compliance Statements; G,~~
</AM#0002>

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 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 Emergency Plan requirements 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.

<AM#0002>

~~1.5 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.~~

~~1.5.1 Contractor Computer Equipment~~

~~Contractor owned computers may be used for construction. When used, contractor computers must meet the following requirements:~~

~~1.5.1.1 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.~~

~~1.5.1.2 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.~~

~~1.5.1.3 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.~~

~~1.5.1.4 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 https://www.wbdg.org/ffc/dod/unified-facilities-guide-specifications-ufgs/ufgs-01-50-0 Each Statement must be signed by a cybersecurity representative for the relevant company.~~

~~1.5.2 Temporary IP Networks~~

~~Temporary Contractor-installed IP networks may be used during construction. Provide Government access to Contractor furnished temporary IP networks during construction. When used, temporary contractor-installed IP networks must meet the following requirements:~~

~~1.5.2.1 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.~~

~~1.5.3 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. If there is a Government agency responsible for network access, identify that agency.~~

</AM#0002>

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 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.

<AM#0002>

~~2.1.2 Project Identification Signs~~

~~The requirements for the signs, their content, and location are as specified in Section 01 58 00 PROJECT IDENTIFICATION. 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.~~

</AM#0002>

2.1.2 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. 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. 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.

To block public view of the construction, enclose the project work area and Contractor lay-down area with a 6 ft high chain link fence and gates with brown, UV light resistant, plastic inserts.

2.3.1 Polyethylene Mesh Safety Fencing

Temporary safety fencing must be a high visibility orange colored, high density polyethylene grid, a minimum of 48 inches high and maximum mesh size of 2 inches. Fencing must extend from the grade to a minimum of 48 inches above the grade and be tightly secured to T-posts spaced as necessary to maintain a rigid and taut fence. 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.

2.3.2 Chain Link Panel Fencing

Temporary panel fencing must be galvanized steel chain link panels 6 feet high. Multiple fencing panels may be linked together at the bases to form long spans as needed. Each panel base must be weighted down using sand bags or other suitable materials in order for the fencing to withstand anticipated winds while remaining upright. 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. Equip fence with a lockable gate. Gate must remain locked when construction personnel are not present.

2.3.3 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. Include plastic strip inserts, colored brown, so that visibility through the fence is obstructed.

2.4 TEMPORARY WIRING

Provide temporary wiring in accordance with EM 385-1-1, NFPA 241 and NFPA 70. Include monthly inspection and testing of all equipment and apparatus.

PART 3 EXECUTION

3.1 EMPLOYEE PARKING

Construction contract employee must park privately owned vehicles within the construction site limits or the laydown/storage area. Employee parking must not interfere with existing and established parking requirements of the Government installation.

3.2 AVAILABILITY AND USE OF UTILITY SERVICES

3.2.1 Temporary Utilities

Provide temporary utilities required for construction. Materials may be new or used, must be adequate for the required usage, not create unsafe conditions, and not violate applicable codes and standards.

3.2.2 Payment for Utility Services

a. The Contractor must provide their own utilities. Contractor must coordinate with Fort Hood DPW.

3.2.3 Meters and Temporary Connections

Provide and maintain necessary temporary connections, distribution lines, and meter bases required to measure the amount of each utility used for the purpose of determining charges. Do not make the final electrical connection until the Government has inspected and approved the Contractor's temporary wiring installation.

3.2.4 Sanitation

Provide and maintain within the construction area minimum field-type sanitary facilities in accordance with EM 385-1-1. Locate the facilities behind the construction fence or out of the public view. Clean units and empty wastes at least once a week or more frequently into a municipal, district, or station sanitary sewage system, or remove waste to a commercial facility. Obtain approval from the system owner prior to discharge into a municipal, district, or commercial sanitary sewer system. Penalties or fines associated with improper discharge will be the responsibility of the Contractor. Coordinate with the Contracting Officer and follow station regulations and procedures when discharging into the station sanitary sewer system. Maintain these conveniences at all times. Include provisions for pest control and elimination of odors. Government toilet facilities will not be available to Contractor's personnel.

3.2.5 Telephone

Make arrangements and pay all costs for telephone facilities desired.

3.2.6 Fire Protection

Provide temporary fire protection equipment for the protection of personnel and property during construction. Remove debris and flammable materials daily to minimize potential hazards.

3.3 TRAFFIC PROVISIONS

3.3.1 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. Make all notifications and obtain all permits required for modification to traffic movements outside Installation's jurisdiction.

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, Life Safety Signage, overhead protection, and other items that may be required by the 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.

3.3.2 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. All personnel working in roadways will wear brightly-colored vests or other high visibility apparel in accordance with EM 385-1-1. 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.

3.3.3 Rush Hour Restrictions

Do not interfere with the peak traffic flows preceding and during normal operations without notification to and approval by the Contracting Officer.

3.3.4 Dust Control

Dust control methods and procedures must be approved by the Contracting Officer. Coordinate dust control methods with </AM#0002> ~~01 57 19 TEMPORARY ENVIRONMENTAL CONTROLS.~~01 56 00.00 44 DUST CONTROL .</AM#0002>

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. Applicable contract clauses are contained in Section 00 72 00 GENERAL CONDITIONS.

<AM#0002>
~~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.~~

</AM#0002>

3.4.1 Storage Area

Construct a temporary 6 foot high chain link fence around trailers and materials. Include plastic strip inserts, colored brown, so that visibility through the fence is obstructed. Fence posts may be driven, in lieu of concrete bases, where soil conditions permit. Do not place or store trailers, materials, or equipment outside the fenced area unless such trailers, materials, or equipment are assigned a separate and distinct storage area by the Contracting Officer away from the vicinity of the construction site but within the installation boundaries. Trailers, equipment, or materials must not be open to public view with the exception of those items which are in support of ongoing work on the current day. Do not stockpile materials outside the fence in preparation for the next day's work. Park mobile equipment, such as tractors, wheeled lifting equipment, cranes, trucks, and like equipment within the fenced area at the end of each work day.

Keep fencing in a state of good repair and proper alignment. If the Contractor elects to traverse grassed or unpaved areas which are not established roadways with construction equipment or other vehicles, cover the grassed or unpaved areas with a layer of gravel as necessary to prevent rutting and the tracking of mud onto paved or established roadways; gravel gradation must be at the Contractor's discretion. Mow and maintain grass located within the boundaries of the construction site for the duration of the project. Grass and vegetation along fences, structures, under trailers, and in areas not accessible to mowers must be edged or trimmed neatly.

3.4.2 Supplemental Storage Area

Upon request, and pending availability, the Contracting Officer will designate another or supplemental area for the use and storage of trailers, equipment, and materials. This area may not be in close proximity of the construction site but will be within the installation boundaries. Maintain the area in a clean and orderly fashion and secured if needed to protect supplies and equipment. Utilities will not be provided to this area by the Government.

3.4.3 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.

3.4.4 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.

3.4.5 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.

3.4.5.1 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 PLANT COMMUNICATIONS

Whenever the individual elements of the plant are located so that operation by normal voice between these elements is not satisfactory, install a satisfactory means of communication, such as telephone or other suitable devices and make available for use by Government personnel.

3.6 TEMPORARY PROJECT SAFETY 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.

3.7 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.

3.8 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 --

SECTION 01 56 00.00 44

DUST CONTROL

Amendment 0002

PART 1 GENERAL

1.1 SUMMARY

The work covered by this section consists of furnishing all labor, materials and equipment and performing all work required for the control and prevention of fugitive dust during and as the result of construction operations under this contract except for those measures set forth in other Technical Provisions of these specifications. For the purpose of this specification, fugitive dust entails the generation of solid particles by the forces of wind or machinery acting upon exposed materials. Provisions of this specification shall prevent fugitive dust from adversely affecting human health or welfare; unfavorably altering ecological balances of importance to human life; affecting other species of importance to man; or degrading the utility of the environment for aesthetic and recreational purposes. Dust Control is a requirement in the EPA and state pollutant discharge elimination system or permit for discharging storm water during construction.

1.2 REFERENCES

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

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1	(2024) Safety -- Safety and Occupational Health (SOH) Requirements

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

Dust Control; G.
Products and Procedures; G

Prior to commencement of the work, submit in writing a proposal to the Contracting Officer for implementing the provisions of this section for fugitive dust control. Address the plans, and the products to be used, to prevent and control fugitive dust through specific mitigative and preventative measures. The effectiveness of the dust control program shall be periodically checked and reviewed. Revisions to the dust control plan shall be submitted to the Contracting Officer as changes are necessary during the

duration of this contract.

Material Safety Data Sheets; G.

- Material Safety Data Sheets include those for soil stabilization products.

Sandblasting; G.

SD-02 Shop Drawings

Recordkeeping;.

- Maintain and furnish records in accordance with PART 1 paragraph RECORDKEEPING.

1.4 IMPLEMENTATION MEETING

Prior to commencement of the work the Contractor shall meet with representatives of the Contracting Officer to develop mutual understandings relative to compliance with these provisions and administration of the dust control program.

1.5 APPLICABLE REGULATIONS

In order to prevent and to provide control of pollution arising from the construction activities of the Contractor and his subcontractors in the performance of this contract, all applicable Federal, State, and local laws and regulations concerning environmental pollution control and abatement, and all applicable provisions of the EM 385-1-1 as well as the specific requirements stated in this section and elsewhere in the contract specifications. Compliance with the provisions of this section by subcontractors will be the responsibility of the Contractor.

1.6 NOTIFICATION OF NON-COMPLIANCE

The Contracting Officer will notify the Contractor in writing of any observed non-compliance with the foregoing provisions. The Contractor shall, after receipt of such notice, immediately take corrective action. Such notice, when delivered to the Contractor or his authorized representative at the site of the work, shall be deemed sufficient for the purpose. If the Contractor fails or refuses to promptly take corrective action, 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 any such stop orders shall be made the subject of a claim for extension of time or for excess costs or damages by the Contractor unless it was later determined that the Contractor was in compliance.

1.7 RECORDKEEPING

The Contractor shall, at a minimum, maintain records indicating dust control measures taken. Information provided shall be sufficient to answer any questions regarding control methods utilized, products used, application rates, inspections performed. Additional information to be recorded, but not limited to reporting, includes treated area, operator, date and time of treatment, meteorological conditions and inspection and monitoring reports. Records shall be submitted every 30 days to the Contracting Officer.

PART 2 PRODUCTS

2.1 PRODUCTS AND PROCEDURES

Products and procedures used in controlling particulates and dust shall be in accordance with the Contractor's Environmental Protection Plan and the dust control plan required by this Section. Material Safety Data Sheets for soil binders for use in dust control shall be approved prior to application. Soil binders containing carcinogenic substances (e.g. acrylamides) are prohibited.

PART 3 EXECUTION

3.1 DUST CONTROL

Control techniques for fugitive dust sources shall involve watering. For arid regions and dusty work areas, dust control shall include water application with soil binders that is environmentally sustainable and non-toxic. The methods utilized shall be cost effective, water conservation, and appropriate for the size and scope of the fugitive dust source. Methods and controls shall not have an adverse effect on plant and animal life, ecosystem, and facility air intakes, or contaminate the treated material.

Repeat methods at such intervals as to keep all parts of the disturbed area(s) treated at all times. Have sufficient competent equipment on the job to accomplish control techniques. Products shall provide a method to reduce dust-related environmental concerns and aid in complying with applicable regulations. Products shall not in any form produce any adverse environmental effects through their use and shall provide an effective, clean, safe control of airborne dust and protection against soil erosion.

3.1.1 Preventative Techniques

The reduction of source extent, the incorporation of process modifications, or adjusted work practices, which reduce the amount of dust-generation, are preventative techniques for the control of fugitive dust emissions. These techniques include the elimination of mud and dirt carry-out onto paved roads at construction sites.

3.1.2 Mitigative Techniques

Mitigative measures entail the periodic removal of dust-producing material. Examples of mitigative control measures include clean-up of spillage on paved or unpaved travel surfaces and clean-up of material spillage at transfer points.

3.2 MATERIALS HANDLING

The Contractor shall take the following minimum precautions to limit fugitive dust emissions from material handling and transportation to achieve control of dust emissions to the extent practicable:

a. Stockpiles

Apply water with an approved soil binder. Other alternatives include laydown topsoil with organic matters that are removed from the disturbed area or placing a compounded fiber erosion control blanket to cover material stockpiles and other surfaces which can create airborne dust. BMP perimeter controls around the stockpile shall be placed at least 10 feet away from the toe of stockpiled material.

b. Transportation

At a minimum, complete covering, maintain a minimum 12 inch freeboard space, and moistening of materials hauled from the construction site. Open truck beds, since they create airborne particulate matter, are prohibited. Additional application of water with approved soil binder shall be required if additional controls are considered necessary by the Contracting Officer.

c. Off-Site Tracking

Perform dust control as the work proceeds to minimize vehicle off-site tracking of sediment and generation of dust. Provide every effort, such as temporary paved roadways, to keep vehicles from tracking soils from the construction site. Gravel construction access roadways shall be at least 80 feet long and 30 feet wide for construction sites 5 acres or larger. The access roadway gravel blanket shall be 6-inch minimum in depth with gravel size of 3-inch minimum. Overlay gravel blankets on two layers of 0.015 mm6-mil thick geotextile fabric or a single layer of 10-mil thick geotextile fabric. Control dust generation by water sprinkling. For water conservation, water may be applied with an approved soil binder.

3.3 CONSTRUCTION AND DEMOLITION

Control dust resulting from demolition and construction activities. No person may cause, suffer, allow, or permit a structure, road, street, alley, or parking area to be constructed, altered, repaired, or demolished, or land to be cleared without taking minimum precautions to achieve control of dust emissions.

3.3.1 Demolition

Control the amount of dust resulting from demolition to prevent the spread of dust to occupied portions of the construction site and to avoid creation of a nuisance in the surrounding area. The use of water, oil, or chemical treatment for control of dust in the demolition of structures, in construction operations, in work performed on a road, parking area, or in the clearing of land is required.

3.3.2 Sandblasting

Utilize adequate methods, including enclosure of work areas and debris, to prevent airborne particulate matter during sandblasting of painted and non-painted structures or other similar operations. Blast media and containment systems shall be approved prior to use.

3.4 ACCESS ROADS AND PARKING LOTS

No person may cause, suffer, allow, or permit any public, industrial, commercial, or private road, street, or alley to be used without taking precautions to achieve control of dust emissions.

In addition to mitigation and control techniques, the removal of soil or other materials shall be periodically performed by mechanical sweepers or their equivalent. Spot clean dirty roadways and parking lots. These activities shall be performed as deemed necessary. Remove sand which is applied for the specific purpose of snow or ice control as soon as such control is no longer necessary.

3.4.1 Access Roads

The use of temporary asphalt pavement is required for major access roadways at extensive development sites (10 acres or larger) and/or construction periods longer than 3 months. Alternative method of dust control for access roads with uniform gravel cover (and geotextile fabric beneath gravel cover) is acceptable for site less than 10 acres of total disturbed area, and if construction period is shorter than 3 months. Site access roads may use uniform gravel cover (with geotextile fabric beneath gravel cover) and water sprinkling with soil binders for dust control.

The use of temporary asphalt or uniform gravel cover, as described above for control of Off-Site Tracking, with wheel wash is an acceptable method of dust control for roads leading to and from areas of construction activity.

3.4.2 Parking Lots

Parking surfaces with more than five parking spaces shall be paved. Temporary parking area(s) to be used 30 calendar days or more for the Contractor's equipment or personal vehicles shall be paved with temporary asphalt. Temporary lots used for less than one month may use uniform gravel, if required by Contracting Officer, applying water with approved soil binder may be necessary.

3.5 CONTROL STRUCTURES

Activities performed under this Contract shall conform with the technical specifications.

If the Contractor proposes to construct temporary structures, he shall submit the proposal for approval at least ten (10) days prior to the scheduled start of such temporary work. Modification of the Contractor's plans shall be made only with the written approval of the Contracting Officer.

3.6 MAINTENANCE

During the life of this contract, the Contractor shall maintain all facilities constructed for pollution control under this Contract as long as the operations creating the particular pollutant are being carried out or until the material concerned has become stabilized to the extent that pollution is no longer being created. Re-application of water by sprinkling or approved soil binder with water shall be required when the disturbed areas are not stabilized.

During the construction period the Contractor shall conduct frequent training courses for his maintenance personnel. The curricula shall include methods of dust control, familiarity with pollution standards, and

care of controls and measures to prevent and correct fugitive dust pollution.

The Contractor shall furnish daily services for the temporary control measures at the project site and perform any required maintenance as deemed necessary by and to the satisfaction of the Contracting Officer during the entire life of the Contract. Services shall be performed at such a time and in such a manner to least interfere with the operations.

Application of soil binder with water is an acceptable temporary stabilization protocol when approved by the Contracting Officer.

-- End of Section --

SECTION 01 74 19

CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

Amendment 0002

PART 1 GENERAL

1.1 DEFINITIONS

1.1.1 Co-mingle

The practice of placing unrelated materials together in a single container, usually for benefits of convenience and speed.

1.1.2 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.

1.1.3 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.

1.1.4 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).

1.1.5 Diversion

The practice of diverting waste from disposal in a landfill or incinerator, by means of eliminating or minimizing waste, or reuse of materials.

1.1.6 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.

1.1.7 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.

1.1.8 Reuse

The use of a product or materials again for the same purpose, in its

original form or with little enhancement or change.

1.1.9 Salvage

Usable, salable items derived from buildings undergoing demolition or deconstruction, parts from vehicles, machinery, other equipment, or other components.

1.1.10 Source Separation

The practice of administering and implementing a management strategy to identify and segregate unrelated waste at the first opportunity.

1.2 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.

1.3 CONSTRUCTION WASTE MANAGEMENT

Implement a Construction Waste Management Program for the project. Take a pro-active, responsible role in the management of 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.

1.3.1 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.

1.3.2 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.

1.3.3 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.

1.3.4 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.

1.3.5 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 steams 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

1.4 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-01 Preconstruction Submittals

Construction Waste Management Plan; G,

SD-06 Test Reports

Monthly Reporting

<AM#0002>

~~SD-11 Closeout Submittals~~

~~Final Construction Waste Diversion Report; S~~</AM#0002>

1.5 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 01 45 00 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).

1.6 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.. Submit Construction Waste Management Plan not less than 60 calendar days before scheduled final site or building design approval. Revise and resubmit Construction Waste Management Plan until it receives final approval from the Contracting Officer, in order for construction to begin. Execute demolition or deconstruction activities in accordance with Section 02 41 00 DEMOLITION . Manage demolition debris/waste or deconstruction materials in accordance with the approved construction waste management plan.

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. Please submit a copy of the waste management plan to the DPW landfill engineer for review. It can be sent to: IMWE-HOD-PWF, Attn: Kevin Scholz, 4612 Engineer Dr., Fort Hood TX 76544.

Distribute copies of the waste management plan to each subcontractor, Quality Control Manager , and the Contracting Officer.

1.7 RECORDS (DOCUMENTATION)

1.7.1 General

Maintain records to document the types and quantities of waste generated and diverted though 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.

1.7.2 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.

1.8 REPORTS

1.8.1 General

Maintain current construction waste diversion information on site for periodic inspection by the Contracting Officer. Include in the monthly 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 quantifies 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.

1.8.2 Monthly Reporting

See Section 01 35 10.00 44 SPECIAL PROJECT PROCEDURES FOR FORT HOOD (FORMERLY KNOWN AS FORT CAVAZOS)for monthly reporting requirements.

<AM#0002>

~~1.9 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 final acceptance of the facility by the Contracting Officer.~~

</MA#0002>

1.9 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 <AM#0002> ~~and coordinate with Section 01 57 19 TEMPORARY ENVIRONMENTAL CONTROLS.~~</AM#0002> Separate materials by one of the following methods described herein:

1.9.1 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.

1.9.2 Other Methods

Other methods proposed by the Contractor may be used when approved by the Contracting Officer.

1.10 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:

1.10.1 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.

1.10.2 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.

1.10.3 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 02 41 00

DEMOLITION
08/22
AMENDMENT 0002

PART 1 GENERAL

1.1 REFERENCES

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

AMERICAN SOCIETY OF SAFETY PROFESSIONALS (ASSP)

ASSP A10.6	(2006) Safety & Health Program Requirements for Demolition Operations - American National Standard for Construction and Demolition Operations

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1	(2024) Safety -- Safety and Occupational Health (SOH) Requirements

U.S. DEFENSE LOGISTICS AGENCY (DLA)

DLA 4145.25	(Jun 2000; Reaffirmed Oct 2010) Storage and Handling of Liquefied and Gaseous Compressed Gases and Their Full and Empty Cylinders; https://www.dla.mil/Portals/104/Documents/Disposition/ddsr/docs/cylinderjointpub.pdf

U.S. DEPARTMENT OF DEFENSE (DOD)

DOD 4000.25-1-M	(2006) MILSTRIP - Military Standard Requisitioning and Issue Procedures
MIL-STD-129	(2014; Rev R; Change 1 2018; Change 2 2019; Change 3 2023) Military Marking for Shipment and Storage

U.S. FEDERAL AVIATION ADMINISTRATION (FAA)

FAA AC 70/7460-1	(2016; Rev L; Change 2) Obstruction Marking and Lighting

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

40 CFR 61	National Emission Standards for Hazardous Air Pollutants
49 CFR 173.301	Shipment of Compressed Gases in Cylinders and Spherical Pressure Vessels

1.2 PROJECT DESCRIPTION

1.2.1 Definitions

1.2.1.1 Critical Root Zone (CRZ)

The critical root zone is the area around and under a tree where the majority of its roots are located. The CRZ is usually measured as a circle with a radius that's 1.5- foot for every inch of the tree's diameter at breast height (DBH), and a depth of 24 inches.

1.2.1.2 Demolition

Demolition is the process of tearing apart and removing any feature of a facility together with any related handling and disposal operations.

1.2.1.3 Deconstruction

Deconstruction is the process of taking apart a facility with the primary goal of preserving the value of all useful building materials.

1.2.1.4 Demolition Plan

Demolition Plan is the planned steps and processes for managing demolition activities and identifying the required sequencing activities and disposal mechanisms.

1.2.1.5 Deconstruction Plan

Deconstruction Plan is the planned steps and processes for dismantling all or portions of a structure or assembly, to include managing sequencing activities, storage, re-installation activities, salvage and disposal mechanisms.

1.2.2 Demolition/Deconstruction Plan

Prepare a Demolition Plan and submit proposed demolition, and removal procedures for approval before work is started. Include in the plan procedures for careful removal and disposition of materials specified to be salvaged, coordination with other work in progress, a disconnection schedule of utility services, a detailed description of methods and equipment to be used for each operation and of the sequence of operations. Coordinate with Waste Management Plan in accordance with Section 01 74 19 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL. Provide procedures for safe conduct of the work in accordance with EM 385-1-1. Plan must be approved by Contracting Officer prior to work beginning.

1.2.3 General Requirements

Do not begin demolition or deconstruction until authorization is received from the Contracting Officer. Remove rubbish and debris from the project site; do not allow accumulations inside or outside the building. The work includes demolition, salvage of identified items and materials, and removal of resulting rubbish and debris. Remove rubbish and debris from Government property daily, unless otherwise directed. Store materials that cannot be removed daily in areas specified by the Contracting Officer. In the interest of occupational safety and health, perform the work in accordance with EM 385-1-1, Section 17, Demolition, and other applicable Sections.

1.3 ITEMS TO REMAIN IN PLACE

Comply with FAR 52.236-9 to protect existing vegetation, structures, equipment, utilities, and improvements. Coordinate the work of this section with all other work indicated. Construct and maintain shoring, bracing, and supports as required. Ensure that structural elements are not overloaded. Increase structural supports or add new supports as may be required as a result of any cutting, removal, deconstruction, or demolition work performed under this contract. Do not overload structural elements. Provide new supports and reinforcement for existing construction weakened by demolition, deconstruction, or removal work. Repairs, reinforcement, or structural replacement require approval by the Contracting Officer prior to performing such work.

1.3.1 Existing Construction Limits and Protection

Do not disturb existing construction beyond the extent indicated or necessary for installation of new construction. Provide temporary shoring and bracing for support of building components to prevent settlement or other movement. Provide protective measures to control accumulation and migration of dust and dirt in all work areas. Remove dust, dirt, and debris from work areas daily.

1.3.2 Weather Protection

For portions of the building to remain, protect building interior and materials and equipment from the weather at all times. Where removal of existing roofing is necessary to accomplish work, have materials and workmen ready to provide adequate and temporary covering of exposed areas.

1.3.3 Utility Service

Maintain existing utilities indicated to stay in service and protect against damage during demolition and deconstruction operations. Prior to start of work, utilities serving each area of alteration or removal will be shut off by the utility provider and disconnected and sealed by the Contractor the utility provider will disconnect and seal utilities serving each area of alteration or removal upon written request from the Contractor.

1.3.4 Facilities

Protect electrical and mechanical services and utilities. Where removal of existing utilities and pavement is specified or indicated, provide approved barricades, temporary covering of exposed areas, and temporary services or connections for electrical and mechanical utilities. Floors, roofs, walls, columns, pilasters, and other structural components that are designed and constructed to stand without lateral support or shoring, and are determined to be in stable condition, must remain standing without additional bracing, shoring, or lateral support until demolished or deconstructed, unless directed otherwise by the Contracting Officer. Ensure that no elements determined to be unstable are left unsupported and place and secure bracing, shoring, or lateral supports as may be required as a result of any cutting, removal, deconstruction, or demolition work performed under this contract.

1.4 BURNING

The use of burning at the project site for the disposal of refuse and debris will not be permitted. Where burning is permitted, adhere to federal, state, and local regulations.

1.5 AVAILABILITY OF WORK AREAS

Areas in which the work is to be accomplished will be available at contract award.

1.6 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

Demolition Plan; G, CO

Existing Conditions

SD-07 Certificates

Notification; G, CO

SD-11 Closeout Submittals

1.7 QUALITY ASSURANCE

Submit timely notification of demolition and renovation projects to Federal, State, regional, and local authorities in accordance with 40 CFR 61, Subpart M. Notify the Regional Office of the United States Environmental Protection Agency (USEPA) and the Contracting Officer in writing 10 working days prior to the commencement of work in accordance with 40 CFR 61, Subpart M. Comply with federal, state, and local hauling and disposal regulations. In addition to the requirements of the "Contract Clauses," conform to the safety requirements contained in ASSP A10.6. Comply with the Environmental Protection Agency requirements specified. Use of explosives will not be permitted.

1.7.1 Dust and Debris Control

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

1.8 PROTECTION

1.8.1 Traffic Control Signs

a. Where pedestrian, driver and aircraft safety is endangered in the area of removal work, use traffic barricades with flashing lights.

Anchor barricades in a manner to prevent displacement by wind, jet or prop blast. Notify the Contracting Officer prior to beginning such work.

Provide a minimum of 2 FAA type L-810 steady burning red obstruction lights on temporary structures (including cranes) over 100 feet, but less than 200 ft, above ground level. The use of LED based obstruction lights are not permitted. For temporary structures (including cranes) over 200 ft above ground level provide obstruction lighting in accordance with FAA AC 70/7460-1. Perform light construction and installation in compliance with FAA AC 70/7460-1. Lights must be operational during periods of reduced visibility, darkness, and as directed by the Contracting Officer. Maintain the temporary services during the period of construction and remove only after permanent services have been installed and tested and are in operation.

1.8.2 Protection of Personnel

Before, during and after the demolition work continuously evaluate the condition of the site specific features and structure being demolished and take immediate action to protect all personnel working in and around the project site. No area, section, or component of floors, roofs, walls, columns, pilasters, or other structural element will be allowed to be left standing without sufficient bracing, shoring, or lateral support to prevent collapse or failure while workmen remove debris or perform other work in the immediate area.

1.9 FOREIGN OBJECT DAMAGE (FOD)

Aircraft and aircraft engines are subject to FOD from debris and waste material lying on airfield pavements. Remove all such materials that may appear on operational aircraft pavements due to the Contractor's operations. If necessary, the Contracting Officer may require the Contractor to install a temporary barricade at the Contractor's expense to control the spread of FOD potential debris. Provide a barricade consisting of a fence covered with a fabric designed to stop the spread of debris. Anchor the fence and fabric to prevent displacement by winds or jet/prop blasts. Remove barricade when no longer required.

1.10 RELOCATIONS

Perform the removal and reinstallation of relocated items as indicated with workmen skilled in the trades involved. Repair or replace items to be relocated which are damaged by the Contractor with new undamaged items as approved by the Contracting Officer.

1.11 EXISTING CONDITIONS

Before beginning any demolition or deconstruction work, survey the site and examine the drawings and specifications to determine the extent of the work. Record existing conditions in the presence of the Contracting Officer or the Contracting Officer's Representative showing the condition of structures and other facilities adjacent to areas of alteration or removal. Photographs or electronic images with a minimum resolution of 3072 x 2304 pixels, capable of a print resolution of 300 dpi, will be acceptable as a record of existing conditions. Include in the record the elevation of the top of foundation walls, finish floor elevations, possible conflicting electrical conduits, plumbing lines, alarms systems,

the location and extent of existing cracks and other damage and description of surface conditions that exist prior to starting work. It is the Contractor's responsibility to verify and document all required outages which will be required during the course of work, and to note these outages on the record document. Submit survey results to the Contracting Officer or the Contracting Officer's Representative.

PART 2 PRODUCTS

2.1 FILL MATERIAL

a. Comply with excavating, backfilling, and compacting procedures for soils used as backfill material to fill basements, voids, depressions or excavations resulting from demolition or deconstruction of structures.

PART 3 EXECUTION

3.1 EXISTING FACILITIES TO BE REMOVED

Inspect and evaluate existing structures onsite for reuse. Disassemble existing construction scheduled to be removed for reuse. Dismantled and removed materials are to be separated, set aside, and prepared as specified, and stored or delivered to a collection point for reuse, remanufacture, recycling, or other disposal, as specified. Designate materials for reuse onsite whenever possible.

3.1.1 Structures

a. Remove existing structures indicated to be removed to top of foundation walls. Break up basement slabs to permit drainage. Remove sidewalks, curbs, gutters and street light bases as indicated.

b. Demolish structures in a systematic manner from the top of the structure to the ground. Complete demolition work above each tier or floor before the supporting members on the lower level are disturbed. Demolish concrete and masonry walls in small sections. Remove structural framing members and lower to ground by means of derricks, platforms hoists, or other suitable methods as approved by the Contracting Officer.

c. Locate demolition and deconstruction equipment throughout the structure and remove materials so as to not impose excessive loads to supporting walls, floors, or framing.

3.1.2 Utilities and Related Equipment

3.1.2.1 General Requirements

Do not interrupt existing utilities serving occupied or used facilities, except when authorized in writing by the Contracting Officer. Do not interrupt existing utilities serving facilities occupied and used by the Government except when approved in writing and then only after temporary utility services have been approved and provided. Do not begin demolition or deconstruction work until all utility disconnections have been made. Shut off and cap utilities for future use, as indicated.

3.1.2.2 Disconnecting Existing Utilities

Remove existing utilities, as indicated and terminate in a manner conforming to the nationally recognized code covering the specific utility and approved by the Contracting Officer. When utility lines are encountered but are not indicated on the drawings, notify the Contracting Officer prior to further work in that area. Remove meters and related equipment and deliver to a location in accordance with instructions of the Contracting Officer.

3.1.3 Chain Link Fencing

Remove chain link fencing, gates and other related salvaged items scheduled for removal and transport to designated areas. Remove gates as whole units. Cut chain link fabric to 25 foot lengths and store in rolls off the ground.

3.1.4 Paving and Slabs

Move, grind and store pavement and slabs designated to be recycled and utilized in this project as directed by the Contracting Officer. Remove pavement and slabs not to be used in this project from the installation at Contractor's expense.

3.1.5 Masonry

Sawcut and remove masonry so as to prevent damage to surfaces to remain and to facilitate the installation of new work. Where new masonry adjoins existing, abut or tie the new work into the existing construction as specified for the new work. Provide square, straight edges and corners where existing masonry adjoins new work and other locations. Masonry removed in pieces must be crushed.

3.1.6 Concrete

Saw concrete along straight lines to a depth of a minimum 2 inch. Make each cut in walls perpendicular to the face and in alignment with the cut in the opposite face. Break out the remainder of the concrete provided that the broken area is concealed in the finished work, and the remaining concrete is sound. At locations where the broken face cannot be concealed, grind smooth or saw cut entirely through the concrete.

3.1.7 Structural Steel

Dismantle structural steel at field connections and in a manner that will prevent bending or damage. Salvage for recycle structural steel, steel joists, girders, angles, plates, columns and shapes. Flame-cutting torches are permitted when other methods of dismantling are not practical. Transport steel joists and girders as whole units and not dismantled. Transport structural steel shapes to a designated area as directed by the Contracting Officer, stacked according to size, type of member and length, and stored off the ground, protected from the weather.

3.1.8 Miscellaneous Metal

Salvage shop-fabricated items such as access doors and frames, steel gratings, metal ladders, wire mesh partitions, metal railings, metal windows and similar items as whole units. Salvage light-gage and cold-formed metal framing, such as steel studs, steel trusses, metal

gutters, roofing and siding, metal toilet partitions, toilet accessories and similar items. Scrap metal is the Contractor's property. Recycle scrap metal as part of demolition and deconstruction operations. Provide separate containers to collect scrap metal and transport to a scrap metal collection or recycling facility, in accordance with the Waste Management Plan.

3.1.9 Airfield Lighting

Remove existing airfield lighting as indicated and terminate in a manner satisfactory to the Contracting Officer. Remove edge lights, associated transformers as indicated and deliver to a location on the station in accordance with instructions of the Contracting Officer.

3.1.10 Patching

Where removals leave holes and damaged surfaces exposed in the finished work, patch and repair these holes and damaged surfaces to match adjacent finished surfaces, using on-site materials when available. Where new work is to be applied to existing surfaces, perform removals and patching in a manner to produce surfaces suitable for receiving new work. Make finished surfaces of patched area flush with the adjacent existing surface and match the existing adjacent surface as closely as possible to texture and finish. Provide patching as specified and indicated, and include the following:

a. Concrete and Masonry: Completely fill holes and depressions, caused by previous physical damage or left as a result of removals in existing masonry walls to remain, with an approved masonry patching material, applied in accordance with the manufacturer's printed instructions.

b. Where existing partitions have been removed leaving damaged or missing resilient tile flooring, patch to match the existing floor tile.

c. Patch acoustic lay-in ceiling where partitions have been removed. Make the transition between the different ceiling heights by continuing the higher ceiling level over to the first runner on the lower ceiling and closing the vertical opening with a painted sheet metal strip.

3.1.11 Cylinders and Canisters

Remove all fire suppression system cylinders and canisters and dispose of in accordance with the paragraph entitled "Disposal of Ozone Depleting Substance (ODS)."

3.1.12 Locksets on Swinging Doors

Remove all locksets from all swinging doors indicated to be removed and disposed of. Deliver the locksets and related items to a designated location for receipt by the Contracting Officer after removal.

3.1.13 Electrical Equipment and Fixtures

Salvage motors, motor controllers, and operating and control equipment that are attached to the driven equipment. Salvage wiring systems and components. Box loose items and tag for identification. Disconnect primary, secondary, control, communication, and signal circuits at the point of attachment to their distribution system.

3.1.13.1 Fixtures

Remove and salvage electrical fixtures. Salvage unprotected glassware from the fixture and salvage separately. Salvage incandescent, mercury-vapor, and fluorescent lamps and fluorescent ballasts manufactured prior to 1978, boxed and tagged for identification, and protected from breakage.

3.1.13.2 Electrical Devices

Remove and salvage switches, switchgear, transformers, conductors including wire and nonmetallic sheathed and flexible armored cable, regulators, meters, instruments, plates, circuit breakers, panelboards, outlet boxes, and similar items. Box and tag these items for identification according to type and size.

3.1.13.3 Wiring Ducts or Troughs

Remove and salvage wiring ducts or troughs. Dismantle plug-in ducts and wiring troughs into unit lengths. Remove plug-in or disconnecting devices from the busway and store separately.

3.1.13.4 Conduit and Miscellaneous Items

Salvage conduit except where embedded in concrete or masonry. Consider corroded, bent, or damaged conduit as scrap metal. Sort straight and undamaged lengths of conduit according to size and type. Classify supports, knobs, tubes, cleats, and straps as debris to be removed and disposed.

3.1.14 Elevators and Hoists

Remove elevators, hoists, and similar conveying equipment and salvage as whole units, to the most practical extent. Remove and prepare items for salvage without damage to any of the various parts. Salvage and store rails for structural steel with the equipment as an integral part of the unit.

3.2 CONCURRENT EARTH-MOVING OPERATIONS

Do not begin excavation, filling, and other earth-moving operations that are sequential to demolition or deconstruction work in areas occupied by structures to be demolished or deconstructed until all demolition and deconstruction in the area has been completed and debris removed. Fill holes, open basements and other hazardous openings.

3.3 DISPOSITION OF MATERIAL

3.3.1 Title to Materials

Except for salvaged items specified in related Sections, and for materials or equipment scheduled for salvage, all materials and equipment removed and not reused or salvaged, become the property of the Contractor and must be removed from Government property. Materials approved for storage by the Contracting Officer must be removed before completion of the contract. Title to materials resulting from demolition and deconstruction, and materials and equipment to be removed, is vested in the Contractor upon approval by the Contracting Officer. The Government will not be responsible for the condition or loss of, or damage to, such

property after contract award. Showing for sale or selling materials and equipment on site is prohibited.

3.3.2 Reuse of Materials and Equipment

Remove and store materials and equipment listed in the Demolition Plan to be reused or relocated to prevent damage, and reinstall as the work progresses. Coordinate the re-use of materials and equipment with the re-use requirements in accordance with Section 01 74 19 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL. Capture re-use of materials in the diversion calculations for the project.

3.3.3 Salvaged Materials and Equipment

Remove materials and equipment that are listed in the Demolition Plan to be removed by the Contractor and that are to remain the property of the Government, and deliver to a storage site.

a. Salvage items and material to the maximum extent possible.

b. Store all materials salvaged for the Contractor as approved by the Contracting Officer and remove from Government property before completion of the contract. Coordinate the salvaged materials with tracking requirements in accordance with Section 01 74 19 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL. Capture salvaged materials in the diversion calculations for the project.

3.3.4 Transportation Guidance

Ship all ODS containers in accordance with MIL-STD-129, DLA 4145.25 (also referenced one of the following: Army Regulation 700-68, Naval Supply Instruction 4440.128C, Marine Corps Order 10330.2C, and Air Force Regulation 67-12), 49 CFR 173.301, and DOD 4000.25-1-M.

3.3.5 Unsalvageable and Non-Recyclable Material

Dispose of unsalvageable and non-recyclable noncombustible material in the disposal area. Dispose of unsalvageable and non-recyclable combustible material off the site.

3.4 CLEANUP

Remove debris and rubbish from project site and similar excavations. Remove and transport the debris in a manner that prevents spillage on streets or adjacent areas. Apply local regulations regarding hauling and disposal.

3.5 DISPOSAL OF REMOVED MATERIALS

3.5.1 Regulation of Removed Materials

Dispose of debris, rubbish, scrap, and other nonsalvageable materials resulting from removal operations with all applicable federal, state and local regulations as contractually specified in the Waste Management Plan . Storage of removed materials on the project site is prohibited.

3.5.2 Burning on Government Property

Burning of materials removed from demolished and deconstructed structures

will not be permitted on Government property.

3.5.3 Removal to Spoil Areas on Government Property

Transport noncombustible materials removed from demolition and deconstruction structures to designated spoil areas on Government property.

3.5.4 Removal from Government Property

Transport waste materials removed from demolished and deconstructed structures, except waste soil, from Government property for legal disposal. <AM#0002> ~~Dispose of waste soil per Section 01 57 19 TEMPORARY ENVIRONMENTAL CONTROLS.~~ </AM#0002>

3.6 REUSE OF SALVAGED ITEMS

Recondition salvaged materials and equipment designated for reuse before installation. Replace items damaged during removal and salvage operations or restore them as necessary to usable condition.

-- End of Section --

SECTION 05 12 00

STRUCTURAL STEEL
08/18, CHG 2: 05/21
AMENDMENT 0002

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 207	(2016; R 2017) Certification Standard for Steel Fabrication and Erection, and Manufacturing of Metal Components
AISC 325	(2017) Steel Construction Manual
AISC 326	(2009) Detailing for Steel Construction
AISC 360	(2016) Specification for Structural Steel Buildings
AISC 420	(2010) Certification Standard for Shop Application of Complex Protective Coating Systems
ANSI/AISC 303	(2022) Code of Standard Practice for Structural Steel Buildings and Bridges

AMERICAN SOCIETY FOR NONDESTRUCTIVE TESTING (ASNT)

ANSI/ASNT CP-189	(2020) ASNT Standard for Qualification and Certification of Nondestructive Testing Personnel

AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)

ASME B46.1	(2020) Surface Texture, Surface Roughness, Waviness and Lay

AMERICAN WELDING SOCIETY (AWS)

AWS A2.4	(2012) Standard Symbols for Welding, Brazing and Nondestructive Examination
AWS D1.1/D1.1M	(2025) Structural Welding Code - Steel
AWS QC1	(2016) Specification for AWS Certification of Welding Inspectors

ASTM INTERNATIONAL (ASTM)

ASTM A6/A6M	(2024b) Standard Specification for General

	Requirements for Rolled Structural Steel Bars, Plates, Shapes, and Sheet Piling
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 A123/A123M	(2024) Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
ASTM A307	(2023) Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60 000 PSI Tensile Strength
ASTM A500/A500M	(2023) Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes
ASTM A563	(2021; E 2022a) Standard Specification for Carbon and Alloy Steel Nuts
ASTM A780/A780M	(2020) Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings
ASTM A992/A992M	(2022) Standard Specification for Structural Steel Shapes
ASTM B695	(2021) Standard Specification for Coatings of Zinc Mechanically Deposited on Iron and Steel
ASTM C827/C827M	(2023) Standard Test Method for Change in Height at Early Ages of Cylindrical Specimens of Cementitious Mixtures
ASTM C1107/C1107M	(2020) Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink)
ASTM F436/F436M	(2024) Standard Specification for Hardened Steel Washers Inch and Metric Dimensions
ASTM F844	(2019; R 2024) Standard Specification for Washers, Steel, Plain (Flat), Unhardened for General Use
ASTM F959/F959M	(2017a; R 2023) Standard Specification for Compressible-Washer-Type Direct Tension Indicators for Use with Structural Fasteners, Inch and Metric Series
ASTM F1136/F1136M	(2011) Standard Specification for Zinc/Aluminum Corrosion Protective Coatings for Fasteners

ASTM F1554	(2020) Standard Specification for Anchor Bolts, Steel, 36, 55, and 105-ksi Yield Strength
ASTM F2329/F2329M	(2015; R 2023) Standard Specification for Zinc Coating, Hot-Dip, Requirements for Application to Carbon and Alloy Steel Bolts, Screws, Washers, Nuts, and Special Threaded Fasteners
ASTM F2833	(2011; R 2017) Standard Specification for Corrosion Protective Fastener Coatings with Zinc Rich Base Coat and Aluminum Organic/Inorganic Type
ASTM F3125/F3125M	(2019) Standard Specification for High Strength Structural Bolts and Assemblies, Steel and Alloy Steel, Heat Treated, Inch Dimensions 120 ksi and 150 ksi Minimum Tensile Strength, and Metric Dimensions 830 MPa and 1040 MPa Minimum Tensile Strength

SOCIETY FOR PROTECTIVE COATINGS (SSPC)

SSPC PA 1	(2024) Shop, Field, and Maintenance Coating of Metals
SSPC Paint 20	(2019) Zinc-Rich Primers (Type I, Inorganic, and Type II, Organic)
SSPC Paint 29	(2002; E 2004) Zinc Dust Sacrificial Primer, Performance-Based
SSPC SP 3	(2024) Power Tool Cleaning
SSPC SP 6/NACE No.3	(2007) Commercial Blast Cleaning

U.S. DEPARTMENT OF DEFENSE (DOD)

UFC 3-301-01	(2023; with Change 6, 2026) Structural Engineering

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

29 CFR Part 1926, Subpart R	Steel Erection

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

Erection and Erection Bracing Drawings; G

SD-02 Shop Drawings

Fabrication Drawings Including Details of Connections; G

SD-03 Product Data

Shop Primer

Welding Electrodes and Rods

Direct Tension Indicator Washers

Non-Shrink Grout

Tension Control Bolts

<AM#0002> ~~Recycled Content for Structural Steel; S~~</AM#0002>

<AM#0002> ~~Recycled Content for Structural Steel Tubing; S~~</AM#0002>

<AM#0002> ~~Recycled Content for Steel Pipe; S~~</AM#0002>

SD-05 Design Data

Shoring and Temporary Bracing; G

SD-06 Test Reports

Bolts, Nuts, and Washers

Weld Inspection Reports

Direct Tension Indicator Washer Inspection Reports

Bolt Testing Reports

SD-07 Certificates

Steel

Bolts, Nuts, and Washers

Galvanizing

AISC Structural Steel Fabricator Quality Certification

AISC Structural Steel Erector Quality Certification

Welding Procedures and Qualifications

Welding Electrodes and Rods

Certified Welding Inspector

NDT Technician

Welding Procedure Specifications (WPS)

1.3 AISC QUALITY CERTIFICATION

Work must be fabricated by an AISC Certified Structural Steel Fabricator, in accordance with AISC 207, Category BU. Submit AISC Structural Steel Fabricator quality certification.

Work must be erected by an AISC Structural Steel Certified Erector, in accordance with AISC 207, Category CSE. Submit AISC Structural Steel erector quality certification.

1.4 QUALITY ASSURANCE

1.4.1 Preconstruction Submittals

1.4.1.1 Erection and Erection Bracing Drawings

Submit for record purposes. Indicate the sequence of erection, temporary shoring and bracing. The erection drawings must conform to ANSI/AISC 303. Erection drawings must be reviewed, stamped and sealed by a registered professional engineer.

1.4.2 Fabrication Drawing Requirements

Submit fabrication drawings for approval prior to fabrication. Prepare in accordance with ANSI/AISC 303, AISC 326 and AISC 325. Fabrication drawings must not be reproductions of contract drawings. Include complete information for the fabrication and erection of the structure's components, including the location, type, and size of bolts, welds, member sizes and lengths, connection details, blocks, copes, and cuts. Use AWS A2.4 standard welding symbols. Shoring and temporary bracing must be designed and sealed by a registered professional engineer and submitted for record purposes, with calculations, as part of the drawings. Clearly highlight any deviations from the details shown on the contract drawings highlighted on the fabrication drawings. Explain the reasons for any deviations from the contract drawings.

1.4.3 Certifications

1.4.3.1 Welding Procedures and Qualifications

Prior to welding, submit certification for each welder stating the type of welding and positions qualified for, the code and procedure qualified under, date qualified, and the firm and individual certifying the qualification tests. If the qualification date of the welder or welding operator is more than 6 months old, the welding operator's qualification certificate must be accompanied by a current certificate by the welder attesting to the fact that he has been engaged in welding since the date of certification, with no break in welding service greater than 6 months.

Conform to all requirements specified in AWS D1.1/D1.1M.

PART 2 PRODUCTS

2.1 SYSTEM DESCRIPTION

Provide the structural steel system, including shop primer, complete and ready for use. Provide structural steel systems including design, materials, installation, workmanship, fabrication, assembly, erection,

inspection, quality control, and testing in accordance with ANSI/AISC 303, AISC 360, and UFC 3-301-01 except as modified in this contract.

2.2 STEEL

2.2.1 Structural Steel

Wide flange and WT shapes, ASTM A992/A992M. Angles, Channels and Plates, ASTM A36/A36M. Provide structural steel containing a minimum of 80 percent recycled content. <AM#0002>~~Submit data identifying percentage of recycled content for structural steel.~~</AM#0002>

2.2.2 Structural Steel Tubing

ASTM A500/A500M, Grade C. Provide structural steel tubing containing a minimum of 90 percent recycled content. <AM#0002>~~Submit data identifying percentage of recycled content for structural steel tubing.~~</AM#0002>

2.2.3 Steel Pipe

ASTM A53/A53M, Type E or S, Grade B, weight class STD (Standard) or as indicated. Provide steel pipe containing a minimum of 50 percent recycled content. <AM#0002>~~Submit data identifying percentage of recycled content for steel pipe.~~</AM#0002>

2.3 BOLTS, NUTS, AND WASHERS

Submit the certified manufacturer's mill reports which clearly show the applicable ASTM mechanical and chemical requirements together with the actual test results for the supplied fasteners.

2.3.1 Common Grade Bolts

2.3.1.1 Bolts

ASTM A307, Grade A, plain finish. The bolt heads and the nuts of the supplied fasteners must be marked with the manufacturer's identification mark, the strength grade and type specified by ASTM specifications.

2.3.1.2 Nuts

ASTM A563, Grade A, heavy hex style.

2.3.1.3 Washers

ASTM F844.

2.3.2 High-Strength Bolts

High strength bolts and nuts must be shipped together in the same shipping container. Fasteners indicated to be galvanized shall be tested by the supplier to show that the galvanized nut with the supplied lubricant provided may be rotated from the snug tight condition well in excess of the rotation required for pretentioned installation without stripping. The supplier shall supply nuts that have been lubricated and tested with the supplied bolts.

2.3.2.1 Bolts

ASTM F3125/F3125M, Grade A325M A325, Type 1 Heavy Hex Head Style, plain finish.

2.3.2.2 Nuts

ASTM A563, Grade and Style as specified in the applicable ASTM bolt standard.

2.3.2.3 Direct Tension Indicator Washers

ASTM F959/F959M. Submit product data for direct tension indicator washers.

2.3.2.4 Washers

ASTM F436/F436M, plain carbon steel.

2.3.3 Tension Control Bolts

ASTM F3125/F3125M, Grade F1852, Type 1, twistoff style assemblies consisting of steel structural bolts with splined ends, heavy-hex carbon steel nuts, and hardened carbon steel washers. Submit product data for tension control bolts.

2.3.4 Foundation Anchorage

2.3.4.1 Anchor Rods

ASTM F1554 Gr 55, Class 1A.

2.3.4.2 Anchor Nuts

ASTM A563, Grade A, hex style.

2.3.4.3 Anchor Washers

ASTM F844.

2.3.4.4 Anchor Plate Washers

ASTM A36/A36M.

2.4 STRUCTURAL STEEL ACCESSORIES

2.4.1 Welding Electrodes and Rods

AWS D1.1/D1.1M. Submit product data for welding electrodes and rods.

2.4.2 Non-Shrink Grout

ASTM C1107/C1107M, with no ASTM C827/C827M shrinkage. Grout must be nonmetallic. Submit product data for non-shrink grout.

2.5 GALVANIZING

ASTM F2329/F2329M, ASTM F1136/F1136M, ASTM F2833 or ASTM B695 for threaded parts or ASTM A123/A123M for structural steel members, as applicable, unless specified otherwise galvanize after fabrication where practicable.

2.6 FABRICATION

Fabrication must be in accordance with the applicable provisions of AISC 325. Fabrication and assembly must be done in the shop to the greatest extent possible. Punch, subpunch and ream, or drill bolt holes perpendicular to the surface of the member.

Compression joints depending on contact bearing must have a surface roughness not in excess of 500 micro inch as determined by ASME B46.1, and ends must be square within the tolerances for milled ends specified in ASTM A6/A6M.

Shop splices of members between field splices will be permitted only where indicated on the Contract Drawings. Splices not indicated require the approval of the Contracting Officer.

2.6.1 Markings

Prior to erection, identify members by a painted erection mark. Connecting parts assembled in the shop for reaming holes in field connections must be match marked with scratch and notch marks. Do not locate erection markings on areas to be welded. Do not locate match markings in areas that will decrease member strength or cause stress concentrations. Affix embossed tags to hot-dipped galvanized members.

2.6.2 Shop Primer

SSPC Paint 20 or SSPC Paint 29, (zinc rich primer). Shop prime structural steel, except as modified herein, in accordance with SSPC PA 1. Do not prime steel surfaces embedded in concrete, galvanized surfaces, or surfaces within 0.5 inch of the toe of the welds prior to welding (except surfaces on which metal decking and shear studs are to be welded). If flash rusting occurs, re-clean the surface prior to application of primer. Apply primer in accordance with endorsement "SPE-P1" of AISC 420 or approved equal NACE or SSPC certification to a minimum dry film thickness of2.0 mil. Submit shop primer product data.

Prime slip critical surfaces with a Class B coating in accordance with AISC 325. Submit test report for Class B coating.

Prior to assembly, prime surfaces which will be concealed or inaccessible after assembly. Do not apply primer in foggy or rainy weather; when the ambient temperature is below 45 degrees F or over 95 degrees F; or when the primer may be exposed to temperatures below 40 degrees F within 48 hours after application, unless approved otherwise by the Contracting Officer. Repair damaged primed surfaces with an additional coat of primer.

2.6.2.1 Cleaning

SSPC SP 6/NACE No.3, except steel exposed in spaces above ceilings, attic spaces, furred spaces, and chases that will be hidden to view in finished construction may be cleaned to SSPC SP 3 when recommended by the shop primer manufacturer. Maintain steel surfaces free from rust, dirt, oil, grease, and other contaminants through final assembly.

2.7 DRAINAGE HOLES

Drill adequate drainage holes to eliminate water traps. Hole diameter

must be 1/2 inch and location indicated on the detail drawings. Hole size and locations must not affect the structural integrity.

PART 3 EXECUTION

3.1 ERECTION

a. Erection of structural steel, except as indicated in item b. below, must be in accordance with the applicable provisions of AISC 325, ANSI/AISC 303 and 29 CFR Part 1926, Subpart R.

After final positioning of steel members, provide full bearing under base plates and bearing plates using nonshrink grout. Place nonshrink grout in accordance with the manufacturer's instructions.

3.1.1 STORAGE

Store the material out of contact with the ground in such manner and location as to minimize deterioration.

3.2 CONNECTIONS

Except as modified in this section, design connections indicated in accordance with AISC 360. Build connections into existing work. Do not tighten anchor bolts set in concrete with impact torque wrenches. Holes must not be cut or enlarged by burning. Bolts, nuts, and washers must be clean of dirt and rust, and lubricated immediately prior to installation.

3.2.1 Common Grade Bolts

Tighten ASTM A307 bolts to a "snug tight" fit. "Snug tight" is the tightness that exists when plies in a joint are in firm contact. If firm contact of joint plies cannot be obtained with a few impacts of an impact wrench, or the full effort of a man using a spud wrench, contact the Contracting Officer for further instructions.

3.2.2 High-Strength Bolts

Provide direct tension indicator washers in all ASTM F3125/F3125M, Grade A325 and Grade A490 bolted connections. Bolts must be installed in connection holes and initially brought to a snug tight fit. After the initial tightening procedure, fully tension bolts, progressing from the most rigid part of a connection to the free edges.

Fastener components shall be protected from dirt and moisture in closed containers at the site of the installation. Fastener components that are not incorporated into the work shall be returned to protected storage at the end of the work shift.

3.2.2.1 Installation of Direct Tension Indicator Washers (DTIW)

Where possible, install the DTIW under the bolt head and tighten the nut. If the DTIW is installed adjacent to the turned element, provide a flat washer between the DTIW and nut when the nut is turned for tightening, and between the DTIW and bolt head when the bolt head is turned for tightening. In addition to the LIW, provide flat washers under both the bolt head and nut when ASTM F3125/F3125M, Grade A490 bolts are used.

3.2.3 Tension Control Bolts

Bolts must be installed in connection holes and initially brought to a snug tight fit. After the initial tightening procedure, fully tension bolts, progressing from the most rigid part of a connection to the free edges.

3.3 GAS CUTTING

Use of gas-cutting torch in the field for correcting fabrication errors is not permitted on any major member in the structural framing. Use of a gas cutting torch will be permitted on minor members not under stress only after approval has been obtained from the Contracting Officer.

3.4 WELDING

Welding must be in accordance with AWS D1.1/D1.1M. Provide AWS D1.1/D1.1M qualified welders, welding operators, and tackers.

Develop and submit the Welding Procedure Specifications (WPS) for all welding, including welding done using prequalified procedures. Submit for approval all WPS, whether prequalified or qualified by testing.

3.4.1 Removal of Temporary Welds, Run-Off Plates, and Backing Strips

Remove only from finished areas. Remove backing strips from bottom flange of moment connections, backgouge the root pass to sound weld metal and reinforce with a 5/16 inch fillet weld minimum.

3.5 SHOP PRIMER REPAIR

Repair shop primer in accordance with the paint manufacturer's recommendation for surfaces damaged by handling, transporting, cutting, welding, or bolting.

3.5.1 Field Priming

Field prime steel exposed to the weather, or located in building areas without HVAC for control of relative humidity. After erection, the field bolt heads and nuts, field welds, and any abrasions in the shop coat must be cleaned and primed with paint of the same quality as that used for the shop coat.

3.6 GALVANIZING REPAIR

Repair damage to galvanized coatings using ASTM A780/A780M zinc rich paint for galvanizing damaged by handling, transporting, cutting, welding, or bolting. Do not heat surfaces to which repair paint has been applied.

3.7 FIELD QUALITY CONTROL

Perform field tests, and provide labor, equipment, and incidentals required for testing. Notify the Contracting Officer in writing of defective welds, bolts, nuts, and washers within 7 working days of the date of the inspection.

3.7.1 Welds

3.7.1.1 Visual Inspection

AWS D1.1/D1.1M. Furnish the services of AWS-certified welding inspectors for fabrication and erection inspection and testing and verification inspections. A Certified Welding Inspector must perform visual inspection on 100 percent of all welds. Document this inspection in the Visual Weld Inspection Log. Submit certificates indicating that certified welding inspectors meet the requirements of AWS QC1.

Inspect proper preparation, size, gaging location, and acceptability of all welds; identification marking; operation and current characteristics of welding sets in use.

3.7.1.2 Nondestructive Testing

Nondestructive testing must be in accordance with AWS D1.1/D1.1M. Ultrasonic testing must be performed in accordance with Table 8.2 or 8.3 of AWS D1.1/D1.1M. Test locations must be as indicated. All personnel performing NDT must be certified in accordance with ANSI/ASNT CP-189 in the method of testing being performed. Submit certificates showing compliance with ANSI/ASNT CP-189 for all NDT technicians. If more than 20 percent of welds made by a welder contain defects identified by testing, then all groove welds made by that welder must be tested by ultrasonic testing, and all fillet welds made by that welder must be inspected by magnetic particle testing (MT) or dye penetrant testing (PT) as approved by the Contracting Officer. When groove welds made by an individual welder are required to be tested, magnetic particle or dye penetrant testing may be used only in areas inaccessible to ultrasonic testing. Retest all repaired areas. Submit weld inspection reports.

Testing frequency: Provide the following types and number of tests:

Test Type	Number of Tests
Ultrasonic	50 percent of CJP Welds
Magnetic Particle	50 percent of PJP and Fillet Welds
Dye Penetrant	50 percent of PJP and Fillet Welds

3.7.2 Direct Tension Indicator Washers

3.7.2.1 Direct Tension Indicator Washer Compression

Test direct tension indicator washers in place to verify that they have been compressed sufficiently to provide the 0.015 inch gap, as required by ASTM F959/F959M. Submit direct tension indicator washer inspection reports.

3.7.3 High-Strength Bolts

3.7.3.1 Testing Bolt, Nut, and Washer Assemblies

Test a minimum of 3 bolt, nut, and washer assemblies from each mill certificate batch in a tension measuring device at the job site prior to the beginning of bolting start-up. Demonstrate that the bolts and nuts, when used together, can develop tension not less than the provisions

specified in AISC 360, depending on bolt size and grade. The bolt tension must be developed by tightening the nut. A representative of the manufacturer or supplier must be present to ensure that the fasteners are properly used, and to demonstrate that the fastener assemblies supplied satisfy the specified requirements. Submit bolt testing reports.

3.7.3.2 Inspection

Inspection procedures must be in accordance with AISC 360. Confirm and report to the Contracting Officer that the materials meet the project specification and that they are properly stored. Confirm that the faying surfaces have been properly prepared before the connections are assembled. Observe the specified job site testing and calibration, and confirm that the procedure to be used provides the required tension. Monitor the work to ensure the testing procedures are routinely followed on joints that are specified to be fully tensioned.

Inspect calibration of torque wrenches for high-strength bolts.

3.7.3.3 Testing

The Government has the option to perform nondestructive tests on 5 percent of the installed bolts to verify compliance with pre-load bolt tension requirements. Provide the required access for the Government to perform the tests. The nondestructive testing will be done in-place using an ultrasonic measuring device or any other device capable of determining in-place pre-load bolt tension. The test locations must be selected by the Contracting Officer. If more than 10 percent of the bolts tested contain defects identified by testing, then all bolts used from the batch from which the tested bolts were taken, must be tested at the Contractor's expense. Retest new bolts after installation at the Contractor's expense.

-- End of Section --

SECTION 05 50 13

MISCELLANEOUS METAL FABRICATIONS
08/24, CHG 1: 08/25
AMENDMENT 0002

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 318	(2019; R 2022) Building Code Requirements for Structural Concrete (ACI 318-19) and Commentary (ACI 318R-19)

AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)

ANSI/AISC 303	(2022) Code of Standard Practice for Structural Steel Buildings and Bridges

AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)

ASME B18.2.1	(2012; R 2021) Square, Hex, Heavy Hex, and Askew Head Bolts and Hex, Heavy Hex, Hex Flange, Lobed Head, and Lag 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	(2024) Machine Screws, Tapping Screws, and Metallic 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	(2025) Structural Welding Code - Steel
AWS D1.2/D1.2M	(2014; Errata 1 2014; Errata 2 2020) Structural Welding Code - Aluminum

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 A307	(2023) 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	(2023) Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes
ASTM A653/A653M	(2025) 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 A924/A924M	(2022a) Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process
ASTM C1513	(2024) 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 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

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 PA 1	(2024) Shop, Field, and Maintenance Coating of Metals
SSPC SP 3	(2024) 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

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

Floor Gratings, Installation Drawings; G

Bollards/Pipe Guards; G

Embedded Angles and Plates, Installation Drawings; G

SD-03 Product Data

Floor Gratings; G

<AM#0002> ~~Recycled Content; S~~

</AM#0002>

SD-07 Certificates

<AM#0002> ~~Certificate Of Compliance; G~~

</AM#0002>

Certified Mill Test Reports for Chemistry and Mechanical Properties; G

1.3 QUALIFICATION OF WELDERS

Qualify procedures and personnel according to the following:

a. AWS D1.1/D1.1M Structural Welding Code - Steel.

b. AWS D1.2/D1.2M Structural Welding Code - Aluminum.

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 ANSI/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 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.

2.1.1 Structural Carbon Steel

Provide in accordance with ASTM A36/A36M.

2.1.2 Structural Tubing

Provide in accordance with ASTM A500/A500M.

2.1.3 Steel Pipe

Provide in accordance with ASTM A53/A53M, Type E or S, Grade B.

2.1.4 Fittings for Steel Pipe

Provide standard malleable iron fittings in accordance with ASTM A47/A47M.

2.1.5 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.

2.1.6 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.

2.1.6.1 Adhesive Anchors

Provide 5/8in. diameter adhesive anchors. Minimum concrete embedment of 8 in. Design values listed are as tested in accordance with ASTM E488/E488M.

a. Provide minimum ultimate pullout value of 5,000 lb. Calculate pullout capacity according to ACI 318.

b. Provide minimum ultimate shear value of 5,000 lb. Calculate shear capacity according to ACI 318.

2.1.6.2 Lag Screws and Bolts

Provide in accordance with ASME B18.2.1, type and grade best suited for the purpose.

2.1.6.3 Toggle Bolts

Provide in accordance with ASME B18.2.1.

2.1.6.4 Bolts, Nuts, Studs and Rivets

Provide in accordance with ASME B18.2.2 or ASTM A307.

2.1.6.5 Powder Actuated Fasteners

Follow safety provisions in accordance with ASSP A10.3.

2.1.6.6 Screws

Provide in accordance with ASME B18.2.1, ASME B18.6.2, ASME B18.6.3 and ASTM C1513.

2.1.6.7 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 FABRICATION FINISHES

2.2.1 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.

2.2.2 Galvanize

Anchor bolts, grating fasteners, washers, and parts or devices necessary for proper installation, unless indicated otherwise.

2.2.3 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.

2.2.4 Shop Cleaning and Painting

2.2.4.1 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.

2.2.4.2 Pretreatment, Priming and Painting

Apply pre-treatment, primer, and paint in accordance with manufacturer's printed instructions.

2.2.5 Nonferrous Metal Surfaces

Protect by plating, anodic, or organic coatings.

2.3 FLOOR GRATINGS AND ROOF WALKWAYS

Design steel grating in accordance with NAAMM MBG 531 and NAAMM MBG 532 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 40 pounds per square foot for the spans indicated, with maximum deflection of L/240.

b. In accordance with NAAMM MBG 531, NAAMM MBG 532, 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. NAAMM MBG 531, NAAMM MBG 532, band ends of gratings with bars of the same or greater thickness than the metal used for grating. Weld banding bars to bearing bars or channels at least every fourth bar or channel and in every corner. Tack weld intervening bars or channels. Band diagonal or round cuts by welding bars of the same or greater thickness as the grating and in accordance with the manufacturer's standard for trim.

d. Anchor gratings to structural members with bolts, toggle bolts, or expansion shields and bolts.

e. Provide slip resistant surface finishes.

2.4 BOLLARDS/PIPE GUARDS

Provide 12 and 6 inch galvanized weight steel pipe in accordance with ASTM A53/A53M. Anchor posts in concrete as indicated and fill solidly with concrete.

2.5 MISCELLANEOUS PLATES AND SHAPES

Submit installation drawings for and provide items that do not form a part of the structural steel framework, such as miscellaneous mountings and frames.

Provide angles and plates in accordance with ASTM A36/A36M, for embedment as indicated. Hot dip galvanize embedded items exposed to the elements in accordance with ASTM A123/A123M unless noted otherwise.

2.6 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.

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. Do not weld, cut or abrade surfaces of exterior units that have been hot-dip galvanized after fabrication and are bolted or screwed field connections.

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.

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 PREPARATION

3.7.1 Material Coatings and Surfaces

Remove rust preventive coating just prior to field erection, using a remover approved by the metal manufacturer. Surfaces, when assembled, must be free of rust, grease, dirt and other foreign matter.

3.7.2 Environmental Conditions

Do not clean or paint surfaces when damp or exposed to foggy or rainy weather, when metallic surface temperature is less than minus 5 degrees F above the dew point of the surrounding air, or when surface temperature is below 45 degrees F or over 95 degrees F, unless approved by the Contracting Officer. Metal surfaces to be painted must be dry for a minimum of 48 hours prior to the application of primer or paint.

3.8 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.

3.9 MOUNTING OF SAFETY CHAINS

Provide safety chains where indicated. Mount the top chain 3 feet 6 inches above the floor and mount the lower chain 2 feet above the floor.

3.10 REPAIRS

a. Touchup Painting:

(1) Immediately after erection, clean field welds, bolted connections, and abraded areas. Paint uncoated and abraded areas with same material as used for shop painting to comply with SSPC PA 1 for touching up shop-painted surfaces.

b. Galvanized Surfaces:

(1) Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A780/A780M.

-- End of Section --

SECTION 05 51 33

METAL LADDERS
08/24
AMENDMENT 0002

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 LADDER INSTITUTE (ALI)

ALI A14.3	(2008; R 2018) Ladders - Fixed - Safety Requirements

AMERICAN SOCIETY OF SAFETY PROFESSIONALS (ASSP)

ASSP Z359.16	(2016) Safety Requirements for Climbing Ladder Fall Arrest Systems

AMERICAN WELDING SOCIETY (AWS)

AWS D1.1/D1.1M	(2025) 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 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 A500/A500M	(2023) Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes
ASTM A653/A653M	(2025) 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 A924/A924M	(2022a) Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process
ASTM D1187/D1187M	(1997; R 2018) Standard Specification for Asphalt-Base Emulsions for Use as Protective Coatings for Metal

MASTER PAINTERS INSTITUTE (MPI)

MPI 79	(2016) Primer, Alkyd, Anti-Corrosive for Metal

SOCIETY FOR PROTECTIVE COATINGS (SSPC)

SSPC SP 3	(2024) Power Tool Cleaning
SSPC SP 6/NACE No.3	(2007) Commercial Blast Cleaning

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

29 CFR 1910.23	(Nov 2016) Ladders
29 CFR 1910.28	(Nov 2016) Duty to Have Fall Protection and Falling Object Protection
29 CFR 1910.29	(Nov 2016) Fall Protection System and Falling Object Protection - Criteria and Practices

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

Ladders, Installation Drawings

SD-03 Product Data

Ladders

Ladder Safety Devices (Climbing Ladder Fall Arrest Systems)

SD-07 Certificates

Fabricator Certification for Ladder Assembly

1.3 CERTIFICATES

Provide fabricator certification for ladder assembly stating that the ladder and associated components have been fabricated according to the requirements of 29 CFR 1910.23.

1.4 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.

1.5 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.

PART 2 PRODUCTS

<AM#0002>~~2.1 SUSTAINABILITY REQUIREMENTS AND REPORTING~~

~~2.1.1 Recycled Content of Products~~

~~Provide products with post-consumer recycled content plus one-half of pre-consumer recycled content to the greatest extent possible, but not less than 10 percent~~

</AM#0002>2.1 MATERIALS

2.1.1 Structural Carbon Steel

ASTM A36/A36M.

2.1.2 Structural Tubing

ASTM A500/A500M.

2.1.3 Steel Pipe

ASTM A53/A53M, Type E or S, Grade B.

2.1.4 Fittings for Steel Pipe

Standard malleable iron fittings ASTM A47/A47M.

2.2 FABRICATION FINISHES

2.2.1 Galvanizing

Hot-dip galvanize items specified to be zinc-coated, after fabrication where practicable. Galvanizing: ASTM A123/A123M, ASTM A153/A153M, ASTM A653/A653M or ASTM A924/A924M, G90, as applicable.

2.2.2 Galvanize

Anchor bolts, washers, and parts or devices necessary for proper installation, unless indicated otherwise.

2.2.3 Repair of Zinc-Coated Surfaces

Repair damaged surfaces with galvanizing repair method and paint conforming to 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 surfaces to which stick or paste material is applied, with a torch to a temperature sufficient to melt the metallics in stick or paste; spread molten material uniformly over surfaces to be coated and wipe off excess material.

2.2.4 Shop Cleaning and Painting

2.2.4.1 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.

2.2.4.2 Pretreatment, Priming and Painting

Apply pretreatment, 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.

2.2.5 Nonferrous Metal Surfaces

Protect by plating, anodic, or organic coatings.

2.3 LADDERS

Fabricate vertical ladders conforming to 29 CFR 1910.23 and Section 5 of ALI A14.3. Design assembly, including rung connections and methods of attachment, to support a live load of 300 pounds per rung, or 1000 pounds point load, or 100 pounds per square foot load applied downward. Ladders requiring a "Safety Device" must have stringers and rungs that meet the minimum strength requirements of the Safety Device anchor points dynamic loading. Ladder rungs, step and cleats must be spaced not less than 10 inches and not more than 16 inches wide (measured before installation of ladder safety system), spaced no more than 14 inches apart, plug welded or shouldered and headed into stringers. Install ladders so that the maximum perpendicular distance from the centerline of the steps or rungs, or grab bars, or both, to the nearest permanent object in the back of the ladder or to the finished wall surface will not be less than 7 inches, except for the elevator pit ladders, which have a minimum perpendicular distance of 4.5 inches. Provide heavy clip angles riveted or bolted to the stringer and drilled for not less than two 1/2 inch diameter expansion bolts as indicated. Provide intermediate clip angles not over 48 inches on centers. The top rung of the ladder must be level with the top of the access level, parapet or landing served by the ladder except for hatches or wells. Extend the side rails of through or side step ladders 42 inches above the access level. Provide ladder access protective swing gates at the top of access/egress level. The drawings must indicate ladder locations and details of critical dimensions and materials.

2.3.1 Phasing out of Ladder Cages and Wells (29 CFR 1910.28, Nov 2016)

Conform to 29 CFR 1910.28 (Nov 2016).

Each newly installed fixed ladder over 20 feet in length must be equipped with a personal fall arrest system or climbing ladder fall arrest system (ladder safety device), cages and wells can still be utilized, but will not qualify as fall protection. When a fixed ladder, cage, or well, or any portion of a section thereof, is replaced, a personal fall arrest system or climbing ladder fall arrest system (ladder safety device) must be installed in at least that section of the fixed ladder, cage, or well where the replacement is located. The minimum strength requirements of the safety device anchor points dynamic loading must be coordinated with existing rungs and stringers to confirm they have capacity. On and after November 18, 2036, all fixed ladders must only be equipped with a personal fall arrest system or a ladder safety device (climbing ladder Fall Arrest System).

2.3.2 Ladder Safety Devices (Climbing Ladder Fall Arrest Systems)

Conform to 29 CFR 1910.29, Section 7 of ALI A14.3 and ASSP Z359.16. Install ladder safety devices on ladders over 20 feet long or more. The ladder safety systems must meet the design requirement of the ladders which they serve. The ladder safety system must be capable of sustaining a minimum static load of four personnel that may be attached to the fall safety device and climb the ladder at one time. The ladder must have ladder members or anchor points that meet the minimum loading requirements as defined by the safety device and the ladder must be designed to handle the dynamic load being applied in the event of a fall Each ladder safety system must allow the worker to climb up and down using both hands and does not require the employee continuously, hold, push, or pull any part of the system while climbing. The connection between the carrier or lifeline and the point of attachment to the body harness does not exceed 9 inches. The ladder safety system consists of a rigid or flexible carrier. Mountings for the rigid carries are attached at each end of the carrier, with intermediate mountings spaced as necessary, along the entire length of the carrier. Mountings for flexible carrier are attached at each end of the carrier and cable guides for flexible carriers are installed at least 25 feet apart but not more than 40 feet apart along the entire length of the carrier. The design and installation of mountings and cable guides does not reduce the design strength of the ladder.

PART 3 EXECUTION

3.1 GENERAL INSTALLATION REQUIREMENTS

Install items at locations indicated, according to manufacturer's instructions. Verify all measurements and take all field measurements necessary before fabrication. Provide exposed fastenings of compatible materials, generally matching in color and finish, and harmonize with the material to which fastenings are applied. Include materials and parts necessary to complete each item, even though such work is not definitely shown or specified. Poor matching of holes for fasteners will be cause for rejection. Conceal fastenings where practicable. Thickness of metal and details of assembly and supports must provide strength and stiffness. Formed joints exposed to the weather to exclude water. Items listed below require additional procedures.

3.2 WORKMANSHIP

Metalwork must be well formed to shape and size, with sharp lines and angles and true curves. Drilling and punching must produce clean true lines and surfaces. Continuously weld along the entire area of contact. Do not tack weld exposed connections of work in place. Grind exposed welds smooth. Provide smooth finish on exposed surfaces of work in place, unless otherwise approved. Where tight fits are required, mill joints. Cope or miter corner joints, well formed, and in true alignment. Install in accordance with manufacturer's installation instructions and approved drawings, cuts, and details.

3.3 ANCHORAGE, FASTENINGS, AND CONNECTIONS

Provide anchorage where necessary for fastening metal items securely in place. Include for anchorage not otherwise specified or indicated slotted inserts, expansion anchors, and powder-actuated fasteners, when approved for concrete; toggle bolts and through bolts for masonry; machine bolts, carriage bolts and powder-actuated threaded studs for steel; through bolts, lag bolts, and screws for wood. Do not use wood plugs in any material. Provide non-ferrous attachments for non-ferrous metal. Make exposed fastenings of compatible materials, generally matching in color and finish, to which fastenings are applied. Conceal fastenings where practicable.

3.4 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.

3.5 FINISHES

3.5.1 Dissimilar Materials

Where dissimilar metals are in contact, protect surfaces with a coat conforming to 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 with ASTM D1187/D1187M, asphalt-base emulsion.

3.6 LADDERS

Secure to the adjacent construction with the clip angles attached to the stringer. Install intermediate clip angles not over 48 inches on center. Install brackets as required for securing of ladders welded or bolted to structural steel or built into the masonry or concrete. Ends of ladders must not rest upon floor.

-- End of Section --

SECTION 07 21 16

MINERAL FIBER BLANKET INSULATION
08/23, CHG 1: 08/25
AMENDMENT 0002

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 C665	(2024) Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing
ASTM C930	(2019; R 2025) Standard Classification of Potential Health and Safety Concerns Associated with Thermal Insulation Materials and Accessories
ASTM D5359	(1998; R 2021) Standard Specification for Glass Cullet Recovered from Waste for Use in Manufacture of Glass Fiber
ASTM E84	(2024) Standard Test Method for Surface Burning Characteristics of Building Materials
ASTM E136	(2024c) Standard Test Method for Assessing Combustibility of Materials Using a Vertical Tube Furnace at 750 Degrees C

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

GREEN SEAL (GS)

GS-36	(2013) Adhesives for Commercial Use

SCIENTIFIC CERTIFICATION SYSTEMS (SCS)

SCS	SCS Global Services (SCS) Indoor Advantage

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT (SCAQMD)

SCAQMD Rule 1168	(2022) Adhesive and Sealant Applications

U.S. DEPARTMENT OF ENERGY (DOE)

Energy Star	Energy Star Energy Efficiency Labeling System (FEMP)

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

29 CFR 1910.134	Respiratory Protection

UL SOLUTIONS (UL)

UL 2818	(2022) GREENGUARD Certification Program For Chemical Emissions For Building Materials, Finishes And Furnishings

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

Blanket Insulation; G, AE

<AM#0002> ~~Recycled Content for Insulation Materials; S~~</AM#0002>

<AM#0002> ~~Energy Star Label for Insulation Materials; S~~

</AM#0002>

Accessories

<AM#0002>~~SD-07 Certificates~~

~~Indoor Air Quality for Insulation Materials; S~~

~~Indoor Air Quality for Adhesives; S~~

</AM#0002>

SD-08 Manufacturer's Instructions

Insulation

1.3 CERTIFICATIONS

Submit required indoor air quality certifications and validations in one submittal package.

1.3.1 Insulation Products

Provide product certified to meet indoor air quality requirements by UL 2818(Greenguard) Gold, SCS Global Services Indoor Advantage Gold or provide certification by other third-party programs. Provide current product certification from certification body.

1.3.2 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.

1.4 DELIVERY, STORAGE, AND HANDLING

1.4.1 Delivery

Deliver materials to site in original sealed wrapping bearing manufacturer's name and brand designation, specification number, type, grade, R-value, and class. Store and handle to protect from damage. Do not allow insulation materials to become wet, soiled, crushed, or covered with ice or snow. Comply with manufacturer's recommendations for handling, storing, and protecting of materials before and during installation.

1.4.2 Storage

Inspect materials delivered to the site for damage; unload and store out of weather in manufacturer's original packaging. Store only in dry locations, not subject to open flames or sparks, and easily accessible for inspection and handling.

1.5 SAFETY PRECAUTIONS

1.5.1 Respirators

Provide installers with dust/mist respirators, training in their use, and protective clothing, all approved by National Institute for Occupational Safety and Health (NIOSH)/Mine Safety and Health Administration (MSHA) in accordance with 29 CFR 1910.134.

1.5.2 Other Safety Concerns

Consider other safety concerns and measures as outlined in ASTM C930.

PART 2 PRODUCTS

2.1 BLANKET INSULATION

ASTM C665, Type II, blankets with non-reflecting coverings ; Class A, membrane-faced surface with a flame spread of 25 or less, except a flame spread rating of 25 or less and a smoke developed rating of 150 or less when tested in accordance with ASTM E84.

Provide insulation with R-Value as indicated on drawings

2.1.1 Recycled Materials

Provide insulation materials containing the following minimum percentage of recycled material content by weight:

a. Fiberglass: 20 percent glass cullet complying with ASTM D5359

b. Mineral wool: 75 percent recovered materials content

<AM#0002>~~Provide data identifying percentage of recycled content for insulation materials.~~</AM#0002>

2.1.2 Energy Star

Provide insulation materials that are Energy Star labeled.<AM#0002>~~Provide data identifying Energy Star label for insulation materials.~~</AM#0002>

2.1.3 Prohibited Materials

Do not provide asbestos-containing materials.

2.1.4 Reduced Volatile Organic Compounds (VOC) for Insulation Materials

<AM#0002>~~Provide certification of indoor air quality for insulation materials.~~</AM#0002>

2.2 BLOCKING

Wood, metal, unfaced mineral fiber blankets in accordance with ASTM C665, Type I, or other approved materials. Use only non-combustible materials meeting the requirements of ASTM E136 for blocking around chimneys and heat producing devices.

2.3 ACCESSORIES

2.3.1 Adhesive

As recommended by the insulation manufacturer. Provide non-aerosol adhesive products used on the interior of the building (defined as inside of the weatherproofing system) that meet 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 that meet either emissions requirements of CDPH SECTION 01350 (use the office or classroom requirements, regardless of space type) or VOC content requirements of GS-36.<AM#0002>~~Provide certification or validation of indoor air quality for adhesives.~~</AM#0002>

2.3.2 Mechanical Fasteners

Corrosion resistant fasteners as recommended by the insulation manufacturer.

2.3.3 Wire Mesh

Corrosion resistant and as recommended by the insulation manufacturer.

PART 3 EXECUTION

3.1 EXISTING CONDITIONS

Before installing insulation, ensure that surfaces that will be in contact with the insulation are dry and free of projections which could cause

voids, compressed insulation, or punctured vapor retarders. If moisture or other conditions are found that do not allow the workmanlike installation of the insulation, do not proceed but notify Contracting Officer of such conditions.

3.2 INSTALLATION

3.2.1 Insulation

Install and handle insulation in accordance with manufacturer's instructions. Keep material dry and free of extraneous materials. Any materials that show visual evidence of biological growth due to presence of moisture must not be installed on the building project. Ensure personal protective clothing and respiratory equipment is used as required. Observe safe work practices.

3.2.1.1 Electrical wiring

Do not install insulation in a manner that would sandwich electrical conductors, that are not installed in conduit, between two layers of insulation.

3.2.1.2 Continuity of Insulation

Install blanket insulation to butt tightly against adjoining blankets and to studs, rafters, joists, sill plates, headers and any obstructions. Provide continuity and integrity of insulation at corners, wall to ceiling joints, roof, and floor. Avoid creating thermal bridges.

3.2.1.3 Installation at Bridging and Cross Bracing

Insulate at bridging and cross bracing by splitting blanket vertically at center and packing one half into each opening. Butt insulation at bridging and cross bracing; fill in bridged area with loose or scrap insulation.

3.2.1.4 Sizing of Blankets

Provide only full width blankets when insulating between trusses, joists, or studs. Size width of blankets for a snug fit where trusses, joists or studs are irregularly spaced.

3.2.1.5 Installation of Sill Sealer

Size sill sealer insulation and place insulation over top of masonry or concrete perimeter walls or concrete perimeter floor slab on grade. Fasten sill plate over insulation.

-- End of Section --

SECTION 07 42 13

METAL WALL PANELS
08/25
AMENDMENT 0002

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 ADM	(2020) Aluminum Design Manual
AA ASD1	(2024) Aluminum Standards and Data

AMERICAN ARCHITECTURAL MANUFACTURERS ASSOCIATION (AAMA)

AAMA 501.1	(2017) Standard Test Method for Water Penetration of Windows, Curtain Walls and Doors Using Dynamic Pressure
AAMA 800	(2016) Voluntary Specifications and Test Methods for Sealants

AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)

ANSI/AISC 341	(2022) Seismic Provisions for Structural Steel Buildings

AMERICAN IRON AND STEEL INSTITUTE (AISI)

AISI S100	(2016) North American Specification for the Design of Cold-Formed Steel Structural Members
AISI SG03-3	(2002; Suppl 2001-2004; R 2008) Cold-Formed Steel Design Manual Set

AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE)

ASCE 7-22	(2022; Supp 1 2023; Supp 2 2023; Supp 3 2025) Minimum Design Loads and Associated Criteria for Buildings and Other Structures

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 A606/A606M	(2023) Standard Specification for Steel Sheet and Strip, High-Strength, Low-Alloy, Hot-Rolled and Cold-Rolled, with Improved Atmospheric Corrosion Resistance
ASTM A653/A653M	(2025) Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
ASTM A924/A924M	(2022a) Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process
ASTM A1008/A1008M	(2024) 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 B117	(2025) Standard Practice for Operating Salt Spray (Fog) Apparatus
ASTM B209	(2014) Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate
ASTM C920	(2018; R 2024) Standard Specification for Elastomeric Joint Sealants
ASTM D522/D522M	(2017; R 2021) Mandrel Bend Test of Attached Organic Coatings
ASTM D523	(2014; R 2018) Standard Test Method for Specular Gloss
ASTM D610	(2025) Standard Practice for Evaluating Degree of Rusting on Painted Steel Surfaces
ASTM D714	(2002; R 2017) Standard Test Method for Evaluating Degree of Blistering of Paints
ASTM D822	(2013; R 2018) Filtered Open-Flame Carbon-Arc Exposures of Paint and Related Coatings
ASTM D968	(2022) Standard Test Methods for Abrasion Resistance of Organic Coatings by Falling Abrasive
ASTM D1056	(2020) Standard Specification for Flexible Cellular Materials - Sponge or Expanded Rubber
ASTM D1308	(2020) Standard Test Method for Effect of Household Chemicals on Clear and Pigmented Coating Systems
ASTM D1654	(2008; R 2016; E 2017) Standard Test Method for Evaluation of Painted or Coated

	Specimens Subjected to Corrosive Environments
ASTM D1667	(2022) Standard Specification for Flexible Cellular Materials - Poly (Vinyl Chloride) Foam (Closed-Cell)
ASTM D2244	(2025) Standard Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates
ASTM D2247	(2025) Standard Practice for Testing Water Resistance of Coatings in 100 Percent Relative Humidity
ASTM D2794	(1993; R 2024) Standard Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact)
ASTM D3359	(2017) Standard Test Methods for Rating Adhesion by Tape Test
ASTM D3363	(2022) Standard Test Method for Film Hardness by Pencil Test
ASTM D4214	(2023) Standard Test Method for Evaluating the Degree of Chalking of Exterior Paint Films
ASTM D4587	(2011; R 2019; E 2019) Standard Practice for Fluorescent UV-Condensation Exposures of Paint and Related Coatings
ASTM D5894	(2016) Standard Practice for Cyclic Salt Fog/UV Exposure of Painted Metal, (Alternating Exposures in a Fog/Dry Cabinet and a UV/Condensation Cabinet)
ASTM E72	(2022) Conducting Strength Tests of Panels for Building Construction
ASTM E84	(2024) Standard Test Method for Surface Burning Characteristics of Building Materials
ASTM E283	(2019) Standard Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen
ASTM E331	(2000; R 2023) Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference
ASTM E1592	(2017) Standard Test Method for Structural Performance of Sheet Metal Roof and Siding

	Systems by Uniform Static Air Pressure Difference
ASTM G152	(2013; R 2021) Standard Practice for Operating Open Flame Carbon Arc Light Apparatus for Exposure of Nonmetallic Materials
ASTM G153	(2013; R 2021) Standard Practice for Operating Enclosed Carbon Arc Light Apparatus for Exposure of Nonmetallic Materials

METAL BUILDING MANUFACTURERS ASSOCIATION (MBMA)

MBMA MBSM	(2018) Metal Building Systems Manual

NATIONAL ASSOCIATION OF ARCHITECTURAL METAL MANUFACTURERS (NAAMM)

NAAMM AMP 500	(2006) Metal Finishes Manual

SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION (SMACNA)

SMACNA 1793	(2012) Architectural Sheet Metal Manual, 7th Edition

UL SOLUTIONS (UL)

UL Bld Mat Dir	(updated continuously online) Building Materials Directory

1.2 DEFINITIONS

Metal Wall Panel: Metal wall panels, attachment system components and accessories necessary for a complete weather-tight wall system.

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

Qualification of Manufacturer; G, RO

Qualification of Installation Contractor; G, RO

Sample Warranty; G, RO

SD-02 Shop Drawings

Installation Drawings; G, RO

SD-03 Product Data

<AM#0002> ~~Recycled Content; S~~</AM#0002>

Steel Sheet Panels; G, AE

Factory Color Finish

Closure Materials

Pressure Sensitive Tape

Sealants and Caulking

Galvanizing Repair Paint

Enamel Repair Paint

Accessories

SD-04 Samples

Steel Sheet Panels; G, AE

Fasteners; G, AE

Metal Closure Strips; G, AESD-05 Design Data

Wind Load Design Analysis; G, AE

SD-06 Test Reports

Leakage Tests; G, RO

Wind Load Tests; G, RO

Coating Tests; G, RO

Chalking Tests; G, RO

Seismic Tests; G, RO

SD-07 Certificates

Coil Stock; G, RO

Fasteners; G, AE

Galvanizing Repair Paint; G, AE

Enamel Repair Paint; G, AE

SD-08 Manufacturer's Instructions

Installation of Wall panels; G, RO

SD-09 Manufacturer's Field Reports

Manufacturer's Field Inspection Reports; G, PO

SD-11 Closeout Submittals

Warranty; G, RO

Maintenance Instructions; G, RO

20 Year "No Dollar Limit" Warranty for Labor and Material

1.4 QUALITY CONTROL

1.4.1 Pre-Installation Conference

Upon notification of submittal receipt and approval by the Contracting Officer; and prior to the commencement of the work, attend a pre-installation conference to review the following:

a. Drawings and Specifications.

b. Qualification of Installer, Qualification of Welders.

c. Sustainable acquisition

d. Approved Warranty

e. Sample wall panels, 12 inches long by actual panel width

f. Sample metal closure strips, 10 inches long of each type

g. Color charts and chips

h. Coatings and base metal tests, chalking tests

i. Construction schedule, availability of materials, Installer's personnel, equipment, and facilities required to progress with the work without delay.

j. Methods and procedures related to installation of wall panels, including manufacturer's written instructions. Explicitly identify in writing, differences between manufacturer's instructions and the specified requirements.

k. Support conditions for compliance with requirements, including alignment between and attachment to structural members.

l. Flashing, special siding details, wall penetrations, openings, and condition of other construction that affect metal wall panels.

m. Governing regulations and requirements for insurance, certificates, and tests and inspections if applicable.

n. Temporary protection requirements for metal wall panel assembly during and after installation.

o. Wall panel observation and repair procedures after metal wall panel installation. Provide detailed written instructions including copies of Safety Data Sheets for maintenance and repair materials, and manufacturer's maintenance instructions.

1.4.1.1 Installation Drawings

Provide installation shop drawings for wall panels, flashing, accessories, and anchorage systems showing completely dimensioned structural frame and erection layouts, openings in the wall, special framing details, and construction details at corners, building intersections and flashing, location and type of mastic and metal filler strips.

1.4.1.2 Wind Load Design Analysis

Include in the wind design analysis a wall plan delineating dimensions and attachment patterns for each zone. Wind design analysis is required to be prepared and sealed by Registered Professional Engineer in the geographic area where the construction takes place. As applicable, submit the following wind load design analysis data, to include, but not limited to:

wind speed

exposure category, co-efficient, importance factor

type of facility

negative pressures for each zone

methods and requirements of attachment

1.4.2 Manufacturer's Technical Representative

The representative is required to receive authorization from manufacturer to approve field changes and is to be thoroughly familiar with the products and installations in the geographical area where construction takes place.

1.4.3 Qualification of Manufacturer

Certify that metal wall panel system manufacturer has a minimum of five years experience in manufacturing metal wall system and accessory products.

Manufacturer is required to provide engineering services by an authorized Registered Professional Engineer; currently licensed in the State where construction takes place, having a minimum of 4 years experience as an engineer knowledgeable in wind load design analysis, protocols, and procedures per MBMA MBSM, "Metal Building Systems Manual"; ASCE 7-22, and ASTM E1592.

Provide certified engineering calculations, using the products submitted, for Wind load requirements in accordance with ASCE 7-22.

1.4.3.1 Manufacturer's Certificates

Also provide the following certifications from the manufacturer:

Coil Stock

Fasteners

Galvanizing Repair Paint

Enamel Repair Paint

Submit certification from coil stock manufacturer or supplier that the machinery used forms the provided coil stock without warping, waviness, or rippling that is not a part of the panel profile, and without damage, abrasion or marring of the finish coating.

Provide evidence that products used within this specification are manufactured in the United States.

1.4.4 Certified Qualification of Installation Contractor

The installation contractor is to be approved and certified by the metal wall panel manufacturer prior to beginning the installation of the metal wall panel system. Subcontracting by Certified Contractor for the metal wall panel work is not permitted.

1.4.5 Single Source

Obtain each type of metal wall panels, clips, closure materials, and other accessories from the standard products of the single source from a single manufacturer to operate as a complete system for the intended use.

1.4.6 Manufacturer's Maintenance Instructions

Provide manufacturer's detailed written instructions including copies of Safety Data Sheets for maintenance and repair materials.

1.5 DELIVERY, HANDLING, AND STORAGE

Deliver and protect package components, sheets, metal wall panels, and other manufactured items to prevent damage or deformation during transportation and handling. Unload, store, and erect metal wall panels in a manner to prevent bending, warping, twisting, and surface damage. Always lift and carry panels by the long edge to prevent twisting and damage to the panels.

Stack and store metal wall panels horizontally on platforms or pallets, covered with suitable weather-tight and ventilated covering to ensure dryness, with positive slope for drainage of water. Do not store metal wall panels in contact with other materials that might cause staining, denting, or other surface damage. Ensure panels are stored in a dry environment, and minimize the amount of handling to minimize opportunities for damaging panels. Retain strippable protective covering on metal wall panel until actual installation.

1.6 PROJECT CONDITIONS

1.6.1 Field Measurements

Verify locations of wall framing and opening dimensions by field measurements before metal wall panel fabrication and indicate measurements on Shop Drawings.

1.6.2 Weather Limitations

Proceed with installation preparation only when existing and forecasted weather conditions permit Work to proceed without water entering into wall system or building.

1.7 WARRANTY

Final Warranty provided is required to conform to the Sample Warranty as reviewed and approved by the Contracting Officer.

1.7.1 20 Year "No Dollar Limit" Warranty for Labor and Material

Furnish manufacturer's no-dollar-limit warranty for the metal wall panel system. The warranty period is to be no less than 20 years from the date of Government acceptance of the work. Write warranty directly to the Government, commencing at time of Government's acceptance of the wall panel work. The warranty is to provide that if within the warranty period the metal wall panel system shows evidence of corrosion, perforation, rupture, or excess weathering due to deterioration of the wall panel system resulting from defective materials, then correction of the defective workmanship be the responsibility of the metal wall panel system manufacturer. Repairs that become necessary because of defective materials and workmanship while metal wall panel system is under warranty are to be performed within 72 hours after notification, unless additional time is approved by the Contracting Officer. Failure to perform repairs within 72 hours of notification constitutes grounds for having emergency repairs performed by others and does not void the remaining warranty.

PART 2 PRODUCTS

2.1 SYSTEM DESCRIPTION

Factory color finished, metal wall panel system with exposed fastener attachment. Panel profile is to match existing profile.

2.1.1 Metal Wall Panel General Performance

Comply with performance requirements, conforming to AISI S100, without failure due to defective manufacture, fabrication, installation, or other defects in construction. Ensure wall panels and accessory components conform to the following standards:

ASTM A1008/A1008M

ASTM A123/A123M

ASTM A36/A36M

ASTM A653/A653M

ASTM A606/A606M

ASTM A924/A924M for metallic coated steel sheet

ASTM D522/D522M for applied coatings

UL Bld Mat Dir

2.1.2 Structural Performance

Ensure maximum calculated fiber stress will not exceed the allowable value in the AISI or AA manuals; a one third overstress for wind is allowed. Midspan deflection under maximum design loads is limited to L/180. Contract drawings show the design wind loads and the extent and general

assembly details of the metal siding. Provide design for members and connections not shown on the drawings. Provide siding panels and accessories products by the same manufacturer.

Provide metal wall panel assemblies complying with the load and stress requirements in accordance with ASTM E1592. Wind Load force due to wind action governs the design for panels. Wall systems and attachments are required to resist the wind loads as determined by ASTM E72 and ASCE 7-22 in the geographic area where the construction takes place, in pounds per square foot. Submit five copies of wind load tests and seismic tests to the Contracting Officer. Provide metal wall panel assembly for seismic conditions complying with the applicable requirements of ANSI/AISC 341.

2.1.3 Air Infiltration

Air leakage is required to conform to the air leakage limits through the wall assembly area when tested according to ASTM E283.

2.1.4 Water Penetration Under Static Pressure

No water penetration is allowed when tested according to ASTM E331.

2.1.5 Water Penetration Under Dynamic Pressure

No evidence of water leakage is allowed when tested according to AAMA 501.1.

2.2 FABRICATION

Unless approved otherwise, fabricate and finish metal wall panels and accessories at the factory, by manufacturer's standard procedures and processes and as necessary to fulfill indicated and specified performance requirements. Comply with indicated profiles and with dimensional and structural requirements.<AM#0002> ~~Submit manufacturer's data indicating recycled content percentages.~~</AM#0002>

Provide panel profile, including major ribs and intermediate stiffening ribs, if any, for full length of panel. Fabricate metal wall panel side laps with factory-installed captive gaskets or separator strips that provide a tight seal and prevent metal-to-metal contact, in a manner that seals weather-tight and minimize noise from movements within panel assembly.

2.2.1 Sheet Metal Accessories

Fabricate flashing and trim to comply with recommendations in SMACNA 1793 that apply to the design, dimensions, metal, and other characteristics of item indicated:

a. Form exposed sheet metal accessories that are without excessive oil canning, buckling, and tool marks and that are true to line and levels indicated, with exposed edges folded back to form hems.

b. End Seams: fabricate nonmoving end seams with flat-lock seams. Form seams and seal with epoxy seam sealer. Rivet joints for additional strength.

c. Sealed Joints: form non-expansion but movable joints in metal to accommodate elastomeric sealant to comply with SMACNA 1793.

d. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces of accessories exposed to view.

e. Fabricate cleats and attachment devices of size and metal thickness recommended by SMACNA 1793 or by metal wall panel manufacturer for application, but not less than thickness of metal being secured.

2.3 MATERIALS

2.3.1 Aluminum Sheet Panels

Submit a sample Aluminum Sheet Panel, 12 inches long by actual panel width, of each panel proposed to be used on the project.

Roll-form aluminum wall panels to the specified profile, with fy = 50 ksi, 24 guage. Provide material plumb and true, and within the tolerances listed:

a. Aluminum Sheet conforming to ASTM B209, AA ASD1 and AA ADM.

b. Individual panels are to have continuous length to cover the entire length of any wall area with no joints or seams and formed without warping, waviness, or ripples that are not part of the panel profile and free of damage to the finish coating system.

c. Provide panels with thermal expansion and contraction consistent with the type of system specified.

(1) Profile and coverage to be a minimum height and width from manufacturer's standard for the indicated wall area.

2.3.2 Steel Sheet Panels

Submit a sample Steel Sheet Panel, 12 inches long by actual panel width, of each panel proposed to be used on the project.

Roll-form steel wall panels to the specified profile, with fy= 50 ksi, 24 gauge and depth as indicated. Provide material plumb and true, and within the tolerances listed:

a. Galvanized Steel Sheet conforming to ASTM A653/A653M and AISI SG03-3.

b. Individual panels of a continuous length sufficient to cover the entire length of any unbroken wall area with no joints or seams and formed without warping, waviness, or ripples that are not part of the panel profile and free of damage to the finish coating system.

c. Provide panels with thermal expansion and contraction consistent with the type of system specified.

(1) Profile and coverage to be a minimum height and width from manufacturer's standard for the indicated wall area.

2.3.3 Factory Color Finish

Comply with NAAMM AMP 500 for recommendations for applying and designating finishes. Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved samples and are assembled or installed to

minimize contrast.

All panels are to receive a factory-applied polyvinylidene fluoride finish consisting of a baked-on top-coat with a manufacturer's recommended prime coat conforming to the following:

2.3.3.1 Metal Preparation

Carefully prepare all metal surface for painting on a continuous process coil coating line by alkali cleaning, hot water rinsing, application of chemical conversion coating, cold water rinsing, sealing with acid rinse, and thorough drying.

2.3.3.2 Prime Coating

Apply a base coat of epoxy paint, specifically formulated to interact with the top-coat, to the prepared surfaces by roll coating to a dry film thickness of 0.20 plus 0.05 mils. Prime coat is to be oven cured prior to application of finish coat.

2.3.3.3 Exterior Finish Coating

Roll coat the finish coating over the primer by roll coating to dry film thickness of 0.80 plus 5 mils for a total dry film thickness of 1.00 plus 0.10 mils. Oven-cure finish coat.

2.3.3.4 Interior Finish Coating

Apply a wash-coat on the reverse side over the primer by roll coating to a dry film thickness of 0.30 plus 0.05 mils for a total dry film thickness of 0.50 plus 0.10 mils. Oven-cured the wash coat.

2.3.3.5 Color

Provide exterior finish color asas specified. Submit manufacturer's color charts and chips, approximately 4 by 4 inches, showing full range of colors, textures, and patterns available for wall panels with factory applied finishes.

2.3.3.6 Physical Properties

Coating is to conform to the industry and manufacturer's standard performance criteria as listed by the following certified test reports:

General:	ASTM D5894 and ASTM D4587
Abrasion:	ASTM D968
Adhesion:	ASTM D3359
Chalking:	ASTM D4214
Chemical Pollution:	ASTM D1308
Color Change and Conformity:	ASTM D2244
Creepage:	ASTM D1654

Cyclic Corrosion Test:	ASTM D5894
Flame Spread:	ASTM E84
Flexibility:	ASTM D522/D522M
Formability:	ASTM D522/D522M
Gloss at 60 and 85 degrees:	ASTM D523
Humidity:	ASTM D2247 and ASTM D714
Oxidation:	ASTM D610
Pencil Hardness:	ASTM D3363
Reverse Impact:	ASTM D2794
Salt Spray:	ASTM B117
Weatherometer:	ASTM G152, ASTM G153 and ASTM D822

2.3.4 Miscellaneous Metal Framing

Cold-formed metallic-coated steel sheet conforming to ASTM A653/A653M.

2.3.4.1 Fasteners for Miscellaneous Metal Framing

Type, material, corrosion resistance, size, and sufficient length to penetrate the supporting member a minimum of 1 inch with other properties required to fasten miscellaneous metal framing members to supporting members and substrates in accordance with the wall panel manufacturer's and ASCE 7-22 requirements.

2.3.5 Fasteners

2.3.5.1 Exposed Fasteners

Provide corrosion resistant fasteners for wall panels, made of zinc-coated steel, compatible with the sheet panel and flashing and of a type and size recommended by the manufacturer to meet the performance requirements and design loads.

Fasteners for accessories are to be the manufacturer's standard. Provide an integral metal washer matching the color of attached material with compressible sealing EPDM gasket approximately 3/32 inch thick.

2.3.5.2 Hidden Fasteners

Provide corrosion resistant fasteners recommended by the manufacturer to meet the performance requirements and design loads.

2.3.5.3 Screws

Screws to be corrosion resistant zinc-coated steel, being the type and size recommended by the manufacturer to meet the performance requirements.

2.3.5.4 Rivets

Rivets to be closed-end type, corrosion resistant coated zinc-coated steel where watertight connections are required.

2.3.5.5 Attachment Clips

Fabricate clips from steel hot-dipped galvanized in accordance with ASTM A653/A653M, Z275 G 90, or Series 300 stainless steel. Size, shape, thickness, and capacity as required meeting the insulation thickness and design load criteria specified.

2.3.6 Accessories

All accessories to be compatible with the metal wall panels. Sheet metal flashing, trim, metal closure strips, caps, and similar metal accessories to not be less than the minimum thickness specified for the wall panels. Exposed metal accessories/finishes to match the panels furnished, except as otherwise indicated. Provide molded foam rib, ridge, and other closure strips of non-absorbent closed-cell, solid-cell synthetic rubber, or pre-molded neoprene to match configuration of the panels.

2.3.6.1 Rubber Closure Strips

Provide closed-cell, expanded cellular rubber conforming to ASTM D1056 and ASTM D1667; extruded or molded to the configuration of the specified wall panel and in lengths supplied by the wall panel manufacturer.

2.3.6.2 Metal Closure Strips

Submit sample metal closure strips, 10 inches long of each type proposed to be used on the project.

Provide factory fabricated steel closure strips to be the same gauge, color, finish, and profile of the specified wall panel.

2.3.6.3 Sealants and Caulking

Provide approved gun type sealants for use in hand- or air-pressure caulking guns at temperatures above 40 degrees F or frost-free application at temperatures above 10 degrees F with minimum solid content of 85 percent of the total volume. Sealants are required to dry with a tough, durable surface skin which permit remaining soft and pliable underneath, providing a weather-tight joint. No migratory staining is permitted on painted or unpainted metal, stone, glass, vinyl, or wood.

Prime all joints receiving sealants with a compatible one-component or two-component primer as recommended by the wall panel manufacturer.

2.3.6.4 Shop-Applied Caulking

Sealant for shop-applied caulking is to be non-curing butyl compliant with AAMA 800 to ensure the sealant's plasticity at the time of field erection.

2.3.6.5 Field-Applied Caulking

Sealant for field-applied caulking is to be an approved gun grade, non-sag sealant with an initial maximum Shore A durometer hardness of 25, and conforming to ASTM C920, Type II. Color to match panel colors.

2.3.6.6 Pressure Sensitive Tape

Provide pressure sensitive tape sealant, 100 percent solid with a release paper backing; permanently elastic, non-sagging, non-toxic and non-staining as approved by the wall panel manufacturer.

2.3.7 Sheet Metal Flashing and Trim

Shop fabricate sheet metal flashing and trim where practicable to comply with recommendations in SMACNA 1793 that apply to design, dimensions, metal, and other characteristics of item indicated. Obtain field measurements for accurate fit before shop fabrication.

Fabricate sheet metal flashing and trim without excessive oil canning, buckling, and tool marks and true to line and levels indicated, with exposed edges folded back to form hems.

2.3.8 Repair of Finish Protection

Repair paint for color finish enameled wall panel is required to be compatible paint of the same formula and color as the specified finish furnished by the wall panel manufacturer. Provide quarts of repair paint matching the specified wall panels.

PART 3 EXECUTION

3.1 EXAMINATION

Examine the following:

a. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, metal wall panel supports, and other conditions affecting performance of the Work.

b. Examine primary and secondary wall framing to verify that rafters, purlins, angles, channels, and other structural panel support members and anchorages have been installed within alignment tolerances required by metal wall panel manufacturer, UL, ASTM, ASCE 7-22 and as required for the geographical area where construction takes place.

c. Examine solid wall sheathing to verify that sheathing joints are supported by framing or blocking and that installation is within flatness tolerances required by metal wall panel manufacturer.

d. Examine roughing-in for components and systems penetrating metal wall panels to verify actual locations of penetrations relative to seam locations of metal wall panels before metal wall panel installation.

Submit to the Contracting Officer a written report, endorsed by Installer, listing conditions detrimental to performance of the Work. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

Clean substrates of substances harmful to insulation, including removing projections capable of interfering with insulation attachment. Install miscellaneous framing installation, including sub-purlins, girts, angles, furring, and other miscellaneous wall panel support members and anchorage

are to be according to metal wall panel manufacturer's written instructions.

3.3 INSTALLATION

3.3.1 Wall Panel Installation

Provide full length metal wall panels, from sill to eave as indicated, unless otherwise indicated or restricted by shipping limitations. Anchor metal wall panels and other components of the Work securely in place, with provisions for thermal and structural movement in accordance with MBMA MBSM. Work is to allow for thermal movement of the wall panel, movement of the building structure, and to provide permanent freedom from noise due to wind pressure. Erect sheets true and plumb and in exact alignment with the horizontal and vertical edges of the building, securely anchored, and with the indicated eave, and sill. Ensure substrate is plumb and level prior to installation.

Erect wall panel system in accordance with the approved erection drawings, the printed instructions, and safety precautions of the manufacturer. Sheets are not to be subjected to overloading, abuse, or undue impact. Do not apply bent, chipped, or defective sheets. Field cutting metal wall panels by torch is not permitted.

3.3.1.1 Aluminum Wall Panels

Use aluminum or stainless-steel fasteners for exterior surfaces and aluminum or galvanized steel fasteners for interior surfaces.

3.3.1.2 Metal Protection

Where dissimilar metals contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with bituminous coating, by applying rubberized-asphalt underlayment to each contact surface, or by other permanent separation as recommended by metal wall panel manufacturer.

3.3.1.3 Joint Sealers

Install gaskets, joint fillers, and sealants where indicated and where required for weatherproof performance of metal wall panel assemblies. Provide types of gaskets, fillers, and sealants indicated or, if not indicated, types recommended by metal wall panel manufacturer.

3.3.2 Fastener Installation

Anchor metal wall panels and other components of the Work securely in place, using manufacturer's approved fasteners according to manufacturers' written instructions. Never overdrive fasteners and ensure fasteners are installed straight and not at an angle.

3.3.3 Flashing, Trim, and Closure Installation

3.3.3.1 General Requirements

Comply with performance requirements, manufacturer's written installation instructions, and SMACNA 1793. Provide concealed fasteners where possible, and set units true to line and level as indicated. Install work with laps, joints, and seams to form permanently watertight and weather

resistant.

Install sheet metal work is to form weather-tight construction without waves, warps, buckles, fastening stresses or distortion, and allow for expansion and contraction. Cutting, fitting, drilling, and other operations in connection with sheet metal required to accommodate the work of other trades is to be performed by sheet metal mechanics.

3.3.3.2 Metal Flashing

Install exposed metal flashing at building corners, sills and eaves, junctions between metal siding and walling. Exposed metal flashing to be the same material, color, and finish as the specified metal wall panel. Fasten flashing at a minimum of 8 inches on center, except where flashing is held in place by the same screws that secure covering sheets. Flashing is to be furnished in at least 8 foot lengths. Exposed flashing is to have 1 inch locked and blind-soldered end joints, and expansion joints at intervals of not more than 16 feet.

Exposed flashing and flashing subject to rain penetration to be bedded in the specified joint sealant. Isolate flashing which is in contact with dissimilar metals by means of the specified asphalt mastic material to prevent electrolytic deterioration. Form drips to the profile indicated, with the edge folded back 1/2 inch to form a reinforced drip edge.

3.3.3.3 Closures

Install metal closure strips at open ends of corrugated or ribbed pattern walls, and at intersection of wall and wall unless open ends are concealed with formed eave flashing; and in other required areas.

Install mastic closure strips at intersection of the wall with metal walling; top and bottom of metal siding; heads of wall openings; and in other required locations.

3.4 APPLICATION

3.4.1 Workmanship

Make lines, arises, and angles sharp and true. Free exposed surfaces from visible wave, warp, buckle, and tool marks. Fold back exposed edges neatly to form a 1/2 inch hem on the concealed side. Make sheet metal exposed to the weather watertight with provisions for expansion and contraction.

Make surfaces to receive sheet metal plumb and true, clean, even, smooth, dry, and free of defects and projections which might affect the application. For installation of items not shown in detail or not covered by specifications conform to the applicable requirements of SMACNA 1793. Provide sheet metal flashing in the angles formed where roof decks abut walls, curbs, ventilators, pipes, or other vertical surfaces and wherever indicated and necessary to make the work watertight.

3.4.2 Erection Tolerances

Erect metal wall panels straight and true with plumb vertical lines correctly lapped and secured in accordance with the manufacturer's written instructions.

3.5 FIELD QUALITY CONTROL

3.5.1 Leakage Tests

Finished application of metal wall panels are to be subject to inspection and test for leakage by request of the Contracting Officer, Architect/Engineer. Conduct inspection and tests at no cost to the Government.

Inspection and testing are to be made promptly after erection to permit correction of defects and the removal and replacement of defective materials.

3.5.2 Repairs to Finish

Scratches, abrasions, and minor surface defects of finish may be repaired with the specified repair materials. Finished repaired surfaces are to be uniform and free from variations of color and surface texture.

Repaired metal surfaces that are not acceptable to the project requirements and Contracting Officer are to be immediately removed and replaced with new material.

3.5.3 Paint-Finish Metal Siding

Paint-finish metal siding will be tested for color stability by the Government during the manufacturer's specified guarantee period.

Remove and replace panels that indicate color changes, fading, or surface degradation, determined by visual examination, with new panels at no expense to the Government. Subject new panels to the specified tests for an additional year from the date of their installation.

3.5.4 Construction Monitoring

Make visual inspections as necessary to ensure compliance with specified requirements. Additionally, verify the following:

a. Materials comply with the specified requirements.

b. All materials are properly stored, handled, and protected from damage. Damaged materials are removed from the site.

c. Framing and substrates are in acceptable condition, in compliance with specification, prior to application of wall panels.

d. Panels are installed without buckles, ripples, or waves and in uniform alignment and modulus.

e. Side laps are formed, sealed, fastened, or seam locked as required.

f. The proper number, type, and spacing of attachment clips and fasteners are installed.

g. Installer adheres to specified and detailed application parameters.

h. Associated flashing and sheet metal are installed in a timely manner in accord with the specified requirements.

3.5.4.1 Manufacturer's Inspection

The metal wall panel manufacturer's technical representative must visit the work site to inspect ongoing work. Inspections are to include observing installation technique and verifying the quality of work-in-place for compliance with the manufacturer's instructions. Deficiencies identified by the manufacturer's technical representative must be corrected and re-inspected by the manufacturer's technical representative.

3.5.4.1.1 Frequency

The manufacturer's technical representative must visit the work site to inspect and document ongoing work a minimum of three separate occasions during the course of the installation. One visit must occur during the first 20 squares of installation, one at substantial completion of the metal panel work, and all others during different periods of installation. Notify the Contracting officer a minimum of five working days prior to each visit by the manufacturer's technical representative.

3.5.4.1.2 Field Inspection Report

Document inspection results in a report prepared and signed by the manufacturer's technical representative for each visit. Submit the report to the Contracting Officer with the contractor's daily Quality Control report. The manufacturer's field inspection report must include a description of ongoing work observed and whether the inspected work was satisfactory or unsatisfactory. The final report must include certification by the manufacturer's technical representative that the work was performed in accordance with the manufacturer's instructions and contains no deficiencies. Submit the final manufacturer's field inspection reports to the Contracting Officer within five working days of the final visit.

3.6 CLEAN-UP AND DISPOSAL

Clean all exposed sheet metal work at completion of installation. Remove metal shavings, filings, nails, bolts, and wires from work area. Remove grease and oil films, excess sealants, handling marks, contamination from steel wool, fittings and drilling debris and scrub the work clean. Exposed metal surfaces are to be free of dents, creases, waves, scratch marks, solder or weld marks, and damage to the finish coating.

Collect and place scrap/waste materials in containers. Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site; transport demolished materials from government property and legally dispose of them.

-- End of Section --

SECTION 07 60 00

FLASHING AND SHEET METAL
08/23, CHG 1: 05/25
AMENDMENT 0002

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 WELDING SOCIETY (AWS)

AWS D1.2/D1.2M	(2014; Errata 1 2014; Errata 2 2020) Structural Welding Code - Aluminum

ASTM INTERNATIONAL (ASTM)

ASTM A308/A308M	(2010) Standard Specification for Steel Sheet, Terne (Lead-Tin Alloy) Coated by the Hot Dip Process
ASTM A480/A480M	(2025a) Standard Specification for General Requirements for Flat-Rolled Stainless and Heat-Resisting Steel Plate, Sheet, and Strip
ASTM A653/A653M	(2025) Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
ASTM A792/A792M	(2022) Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process
ASTM B32	(2020) Standard Specification for Solder Metal
ASTM B69	(2021) Standard Specification for Rolled Zinc
ASTM B101	(2022) Standard Specification for Lead-Coated Copper Sheet and Strip for Building Construction
ASTM B209/B209M	(2021a) Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate
ASTM B221	(2021) Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes
ASTM B370	(2022) Standard Specification for Copper Sheet and Strip for Building Construction

ASTM D41/D41M	(2011; R 2023) Standard Specification for Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing
ASTM D1784	(2020) Standard Specification for Rigid Poly(Vinyl Chloride) (PVC) Compounds and Chlorinated Poly(Vinyl Chloride) (CPVC) Compounds
ASTM D2244	(2025) Standard Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates
ASTM D4214	(2023) Standard Test Method for Evaluating the Degree of Chalking of Exterior Paint Films
ASTM E2112	(2023) Standard Practice for Installation of Exterior Windows, Doors and Skylights

NATIONAL ROOFING CONTRACTORS ASSOCIATION (NRCA)

NRCA 0429	(2022) The NRCA Roofing Manual: Architectural Metal Flashing, Condensation and Air Leakage Control and Reroofing

SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION (SMACNA)

SMACNA 1793	(2012) Architectural Sheet Metal Manual, 7th Edition

1.2 GENERAL REQUIREMENTS

Finished sheet metal assemblies must form a weathertight enclosure without waves, warps, buckles, fastening stresses or distortion, while allowing for expansion and contraction without damage to the system. The sheet metal installer is responsible for cutting, fitting, drilling, and other operations in connection with sheet metal modifications required to accommodate the work of other trades. Coordinate installation of sheet metal items used in conjunction with roofing with roofing work to permit continuous, uninterrupted roofing operations.

1.2.1 General Material Requirements

All materials specified in this Section installed in conjunction with the roofing system must be provided by the roofing system manufacturer, or by a manufacturer approved by the roofing system manufacturer for use in the roofing system, and must form a part of the Warranty as required by the applicable roofing system Section.

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-02 Shop Drawings

Exposed Sheet Metal Coverings; G, PO

Expansion Joints; G, AE

Gravel Stops and fascia; G, AE

Counterflashing; G, AEReglets; G, AECopings; G, AE

Drip Edges; G, AE<AM#0002>~~Recycled Content; S~~</AM#0002>

SD-04 Samples

Finish Samples; G, AE

SD-07 Certificates

Warranty on Finishes; G, AE

SD-08 Manufacturer's Instructions

Instructions for Installation; G,

SD-10 Operation and Maintenance Data

Cleaning and Maintenance; G, PO

1.4 MISCELLANEOUS REQUIREMENTS

1.4.1 Product Data

Indicate thicknesses, dimensions, fastenings, anchoring methods, expansion joints, and other provisions necessary for thermal expansion and contraction. Scaled manufacturer's catalog data may be submitted for factory fabricated items.

1.4.2 Finish Samples

Submit two color charts and two finish sample chips from manufacturer's standard color and finish options for each type of finish indicated.

1.4.3 Operation and Maintenance Data

Submit detailed instructions for installation and quality control during installation, cleaning and maintenance, for each type of assembly indicated.

1.5 DELIVERY, HANDLING, AND STORAGE

Package and protect materials during shipment. Uncrate and inspect materials for damage, dampness, and wet-storage stains upon delivery to the job site. Remove from the site and replace damaged materials that cannot be restored to like-new condition. Handle sheet metal items to avoid damage to surfaces, edges, and ends. Store materials in dry, weather-tight, ventilated areas until installation.

PART 2 PRODUCTS

<AM#0002>~~2.1 RECYCLED CONTENT~~

~~Provide products with recycled content. Provide data for each product with recycled content, identifying percentage of recycled content.~~

</AM#0002>2.1 MATERIALS

Use any metal listed by NRCA 0429 or SMACNA 1793 for a particular item, unless otherwise indicated. Provide materials and configurations in accordance with NRCA 0429 or SMACNA 1793 for each material, while also meeting the minimum thickness requirements specified in this Section. Different items need not be of the same metal, except that contact between dissimilar metals must be avoided.

Provide sheet metal items in 8 to 10 foot lengths. Single pieces less than 8 feet long may be used to connect to factory-fabricated inside and outside corners, and at ends of runs. Factory fabricate corner pieces with minimum 12 inch legs. Provide accessories and other items essential to complete the sheet metal installation. Provide accessories made of the same or compatible materials as the items to which they are applied. Fabricate sheet metal items of the materials specified below and to the gage, thickness, or weight shown in Table I at the end of this section. Provide sheet metal items with mill finish unless specified otherwise. Where more than one material is listed for a particular item in Table I, each is acceptable and may be used, except as follows:

2.1.1 Exposed Sheet Metal Items

Provide exposed sheet metal items of the same material. Consider the following as exposed sheet metal: gutters, including hangers; downspouts; gravel stops and fascia; cap, valley, steeped, base, and eave flashings and related accessories.

2.1.2 Drainage

Do not use copper for an exposed item if drainage from that item will pass over exposed masonry, stonework or other metal surfaces. In addition to the metals listed in Table I, lead-coated copper may be used for such items.

2.1.3 Copper, Sheet and Strip

Provide in accordance with ASTM B370, cold-rolled temper, H 00 (standard).

2.1.4 Lead-Coated Copper Sheet

Provide in accordance with ASTM B101.

2.1.5 Lead Sheet

Provide in a minimum weight of 4 pounds per square foot.

2.1.6 Steel Sheet, Zinc-Coated (Galvanized)

Provide in accordance with ASTM A653/A653M, a minimum of 24 gauge, and a minimum zinc coat weighting of 90 ounces per square feet.

2.1.7 Zinc Sheet and Strip

Provide in accordance with ASTM B69, Type I, a minimum of 0.024 inch thick.

2.1.8 Steel Sheet, Aluminum Zinc-Coated

Provide in accordance with ASTM A792/A792M, a minimum of 24 gauge.

2.1.9 Stainless Steel

Provide in accordance with ASTM A480/A480M, Type 302 or 304, 2D Finish, fully annealed, dead-soft temper, a minimum of 24 gauge.

2.1.10 Terne-Coated Steel

Provide in accordance with ASTM A308/A308M, a minimum of 14 by 20 inch with minimum of 40 pound coating per double base box. ASTM A308/A308M.

2.1.11 Aluminum Alloy Sheet and Plate

Provide in accordance with ASTM B209/B209M anodized clear form alloy, and temper appropriate for use. Provide material not less than 0.065-in in thickness.

2.1.12 Finishes

Provide exposed exterior sheet metal and aluminum with a baked on, factory applied coil fluoropolymer color coating or approved equal siliconized polyester coating. Dry film thickness of coatings must be 0.8 to 1.3 mils. Color to be selected from manufacturer's full range of color choices. Field applications of color coatings are prohibited and will be rejected.

2.1.12.1 Warranty on Finishes

Provide a manufacturer's warranty to repair, or replace, sheet metal flashing and trim that shows evidence of deterioration of factory-applied finishes within 10 years from date of project substantial completion. Deterioration includes the following:

a. Color fading more than 5 Delta E units when tested in accordance with ASTM D2244.

b. Chalking in excess of a No. 8 rating when tested in accordance with ASTM D4214.

c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.

2.1.13 Aluminum Alloy, Extruded Bars, Rods, Shapes, and Tubes

ASTM B221.

2.1.14 Solder

Provide in accordance with ASTM B32, 95-5 tin-antimony.

2.1.15 Reglets

2.1.15.1 Polyvinyl Chloride Reglets

Provide in accordance with ASTM D1784, Type II, Grade 1, Class 14333-D, 0.075 inch minimum thickness.

2.1.15.2 Metal Reglets

Provide factory fabricated caulked type or friction type reglets with a minimum opening of 1/4 inch and a depth of 1-1/4 inch, as approved.

2.1.15.2.1 Caulked Reglets

Provide with rounded edges, temporary reinforcing cores, and accessories as required for securing to adjacent construction. Provide built-up mitered corner pieces for inside and outside corners.

2.1.15.2.2 Friction Reglets

Provide with flashing receiving slots not less than 5/8 inch deep, one inch jointing tongues, and upper and lower anchoring flanges installed at 24 inch maximum snap-lock type receiver.

2.1.16 Copings

Unless otherwise indicated, provide copings in copper sheets, 8 or 10 feet long, joined by a 3/4 inch locked and soldered seam.

2.1.17 Asphalt Primer

Provide in accordance with ASTM D41/D41M.

2.1.18 Fasteners

Use the same metal as, or a metal compatible with the item fastened. Confirm compatibility of fasteners and items to be fastened to avoid galvanic corrosion due to dissimilar materials.

PART 3 EXECUTION

3.1 INSTALLATION

3.1.1 Workmanship

Make lines and angles sharp and true. Free exposed surfaces from visible wave, warp, buckle, and tool marks. Fold back exposed edges neatly to form a 1/2 inch hem on the concealed side. Make sheet metal exposed to the weather watertight with provisions for expansion and contraction.

Make surfaces to receive sheet metal plumb and true, clean, even, smooth, dry, and free of defects and projections. For installation of items not shown in detail or not covered by specifications conform to the applicable requirements of SMACNA 1793, Architectural Sheet Metal Manual. Provide sheet metal flashing in the angles formed where roof decks abut walls, curbs, ventilators, pipes, or other vertical surfaces and wherever indicated and necessary to make the work watertight. Join sheet metal items together as shown in Table II.

3.1.2 Nailing

Confine nailing of sheet metal generally to sheet metal having a maximum width of 18 inches. Confine nailing of flashing to one edge only. Space nails evenly not over 3 inch on center and approximately 1/2 inch from edge unless otherwise specified or indicated. Face nailing is not permitted. Where sheet metal is applied to other than wood surfaces, include in shop drawings, the locations for sleepers and nailing strips required to secure the work.

3.1.3 Cleats

Provide cleats for sheet metal 18 inches and over in width. Space cleats evenly not over 12 inches on center unless otherwise specified or indicated. Unless otherwise specified, provide cleats of 2 inches wide by 3 inches long and of the same material and thickness as the sheet metal being installed. Secure one end of the cleat with two nails and the cleat folded back over the nailheads. Lock the other end into the seam. Where the fastening is to be made to concrete or masonry, use screws and drive in expansion shields set in concrete or masonry. Pre-tin cleats for soldered seams.

3.1.4 Bolts, Rivets, and Screws

Install bolts, rivets, and screws where indicated or required. Provide compatible washers where required to protect surface of sheet metal and to provide a watertight connection. Provide mechanically formed joints in aluminum sheets 0.040 inches or less in thickness.

3.1.5 Seams

Straight and uniform in width and height with no solder showing on the face.

3.1.5.1 Flat-lock Seams

Finish not less than 3/4 inch wide.

3.1.5.2 Lap Seams

Finish soldered seams not less than one inch wide. Overlap seams not soldered, not less than 3 inches.

3.1.5.3 Loose-Lock Expansion Seams

Not less than 3 inches wide; provide minimum one inch movement within the joint. Completely fill the joints with the specified sealant, applied at not less than 1/8 inch thick bed.

3.1.5.4 Standing Seams

Not less than one inch high, double locked without solder.

3.1.5.5 Flat Seams

Make seams in the direction of the flow.

3.1.6 Soldering

Where soldering is specified, apply to copper, terne-coated stainless steel, zinc-coated steel, and stainless steel items. Pre-tin edges of sheet metal before soldering is begun. Seal the joints in aluminum sheets of 0.040 inch or less in thickness with specified sealants. Do not solder aluminum.

3.1.6.1 Edges

Scrape or wire-brush the edges of lead-coated material to be soldered to produce a bright surface. Flux brush the seams in before soldering. Treat with soldering acid flux the edges of stainless steel to be pre-tinned. Seal the joints in aluminum sheets of 0.040 inch or less in thickness with specified sealants. Do not solder aluminum.

3.1.7 Welding and Mechanical Fastening

Use welding for aluminum of thickness greater than 0.040 inch. Aluminum 0.040 inch or less in thickness must be butted and the space backed with formed flashing plate; or lock joined, mechanically fastened, and filled with sealant as recommended by the aluminum manufacturer.

3.1.7.1 Welding of Aluminum

Use welding of the inert gas, shield-arc type. For procedures, appearance and quality of welds, and the methods used in correcting welding work, conform to AWS D1.2/D1.2M.

3.1.7.2 Mechanical Fastening of Aluminum

Use No. 12, aluminum alloy, sheet metal screws or other suitable aluminum alloy or stainless steel fasteners. Drive fasteners in holes made with a No. 26 drill in securing side laps, end laps, and flashings. Space fasteners 12 inches maximum on center. Where end lap fasteners are required to improve closure, locate the end lap fasteners not more than 2 inches from the end of the overlapping sheet.

3.1.8 Protection from Contact with Dissimilar Materials

3.1.8.1 Copper or Copper-bearing Alloys

Paint with heavy-bodied bituminous paint surfaces in contact with dissimilar metal, or separate the surfaces by means of moistureproof building felts.

3.1.8.2 Aluminum

Do not allow aluminum surfaces in direct contact with other metals except stainless steel, zinc, or zinc coating. Where aluminum contacts another metal, paint the dissimilar metal with a primer followed by two coats of aluminum paint. Where drainage from a dissimilar metal passes over aluminum, paint the dissimilar metal with a non-lead pigmented paint. Aluminum may be used over concrete construction, provided that required reglets are of stainless steel and aluminum surface in contact with concrete or masonry is coated with bituminous paint or zinc chromate primer.

3.1.8.3 Metal Surfaces

Paint surfaces in contact with mortar, concrete, or other masonry materials with alkali-resistant coatings such as heavy-bodied bituminous paint.

3.1.8.4 Wood or Other Absorptive Materials

Paint surfaces that may become repeatedly wet and in contact with metal with two coats of aluminum paint or a coat of heavy-bodied bituminous paint.

3.1.9 Expansion and Contraction

Provide expansion and contraction joints at not more than 32 foot intervals for aluminum and at not more than 40 foot intervals for other metals. Provide an additional joint where the distance between the last expansion joint and the end of the continuous run is more than half the required interval. Space joints evenly. Join extruded aluminum gravel stops and fascia by expansion and contraction joints spaced not more than 12 feet apart.

3.1.10 Counterflashing

Except where indicated or specified otherwise, insert counterflashing in reglets located from 9 to 10 inches above roof decks, extend down vertical surfaces over upturned vertical leg of base flashings not less than 3 inches. Fold the exposed edges of counterflashings 1/2 inch. Where stepped counterflashings are required, they may be installed in short lengths a minimum 8 inches by 8 inches or may be of the preformed single piece type. Provide end laps in counterflashings not less than 3 inches and make it weathertight with plastic cement. Do not make lengths of metal counterflashings exceed 10 feet. Form flashings to the required shapes before installation. Factory form corners not less than 12 inches from the angle. Secure the flashings in the reglets with lead wedges and space not more than 18 inches apart; on short runs, place wedges closer together. Fill caulked-type reglets or raked joints which receive counterflashing with caulking compound. Turn up the concealed edge of counterflashings built into masonry or concrete walls not less than 1/4 inch and extend not less than 2 inches into the walls. Install counterflashing to provide a spring action against base flashing.

3.1.11 Metal Reglets

Keep temporary cores in place during installation. Ensure factory fabricated caulked type or friction type, reglets have a minimum opening of 1/4 inch and a minimum depth of 1-1/4 inch, when installed.

3.1.11.1 Caulked Reglets

Wedge flashing in reglets with lead wedges every 18 inches, caulked full and solid with an approved compound.

3.1.11.2 Friction Reglets

Install flashing snap lock receivers at 24 inches on center maximum. When flashing has been inserted the full depth of the slot, caulk the slot, lock, and fill with sealant.

3.1.12 Polyvinyl Chloride Reglets for Temporary Construction

Rigid polyvinyl chloride reglets may be provided in lieu of metal reglets for temporary construction.

3.1.13 Gravel Stops and fascia

Prefabricate in the shapes and sizes indicated and in lengths not less than 8 feet. Extend flange at least 4 inches onto roofing. Provide prefabricated, mitered corners internal and external corners. Install gravel stops and fascia after all plies of the roofing membrane have been applied, but before the flood coat of bitumen is applied. Prime roof flange of gravel stops and fascia on both sides with an asphalt primer. After primer has dried, set flange on roofing membrane and strip-in. Nail flange securely to wood nailer with large-head, barbed-shank roofing nails 1.5 inch long spaced not more than 3 inches on center, in two staggered rows.

3.1.13.1 Edge Strip

Hook the lower edge of fascia at least 3/4 inch over a continuous strip of the same material bent outward at an angle not more than 45 degrees to form a drip. Nail hook strip to a wood nailer at 6 inches maximum on center. Where fastening is made to concrete or masonry, use screws spaced 12 inches on center driven in expansion shields set in the concrete or masonry. Where horizontal wood nailers are slotted to provide for insulation venting, install strips to prevent obstruction of vent slots. Where necessary, install strips over 1/16 inch thick compatible spacer or washers.

3.1.13.2 Joints

Leave open the section ends of gravel stops and fascia 1/4 inch and backed with a formed flashing plate, mechanically fastened in place and lapping each section end a minimum of 4 inches set laps in plastic cement. Face nailing is not permitted. Install prefabricated aluminum gravel stops and fascia in accordance with the manufacturer's printed instructions and details.

3.1.14 Metal Drip Edges

Provide a metal drip edge, designed to allow water run-off to drip free of underlying construction, at eaves and rakes prior to the application of roofing shingles. Apply directly on the wood deck at the eaves and over the underlay along the rakes. Extend back from the edge of the deck not more than 3 inches and secure with compatible nails spaced not more than 10 inches on center along upper edge.

3.1.15 Flashing at Wall Openings

Install pan flashing in the rough opening sill at all penetrations in the exterior wall assemblies, such as windows, louvers, storefronts and curtain walls. Pan sill flashing must have end dams at both jambs a minimum of 2 in high and a rear dam of 2 in high. Flashing must comply with ASTM E2112 and SMACNA 1793.

3.1.16 Sheet Metal Covering on Flat, Sloped, or Curved Surfaces

Except as specified or indicated otherwise, cover and flash all minor

flat, sloped, or curved surfaces such as crickets, bulkheads, dormers and small decks with metal sheets of the material used for flashing; maximum size of sheets, 16 by 18 inches. Fasten sheets to sheathing with metal cleats. Lock seams and solder. Lock aluminum seams as recommended by aluminum manufacturer. Provide an underlayment of roofing felt for all sheet metal covering.

3.1.17 Expansion Joints

Provide expansion joints for roofs, walls, and floors as specified. Provide expansion joints in continuous sheet metal at 40 foot intervals for copper and stainless steel and at 32 foot intervals for aluminum. Provide evenly spaced joints. Provide an additional joint where the distance between the last expansion joint and the end of the continuous run is more than half the required interval spacing. Conform to the requirements of Table I.

3.1.17.1 Roof Expansion Joints

Consist of curb with wood nailing members on each side of joint, bituminous base flashing, metal counterflashing, and metal joint cover. Bituminous base flashing is specified in Roofing Section. Provide counterflashing as specified in paragraph COUNTERFLASHING, except as follows: Provide counterflashing with vertical leg of suitable depth to enable forming into a horizontal continuous cleat. Secure the inner edge to the nailing member. Make the outer edge projection not less than one inch for flashing on one side of the expansion joint and be less than the width of the expansion joint plus one inch for flashing on the other side of the joint. Hook the expansion joint cover over the projecting outer edges of counterflashing. Provide roof joint with a joint cover of the width indicated. Hook and lock one edge of the joint cover over the shorter projecting flange of the continuous cleat, and the other edge hooked over and loose locked with the longer projecting flange. Joints are specified in Table II.

3.1.17.2 Floor and Wall Expansion Joints

Provide U-shape with extended flanges for expansion joints in concrete and masonry walls and in floor slabs.

3.1.18 Stepped Flashing

Provide stepped flashing where sloping roofs surfaced with shingles abut vertical surfaces. Place separate pieces of base flashing in alternate shingle courses.

3.1.19 Copings

Provide coping with locked and soldered seam. Terminate outer edges in edge strips. Install with sealed lap joints as indicated.

3.1.20 Through Wall Flashing

Provide through wall flashing as required in the applicable wall system Sections.

3.2 PAINTING

Touch ups in the field may be applied only after metal substrates have

been cleaned and pretreated in accordance with manufacturer's written instructions and products.

Field-paint dissimilar sheet metals in contact to separate and deter galvanic interactions.

3.3 CLEANING

Clean exposed sheet metal work at completion of installation. Remove grease and oil films, handling marks, contamination from steel wool, fittings and drilling debris, and scrub-clean. Free the exposed metal surfaces of dents, creases, waves, scratch marks, and solder or weld marks.

3.4 REPAIRS TO FINISH

Scratches, abrasions, and minor surface defects of finish may be repaired in accordance with the manufacturer's printed instructions and as approved. Repair damaged surfaces caused by scratches, blemishes, and variations of color and surface texture. Replace items which cannot be repaired.

-- End of Section --

SECTION 07 92 00

JOINT SEALANTS
08/23
AMENDMENT 0002

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 C509	(2006; R 2021) Standard Specification for Elastomeric Cellular Preformed Gasket and Sealing Material
ASTM C834	(2017; R 2023) Standard Specification for Latex Sealants
ASTM C920	(2018; R 2024) Standard Specification for Elastomeric Joint Sealants
ASTM C1193	(2016) Standard Guide for Use of Joint Sealants
ASTM C1521	(2019; R 2020) Standard Practice for Evaluating Adhesion of Installed Weatherproofing Sealant Joints
ASTM D1056	(2020) Standard Specification for Flexible Cellular Materials - Sponge or Expanded Rubber

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

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT (SCAQMD)

SCAQMD Rule 1168	(2022) Adhesive and Sealant Applications

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

Sealants; G, AE

Primers; G, AE

Bond Breakers; G, AE

Backstops; G, AE

Cleaning Solvents; G, AE

SD-06 Test Reports

Field Adhesion; G, PO

SD-07 Certificates

<AM#0002> ~~Indoor Air Quality For Interior Sealants; S~~</AM#0002>

<AM#0002> ~~Indoor Air Quality For Interior Floor Joint Sealants; S~~</AM#0002>

1.3 PRODUCT DATA

Include storage requirements, shelf life, curing time, instructions for mixing and application, and accessories. Provide manufacturer's Safety Data Sheets (SDS) for each solvent, primer and sealant material proposed.

1.4 ENVIRONMENTAL CONDITIONS

Apply sealant when the ambient temperature is between 40 and 90 degrees F.

1.5 DELIVERY AND STORAGE

Deliver materials to the jobsite in unopened manufacturers' sealed shipping containers, with brand name, date of manufacture, and material designation clearly marked thereon. Label elastomeric sealant containers to identify type, class, grade, and use. Handle and store materials in accordance with manufacturer's printed instructions. Prevent exposure to foreign materials or subjection to sustained temperatures exceeding 90 degrees F or lower than0 degrees F. Keep materials and containers closed and separated from absorptive materials such as wood and insulation.

1.6 QUALITY ASSURANCE

1.6.1 Compatibility with Substrate

Verify that each sealant is compatible for use with each joint substrate in accordance with sealant manufacturer's printed recommendations for each application.

1.6.2 Joint Tolerance

Provide joint tolerances in accordance with manufacturer's printed instructions.

1.6.3 Mock-Up

Provide a mock-up of each type of sealant using materials, colors, and techniques approved for use on the project. Approved mock-ups may be

incorporated into the Work.

1.6.4 Adhesion

Provide in accordance with ASTM C1193 or ASTM C1521.

PART 2 PRODUCTS

2.1 SEALANTS

Provide sealant products that have been tested, found suitable, and documented as such by the manufacturer for the particular substrates to which they will be applied.

In areas with ambient temperatures that exceed 110 degrees F, do not use polybutene, bituminous, acrylic-latex, polyvinyl acetate latex sealants, polychloroprene (neoprene), polyvinyl chloride (PVC), and polyurethane foams, and neoprene, PVC, and styrene butadiene rubber extruded seals and closure strips due to these materials having maximum recommended surface temperature ranges from 130 to 180 degrees F.

2.1.1 Interior Sealants

Provide ASTM C834. Provide sealant 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.<AM#0002> ~~Provide certification or validation of indoor air quality for interior sealants.~~ </AM#0002> Location(s) and color(s) of sealant for the following (Note, color "as selected" refers to manufacturer's full range of color options):

LOCATION	COLOR
a. Small voids between walls or partitions and adjacent lockers, casework, shelving, door frames, built-in or surface mounted equipment and fixtures, and similar items.	Gray
b. Perimeter of frames at doors, windows, and access panels which adjoin exposed interior concrete and masonry surfaces.	Gray
c. Joints of interior masonry walls and partitions which adjoin columns, pilasters, concrete walls, and exterior walls unless otherwise detailed.	Gray
d. Joints between edge members for acoustical tile and adjoining vertical surfaces.	Gray
e. Interior locations, not otherwise indicated or specified, where small voids exist between materials specified to be painted.	Gray
f. Joints between bathtubs and ceramic tile; joints between shower receptors and ceramic tile; joints formed where non-planar tile surfaces meet.	Gray

LOCATION	COLOR
g. Joints formed between tile floors and tile base cove; joints between tile and dissimilar materials; joints occurring where substrates change.	Gray
h. Behind escutcheon plates at valve pipe penetrations and showerheads in showers.	Gray

2.1.2 Exterior Sealants

For joints in vertical surfaces, provide ASTM C920, Type S or M, Grade NS, Class 25, Use NT. For joints in horizontal surfaces, provide ASTM C920, Type S or M, Grade P, Class 25, Use T. Provide location(s) and color(s) of sealant as follows (Note, color "as selected" refers to manufacturer's full range of color options):

LOCATION	COLOR
a. Joints and recesses formed where frames and subsills of windows, doors, louvers, and vents adjoin masonry, concrete, or metal frames. Use sealant at both exterior and interior surfaces of exterior wall penetrations.	Gray
b. Joints between new and existing exterior masonry walls.	Gray
c. Masonry joints where shelf angles occur.	Gray
d. Joints in wash surfaces of stonework.	Gray
e. Expansion and control joints.	Gray
f. Interior face of expansion joints in exterior concrete or masonry walls where metal expansion joint covers are not required.	Gray
g. Voids where items pass through exterior walls.	Gray
h. Metal reglets, where flashing is inserted into masonry joints, and where flashing is penetrated by coping dowels.	Gray
i. Metal-to-metal joints where sealant is indicated or specified.	Gray
j. Joints between ends of gravel stops, fascia, copings, and adjacent walls.	Gray

2.1.3 Floor Joint Sealants

ASTM C920, Type S or M, Grade P, Class 25, Use T. Provide sealant 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.<AM#0002> ~~Provide certification or validation of indoor air quality for interior floor joint sealants.~~</AM#0002> Provide location(s) and color(s) of sealant as follows (Note, color "as selected" refers to manufacturer's full range of color options):

LOCATION	COLOR
a. Seats of metal thresholds for exterior doors.	Gray
b. Control and expansion joints in floors, slabs, ceramic tile, and walkways.	Gray

2.2 PRIMERS

Non-staining, quick drying type and consistency as recommended by the sealant manufacturer for the particular application. Provide primers for interior applications that meet the indoor air quality requirements of the paragraph INTERIOR SEALANTS above.

2.3 BOND BREAKERS

Type and consistency as recommended by the sealant manufacturer to prevent adhesion of the sealant to the backing or to the bottom of the joint. Provide bond breakers for interior applications that meet the indoor air quality requirements of the paragraph INTERIOR SEALANTS above.

2.4 BACKSTOPS

Provide glass fiber roving, neoprene, butyl, polyurethane, or polyethylene foams free from oil or other staining elements as recommended by sealant manufacturer. Provide 25 to 33 percent oversized backing for closed cell and 40 to 50 percent oversized backing for open cell material, unless otherwise indicated. Provide backstop material that is compatible with sealant. Do not use oakum or other types of absorptive materials as backstops.

2.4.1 Rubber

Provide in accordance with ASTM D1056, Type 2, closed cell, Class B, Grade 2A1 or 2A2, round cross section for cellular rubber sponge backing.

2.4.2 Synthetic Rubber

Provide in accordance with ASTM C509, Option I, Type I preformed rods for synthetic rubber backing.

2.4.3 Silicone Rubber Base

Provide in accordance with ASTM C920, from a single component, with

solvent release, Non-sag, Type S, Grade NS, Class 25. Color as selected from manufacturer's full range of color choices.

2.5 CLEANING SOLVENTS

Provide type(s) recommended by the sealant manufacturer and in accordance with environmental requirements herein. Protect adjacent aluminum and bronze surfaces from solvents. Provide solvents for interior applications that meet the indoor air quality requirements of the paragraph INTERIOR SEALANTS above.

PART 3 EXECUTION

3.1 FIELD QUALITY CONTROL

Perform a field adhesion test in accordance with manufacturer's instructions and ASTM C1193, Method A or ASTM C1521, Method A, Tail Procedure. Remove sealants that fail adhesion testing; clean substrates, reapply sealants, and re-test. Test sealants adjacent to failed sealants. Submit field adhesion test report indicating tests, locations, dates, results, and remedial actions taken.

3.2 SURFACE PREPARATION

Prepare surfaces according to manufacturer's printed installation instructions. Clean surfaces from dirt, frost, moisture, grease, oil, wax, lacquer, paint, or other foreign matter that would destroy or impair adhesion. Remove oil and grease with solvent; thoroughly remove solvents prior to sealant installation. Wipe surfaces dry with clean cloths. When resealing an existing joint, remove existing caulk or sealant prior to applying new sealant. For surface types not listed below, provide in accordance with sealant manufacturer's printed instructions for each specific surface.

3.2.1 Steel Surfaces

Remove loose mill scale by sandblasting or, if sandblasting is impractical or would damage finished work, scraping and wire brushing. Remove protective coatings by sandblasting or using a residue free solvent. Remove resulting debris and solvent residue prior to sealant installation.

3.2.2 Aluminum or Bronze Surfaces

Remove temporary protective coatings from surfaces that will be in contact with sealant. When masking tape is used as a protective coating, remove tape and residual adhesive prior to sealant application. For removing protective coatings and final cleaning, use non-staining solvents recommended by the manufacturer of the item(s) containing aluminum or bronze surfaces.

3.2.3 Concrete and Masonry Surfaces

Where surfaces have been treated with curing compounds, oil, or other such materials, remove materials by sandblasting or wire brushing. Remove laitance, efflorescence and loose mortar from the joint cavity. Remove resulting debris prior to sealant installation.

3.2.4 Wood Surfaces

Ensure wood surfaces that will be in contact with sealants are free of splinters, sawdust and other loose particles.

3.3 SEALANT PREPARATION

Do not add liquids, solvents, or powders to sealants. Mix multicomponent elastomeric sealants in accordance with manufacturer's printed instructions.

3.4 APPLICATION

3.4.1 Joint Width-To-Depth Ratios

Acceptable Ratios:

JOINT WIDTH	JOINT DEPTH	
	Minimum	Maximum
For metal, glass, or other nonporous surfaces:		
1/4 inch (minimum)	1/4 inch	1/4 inch
over 1/4 inch	1/2 of width	Equal to width
For wood, concrete, masonry, or stone:		
1/4 inch (minimum)	1/4 inch	1/4 inch
over 1/4 inch to 1/2 inch	1/4 inch	Equal to width
over 1/2 inch to 1 inch	1/2 inch	5/8 inch
Over 1 inch	prohibited	

Unacceptable Ratios: Where joints of acceptable width-to-depth ratios have not been provided, clean out joints to acceptable depths and grind or cut to acceptable widths without damage to the adjoining work. Grinding is prohibited at metal surfaces.

3.4.2 Unacceptable Sealant Use

Do not install sealants in lieu of other required building enclosure weatherproofing components such as flashing, drainage components, and joint closure accessories, or to close gaps between walls, floors, roofs, windows, and doors, that exceed acceptable installation tolerances. Remove sealants that have been used in an unacceptable manner and correct building enclosure deficiencies to comply with contract documents requirements.

3.4.3 Masking Tape

Place masking tape on the finished surface on one or both sides of joint cavities to protect adjacent finished surfaces from primer or sealant smears. Remove masking tape within 10 minutes of joint filling and

tooling.

3.4.4 Backstops

Provide backstops dry and free of tears or holes. Tightly pack the back or bottom of joint cavities with backstop material to provide joints in specified depths. Provide backstops where indicated and where backstops are not indicated but joint cavities exceed the acceptable maximum depths specified in JOINT WIDTH-TO-DEPTH RATIOS Table.

3.4.5 Primer

Clean out loose particles from joints immediately prior to application of. Apply primer to joints in concrete masonry units, wood, and other porous surfaces in accordance with sealant manufacturer's printed instructions. Do not apply primer to exposed finished surfaces.

3.4.6 Bond Breaker

Provide bond breakers to surfaces not intended to bond in accordance with, sealant manufacturer's printed instructions for each type of surface and sealant combination specified.

3.4.7 Sealants

Provide sealants compatible with the material(s) to which they are applied. Do not use a sealant that has exceeded its shelf life or has jelled and cannot be discharged in a continuous flow from the sealant gun. Apply sealants in accordance with the manufacturer's printed instructions with a gun having a nozzle that fits the joint width. Work sealant into joints so as to fill the joints solidly without air pockets. Tool sealant after application to ensure adhesion. Apply sealant uniformly smooth and free of wrinkles. Upon completion of sealant application, roughen partially filled or unfilled joints, apply additional sealant, and tool smooth as specified. Apply sealer over sealants in accordance with the sealant manufacturer's printed instructions.

3.5 PROTECTION AND CLEANING

3.5.1 Protection

Protect areas adjacent to joints from sealant smears. Masking tape may be used for this purpose if removed 5 to 10 minutes after the joint is filled and no residual tape marks remain.

3.5.2 Final Cleaning

Upon completion of sealant application, remove remaining smears and stains and leave the work in a clean and neat condition.

a. Masonry and Other Porous Surfaces: Immediately remove fresh sealant that has been smeared on adjacent masonry, rub clean with a solvent, and remove solvent residue, in accordance with sealant manufacturer's printed instructions. Allow excess sealant to cure for 24 hours then

remove by wire brushing or sanding. Remove resulting debris.

b. Metal and Other Non-Porous Surfaces: Remove excess sealant with a solvent moistened cloth. Remove solvent residue in accordance with solvent manufacturer's printed instructions.

-- End of Section --

SECTION 08 11 13

STEEL DOORS AND FRAMES
08/20, CHG 1: 08/25
AMENDMENT 0002

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 WELDING SOCIETY (AWS)

AWS D1.1/D1.1M	(2025) Structural Welding Code - Steel

ASTM INTERNATIONAL (ASTM)

ASTM A653/A653M	(2025) Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
ASTM A879/A879M	(2012; R 2017) Standard Specification for Steel Sheet, zinc Coated by the Electrolytic Process for Applications Requiring Designation of the Coating Mass on Each Surface
ASTM A924/A924M	(2022a) Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process
ASTM C578	(2023) Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation
ASTM C591	(2022) Standard Specification for Unfaced Preformed Rigid Cellular Polyisocyanurate Thermal Insulation
ASTM C612	(2014; R 2019) Standard Specification for Mineral Fiber Block and Board Thermal Insulation
ASTM D2863	(2019) Standard Test Method for Measuring the Minimum Oxygen Concentration to Support Candle-Like Combustion of Plastics (Oxygen Index)
ASTM F2247	(2018) Standard Test Method for Metal Doors Used in Blast Resistant Applications (Equivalent Static Load Method)
ASTM F2927	(2012) Standard Test Method for Door Systems Subject to Airblast Loadings

BUILDERS HARDWARE MANUFACTURERS ASSOCIATION (BHMA)

ANSI/BHMA A156.115	(2016) Hardware Preparation in Steel Doors and Steel Frames

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 80	(2025) Standard for Fire Doors and Other Opening Protectives

STEEL DOOR INSTITUTE (SDI/DOOR)

SDI/DOOR 111	(2009) Recommended Details for Standard Steel Doors, Frames, and Accessories and Related Components
SDI/DOOR 113	(2023) Standard Practice for Determining the Steady-State Thermal Transmittance of Steel Door and Frame Assemblies
SDI/DOOR A250.6	(2020) Recommended Practice for Hardware Reinforcing on Standard Steel Doors and Frames
SDI/DOOR A250.8	(2023) Specifications for Standard Steel Doors and Frames
SDI/DOOR A250.11	(2022) Recommended Erection Instructions for Steel Frames

U.S. DEPARTMENT OF DEFENSE (DOD)

UFC 4-010-01	(2018; with Change 3, 2024) DoD Minimum Antiterrorism Standards for Buildings

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

Doors; G, AE

Frames; G, AE

Accessories

SD-03 Product Data

Doors; G, AE

<AM#0002> ~~Recycled Content for Steel Door Product; S~~</AM#0002>

Frames; G, AE

<AM#0002> ~~Recycled Content for Steel Frame Product; S~~</AM#0002>

Accessories

1.3 DELIVERY, STORAGE, AND HANDLING

Deliver doors, frames, and accessories undamaged and with protective wrappings or packaging. Provide temporary steel spreaders securely fastened to the bottom of each welded frame. Store doors and frames on platforms under cover in clean, dry, ventilated, and accessible locations, with 1/4 inch airspace between doors. Remove damp or wet packaging immediately and wipe affected surfaces dry. Replace damaged materials with new.

PART 2 PRODUCTS

2.1 STANDARD STEEL DOORS

SDI/DOOR A250.8, except as specified otherwise. Prepare doors to receive door hardware as specified in Section 08 71 00 DOOR HARDWARE. Undercut where indicated. Provide exterior doors with top edge closed flush and sealed to prevent water intrusion. Provide doors at 1-3/4 inch thick, unless otherwise indicated. Provide door material that uses a minimum of 25 percent recycled content. Submit shop drawings showing each type of door. Provide a schedule of doors within the shop drawing submittal identifying door number, door and frame types and construction, dimensions, thickness, door louvers, fire ratings, hardware sets, accessories, and glazing size and type.<AM#0002> ~~Provide data indicating percentage of recycled content for steel door product.~~</AM#0002> Exterior doors must be tested in accordance with ASTM F2247 or ASTM F2927 to meet requirements of UFC 4-010-01.

2.1.1 Classification - Level, Performance, Model

2.1.1.1 Heavy Duty Doors

SDI/DOOR A250.8, Level 2, physical performance Level B, Model 2, with core construction as required by the manufacturer for exterior doors, of size(s) and design(s) indicated. Where vertical stiffener cores are required, the space between the stiffeners must be filled with board insulation. Provide Level 2 where indicated.

2.2 ACCESSORIES

2.2.1 Astragals

For pairs of exterior steel doors which will not have aluminum astragals or removable mullions, as specified in Section 08 71 00 DOOR HARDWARE provide overlapping steel astragals with the doors.

2.2.2 Moldings

Provide moldings around glass of interior and exterior doors and louvers of interior doors. Provide nonremovable moldings on outside of exterior doors and on corridor side of interior doors. Other moldings may be stationary or removable. Secure inside moldings to stationary moldings, or provide snap-on moldings.

2.3 INSULATION CORES

Provide insulating cores at all exterior doors, and provide an apparent U-factor of.37 BTU/h x ft2 x degrees F in accordance with SDI/DOOR 113 and conforming to:

a. Rigid Cellular Polyisocyanurate Foam: ASTM C591, Type I or II, foamed-in-place or in board form, with oxygen index of not less than 22 percent when tested in accordance with ASTM D2863; or

b. Rigid Polystyrene Foam Board: ASTM C578, Type I or II; or

c. Mineral board: ASTM C612, Type I.

2.4 STANDARD STEEL FRAMES

SDI/DOOR A250.8, Level 4, except as otherwise specified. Form frames to sizes and shapes indicated, with welded corners. Provide steel frames for doors, unless otherwise indicated. Submit shop drawings showing each type of frame. Provide frame product that uses a minimum of 25 percent recycled content.<AM#0002> ~~Provide data indicating percentage of recycled content for steel frame product.~~</AM#0002>

2.4.1 Welded Frames

Continuously weld frame faces at corner joints. Mechanically interlock or continuously weld stops and rabbets. Grind welds smooth.

Weld frames in accordance with the recommended practice of the Structural Welding Code Sections 1 through 6, AWS D1.1/D1.1M and in accordance with the practice specified by the producer of the metal being welded.

2.4.2 Stops and Beads

Provide form and loose stops and beads from 20 gage steel. Provide for glazed and other openings in standard steel frames. Secure beads to frames with oval-head, countersunk Phillips self-tapping sheet metal screws or concealed clips and fasteners. Space fasteners approximately 12 to 16 inch on center. Miter molded shapes at corners. Butt or miter square or rectangular beads at corners.

2.4.3 Anchors

Provide anchors to secure the frame to adjoining construction. Provide steel anchors, zinc-coated not lighter than 18 gage.

2.4.3.1 Wall Anchors

Provide at least three anchors for each jamb. For frames which are more than 7.5 feet in height, provide one additional anchor for each jamb for each additional 2.5 feet or fraction thereof.

a. Masonry: Provide anchors of corrugated or perforated steel straps or 3/16 inch diameter steel wire, adjustable or T-shaped;

b. Stud partitions: Weld or otherwise securely fasten anchors to backs of frames. Design anchors to be fastened to closed steel studs with sheet metal screws, and to open steel studs by wiring or welding;

c. Completed openings: Secure frames to previously placed concrete or masonry with expansion bolts in accordance with SDI/DOOR 111; and

d. Solid plaster partitions: Secure anchors solidly to back of frames and tie into the lath. Provide adjustable top strut anchors on each side of frame for fastening to structural members or ceiling construction above. Provide size and type of strut anchors as recommended by the frame manufacturer.

2.4.3.2 Floor Anchors

Provide floor anchors drilled for 3/8 inch anchor bolts at bottom of each jamb member. Where floor fill occurs, terminate bottom of frames at the indicated finished floor levels and support by adjustable extension clips resting on and anchored to the structural slabs.

2.5 EXTERIOR FRAMES

Provide thermal insulation in all exterior frames. Provide frames of a minimum Level 4, with frames of a minimum thickness of 0.067 inch, 14 gage.

2.6 HARDWARE PREPARATION

Drill and tap doors and frames to receive finish hardware. Prepare doors and frames for hardware in accordance with the applicable requirements of SDI/DOOR A250.8 and SDI/DOOR A250.6. For additional requirements refer to ANSI/BHMA A156.115. Drill and tap for surface-applied hardware at the project site. Build additional reinforcing for surface-applied hardware into the door at the factory. Punch door frames, with the exception of frames that will have weatherstripping gasketing, to receive a minimum of two rubber or vinyl door silencers on lock side of single doors and one silencer for each leaf at heads of double doors. Set lock strikes out to provide clearance for silencers.

2.7 FINISHES

2.7.1 Hot-Dip Zinc-Coated and Factory-Primed Finish

Fabricate exterior doors and frames from hot dipped zinc coated steel, alloyed type, that complies with ASTM A924/A924M and ASTM A653/A653M. The coating weight must meet or exceed the minimum requirements for coatings having 0.4 ounces per square foot, total both sides, i.e., A40. Repair damaged zinc-coated surfaces by the application of zinc dust paint. Thoroughly clean and chemically treat to insure maximum paint adhesion. Factory prime as specified in SDI/DOOR A250.8.

2.7.2 Electrolytic Zinc-Coated Anchors and Accessories

Provide electrolytically deposited zinc-coated steel in accordance with ASTM A879/A879M, Commercial Quality, Coating Class A. Phosphate treat and factory prime zinc-coated surfaces as specified in SDI/DOOR A250.8.

2.8 FABRICATION AND WORKMANSHIP

Provide finished doors and frames that are strong and rigid, neat in appearance, and free from defects, waves, scratches, cuts, dents, ridges, holes, warp, and buckle. Provide molded members that are clean cut, straight, and true, with joints coped or mitered, well formed, and in true alignment. Dress exposed welded and soldered joints smooth. Design door

frame sections for use with the wall construction indicated. Corner joints must be well formed and in true alignment. Conceal fastenings where practicable.

PART 3 EXECUTION

3.1 INSTALLATION

3.1.1 Frames

Set frames in accordance with SDI/DOOR A250.11. Plumb, align, and brace securely until permanent anchors are set. Anchor bottoms of frames with expansion bolts or powder-actuated fasteners. Build in or secure wall anchors to adjoining construction.

3.1.2 Doors

Hang doors in accordance with clearances specified in SDI/DOOR A250.8. After erection and glazing, clean and adjust hardware.

3.1.3 Fire Doors and Frames

Install fire doors and frames, including hardware, in accordance with NFPA 80.

3.2 PROTECTION

Protect doors and frames from damage. Repair damaged doors and frames prior to completion and acceptance of the project or replace with new, as directed. Wire brush rusted frames until rust is removed. Clean thoroughly. Apply an all-over coat of rust-inhibitive paint of the same type used for shop coat.

3.3 CLEANING

Upon completion, clean exposed surfaces of doors and frames thoroughly. Remove mastic smears and other unsightly marks.

-- End of Section --

SECTION 09 67 23.14

CHEMICAL RESISTANT RESINOUS FLOORING
08/16, CHG 1: 08/18
AMENDMENT 0002

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 C307	(2023) Standard Test Method for Tensile Strength of Chemical-Resistant Mortar, Grouts, and Monolithic Surfacings
ASTM C413	(2018; R 2023) Standard Test Method for Absorption of Chemical-Resistant Mortars, Grouts, and Monolithic Surfacings and Polymer Concretes
ASTM C531	(2018; R 2023) Standard Test Method for Linear Shrinkage and Coefficient of Thermal Expansion of Chemical-Resistant Mortars, Grouts, and Monolithic Surfacings, and Polymer Concretes
ASTM C579	(2023) Standard Test Methods for Compressive Strength of Chemical-Resistant Mortars, Grouts, Monolithic Surfacings, and Polymer Concretes
ASTM C580	(2018; R 2023) Standard Test Method for Flexural Strength and Modulus of Elasticity of Chemical-Resistant Mortars, Grouts, Monolithic Surfacings, and Polymer Concretes
ASTM C722	(2018; R 2023) Standard Specification for Chemical-Resistant Resin Monolithic Floor Surfacings
ASTM D1308	(2020) Standard Test Method for Effect of Household Chemicals on Clear and Pigmented Coating Systems
ASTM D4060	(2019) Abrasion Resistance of Organic Coatings by the Taber Abraser
ASTM D4263	(1983; R 2018) Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method
ASTM E162	(2025) Standard Test Method for Surface

	Flammability of Materials Using a Radiant Heat Energy Source

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

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 99	(2024, TIA 24-2) Health Care Facilities Code

NATIONAL TERRAZZO AND MOSAIC ASSOCIATION (NTMA)

NTMA Info Guide	(2017) Terrazzo Reference Guide

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT (SCAQMD)

SCAQMD Rule 1113	(2016) Architectural Coatings

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

29 CFR 1910	Occupational Safety and Health Standards

1.2 SUBMITTALS

Government approval is required for submittals with a "G" or "S" classification. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Flooring Systems; G

SD-03 Product Data

Sealer and Resin; G

Floor Surfacing; G

Conductive Sparkproof Flooring; G

<AM#0002> ~~Indoor Air Quality for Primer; S~~</AM#0002>

<AM#0002> ~~Indoor Air Quality for Top Coating; S~~</AM#0002>

<AM#0002> ~~Indoor Air Quality for Sealer And Resin; S~~</AM#0002>

Mixing; G

SD-04 Samples

Flooring Systems; G

SD-06 Test Reports

Testing; G

SD-07 Certificates

Qualifications of Installer; G

Certification Letter from the Manufacturer stating that the installed chemical resistant resinous flooring system complies with the specified materials and performance requirements.

SD-08 Manufacturer's Instructions

Application; G

SD-10 Operation and Maintenance Data

Flooring Systems; G

1.3 QUALITY ASSURANCE

1.3.1 Qualifications of Installer

Perform installation by an applicator approved by the manufacturer of the floor surfacing materials. Furnish a written Certification Letter from the Manufacturer detailing the Qualifications of Installer.

1.3.2 Shop Drawings

Submit drawings indicating the type and layout of the flooring system for approval.

1.4 DELIVERY, STORAGE, AND HANDLING

Deliver the materials to the project site in unopened bags and containers clearly labeled with the name of the manufacturer, type of material, batch number, and date of manufacture. Store materials, other than aggregates, away from fire, sparks, or smoking areas. Maintain the storage area between50 and 90 degrees F.

1.5 ENVIRONMENTAL REQUIREMENTS

Maintain the ambient room and floor temperatures at 65 degrees F, or above, for a period extending from 48 hours before installation until one week after installation. Cure concrete for at least 28 days and keep it free of water for at least 7 days prior to receiving surfacing in accordance with ASTM D4263. Measure and insure moisture content of wood substrates between 8 and 10 percent prior to application.

PART 2 PRODUCTS

2.1 MATERIALS

Provide materials (except aggregate) used in the flooring from a single manufacturer. Furnish and install trowel applied type epoxy finish of 1/4 inch thickness with properties and chemical resistance conforming to the requirements specified in NTMA Info Guide. resin-based flooring. Meet the following material requirements:

2.1.1 Primer

Type recommended by the manufacturer to penetrate into the pores of the substrate and bond with the floor surfacing matrix to form a permanent monolithic bond between substrate and surfacing matrix. 100% solid epoxy concrete primer at 10 mils. (0.01 inches). Primer products used on the interior of the building (defined as inside of the weatherproofing system) must meet 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 1113.<AM#0002> ~~Provide validation of indoor air quality for primer.~~</AM#0002>

2.1.2 Aggregate

Provide silica sand, quartz, granite, or other suitable chemical resistant material having a Mohr's hardness of not less than 6.0 aggregate. Epoxy mortar coat with anti-sparking glass aggregate at 185 mils (0.185 inches).

2.1.3 Binder

Provide thermo-setting epoxy binder. Apply epoxy gel coat at 16 mils (0.016 inch) thickness.

2.1.4 Fillers

If required, provide inert silica, quartz or other hard aggregate material fillers as recommended by the flooring manufacturer. Furnish fillers in the quantity necessary to impart the required color and physical characteristics. Provide a filler containing sufficient fines to obtain an even-textured, nonslip type of surface on the finished topping. Apply conductive epoxy prime coat at 6 mils (0.006 inches) thickness.

2.1.5 Top Coating

Furnish clear color coating of type recommended by the manufacturer. Apply high wear conductive urethane top coat with non-skid aggregate and abrasion resistant additive. Floor top coating products used on the interior of the building (defined as inside of the weatherproofing system) must meet 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 1113.<AM#0002> ~~Provide validation of indoor air quality for top coating.~~</AM#0002>

2.2 FLOORING SYSTEMS

Submit cured samples of each floor finish or color combination indicated. The complete systems, after curing, must have the following properties when tested in accordance with the test methods listed for each property.

2.2.1 Epoxy Matrix Floor Surfacing

2.2.1.1 Compressive Strength

ASTM C579; 10,000 psi minimum at 7 days.

2.2.1.2 Tensile Strength

ASTM C307; 1500 psi minimum at 7 days.

2.2.1.3 Flexural Modulus of Elasticity

ASTM C580; 500,000 psi minimum at 7 days.

2.2.1.4 Thermal Coefficient of Expansion

ASTM C531; 0.00004 inches per inch per degree F maximum.

2.2.1.5 Shrinkage

ASTM C531; 0.5 percent maximum.

2.2.1.6 Bond Strength

300 psi minimum with 100 percent concrete failure (2500 psi Compressive Strength Concrete).

2.2.1.7 Flame Spread Index

ASTM E162; 25 maximum.

2.2.1.8 Smoke Deposited

ASTM E162; 4 mg maximum.

2.2.1.9 Abrasion Resistance

ASTM D4060; 15 mg maximum weight loss.

2.2.1.10 Moisture Absorption

ASTM C413; 1.0 percent maximum.

2.2.1.11 Chemical Resistance

ASTM D1308; no effect when exposed to the following reagents for 7 days:

Acetic acid: 5 percent solution
Ammonium Hydroxide: 10 percent solution
Citric Acid: 5 percent solution
Coffee
Cola Syrup
Isopropyl Alcohol
Mineral Oil
Sodium Hydroxide: 5 percent solution
Tri-Sodium Phosphate: 5 percent solution
Urea: 6.6 percent solution

2.3 CONDUCTIVE SPARKPROOF FLOORING

Trowel or spray apply conductive sparkproof industrial resin-based flooring 221 mil (0.221 inches) thick, epoxy, polyester, or other resinous material conforming to ASTM C722with Type A surfacings (chemical resistance and moderate to heavy traffic resistance). Ground conductive flooring and conform to the requirements for conductive flooring of NFPA 99.

2.4 SEALER AND RESIN

Provide a sealer product recommended by the industrial resin-based

flooring manufacturer; when applied to the resin topping and dried, it must be nonslip and resistant to staining and suitable for the type application indicated. Floor resin and sealer products used on the interior of the building (defined as inside of the weatherproofing system) must meet 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 1113.<AM#0002> ~~Provide validation for Indoor Air Quality for Sealer and Resin.~~</AM#0002>

2.5 COLOR

Provide color as indicated in drawings.

PART 3 EXECUTION

3.1 SURFACE PREPARATION

Remove all dirt, dust, debris, and other loose particles by sweeping or vacuum cleaning. Protect adjacent surfaces not scheduled to receive the flooring by masking, or by other means, to maintain these surfaces free of the flooring material.

3.1.1 Concrete Surfaces

3.1.1.1 Mechanical Cleaning

Completely remove dirt, wax, paint, laitance, and oil, grease, contaminates, by grinding with a terrazzo machine, sanding with coarse open grid sandpaper, sand blasting, chipping, bush hammering, or wire brushing.

3.1.1.2 Acid Etching

Apply a 10 percent solution of muriatic acid at a rate of one quart/each 10 square feet of concrete surface. Allow the solution to stand until it stops bubbling but not less than 5 minutes. Remove the acid and wash the surfaces several times, as required, to remove all traces of the acid. Always dilute acid by pouring into water. Use face shield rubber gloves, and other safety equipment when using acids, alkalis, or solvents.

3.1.1.3 Air Drying

After cleaning, allow concrete surface to air dry thoroughly prior to application of surfacing. Blowers or oil free compressed air may be used. Do not use flame-drying methods. Prior to application of surfacing, test concrete surface for excessive moisture in at least two locations. Place rubber mats at each location with smooth side against concrete and place weight on top of mat to hold in position and ensure contact with concrete. Polyethylene with all edges taped may be used in lieu of mats. After 8 hours remove mat or sheeting and examine floor surface for moisture accumulation. If tests indicate accumulation of moisture at either location, perform additional air drying until additional tests show no moisture accumulation.

3.1.2 Substrate Cracks, Spalls, Joints, and Depressions

Fill all cracks, joints, spalls, and other depressions in the substrate with a latex underlayment, as recommended by the manufacturer compatible with the floor surfacing material.

3.1.2.1 CONCRETE SUBSTRATES

Prepare substrates according to resinous flooring manufacturer's written instructions to ensure adhesion of resinous flooring.

Concrete Substrates: Prepare according to ASTM F710.

Verify that substrates are dry and free of curing compounds, sealers, and hardeners.

Alkalinity and Adhesion Testing: Perform tests recommended by flooring manufacturer. Proceed with installation only after substrate alkalinity falls within range on pH scale recommended by manufacturer in writing, but not less than 5 or more than 9 pH.

Moisture Testing: Perform tests so that each test area does not exceed 200 sq. ft., and perform no fewer than three tests in each installation area and with test areas evenly spaced in installation areas.

Anhydrous Calcium Chloride Test: ASTM F1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. in 24 hours.

Relative Humidity Test: Using in-situ probes, ASTM F2170. Proceed with installation only after substrates have a maximum 75 percent relative humidity level measurement

3.2 MIXING

Proportion and mix the floor surfacing components in accordance with the manufacturer's instructions. Submit flooring manufacturer's descriptive data, mixing, proportioning, and installation instructions. Include maintenance literature for resinous flooring.

3.3 APPLICATION

Submit complete instructions for application of flooring system including any precautions or special handling instructions required to comply with OSHA 29 CFR 1910-Subpart Z. Apply primer, floor surfacing, and seal coat in accordance with the manufacturer's recommendations and the following requirements.

3.3.1 Primer

Apply primer uniformly over the entire area to receive floor surfacing using clean rubber squeegees or clean steel trowels. Do not allow primer to collect in depressions. Allow primer to dry thoroughly before the next coat is applied. Reprime porous areas or areas where primer has dried.

3.3.2 Floor Surfacing

Apply mixed surfacing material to provide a finish floor surfacing not less than 1/4 inch thick. The entire surfacing in any one room or area must be placed in one continuous operation without use of cold joints or divider strips. All surfaces must be flush, true to plane and line, and level within 1/4 inch in 10 feet.

3.3.3 Seal Coat

Apply seal coat uniformly covering all surfaces after floor surfacing has cured and as recommended by the supplier.

3.4 TESTING

Submit reports of tests for conductive sparkproof flooring, including analysis and interpretation of test results. Properly identify each report. Identify and record the test methods used.

3.4.1 Electrical Resistance

Test the flooring between 30 and 45 days after flooring installation is completed, and prior to its use, in accordance with paragraph 12-4.1.3.8(b)(7) of NFPA 99. The resistance of the floor at any one location must be more than 5,000 ohms in areas with 110 volts service, more than 10,000 ohms in areas with 220 volt service, and average less than 1,000,000 ohms and more than 25,000 ohms in all areas. Perform tests using a technician experienced in such work.

3.4.2 Spark Resistance

Test the floor for spark resistance by stroking the floor vigorously with a 12 inch hardened steel file in a 3 foot arc. Perform the test for each 80 square feet of floor area. Perform the tests in a darkened space and only when the relative humidity of the atmosphere within the space does not exceed 50 percent. The floor must not produce a spark when tested under these conditions.

3.5 PROTECTION

Allow surfacing to set for a minimum period of 48 hours before traffic is allowed on the floor. Protect finished flooring from traffic by covering with 30 pound building paper or other equally effective means until final acceptance of the project.

-- End of Section --

SECTION 26 20 00

INTERIOR DISTRIBUTION SYSTEM
05/25, CHG 1: 08/25
AMENDMENT 0002

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 B1	(2013) Standard Specification for Hard-Drawn Copper Wire
ASTM B8	(2023) Standard Specification for Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft
ASTM D709	(2017) Standard Specification for Laminated Thermosetting Materials

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)

IEEE 81	(2012) Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Surface Potentials of a Ground System
IEEE Stds Dictionary	(2009) IEEE Standards Dictionary: Glossary of Terms & Definitions

INTERNATIONAL ELECTRICAL TESTING ASSOCIATION (NETA)

NETA ATS	(2025) Standard for Acceptance Testing Specifications for Electrical Power Equipment and Systems

NATIONAL ELECTRICAL CONTRACTORS ASSOCIATION (NECA)

NECA NEIS 1	(2015) Standard for Good Workmanship in Electrical Construction

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

ANSI C80.1	(2020) American National Standard for Electrical Rigid Steel Conduit (ERSC)
ANSI C80.3	(2020) American National Standard for Electrical Metallic Tubing (EMT)
NEMA 250	(2020) Enclosures for Electrical Equipment (1000 Volts Maximum)
NEMA FU 1	(2012) Low Voltage Cartridge Fuses

NEMA ICS 1	(2022) Standard for Industrial Control and Systems: General Requirements
NEMA ICS 2	(2000; R 2020) Industrial Control and Systems Controllers, Contactors, and Overload Relays Rated 600 V
NEMA ICS 4	(2015) Application Guideline for Terminal Blocks
NEMA ICS 6	(1993; R 2016) Industrial Control and Systems: Enclosures
NEMA KS 1	(2013) Enclosed and Miscellaneous Distribution Equipment Switches (600 V Maximum)
NEMA MG 00001	(2024) Motors and Generators
NEMA MG 10	(2017) Energy Management Guide for Selection and Use of Fixed Frequency Medium AC Squirrel-Cage Polyphase Induction Motors
NEMA MG 11	(1977; R 2012) Energy Management Guide for Selection and Use of Single Phase Motors
NEMA RN 1	(2018) Polyvinyl-Chloride (PVC) Externally Coated Galvanized Rigid Steel Conduit and Intermediate Metal Conduit
NEMA TC 2	(2020) Standard for Electrical Polyvinyl Chloride (PVC) Conduit
NEMA TC 3	(2021) Polyvinyl Chloride (PVC) Fittings for Use With Rigid PVC Conduit and Tubing
NEMA WD 1	(1999; R 2020) Standard for General Color Requirements for Wiring Devices
NEMA WD 6	(2021) Wiring Devices Dimensions Specifications
NEMA Z535.4	(2023) Product Safety Signs and Labels

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 70	(2026; TIA 26-1; ERTA 26-1; TIA 26-2; TIA 26-3; TIA 26-4; TIA 26-5; TIA 26-6; TIA 26-7; ERTA 26-2; ERTA 26-3) National Electrical Code
NFPA 70E	(2024) Standard for Electrical Safety in the Workplace
NFPA 780	(2026) Standard for the Installation of Lightning Protection Systems

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

29 CFR 1910.147	The Control of Hazardous Energy (Lock Out/Tag Out)
29 CFR 1910.303	Electrical, General

UL SOLUTIONS (UL)

UL 1	(2005; Reprint Jan 2022) UL Standard for Safety Flexible Metal Conduit
UL 6	(2022) UL Standard for Safety Electrical Rigid Metal Conduit-Steel
UL 20	(2025) UL Standard for Safety General-Use Snap Switches
UL 44	(2018; Reprint May 2021) UL Standard for Safety Thermoset-Insulated Wires and Cables
UL 50	(2024) UL Standard for Safety Enclosures for Electrical Equipment, Non-Environmental Considerations
UL 67	(2018; Reprint Aug 2025) UL Standard for Safety Panelboards
UL 83	(2017; Reprint Mar 2020) UL Standard for Safety Thermoplastic-Insulated Wires and Cables
UL 248-4	(2010; Reprint Apr 2019) Low-Voltage Fuses - Part 4: Class CC Fuses
UL 248-8	(2011; Reprint Aug 2020) Low-Voltage Fuses - Part 8: Class J Fuses
UL 248-10	(2011; Reprint Aug 2020) Low-Voltage Fuses - Part 10: Class L Fuses
UL 248-12	(2011; Reprint Aug 2020) Low Voltage Fuses - Part 12: Class R Fuses
UL 248-15	(2018) Low-Voltage Fuses - Part 15: Class T Fuses
UL 360	(2013; Reprint Jan 2024) UL Standard for Safety Liquid-Tight Flexible Metal Conduit
UL 467	(2022) UL Standard for Safety Grounding and Bonding Equipment
UL 486A-486B	(2025) UL Standard for Safety Wire Connectors
UL 486C	(2023; Reprint Feb 2025) UL Standard for Safety Splicing Wire Connectors

UL 489	(2025) UL Standard for Safety Molded-Case Circuit Breakers, Molded-Case Switches and Circuit-Breaker Enclosures
UL 498	(2017; Reprint Jun 2024) UL Standard for Safety Attachment Plugs and Receptacles
UL 506	(2017; Reprint Jan 2022) UL Standard for Safety Specialty Transformers
UL 508	(2018; Reprint Jul 2021) UL Standard for Safety Industrial Control Equipment
UL 510	(2020; Dec 2022) UL Standard for Safety Polyvinyl Chloride, Polyethylene and Rubber Insulating Tape
UL 514A	(2024) UL Standard for Safety Metallic Outlet Boxes
UL 514B	(2012; Reprint Mar 2024) UL Standard for Safety Conduit, Tubing and Cable Fittings
UL 514C	(2014; Reprint Apr 2024) UL Standard for Safety Nonmetallic Outlet Boxes, Flush-Device Boxes, and Covers
UL 651	(2011; Reprint May 2022) UL Standard for Safety Schedule 40, 80, Type EB and A Rigid PVC Conduit and Fittings
UL 797	(2007; Reprint Apr 2023) UL Standard for Safety Electrical Metallic Tubing -- Steel
UL 869A	(2006; Reprint Jun 2020) Reference Standard for Service Equipment
UL 943	(2016; Reprint Aug 2025) UL Standard for Safety Ground-Fault Circuit-Interrupters
UL 984	(1996; Reprint Sep 2005) Hermetic Refrigerant Motor-Compressors
UL 1004-1	(2012; Reprint Nov 2020) UL Standard for Safety Rotating Electrical Machines - General Requirements
UL 1063	(2017; Reprint Jun 2022) UL Standard for Safety Machine-Tool Wires and Cables
UL 1242	(2006; Reprint Apr 2022) UL Standard for Safety Electrical Intermediate Metal Conduit -- Steel
UL 1660	(2019; Reprint May 2024) Liquid-Tight Flexible Nonmetallic Conduit
UL 4248-1	(2022; Reprint Jun 2025) UL Standard for Safety Fuseholders - Part 1: General

Requirements

UL 4248-12 (2025) UL Standard for Safety Fuseholders - Part 12: Class R

1.2 DEFINITIONS

Unless otherwise specified or indicated, electrical and electronics terms used in these specifications, and on the drawings, are as defined in IEEE Stds Dictionary.

1.3 RELATED 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

SD-03 Product Data

Switches; G

Receptacles; G

Circuit Breakers; G

Fuses; G

Enclosed Circuit Breakers; G

Motor Controllers; G

SD-06 Test Reports

600-volt Wiring Test; G

Grounding System Test; G

SD-07 Certificates

Fuses; G

SD-10 Operation and Maintenance Data

Electrical Systems, Data Package 5; G

1.5 QUALITY ASSURANCE

1.5.1 Electrician Qualifications

Electrical work must be performed by qualified persons 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.

1.5.2 Fuses

Submit coordination data as specified in paragraph, FUSES of this section.

1.5.3 Regulatory Requirements

In each of the publications referred to herein, consider the advisory provisions to be mandatory, as though the word, "must" had been substituted for "should" wherever it appears. Interpret references in these publications to the "authority having jurisdiction," or words of similar meaning, to mean the Contracting Officer. Provide equipment, materials, installation, and workmanship in accordance with NFPA 70 unless more stringent requirements are specified or indicated. NECA NEIS 1 is the minimum standard for workmanship.

1.5.4 Standard Products

Provide materials and equipment that are products of manufacturers regularly engaged in the production of such products which are of equal material, design and workmanship and:

a. Have been in satisfactory commercial or industrial use for 2 years prior to bid opening including applications of equipment and materials under similar circumstances and of similar size.

b. Have been on sale on the commercial market through advertisements, manufacturers' catalogs, or brochures during the 2-year period.

c. Where two or more items of the same class of equipment are required, provide products of a single manufacturer; however, the component parts of the item need not be the products of the same manufacturer unless stated in this section.

1.5.4.1 Alternative Qualifications

Products having less than a 2-year field service record will be acceptable if a certified record of satisfactory field operation for not less than 6000 consecutive hours, exclusive of the manufacturers' factory or laboratory tests, is furnished.

1.5.4.2 Material and Equipment Manufacturing Date

Products manufactured more than 3 years prior to date of delivery to site are not acceptable.

1.6 MAINTENANCE

1.6.1 Electrical Systems

Submit operation and maintenance data in accordance with Section 01 78 23, OPERATION AND MAINTENANCE DATA and as specified herein. Submit operation and maintenance manuals for electrical systems that provide basic data relating to the design, operation, and maintenance of the electrical distribution system for the building. Include the following:

a. Single line diagram of the "as-built" building electrical system.

b. Schematic diagram of electrical control system (other than HVAC, covered elsewhere).

c. Manufacturers' operating and maintenance manuals on active electrical equipment.

1.7 WARRANTY

Provide equipment items supported by service organizations that are located within 250 miles of the equipment installation in order to render service to the equipment on a regular and emergency basis during the warranty period of the contract.

PART 2 PRODUCTS

2.1 MATERIALS AND EQUIPMENT

As a minimum, meet requirements of UL, where UL standards are established for those items, and requirements of NFPA 70 for all materials, equipment, and devices.

2.2 CONDUIT AND FITTINGS

Conform to the following:

2.2.1 Rigid Metallic Conduit

2.2.1.1 Rigid, Threaded Zinc-Coated Steel Conduit

ANSI C80.1, UL 6.

<AM#0002>~~2.2.1.2 Rigid Aluminum Conduit~~

~~ANSI C80.5, UL 6A.~~

</AM#0002>2.2.2 Rigid Nonmetallic Conduit

PVC Type EPC-40, and EPC-80 in accordance with NEMA TC 2,UL 651.

2.2.3 Intermediate Metal Conduit (IMC)

UL 1242, zinc-coated steel only.

2.2.4 Electrical, Zinc-Coated Steel Metallic Tubing (EMT)

UL 797, ANSI C80.3.

2.2.5 Plastic-Coated Rigid Steel and IMC Conduit

NEMA RN 1, Type 40(40 mils thick).

2.2.6 Flexible Metal Conduit

UL 1, limited to 6 feet in areas where not accessible or below a raised floor installation.

2.2.6.1 Liquid-Tight Flexible Metal Conduit, Steel

UL 360, limited to 6 feet in areas where not accessible or below a raised floor installation. The use of flexible metal conduit for bends or transitions in RMC, IMC, or EMT is prohibited.

2.2.7 Liquid-Tight Flexible Nonmetallic Conduit

UL 1660. The use of liquid-tight flexible metal conduit for bends or transitions in RMC, IMC, or EMT is prohibited.

2.2.8 Fittings for Metal Conduit, EMT, and Flexible Metal Conduit

UL 514B. Ferrous fittings: cadmium- or zinc-coated in accordance with UL 514B.

2.2.8.1 Fittings for Rigid Metal Conduit and IMC

Threaded-type. Split couplings unacceptable.

2.2.8.2 Fittings for EMT

Die Cast compression type.

2.2.9 Fittings for Rigid Nonmetallic Conduit

NEMA TC 3 for PVC, and UL 514B.

2.3 OUTLET BOXES AND COVERS

UL 514A, cadmium- or zinc-coated, if ferrous metal. UL 514C, if nonmetallic.

2.4 CABINETS, JUNCTION BOXES, AND PULL BOXES

UL 50; volume greater than 100 cubic inches, NEMA Type 1 enclosure; sheet steel, hot-dip, zinc-coated. Where exposed to wet, damp, or corrosive environments, NEMA Type 3R.

2.5 WIRES AND CABLES

Provide wires and cables in accordance with applicable requirements of NFPA 70 and UL for type of insulation, jacket, and conductor specified or indicated. Do not use wires and cables manufactured more than 24 months prior to date of delivery to site.

2.5.1 Conductors

Provide the following:

a. Conductor sizes and capacities shown are based on copper, unless indicated otherwise.

b. Conductors No. 10 AWG and larger diameter: stranded.

c. Conductors No. 12 AWG and smaller diameter: solid.

d. Conductors for remote control, alarm, and signal circuits, classes 1, 2, and 3: stranded unless specifically indicated otherwise.

e. All conductors: copper.

2.5.1.1 Equipment Manufacturer Requirements

When manufacturer's equipment requires copper conductors at the terminations or requires copper conductors to be provided between components of equipment, provide copper conductors or splices, splice boxes, and other work required to satisfy manufacturer's requirements.

2.5.1.2 Minimum Conductor Sizes

Provide minimum conductor size in accordance with the following:

a. Branch circuits: No. 12 AWG.

b. Class 1 remote-control and signal circuits: No. 14 AWG.

c. Class 2 low-energy, remote-control and signal circuits: No. 16 AWG.

d. Class 3 low-energy, remote-control, alarm and signal circuits: No. 22 AWG.

2.5.2 Color Coding

Provide color coding for service, feeder, branch, control, and signaling circuit conductors.

2.5.2.1 Ground and Neutral Conductors

Provide color coding of ground and neutral conductors as follows:

a. Grounding conductors: Green.

b. Neutral conductors: White.

c. Exception, where neutrals of more than one system are installed in same raceway or box, other neutrals color coding: white with a different colored (not green) stripe for each.

2.5.2.2 Ungrounded Conductors

Provide color coding of ungrounded conductors in different voltage systems as follows:

a. 208/120 volt, three-phase

(1) Phase A - black

(2) Phase B - red

(3) Phase C - blue

b. 480/277 volt, three-phase

(1) Phase A - brown

(2) Phase B - orange

(3) Phase C - yellow

c. 120/240 volt, single phase: Black and red

2.5.3 Insulation

Unless specified or indicated otherwise or required by NFPA 70, provide power and lighting wires rated for 600-volts, Type THWN/THHN conforming to UL 83 or Type XHHW or RHW conforming to UL 44, except that grounding wire may be type TW conforming to UL 83; remote-control and signal circuits: Type TW or TF, conforming to UL 83. Where equipment or devices require 90-degree Centigrade (C) conductors, provide only conductors with 90-degree C insulation or better.

2.5.4 Bonding Conductors

ASTM B1, solid bare copper wire for sizes No. 8 AWG and smaller diameter; ASTM B8, Class B, stranded bare copper wire for sizes No. 6 AWG and larger diameter.

<AM#0002>~~2.5.5 Metal-Clad Cable~~

~~UL 1569; NFPA 70, Type MC cable.~~

</AM#0002>2.6 SPLICES AND TERMINATION COMPONENTS

UL 486A-486B for wire connectors and UL 510 for insulating tapes. Connectors for No. 10 AWG and smaller diameter wires: insulated, pressure-type in accordance with UL 486A-486B or UL 486C (twist-on splicing connector). Provide solderless terminal lugs on stranded conductors.

2.7 DEVICE PLATES

Provide the following:

a. UL listed, one-piece device plates for outlets to suit the devices installed.

b. For metal outlet boxes, plates on unfinished walls: zinc-coated sheet steel or cast metal having round or beveled edges.

c. For nonmetallic boxes and fittings, other suitable plates may be provided.

d. Plates on finished walls: nylon or lexan, minimum 0.03 inch wall thickness and same color as receptacle or toggle switch with which they are mounted.

e. Plates on finished walls: satin finish stainless steel or brushed-finish aluminum, minimum 0.03 inch thick.

f. Screws: machine-type with countersunk heads in color to match finish of plate.

g. Sectional type device plates are not be permitted.

h. Plates installed in wet locations: gasketed and UL listed for "wet locations."

2.8 SWITCHES

2.8.1 Toggle Switches

NEMA WD 1, UL 20, single pole, double pole, three-way, and four-way, totally enclosed with bodies of thermoplastic or thermoset plastic and mounting strap with grounding screw. Include the following:

a. Handles: white thermoplastic.

b. Wiring terminals: screw-type, side-wired. Do not use back-stabbed conductor terminals.

c. Contacts: silver-cadmium and contact arm - one-piece copper alloy.

d. Switches: rated quiet-type ac only, 120/277 volts, with current rating and number of poles indicated.

2.8.2 Disconnect Switches

NEMA KS 1. Provide heavy duty-type switches where indicated, where switches are rated higher than 240 volts, and for double-throw switches. Utilize Class R fuseholders and fuses for fused switches, unless indicated otherwise. Provide horsepower rated for switches serving as the motor-disconnect means. Provide switches in NEMA 1 or NEMA 3R, enclosure as indicated per NEMA ICS 6.

2.9 FUSES

NEMA FU 1. Provide complete set of fuses for each fusible. Coordinate time-current characteristics curves of fuses serving motors or connected in series with circuit breakers for proper operation. Submit coordination data for approval. Provide fuses with a voltage rating not less than circuit voltage.

2.9.1 Fuseholders

Provide in accordance with UL 4248-1.

2.9.2 Cartridge Fuses, Current Limiting Type (Class R)

UL 248-12, Class RK-5. Provide only Class R associated fuseholders in accordance with UL 4248-12.

2.9.3 Cartridge Fuses, High-Interrupting Capacity, Current Limiting Type (Classes J, L, and CC)

UL 248-8, UL 248-10, UL 248-4, Class J for zero to 600 amperes, Class L for 601 to 6,000 amperes, and Class CC for zero to 30 amperes.

2.9.4 Cartridge Fuses, Current Limiting Type (Class T)

UL 248-15, Class T for zero to 1,200 amperes, 300 volts; and zero to 800 amperes, 600 volts.

2.10 RECEPTACLES

Provide the following:

a. UL 498, general purpose specification grade, grounding-type. Residential grade receptacles are not acceptable.

b. Ratings and configurations: as indicated.

c. Bodies: ivory as per NEMA WD 1.

d. Face and body: thermoplastic supported on a metal mounting strap.

e. Dimensional requirements: per NEMA WD 6.

f. Screw-type, side-wired wiring terminals. Do not use back-stabbed conductor terminals.

g. Grounding pole connected to mounting strap.

h. The receptacle: containing triple-wipe power contacts and double or triple-wipe ground contacts.

2.10.1 Split Duplex Receptacles2.10.2 Weather Resistant Receptacles

Provide receptacles, UL listed for use in "wet locations" with integral GFCI protection. Include cast metal box with gasketed, hinged, lockable and weather resistant while-in-use, die-cast metal/aluminum extra-duty rated hood.

2.10.3 Ground-Fault Circuit Interrupter Receptacles

UL 943, duplex type for mounting in standard outlet box. Provide device capable of detecting current leak when the current to ground is 6 milliamperes or higher, and tripping per requirements of UL 943 for Class A ground-fault circuit interrupter devices. Provide screw-type, side-wired wiring terminals or pre-wired (pigtail) leads.

2.11 PANELBOARDS

Provide panelboards in accordance with the following:

a. UL 67 and UL 50 having a short-circuit current rating as indicated of 10,000 amperes symmetrical minimum for voltages 240 V and below of 14,000 amperes symmetrical minimum for 480 V.

b. Panelboards for use as service disconnecting means: additionally conform to UL 869A.

c. Panelboards: circuit breaker-equipped.

d. Designed such that individual breakers can be removed without disturbing adjacent units or without loosening or removing supplemental insulation supplied as means of obtaining clearances as required by UL.

e. "Specific breaker placement" is required in panelboards to match the breaker placement indicated in the panelboard schedule on the design drawings. If it is not possible to match "specific breaker placement" during construction, obtain Government approval prior to device installation.

f. Use of "Subfeed Breakers" is not acceptable.

g. Main breaker: "separately" mounted "above" or "below" branch breakers.

h. Where "space only" is indicated, make provisions for future installation of breakers.

i. Directories: indicate load served by each circuit in panelboard.

j. Directories: indicate source of service to panelboard (e.g., Panel PA served from Panel MDP).

k. Provide new directories for existing panels modified by this project as indicated.

l. Type directories and mount in holder behind transparent protective covering.

m. Panelboards: listed and labeled for their intended use.

2.11.1 Enclosure

Provide panelboard enclosure in accordance with the following:

a. UL 50.

b. Cabinets mounted outdoors or flush-mounted: hot-dipped galvanized after fabrication.

c. Cabinets: painted in accordance with paragraph FIELD APPLIED PAINTING.

d. Outdoor cabinets: NEMA 3R raintight with conduit hubs welded to the cabinet.

e. Front edges of cabinets: form-flanged or fitted with structural shapes welded or riveted to the sheet steel, for supporting the panelboard front.

f. All cabinets: fabricated such that no part of any surface on the finished cabinet deviates from a true plane by more than 1/8 inch.

g. Holes: provided in the back of indoor surface-mounted cabinets, with outside spacers and inside stiffeners, for mounting the cabinets with a 1/2 inch clear space between the back of the cabinet and the wall surface.

h. Flush doors: mounted on hinges that expose only the hinge roll to view when the door is closed.

i. Each door: fitted with a combined catch and lock latch.

j. Keys: two provided with each lock, with all locks keyed alike.

k. Finished-head cap screws: provided for mounting the panelboard fronts on the cabinets.

2.11.2 Panelboard Buses

Support bus bars on bases independent of circuit breakers. Design main buses and back pans so that breakers may be changed without machining,

drilling, or tapping. Provide isolated neutral bus in each panel for connection of circuit neutral conductors. Provide separate ground bus identified as equipment grounding bus per UL 67 for connecting grounding conductors; bond to steel cabinet.

2.11.2.1 Panelboard Neutrals for Non-Linear Loads

Provide in accordance with the following:.

a. UL listed, with panelboard type specifically UL heat rise tested for use on non-linear loads.

b. Panelboard: heat rise tested in accordance with UL 67, except with the neutral assembly installed and carrying 200 percent of the phase bus current during testing.

c. Verification of the testing procedure: provided upon request.

d. Two neutral assemblies paralleled together with cable is not acceptable.

e. Nameplates for panelboard rated for use on non-linear loads: marked "SUITABLE FOR NON-LINEAR LOADS" and in accordance with paragraph FIELD FABRICATED NAMEPLATES.

f. Provide a neutral label with instructions for wiring the neutral of panelboards rated for use on non-linear loads.

2.11.3 Circuit Breakers

UL 489, thermal magnetic-type having a minimum short-circuit current rating equal to the short-circuit current rating of the panelboard in which the circuit breaker will be mounted. Breaker terminals: UL listed as suitable for type of conductor provided. Series rated circuit breakers and plug-in circuit breakers that do not use a retaining bolt are unacceptable.

2.11.3.1 Multipole Breakers

Provide common trip-type with single operating handle. Design breaker such that overload in one pole automatically causes all poles to open. Maintain phase sequence throughout each panel so that any three adjacent breaker poles are connected to Phases A, B, and C, respectively.

2.11.3.2 Circuit Breaker With Ground-Fault Circuit Interrupter

UL 943 and NFPA 70. Provide with auto-monitoring (self-test) and lockout features, "push-to-test" button, visible indication of tripped condition, and ability to detect and trip when current imbalance is 6 milliamperes or higher per requirements of UL 943 for Class A ground-fault circuit interrupter devices.

2.11.3.3 LSIG Type Circuit Breakers

Provide circuit breaker rated for the appropriate current and voltage level as indicated by the system design and a short circuit current capacity as indicated for the system's fault levels. The circuit breaker must have a reliable operating mechanism for manual and automatic operation. Provide circuit breaker with a suitable enclosure for the

installation environment (e.g., indoor, outdoor, hazardous locations) and be suitable for the specified environmental conditions (e.g., temperature, humidity, altitude).

2.11.3.3.1 Long-Time Protection (L)

Provide adjustable long-time current protection with a time delay measured in seconds to safeguard against sustained, moderate levels of overcurrent.

2.11.3.3.2 Short-Time Protection (S)

Provide adjustable short-time current protection with a time delay measured in seconds to respond to temporary overcurrent conditions.

2.11.3.3.3 Instantaneous Protection (I)

Provide adjustable instantaneous current protection with no intentional delay to interrupt severe short circuits.

2.11.3.3.4 Ground Fault Protection (G)

Provide ground fault protection with adjustable settings to detect and interrupt ground fault conditions.

2.12 ENCLOSED CIRCUIT BREAKERS

UL 489. Individual molded case circuit breakers with voltage and continuous current ratings, number of poles, overload trip setting, and short circuit current interrupting rating as indicated. Enclosure type as indicated.

2.13 MOTORS

Provide motors in accordance with the following:

a. Hermetic-type sealed motor compressors: Also comply with UL 984.

b. Provide the size in terms of HP, or kVA, or full-load current, or a combination of these characteristics, and other characteristics, of each motor as indicated or specified.

c. Determine specific motor characteristics to ensure provision of correctly sized starters and overload heaters.

d. Rate motors for operation on 208-volt, 3-phase circuits with a terminal voltage rating of 200 volts, and those for operation on 480-volt, 3-phase circuits with a terminal voltage rating of 460 volts.

e. Use motors designed to operate at full capacity with voltage variation of plus or minus 10 percent of motor voltage rating.

f. Unless otherwise indicated, use continuous duty type motors if rated 1 HP and above.

g. Where fuse protection is specifically recommended by the equipment manufacturer, provide fused switches in lieu of non-fused switches indicated.

h. Use Inverter-Rated motors designed to operate with adjustable speed drive (ASD).

2.13.1 High Efficiency Single-Phase Motors

Single-phase fractional-horsepower alternating-current motors: high efficiency types are not acceptable. In exception, for special purpose motors and motor-driven equipment with a minimum seasonal or overall efficiency rating, such as a SEER rating, provide equipment with motor to meet the overall system rating indicated.

2.13.2 Premium Efficiency Polyphase and Single-Phase Motors

Select polyphase and continuous-duty single phase motors based on high efficiency characteristics relative to typical characteristics and applications as listed in NEMA MG 10 and NEMA MG 11. In addition, continuous rated, polyphase squirrel-cage medium induction motors must meet the requirements for premium efficiency electric motors in accordance with NEMA MG 00001, including the NEMA full load efficiency ratings. In exception, for motor-driven equipment with a minimum seasonal or overall efficiency rating, such as a SEER rating, provide equipment with motor to meet the overall system rating indicated. The rotor must be of a permanent magnet type supported by ball bearings to increase motor efficiency and longevity. The motor must maintain 70 percent or greater efficiency for its design application. ECM motors to comply with UL 1004-1.

2.13.3 Electronically Commutated Motors

Provide Electronically Commutated Motor (ECM) designed as a DC brushless motor for variable speed or constant speed motor control. ECM will be complete with and be operated by a single-phase or three-phase integrated controller/inverter. The integrated controller must sense rotor position and electronically commutate the stator windings to provide synchronous rotation. AC power must be rectified, filtered and then converted to DC power. ECM controller must be capable of accepting a 0-10VDC or a 4-20mA signal for manual/automatic control. Ensure efficiency is a minimum of 70 percent over the motors entire operating range.

2.13.4 Motor Sizes

Provide size for duty to be performed, not exceeding the full-load nameplate current rating when driven equipment is operated at specified capacity under most severe conditions likely to be encountered. When motor size provided differs from size indicated or specified, make adjustments to wiring, disconnect devices, and branch circuit protection to accommodate equipment actually provided. Provide controllers for motors rated 1-hp and above with electronic phase-voltage monitors designed to protect motors from phase-loss, undervoltage, and overvoltage. Provide protection for motors from immediate restart by a time adjustable restart relay.

2.13.5 Wiring and Conduit

Provide internal wiring for components of packaged equipment as an integral part of the equipment. Provide power wiring and conduit for field-installed equipment using adjustable speed drive (ASD) manufacturer required wiring type and length as specified herein. Power wiring and conduit: conform to the requirements specified herein. Control wiring: provided under, and conform to, the requirements of the section specifying

the associated equipment.

2.14 MOTOR CONTROLLERS

Provide motor controllers in accordance with the following:

a. UL 508, NEMA ICS 1, and NEMA ICS 2.

b. Provide controllers with thermal overload protection in each phase, and one spare normally open auxiliary contact, and one spare normally closed auxiliary contact.

c. Provide controllers for motors rated 1-hp 746 watts and above with electronic phase-voltage monitors designed to protect motors from phase-loss, undervoltage, and overvoltage.

d. Provide protection for motors from immediate restart by a time adjustable restart relay.

e. When used with pressure, float, or similar automatic-type or maintained-contact switch, provide a hand/off/automatic selector switch with the controller.

f. Connections to selector switch: wired such that only normal automatic regulatory control devices are bypassed when switch is in "hand" position.

g. Safety control devices, such as low and high pressure cutouts, high temperature cutouts, and motor overload protective devices: connected in motor control circuit in "hand" and "automatic" positions.

h. Control circuit connections to hand/off/automatic selector switch or to more than one automatic regulatory control device: made in accordance with indicated or manufacturer's approved wiring diagram.

i. Provide selector switch with the means for locking in any position.

j. Provide a disconnecting means, capable of being locked in the open position, for the motor that is located in sight from the motor location and the driven machinery location. As an alternative, provide a motor controller disconnect, capable of being locked in the open position, to serve as the disconnecting means for the motor if it is in sight from the motor location and the driven machinery location.

k. Overload protective devices: provide adequate protection to motor windings; be thermal inverse-time-limit type; and include manual reset-type pushbutton on outside of motor controller case.

l. Cover of combination motor controller and manual switch or circuit breaker: interlocked with operating handle of switch or circuit breaker so that cover cannot be opened unless handle of switch or circuit breaker is in "off" position.

2.14.1 Control Wiring

Provide control wiring in accordance with the following:

a. All control wire: stranded tinned copper switchboard wire with 600-volt flame-retardant insulation Type SIS meeting UL 44, or Type

MTW meeting UL 1063, and passing the VW-1 flame tests included in those standards.

b. Hinge wire: Class K stranding.

c. Current transformer secondary leads: not smaller than No. 10 AWG.

d. Control wire minimum size: No. 14 AWG.

e. Power wiring for 480-volt circuits and below: the same type as control wiring with No. 12 AWG minimum size.

f. Provide wiring and terminal arrangement on the terminal blocks to permit the individual conductors of each external cable to be terminated on adjacent terminal points.

2.14.2 Control Circuit Terminal Blocks

Provide control circuit terminal blocks in accordance with the following:

a. NEMA ICS 4.

b. Control circuit terminal blocks for control wiring: molded or fabricated type with barriers, rated not less than 600 volts.

c. Provide terminals with removable binding, fillister or washer head screw type, or of the stud type with contact and locking nuts.

d. Terminals: not less than No. 10 in size with sufficient length and space for connecting at least two indented terminals for 10 AWG conductors to each terminal.

e. Terminal arrangement: subject to the approval of the Contracting Officer with not less than four spare terminals or 10 percent, whichever is greater, provided on each block or group of blocks.

f. Modular, pull apart, terminal blocks are acceptable provided they are of the channel or rail-mounted type.

g. Submit data showing that any proposed alternate will accommodate the specified number of wires, are of adequate current-carrying capacity, and are constructed to assure positive contact between current-carrying parts.

2.14.2.1 Types of Terminal Blocks

a. Short-Circuiting Type: Short-circuiting type terminal blocks: furnished for all current transformer secondary leads with provision for shorting together all leads from each current transformer without first opening any circuit. Terminal blocks: comply with the requirements of paragraph CONTROL CIRCUIT TERMINAL BLOCKS above.

b. Load Type: Load terminal blocks rated not less than 600 volts and of adequate capacity: provided for the conductors for NEMA Size 3 and smaller motor controllers and for other power circuits, except those for feeder tap units. Provide terminals of either the stud type with contact nuts and locking nuts or of the removable screw type, having length and space for at least two indented terminals of the size required on the conductors to be terminated. For conductors rated

more than 50 amperes, provide screws with hexagonal heads. Conducting parts between connected terminals must have adequate contact surface and cross-section to operate without overheating. Provide each connected terminal with the circuit designation or wire number placed on or near the terminal in permanent contrasting color.

2.14.3 Control Circuits

Control circuits: maximum voltage of 120 volts derived from control transformer in same enclosure. Transformers: conform to UL 506, as applicable. Transformers, other than transformers in bridge circuits: provide primaries wound for voltage available and secondaries wound for correct control circuit voltage. Size transformers so that 80 percent of rated capacity equals connected load. Provide disconnect switch on primary side.

Control circuits: maximum voltage of 120 volts derived from a separate control source. Provide terminals and terminal boards. Provide separate control disconnect switch within controller. Provide one fused secondary lead with the other lead grounded.

2.14.4 Enclosures for Motor Controllers

NEMA ICS 6.

2.14.5 Multiple-Speed Motor Controllers and Reversible Motor Controllers

Across-the-line-type, electrically and mechanically interlocked. Multiple-speed controllers: include compelling relays and multiple-button, station-type with pilot lights for each speed.

2.14.6 Pushbutton Stations

Provide with "start/stop" momentary contacts having one normally open and one normally closed set of contacts, and red lights to indicate when motor is running. Stations: heavy duty, oil-tight design.

2.15 LOCKOUT REQUIREMENTS

Provide circuit breakers, disconnecting means, and other devices that are electrical energy-isolating capable of being locked out for machines and other equipment to prevent unexpected startup or release of stored energy in accordance with 29 CFR 1910.147, NFPA 70E and 29 CFR 1910.303. Comply with requirements of Division 23, "Heating, Ventilating, and Air Conditioning (HVAC)" for mechanical isolation of machines and other equipment.

2.16 GROUNDING AND BONDING EQUIPMENT

2.16.1 Ground Rods

UL 467. Ground rods: cone pointed copper-clad steel, with minimum diameter of 3/4 inch and minimum length 10 feet. Sectional type rods may be used for rods 20 feet or longer.

2.17 NAMEPLATES AND SIGNS

2.17.1 Manufacturer's Nameplate

Provide on each item of equipment a nameplate bearing the manufacturer's name, address, model number, and serial number securely affixed in a conspicuous place; the nameplate of the distributing agent will not be acceptable.

2.17.2 Field Fabricated Nameplates

Provide field fabricated nameplates in accordance with the following:

a. ASTM D709.

b. Provide laminated plastic nameplates for each equipment enclosure, relay, switch, and device; as specified or as indicated on the drawings.

c. Each nameplate inscription: identify the function and, when applicable, the position.

d. Nameplates: melamine plastic, 0.125 inch thick, white with black center core.

e. Provide red laminated plastic label with white center core where indicated.

f. Surface: matte finish. Corners: square. Accurately align lettering and engrave into the core.

g. Minimum size of nameplates: one by 2.5 inches.

h. Lettering size and style: a minimum of 0.25 inch high normal block style.

2.17.3 Warning Signs

Provide warning signs for flash protection in accordance with NFPA 70E and NEMA Z535.4 for switchboards, panelboards, industrial control panels, and motor control centers that are in other than dwelling occupancies and are likely to require examination, adjustment, servicing, or maintenance while energized. Provide field installed signs to warn qualified persons of potential electric arc flash hazards when warning signs are not provided by the manufacturer. Provide marking that is clearly visible to qualified persons before examination, adjustment, servicing, or maintenance of the equipment.

2.18 FIRESTOPPING MATERIALS

2.19 FACTORY APPLIED FINISH

Provide factory-applied finish on electrical equipment in accordance with the following:

a. NEMA 250 corrosion-resistance test and the additional requirements as specified herein.

b. Interior and exterior steel surfaces of equipment enclosures:

thoroughly cleaned followed by a rust-inhibitive phosphatizing or equivalent treatment prior to painting.

c. Exterior surfaces: free from holes, seams, dents, weld marks, loose scale or other imperfections.

d. Interior surfaces: receive not less than one coat of corrosion-resisting paint in accordance with the manufacturer's standard practice.

e. Exterior surfaces: primed, filled where necessary, and given not less than two coats baked enamel with semigloss finish.

f. Equipment located indoors: ANSI Light Gray, and equipment located outdoors: ANSI Dark Gray.

g. Provide manufacturer's coatings for touch-up work and as specified in paragraph FIELD APPLIED PAINTING.

PART 3 EXECUTION

3.1 INSTALLATION

Electrical installations, including weatherproof and hazardous locations and ducts, plenums and other air-handling spaces: conform to requirements of NFPA 703.1.1 Service Entrance Identification

3.1.1.1 Labels

Wherever work results in service entrance disconnect devices in more than one enclosure, as permitted by NFPA 70, label each enclosure, new and existing, as one of several enclosures containing service entrance disconnect devices. Label, at minimum: indicate number of service disconnect devices housed by enclosure and indicate total number of enclosures that contain service disconnect devices. Provide laminated plastic labels conforming to paragraph FIELD FABRICATED NAMEPLATES. Use lettering of at least 0.25 inch in height, and engrave on black-on-white matte finish. Service entrance disconnect devices in more than one enclosure: provided only as permitted by NFPA 70.

3.1.2 Wiring Methods

Provide insulated conductors installed in rigid steel conduit, IMC, rigid nonmetallic conduit, or EMT, except where specifically indicated or specified otherwise or required by NFPA 70 to be installed otherwise. Grounding conductor: separate from electrical system neutral conductor. Provide insulated green equipment grounding conductor for circuit(s) installed in conduit and raceways. Minimum conduit size: 1/2 inch in diameter for low voltage lighting and power circuits. Vertical distribution in multiple story buildings: made with metal conduit in fire-rated shafts, with metal conduit extending through shafts for minimum distance of 6 inches. Firestop conduit which penetrates fire-rated walls, fire-rated partitions, or fire-rated floors.

3.1.2.1 Pull Wire

Install pull wires in empty conduits. Pull wire: plastic having minimum 200-pound force tensile strength. Leave minimum 36 inches of slack at each end of pull wire.

<AM#0002>~~3.1.2.2 Metal-Clad Cable~~

~~Install in accordance with NFPA 70, Type MC cable. MC Cable is also allowed for branch circuits in the following locations:~~

~~a. New construction in exposed locations.~~

~~b. Renovations in exposed locations.~~

~~c. Concealed in renovations in existing areas where walls and ceilings are not disturbed.~~

~~d. Cable trays.~~

~~MC Cable is prohibited in the following locations:~~

~~a. Feeder circuits other than feeder circuits for aerial messengers between buildings.~~

~~b. Embedded or direct buried locations.~~

~~c. Concealed locations, except as allowed above.~~

</AM#0002>3.1.2.2 Armored Cable

Install in accordance with NFPA 70, Type AC cable.

3.1.3 Conduit Installation

Unless indicated otherwise, conceal conduit under floor slabs and within finished walls, ceilings, and floors. Keep conduit minimum 6 inches away from parallel runs of flues and steam or hot water pipes. Install conduit parallel with or at right angles to ceilings, walls, and structural members where located above accessible ceilings and where conduit will be visible after completion of project.

<AM#0002>~~3.1.3.1 Restrictions Applicable to Aluminum Conduit~~

~~a. Do not install underground or encase in concrete or masonry.~~

~~b. Do not use brass or bronze fittings.~~

~~c. Do not use when the enclosed conductors must be shielded from the effects of High-altitude Electromagnetic Pulse (HEMP).~~

</AM#0002>3.1.3.1 Restrictions Applicable to EMT

a. Do not install underground.

b. Do not encase in concrete, mortar, grout, or other cementitious materials.

c. Do not use in areas subject to physical damage including but not limited to equipment rooms where moving or replacing equipment could physically damage the EMT.

d. Do not use in hazardous areas.

e. Do not use outdoors.

f. Do not use in fire pump rooms.

g. Do not use when the enclosed conductors must be shielded from the effects of High-altitude Electromagnetic Pulse (HEMP).

3.1.3.2 Restrictions Applicable to Nonmetallic Conduit

a. PVC Schedule 40.

(1) Do not use where subject to physical damage, including but not limited to, mechanical equipment rooms, electrical equipment rooms, fire pump rooms, and where restrictions are applying to both PVC Schedule 40 and PVC Schedule 80.

(2) Do not use above grade, except where allowed in this section for rising through floor slab or indicated otherwise.

b. PVC Schedule 80.

(1) Do not use where subject to physical damage, including but not limited to, hospitals, power plant, missile magazines, and other such areas.

(2) Do not use in hazardous (classified) areas.

(3) Do not use in penetrating fire-rated walls or partitions, or fire-rated floors.

-

3.1.3.3 Restrictions Applicable to Flexible Conduit

Use only as specified in paragraph FLEXIBLE CONNECTIONS. Do not use when the enclosed conductors must be shielded from the effects of High-altitude Electromagnetic Pulse (HEMP).

3.1.3.4 Underground Conduit

Plastic-coated rigid steel; plastic-coated steel IMC; PVC, Type EPC-40. Plastic coating: extend minimum 6 inches above floor.

3.1.3.5 Conduit Installed Under Floor Slabs

Conduit run under floor slab: located a minimum of 12 inches below the vapor barrier. Seal around conduits at penetrations thru vapor barrier. Use NECA NEIS 1 Table 2a (Minimum Raceway Spacing) to determine under floor slab conduit spacing unless greater spacing is required elsewhere in this section.

3.1.3.6 Conduit Through Floor Slabs

Where conduits rise through floor slabs, do not allow curved portion of bends to be visible above finished slab. Where conduit rises through slab-on grade, seal all electrical penetrations to address radon mitigation and prevent infiltration of air, insects, and vermin.

3.1.3.7 Conduit Installed in Concrete Floor Slabs or Concrete Walls

Rigid steel; steel IMC; fiberglass, or PVC, Type EPC-40. Locate so as not to adversely affect structural strength of slabs. Install conduit within

middle one-third of concrete slab. Do not stack conduits. Space conduits horizontally not closer than three diameters, except at cabinet locations. Curved portions of bends must not be visible above finish slab. Increase slab thickness as necessary to provide minimum one inch cover over conduit. Where embedded conduits cross building expansion joints, provide suitable watertight expansion/deflection fittings and bonding jumpers. Expansion/deflection fittings must allow horizontal and vertical movement of raceway. Conduit larger than one inch trade size: installed parallel with or at right angles to main reinforcement; when at right angles to reinforcement, install conduit close to one of supports of slab.

3.1.3.8 Stub-Ups

Provide conduits stubbed up through concrete floor for connection to free-standing equipment with adjustable top or coupling threaded inside for plugs, set flush with finished floor. Extend conductors to equipment in rigid steel conduit, except that flexible metal conduit may be used 6 inches above floor. Where no equipment connections are made, install screwdriver-operated threaded flush plugs in conduit end.

3.1.3.9 Conduit Support

Support conduit by pipe straps, wall brackets, threaded rod conduit hangers, or ceiling trapeze. Plastic cable ties are not acceptable. Fasten by wood screws to wood; by toggle bolts on hollow masonry units; by concrete inserts or expansion bolts on concrete or brick; and by machine screws, welded threaded studs, or spring-tension clamps on steel work. Threaded C-clamps may be used on rigid steel conduit only. Do not weld conduits or pipe straps to steel structures. Do not exceed one-fourth proof test load for load applied to fasteners. Provide vibration resistant and shock-resistant fasteners attached to concrete ceiling. Do not cut main reinforcing bars for any holes cut to depth of more than 1 1/2 inches in reinforced concrete beams or to depth of more than 3/4 inch in concrete joints. Fill unused holes. In partitions of light steel construction, use sheet metal screws. In suspended-ceiling construction, run conduit above ceiling. Do not support conduit by ceiling support system. Conduit and box systems: supported independently of both (a) tie wires supporting ceiling grid system, and (b) ceiling grid system into which ceiling panels are placed. Do not share supporting means between electrical raceways and mechanical piping or ducts. Identify independent conduit support in both fire and non-fire rated assemblies per NFPA 70. Coordinate installation with above-ceiling mechanical systems to assure maximum accessibility to all systems. Spring-steel fasteners may be used for lighting branch circuit conduit supports in suspended ceilings in dry locations. Where conduit crosses building expansion joints, provide suitable expansion fitting that maintains conduit electrical continuity by bonding jumpers or other means. For conduits greater than 2 1/2 inches inside diameter, provide supports to resist forces of 0.5 times the equipment weight in any direction and 1.5 times the equipment weight in the downward direction.

3.1.3.10 Directional Changes in Conduit Runs

Make changes in direction of runs with symmetrical bends or cast-metal fittings. Make field-made bends and offsets with hickey or conduit-bending machine. Do not install crushed or deformed conduits. Avoid trapped conduits. Prevent plaster, dirt, or trash from lodging in conduits, boxes, fittings, and equipment during construction. Free

clogged conduits of obstructions.

3.1.3.11 Locknuts and Bushings

Fasten conduits to sheet metal boxes and cabinets with two locknuts where required by NFPA 70, where insulated bushings are used, and where bushings cannot be brought into firm contact with the box; otherwise, use at least minimum single locknut and bushing. Provide locknuts with sharp edges for digging into wall of metal enclosures. Install bushings on ends of conduits, and provide insulating type where required by NFPA 70.

3.1.3.12 Flexible Connections

Provide flexible steel conduit between 3 and 6 feet in length for recessed and semirecessed lighting fixtures; for equipment subject to vibration, noise transmission, or movement; and for motors. Install flexible conduit to allow 20 percent slack. Minimum flexible steel conduit size: 1/2 inch diameter. Provide liquid tight flexible conduit in wet and damp locations for equipment subject to vibration, noise transmission, movement or motors. Provide separate ground conductor across flexible connections. Plastic cable ties are not acceptable as a support method.

3.1.4 Boxes, Outlets, and Supports

Provide boxes in wiring and raceway systems wherever required for pulling of wires, making connections, and mounting of devices or fixtures. Boxes for metallic raceways: cast-metal, hub-type when located in wet locations, when surface mounted on outside of exterior surfaces, and when specifically indicated. Boxes in other locations: sheet steel, except that aluminum boxes may be used with aluminum conduit, and nonmetallic boxes may be used with nonmetallic conduit system. Provide each box with volume required by NFPA 70 for number of conductors enclosed in box. Boxes for mounting lighting fixtures: minimum 4 inches square, or octagonal, except that smaller boxes may be installed as required by fixture configurations, as approved. Boxes for use in masonry-block or tile walls: square-cornered, tile-type, or standard boxes having square-cornered, tile-type covers. Provide gaskets for cast-metal boxes installed in wet locations and boxes installed flush with outside of exterior surfaces. Provide separate boxes for flush or recessed fixtures when required by fixture terminal operating temperature; provide readily removable fixtures for access to boxes unless ceiling access panels are provided. Support boxes and pendants for surface-mounted fixtures on suspended ceilings independently of ceiling supports. Fasten boxes and supports with wood screws on wood, with bolts and expansion shields on concrete or brick, with toggle bolts on hollow masonry units, and with machine screws or welded studs on steel. In open overhead spaces, cast boxes threaded to raceways need not be separately supported except where used for fixture support; support sheet metal boxes directly from building structure or by bar hangers. Where bar hangers are used, attach bar to raceways on opposite sides of box, and support raceway with approved-type fastener maximum 24 inches from box. When penetrating reinforced concrete members, avoid cutting reinforcing steel.

3.1.4.1 Boxes

Boxes for use with raceway systems: minimum 1 1/2 inches deep, except where shallower boxes required by structural conditions are approved. Boxes for other than lighting fixture outlets: minimum 4 inches square, except that 4 by 2 inch boxes may be used where only one raceway enters

outlet.

3.1.4.2 Pull Boxes

Construct of at least minimum size required by NFPA 70 of code-gauge aluminum or galvanized sheet steel, except where cast-metal boxes are required in locations specified herein. Provide boxes with screw-fastened covers. Where several feeders pass through common pull box, tag feeders to indicate clearly electrical characteristics, circuit number, and panel designation.

3.1.4.3 Extension Rings

Extension rings are not permitted for new construction. Use only on existing boxes in concealed conduit systems where wall is furred out for new finish.3.1.5 Mounting Heights

Mount panelboards, enclosed circuit breakers, motor controller and disconnecting switches so height of center of grip of the operating handle of the switch or circuit breaker at its highest position is maximum 79 inches above floor or working platform or as allowed in Section 404.8 per NFPA 70. Mount lighting switches 48 inches above finished floor. Mount receptacles 18 inches above finished floor, unless otherwise indicated. Mount other devices as indicated. Measure mounting heights of wiring devices and outlets in non-hazardous areas to center of device or outlet.

3.1.6 Conductor Identification

Provide conductor identification within each enclosure where tap, splice, or termination is made. For conductors No. 6 AWG and smaller diameter, provide color coding by factory-applied, color-impregnated insulation. For conductors No. 4 AWG and larger diameter, provide color coding by plastic-coated, self-sticking markers; colored nylon cable ties and plates; or heat shrink-type sleeves.

3.1.6.1 Marking Strips

Provide marking strips for identification of power distribution, control, data, and communications cables in accordance with the following:

a. Provide white or other light-colored plastic marking strips, fastened by screws to each terminal block, for wire designations.

b. Use permanent ink for the wire numbers

c. Provide reversible marking strips to permit marking both sides, or provide two marking strips with each block.

d. Size marking strips to accommodate the two sets of wire numbers.

e. Assign a device designation in accordance with NEMA ICS 1 to each device to which a connection is made. Mark each device terminal to which a connection is made with a distinct terminal marking corresponding to the wire designation used on the Contractor's schematic and connection diagrams.

f. The wire (terminal point) designations used on the Contractor's wiring diagrams and printed on terminal block marking strips may be according to the Contractor's standard practice; however, provide additional

wire and cable designations for identification of remote (external) circuits for the Government's wire designations.

g. Prints of the marking strips drawings submitted for approval will be so marked and returned to the Contractor for addition of the designations to the terminal strips and tracings, along with any rearrangement of points required.

3.1.7 Splices

Make splices in accessible locations. Make splices in conductors No. 10 AWGand smaller diameter with insulated, pressure-type connector. Make splices in conductors No. 8 AWG and larger diameter with solderless connector, and cover with insulation material equivalent to conductor insulation.

3.1.8 Covers and Device Plates

Install with edges in continuous contact with finished wall surfaces without use of mats or similar devices. Plaster fillings are not permitted. Install plates with alignment tolerance of 1/16 inch. Use of sectional-type device plates are not permitted. Provide gasket for plates installed in wet locations.

3.1.8.1 Circuit Identification

Indicate the electrical source(s) for the conductors supplying the receptacles or light switches at a given cover/device plate using a 'Panel-Circuit Number' naming convention (e.g., L1-23 for a circuit supplied from Panel L1, Pole Number 23). Labels must be black on a white field. Labels must be digitally printed; handwritten lables are unacceptable. Stenciled lettering must be provided using thermal ink transfer process.

3.1.9 Electrical Penetrations

Seal openings around electrical penetrations through fire resistance-rated walls, partitions, floors, or ceilings.

3.1.10 Grounding and Bonding

Provide in accordance with NFPA 70 and NFPA 780. Ground exposed, non-current-carrying metallic parts of electrical equipment, metallic raceway systems, grounding conductor in metallic and nonmetallic raceways, telecommunications system grounds, and neutral conductor of wiring systems. Make ground connection to driven ground rods on exterior of building. Bond additional driven rods together with a minimum of 4 AWG soft bare copper wire buried to a depth of at least 12 inches. Interconnect all grounding media in or on the structure to provide a common ground potential. This includes lightning protection, electrical service, telecommunications system grounds, as well as underground metallic piping systems. Make interconnection to the gas line on the customer's side of the meter. Use main size lightning conductors for interconnecting these grounding systems to the lightning protection system. Where ground fault protection is employed, ensure that connection of ground and neutral does not interfere with correct operation of fault protection.

3.1.10.1 Ground Rods

Provide ground rods and measure the resistance to ground using the fall-of-potential method described in IEEE 81. Do not exceed 25 ohms under normally dry conditions for the maximum resistance of a driven ground. If this resistance cannot be obtained, provide one additional rods, spaced on center. Spacing for additional rods must be a minimum of 10 feet In high-ground-resistance, UL listed chemically charged ground rods may be used. If the resultant resistance exceeds 25 ohms measured not less than 48 hours after rainfall, notify the Contracting Officer who will decide on the number of ground rods to add.

3.1.10.2 Grounding Connections

Make grounding connections which are buried or otherwise normally inaccessible, excepting specifically those connections for which access for periodic testing is required, by exothermic weld or high compression connector.

a. Make exothermic welds strictly in accordance with the weld manufacturer's written recommendations. Welds which are "puffed up" or which show convex surfaces indicating improper cleaning are not acceptable. Mechanical connectors are not required at exothermic welds.

b. Make high compression connections using a hydraulic or electric compression tool to provide the correct circumferential pressure. Provide tools and dies as recommended by the manufacturer. Use an embossing die code or other standard method to provide visible indication that a connector has been adequately compressed on the ground wire.

3.1.10.3 Resistance

Maximum resistance-to-ground of grounding system: do not exceed 5 ohms under dry conditions. Where resistance obtained exceeds 5 ohms, contact Contracting Officer for further instructions.

3.1.11 Equipment Connections

Provide power wiring and connections to motors and equipment. Except as otherwise specifically noted or specified, automatic control wiring, control devices, and protective devices within the control circuitry are not included in this section of the specifications and are provided under the section specifying the associated equipment.

3.1.12 Government-Furnished Equipment

Contractor make connections to Government-furnished equipment to make equipment operate as intended, including providing miscellaneous items such as plugs, receptacles, wire, cable, conduit, flexible conduit, and outlet boxes or fittings.

3.1.13 Repair of Existing Work

Perform repair of existing work, demolition, and modification of existing electrical distribution systems as follows:

3.1.13.1 Workmanship

Lay out work in advance. Exercise care where cutting, channeling, chasing, or drilling of floors, walls, partitions, ceilings, or other surfaces is necessary for proper installation, support, or anchorage of conduit, raceways, or other electrical work. Repair damage to buildings, piping, and equipment using skilled craftsmen of trades involved.

3.1.13.2 Existing Concealed Wiring to be Removed

Disconnect existing concealed wiring to be removed from its source. Remove conductors; cut conduit flush with floor, underside of floor, and through walls; and seal openings.

3.1.13.3 Removal of Existing Electrical Distribution System

Removal of existing electrical distribution system equipment includes equipment's associated wiring, including conductors, cables, exposed conduit, surface metal raceways, boxes, and fittings, back to equipment's power source as indicated.

3.1.13.4 Continuation of Service

Maintain continuity of existing circuits of equipment to remain. Maintain existing circuits of equipment energized. Restore circuits wiring and power which are to remain but were disturbed during demolition back to original condition.

3.2 FIELD FABRICATED NAMEPLATE MOUNTING

Provide number, location, and letter designation of nameplates as indicated. Fasten nameplates to the device with a minimum of two sheet-metal screws or two rivets. Provide nameplate on all equipment in access controlled spaces and areas.

3.3 WARNING SIGN MOUNTING

Provide the number of signs required to be readable from each accessible side. Space the signs in accordance with NFPA 70E.

3.4 FIELD APPLIED PAINTING

Paint electrical equipment as required to match finish of adjacent surfaces or to meet the indicated or specified safety criteria.

3.5 FIELD QUALITY CONTROL

Furnish test equipment and personnel and submit written copies of test results. Give Contracting Officer 5 working days notice prior to each test. Where applicable, test electrical equipment in accordance with NETA ATS.

3.5.1 Devices Subject to Manual Operation

Operate each device subject to manual operation at least five times, demonstrating satisfactory operation each time.

3.5.2 600-Volt Wiring Test

Test wiring rated 600 volt and less to verify that no short circuits or accidental grounds exist. Perform insulation resistance tests on wiring No. 6 AWG and larger diameter using instrument which applies voltage of 1,000 volts DC for 600 volt rated wiring and 500 volts DC for 300 volt rated wiring per NETA ATS to provide direct reading of resistance. All existing wiring to be reused must also be tested.

3.5.3 Transformer Tests

Perform the standard tests in accordance with the Inspection and Test Procedures for transformers, dry type, air-cooled, 600 volt and below; as specified in NETA ATS. Measure primary and secondary voltages for proper tap settings. Tests need not be performed by a recognized independent testing firm or independent electrical consulting firm.

3.5.4 Ground-Fault Receptacle Test

Test ground-fault receptacles with a "load" (such as a plug in light) to verify that the "line" and "load" leads are not reversed. Press the TEST button and then the RESET button to verify by LED status that the device is a self-test model as specified in UL 943.

3.5.5 Grounding System Test

Test grounding system to ensure continuity, and that resistance to ground is not excessive. Test each ground rod for resistance to ground before making connections to rod; tie grounding system together and test for resistance to ground. Make resistance measurements in dry weather, not earlier than 48 hours after rainfall. Submit written results of each test to Contracting Officer, and indicate location of rods as well as resistance and soil conditions at time measurements were made.

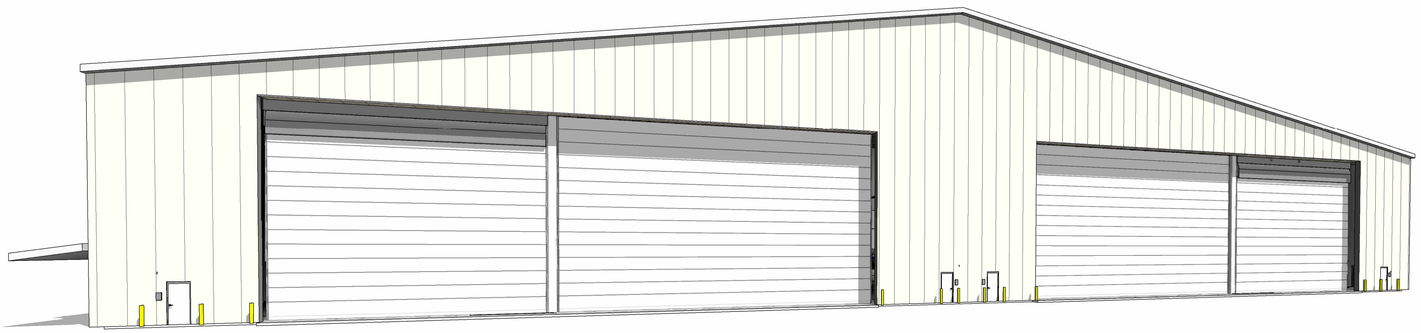
3.5.6 Phase Rotation Test

Perform phase rotation test to ensure proper rotation of service power prior to operation of new or reinstalled equipment using a phase rotation meter. Follow the meter manual directions performing the test.

-- End of Section --

US Army Corps
of Engineers ®
FORT WORTH DISTRICT

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES
MISSION SUPPORT

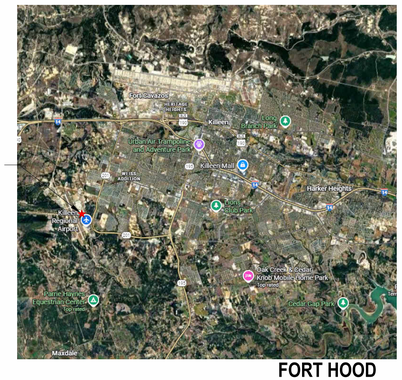


SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:
ISSUE DATE: MAY 28, 2026
VOLUME: DESIGN PACKAGE

PROJECT LOCATION

LOCATION

PROJECT LOCATION



FORT HOOD

VICINITY

STATE OF OKLAHOMA
BRIAN BOURN
MAY 28, 2026
A08515
LICENSED ARCHITECT

Larson Design Group
3817 NW EXPRESSWAY
SUITE 840
OKLAHOMA CITY, OK 73112
(405) 722-7270

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: B. BOURN
DRAWN BY: B. BOURN
CHECKED BY: B. HUNTER
SUBMITTED BY: K. MORGAN
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST, FORT WORTH, TX 76102

LARSON DESIGN GROUP
3817 NW EXPRESSWAY, SUITE 840
OKLAHOMA CITY, OK 73112

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT

COVER SHEET

SHEET ID
G-001

Plot Date: 7/2/2026 2:11:48 PM
File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/B90176 Hangar Door Expansion - R24 - Arch.rvt

MATERIALS LEGEND

FOR PLANS AND DETAILS

- EXISTING WALL
- FACE BRICK
- CONCRETE BLOCK
- CONCRETE
- FRAME PARTITION (METAL STUD)
- ROUND STEEL COLUMN
- SQUARE STEEL COLUMN
- WIDE FLANGE STEEL COLUMN
- SQUARE CONCRETE COLUMN

FOR DETAILS

- GYPSUM BOARD
- GYPSUM SHEATHING
- PLYWOOD
- RIGID INSULATION BOARD
- INSULATED PANEL
- WOOD FRAMING (CONTINUOUS MEMBER)
- WOOD BLOCKING (DISCONTINUOUS MEMBER)
- FINISH WOOD
- MISCELLANEOUS METAL
- ALUMINUM
- BATT INSULATION
- EARTH FILL

NOTE: ABOVE MATERIAL INDICATIONS ARE STANDARD AND ARE NOT INTENDED AS A COMPLETE LISTING OF MATERIALS ON THE JOB.

SYMBOLS LEGEND

- PLAN NORTH / TRUE NORTH — NORTH ARROW SYMBOLS
- PLAN NORTH — 3-DIMENSIONAL ISOMETRIC NORTH ARROW SYMBOL
- X100.25 — EXISTING SPOT ELEVATION
- 103 — FINISH SPOT ELEVATION
- 100 — EXISTING GRADE CONTOUR
- 103 — FINISH GRADE CONTOUR
- 15' OAK — EXISTING TREE TO BE PROTECTED
- 18' ELM — EXISTING TREE TO BE REMOVED

SYMBOLS LEGEND

- PROPERTY LINE
- PAVING (CONCRETE)
- PAVING (ASPHALT)
- CONCRETE WALK
- TEST HOLE
- BENCHMARK / SPOT ELEVATION
- EXISTING BUILDING TO REMAIN
- EXISTING BUILDING TO BE REMOVED
- EXISTING BUILDING TO BE MODIFIED
- NEW BUILDING
- FENCE
- L8 / A-201 — ELEV INDICATED / SHEET WHERE ELEV IS DRAWN — EXTERIOR ELEVATION REF.
- L8 / A-201 — ELEV INDICATED / SHEET WHERE ELEV IS DRAWN — INTERIOR ELEVATION REF.
- 101 — DOOR NUMBER
- 1t — FRAME ELEVATION
- 1i — PARTITION TYPE
- 0 / 0 — STRUCTURAL GRID COORDINATES
- 1 A101 SIM — BUILDING SECTION CUT MARK
- 1 A101 SIM — WALL SECTION CUT MARK
- 1 A101 SIM — DETAIL SECTION CUT MARK
- 1 A101 SIM — DETAIL INDICATED / SHEET WHERE DETAIL IS DRAWN
- LARGER SCALE DETAIL MARK
- Room name / 101 — ROOM NAME AND NUMBER
- 512 — CASEWORK SECTION IDENTIFICATION NUMBER — CASEWORK TAG, REF. CASEWORK SECTION SHEETS
- 1/A101 — GENERAL DIRECTION OF VIEW / SHEET WHERE VIEW IS DRAWN / VIEW INDICATED — 3-DIMENSIONAL ISOMETRIC VIEW REF.
- VIEW INDICATED / 1/A101 — SHEET WHERE VIEW IS DRAWN / GENERAL DIRECTION OF VIEW — 3-DIMENSIONAL CAMERA/ PERSPECTIVE VIEW REF.

NOTE: ADDITIONAL SYMBOLS/ABBREVIATIONS NOT SHOWN OR DEFINED WITHIN THIS SHEET MAY OCCUR AND ARE DEFINED ON OTHER DRAWINGS.

ABBREVIATIONS

AB	ABOVE
ADJ	ADJUSTABLE
AFF	ABOVE FINISH FLOOR
ALUM	ALUMINUM
APPROX, APP	APPROXIMATELY
ATFP, AT/FP	ANTI-TERRORISM/FORCE PROTECTION
AWC	ACOUSTICAL WALL COVERING
BLDG	BUILDING
BM	BENCH MARK
BRG	BEARING
BTM	BOTTOM
℄	CENTERLINE
CFCI	CONTRACTOR FURNISHED, CONTRACTOR INSTALLED
CFOI	CONTRACTOR FURNISHED, OWNER INSTALLED
CJ	CONTROL JOINT
CLG	CEILING
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONT	CONTINUOUS
DF	DRINKING FOUNTAIN
DIA	DIAMETER
DIM	DIMENSION
DN	DOWN
DTL	DETAIL
DWR	DRAWER
EJ, EXP JT	EXPANSION JOINT
ELEC	ELECTRICAL
ELEV	ELEVATION
EQ	EQUAL
EWC	ELECTRIC WATER COOLER
EXIST, EXSTG	EXISTING
EXT, EXTR	EXTERIOR
FD	FLOOR DRAIN
FE	FIRE EXTINGUISHER
FEB	FIRE EXTINGUISHER BRACKET
FEC	FIRE EXTINGUISHER CABINET
FF, FIN FLR	FINISH FLOOR
FH	FIRE HYDRANT
FHC	FIRE HOSE CABINET
FIO	FOR INFORMATION ONLY
FL	FLOW LINE
GA	GAUGE
GI	GALVANIZED IRON
GWB, GYP BD	GYPSUM BOARD
HC, HDCP	HANDICAPPED (ACCESSIBLE)
HD	HEAD
HDWR	HARDWARE
HM	HOLLOW METAL
HORIZ	HORIZONTAL
HT	HEIGHT
INSUL	INSULATION
INT, INTR	INTERIOR
JST	JOIST
JT	JOINT
LAM	LAMINATE
LAV	LAVATORY
LP	LIGHT POLE
MATL	MATERIAL
MAX	MAXIMUM
MB	MARKER BOARD
MECH	MECHANICAL
MFR, MFG	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
NIC	NOT IN CONTRACT
NO	NUMBER
NTS	NOT TO SCALE
OC	ON CENTER
OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED, OWNER INSTALLED
OPNG	OPENING
OPP	OPPOSITE
PL	PLATE
PLYWD	PLYWOOD
R	RADIUS OR RISER
RE:, REF	REFER
REINF	REINFORCING / REINFORCED
REQD	REQUIRED
RI	ROUGH IN
RM	ROOM
RO	ROUGH OPENING
SB	SMART BOARD
SC	SOLID CORE
SCHED	SCHEDULE / SCHEDULED
SIM	SIMILAR
SJ	SCORED JOINT
SPECS	SPECIFICATIONS
SQ	SQUARE
SS	STAINLESS STEEL
STL	STEEL
STRUCT	STRUCTURAL
TB	TACK BOARD
TOC	TOP OF CURB
TOM	TOP OF MASONRY
TOS	TOP OF STEEL
TOW	TOP OF WALL
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
WD	WOOD

DRAWING INDEX

NUMBER	NAME
GENERAL	
G-001	COVER SHEET
G-002	SHEET INDEX, SYMBOLS AND ABBREVIATIONS
G-003	ACCESSIBILITY REQUIREMENTS
G-004	GENERAL CONVENTIONS
4	
LIFE SAFTEY	
LP001	LIFE SAFETY CODE COMPLIANCE PLAN
LP101	LIFE SAFETY FLOOR PLAN - OVERALL
2	
CIVIL	
GC001	GENERAL NOTES
CD101	DEMOLITION PLAN
CS101	SITE PLAN
CS102	PROJECT LOCATION AND STAGING AREA MAP
CS501	SITE DETAILS
5	
STRUCTURAL	
S-001	GENERAL STRUCTURAL NOTES, DESIGN LOADS & ABBREVIATIONS
S-002	GENERAL STRUCTURAL NOTES
SD101	DEMO FOUNDATION PLAN AREA - HA, HB, HC & HD
SD102	ENLARGED DEMO FLOOR PLAN AREA HB & HC
SD201	DEMO ELEVATION PLAN AREA HB & HC
SD202	ENLARGED DEMO ELEVATION PLAN - AREA HB
SD203	ENLARGED DEMO ELEVATION PLAN - AREA HC
S-101	OVERALL NEW FOUNDATION PLAN
S-102	ENLARGED NEW FOUNDATION PLAN
S-111	OVERALL NEW CATWALK FRAMING PLAN - AREA HB & HC
S-112	NEW CATWALK FRAMING PLAN - AREA HB
S-113	NEW CATWALK FRAMING PLAN - AREA HC
S-121	OVERALL ROOF FRAMING PLAN
S-122	NEW FRAMING PLAN - AREA HB
S-123	NEW FRAMING PLAN - AREA HC
S-200	NEW CONSTRUCTION OVERALL ELEVATION AREA HB & HC
S-201	ENLARGED NEW CONSTRUCTION ELEVATION AREA - HB
S-202	ENLARGED NEW CONSTRUCTION ELEVATION AREA - HC
S-203	OVERALL INTERIOR FRAMING ELEVATION AREA - HB & HC
S-204	ENLARGED INTERIOR FRAMING ELEVATION - AREA HB
S-205	ENLARGED INTERIOR FRAMING ELEVATION - AREA HC
S-206	NEW CATWALK FRAMING ELEVATIONS AND SECTION
S-301	STRUCTURAL SECTIONS
S-500	CONCRETE DETAILS
S-501	TYPICAL STRUCTURAL DETAILS
S-502	STRUCTURAL DETAILS
S-503	STRUCTURAL DETAILS
S-504	STRUCTURAL DETAILS
S-505	STRUCTURAL DETAILS
S-506	STRUCTURAL DETAILS
S-901	STRUCTURAL FRAMING ISOMETRIC
31	
ARCHITECTURAL	
AD101	DEMOLITION FIRST FLOOR PLAN
AD301	DEMOLITION BUILDING ELEVATION
A-101	FIRST FLOOR PLAN - OVERALL
A-104	FIRST FLOOR PLAN - AREA HA
A-105	FIRST FLOOR PLAN - AREA HB
A-106	FIRST FLOOR PLAN - AREA HC
A-107	FIRST FLOOR PLAN - AREA HD
A-109	FIRST FLOOR PLAN - OVERALL - VEHICLE TOW PLAN
A-111	HANGAR REFLECTED CEILING PLAN
A-113	HANGAR CATWALK ENLARGED PLAN
A-201	EXTERIOR ELEVATIONS
A-310	WALL SECTIONS
A-311	WALL SECTIONS
A-601	DOOR SCHEDULE
14	
INTERIORS	
I-100	OVERALL FINISH FLOOR PLAN
I-110	OVERALL SIGNAGE PLAN
I-114	OVERALL STRIPING PLAN
I-501	FINISH DETAILS
I-502	SIGNAGE DETAILS
I-601	FINISH MATERIAL COLOR LEGEND
6	

NUMBER	NAME
FIRE PROTECTION	
FA001	GENERAL FIRE ALARM INFORMATION
FAD101	FIRE ALARM DEMO FLOOR PLAN - HB
FAD102	FIRE ALARM DEMO FLOOR PLAN - HC
FA101	FIRE ALARM FLOOR PLAN - OVERALL
FA102	FIRE ALARM FLOOR PLAN - HB
FA103	FIRE ALARM FLOOR PLAN - HC
FP001	GENERAL FIRE PROTECTION INFORMATION
FP101	FIRE PROTECTION FLOOR PLAN - OVERALL
8	
PLUMBING	
P-001	PLUMBING LEGEND
PD100	DEMOLITION PLAN - PLUMBING - OVERALL
PD101	DEMOLITION PLAN - PLUMBING - AREA HB
PD102	DEMOLITION PLAN - PLUMBING - AREA HC
P-100	FLOOR PLAN - PLUMBING - OVERALL
P-101	FLOOR PLAN - PLUMBING - AREA HB
P-102	FLOOR PLAN - PLUMBING - AREA HC
P-301	PLUMBING SECTION
P-501	PLUMBING DETAILS
P-601	PLUMBING SCHEDULES
10	
ELECTRICAL	
E-000	LEGEND, ABBREVIATIONS & NOTES
ED101	FLOOR PLAN - DEMO - OVERALL
ED501	DEMO ELECTRICAL SCHEDULES
E-101	FLOOR PLAN - POWER - OVERALL
E-102	FLOOR PLAN - POWER - AREA A
E-103	FLOOR PLAN - POWER - AREA B
E-104	FLOOR PLAN - POWER - AREA HA
E-105	FLOOR PLAN - POWER - AREA HB
E-106	FLOOR PLAN - POWER - AREA HC
E-107	FLOOR PLAN - POWER - AREA HD
E-201	ELEVATION - POWER - AREA HB
E-202	ELEVATION - POWER - AREA HC
E-501	ELECTRICAL SCHEDULES
E-601	EXISTING ONE-LINE DIAGRAM
E-602	HANGAR DOOR ELECTRICAL LOAD DIAGRAM
15	
TOTAL SHEETS IN SET: 95	

STATE OF OKLAHOMA
BRIAN BOURN
MAY 28, 2026
A08515
LICENSED ARCHITECT

LDG
Larson Design Group
3817 NW EXPRESSWAY
SUITE 840
OKLAHOMA CITY, OK 73112
(405) 722-7270

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: B. BOURN
DRAWN BY: B. BOURN
CHECKED BY: B. HUNTER
SUBMITTED BY: T. MORGAN
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST, FORT WORTH, TX 76102

LARSON DESIGN GROUP
3817 NW EXPRESSWAY, SUITE 840
OKLAHOMA CITY, OK 73112

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT

SHEET INDEX, SYMBOLS AND ABBREVIATIONS

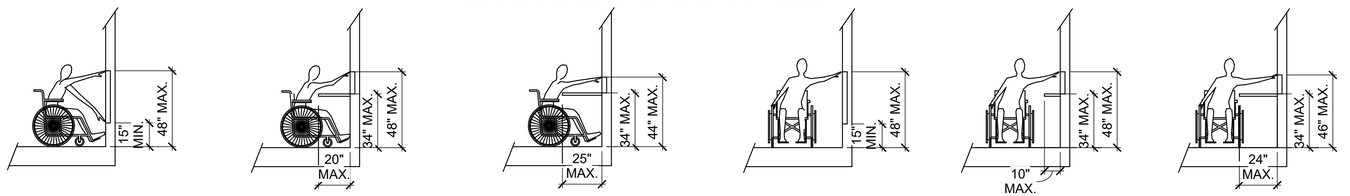
SHEET ID
G-002

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/B90176 Hangar Door Expansion - R24 - Arch.rvt
Plot Date: 7/2/2026 2:11:48 PM

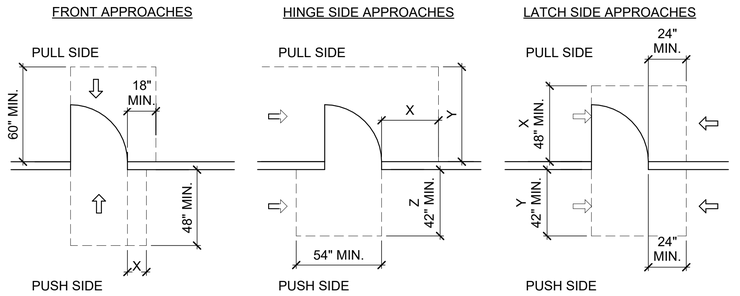
TYPICAL HANDICAP ACCESSIBLE MOUNTING HEIGHTS ABOVE FINISH FLOOR

DIMENSION NAME	ELEMENT	ANSI A117.1 GUIDELINE REFERENCE	MOUNTING HEIGHT REFERENCE ABOVE F.F.	ADDITIONAL COMMENTS
M1	DRINKING FOUNTAIN (STANDING)	602.4	SPOUT HT.	
M2	DRINKING FOUNTAIN (WHEELCHAIR)	602.4	SPOUT HT.	FOR SPOUT 30" OR LESS, 24" KNEE AND 12" TOE CLEARANCE NOT REQUIRED IF PARALLEL APPROACH IS PROVIDED
M3	GRAB BAR AT TOILET - 18" VERTICAL	604.5	TO BOTTOM OF RAIL	
M4	GRAB BARS AT TOILET - HORIZONTAL	604.9 & 609.4	TO TOP SURFACE OF RAIL	THE GRAB BAR ON REAR WALL OF NON-ADULT TOILETS CAN BE SPLIT WHEN IT CONFLICTS WITH WATER VALVE
M5A	HANDRAILS	505.4	TO TOP SURFACE OF RAIL	M5A = ADULT DIMENSION, DIMENSION OF SECOND HANDRAIL TO F.F.
M6	LAVATORY	606.3	TO HIGHEST POINT OF LAVATORY RIM OR COUNTER	
M7	MIRROR	606.3	TO BOTTOM EDGE OF REFLECTING SURFACE	
M8	MIRROR ABOVE LAVATORY	606.3	TO BOTTOM EDGE OF REFLECTING SURFACE	
M9	TOILET PAPER DISPENSOR	604.7 & 604.10	TO BOTTOM OF DISPENSER OUTLET	
M10	URINAL	605	TO RIM, 13-1/2" MIN PROJECTION	
M11	URINAL FLUSH CONTROLS	605.4 & 309	TO TOP OF CONTROL	
M12	TOILET SEAT HEIGHT	604.4		
M13	WATER CLOSET FLUSH CONTROLS	604.6	LOCATED ON WHEELCHAIR SIDE	
P1	WATER CLOSET CENTERLINE FROM WALL	604.2	WALL TO CENTERLINE OF WATER CLOSET	
	FIRE EXTINGUISHER	308	TO RELEASE CLAMP	

IBC/ANSI/ADAAG SECTION 308 - ADULT REACH RANGES



IBC/ANSI/ADAAG - ACCESSIBLE ROUTE
(TYPICAL FOR ALL DOORS)



HANDICAP ACCESSIBILITY ANALYSIS

I. APPLICABLE CODES AND CRITERIA

IN ORDER TO PROVIDE THE BEST ACCESSIBILITY, THE MOST STRINGENT REQUIREMENTS OF THE GUIDELINES BELOW HAVE BEEN EMPLOYED IN THIS DESIGN.

A. INTERNATIONAL BUILDING CODE 2018 (IBC) INTERNATIONAL CODE COUNCIL / AMERICAN NATIONAL STANDARDS INSTITUTE ICC / ANSI A117.1 - 2003

B. ARCHITECTURAL BARRIERS ACT (ABA) STANDARD (DESIGN REQUIREMENTS MANUAL, SECTION 1.9)

II. PROJECT SCOPE

A. REMODEL

III. PRIMARY USER GROUPS

A. ADULTS

IV. ASSEMBLY SEATING ANALYSIS - NOT APPLICABLE

LEGEND

- ACCESSIBLE PARKING SPACE FOR CARS OR VANS OR ACCESSIBLE SEAT
- ACCESSIBLE ENTRANCE
- ACCESSIBLE ROUTE TO ACCESSIBLE ENTRANCES OR FACILITIES
- 60" WHEELCHAIR TURNING AREA
- HC — ACCESSIBLE ELEMENT
- AR — AREA OF REFUGE
- T-TURN FOR WHEELCHAIR ACCESS

LDG
Larson Design Group
3817 NW EXPRESSWAY
SUITE 840
OKLAHOMA CITY, OK 73112
(405) 722-7270

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: B. BOURN
DRAWN BY: B. BOURN
CHECKED BY: B. HUNTER
SUBMITTED BY: T. JORDAN
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST, FORT WORTH, TX 76102

LARSON DESIGN GROUP
3817 NW EXPRESSWAY, SUITE 840
OKLAHOMA CITY, OK 73112

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT

ACCESSIBILITY REQUIREMENTS

SHEET ID

G-003

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/B90176 Hangar Door Expansion - R24 - Arch.rvt

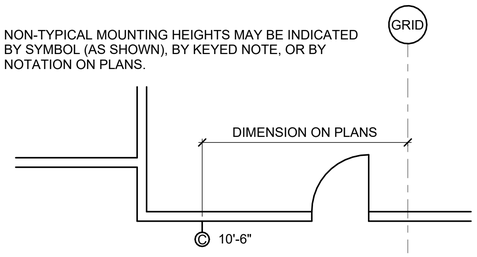
Plot Date: 7/2/2026 2:11:49 PM

TYPICAL RULES FOR DETERMINING MOUNTING HEIGHTS, LOCATIONS AND CONFIGURATIONS

LOCATE ITEMS AS INDICATED WHEN SHOWN DIMENSIONED (BOTH HORIZ AND VERT) BY A PLAN OR DETAIL PLAN.

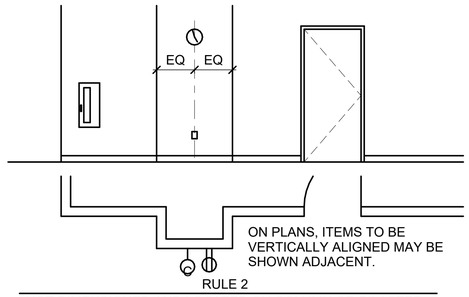
SPECIFIC VERT DIMENSIONS SHOWN BY ELEVATIONS, SECTIONAL ELEVATIONS, OR DETAIL ELEVATIONS AND SPECIFIC HORIZ DIM SHOWN BY PLANS AND DETAIL PLANS TAKE PRECEDENCE OVER TYPICAL MOUNTING HEIGHTS AND LOCATION RULES.

NON-TYPICAL MOUNTING HEIGHTS MAY BE INDICATED BY SYMBOL (AS SHOWN), BY KEYED NOTE, OR BY NOTATION ON PLANS.



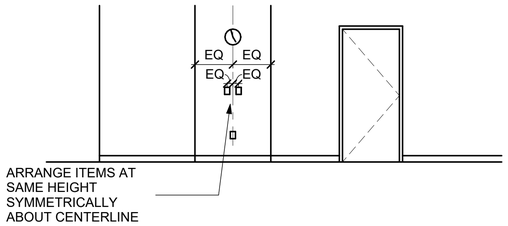
RULE 1
WHEN COMPLETELY DIMENSIONED ON PLANS

WHEN NOT DIMENSIONED AND SHOWN LOCATED ON A COLUMN OR PILASTER, AND WHEN NO OTHER TYPICAL CONFIGURATION DIAGRAM APPLIES: HORIZONTALLY CENTER ITEM ON FACE OF COLUMN OR PILASTER. ALIGN VERTICALLY CENTERS OF MULTIPLE ITEMS HAVING DIFFERING TYPICAL MOUNTING HEIGHTS.
WHEN MULTIPLE ITEMS HAVING THE SAME TYP MOUNTING HEIGHT ARE INDICATED, HORIZONTALLY CENTER GROUP OF ITEMS ON FACE OF COLUMN OR PILASTER (SEE RULE 3).



RULE 2
NOT DIMENSIONED AND LOCATED ON COLUMN OR PILASTER

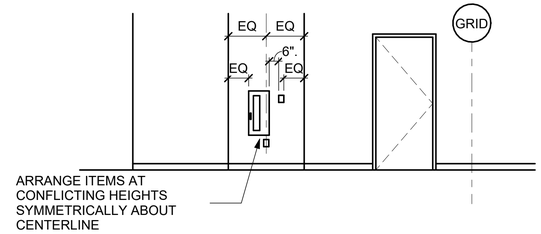
WHEN NOT DIMENSIONED AND SHOWN LOCATED ON A COLUMN OR PILASTER, AND WHEN NO OTHER TYPICAL CONFIGURATION DIAGRAM APPLIES: HORIZ CENTER GROUP OF SIMILAR ITEMS HAVING THE SAME MOUNTING HEIGHT(S) ABOUT THE CENTERLINE OF THE COLUMN OR PILASTER.
WHEN APPLICABLE, COMBINE THIS RULE WITH RULE 2 (PREVIOUS) TO SYMMETRICALLY ARRANGE GROUPS OF ITEMS HAVING BOTH DIFFERING AND SIMILAR MOUNTING HEIGHTS.



RULE 3
NOT DIMENSIONED AND LOCATED ON COLUMN OR PILASTER

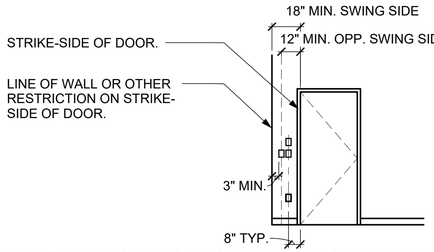
WHEN NOT DIMENSIONED AND SHOWN LOCATED ON A COLUMN OR PILASTER, AND WHEN NO OTHER TYPICAL CONFIGURATION DIAGRAM APPLIES: HORIZONTALLY CENTER GROUP OF DISSIMILAR ITEMS HAVING CONFLICTING MOUNTING HEIGHT(S) ABOUT THE CENTERLINE OF THE COLUMN OR PILASTER.

WHEN APPLICABLE, COMBINE THIS RULE WITH RULE 2 AND/OR RULE 3 (PREVIOUS) TO SYMMETRICALLY ARRANGE GROUPS OF ITEMS HAVING DIFFERING, SIMILAR, AND CONFLICTING MOUNTING HEIGHTS.



RULE 4
NOT DIMENSIONED AND LOCATED ON COLUMN OR PILASTER

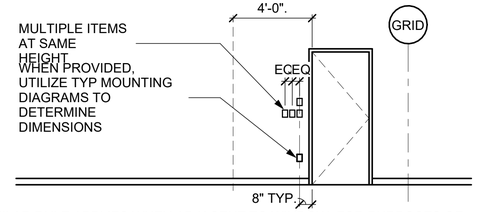
WHEN NOT DIMENSIONED AND SHOWN LOCATED ADJ TO STRIKE SIDE OF DOOR, AND WHEN STRIKE-SIDE CLEARANCE IS BETWEEN 12 INCHES AND 18 INCHES, AND WHEN NO OTHER TYPICAL CONFIGURATION DIAGRAM APPLIES: MOUNT ITEMS IN RELATION TO FRAME USING TYP OFFSET DIMENSION. VERTICALLY ALIGN CENTERS OF ITEMS MOUNTED AT DIFFERENT HEIGHTS.



WHEN MULTIPLE ITEMS HAVING THE SAME TYP MTG HGT ARE INDICATED, MOUNT FIRST ITEM IN RELATION TO FRAME USING TYP OFFSET DIM AND PLACE REMAINING ADJ TO FIRST ON SIDE OPP FRAME AS ILLUSTRATED BY THIS DIAGRAM. DO NOT CROWD MULTIPLE ITEMS AGAINST WALL OR RESTRICTION.

RULE 5
NOT DIMENSIONED AND LOCATED ADJ TO MIN STRIKE-SIDE OF DOOR

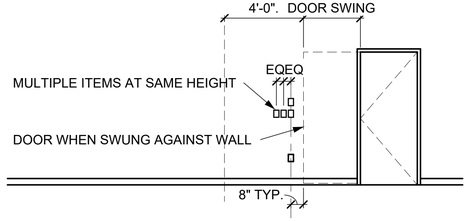
WHEN NOT DIMENSIONED AND SHOWN LOCATED ADJACENT TO DOOR, AND WHEN NO OTHER TYPICAL CONFIGURATION DIAGRAM APPLIES: MOUNT ITEMS IN RELATION TO FRAME USING TYP OFFSET DIMENSION. VERTICALLY ALIGN CENTERS OF ITEMS MOUNTED AT DIFFERENT HEIGHTS.
WHEN MULTIPLE ITEMS HAVING THE SAME TYP MOUNTING HEIGHT ARE INDICATED, MOUNT FIRST ITEM IN RELATION TO FRAME USING TYP OFFSET DIMENSION AND PLACE REMAINING ITEMS ADJACENT TO FIRST ON SIDE OPPOSITE FRAME AS ILLUSTRATED BY THIS DIAGRAM.



SIMILAR RULE APPLIES WHEN ADJACENT TO WINDOW. FOR PURPOSES OF THESE RULES, ITEMS SHOWN APPROX LOCATED WITHIN 4 FEET OF DOOR ARE CONSIDERED TO BE ADJACENT TO DOOR (OR WINDOW).

RULE 6
NOT DIMENSIONED AND LOCATED ADJACENT TO DOOR (OR WINDOW)

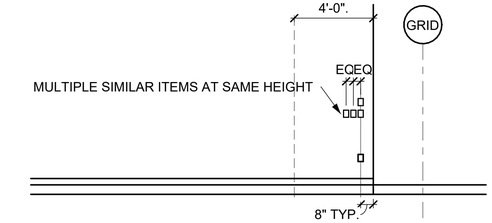
WHEN NOT DIMENSIONED AND SHOWN LOCATED ADJACENT TO DOOR, AND WHEN NO OTHER TYPICAL CONFIGURATION DIAGRAM APPLIES: MOUNT ITEMS IN RELATION TO SWING USING TYP OFFSET DIMENSION. VERTICALLY ALIGN CENTERS OF ITEMS MOUNTED AT DIFFERENT HEIGHTS.
WHEN MULTIPLE ITEMS HAVING THE SAME TYP MOUNTING HEIGHT ARE INDICATED, MOUNT FIRST ITEM IN RELATION TO SWING USING TYP OFFSET DIMENSION AND PLACE REMAINING ITEMS ADJACENT TO FIRST ON SIDE OPPOSITE FRAME AS ILLUSTRATED BY THIS DIAGRAM.



FOR PURPOSES OF THESE RULES, ITEMS SHOWN APPROX. LOCATED WITHIN 4 FEET OF OPEN DOOR ARE CONSIDERED TO BE ADJACENT TO DOOR.

RULE 7
NOT DIMENSIONED AND LOCATED ADJ TO DOOR AND ON WALL AGAINST WHICH DOOR SWINGS

WHEN NOT DIMENSIONED AND SHOWN LOCATED ADJ TO CHANGE IN PLANE OF WALL, AND WHEN NO OTHER TYP CONFIGURATION DIAGRAM APPLIES: MOUNT ITEMS IN RELATION TO PLANE CHANGE USING TYP OFFSET DIM. VERTICALLY ALIGN CENTERS OF ITEMS MOUNTED AT DIFFERENT HEIGHTS.
WHEN MULTIPLE SIMILAR ITEMS HAVING THE SAME TYP MTG HEIGHT ARE INDICATED, MOUNT FIRST ITEM IN RELATION TO PLANE CHANGE USING TYP OFFSET DIMENSION AND PLACE REMAINING ITEMS ADJACENT TO FIRST ON SIDE OPPOSITE PLANE CHANGE AS ILLUSTRATED BY THIS DIAGRAM.



FOR PURPOSES OF THESE RULES, ITEMS SHOWN APPROX LOCATED WITHIN 4 FEET OF PLANE CHANGE ARE CONSIDERED TO BE ADJACENT TO CHANGE IN PLANE.

RULE 8
WHEN NOT DIMENSIONED AND LOCATED ADJACENT TO CHANGE IN WALL DIRECTION

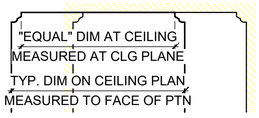
ARCHITECTURAL DIMENSIONING CONVENTIONS

1. EXCEPT WHERE DIRECTED TO PLACE ITEMS OF THE WORK AT THE "APPROXIMATE LOCATION SHOWN," DO NOT SCALE THE DRAWINGS FOR DIMENSIONAL INFORMATION.
2. ALL ELEMENTS OF THE DRAWINGS MAY NOT BE DRAWN TO EXACT SCALE. ALL DIMENSIONS REQUIRED ARE SHOWN (OR MAY BE DERIVED FROM THOSE SHOWN OR NOTED) ONT HE FLOOR PLANS, DETAIL PLANS, ELEVATIONS, SECTIONS, SCHEDULES, CONFIGURATION DETAILS AND SPECIFICATIONS. SEE THE NOTES BELOW AND "SYMBOLS AND ABBREVIATIONS" SHEET FOR DIMENSIONING, GRAPHIC AND OTHER TYPICAL CONVENTIONS USED ON THIS PROJECT.
3. EXCEPT WHERE SPECIFICALLY NOTED TO THE CONTRARY, ALL DIMENSIONS SHOWN ON THE ARCHITECTURAL DRAWINGS CONFORM TO THE FOLLOWING CONVENTIONS:
   A. GENERALLY, DIMENSIONS ARE MEASURED TO:
   - STRUCTURAL OR DIMENSIONAL GRID LINES.
   - CENTERLINE OF STUD (EXCLUSIVE OF GWB, AND ANY APPLIED FINISHES HAVING THICKNESS WHICH MAY BE ADDED TO SUCH WALLS) AT PARTITIONS FRAMED WITH METAL STUDS. REFER TO "PARTITION TYPES" SCHEDULE TO DETERMINE THICKNESS OF EACH PARTITION TYPE.
   - FACE OF CONCRETE OR MASONRY WALL (EXCLUSIVE OF ANY FURRING OR APPLIED FINISHES HAVING THICKNESS WHICH MAY BE ADDED TO SUCH WALLS) AT WALLS WITH CONCRETE OR MASONRY COMPONENTS. REFER TO STRUCTURAL DRAWINGS AND "PARTITION TYPES" SCHEDULE TO DETERMINE THICKNESS OF EACH PARTITION TYPE.
   - FACE OF APPLIED FINISH IF NOTED AS A "FACE OF FINISH" OR "CLEAR" DIMENSION. SEE NOTE 'B' BELOW.
   - OUTSIDE EDGE OF HOLLOW METAL DOOR AND WINDOW FRAMES. REFER TO THE "DOOR SCHEDULE" AND "FRAME ELEVATIONS" FOR ADDITIONAL DIMENSIONAL INFORMATION.
   - INSIDE EDGE OF FINISHED WALL OPENING AT OTHER DOORS, WINDOWS AND CURTAIN WALLS. REFER TO THE "DOOR SCHEDULE" AND "FRAME ELEVATIONS" FOR ADDITIONAL DIMENSIONAL INFORMATION.
   - DIMENSION OR WORK POINTS AS INDICATED ON RELATED ARCH DETAIL, PLAN, SECTION, ELEVATION, LAYOUT OR CONFIGURATION DETAIL, OR CONSTRUCTION DETAIL.

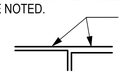
   B. WHERE "FACE OF FINISH" OR "CLEAR" DIMENSIONS ARE SPECIFICALLY NOTED, THE DIM IS MEASURED TO:
   - FINISH FACES AT THE MOST NARROW OR CONSTRICTED POINT OF SECTION WHERE DIMENSION IS SHOWN, WHEN THE DIMENSION OCCURS ACROSS AN OPEN SPACE. IN THIS CASE, A "FACE OF FINISH" DIMENSION IS EQUIVALENT TO A "CLEAR" DIMENSION.
   - FINISH FACES AT THE WIDEST OR MOST EXPANSIVE POINTS OF THE SECTION THE DIMENSION IS SHOWN WHEN THE DIMENSION OCCURS ACROSS AN OBJECT OR GROUP OF OBJECTS.

   C. WHERE "EQUAL" DIMENSIONS ARE USED:
   - IN CASEWORK AND OTHER SUCH ELEMENTS, "EQUAL" DIMENSIONS ARE NOT INTENDED TO REQUIRE CUSTOM COMPONENTS. SUCH "EQUAL" ELEMENTS SHALL BE THE SAME SIZE, AT THE STANDARD SIZE INCREMENT THAT MOST NEARLY EQUALS THE DESIGNED OVERALL DIMENSION. IN THESE CONDITIONS, EQUAL SIZE FILLER PANELS ARE INTENDED AND REQUIRED AT EACH END OF THE RUN.

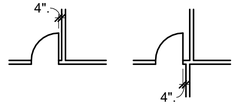
   D. WHERE "EQUAL" DIMENSIONS ARE USED ON REFLECTED CEILING PLANS TO LOCATE CEILING GRID WORK POINTS, MEASURE DIMENSIONS TO:
   - EDGE OF THE INDICATED CEILING AT THE FACE OF THE ADJACENT APPLIED FINISH, MEASURED AT THE PLANE OF THE CEILING.
   - CAUTION: DUE TO THE POSSIBLE APPLICATION OF APPLIED FINISHES (THE THICKNESS OF WHICH MAY VARY BETWEEN FLOOR AND CEILING AND IS NOT ACCOUNTED FOR BY THE DIMENSIONS SHOWN ON THE FLOOR PLANS, EXCEPT AS INDICATED BY "FACE OF FINISH" OR "CLEAR"), THE CONTRACTOR MUST ADJUST, AS NECESSARY, THE FLOOR PLAN DIMENSIONS TO REFLECT THE ACTUAL DIMENSIONS FOUND AT THE PLANE OF THE CEILING.



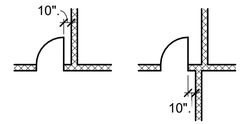
4. WHERE WALLS AND/OR PARTITIONS OF UNEQUAL THICKNESS ABUT, ALIGN EXPOSED FACES, UNLESS OTHERWISE NOTED.



5. WHERE DIMENSIONS ARE NOT PROVIDED ON FLOOR PLANS TO LOCATE DOOR OPENINGS, APPLY THE FOLLOWING RULES IN ORDER, TO DETERMINE THE LOCATION OF DOOR OPENINGS:
   A. DOOR OPENINGS MAY BE DIMENSIONED ON DRAWINGS OTHER THAN THE FLOOR PLANS. REFER TO THE SECTIONS, ELEVATIONS, DETAILS AND DOOR SCHEDULE NOTES FOR ADDITIONAL DIMENSIONAL INFORMATION.
   B. WHERE THE HINGE-SIDE OF A DOOR IS SHOWN ADJACENT TO A WALL, OR WALLS, PERPENDICULAR TO THE WALL IN WHICH THE DOOR OPENING OCCURS:
   - AT DOORS OCCURRING IN METAL FRAMED GYPSUM BOARD PARTITIONS, LOCATE THE HINGE-SIDE OF THE DOOR FINISHED OPENING 4 INCHES FROM THE FACE (EXCLUSIVE OF APPLIED FINISHES) OF THE CLOSEST PERPENDICULAR WALL OR PARTITION ASSEMBLY.

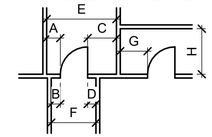


   - AT DOORS OCCURRING IN WALLS OF CONCRETE OR CONCRETE MASONRY CONSTRUCTION, LOCATE THE HINGE-SIDE OF THE DOOR FINISHED OPENING 10 INCHES FROM THE FACE (EXCLUSIVE OF APPLIED FINISHES) OF THE CLOSEST PERPENDICULAR WALL OR PARTITION ASSEMBLY.

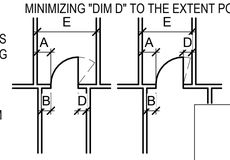


   C. WHERE DOOR OCCURS NOT ADJACENT TO A PERPENDICULAR WALL, AND EITHER "DIM E" OR "DIM F" IS 16'-0" OR LESS, LOCATE DOOR UTILIZING THE FOLLOWING MINIMUM DIMENSIONS:
   - DIMENSION A = 18 INCHES MIN
   - DIMENSION B = 12 INCHES MIN
   - DIMENSIONS C = DOOR WIDTH + 2 INCHES MINIMUM
   - DIMENSION D = 4 INCHES MIN AT METAL FRAMED GYP BD PARTITIONS
   - DIMENSIONS E AND F = AS SHOWN ON PLANS
   - DIMENSION G = 36 INCHES MIN
   - DIMENSION H = 60 INCHES MIN

   - IF SPACE ALLOWS, CENTER DOOR IN WALL SHOWN ON THE DRAWINGS SO THAT EITHER "DIM A" EQUALS "DIM C", OR "DIM B" EQUALS "DIM D".



   D. IF "DIM E" IN DIAGRAMS BELOW IS LESS THAN THE SUM OF 2 TIMES THE DOOR WIDTH PLUS 20 INCHES, LOCATE DOOR SO THAT MINIMUMS STATED BY NOTE 4C ABOVE FOR "DIM A", "DIM B", AND "DIM D" ARE MET, MAXIMIZING "DIM A" AND MINIMIZING "DIM D" TO THE EXTENT POSSIBLE.



US Army Corps of Engineers ®
US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST, FORT WORTH, TX 76102
LARSON DESIGN GROUP
3817 NW EXPRESSWAY, SUITE 840
OKLAHOMA CITY, OK 73112

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: B. BOURN
DRAWN BY: B. BOURN
CHECKED BY: B. HUNTER
SUBMITTED BY: T. MORGAN
SIZE: ANSI D

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/B90176 Hangar Door Expansion - R24 - Arch.rvt
Plot Date: 7/2/2026 2:11:50 PM

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT

GENERAL CONVENTIONS

STATE OF OKLAHOMA
BRIAN BOURN
MAY 28, 2026
A08515
LICENSED ARCHITECT

LDG
Larson Design Group
3817 NW EXPRESSWAY
SUITE 840
OKLAHOMA CITY, OK 73112
(405) 722-7270

SHEET ID
G-004

PROJECT DATA AND CODE INFORMATION

PROJECT DATA

THIS PROJECT CONSISTS OF THE REPLACEMENT OF TWO EXISTING ROLLING SECTIONAL HANGAR DOORS WITH NEW 120-FOOT-WIDE VERTICAL LIFT FABRIC DOORS. THE HANGAR WAS ORIGINALLY DESIGNED FOR HOUSING UNMANNED AERIAL SYSTEMS AND WILL BE RENOVATED WITH LARGER HANGAR BAY DOORS TO ACCOMMODATE THE ME-11B AIRCRAFT. ALL AREAS OUTSIDE OF HANGAR BAYS ARE OUT OF SCOPE.

PROJECT DATA	
PROJECT NAME	B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT
PROJECT ADDRESS	FORT HOOD, TX
OWNER	US ARMY CORPS OF ENGINEERS

APPLICABLE CODES	
UFC 1-200-01, CHANGE 4	DOD BUILDING CODE
UFC 3-600-01, CHANGE 6	FIRE PROTECTION ENGINEERING FOR FACILITIES
UFC 4-010-01, CHANGE 3	DOD MINIMUM ANTITERRORISM STANDARDS FOR BUILDINGS
UFC 4-021-01, DATED 04/09/2008	DESIGN AND O&M: MASS NOTIFICATION SYSTEMS
UFC 4-211-01, CHANGE 3	AIRCRAFT MAINTENANCE HANGARS
2024 EDITION NFPA 1	FIRE CODE
2024 EDITION NFPA 101	LIFE SAFETY CODE
2024 EDITION NFPA 220	STANDARD ON TYPES OF BUILDING CONSTRUCTION
2022 EDITION NFPA 409	STANDARD ON AIRCRAFT HANGARS
2025 EDITION NFPA 13	STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS
2025 EDITION NFPA 72	NATIONAL FIRE ALARM AND SIGNALING CODE
2024 EDITION IBC	INTERNATIONAL BUILDING CODE
2024 EDITION IEBC	INTERNATIONAL EXISTING BUILDING CODE

LIFE SAFETY INFORMATION					REFERENCE
USE OR OCCUPANCY CLASSIFICATION					UFC 3-600-01 TABLE 10-1
OCCUPANCY (OCCUPANT LOAD)	AIRCRAFT HANGAR, AIRCRAFT STORAGE AND SERVICING AREAS				NFPA 101 CHAPTER 7
OCCUPANCY (MEANS OF EGRESS)	GENERAL INDUSTRIAL				IBC SECTION 311.2
OCCUPANCY (CONSTRUCTION TYPE)	S-1 STORAGE				
TYPE OF CONSTRUCTION					
CONSTRUCTION TYPE	IIB (SPRINKLERED, SINGLE-STORY)				2024 IBC, SECTION 602
	II (000)				NFPA 220 TABLE 4.1.1 AS REFERENCED BY NFPA 101 SECTION 8.2.1.2
FIRE PROTECTION REQUIREMENTS	**REQUIRED**		**PROVIDED**		
BEARING WALLS: INT./EXT.	0 HR. / 0 HR.		0 HR. / 0 HR.		2024 IBC, SECTION 602
NONBEARING WALLS: INT./EXT.	0 HR. / 0 HR.		0 HR. / 0 HR.		2024 IBC, SECTION 602
ROOF / CEILING	0 HR. / 0 HR.		0 HR. / 1 HR.		2024 IBC, SECTION 602
FLOOR / CEILING	0 HR. / 0 HR.		0 HR. / 0 HR.		2024 IBC, SECTION 602
HANGAR SEPARATIONS	1 HR.		1 HR. & 0 HR.		UFC 4-211-01 section 3-3.1.3
DESIGN LIMITATIONS	**MAX. ALLOWED**		**PROVIDED**		
HEIGHT	75'-0"		71'-0"		2024 IBC, TABLE 504.3
AREA	UNLIMITED		121,200 SQ. FT.		2024 IBC, SECTION 507.4
STORIES	1		1		2024 IBC, SECTION 507.4
MEANS OF EGRESS	**MAX. ALLOWED**		**PROVIDED**		
	HANGAR BAY		HANGAR BAY		
TRAVEL DISTANCE TO EXIT	250'-0"		224'-0"		NFPA 101 SECTION 40.2.6
OCCUPANT LOAD	184 PERSONS				UFC 3-600-01 TABLE 10-1
TRAVEL DISTANCE TO HANGAR EXITS	150'-0"				NFPA 101 SECTION 40.6.2.2
EGRESS WIDTH PER OCCUPANT	**MIN. ALLOWED**		**PROVIDED**		
	HIGH-HAZARD		HIGH-HAZARD		
STAIRS	N/A		N/A		NFPA 101 TABLE 7.3.3.1
DOORS	32"		36" (33" CLEAR)		NFPA 101 SECTION 7.3.4.1(2)

COLORADO LICENSED
JAMES W WHITCOMB
64076
05/28/2026
PROFESSIONAL ENGINEER

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson
Ready • Reliable • Resilient

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/B90176 Hangar Door Expansion - R24 - Fire.rvt

Plot Date: 7/1/2026 1:38:09 PM

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: J. WHITCOMB
DRAWN BY: N. CHAPA
CHECKED BY: P. TUNES
SUBMITTED BY: CITRINE-OLSSON JV
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST, FORT WORTH, TX 76102

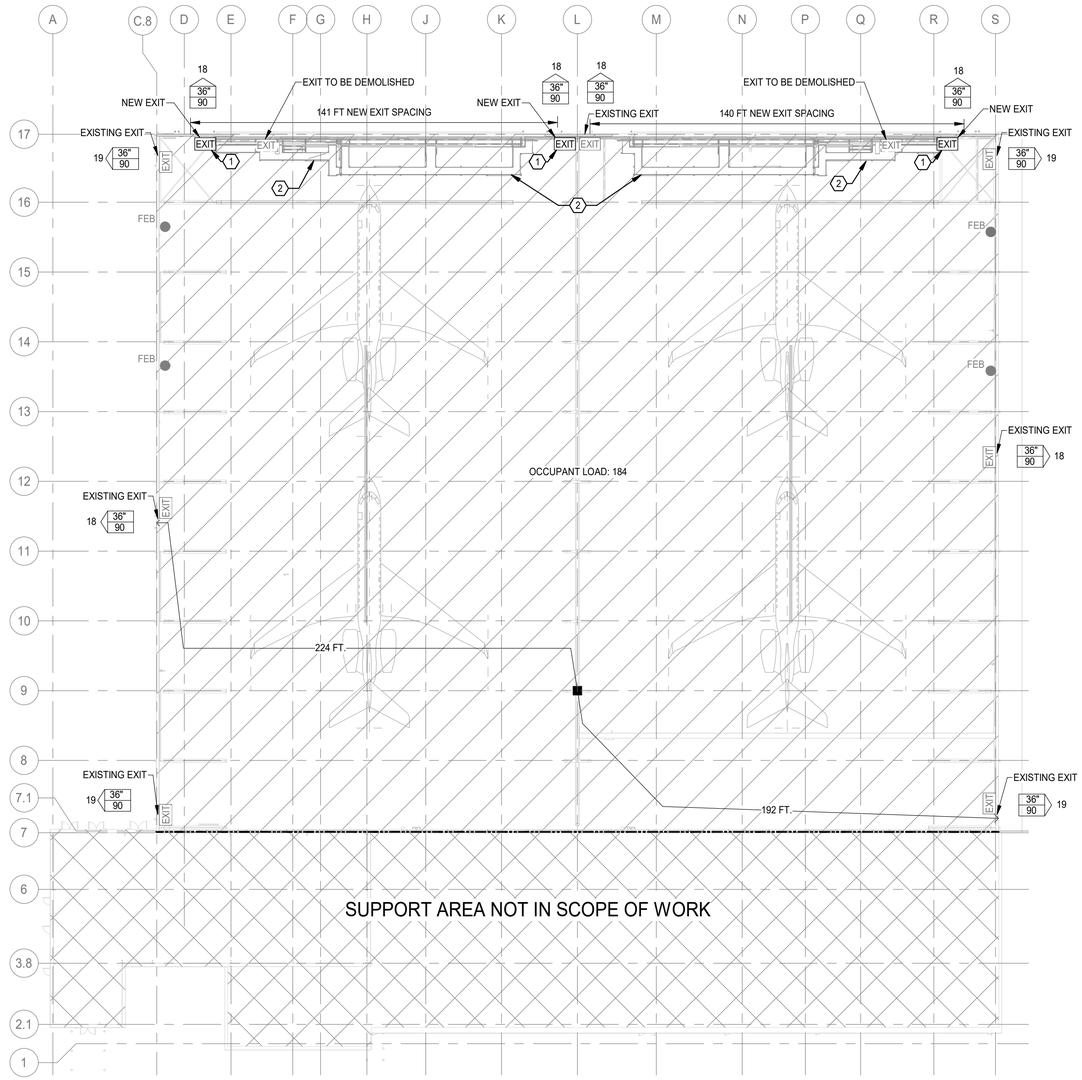
CITRINE-OLSSON
2801 GRAND AVE
GRAND JUNCTION CO, 81501

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT
W9126G25F0273

LIFE SAFETY CODE COMPLIANCE PLAN

SHEET ID

LP001



1 LIFE SAFETY FLOOR PLAN - OVERALL
1" = 30'-0"

EGRESS LEGEND

- START OF COMMON PATH AND TRAVEL DISTANCE
- END OF COMMON PATH
- TRAVEL DISTANCE
- DEAD END PATH
- PATH OF EXIT
- X / XX" / XXX — MAX EXPECTED OCCUPANTS AT EXIT BASED ON OCCUPANT LOAD FACTOR ACTUAL WIDTH OF EXIT; MAX ALLOWABLE OCCUPANTS AT EXIT BASED ON EXIT WIDTH

EGRESS DATA

OCCUPANCY EXIT ROUTE TYPE	MAXIMUM ALLOWABLE
MAXIMUM TRAVEL DISTANCE TO EXIT (NFPA 101 SECTION 40.2.6)	250'-0"
COMMON PATH (NFPA 101 SECTION 40.2.5)	100'-0"

SYMBOLS LEGEND

- FEC — FIRE EXTINGUISHER IN SEMI-RECESSED FIRE EXTINGUISHER CABINET
- FEB — WALL BRACKET - MOUNTED FIRE EXTINGUISHER
- WALL MOUNTED EMERGENCY LIGHT WITH BATTERY PACK
- EXIT LIGHT FIXTURE DIRECTION ARROWS AS SHOWN (SHADED QUADRANT INDICATES FACE(S) OF FIXTURE)
- WALL MOUNTED EMERGENCY LIGHT WITH BATTERY PACK
- EXISTING 1 HOUR FIRE BARRIER

REFER TO ELECTRICAL SHEETS FOR EMERGENCY LIGHT AND EXIT LIGHT SCHEDULES AND DETAILS.

REFER TO ARCHITECTURAL SHEETS FOR FIRE EXTINGUISHER CABINET SCHEDULES AND DETAILS.

OCCUPANT LOAD				
HATCH PATTERN	OCCUPANCY FUNCTION	AREA (SF) APPROXIMATE	CODE OCCUPANT LOAD FACTOR (SF/PERSON)	OCCUPANT LOAD
	NOT IN SCOPE OF WORK			
	AIRCRAFT HANGAR, AIRCRAFT STORAGE AND SERVICING AREAS (UFC 3-600-01 TABLE 10-1)	92,000	500 GROSS	184

NOTE: ALL EXISTING AREAS OUTSIDE OF THE HANGAR BAYS ARE OUT OF SCOPE OF WORK AND ARE NOT INCLUDED IN THE OCCUPANT LOAD FACTORS FOR THE HANGAR BAY.

GENERAL SHEET NOTES

A. MEANS OF EGRESS TRAVEL DISTANCE REQUIREMENTS ARE BASED ON NFPA 101 INDUSTRIAL OCCUPANCY AS DIRECTED BY UFC 4-211-01 SECTION 3-3.1.9 FOR ARMY BASES.

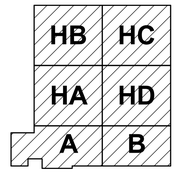
B. OCCUPANT LOADS ARE BASED ON UFC 3-600-01 TABLE 10-1 FOR AIRCRAFT HANGARS - AIRCRAFT STORAGE AND SERVICING AREAS.

C. EXITS REQUIRED AT MAXIMUM OF 150 FT INTERVALS IN EXTERIOR HANGAR WALLS IN ACCORDANCE WITH NFPA 101 SECTION 10.6.2.2.

SHEET KEYNOTES

1. REFER TO ELECTRICAL SHEETS FOR EXIT SIGNS.
2. A MEANS OF EGRESS PATH IS NOT REQUIRED FROM THE CATWALKS PER NFPA 101 SECTION 7.14.3, AS THEY ARE CONSIDERED NORMALLY UNOCCUPIED BUILDING SERVICE EQUIPMENT SUPPORT AREAS PER NFPA 101 SECTION 7.14. REFER TO RFI-016 FOR INFORMATION REGARDING THE OCCUPANCY OF THE CATWALK SYSTEMS.

KEY PLAN



N

0 15'-0" 30'-0" 60'-0"
SCALE: 0' - 1" = 30' - 0"

COLORADO LICENSED JAMES WHITCOMB 64076 05/28/2026 PROFESSIONAL ENGINEER

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson
Ready • Reliable • Resilient

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/B90176 Hangar Door Expansion - R24 - Fire.rvt

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: J. WHITCOMB
DRAWN BY: N. CHAPA
CHECKED BY: P. HAINES
SUBMITTED BY: CITRINE-OLSSON JV
SIZE: ANSI D

Plot Date: 7/1/2026 1:38:09 PM

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST, FORT WORTH, TX 76102

CITRINE-OLSSON
2801 GRAND AVE
GRAND JUNCTION CO, 81501

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT
W9126G25F0273

LIFE SAFETY FLOOR PLAN - OVERALL

SHEET ID

LP101

W9126G26RA087-0002

GENERAL NOTES

1. ALL REFERENCES CONTAINED WITHIN THESE PLANS TO THE ENGINEER ARE HEREBY A REFERENCE TO OLSSON.
2. THE EXISTING UTILITY LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE AND MAY NOT INCLUDE ALL LINES PRESENT. THE CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN ANY NECESSARY DIG PERMITS. THE CONTRACTOR SHALL BE RESPONSIBLE TO CALL "811", AND COORDINATE FIELD LOCATION OF EXISTING UNDERGROUND UTILITIES PRIOR TO BEGINNING EXCAVATION ACTIVITIES. !!STOP!! CALL BEFORE YOU DIG!!
3. UTILITIES AS SHOWN WERE OBTAINED FROM INFORMATION INDICATED ON THE SURVEY OR BY FIELD OBSERVATION. CONTRACTOR SHALL FIELD VERIFY ALL HORIZONTAL AND VERTICAL LINES AND GRADES OF EXISTING UTILITIES PRIOR TO THE CONSTRUCTION OF IMPROVEMENTS. CONTRACTOR SHALL NOTIFY THE GOVERNMENT IMMEDIATELY UPON DISCOVERY OF A DISCREPANCY BETWEEN THE CONTRACT DRAWINGS AND ACTUAL FIELD CONDITIONS.
4. CONTRACTOR SHALL NOT CHANGE OR DEVIATE FROM THE PLANS WITHOUT FIRST OBTAINING WRITTEN APPROVAL FROM THE GOVERNMENT.
5. CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN ALL PERMITS AND PAY ALL FEES AS REQUIRED BY THE CONSTRUCTION COVERED IN THESE PLANS.
6. ALL WORK AND MATERIALS SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE GOVERNMENT.
7. ANY ESTIMATES OF QUANTITIES ARE FOR INFORMATIONAL PURPOSES ONLY. CONTRACTOR AND SUBCONTRACTOR(S) SHALL BE RESPONSIBLE FOR DETERMINING ALL QUANTITIES. CONTRACTOR SHALL PROVIDE ALL WORK AND MATERIALS TO COMPLETE CONSTRUCTION AS SHOWN ON PLANS.
8. CONTRACTOR SHALL TAKE CARE NOT TO DAMAGE ANY EXISTING STREET, RUNWAY, CURB AND GUTTER, SIDEWALK, DRIVEWAYS OR STRUCTURE UNLESS SHOWN TO BE REMOVED. DAMAGE SHALL BE REPAIRED TO THE SATISFACTION OF THE GOVERNMENT.
9. ALL TRAFFIC CONTROL SHALL BE IN CONFORMANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
10. THE CONTRACTOR IS RESPONSIBLE FOR ATTENDING TO AND CORRECTING UNSUITABLE SOIL CONDITIONS RELATED TO PLOW ZONES, WET SOILS AND OTHER CONDITIONS. THE UNSUITABLE CONDITIONS MUST BE CORRECTED PER THE GEOTECHNICAL ENGINEER'S REPORT, WHERE REQUIRED, TO MEET PROJECT NEEDS.
11. CONTRACTOR SHALL BE PROHIBITED FROM DISRUPTING UTILITY SERVICES TO THE EXISTING BUILDING.
12. CONTRACTOR SHALL MAINTAIN SAFETY PRACTICES THAT CONFORM TO OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REGULATIONS AND USACE EM385-1-1.

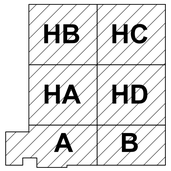
POLLUTION PREVENTION NOTES

1. CONTAINERS MUST BE PROVIDED FOR COLLECTION OF WASTE MATERIAL INCLUDING CONSTRUCTION DEBRIS, TRASH, AND OTHER MATERIALS GENERATED ON-SITE. PERFORM DAILY FOD (FOREIGN OBJECT DEBRIS) CONTROL ON ALL AIRFIELD PAVEMENT TRAVERSED BY THE CONTRACTOR'S VEHICLES. ALL ACTIVE AIRFIELD PAVEMENTS TRAFFICKED BY THE CONTRACTORS CONSTRUCTION EQUIPMENT SHALL BE CONTINUOUSLY SWEPT AND VACUUMED CLEAN. PROVIDE A SELF CONTAINED PAVEMENT VACUUMING TRUCK WHICH IS SPECIFICALLY MANUFACTURED TO CLEAN AIRFIELD PAVEMENTS. OPERATE THE VACUUM TRUCK CONTINUOUSLY DURING CONTRACTOR HAULING OPERATIONS.
2. WASTE MATERIALS MUST NOT BE BURIED ON-SITE. ALL WASTE MATERIAL SHALL BE DISPOSED OF PROPERLY PER LOCAL, STATE AND FEDERAL REGULATIONS.
3. THE CONTRACTOR MUST KEEP ALL POLLUTANTS, INCLUDING BUT NOT LIMITED TO SEDIMENT, CONSTRUCTION DEBRIS, CONSTRUCTION RELATED CHEMICALS, UNTREATED DEWATERING DISCHARGES, AND POTENTIALLY HAZARDOUS MATERIALS FROM ENTERING THE STORM SEWER SYSTEM OR WATER COURSES.
4. THE DISCHARGE OF CONCRETE WASHWATERS TO THE STORMWATER SYSTEM IS PROHIBITED. ALL CONCRETE WASTE SHALL BE PROPERLY CLEANED UP AND DISPOSED OF AT AN APPROPRIATE LOCATION. THE CLEANING OF CONCRETE DELIVERY TRUCK CHUTES IS TO BE RESTRICTED TO APPROVED LOCATIONS. IF CONCRETE WASHWATERS ARE TO BE GENERATED ONSITE, THE CONTRACTOR SHALL CONSTRUCT, UTILIZE AND MAINTAIN A CONCRETE TRUCK WASH OUT BASIN ON-SITE.
5. THE CONTRACTOR SHALL STORE FUEL AND OIL AS FAR FROM ANY STORM SEWER, WETLAND OR SURFACE WATER AS PRACTICABLE (UNLESS A SPECIFIED DISTANCE IS DESIGNATED BY AUTHORITY HAVING JURISDICTION). EQUIPMENT FUELING AND MAINTENANCE SHALL BE PERFORMED ONLY IN AN AREA DESIGNATED FOR THAT PURPOSE. BEST MANAGEMENT PRACTICES (BMPS) SUCH AS CONTAINMENT BERMS AND DRIP PANS SHALL BE IN PLACE AT THE DESIGNATED AREA TO MINIMIZE THE SPILLING OR LEAKING OF HAZARDOUS MATERIALS.
6. ALL PAINT, SOLVENTS, PETROLEUM PRODUCTS, PETROLEUM WASTE PRODUCTS, AND STORAGE CONTAINERS (SUCH AS DRUMS, CANS, OR CARTONS) SHALL BE STORED ACCORDING TO BMPS. THE MATERIALS EXPOSED TO PRECIPITATION SHALL BE STORED IN WATERTIGHT, STRUCTURALLY SOUND, CLOSED CONTAINERS. IF SUBSTANCES SUCH AS OIL, DIESEL FUEL, HYDRAULIC FLUID, ANTIFREEZE, ETC. ARE SPILLED, LEAKED, OR RELEASED ONTO SOIL, THE SOIL SHALL BE DUG UP AND PROPERLY DISPOSED OF IN ACCORDANCE WITH THE AUTHORITY HAVING JURISDICTION'S REQUIREMENTS. SPILLS ON PAVEMENT SHALL BE ABSORBED WITH SAWDUST, KITTY LITTER, OR PRODUCT DESIGNED FOR THAT PURPOSE AND DISPOSED OF AT A LICENSED SANITARY LANDFILL. HAZARDOUS OR INDUSTRIAL WASTES SUCH AS SOLVENTS, GASOLINE, OIL-BASED PAINTS, AND CONCRETE CURING COMPOUNDS REQUIRE SPECIAL HANDLING. THESE MATERIALS WILL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE AUTHORITY HAVING JURISDICTION'S SPECIFIC REGULATIONS.
7. SPILLS INCLUDING, BUT NOT LIMITED TO, PETROLEUM PRODUCTS, SOLVENTS AND CEMENT SHALL BE CONTAINED AND CLEANED UP IMMEDIATELY. FEDERAL LAW REQUIRES THE RESPONSIBLE PARTY TO REPORT ANY RELEASE OF OIL IF IT REACHES OR THREATENS A STORM SYSTEM, LAKE, CREEK, STREAM, RIVER, GROUNDWATER, WETLAND OR AN AREA THAT DRAINS INTO ONE OF THESE ENTITIES (E.G. ROADSIDE DITCH).
8. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN SUFFICIENT TEMPORARY SANITARY WASTE FACILITIES TO SERVE THE NUMBER OF WORKERS ON THE SITE. THE FACILITIES SHALL BE PLACED, AND SECURED TO PREVENT TIPPING. FACILITIES SHALL NOT BE PLACED ON ROADS OR ON TOP OF STORMWATER INLETS. FACILITIES SHALL BE MAINTAINED PER MANUFACTURER'S SPECIFICATIONS.
9. CONTRACTOR SHALL RETAIN FLOATABLE WIND BLOWN MATERIALS ON SITE BY STORING ALL TRASH AND BUILDING MATERIAL WASTE IN ENCLOSURES UNTIL PROPER DISPOSAL AT AN OFF-SITE FACILITY. CONTRACTOR TO CHECK ADJACENT AREAS DAILY AND PICK UP CONSTRUCTION WASTE MATERIALS AND DEBRIS THAT HAVE BLOWN OR WASHED OFF-SITE.
10. CONTRACTOR SHALL BE RESPONSIBLE TO CONTROL DOWNSTREAM EROSION AND SILTATION DURING ALL PHASES OF CONSTRUCTION.
11. CONTRACTOR SHALL PROTECT ANY STORM INLETS FROM SEDIMENT THAT TAKE STORM WATER FROM THE AREA OF CONSTRUCTION.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING THE SURROUNDING STREETS IN THE VICINITY OF THE JOB SITE CLEAN AND FREE OF ROCKS, SOIL/MUD AND DEBRIS DURING ALL PHASES OF CONSTRUCTION.
13. CONTRACTOR SHALL CLEAN OUT ALL EXISTING AND PROPOSED INLETS, PIPES AND MANHOLES OF DEBRIS AND SEDIMENTATION AT COMPLETION OF SITEWORK. THIS WORK SHALL BE DONE TO THE SATISFACTION OF THE GOVERNMENT.
14. CONTRACTOR SHALL COORDINATE WITH ADJACENT CONTRACTORS FOR RAMP CLOSURES.

ACCESS AND STAGING

1. ACCESS AND HAUL ROUTES FOR ALL CONTRACTOR PERSONNEL, VEHICLES, AND EQUIPMENT ARE SUBJECT TO THE APPROVAL OF THE GOVERNMENT. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO COMMUNICATE OFF-SITE HAUL ROUTES WITH THE APPROPRIATE AUTHORITY WHO HAS JURISDICTION OVER THE AFFECTED ROUTE. ACCESS ROUTES AND HAUL ROUTES ARE SUBJECT TO CHANGE AT THE DIRECTION OF THE GOVERNMENT AND MAY CHANGE BASED ON OPERATIONAL REQUIREMENTS OF THE PROJECT SITE.
2. CONTRACTOR SHALL COMMUNICATE ACTIVITIES AND MAINTAIN ALL ACCESS AND HAUL ROUTES IN A MANNER THAT ALLOWS UNOBSTRUCTED EMERGENCY ACCESS TO ALL PROJECT AREAS AND EXISTING ROADWAYS AT ALL TIMES WITHOUT DELAY TO EMERGENCY AND SECURITY VEHICLE RESPONSE TIME.
3. IF ANY EMERGENCY ROUTES REQUIRE CLOSURE DUE TO CONSTRUCTION ACTIVITIES, CONTRACTOR SHALL NOTIFY THE BASE, POLICE, LOCAL FIRE AUTHORITY AND ALL OTHER EMERGENCY SERVICES OF CLOSURE.
4. CONTRACTOR SHALL MAINTAIN ACCESS AND HAUL ROUTES TO BE FREE FROM DEBRIS CAUSED FROM CONSTRUCTION ACTIVITIES ON A DAILY BASIS.
5. CONTRACTOR SHALL RESTRICT ALL OPERATIONS TO AREAS WITHIN THE CONSTRUCTION LIMITS UNLESS COMMUNICATED OTHERWISE WITH THE GOVERNMENT.
6. CONTRACTOR IS RESPONSIBLE FOR ESTABLISHING A STAGING AND STOCKPILE AREA FOR MATERIALS AND EQUIPMENT. LOCATION OF CONTRACTOR'S STAGING IS SUBJECT TO THE APPROVAL OF THE GOVERNMENT. CONTRACTOR MAY SUBMIT ALTERNATIVES TO THE STAGING AREA LOCATIONS AS SHOWN. CONTRACTOR'S STAGING AREA IS SUBJECT TO CHANGE AT THE DIRECTION OF THE GOVERNMENT AND MAY CHANGE BASED ON OPERATIONAL REQUIREMENTS OF THE PROJECT SITE.
7. WHEN NOT ENGAGED IN CONSTRUCTION ACTIVITIES, CONTRACTOR'S EQUIPMENT AND VEHICLES SHALL BE PARKED IN THE STAGING AREA.
8. CONTRACTOR SHALL PROVIDE A MINIMUM NOTICE OF 48 HOURS TO THE GOVERNMENT REGARDING CONSTRUCTION DELIVERIES PRIOR TO THOSE DELIVERIES.
9. ALL CONTRACTOR VEHICLES AND PERSONNEL SHALL BE RESPONSIBLE FOR COMMUNICATING AND COMPLYING WITH FORT HOOD BASE SECURITY POLICY.

KEY PLAN



Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson
Waco · Antioch · Madison

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUNE 2026

ISSUE DATE: MAY 28, 2025
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: D. HOLMES
DRAWN BY: C. FERGUSON
CHECKED BY: A. SLATER
SUBMITTED BY: CITRINE-OLSSON JV
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST.,FOR WORTH, TX 76102

CITRINE-OLSSON
2801 GRANDE AVE
GRAND JUNCTION CO, 81501

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT
W9126G25F0273

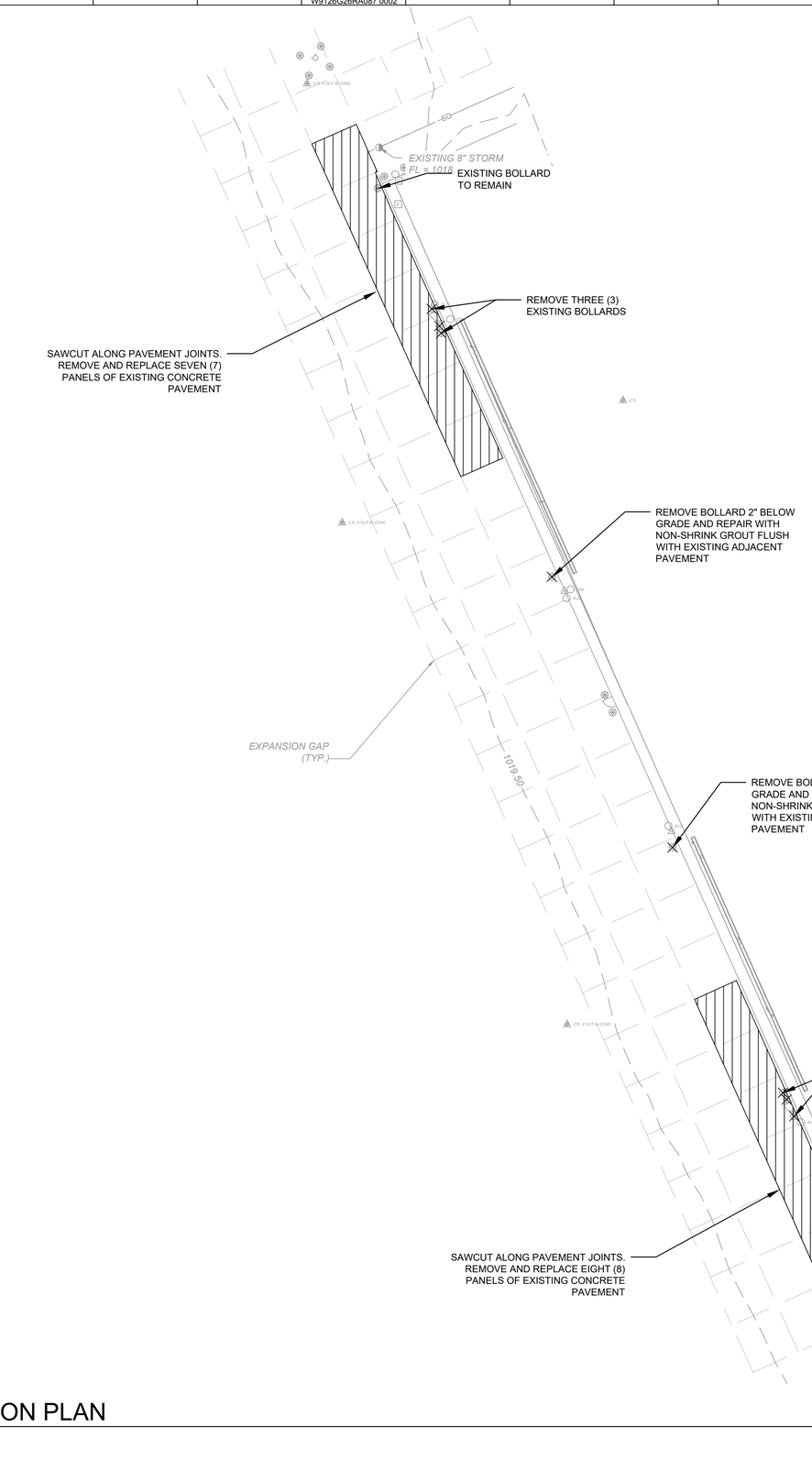
GENERAL CIVIL NOTES

SHEET ID

GC001

File Path:
Plot Date: 2/17/2016 12:09:44 PM

W9126G26RA087-0002



NORTH

0 10' 20' 40' 60' 80'

1" = 20'-0" GRAPHIC SCALE

A1 DEMOLITION PLAN

1" = 20' HORIZONTAL

GENERAL SHEET NOTES

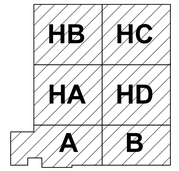
1. REFER TO GC001 FOR GENERAL NOTES APPLICABLE TO THIS DRAWING.
2. UTILITY DEMOLITION MUST BE COORDINATED WITH THE CONTRACTING OFFICER PRIOR TO BEGINNING WORK.

LEGEND

SITE FEATURE TO BE REMOVED

CONCRETE PAVEMENT TO BE REMOVED

KEY PLAN



US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUNE 2026

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: D. HOLMES
DRAWN BY: C. FERGUSON
CHECKED BY: A. SLYTER
SUBMITTED BY: CITRINE-OLSSON JV
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST ; FOR WORTH, TX 76102

CITRINE-OLSSON
2801 GRANDE AVE
GRAND JUNCTION CO, 81501

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT
W9126G25F0273

DEMOLITION PLAN

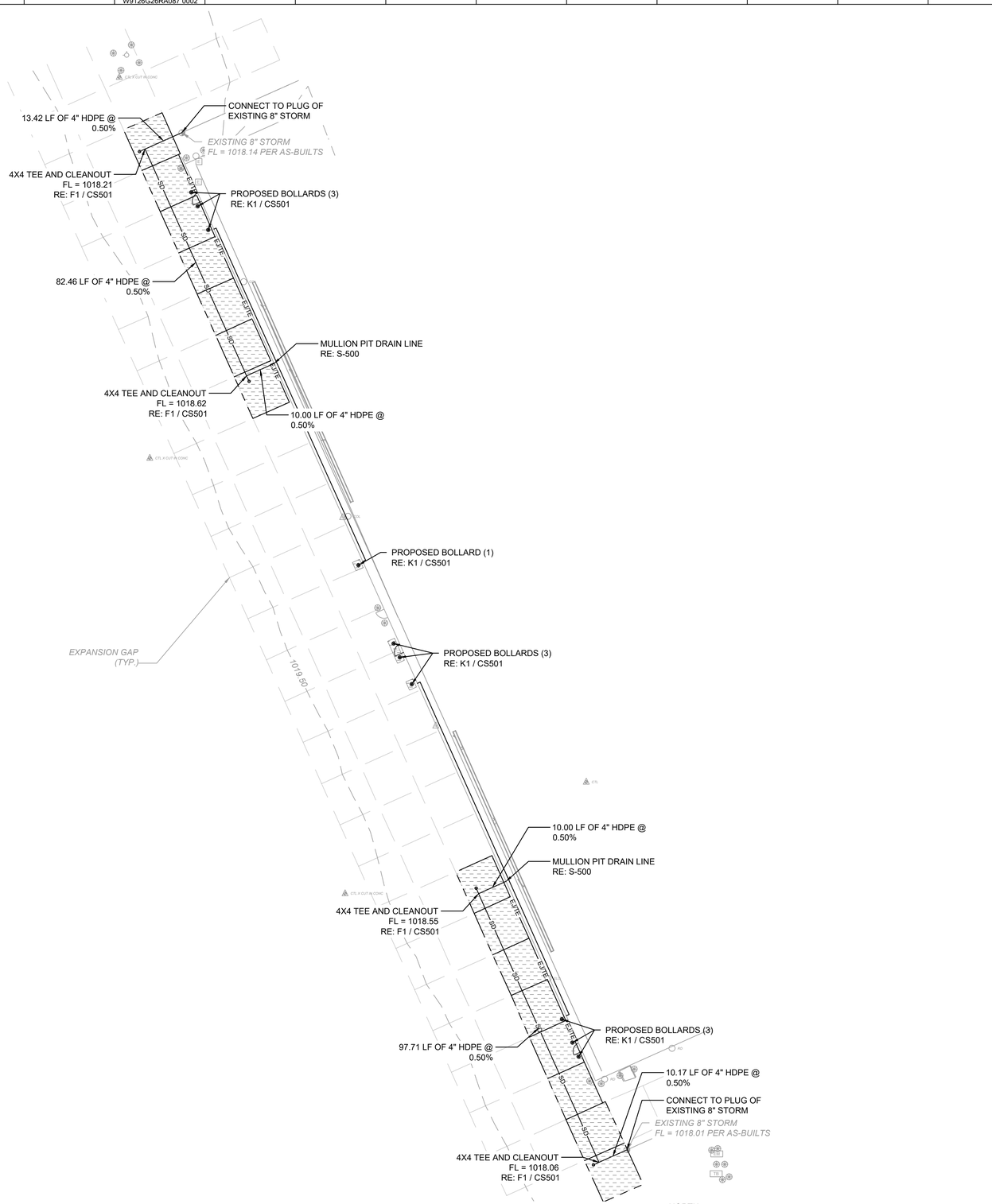
SHEET ID

CD101

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson
Ready · Reliable · Resilient

File Path:
Plot Date: 2/17/2016 12:09:44 PM

W9126G26RA087-0002



A1 SITE PLAN
1" = 20' HORIZONTAL

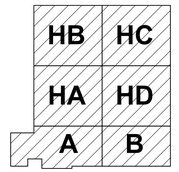
GENERAL SHEET NOTES

1. REFER TO GC001 FOR GENERAL NOTES APPLICABLE TO THIS DRAWING.

LEGEND

SD	STORMWATER LINE
EJ/TE	THICKENED EDGE EXPANSION JOINT RE: B14 AND F7 / CS501
	CONTRACTION JOINT RE: K14 / CS501
	DOWELED CONSTRUCTION JOINT RE: B7 AND B14 / CS501
	10.50" CONCRETE PAVEMENT RE: K7 / CS501

KEY PLAN



US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUNE 2026

DESIGNED BY: D. HOLMES
DRAWN BY: C. FERGUSON
CHECKED BY: A. SLITER
SUBMITTED BY: CITRINE-OLSSON JV
SIZE: ANSI D
ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST., FOR WORTH, TX 76102

CITRINE-OLSSON
2801 GRANDE AVE
GRAND JUNCTION CO, 81501

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT
W9126G25F0273

SITE PLAN

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson
Ready · Reliable · Resilient

SHEET ID
CS101

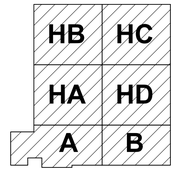
Plot Date: 2/17/2016 12:09:44 PM
File Path:

W9126G26RA087-0002

GENERAL SHEET NOTES

1. REFER TO GC001 FOR GENERAL NOTES APPLICABLE TO THIS DRAWING.
2. CONTRACTOR TO REFER TO DIVISION 00 AND 01 OF THE SPECIFICATIONS FOR ADDITIONAL ACCESS REQUIREMENTS.

KEY PLAN



A1 PROJECT LOCATION AND STAGING AREA MAP

1" = 500' HORIZONTAL

NORTH

0 250' 500' 1000' 1500' 2000'

1" = 500'-0" GRAPHIC SCALE

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUNE 2026

ISSUE DATE: MAY 28, 2025
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: D. HOLMES
DRAWN BY: C. FERGUSON
CHECKED BY: A. SKYTTE
SUBMITTED BY: CITRINE-OLSSON JV
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST, FOR WORTH, TX 76102

CITRINE-OLSSON
2801 GRANDE AVE
GRAND JUNCTION CO, 81501

FORT HOOD, TX
B80176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT
W9126G25F0273

PROJECT LOCATION AND STAGING AREA MAP

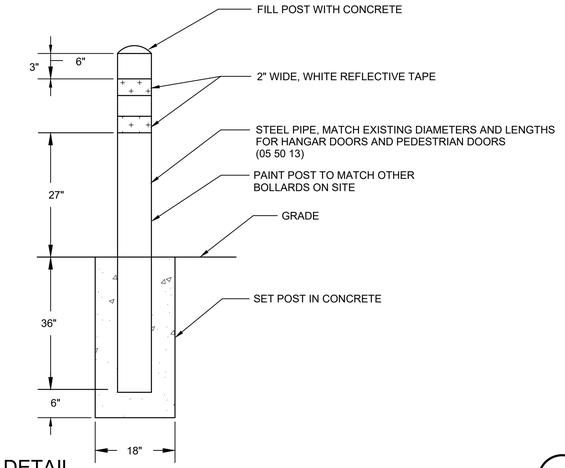
Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson

SHEET ID

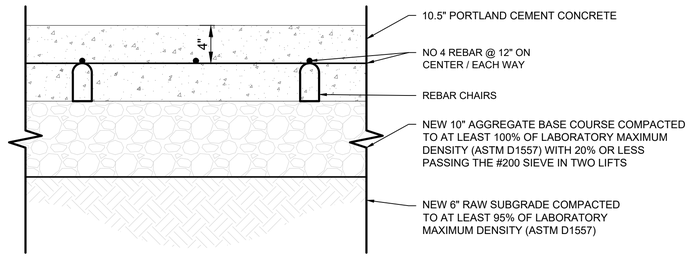
CS102

File Path:

Plot Date: 2/17/2016 12:09:44 PM

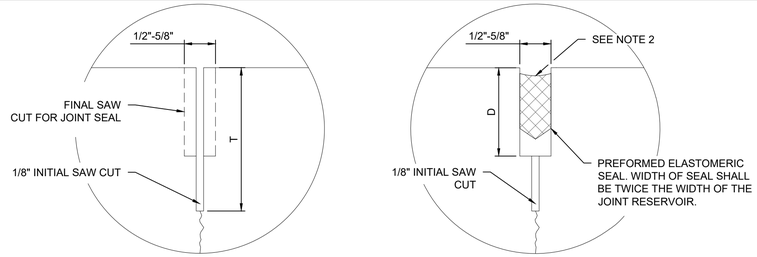


K1 BOLLARD DETAIL
SCALE: NTS



NOTES:
1. CONTRACTOR SHALL USE FLOW FILL MATERIAL FOR BACKFILL (BEDDING TO BOTTOM OF PROPOSED CONCRETE) OF 4" STORMWATER LINE WITHIN NEW PAVEMENT PANELS.

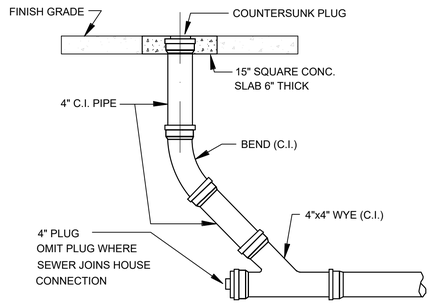
K7 10.50" CONCRETE PAVEMENT
SCALE: NTS



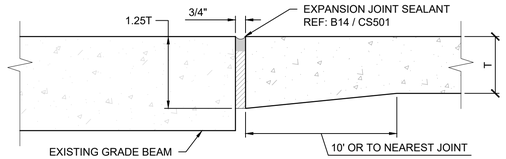
CONTRACTION JOINT

NOTES:
1. D = DEPTH AS RECOMMENDED BY MANUFACTURER OF JOINT SEAL.
   T = DEPTH OF INITIAL SAWCUT TYPE JOINT FORMER (CONTRACTION JOINT)
   A. 1/4 SLAB THICKNESS +/- 1/2" FOR PAVEMENT LESS THAN 12 INCHES
   B. 3 INCHES FOR PAVEMENTS 12-18 INCHES
   C. 1/6 SLAB THICKNESS FOR PAVEMENTS MORE THAN 18 INCHES
2. TOP OF SEALANT SHALL BE 1/8 INCH TO 1/4 INCH BELOW PAVEMENT SURFACE. IN AREAS TO BE GROOVED, THE JOINT SEAL SHALL BE RECESSED BELOW THE DEPTH OF THE GROOVES.
3. JOINTS TO BE IN CONFORMANCE WITH SPECIFICATION 32 13 73.19.
4. COMPRESSION SEALS MUST BE IN COMPRESSION AT ALL TIMES.

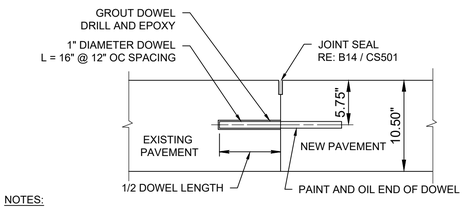
K14 PREFORMED COMPRESSION JOINT SEALANTS
SCALE: NTS



F1 ONE-WAY CLEANOUT
SCALE: NTS

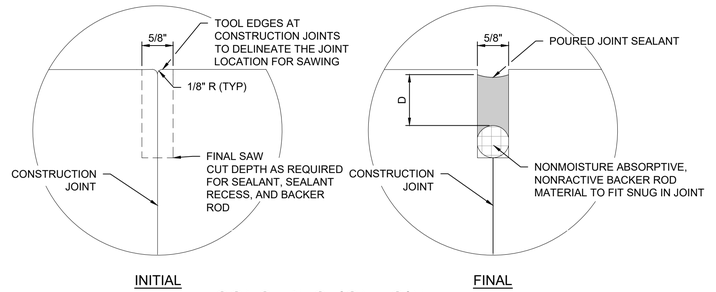


F7 THICKENED EDGE EXPANSION JOINT
SCALE: NTS

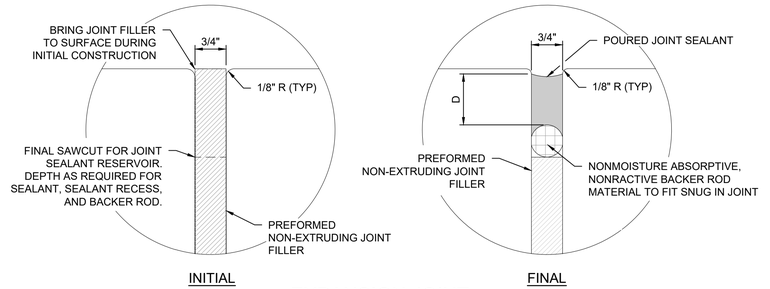


NOTES:
1. HOLES APPROXIMATELY 1/8 INCH GREATER IN DIAMETER THAN THE DOWELS SHALL BE DRILLED IN THE EXISTING CONCRETE AND THE DOWELS SHALL BE BONDED IN THE DRILLED HOLES USING AN EPOXY RESIN GROUT.
2. STOP PROPOSED PAVEMENT REINFORCEMENT 3" FROM THE CONSTRUCTION JOINT. REBAR SHALL BE PLACED ABOVE DOWEL.

B7 DOWELED CONSTRUCTION JOINT
SCALE: NTS



CONSTRUCTION JOINT



EXPANSION JOINT

NOTES:
1. D = DEPTH OF SEALANT (1.0 TO 1.5 x WIDTH OF JOINT) OR AS RECOMMENDED BY MANUFACTURER.
2. TOP OF SEALANT SHALL BE 1/8 INCH TO 1/4 INCH BELOW PAVEMENT SURFACE OR 1/8 INCH BELOW BOTTOM EDGE OF RADIUS. IN AREAS TO BE GROOVED, THE JOINT SEAL SHALL BE RECESSED BELOW THE DEPTH OF THE GROOVES.
3. JOINTS TO BE IN CONFORMANCE WITH SPECIFICATION 32 01 19.61.
4. A HEAT-RESISTANT BACKER ROD MUST BE USED WITH ASTM D6690 (HOT-POURED) SEALANT.
5. DIAMETER OF BACKER ROD MATERIAL = WIDTH OF SEALANT + 1/8".

B14 POURED JOINT SEALANTS
SCALE: NTS

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson
Ready · Reliable · Resilient

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUNE 2026

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: D. HOLMES
DRAWN BY: C. FERGUSON
CHECKED BY: A. SLYTER
SUBMITTED BY: CITRINE-OLSSON JV
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST, FOR WORTH, TX 76102

CITRINE-OLSSON
2801 GRANDE AVE
GRAND JUNCTION CO, 81501

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT
W9126G25F0273

SITE DETAILS

SHEET ID
CS501

File Path:
Plot Date: 2/17/2016 12:09:44 PM

GENERAL NOTES

NO.	GENERAL NOTES DESCRIPTION
1	THE PROJECT SPECIFICATIONS ARE A PART OF THE CONTRACT DOCUMENTS.
2	THE CONTRACTOR SHALL EXAMINE THE STRUCTURAL DRAWINGS AND SHALL NOTIFY THE CONTRACTING OFFICER OF ANY DISCEPANCIES BEFORE PROCEESING WITH ANY WORK
3	THE DRAWINGS AND SPECFICATIONS REPRESENT THE COMPLETED STRUCTURE. THEY DO NOT INDICATED THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES AND MEANS NECESSARY TO PROTECT PERSONS AND STRUCTURES DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO BRACING, SHORING, ETC. OBSERVATION BY THE ARCHITECT, ENGINEER OR CONTRACTING OFFICER DOES NOT INCLUDE REVIEW OF THESE MEASURES.
4	NOTES AND DETAILS ON THE STRUCTURAL DRAWINGS TAKE PRECEDENCE OVER GENERAL NOTES. TYPICAL DETAILS SHALL BE USED WHENEVER APPLICABLE. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
5	ALL WORK NOT DETAILED OR NOTED SHALL BE CONSTRUCTED IN ACCORDANCE WITH OTHER SIMILAR WORK SHOWN ON THE DRAWINGS AND TYPICAL DETAILS. DIMENSIONS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. DRAWINGS SHALL NOT BE SCALED FOR CONSTRUCTION PURPOSES.
6	NO PIPES OR DUCTS SHALL BE PLACED IN OR PENETRATE STRUCTURAL MEMBERS UNLESS SPECIFICALLY DESIGNED AND DETAILED.
7	REFER TO ARCHITECTURAL DRAWINGS FOR THE FOLLOWING: A) SIZE AND LOCATION OF DOOR AND WINDOW OPENINGS, EXCEPT AS NOTED. B) SIZE AND LOCATION OF INTERIOR AND EXTERIOR NONBEARING PARTITIONS. C) SIZE AND LOCATION OF CURBS, FLOOR DRAINS, SLOPES, DEPRESSED AREAS, CHANGES IN LEVEL, RAMPS, CHAMFERS GROOVES, INSERTS, ETC. D) SIZE AND LOCATION OF FLOOR AND ROOF OPENINGS IF NOT DIMENSIONED ON THESE DRAWINGS. E) FLOOR AND ROOF FINISHES. F) STAIR FRAMING AND DETAILS EXCEPT AS SHOWN HEREIN. G) DIMENSIONS NOT SHOWN ON STRUCT DWGS.
8	REFER TO MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS FOR THE FOLLOWING: A) PIPE RUNS, SLEEVES, HANGERS, EQUIPMENT, SLAB OPENINGS, NOT SHOWN OR NOTED HEREIN. B) ELECTRICAL CONDUIT, BOXES, OUTLETS. C) CONCRETE INSERTS FOR ELECTRICAL, MECHANICAL, AND PLUMBING FIXTURES. D) SIZE AND LOCATION OF MACHINE AND EQUIPMENT BASES. CONTRACTOR'S ENGINEER SHALL DESIGN SEISMIC ANCHORAGE FOR MECHANICAL AND ELECTRICAL EQUIPMENT PER SPEC.
9	CONTRACTOR/JOIST MANUFACTURER TO COORDINATOR EXACT WEIGHT, WEIGHT DISTRIBUTION, SIZE AND LOCATION OF ROOF MECHANICAL UNITS/DUCTS AND VERIFY SIZE OF OPEN-WEB STEEL JOIST SHOWN ON THE DRAWINGS.
10	ASTM REFERENCES ARE FOR LATEST REVISIONS AND ISSUE, UON.
11	CONTRACTOR SHALL INVESTIGATE THE SITE DURING CLEARING AND EXCAVATION FOR UNSUITABLE CONDITIONS. UNCONSOLIDATED AND UNDOCUMENTED FILLS, BURIED STRUCTURES, UTILITIES, ETC, SHALL IMMEDIATELY NOTIFY THE CONTRACTING OFFICER OF ANY SITE CONDITIONS NOT REFLECTED ON THE DRAWINGS OR DIFFERENT FROM MAXIMUM OR MINIMUM DIMENSIONS INDICATED, INCLUDING CONFLICT IN GRADES, ADVERSE SOIL CONDITIONS, GROUND WATER PRESENT, DEEPENED FOOTINGS, UNCOVERED AND UNEXPECTED UTILITY LINES, ETC.
12	CONSTRUCTION MATERIALS SHALL BE SPREAD OUT IF PLACED ON STRUCTURAL FRAMES SUCH THAT THE LOADING DOES NOT EXCEED THE DESIGN LIVE LOADS. PROVIDE SHORING AND BRACING WHERE DESIGN STRENGTH HAS NOT BEEN ATTAINED OR STRUCTURE IS NOT COMPLETE.
13	THE CONTRACTOR SHALL DETERMINE THE LOCATION OF UTILITY SERVICES IN AREAS TO BE EXCAVATED BEFORE BEGINNING EXCAVATION. EXERCISE CAUTION IN EXCAVATING AND TRENCHING.
14	STRUCTURE DRAWINGS TO BE USED IN CONJUNCTION WITH ARCHITECTURAL DRAWINGS HEREIN.

STRUCTURAL ABBREVIATIONS

ABBREVIATION	ABBREVIATION NAME
#	NUMBER
&	AND
=	EQUAL, EQUALS
@	AT
A/C	AIR CONDITIONING
AB	ANCHOR BOLT
ACI	AMERICAN CONCRETE INSTITUTE
ADDL	ADDITIONAL
ADJ	ADJACENT
AFF	ABOVE FINISEHD FLOOR
AH, AHU	AIR HANDLING UNIT
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ALT	ALTERNATE
APA	AMERICAN PLYWOOD ASSOCIATION
APPROX	APPROXIMATELY
ARCH	ARCHITECTURAL
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AT/FP	ANTI-TERRORISM/ FORCE PROTECTION
AWS	AMERICAN WELDING SOCIETY
BET	BETWEEN
BLW	BELOW
BM	BEAM
BN	BOUNDARY NAIL
BOF	BOTTOM OF FOOTING
BOT	BOTTOM
BRG	BEARING
C	CHANNEL
CE	CARBON EQUIVALENT
CENT	CENTERED
CFMF	COLD-FORMED METAL FRAMING
CFS	COLD-FORMED STEEL
CIP	CAST IN PLACE
CJ	CONTROL JOINT/CEILING JOIST
CJP	COMPLETE JOINT PENETRATION
CL	CENTERLINE
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
COND	CONDITION
CONN	CONNECT, CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS
CONTR	CONTRACTOR
COORD	COORDINATE
COR	CORNER
CWB	CAPILLARY WATERBARRIER
D	DEEP, DEPTH
DEG	DEGREE
DEM	DEMOLISH, DEMOLITION
DEP	DEPRESSED
DET	DETAIL
DIA	DIAMETER
DIAG	DIAGONAL
DL	DEADLOAD
DO	DITTO
DT	DRAG TRUSS
DWG(S)	DRAWINGS
DWL	DOWEL
EA	EACH
EF	EACHFACE
ELEC	ELECTRICAL
ELEV	ELEVATION
EN	EDGE NAIL
EQN	EQUATION
EQUIP	EQUIPMENT
ES	EACH SIDE
EW	EACH WAY
EXIST OR (E)	EXISTING
EXT	EXTERNAL, EXTERIOR
FF	FAR FACE
FFE	FINISH FLOOR ELEVATION
FG	FINISH GRADE
FJ	FLOOR JOIST
FMG	FRAMING
FN	FIELD NAIL
FND	FOUNDATION
FOC	FACE OF CONCRETE
FOM	FACE OF MASONRY
FOS	FACE OF STUD
FS	FAR SIDE
FT, '	FOOT
FTG	FOOTING
Fy	YIELD STRESS
GA	GAUGE
GLB	GLUED LAMINATED BEAM
GT	GIRDER TRUSS
GUSS	GUSSET
GYP BD	GYPSUM BOARD
HD	HOLD DOWN
HDR	HEADER
HGR	HANGER
HK	HOOK
HORIZ	HORIZONTAL
HP	HIGH POINT
HSS	HOLLOW STRUCTURAL SECTION
HT	HEIGHT
HVAC	HEATNG/ VENTILATING/ AIR CONDITIONING
I	MOMENT OF INERTIA
IBC	INTERNATIONAL BUILDING CODE
ICF	INSULATED CONCRETE FORM
ID	INSIDE DIAMETER
IN, "	INCH

STRUCTURAL ABBREVIATIONS

ABBREVIATION	ABBREVIATION NAME
INCL	INCLUDE
INFO	INFORMATION
INS	INSULATED, INSULATION
JST	JOIST
K, KIPS	THOUSAND POUNDS
L	LENGTH, ANGLE
LB	POUND
LG	LONG
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLO	LONG LEG OUTSTANDING
LLV	LONG LEG VERTICAL
LOC	LOCATE, LOCATION
LONG	LONGITUDINAL
LP	LOW POINT
LW	LIGHT WEIGHT
MAS	MASONRY
MB	MACHINE BOLT
MBR	MEMBER
MECH	MECHANICAL
MED	MEDIUM
MEZZ	MEZZANINE
MF	MOMENT FRAME
MFG	MANUFACTURING
MIN	MINIMUM
MO	MASONRY OPENING
MOD	MODIFY, MODIFIED
MRF	MANUFACTURER
NF	NEAR FACE
NOM	NOMINAL
NS	NEAR SIDE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OH	OPPOSITE HAND, OVERHEAD
OWSJ	OPEN WEB STEEL JOIST
P/C	PIN CONNECTED
PAR	PARALLEL
PCC	PRECAST CONCRETE
PCF	POUNDS PER CUBIC FOOT
PEN	PENETRATION
PFJ	PERIMETER FELT JOINT
PL	PLATE
PLYWD	PLYWOOD
PNL	PANEL
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	PRESSURE TREATED, POINT, PRETENSIONED
REINF	REINFORCING, REINFORCED
REQ	REQUIRED
RET	RETURN, RETAINING
REV	REVISION, REVISED
RF	ROOF
RFT	RAFTERS
RPM	REVOLUTIONS PR MINUTE
RS	ROUGH SAWN
RT	ROOF TRUSS
S	SECTION MODULUS
SC	SLIP CRITICAL
SCBRW	SEGMENTAL CONCRETE BLOCK RETAINING WALL
SCHED	SCHEDULE
SDI	STEEL DECK INSTITUTE
SECT	SECTION
SEIS	SEISMIC
SEP	SEPARATION
SHT	SHEET
SIM	SIMILAR
SJI	STEEL JOIST INSTITUTE
SLO	SHORT LEG OUTSTANDING
SMS	SHEET METAL SCREW
SPEC(S)	SPECIFICATION(S)
SPRT	SUPPORT
SQ	SQUARE
SS	STAINLESS STEEL
ST	SNUG TIGHT
STD	STANDARD
STIF/STIFF	STIFFENER
STL	STEEL
STRUCT	STRUCTURAL, STRUCTURE
SUSP	SUSPENDED
SYM	SYMMETRICAL
T&B	TOP AND BOTTOM
T&G	TONGUE AND GROOVE
TGB	TOP OF GRADE BEAM
THK	THICK, THICKNESS
TL	TOTAL LOAD
TN	TOE NAIL
TOB	TOP OF BEAM
TOC	TOP OF CONCRETE
TOF	TOP OF FOOTING
TOS	TOP OF STEEL
TOW	TOP OF WALL
TYP	TYPICAL
UFC	UNITED FACILITES CRITERIA
UNO	UNLESS NOTED OTHERWISE
UON	UNLESS OTHERWISE NOTED
VB	VAPOR BARRIER
VERT	VERTICAL
W	WIDTH, WEST, WIDE FLANGE
w/	WITH
WF	WIDE FLANGE
WPT	WORKING POINT
WWF	WELDED WIRE FABRIC
WWM	WELDED WIRE MESH
x	BY, TIMES

STATE OF TEXAS
WESTON McCANN
115262
LICENSED
PROFESSIONAL ENGINEER

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson
Ready • Reliable • Resilient

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion_FtHood/S_B90176 Hangar Door Expansion_D25-04414_R24.rvt

Plot Date: 7/1/2026 8:32:28 AM

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: J. BATY
DRAWN BY: D. FAVAZZA
CHECKED BY: W. McCANN
SUBMITTED BY: CITRINE-OLSSON JV
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST; FORT WORTH, TX 76102

CITRINE OLSSON JV
2801 GRANDE AVE
GRAND JUNCTION, CO 81508

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT
W9126G25F0273

GENERAL STRUCTURAL NOTES, DESIGN LOADS & ABBREVIATIONS

SHEET ID
S-001

BUILDING CODE AND STANDARDS

UFC 1-200-01 DOD BUILDING CODE W/ CHANGE 4, 17 DECEMBER 2024
UFC 3-301-01 STRUCTURAL ENGINEERING WITH CHANGE 4, 3 JUNE 2025
UFC 4-010-01 DOD MINIMUM ANTITERRORISM STANDARDS FOR BUILDINGS W/ CHANGE 3, 24 MAY 2024
IBC 2024 INTERNATIONAL BUILDING CODE WITH STANDARDS AS REFERENCED IN IBC CHAPTER 35
IEBC 2024 INTERNATIONAL EXISTING BUILDING CODE
ASCE 7-22 MINIMUM DESIGN LOADS AND ASSOCIATED CRITERIA FOR BUILDINGS AND OTHER STRUCTURES, 2022

STRUCTURAL DESIGN LOADS:

	UNIFORM (PSF)	CONCENTRATED (LB)
DEAD LOAD (IN ADDITION TO WEIGHT OF STRUCTURAL MEMBERS AND NON-LOAD-BEARING WALLS/PARTITIONS, ADD THE FOLLOWING):		
ALLOWANCE FOR MEP/FIREPROOFING/MISC:	5 PSF	
ALLOWANCE FOR ROOFING SYSTEM	3 PSF	
FLOOR LIVE & MISC LOADS		
AIRCRAFT WEIGHT	100 KIPS	
AIRCRAFT WHEEL LOAD	40 KIPS (ASSUMED MAX)	
CATWALK	40 PSF	
RAILING (LATERAL LOAD AT TOP)	50 PLF	200
ROOF LIVE LOAD	20 PSF	

SNOW DESIGN DATA

GROUND SNOW LOAD, P_G	14 PSF
FLAT ROOF SNOW LOAD, P_F	9.4 PSF
MINIMUM SNOW LOAD FOR LOW-SLOPE ROOFS, P_M	14 PSF
RAIN-ON-SNOW SURCHARGE	0.0 PSF
SNOW EXPOSURE FACTOR, C_E	0.80
SNOW LOAD IMPORTANCE FACTOR, I_S	1.0
THERMAL FACTOR, C_T	1.2

WIND DESIGN DATA

BASIC WIND SPEED, V	105 MPH
RISK CATEGORY	II
WIND EXPOSURE	C
INTERNAL PRESSURE COEFFICIENT, GC_{PI}	±0.18 TYPICAL ±0.55 FOR NEW VERTICAL LIFT FABRIC HANGAR DOORS

COMPONENTS AND CLADDING (ULT. PSF FOR FULLY ENCLOSED)

	10 SF	50 SF	100 SF
INTERIOR ROOF (ZONE 1)	-53.0 / +23.6	-38.6 / +16.1	-38.6 / +16.0
EDGE ROOF (ZONE 2)	-69.1 / +23.6	-53.2 / +16.1	-46.4 / +16.0
CORNER ROOF (ZONE 3)	-74.4 / +23.6	-57.2 / +16.1	-49.7 / +16.0
INTERIOR WALL (ZONE 4)	-96.1 / +23.6	-75.9 / +16.1	-67.2 / +16.0
CORNER WALL (ZONE 5)	-103.3 / +23.6	-80.1 / +16.1	-70.1 / +16.0

END ZONE DISTANCE (a) 22.6 FT

EARTHQUAKE DESIGN DATA

RISK CATEGORY	II
SEISMIC IMPORTANCE FACTOR, I_e	1.00
SITE CLASS	C
SPECTRAL RESPONSE COEFFICIENTS	S_S = 0.07 g; S_1 = 0.041 g
DESIGN SPECTRAL RESPONSE COEFF'S	S_{DS} = 0.065 g; S_{D1} = 0.062 g
SEISMIC DESIGN CATEGORY	A
SEISMIC FORCE-RESISTING SYSTEM	STRUCTURAL STEEL SYSTEMS NOT SPECIFICALLY DETAILED FOR SEISMIC RESISTANCE
DESIGN BASE SHEAR	V = 0.010W
SEISMIC RESPONSE COEFFICIENT	C_S = 0.01
RESPONSE MODIFICATION COEFFICIENT	R = 3
ANALYSIS PROCEDURE	EQUIVALENT LATERAL FORCE PROCEDURE

FOUNDATION DESIGN DATA

ALLOWABLE CAPACITIES FOR EXISTING DRILLED PIERS	
END BEARING	30 KSF
SKIN FRICTION	1 KSF
EMBEDMENT INTO BEARING STRATA	3 FEET
TOTAL ASD CAPACITY FOR EXISTING DRILLED PIERS	
30" DIAMETER	338 KIPS
42" DIAMETER	624 KIPS

MATERIAL DATA:

CONCRETE & REINFORCING

DESIGN CONCRETE MIXES TO PROVIDE THE FOLLOWING PROPERTIES:

MIX	USE	28-DAY COMP. STRENGTH (MIN PSI)	28-DAY FLEXURAL STRENGTH (MIN PSI)	WATER/ CEMENT (MAX RATIO)	AIR CONTENT (%)
A	TRENCH FTGS AND HANGAR SLAB	4,000	650	0.45	<3

CONCRETE WEIGHT	NORMAL WEIGHT CONCRETE - TYPICAL, UON
CEMENT TYPE	ORDINARY PORTLAND CEMENT (OPC) TYPE I/II - ASTM C150 OR PORTLAND LIMESTONE CEMENT (PLC) TYPE IL - ASTM C595
AGGREGATES	REGULAR WEIGHT HARDROCK TYPE - ASTM C33
ADMIXTURES	ASTM C494
AIR-ENTRAINMENT	ASTM C260
REINFORCING STEEL	ASTM A615, GRADE 60, DEFORMED
WELDABLE REINFORCING STEEL	ASTM A706, GRADE 60, DEFORMED
DEFORMED BAR ANCHORS	ASTM 1064-18, GRADE 70, DEFORMED
WELDED WIRE REINFORCEMENT	ASTM A1064, PROVIDE SHEET-TYPE; ROLL-TYPE IS NOT ACCEPTABLE
NON-SHRINK GROUT (8,000 PSI, MIN.)	ASTM C1107, FACTORY PREMIXED
PREFORMED EXPANSION JOINT (1/2", UON)	ASTM D1751

STEEL

W SHAPES, WT SHAPES	ASTM A992
PLATES, ROUND BAR	ASTM A572, GRADE 50
ANGLES	ASTM A572, GRADE 50
C AND MC SHAPES	ASTM A992
HSS SQUARE AND RECTANGULAR TUBES	ASTM A500 GRADE C, F_y = 50 ksi
HSS ROUNDS	ASTM A500, GRADE C, F_y = 46 ksi
PIPES	ASTM A53, GRADE B, F_y = 35 ksi
ANCHOR RODS	ASTM F1554, GRADE 55 WITH SUPPLEMENT S1
HIGH STRENGTH BOLTS	ASTM F3125, GRADE 325, TYPE 1, UON ASTM F3125, GRADE 490, TYPE 1
WASHERS FOR HIGH STRENGTH BOLTS	ASTM F436
DIRECT-TENSION INDICATING WASHERS	ASTM F959
HEAVY HEX NUTS	ASTM A563
STICK ELECTRODES	AWS CLASS E70XX AWS CLASS E6010 OR E6011 (GALV. SURFACES)
HEADED STUDS	ASTM A108 GRADES C1010 THRU C1020 (Fu = 55 ksi)

GENERAL NOTES

1. THE STRUCTURAL DRAWINGS ARE TO BE COORDINATED AND USED IN CONJUNCTION WITH THE CIVIL, ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS. VERIFY ALL DIMENSIONS AND ELEVATIONS WITH [ARCHITECTURAL] DRAWINGS AND IMMEDIATELY NOTIFY THE CONTRACTING OFFICER OF ANY DISCREPANCIES. REFER TO OTHER DISCIPLINE DRAWINGS FOR ADDITIONAL OPENINGS, SLEEVES, UNDER-FLOOR DUCTS, FLOOR DEPRESSIONS, ETC. NOT SHOWN ON THE STRUCTURAL DRAWINGS. COORDINATE LOCATION, SIZE, AND REINFORCEMENT OF ALL OPENINGS WITH RESPECTIVE TRADES BEFORE FABRICATION.
2. OLSSON SHALL NOT BE RESPONSIBLE FOR, NOR HAVE CHARGE OF, CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, OR PROCEDURES FOR THE SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THIS PROJECT AND SHALL NOT BE RESPONSIBLE FOR CONTRACTOR'S FAILURE TO CARRY OUT WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
3. OLSSON SHALL NOT BE RESPONSIBLE FOR, NOR HAVE CONTROL OVER, THE ACTS OR OMISSIONS OF THE CONTRACTOR, SUBCONTRACTORS, ANY OF THEIR AGENTS OR EMPLOYEES, OR ANY OTHER PERSONS PERFORMING ANY OF THE WORK, OR FOR THE FAILURE OF ANY OF THEM TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
4. THE CONTRACTOR SHALL PROVIDE AND BE RESPONSIBLE FOR ALL TEMPORARY SHORING AND BRACING REQUIRED FOR THE CONSTRUCTION OF THIS PROJECT. ALL SHORING AND BRACING MEMBERS AND CONNECTIONS SHALL BE OF SUFFICIENT STRENGTH TO SUPPORT THE IMPOSED LOADS. TEMPORARY MEMBERS AND CONNECTIONS SHALL NOT BE REMOVED UNTIL PERMANENT MEMBERS ARE IN PLACE AND FINAL CONNECTIONS ARE MADE.
5. THE CONTRACTOR SHALL FOLLOW WRITTEN DIMENSIONS ONLY. DO NOT SCALE DRAWINGS.
6. NO FIELD MODIFICATIONS TO ANY STRUCTURAL COMPONENTS SHALL BE MADE WITHOUT PRIOR APPROVAL BY THE CONTRACTING OFFICER. THIS INCLUDES, BUT IS NOT LIMITED TO, REVISIONS DUE TO MISLOCATION, MISFIT, OR ANY OTHER CONSTRUCTION ERRORS.
7. NO OPENING SHALL BE PLACED IN ANY STRUCTURAL MEMBER (OTHER THAN AS INDICATED ON APPROVED SHOP DRAWINGS) UNTIL THE LOCATION HAS BEEN APPROVED BY THE CONTRACTING OFFICER.
8. PROVIDE SLEEVE LAYOUTS FOR ALL PENETRATIONS THROUGH CONCRETE STRUCTURAL MEMBERS FOR ALL TRADES.
9. EMBEDDED ITEMS, SUCH AS PIPE SLEEVES, CONDUITS, AND INSERTS, SHALL BE IN PLACE BEFORE CONCRETE PLACEMENT.
10. ALL ROOF MOUNTED EQUIPMENT OR EQUIPMENT SUSPENDED FROM ROOFS SHALL BE SUPPORTED BY BEAMS DESIGNATED FOR SUCH PURPOSE ONLY. IF NO SUPPORT HAS BEEN DESIGNATED, OR IF A QUESTION ARISES, NOTIFY THE CONTRACTING OFFICER PRIOR TO ERECTION OF EQUIPMENT.
11. ALL DETAILS, SECTIONS, AND NOTES ON THE DRAWINGS ARE INTENDED TO BE TYPICAL FOR SIMILAR SITUATIONS ELSEWHERE UNLESS OTHERWISE NOTED. SEE THE ARCHITECTURAL DRAWINGS FOR DETAILS AND DIMENSIONS NOT INDICATED ON THE STRUCTURAL DRAWINGS.
12. MATERIALS AND EQUIPMENT SHALL BE STORED AND TRANSPORTED IN A MANNER SO AS NOT TO EXCEED THE ALLOWABLE CAPACITY OF THE CONSTRUCTION.
13. FOR LOCATIONS AND DIMENSIONS OF SLEEVES, CURBS, OPENINGS, AND DEPRESSIONS NOT SHOWN ON THE STRUCTURAL DRAWINGS, SEE CIVIL, ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS. CONTRACTOR SHALL VERIFY AND COORDINATE LOCATION OF ABOVE ITEMS WHETHER SHOWN ON THE STRUCTURAL DRAWINGS OR NOT.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DESIGN AND PROVISION OF ANY AND ALL TEMPORARY BRACING AND SHORING AGAINST WIND, ERECTION AND ALL CONSTRUCTION LOADS UNTIL ALL ELEMENTS, MEMBERS, AND CONNECTIONS (ROOF, LATERAL FRAMES, ETC), AS SHOWN ON THE CONTRACT DOCUMENTS ARE COMPLETELY INSTALLED. THE STRUCTURAL MEMBERS SHOWN ON THE CONTRACT DOCUMENTS ARE DESIGNED FOR THE ANTICIPATED LOADS THAT THE STRUCTURE WILL BE SUBJECTED TO ONLY AFTER ALL STRUCTURAL ELEMENTS ARE IN PLACE AND FINAL CONNECTIONS ARE COMPLETE. A DETAILED SHORING AND ERECTION PLAN WITH CALCULATIONS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR AND SHALL BE PREPARED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER.
15. THE ENGINEER HAS ASSUMED THAT THE EXISTING CONSTRUCTION WAS DESIGNED AND CONSTRUCTED IN CONFORMITY WITH GOOD PRACTICES. THE CONTRACTOR SHALL PROVIDE ALL MEASURES AND PRECAUTIONS NECESSARY INCLUDING BRACING OR SHORING TO PREVENT DAMAGE AND/OR SETTLEMENT TO THE EXISTING STRUCTURE. FURTHERMORE, THEY SHALL AGREE TO ASSUME ALL RESPONSIBILITY FOR THE PRESERVATION OF THE EXISTING STRUCTURE.
16. IF DURING CONSTRUCTION, MOVEMENTS OR SETTLEMENTS OF THE EXISTING STRUCTURE ARE OBSERVED, TAKE PRECAUTIONS NECESSARY TO SECURE THE SAFETY OF THE SUBJECT AND/OR ADJOINING PREMISES, AND CONTACT THE CONTRACTING OFFICER.
17. THE EXISTING INFORMATION SHOWN ON THE DRAWINGS IS AS EXACT AS COULD BE SECURED INSOFAR AS BUILDING CONSTRUCTION AND EXISTING CONDITIONS ARE CONCERNED. EXTREME ACCURACY IS NOT GUARANTEED. THE DRAWINGS AND SPECIFICATIONS ARE INTENDED FOR THE ASSISTANCE OF THE CONTRACTOR IN ACHIEVING THE END RESULTS. MANY OF THE DIMENSIONS AND CONDITIONS NOTED ON THE DRAWINGS ARE BASED ON INFORMATION OBTAINED FROM THE ORIGINAL DRAWINGS AND MAY OR MAY NOT BE CORRECT. EXACT LOCATIONS, MEASUREMENTS, DISTANCES, LEVELS, ETC. WILL BE GOVERNED BY CONDITIONS AT THE JOB SITE. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS, INCLUDING EXISTING MEMBER SIZES, DIMENSIONS, AND ELEVATIONS WHICH AFFECT WORK TO BE PERFORMED AS PART OF THIS PROJECT, PRIOR TO ANY NEW CONSTRUCTION OR MATERIAL FABRICATION. ALL FIELD VERIFIED DIMENSIONS AND DISCREPANCIES MUST BE SHOWN ON THE STRUCTURAL SHOP DRAWINGS OR ON A SEPARATE SUBMITTAL SO THAT THE CONTRACTING OFFICER CAN MAKE ANY ADJUSTMENT IN MEMBER SIZES OR DETAILS. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL CONSTRUCTION CHANGES WHICH ARE A RESULT OF EXISTING JOB SITE CONDITIONS, AND WHICH ARE NOT ACCURATELY DOCUMENTED FOR THE CONTRACTING OFFICER IMMEDIATELY AFTER THE CONTRACTOR'S FIELD VERIFICATION EFFORTS.

SHOP DRAWINGS

1. EACH SHOP DRAWING AND SUBMITTAL THAT HAS BEEN PREPARED BY THE GENERAL CONTRACTOR'S SUBCONTRACTOR SHALL BE REVIEWED, APPROVED, AND STAMPED BY THE SUBCONTRACTOR, PRIOR TO SUBMITTING TO THE CONTRACTING OFFICER FOR REVIEW.
2. THE GENERAL CONTRACTOR SHALL REVIEW ALL SUBMISSIONS FOR CONFORMANCE WITH THE CONTRACT DOCUMENTS, MEANS, METHODS, TECHNIQUES, SEQUENCES, AND OPERATION OF CONSTRUCTION, TECHNICAL CONTENT, COORDINATION OF TRADES, DIMENSIONAL ACCURACY, SAFETY PRECAUTIONS AND PROGRAMS INCIDENTAL THERETO, ALL OF WHICH ARE THE SOLE RESPONSIBILITY OF THE GENERAL CONTRACTOR.
3. ANY DEVIATIONS FROM THE ORIGINAL DESIGN OR DESIGN CRITERIA AS SPECIFIED ON THE "FOR CONSTRUCTION" DESIGN DOCUMENTS OF THE PROJECT SHALL BE BOLDLY NOTED AND CLOUDED ON THE SHOP DRAWINGS THAT ARE SUBMITTED FOR APPROVAL TO BRING TO THE EOR'S ATTENTION.
4. ALL CHANGES TO RESUBMITTED SHOP DRAWINGS SHALL BE CLOUDED.

DEFERRED SUBMITTALS

THE FOLLOWING ELEMENTS ARE DELEGATED DESIGN AND SHALL BE PREPARED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER.

1. SHORING AND ERECTION PLAN AND CALCULATIONS.

FOUNDATIONS

1. !!STOP!! CALL BEFORE YOU DIG! THE CONTRACTOR SHALL BE RESPONSIBLE TO CALL "811" AND COORDINATE FIELD LOCATIONS OF EXISTING UNDERGROUND UTILITIES PRIOR TO BEGINNING GRADING ACTIVITIES. NOTIFY THE CONTRACTING OFFICER WHENEVER CONFLICTS ARE ENCOUNTERED. THE CONTRACTOR SHALL PROTECT ANY EXISTING UTILITIES FROM DAMAGE OR INTERRUPTION DURING CONSTRUCTION.
2. A GEOTECHNICAL ENGINEER SHALL BE RETAINED FOR TESTING, OBSERVATIONS, AND SPECIAL INSPECTIONS DURING ALL EARTHWORK AND FOUNDATION CONSTRUCTION PHASES TO VERIFY THAT THE RECOMMENDATIONS OF THE SUBSOIL INVESTIGATION ARE BEING IMPLEMENTED. THE GEOTECHNICAL ENGINEER OR THEIR REPRESENTATIVE SHALL INSPECT ALL FOOTING EXCAVATIONS AND SLAB SUBGRADE IMMEDIATELY PRIOR TO PLACEMENT OF ANY CONCRETE AND SHALL TEST ALL FILL FOR PROPER COMPACTION.
3. NONEXPANSIVE STRUCTURAL FILL MATERIALS SHALL CONSIST OF SUITABLE ON-SITE OR BORROW MATERIALS MEETING THE REQUIREMENTS OF TEXAS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATION FOR BASE COURSE, ITEM 247, TYPE A, GRADE 1 OR 2, WITH PLASTICITY INDEX OF NOT LESS THAN 4 PERCENT NOR GREATER THAN 12 PERCENT WHEN TESTED IN ACCORDANCE WITH ASTM D 4318. AND SHALL BE PLACED IN CONTROLLED LIFTS NOT EXCEEDING 8 INCHES IN LOOSE THICKNESS AND COMPACTED TO AT LEAST 95 PERCENT OF LABORATORY MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D 1557.
4. CAPILLARY WATER BARRIER SHALL CONSIST OF CLEAN, CRUSHED, NONPOROUS ROCK, CRUSHED GRAVEL, OR UNCRUSHED GRAVEL. THE MAXIMUM PARTICLE SIZE SHALL BE 1.5 INCHES AND NO MORE THAN 2 PERCENT BY WEIGHT SHALL PASS THE 3/16-INCH SIZE (NO. 4) SIEVE.
5. GENERAL CONTRACTOR SHALL COMPACT EXPOSED FOOTING BOTTOMS WITH HAND-OPERATED, MECHANICAL COMPACTION EQUIPMENT AFTER EACH FOOTING EXCAVATIONS IS COMPLETED AND PRIOR TO PLACING STEEL OR CONCRETE.
6. SHOULD UNSUITABLE BEARING CONDITIONS BE ENCOUNTERED DURING EXCAVATION, NOTIFY THE CONTRACTING OFFICER BEFORE CONTINUING WITH CONSTRUCTION.
7. PONDING OF WATER IN EXCAVATION IS UNACCEPTABLE AT ANY TIME. THE CONTRACTOR MUST PROVIDE SURFACE DRAINAGE AND PUMPS TO PROTECT ALL EXCAVATION FROM PONDING, TO CONTINUALLY AND EFFECTIVELY REMOVE WATER FROM THE SITE AT ALL TIMES. FLOODING OF ANY EXCAVATION AFTER APPROVAL OF THE SUBGRADE WILL BE CAUSE FOR RE-PREPARATION AND RE-APPROVAL OF THE SUBGRADE.
8. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY MEASURES TO PREVENT ANY WATER, FROST, OR ICE FROM PENETRATING ANY FOOTING OR SLAB SUBGRADE BEFORE AND AFTER PLACING OF CONCRETE AND UNTIL SUCH SUBGRADES ARE FULLY PROTECTED BY THE PERMANENT BUILDING STRUCTURE.
9. RECORDS OF ANY EXISTING SUBGRADE INTERFERENCES, OTHER THAN THOSE INTERFERENCES SHOWN OR INDICATED ON THE CIVIL CONSTRUCTION DOCUMENTS, ARE NOT CURRENTLY AVAILABLE. DURING EXCAVATION WORK, INTERFERENCES MAY BE DISCOVERED. CONTRACTOR SHALL DOCUMENT CONSTRUCTION-RELATED DIMENSIONS OF ALL INTERFERENCES. CONTRACTOR SHALL FURNISH THE ABOVE INFORMATION IN THE FORM OF DETAILED SKETCHES TO THE CONTRACTING OFFICER FOR REVIEW.
10. THE CONTRACTOR SHALL REVIEW ESTABLISH SPECIFIC "CONSTRUCTION PROCEDURES AND SEQUENCES" FOR THE EXCAVATION, COMPACTION, FILL, AND INSTALLATION OF THE NEW BUILDING FOUNDATION. SUBMIT THESE FOR REVIEW TO THE ACCREDITED TESTING LABORATORY AND CONTRACTING OFFICER.
11. TESTING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT THE SUBGRADE, FILL, AND BACKFILL MATERIALS ARE PROPERLY COMPACTED.
    A. IN-PLACE DENSITY OF THE SUBGRADE, FILLS, AND BACKFILLS SHALL BE PERFORMED FOR EVERY 2,500 SQUARE FEET PER LIFT IN ACCORDANCE WITH ASTM D 1556 OR ASTM D 2922.
    B. OPTIMUM MOISTURE AND LABORATORY MAXIMUM DENSITY OF NONEXPANSIVE FILL AND BACKFILL SHALL BE PERFORMED FOR EVERY 500 CUBIC YARDS OR WHEN ANY CHANGE IN MATERIAL OCCURS.

STRUCTURAL CONCRETE

1. CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF:
    A. ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE"
    B. ACI 302.1R "GUIDE TO CONCRETE FLOOR AND SLAB CONSTRUCTION"
    C. ACI 304 "GUIDE FOR MEASURING, MIXING, TRANSPORTING, AND PLACING CONCRETE"
    D. ACI 311.1R "MANUAL OF CONCRETE INSPECTION"
    E. ACI 315R "GUIDE TO PRESENTING REINFORCING STEEL DESIGN DETAILS"
    F. ACI 318 "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE"
    G. ACI 347 "GUIDE TO FORMWORK FOR CONCRETE"
2. SUBMIT A CONCRETE MIX DESIGN FOR EACH CLASS OF CONCRETE FOR APPROVAL BY THE PROJECT ENGINEER. THE MIX DESIGN SHALL INCLUDE THE PROPORTIONS AND TEST RESULTS OR CERTIFICATIONS FOR ALL COMPONENTS OF THE MIX IN ACCORDANCE WITH THE LATEST ACI 301. SUBMIT DOCUMENTED RESULTS OF "FIELD TEST DATA" OR "TRIAL MIXTURES" IN ACCORDANCE WITH ACI 301 FOR EACH CLASS OF CONCRETE TO BE USED. THE MIX DESIGNS SHALL MEET THE GUIDELINES AS LISTED IN THE "MATERIAL DATA" SECTION, EXCEPT AS APPROVED BY THE PROJECT ENGINEER.
3. THE ADDITION OF WATER TO THE MIX ON SITE WILL NOT BE ALLOWED, UNLESS SPECIFICALLY APPROVED.
4. CONCRETE MAY NOT BE PLACED DURING FREEZING WEATHER UNLESS SUITABLY PROTECTED, PER ACI 306.1. CONFORM TO ACI 305.1 FOR HOT WEATHER CONCRETING.
5. CONCRETE MIXES FOR INTERIOR CONCRETE SLABS-ON-GROUND SHALL ADHERE TO THE FOLLOWING CRITERIA:
    A. FLY ASH MAY REPLACE UP TO 15% OF PORTLAND CEMENT (MAXIMUM).
        a. DO NOT USE POZZOLANS IN MIXES FOR FINISHED FLOOR SLABS.
    B. AGGREGATE SHALL BE WELL-GRADED WITH 1-1/2" MAXIMUM DIAMETER.
    C. THE MIX SHALL CONTAIN NO ADMIXTURES THAT EXACERBATE SHRINKAGE.
    D. AIR ENTRAINMENT SHALL NOT BE USED.
    E. NO MORE THAN 658 LBS OF PORTLAND CEMENT (7 BAGS), WILL BE ALLOWED PER CUBIC YARD.
6. FLY ASH (CLASS 'C') MAY REPLACE UP TO 25% OF PORTLAND CEMENT, MAXIMUM, EXCEPT AS NOTED FOR INTERIOR SLABS.
7. MINIMUM FLEXURAL STRENGTH, WHERE REQUIRED, SHALL BE TESTED IN ACCORDANCE WITH ASTM C78.
8. CURE SPECIFIC CONCRETE ELEMENTS FOR 72 HOURS AS INDICATED BELOW:
   SLABS-ON-GRADE: MEMBRANE FORMING COMPOUND
9. THE CONTRACTOR SHALL SUBMIT CHECKED, DETAILED REINFORCEMENT SHOP DRAWINGS SHOWING THE LOCATIONS AND DETAILING OF ALL FOOTINGS, WALLS, PIERS, BEAMS, COLUMNS, SLABS, CONSTRUCTION JOINTS, CONTROL JOINTS, ETC, PRIOR TO FABRICATION. DETAILS SHALL INCLUDE BAR SIZES, LAPS, SPACING, AND PLACEMENT.
10. WELDED WIRE FABRIC SHALL BE LAPPED TWO PANELS AT EDGES AND ENDS, AND TIED SECURELY.
11. THE MINIMUM CONCRETE COVER FOR CAST-IN-PLACE (NON-PRESTRESSED) CONCRETE SHALL BE IN ACCORDANCE WITH THE FOLLOWING:
    A. CONCRETE CAST AGAINST/PERMANENTLY EXPOSED TO EARTH: 3"
    B. CONCRETE EXPOSED TO EARTH OR WEATHER:
        a. NO 6 THROUGH NO 18 BARS 2"
        b. NO 5 BAR, W31 OR D31 WIRE, AND SMALLER 1 1/2"
    C. CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND:
        a. SLABS, WALLS, JOISTS:
            • NO 14 AND NO 18 BARS 1 1/2"
            • NO. 11 BAR AND SMALLER 3/4"
        b. BEAMS, COLUMNS:
            • PRIMARY REINFORCEMENT 1 1/2"
        c. TIES, STIRRUPS, SPIRALS 1 1/2"
12. PROVIDE LAP SPLICES AS INDICATED BELOW UNLESS OTHERWISE NOTED IN THE DRAWINGS.

BAR SIZE	SPLICE LENGTH: TOP BARS*	SPLICE LENGTH: OTHER BARS
#3	1'-3"	1'-0"
#4	1'-8"	1'-3"
#5	2'-5"	1'-10"
#6	3'-4"	2'-7"

* TOP BAR CONDITION OCCURS WHERE HORIZONTAL REINFORCEMENT IS PLACED SUCH THAT MORE THAN 12 INCHES OF FRESH CONCRETE IS CAST BELOW THE SPLICE.

13. SEE PLANS FOR SLABS-ON-GROUND THICKNESS AND REINFORCING. ALL SLABS SHALL BE PLACED OVER A VAPOR BARRIER AND 6-INCHES MINIMUM OF GRANULAR FILL.
14. VAPOR RETARDER SHALL BE ASTM E1745, CLASS A (10 MIL MIN) POLYETHYLENE SHEETS, UNLESS OTHERWISE SPECIFIED, WITH ALL LAPS SEALED AND EDGES TURNED UP 1/2-INCH BELOW FINISH FLOOR SLABS.
15. CONCRETE WITH PORTLAND LIMESTONE CEMENT (PLC) MUST HAVE PERFORMANCE AT LEAST EQUIVALENT TO SPECIFIED CONCRETE WITH OPC, SUCH AS STRENGTH AND DURABILITY. THEREFORE, ITEMS SUCH AS LIMESTONE CONTENT AND PARTICLE SIZE DISTRIBUTION MAY NEED TO BE MODIFIED.
16. UNLESS DETAILED OTHERWISE, BEND DIAMETERS AND HOOK LENGTHS FOR "STANDARD HOOKS" USED FOR STIRRUPS, TIES, AND HOOPS SHALL BE AS SHOWN IN ACI 318-14, TABLE 25.3.2. BEND DIAMETERS AND HOOK LENGTHS FOR "STANDARD HOOKS" EMBEDDED INTO FOOTINGS SHALL BE PER TABLE 25.3.1. (SEE DRAWINGS FOR EMBEDMENT LENGTH OF HOOK INTO FOOTING).
17. MECHANICAL COUPLERS CAPABLE OF SUSTAINING 125% OF THE BAR ULTIMATE TENSILE CAPACITY MAY BE USED IN LIEU OF LAP SPLICES.

POST-INSTALLED ANCHORS

1. LARGE DIAMETER SCREW ANCHORS:
    A. MINIMUM EMBEDMENT, UNLESS OTHERWISE NOTED, SHALL BE:
        a. 4" FOR 1/2" DIAMETER.
        b. 5" FOR 5/8" DIAMETER.
        c. 6" FOR 3/4" DIAMETER.
2. ADHESIVE ANCHORS:
    A. MINIMUM EMBEDMENT SHALL BE 9 TIMES ANCHOR DIAMETER, UNLESS OTHERWISE SPECIFIED, OR LIMITED BY THICKNESS OF CONCRETE OR CONCRETE MASONRY.
    B. ANCHOR RODS TO BE GRADE 55 THREADED ROD, UNLESS OTHERWISE SPECIFIED.
    C. USE SCREENS AT MASONRY HOLLOW BASE CONDITIONS.
3. ALL POST-INSTALLED ANCHORS SHALL BE INSTALLED BY QUALIFIED INDIVIDUALS IN STRICT CONFORMANCE TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND RECOMMENDATIONS INCLUDING FINISH, MINIMUM EMBEDMENT, ADHESIVE TYPES, RECOMMENDED ACCESSORIES FOR BASE CONDITIONS, AND CURE TIMES FOR WEATHER CONDITIONS.
4. ALL POST-INSTALLED ANCHORS SHALL CONFORM TO THE REQUIREMENTS OF THE MOST RECENT VERSIONS OF ACI 355.2 OR ACI 355.4.

STRUCTURAL STEEL

1. ALL STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST EDITION OF AISC 303 "CODE OF STANDARD PRACTICE FOR STEEL BUILDING AND BRIDGES".
2. THE STEEL FABRICATOR/ERECTOR SHALL DOCUMENT ANY CONSTRUCTION RELATED DISCREPANCIES AND SHALL FURNISH SAID INFORMATION IN THE FORM OF DETAILED SKETCHES TO THE CONTRACTING OFFICER FOR REVIEW. THERE SHALL BE RESOLUTION TO THE NOTED DISCREPANCIES PRIOR TO FABRICATION OF ANY NEW STRUCTURAL ELEMENTS.
3. THE FABRICATOR SHALL SUBMIT TO THE CONTRACTING OFFICER FOR REVIEW, ENGINEERED AND CHECKED DRAWINGS SHOWING FABRICATION DETAILS, FIELD ASSEMBLY DETAILS, AND ERECTION DIAGRAMS FOR ALL STRUCTURAL STEEL ELEMENTS.
4. ALL BEAMS AND JOISTS SHALL BE FABRICATED WITH THE NATURAL CAMBER UP.
5. ALL WELDING SHALL BE PERFORMED BY CERTIFIED/QUALIFIED WELDERS AND SHALL CONFORM TO THE LATEST EDITION OF AWS D1.1 "STRUCTURAL WELDING CODE - STEEL".
6. COMPRESSIBLE-WASHER-TYPE DIRECT TENSION INDICATORS OR TWIST-OFF-TYPE TENSION CONTROL BOLTS CONFORMING TO RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS (RCSC) SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS SHALL BE PROVIDED AT ALL HIGH-STRENGTH BOLTED CONNECTIONS IN ACCORDANCE WITH UFC 3-301-01.
7. WHERE GALVANIZED TENSION-CONTROLLED (T/C) BOLTS ARE SPECIFIED, COLD-GALVANIZED PAINT SHALL BE APPLIED TO THE UNCOATED ENDS OF THE TC BOLTS FOLLOWING INSTALLATION.
8. BOLTS INDICATED AS "FULLY-TENSIONED" TO BE ASTM F3125, GRADE F1852, GRADE 1.
9. ANCHOR RODS, NUTS, WASHER PLATES SHALL BE G90 HOT-DIPPED GALVANIZED.
10. WHEN STRENGTHENING EXISTING MEMBERS, THE CONTRACTOR SHALL BEGIN THE WELD OPERATIONS AT THE CENTER OF THE MEMBER AND WORK TOWARD THE ENDS.

MISCELLANEOUS STEEL

1. ALL KICK PLATES SHALL EXTEND A MINIMUM OF 4" ABOVE WALKING SURFACE WITH A MAXIMUM OF 1/2" BETWEEN KICKPLATE AND FINISHED FLOOR.
2. PROVIDE GALVANIZED FASTENERS FOR ALL BOLTED CONNECTIONS WHERE ONE OR MORE MEMBERS OR ELEMENTS ARE OF GALVANIZED MATERIAL.
3. MISCELLANEOUS ANCHOR BOLTS, EXPANSION ANCHORS, AND FASTENERS NOT INDICATED, BUT REQUIRED FOR ANCHORAGE OF EQUIPMENT AND MATERIALS, SHALL BE PROVIDED (AS RECOMMENDED BY MANUFACTURER OF ITEMS). ANCHORAGE WILL BE SUBJECT TO REVIEW BY CONTRACTING OFFICER.
4. ALL LADDERS THAT ARE OVER 24 FEET TALL SHALL HAVE A LADDER SAFETY SYSTEM OR PERSONAL FALL ARREST SYSTEM.

STATE OF TEXAS
WESTON McCANN
115262
LICENSED PROFESSIONAL ENGINEER
05/28/2026

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson
Ready • Reliable • Resilient

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:
DESIGNED BY: J. BATY
DRAWN BY: D. FAVAZZA
CHECKED BY: W. McCANN
SUBMITTED BY: CITRINE-OLSSON JV
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST, FORT WORTH, TX 76102

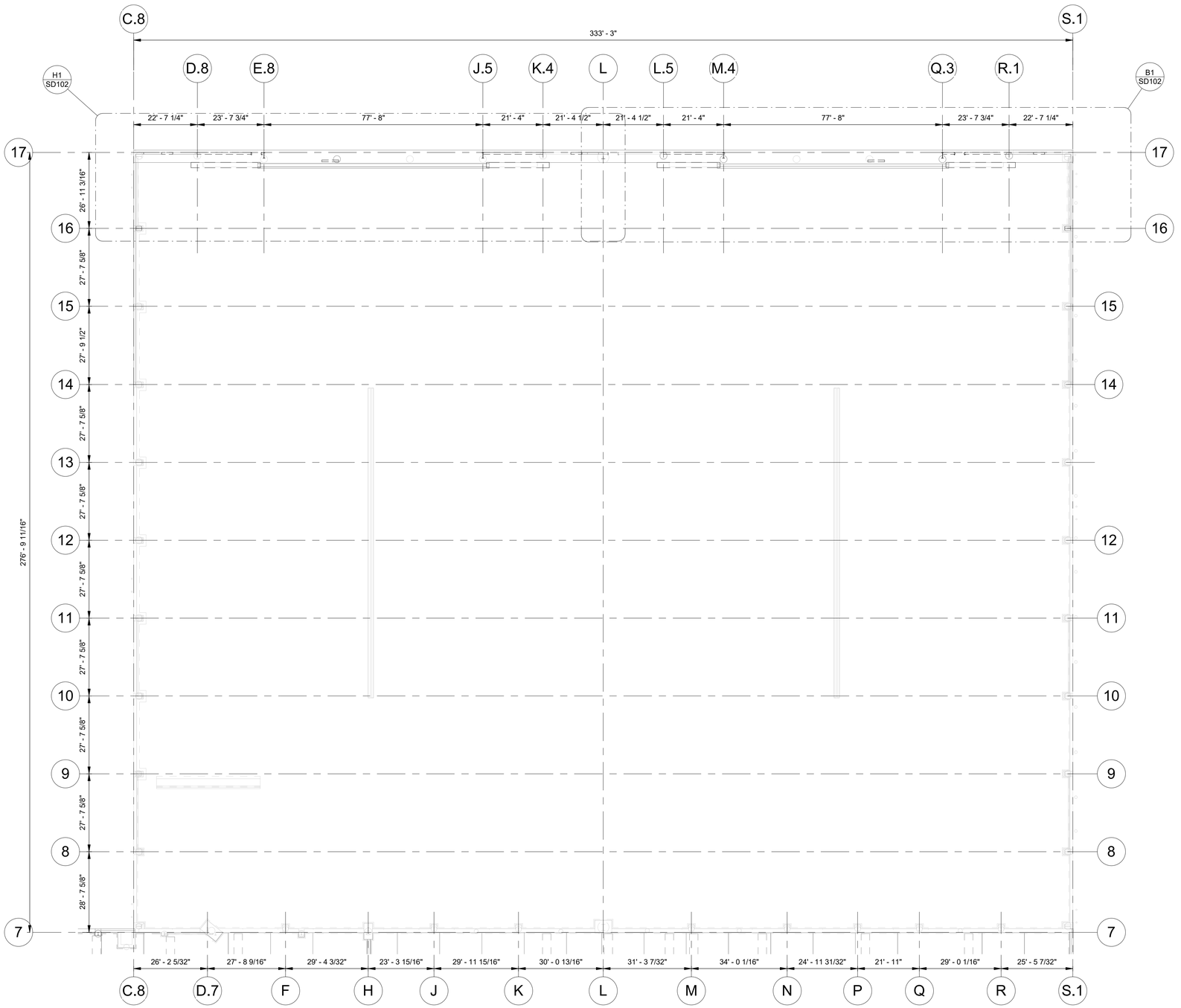
CITRINE OLSSON JV
2801 GRANDE AVE
GRAND JUNCTION, CO 81508

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT
W9126G25F0273

GENERAL STRUCTURAL NOTES

SHEET ID
S-002

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/S_B90176 Hangar Door Expansion_025-04414_R24.rvt
Plot Date: 7/1/2026 8:32:29 AM



B2 01_OVERALL DEMO FOUNDATION PLAN AREA - HA, HB, HC & HD
1" = 20'-0"

DEMO FOUNDATION PLAN NOTES

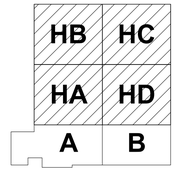
A. REFER TO DRAWINGS S-001 THROUGH S-002 FOR GENERAL NOTES, DESIGN CRITERIA, AND ABBREVIATIONS.
B. COORDINATE DIMENSIONS, WALL OPENINGS, ELEVATIONS, SECTIONS, AND DETAILS WITH ARCHITECTURAL DWGS.
C. TOP OF EXISTING SLAB ELEVATION = 1020.0'. THIS IS THE DATUM ELEVATION = 100'-0". ALL ELEVATIONS ARE REFERENCED FROM THIS ELEVATION.
D. ALL CONSTRUCTION SHALL BE COORDINATED WITH NEW VERTICAL LIFT HANGAR DOOR VENDOR.
E. GENERAL CONTRACTOR TO SUBMIT A DETAILED DEMOLITION, ERECTION, AND SHORING PLAN WITH CALCULATIONS PREPARED BY A LICENSED PROFESSIONAL ENGINEER.

DEMO PLAN LEGEND

EXISTING CONSTRUCTION TO REMAIN

EXISTING CONSTRUCTION TO BE DEMOLISHED

KEY PLAN



PLAN NORTH

SCALE: 1" = 240"

STATE OF TEXAS
WESTON McCANN
115262
LICENSED PROFESSIONAL ENGINEER

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson
Ready • Reliable • Resilient

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/S_B90176 Hangar Door Expansion_D25-04414_R24.rvt

Plot Date: 7/1/2026 8:32:29 AM

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: J. BATY
DRAWN BY: D. FAVAZZA
CHECKED BY: W. McCANN
SUBMITTED BY: CITRINE-OLSSON JV
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST., FORT WORTH, TX 76102

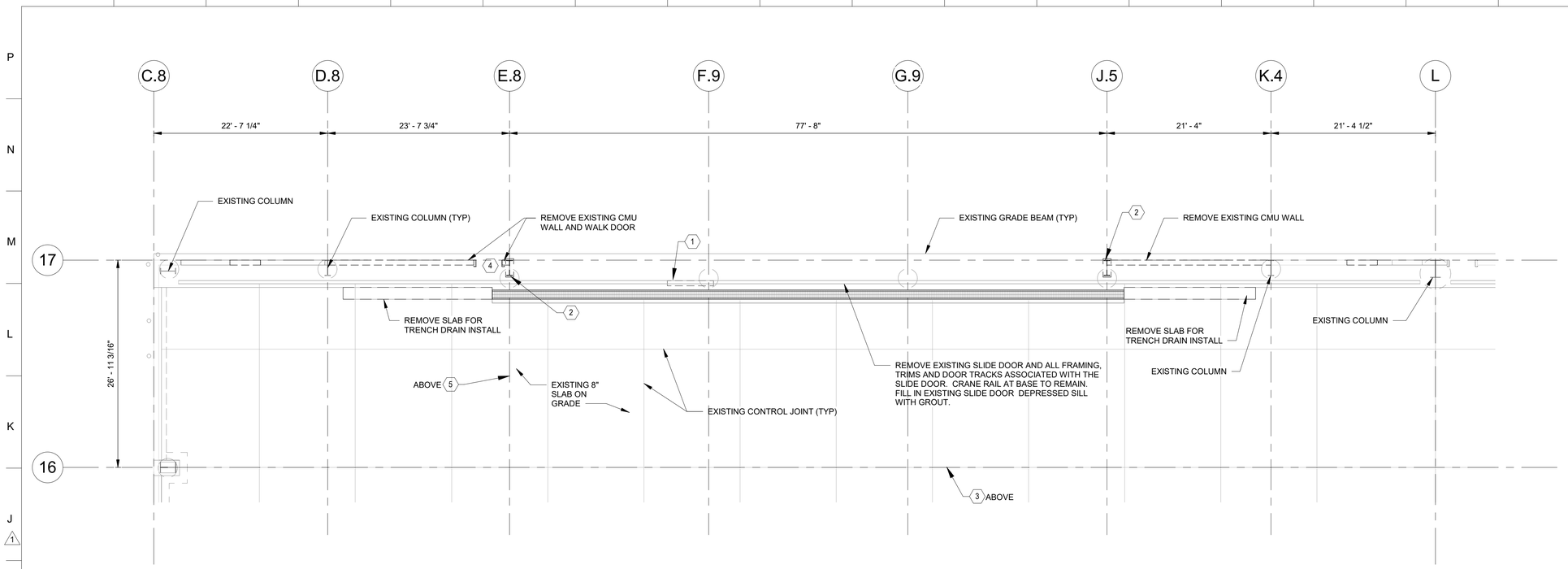
CITRINE OLSSON JV
2801 GRANDE AVE
GRAND JUNCTION, CO 81508

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT
W9126G25F0273

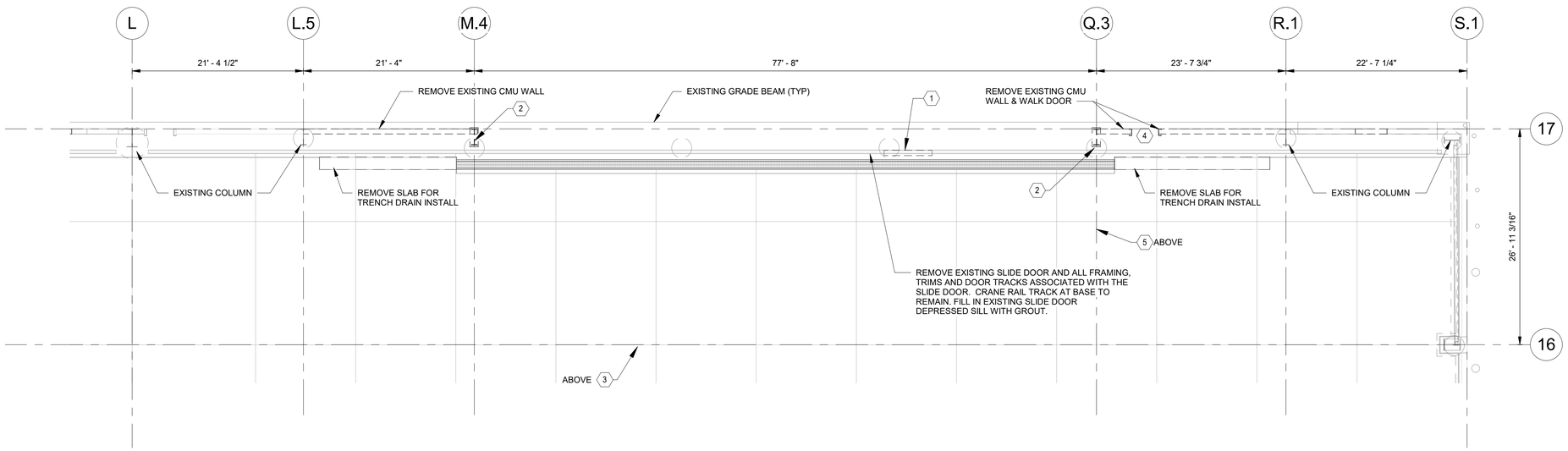
DEMO FOUNDATION PLAN AREA - HA, HB, HC & HD

SHEET ID

SD101



H1 **01_ENLARGED DEMO FOUNDATION PLAN -AREA HB**
1/8" = 1'-0"



B1 **01_ENLARGED DEMO FOUNDATION PLAN-AREA HC**
1/8" = 1'-0"

DEMO FOUNDATION PLAN NOTES

A. REFER TO DRAWINGS S-001 THROUGH S-002 FOR GENERAL NOTES, DESIGN CRITERIA, AND ABBREVIATIONS.
B. COORDINATE DIMENSIONS, WALL OPENINGS, ELEVATIONS, SECTIONS, AND DETAILS WITH ARCHITECTURAL DWGS.
C. TOP OF EXISTING SLAB ELEVATION = 1020.0'. THIS IS THE DATUM ELEVATION = 100'-0". ALL ELEVATIONS ARE REFERENCED FROM THIS ELEVATION.
D. ALL CONSTRUCTION SHALL BE COORDINATED WITH NEW VERTICAL LIFT HANGAR DOOR VENDOR.
E. GENERAL CONTRACTOR TO SUBMIT A DETAILED DEMOLITION, ERECTION, AND SHORING PLAN WITH CALCULATIONS PREPARED BY A LICENSED PROFESSIONAL ENGINEER.

(#) DEMO PLAN KEY NOTES

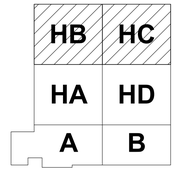
1. CUT NEW MULLION PIT INTO EXISTING GRADE BEAM. COORDINATE LOCATION, DIMENSIONS, AND ALL REQUIREMENTS WITH VERTICAL LIFT HANGAR DOOR VENDOR. DO NOT OVERCUT. MAXIMUM NUMBER OF EXISTING #8 TOP BAR REINFORCING IN THE GRADE BEAM THAT CAN BE CUT IS 2. LOCATE ALL REINFORCING PRIOR TO DEMOLITION. CUT OUT EXISTING CRANE RAIL AS NECESSARY.
2. DEMOLISH COLUMN UP TO NEW HANGAR DOOR CLEARANCE HEIGHT. REMOVE EXISTING SECONDARY CONCRETE POUR AROUND COLUMN TO A DEPTH OF APPROXIMATELY 7" TO GAIN ACCESS TO EXISTING ANCHOR BOLTS. DO NOT OVER CUT AND DO NOT CUT INTO EXISTING GRADE BEAM. TOP OF EXISTING GRADE BEAM IS AT 8" BELOW SLAB. CUT ANCHOR RODS TO A MINIMUM DEPTH OF 6" BELOW TOP OF SLAB.
3. CAREFULLY DECONSTRUCT EXISTING DRAFT CURTAIN ATTACHED TO EXISTING MAIN FRAME BEAM AT GRID 16. SET ASIDE FOR RE-ATTACHMENT AFTER BEAM RETROFITS ARE COMPLETED.
4. CAREFULLY DECONSTRUCT EXISTING DOOR OPENING FRAMING AND SET ASIDE FOR RE-USE IN NEW DOOR OPENINGS.
5. REMOVE HSS8.625 PIPE KICKER ABOVE

DEMO PLAN LEGEND

EXISTING CONSTRUCTION TO REMAIN

EXISTING CONSTRUCTION TO BE DEMOLISHED

KEY PLAN



PLAN NORTH

SCALE: 1/8" = 12"

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson
Ready • Reliable • Resilient

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/S_B90176 Hangar Door Expansion_025-04414_R24.rvt

Plot Date: 7/1/2026 8:32:30 AM

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: J. BATY
DRAWN BY: D. FAVAZZA
CHECKED BY: W. McCANN
SUBMITTED BY: CITRINE-OLSSON JV
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST., FORT WORTH, TX 76102

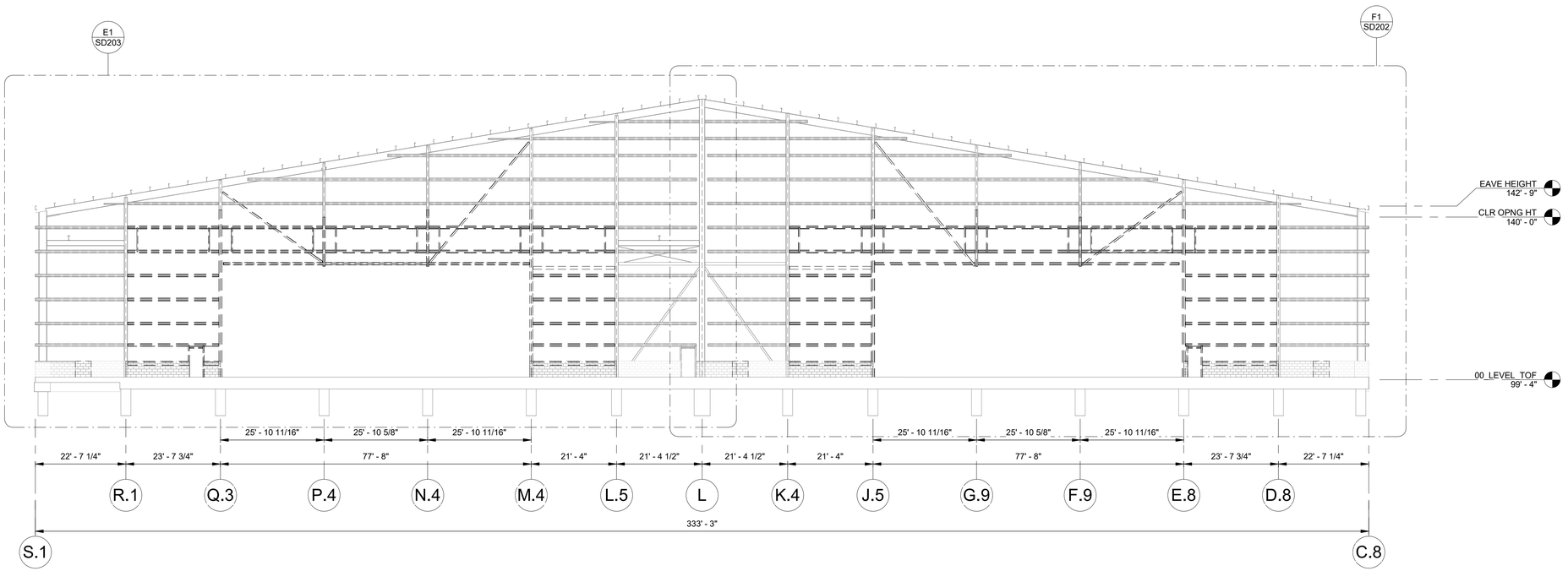
CITRINE OLSSON JV
2801 GRANDE AVE
GRAND JUNCTION, CO 81508

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT
W9126G25F0273

ENLARGED DEMO FLOOR PLAN AREA HB & HC

SHEET ID

SD102



H1 DEMO OVERALL ELEVATION AREA HB & HC

1/16" = 1'-0"

DEMO FRAMING ELEVATION NOTES

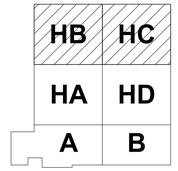
A. REFER TO DRAWINGS S-001 THRU S-002 FOR GENERAL NOTES, DESIGN CRITERIA, AND ABBREVIATIONS.
B. COORDINATE DIMENSIONS, WALL OPENINGS, ELEVATIONS, SECTIONS, AND DETAILS WITH ARCHITECTURAL DWGS.
C. DASHED LINE INDICATES EXISTING FRAMING TO BE REMOVED.
D. GENERAL CONTRACTOR TO SUBMIT A DETAILED DEMOLITION, ERECTION, AND SHORING PLAN WITH CALCULATIONS PREPARED BY A LICENSED PROFESSIONAL ENGINEER.

DEMO LEGEND

EXISTING CONSTRUCTION TO REMAIN

EXISTING CONSTRUCTION TO BE DEMOLISHED

KEY PLAN



0 96" 192" 384"

SCALE: 1/16" = 12"

STATE OF TEXAS
WESTON McCANN
115262
LICENSED
PROFESSIONAL ENGINEER

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson
Ready • Reliable • Resilient

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/S_B90176 Hangar Door Expansion_D25-04414_R24.rvt

Plot Date: 7/1/2026 8:32:30 AM

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: J. BATY
DRAWN BY: D. FAVAZZA
CHECKED BY: W. McCANN
SUBMITTED BY: CITRINE-OLSSON JV
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST, FORT WORTH, TX 76102

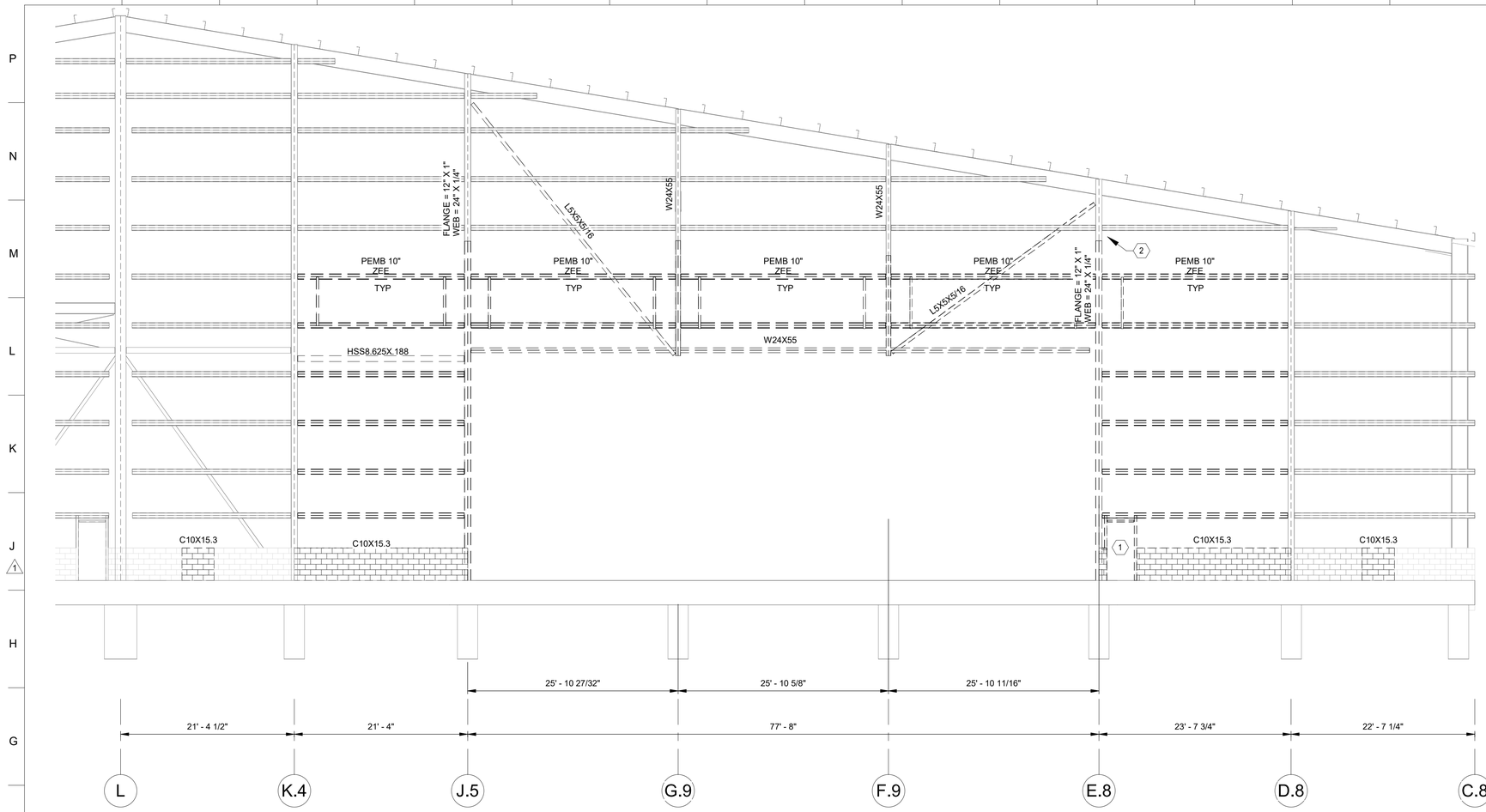
CITRINE OLSSON JV
2801 GRANDE AVE
GRAND JUNCTION, CO 81508

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT
W9126G25F0273

DEMO ELEVATION PLAN AREA HB & HC

SHEET ID

SD201



F1 ENLARGED DEMO ELEVATION - AREA HB

1/8" = 1'-0"

DEMO FRAMING ELEVATION NOTES

A. REFER TO DRAWINGS S-001 THRU S-002 FOR GENERAL NOTES, DESIGN CRITERIA, AND ABBREVIATIONS.
B. COORDINATE DIMENSIONS, WALL OPENINGS, ELEVATIONS, SECTIONS, AND DETAILS WITH ARCHITECTURAL DWGS.
C. DASHED LINE INDICATES EXISTING FRAMING TO BE REMOVED.
D. GENERAL CONTRACTOR TO SUBMIT A DETAILED DEMOLITION, ERECTION, AND SHORING PLAN WITH CALCULATIONS PREPARED BY A LICENSED PROFESSIONAL ENGINEER.

(#) DEMO KEY NOTES

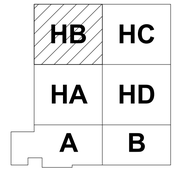
1. CAREFULLY DECONSTRUCT EXISTING DOOR OPENING FRAMING AND SET ASIDE FOR RE-USE IN NEW DOOR OPENINGS.
2. DEMOLISH HSS8.625 PIPE KICKER THAT SPANS BETWEEN GRIDS 16 AND 17

DEMO LEGEND

EXISTING CONSTRUCTION TO REMAIN

EXISTING CONSTRUCTION TO BE DEMOLISHED

KEY PLAN



0 48" 96" 192"

SCALE: 1/8" = 12"

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson
Ready • Reliable • Resilient

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/S_B90176 Hangar Door Expansion_D25-04414_R24.rvt

Plot Date: 7/1/2026 8:32:31 AM

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: J. BATY
DRAWN BY: D. FAVAZZA
CHECKED BY: W. McCANN
SUBMITTED BY: CITRINE-OLSSON JV
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST., FORT WORTH, TX 76102

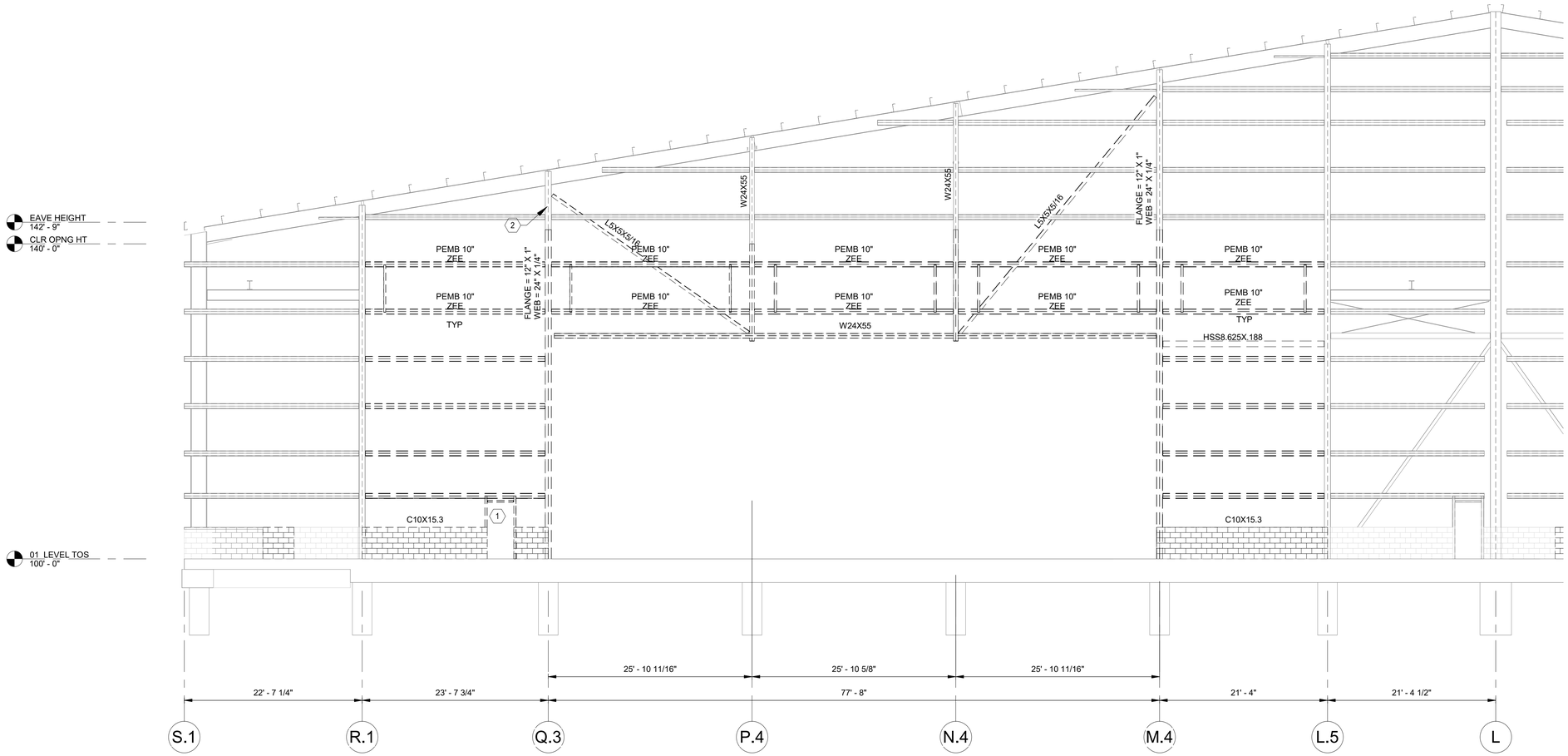
CITRINE OLSSON JV
2801 GRANDE AVE
GRAND JUNCTION, CO 81508

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT
W9126G25F0273

ENLARGED DEMO ELEVATION PLAN - AREA HB

SHEET ID

SD202



E1 ENLARGED DEMO ELEVATION - AREA HC
1/8" = 1'-0"

DEMO FRAMING ELEVATION NOTES

A. REFER TO DRAWINGS S-001 THRU S-002 FOR GENERAL NOTES, DESIGN CRITERIA, AND ABBREVIATIONS.
B. COORDINATE DIMENSIONS, WALL OPENINGS, ELEVATIONS, SECTIONS, AND DETAILS WITH ARCHITECTURAL DWGS.
C. DASHED LINE INDICATES EXISTING FRAMING TO BE REMOVED.
D. GENERAL CONTRACTOR TO SUBMIT A DETAILED DEMOLITION, ERECTION, AND SHORING PLAN WITH CALCULATIONS PREPARED BY A LICENSED PROFESSIONAL ENGINEER.

DEMO KEY NOTES

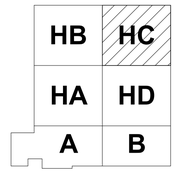
1. CAREFULLY DECONSTRUCT EXISTING DOOR OPENING FRAMING AND SET ASIDE FOR RE-USE IN NEW DOOR OPENINGS.
2. DEMOLISH HSS8.625 PIPE KICKER THAT SPANS BETWEEN GRIDS 16 AND 17

DEMO LEGEND

EXISTING CONSTRUCTION TO REMAIN

EXISTING CONSTRUCTION TO BE DEMOLISHED

KEY PLAN



0 48" 96" 192"
SCALE: 1/8" = 12"

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson
Ready • Reliable • Resilient

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/S_B90176 Hangar Door Expansion_025-04414_R24.rvt
Plot Date: 7/1/2026 8:32:31 AM

DESIGNED BY: J. BATY
DRAWN BY: D. FAVAZZA
CHECKED BY: W. McCANN
ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:
SUBMITTED BY: CITRINE-OLSSON JV
SIZE: ANSI D

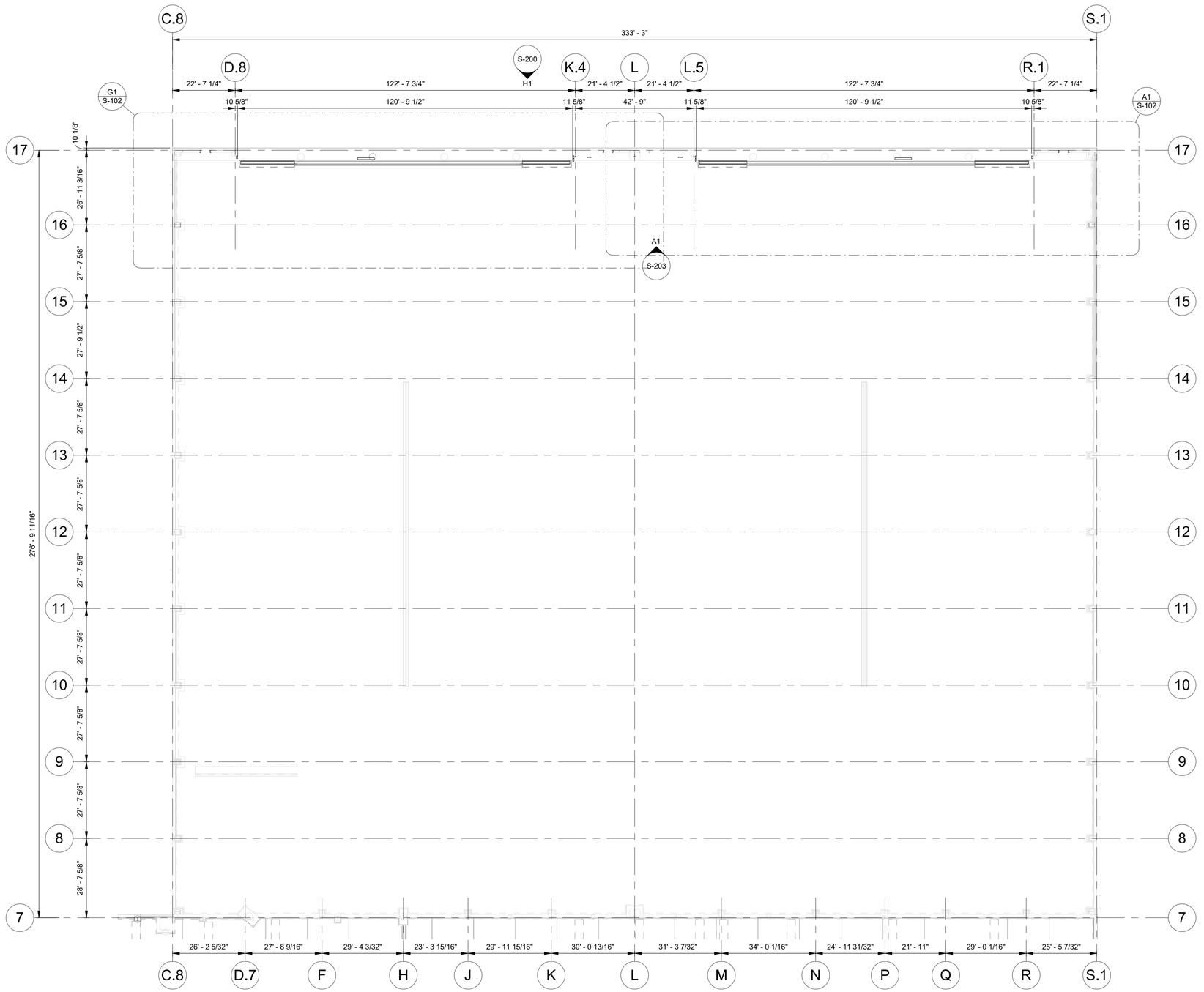
US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST, FORT WORTH, TX 76102

CITRINE OLSSON JV
2801 GRANDE AVE
GRAND JUNCTION, CO 81508

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT
W9126G25F0273

ENLARGED DEMO ELEVATION PLAN - AREA HC

SHEET ID
SD203



B1 OVERALL NEW FOUNDATION PLAN
1" = 20'-0"

0 120" 240" 480"
SCALE:1" = 240"

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/S_B90176 Hangar Door Expansion_025-04414_R24.rvt

Plot Date: 7/1/2026 8:32:32 AM

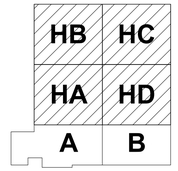
ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: J. BATY
DRAWN BY: D. FAVAZZA
CHECKED BY: W. McCANN
SUBMITTED BY: CITRINE-OLSSON JV
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST, FORT WORTH, TX 76102

CITRINE OLSSON JV
2801 GRANDE AVE
GRAND JUNCTION, CO 81508

KEY PLAN



PLAN NORTH
N

0 120" 240" 480"
SCALE:1" = 240"

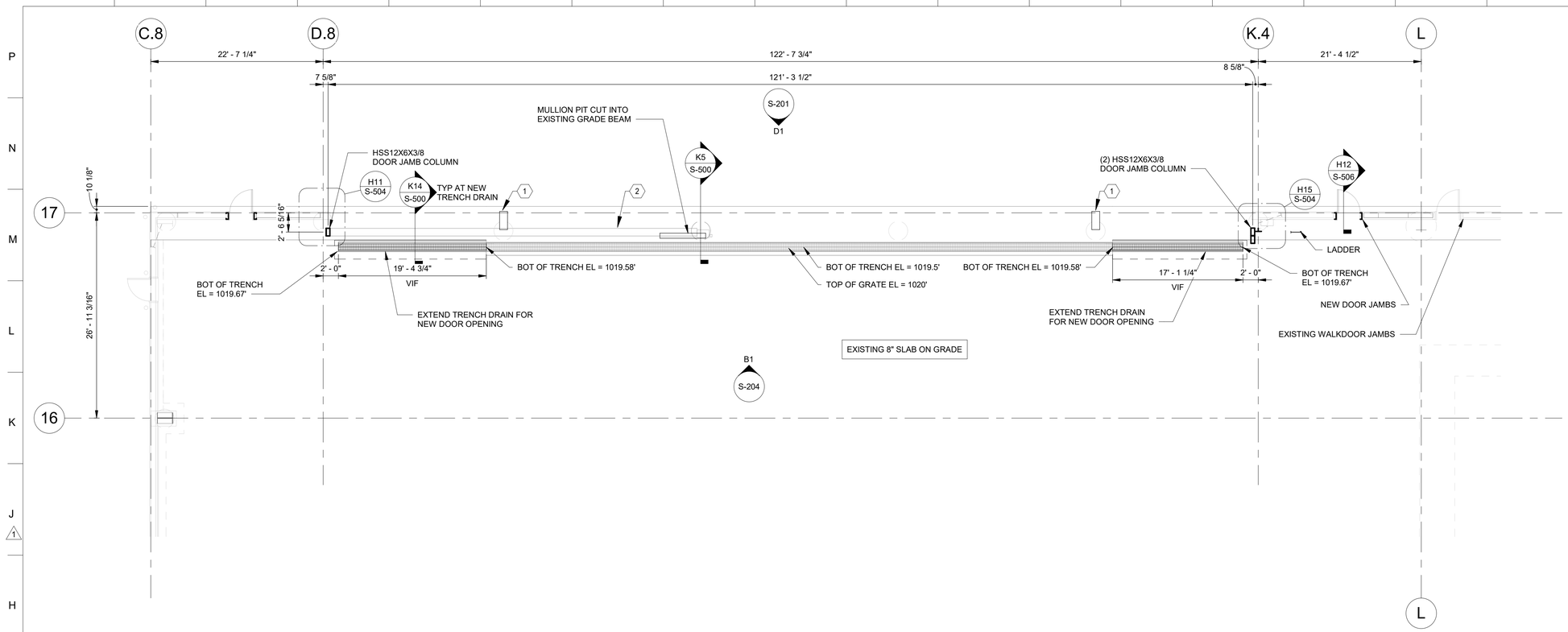
STATE OF TEXAS
WESTON McCANN
115262
LICENSED PROFESSIONAL ENGINEER

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson
Ready • Resolute • Resilient

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT
W9126G25F0273

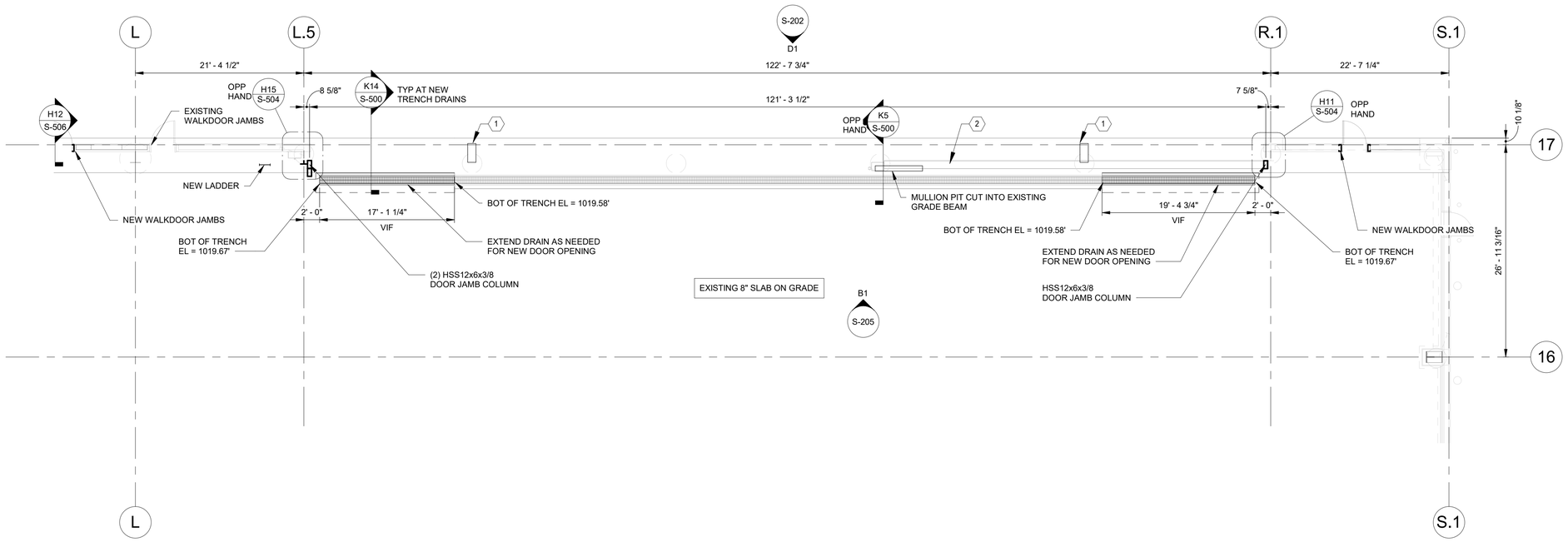
OVERALL NEW FOUNDATION PLAN

SHEET ID
S-101



G1 01_ENLARGED NEW FOUNDATION PLAN - AREA HB

1/8" = 1'-0"



A1 ENLARGED NEW FOUNDATION PLAN - AREA HC

1/8" = 1'-0"

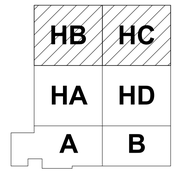
FOUNDATION PLAN NOTES

A. REFER TO DRAWINGS S-001 THROUGH S-002 FOR GENERAL NOTES, DESIGN CRITERIA, AND ABBREVIATIONS.
B. COORDINATE DIMENSIONS, WALL OPENINGS, ELEVATIONS, SECTIONS, AND DETAILS WITH ARCHITECTURAL DWGS.
C. TOP OF EXISTING SLAB ELEVATION = 1020.0'. THIS IS THE DATUM ELEVATION = 100'-0". ALL ELEVATIONS ARE REFERENCED FROM THIS ELEVATION.
D. REFER TO CS101 FOR NEW BOLLARDS AT NEW HANGAR AND MAN DOORS.
E. ALL NEW CONSTRUCTION SHALL BE COORDINATED WITH NEW VERTICAL LIFT HANGAR DOOR VENDOR.
F. REPAIR ALL REMOVED ANCHOR LOCATIONS, CRACKS, AND JOINT SEALANTS IN EXISTING CONCRETE FLOOR SLABS AT AREAS WITH NEW FLOOR FINISH AND STRIPING. COORDINATE WITH SHEET I-114.

(#) FOUNDATION PLAN KEY NOTES

1. REPAIR CONCRETE AT COLUMN DEMO LOCATIONS. RE: D5 / S-500
2. FILL EXISTING DOOR RAIL POCKET WITH NON-SHRINK GROUT, FULL LENGTH OF EXISTING DOOR TRACK

KEY PLAN



PLAN NORTH

N

0 48" 96" 192"

SCALE: 1/8" = 12"

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/S_B90176 Hangar Door Expansion_025-04414_R24.rvt

Plot Date: 7/1/2026 8:32:32 AM

ISSUE DATE:	MAY 28, 2026
SOLICITATION NO.:	W9126G26RA087
CONTRACT NO.:	
DESIGNED BY:	J. BATY
DRAWN BY:	D. FAVAZZA
CHECKED BY:	W. MCCANN
QA/QC BY:	A. KOHN
SUBMITTED BY:	CITRINE-OLSSON JV
SIZE:	ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST, FORT WORTH, TX 76102

CITRINE OLSSON JV
2801 GRANDE AVE
GRAND JUNCTION, CO 81508

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT
W9126G25F0273

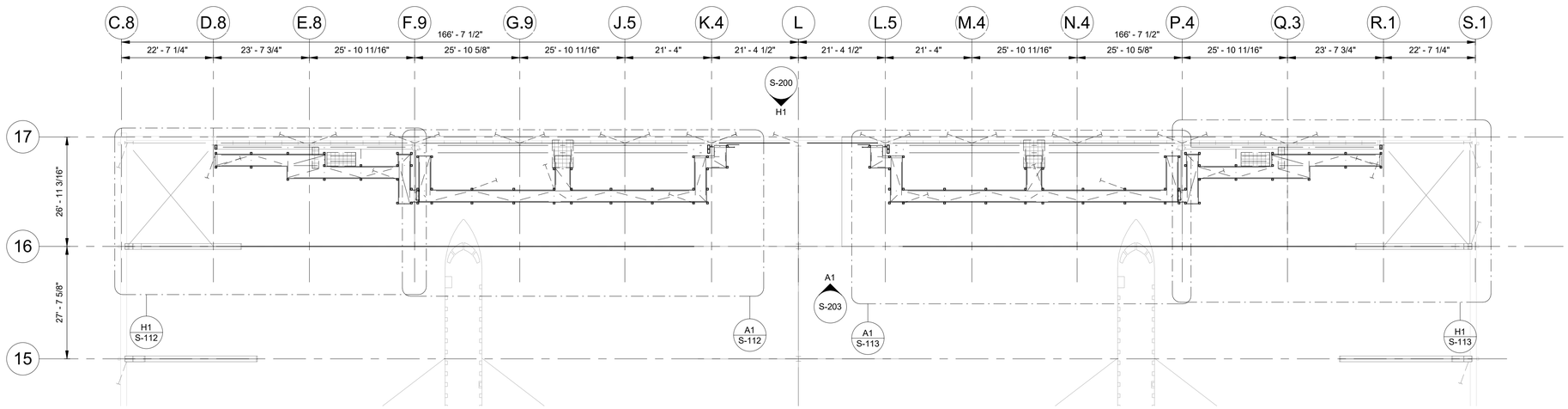
ENLARGED NEW FOUNDATION PLANS

STATE OF TEXAS
12/29/2025
WESTON McCANN
115262
LICENSED
PROFESSIONAL ENGINEER

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson
Ready • Reliable • Resilient

SHEET ID

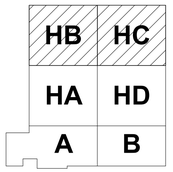
S-102



H1 OVERALL NEW CATWALK FRAMING PLAN - AREAS HB & HC

1/16" = 1'-0"

KEY PLAN



PLAN NORTH

N

0 96" 192" 384"

SCALE: 1/16" = 12"

STATE OF TEXAS
12/29/2025
WESTON McCANN
115262
LICENSED PROFESSIONAL ENGINEER

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson
Ready • Reliable • Resilient

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hanger Door Expansion - Ft Hood/S_B90176 Hangar Door Expansion_025-04414_R24.rvt

Plot Date: 7/1/2026 8:32:33 AM

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: J. BATY
DRAWN BY: D. FAVAZZA
CHECKED BY: W. McCANN
SUBMITTED BY: CITRINE-OLSSON JV
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST, FORT WORTH, TX 76102

CITRINE OLSSON JV
2801 GRANDE AVE
GRAND JUNCTION, CO 81508

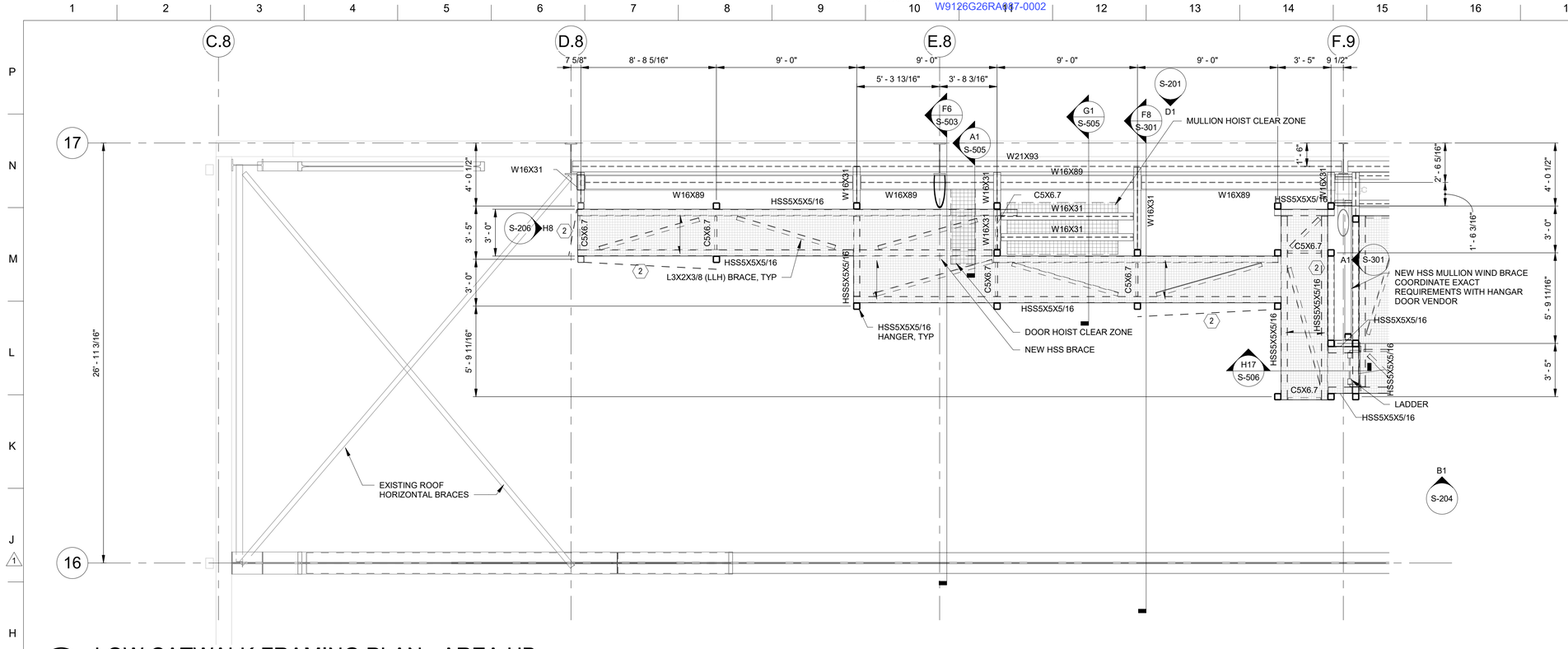
FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT
W9126G25F0273

OVERALL NEW CATWALK FRAMING PLAN - AREA HB & HC

SHEET ID

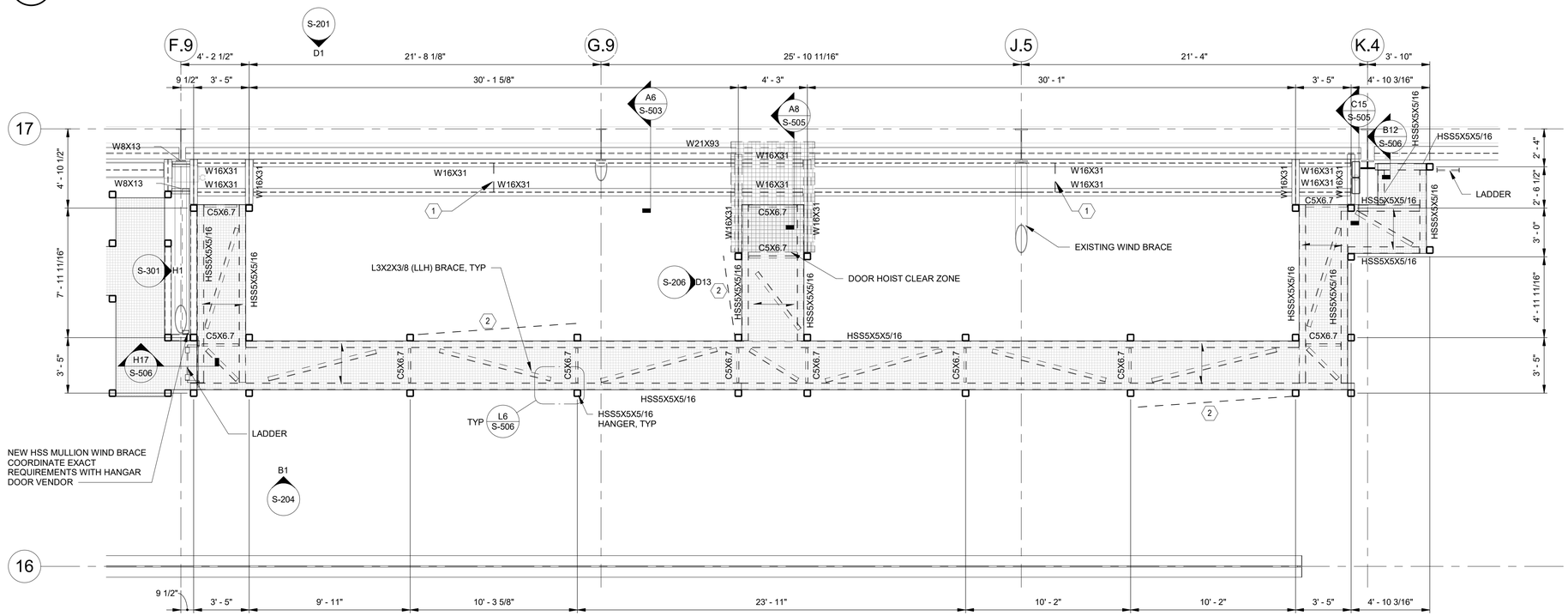
S-111

W9126G26RA087-0002



H1 LOW CATWALK FRAMING PLAN - AREA HB

1/4" = 1'-0"



A1 HIGH CATWALK FRAMING PLAN - AREA HB

1/4" = 1'-0"

CATWALK FRAMING PLAN NOTES

A. REFER TO DRAWINGS S-001 THROUGH S-002 FOR GENERAL NOTES, DESIGN CRITERIA, AND ABBREVIATIONS.
B. COORDINATE DIMENSIONS, WALL OPENINGS, ELEVATIONS, SECTIONS, AND DETAILS WITH ARCHITECTURAL DWGS.
C. LOCATIONS OF THE NEW DOORS AND EQUIPMENT SHOWN ON THE PLAN HAVE BEEN ASSUMED FOR BIDDING PURPOSES ONLY. CONTRACTOR TO COORDINATE FINAL UNIT LOCATIONS AND WEIGHTS (AND ADDITIONAL UNITS) AND SUBMIT TO CONTRACTING OFFICER FOR REVIEW PRIOR TO PROCEEDING WITH ANY FABRICATION.
D. PROVIDE GUARDRAIL AT PERIMETER OF ALL CATWALKS REFER TO E1/S-501.

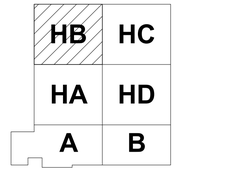
(#) FRAMING PLAN KEY NOTES

1. PROVIDE FLANGE BRACING AT MIDSPAN OF BEAM PER K16 / S-501
2. HSS 5X5X5/16 VERTICAL BRACE BAY

FRAMING PLAN LEGEND

SPAN DIRECTION OF 19W4 1-1/4 X 1/8 GALVANIZED SERRATED CATWALK GRATING

KEY PLAN



PLAN NORTH

SCALE: 1/4" = 12"

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson
Ready • Reliable • Resilient

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion_FI Hook/S_B90176 Hangar Door Expansion_D25-04414_R24.rvt

Plot Date: 7/1/2026 8:32:35 AM

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: J. BATY
DRAWN BY: D. FAVAZZA
CHECKED BY: W. McCANN
SUBMITTED BY: CITRINE-OLSSON JV
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST., FORT WORTH, TX 76102

CITRINE OLSSON JV
2801 GRANDE AVE
GRAND JUNCTION, CO 81508

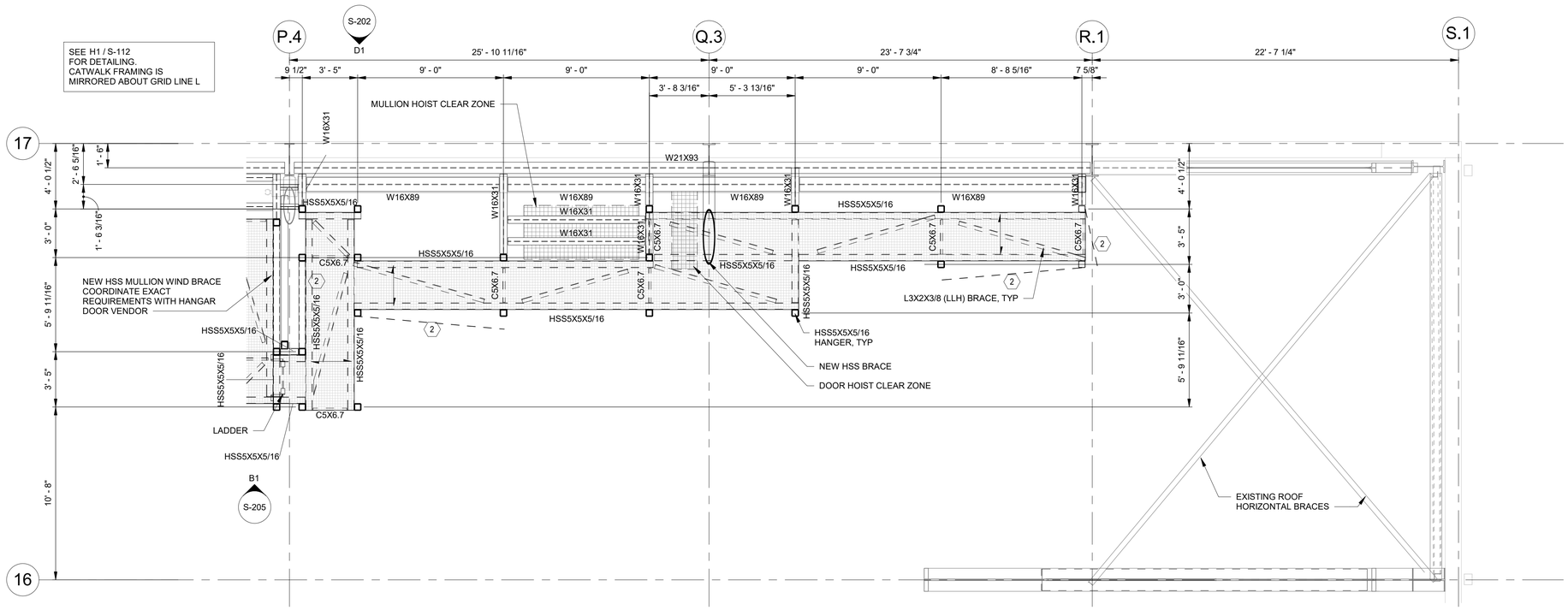
FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT
W9126G25F0273

NEW CATWALK FRAMING PLAN - AREA HB

SHEET ID

S-112

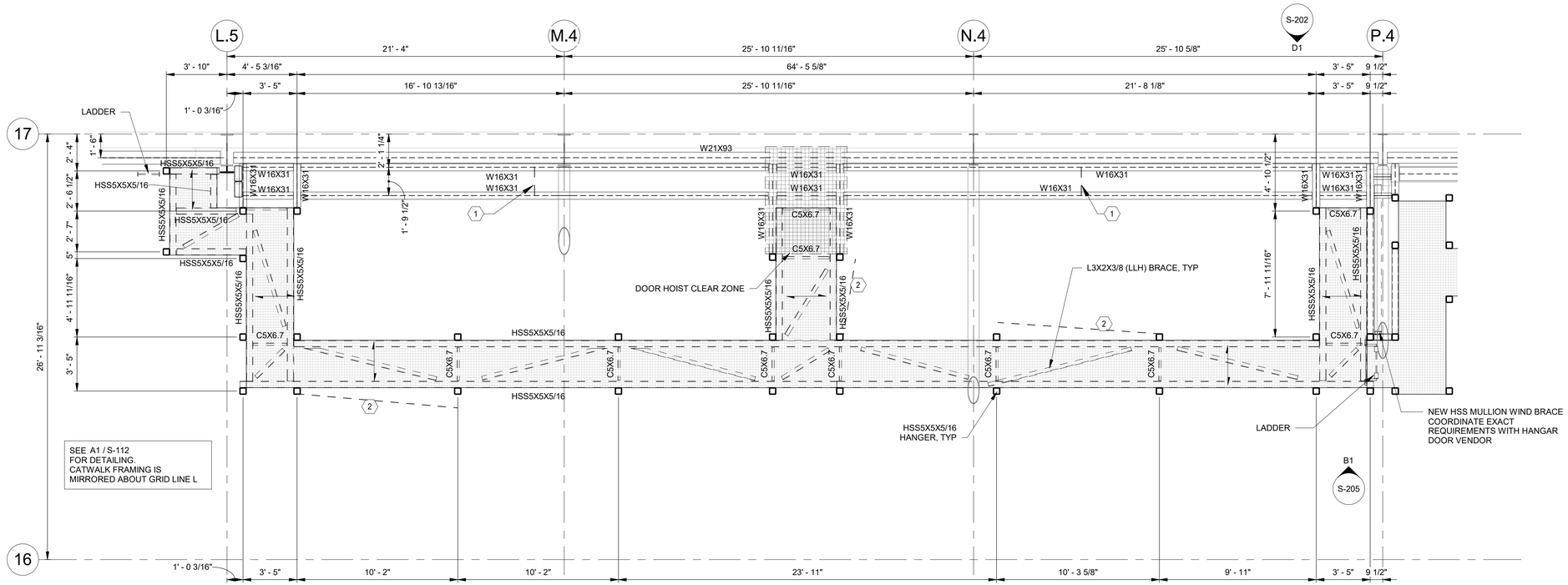
SEE H1 / S-112
FOR DETAILING.
CATWALK FRAMING IS
MIRRORED ABOUT GRID LINE L



H1 LOW CATWALK FRAMING PLAN - AREA HC

1/4" = 1'-0"

SEE A1 / S-112
FOR DETAILING.
CATWALK FRAMING IS
MIRRORED ABOUT GRID LINE L



A1 HIGH CATWALK FRAMING PLAN - AREA HC

1/4" = 1'-0"

CATWALK FRAMING PLAN NOTES

A. REFER TO DRAWINGS S-001 THROUGH S-002 FOR GENERAL NOTES, DESIGN CRITERIA, AND ABBREVIATIONS.
B. COORDINATE DIMENSIONS, WALL OPENINGS, ELEVATIONS, SECTIONS, AND DETAILS WITH ARCHITECTURAL DWGS.
C. LOCATIONS OF THE NEW DOORS AND EQUIPMENT SHOWN ON THE PLAN HAVE BEEN ASSUMED FOR BIDDING PURPOSES ONLY. CONTRACTOR TO COORDINATE FINAL UNIT LOCATIONS AND WEIGHTS (AND ADDITIONAL UNITS) AND SUBMIT TO CONTRACTING OFFICER FOR REVIEW PRIOR TO PROCEEDING WITH ANY FABRICATION.
D. PROVIDE GUARDRAIL AT PERIMETER OF ALL CATWALKS REFER TO E1/S-501.

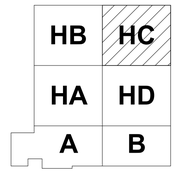
(#) FRAMING PLAN KEY NOTES

1. PROVIDE FLANGE BRACING AT MIDSPAN OF BEAM PER K16 / S-501
2. HSS 5X5X5/16 VERTICAL BRACE BAY

FRAMING PLAN LEGEND

SPAN DIRECTION OF 19W4 1-1/4 X 1/8 GALVANIZED SERRATED CATWALK GRATING

KEY PLAN



PLAN NORTH

N

0 24" 48" 96"

SCALE: 1/4" = 12"

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - FY Hook/S_B90176 Hangar Door Expansion_025-04414_R24.rvt

Plot Date: 7/1/2026 8:32:36 AM

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: J. BATY
DRAWN BY: D. FAVAZZA
CHECKED BY: W. McCANN
SUBMITTED BY: CITRINE-OLSSON JV
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST, FORT WORTH, TX 76102

CITRINE OLSSON JV
2801 GRANDE AVE
GRAND JUNCTION, CO 81508

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT
W9126G25F0273

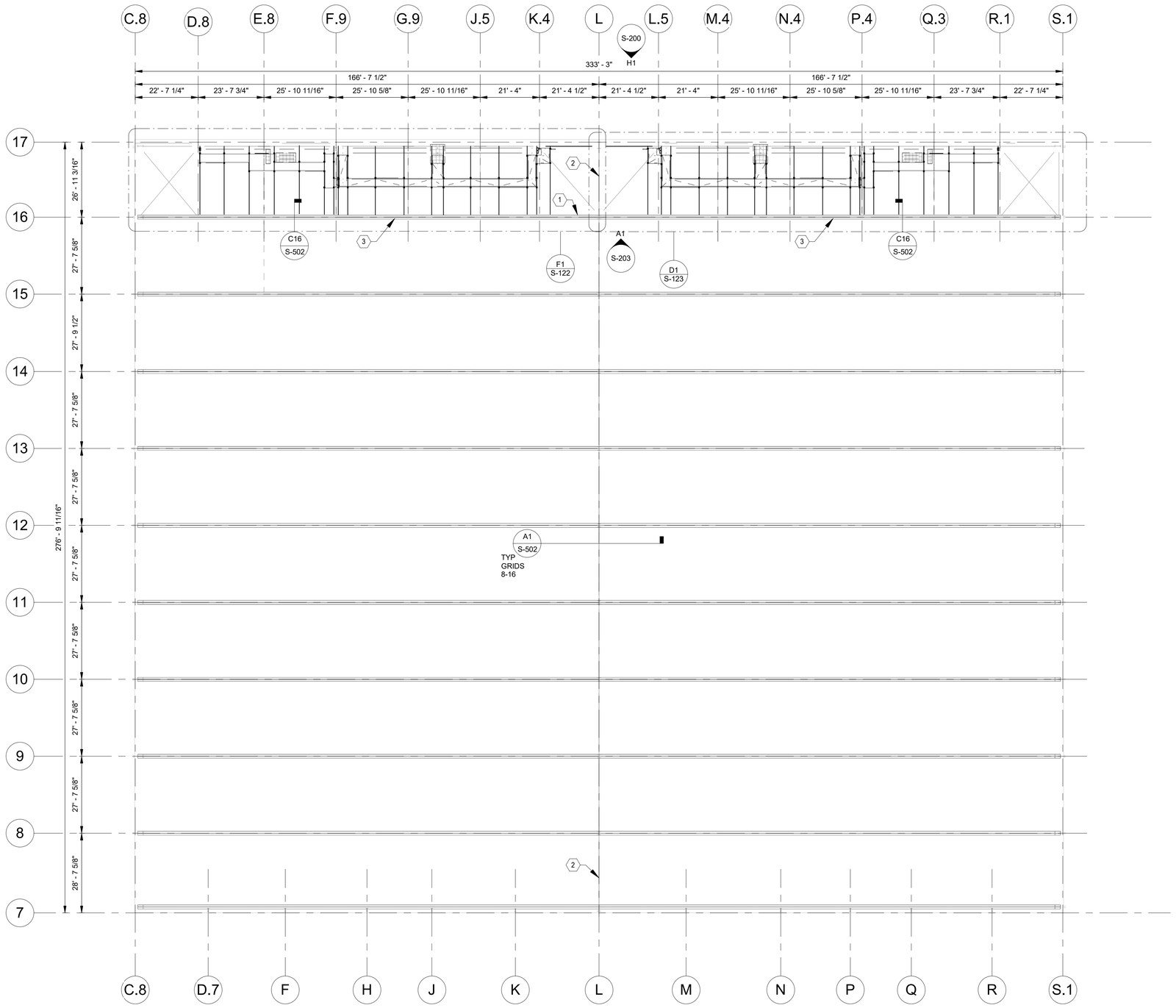
NEW CATWALK FRAMING PLAN - AREA HC

SHEET ID

S-113

STATE OF TEXAS
Waterstock
WESTON McCANN
115262
LICENSED
PROFESSIONAL ENGINEER

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson
Ready • Reliable • Resilient



A1 OVERALL ROOF FRAMING PLAN
1" = 20'-0"

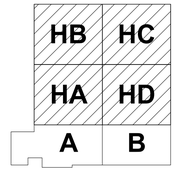
ROOF FRAMING PLAN NOTES

A. REFER TO DRAWINGS S-001 THROUGH S-002 FOR GENERAL NOTES, DESIGN CRITERIA, AND ABBREVIATIONS.
B. COORDINATE DIMENSIONS, WALL OPENINGS, ELEVATIONS, SECTIONS, AND DETAILS WITH ARCHITECTURAL DWGS.
C. LOCATIONS OF THE DOORS AND EQUIPMENT SHOWN ON THE PLAN HAVE BEEN ASSUMED FOR BIDDING PURPOSES ONLY. CONTRACTOR TO COORDINATE FINAL UNIT LOCATIONS AND WEIGHTS (AND ADDITIONAL UNITS) AND SUBMIT TO CONTRACTING OFFICER FOR REVIEW PRIOR TO PROCEEDING WITH ANY FABRICATION.
D. WHEN STRENGTHENING EXISTING MEMBERS, THE CONTRACTOR SHALL BEGIN THE WELD OPERATIONS AT THE CENTER OF THE MEMBER AND WORK TOWARD THE ENDS.

FRAMING PLAN KEY NOTES

1. RETROFIT EXISTING 12-3/4" PIPE KICKER. RE: L6 / S-502
2. RETROFIT EXISTING W14X90 TRUSS DIAGONAL AT END BAY. RE: L1 / S-502
3. REINSTALL EXISTING DRAFT CURTAIN AFTER WT REINFORCING IS ADDED TO EXISTING MAIN FRAME BEAM.

KEY PLAN



PLAN NORTH
N

0 120" 240" 480"
SCALE: 1" = 240"

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson
Ready • Reliable • Resilient

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/S_B90176 Hangar Door Expansion_D25-04414_R24.rvt
Plot Date: 7/1/2026 8:32:37 AM

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: J. BATY
DRAWN BY: D. FAVAZZA
CHECKED BY: W. MCCANN
SUBMITTED BY:
SIZE: ANSI D

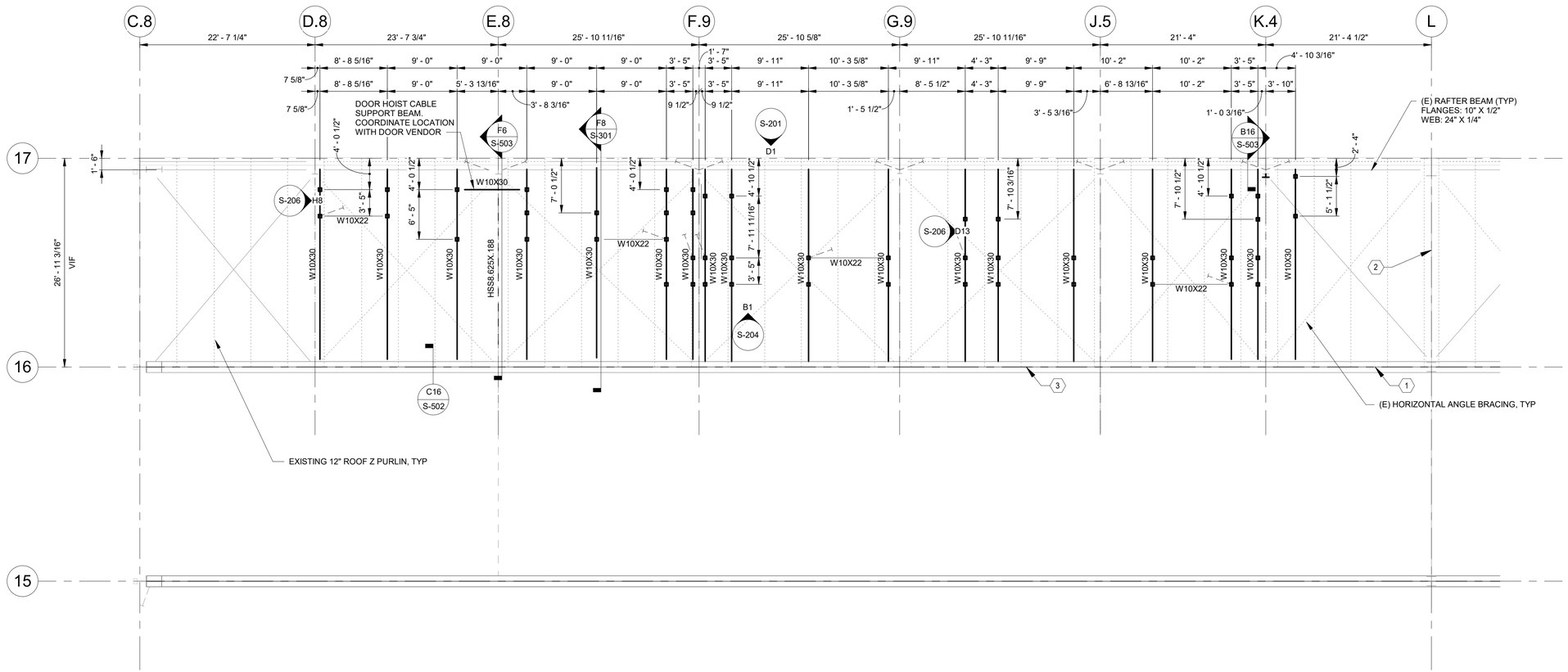
US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST, FORT WORTH, TX 76102

CITRINE OLSSON JV
2801 GRANDE AVE
GRAND JUNCTION, CO 81508

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT
W9126G25F0273

OVERALL ROOF FRAMING PLAN

SHEET ID
S-121



F1 NEW ROOF FRAMING PLAN - AREA HB

1/8" = 1'-0"

ROOF FRAMING PLAN NOTES

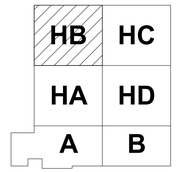
A. REFER TO DRAWINGS S-001 THROUGH S-002 FOR GENERAL NOTES, DESIGN CRITERIA, AND ABBREVIATIONS.
B. COORDINATE DIMENSIONS, WALL OPENINGS, ELEVATIONS, SECTIONS, AND DETAILS WITH ARCHITECTURAL DWGS.
C. LOCATIONS OF THE DOORS AND EQUIPMENT SHOWN ON THE PLAN HAVE BEEN ASSUMED FOR BIDDING PURPOSES ONLY. CONTRACTOR TO COORDINATE FINAL UNIT LOCATIONS AND WEIGHTS (AND ADDITIONAL UNITS) AND SUBMIT TO CONTRACTING OFFICER FOR REVIEW PRIOR TO PROCEEDING WITH ANY FABRICATION.
D. WHEN STRENGTHENING EXISTING MEMBERS, THE CONTRACTOR SHALL BEGIN THE WELD OPERATIONS AT THE CENTER OF THE MEMBER AND WORK TOWARD THE ENDS.

(#) FRAMING PLAN KEY NOTES

1. RETROFIT EXISTING 12-3/4" PIPE KICKER. RE: L6 / S-502
2. RETROFIT EXISTING W14X90 TRUSS DIAGONAL AT END BAY. RE: L1 / S-502
3. REINSTALL EXISTING DRAFT CURTAIN AFTER WT REINFORCING IS ADDED TO EXISTING MAIN FRAME BEAM.

FRAMING PLAN LEGEND

KEY PLAN



PLAN NORTH

N

0 48" 96" 192"

SCALE: 1/8" = 12"

STATE OF TEXAS
DATED 7/2026
WESTON McCANN
115262
LICENSED PROFESSIONAL ENGINEER

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson
Ready • Reliable • Resilient

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/S_B90176 Hangar Door Expansion_025-04414_R24.rvt

Plot Date: 7/1/2026 8:32:38 AM

DESIGNED BY: J. BATY
DRAWN BY: D. FAVAZZA
CHECKED BY: W. McCANN
SUBMITTED BY:
SIZE: ANSI D

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST, FORT WORTH, TX 76102

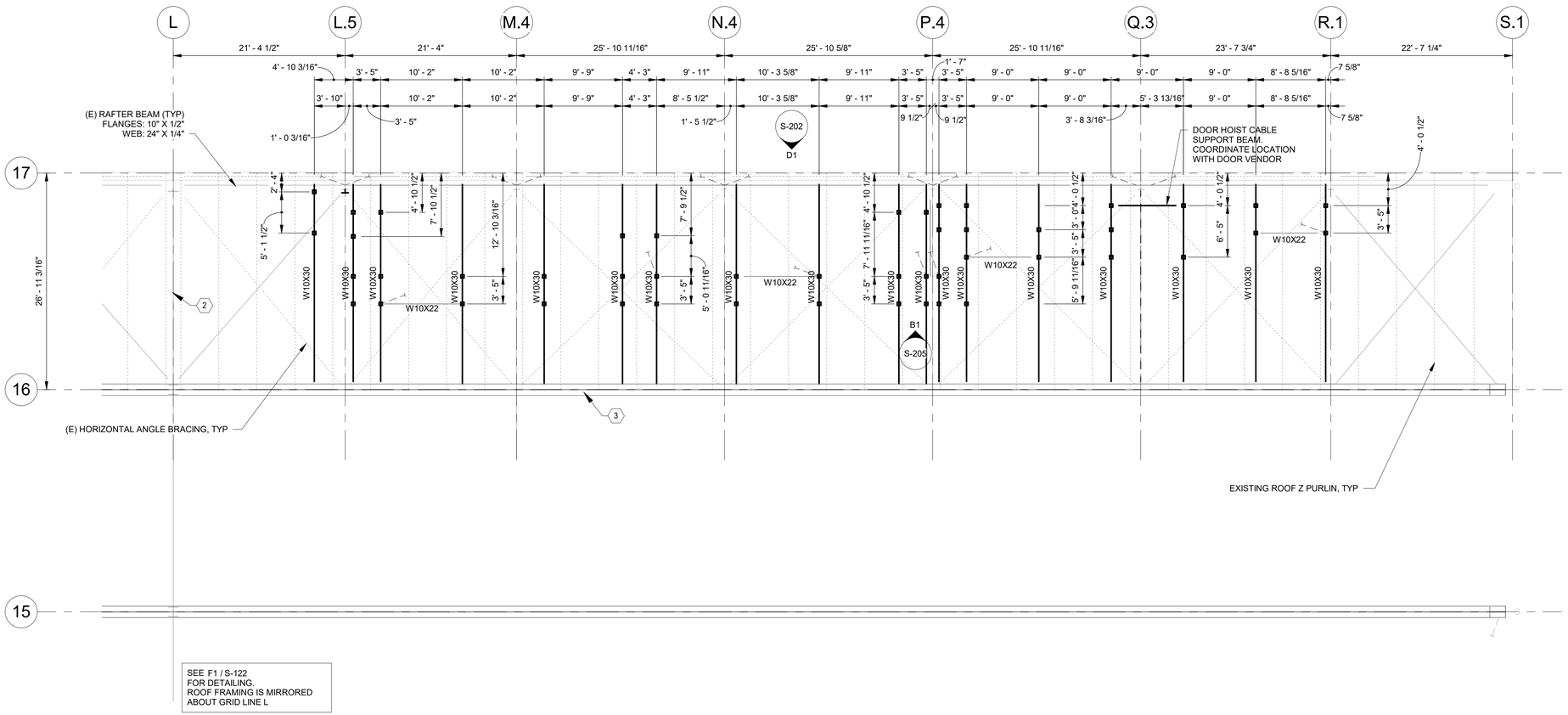
CITRINE OLSSON JV
2801 GRANDE AVE
GRAND JUNCTION, CO 81508

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT
W9126G25F0273

NEW ROOF FRAMING PLAN - AREA HB

SHEET ID

S-122



SEE F1 / S-122
FOR DETAILING.
ROOF FRAMING IS MIRRORED
ABOUT GRID LINE L

D1 NEW ROOF FRAMING PLAN - AREA HC

1/8" = 1'-0"

ROOF FRAMING PLAN NOTES

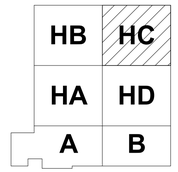
A. REFER TO DRAWINGS S-001 THROUGH S-002 FOR GENERAL NOTES, DESIGN CRITERIA, AND ABBREVIATIONS.
B. COORDINATE DIMENSIONS, WALL OPENINGS, ELEVATIONS, SECTIONS, AND DETAILS WITH ARCHITECTURAL DWGS.
C. LOCATIONS OF THE DOORS AND EQUIPMENT SHOWN ON THE PLAN HAVE BEEN ASSUMED FOR BIDDING PURPOSES ONLY. CONTRACTOR TO COORDINATE FINAL UNIT LOCATIONS AND WEIGHTS (AND ADDITIONAL UNITS) AND SUBMIT TO CONTRACTING OFFICER FOR REVIEW PRIOR TO PROCEEDING WITH ANY FABRICATION.
D. WHEN STRENGTHENING EXISTING MEMBERS, THE CONTRACTOR SHALL BEGIN THE WELD OPERATIONS AT THE CENTER OF THE MEMBER AND WORK TOWARD THE ENDS.

(#) FRAMING PLAN KEY NOTES

1. RETROFIT EXISTING 12-3/4" PIPE KICKER. RE: L6 / S-502
2. RETROFIT EXISTING W14X90 TRUSS DIAGONAL AT END BAY. RE: L1 / S-502
3. REINSTALL EXISTING DRAFT CURTAIN AFTER WT REINFORCING IS ADDED TO EXISTING MAIN FRAME BEAM.

FRAMING PLAN LEGEND

KEY PLAN



PLAN NORTH

0 48" 96" 192"

SCALE: 1/8" = 12"

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson
Ready • Reliable • Resilient

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion_FI Hood/S_B90176 Hangar Door Expansion_025-04414_R24.rvt

Plot Date: 7/1/2026 8:32:39 AM

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: J. BATY
DRAWN BY: D. FAVAZZA
CHECKED BY: W. McCANN
SUBMITTED BY:
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST., FORT WORTH, TX 76102

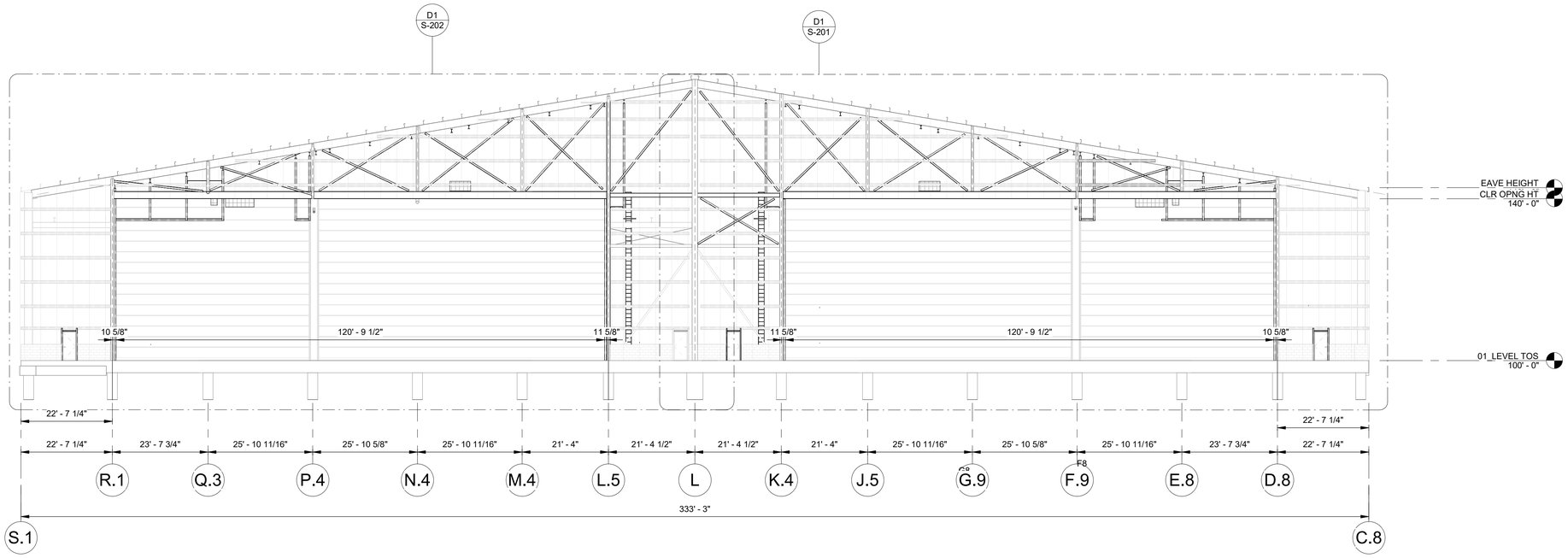
CITRINE OLSSON JV
2801 GRANDE AVE
GRAND JUNCTION, CO 81508

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT
W9126G25F0273

NEW ROOF FRAMING PLAN - AREA HC

SHEET ID

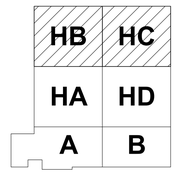
S-123



H1 NEW CONSTRUCTION OVERALL ELEVATION - AREA HB & HC

1/16" = 1'-0"

KEY PLAN



0 96" 192" 384"

SCALE: 1/16" = 12"

STATE OF TEXAS
6/29/2026
WESTON McCANN
115262
LICENSED
PROFESSIONAL ENGINEER

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson
Ready • Reliable • Resilient

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/S_B90176 Hangar Door Expansion_025-04414_R24.rvt

Plot Date: 7/1/2026 8:32:39 AM

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: J. BATY
DRAWN BY: D. FAVAZZA
CHECKED BY: W. McCANN
SUBMITTED BY: CITRINE-OLSSON JV
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST, FORT WORTH, TX 76102

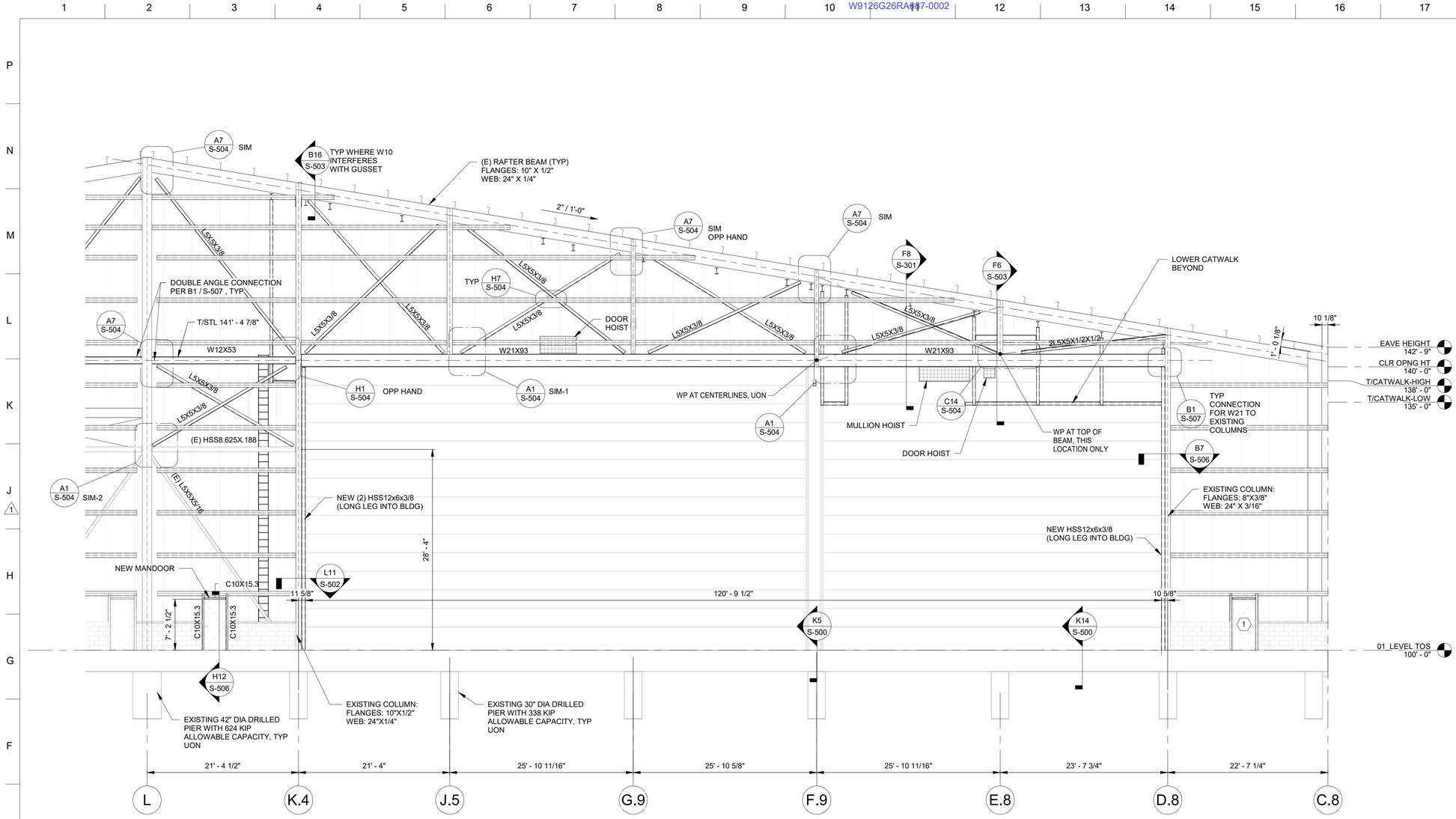
CITRINE OLSSON JV
2801 GRANDE AVE
GRAND JUNCTION, CO 81508

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT
W9126G25F0273

NEW CONSTRUCTION OVERALL ELEVATION
AREAS HB & HC

SHEET ID

S-200



D1 ENLARGED NEW CONSTRUCTION ELEVATION - AREA HB
1/8" = 1'-0"

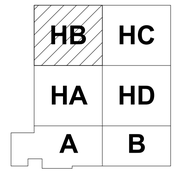
FRAMING ELEVATION NOTES

A. REFER TO DRAWINGS S-001 THRU S-002 FOR GENERAL NOTES, DESIGN CRITERIA, AND ABBREVIATIONS.
B. COORDINATE DIMENSIONS, WALL OPENINGS, ELEVATIONS, SECTIONS, AND DETAILS WITH ARCHITECTURAL DWGS.
C. WHEN STRENGTHENING EXISTING MEMBERS, THE CONTRACTOR SHALL BEGIN THE WELD OPERATIONS AT THE CENTER OF THE MEMBER AND WORK TOWARD THE ENDS.
D. RAILING NOT SHOWN FOR CLARITY

FRAMING ELEVATION KEY NOTES

1. NEW MANDOOR. RE-USE EXISTING OPENING FRAMING FROM DEMOED DOORS. CLEAN AND REFINISH STEEL.

KEY PLAN



0 48" 96" 192"
SCALE: 1/8" = 12"

WESTON McCANN 115262 LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson
Ready • Resilient • Resilient

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/S_B90176 Hangar Door Expansion_DZ5-04414_R24.rvt
Plot Date: 7/1/2026 8:32:40 AM

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: J. BATY
DRAWN BY: D. FAVAZZA
CHECKED BY: W. McCANN
SUBMITTED BY: CITRINE-OLSSON JV
SIZE: ANSI D

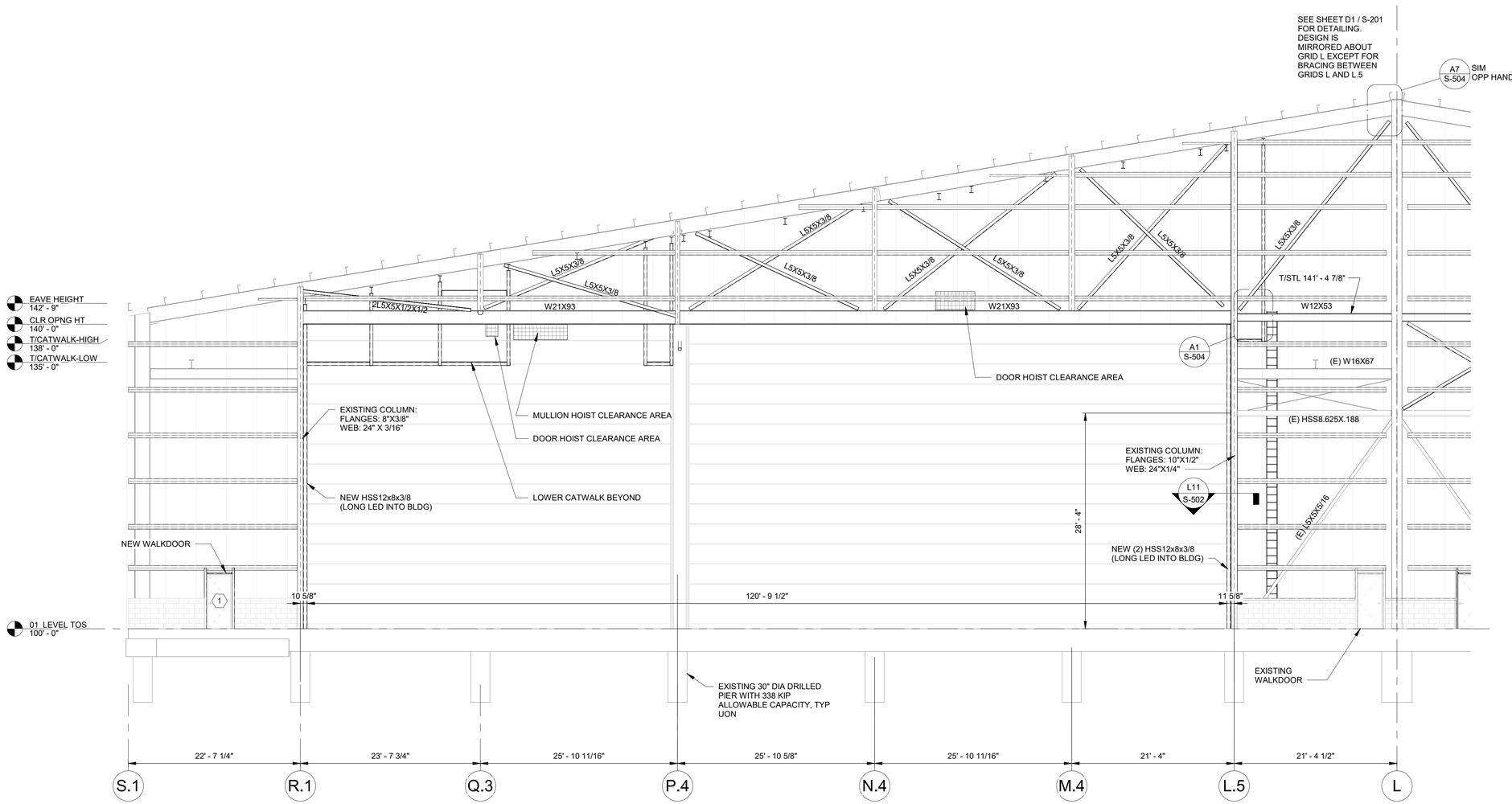
US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST, FORT WORTH, TX 76102

CITRINE OLSSON JV
2801 GRANDE AVE
GRAND JUNCTION, CO 81508

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT
W9126G25F0273

ENLARGED NEW CONSTRUCTION ELEVATION AREA - HB

SHEET ID
S-201



D1 ENLARGED NEW CONSTRUCTION ELEVATION - AREA - HC

1/8" = 1'-0"

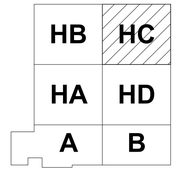
FRAMING ELEVATION NOTES

A. REFER TO DRAWINGS S-001 THRU S-002 FOR GENERAL NOTES, DESIGN CRITERIA, AND ABBREVIATIONS.
B. COORDINATE DIMENSIONS, WALL OPENINGS, ELEVATIONS, SECTIONS, AND DETAILS WITH ARCHITECTURAL DWGS.
C. WHEN STRENGTHENING EXISTING MEMBERS, THE CONTRACTOR SHALL BEGIN THE WELD OPERATIONS AT THE CENTER OF THE MEMBER AND WORK TOWARD THE ENDS.
D. RAILING NOT SHOWN FOR CLARITY

(#) FRAMING ELEVATION KEY NOTES

1. NEW MANDOOR. RE-USE EXISTING OPENING FRAMING FROM DEMOED DOORS. CLEAN AND REFINISH STEEL.

KEY PLAN



0 48" 96" 192"

SCALE: 1/8" = 12"

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson
Ready • Reliable • Resilient

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/S_B90176 Hangar Door Expansion_D25-04414_R24.rvt

Plot Date: 7/1/2026 8:32:41 AM

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: J. BATY
DRAWN BY: D. FAVAZZA
CHECKED BY: W. McCANN
SUBMITTED BY: CITRINE-OLSSON JV
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST., FORT WORTH, TX 76102

CITRINE OLSSON JV
2801 GRANDE AVE
GRAND JUNCTION, CO 81508

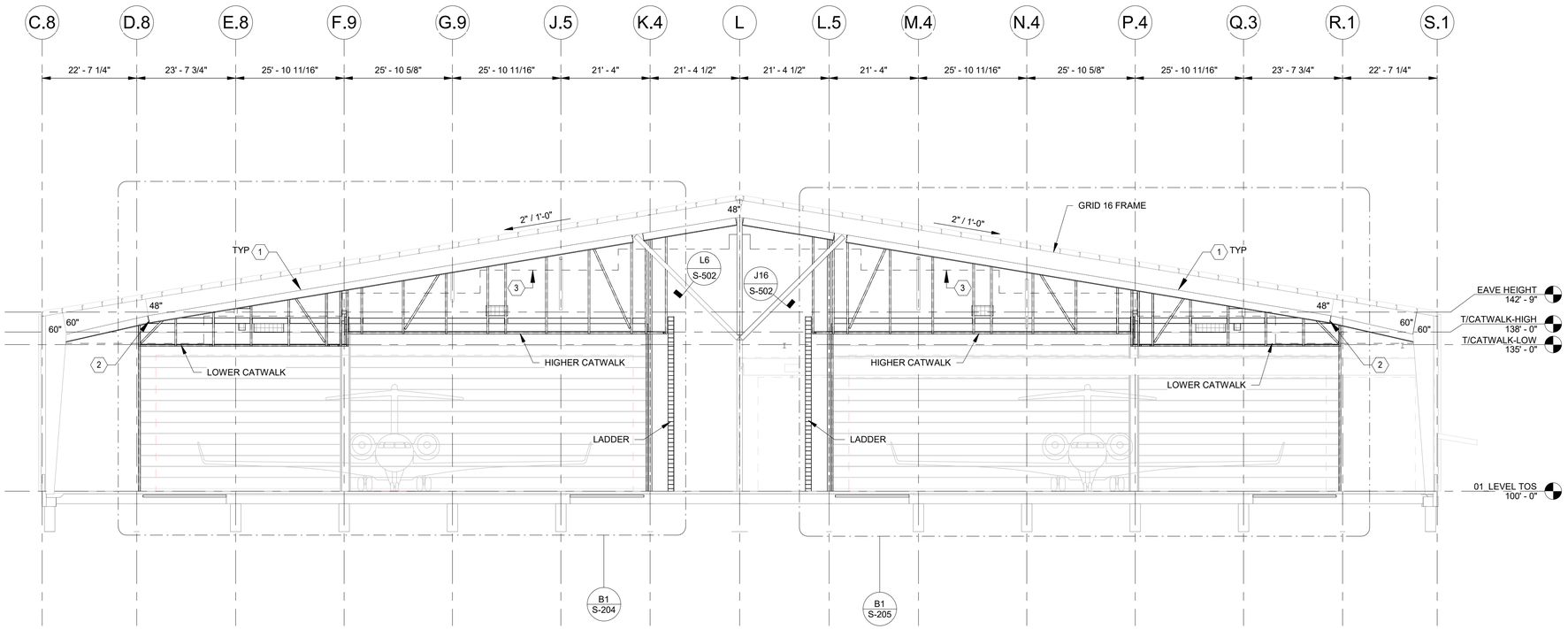
FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT
W9126G25F0273

ENLARGED NEW CONSTRUCTION ELEVATION
AREA - HC

SHEET ID

S-202

W9126G26RA087-0002



A1 OVERALL INTERIOR FRAMING ELEVATION AREAS HB & HC

1/16" = 1'-0"

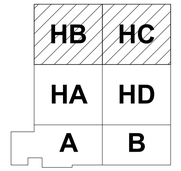
FRAMING ELEVATION NOTES

A. REFER TO DRAWINGS S-001 THRU S-002 FOR GENERAL NOTES, DESIGN CRITERIA, AND ABBREVIATIONS.
B. COORDINATE DIMENSIONS, WALL OPENINGS, ELEVATIONS, SECTIONS, AND DETAILS WITH ARCHITECTURAL DWGS.
C. WHEN STRENGTHENING EXISTING MEMBERS, THE CONTRACTOR SHALL BEGIN THE WELD OPERATIONS AT THE CENTER OF THE MEMBER AND WORK TOWARD THE ENDS.
D. RAILING NOT SHOWN FOR CLARITY

(#) FRAMING ELEVATION KEY NOTES

1. NEW CONT WT REINFORCING AT FRAME AT GRID 16.
2. PROVIDE FULL PEN BROKE BACK CONNECTION AT CHANGE IN SLOPE
3. RE-ATTACH DRAFT CURTAIN AFTER INSTALLATION OF NEW WT REINFORCING.

KEY PLAN



0 96" 192" 384"

SCALE: 1/16" = 12"

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson
Ready • Reliable • Resilient

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST., FORT WORTH, TX 76102

CITRINE OLSSON JV
2801 GRANDE AVE
GRAND JUNCTION, CO 81508

DESIGNED BY: J. BATY
DRAWN BY: D. FAVAZZA
CHECKED BY: W. McCANN
SUBMITTED BY: CITRINE-OLSSON JV
SIZE: ANSI D

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT
W9126G25F0273

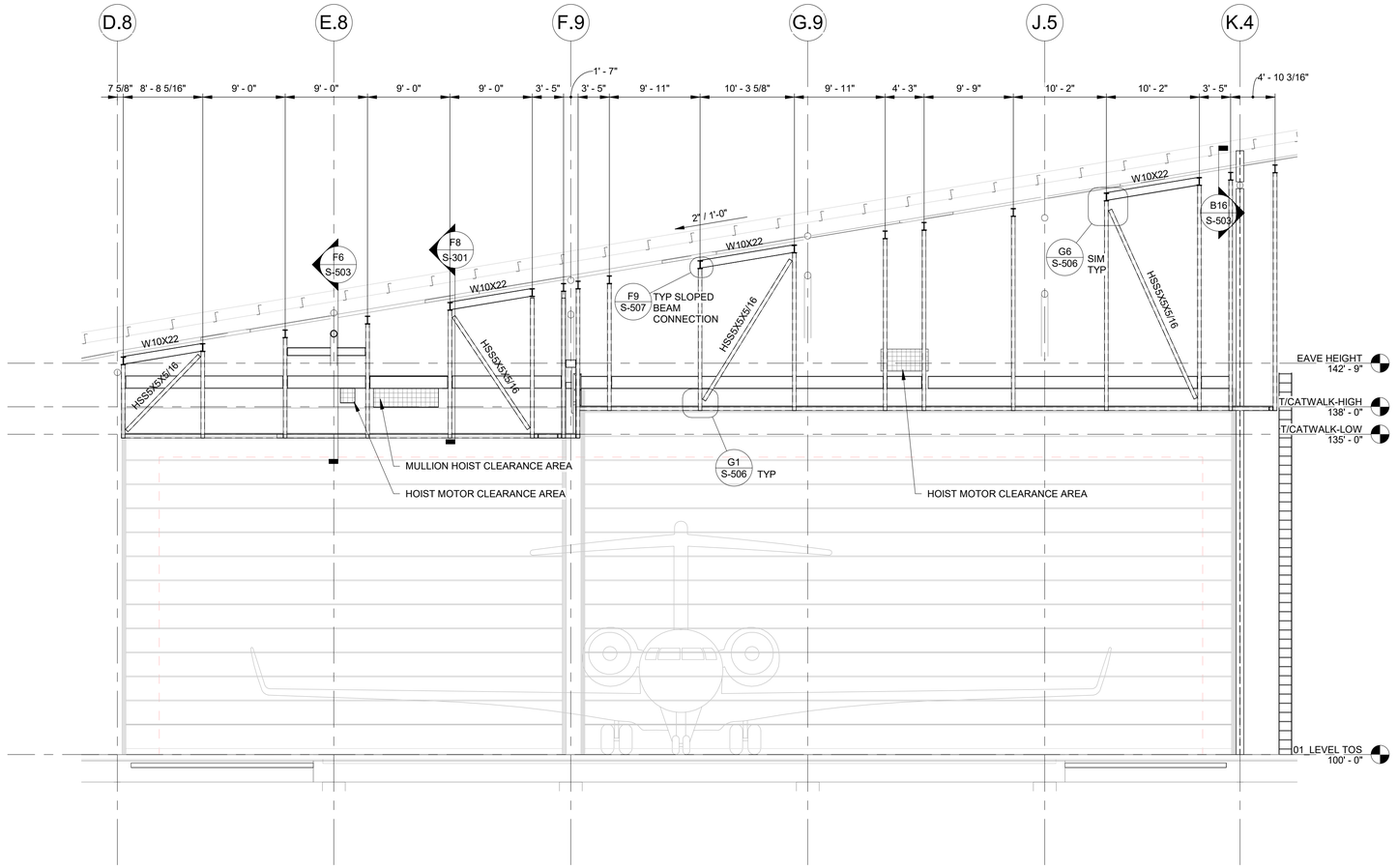
OVERALL INTERIOR FRAMING ELEVATION AREA - HB & HC

SHEET ID

S-203

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/S_B90176 Hangar Door Expansion_(25)-04414_R24.rvt

Plot Date: 7/1/2026 8:32:42 AM

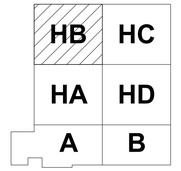


B1 NEW INTERIOR ELEVATION - AREA HB
1/8" = 1'-0"

FRAMING ELEVATION NOTES

A. RE: DRAWINGS S-001 THRU S-002 FOR GENERAL NOTES, DESIGN CRITERIA, AND ABBREVIATIONS.
B. COORDINATE DIMENSIONS, WALL OPENINGS, ELEVATIONS, SECTIONS, AND DETAILS WITH ARCHITECTURAL DWGS.
C. SEE FRAMING PLANS FOR EXACT LOCATIONS OF VERTICAL DIAGONAL BRACES.
D. RAILING NOT SHOWN FOR CLARITY

KEY PLAN



0 48" 96" 192"
SCALE: 1/8" = 12"

US Army Corps of Engineers ®

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST, FORT WORTH, TX 76102

CITRINE OLSSON JV
2801 GRANDE AVE
GRAND JUNCTION, CO 81508

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/S_B90176 Hangar Door Expansion_025-04414_R24.rvt
Plot Date: 7/1/2026 8:32:43 AM

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: J. BATY
DRAWN BY: D. FAVAZZA
CHECKED BY: W. McCANN
SUBMITTED BY: CITRINE-OLSSON JV
SIZE: ANSI D

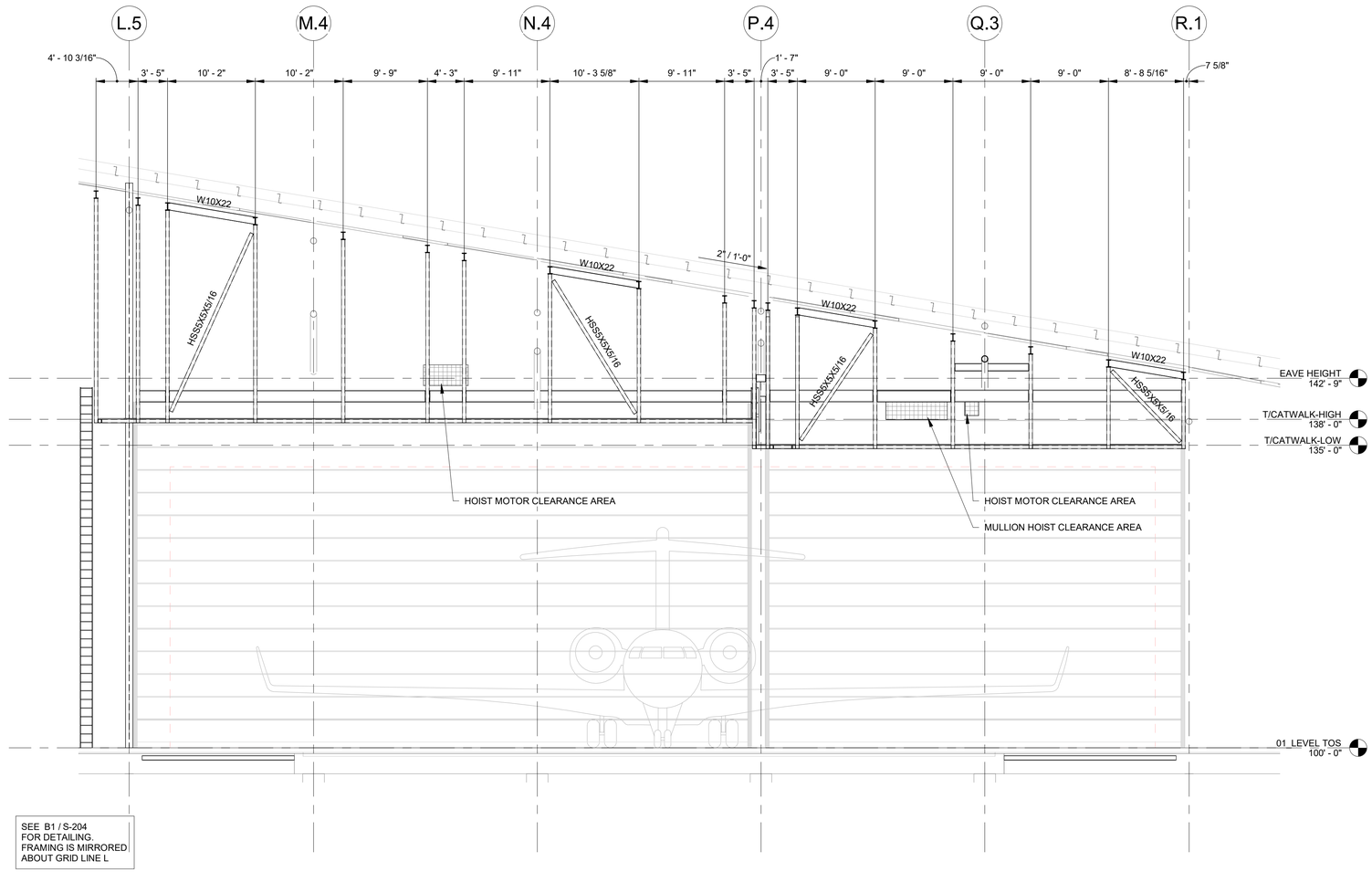
FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT
W9126G25F0273

ENLARGED INTERIOR FRAMING ELEVATION - AREA HB

STATE OF TEXAS
WESTON McCANN
115262
LICENSED PROFESSIONAL ENGINEER

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson
Ready • Resolute • Resilient

SHEET ID
S-204



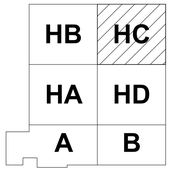
SEE B1 / S-204
FOR DETAILING.
FRAMING IS MIRRORED
ABOUT GRID LINE L

B1 NEW INTERIOR ELEVATION - AREA HC
1/8" = 1'-0"

FRAMING ELEVATION NOTES

A. RE: DRAWINGS S-001 THRU S-002 FOR GENERAL NOTES, DESIGN CRITERIA, AND ABBREVIATIONS.
B. COORDINATE DIMENSIONS, WALL OPENINGS, ELEVATIONS, SECTIONS, AND DETAILS WITH ARCHITECTURAL DWGS.
C. SEE FRAMING PLANS FOR EXACT LOCATIONS OF VERTICAL DIAGONAL BRACES.
D. RAILING NOT SHOWN FOR CLARITY

KEY PLAN



0 48" 96" 192"
SCALE: 1/8" = 12"

STATE OF TEXAS
WESTON McCANN
115262
LICENSED
PROFESSIONAL ENGINEER
DATE: 06/26/2026

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson
Ready • Reliable • Resilient

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B80176 Hangar Door Expansion - Ft Hood/S_B80176 Hangar Door Expansion_025-04414_R24.rvt

Plot Date: 7/1/2026 8:32:44 AM

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: J. BATY
DRAWN BY: D. FAVAZZA
CHECKED BY: W. McCANN
SUBMITTED BY: CITRINE-OLSSON JV
SIZE: ANSI D

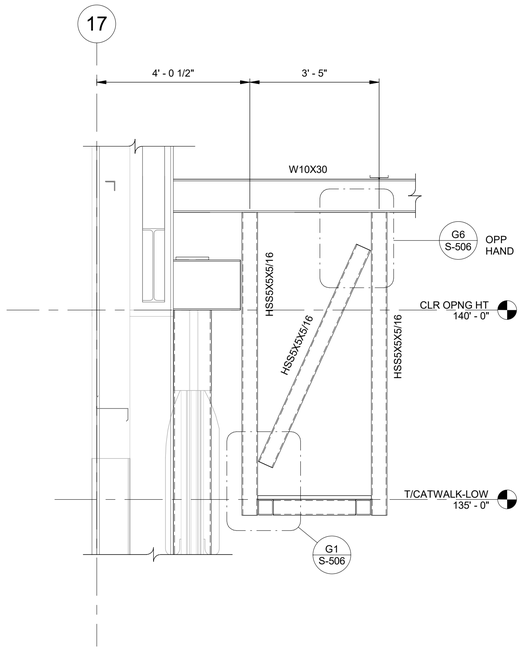
US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST., FORT WORTH, TX 76102

CITRINE OLSSON JV
2801 GRANDE AVE
GRAND JUNCTION, CO 81508

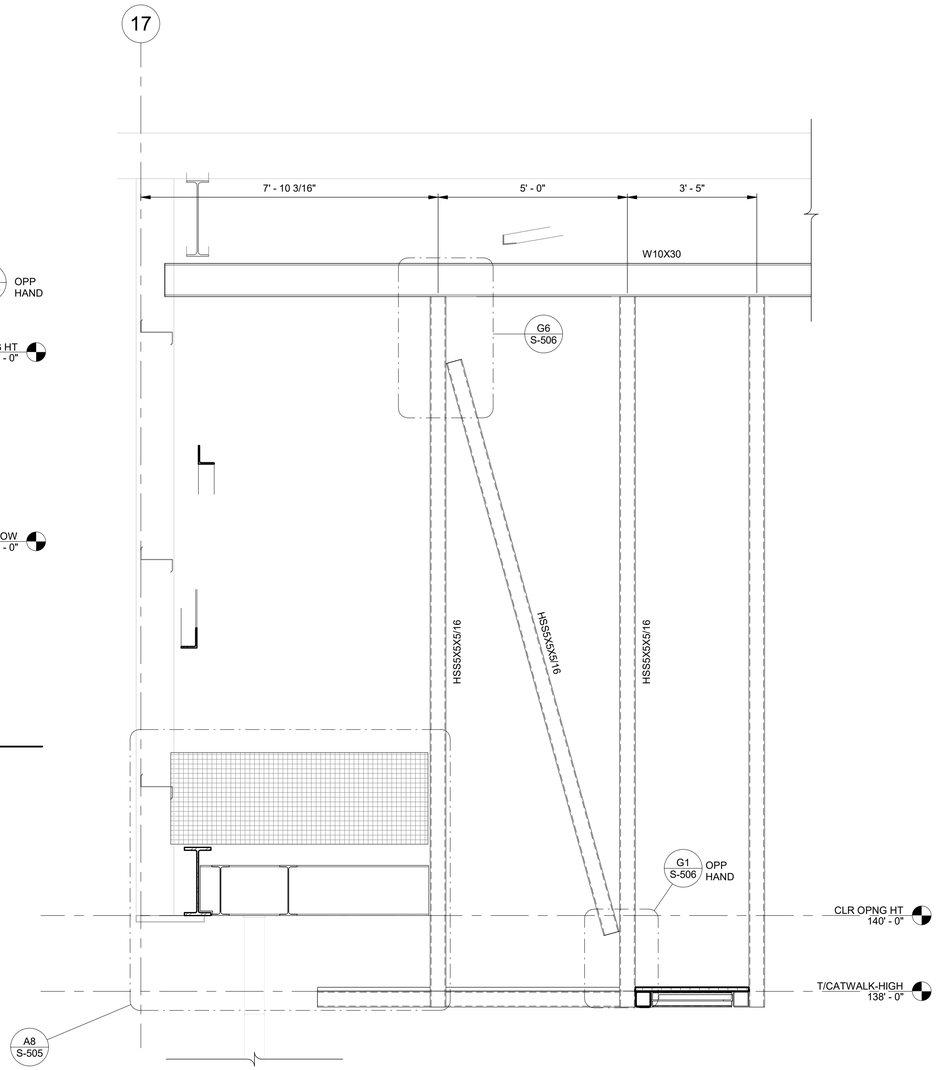
FORT HOOD, TX
B80176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT
W9126G25F0273

ENLARGED INTERIOR FRAMING ELEVATION-AREA HC

SHEET ID
S-205



H8 LOW CATWALK BRACE BAY
1/2" = 1'-0"



D13 HIGH CATWALK BRACED BAY
1/2" = 1'-0"

US Army Corps of Engineers ®

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST, FORT WORTH, TX 76102

CITRINE OLSSON JV
2801 GRANDE AVE
GRAND JUNCTION, CO 81508

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/S_B90176 Hangar Door Expansion_DZ5-53414_R24.rvt

Plot Date: 7/1/2026 8:32:45 AM

DESIGNED BY: J. BATY
DRAWN BY: D. FAVAZZA
CHECKED BY: W. McCANN
SUBMITTED BY: CITRINE-OLSSON JV
SIZE: ANSI D
ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

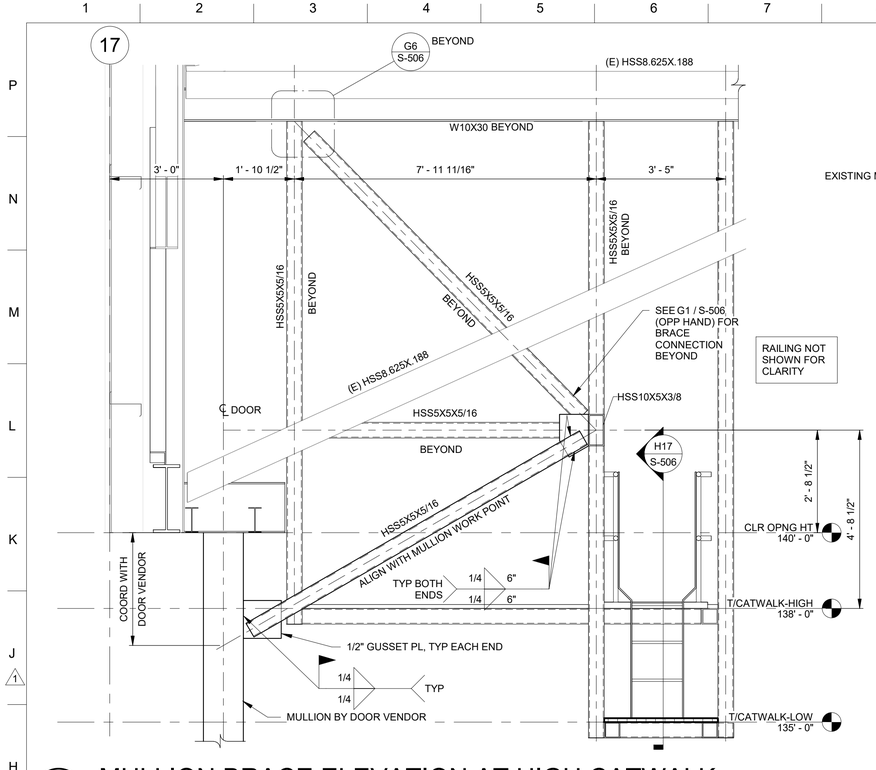
FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT
W9126G25F0273

NEW CATWALK FRAMING ELEVATIONS AND SECTION

SHEET ID
S-206

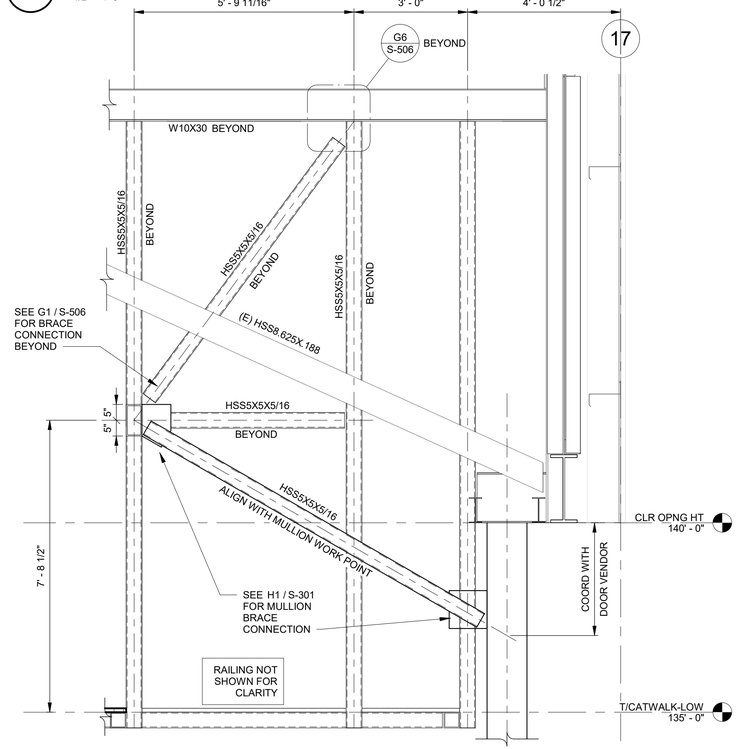
STATE OF TEXAS
6/29/2026
WESTON McCANN
115262
LICENSED PROFESSIONAL ENGINEER

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson
Ready • Reliable • Resilient



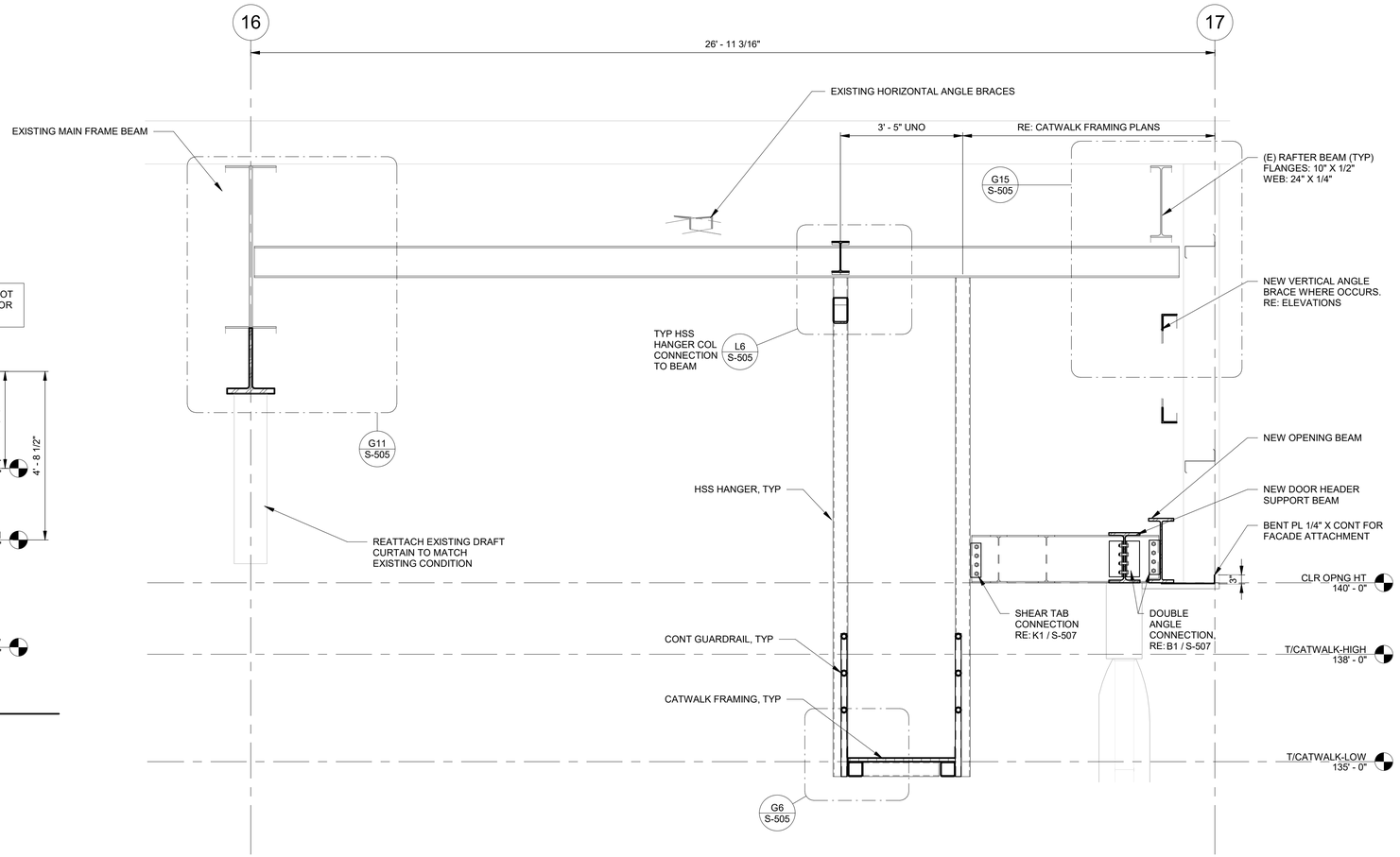
H1 MULLION BRACE ELEVATION AT HIGH CATWALK

1/2" = 1'-0"



A1 MULLION BRACE ELEVATION AT LOW CATWALK

1/2" = 1'-0"



F8 TYPICAL CATWALK SECTION

1/2" = 1'-0"

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/S_B90176 Hangar Door Expansion_025-04414_R24.rvt

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: J. BATY
DRAWN BY: D. FAVAZZA
CHECKED BY: W. McCANN
SUBMITTED BY: CITRINE-OLSSON JV
SIZE: ANSI D

Plot Date: 7/1/2026 8:32:46 AM

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST, FORT WORTH, TX 76102

CITRINE OLSSON JV
2801 GRANDE AVE
GRAND JUNCTION, CO 81508

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT
W9126G25F0273

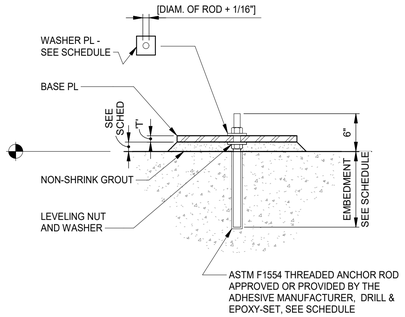
STRUCTURAL SECTIONS

STATE OF TEXAS
WESTON McCANN
115262
LICENSED
PROFESSIONAL ENGINEER

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson
Ready • Reliable • Resilient

SHEET ID

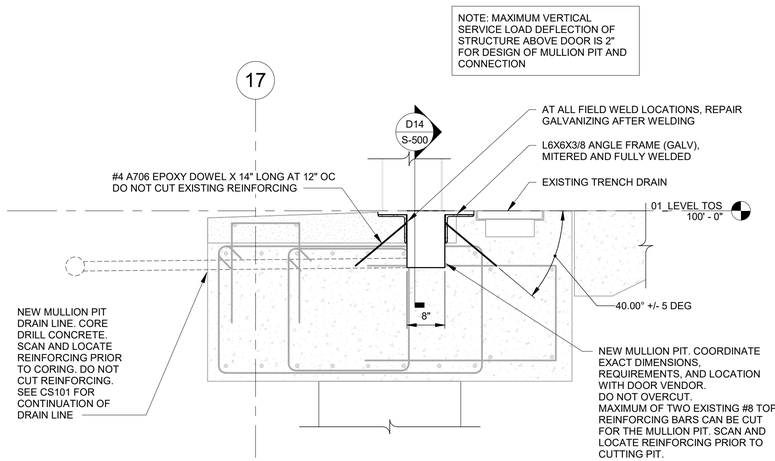
S-301



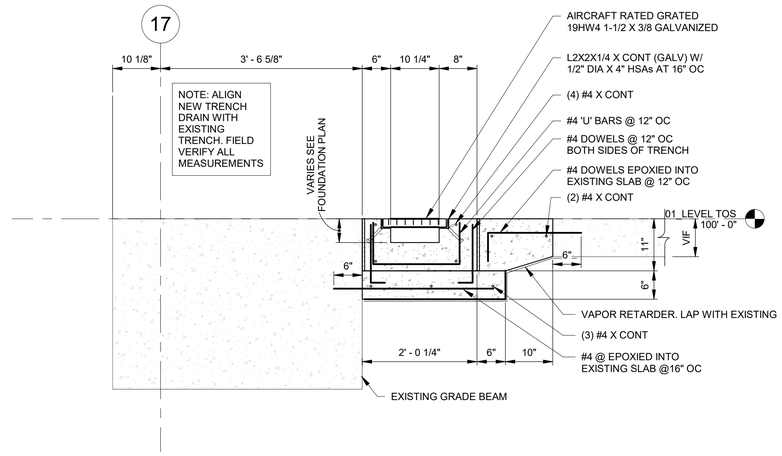
NOTES:
1. DETAIL IS REPRESENTATIVE ONLY.
2. DO NOT USE ADHESIVE INSTALLED ANCHOR FOR CAST-IN-PLACE FOR REPAIRS UNLESS APPROVED BY EOR FOR EACH INSTANCE.
3. WASHER PLATE NOT REQUIRED IF BASE PLATE ANCHOR ROD HOLES ARE STANDARD HOLES [DIAM. OF ROD + 1/16"].

TYPICAL EPOXY ANCHOR ROD DETAIL

K1 TYPICAL EPOXY ANCHOR DETAIL
NTS



K5 SECTION AT MULLION PIT
3/4" = 1'-0"



K14 SECTION AT NEW TRENCH DRAIN
NTS

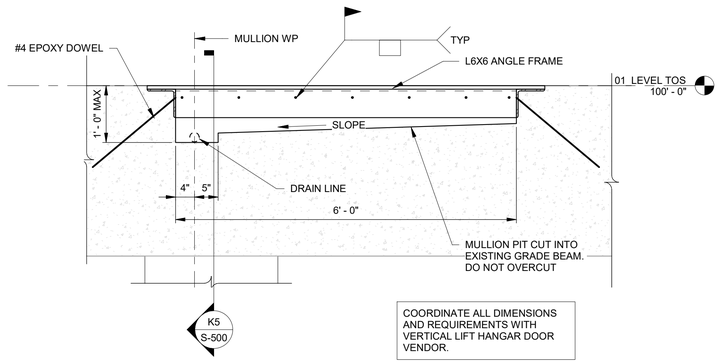
PLAN

NOTES:
1. SAW CUT EDGES OF AREA WHERE CONCRETE WILL BE REMOVED A MINIMUM OF 1/2" DEEP. DO NOT CUT REINFORCING BARS. DO NOT CUT PAST OUTSIDE CORNERS.
2. CHIP OUT DAMAGED OR DEFECTIVE CONCRETE WITH HAND HELD PNEUMATIC CHIPPING GUN. DO NOT CUT OR DAMAGE REINFORCING BARS.
3. IF MORE THAN 1/3 OF BAR DIAMETER IS EXPOSED REMOVING DAMAGED OR DEFECTIVE CONCRETE, REMOVE ADDITIONAL CONCRETE TO A MINIMUM 1" BEHIND BARS.
4. CONCRETE SURFACES TO BE REPAIRED SHALL BE CLEANED AND ROUGHENED TO 1/4" AMPLITUDE.
5. CONCRETE IN REPAIR AREA TO BE REPAIRED SHALL BE SATURATED AND SURFACE DAMP WHEN REPAIR CONCRETE IS PLACED.
6. FOR THE REPAIR OF VERTICAL CONCRETE SURFACES, SLOPE TOP SURFACE OF CHIPPED OUT AREA SLIGHTLY TOWARD FORMS TO ALLOW AIR TO ESCAPE DURING PLACEMENT OF REPAIR CONCRETE.
7. WATER CURE REPAIRED CONCRETE FOR MINIMUM OF 7 DAYS. KEEP REPAIRED AREA CONTINUOUSLY MOIST.
8. FOLLOW MANUFACTURER INSTRUCTIONS FOR REPAIR MATERIALS.

SECTION A-A IF NO REBAR IS EXPOSED

SECTION A-A IF REBAR IS EXPOSED

D5 TYPICAL CONCRETE SURFACE REPAIR DETAIL
NTS



D14 MULLION SECTION
3/4" = 1'-0"

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

DESIGNED BY: J. BATY
DRAWN BY: D. FAVAZZA
CHECKED BY: W. MCCANN
ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:
SUBMITTED BY: CITRINE-OLSSON JV
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST, FORT WORTH, TX 76102

CITRINE OLSSON JV
2801 GRANDE AVE
GRAND JUNCTION, CO 81508

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT
W9126G25F0273

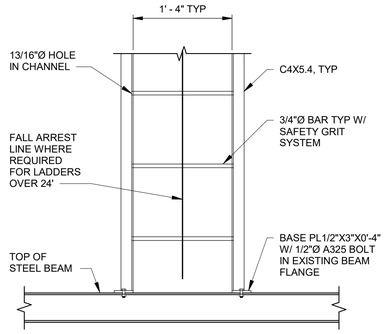
CONCRETE DETAILS

SHEET ID
S-500

STATE OF TEXAS 12/31/2026 WESTON McCANN 115262 LICENSED PROFESSIONAL ENGINEER

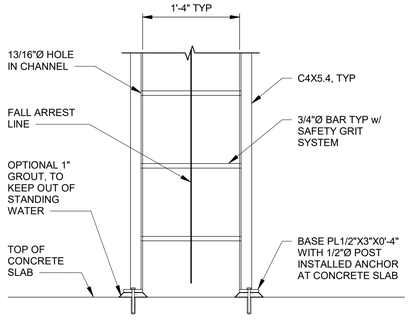
Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson
Ready • Reliable • Resilient

Plot Date: 7/1/2026 8:32:47 AM
File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/S_B90176 Hangar Door Expansion_D25-04414_R24.rvt



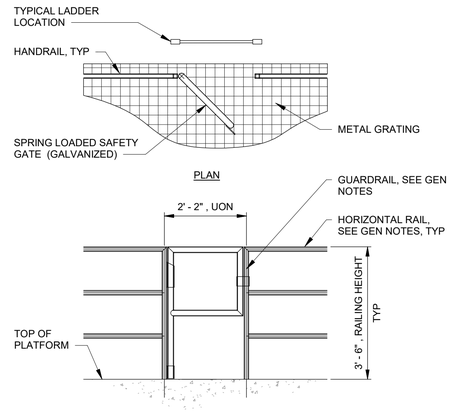
NOTE: PROVIDE PERSONAL FALL ARREST STSTEM FOR LADDERS ABOVE 24'.

K1 TYP BOT. LADDER CONN. TO STEEL DETAIL
NTS

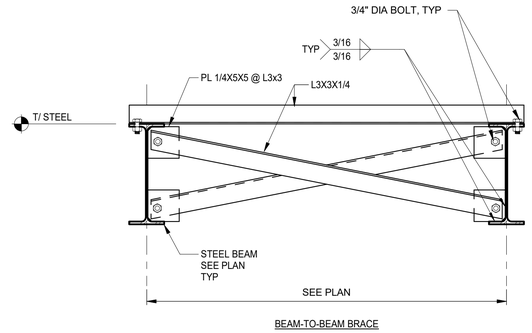


NOTE: PROVIDE PERSONAL FALL ARREST STSTEM FOR LADDER.

K7 TYP BOT. LADDER CONN. DETAIL
NTS



K11 TYP SAFETY GATE DETAIL
NTS



NOTES:
1. SEE PLAN FOR LOCATIONS OF ANGLE BRACES.
2. FIELD WELDING OF 1/4" CONNECTION PLATES SHALL BE AT FABRICATOR'S OPTION.
3. BRACE SIZES SHOWN ARE TYPICAL UNLESS OTHERWISE NOTED ON PLAN.

K16 BEAM BOTTOM FLANGE BRACE DETAIL
NTS

E1 TYP PERMANENT GUARDRAIL DETAIL
NTS

E7 TYP GUARDRAIL DETAIL
NTS

NOTE:
1. PROVIDE PERSONAL FALL ARREST SYSTEM IF LADDER HEIGHT IS GREATER THAN 24 FEET.
2. LADDER TO EXTEND A MINIMUM OF 42" ABOVE LANDING LEVEL.
3. PROVIDE LADDERS PER OSHA REQUIREMENTS

A12 TYP LADDER ELEVATION
NTS

A1 TYP GRATING WELD DETAILS
NTS

A7 TYP TOP LADDER CONN. DETAIL
NTS

US Army Corps of Engineers ®

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST., FORT WORTH, TX 76102

CITRINE OLSSON JV
2801 GRANDE AVE
GRAND JUNCTION, CO 81508

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: J. BATY
DRAWN BY: D. FAVAZZA
CHECKED BY: W. McCANN
SUBMITTED BY: CITRINE-OLSSON JV
SIZE: ANSI D

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT
W9126G25F0273

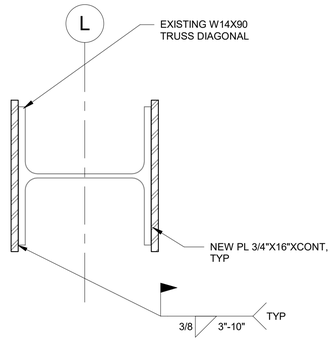
TYPICAL STRUCTURAL DETAILS

SHEET ID
S-501

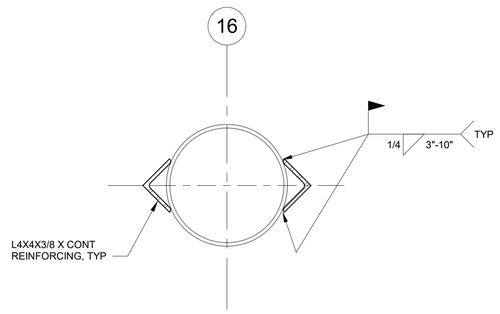
STATE OF TEXAS
WESTON McCANN
115262
LICENSED PROFESSIONAL ENGINEER

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson
Ready • Reliable • Resilient

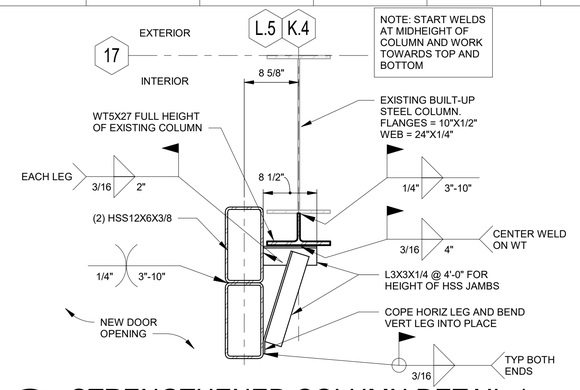
File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/S_B90176 Hangar Door Expansion_025-04414_R24.rvt
Plot Date: 7/1/2026 8:32:48 AM



L1 TRUSS END BAY DIAGONAL REINF
1 1/2" = 1'-0"



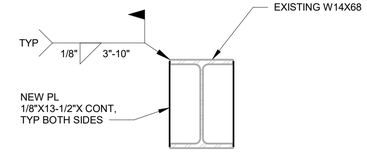
L6 GRID 16 PIPE KICKER REINFORCING
1 1/2" = 1'-0"



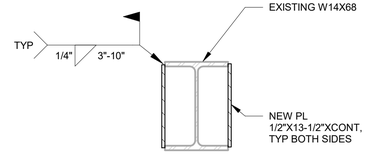
L11 STRENGTHENED COLUMN DETAIL 1
1" = 1'-0"

DETAIL SHEET NOTES

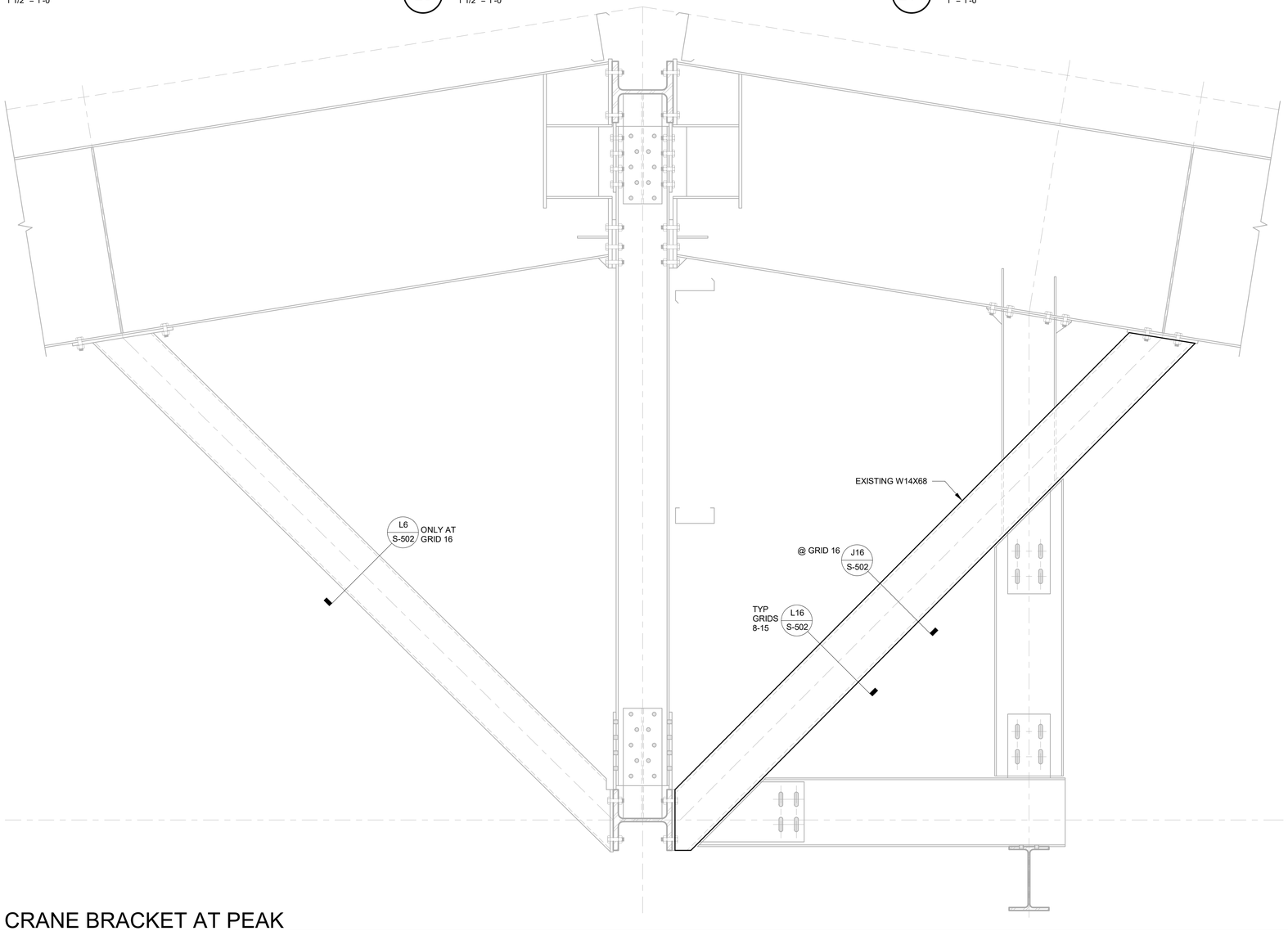
A. WHEN STRENGTHENING EXISTING MEMBERS, THE CONTRACTOR SHALL BEGIN THE WELD OPERATIONS AT THE CENTER OF THE MEMBER AND WORK TOWARD THE END



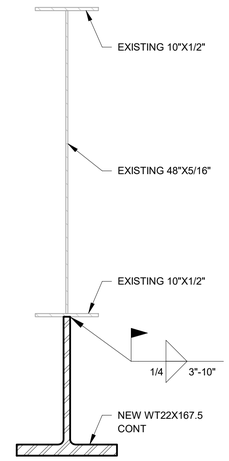
L16 TYP CRANE BRACKET SUPPORT
1" = 1'-0"



J16 GRID 16 KICKER REINFORCING
1" = 1'-0"



A1 CRANE BRACKET AT PEAK
3/4" = 1'-0"



C16 ROOF BEAM SUPPORT
1" = 1'-0"

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/S_B90176 Hangar Door Expansion_025-04414_R24.rvt
Plot Date: 7/1/2026 8:32:49 AM

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: J. BATY
DRAWN BY: D. FAVAZZA
CHECKED BY: W. McCANN
SUBMITTED BY: CITRINE-OLSSON JV
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST., FORT WORTH, TX 76102

CITRINE OLSSON JV
2801 GRANDE AVE
GRAND JUNCTION, CO 81508

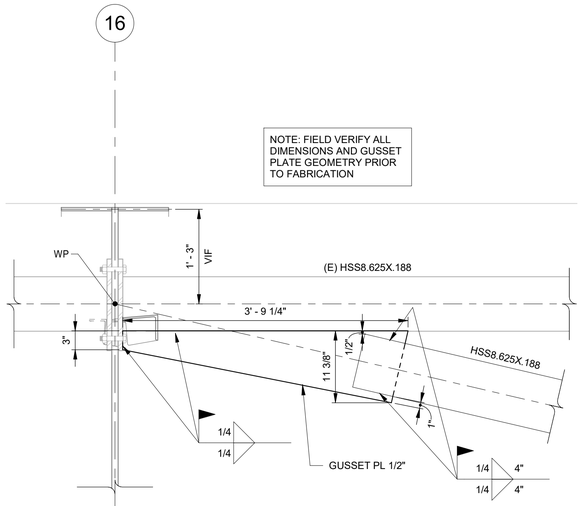
FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT
W9126G25F0273

STRUCTURAL DETAILS

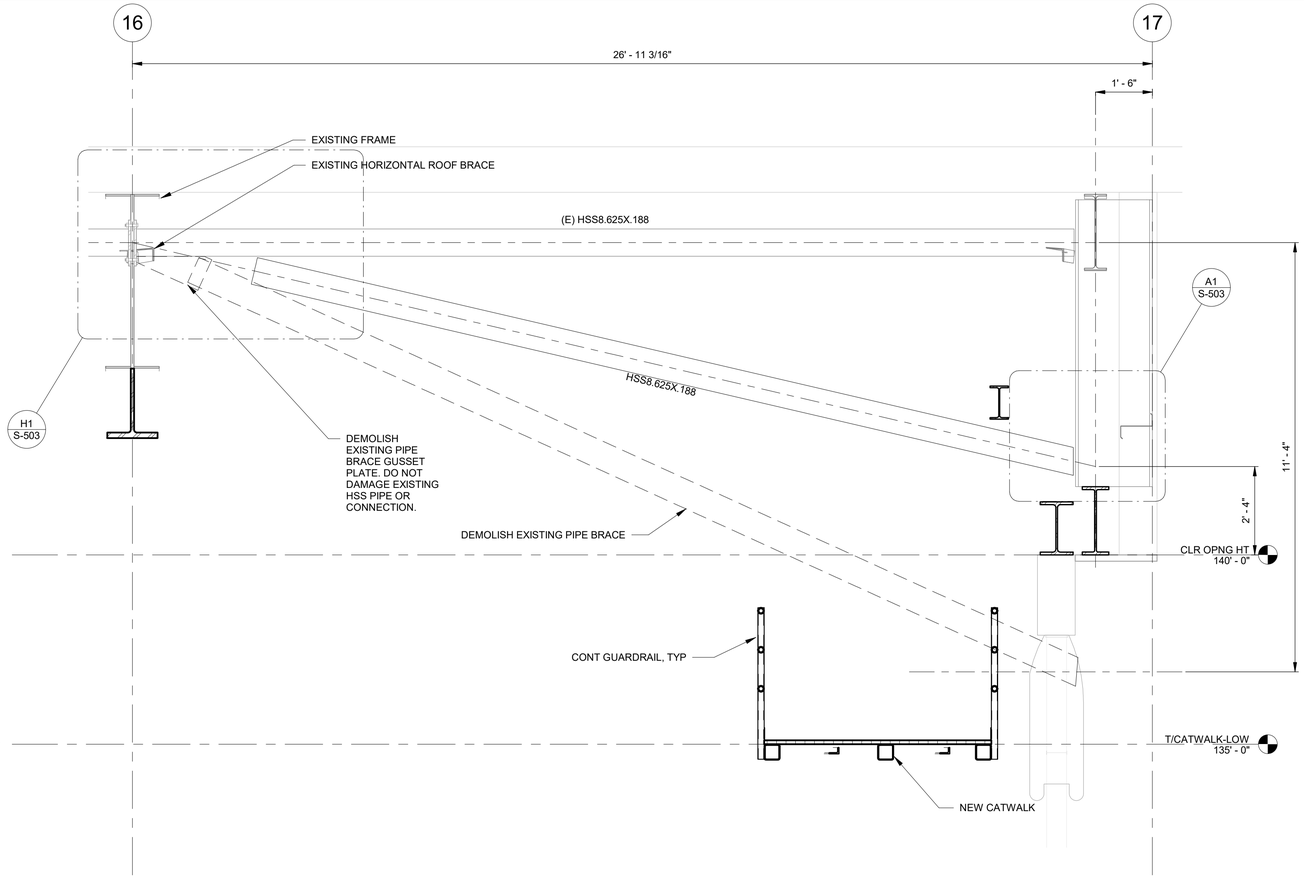
SHEET ID
S-502

STATE OF TEXAS
WESTON McCANN
115262
LICENSED
PROFESSIONAL ENGINEER
7/1/2026

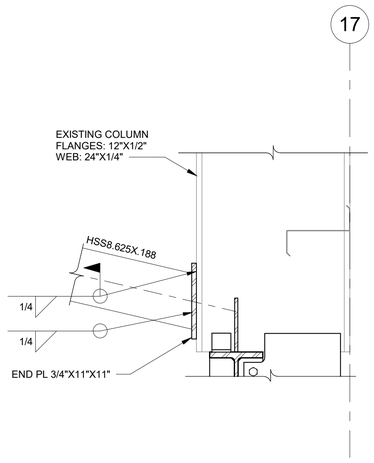
Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson
Ready • Reliable • Resilient



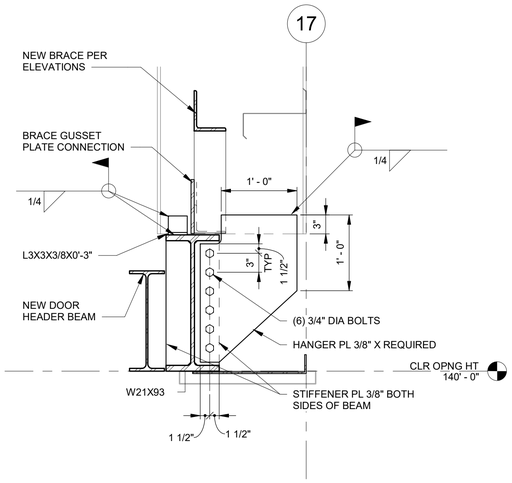
H1 NEW KICKER BRACE AT GRID 16
1" = 1'-0"



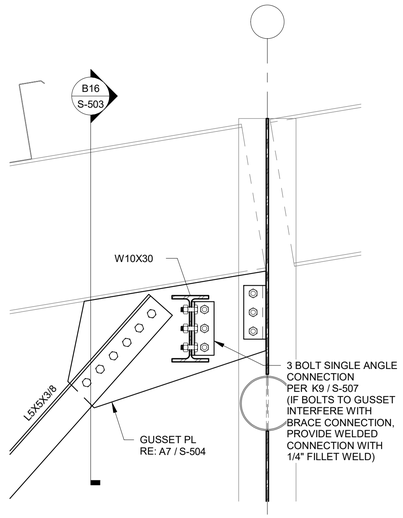
F6 NEW KICKER BRACE AT GRIDS E.8 AND Q.3
1/2" = 1'-0"



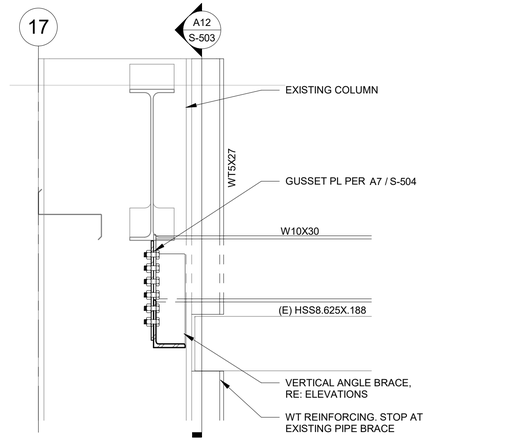
A1 NEW KICKER BRACE AT GRID 17
1" = 1'-0"



A6 TYP (E) COLUMN CONNECT TO NEW BEAM
1" = 1'-0"



A12 W10 BEAM AT GUSSET PL
1" = 1'-0"



B16 W10 BEAM SUPPORT AT GUSSET PL
1" = 1'-0"

US Army Corps of Engineers ®

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST, FORT WORTH, TX 76102

CITRINE.OLSSON JV
2801 GRANDE AVE
GRAND JUNCTION, CO 81508

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

DESIGNED BY: J. BATY
DRAWN BY: D. FAVAZZA
CHECKED BY: W. MCCANN
SUBMITTED BY: CITRINE-OLSSON JV
SIZE: ANSI D

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

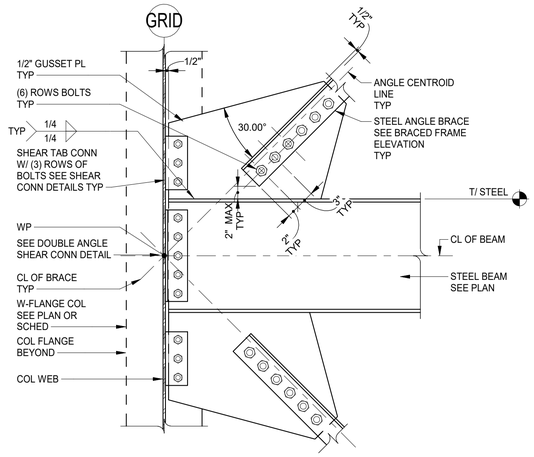
FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT
W9126G25F0273

STRUCTURAL DETAILS

SHEET ID
S-503

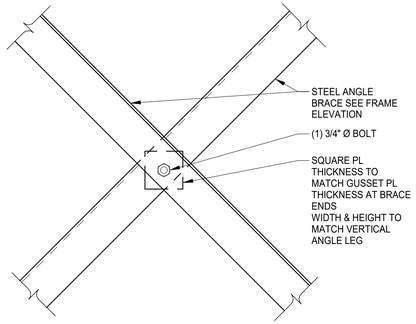
Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson
Ready • Resolute • Resilient

Plot Date: 7/1/2026 8:32:50 AM
File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/S_B90176 Hangar Door Expansion_025-04414_R24.rvt

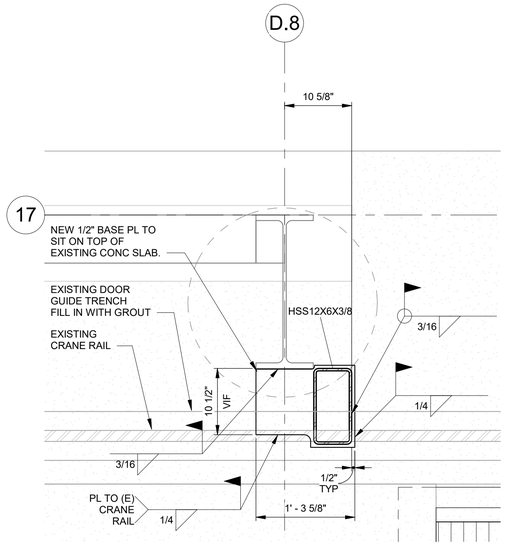


NOTES:
1. ALL BOLTS AT BRACE & GUSSET PL SHALL BE 1"Ø, CONFORMING TO ASTM F3125, GRADE A325-N, AND FULLY-PRETENSIONED. ASTM F1852 'TWIST-OFF' BOLTS MAY BE PROVIDED AT CONTRACTOR'S OPTION. BOLT HOLES SHALL BE STANDARD IN BEAM AND OVERSIZED IN ANGLES AND WEB PLATES. ALL FAYING SURFACES SHALL BE SLIP-CRITICAL CLASS 'A'.
2. COMPRESSIBLE-WASHER-TYPE DIRECT TENSION INDICATORS OR TWIST-OFF-TYPE TENSION CONTROL BOLTS CONFORMING TO RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS (RCSC) SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS SHALL BE PROVIDED AT ALL HIGH-STRENGTH BOLTED CONNECTIONS IN ACCORDANCE WITH UFC 3-301-01

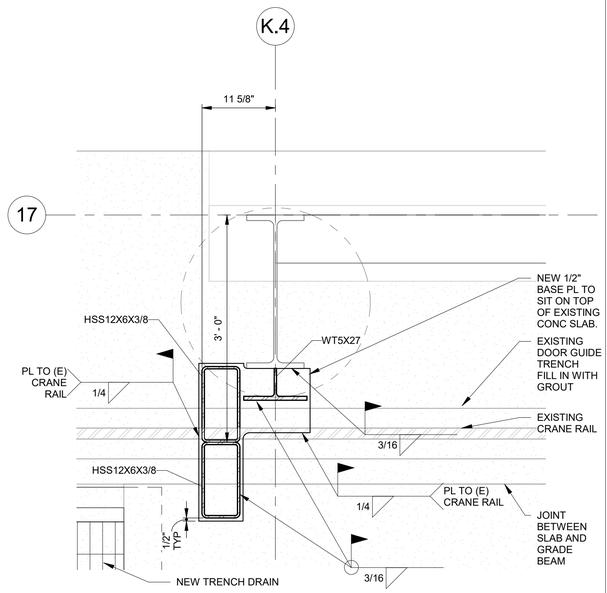
H1 ANGLE BRACE ABOVE & BELOW CONNECTION
NTS



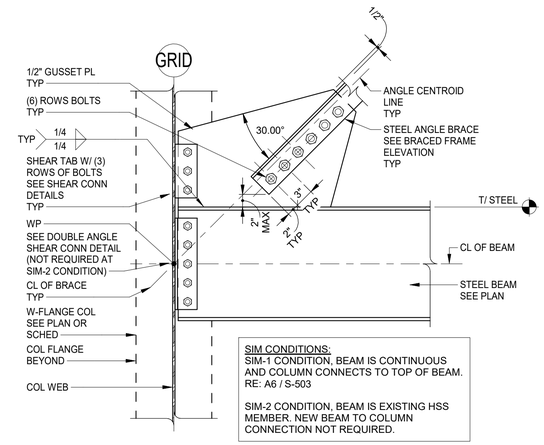
H7 BRACING SPACER PLATE DTL
NTS



H11 JAMB DTL AT GRIDS D.8 AND R.1
1" = 1'-0"



H15 JAMB DTL GRIDS K.4 AND L.5
1" = 1'-0"

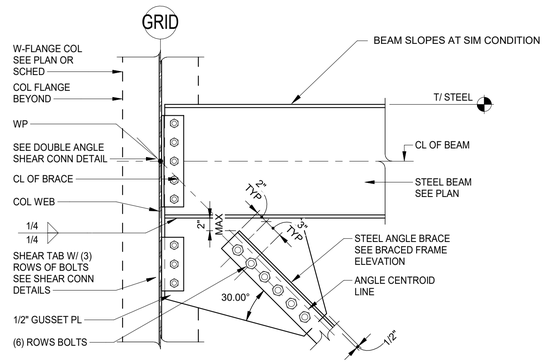


SIM CONDITIONS:
SIM-1 CONDITION, BEAM IS CONTINUOUS AND COLUMN CONNECTS TO TOP OF BEAM. RE: A6 / S-503

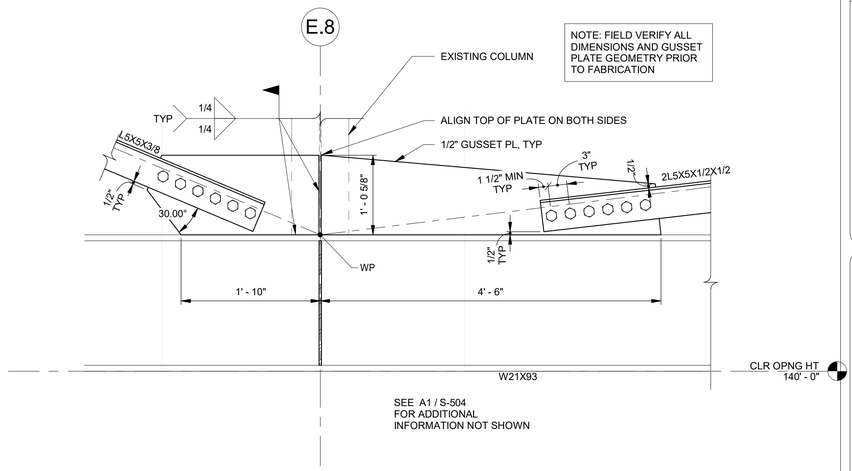
SIM-2 CONDITION, BEAM IS EXISTING HSS MEMBER. NEW BEAM TO COLUMN CONNECTION NOT REQUIRED.

NOTES:
1. ALL BOLTS AT BRACE & GUSSET PL SHALL BE 1"Ø, CONFORMING TO ASTM F3125, GRADE A325-N, AND FULLY-PRETENSIONED. ASTM F1852 'TWIST-OFF' BOLTS MAY BE PROVIDED AT CONTRACTOR'S OPTION. BOLT HOLES SHALL BE STANDARD IN BEAM AND OVERSIZED IN ANGLES AND WEB PLATES. ALL FAYING SURFACES SHALL BE SLIP-CRITICAL CLASS 'A'.
2. COMPRESSIBLE-WASHER-TYPE DIRECT TENSION INDICATORS OR TWIST-OFF-TYPE TENSION CONTROL BOLTS CONFORMING TO RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS (RCSC) SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS SHALL BE PROVIDED AT ALL HIGH-STRENGTH BOLTED CONNECTIONS IN ACCORDANCE WITH UFC 3-301-01

A1 ANGLE BRACE ABOVE CONNECTION
1" = 1'-0"



A7 ANGLE BRACE BELOW CONNECTION
NTS



C14 BRACE CONNECTION WP TOP OF BEAM
1" = 1'-0"

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/S_B90176 Hangar Door Expansion_025-04414_R24.rvt

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: J. BATY
DRAWN BY: D. FAVAZZA
CHECKED BY: W. MCCANN
SUBMITTED BY: CITRINE-OLSSON JV
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST, FORT WORTH, TX 76102

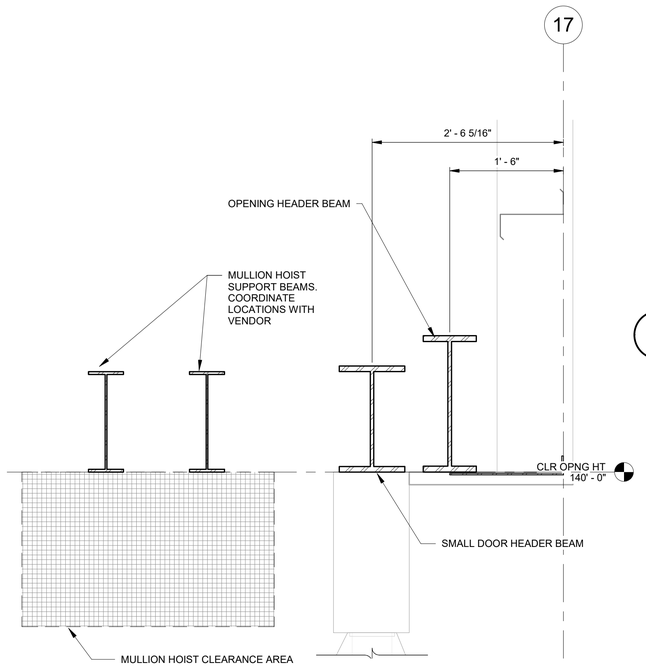
CITRINE OLSSON JV
2801 GRANDE AVE
GRAND JUNCTION, CO 81508

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT
W9126G25F0273

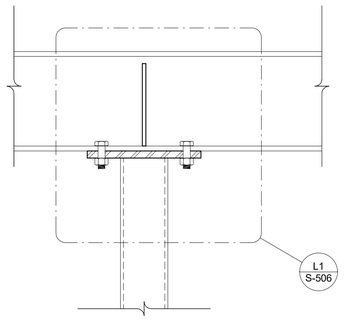
STRUCTURAL DETAILS

SHEET ID
S-504

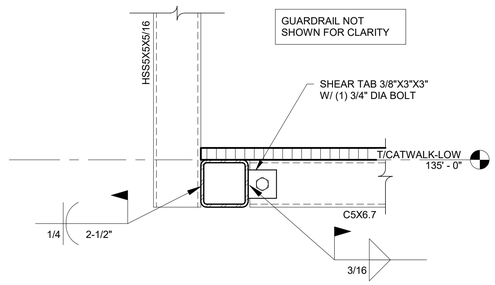
Plot Date: 7/1/2026 8:32:52 AM



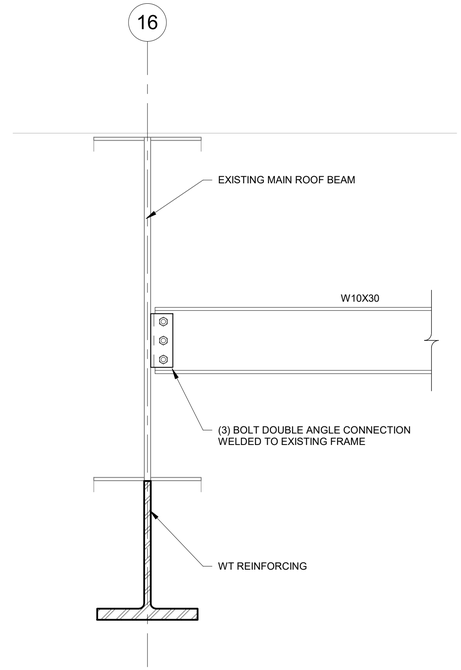
G1 SECTION AT MULLION HOIST
1" = 1'-0"



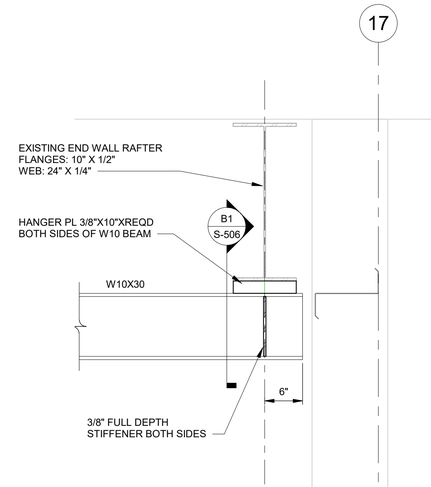
L6 TYP HANGER CONNECTION
1 1/2" = 1'-0"



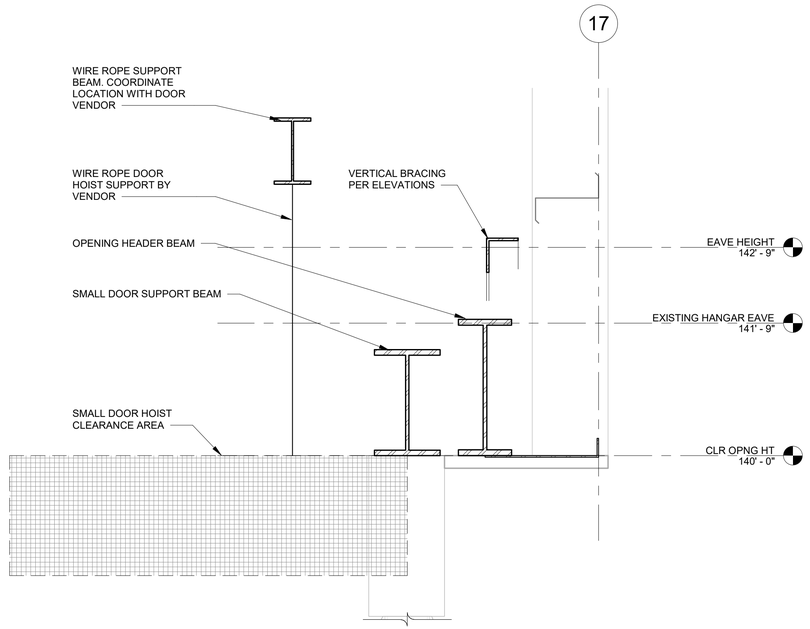
G6 TYP CATWALK CONN TO HANGER
1 1/2" = 1'-0"



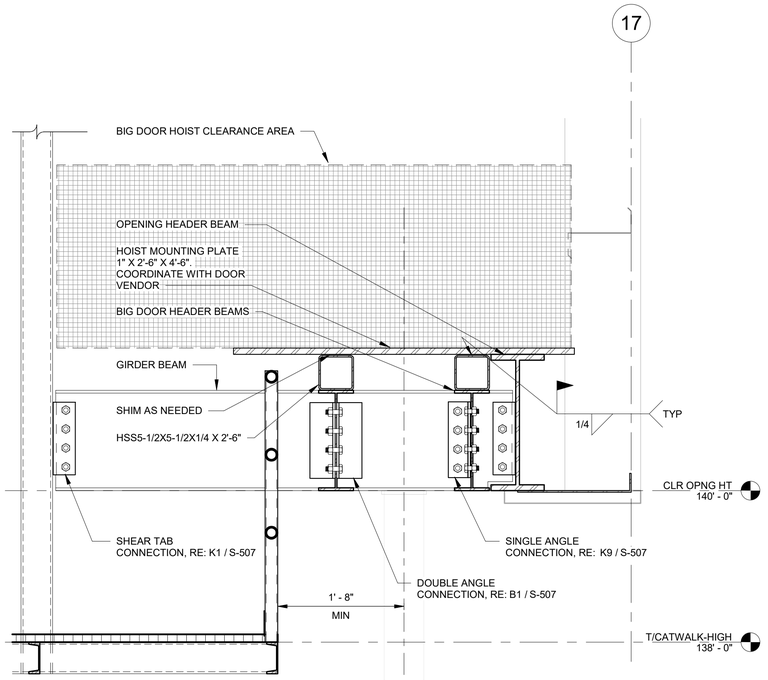
G11 TYP ROOF BEAM CONN AT GRID 16
1" = 1'-0"



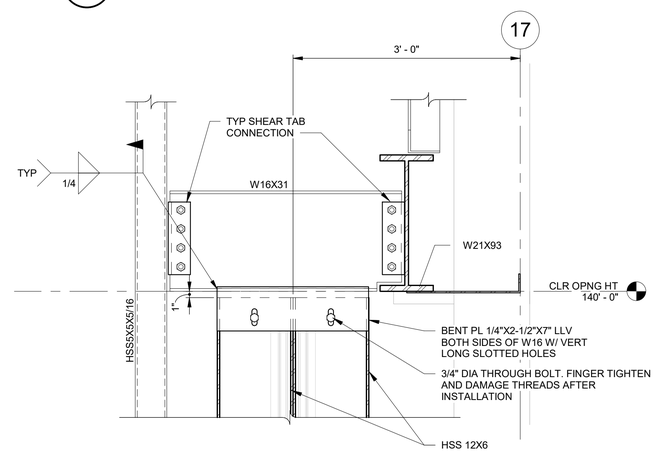
G15 TYP ROOF BEAM CONN AT RAFTER BEAM
1" = 1'-0"



A1 SECTION AT SMALL DOOR HOIST
1" = 1'-0"



A8 SECTION AT BIG DOOR HOIST
1" = 1'-0"



C15 SECTION AT TOP OF JAMB
1" = 1'-0"

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hanger Door Expansion - Ft Hood/S_B90176 Hanger Door Expansion_DZ5-54414_R24.rvt

Plot Date: 7/1/2026 8:32:54 AM

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: J. BATY
DRAWN BY: D. FAVAZZA
CHECKED BY: W. MCCANN
SUBMITTED BY: CITRINE-OLSSON JV
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST, FORT WORTH, TX 76102

CITRINE OLSSON JV
2801 GRANDE AVE
GRAND JUNCTION, CO 81508

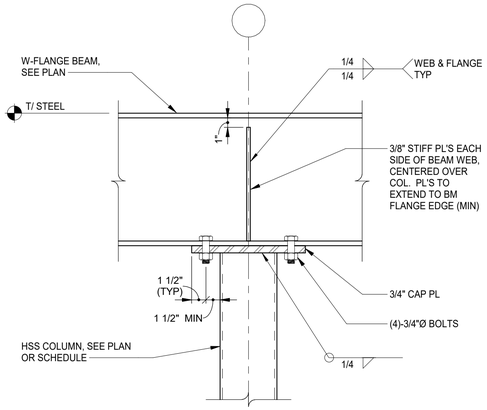
FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT
W9126G25F0273

STRUCTURAL DETAILS

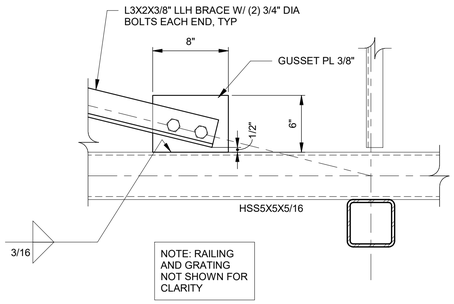
SHEET ID
S-505

STATE OF TEXAS
WESTON McCANN
115262
LICENSED
PROFESSIONAL ENGINEER

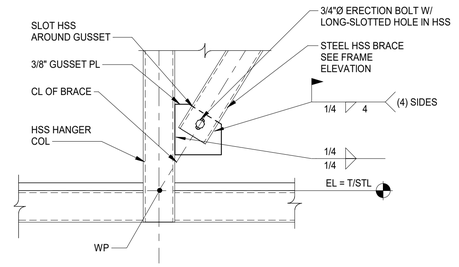
Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson
Ready • Resolute • Resilient



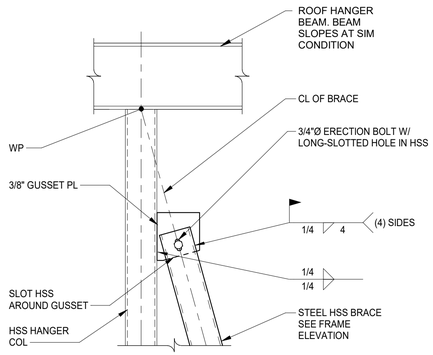
L1 TYP HSS COL HANGING FROM BEAM
NTS



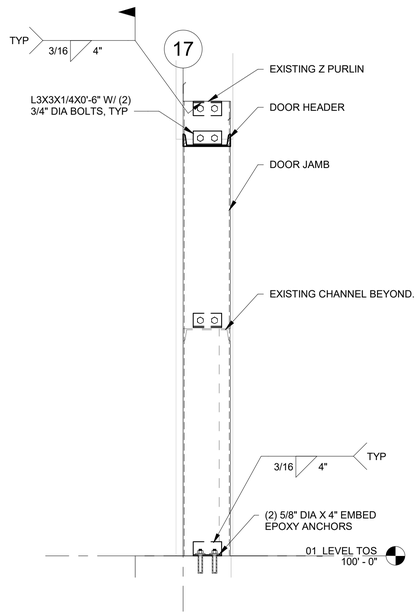
L6 TYP CATWALK HORIZ BRACE CONN
NTS



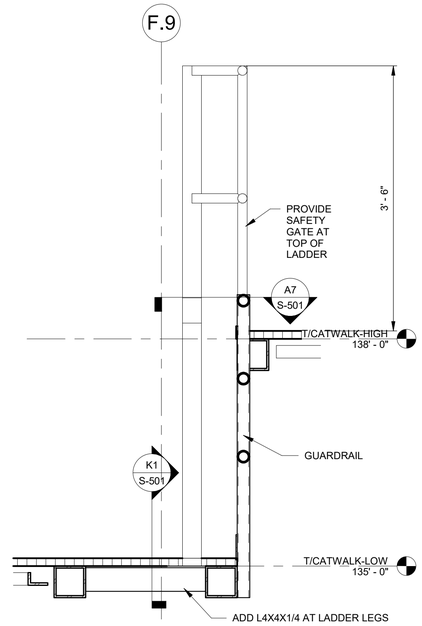
G1 HSS BRACE CONNECT DTL BOTTOM
1" = 1'-0"



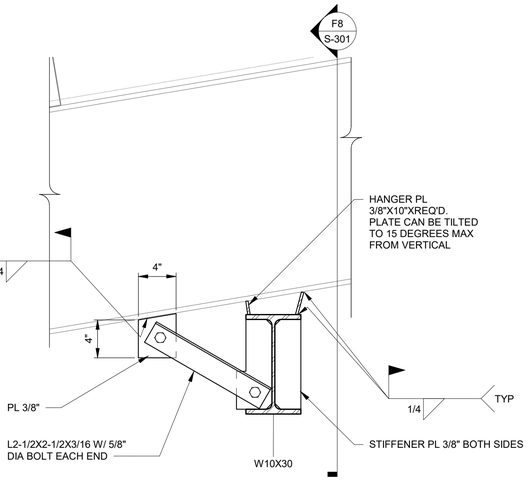
G6 HSS BRACE CONNECTION TOP
1" = 1'-0"



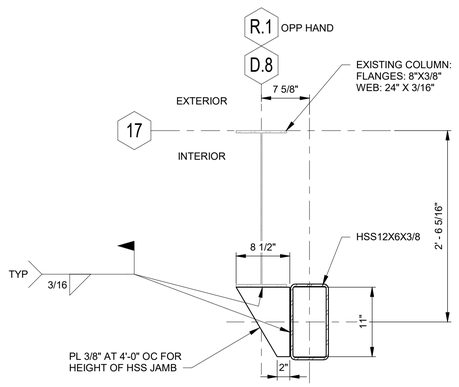
H12 TYPICAL MAN DOOR FRAMING
NTS



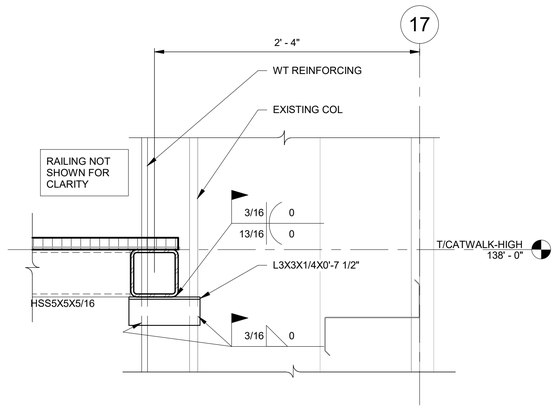
H17 SECTION AT LADDER
1" = 1'-0"



B1 W10 BEAM HANGER CONNECT AT GRID 17
1 1/2" = 1'-0"



B7 JAMB DETAIL
1" = 1'-0"



B12 CATWALK HSS TO COL CONNECTION
1 1/2" = 1'-0"

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/S_B90176 Hangar Door Expansion_D25-04414_R24.rvt

Plot Date: 7/1/2026 8:32:56 AM

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: J. BATY
DRAWN BY: D. FAVAZZA
CHECKED BY: W. McCANN
SUBMITTED BY: CITRINE-OLSSON JV
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST, FORT WORTH, TX 76102

CITRINE OLSSON JV
2801 GRANDE AVE
GRAND JUNCTION, CO 81508

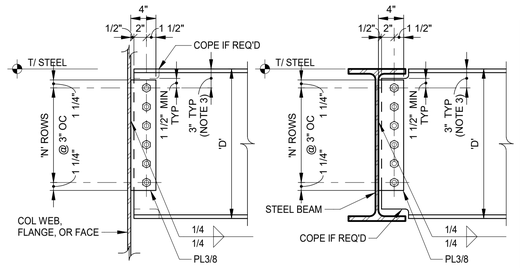
FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT
W9126G25F0273

STRUCTURAL DETAILS

STATE OF TEXAS
WESTON McCANN
115262
LICENSED
PROFESSIONAL ENGINEER

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson
Ready • Reliable • Resilient

SHEET ID
S-506



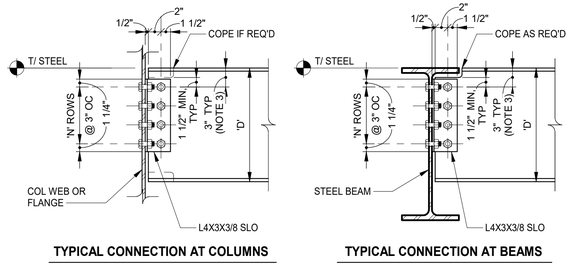
TYPICAL CONNECTION AT COLUMNS **TYPICAL CONNECTION AT BEAMS**

CONNECTION SCHEDULE	
NOMINAL BEAM SIZE 'D'	NUMBER OF BOLT ROWS 'N'
W8, C8, C9, W10, C10	2
W12, C12, W14	3
C15, W16	4
W18	5
W21, W24	6
W27	7
W30	8
W33	9
W36, W40, W44	10

NOTES:

1. PROVIDE SINGLE PL CONNECTIONS AT ALL BEAM TO COLUMN AND GIRDER CONNECTIONS, UNLESS OTHERWISE NOTED.
2. ALL BOLTS SHALL BE 3/4"Ø, CONFORMING TO ASTM F3125, GRADE A325-N. BOLT HOLES SHALL BE STANDARD IN BEAM WEB AND HORIZ. SHORT-SLOTTED IN PLATES.
3. COMPRESSIBLE-WASHER-TYPE DIRECT TENSION INDICATORS OR TWIST-OFF-TYPE TENSION CONTROL BOLTS CONFORMING TO RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS (RCSC) SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS SHALL BE PROVIDED AT ALL HIGH-STRENGTH BOLTED CONNECTIONS IN ACCORDANCE WITH UFC 3-301-01.
4. MIN. EDGE DISTANCE FROM TOP OR BOTTOM BOLT TO A COPE SHALL BE 1 1/2". WHERE DEEP COPES ARE REQUIRED, INCREASE DISTANCE FROM TOP OF BEAM TO CL OF TOP BOLT.

K1 TYPICAL SINGLE PLATE SHEAR TAB W/ 3/4"Ø BOLTS
NTS



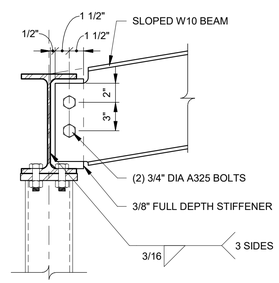
TYPICAL CONNECTION AT COLUMNS **TYPICAL CONNECTION AT BEAMS**

CONNECTION SCHEDULE	
NOMINAL BEAM SIZE 'D'	NUMBER OF BOLT ROWS 'N'
W8, C8, C9, W10, C10	2
W12, C12, W14	3
C15, W16	4
W18	5
W21, W24	6
W27	7
W30	8
W33	9
W36, W40, W44	10

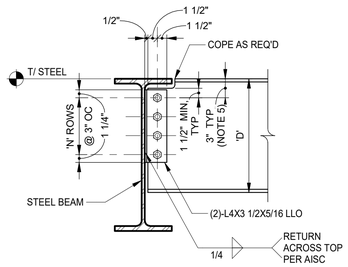
NOTES:

1. PROVIDE SINGLE ANGLE CONNECTIONS AT ALL BEAM TO WIDE-FLANGE COLUMN AND GIRDER CONNECTIONS, UNLESS OTHERWISE NOTED.
2. ALL BOLTS SHALL BE 3/4"Ø, CONFORMING TO ASTM F3125, GRADE A325-N. BOLT HOLES SHALL BE AS FOLLOWS:
   A. SUPPORTING MEMBER: STANDARD HOLES IN BEAM/COLUMN WEB/FLANGE AND ANGLE.
   B. SUPPORTED BEAM: STANDARD HOLES IN BEAM WEB AND STANDARD OR HORIZ. SHORT-SLOTTED HOLES IN ANGLES.
3. COMPRESSIBLE-WASHER-TYPE DIRECT TENSION INDICATORS OR TWIST-OFF-TYPE TENSION CONTROL BOLTS CONFORMING TO RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS (RCSC) SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS SHALL BE PROVIDED AT ALL HIGH-STRENGTH BOLTED CONNECTIONS IN ACCORDANCE WITH UFC 3-301-01.
4. MIN. EDGE DISTANCE FROM TOP OR BOTTOM BOLT TO A COPE SHALL BE 1 1/2". WHERE DEEPER COPES ARE REQD., INCREASE DISTANCE FROM TOP OF BEAM TO CL OF TOP BOLT.
5. BOLTS IN SUPPORTING MEMBER MUST BE INSTALLED 1 3/4" MAX FROM SUPPORTED BEAM WEB.

K9 TYPICAL SINGLE ANGLE CONNECTION W/ 3/4"Ø BOLTS
NTS



F9 SLOPED BEAM CONNECTION
1 1/2" = 1'-0"



TYPICAL CONNECTION AT COLUMNS

TYPICAL CONNECTION AT GIRDERS

CONNECTION SCHEDULE	
NOMINAL BEAM SIZE 'D'	NUMBER OF BOLT ROWS 'N'
W8, C8, C9, W10, C10	2
W12, C12, W14	3
C15, W16, W18	4
W21, W24	6
W27, W30, W33	7
W36, W40, W44	8

NOTES:

1. PROVIDE DOUBLE ANGLE CONNECTION AT ALL BEAM TO WIDE-FLANGE COLUMN AND GIRDER CONNECTIONS, UNLESS OTHERWISE NOTED.
2. ALL BOLTS SHALL BE 3/4"Ø, CONFORMING TO ASTM F3125, GRADE A325-N. BOLT HOLES SHALL BE STANDARD IN BEAM WEB AND STANDARD OR HORIZ. SHORT-SLOTTED IN ANGLES.
3. COMPRESSIBLE-WASHER-TYPE DIRECT TENSION INDICATORS OR TWIST-OFF-TYPE TENSION CONTROL BOLTS CONFORMING TO RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS (RCSC) SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS SHALL BE PROVIDED AT ALL HIGH-STRENGTH BOLTED CONNECTIONS IN ACCORDANCE WITH UFC 3-301-01.
4. WHERE BEAMS FRAME INTO BOTH SIDES OF SUPPORTING MEMBER, THE DETAILER SHALL ENSURE CONFORMANCE WITH OSHA ERECTION GUIDELINES. ADD ADDITIONAL ROWS OF BOLTS OR STAGGER ANGLES AS REQUIRED.
5. MIN. EDGE DISTANCE FROM TOP OR BOTTOM BOLT TO A COPE SHALL BE 1 1/2". WHERE DEEP COPES ARE REQD., INCREASE DISTANCE FROM TOP OF BEAM TO CL OF TOP BOLT.

B1 TYPICAL DOUBLE ANGLE SHEAR CONNECTION DETAIL
NTS

US Army Corps of Engineers ®

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST., FORT WORTH, TX 76102

CITRINE OLSSON JV
2801 GRANDE AVE
GRAND JUNCTION, CO 81508

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion_FI Hook/S_B90176 Hangar Door Expansion_025-04414_R24.rvt
Plot Date: 7/1/2026 8:32:56 AM

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: J. BATY
DRAWN BY: D. FAVAZZA
CHECKED BY: W. McCANN
SUBMITTED BY: CITRINE-OLSSON JV
SIZE: ANSI D

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT
W9126G25F0273

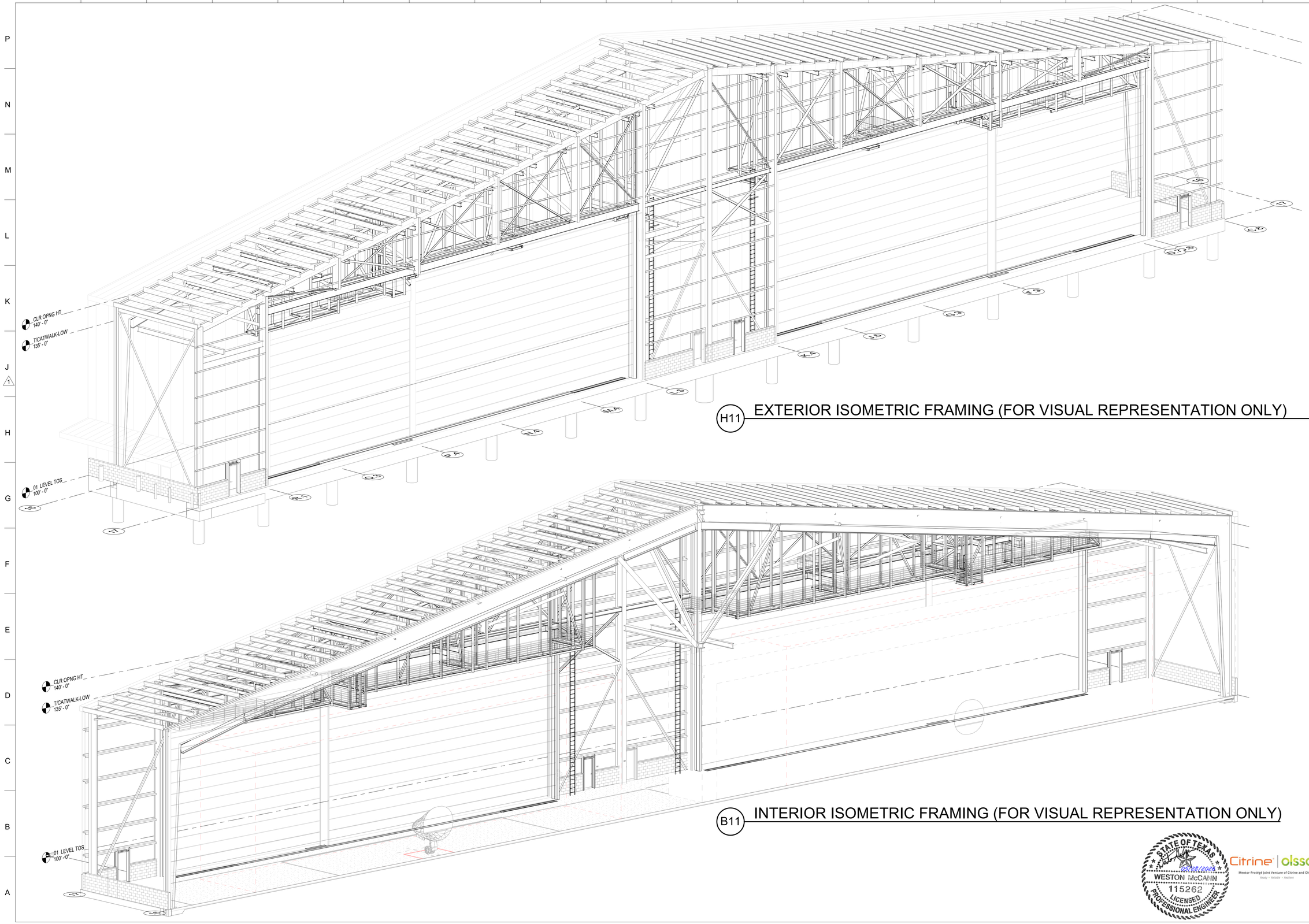
STRUCTURAL SHEAR CONNECTION DETAILS

SHEET ID
S-507

STATE OF TEXAS
WESTON McCANN
115262
LICENSED
PROFESSIONAL ENGINEER
7/1/2026

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson
Ready • Reliable • Resilient

W9126G26RA087-0002



H11 EXTERIOR ISOMETRIC FRAMING (FOR VISUAL REPRESENTATION ONLY)

B11 INTERIOR ISOMETRIC FRAMING (FOR VISUAL REPRESENTATION ONLY)

STATE OF TEXAS
WESTON McCANN
115262
LICENSED
PROFESSIONAL ENGINEER
06/26/2026

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson
Ready • Reliable • Resilient

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/S_B90176 Hangar Door Expansion_D25-04414_R24.rvt

Plot Date: 7/1/2026 8:33:01 AM

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: J. BATY
DRAWN BY: D. FAVAZZA
CHECKED BY: W. McCANN
SUBMITTED BY: CITRINE-OLSSON JV
SIZE: ANSI D

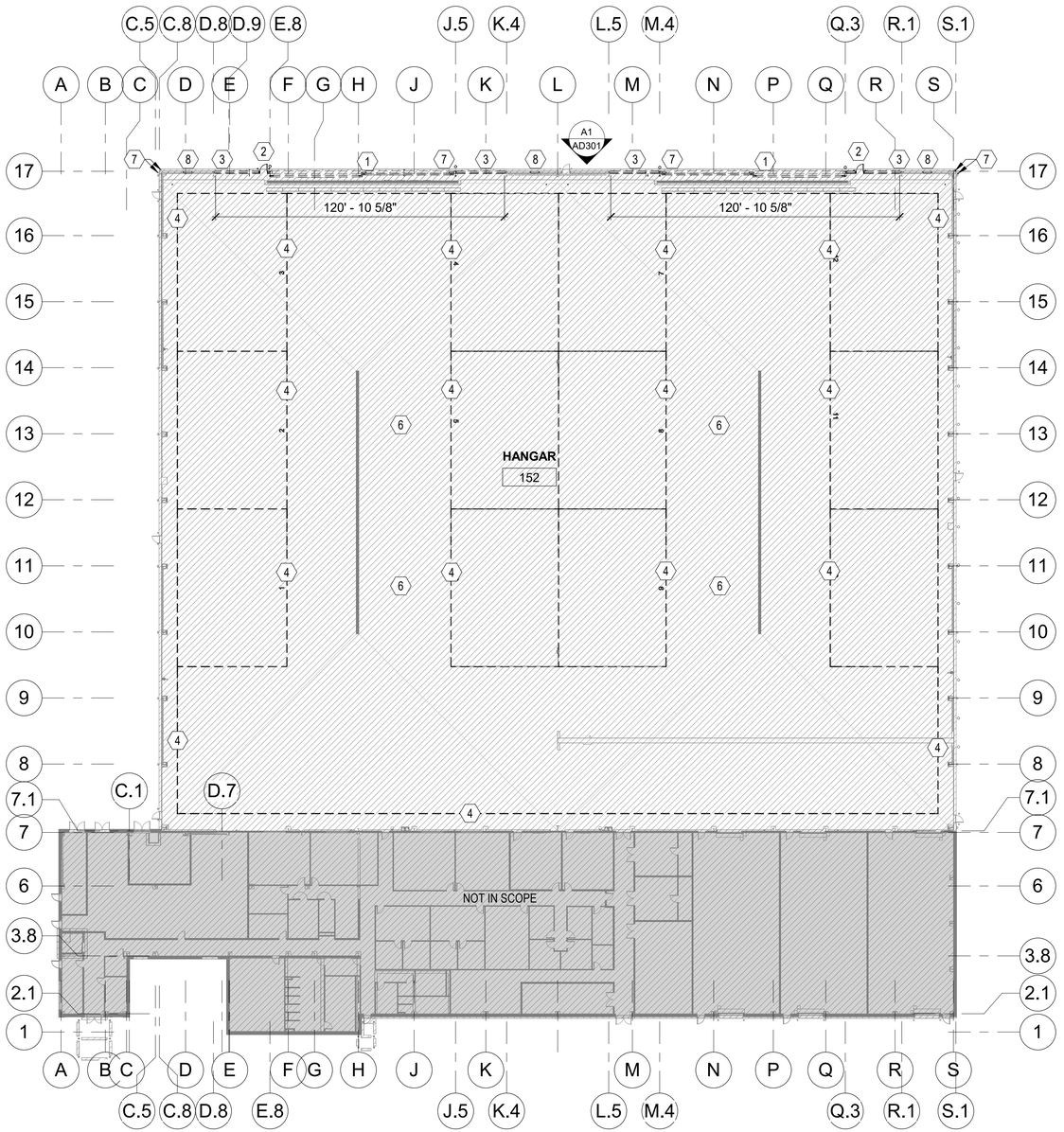
US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST., FORT WORTH, TX 76102

CITRINE OLSSON JV
2801 GRANDE AVE
GRAND JUNCTION, CO 81508

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT
W9126G25F0273

STRUCTURAL FRAMING ISOMETRIC

SHEET ID
S-901



A1 DEMOLITION FIRST FLOOR PLAN
1" = 30'-0"

DEMO FLOOR PLAN KEYNOTES

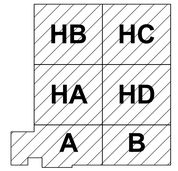
NOTE NUMBER	DESCRIPTION
1	DEMOLISH EXISTING ROLLING HANGAR DOOR, FRAMES, AND BOLLARDS
2	DEMOLISH EXISTING DOOR AND BOLLARDS
3	DEMOLISH EXISTING WALL TO EXTENT OF NEW FABRIC DOOR FRAME AND PREPARE FOR NEW DOOR
4	REMOVE STRIPING FOR EXISTING MISSION AND PREPARE FOR RESTRIPING TO MEET NEW MISSION REQUIREMENTS
6	PREPARE EXISTING SLAB TO MANUFACTURER REQUIREMENTS TO RECEIVE NEW FINISH.
7	DEMOLISH EXISTING BOLLARDS
8	DEMOLISH EXISTING WALL AND PREPARE FOR NEW DOOR

LEGEND	
	EXISTING - IN SCOPE
	EXISTING - NOT IN SCOPE

DEMOLITION NOTES

1. AN ATTEMPT HAS BEEN MADE TO SHOW ON THE DRAWINGS EXISTING BUILDING CONSTRUCTION AND CONDITIONS, HOWEVER, THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSPECTING AND VERIFYING ALL EXISTING CONDITIONS PRIOR TO THE START OF CONSTRUCTION, AND SHALL REPORT ANY DISCREPANCIES TO THE CONTRACTING OFFICER FOR CLARIFICATION BEFORE PROCEEDING WITH THE WORK.
2. CONTRACTOR SHALL REMOVE ALL EXISTING CONSTRUCTION, WALKS, LANDSCAPING AND GRADE NECESSARY TO CONSTRUCT NEW ADDITION. ANY DEMOLITION IN ADDITION TO WHAT IS REFERENCED ON THE DRAWINGS SHALL BE APPROVED BY CONTRACTING OFFICER PRIOR TO BEGINNING. ANY ADDITIONAL DEMOLITION REQUIRED AS A CONVENIENCE TO THE CONTRACTOR SHALL BE AT THE CONTRACTOR'S EXPENSE AND SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

KEY PLAN



N

0 15' 30' 60'
SCALE: 1"=30'

STATE OF OKLAHOMA
BRIAN BOURN
MAY 28, 2026
A08515
LICENSED ARCHITECT

LDG
Larson Design Group
3817 NW EXPRESSWAY
SUITE 840
OKLAHOMA CITY, OK 73112
(405) 722-7270

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

ISSUE DATE:
MAY 28, 2026
SOLICITATION NO.:
W9126G26RA087
CONTRACT NO.:

DESIGNED BY: B. BOURN
DRAWN BY: M. MILLER
CHECKED BY: B. BOURN
SUBMITTED BY: T. KURGAN
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST, FORT WORTH, TX 76102

LARSON DESIGN GROUP
3817 NW EXPRESSWAY, SUITE 840
OKLAHOMA CITY, OK 73112

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT

DEMOLITION FIRST FLOOR PLAN

SHEET ID
AD101

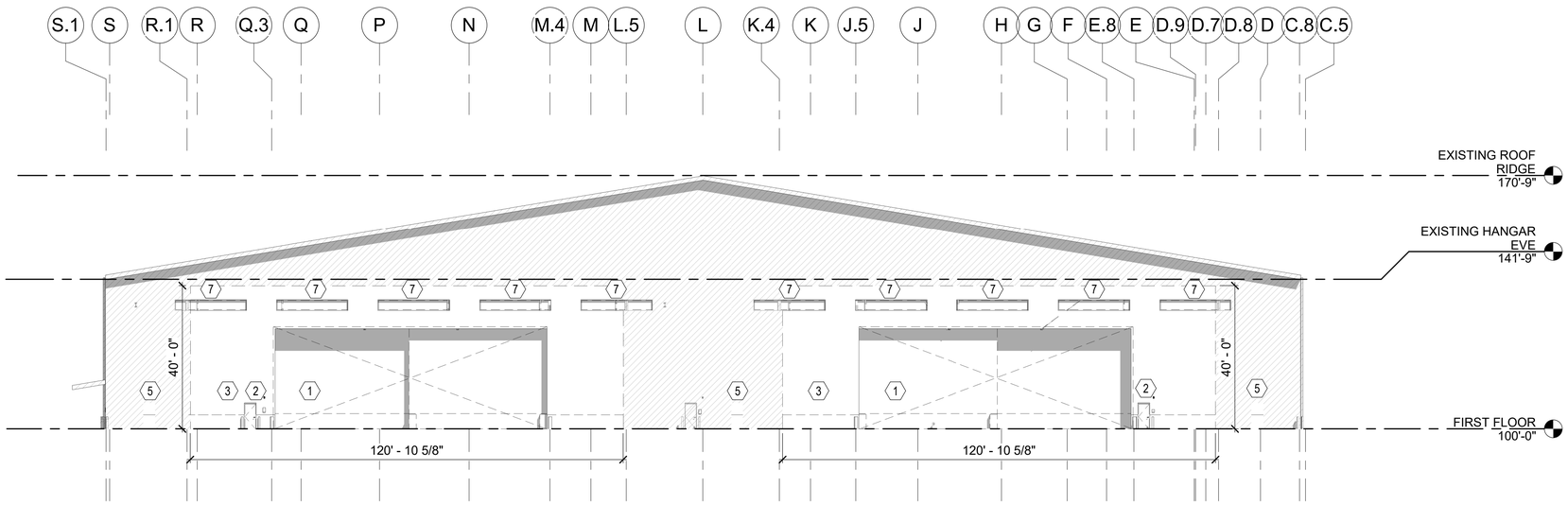
File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/B90176 Hangar Door Expansion - R24 - Arch.rvt
Plot Date: 7/1/2026 1:15:31 PM

W9126G26RA087-0002

DEMO FLOOR PLAN KEYNOTES

NOTE NUMBER	DESCRIPTION
1	DEMOLISH EXISTING ROLLING HANGAR DOOR, FRAMES, AND BOLLARDS
2	DEMOLISH EXISTING DOOR AND BOLLARDS
3	DEMOLISH EXISTING WALL TO EXTENT OF NEW FABRIC DOOR FRAME AND PREPARE FOR NEW DOOR
5	DEMOLISH EXISTING WALL AND PREPARE FOR NEW DOOR
7	DEMOLISH EXISTING WINDOWS

LEGEND	
	EXISTING - IN SCOPE
	EXISTING - NOT IN SCOPE



A1 DEMOLITION BUILDING ELEVATION
1" = 20'-0"

0 10' 20' 40'
SCALE: 1"=20'

STATE OF OKLAHOMA
BRIAN BOURN
MAY 28, 2026
A08515
LICENSED ARCHITECT

Larson Design Group
3817 NW EXPRESSWAY
SUITE 840
OKLAHOMA CITY, OK 73112
(405) 722-7270

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/B90176 Hangar Door Expansion - R26 - Arch.rvt
Plot Date: 7/11/2026 1:15:33 PM

ISSUE DATE:
MAY 28, 2026
SOLICITATION NO.:
W9126G26RA087
CONTRACT NO.:

DESIGNED BY: B. BOURN
DRAWN BY: M. MILLER
CHECKED BY: B. HUNTER
SUBMITTED BY: T. KURGAN
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST, FORT WORTH, TX 76102

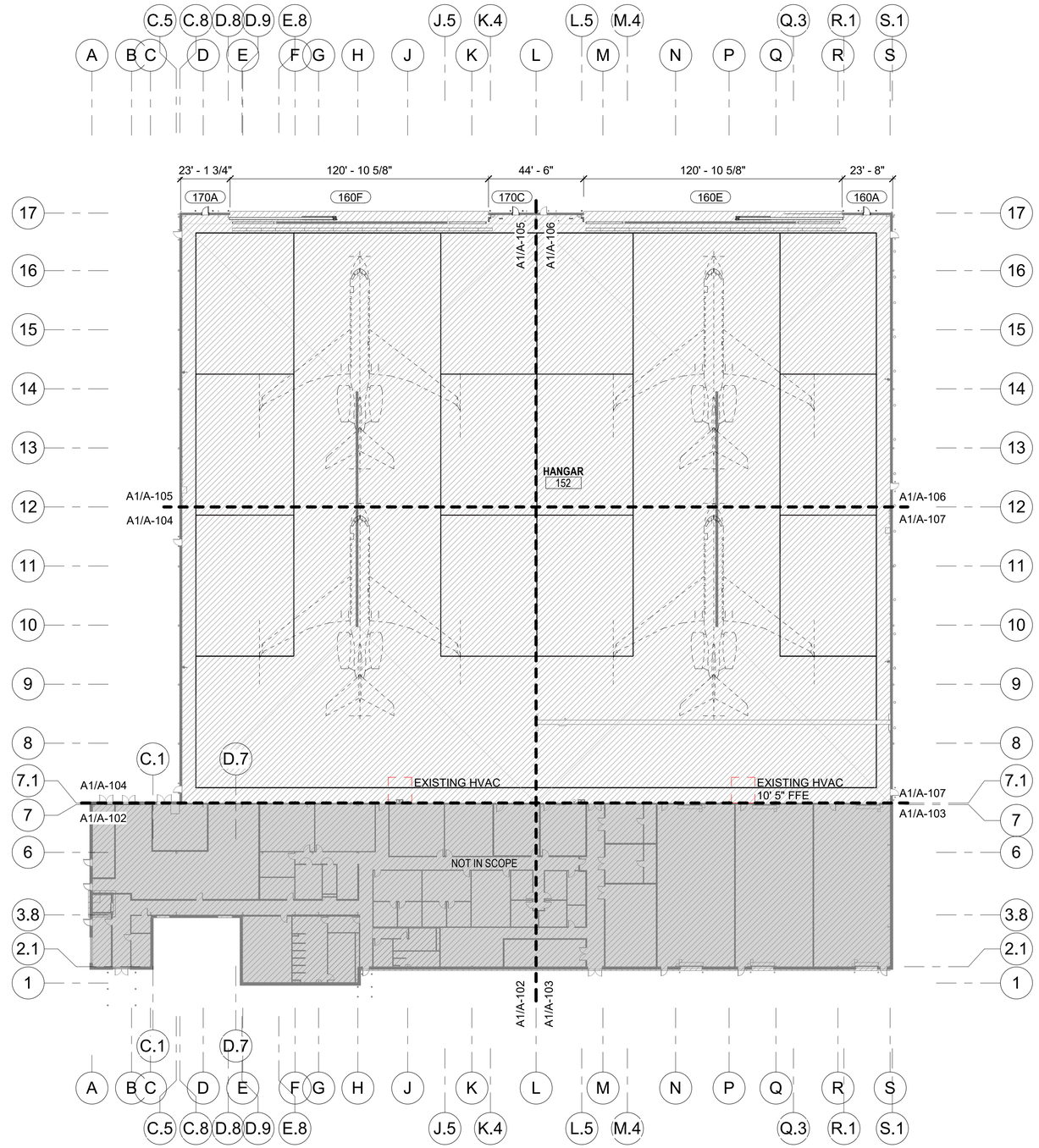
LARSON DESIGN GROUP
3817 NW EXPRESSWAY, SUITE 840
OKLAHOMA CITY, OK 73112

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT

DEMOLITION BUILDING ELEVATION

SHEET ID
AD301

W9126G26RA087-0002

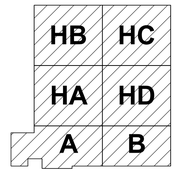


A1 FIRST FLOOR PLAN - OVERALL
1" = 30'-0"

GENERAL NOTES (PLANS):

1. DIMENSIONS SHOWN ARE LOCATED TO FACES OF CORE.
2. REFER SHEET ***I-600*** FOR FINISH SCHEDULE.
3. REFER SHEET SERIES ***A-101*** FOR OVERALL PLANS, EXTERIOR DIMENSIONS AND OPENING DIMENSIONS.

KEY PLAN



N

0 15' 30' 60'
SCALE: 1"=30'

STATE OF OKLAHOMA
BRIAN BOURN
MAY 28, 2026
A08515
LICENSED ARCHITECT

Larson Design Group
3817 NW EXPRESSWAY
SUITE 840
OKLAHOMA CITY, OK 73112
(405) 722-7270

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

ISSUE DATE:
MAY 28, 2026
SOLICITATION NO.:
W9126G26RA087
CONTRACT NO.:

DESIGNED BY: B. BOURN
DRAWN BY: M. MILLER
CHECKED BY: B. HUBER
SUBMITTED BY: T. KURGAN
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST, FORT WORTH, TX 76102

LARSON DESIGN GROUP
3817 NW EXPRESSWAY, SUITE 840
OKLAHOMA CITY, OK 73112

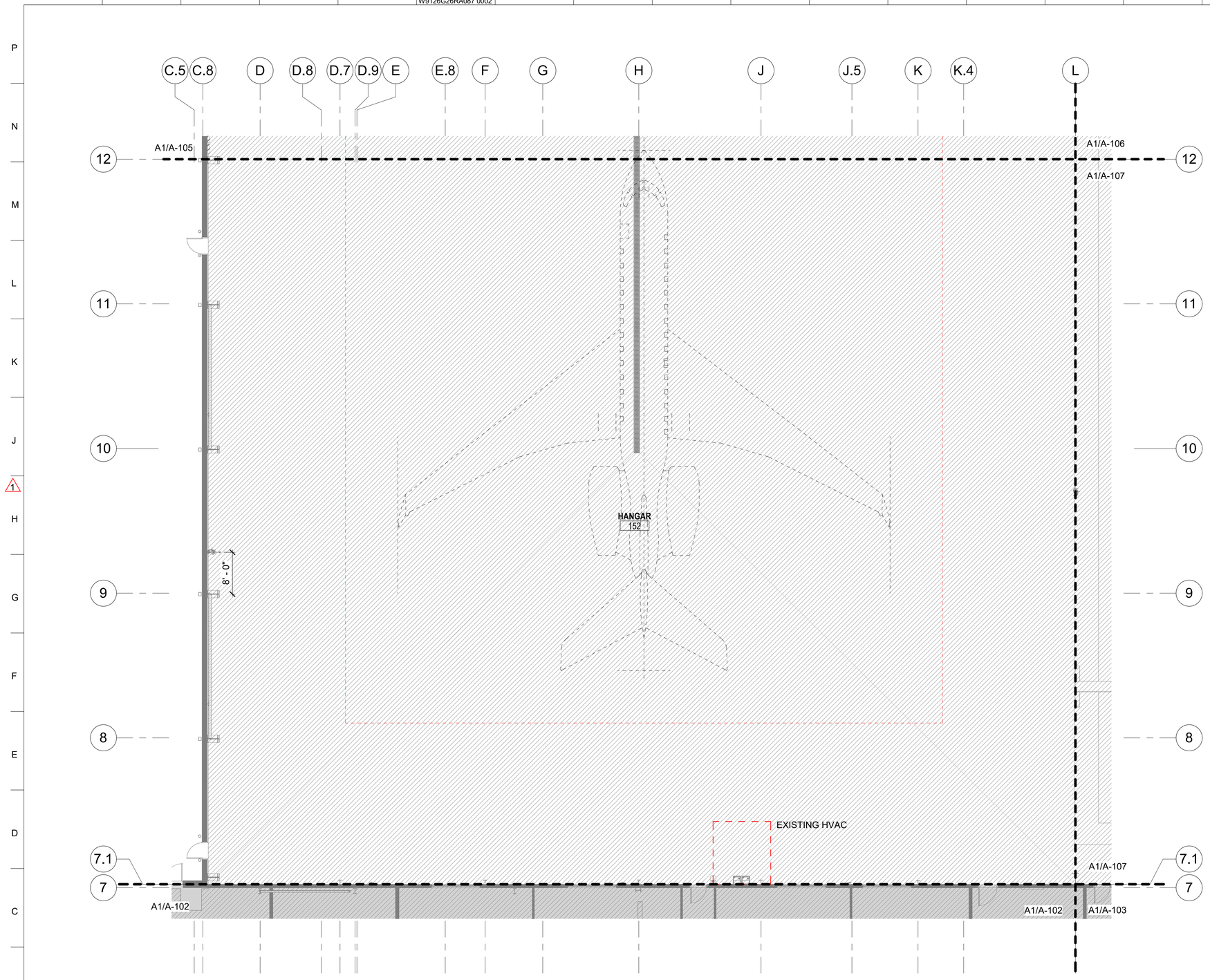
FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT

FIRST FLOOR PLAN - OVERALL

SHEET ID
A-101

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/B90176 Hangar Door Expansion - R26 - Arch.rvt
Plot Date: 7/1/2026 1:15:33 PM

W9126G26RA087-0002



A1 FIRST FLOOR PLAN - AREA HA

1" = 10'-0"

GENERAL NOTES (PLANS):

1. DIMENSIONS SHOWN ARE LOCATED TO FACES OF CORE.
2. REFER SHEET ***I-600*** FOR FINISH SCHEDULE.
3. REFER SHEET SERIES ***A-101*** FOR OVERALL PLANS, EXTERIOR DIMENSIONS AND OPENING DIMENSIONS.

LINETYPE LEGEND	
- - -	CLEARANCE LINE

KEY PLAN

HB	HC
HA	HD
A	B

N

0 5' 10' 20'

SCALE: 1"=10'

STATE OF OKLAHOMA
BRIAN BOURN
MAY 28, 2026
A08515
LICENSED ARCHITECT

Larson Design Group
3817 NW EXPRESSWAY
SUITE 840
OKLAHOMA CITY, OK 73112
(405) 722-7270

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

ISSUE DATE:
MAY 28, 2026
SOLICITATION NO.:
W9126G26RA087
CONTRACT NO.:

DESIGNED BY: B. BOURN	SUBMITTED BY: T. KURGAN
DRAWN BY: M. MILLER	SIZE: ANSI D
CHECKED BY: B. BOURN	

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST, FORT WORTH, TX 76102

LARSON DESIGN GROUP
3817 NW EXPRESSWAY, SUITE 840
OKLAHOMA CITY, OK 73112

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT

FIRST FLOOR PLAN - AREA HA

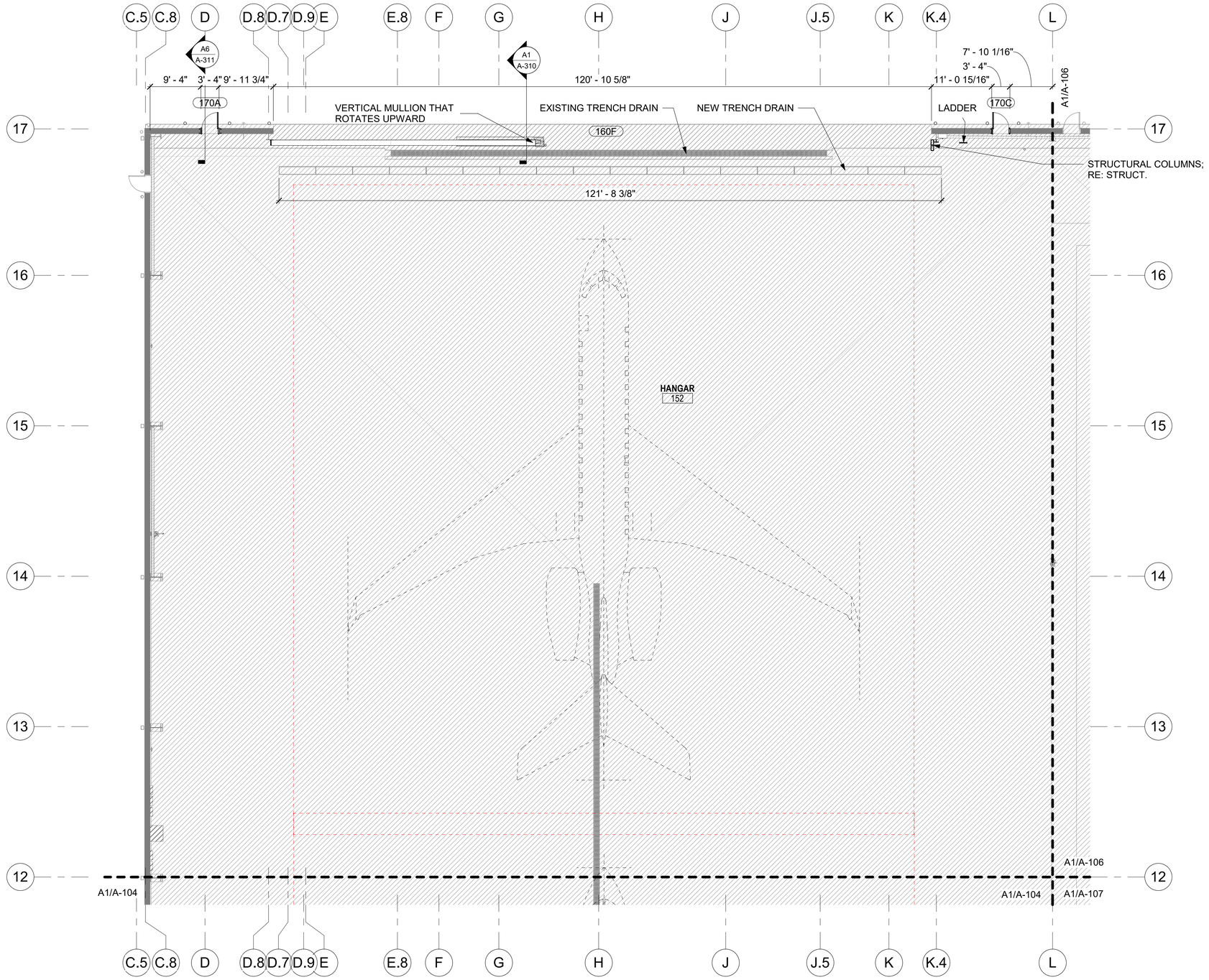
SHEET ID

A-104

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/B90176 Hangar Door Expansion - R26 - Arch.rvt

Plot Date: 7/1/2026 1:15:35 PM

W9126G26RA087-0002



A1 FIRST FLOOR PLAN - AREA HB

1" = 10'-0"

GENERAL NOTES (PLANS):

1. DIMENSIONS SHOWN ARE LOCATED TO FACES OF CORE.
2. REFER SHEET ***I-600*** FOR FINISH SCHEDULE.
3. REFER SHEET SERIES ***A-101*** FOR OVERALL PLANS, EXTERIOR DIMENSIONS AND OPENING DIMENSIONS.

LINETYPE LEGEND	
- - -	CLEARANCE LINE

KEY PLAN

HB	HC
HA	HD
A	B

N

0 5' 10' 20'

SCALE: 1"=10'

STATE OF OKLAHOMA
BRIAN BOURN
MAY 28, 2026
A08515
LICENSED ARCHITECT

Larson Design Group
3817 NW EXPRESSWAY
SUITE 840
OKLAHOMA CITY, OK 73112
(405) 722-7270

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/B90176 Hangar Door Expansion - R26 - Arch.rvt

Plot Date: 7/1/2026 1:15:37 PM

ISSUE DATE:
MAY 28, 2026
SOLICITATION NO.:
W9126G26RA087
CONTRACT NO.:

DESIGNED BY: B. BOURN
DRAWN BY: M. MILLER
CHECKED BY: B. BOURN
SUBMITTED BY: T. KURGAN
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST, FORT WORTH, TX 76102

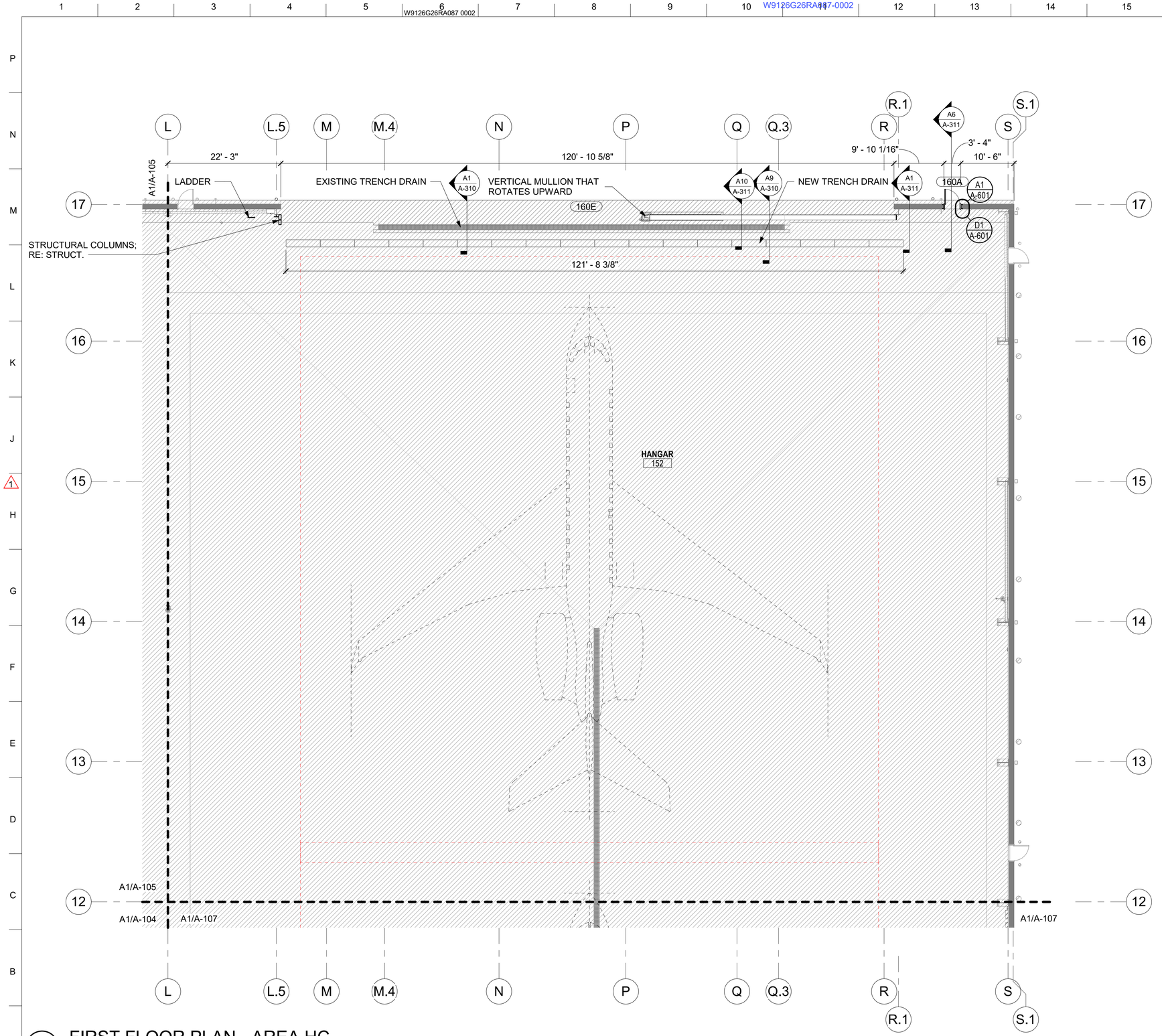
LARSON DESIGN GROUP
3817 NW EXPRESSWAY, SUITE 840
OKLAHOMA CITY, OK 73112

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT

FIRST FLOOR PLAN - AREA HB

SHEET ID

A-105



A1 FIRST FLOOR PLAN - AREA HC
1" = 10'-0"

GENERAL NOTES (PLANS):

1. DIMENSIONS SHOWN ARE LOCATED TO FACES OF CORE.
2. REFER SHEET ***I-600*** FOR FINISH SCHEDULE.
3. REFER SHEET SERIES ***A-101*** FOR OVERALL PLANS, EXTERIOR DIMENSIONS AND OPENING DIMENSIONS.

LINETYPE LEGEND	
- - -	CLEARANCE LINE

KEY PLAN

HB	HC
HA	HD
A	B

N

0 5' 10' 20'

SCALE: 1"=10'

STATE OF OKLAHOMA
BRIAN BOURN
MAY 28, 2026
A08515
LICENSED ARCHITECT

LDG

Larson Design Group
3817 NW EXPRESSWAY
SUITE 840
OKLAHOMA CITY, OK 73112
(405) 722-7270

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/B90176 Hangar Door Expansion - R26 - Arch.rvt

Plot Date: 7/1/2026 1:15:39 PM

ISSUE DATE:
MAY 28, 2026

SOLICITATION NO.:
W9126G26RA087

CONTRACT NO.:

DESIGNED BY: B. BOURN
DRAWN BY: M. MILLER
CHECKED BY: B. HUNTER
SUBMITTED BY: T. KURGAN
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST.; FORT WORTH, TX 76102

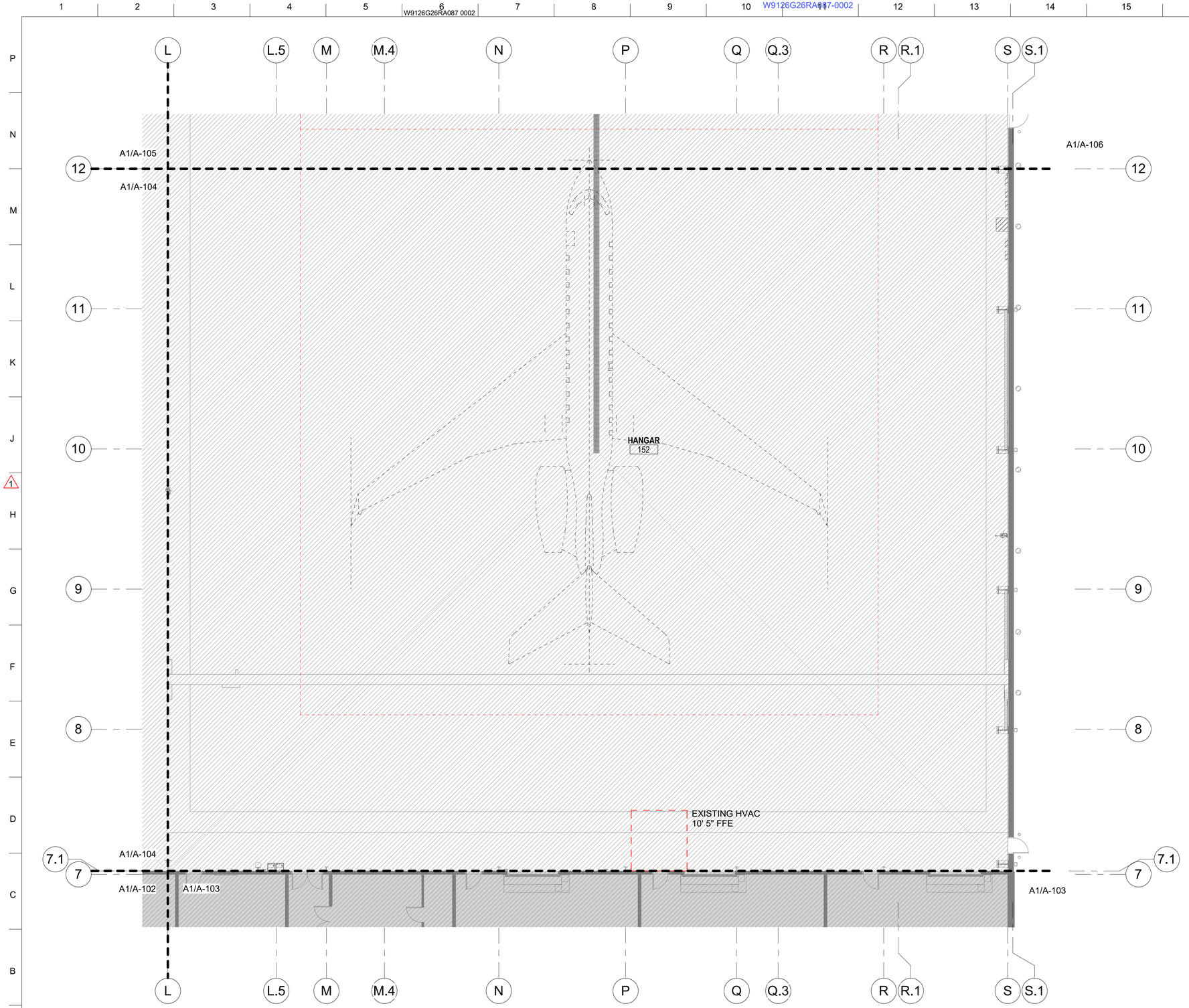
LARSON DESIGN GROUP
3817 NW EXPRESSWAY, SUITE 840
OKLAHOMA CITY, OK 73112

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT

FIRST FLOOR PLAN - AREA HC

SHEET ID

A-106



A1 FIRST FLOOR PLAN - AREA HD

1" = 10'-0"

GENERAL NOTES (PLANS):

1. DIMENSIONS SHOWN ARE LOCATED TO FACES OF CORE.
2. REFER SHEET ***I-600*** FOR FINISH SCHEDULE.
3. REFER SHEET SERIES ***A-101*** FOR OVERALL PLANS, EXTERIOR DIMENSIONS AND OPENING DIMENSIONS.

LINETYPE LEGEND	
- - -	CLEARANCE LINE

KEY PLAN

HB	HC
HA	HD
A	B

N

0 5' 10' 20'

SCALE: 1"=10'

STATE OF OKLAHOMA
BRIAN BOURN
MAY 28, 2026
A08515
LICENSED ARCHITECT

LDG
Larson Design Group
3817 NW EXPRESSWAY
SUITE 840
OKLAHOMA CITY, OK 73112
(405) 722-7270

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

1 ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: B. BOURN
DRAWN BY: M. MILLER
CHECKED BY: B. BOURN
SUBMITTED BY: T. KURGAN
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST, FORT WORTH, TX 76102

LARSON DESIGN GROUP
3817 NW EXPRESSWAY, SUITE 840
OKLAHOMA CITY, OK 73112

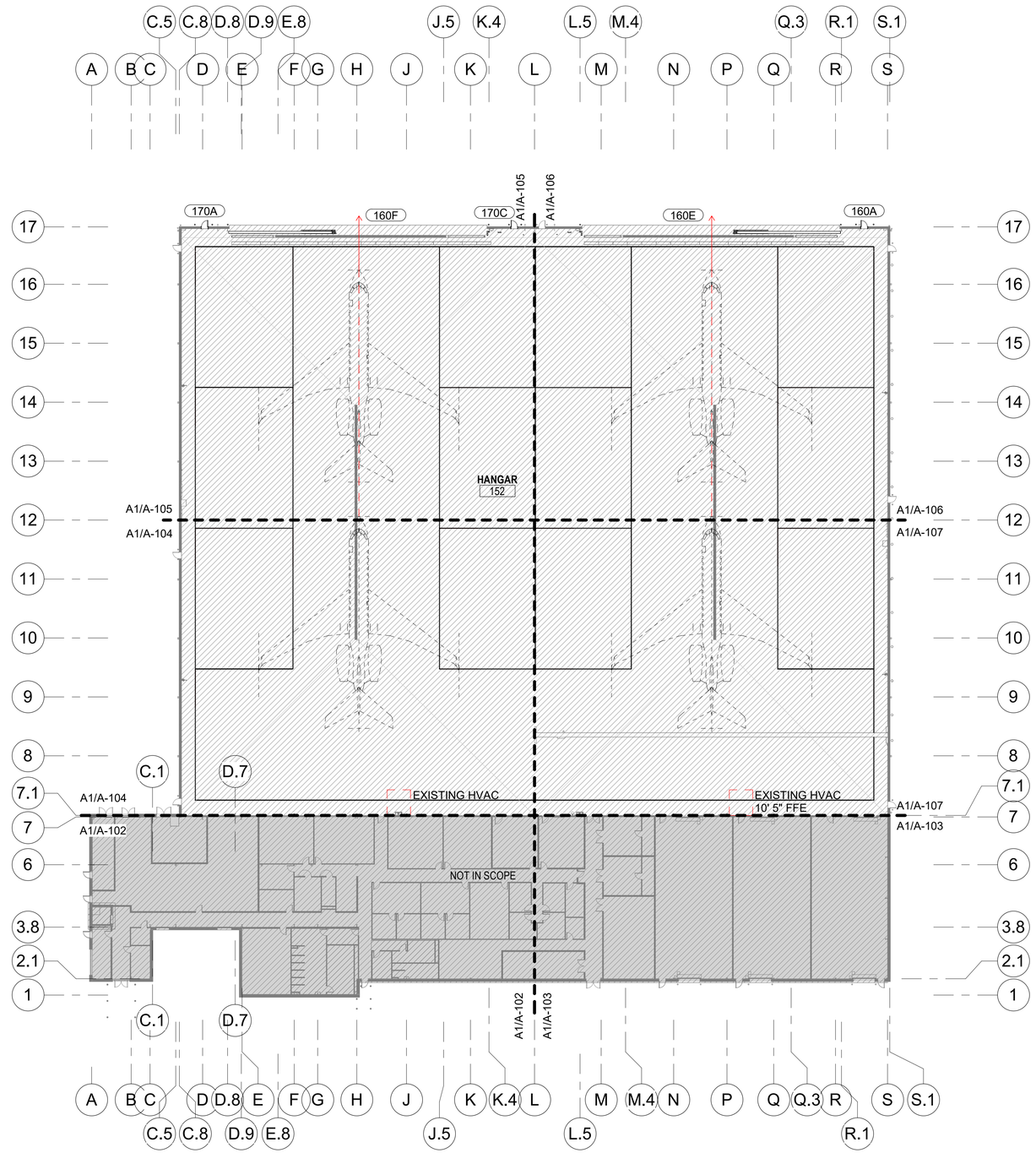
FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT

FIRST FLOOR PLAN - AREA HD

SHEET ID
A-107

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/B90176 Hangar Door Expansion - R26 - Arch.rvt
Plot Date: 7/1/2026 1:15:41 PM

W9126G26RA087-0002



A1 FIRST FLOOR PLAN - OVERALL

1" = 30'-0"

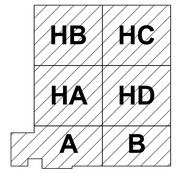
GENERAL NOTES (PLANS):

1. NO DEDICATED TOW EGRESS IS PROVIDED. TOW VEHICLES WILL ENTER AND EXIT THROUGH THE VERTICAL LIFT FABRIC DOORS.

VEHICLE TOW PATH LEGEND:

———	2ND VEHICLE TOW PATH
- - - -	1ST VEHICLE TOW PATH

KEY PLAN



N

0 15' 30' 60'

SCALE: 1"=30'

STATE OF OKLAHOMA
BRIAN BOURN
MAY 28, 2026
A08515
LICENSED ARCHITECT

Larson Design Group
3817 NW EXPRESSWAY
SUITE 840
OKLAHOMA CITY, OK 73112
(405) 722-7270

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

ISSUE DATE:
MAY 28, 2026
SOLICITATION NO.:
W9126G26RA087
CONTRACT NO.:

DESIGNED BY: B. BOURN
DRAWN BY: M. MILLER
CHECKED BY: B. HUMBLE
SUBMITTED BY: T. KURGAN
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST, FORT WORTH, TX 76102

LARSON DESIGN GROUP
3817 NW EXPRESSWAY, SUITE 840
OKLAHOMA CITY, OK 73112

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT

FIRST FLOOR PLAN - OVERALL - VEHICLE TOW PLAN

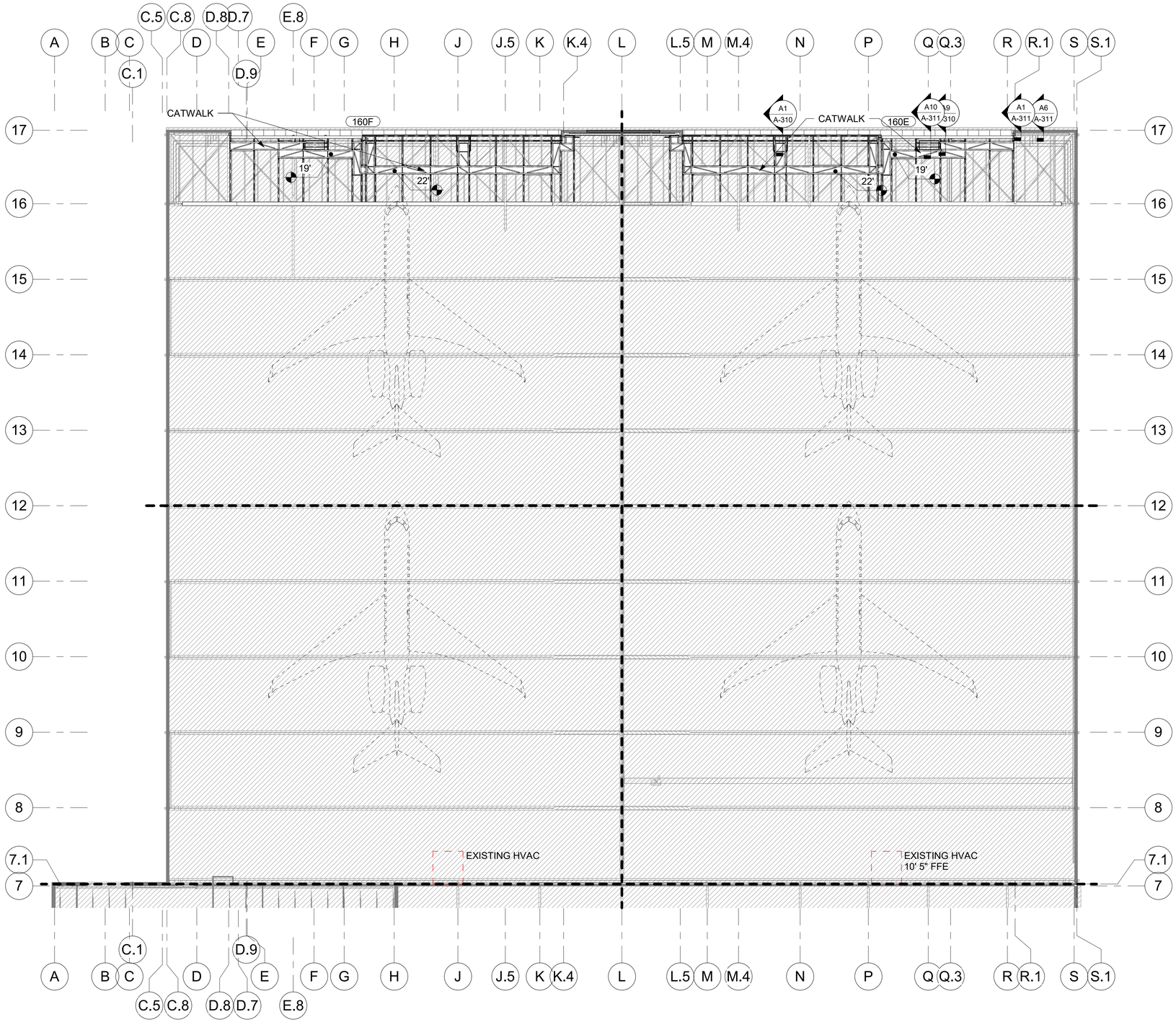
SHEET ID

A-109

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/B90176 Hangar Door Expansion - R26 - Arch.rvt

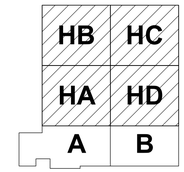
Plot Date: 7/1/2026 1:15:45 PM

W9126G26RA087-0002



A1 HANGAR CEILING PLAN
1" = 20'-0"

KEY PLAN



N

0 10' 20' 40'
SCALE: 1"=20'

STATE OF OKLAHOMA
BRIAN BOURN
MAY 28, 2026
A08515
LICENSED ARCHITECT

LDG
Larson Design Group
3817 NW EXPRESSWAY
SUITE 840
OKLAHOMA CITY, OK 73112
(405) 722-7270

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

ISSUE DATE:
MAY 28, 2026
SOLICITATION NO.:
W9126G26RA087
CONTRACT NO.:

DESIGNED BY: B. BOURN
DRAWN BY: M. MILLER
CHECKED BY: B. HAYES
SUBMITTED BY: T. KURGAN
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST., FORT WORTH, TX. 76102

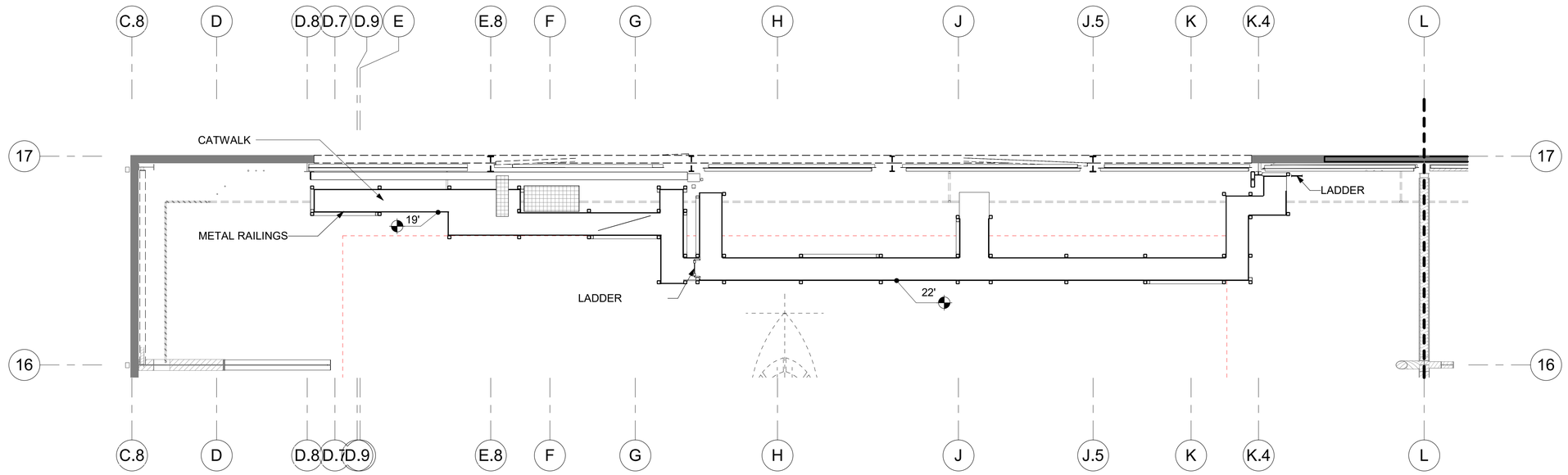
LARSON DESIGN GROUP
3817 NW EXPRESSWAY, SUITE 840
OKLAHOMA CITY, OK 73112

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT

HANGAR REFLECTED CEILING PLAN

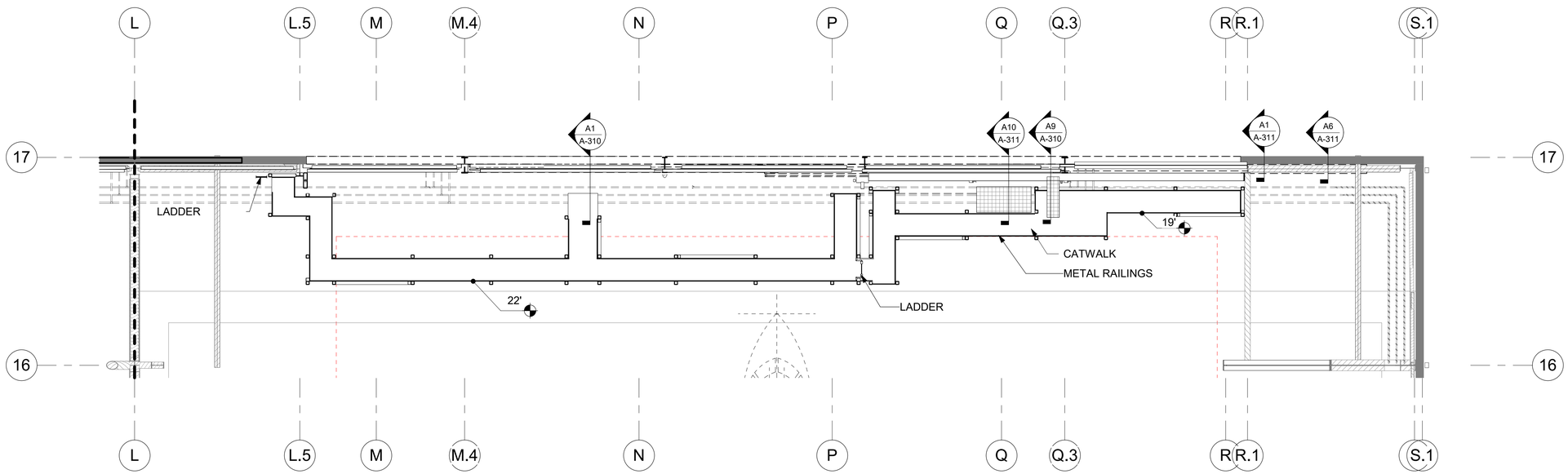
SHEET ID
A-111

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/B90176 Hangar Door Expansion - R26 - Arch.rvt
Plot Date: 7/1/2026 1:15:50 PM



H1 CATWALK ENLARGED PLAN - AREA HB

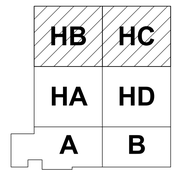
A-16 A-113 SCALE: 1/8" = 1'-0"



A1 CATWALK ENLARGED PLAN - AREA HC

A-16 A-113 SCALE: 1/8" = 1'-0"

KEY PLAN



N

0 10' 20' 40'

SCALE: 1"=20'

STATE OF OKLAHOMA
BRIAN BOURN
MAY 28, 2026
A08515
LICENSED ARCHITECT

Larson Design Group
3817 NW EXPRESSWAY
SUITE 840
OKLAHOMA CITY, OK 73112
(405) 722-7270

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B80176 Hangar Door Expansion - FtHood/B80176 Hangar Door Expansion - R26 - Arch.rvt

Plot Date: 7/1/2026 1:15:52 PM

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: B. BOURN
DRAWN BY: M. MILLER
CHECKED BY: B. HUNTER
SUBMITTED BY: T. KURGAN
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST, FORT WORTH, TX 76102

LARSON DESIGN GROUP
3817 NW EXPRESSWAY, SUITE 840
OKLAHOMA CITY, OK 73112

FORT HOOD, TX
B80176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT

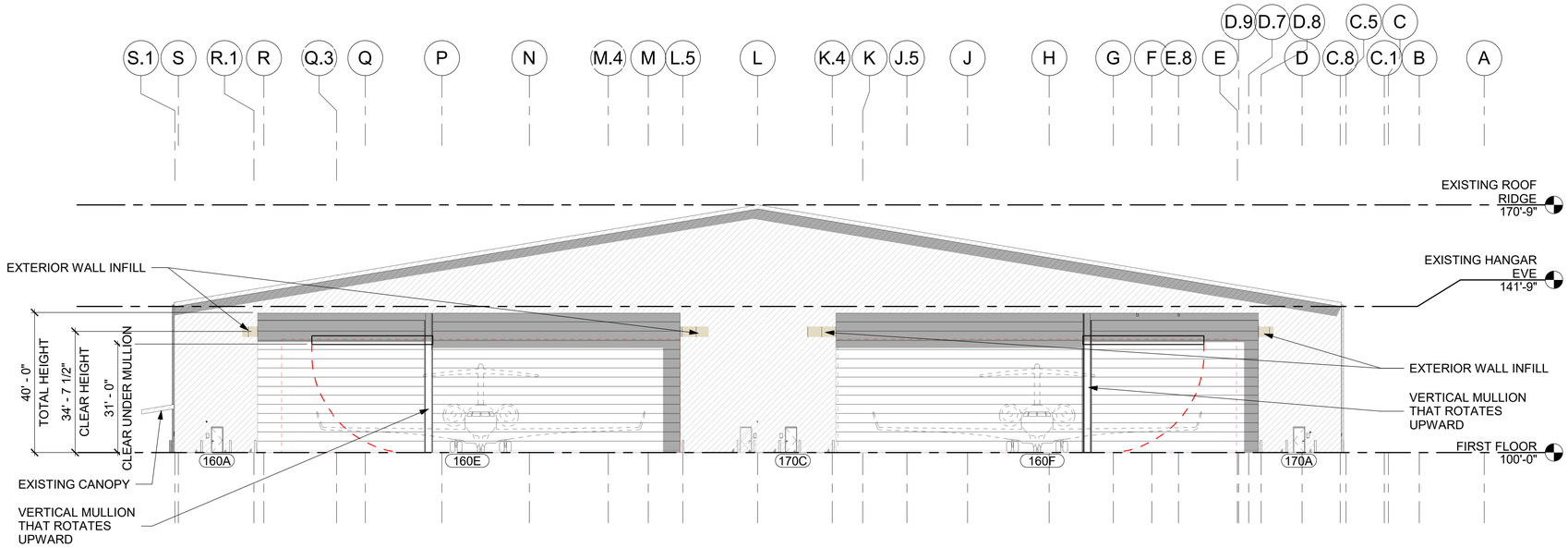
HANGAR CATWALK ENLARGED PLAN

SHEET ID

A-113

GENERAL NOTES:

1. EXTERIOR FINISH MATERIALS TO MATCH EXISTING.



G3 SOUTH ELEVATION

1" = 20'-0"

0 10' 20' 40'

SCALE: 1"=20'

STATE OF OKLAHOMA
BRIAN BOURN
MAY 28, 2026
A08515
LICENSED ARCHITECT

Larson Design Group
3817 NW EXPRESSWAY
SUITE 840
OKLAHOMA CITY, OK 73112
(405) 722-7270

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

ISSUE DATE:
MAY 28, 2026
SOLICITATION NO.:
W9126G26RA087
CONTRACT NO.:

DESIGNED BY: B. BOURN
DRAWN BY: B. BOURN
CHECKED BY: B. BOURN
SUBMITTED BY: T. KURGAN
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST, FORT WORTH, TX 76102

LARSON DESIGN GROUP
3817 NW EXPRESSWAY, SUITE 840
OKLAHOMA CITY, OK 73112

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT

EXTERIOR ELEVATIONS

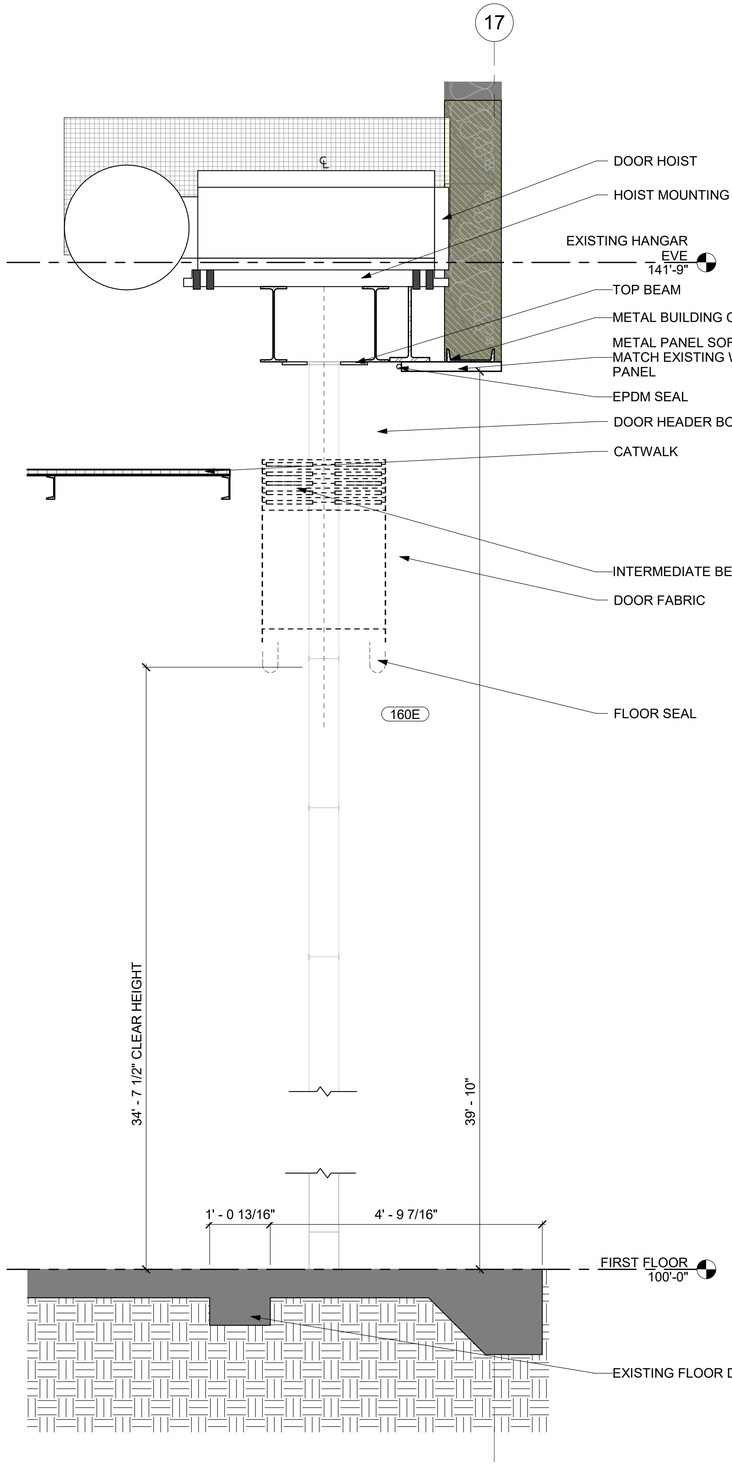
SHEET ID

A-201

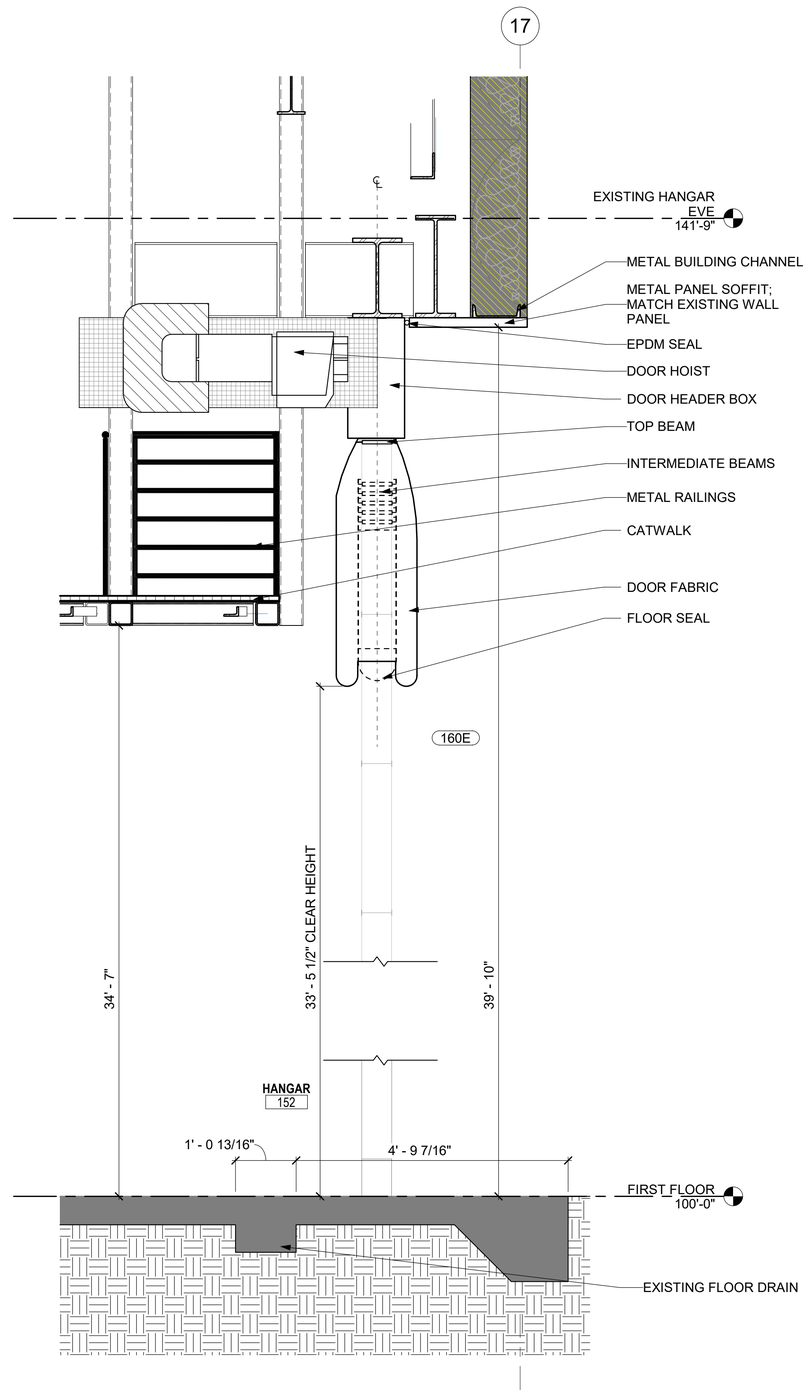
File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/B90176 Hangar Door Expansion - R24 - Arch.rvt

Plot Date: 7/1/2026 1:15:54 PM

W9126G26RA087-0002



A1 WALL SECTION
3/4" = 1'-0"



A9 WALL SECTION
3/4" = 1'-0"

GENERAL NOTES (WALL SECTION):

1. R-VALUES FOR EXTERIOR ENVELOPE IN CLIMATE ZONE **2A**:

LOCATION	MATERIAL	R-VALUE
ROOF	METAL BUILDING	R-16
WALLS	METAL BUILDING	R-13
FLOOR	SLAB ON GRADE	NR

EXISTING VS. NEW	
	EXISTING WALL

0 0.5' 1' 2' 3'
SCALE: 3/4"=1'-0"

STATE OF OKLAHOMA
BRIAN BOURN
MAY 28, 2026
A08515
LICENSED ARCHITECT

Larson Design Group
3817 NW EXPRESSWAY
SUITE 840
OKLAHOMA CITY, OK 73112
(405) 722-7270

US Army Corps of Engineers ®

MARK	DATE	DESCRIPTION
1	JUN 2026	REVISED IN ACCORDANCE WITH AM0002

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/B90176 Hangar Door Expansion - R26 - Arch.rvt
Plot Date: 7/1/2026 1:15:57 PM

ISSUE DATE:
MAY 28, 2026
SOLICITATION NO.:
W9126G26RA087
CONTRACT NO.:

DESIGNED BY:	B. BOURN
DRAWN BY:	B. BOURN
CHECKED BY:	B. HUNTER
SUBMITTED BY:	T. KURGAN
SIZE:	ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST, FORT WORTH, TX 76102

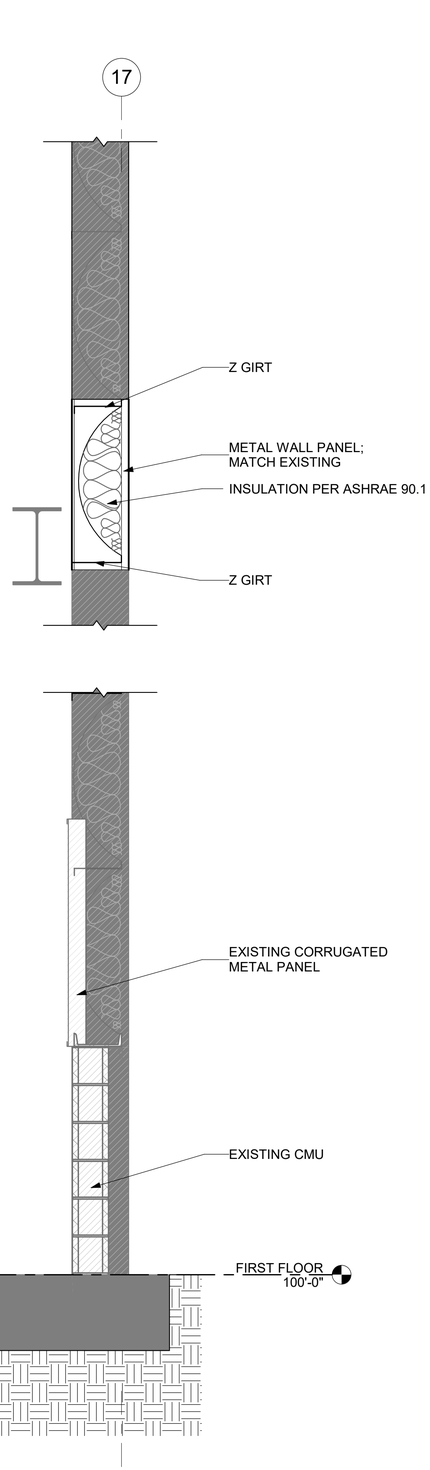
LARSON DESIGN GROUP
3817 NW EXPRESSWAY, SUITE 840
OKLAHOMA CITY, OK 73112

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT

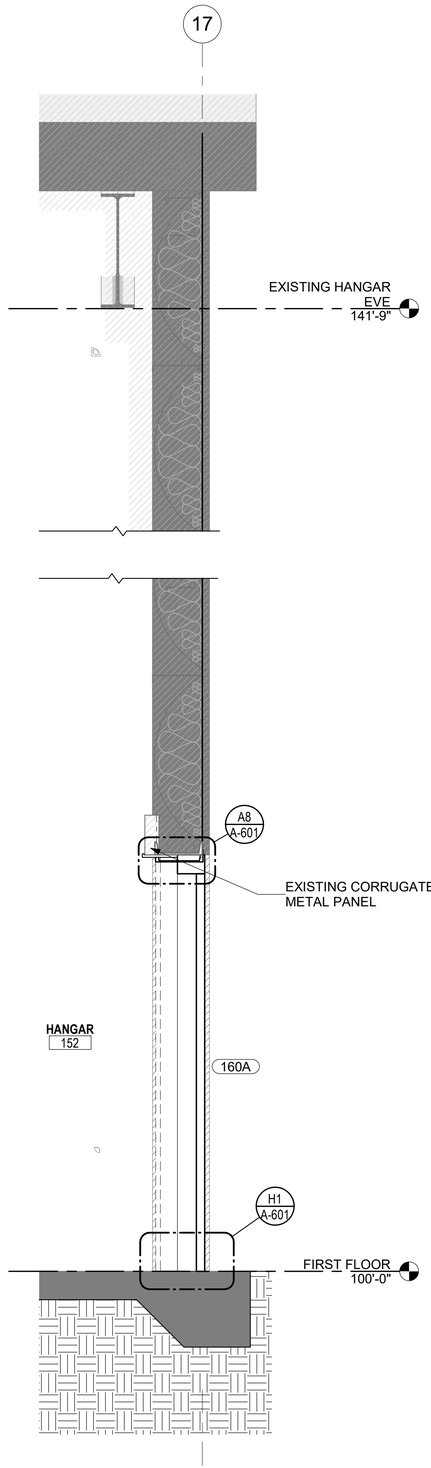
WALL SECTIONS

SHEET ID
A-310

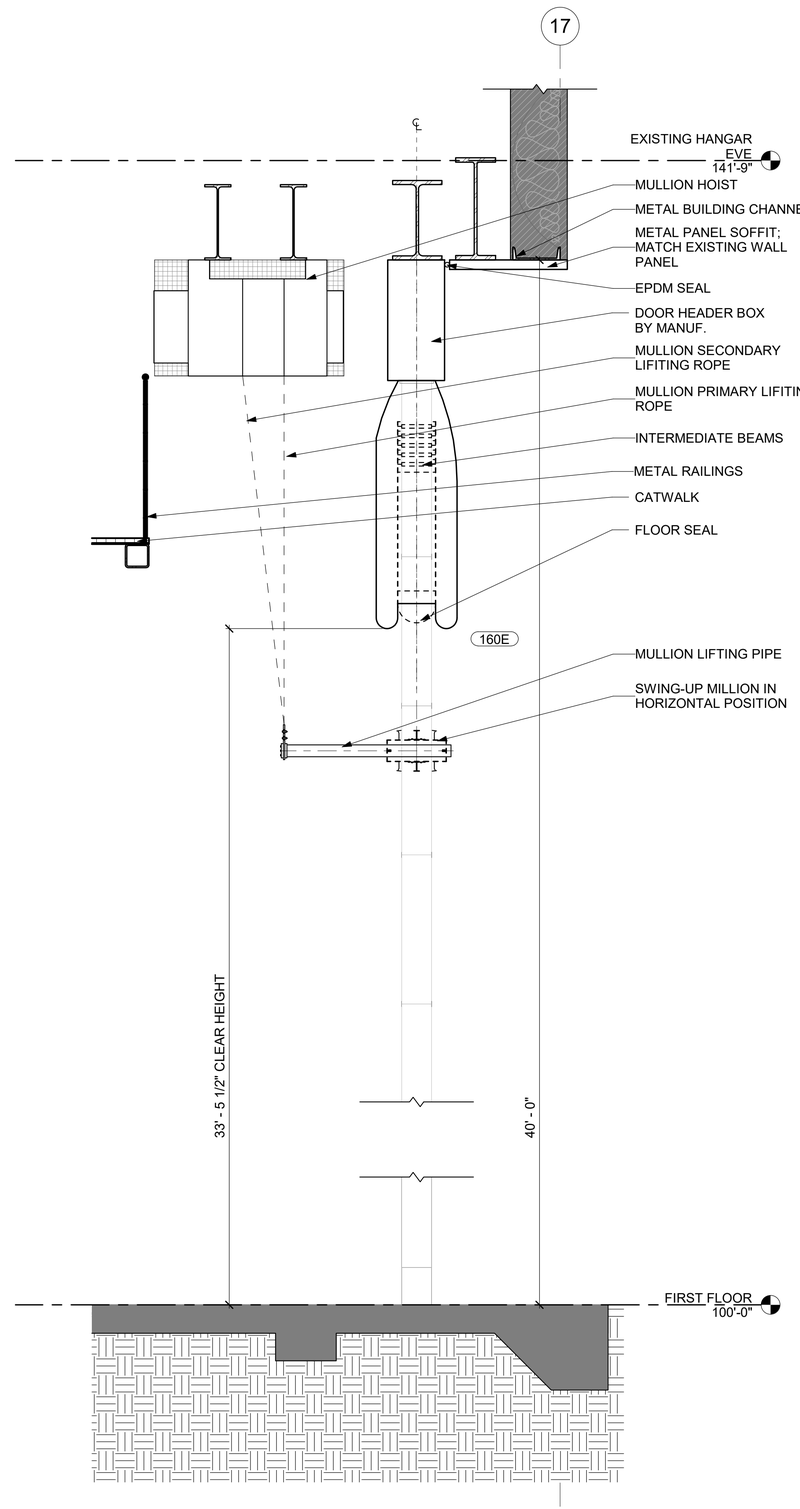
W9126G26RA087-0002



A1 WALL SECTION
3/4" = 1'-0"



A6 WALL SECTION
3/4" = 1'-0"



A10 WALL SECTION
3/4" = 1'-0"

GENERAL NOTES (WALL SECTION):

1. R-VALUES FOR EXTERIOR ENVELOPE IN CLIMATE ZONE **2A**:

LOCATION	MATERIAL	R-VALUE
ROOF	METAL BUILDING	R-16
WALLS	METAL BUILDING	R-13
FLOOR	SLAB ON GRADE	NR

EXISTING VS. NEW	
	EXISTING WALL

0 0.5' 1' 2' 3'
SCALE: 3/4"=1'-0"

STATE OF OKLAHOMA
BRIAN BOURN
MAY 28, 2026
A08515
LICENSED ARCHITECT

LDG
Larson Design Group
3817 NW EXPRESSWAY
SUITE 840
OKLAHOMA CITY, OK 73112
(405) 722-7270

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B80176 Hangar Door Expansion - Ft Hood/B80176 Hangar Door Expansion - R26 - Arch.rvt

Plot Date: 7/1/2026 1:15:59 PM

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: B. BOURN
DRAWN BY: B. BOURN
CHECKED BY: C. HAMEL
SUBMITTED BY: T. KURGAN
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST.; FORT WORTH, TX 76102

LARSON DESIGN GROUP
3817 NW EXPRESSWAY, SUITE 840
OKLAHOMA CITY, OK 73112

FORT HOOD, TX
B80176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT

WALL SECTIONS

SHEET ID
A-311

DOOR + FRAME SCHEDULE - EXISTING & NEW

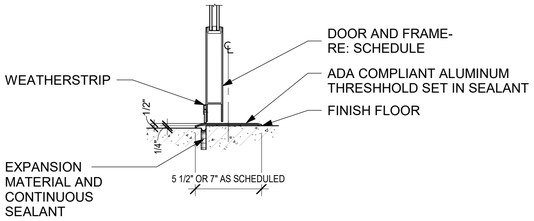
MARK	ROOM	DOOR ELEV.	DOOR WIDTH	DOOR HEIGHT	DOOR THK.	DOOR MAT'L	DOOR FINISH	DOOR COLOR	FRAME ELEV.	FRAME DEPTH	FRAME MAT'L	FRAME FINISH	FRAME COLOR	DETAILS HEAD	DETAILS JAMB	DETAILS JAMB	DETAILS SILL	STC RATING	FIRE RATING	HARDWARE SET	COMMENTS TYPE	COMMENTS OTHER
NEW CONSTRUCTION FIRST FLOOR																						
160A		F	3'-0"	7'-0"	1 3/4"	HM	PT	PT-1	1		HM	PT	PT-2	A8 / A-601	A1 / A-601 & D1 / A-601	A1 / A-601 & D1 / A-601	H1 / A-601	0		1		
160E			120'-10 5/8"	34'-7 1/2"																		
160F			120'-10 5/8"	34'-7 1/2"																		
170A		F	3'-0"	7'-0"	1 3/4"	HM	PT	PT-1	1		HM	PT	PT-2	A8 / A-601	A1 / A-601 & D1 / A-601	A1 / A-601 & D1 / A-601	H1 / A-601	0		1		
170C		F	3'-0"	7'-0"	1 3/4"	HM	PT	PT-1	1		HM	PT	PT-2	A8 / A-601	A1 / A-601 & D1 / A-601	A1 / A-601 & D1 / A-601	H1 / A-601	0		1		

GENERAL DOOR SCHEDULE NOTES:

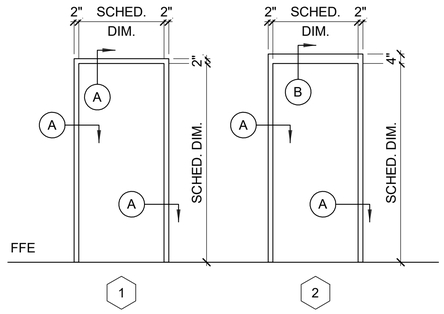
1. REFER SHEET ***I-601*** FOR BASIS-OF-DESIGN MANUFACTURER AND COLOR INFORMATION FOR WOOD, ANODIZED ALUMINUM, & PAINTED STEEL OR HOLLOW METAL DOORS & TRIM.
2. REFER SHEET ***A-601*** FOR DOOR TYPES AND FRAME ELEVATIONS
3. REFER SHEET ***A-601*** FOR FRAME TYPES
4. REFER TO SHEET ***I-501*** FOR INTERIOR FLOOR MATERIAL TRANSITION DETAILS.
5. BACK PRIME ALL HOLLOW METAL DOOR FRAMES
6. HARDWARE BY DOOR MANUFACTURER
7. HANGAR DOOR JAMB DETAILS PER MANUFACTURER

DOOR FRAME NOTES:

1. SEE SPECIFICATIONS FOR ALLOWABLE HOLLOW METAL FRAME TYPES (WELDED, KNOCK-DOWN, ETC.)
2. FRAME SECTIONS SHOWN APPLY AT HOLLOW METAL FRAMES ONLY. WHERE ALUMINUM IS SCHEDULED, PROVIDE A FRAME OF THE SCHEDULED DEPTH, WITH FACE DIMENSIONS AS SHOWN IN THE FRAME ELEVATION. ALUMINUM FRAME SECTION TO BE THE MANUFACTURER'S PROFILE AS SPECIFIED.

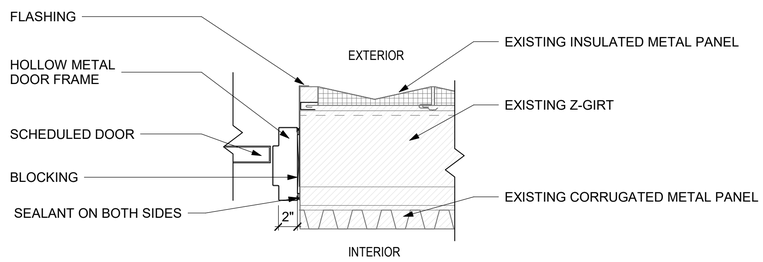


H1 EXTERIOR DOOR THRESHOLD
1 1/2" = 1'-0"

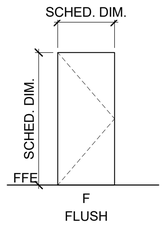


NOTE: NOT ALL FRAME ELEVATIONS MAY BE USED

F15 DOOR FRAME ELEVATIONS (TYPICAL)
3/8" = 1'-0"



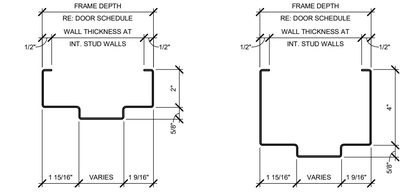
D1 HOLLOW METAL FRAME JAMB @ METAL PANEL DETAIL
1 1/2" = 1'-0"



DOOR ELEVATION NOTES:

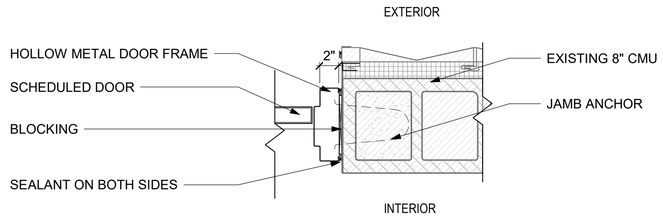
1. WHERE POSSIBLE, DOOR ELEVATION TYPE ABBREVIATIONS CONFORM TO ANSI DOCUMENT A250.7-1997 - NOMENCLATURE FOR STANDARD DOOR DESIGNS.
2. SEE THE DOOR + FRAME SCHEDULE FOR DOOR MATERIAL(S).

D8 DOOR ELEVATIONS (TYPICAL) CONDENSED
1/4" = 1'-0"

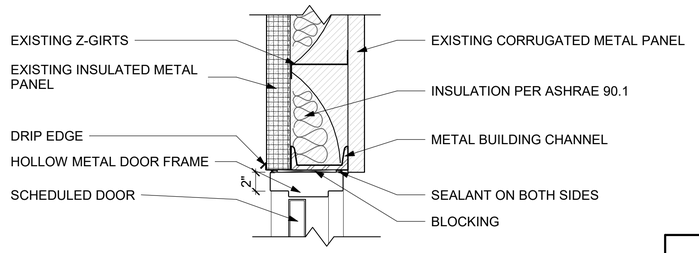


Ⓐ Ⓑ

B15 HOLLOW METAL FRAME PROFILES (TYPICAL)
3" = 1'-0"



A1 HOLLOW METAL FRAME JAMB @CMU DETAIL
1 1/2" = 1'-0"



A8 HOLLOW METAL FRAME HEAD DETAIL
1 1/2" = 1'-0"

EXISTING VS. NEW
EXISTING WALL

US Army Corps of Engineers ®

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST.; FORT WORTH, TX 76102

LARSON DESIGN GROUP
3817 NW EXPRESSWAY, SUITE 840
OKLAHOMA CITY, OK 73112

STATE OF OKLAHOMA
BRIAN BOURN
MAY 28, 2026
A08515
LICENSED ARCHITECT

Larson Design Group
3817 NW EXPRESSWAY
SUITE 840
OKLAHOMA CITY, OK 73112
(405) 722-7270

0 4' 8' 16'
SCALE: 1/8"=1'-0

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

DESIGNED BY: B. BOURN
DRAWN BY: M. MILLER
CHECKED BY: B. HAMEZ
SUBMITTED BY: T. KURGAN
SIZE: ANSI D

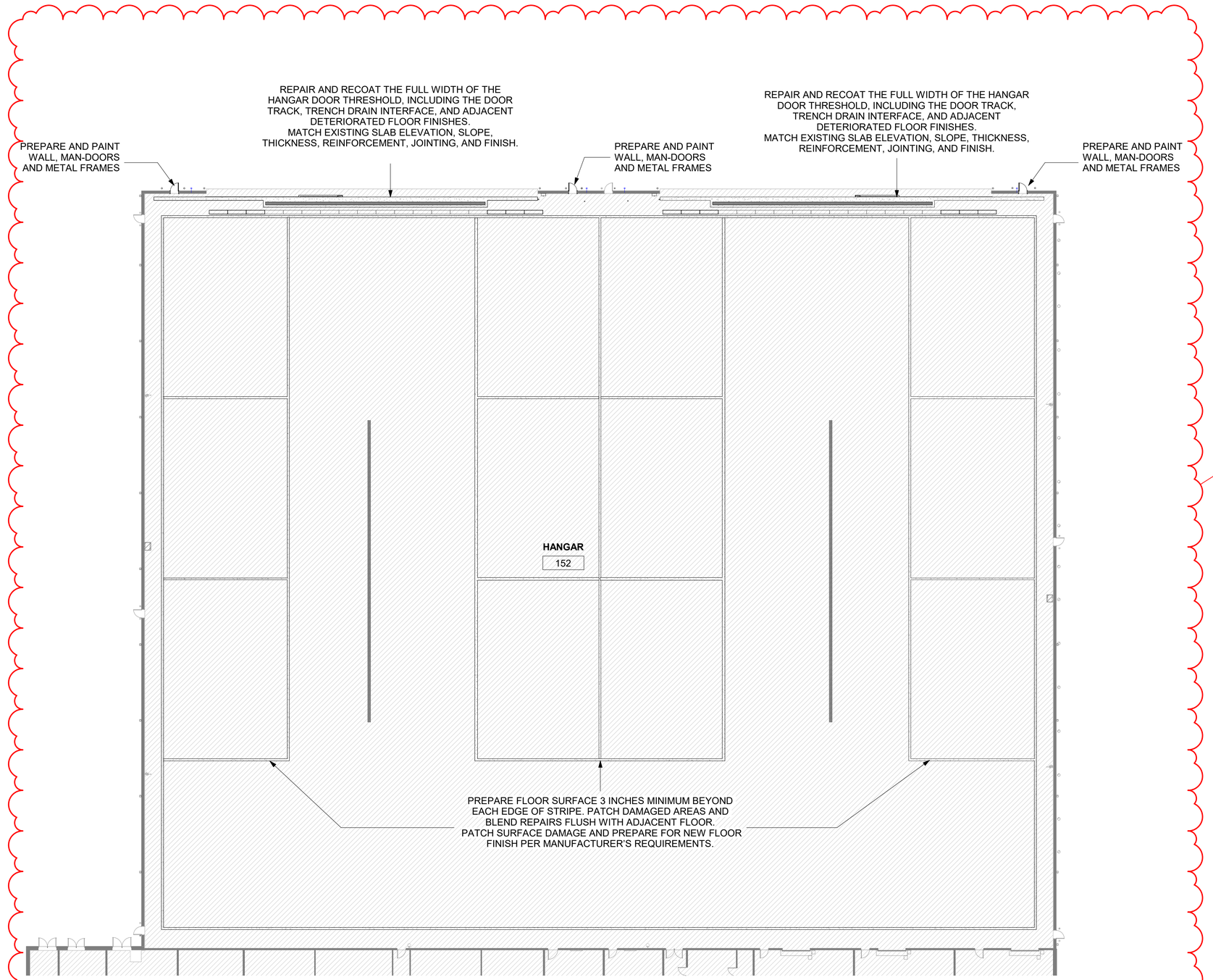
ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT

DOOR SCHEDULE

SHEET ID
A-601

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/B90176 Hangar Door Expansion - R24 - Arch.rvt
Plot Date: 7/1/2026 1:16:00 PM



A1 FINISH FLOOR PLAN
1" = 20'-0"

GENERAL NOTES (INTERIOR FINISHES):

1. RE-STRIPE EXISTING EPOXY FLOOR, PATCH AND REPAIR AS NEEDED.
2. NEW MARKINGS FOR ME-11B AIRCRAFT TO COMPLY WITH UFC MAINTAINANCE HANGAR CLEARANCE REQUIREMENTS.
3. THESE DRAWINGS INDICATE THE LIMITS OF FINISHES FOR AREAS THAT HAVE MULTIPLE TYPES AND COLORS. SEE FINISH MATERIAL COLOR LEGEND, SHEET **I-601**, FOR FINISHES AND COLORS NOT IDENTIFIED OR CALLED OUT ON THIS SHEET.
4. INTERIOR MATERIAL COLOR LEGEND REPRESENTS THE BASIS OF DESIGN MANUFACTURER, PATTERN AND COLOR INFORMATION FOR THE INTERIOR FLOOR, WALL, CEILING AND MISCELLANEOUS MATERIALS.
5. TYPICAL FIELD PAINT PT-1, LATEX PAINT.
6. REFERENCE SHEET **I-114** OVERALL STRIPING PLAN.
7. PAINT ALL WALLS, COLUMNS, ACCESS PANELS AND DOORS TO MATCH ADJACENT SURFACES.
8. PAINT EXPOSED STRUCTURE INCLUDING ALL PIPES, DUCTS, ETC.
9. REFERENCE SHEET **I-601** FOR DOOR FRAME COLOR.
10. REFER TO REFLECTED CEILING PLAN, SHEET **A-111** FOR CEILING HEIGHTS.
11. NOTIFY CONTRACTING OFFICER BEFORE STARTING TO PAINT. DO NOT BEGIN PAINTING UNTIL CONTRACTING OFFICER'S REPRESENTATIVE HAS VISITED THE SITE AND INDICATED EXACTLY THE EXTENT OF EACH COLOR.

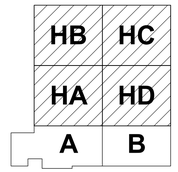
FINISH LEGEND:

CONC-1A
EPOXY FLOOR, INDUSTRIAL THREE-PART EPOXY FLOOR SYSTEM OVER EXISTING SLAB.

BASE BID: REPAIRE AREA
~ 3,300 SQUARE FEET

BID OPTION: ENTIRE BAY AREA:
~ 912,216.5 SQUARE FEET

KEY PLAN



N
0 15' 30' 60'
SCALE: 1"=30'

STATE OF OKLAHOMA
BRIAN BOURN
MAY 28, 2026
A08515
LICENSED ARCHITECT

LDG
Larson Design Group
3817 NW EXPRESSWAY
SUITE 840
OKLAHOMA CITY, OK 73112
(405) 722-7270

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/B90176 Hangar Door Expansion - R24 - Arch.rvt
Plot Date: 7/1/2026 1:16:01 PM

ISSUE DATE:
MAY 28, 2026
SOLICITATION NO.:
W9126G26RA087
CONTRACT NO.:

DESIGNED BY: A. MCFALL
DRAWN BY: A. MCFALL
CHECKED BY: CHECKER
SUBMITTED BY: T. KURGAN
SIZE: ANSI D

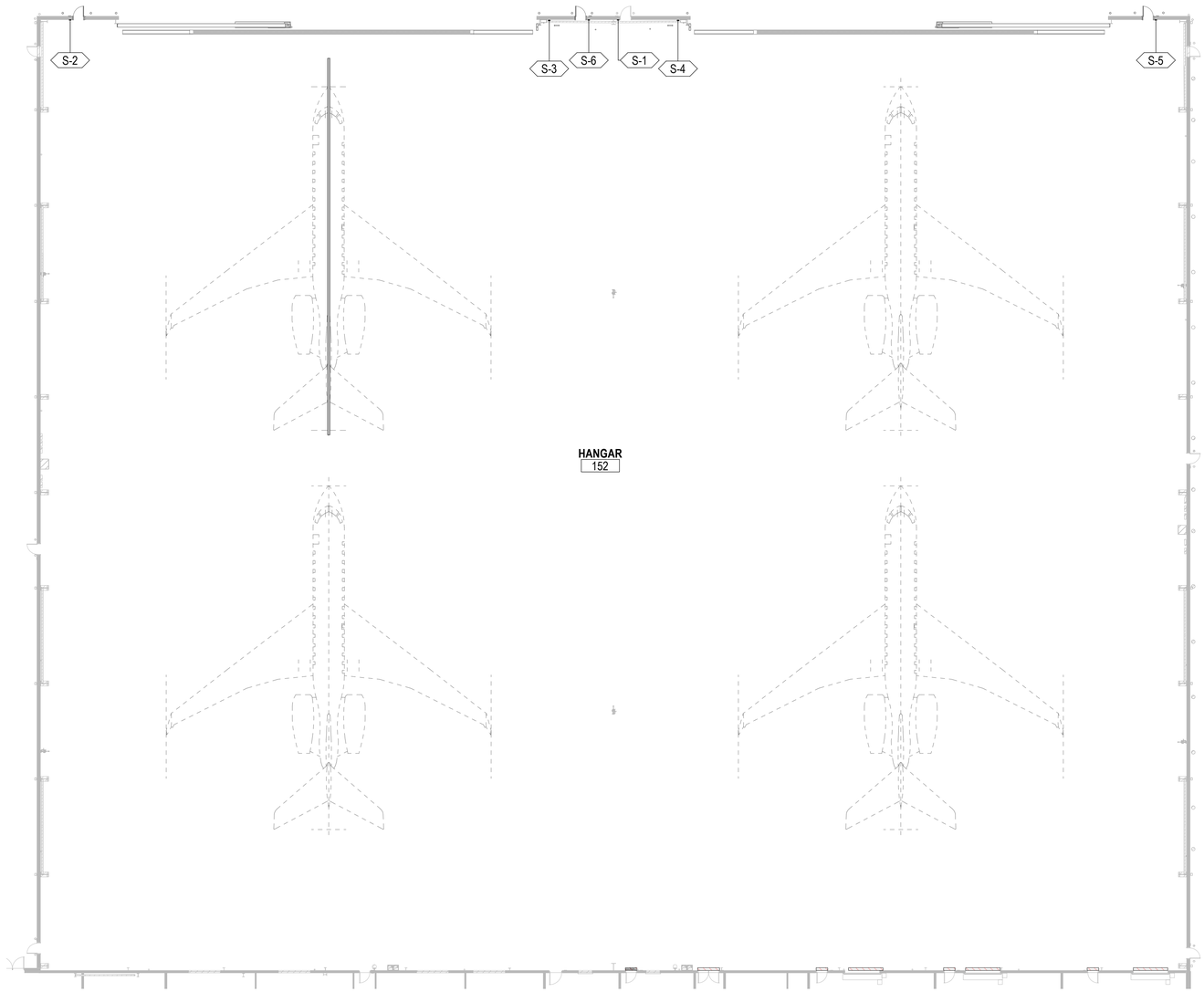
US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST., FORT WORTH, TX 76102

LARSON DESIGN GROUP
3817 NW EXPRESSWAY, SUITE 840
OKLAHOMA CITY, OK 73112

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT

OVERALL FINISH FLOOR PLAN

SHEET ID
I-100



SYMBOL LEGEND:

1001 — INDICATES SIGN **MARK**. REFER SIGN SCHEDULE (**I-110**)

Suite A / A100 — INDICATES ROOM NAME AND NUMBER THAT WILL APPEAR ON PERMANENT ROOM IDENTIFICATION SIGN.

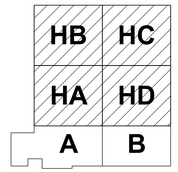
(101 Name) — INDICATES ROOM NUMBER & NAME AS THEY APPEAR IN THE REMAINDER OF BUILDING CONSTRUCTION DRAWINGS.

SIGNAGE SCHEDULE

Mark	Sign Type / Model	Sign Copy / Verbiage / Title / Name	Type Comments
S-1	EX1	EXIT	TACTILE W/ BRAILLE
S-2	EX1	EXIT	TACTILE W/ BRAILLE
S-3	DD2	DANGER - DOORS MUST BE CLOSED IF WINDS ARE IN EXCESS OF 60 MPH	REGULATORY
S-4	DD2	DANGER - DOORS MUST BE CLOSED IF WINDS ARE IN EXCESS OF 60 MPH	REGULATORY
S-5	EX1	EXIT	TACTILE W/ BRAILLE
S-6	EX1	EXIT	TACTILE W/ BRAILLE

A1 SIGNAGE PLAN
1" = 20'-0"

KEY PLAN



N

SCALE: 1"=20'

STATE OF OKLAHOMA
BRIAN BOURN
MAY 28, 2026
A08515
LICENSED ARCHITECT

Larson Design Group
3817 NW EXPRESSWAY
SUITE 840
OKLAHOMA CITY, OK 73112
(405) 722-7270

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/B90176 Hangar Door Expansion - R24 - Arch.rvt

Plot Date: 7/1/2026 1:16:04 PM

ISSUE DATE:
MAY 28, 2026

SOLICITATION NO.:
W9126G26RA087

CONTRACT NO.:

DESIGNED BY:	A. MCFALL
DRAWN BY:	A. MCFALL
CHECKED BY:	CHARLIE
SUBMITTED BY:	T. KURGAN
SIZE:	ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST, FORT WORTH, TX 76102

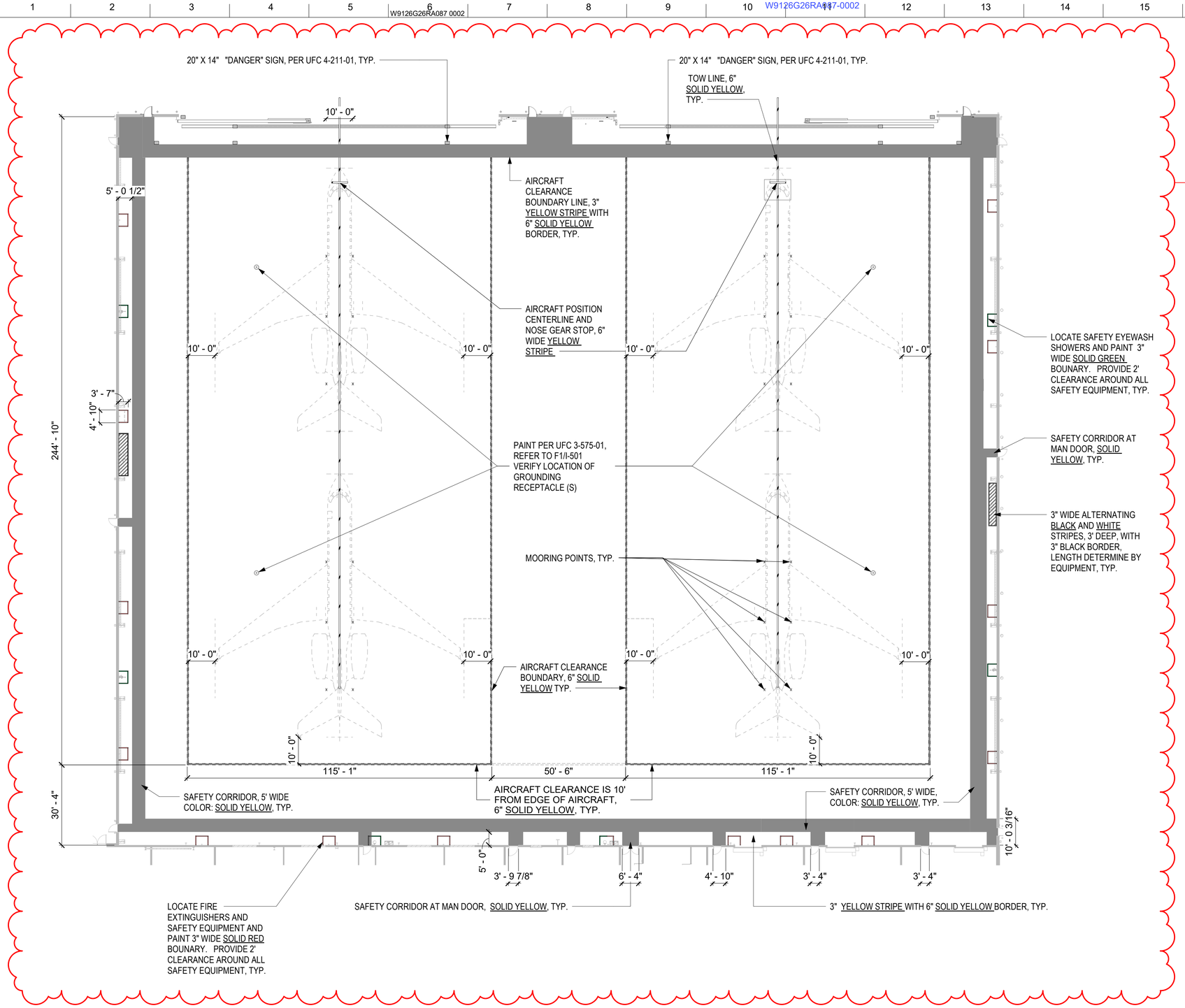
LARSON DESIGN GROUP
3817 NW EXPRESSWAY, SUITE 840
OKLAHOMA CITY, OK 73112

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT

OVERALL SIGNAGE PLAN

SHEET ID

I-110



A1 STRIPING PLAN
1" = 20'-0"

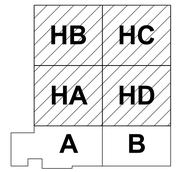
GENERAL NOTES (STRIPING):

1. FIELD VERIFY LOCATIONS OF GROUNDING RECEPTACLES.
2. CONTRACTOR SHALL PROVIDE AND COORDINATE ALL FLOOR MARKINGS FOR HANGAR DOOR HAZARD ZONES, FIRE EXTINGUISHERS, EYEWASH / SAFETY EQUIPMENT CLEARANCE ZONES, VEHICLE / EQUIPMENT CLEARANCE AREAS, AND OTHER SAFETY-RELATED FLOOR MARKINGS IN ACCORDANCE WITH APPLICABLE UFC, OSHA, BASE SAFETY REQUIREMENTS, AND AUTHORITY HAVING JURISDICTION REQUIREMENTS. VERIFY FINAL LOCATIONS, COLORS, DIMENSIONS, CLEARANCES, AND EXTENTS WITH THE USER, BASE SAFETY OFFICE, FIRE DEPARTMENT / F&ES, AND FIELD CONDITIONS PRIOR TO INSTALLATION. DO NOT INSTALL CONFLICTING OR OVERLAPPING FLOOR MARKING PATTERNS WITHOUT PRIOR COORDINATION. VERIFY FINAL HAZARD LOCATIONS WITH DOOR MANUFACTURER.

STRIPING LEGEND:

- **SAFETY CORRIDOR:** SOLID YELLOW
- **EQUIPMENT CLEARANCE ZONE:** 3" BLACK AND WHITE STRIPES, ALTERNATING 3" SOLID BLACK BORDER EXTEND STRIPED ZONE 3'-0" FROM FACE OF EQUIPMENT.
- **AIRCRAFT CLEARANCE BOUNDARY:** 3" WIDE SOLID YELLOW
- **FIRE EXTINGUISHER CLEARANCE ZONE:** 3" WIDE SOLID RED
- **EYEWASH / SHOWER CLEARANCE ZONE:** 3" WIDE SOLID GREEN
- **AIRCRAFT POSITION CENTERLINE & NOSE GEAR STOP:** 6" SOLID YELLOW STRIPE

KEY PLAN



N

0 10' 20' 40'
SCALE: 1"=20'

STATE OF OKLAHOMA
BRIAN BOURN
MAY 28, 2026
A08515
LICENSED ARCHITECT

Larson Design Group
3817 NW EXPRESSWAY
SUITE 840
OKLAHOMA CITY, OK 73112
(405) 722-7270

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/B90176 Hangar Door Expansion - R26 - Arch.rvt

Plot Date: 7/1/2026 1:16:08 PM

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: A. MCFALL
DRAWN BY: A. MCFALL
CHECKED BY:
SUBMITTED BY: T. KURGAN
SIZE: ANSI D

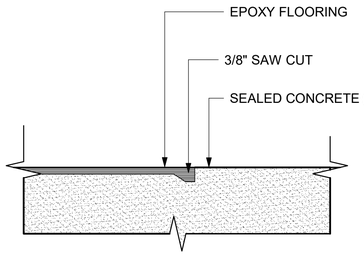
US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST; FORT WORTH, TX 76102

LARSON DESIGN GROUP
3817 NW EXPRESSWAY, SUITE 840
OKLAHOMA CITY, OK 73112

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT

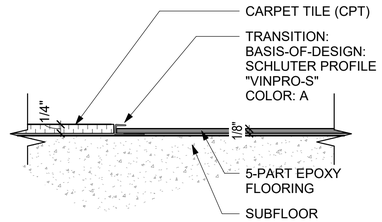
OVERALL STRIPING PLAN

SHEET ID
I-114



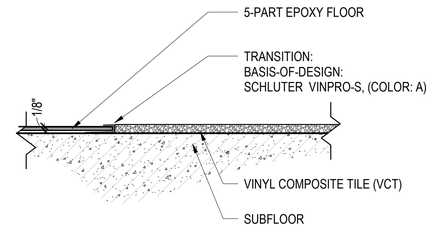
L1 TRANSITION EPOXY TO CONC
6" = 1'-0"

0 1 1/2" 3" 6"
SCALE: 6" = 1'-0"



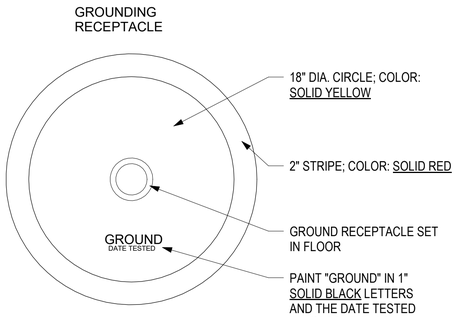
L8 TRANSITION EPOXY TO CPT
6" = 1'-0"

0 1 1/2" 3" 6"
SCALE: 6" = 1'-0"



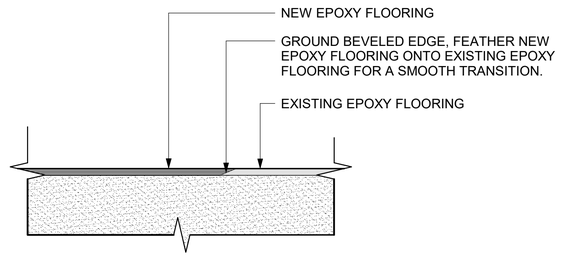
L13 TRANSITION EPOXY TO VCT
6" = 1'-0"

0 1 1/2" 3" 6"
SCALE: 6" = 1'-0"



F1 GROUNDING RECEPTACLE SAFETY PAINT
1/16" = 1'-0"

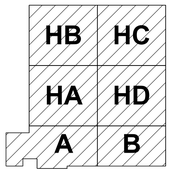
0 8'-0" 16'-0" 32'-0"
SCALE: 1/16" = 1'-0"



G8 TRANSITION NEW EPOXY TO EXISTING EPOXY
6" = 1'-0"

0 1 1/2" 3" 6"
SCALE: 6" = 1'-0"

KEY PLAN



STATE OF OKLAHOMA
BRIAN BOURN
MAY 28, 2026
A08515
LICENSED ARCHITECT

Larson Design Group
3817 NW EXPRESSWAY
SUITE 840
OKLAHOMA CITY, OK 73112
(405) 722-7270

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - FtHood/B90176 Hangar Door Expansion - R26 - Arch.rvt
Plot Date: 7/1/2026 1:16:08 PM

ISSUE DATE:
MAY 28, 2026
SOLICITATION NO.:
W9126G26RA087
CONTRACT NO.:

DESIGNED BY: Designer
DRAWN BY: Author
CHECKED BY: Checker
SUBMITTED BY: T. KURGAN
SIZE: ANSI D

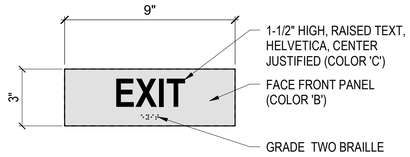
US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST, FORT WORTH, TX 76102

LARSON DESIGN GROUP
3817 NW EXPRESSWAY, SUITE 840
OKLAHOMA CITY, OK 73112

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT

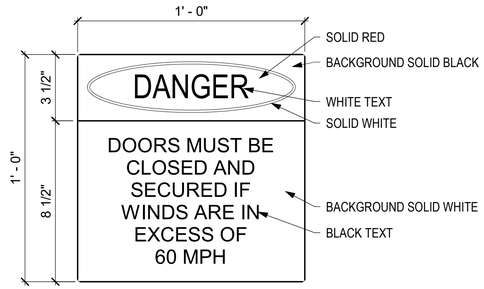
FINISH DETAILS

SHEET ID
I-501



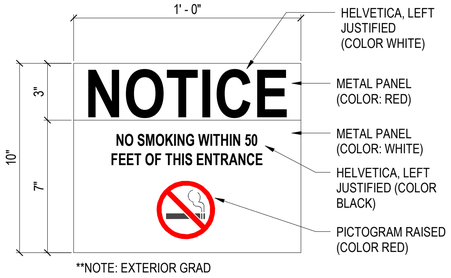
L1 SIGN EX.1 TACTILE EXIT
3" = 1'-0"

0 3" 6" 1'-0"
SCALE: 3" = 1'-0"



H6 SAFETY - HANGAR DOOR
3" = 1'-0"

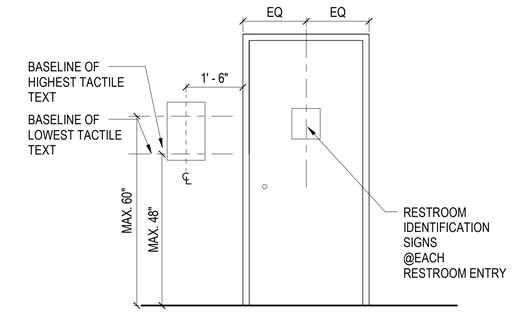
0 3" 6" 1'-0"
SCALE: 3" = 1'-0"



**NOTE: EXTERIOR GRAD

H12 SAFETY - O.8 NO SMOKING
3" = 1'-0"

0 3" 6" 1'-0"
SCALE: 3" = 1'-0"

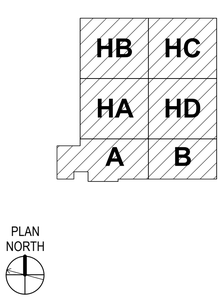


NOTE: MOUNT SIGN ON LATCH SIDE OF DOOR. WHERE THESE IS NO WALL SPACE, INCLUDING DOUBLE LEAF DOOR, SIGN SHALL BE PLACED ON THE NEAREST WALL, PREFERABLY TO THE RIGHT.

A11 ROOM ID SIGN INSTALLATION
1/2" = 1'-0"

0 1'-0" 2'-0" 4'-0"
SCALE: 1/2" = 1'-0"

KEY PLAN



STATE OF OKLAHOMA
BRIAN BOURN
MAY 28, 2026
A08515
LICENSED ARCHITECT

LDG
Larson Design Group
3817 NW EXPRESSWAY
SUITE 840
OKLAHOMA CITY, OK 73112
(405) 722-7270

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: A. MCFALL
DRAWN BY: A. MCFALL
CHECKED BY: Checker
SUBMITTED BY: T. KURGAN
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST, FORT WORTH, TX 76102

LARSON DESIGN GROUP
3817 NW EXPRESSWAY, SUITE 840
OKLAHOMA CITY, OK 73112

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT

SIGNAGE DETAILS

SHEET ID
I-502

Plot Date: 7/1/2026 1:16:09 PM
File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/B90176 Hangar Door Expansion - R24 - Arch.rvt

ROOM FINISH SCHEDULE

ROOM NO.	ROOM NAME	FLOOR FIN.	BASE FIN.	WALLS MAT'L	WALLS FIN.	CEILING MAT'L	CEILING FIN.	COMMENTS
152	HANGAR	EP-1	NA		PT-1			HANGAR DOOR WALL ONLY

INTERIOR FINISH MATERIAL COLOR LEGEND

FLOOR FINISH MATERIAL

Code	Material	Manufacturer	Pattern / Color	Dimensions	Comments
CONC-1A	3-PART, NON-SKID, LIGHT REFLECTIVE, NON-OXIDIZING COATING: FLOROCK THICK MIL SYSTEM; FLOROPOXY & FLOROTHANE - 4700 PRIMER, 4805 INTERMEDIATE COAT, FLOROTHANE MC ULTRA 100 TOPCOAT	...	CUSTOM MATCH SW SW4005 CYLINDER CREAM - (HEX NUMBER/COLOR TBD) FINISH: GLOSS	N/A	MIN. LRV=70 REFER TO SHEET I-100 FOR BID OPTION.
CONC-1B	3-PART, NON-SKID, LIGHT REFLECTIVE, NON-OXIDIZING COATING: FLOROCK THICK MIL SYSTEM; FLOROPOXY & FLOROTHANE - 4700 PRIMER, 4805 INTERMEDIATE COAT, FLOROTHANE MC ULTRA 100 TOPCOAT		COLOR: SAFETY YELLOW, FINISH GLOSS	N/A	6" STRIPING FOR TOW-LANE CENTER AND EDGE OF AIRCRAFT PARKING MODULE
CONC-1C	3-PART, NON-SKID, LIGHT REFLECTIVE, NON-OXIDIZING COATING: FLOROCK THICK MIL SYSTEM; FLOROPOXY & FLOROTHANE - 4700 PRIMER, 4805 INTERMEDIATE COAT, FLOROTHANE MC ULTRA 100 TOPCOAT		COLOR: SAFETY RED, FINISH GLOSS	N/A	6" STRIPING FOR 10' 'SAFETY ZONE' BORDER AT PERIMETR OF MAINTENCE BAY, FIRE EXTINGUISHERS AND ALARMS
CONC-1D	3-PART, NON-SKID, LIGHT REFLECTIVE, NON-OXIDIZING COATING: FLOROCK THICK MIL SYSTEM; FLOROPOXY & FLOROTHANE - 4700 PRIMER, 4805 INTERMEDIATE COAT, FLOROTHANE MC ULTRA 100 TOPCOAT		COLOR: BLACK, FINISH GLOSS	N/A	3" STRIPING FOR PINCH POINTS AND ELECTRICAL
CONC-1E	3-PART, NON-SKID, LIGHT REFLECTIVE, NON-OXIDIZING COATING: FLOROCK THICK MIL SYSTEM; FLOROPOXY & FLOROTHANE - 4700 PRIMER, 4805 INTERMEDIATE COAT, FLOROTHANE MC ULTRA 100 TOPCOAT		COLOR: GREEN, FINISH GLOSS	N/A	SOLID GREEN AT EYEWASH STATIONS
CONC-2	SEALED CONCRETE (PAINT): LOW VOC CONCRETE SEALER		COLOR: CLEAR, FINISH GLOSS	N/A	...

WALL FINISH MATERIAL

Code	Material	Manufacturer	Pattern / Color	Dimensions	Comments
PT-1	ZERO VOC INTERIOR LATEX	...	MATCH EXISTING, FINISH: EGGSHELL - CONFIRM COLOR WITH THE ACTIVITY	...	WALLS - MIN. LRV=70
PT-2	ZERO VOC INTERIOR ACRYLIC	...	MATCH EXISTING, FINISH: SEMI-GLOSS - CONFIRM COLOR WITH THE ACITIVTY	...	DOOR FRAME

MISCELLANEOUS FINISH MATERIALS

Code	Material	Manufacturer	Pattern / Color	Dimensions	Comments
S	SIGNAGE	...	REFER TO SIGNAGE DETAILS SHEET I-501	...	INTERIOR ROOM IDENTIFICATION SIGNAGE

GENERAL FINISH MATERIAL COLOR LEGEND NOTES:

1. MATERIALS LISTED IN THE FINISH MATERIAL COLOR LEGEND ESTABLISH THE BASIS OF DESIGN MANUFACTURERS, PATTERNS AND COLORS OF INTERIOR FNISH MATERIALS.
2. REFER TO REFLECTED CEILING PLAN FOR CEILING HEIGHTS.
3. NOTIFY CONTRACTING OFFICER BEFORE STARTNG TO PAINT. DO NOT BEGIN PAINTING UNTIL CONTRACTING OFFICER'S REPRESENTATIVE HAS VISITED THE SITE AND INDICATED EXACTLY THE EXTENT OF EACH COLOR.
4. REFER TO DETAILS, CEILING PLANS ETC. FOR ADDITIONAL PAINT ITEMS NOT SPECIFICALLY CALLED OUT IN THE ROOM FINISH SCHEDULE.

ABBREVIATION LEGEND

ACT	ACOUSTIC CEILING TILE
AL	ALUMINUM
ALUM	ANODIZED ALUMINUM
AWP	ACOUSTIC WALL PANEL
BRK	BRICK
CJ	CONTROL JOINTS
CMU	CONCRETE MASONRY UNIT
CONC	CONCRETE
CPT	CARPET TILE
CST	CAST STONE
DCMU	DECORATIVE CONCRETE MASONRY UNIT
EJ	EXPANSION JOINTS
EPT	EPOXY PAINT
EXS	EXPOSED STRUCTURE
FRP	FIBERGLASS REINFORCED PANEL
GCMU	GLAZED CONCRETE MASONRY UNIT
GLZ	GLAZING
GLCW	GLAZED CURTAIN WALL
GRT	GROUT
GWB	GYPSUM WALLBOARD
HPL	HIGH PRESSURE LAMINATE
HR	HANDRAIL
MB	MARKER BOARD
MCS	METAL CEILING SYSTEM
MTR	MORTAR
MWP	METAL WALL PANEL
OCD	OVERHEAD COILING DOORS
PCT	PORCELAIN CERAMIC TILE
PT	PAINT
RAF	RAISED ACCESS FLOOR
RB	RUBBER BASE
RF	ROOF
RST	RUBBER STAIR TREADS AND RISERS
SC	SEALED CONCRETE
SDT	STATIC DISSIPATIVE TILE
SG	INTERIOR SIGNAGE
SSCG	STAINLESS STEEL CORNER GUARD
SSM	SOLID SURFACE MATERIAL
TB	TACK BOARD
TP	TOILET PARTITION
TPO	THERMOPLASTIC OLEFIN
US	URINAL SCREEN
WOC	WALK-OFF CARPET
XMT	EXTERIOR METAL TRIM
XPT	EXTERIOR PAINT
XSG	EXTERIOR SIGNAGE
--	NONE

DISCLAIMER: MANUFACTURERS NAMES ARE USED TO ESTABLISH MATERIAL, QUALITY, COLOR, AND PATTERN ONLY. THERE IS NO INTENT TO BE PROPRIETARY.

BRIAN BOURN
MAY 28, 2026
A08515
STATE OF OKLAHOMA
LICENSED ARCHITECT

Larson Design Group
3817 NW EXPRESSWAY
SUITE 840
OKLAHOMA CITY, OK 73112
(405) 722-7270

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

ISSUE DATE:
MAY 28, 2026
SOLICITATION NO.:
W9126G26RA087
CONTRACT NO.:

DESIGNED BY: A. MCFALL
DRAWN BY: A. MCFALL
CHECKED BY: CHECKER
SUBMITTED BY: T. KURGAN
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST., FORT WORTH, TX 76102

LARSON DESIGN GROUP
3817 NW EXPRESSWAY, SUITE 840
OKLAHOMA CITY, OK 73112

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT

FINISH MATERIAL COLOR LEGEND

SHEET ID

I-601

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/B90176 Hangar Door Expansion - R24 - Arch.rvt
Plot Date: 7/1/2026 1:16:09 PM

FIRE ALARM SHEET LIST

SHEET NO.	SHEET NAME
FA001	GENERAL FIRE ALARM INFORMATION
FAD101	FIRE ALARM DEMO FLOOR PLAN - HB
FAD102	FIRE ALARM DEMO FLOOR PLAN - HC
FA101	FIRE ALARM FLOOR PLAN - OVERALL
FA102	FIRE ALARM FLOOR PLAN - HB
FA103	FIRE ALARM FLOOR PLAN - HC

FIRE ALARM

M — MAGNETIC DOOR HOLD DEVICE	FIRE ALARM VOICE CEILING MOUNT SPEAKER
FS — SPRINKLER FLOW SWITCH	FIRE ALARM CEILING MOUNT SPEAKER STROBE WITH CLEAR OR WHITE STROBE MARKED WITH WORD "ALERT"
TS — SPRINKLER TAMPER SWITCH	SMOKE DETECTOR
MANUAL PULL STATION; MOUNT ACCORDING TO MOUNTING HEIGHT DETAIL AT 46" TO CENTER OF DEVICE AFF. ADA COMPLIANT	CEILING MOUNTED SMOKE DETECTOR PHOTOELECTRIC
HORN & STROBE; MOUNT SO BOTTOM OF DEVICE IS AT 80" AFF UNLESS OTHERWISE NOTED. ADA COMPLIANT	DUCT MOUNTED SMOKE DETECTOR
STROBE WITH CLEAR OR WHITE STROBE MARKED WITH THE WORD "ALERT"; MOUNT SO BOTTOM OF DEVICE IS AT 80" AFF UNLESS OTHERWISE NOTED. ADA COMPLIANT	THERMAL HEAT DETECTOR
SPEAKER & STROBE WITH CLEAR OR WHITE STROBE MARKED WITH THE WORD "ALERT"; MOUNT SO BOTTOM OF DEVICE IS AT 80" AFF UNLESS OTHERWISE NOTED. ADA COMPLIANT	POST INDICATOR VALVE
FIRE ALARM CEILING MOUNTED CLEAR OR WHITE STROBE MARKED WITH THE WORD "ALERT"	BELL
FIRE ALARM VOICE WALL MOUNT SPEAKER	SHUTDOWN RELAY WITH REMOTE TEST SWITCH
	SHUTDOWN RELAY AND TEST SWITCH
	COMBINATION FIRE ALARM / MASS NOTIFICATION CONTROL PANEL
	REMOTE ANNUNCIATOR PANEL
	MASS NOTIFICATION LED TEXT SIGN
	ADDRESSABLE INPUT MODULE
	ADDRESSABLE OUTPUT MODULE

NOTE: NOT ALL FIRE ALARM SYMBOLS MAY BE USED

DEMOLITION GENERAL NOTES

A. COORDINATE ALL DEMOLITION WITH WHAT IS SHOWN ON ARCHITECTURAL PLANS. NOTIFY CONTRACTING OFFICER OF ANY DISCREPANCIES.

B. COORDINATE NEW WORK AND DEMOLITION WITH OTHER DISCIPLINES AND EXISTING CONDITIONS PRIOR TO CONSTRUCTION.

C. PRIOR TO SUBMITTING BID, VISIT THE JOB SITE AND BECOME FULLY ACQUAINTED WITH THE EXISTING CONDITIONS OF THE PROJECT. REVIEW GENERAL NOTES, SPECIFICATIONS AND OTHER DRAWINGS FOR ADDITIONAL REQUIREMENTS THAT MAY NOT BE SPECIFICALLY CALLED OUT IN THIS PORTION OF THE CONSTRUCTION DOCUMENTS. NOTIFY CONTRACTING OFFICER AS DEFINED IN BID DOCUMENTS, OF CONFLICTS OR DISCREPANCIES PRIOR TO SUBMISSION OF BID ADDITIONAL COMPENSATION WILL NOT BE PAID FOR LACK OF SUCH DETERMINATION, FAMILIARIZATION AND/OR ALLOWANCE.

D. EXISTING CONDITIONS WERE TAKEN FROM ORIGINAL DRAWINGS AND SITE VISITS AND MAY NOT REFLECT EXACT "AS-BUILT" CONDITIONS. FIELD VERIFY EXISTING CONDITIONS PRIOR TO SUBMITTING FINAL BIDS. COORDINATE NEW WORK AND DEMOLITION WITH OTHER DISCIPLINES AND EXISTING CONDITIONS PRIOR TO CONSTRUCTION.

E. CONTRACTING OFFICER RETAINS RIGHTS OF SALVAGE FOR EQUIPMENT AND FIXTURES TO BE REMOVED. COORDINATE WITH THE CONTRACTING OFFICER THE EQUIPMENT AND FIXTURES TO BE SALVAGED AND THE LOCATION FOR STORAGE. AVOID DAMAGE TO EQUIPMENT DURING DEMOLITION WORK AND DURING TRANSPORT TO CONTRACTING OFFICER'S DESIGNATED STORAGE LOCATION. PROPERLY DISPOSE OF MATERIALS THAT ARE REMOVED AND ARE NOT REQUESTED TO BE SALVAGED BY THE CONTRACTING OFFICER.

F. EQUIPMENT TO BE REMOVED SHALL BE KEPT FOR REINSTALLATION DURING THE CONSTRUCTION PHASE WHEN POSSIBLE AND/OR INDICATED ON THE DRAWINGS. AVOID DAMAGING EXISTING SURFACES AND EQUIPMENT TO REMAIN FOR NEW INSTALLATION. REPAIR ANY DAMAGE CAUSED DURING WORK AT NO EXTRA COST TO THE GOVERNMENT.

G. SEAL PENETRATIONS THROUGH FLOORS, WALLS, CEILINGS AND ROOFS WHERE COMPONENTS ARE REMOVED AND WHERE THE EXISTING PENETRATION IS NOT USED FOR THE NEW INSTALLATION. REPAIR DAMAGED SURFACES TO MATCH ADJACENT AREAS OR AS INDICATED ON THE ARCHITECTURAL DRAWINGS.

H. ONLY THE PORTIONS OF THE BUILDING AFFECTED BY THE SCOPE OF THE PROJECT HAVE BEEN SHOWN. INFORMATION SHOWN AS EXISTING TO REMAIN IS NOT BEING MODIFIED AS A PART OF THIS PROJECT.

I. REMOVE ALL UNUSED AND DEMOLISHED EQUIPMENT AND ASSOCIATED MATERIALS FROM SITE. ABANDONING UNUSED PORTIONS WILL NOT BE ACCEPTABLE.

J. SYSTEM(S) NOT ASSOCIATED WITH THE DEMOLITION SHALL BE LEFT IN SERVICE AS APPLICABLE.

K. INSPECT EXISTING EQUIPMENT TO REMAIN TO VERIFY THAT EQUIPMENT IS OPERATING PROPERLY. NOTIFY CONTRACTING OFFICER OF DAMAGED AND/OR MALFUNCTIONING COMPONENTS.

L. ALL SYSTEMS TO BE LEFT IN SERVICE PRIOR TO THE END OF EACH WORKDAY.

FIRE ALARM REQUIRED SUBMITTALS

A. SUBMIT MANUFACTURER'S CATALOG DATA WITH PRINTED LOGO OR TRADEMARK FOR EACH TYPE OF PRODUCT TO BE PROVIDED AS PART OF THIS PROJECT. CATALOG DATA SHALL BE MARKED TO INDICATE THE TYPE, SIZE, RATING, STYLE, AND CATALOG NUMBER FOR ALL ITEMS PROPOSED TO MEET THE SYSTEM PERFORMANCE DETAILED IN THE CONTRACT DOCUMENTS. PROPOSED EQUIPMENT SHALL BE SUBJECT TO THE APPROVAL OF THE CONTRACTING OFFICER. REFERENCE SPECIFICATIONS FOR MORE DETAILS.

B. INCLUDE PLANS, ELEVATIONS, SECTIONS, DETAILS, AND ATTACHMENTS TO OTHER WORK.

C. COMPLY WITH RECOMMENDATIONS IN THE "DOCUMENTATION" SECTION OF THE "FUNDAMENTALS OF FIRE ALARM SYSTEMS" CHAPTER IN NFPA 72.

D. INCLUDE PERFORMANCE PARAMETERS AND INSTALLATION DETAILS FOR EACH DETECTOR, VERIFYING THAT EACH DETECTOR IS LISTED FOR COMPLETE RANGE OF AIR VELOCITY, TEMPERATURE, AND HUMIDITY POSSIBLE WHEN AIR-HANDLING SYSTEM IS OPERATING.

E. INCLUDE PLANS DRAWN TO SCALE AND COORDINATING INSTALLATION OF DUCT SMOKE DETECTORS AND ACCESS TO THEM. SHOW PLACEMENT AND SUPPORT OF SAMPLING TUBES, DETECTOR HOUSING, AND REMOTE STATUS AND ALARM INDICATORS. LOCATE DETECTORS ACCORDING TO MANUFACTURER'S WRITTEN RECOMMENDATIONS.

F. INCLUDE CONTROL PANEL WIRING AND INTERCONNECTION SCHEMATICS.

G. INCLUDE FIRE ALARM SIGNALING - SERVICE EQUIPMENT RACK OR CONSOLE LAYOUT, GROUNDING SCHEMATIC AND SINGLE-LINE CONNECTION DIAGRAM.

H. INCLUDE FLOOR PLANS TO INDICATE FINAL OUTLET LOCATIONS OF EACH ADDRESSABLE DEVICE INCLUDING DEVICE ADDRESS.

I. INCLUDE COMPLETE POINT-TO-POINT WIRING DIAGRAMS SHOWING RACEWAY SIZE AND ROUTING, JUNCTION BOXES, AND CONDUCTOR SIZE AND QUANTITY.

J. INCLUDE COMPLETE SYSTEM RISER DIAGRAM.

K. INCLUDE FIRE ALARM SYSTEM OPERATIONAL MATRIX AS REFERENCED BY NFPA 72. THE MATRIX SHALL ILLUSTRATE ALL INPUT-OUTPUT EVENTS IN ASSOCIATION WITH INITIATION DEVICES. MATRIX SHALL INCLUDE SYSTEM SUPERVISORY AND TROUBLE OUTPUT FUNCTIONS.

L. THE SERVICES OF A REGISTERED PROFESSIONAL ENGINEER (PE) SHALL BE RETAINED TO REVIEW AND CERTIFY ALL DRAWINGS FOR LOCAL COMPLIANCE.

FIRE ALARM GENERAL NOTES

A. SYSTEM DESIGN, INSTALLATION AND MATERIALS SHALL BE IN ACCORDANCE WITH APPLICABLE NFPA STANDARDS. SYSTEM SHALL ALSO MEET ALL APPLICABLE BUILDING CODES, FIRE CODES, THE AUTHORITY HAVING JURISDICTION. VERIFY REQUIREMENTS PRIOR TO BID SUBMITTAL.

B. DEVICES, PANELS, AND CONDUIT TO BE PERMANENTLY IDENTIFIED WITH A UNIQUE LABEL.

C. POWER TO ALL POWER SUPPLIES AND FIRE ALARM PANELS TO BE PROVIDED FROM A DEDICATED EMERGENCY CIRCUIT PER NFPA 72.

D. FIRE ALARM CONTRACTOR TO COORDINATE WITH FIRE PROTECTION CONTRACTOR FOR THE LOCATION AND QUANTITIES OF TAMPER, PRESSURE, AND WATER FLOW SWITCHES.

E. THE NOTIFICATION APPLIANCE LOCATIONS, SPEAKER POWER TAPS, AND CANDELA RATINGS SHOWN ON THE PLANS ARE A GENERAL GUIDELINE INTENDED TO COMMUNICATE DESIGN INTENT. THE CONTRACTOR SHALL PROVIDE A QUANTITY OF APPLIANCES IN EACH ROOM WITH THE NECESSARY SPEAKER POWER TAPS AND CANDELA RATINGS TO ACHIEVE THE REQUIRED DESIGN CRITERIA. WALL OR CEILING MOUNTED APPLIANCES ARE ACCEPTABLE.

F. MAINTAIN A CLEAN, PROPER SAFE WORK ENVIRONMENT PER OSHA AND LOCAL AHJ REQUIREMENTS

G. AS NEW EQUIPMENT IS INSTALLED, LABEL IT "NOT IN SERVICE" UNTIL IT IS ACCEPTED.

H. PROTECTIVE DUST COVERS SHALL REMAIN ON ALL NEW DETECTORS UNTIL FINAL CONSTRUCTION CLEANUP IS COMPLETED.

I. PERFORM RE-ACCEPTANCE TESTING TO VERIFY THE PROPER OPERATION OF ADDED OR REPLACED DEVICES AND APPLIANCES.

J. PRIOR TO SUBMITTING BID, VISIT THE JOB SITE AND BECOME FULLY ACQUAINTED WITH THE EXISTING CONDITIONS OF THE PROJECT. REVIEW THE GENERAL NOTES, SPECIFICATIONS AND OTHER DRAWINGS FOR ADDITIONAL REQUIREMENTS WHICH MAY NOT BE SPECIFICALLY CALLED OUT IN THIS PORTION OF THE CONSTRUCTION DOCUMENTS. NOTIFY CONTRACTING OFFICER OF CONFLICTS OR DISCREPANCIES PRIOR TO SUBMISSION OF BID.

K. THE CONTRACTOR SHALL FOLLOW THE ENGINEER OF RECORD'S SYSTEM DESIGN AND LAYOUT OF ALL COMPONENTS EXCEPT WHERE MODIFICATION TO THE DESIGN IS NECESSARY. MODIFICATIONS SHALL BE REFLECTED IN THE CONTRACTOR'S SHOP DRAWINGS AND CALCULATIONS.

L. DEVIATIONS FROM ENGINEER'S DESIGN WILL NOT BE CONSIDERED UNLESS A FORMALLY SUBMITTED RFI IS RECEIVED AND APPROVED.

M. THE CONTRACTOR SHALL PROVIDE ALL EQUIPMENT AND LABOR REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM AS INDICATED IN THE DRAWINGS AND SPECIFICATIONS.

N. WHERE EXISTING SYSTEMS ARE PRESENT, CONTRACTOR SHALL MODIFY, RELOCATE AND/OR PROVIDE ADDITIONAL EQUIPMENT AS REQUIRED FOR SCOPE OF WORK AS REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM. COORDINATE WITH WALLS, CEILINGS, LIGHTS, DIFFUSERS, STRUCTURE, OBSTRUCTIONS, ETC. IN AREAS AFFECTED BY SCOPE OF WORK. NEW EQUIPMENT SHALL BE COMPATIBLE WITH EXISTING HONEYWELL SILENT KNIGHT IFP-1000. CONTRACTOR SHALL REMOVE ALL ABANDONED EQUIPMENT, COORDINATE SYSTEM MODIFICATIONS TO MINIMIZE SYSTEM IMPACTS.

COLORADO LICENSED
JAMES WHITCOMB
64076
James Whitcomb
05/28/2026
PROFESSIONAL ENGINEER

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson
Ready • Reliable • Resilient

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: J. WHITCOMB
DRAWN BY: N. CHAPA
CHECKED BY: P. TANNER
SUBMITTED BY: CITRINE-OLSSON JV
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST, FORT WORTH, TX 76102

CITRINE-OLSSON
2801 GRAND AVE
GRAND JUNCTION CO, 81501

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT
W9126G25F0273

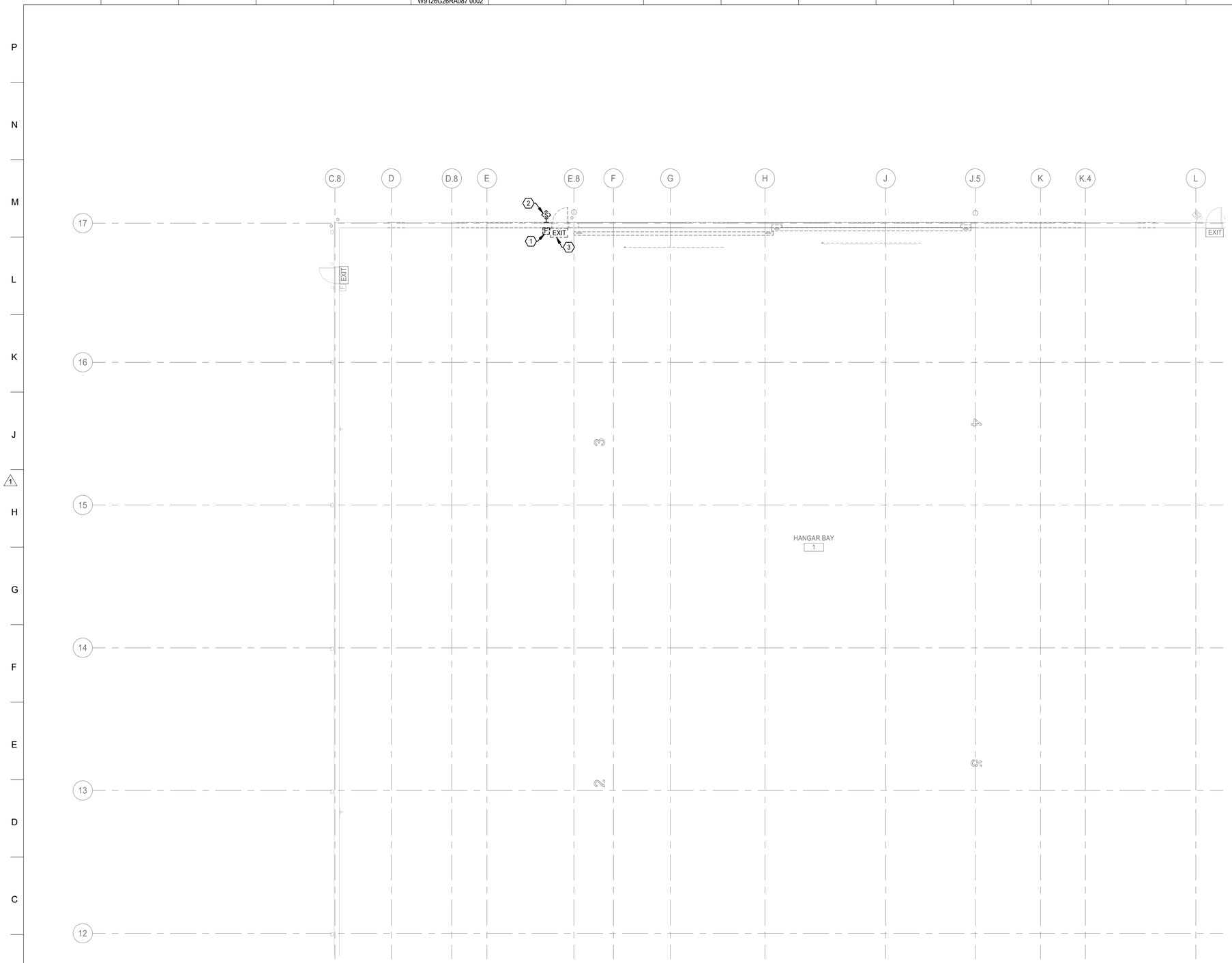
GENERAL FIRE ALARM INFORMATION

SHEET ID

FA001

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/B90176 Hangar Door Expansion - R24 - Fire.rvt
Plot Date: 7/1/2026 1:38:08 PM

W9126G26RA087-0002



1 FIRE ALARM DEMO FLOOR PLAN - HB
1" = 10'-0"

GENERAL SHEET NOTES

A. REFER TO SHEET FA001 FOR DEMOLITION GENERAL NOTES.

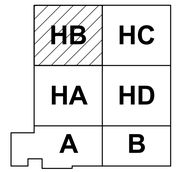
B. EXISTING FIRE ALARM NOTIFICATION AND INITIATION DEVICES THAT ARE NOT IN SCOPE ARE NOT SHOWN.

C. EXISTING DEVICES NOT SHOWN SHALL REMAIN UNLESS OTHERWISE NOTES.

SHEET KEYNOTES

1. DEMOLISH EXISTING MANUAL PULL STATION ADJACENT TO HANGAR DOOR.
2. DEMOLISH EXISTING FIRE ALARM SPEAKER DEVICE.
3. REFER TO ELECTRICAL SHEETS FOR EXIT SIGNS.

KEY PLAN



N

0 5' - 0" 10' - 0" 20' - 0"

SCALE: 0' - 1" = 10' - 0"

COLORADO LICENSED
JAMES WHITCOMB
64076
05/28/2026
PROFESSIONAL ENGINEER

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson
Ready • Reliable • Resilient

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: J. WHITCOMB
DRAWN BY: N. CHAPA
CHECKED BY: P. TUNNELL
SUBMITTED BY: CITRINE-OLSSON JV
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST., FORT WORTH, TX 76102

CITRINE-OLSSON
2801 GRAND AVE
GRAND JUNCTION CO, 81501

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT
W9126G25F0273

FIRE ALARM DEMO FLOOR PLAN - HB

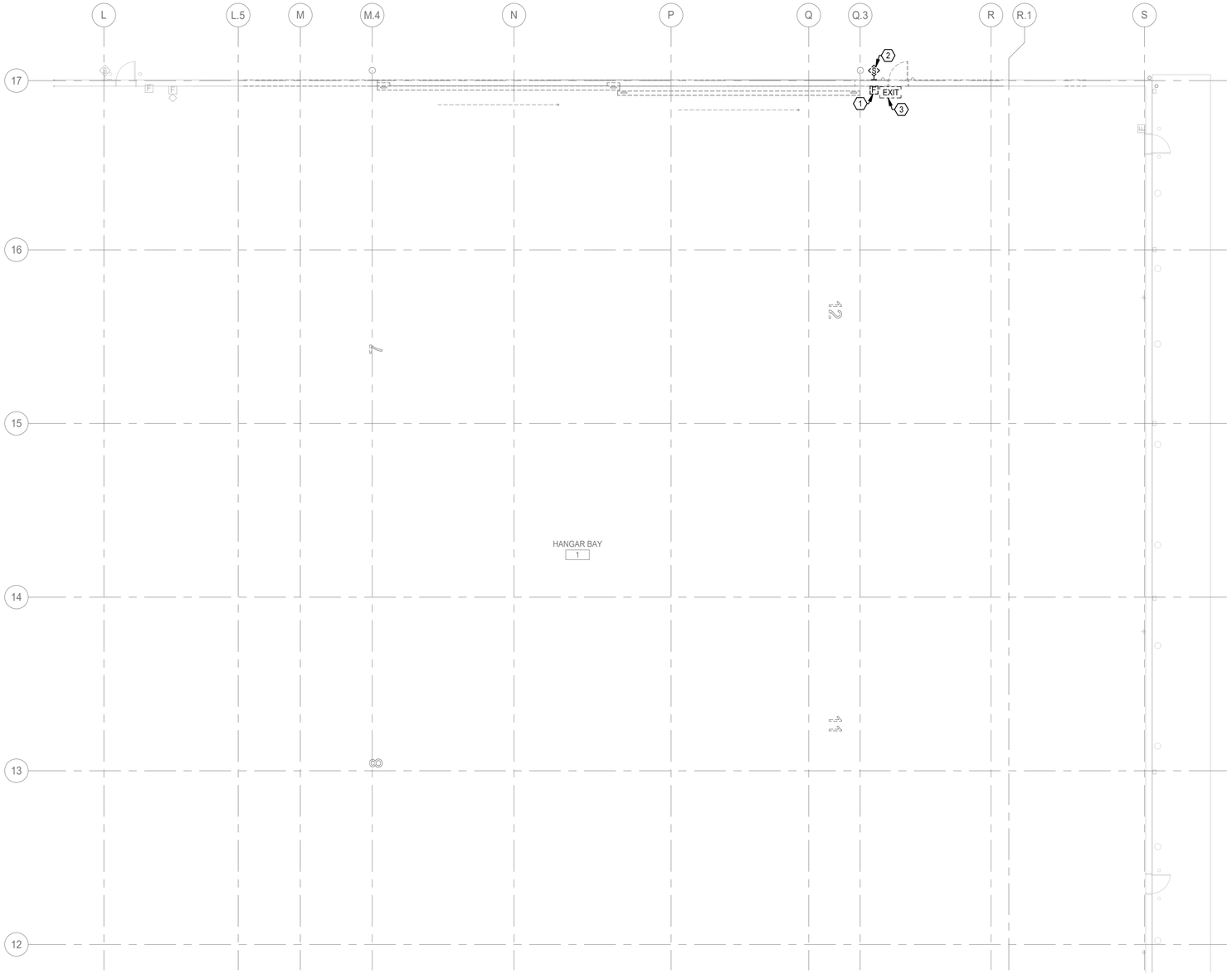
SHEET ID

FAD101

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/B90176 Hangar Door Expansion - R24 - Fire.rvt

Plot Date: 7/1/2026 1:38:08 PM

W9126G26RA087-0002



1 FIRE ALARM DEMO FLOOR PLAN - HC
1" = 10'-0"

GENERAL SHEET NOTES

A. REFER TO SHEET FA001 FOR DEMOLITION GENERAL NOTES.

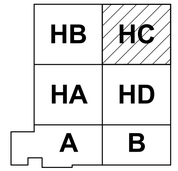
B. EXISTING FIRE ALARM NOTIFICATION AND INITIATION DEVICES THAT ARE NOT IN SCOPE ARE NOT SHOWN.

C. EXISTING DEVICES NOT SHOWN SHALL REMAIN UNLESS OTHERWISE NOTED.

(XX) SHEET KEYNOTES

1. DEMOLISH EXISTING MANUAL PULL STATION ADJACENT TO HANGAR DOOR.
2. DEMOLISH EXISTING FIRE ALARM SPEAKER DEVICE.
3. REFER TO ELECTRICAL SHEETS FOR EXIT SIGNS.

KEY PLAN



N

0 5' - 0" 10' - 0" 20' - 0"

SCALE: 0' - 1" = 10' - 0"

COLORADO LICENSED
JAMES WHITCOMB
64076
James Whitcomb
05/28/2026
PROFESSIONAL ENGINEER

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson
Ready • Reliable • Resilient

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - FI Hood/B90176 Hangar Door Expansion - R24 - Fire.rvt

Plot Date: 7/1/2026 1:38:08 PM

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: J. WHITCOMB
DRAWN BY: N. CHAPA
CHECKED BY: P. TURNER
SUBMITTED BY: CITRINE-OLSSON JV
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST, FORT WORTH, TX 76102

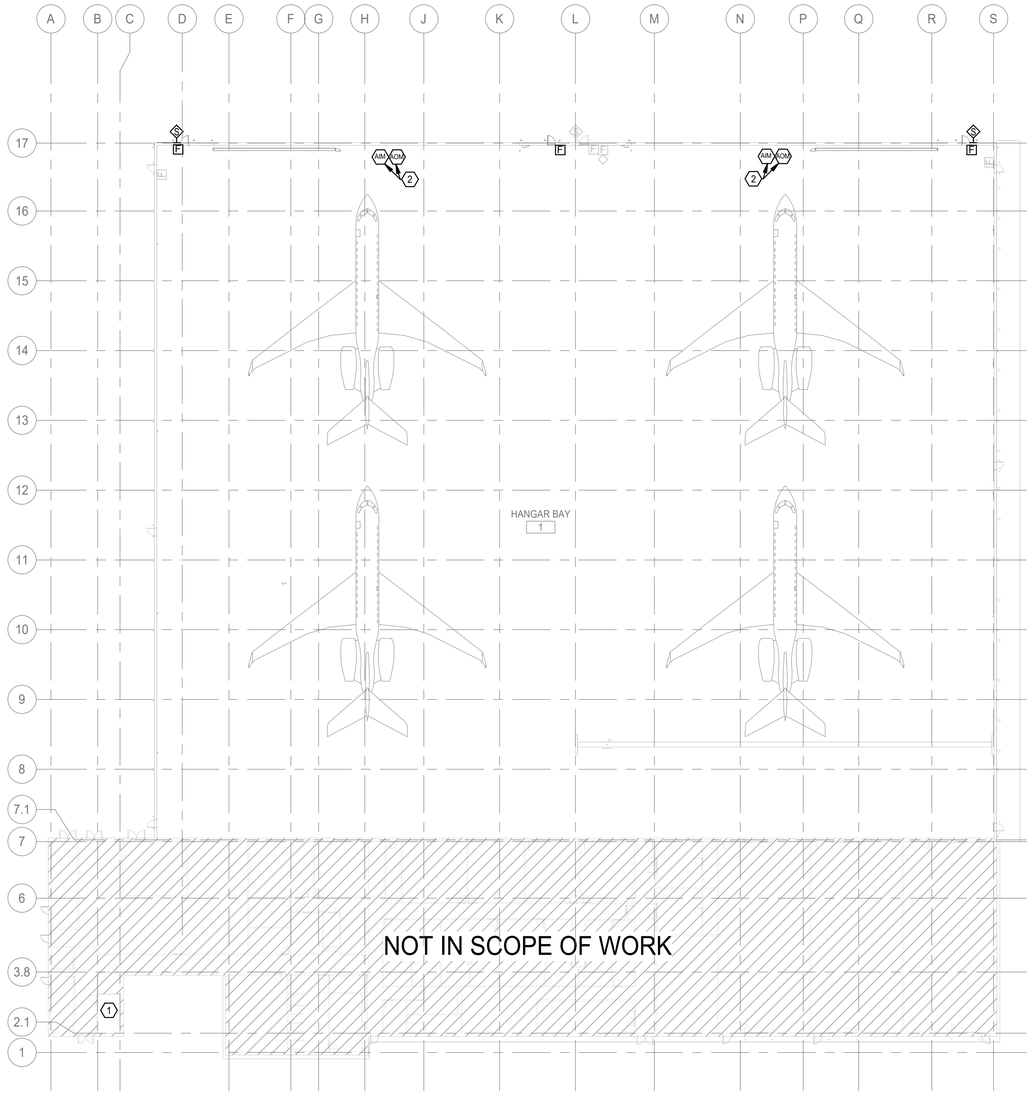
CITRINE-OLSSON
2801 GRAND AVE
GRAND JUNCTION CO, 81501

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT
W9126G25F0273

FIRE ALARM DEMO FLOOR PLAN - HC

SHEET ID

FAD102



1 FIRE ALARM FLOOR PLAN - OVERALL
1" = 30'-0"

GENERAL SHEET NOTES

A. REFER TO SHEET FA001 FOR FIRE ALARM GENERAL NOTES.

B. EXISTING FIRE ALARM NOTIFICATION AND INITIATION DEVICES THAT ARE NOT IN AREA OF SCOPE ARE NOT SHOWN.

C. EXISTING DEVICES NOT SHOWN SHALL REMAIN UNLESS OTHERWISE NOTED.

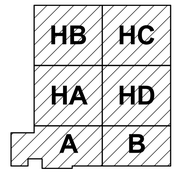
D. ALL NEW FIRE ALARM DEVICES SHALL BE COMPATIBLE WITH THE EXISTING HONEYWELL SILENT KNIGHT IFP-1000 FIRE ALARM CONTROL PANEL.

SHEET KEYNOTES

1. LOCATION OF EXISTING HONEYWELL SILENT KNIGHT FIRE ALARM CONTROL PANEL IFP-1000, WHEELOCK SAFEPATH 4 MASS NOTIFICATION CONTROL PANEL, AND ASSOCIATED EQUIPMENT TO REMAIN.

2. PROVIDE ADDRESSABLE DUAL MONITOR MODULES TO MONITOR AND CONTROL ALL NEW HANGAR BAY DOOR EQUIPMENT. NEW HANGAR DOOR SHALL CLOSE UPON HANGAR SPRINKLER WATERFLOW SWITCH ACTIVATION.

KEY PLAN



N

0 15' - 0" 30' - 0" 60' - 0"
SCALE: 0' - 1" = 30' - 0"

COLORADO LICENSED
JAMES WHITCOMB
64076
05/28/2026
PROFESSIONAL ENGINEER

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson
Ready • Reliable • Resilient

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - FI Hood/B90176 Hangar Door Expansion - R24 - Fire.rvt

Plot Date: 7/1/2026 1:38:08 PM

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: J. WHITCOMB
DRAWN BY: N. CHAPA
CHECKED BY: P. TURNER
SUBMITTED BY: CITRINE-OLSSON JV
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST, FORT WORTH, TX 76102

CITRINE-OLSSON
2801 GRAND AVE
GRAND JUNCTION CO, 81501

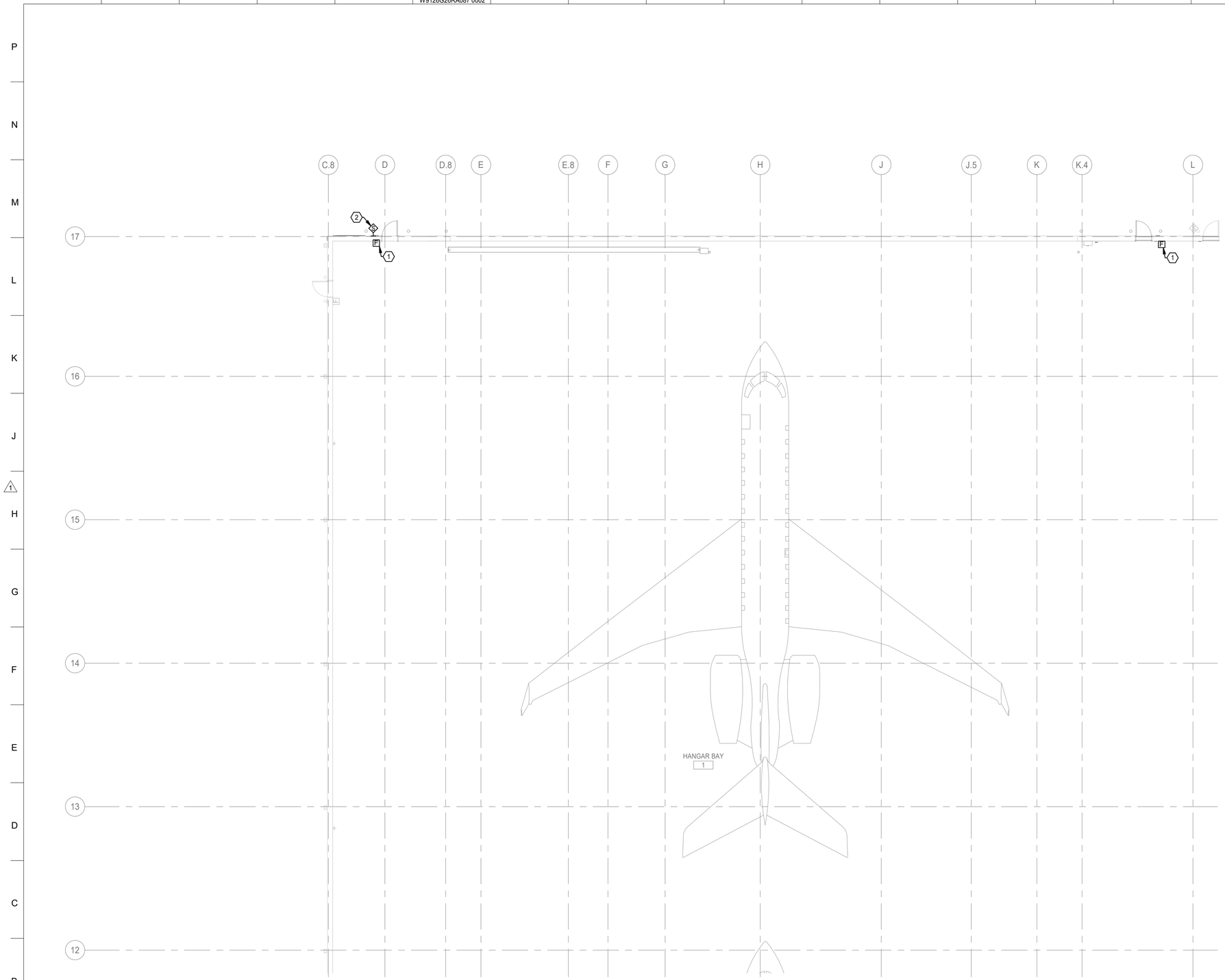
FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT
W9126G25F0273

FIRE ALARM FLOOR PLAN - OVERALL

SHEET ID

FA101

W9126G26RA087-0002



1 FIRE ALARM FLOOR PLAN - HB
1" = 10'-0"

GENERAL SHEET NOTES

A. REFER TO SHEET FA001 FOR FIRE ALARM GENERAL NOTES.

B. EXISTING FIRE ALARM NOTIFICATION AND INITIATION DEVICES THAT ARE NOT IN AREA OF SCOPE ARE NOT SHOWN.

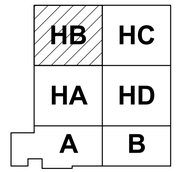
C. EXISTING DEVICES NOT SHOWN SHALL REMAIN UNLESS OTHERWISE NOTED.

D. ALL NEW FIRE ALARM DEVICES SHALL BE COMPATIBLE WITH THE EXISTING HONEYWELL SILENT KNIGHT IFP-1000 FIRE ALARM/ MASS NOTIFICATION CONTROL PANEL.

(XX) SHEET KEYNOTES

1. PROVIDE NEW DOUBLE-ACTION MANUAL PULL STATIONS AT NEW EXIT DOOR IN ACCORDANCE WITH UFC 3-600-01 SECTION 9-18.7.4.2.
2. PROVIDE NEW FIRE ALARM/MASS NOTIFICATION WEATHERPROOF SPEAKER IN ACCORDANCE WITH UFC 4-021-01 SECTION 5-7.1.

KEY PLAN



N

0 5' - 0" 10' - 0" 20' - 0"
SCALE: 0' - 1" = 10' - 0"

COLORADO LICENSED
JAMES WHITCOMB
64076
05/28/2026
PROFESSIONAL ENGINEER

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson
Ready • Reliable • Resilient

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: J. WHITCOMB
DRAWN BY: N. CHAPA
CHECKED BY: P. TURNER
SUBMITTED BY: CITRINE-OLSSON JV
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST., FORT WORTH, TX 76102

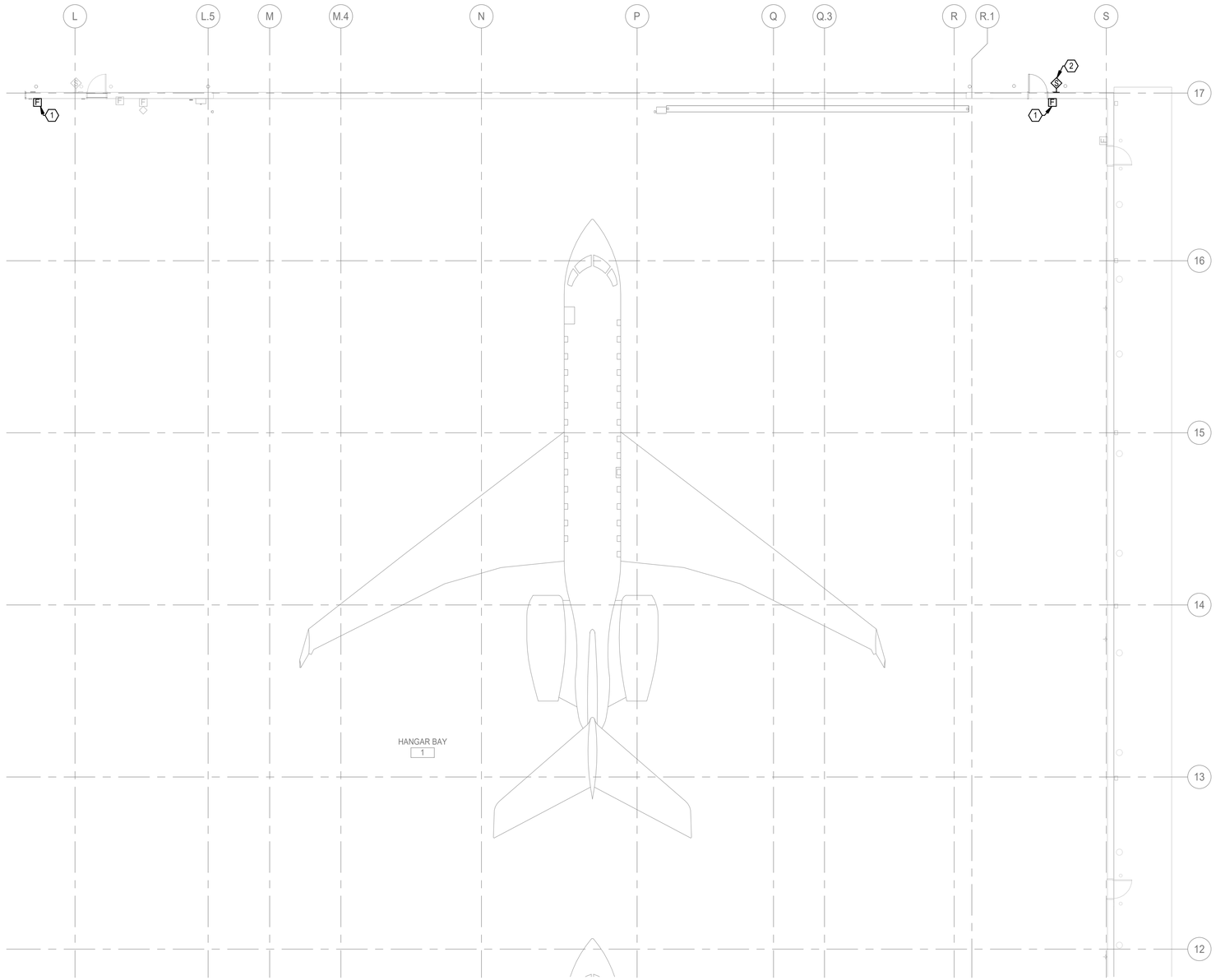
CITRINE-OLSSON
2801 GRAND AVE
GRAND JUNCTION CO, 81501

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT
W9126G25F0273

FIRE ALARM FLOOR PLAN - HB

SHEET ID
FA102

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/B90176 Hangar Door Expansion - R24 - Fire.rvt
Plot Date: 7/1/2026 1:38:08 PM



1 FIRE ALARM FLOOR PLAN - HC
1" = 10'-0"

GENERAL SHEET NOTES

A. REFER TO SHEET FA001 FOR FIRE ALARM GENERAL NOTES.

B. EXISTING FIRE ALARM NOTIFICATION AND INITIATION DEVICES THAT ARE NOT IN AREA OF SCOPE ARE NOT SHOWN.

C. EXISTING DEVICES NOT SHOWN SHALL REMAIN UNLESS OTHERWISE NOTED.

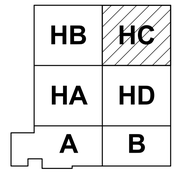
D. ALL NEW FIRE ALARM DEVICES SHALL BE COMPATIBLE WITH THE EXISTING HONEYWELL SILENT KNIGHT IFP-1000 FIRE ALARM/ MASS NOTIFICATION CONTROL PANEL.

SHEET KEYNOTES

1. PROVIDE NEW DOUBLE-ACTION MANUAL PULL STATIONS AT NEW EXIT DOOR IN ACCORDANCE WITH UFC 3-600-01 SECTION 9-18.7.4.2.

2. PROVIDE NEW FIRE ALARM/MASS NOTIFICATION WEATHERPROOF SPEAKER IN ACCORDANCE WITH 4-021-01 SECTION 5-7.1.

KEY PLAN



N

0 5' - 0" 10' - 0" 20' - 0"

SCALE: 0' - 1" = 10' - 0"

COLORADO LICENSED
JAMES WHITCOMB
64076
05/28/2026
PROFESSIONAL ENGINEER

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson
Ready • Reliable • Resilient

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: J. WHITCOMB	SUBMITTED BY: CITRINE-OLSSON JV
DRAWN BY: N. CHAPA	SIZE: ANSI D
CHECKED BY: P. TURNER	

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST., FORT WORTH, TX 76102

CITRINE-OLSSON
2801 GRAND AVE
GRAND JUNCTION CO, 81501

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT
W9126G25F0273

FIRE ALARM FLOOR PLAN - HC

SHEET ID

FA103

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/B90176 Hangar Door Expansion - R24 - Fire.rvt

Plot Date: 7/1/2026 1:38:09 PM

W9126G26RA087-0002

FIRE PROTECTION SHEET LIST

SHEET NO.	SHEET NAME
FP001	GENERAL FIRE PROTECTION INFORMATION
FP101	FIRE PROTECTION FLOOR PLAN - OVERALL

DEMOLITION GENERAL NOTES

A. COORDINATE ALL DEMOLITION WITH WHAT IS SHOWN ON ARCHITECTURAL PLANS. NOTIFY CONTRACTING OFFICER OF ANY DISCREPANCIES.

B. COORDINATE NEW WORK AND DEMOLITION WITH OTHER DISCIPLINES AND EXISTING CONDITIONS PRIOR TO CONSTRUCTION.

C. PRIOR TO SUBMITTING BID, VISIT THE JOB SITE AND BECOME FULLY ACQUAINTED WITH THE EXISTING CONDITIONS OF THE PROJECT. REVIEW GENERAL NOTES, SPECIFICATIONS AND OTHER DRAWINGS FOR ADDITIONAL REQUIREMENTS THAT MAY NOT BE SPECIFICALLY CALLED OUT IN THIS PORTION OF THE CONSTRUCTION DOCUMENTS. NOTIFY CONTRACTING OFFICER AS DEFINED IN BID DOCUMENTS, OF CONFLICTS OR DISCREPANCIES PRIOR TO SUBMISSION OF BID ADDITIONAL COMPENSATION WILL NOT BE PAID FOR LACK OF SUCH DETERMINATION, FAMILIARIZATION AND/OR ALLOWANCE.

D. EXISTING CONDITIONS WERE TAKEN FROM ORIGINAL DRAWINGS AND SITE VISITS AND MAY NOT REFLECT EXACT "AS-BUILT" CONDITIONS. FIELD VERIFY EXISTING CONDITIONS PRIOR TO SUBMITTING FINAL BIDS. COORDINATE NEW WORK AND DEMOLITION WITH OTHER DISCIPLINES AND EXISTING CONDITIONS PRIOR TO CONSTRUCTION.

E. OWNER RETAINS RIGHTS OF SALVAGE FOR EQUIPMENT AND FIXTURES TO BE REMOVED. COORDINATE WITH THE OWNER THE EQUIPMENT AND FIXTURES TO BE SALVAGED AND THE LOCATION FOR STORAGE. AVOID DAMAGE TO EQUIPMENT DURING DEMOLITION WORK AND DURING TRANSPORT TO CONTRACTING OFFICER DESIGNATED STORAGE LOCATION. PROPERLY DISPOSE OF MATERIALS THAT ARE REMOVED AND ARE NOT REQUESTED TO BE SALVAGED BY THE OWNER.

F. EQUIPMENT TO BE REMOVED SHALL BE KEPT FOR REINSTALLATION DURING THE CONSTRUCTION PHASE WHEN POSSIBLE AND/OR INDICATED ON THE DRAWINGS. AVOID DAMAGING EXISTING SURFACES AND EQUIPMENT TO REMAIN FOR NEW INSTALLATION. REPAIR ANY DAMAGE CAUSED DURING WORK AT NO EXTRA COST TO THE GOVERNMENT.

G. SEAL PENETRATIONS THROUGH FLOORS, WALLS, CEILINGS AND ROOFS WHERE COMPONENTS ARE REMOVED AND WHERE THE EXISTING PENETRATION IS NOT USED FOR THE NEW INSTALLATION. REPAIR DAMAGED SURFACES TO MATCH ADJACENT AREAS OR AS INDICATED ON THE ARCHITECTURAL DRAWINGS.

H. PERFORM ALL WORK ACCORDING TO THE PHASING SCHEDULE FOR THIS PROJECT. PROVIDE ALL TEMPORARY DESIGN AND/OR CONFIGURATIONS THAT MEET APPLICABLE CODE REQUIREMENTS AS NECESSARY TO CONFORM TO THE REQUIRED CONSTRUCTION PHASING OF THE PROJECT.

I. ONLY THE PORTIONS OF THE BUILDING AFFECTED BY THE SCOPE OF THE PROJECT HAVE BEEN SHOWN. INFORMATION SHOWN AS EXISTING TO REMAIN IS NOT BEING MODIFIED AS A PART OF THIS PROJECT.

J. ALL WORK SHALL BE PERFORMED SO AS TO NOT INTERRUPT SERVICE. THE CONTRACTOR SHALL PROPERLY NOTIFY THE CONTRACTING OFFICER PER SPECIFICATIONS.

K. REMOVE ALL UNUSED AND DEMOLISHED EQUIPMENT AND ASSOCIATED MATERIALS FROM SITE. ABANDONING UNUSED PORTIONS WILL NOT BE ACCEPTABLE.

L. SYSTEM(S) NOT ASSOCIATED WITH THE DEMOLITION SHALL BE LEFT IN SERVICE AS APPLICABLE.

M. INSPECT EXISTING EQUIPMENT TO REMAIN TO VERIFY THAT EQUIPMENT IS OPERATING PROPERLY. NOTIFY CONTRACTING OFFICER OF DAMAGED AND/OR MALFUNCTIONING COMPONENTS.

N. ALL SYSTEMS TO BE LEFT IN SERVICE PRIOR TO THE END OF EACH WORKDAY.

O. REMOVE ITEMS SHOWN HEAVY LINED AND/OR CROSSHATCHED AND/OR NOTED TO BE REMOVED.

FIRE PROTECTION GENERAL NOTES

A. MODIFY THE EXISTING FIRE SUPPRESSION SYSTEM FOR THE NEW CATWALKS BEING ADDED IN ACCORDANCE WITH NFPA 13 AND UFC 3-600-01.

B. PRIOR TO SUBMITTING BID, VISIT THE JOB SITE AND BECOME FULLY ACQUAINTED WITH THE EXISTING CONDITIONS OF THE PROJECT. REVIEW THE GENERAL NOTES, SPECIFICATIONS AND OTHER DRAWINGS FOR ADDITIONAL REQUIREMENTS WHICH MAY NOT BE SPECIFICALLY CALLED OUT IN THIS PORTION OF THE CONSTRUCTION DOCUMENTS. NOTIFY CONTRACTING OFFICER OF CONFLICTS OR DISCREPANCIES PRIOR TO SUBMISSION OF BID.

C. SYSTEM DESIGN, INSTALLATION AND MATERIALS SHALL BE IN ACCORDANCE WITH APPLICABLE NFPA STANDARDS. SYSTEM SHALL ALSO MEET ALL APPLICABLE BUILDING CODES, FIRE CODES AND THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.

D. INFORMATION ON CONTRACT DOCUMENTS IS GENERAL INFORMATION AND FOR BID PURPOSES ONLY. CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE FINAL SYSTEM DESIGN AND LAYOUT OF ALL COMPONENTS, COORDINATION WITH ALL OTHER TRADES, AND SYSTEM CALCULATIONS REQUIRED FOR APPROVAL BY THE AUTHORITY HAVING JURISDICTION, AND ENGINEER.

E. THE CONTRACTOR SHALL FOLLOW THE ENGINEER OF RECORD'S SYSTEM DESIGN AND LAYOUT OF ALL COMPONENTS EXCEPT WHERE MODIFICATION TO THE DESIGN IS NECESSARY. MODIFICATIONS SHALL BE REFLECTED IN THE CONTRACTOR'S SHOP DRAWINGS AND CALCULATIONS.

F. DEVIATIONS FROM ENGINEER'S DESIGN WILL NOT BE CONSIDERED UNLESS A FORMALLY SUBMITTED RFI IS RECEIVED AND APPROVED.

G. THE CONTRACTOR SHALL PROVIDE ALL EQUIPMENT AND LABOR REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM AS INDICATED IN THE DRAWINGS AND SPECIFICATIONS.

H. PROVIDE ADDITIONAL MATERIALS AND LABOR REQUIRED DUE TO LACK OF COORDINATION OR TO MEET CONTRACTING OFFICER REQUIREMENTS AT NO ADDITIONAL COST TO THE GOVERNMENT.

I. FORWARD COMPLETED CERTIFICATE OF COMPLETION AND CONTRACTOR MATERIAL TEST CERTIFICATES TO THE CONTRACTING OFFICER. COORDINATE WORK WITH ALL OTHER TRADES.

J. PROVIDE 100% FIRE SPRINKLER COVERAGE THROUGHOUT BUILDING AREA INDICATED ON CONTRACT DOCUMENTS. FIRE SPRINKLER PIPING SHALL BE DESIGNED IN ACCORDANCE WITH LOCAL BUILDING CODES, AND NFPA 13.

K. REFERENCE ARCHITECTURAL REFLECTED CEILING PLAN FOR CEILING DETAILS. CONTRACTOR SHALL DETERMINE LOCATION, CENTER IN CEILING TILES IN LAY-IN CEILING AREAS, ALIGN WITH LIGHTS AND OTHER CEILING ELEMENTS IN HARD CEILING AREAS. COORDINATE EXACT LOCATION WITH CONTRACTING OFFICER DURING SHOP DRAWING SUBMITTAL PROCESS.

L. WHERE NOT SHOWN, PIPING LAYOUT AND SIZE SHALL BE DETERMINED BY FIRE PROTECTION CONTRACTOR.

M. SHOW ALL DUCTWORK AND OTHER OBSTRUCTIONS IN ROOMS THAT ARE WITHOUT CEILINGS ON SHOP DRAWINGS. PROVIDE COVERAGE AROUND AND UNDER ALL OBSTRUCTIONS AS REQUIRED BY NFPA 13 INCLUDING BUT NOT LIMITED TO COVERAGE UNDER DUCTWORK AND/OR OBSTRUCTIONS WIDER THAN 48". SPRINKLERS THAT ARE BELOW 7'-0" SHALL BE PROVIDED WITH WIRE CAGE GUARDS.

N. CONTRACTOR SHALL VERIFY LOCATION OF ANY EQUIPMENT, PIPING, CONDUIT, CABLE TRAY, STRUCTURAL MEMBERS, ETC. THAT MAY CONFLICT WITH ROUTING OF FIRE PROTECTION PIPING PRIOR TO COMMENCEMENT OF WORK. CONTRACTOR SHALL SUBMIT REPORT OF CONFLICT DIRECTLY TO ENGINEER.

O. NOTIFY AND COORDINATE WITH OWNERS REPRESENTATIVE PRIOR TO SHUT-DOWN OF ANY FIRE PROTECTION UTILITY. SHUT DOWN TIME TO BE MINIMUM. NOTIFICATION SHALL BE IN WRITING A MINIMUM OF 48 HOURS PRIOR TO SHUT DOWN.

P. THE FIRE SUPPRESSION SYSTEM, AS SHOWN ON THE CONTRACT DOCUMENTS, IS SCHEMATIC IN NATURE AND INDICATES THE AREAS TO BE COVERED BY THE SUPPRESSION SYSTEMS.

Q. FIRE SPRINKLER CONTRACTOR TO COORDINATE WITH STRUCTURAL ENGINEER FOR HANGING REQUIREMENTS.

R. REFER TO THE FIRE PROTECTION SPECIFICATIONS FOR THE FULL REQUIREMENTS OF THIS SECTION. WHEN A CONFLICT BETWEEN THE SPECIFICATIONS AND THE DRAWING OCCURS, THE REQUIREMENTS IN THE SPECIFICATIONS SHALL PREVAIL.

S. WHERE SPRINKLER HEADS ARE INSTALLED IN TILED CEILINGS, ALL HEADS SHALL BE LOCATED ON THE CENTER OR QUARTER POINTS OF THE CEILING TILE.

T. PROVIDE AND INSTALL DRAIN VALVES AT ALL LOW POINTS ON THE SPRINKLER PIPING SYSTEM PER NFPA 13 TO PROVIDE FOR COMPLETE SYSTEM DRAINAGE.

U. ALL SPRINKLER HEAD TEMPERATURE RATINGS SHALL BE COORDINATED FOR THE INTENDED USE OF EACH ROOM/AREA IN WHICH THE SPRINKLER HEAD(S) ARE LOCATED.

V. ALL NEW SYSTEM VALVES SHALL BE ACCESSIBLE AND A MAXIMUM OF 7 FEET A.F.F. WITH THE EXCEPTION OF AUXILIARY DRAINS.

W. ALL DRAINS AND INSPECTOR'S TEST CONNECTIONS SHALL BE PIPED TO THE EXTERIOR UNLESS NOTED OTHERWISE.

COLORADO LICENSED
JAMES WHITCOMB
64076
05/28/2026
PROFESSIONAL ENGINEER

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson
Ready • Reliable • Resilient

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/B90176 Hangar Door Expansion - R24 - Fire.rvt

Plot Date: 7/1/2026 1:38:09 PM

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: J. WHITCOMB
DRAWN BY: N. CHAPA
CHECKED BY: A. TURNER
SUBMITTED BY: CITRINE-OLSSON JV
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST., FORT WORTH, TX 76102

CITRINE-OLSSON
2801 GRAND AVE
GRAND JUNCTION CO, 81501

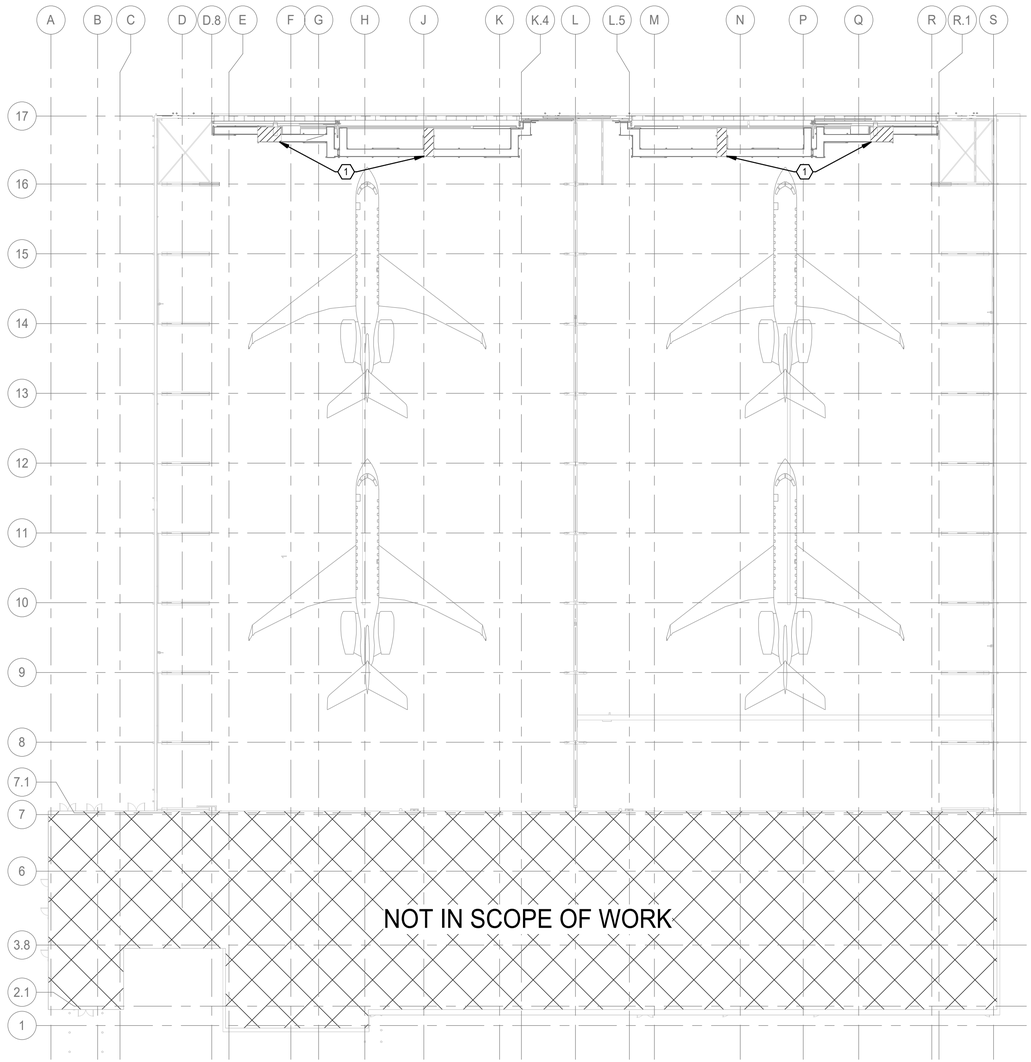
FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT
W9126G25F0273

GENERAL FIRE PROTECTION INFORMATION

SHEET ID

FP001

W9126G26RA087-0002



1 FIRE PROTECTION FLOOR PLAN - OVERALL
1" = 30'-0"

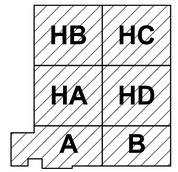
GENERAL SHEET NOTES

A. REFER TO SHEET FP001 FOR FIRE PROTECTION GENERAL NOTES.

SHEET KEYNOTES

1. PROVIDE SPRINKLER COVERAGE BELOW NEW CATWALK OBSTRUCTIONS OVER 4 FT WIDE IN ACCORDANCE WITH NFPA 13. SPRINKLERS SHALL BE SHIELDED FROM THE DISCHARGE OF OVERHEAD SPRINKLERS PER NFPA 13 SECTION 9.5.5.3.3.4.

KEY PLAN



0 15' - 0" 30' - 0" 60' - 0"

SCALE: 0' - 1" = 30' - 0"

COLORADO LICENSED
JAMES WHITCOMB
64076
James Whitcomb
05/28/2026
PROFESSIONAL ENGINEER

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson
Ready • Reliable • Resilient

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - FS Hood/B90176 Hangar Door Expansion - R24 - Fire.rvt

Plot Date: 7/1/2026 1:38:10 PM

DESIGNED BY:	J. WHITCOMB
DRAWN BY:	N. CHAPA
CHECKED BY:	P. LUNDE
ISSUE DATE:	MAY 28, 2026
SOLICITATION NO.:	W9126G26RA087
CONTRACT NO.:	
SUBMITTED BY:	CITRINE-OLSSON JV
SIZE:	ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST, FORT WORTH, TX 76102

CITRINE-OLSSON
2801 GRAND AVE
GRAND JUNCTION CO, 81501

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT
W9126G25F0273

FIRE PROTECTION FLOOR PLAN - OVERALL

SHEET ID

FP101

GENERAL ABBREVIATIONS

A
AFF - ABOVE FINISHED FLOOR
ALT - ALTERNATE
AP - ACCESS PANEL

B
BOP - BOTTOM OF PIPE ELEV.

C
CA - COMBUSTION AIR
CAV - CONSTANT AIR VOLUME
CFM - CUBIC FEET PER MINUTE
CL - CENTERLINE
CLG - CEILING
COND - CONDENSATE/CONDENSER
CONN - CONNECTION/CONNECT
COP - CENTER OF PIPE

D
DB - DRY BULB TEMPERATURE
DDC - DIRECT DIGITAL CONTROL
DTC - DATA TERMINAL CABINET

E
EL - ELEVATION
EMCS - ENERGY MONITORING AND CONTROL SYSTEM
ESP - EXTERNAL STATIC PRESSURE
EWT - ENTERING WATER TEMP.

F
FA - FIELD ADJUSTABLE
FC - FAIL CLOSED
FD - FLOOR DRAIN
FID - FIELD INTERFACE DEVICE
FLA - FULL LOAD AMPS
FO - FAIL OPEN

G
GA - GAUGE

H
HD - HUB DRAIN

I
IE - INVERT ELEVATION

K
kW - KILOWATTS

L
LWT - LEAVING WATER TEMP.

N
NA - NOT APPLICABLE
NC - NORMALLY CLOSED
NIC - NOT IN CONTRACT
NO - NORMALLY OPEN
NPS - NOMINAL PIPE SIZE
NPT - NATIONAL PIPE THREAD
NTS - NOT TO SCALE

O
OC - ON CENTER
OED - OPEN END DUCT
OV - OUTLET VELOCITY

P
Pa - PASCALS
PaA - PASCALS ABSOLUTE
PaG - PASCALS GAUGE
PD - PRESSURE DROP

R
RA - RETURN AIR
RPM - REVOLUTIONS PER MINUTE

S
SOG - SLAB ON GRADE
SP - STATIC PRESSURE
SV - SUPPLY VALVE

T
TOP - TOP OF PIPE ELEVATION
TOS - TOP OF SLAB/ TOP OF STEEL
TSP - TOTAL STATIC PRESSURE

V
VP - VELOCITY PRESSURE
VTR - VENT THRU ROOF

W
W - WATTS
WB - WET BULB
WC - WATER COLUMN
WG - WATER GAUGE

PIPING SYMBOLS

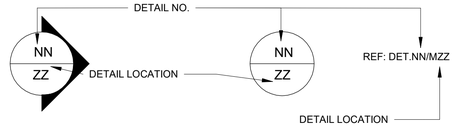
- CONTINUATION
- DROP IN PIPE
- VALVE IN RISER
- ELBOW
- ELBOW UP
- ELBOW DOWN
- TEE
- UNION
- UNION, FLANGED
- TOP CONNECTION
- BOTTOM CONNECTION
- PIPE PITCH
- VTR — VENT THRU ROOF
- CONCENTRIC REDUCER
- ECCENTRIC REDUCER
- PRV — PRESSURE RELIEF
- PRESSURE REDUCING VALVE
- TPRV — TEMP & PRESS RELIEF
- ANCHOR
- BALL JOINT
- EXPANSION LOOP
- GUIDE
- EXPANSION JOINT
- FLEXIBLE CONNECTOR
- PRESSURE/TEMPERATURE TEST PORT)
- NFWH — NON-FREEZING WALL HYDRANT

- FLOOR DRAIN WITH TRAP
- FD / CO — FLOOR DRAIN WITH CLEANOUT
- FLOOR SINK WITH HALF GRATE
- FLOOR SINK WITH FULL GRATE
- DIRECTION OF FLOW
- FLOOR PENETRATION
- WH — WALL HYDRANT
- WCO — WALL CLEANOUT
- HB — HOSE BIB
- WATER HAMMER ARRESTOR/ACCESS
- THERMOMETER
- THERMOMETER WELL
- STRAINER W/BLOW-OFF AND HOSE CONNECTION
- PRESSURE GAUGE WITH COCK
- PS — PRESSURE SWITCH
- FS — FLOW SWITCH
- AV — AIR VENT, AUTOMATIC
- AIR VENT, MANUAL
- AS — AIR SEPARATOR
- FLOW METER, ORIFICE
- PETE'S PLUG

VALVES

- BALL VALVE
- GLOBE VALVE
- GATE VALVE
- CHECK VALVE
- PLUG VALVE
- SOLENOID VALVE
- CALIBRATED BALANCING VALVE
- AUTOMATIC BALANCING VALVE
- BUTTERFLY VALVE
- MODULATING TWO-WAY
- S — SOLENOID TWO-WAY
- THREE-WAY

REFERENCE SYMBOLOGY



PIPING SYSTEMS

- DOMESTIC COLD WATER
- DOMESTIC HOT WATER
- DOMESTIC HOT WATER RETURN
- SS — SANITARY SEWER
- V — VENT
- NG — NATURAL GAS
- A — COMPRESSED AIR
- F — FIRE PROTECTION
- NPW — NON-POTABLE WATER (PURPLE PIPE) PIPES SHALL BE MARKED WITH "NONPOTABLE WATER, DO NOT DRINK"
- CHS — CHILLED WATER SUPPLY
- CHR — CHILLED WATER RETURN
- HWS — HEATING WATER SUPPLY
- HWR — HEATING WATER RETURN
- CD — CONDENSATE DRAIN
- CWS — CONDENSER WATER SUPPLY
- CWR — CONDENSER WATER RETURN
- RS — REFRIGERANT SUCTION
- RL — REFRIGERANT LIQUID
- RD — ROOF DRAIN

GENERAL NOTES

A. REFER TO SPECIFICATIONS FOR MATERIALS AND METHODS OF CONSTRUCTION.

B. OVERHEAD PLUMBING EQUIPMENT AND SYSTEMS SHALL BE SUPPORTED TO MEET ANTI-TERRORISM/FORCE PROTECTION MEASURES OF UFC 4-010-01 AS REQUIRED BY CODE.

C. ALL FLOOR MOUNTED EQUIPMENT IN MECHANICAL ROOM SHALL BE MOUNTED ON 6" HIGH HOUSEKEEPING PADS. THESE PADS SHALL EXTEND 6" BEYOND THE FOOTPRINT OF THE EQUIPMENT IN ALL DIRECTIONS.

D. WHERE PIPE SIZES ARE NOT INDICATED, THEY SHALL BE IN ACCORDANCE WITH THE INTERNATIONAL PLUMBING CODE (LATEST EDITION). DOMESTIC COLD WATER PIPING SHALL BE LIMITED TO 5 FPS. DOMESTIC HOT WATER PIPING SHALL BE LIMITED TO 4 FPS.

E. DRAWINGS ARE SCHEMATIC AND ARE TO SHOW DESIGN INTENT, AND IT ISTHE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE PLACEMENTS.

F. COORDINATE WITH ALL OTHER DISCIPLINES PRIOR TO DEMOLITION AND CONSTRUCTION.

MAY 28, 2026

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/B90176 Hangar Door Expansion - RDA - Plumbing.rvt

Plot Date: 7/1/2026 12:18:40 PM

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: JPF
DRAWN BY: JPF
CHECKED BY: SRR
SUBMITTED BY: CITRINE-OLSSON JV
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST, FORT WORTH, TX 76102

CITRINE-OLSSON
2851 GRAND AVE
GRAND JUNCTION CO, 81501

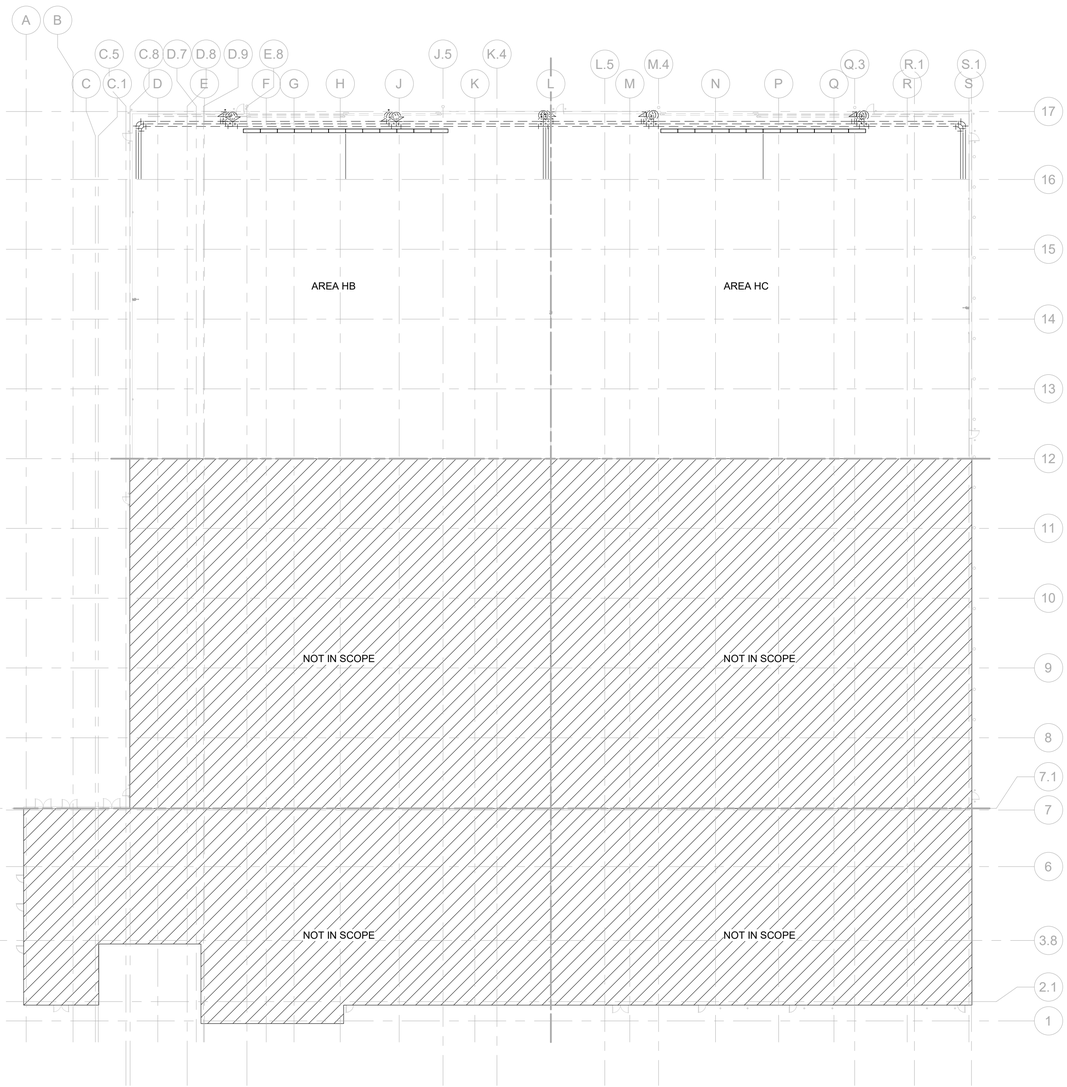
FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT

PLUMBING LEGEND

SHEET ID

P-001

W9126G26RA087-0002



A1 FIRST FLOOR DEMOLTION PLAN - PLUMBING
1" = 30'-0"

PLUMBING GENERAL NOTES

A EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

B VERIFY ALL EQUIPMENT CONFIGURATION REQUIREMENTS BEFORE INSTALLATION.

C ALL ROOF AND WALL PENETRATIONS SHALL BE FLASHED AND COUNTERFLASHED AS REQUIRED TO BE WATERTIGHT.

D REFER TO SPECIFICATIONS FOR MATERIALS AND METHODS OF CONSTRUCTION.

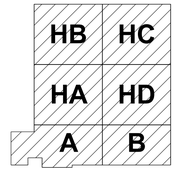
E

F WHERE PIPE SIZES ARE NOT INDICATED, THEY SHALL BE IN ACCORDANCE WITH THE INTERNATIONAL PLUMBING CODE (LATEST EDITION). DOMESTIC COLD WATER PIPING SHALL BE LIMITED TO 5 FPS. DOMESTIC HOT WATER PIPING SHALL BE LIMITED TO 4 FPS.

G DRAWINGS ARE SCHEMATIC AND ARE TO SHOW DESIGN INTENT, AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE PLACEMENTS.

H COORDINATE WITH ALL OTHER DISCIPLINES PRIOR TO DEMOLITION AND CONSTRUCTION.

KEY PLAN



PLAN NORTH

0 180" 360" 720"

SCALE: 1" = 360"

STATE OF TEXAS
SHANNON RASMUSSEN
132019
LICENSED
PROFESSIONAL ENGINEER

MAY 28, 2026

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/B90176 Hangar Door Expansion - R24 - Plumbing.rvt

Plot Date: 7/1/2026 12:18:45 PM

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: JPF
DRAWN BY: JPF
CHECKED BY: SRR

SUBMITTED BY: CITRINE-OLSSON JV
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST., FORT WORTH, TX 76102

CITRINE-OLSSON
2801 GRAND AVE
GRAND JUNCTION CO, 81501

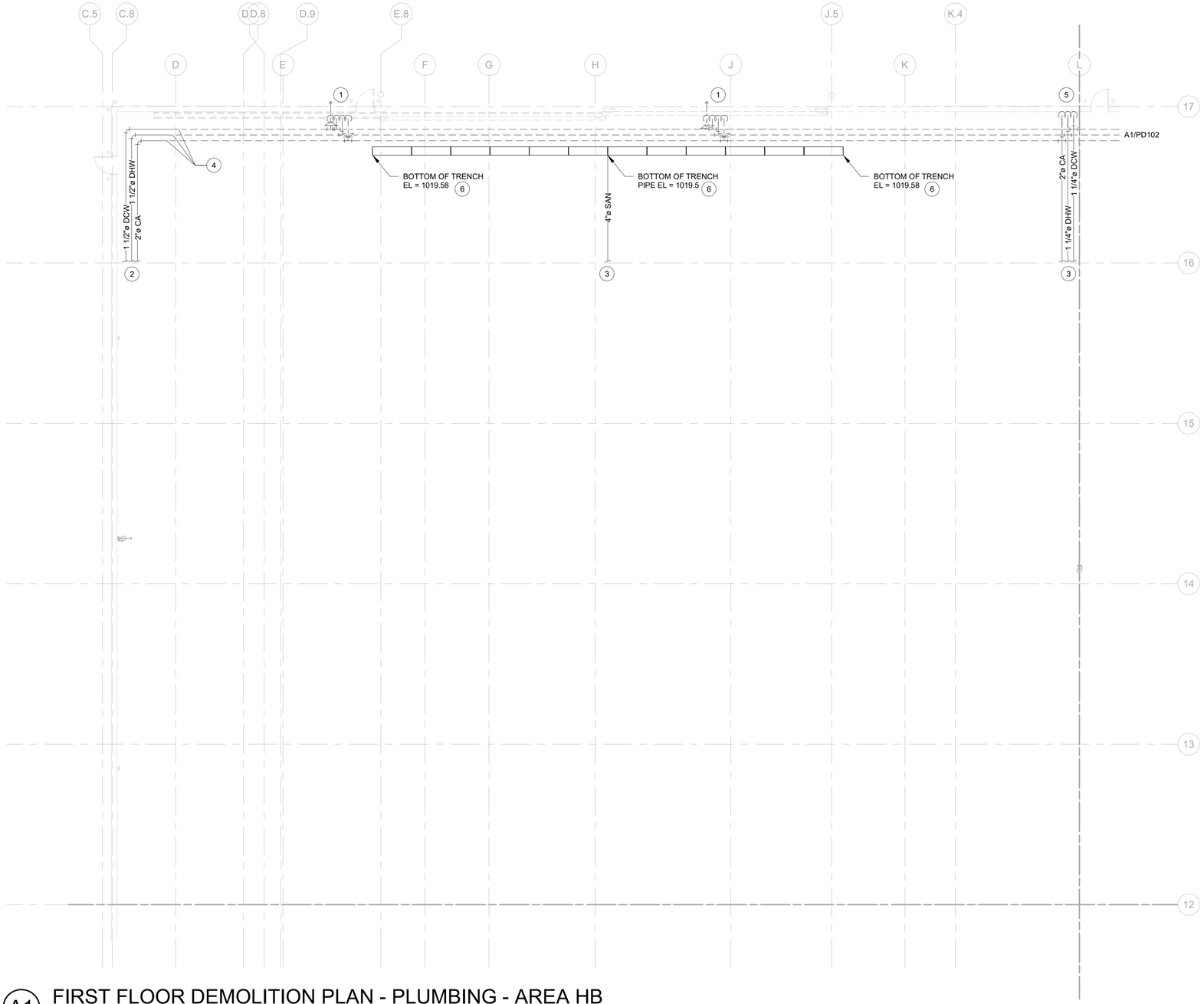
FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT

DEMOLITION PLAN - PLUMBING - OVERALL

SHEET ID

PD100

W9126G26RA087-0002



A1 FIRST FLOOR DEMOLITION PLAN - PLUMBING - AREA HB
1" = 10'-0"

PLUMBING GENERAL NOTES

A EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

B VERIFY ALL EQUIPMENT CONFIGURATION REQUIREMENTS BEFORE INSTALLATION.

C ALL ROOF AND WALL PENETRATIONS SHALL BE FLASHED AND COUNTERFLASHED AS REQUIRED TO BE WATERTIGHT.

D REFER TO SPECIFICATIONS FOR MATERIALS AND METHODS OF CONSTRUCTION.

E

F WHERE PIPE SIZES ARE NOT INDICATED, THEY SHALL BE IN ACCORDANCE WITH THE INTERNATIONAL PLUMBING CODE (LATEST EDITION). DOMESTIC COLD WATER PIPING SHALL BE LIMITED TO 5 FPS. DOMESTIC HOT WATER PIPING SHALL BE LIMITED TO 4 FPS.

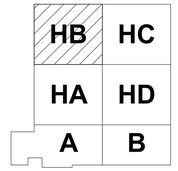
G DRAWINGS ARE SCHEMATIC AND ARE TO SHOW DESIGN INTENT, AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE PLACEMENTS.

H COORDINATE WITH ALL OTHER DISCIPLINES PRIOR TO DEMOLITION AND CONSTRUCTION.

PD101 KEYNOTE SCHEDULE

1	REMOVE EXISTING DOMESTIC COLD WATER, DOMESTIC HOT WATER, AND COMPRESSED AIR PIPING COMPLETE AS SHOWN. RELOCATE EXISTING WALL HYDRANT AND AIR COMPRESSOR DROP TO LOCATION SHOWN ON NEW PLANS. DISPOSE OF ALL REMOVED MATERIAL OFF-SITE.
2	EXISTING ABOVEGROUND PLUMBING PIPING MAINS CONTINUED WITHIN BUILDING. CONTRACTOR SHALL VERIFY EXACT SIZES AND LOCATION PRIOR TO DEMOLTION.
3	EXISTING UNDERGROUND PLUMBING PIPING MAINS TO ASSOCIATED EQUIPMENT.
4	DEMOLISH ASSOCIATED PLUMBING PIPING MAIN BACK TO APPROXIMATE LOCATION INDICATED. SEE NEW PLANS FOR ADDITIONAL INFORMATION.
5	DISCONNECT EXISTING PIPING BRANCHES FROM ASSOCIATED MAINS. PREPARE FOR CONNECTION TO NEW. SEE NEW PLANS FOR ADDITIONAL INFORMATION.
6	EXISTING ELEVATIONS TAKEN FROM EXISTING AS-BUILT PLUMBING DRAWINGS. CONTRACTOR SHALL VERIFY EXACT LOCATIONS, DIMENSIONS, ELEVATIONS, AND SLOPE OF ASSOCIATED EXISTING TRENCH DRAIN SYSTEM. SEE NEW PLANS FOR ADDITIONAL INFORMATION. COORDINATE WITH STRUCTURAL AND ARCHITECTURAL.

KEY PLAN



PLAN NORTH

N

0 60" 120" 240"

SCALE: 1" = 120"

STATE OF TEXAS
SHANNON RASMUSSEN
132019
LICENSED
PROFESSIONAL ENGINEER

MAY 28, 2026

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/B90176 Hangar Door Expansion - R24 - Plumbing.rvt

Plot Date: 7/1/2026 12:18:45 PM

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: JPF
DRAWN BY: JPF
CHECKED BY: SRR

SUBMITTED BY: CITRINE-OLSSON JV
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST., FORT WORTH, TX 76102

CITRINE-OLSSON
2801 GRAND AVE
GRAND JUNCTION CO, 81501

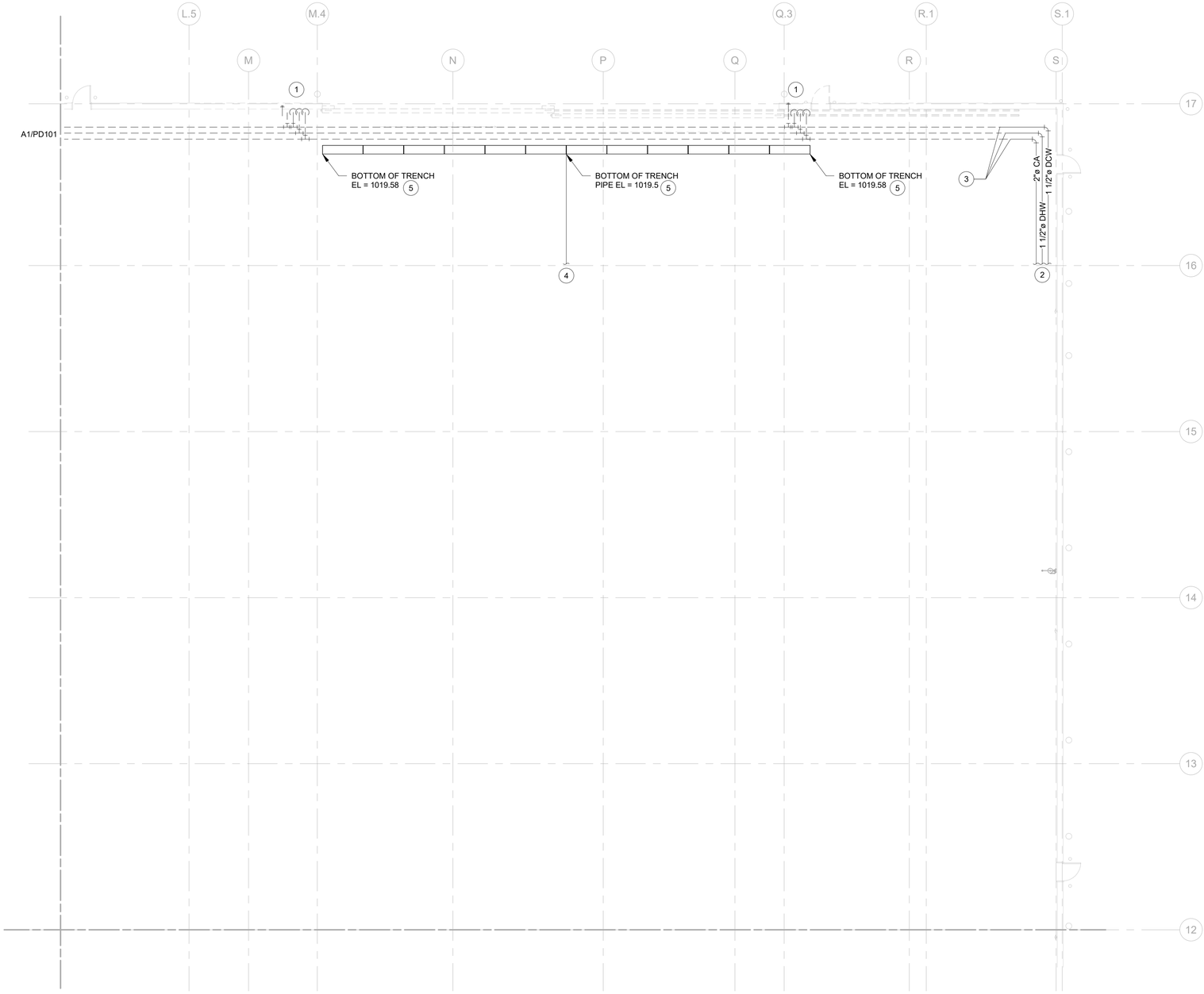
FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT

DEMOLITION PLAN - PLUMBING - AREA HB

SHEET ID

PD101

W9126G26RA087-0002



A1 FIRST FLOOR DEMOLITION PLAN - PLUMBING - AREA HC

1" = 10'-0"

PLUMBING GENERAL NOTES

A EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

B VERIFY ALL EQUIPMENT CONFIGURATION REQUIREMENTS BEFORE INSTALLATION.

C ALL ROOF AND WALL PENETRATIONS SHALL BE FLASHED AND COUNTERFLASHED AS REQUIRED TO BE WATERTIGHT.

D REFER TO SPECIFICATIONS FOR MATERIALS AND METHODS OF CONSTRUCTION.

E

F WHERE PIPE SIZES ARE NOT INDICATED, THEY SHALL BE IN ACCORDANCE WITH THE INTERNATIONAL PLUMBING CODE (LATEST EDITION). DOMESTIC COLD WATER PIPING SHALL BE LIMITED TO 5 FPS. DOMESTIC HOT WATER PIPING SHALL BE LIMITED TO 4 FPS.

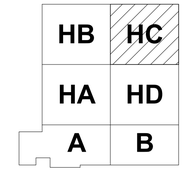
G DRAWINGS ARE SCHEMATIC AND ARE TO SHOW DESIGN INTENT, AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE PLACEMENTS.

H COORDINATE WITH ALL OTHER DISCIPLINES PRIOR TO DEMOLITION AND CONSTRUCTION.

PD102 KEYNOTE SCHEDULE

1	REMOVE EXISTING DOMESTIC COLD WATER, DOMESTIC HOT WATER, AND COMPRESSED AIR PIPING COMPLETE AS SHOWN. RELOCATE EXISTING WALL HYDRANT AND AIR COMPRESSOR DROP TO LOCATION SHOWN ON NEW PLANS. DISPOSE OF ALL REMOVED MATERIAL OFF-SITE.
2	EXISTING ABOVEGROUND PLUMBING PIPING MAINS CONTINUED WITHIN BUILDING. CONTRACTOR SHALL VERIFY EXACT SIZES AND LOCATION PRIOR TO DEMOLTION.
3	DEMOLISH ASSOCIATED PLUMBING PIPING MAIN BACK TO APPROXIMATE LOCATION INDICATED. SEE NEW PLANS FOR ADDITIONAL INFORMATION.
4	EXISTING UNDERGROUND PLUMBING PIPING MAINS TO ASSOCIATED EQUIPMENT.
5	EXISTING ELEVATIONS TAKEN FROM EXISTING AS-BUILT PLUMBING DRAWINGS. CONTRACTOR SHALL VERIFY EXACT LOCATIONS, DIMENSIONS, ELEVATIONS, AND SLOPE OF ASSOCIATED EXISTING TRENCH DRAIN SYSTEM. SEE NEW PLANS FOR ADDITIONAL INFORMATION. COORDINATE WITH STRUCTURAL AND ARCHITECTURAL.

KEY PLAN



PLAN NORTH

N

0 60" 120" 240"

SCALE: 1" = 120"

STATE OF TEXAS
SHANNON RASMUSSEN
132019
LICENSED
PROFESSIONAL ENGINEER

MAY 28, 2026

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/B90176 Hangar Door Expansion - RDA - Plumbing.rvt

Plot Date: 7/1/2026 12:18:46 PM

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: JPF
DRAWN BY: JPF
CHECKED BY: SRR
SUBMITTED BY: CITRINE-OLSSON JV
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST, FORT WORTH, TX 76102

CITRINE-OLSSON
2801 GRAND AVE
GRAND JUNCTION CO, 81501

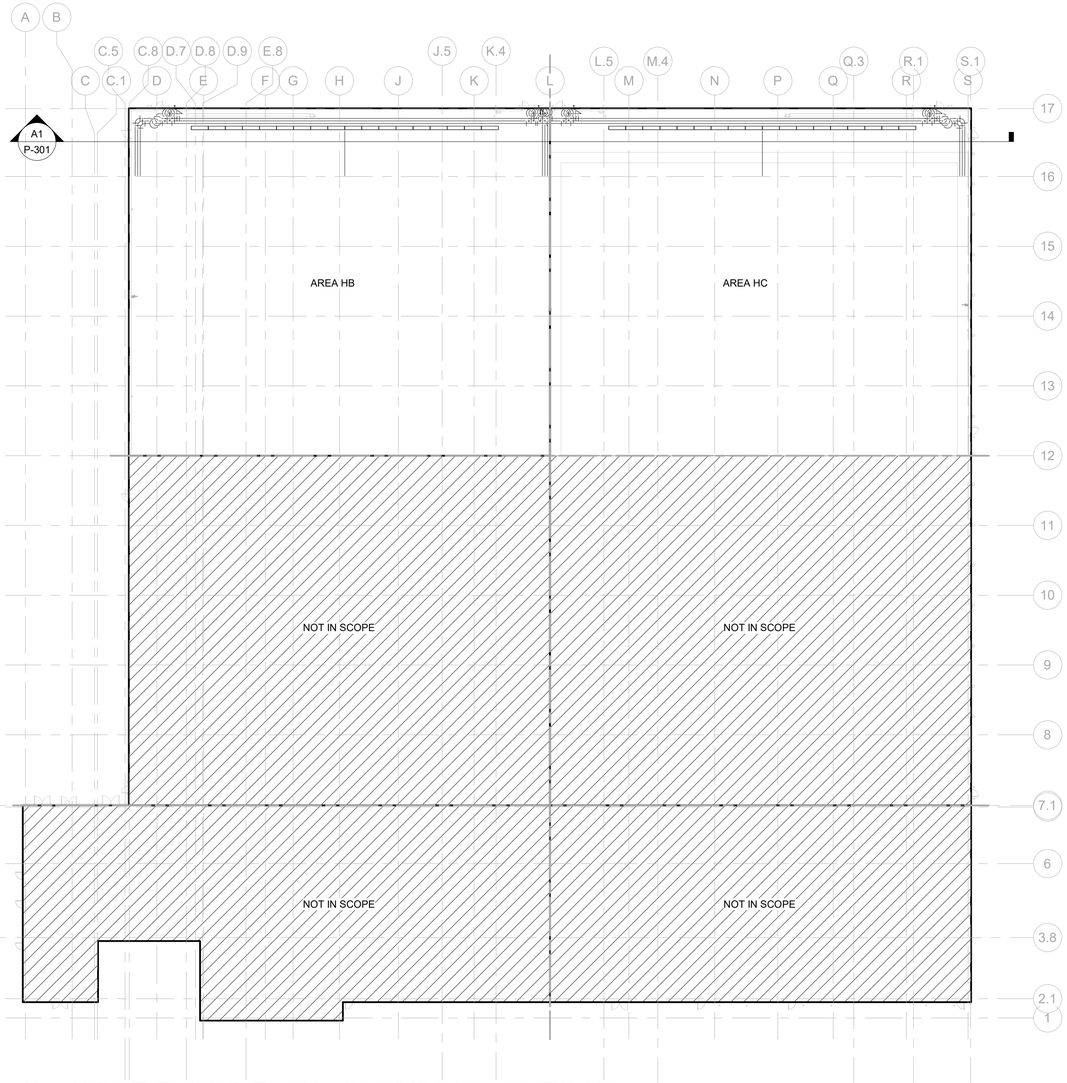
FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT

DEMOLITION PLAN - PLUMBING - AREA HC

SHEET ID

PD102

W9126G26RA087-0002



A1 FIRST FLOOR PLAN - PLUMBING - OVERALL
1" = 30'-0"

PLUMBING GENERAL NOTES

A EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

B VERIFY ALL EQUIPMENT CONFIGURATION REQUIREMENTS BEFORE INSTALLATION.

C ALL ROOF AND WALL PENETRATIONS SHALL BE FLASHED AND COUNTERFLASHED AS REQUIRED TO BE WATERTIGHT.

D REFER TO SPECIFICATIONS FOR MATERIALS AND METHODS OF CONSTRUCTION.

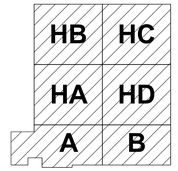
E

F WHERE PIPE SIZES ARE NOT INDICATED, THEY SHALL BE IN ACCORDANCE WITH THE INTERNATIONAL PLUMBING CODE (LATEST EDITION). DOMESTIC COLD WATER PIPING SHALL BE LIMITED TO 5 FPS. DOMESTIC HOT WATER PIPING SHALL BE LIMITED TO 4 FPS.

G DRAWINGS ARE SCHEMATIC AND ARE TO SHOW DESIGN INTENT, AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE PLACEMENTS.

H COORDINATE WITH ALL OTHER DISCIPLINES PRIOR TO DEMOLITION AND CONSTRUCTION.

KEY PLAN



PLAN NORTH

0 180" 360" 720"

SCALE: 1" = 360"

STATE OF TEXAS
SHANNON RASMUSSEN
132019
LICENSED
PROFESSIONAL ENGINEER

MAY 28, 2026

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/B90176 Hangar Door Expansion - R24 - Plumbing.rvt

Plot Date: 7/1/2026 12:18:42 PM

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: JPF
DRAWN BY: JPF
CHECKED BY: SRR
SUBMITTED BY: CITRINE-OLSSON JV
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST, FORT WORTH, TX 76102

CITRINE-OLSSON
2801 GRAND AVE
GRAND JUNCTION CO, 81501

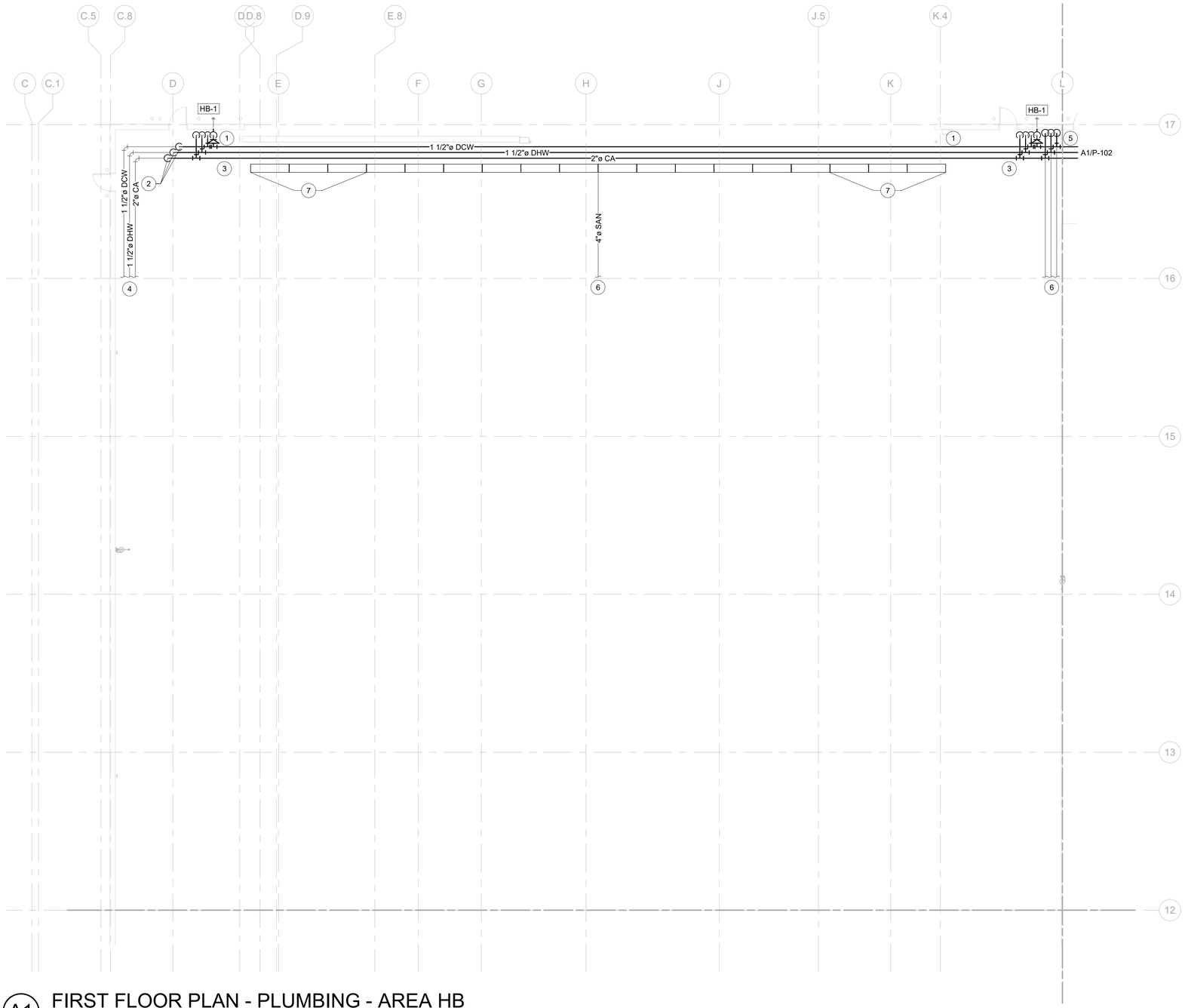
FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT

FLOOR PLAN - PLUMBING - OVERALL

SHEET ID

P-100

W9126G26RA087-0002



A1 FIRST FLOOR PLAN - PLUMBING - AREA HB

1" = 10'-0"

PLUMBING GENERAL NOTES

A EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

B VERIFY ALL EQUIPMENT CONFIGURATION REQUIREMENTS BEFORE INSTALLATION.

C ALL ROOF AND WALL PENETRATIONS SHALL BE FLASHED AND COUNTERFLASHED AS REQUIRED TO BE WATERTIGHT.

D REFER TO SPECIFICATIONS FOR MATERIALS AND METHODS OF CONSTRUCTION.

E

F WHERE PIPE SIZES ARE NOT INDICATED, THEY SHALL BE IN ACCORDANCE WITH THE INTERNATIONAL PLUMBING CODE (LATEST EDITION). DOMESTIC COLD WATER PIPING SHALL BE LIMITED TO 5 FPS. DOMESTIC HOT WATER PIPING SHALL BE LIMITED TO 4 FPS.

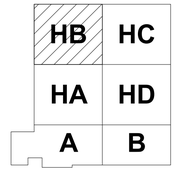
G DRAWINGS ARE SCHEMATIC AND ARE TO SHOW DESIGN INTENT, AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE PLACEMENTS.

H COORDINATE WITH ALL OTHER DISCIPLINES PRIOR TO DEMOLITION AND CONSTRUCTION.

P-101 KEYNOTE SCHEDULE

1	NEW LOCATION OF EXISTING FREEZE-PROOF WALL HYDRANT AND 3/4" DCW PIPING, COMPRESSED AIR DROP INLET/OUTLET AND 2" COMPRESSED AIR PIPING, DOMESTIC COLD WATER DROP WITH 1-1/2" DCW PIPING AND DOMESTIC HOT WATER DROP WITH 1-1/2" DHW PIPING. MATCH EXISTING CONDITIONS TO PROVIDE A COMPLETE AND WORKING SYSTEM TO MATCH ORIGINAL INTENTION. PROVIDE WITH SHUT-OFF VALVES AT ACCESSIBLE LOCATIONS (APPROXIMATELY 4 FEET AFF, ADJUSTABLE). SEE DEMOLITION PLANS FOR ADDITIONAL INFORMATION.
2	EXTEND AND CONNECT NEW PIPING MAINS TO EXISTING PIPING IN APPROXIMATE LOCATION SHOWN. SEE A1/P-301 FOR ADDITIONAL INFORM
3	PIPING MAINS SHALL CLEAR NEW HANGAR DOOR AND ASSOCIATED EQUIPMENT AND STRUCTURAL ELEMENTS. PIPING MAINS SHALL BE AS ACCESSIBLE AS POSSIBLE BY NEW CATWALK(S). COORDINATE WITH STRUCTURAL AND ARCHITECTURAL PRIOR TO CONSTRUCTION.
4	EXISTING ABOVEGROUND PLUMBING PIPING MAINS CONTINUED WITHIN BUILDING. CONTRACTOR SHALL VERIFY EXACT SIZES AND LOCATION PRIOR TO DEMOLTION.
5	CONNECT NEW 2" COMPRESSED AIR PIPING, 1-1/2" DOMESTIC COLD WATER PIPING, AND 1-1/2" DOMESTIC HOT WATER PIPING TO EXISTING UNDERGROUND MAINS AT APPROXIMATE LOCATION SHOWN. PROVIDE SHUT-OFF VALVES AT ACCESSIBLE LOCATIONS (APPROXIMATELY 4 FEET AFF, ADJUSTABLE) IF REMOVED DURING DEMOLITION. SEE A1/P-301 PLANS FOR ADDITIONAL INFORMATION.
6	EXISTING UNDERGROUND PLUMBING PIPING MAINS TO ASSOCIATED EQUIPMENT.
7	EXISTING TRENCH DRAIN SYSTEM SHALL BE EXTENDED TO ACCOMMODATE FULL LENGTH OF NEW HANGAR DOOR. PLUMBING CONTRACTOR TO COVER NEWLY INSTALLED TRENCH DRAIN WITH GRATE TO MATCH EXISTING CONDITIONS. STRUCTURAL CONTRACTOR SHALL MATCH EXISTING SLOPE AND VERIFY FINAL DIMENSIONS REQUIRED PRIOR TO CONSTRUCTION. SEE DEMOLITION PLANS FOR ADDITIONAL INFORMATION. COORDINATE WITH STRUCTURAL AND ARCHITECTURAL.

KEY PLAN



PLAN NORTH

N

0 60" 120" 240"

SCALE: 1" = 120"

STATE OF TEXAS
SHANNON RASMUSSEN
132019
LICENSED
PROFESSIONAL ENGINEER

MAY 28, 2026

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B80176 Hangar Door Expansion - Ft Hood/B80176 Hangar Door Expansion - R24 - Plumbing.rvt

Plot Date: 7/1/2026 12:18:42 PM

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: JPF
DRAWN BY: JPF
CHECKED BY: SRR
SUBMITTED BY: CITRINE-OLSSON JV
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST, FORT WORTH, TX 76102

CITRINE-OLSSON
2801 GRAND AVE
GRAND JUNCTION CO, 81501

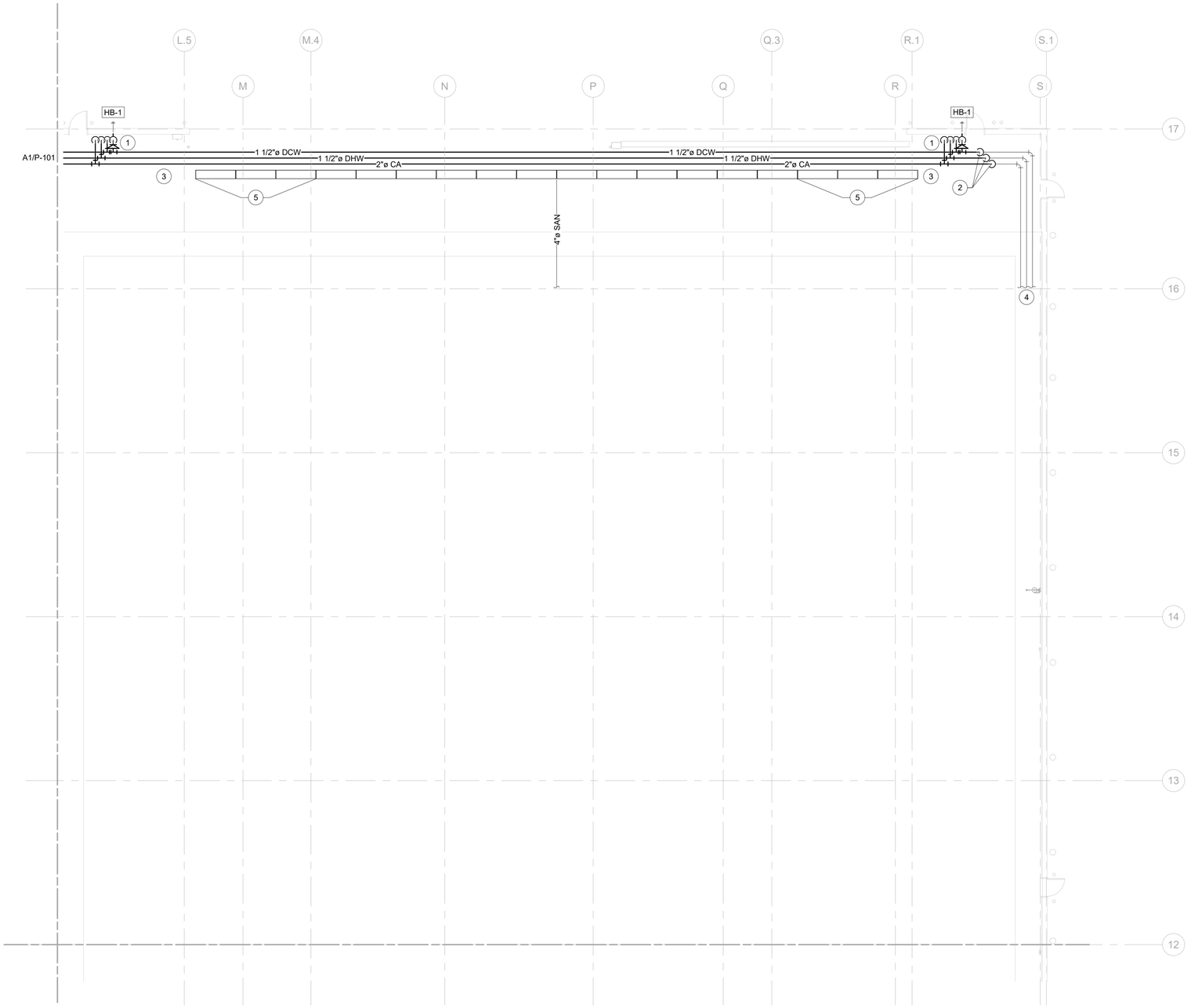
FORT HOOD, TX
B80176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT

FLOOR PLAN - PLUMBING - AREA HB

SHEET ID

P-101

W9126G26RA087-0002



A1 FIRST FLOOR PLAN - PLUMBING - AREA HC

1" = 10'-0"

PLUMBING GENERAL NOTES

A EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

B VERIFY ALL EQUIPMENT CONFIGURATION REQUIREMENTS BEFORE INSTALLATION.

C ALL ROOF AND WALL PENETRATIONS SHALL BE FLASHED AND COUNTERFLASHED AS REQUIRED TO BE WATERTIGHT.

D REFER TO SPECIFICATIONS FOR MATERIALS AND METHODS OF CONSTRUCTION.

E

F WHERE PIPE SIZES ARE NOT INDICATED, THEY SHALL BE IN ACCORDANCE WITH THE INTERNATIONAL PLUMBING CODE (LATEST EDITION). DOMESTIC COLD WATER PIPING SHALL BE LIMITED TO 5 FPS. DOMESTIC HOT WATER PIPING SHALL BE LIMITED TO 4 FPS.

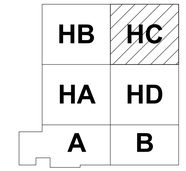
G DRAWINGS ARE SCHEMATIC AND ARE TO SHOW DESIGN INTENT, AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE PLACEMENTS.

H COORDINATE WITH ALL OTHER DISCIPLINES PRIOR TO DEMOLITION AND CONSTRUCTION.

P-102 KEYNOTE SCHEDULE

1	NEW LOCATION OF EXISTING FREEZE-PROOF WALL HYDRANT AND 3/4" DCW PIPING, COMPRESSED AIR DROP INLET/OUTLET AND 2" COMPRESSED AIR PIPING, DOMESTIC COLD WATER DROP WITH 1-1/2" DCW PIPING AND DOMESTIC HOT WATER DROP WITH 1-1/2" DHW PIPING. MATCH EXISTING CONDITIONS TO PROVIDE A COMPLETE AND WORKING SYSTEM TO MATCH ORIGINAL INTENTION. PROVIDE WITH SHUT-OFF VALVES AT ACCESSIBLE LOCATIONS (APPROXIMATELY 4 FEET AFF, ADJUSTABLE). SEE DEMOLITION PLANS FOR ADDITIONAL INFORMATION.
2	EXTEND AND CONNECT NEW PIPING MAINS TO EXISTING PIPING IN APPROXIMATE LOCATION SHOWN. SEE A1/P-301 FOR ADDITIONAL INFORM
3	PIPING MAINS SHALL CLEAR NEW HANGAR DOOR AND ASSOCIATED EQUIPMENT AND STRUCTURAL ELEMENTS. PIPING MAINS SHALL BE AS ACCESSIBLE AS POSSIBLE BY NEW CATWALK(S). COORDINATE WITH STRUCTURAL AND ARCHITECTURAL PRIOR TO CONSTRUCTION.
4	EXISTING ABOVEGROUND PLUMBING PIPING MAINS CONTINUED WITHIN BUILDING. CONTRACTOR SHALL VERIFY EXACT SIZES AND LOCATION PRIOR TO DEMOLTION.
5	EXISTING TRENCH DRAIN SYSTEM SHALL BE EXTENDED TO ACCOMMODATE FULL LENGTH OF NEW HANGAR DOOR. PLUMBING CONTRACTOR TO COVER NEWLY INSTALLED TRENCH DRAIN WITH GRATE TO MATCH EXISTING CONDITIONS. STRUCTURAL CONTRACTOR SHALL MATCH EXISTING SLOPE AND VERIFY FINAL DIMENSIONS REQUIRED PRIOR TO CONSTRUCTION. SEE DEMOLITION PLANS FOR ADDITIONAL INFORMATION. COORDINATE WITH STRUCTURAL AND ARCHITECTURAL.

KEY PLAN



PLAN NORTH

N

0 60" 120" 240"

SCALE: 1" = 120"

STATE OF TEXAS
SHANNON RASMUSSEN
132019
LICENSED
PROFESSIONAL ENGINEER

MAY 28, 2026

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/B90176 Hangar Door Expansion - R24 - Plumbing.rvt

Plot Date: 7/1/2026 12:18:43 PM

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: JPF
DRAWN BY: JPF
CHECKED BY: SRR

SUBMITTED BY: CITRINE-OLSSON JV

SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST., FORT WORTH, TX 76102

CITRINE-OLSSON
2801 GRAND AVE
GRAND JUNCTION CO, 81501

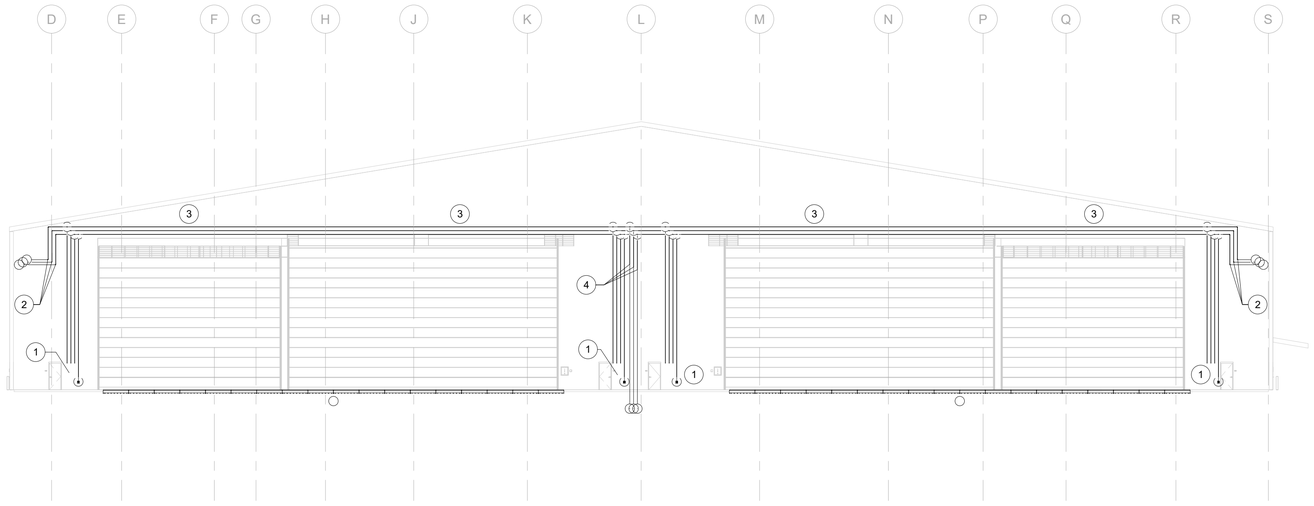
FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT

FLOOR PLAN - PLUMBING - AREA HC

SHEET ID

P-102

W9126G26RA087-0002



A1 HANGAR DOOR PLUMBING SCHEMATIC SECTION

1" = 20'-0"

PLUMBING GENERAL NOTES

A EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

B VERIFY ALL EQUIPMENT CONFIGURATION REQUIREMENTS BEFORE INSTALLATION.

C ALL ROOF AND WALL PENETRATIONS SHALL BE FLASHED AND COUNTERFLASHED AS REQUIRED TO BE WATERTIGHT.

D REFER TO SPECIFICATIONS FOR MATERIALS AND METHODS OF CONSTRUCTION.

E

F WHERE PIPE SIZES ARE NOT INDICATED, THEY SHALL BE IN ACCORDANCE WITH THE INTERNATIONAL PLUMBING CODE (LATEST EDITION). DOMESTIC COLD WATER PIPING SHALL BE LIMITED TO 5 FPS. DOMESTIC HOT WATER PIPING SHALL BE LIMITED TO 4 FPS.

G DRAWINGS ARE SCHEMATIC AND ARE TO SHOW DESIGN INTENT, AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE PLACEMENTS.

H COORDINATE WITH ALL OTHER DISCIPLINES PRIOR TO DEMOLITION AND CONSTRUCTION.

P-301 KEYNOTE SCHEDULE

1	NEW LOCATION OF EXISTING FREEZE-PROOF WALL HYDRANT AND 3/4" DCW PIPING, COMPRESSED AIR DROP INLET/OUTLET AND 2" COMPRESSED AIR PIPING. DOMESTIC COLD WATER DROP WITH 1-1/2" DCW PIPING AND DOMESTIC HOT WATER DROP WITH 1-1/2" DHW PIPING. MATCH EXISTING CONDITIONS TO PROVIDE A COMPLETE AND WORKING SYSTEM TO MATCH ORIGINAL INTENTION. PROVIDE WITH SHUT-OFF VALVES AT ACCESSIBLE LOCATIONS (APPROXIMATELY 4 FEET AFF, ADJUSTABLE). SEE DEMOLITION PLANS FOR ADDITIONAL INFORMATION.
2	EXTEND AND CONNECT NEW PIPING MAINS TO EXISTING PIPING IN APPROXIMATE LOCATION SHOWN. PROVIDE FULL SIZE PIPING MAINS AT EACH POINT AND THROUGHOUT TO FINAL CONNECTION POINT. CONTRACTOR SHALL VERIFY EXACT SIZES PRIOR TO CONSTRUCTION. SEE PLANS FOR ADDITIONAL INFORMATION.
3	PIPING MAINS SHALL CLEAR NEW HANGAR DOOR AND ASSOCIATED EQUIPMENT AND STRUCTURAL ELEMENTS. PIPING MAINS SHALL BE AS ACCESSIBLE AS POSSIBLE BY NEW CATWALK(S). COORDINATE WITH STRUCTURAL AND ARCHITECTURAL PRIOR TO CONSTRUCTION.
4	CONNECT NEW 2" COMPRESSED AIR PIPING, 1-1/2" DOMESTIC COLD WATER PIPING, AND 1-1/2" DOMESTIC HOT WATER PIPING TO EXISTING UNDERGROUND MAINS AT APPROXIMATE LOCATION SHOWN. PROVIDE SHUT-OFF VALVES AT ACCESSIBLE LOCATIONS (APPROXIMATELY 4 FEET AFF, ADJUSTABLE) IF REMOVED DURING DEMOLITION. SEE DEMOLITION PLANS FOR ADDITIONAL INFORMATION.

STATE OF TEXAS
SHANNON RASMUSSEN
132019
LICENSED
PROFESSIONAL ENGINEER
MAY 28, 2026

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: JPF
DRAWN BY: JPF
CHECKED BY: SRR
SUBMITTED BY: CITRINE-OLSSON JV
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST., FORT WORTH, TX 76102

CITRINE-OLSSON
2801 GRAND AVE
GRAND JUNCTION CO, 81501

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT

PLUMBING SECTION

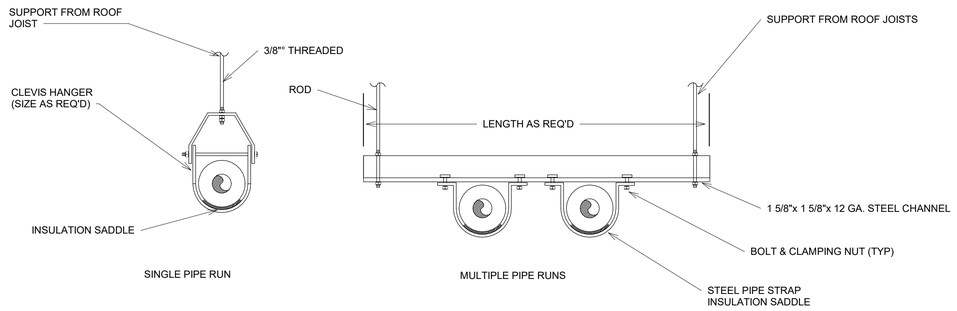
SHEET ID

P-301

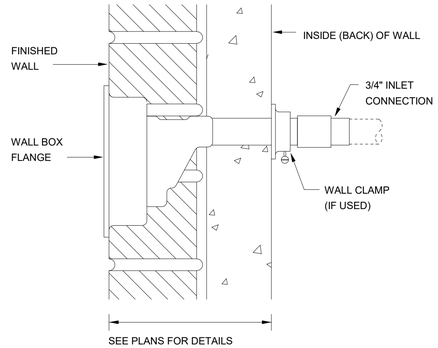
File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/B90176 Hangar Door Expansion - RDA - Plumbing.rvt

Plot Date: 7/1/2026 12:18:43 PM

W9126G26RA087-0002



A1 PIPE SUPPORT SYSTEM
NTS



A11 FREEZEPROOF WALL HYDRANT DETAIL
NTS

STATE OF TEXAS
SHANNON RASMUSSEN
132019
LICENSED
PROFESSIONAL ENGINEER
MAY 28, 2026

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson

US Army Corps of Engineers ®

MARK	DATE
1	JUN 2026

REVISED IN ACCORDANCE WITH AM0002

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hanger Door Expansion - Ft Hood/B90176 Hanger Door Expansion - R24 - Plumbing.rvt

Plot Date: 7/1/2026 12:18:44 PM

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: JPF
DRAWN BY: JPF
CHECKED BY: SRR
SUBMITTED BY: CITRINE-OLSSON JV
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST., FORT WORTH, TX 76102

CITRINE-OLSSON
2801 GRAND AVE
GRAND JUNCTION CO. 81501

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT

PLUMBING DETAILS

SHEET ID

P-501

W9126G26RA087-0002

PLUMBING FIXTURE SCHEDULE

TAG	DESCRIPTION	MOUNTING	DCW	DHW	VENT	WASTE	TRAP	COMMENTS
HB-1	FREEZE-PROOF WALL HYDRANT	WALL MOUNTED	3/4"	-	-	-	-	3/4" DCW CONNECTION. ANTI-SIPHON. SHOWN ONLY FOR AS REQUIRED REPLACEMENT PURPOSES.

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/B90176 Hangar Door Expansion - R24 - Plumbing.rvt

Plot Date: 7/1/2026 12:18:44 PM

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: JPF
DRAWN BY: JPF
CHECKED BY: SRR
SUBMITTED BY: CITRINE-OLSSON JV
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST., FORT WORTH, TX 76102

CITRINE-OLSSON
2801 GRAND AVE
GRAND JUNCTION CO, 81501

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT

PLUMBING SCHEDULES

SHEET ID

P-601

STATE OF TEXAS
SHANNON RASMUSSEN
132019
LICENSED
PROFESSIONAL ENGINEER
MAY 28, 2026

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson

W9126G26RA087-0002

DRAWING ABBREVIATIONS

A	AMPERE
AC	ANALYSIS CONTROL SWITCH
AFF	ABOVE FINISHED FLOOR
AIC	AMPERE INTERRUPTING CAPACITY
AIT	ANALYSIS INDICATION TEMPERATURE
AIP	ANALYSIS INDICATION PHASE
AL	ALUMINUM
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
A/C	ABOVE COUNTER
C	CONDUIT
C/W	COMPLETE WITH
COR	CONTRACTING OFFICER'S REPRESENTATIVE
CIR	CIRCUIT
CU	COPPER
DIV	DIVISION
EC	ELECTRICAL CONTRACTOR
EGC	EQUIPMENT GROUNDING CONDUCTOR
EMT	ELECTRIC METALLIC TUBING
EA	VOLTAGE ALARM
ES	VOLTAGE SWITCH
ER	EXISTING TO REMAIN
FACP	FIRE ALARM CONTROL PANEL
FRC	FLOW RATIO CONTROL
FI	FLOW INDICATION SWITCH
FS	FLOW SWITCH
GEC	GROUNDING ELECTRODE CONDUCTOR
GEN	GENERATOR
GND	GROUND
HC	HAND CONTROL
HP	HORSEPOWER
HZ	HERTZ
IECC	INTERNAL ENERGY CONSERVATION CODE
IMC	INTERMEDIATE METALLIC CONDUIT
IN	INCHES
KC	TIME INDICATION SWITCH
KV	KILOVOLT
KVA	KILOVOLT-AMPS
KW	KILOWATT
LA	LEVEL ALARM
LB	POUND
LED	LIGHT EMITTING DIODE
LI	LEVEL INDICATION SWITCH
LIC	LEVEL INDICATION CONTROL
LOTO	LOCKOUT/TAGOUT
LPS	LIGHTNING PROTECTION SYSTEM
MAX	MAXIMUM
MC	MECHANICAL CONTRACTOR
MCC	MOTOR CONTROL CENTER
MIN	MINIMUM
MFR	MANUFACTURER
NEC	NATIONAL ELECTRIC CODE
NEMA	NATIONAL ELECTRIC MANUFACTURERS ASSOCIATION
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
NUM	NUMBER
NTS	NOT TO SCALE
OEM	ORIGINAL EQUIPMENT MANUFACTURER
OHD	OVERHEAD (ROLLUP) DOOR
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
P	POLE
PC	PRESSURE CONTROL
PH	PHASE
PI	PRESSURE INDICATION SWITCH
PRI	PRIMARY
PVC	POLYVINYL CHLORIDE
QI	QUALITY INDICATION SWITCH
QTY	QUANTITY
RL	RELOCATE
RLD	RELOCATED
RS	RIGID STEEL
RMC	RIGID METAL CONDUIT
RTU	ROOFTOP UNIT
SC	SPEED CONTROL
SCH	SCHEDULE
SEC	SECONDARY
SPD	SURGE PROTECTIVE DEVICE
SQFT	SQUARE FEET
TBD	TO BE DETERMINED
TI	TEMPERATURE INDICATION
TMP	TEMPORARY
TYP	TYPICAL
TSTAT	THERMOSTAT
UG	UNDERGROUND
UL	UNDERWRITER LABORATORIES
UON	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTIBLE POWER SUPPLY
UH	UNIT HEATER
V	VOLTS
VAC	VOLTS ALTERNATING CURRENT
VC	VIBRATION CONTROL
VDC	VOLTS DIRECT CURRENT
VS	VIBRATION SWITCH
W	WATTS
W/	WITH
WP	WEATHERPROOF
XFMR	TRANSFORMER
XP	EXPLOSION PROOF

SYMBOL LEGEND

POWER

- DUPLEX WALL OUTLET. MOUNT 18" AFF UNLESS NOTED OTHERWISE
- +42 DUPLEX WALL OUTLET 42" ABOVE FINISHED FLOOR
- RR CEILING MOUNTED RETRACTABLE ELECTRICAL REEL WITH 25-FOOT CORD AND QUADRUPLEX ELECTRICAL OUTLET
- J ELECTRICAL JUNCTION BOX
- ELECTRICAL DISCONNECT SWITCH
- ELECTRICAL PANELBOARD
- DRY TYPE TRANSFORMER 480V-208/120V
- SB ELECTRICAL SWITCHBOARD
- ELECTRICAL METER ENCLOSURE
- T THERMOSTAT

LIGHTING

- 2X4 RECESSED PANEL LIGHT
- 2X2 RECESSED PANEL LIGHT
- 4 FOOT STRIP LIGHT
- VANITY LIGHT
- 2 FOOT TRACK WITH 2 HEADS
- $ LIGHT SWITCH
- OS CEILING MOUNT OCCUPANCY/MOTION SENSOR
- WALL MOUNT EXIT SIGN
- WALL MOUNT EXIT SIGN WITH EMERGENCY LIGHTS
- WALL MOUNT EXIT SIGN WITH ARROW
- CEILING MOUNT EXIT SIGN WITH ARROW

DEMOLITION POWER

- DUPLEX WALL OUTLET. MOUNT 18" AFF UNLESS NOTED OTHERWISE
- J ELECTRICAL JUNCTION BOX
- ELECTRICAL DISCONNECT SWITCH
- ELECTRICAL PANELBOARD
- DRY TYPE TRANSFORMER 480V-208/120V
- ELECTRICAL METER ENCLOSURE
- T THERMOSTAT

DEMOLITION LIGHTING

- 2X4 RECESSED PANEL LIGHT
- 2X2 RECESSED PANEL LIGHT
- 4 FOOT STRIP LIGHT
- VANITY LIGHT
- 2 FOOT TRACK WITH 2 HEADS
- $ LIGHT SWITCH
- OS CEILING MOUNT OCCUPANCY/MOTION SENSOR
- WALL MOUNT EXIT SIGN
- WALL MOUNT EXIT SIGN WITH EMERGENCY LIGHTS
- WALL MOUNT EXIT SIGN WITH ARROW
- CEILING MOUNT EXIT SIGN WITH ARROW

GENERAL NOTES

1. THE ELECTRICAL INSTALLATION SHALL BE IN ACCORDANCE WITH THE 2023 EDITION OF THE NATIONAL ELECTRICAL CODE (NEC) NFPA 70, 2015 EDITION OF THE INTERNATIONAL BUILDING CODE, THE 2024 EDITION OF THE UNIFIED FACILITIES CRITERIA PUBLICATION UFC 3-501-01 ELECTRICAL ENGINEERING, THE PROJECT DESIGN CRITERIA, SPECIFICATIONS, AND DRAWINGS.
2. CONTRACTOR SHALL COMPLY WITH ALL CONTRACT REQUIREMENTS, APPLICABLE CODES, LAW AND REGULATIONS, INCLUDING BUT NOT LIMITED TO THE NEC, OSHA, AND NATIONAL ELECTRICAL SAFETY CODE.
3. DRAWINGS ARE TO BE READ IN CONJUNCTION WITH STRUCTURAL, MECHANICAL, ARCHITECTURAL, CIVIL, FIRE PROTECTION, FIRE ALARM AND OTHER RELATED DRAWINGS FROM OTHER DISCIPLINES.
4. DRAWINGS ARE DIAGRAMMATIC AND DO NOT SHOW THE EXACT ROUTES OF WIRING AND EXACT LOCATION OF EQUIPMENT. CONTRACTOR SHALL BECOME FAMILIAR WITH JOB CONDITIONS AND ARRANGE ALL WORK TO AVOID CONFLICTS. ALL FINAL LOCATIONS OF NEW CONDUITS, OUTLETS AND EQUIPMENT SHALL BE SUBJECT TO APPROVAL.
5. ALL CUTTING REQUIRED FOR THE INSTALLATION OF ELECTRICAL CONSTRUCTION UNDER THIS CONTRACT SHALL BE ACCOMPLISHED IN SUCH A MANNER AS NOT TO CAUSE STRUCTURAL OR ARCHITECTURAL DAMAGE TO THE BUILDING, OR LEAVE UNSIGHTLY SURFACE. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR PATCHING AND TO PROVIDE A NEW AND FINISHED SURFACE EQUAL TO SURROUNDING UNDISTURBED SURFACES WHEREVER CUTTING, PATCHING, DAMAGE OR REMOVAL OF EQUIPMENT IS PERFORMED UNDER THIS CONTRACT. ALL PATCHING AND RESTORING OF SURFACES SHALL BE PERFORMED BY WORKMEN SKILLED IN THE TRADE INVOLVED AND SHALL BE SUBJECT TO APPROVAL.
6. ALL CONSTRUCTION UNDER THIS PROJECT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER BY QUALIFIED CONTRACTORS SKILLED IN THE TRADE.
7. ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND PROVIDED BY THE CONTRACTOR UNLESS OTHERWISE NOTED.
8. SUBMIT SHOP DRAWINGS, PRODUCT DATA SHEETS AND WIRING DIAGRAMS FOR ALL ELECTRICAL CONSTRUCTION MATERIALS, DEVICES, EQUIPMENT, APPLIANCES AND SYSTEM FOR CONTRACTING OFFICER REVIEW PRIOR TO ORDERING.
9. ALL WORKING SPACE REQUIREMENTS TO BE MAINTAINED AS INDICATED IN DRAWINGS AND NEC.
10. ANY DISCREPANCIES OR COORDINATION ISSUES TO BE BROUGHT TO THE ATTENTION OF THE COR. 1

GENERAL DEMOLITION NOTES

1. CONTRACTOR SHALL BE RESPONSIBLE FOR VISITING THE BUILDING AND SITE TO BECOME FAMILIAR WITH THE EXISTING CONDITIONS. THESE REMOVAL DRAWINGS SHALL SERVE TO AID THE CONTRACTOR IN THEIR EVALUATION OF THE EXTENT OF DEMOLITION, BUT SHALL NOT BE HELD TO BE ALL-INCLUSIVE.
2. FOR FURTHER INFORMATION REGARDING THE EXTENT OF DEMOLITION, SEE THE CONSTRUCTION PLANS, WHICH ILLUSTRATE THE ADJACENT NEW CONSTRUCTION.
3. EXISTING LIGHT FIXTURES IN THE VICINITY OF NEW CATWALK CONSTRUCTION MAY REQUIRE RELOCATION OR MODIFICATION TO AVOID PHYSICAL OR MAINTENANCE ACCESS CONFLICTS. CONTRACTOR SHALL FIELD VERIFY FINAL CATWALK AND FIXTURE CLEARANCES AND COORDINATE REQUIRED ADJUSTMENTS WITH STRUCTURAL AND ARCHITECTURAL DRAWINGS.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REMOVALS REQUIRED FOR THE INSTALLATION OF NEW WORK, WHETHER OR NOT IT IS SPECIFICALLY INDICATED OR NOTED IN THESE DOCUMENTS.
5. ALL CONDUIT RUNS TO REMOVED EQUIPMENT SHALL HAVE ALL WIRING REMOVED UNLESS WIRING IS REQUIRED TO SERVE EXISTING EQUIPMENT TO REMAIN.
6. REMOVE EMPTY CONCEALED (OR OTHERWISE) CONDUIT AND WIRING TO SOURCE; DO NOT ABANDON ANYTHING IN PLACE.
7. IF PORTIONS OF CIRCUITS SERVING EQUIPMENT TO REMAIN MUST BE RELOCATED OR REMOVED DUE TO OTHER DEMOLITION OR INTERFERENCE WITH NEW EQUIPMENT INSTALLATION, THE CIRCUITS SHALL BE MODIFIED IN A MANNER THAT ENSURES PROPER OPERATION OF THE EQUIPMENT AFTER CONSTRUCTION IS COMPLETE. USE SAME GAUGE AND TYPE OF CONDUCTOR AND SAME CONDUIT SIZE AS EXISTING TO MAKE ALL REQUIRED CIRCUIT MODIFICATIONS.

STATE OF TEXAS
DAVID G. KEATTING
128680
LICENSED PROFESSIONAL ENGINEER
28 MAY 2026

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/B90176 Hangar Door Expansion - R24 - Elec.rvt

Plot Date: 7/1/2026 11:07:14 AM

DESIGNED BY: D. KEATTING
DRAWN BY: A. COLISTA
CHECKED BY: M. KEATTING
ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:
SUBMITTED BY: CITRINE-OLSSON JV
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST, FORT WORTH, TX 76102

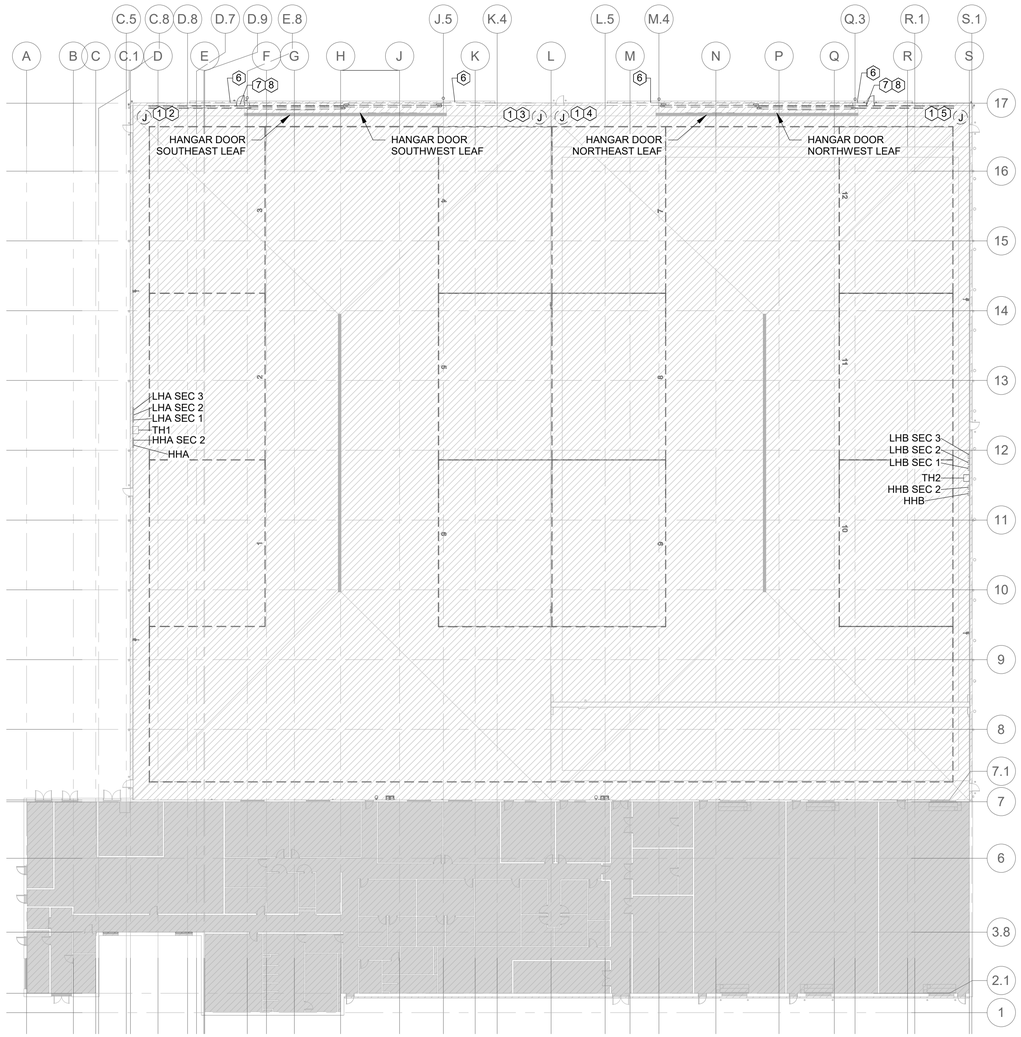
CITRINE-OLSSON
2801 GRANDE AVE
GRAND JUNCTION CO, 81501

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT

LEGEND, ABBREVIATIONS & NOTES

SHEET ID
E-000

W9126G26RA087-0002



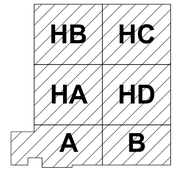
A1 FIRST FLOOR PLAN - POWER - DEMO

1" = 30'-0"

KEY NOTES:

1. EXISTING JUNCTION BOX MOUNTED AT HANGAR DOOR HEIGHT FOR DOOR LEAF POWER WIRING.
2. DEMOLISH POWER BACK TO PANEL HHA AND DEMOLISH CONTROLS FOR HANGAR DOOR SOUTHEAST LEAF.
3. DEMOLISH POWER BACK TO PANEL HHA AND DEMOLISH CONTROLS FOR HANGAR DOOR SOUTHWEST LEAF.
4. DEMOLISH POWER BACK TO PANEL HHB AND DEMOLISH CONTROLS FOR HANGAR DOOR NORTHEAST LEAF.
5. DEMOLISH POWER BACK TO PANEL HHB AND DEMOLISH CONTROLS FOR HANGAR DOOR NORTHWEST LEAF.
6. REMOVE EXISTING EXTERIOR WALL-MOUNTED LIGHT FIXTURE AND ASSOCIATED CONDUIT/CONDUCTORS AS REQUIRED FOR STRUCTURAL DEMOLITION. PROTECT AND MAINTAIN EXISTING LIGHTING CIRCUIT FOR REUSE UNDER NEW WORK. SALVAGE FIXTURE FOR REUSE. REFERENCE NEW WORK PLANS FOR ADDITIONAL INFORMATION.
7. REMOVE EXISTING INTERIOR-MOUNTED EXIT SIGN ASSOCIATED WITH DOOR TO BE DEMOLISHED. SALVAGE DEVICE FOR REUSE. REMOVE ASSOCIATED CONDUIT/CONDUCTORS BACK TO THE POINT OF STRUCTURAL DEMOLITION. PROTECT AND MAINTAIN EXISTING LIGHTING CIRCUIT FOR REUSE UNDER NEW WORK. REFERENCE NEW WORK PLANS FOR ADDITIONAL INFORMATION.
8. REMOVE EXISTING DOOR POSITION SWITCH AND MOTION SENSOR ASSOCIATED WITH DOOR TO BE DEMOLISHED. REMOVE ASSOCIATED CONDUIT AND WIRING BACK TO SOURCE. NO REUSE OF THESE DEVICES, CONDUITS, OR CONDUCTORS IS REQUIRED.

KEY PLAN



PLAN NORTH

N

0 180" 360" 720"

SCALE: 1" = 360"

STATE OF TEXAS
DAVID G. KEATTING
128680
LICENSED PROFESSIONAL ENGINEER

28 MAY 2026

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/B90176 Hangar Door Expansion - R24 - Elec.rvt

Plot Date: 7/1/2026 11:07:30 AM

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: D. KEATTING
DRAWN BY: A. COLISTA
CHECKED BY: M. ACKER
SUBMITTED BY:
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST., FORT WORTH, TX 76102

CITRINE-OLSSON
2801 GRANDE AVE
GRAND JUNCTION CO. 81501

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT

FLOOR PLAN - DEMO- OVERALL

SHEET ID

ED101

W9126G26RA087-0002

Branch Panel: HHA (2 SECTION)

Location: HANGAR AREA
Supply From: SWITCHBOARD SWBD
Mounting: Surface
Enclosure: Type 1

Volts: 480/277 Wye
Phases: 3
Wires: 4
Mfgr: Eaton
Model: PRL4

A.I.C. Rating: 65K
Mains Type: MLO
Mains Rating: 600 A
MCB Rating: - -

Notes:

CKT	Load Name	Trip	Poles	A (VA)		B (VA)		C (VA)		Poles	Trip	Load Name	CKT
1	**HANGAR DOOR, SOUTHEAST LEAF (D),**	20 A	3	2018	2018					3	20 A	**HANGAR DOOR, SOUTHWEST LEAF (D),**	2
3	--	--	--			2018	2018			--	--	--	4
5	--	--	--					2018	2018	--	--	--	6
7	BAF-2 (E),	15 A	3	700	700					3	15 A	BAF-1 (E),	8
9	--	--	--			700	700			--	--	--	10
11	--	--	--					700	700	--	--	--	12
13	BAF-3 (E),	15 A	3	700	--					1	--	PREPARED SPACE,	14
15	--	--	--			700	--			1	--	PREPARED SPACE,	16
17	--	--	--					700	--	1	--	PREPARED SPACE,	18
1	XFMR-TH1 (E),	350 A	3	64000									__
3	--	--	--			64000							__
5	--	--	--					63000					__
		Total Load:		70136 VA		70136 VA		69136 VA					
		Total Amps:		254 A		254 A		250 A					

Load Classification	Connected Load		Estimated Demand	Panel Totals	
Existing Load	209408 VA		209408 VA		
_____	_____		_____	**Total Conn. Load:**	209408 VA
				Total Est. Demand:	209408 VA
				Total Conn. Current:	252 A
				Total Est. Demand Current:	252 A

Key: (D) EXISTING EQUIPMENT TO BE DEMOLISHED, (E) EXISTING EQUIPMENT TO REMAIN

Branch Panel: HHB (2 SECTION)

Location: HANGAR AREA
Supply From: SWITCHBOARD SWBD
Mounting: Surface
Enclosure: Type 1

Volts: 480/277 Wye
Phases: 3
Wires: 4
Mfgr: Eaton
Model: PRL3A

A.I.C. Rating: 65K
Mains Type: MLO
Mains Rating: 400 A
MCB Rating: - -

Notes:

CKT	Load Name	Trip	Poles	A		B		C		Poles	Trip	Load Name	CKT
1	PREPARED SPACE,	--	1	--	--					1	--	PREPARED SPACE,	2
3	PREPARED SPACE,	--	1			--	--			1	--	PREPARED SPACE,	4
5	PREPARED SPACE,	--	1					--	--	1	--	PREPARED SPACE,	6
7	PREPARED SPACE,	--	1	--	--					1	--	PREPARED SPACE,	8
9	PREPARED SPACE,	--	1			--	--			1	--	PREPARED SPACE,	10
11	PREPARED SPACE,	--	1					--	--	1	--	PREPARED SPACE,	12
13	BAF-4 (E),	15 A	3	700	700					3	15 A	BAF-6 (E),	14
15	--	--	--			700	700			--	--	--	16
17	--	--	--					700	700	--	--	--	18
19	BAF-5 (E),	15 A	3	700	2100					3	15 A	EF-H8 (E),	20
21	--	--	--			700	2100			--	--	--	22
23	--	--	--					700	2100	--	--	--	24
25	EF-H7 (E),	15 A	3	2100	2100					3	15 A	EF-H9 (E),	26
27	--	--	--			2100	2100			--	--	--	28
29	--	--	--					2100	2100	--	--	--	30
1	XFMR-TH2 (E),	225 A	3	40000	--					1	--	Space,	2
3	--	--	--			39000	--			1	--	Space,	4
5	--	--	--					39000	--	1	--	Space,	6
7	**HANGAR DOOR, NORTHWEST LEAF (D),**	25 A	3	2018	2018					3	20 A	**HANGAR DOOR, NORTHEAST LEAF (D),**	8
9	--	--	--			2018	2018			--	--	--	10
11	--	--	--					2018	2018	--	--	--	12
13	CRANE (E),	20 A	3	2000	2100					3	15 A	EF-H1 (E),	14
15	--	--	--			2000	2100			--	--	--	16
17	--	--	--					2000	2100	--	--	--	18
19	EF-H5 (E),	15 A	3	2100	2100					3	15 A	EF-H6 (E),	20
21	--	--	--			2100	2100			--	--	--	22
23	--	--	--					2100	2100	--	--	--	24
25	EF-H4 (E),	15 A	3	2100	2100					3	15 A	EF-H2 (E),	26
27	--	--	--			2100	2100			--	--	--	28
29	--	--	--					2100	2100	--	--	--	30
31	EF-H3 (E),	15 A	3	2100									__
33	--	--	--			2100							__
35	--	--	--					2100					__
		Total Load:		67036 VA		66036 VA		66036 VA					
		Total Amps:		242 A		238 A		238 A					

Load Classification	Connected Load		Estimated Demand	Panel Totals	
Existing Load	199108 VA		199108 VA		
_____	_____		_____	**Total Conn. Load:**	199108 VA
				Total Est. Demand:	199108 VA
				Total Conn. Current:	239 A
				Total Est. Demand Current:	239 A

Key: (D) EXISTING EQUIPMENT TO BE DEMOLISHED, (E) EXISTING EQUIPMENT TO REMAIN

STATE OF TEXAS
DAVID G. KEATTING
128680
LICENSED
PROFESSIONAL ENGINEER
28 MAY 2026

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/B90176 Hangar Door Expansion - R24 - Elec.rvt
Plot Date: 7/1/2026 11:07:31 AM

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: D. KEATTING
DRAWN BY: A. COLISTA
CHECKED BY: M. KACER
SUBMITTED BY:
SIZE: ANSI D

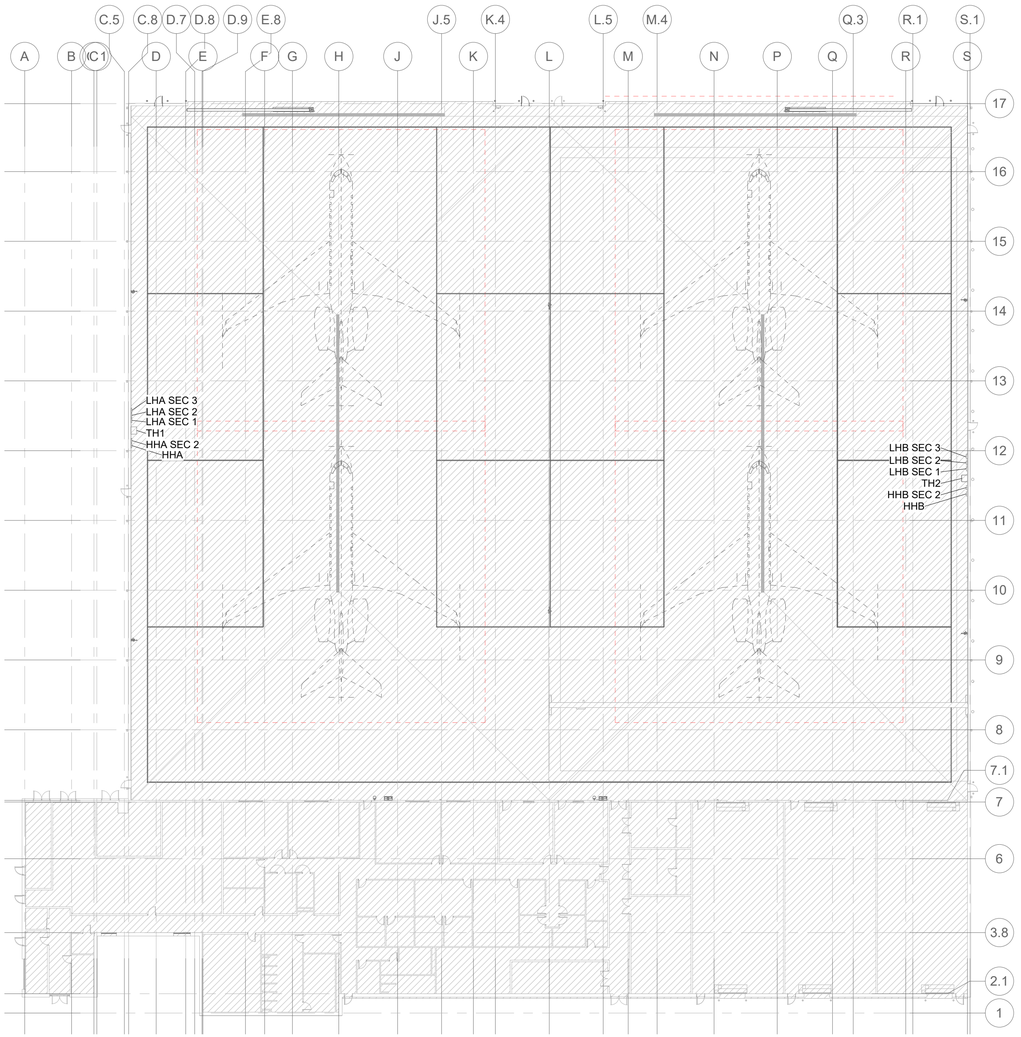
US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST, FORT WORTH, TX 76102

CITRINE-OLSSON
2801 GRANDE AVE
GRAND JUNCTION CO, 81501

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT

DEMO ELECTRICAL SCHEDULES

SHEET ID
ED501



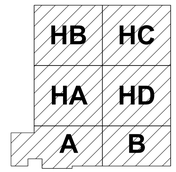
A1 FIRST FLOOR PLAN - POWER - OVERALL

1" = 30'-0"

GENERAL NOTES:

1. EXISTING GROUNDING AND LIGHTNING PROTECTION CONDUCTORS MAY BE DISTURBED BY STRUCTURAL DEMOLITION AND FOUNDATION WORK. CONTRACTOR SHALL FIELD-VERIFY EXISTING GROUNDING ELECTRODE SYSTEMS, BONDING CONDUCTORS, AND ANY LIGHTNING PROTECTION DOWN-LEADS IN AREAS OF SLAB AND FOOTING REMOVAL. MAINTAIN OR RESTORE CONTINUITY OF ALL GROUNDING AND LIGHTNING PROTECTION CONNECTIONS TO NEW STRUCTURAL STEEL AND FOUNDATIONS. COORDINATE WITH STRUCTURAL DRAWINGS.

KEY PLAN



PLAN NORTH

N

0 180" 360" 720"

SCALE: 1" = 360"

STATE OF TEXAS
DAVID G. KEATTING
128680
LICENSED PROFESSIONAL ENGINEER

28 MAY 2026

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: D. KEATTING
DRAWN BY: A. COLISTA
CHECKED BY: M. KOLB
SUBMITTED BY:
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST, FORT WORTH, TX 76102

CITRINE+OLSSON
2801 GRANDE AVE
GRAND JUNCTION CO, 81501

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT

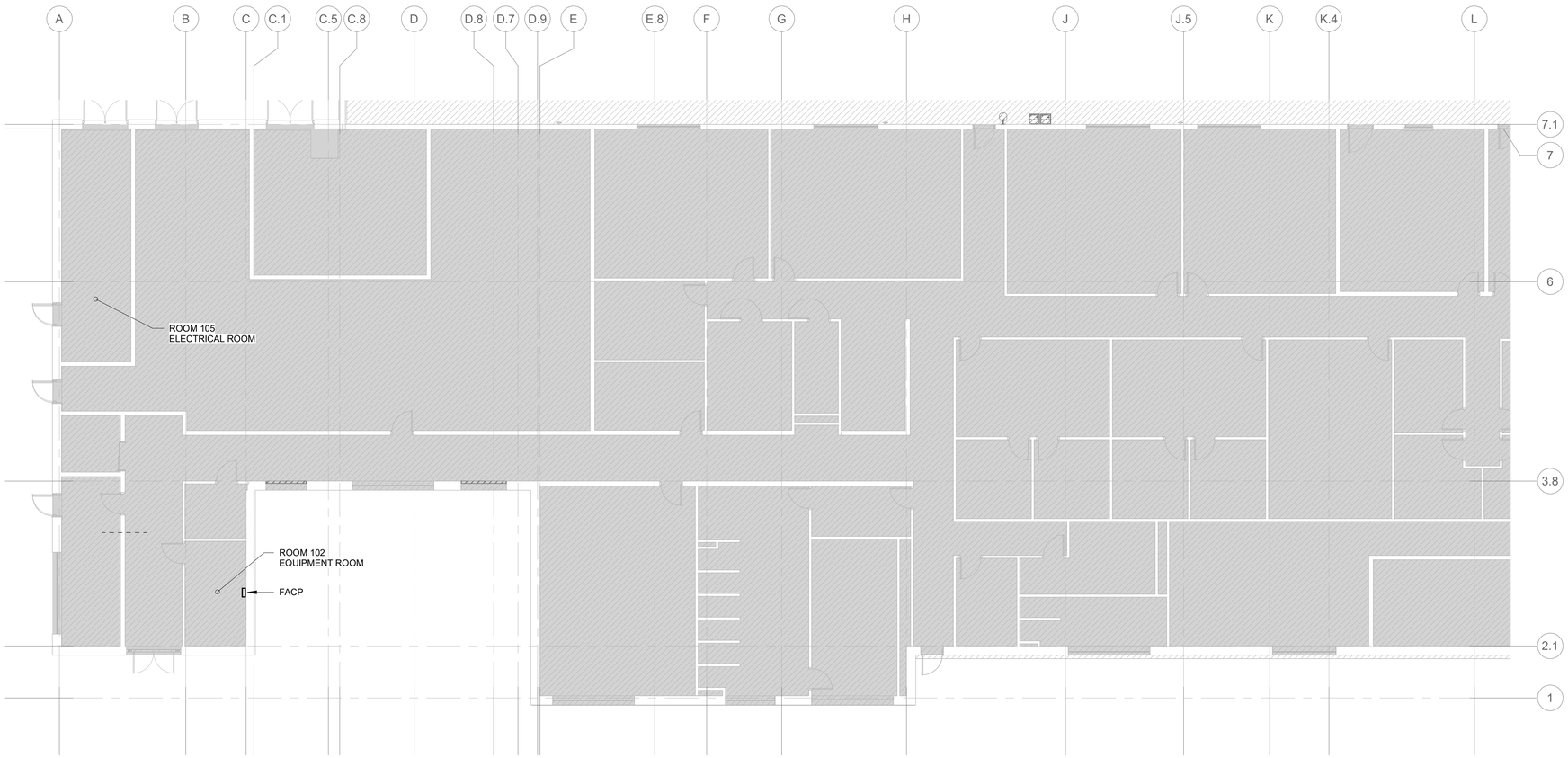
FLOOR PLAN - POWER - OVERALL

SHEET ID

E-101

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/B90176 Hangar Door Expansion - R24 - Elec.rvt

Plot Date: 7/1/2026 11:07:16 AM

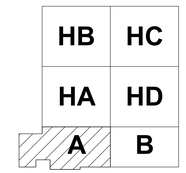


A1 FIRST FLOOR PLAN - POWER - AREA A
1" = 10'-0"

GENERAL NOTES:

1. THIS FLOORPLAN IS INCLUDED FOR REFERENCE ONLY.

KEY PLAN



PLAN NORTH
N

0 60" 120" 240"
SCALE: 1" = 120"

STATE OF TEXAS
DAVID G. KEATTING
128680
LICENSED PROFESSIONAL ENGINEER
28 MAY 2026

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: D. KEATTING
DRAWN BY: A. COLISTA
CHECKED BY: M. CAMPBELL
SUBMITTED BY:
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST, FORT WORTH, TX 76102

CITRINE-OLSSON
2801 GRANDE AVE
GRAND JUNCTION CO. 81501

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT

FLOOR PLAN - POWER - AREA A

SHEET ID
E-102

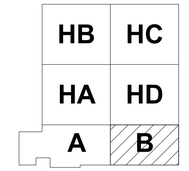
File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/B90176 Hangar Door Expansion - R24 - Elec.rvt
Plot Date: 7/1/2026 11:07:17 AM

A1 FIRST FLOOR PLAN - POWER - AREA B
1" = 10'-0"

GENERAL NOTES:

1. THIS FLOORPLAN IS INCLUDED FOR REFERENCE ONLY.

KEY PLAN



PLAN NORTH
N

0 60" 120" 240"
SCALE: 1" = 120"

STATE OF TEXAS
DAVID G. KEATTING
128680
LICENSED PROFESSIONAL ENGINEER
28 MAY 2026

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: D. KEATTING
DRAWN BY: A. COLISTA
CHECKED BY: M. ACKER
SUBMITTED BY:
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST.; FORT WORTH, TX 76102

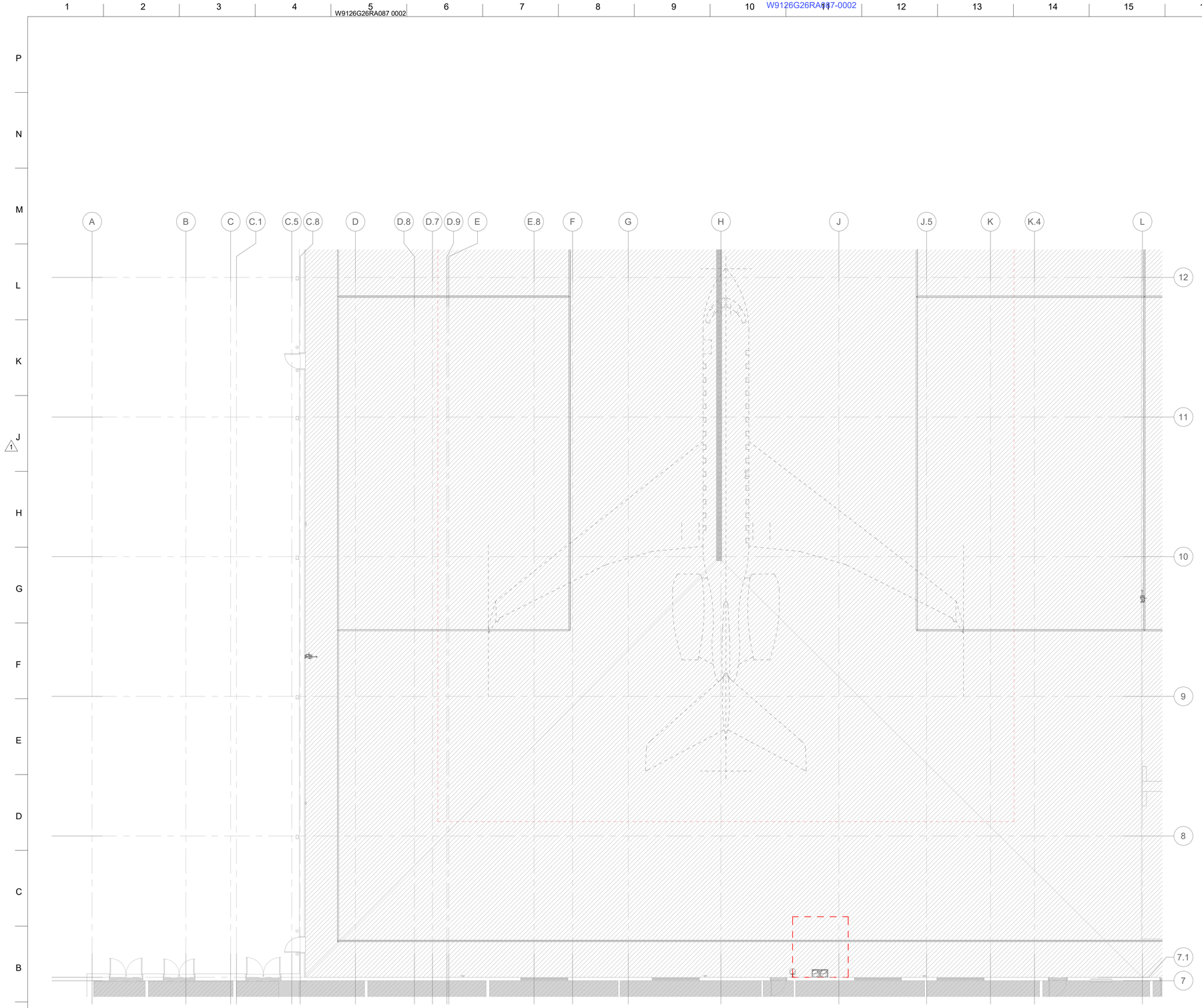
CITRINE-OLSSON
2801 GRANDE AVE
GRAND JUNCTION CO, 81501

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT

FLOOR PLAN - POWER - AREA B

SHEET ID
E-103

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/B90176 Hangar Door Expansion - R24 - Elec.rvt
Plot Date: 7/1/2026 11:07:18 AM



A1 FIRST FLOOR PLAN - POWER - AREA HA
1" = 10'-0"

GENERAL NOTES:

1. THIS FLOORPLAN IS INCLUDED FOR REFERENCE ONLY.

KEY PLAN

HB	HC
HA	HD
A	B

PLAN NORTH

SCALE: 1" = 120"

STATE OF TEXAS
DAVID G. KEATTING
128680
LICENSED
PROFESSIONAL ENGINEER
28 MAY 2026

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - FtHood/B90176 Hangar Door Expansion - R24 - Elec.rvt

Plot Date: 7/1/2026 11:07:20 AM

DESIGNED BY: D. KEATTING
DRAWN BY: A. COLISTA
CHECKED BY: M. KAGEE
SUBMITTED BY:
SIZE: ANSI D

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST., FORT WORTH, TX. 76102

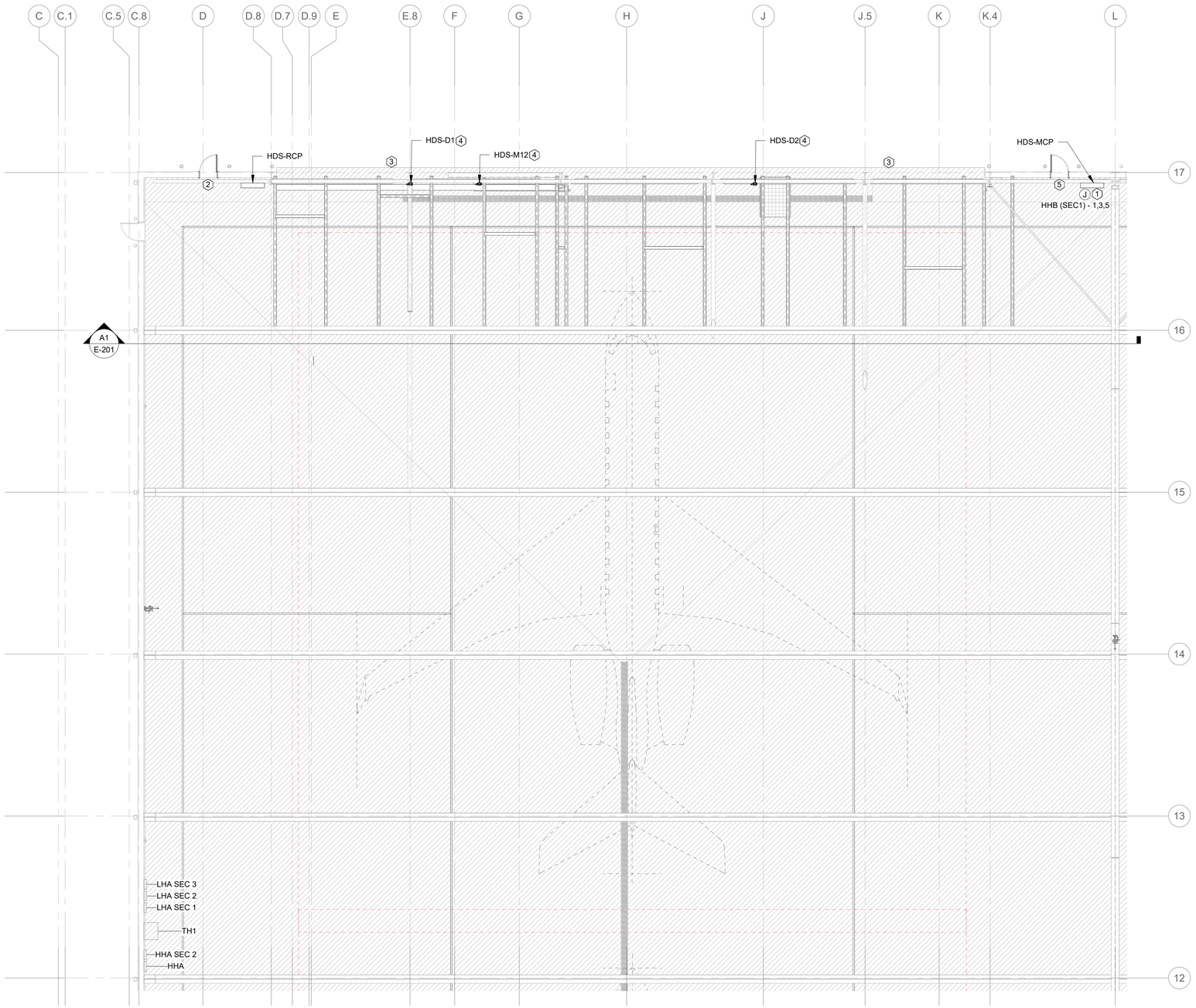
CITRINE-OLSSON
2801 GRANDE AVE
GRAND JUNCTION CO, 81501

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT

FLOOR PLAN - POWER - AREA HA

SHEET ID

E-104



A1 FIRST FLOOR PLAN - POWER - AREA HB

1" = 10'-0"

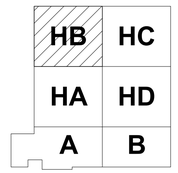
GENERAL NOTES:

1. HANGAR DOOR POWER SHOWN REPRESENTS SINGLE-POINT CONNECTION TO MANUFACTURER-FURNISHED DOOR MASTER CONTROL PANEL (MCP) PER MANUFACTURER'S REQUIREMENTS. REFERENCE SHEET E-602 FOR HANGAR DOOR ELECTRICAL LOAD DIAGRAM AND HANGAR DOOR CONDUIT & CONDUCTOR REQUIREMENTS.

KEY NOTES:

1. PROVIDE (1) 480V, 3-PHASE POWER TO HANGAR DOOR MANUFACTURER-FURNISHED MCP FROM PANEL HHA AS SCHEDULED. PROVIDE 100A, 3-POLE LOCKABLE DISCONNECTING MEANS ADJACENT TO MCP. MCP SHALL CONTAIN INTERNAL MOTOR STARTERS AND OVERLOAD PROTECTION FOR ALL ASSOCIATED HANGAR DOOR MOTORS.
2. RECONNECT SALVAGED ILLUMINATED EXIT SIGN AT NEW PERSONNEL DOOR. REUSE EXISTING LIGHTING CIRCUIT AND EXTEND CONDUIT/CONDUCTORS AS REQUIRED UTILIZING SAME SIZE WIRE AND CONDUIT. REFERENCE DEMOLITION DRAWINGS FOR ADDITIONAL INFORMATION.
3. REINSTALL SALVAGED EXTERIOR WALL-MOUNTED LIGHT FIXTURE REMOVED UNDER DEMOLITION. REUSE EXISTING LIGHTING CIRCUIT AND EXTEND CONDUIT/CONDUCTORS AS REQUIRED UTILIZING SAME SIZE WIRE AND CONDUIT. FINAL FIXTURE LOCATION TO BE COORDINATED WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS. REFERENCE DEMOLITION DRAWINGS FOR ADDITIONAL INFORMATION.
4. PROVIDE LOCAL MOTOR DISCONNECTS HANGAR DOOR MOTOR AS INDICATED ON SHEET E-602.
5. PROVIDE NEW ILLUMINATED EXIT SIGN AT NEW PERSONNEL DOOR. CONNECT TO NEAREST EXISTING EXIT LIGHTING CIRCUIT. EXTEND CONDUIT/CONDUCTORS AS REQUIRED UTILIZING SAME SIZE WIRE AND CONDUIT. COORDINATE FINAL DEVICE PLACEMENT WITH ARCHITECTURAL DOOR CONFIGURATION. PROVIDE INDUSTRIAL-GRADE LED EXIT SIGN, WALL MOUNTED, THERMOPLASTIC WHITE HOUSING, RED LETTERS, MVOLT.

KEY PLAN



PLAN NORTH

N

0 60" 120" 240"

SCALE: 1" = 120"

STATE OF TEXAS
DAVID G. KEATTING
128680
LICENSED PROFESSIONAL ENGINEER

28 MAY 2026

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/B90176 Hangar Door Expansion - R24 - Elec.rvt

Plot Date: 7/1/2026 11:07:22 AM

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: D. KEATTING
DRAWN BY: A. COLISTA
CHECKED BY: M. CAMPBELL
SUBMITTED BY:
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST, FORT WORTH, TX 76102

CITRINE-OLSSON
2801 GRANDE AVE
GRAND JUNCTION CO. 81501

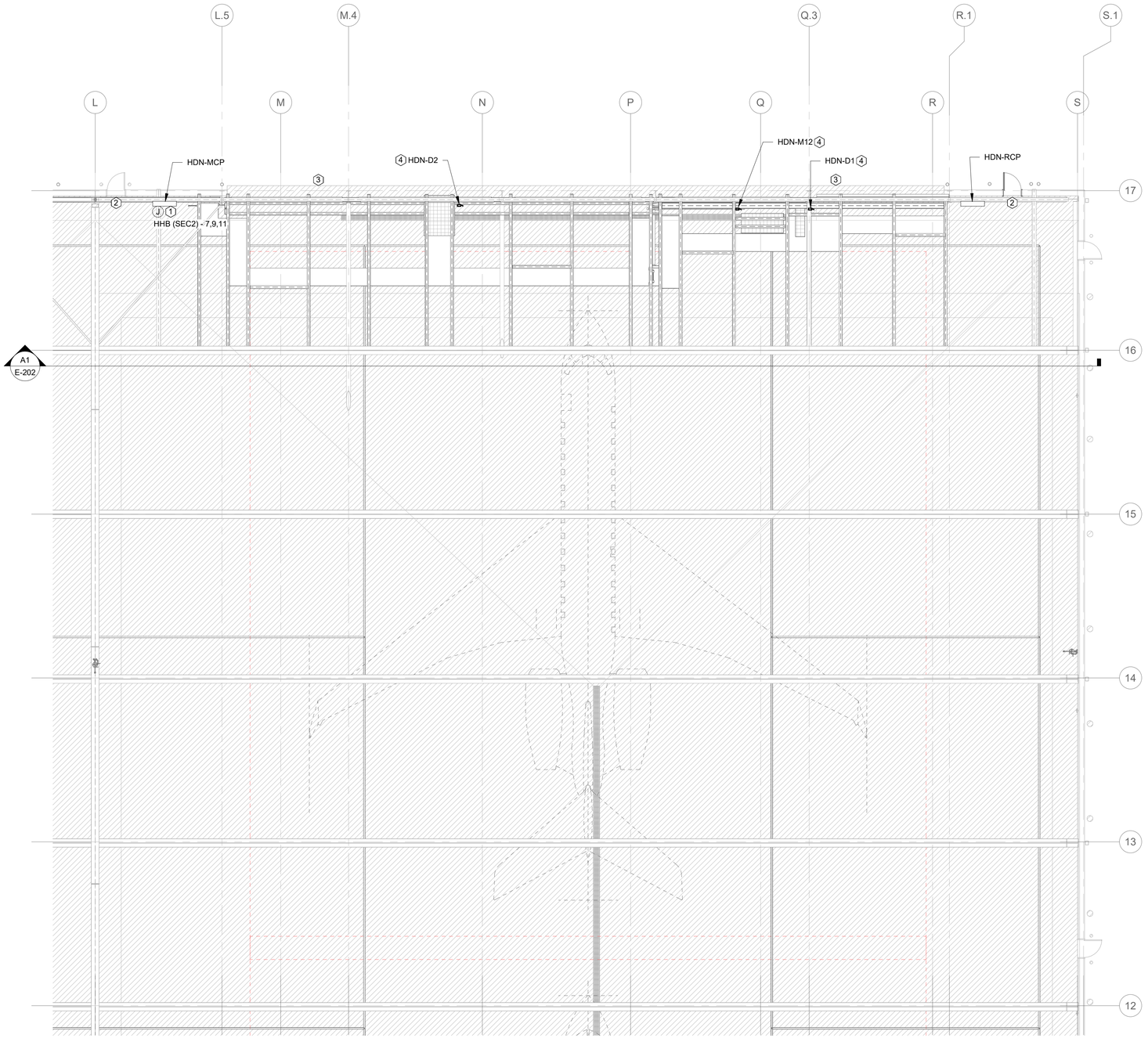
FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT

FLOOR PLAN - POWER - AREA HB

SHEET ID

E-105

W9126G26RA087-0002



A1 FIRST FLOOR PLAN - POWER - AREA HC
1" = 10'-0"

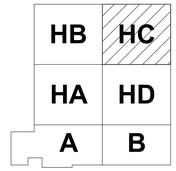
GENERAL NOTES:

1. HANGAR DOOR POWER SHOWN REPRESENTS SINGLE-POINT CONNECTION TO MANUFACTURER-FURNISHED DOOR MASTER CONTROL PANEL (MCP) PER MANUFACTURER'S REQUIREMENTS. REFERENCE SHEET E-602 FOR HANGAR DOOR ELECTRICAL LOAD DIAGRAM AND HANGAR DOOR CONDUIT & CONDUCTOR REQUIREMENTS.

KEY NOTES:

1. PROVIDE (1) 480V, 3-PHASE POWER TO HANGAR DOOR MANUFACTURER-FURNISHED MCP FROM PANEL HHB AS SCHEDULED. PROVIDE 100A, 3-POLE LOCKABLE DISCONNECTING MEANS ADJACENT TO MCP. MCP SHALL CONTAIN INTERNAL MOTOR STARTERS AND OVERLOAD PROTECTION FOR ALL ASSOCIATED HANGAR DOOR MOTORS.
2. RECONNECT SALVAGED ILLUMINATED EXIT SIGN AT NEW PERSONNEL DOOR. REUSE EXISTING LIGHTING CIRCUIT AND EXTEND CONDUIT/CONDUCTORS AS REQUIRED UTILIZING SAME SIZE WIRE AND CONDUIT. REFERENCE DEMOLITION DRAWINGS FOR ADDITIONAL INFORMATION.
3. REINSTALL SALVAGED EXTERIOR WALL-MOUNTED LIGHT FIXTURE REMOVED UNDER DEMOLITION. REUSE EXISTING LIGHTING CIRCUIT AND EXTEND CONDUIT/CONDUCTORS AS REQUIRED UTILIZING SAME SIZE WIRE AND CONDUIT. FINAL FIXTURE LOCATION TO BE COORDINATED WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS. REFERENCE DEMOLITION DRAWINGS FOR ADDITIONAL INFORMATION.
4. PROVIDE LOCAL MOTOR DISCONNECTS HANGAR DOOR MOTOR AS INDICATED ON SHEET E-602.

KEY PLAN



PLAN NORTH
N

0 60" 120" 240"
SCALE: 1" = 120"

STATE OF TEXAS
DAVID G. KEATTING
128680
LICENSED PROFESSIONAL ENGINEER
28 MAY 2026

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/B90176 Hangar Door Expansion - R24 - Elec.rvt

Plot Date: 7/1/2026 11:07:24 AM

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: D. KEATTING
DRAWN BY: A. COLISTA
CHECKED BY: M. KOLEK
SUBMITTED BY:
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST, FORT WORTH, TX 76102

CITRINE+OLSSON
2801 GRANDE AVE
GRAND JUNCTION CO, 81501

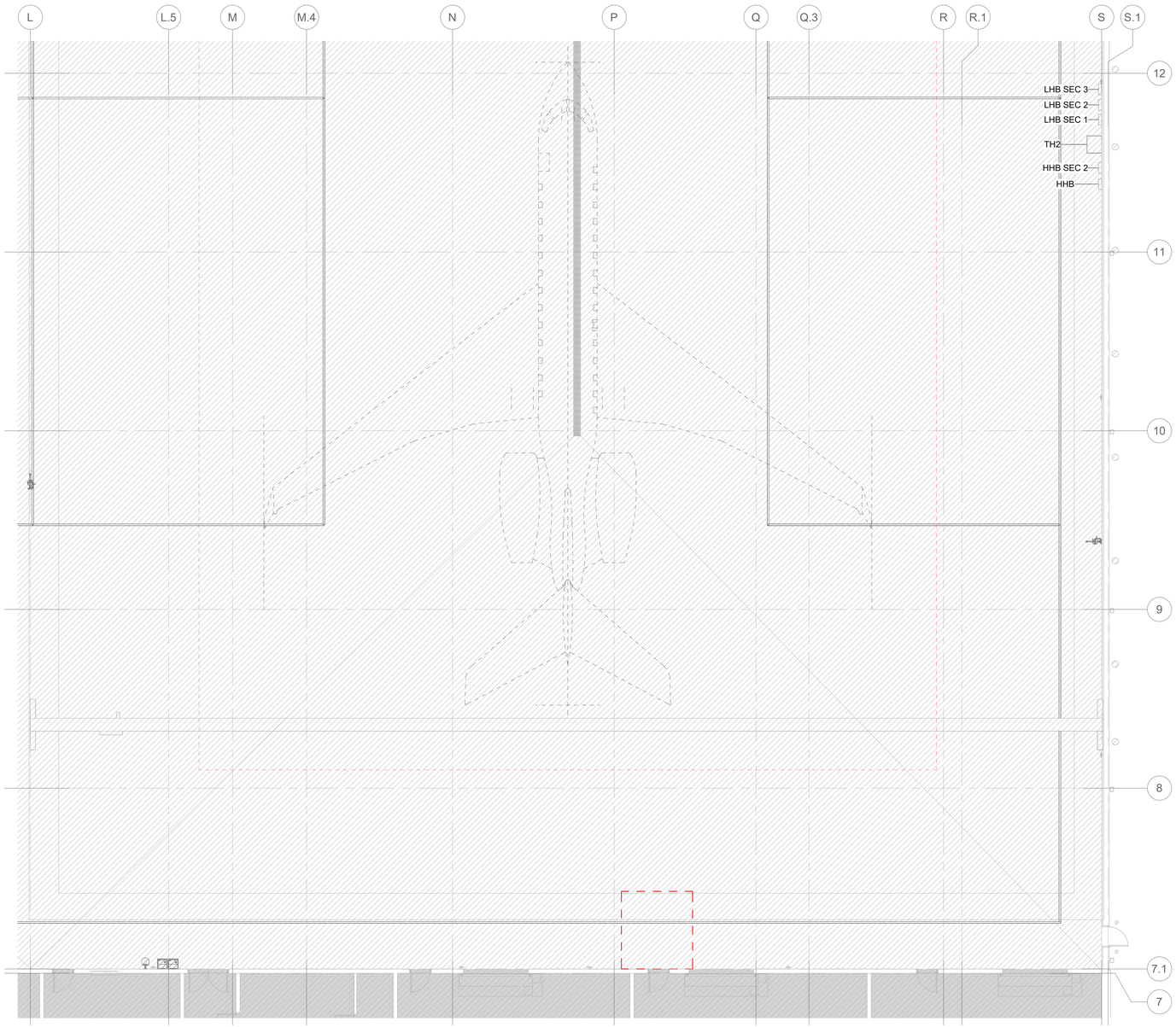
FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT

FLOOR PLAN - POWER - AREA HC

SHEET ID
E-106

W9126G26RA087 0002

W9126G26RA087-0002



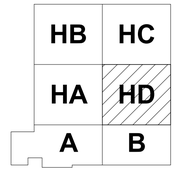
A1 FIRST FLOOR PLAN - POWER - AREA HD

1" = 10'-0"

GENERAL NOTES:

1. THIS FLOORPLAN IS INCLUDED FOR REFERENCE ONLY.

KEY PLAN



PLAN NORTH

N

0 60" 120" 240"

SCALE: 1" = 120"

STATE OF TEXAS
DAVID G. KEATTING
128680
LICENSED
PROFESSIONAL ENGINEER

28 MAY 2026

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

DESIGNED BY: D. KEATTING
DRAWN BY: A. COLISTA
CHECKED BY: M. ACKER
SUBMITTED BY:
SIZE: ANSI D

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST, FORT WORTH, TX 76102

CITRINE-OLSSON
2801 GRANDE AVE
GRAND JUNCTION CO, 81501

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT

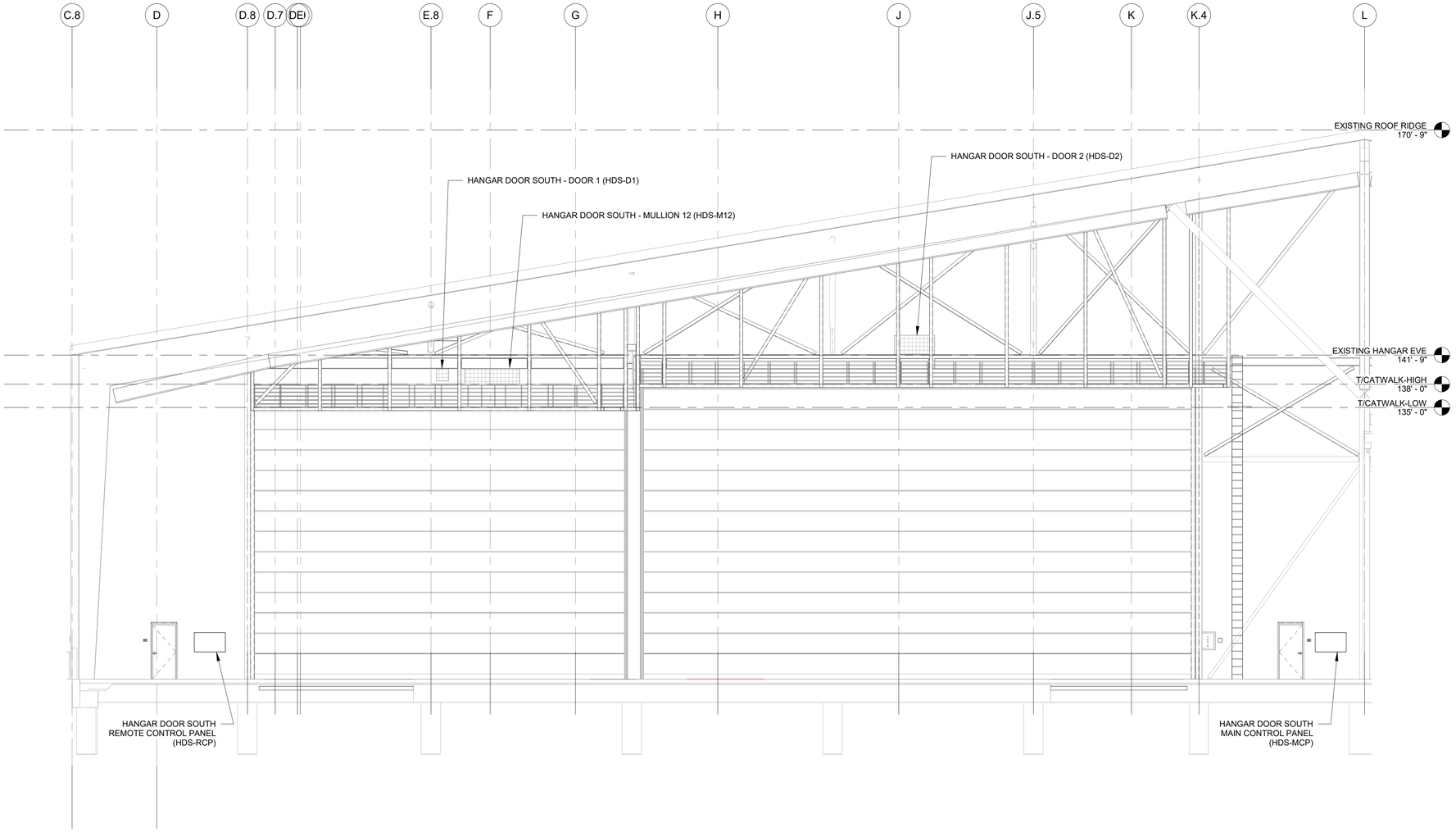
FLOOR PLAN - POWER - AREA HD

SHEET ID

E-107

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/B90176 Hangar Door Expansion - R24 - Elec.rvt

Plot Date: 7/1/2026 11:07:27 AM



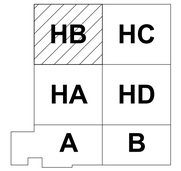
A1 POWER - ELEVATION - AREA HB

1/8" = 1'-0"

GENERAL NOTES:

1. THIS SHEET INDICATES LOCATIONS FOR HANGAR DOOR SYSTEM POWER CONNECTIONS. SOME LOCATIONS ARE ONLY ACCESSIBLE BY CATWALK. REFERENCE SHEET E-602 FOR THE HANGAR DOOR ELECTRICAL LOAD DIAGRAM.

KEY PLAN



PLAN NORTH

N

0 48" 96" 192"

SCALE: 1/8" = 12"

STATE OF TEXAS
DAVID G. KEATTING
128680
LICENSED PROFESSIONAL ENGINEER

28 MAY 2026

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: D. KEATTING
DRAWN BY: A. COLISTA
CHECKED BY: M. ACKER
SUBMITTED BY:
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST., FORT WORTH, TX. 76102

CITRINE-OLSSON
2801 GRANDE AVE
GRAND JUNCTION CO. 81501

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT

ELEVATION - POWER - AREA HB

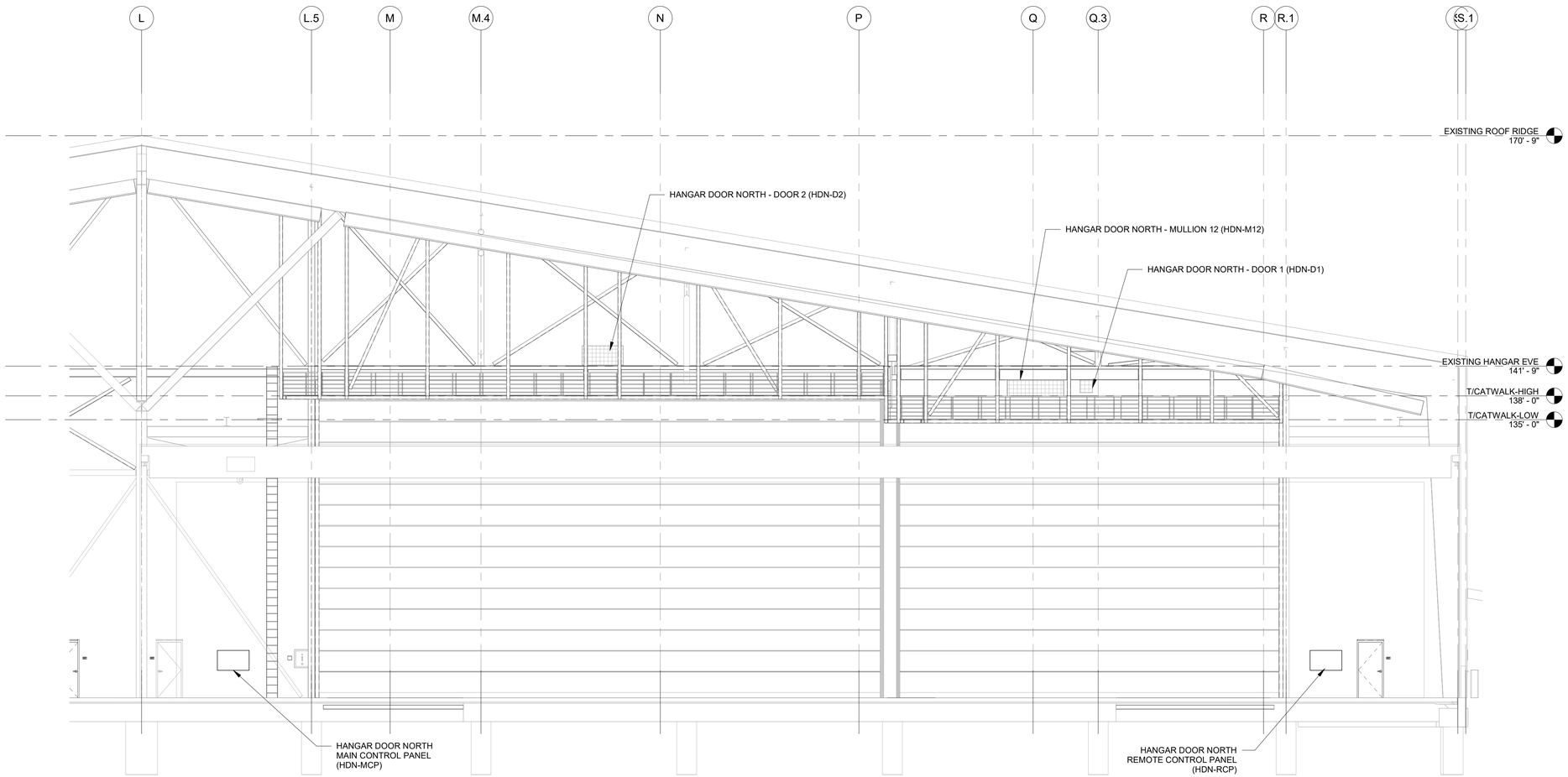
SHEET ID

E-201

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/B90176 Hangar Door Expansion - R24 - Elec.rvt

Plot Date: 7/1/2026 11:07:32 AM

W9126G26RA087-0002



A1 POWER - ELEVATION - AREA HC
1/8" = 1'-0"

GENERAL NOTES:

1. THIS SHEET INDICATES LOCATIONS FOR HANGAR DOOR SYSTEM POWER CONNECTIONS. SOME LOCATIONS ARE ONLY ACCESSIBLE BY CATWALK. REFERENCE SHEET E-602 FOR THE HANGAR DOOR ELECTRICAL LOAD DIAGRAM.

KEY PLAN

HB	HC
HA	HD
A	B

PLAN NORTH

0 48" 96" 192"
SCALE: 1/8" = 12"

STATE OF TEXAS
DAVID G. KEATTING
128680
LICENSED PROFESSIONAL ENGINEER
28 MAY 2026

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hanger Door Expansion - Ft Hood/B90176 Hanger Door Expansion - R24 - Elec.rvt
Plot Date: 7/1/2026 11:07:33 AM

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: D. KEATTING
DRAWN BY: A. COLISTA
CHECKED BY: M. KEATTING
SUBMITTED BY:
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST, FORT WORTH, TX 76102

CITRINE-OLSSON
2801 GRANDE AVE
GRAND JUNCTION CO, 81501

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT

ELEVATION - POWER - AREA HC

SHEET ID
E-202

W9126G26RA087-0002

Branch Panel: HHA (2 SECTION)

Location: HANGAR AREA
Supply From: SWITCHBOARD SWBD
Mounting: Surface
Enclosure: Type 1

Volts: 480/277 Wye
Phases: 3
Wires: 4
Mfgr: Eaton
Model: PRL4

A.I.C. Rating: 65K
Mains Type: MLO
Mains Rating: 600 A
MCB Rating: - -

Notes:

CKT	Load Name	Trip	Poles	A (VA)		B (VA)		C (VA)		Poles	Trip	Load Name	CKT
1	**HANGAR DOOR SOUTH, HDS-MCP (N),**	100 A	3	11000	0					3	20 A	SPARE,	2
3	--	--	--			11000	0			--	--	--	4
5	--	--	--					11000	0	--	--	--	6
7	BAF-2 (E),	15 A	3	700	700					3	15 A	BAF-1 (E),	8
9	--	--	--			700	700			--	--	--	10
11	--	--	--					700	700	--	--	--	12
13	BAF-3 (E),	15 A	3	700	--					1	--	PREPARED SPACE,	14
15	--	--	--			700	--			1	--	PREPARED SPACE,	16
17	--	--	--					700	--	1	--	PREPARED SPACE,	18
1	XFMR-TH1 (E),	350 A	3	64000									__
3	--	--	--			64000							__
5	--	--	--					63000					__
		Total Load:		77100 VA		77100 VA		76100 VA					
		Total Amps:		279 A		279 A		275 A					

Load Classification	Connected Load		Estimated Demand	Panel Totals	
Existing Load	197300 VA		197300 VA		
New Load	33000 VA		33000 VA	**Total Conn. Load:**	230300 VA
				Total Est. Demand:	230300 VA
				Total Conn. Current:	277 A
				Total Est. Demand Current:	277 A

Key: (E) EXISTING EQUIPMENT TO REMAIN, (N) NEW EQUIPMENT. INSTALL NEW CIRCUIT BREAKER AS SCHEDULED.

Branch Panel: HHB (2 SECTION)

Location: HANGAR AREA
Supply From: SWITCHBOARD SWBD
Mounting: Surface
Enclosure: Type 1

Volts: 480/277 Wye
Phases: 3
Wires: 4
Mfgr: Eaton
Model: PRL3A

A.I.C. Rating: 65K
Mains Type: MLO
Mains Rating: 400 A
MCB Rating: - -

Notes:

CKT	Load Name	Trip	Poles	A		B		C		Poles	Trip	Load Name	CKT
1	PREPARED SPACE,	--	1	--	--					1	--	PREPARED SPACE,	2
3	PREPARED SPACE,	--	1			--	--			1	--	PREPARED SPACE,	4
5	PREPARED SPACE,	--	1					--	--	1	--	PREPARED SPACE,	6
7	PREPARED SPACE,	--	1	--	--					1	--	PREPARED SPACE,	8
9	PREPARED SPACE,	--	1			--	--			1	--	PREPARED SPACE,	10
11	PREPARED SPACE,	--	1					--	--	1	--	PREPARED SPACE,	12
13	BAF-4 (E),	15 A	3	700	700					3	15 A	BAF-6 (E),	14
15	--	--	--			700	700			--	--	--	16
17	--	--	--					700	700	--	--	--	18
19	BAF-5 (E),	15 A	3	700	2100					3	15 A	EF-H8 (E),	20
21	--	--	--			700	2100			--	--	--	22
23	--	--	--					700	2100	--	--	--	24
25	EF-H7 (E),	15 A	3	2100	2100					3	15 A	EF-H9 (E),	26
27	--	--	--			2100	2100			--	--	--	28
29	--	--	--					2100	2100	--	--	--	30
1	XFMR-TH2 (E),	225 A	3	40000	--					1	--	Space,	2
3	--	--	--			39000	--			1	--	Space,	4
5	--	--	--					39000	--	1	--	Space,	6
7	**HANGAR DOOR NORTH, HDN-MCP (N),**	100 A	3	11000	0					3	20 A	Spare,	8
9	--	--	--			11000	0			--	--	--	10
11	--	--	--					11000	0	--	--	--	12
13	CRANE (E),	20 A	3	2000	2100					3	15 A	EF-H1 (E),	14
15	--	--	--			2000	2100			--	--	--	16
17	--	--	--					2000	2100	--	--	--	18
19	EF-H5 (E),	15 A	3	2100	2100					3	15 A	EF-H6 (E),	20
21	--	--	--			2100	2100			--	--	--	22
23	--	--	--					2100	2100	--	--	--	24
25	EF-H4 (E),	15 A	3	2100	2100					3	15 A	EF-H2 (E),	26
27	--	--	--			2100	2100			--	--	--	28
29	--	--	--					2100	2100	--	--	--	30
31	EF-H3 (E),	15 A	3	2100									__
33	--	--	--			2100							__
35	--	--	--					2100					__
		Total Load:		74000 VA		73000 VA		73000 VA					
		Total Amps:		267 A		264 A		264 A					

Load Classification	Connected Load		Estimated Demand	Panel Totals	
Existing Load	187000 VA		187000 VA		
New Load	33000 VA		33000 VA	**Total Conn. Load:**	220000 VA
				Total Est. Demand:	220000 VA
				Total Conn. Current:	265 A
				Total Est. Demand Current:	265 A

Key: (E) EXISTING EQUIPMENT TO REMAIN, (N) NEW EQUIPMENT. INSTALL NEW CIRCUIT BREAKER AS SCHEDULED.

STATE OF TEXAS
DAVID G. KEATTING
128680
LICENSED
PROFESSIONAL ENGINEER
28 MAY 2026

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/B90176 Hangar Door Expansion - R24 - Elec.rvt
Plot Date: 7/1/2026 11:07:28 AM

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: D. KEATTING
DRAWN BY: A. COLISTA
CHECKED BY: M. ACKER
SUBMITTED BY:
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST., FORT WORTH, TX 76102

CITRINE-OLSSON
2801 GRANDE AVE.
GRAND JUNCTION CO, 81501

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT

ELECTRICAL SCHEDULES

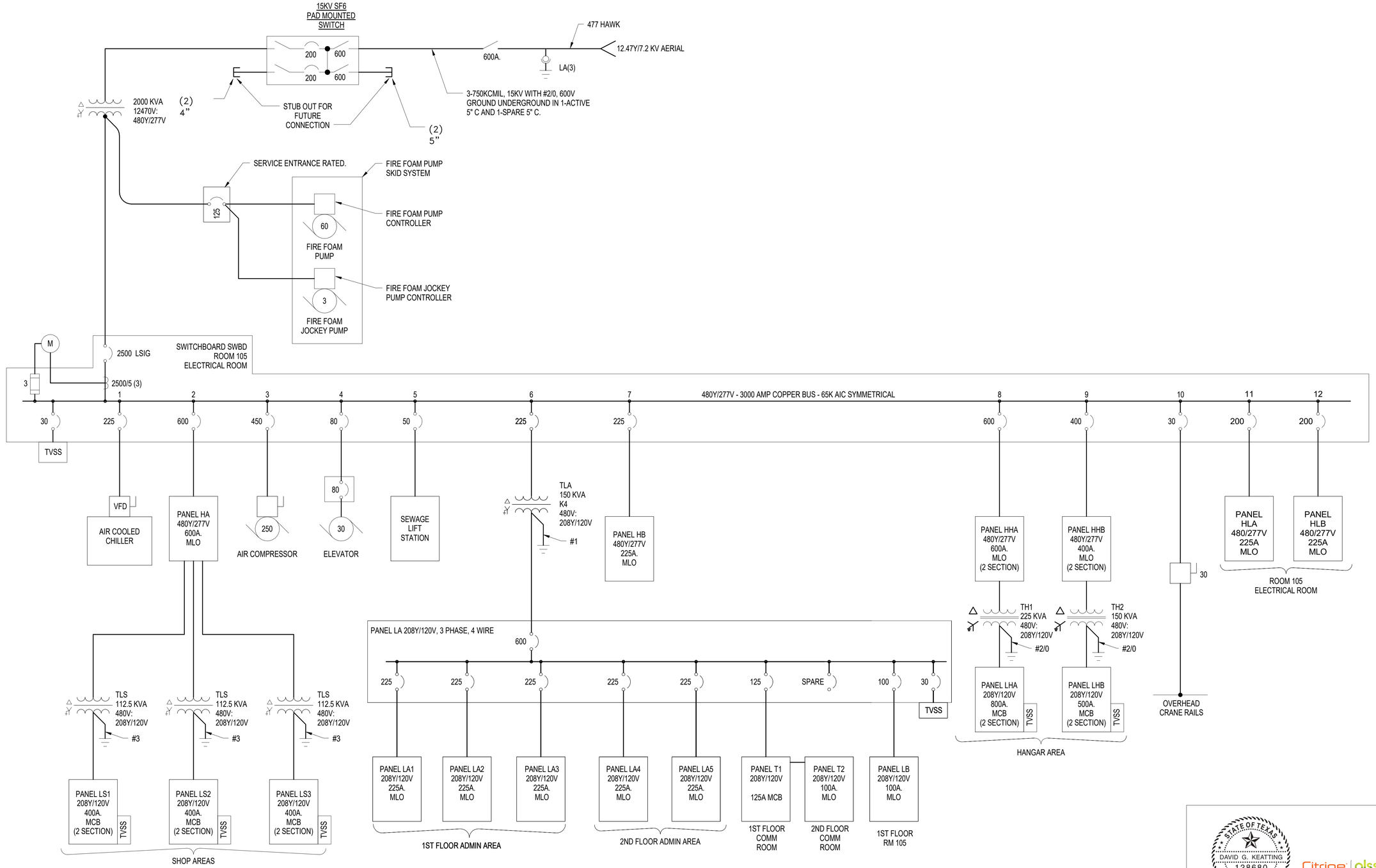
SHEET ID

E-501

W9126G26RA087-0002

GENERAL NOTES:

1. EXISTING ONE LINE DIAGRAM IS SHOWN FOR REFERENCE ONLY. ALL EQUIPMENT SHOWN IS EXISTING UNLESS NOTED OTHERWISE.



A1 EXISTING ONE-LINE DIAGRAM

NTS

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/B90176 Hangar Door Expansion - R24 - Elec.rvt

Plot Date: 7/1/2026 11:07:28 AM

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: D. KEATTING
DRAWN BY: A. COLISTA
CHECKED BY: M. AKEE
SUBMITTED BY:
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST.; FORT WORTH, TX 76102

CITRINE-OLSSON
2801 GRANDE AVE
GRAND JUNCTION CO, 81501

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT

EXISTING ONE-LINE DIAGRAM

STATE OF TEXAS
DAVID G. KEATTING
128680
LICENSED
PROFESSIONAL ENGINEER
28 MAY 2026

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson

SHEET ID

E-601

CONDUIT & CONDUCTOR SCHEDULE			
FEEDER #	DESCRIPTION	CONDUIT, CONDUCTORS	REMARKS
1A	SINGLE-POINT POWER CONNECTION TO HANGAR DOOR MCP	1.5"C, (3)#4 AWG, (1)#8 AWG GND	CONNECT FROM MCP TO ASSOCIATED POWER PANEL. REFERENCE SHEETS E-105 & E-106 FOR ADDITIONAL INFORMATION. HANGAR DOOR MCP SHALL HAVE A LOCKABLE DISCONNECT SWITCH THAT PROVIDES LOTO CAPABILITY. IF MANUFACTURER'S MCP DOES NOT HAVE LOTO CAPABILITY, PROVIDE A 100A, NON-FUSED, 600V, LOCKABLE DISCONNECT SWITCH AHEAD OF THE MCP AND MOUNTED ADJACENT TO THE MCP. CONNECT USING SAME CONDUIT AND WIRE SIZE INDICATED FOR FEEDER 1A.
1B	DOOR 1 POWER FEED FROM MCP	0.75"C, (3)#12 AWG, (1)#12 AWG GND	CONNECT FROM MCP TO D1. PROVIDE LOCAL DISCONNECTING MEANS PER NEC 430.102(B). PROVIDE NON-FUSED DISCONNECT, 480 VAC, 3-POLE, 30A
1C	MULLION 12 POWER FEED FROM MCP	0.75"C, (3)#12 AWG, (1)#12 AWG GND	CONNECT FROM MCP TO M12. PROVIDE LOCAL DISCONNECTING MEANS PER NEC 430.102(B). PROVIDE NON-FUSED DISCONNECT, 480 VAC, 3-POLE, 30A
1D	DOOR 2 POWER FEED FROM MCP	0.75"C, (3)#8 AWG, (1)#10 AWG GND	CONNECT FROM MCP TO D2. PROVIDE LOCAL DISCONNECTING MEANS PER NEC 430.102(B). PROVIDE NON-FUSED DISCONNECT, 480 VAC, 3-POLE, 60A
4	CONTROLS WIRE - 2 CONDUCTOR	0.5"C, (2)#16 AWG	
5	CONTROLS WIRE - 4 CONDUCTOR	0.5"C, (4)#16 AWG	
6	CONTROLS WIRE - 14 CONDUCTOR	0.5"C, (14)#16 AWG	
9	NETWORK CABLE CONNECTION FROM MCP TO I/O BOX 1	0.75"C, CAT-6 CABLE	MAY INSTALL UP TO 3 CABLES IN ONE 3/4" CONDUIT. VERIFY FILL.

NOTES:
- CONDUIT AND CONDUCTORS FURNISHED, INSTALLED AND CONNECTED BY ELECTRICAL CONTRACTOR.
- PROVIDE DEDICATED CONTROL CIRCUITS FOR EACH DEVICE CONNECTION.

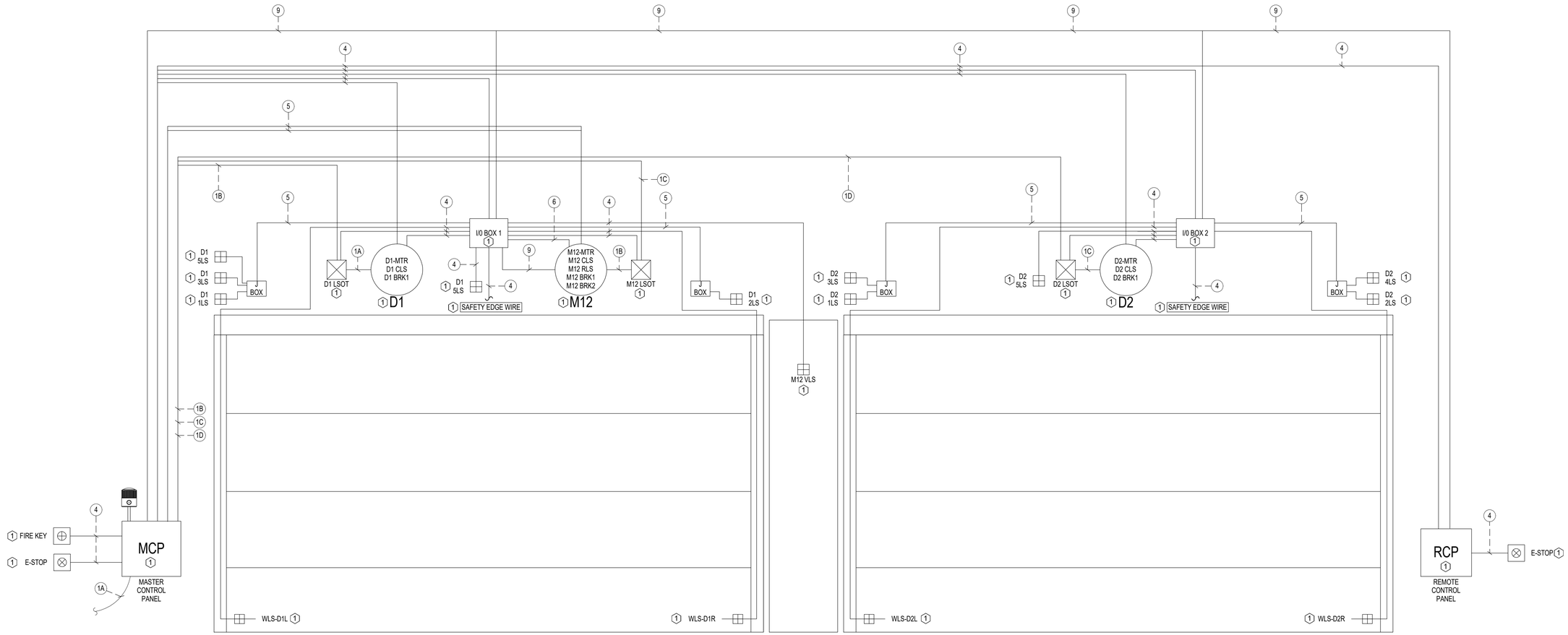
HANGAR DOOR COMPONENT ABBREVIATIONS	
ABBREVIATION	DESCRIPTION
D# MTR	MOTOR FOR DOOR
CLS	HAND CRANK LIMIT SWITCH
LSOT	OVERTRAVEL UP LIMIT SWITCH
1LS	BROKEN ROPE/BELT LIMIT SWITCH
2LS	BROKEN ROPE/BELT LIMIT SWITCH
3LS	SLACK ROPE/BELT (DOOR CLOSED) LIMIT SWITCH
4LS	SLACK ROPE/BELT (DOOR CLOSED) LIMIT SWITCH
5LS	DOOR OPEN LIMIT SWITCH
MCP	MAIN CONTROL PANEL
RCP	REMOTE CONTROL PANEL
WLS	WINDLOCK SENSOR
M# MTR	MOTOR FOR MULLION
VLS	MULLION VERTICAL LIMIT SWITCH
RLS	RUPTURED LIMIT SWITCH

GENERAL NOTES:

1. THIS DIAGRAM IS INTENDED TO SHOW GENERAL HANGAR DOOR POWER AND CONTROL INTERCONNECTIONS. IT IS SCHEMATIC AND DIAGRAMMATIC IN NATURE AND IS NOT INTENDED TO SHOW EXACT EQUIPMENT LOCATIONS, DIMENSIONS, OR ROUTING. CONTRACTOR SHALL FIELD VERIFY FINAL EQUIPMENT LOCATIONS AND COORDINATE EXACT CONDUIT ROUTING, CONNECTION POINTS, AND INSTALLATION REQUIREMENTS PRIOR TO CONSTRUCTION. EXACT COMPONENT LOCATIONS MAY VARY BETWEEN HANGAR DOOR NORTH AND HANGAR DOOR SOUTH.
2. PROVIDE ADDITIONAL JUNCTION BOXES AS REQUIRED TO ACHIEVE A NEAT AND WORKMANLIKE INSTALLATION. JUNCTION BOXES SHALL BE SIZED BY THE ELECTRICAL CONTRACTOR.

KEY NOTES:

1. DEVICE FURNISHED & INSTALLED BY HANGAR DOOR MANUFACTURER. ELECTRICAL CONNECTION BY ELECTRICAL CONTRACTOR.



1 HANGAR DOOR ELECTRICAL LOAD DIAGRAM

NTS

STATE OF TEXAS
DAVID G. KEATTING
128680
LICENSED PROFESSIONAL ENGINEER
28 MAY 2026

Citrine | olsson
Mentor-Protégé Joint Venture of Citrine and Olsson

US Army Corps of Engineers ®

MARK	DESCRIPTION	DATE
1	REVISED IN ACCORDANCE WITH AM0002	JUN 2026

File Path: Autodesk Docs://USACE Ft Worth - B90176 Hangar Door Expansion - Ft Hood/B90176 Hangar Door Expansion - R24 - Elec.rvt

Plot Date: 7/1/2026 11:07:31 AM

ISSUE DATE: MAY 28, 2026
SOLICITATION NO.: W9126G26RA087
CONTRACT NO.:

DESIGNED BY: D. KEATTING
DRAWN BY: A. COLISTA
CHECKED BY: M. KOEP
SUBMITTED BY:
SIZE: ANSI D

US ARMY CORPS OF ENGINEERS
FORT WORTH DISTRICT
819 TAYLOR ST, FORT WORTH, TX 76102

CITRINE+OLSSON
2801 GRANDE AVE
GRAND JUNCTION CO, 81501

FORT HOOD, TX
B90176 HANGAR DOOR EXPANSION - HADES MISSION SUPPORT

HANGAR DOOR ELECTRICAL LOAD DIAGRAM

SHEET ID

E-602