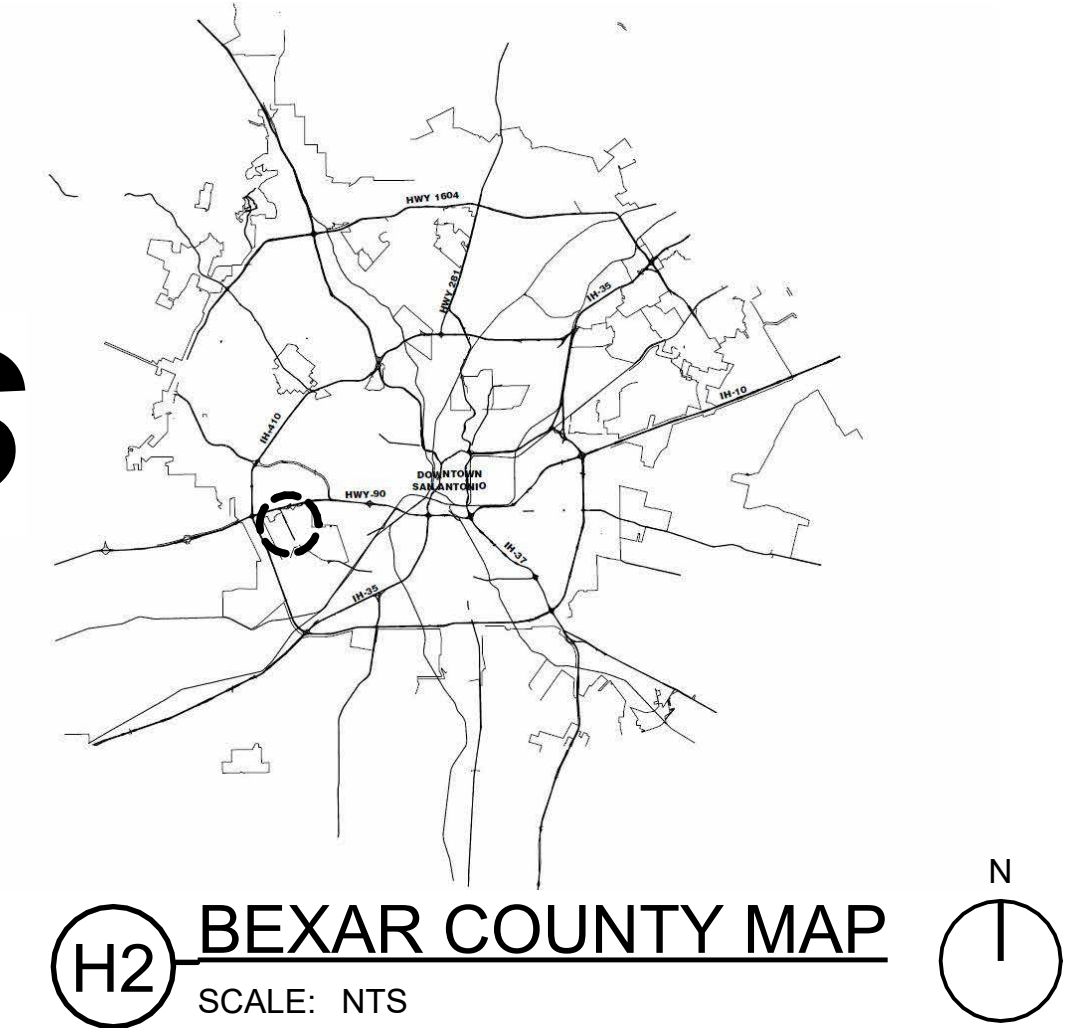


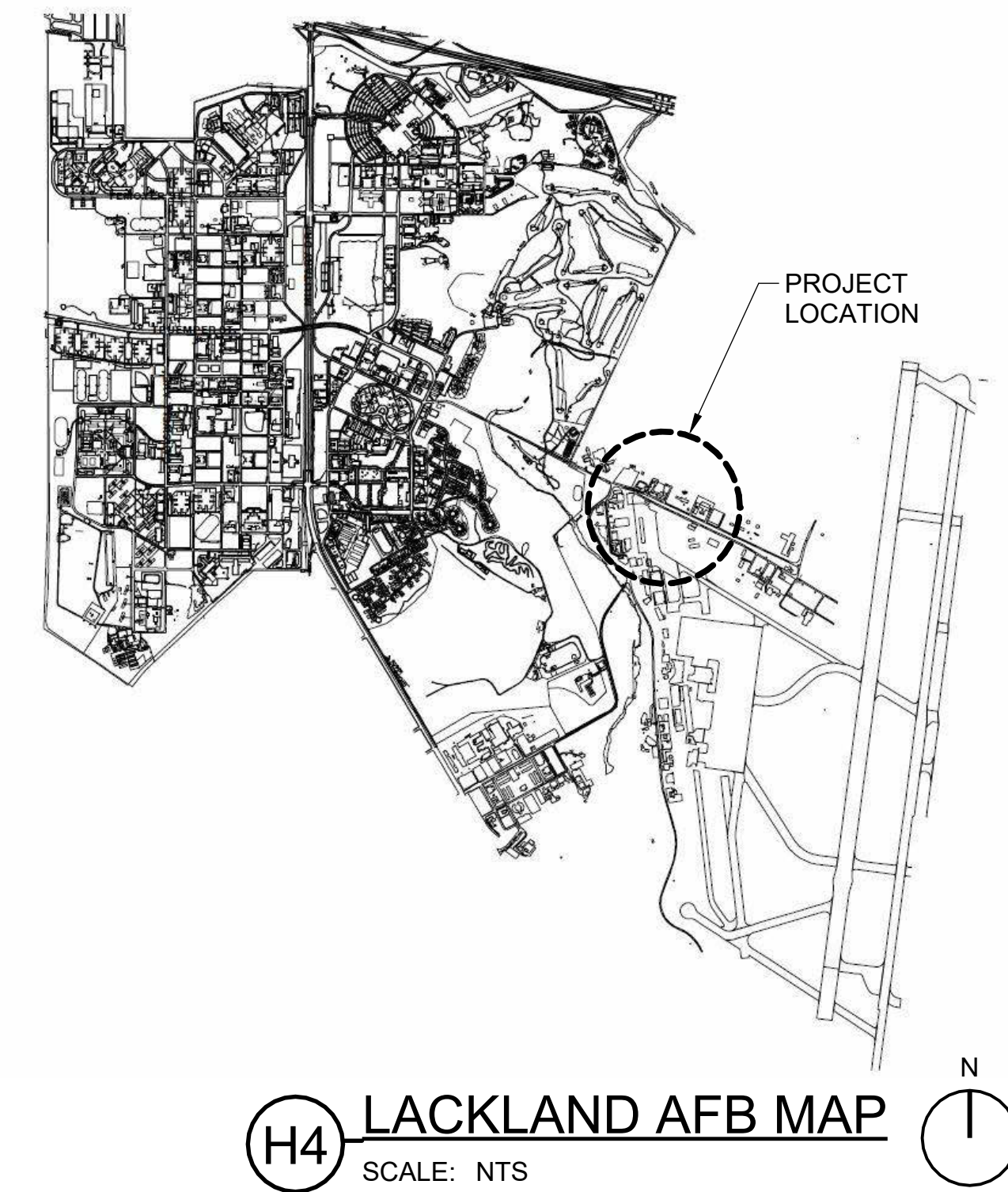
# **KELLY FIELD ANNEX**

## **AT JOINT BASE SAN ANTONIO, TEXAS**

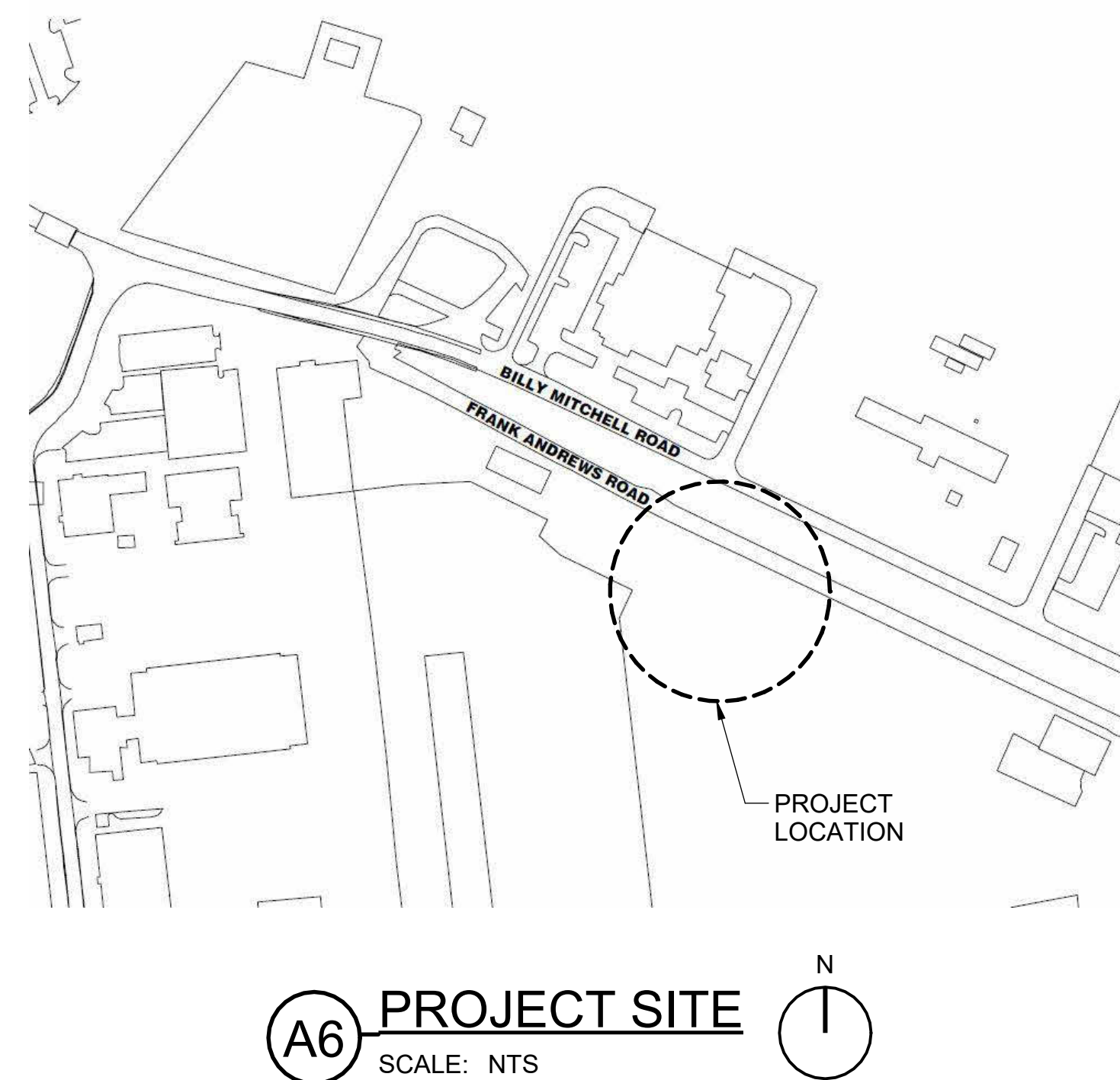
### **CONSTRUCT CORROSION CONTROL FACILITY**



BID OPTION ITEMS	
BID OPTION 1	TRANSLUCENT FIBERGLASS SANDWICH WALL PANEL ILO IMP
BID OPTION 2	SEGMENTAL BRICK SCREEN WALL
BID OPTION 3	STANDING SEAM METAL ROOF ILO METAL BUILDING R-PANEL ROOFING AT HANGAR ONLY
BID OPTION 4	HANGAR BAY 5 PART EPOXY FLOORING ILO 3-PART EPOXY FLOORING



**100% CONTRACT DOCUMENTS**  
**2 AUGUST 2024**



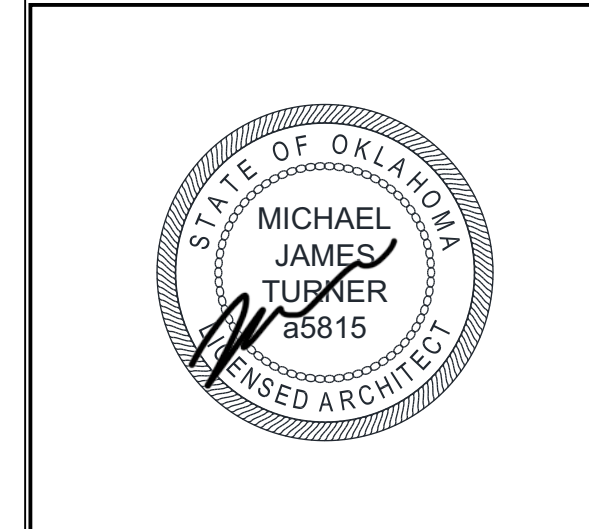
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SHEET INDEX	
NUMBER	TITLE
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G-002	SHEET INDEX
G-003	CODE COMPLIANCE AND LIFE SAFETY FLOOR PLAN
CIVIL	
C-101	ACCESS AND STAGING PLAN
C-201	STORMWATER POLLUTION PREVENTION PLAN
C-202	STORMWATER POLLUTION PREVENTION DETAILS
C-301	REMOVAL PLAN
C-401	PROPOSED PLAN
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C-605	SANITARY SCHEDULE AND DETAILS
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SB505	FOUNDATION DETAILS
SB506	FOUNDATION DETAILS
SB507	FOUNDATION DETAILS
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A-403	INTERIOR ELEVATIONS
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A-602	ROOM FINISH SCHEDULE
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MP101	MECHANICAL PIPING
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EG502	GROUNDING AND LIGHTNING PROTECTION DETAILS
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**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

REVISION HISTORY:	
DESCRIPTION	DATE

PROJECT INFORMATION:	
DESIGNED BY:	<b>JCL</b>
DRAWN BY:	<b>JCL</b>
REVIEWED BY:	<b>BKG</b>
PROJECT MANAGER:	<b>NDM</b>

PROJECT NUMBER:  
**20190320**

SHEET TITLE:  
**SHEET INDEX**

ISSUE DATE:  
**2 AUGUST 2024**

SHEET NUMBER:  
**G-002**

**NFPA 101 TABLE 7.3.3.1 EGRESS CAPACITY FACTOR**  
 LEVEL COMPONENTS = 0.2 WIDTH PER OCCUPANT  
 (36" DR) 32" CLEAR DIVIDED BY 0.2" = 160 OCCUPANTS  
 (72" DR) 66" CLEAR DIVIDED BY 0.2" = 330 OCCUPANTS

OCCUPANCY LEGEND		NFPA 101 TABLE 7.3.1.2 (2021)	SF/LF = OCC LOAD
	NFPA ASSEMBLY USE - LESS CONCENTRATED WITHOUT FIXED SEATING		82/15 = 6
	NFPA BUSINESS USE		1929/150 = 13
	NFPA STORAGE USE - IN STORAGE OCCUPANCIES		1721/500 = 4
	UFC AIRCRAFT HANGARS - AIRCRAFT STORAGE AND SERVICING AREAS		6486/500 = 13
	UFC MECHANICAL, ELECTRICAL, OTHER BUILDING EQUIPMENT SPACES		859/500 = 2
TOTAL OCCUPANTS:			38

**CODE SUMMARY**

**USE AND OCCUPANCY (IBC 2021):**  
 INDIVIDUAL CLASSIFICATION OF OCCUPANCY  
 BUSINESS: GROUP B (SECTION 304.1)  
 STORAGE: GROUP S-1 (SECTION 311.1)

CODE ANALYSIS BASED ON NONSEPARATED MIXED USE OCCUPANCY USING THE MORE RESTRICTIVE OCCUPANCY CLASSIFICATION S-1 (508.3.2).

**OCCUPANCY GROUP(S) (NFPA 101-2021):**  
 INDIVIDUAL CLASSIFICATION OF OCCUPANCIES:  
 BUSINESS (SECTION 6.1.11)  
 STORAGE: ORDINARY HAZARD (SECTION 6.1.13)

**TYPE OF CONSTRUCTION (IBC 2021 TABLE 601):**  
 TYPE II-B WITH SPRINKLER SYSTEM

**ALLOWABLE HEIGHT:**  
 UNLIMITED PER UFC 4-211-01 SEC 3-3.1.7  
 3 STORIES PER IBC 2021 TABLE 504.4

**ALLOWABLE AREA (IBC 2021):**  
 PER TABLE 506.2, TYPE IIB SPRINKLERED ALLOWABLE AREA: 70,000 SF.  
 ACTUAL (FOOTPRINT) AREA: 12,299 SF

INTERVALS BETWEEN DOORS SHALL NOT EXCEED 150'-0" ON ALL EXTERIOR WALLS PER NFPA 409, SEC 10.7.1.1., UFC 4-211-01 SEC. 3-3.1.9

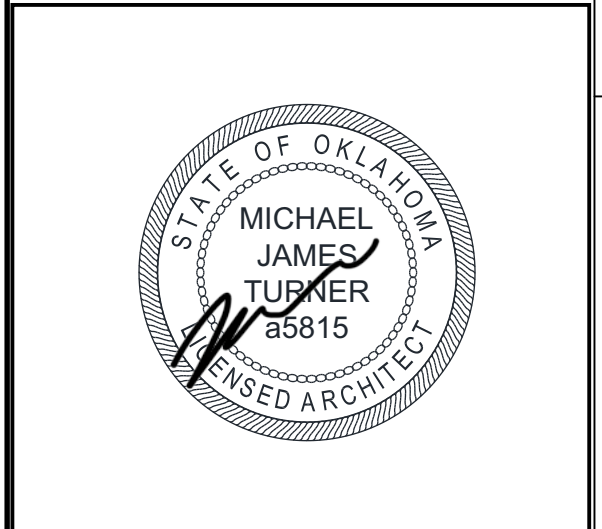
MAXIMUM EXIT ACCESS TRAVEL DISTANCE: PER NFPA 101 (2021) DOES NOT APPLY IN HANGAR PER UFC 4-211-01, SEC. 3-3.1.9.

**UFC 1-200-01; WITH CHANGE 2, (09-01-2022)**  
 UFC 1-200-02 HIGH PERFORMANCE AND SUSTAINABLE BUILDING REQUIREMENTS, WITH CHANGE 2 (06-01-2022)  
 UFC 3-600-01 FIRE PROTECTION ENGINEERING FOR FACILITIES WITH CHANGE 6 (05-06-2021)

INTERNATIONAL BUILDING CODE (2021)  
 INTERNATIONAL MECHANICAL CODE (2021)  
 INTERNATIONAL PLUMBING CODE (2021)  
 NATIONAL ELECTRICAL CODE NFPA 70 (2023)  
 INTERNATIONAL FIRE CODE (2021)  
 NFPA 409 STANDARD ON AIRCRAFT HANGARS (2022)  
 NFPA 72 NATIONAL FIRE ALARM AND SIGNALING CODE (2022)  
 NFPA 13 STANDARD FOR SPRINKLER SYSTEM (2022)  
 INTERNATIONAL ENERGY CONSERVATION CODE (2021)  
 LIFE SAFETY CODE NFPA 101 (2022)  
 ARCHITECTURAL BARRIERS ACT (ABA) WITH DOD MEMORANDUM

FSB FEDERAL DESIGN GROUP JV

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**LIFE SAFETY LEGEND**

TRAVEL DISTANCE

OCCUPANT LOAD NUMBER AT EXIT COMPONENT

EXIT COMPONENT MAXIMUM OCCUPANT CAPACITY NUMBER

DRY CHEMICAL TYPE FIRE EXTINGUISHER - WALL BRACKET MOUNTED AT 48" AFF

DRY CHEMICAL TYPE FIRE EXTINGUISHER - SEMI RECESSED CABINET AT 48" AFF TO CENTER OF DOOR PULL

CLEAN AGENT TYPE FIRE EXTINGUISHER - WALL BRACKET MOUNTED AT 48" AFF

-1 HR- FIRE BARRIER

# OCCUPANT LOAD PER UFC 3-600-01, TABLE 10-1

**PLUMBING FIXTURES**

UFC 3-420-01, 01 APRIL 2021  
 RATIO: 80 MALE /20 FEMALE

FIXTURE TYPE	OCCUPANCY: 38	REQ.	ACT.
PER 403.1 (AIR FORCE): 30 MALE AND 8 FEMALE RATIO			
W.C. (MEN)	30	1 TO 20	2 2+2 UR
W.C. (WOMEN)	8	1 TO 20	1 3
PER 403.1 (AIR FORCE): 30 MALE AND 8 FEMALE RATIO			
LAV. (MEN)	30	1 TO 20	2 2
LAV. (WOMEN)	8	1 TO 20	1 2
PER 403.1 (AIR FORCE):			
DRINKING FOUNTAIN	38/75=	0.50	1
SERVICE SINK	1 PER FLOOR		1

REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: **JCL**

DRAWN BY: **JCL**

REVIEWED BY: **BKG**

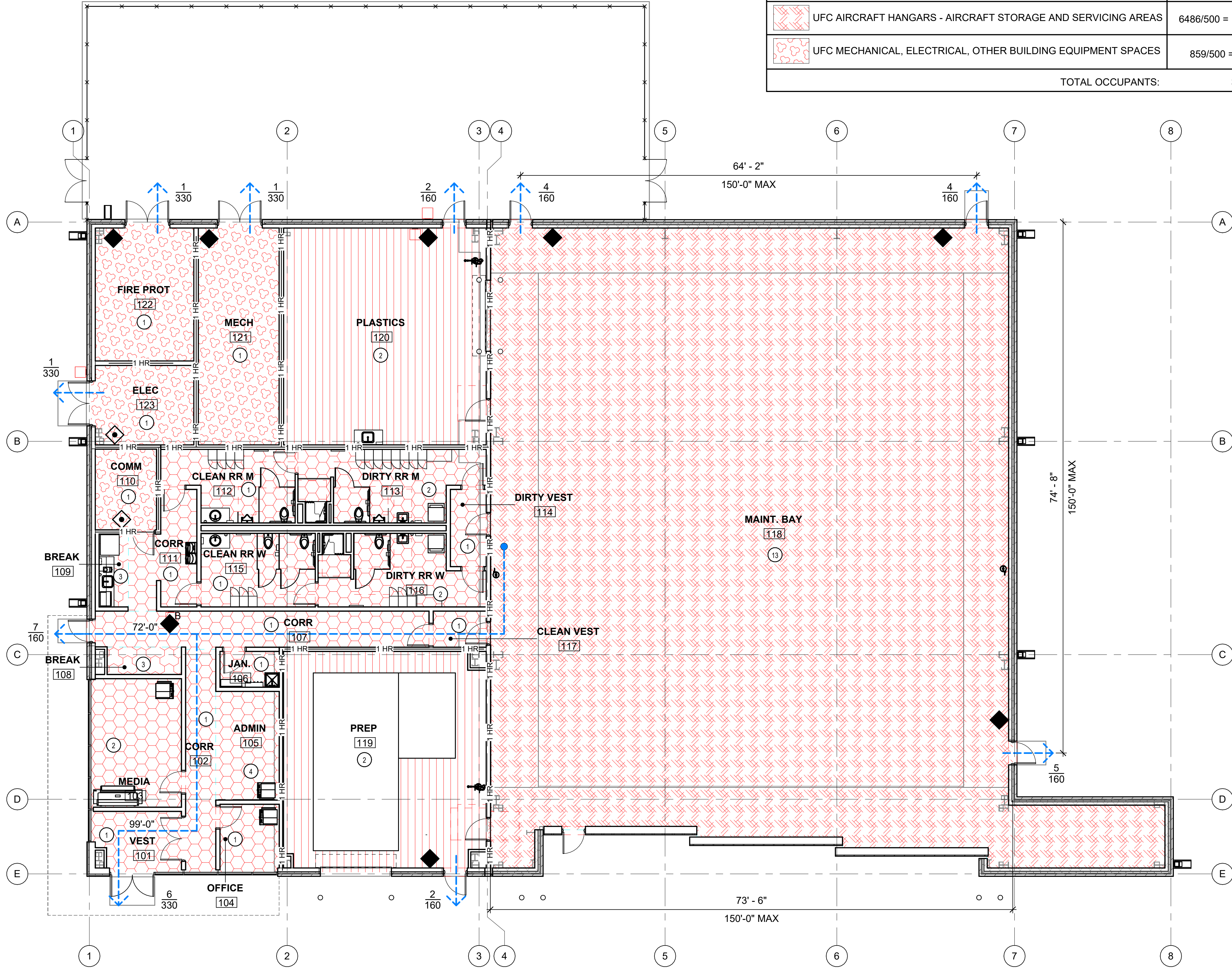
PROJECT MANAGER: **NDM**

PROJECT NUMBER: **20190320**

SHEET TITLE: **CODE COMPLIANCE AND LIFE SAFETY FLOOR PLAN**

ISSUE DATE: **2 AUGUST 2024**

SHEET NUMBER: **G-003**



**A6 CODE COMPLIANCE AND LIFE SAFETY PLAN**  
 SCALE: 1/8" = 1'-0"



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 C:\Users\jcaro\OneDrive - FSB Architects & Engineers\Documents\190320\_Aon\_Codes\169014.rvt



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PROJECT INFORMATION:

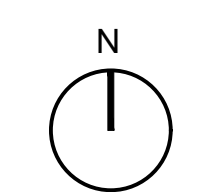
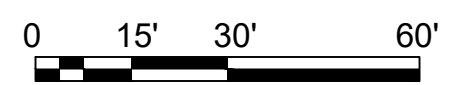
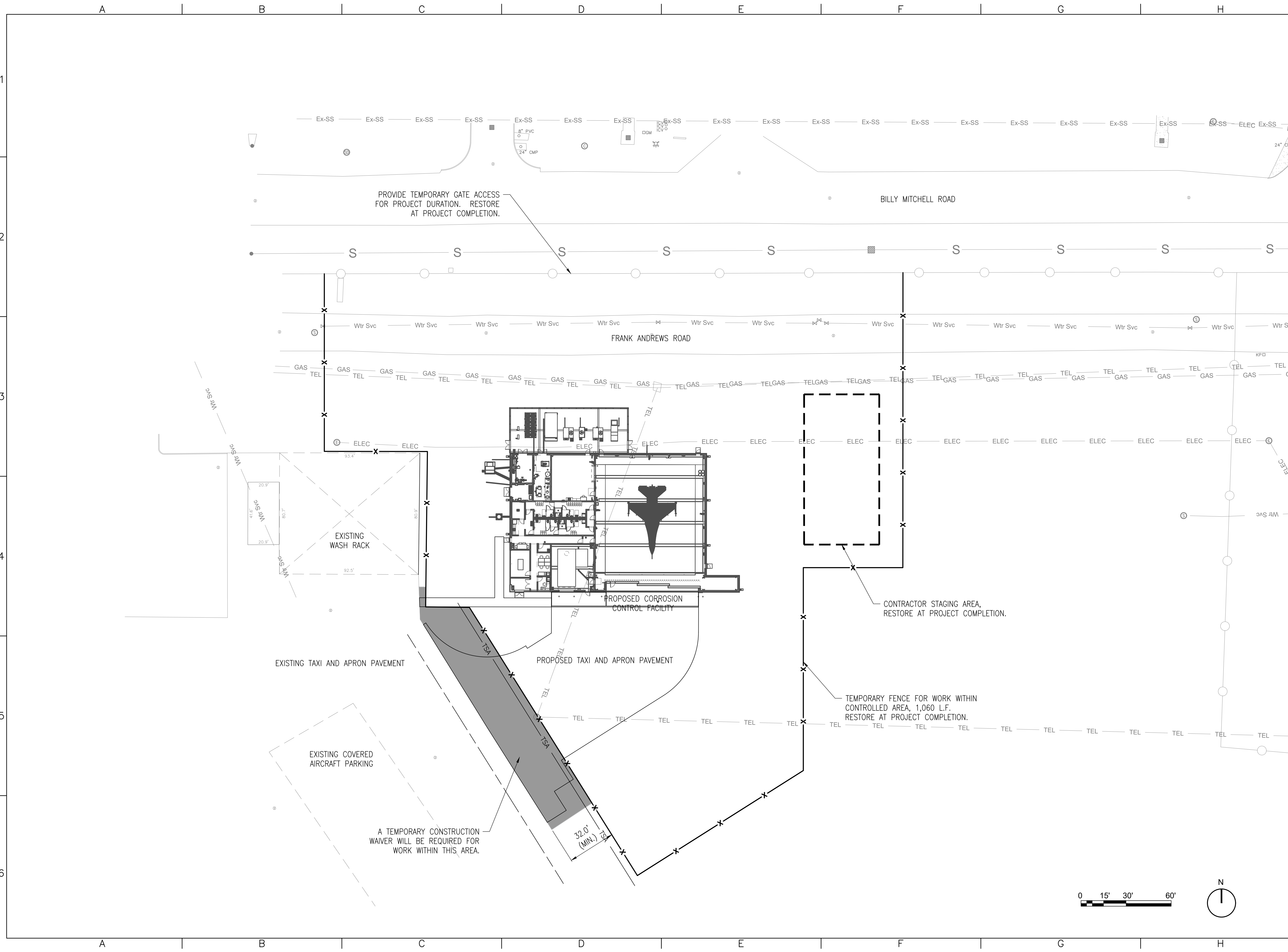
DESIGNED BY:	LDH
DRAWN BY:	LDH
REVIEWED BY:	RMH
PROJECT MANAGER:	NDM

PROJECT NUMBER:  
20190320

SHEET TITLE:  
ACCESS AND STAGING PLAN

ISSUE DATE:  
2 AUGUST 2024

SHEET NUMBER:  
C-101





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Corrosion Control Facility  
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JBSA - Kelly Annex, TX**

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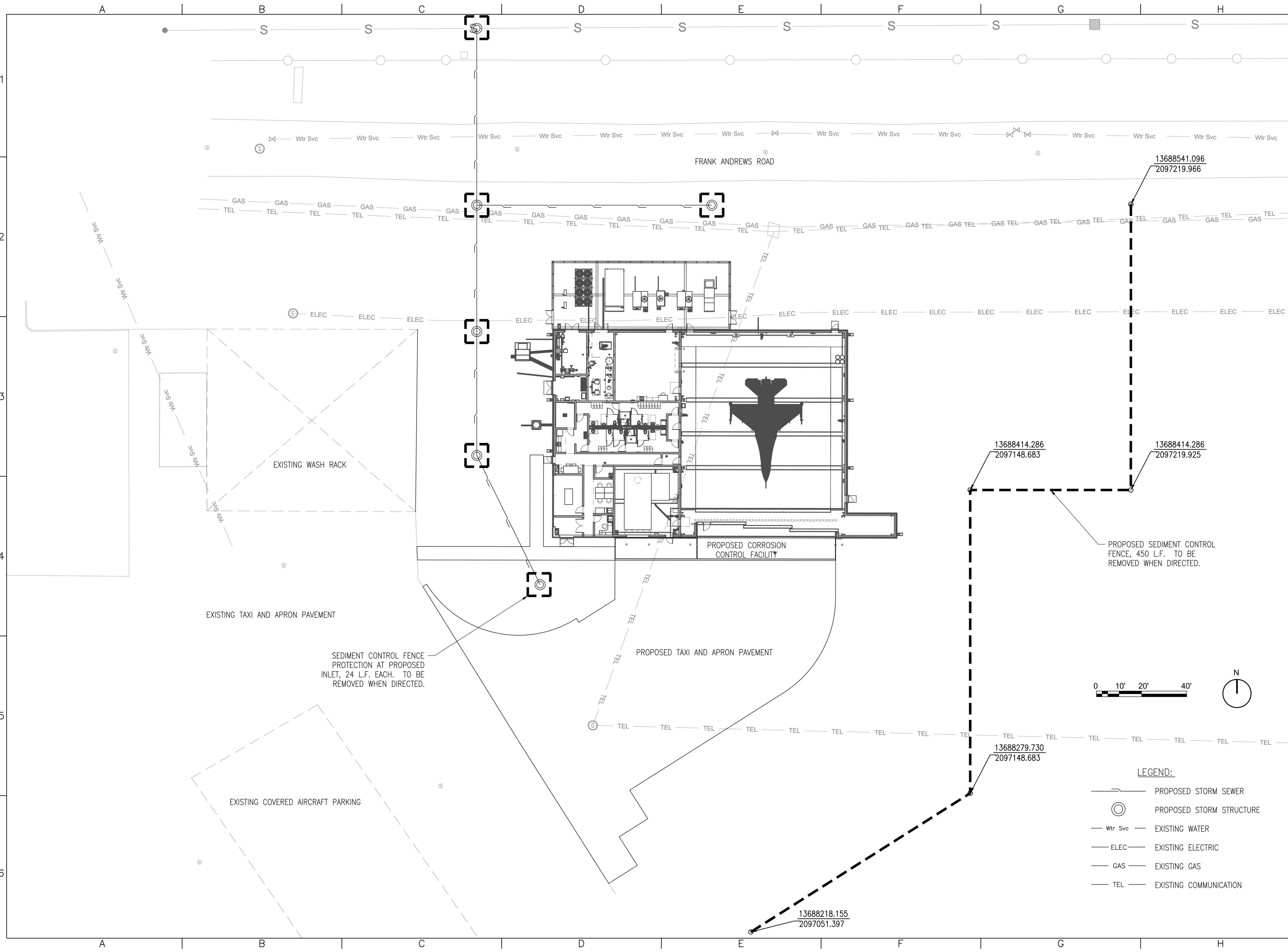
PROJECT INFORMATION:

DESIGNED BY:	LDH
DRAWN BY:	LDH
REVIEWED BY:	RMH
PROJECT MANAGER:	NDM

PROJECT NUMBER:	20190320
SHEET TITLE:	STORM WATER POLLUTION PREVENTION PLAN

ISSUE DATE:	2 AUGUST 2024
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SHEET NUMBER:	C-201
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- LEGEND:**
- PROPOSED STORM SEWER
  - PROPOSED STORM STRUCTURE
  - EXISTING WATER
  - EXISTING ELECTRIC
  - EXISTING GAS
  - EXISTING COMMUNICATION

13688414.286  
2097148.683

13688541.096  
2097219.966

13688414.286  
2097219.925

13688279.730  
2097148.683

13688218.155  
2097051.397



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REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

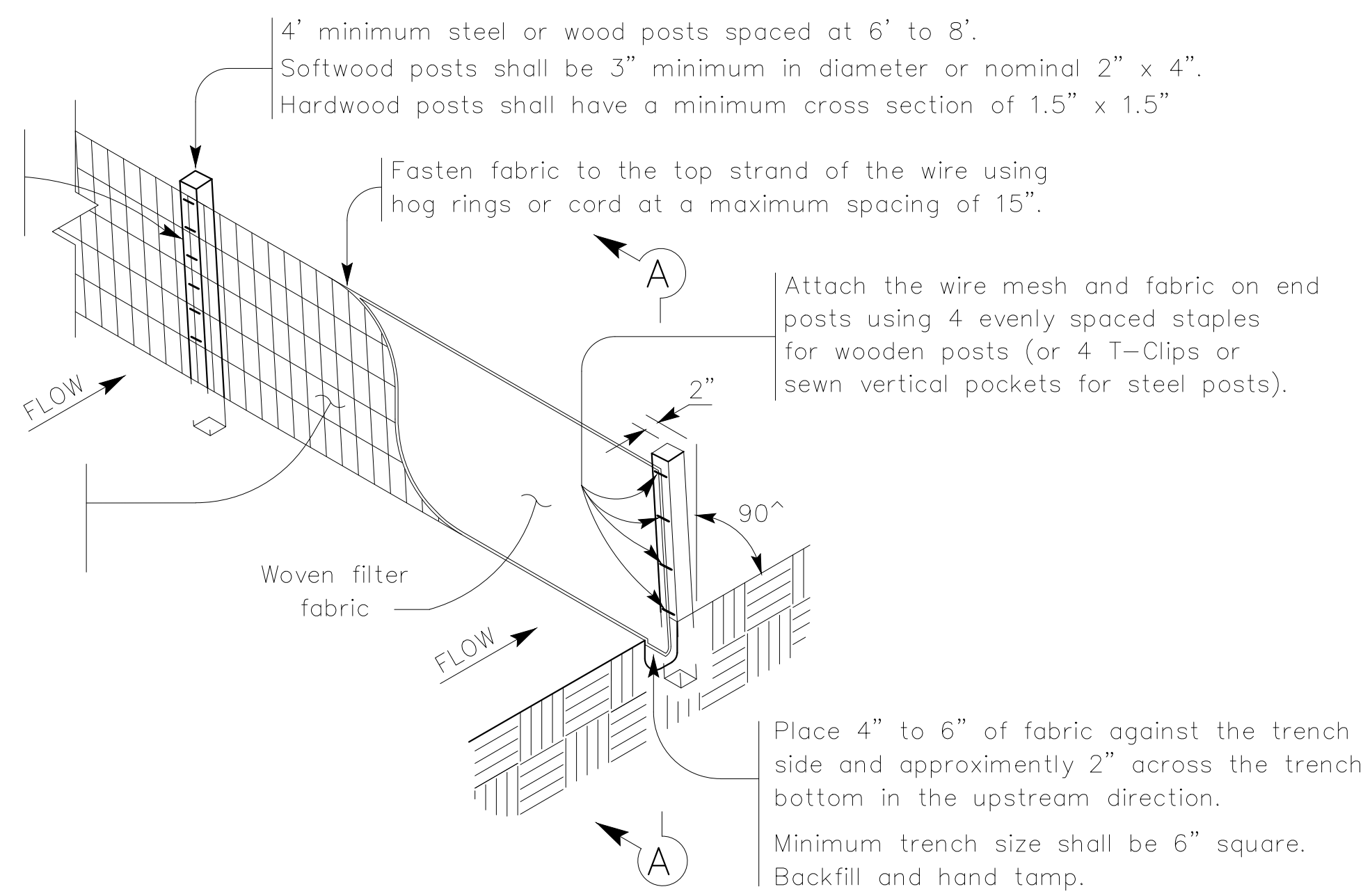
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DRAWN BY:	LDH
REVIEWED BY:	RMH
PROJECT MANAGER:	NDM

PROJECT NUMBER:  
**20190320**

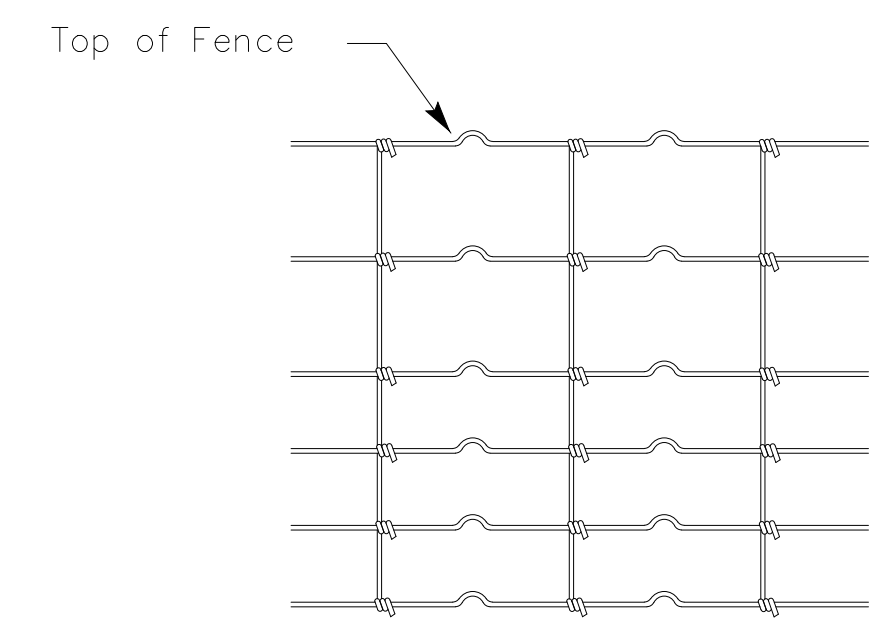
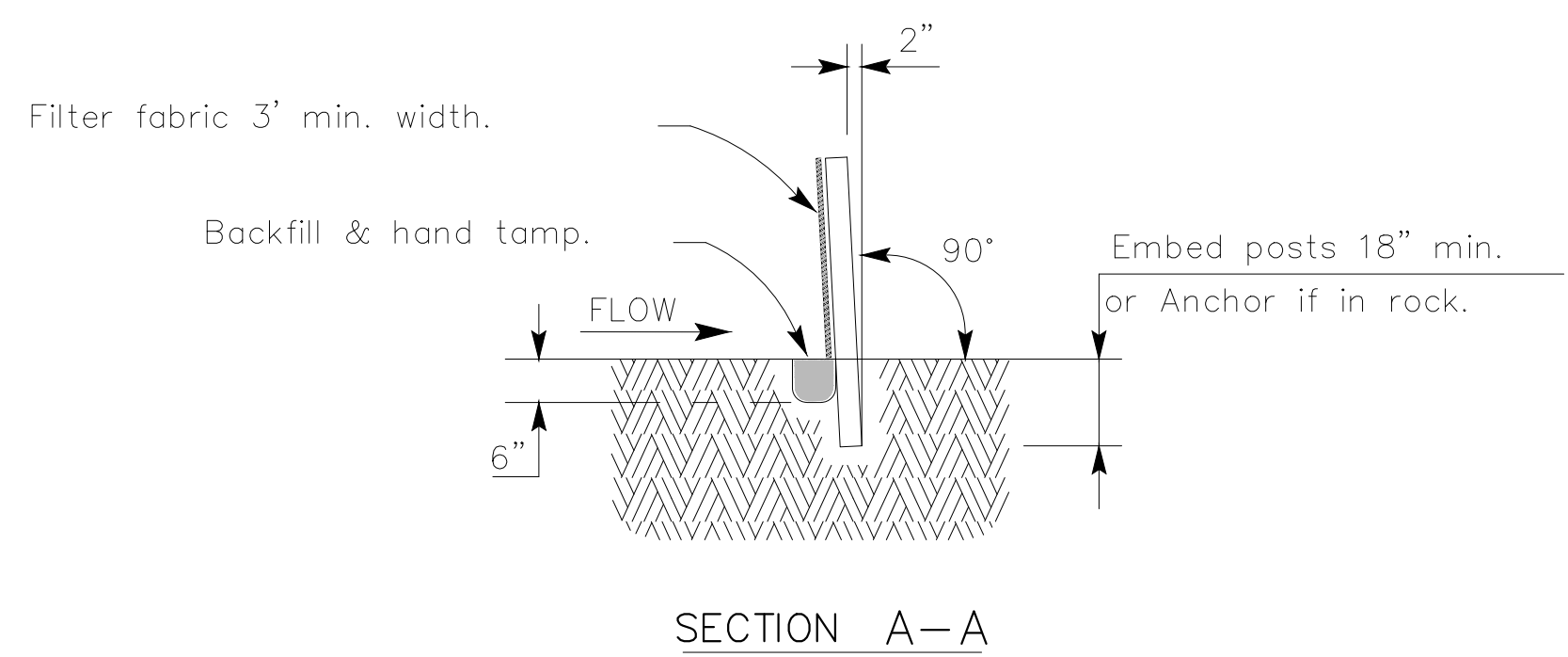
SHEET TITLE:  
**STORM WATER POLLUTION PREVENTION DETAILS**

ISSUE DATE:  
**2 AUGUST 2024**

SHEET NUMBER:  
**C-202**



TEMPORARY SEDIMENT CONTROL FENCE



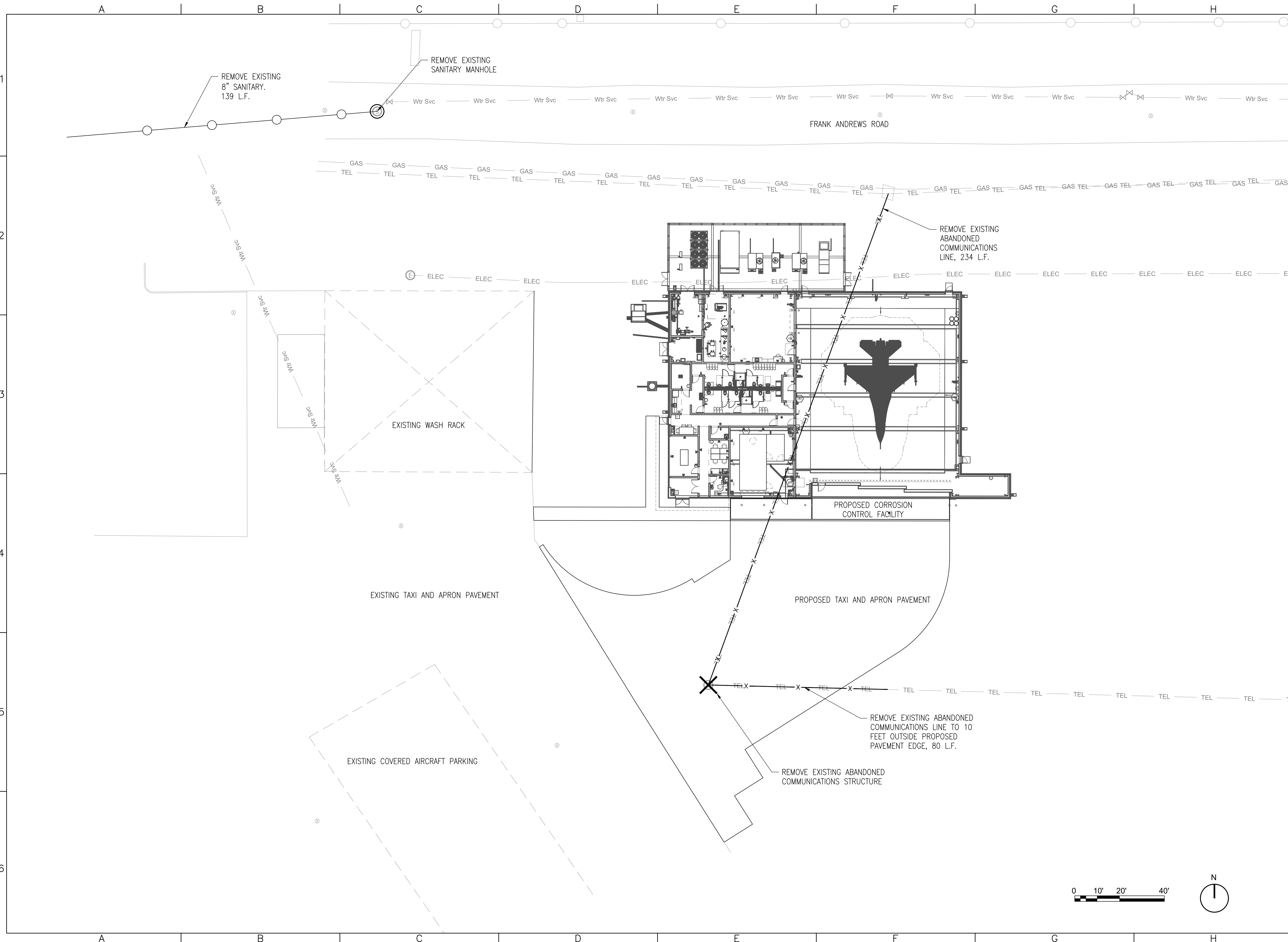
HINGE JOINT KNOT WOVEN MESH (OPTION) DETAIL

Galvanized hinge joint knot woven mesh (12.5 GA.SWG Min.) requires a minimum of five horizontal wires spaced at a maximum of 12 inches apart and all vertical wires spaced at a maximum of 12 inches apart.

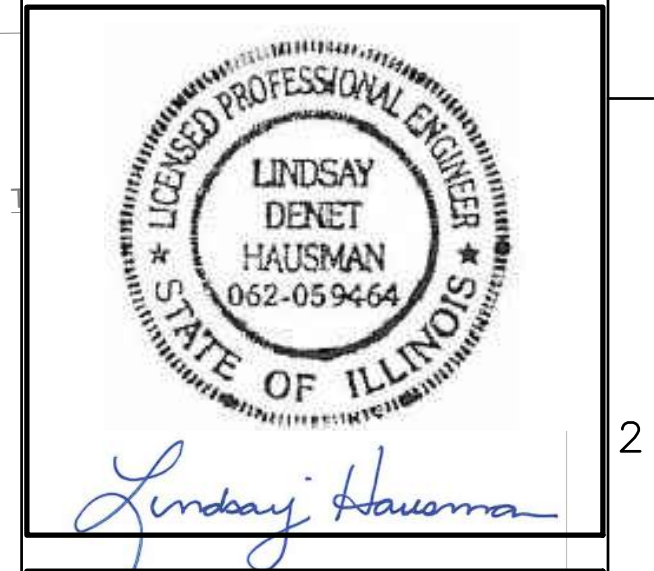
**SEDIMENT CONTROL FENCE USAGE GUIDELINES**

A sediment control fence may be constructed near the downstream perimeter of a disturbed area along a contour to intercept sediment from overland runoff. A 2 year storm frequency may be used to calculate the flow rate to be filtered.

Sediment control fence should be sized to filter a maximum flow through rate of 100 GPM/FT .<sup>2</sup> Sediment control fence is not recommended to control erosion from a drainage area larger than 2 acres.



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**Texas Air National Guard - 149th FW**  
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**JBSA - Kelly Annex, TX**

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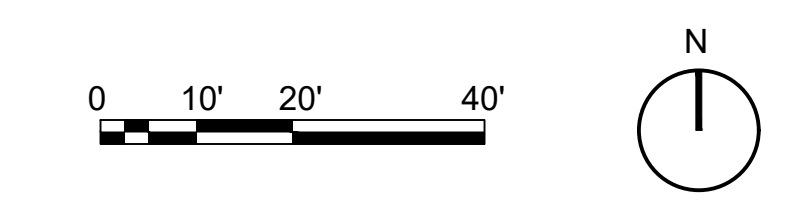
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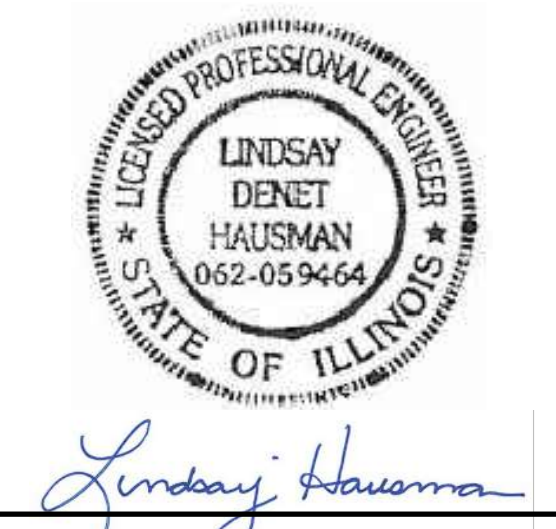
DESIGNED BY:	LDH
DRAWN BY:	LDH
REVIEWED BY:	RMH
PROJECT MANAGER:	NDM

PROJECT NUMBER:  
20190320  
 SHEET TITLE:  
REMOVAL PLAN

ISSUE DATE:  
2 AUGUST 2024

SHEET NUMBER:  
**C-301**





**Texas Air National Guard - 149th FW  
Corrosion Control Facility  
TXANG Project Number: KELL 169014  
JB SA - Kelly Annex, TX**

REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY:	LDH
DRAWN BY:	LDH
REVIEWED BY:	RMH
PROJECT MANAGER:	NDM

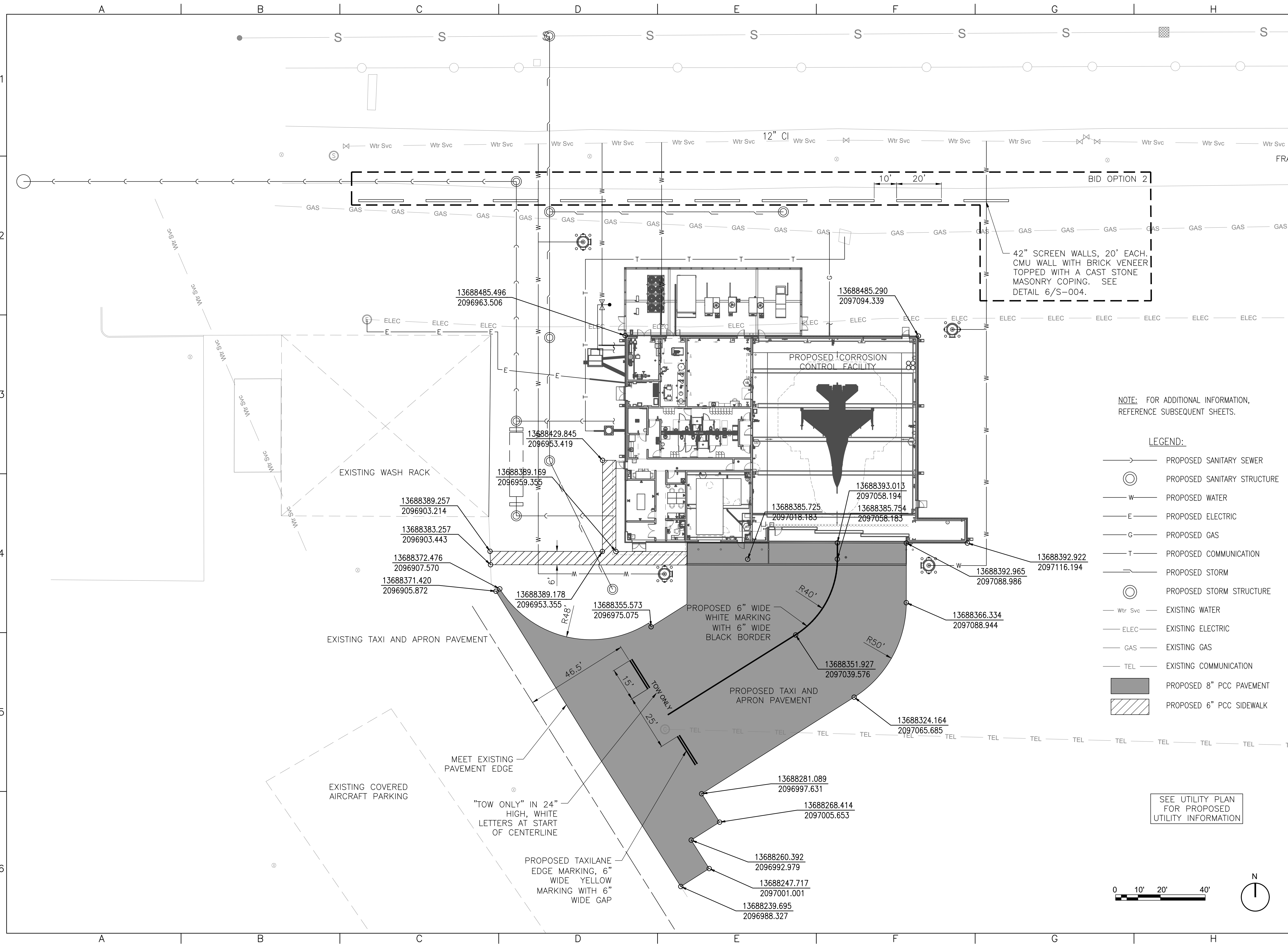
PROJECT NUMBER:  
20190320

SHEET TITLE:  
PROPOSED PLAN

ISSUE DATE:  
2 AUGUST 2024

SHEET NUMBER:

**C-401**



NOTE: FOR ADDITIONAL INFORMATION, REFERENCE SUBSEQUENT SHEETS.

- LEGEND:
- PROPOSED SANITARY SEWER
  - ⊙ PROPOSED SANITARY STRUCTURE
  - W — PROPOSED WATER
  - E — PROPOSED ELECTRIC
  - G — PROPOSED GAS
  - T — PROPOSED COMMUNICATION
  - S — PROPOSED STORM
  - ⊙ PROPOSED STORM STRUCTURE
  - Wtr Svc — EXISTING WATER
  - ELEC — EXISTING ELECTRIC
  - GAS — EXISTING GAS
  - TEL — EXISTING COMMUNICATION
  - PROPOSED 8" PCC PAVEMENT
  - ▨ PROPOSED 6" PCC SIDEWALK

SEE UTILITY PLAN FOR PROPOSED UTILITY INFORMATION





*Lindsay Hausman*

**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

REVISION HISTORY:

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PROJECT INFORMATION:

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DRAWN BY:	LDH
REVIEWED BY:	RMH
PROJECT MANAGER:	NDM

PROJECT NUMBER:

20190320

SHEET TITLE:

TYPICAL SECTION AND PAVEMENT DETAILS

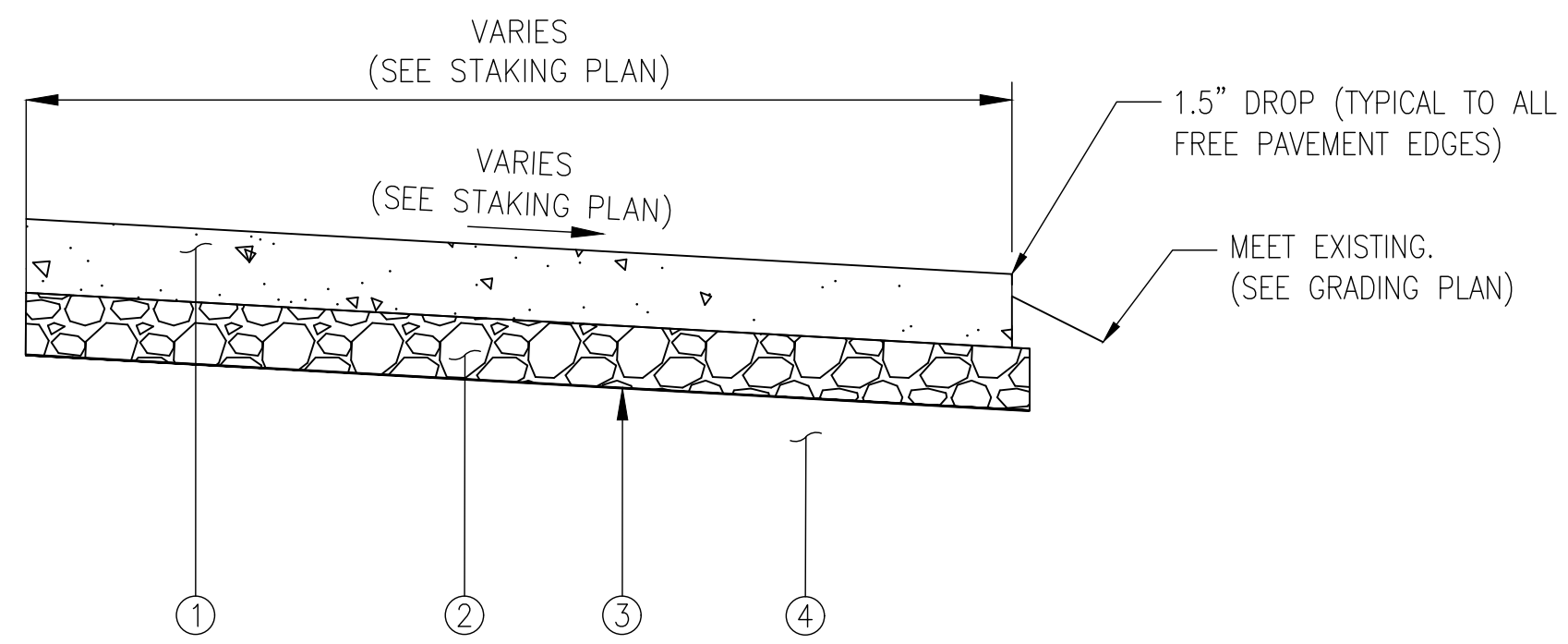
ISSUE DATE:

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SHEET NUMBER:

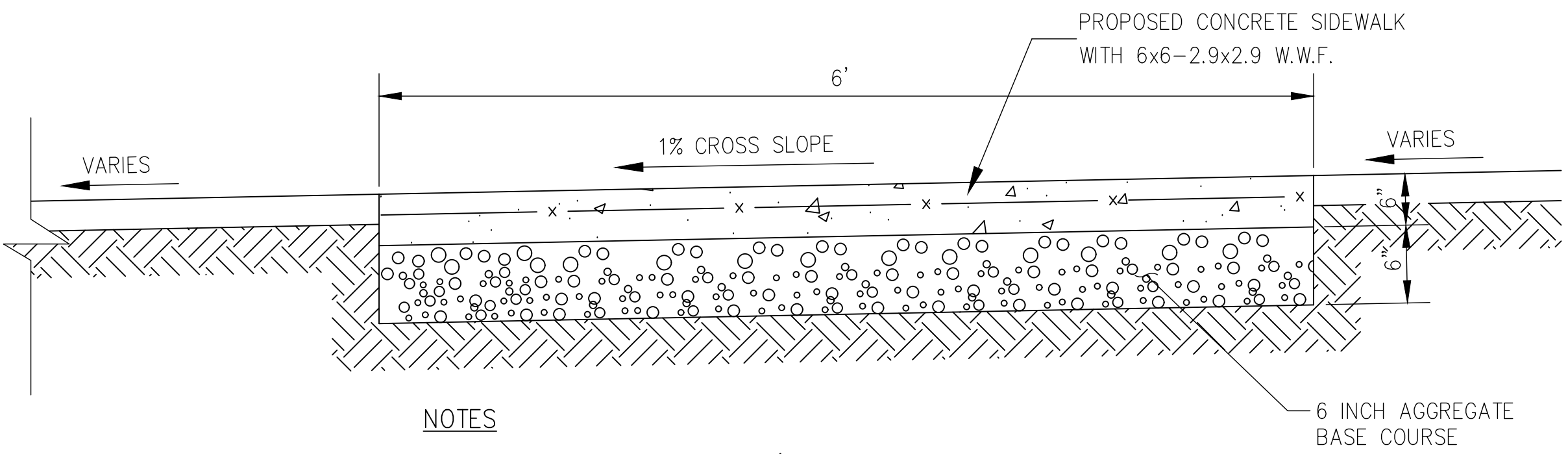
**C-402**

A B C D E F G H



**TYPICAL APRON SECTION**

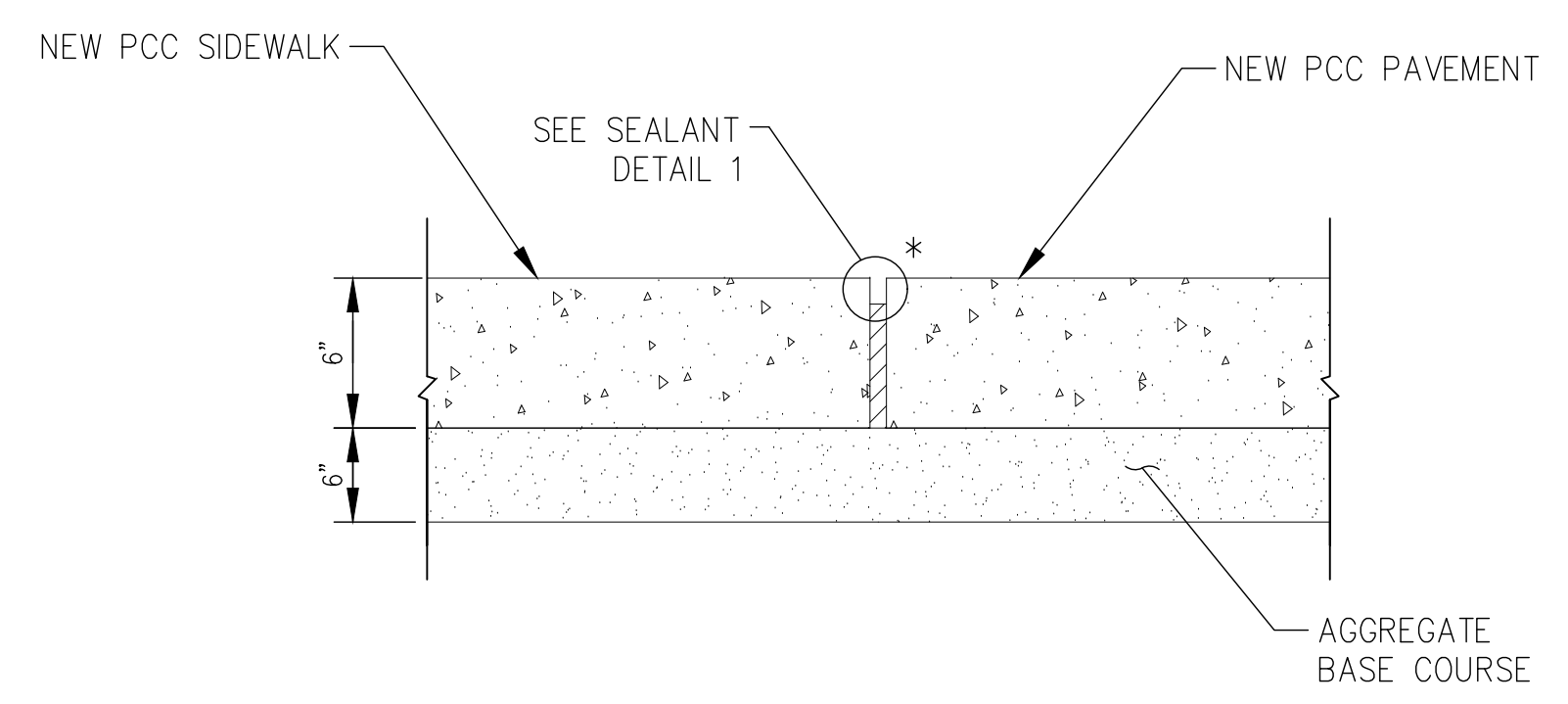
- ① PROPOSED 8 INCH PCC PAVEMENT
- ② PROPOSED 6 INCH AGGREGATE BASE COURSE
- ③ PROPOSED GEOGRID, TENSAR TX-5 OR APPROVED EQUAL
- ④ PROPOSED COMPACTED SUBGRADE OR FILL MATERIAL



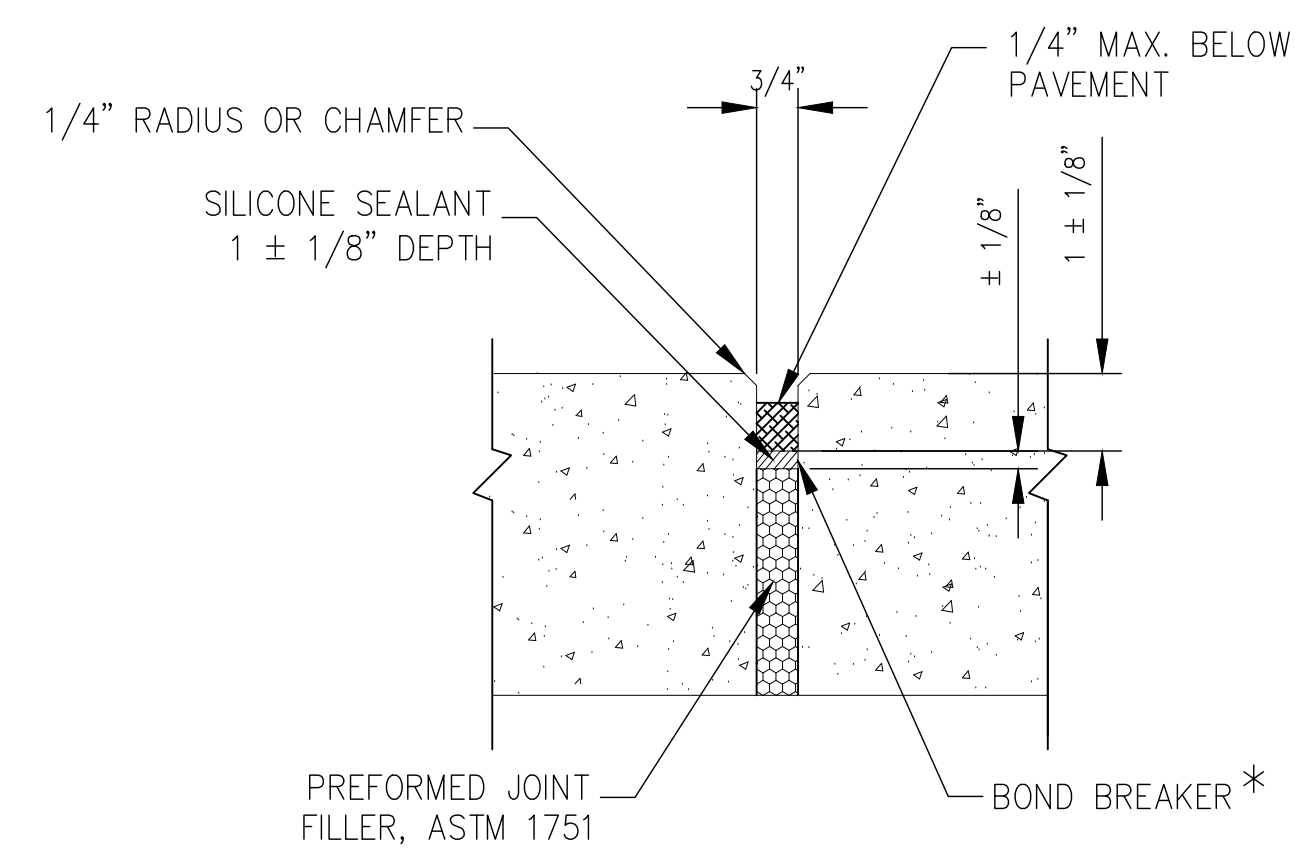
NOTES:

- 1. JOINTS SHALL BE SPACED AT 6' SPACING.
- 2. JOINTS SHALL BE CONTRACTION JOINTS. EXPANSION JOINTS WITH 3/4" PREFORMED EXPANSION MATERIAL SHALL BE SPACED AT 36" MAX. INTERVALS.
- 3. 3/4" PREFORMED JOINT FILLER TO BE USED IN ALL LOCATIONS WHERE SIDEWALK IS ADJACENT TO EXISTING PAVEMENT.

**SIDEWALK CROSS SECTION DETAIL**

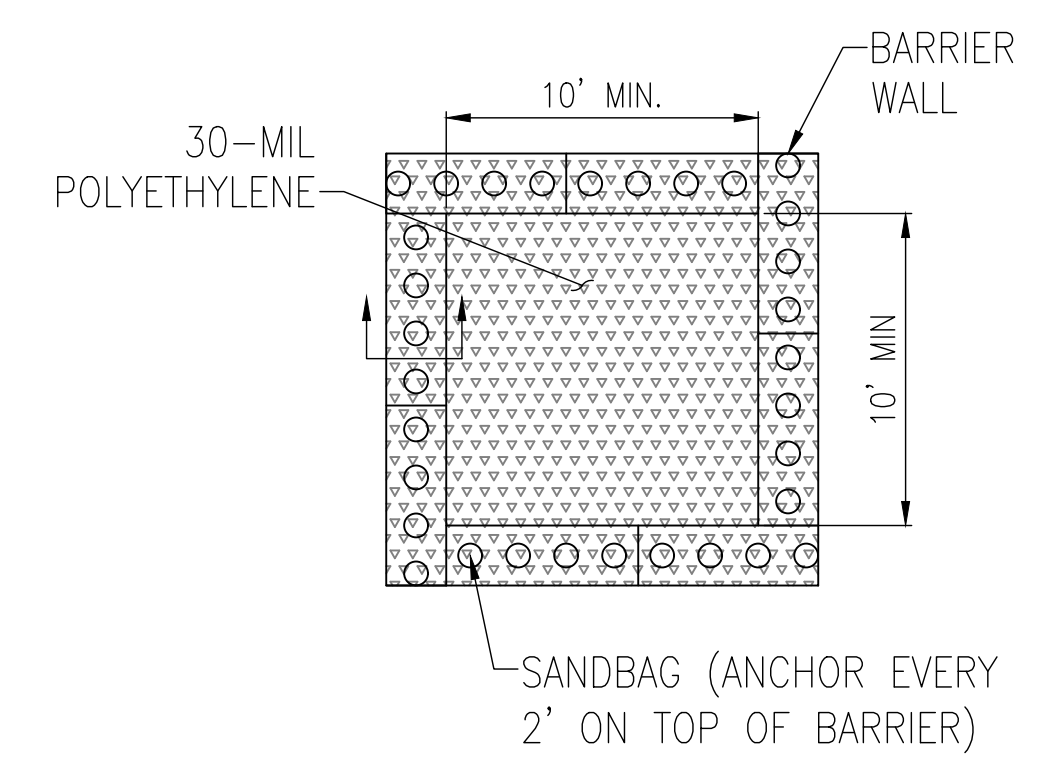


**EXPANSION JOINT**

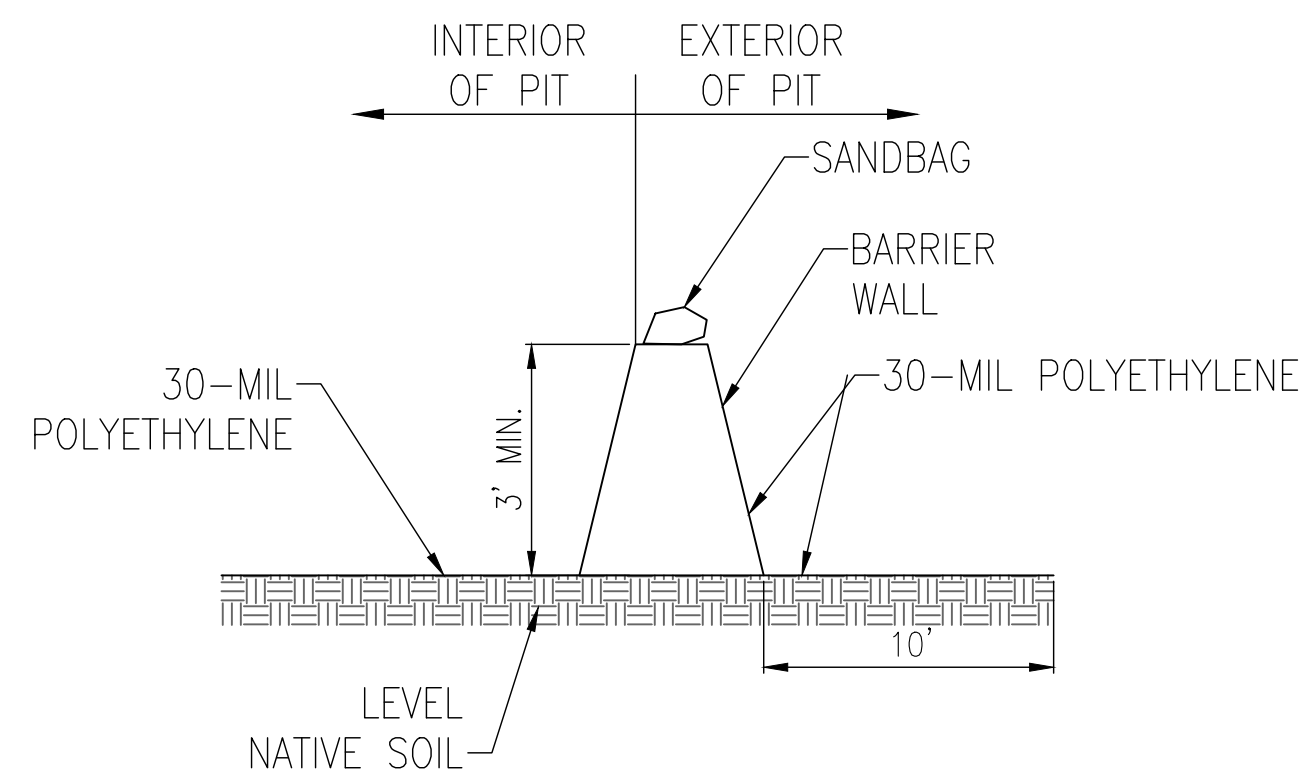


**DETAIL 1 - SEALANT**

\* POLYETHYLENE OR POLYESTER TAPE (3 MIL. MIN.) OR MARKING TAPE, RUBBER TAPE, 1/8" WIDER THAN WIDTH OF JOINT.



PLAN VIEW



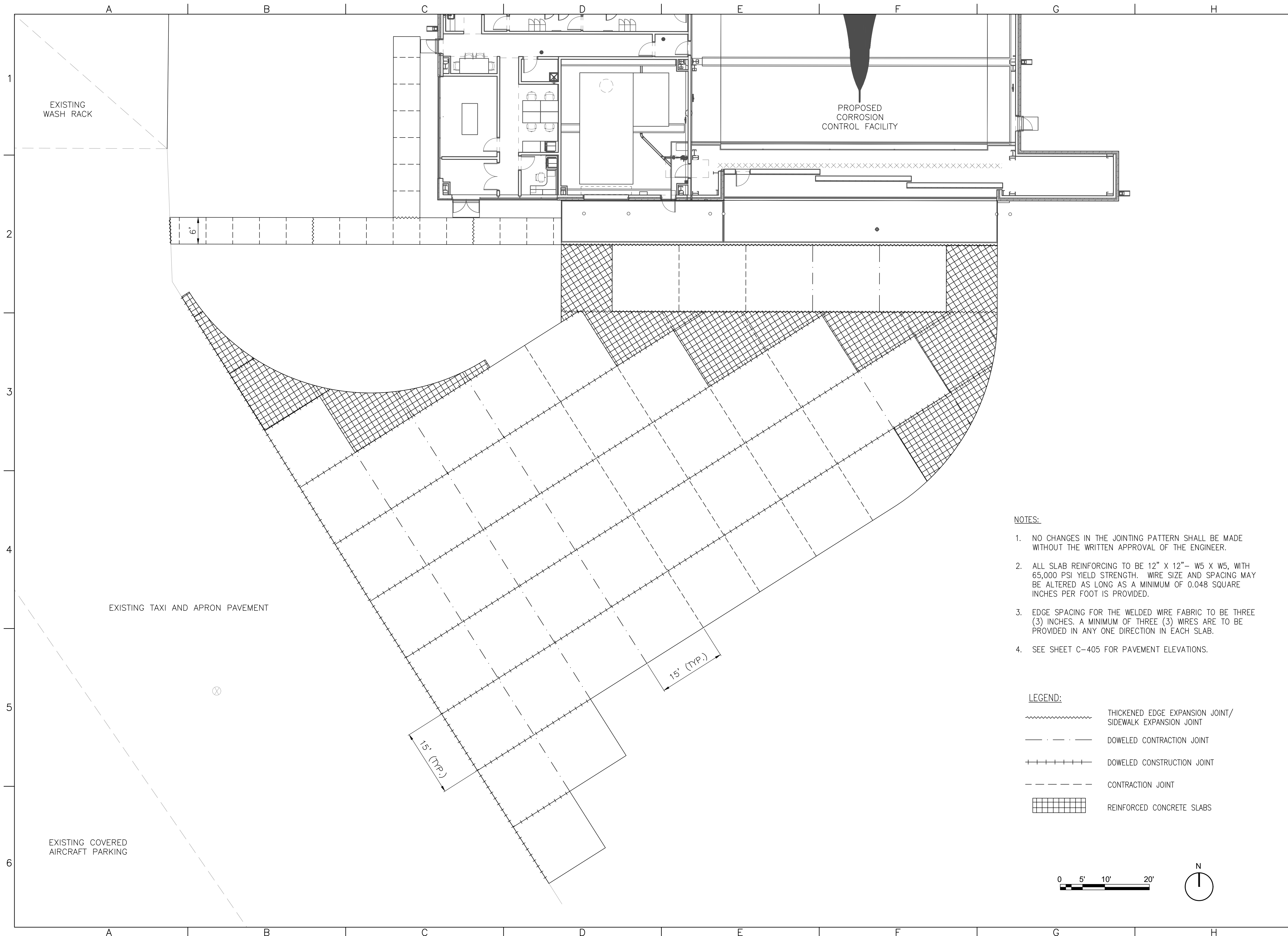
CROSS SECTION VIEW

NOTES:

- 1. IMPERMEABLE SHEETING MUST EXTEND OVER ENTIRE BASIN AND BERM TO PREVENT ESCAPE OF DISCHARGE.
- 2. PROTECT AREA AROUND UNIT FOR 10 FEET WITH PLASTIC UNDER AND AROUND UNIT TO CONTAIN SPILLS OR OVERFLOW.
- 3. FACILITY LINED WITH 30-MIL POLYETHYLENE LINER AND SECURED USING SAND BAGS, OR OTHER ANCHORS, AND SHALL BE FREE OF HOLES OR TEARS.
- 4. FACILITY IS TO BE LOCATED ON LEVEL GROUND.
- 5. WASHOUT NEEDS TO BE COVERED OR LIQUIDS TO BE REMOVED PRIOR TO IMPENDING STORMS TO PREVENT OVERFLOW.
- 6. IF EFFLUENT CANNOT BE REMOVED PRIOR TO ANTICIPATED RAINFALL EVENT, PLACE AND SECURE A NON-COLLAPSING, NON WATER COLLECTING COVER OVER THE WASHOUT FACILITY TO PREVENT ACCUMULATION AND PRECIPITATION OVERFLOW.
- 7. REMOVE WASHOUT WATER FROM HIGH VOLUME FACILITIES WITH A VACUUM TRUCK AND DISPOSE OF PROPERLY. DO NOT DISCHARGE WASTEWATER INTO THE ENVIRONMENT. (NOTE: ACIDITY, NOT PARTICULATES, IS ENVIRONMENTALLY HAZARDOUS)
- 8. DO NOT DISCHARGE WASHOUT WATER INTO THE ENVIRONMENT; FACILITATE EVAPORATION OF LOW VOLUME WASHOUT WATER.
- 9. INSPECT LINER FOR TEARS. AN INTACT LINER WILL ENSURE THAT CONCRETE WASTEWATER WILL NOT ESCAPE THE WASHOUT FACILITY.
- 10. REPLACE DAMAGED LINER IMMEDIATELY.
- 11. CHECK AREA SURROUNDING FACILITY FOR SIGNS OF EFFLUENT ESCAPING CONTAINMENT.
- 12. INSPECT WASHOUT AREA FOLLOWING POUR TO EVALUATE EFFECTIVENESS.
- 13. CHECK DEPTH OF SOLIDS TO ENSURE VOLUME IS SUFFICIENT FOR NEXT POUR.
- 14. INSPECT WASHOUTS PRIOR TO POUR TO ENSURE SUFFICIENT VOLUME IS AVAILABLE TO CONTAIN WASHOUT.
- 15. REMOVE TEMPORARY CONCRETE WASHOUT FACILITIES WHEN NO LONGER NEEDED AND RESTORE DISTURBED AREAS TO ORIGINAL CONDITION.
- 16. DISPOSE OF SOLIDIFIED CONCRETE WASTE, CONSIDERED CLEAN CONSTRUCTION OR DEMOLITION DEBRIS (CCDD) PER TCEQ (TEXAS COMMISSION ON ENVIRONMENTAL QUALITY) REQUIREMENTS

**CONCRETE WASHOUT PIT**

A B C D E F G H



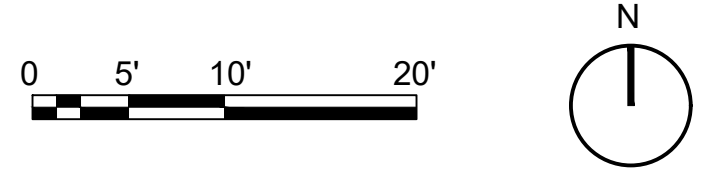
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LICENSED PROFESSIONAL ENGINEER  
 LINDSAY DENET HAUSMAN  
 062-059464  
 STATE OF ILLINOIS  
*Lindsay Hausman*

**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

- NOTES:**
- NO CHANGES IN THE JOINTING PATTERN SHALL BE MADE WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER.
  - ALL SLAB REINFORCING TO BE 12" X 12" - W5 X W5, WITH 65,000 PSI YIELD STRENGTH. WIRE SIZE AND SPACING MAY BE ALTERED AS LONG AS A MINIMUM OF 0.048 SQUARE INCHES PER FOOT IS PROVIDED.
  - EDGE SPACING FOR THE WELDED WIRE FABRIC TO BE THREE (3) INCHES. A MINIMUM OF THREE (3) WIRES ARE TO BE PROVIDED IN ANY ONE DIRECTION IN EACH SLAB.
  - SEE SHEET C-405 FOR PAVEMENT ELEVATIONS.

- LEGEND:**
- THICKENED EDGE EXPANSION JOINT/ SIDEWALK EXPANSION JOINT
  - DOWELED CONTRACTION JOINT
  - DOWELED CONSTRUCTION JOINT
  - CONTRACTION JOINT
  - REINFORCED CONCRETE SLABS



REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

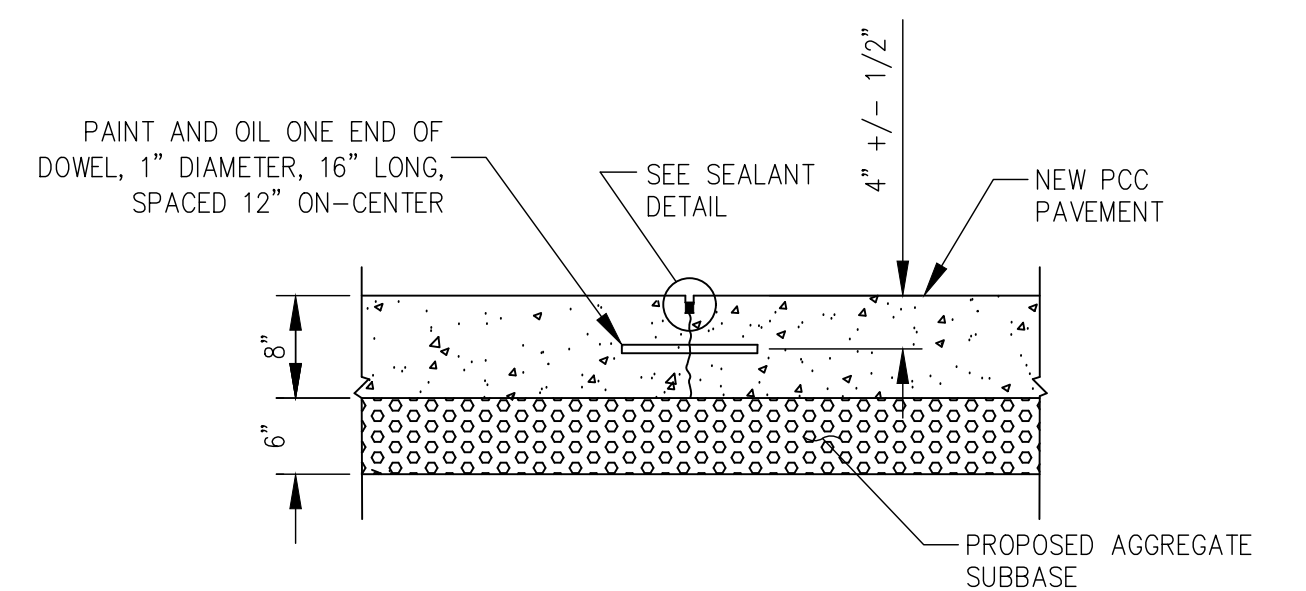
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DRAWN BY:	LDH
REVIEWED BY:	RMH
PROJECT MANAGER:	NDM

PROJECT NUMBER:  
 20190320

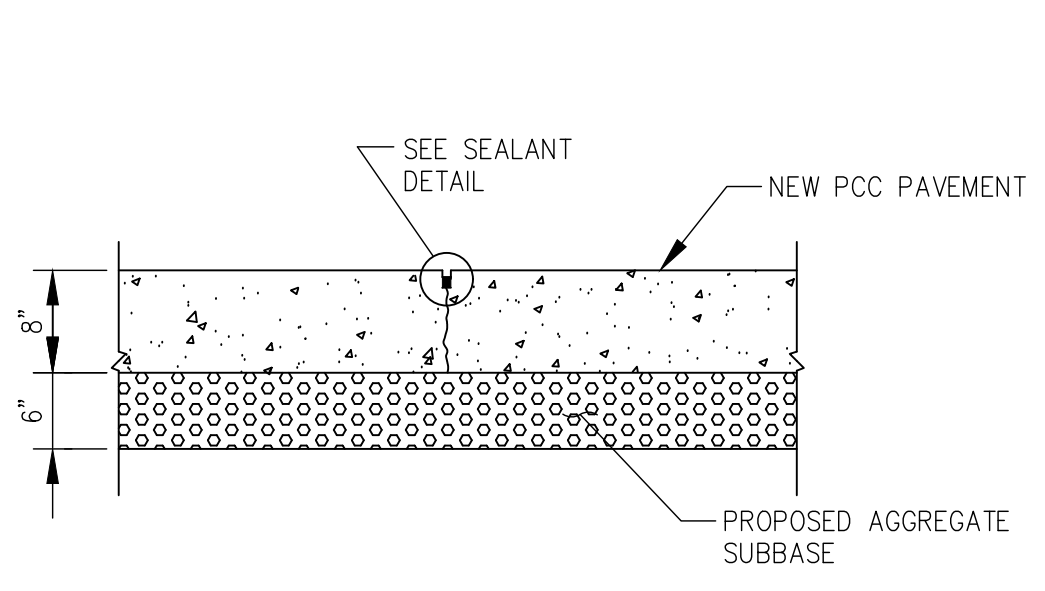
SHEET TITLE:  
 JOINTING PLAN

ISSUE DATE:  
 2 AUGUST 2024

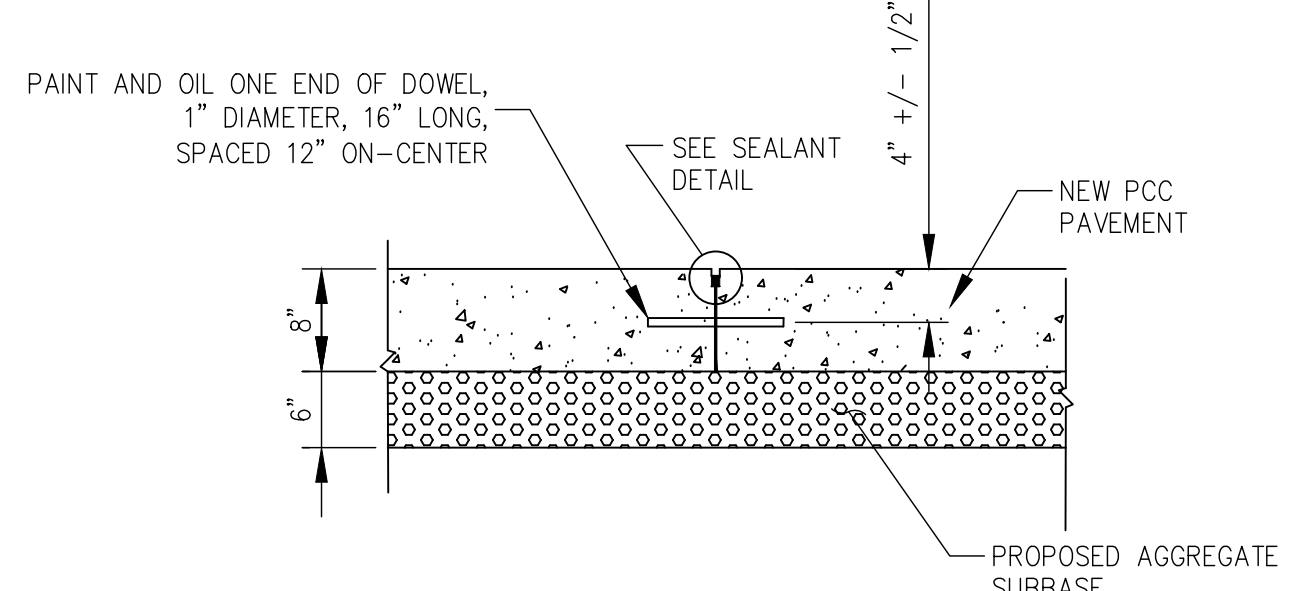
SHEET NUMBER:  
**C-403**



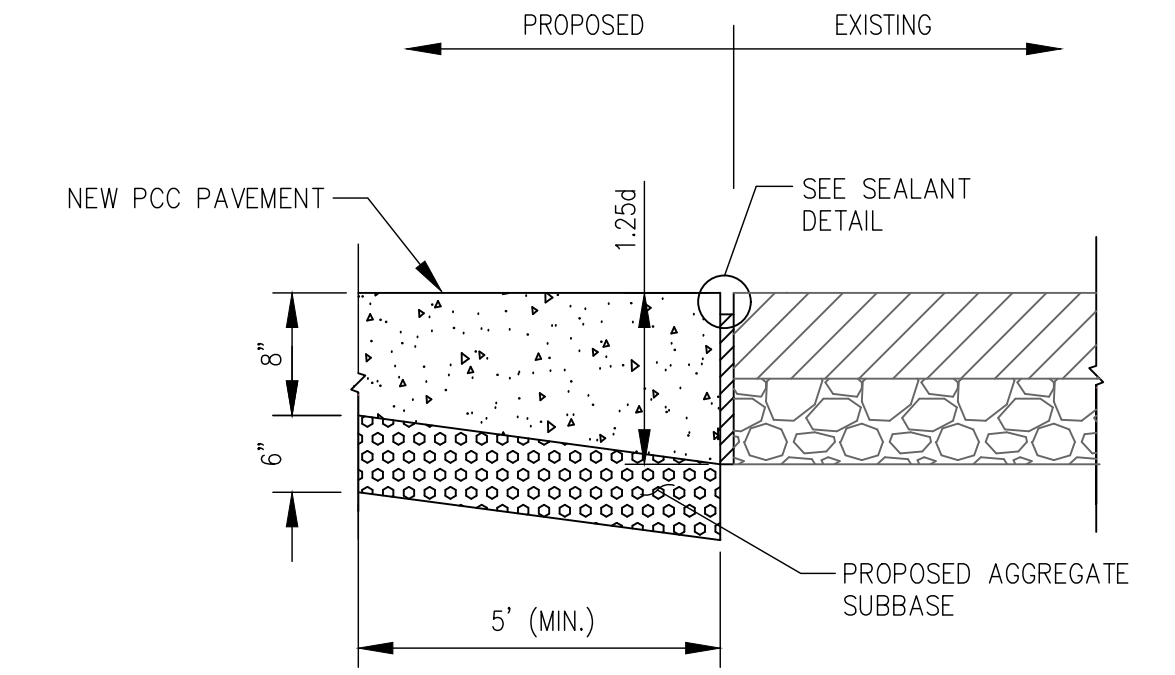
**DOWELED  
CONTRACTION JOINT**



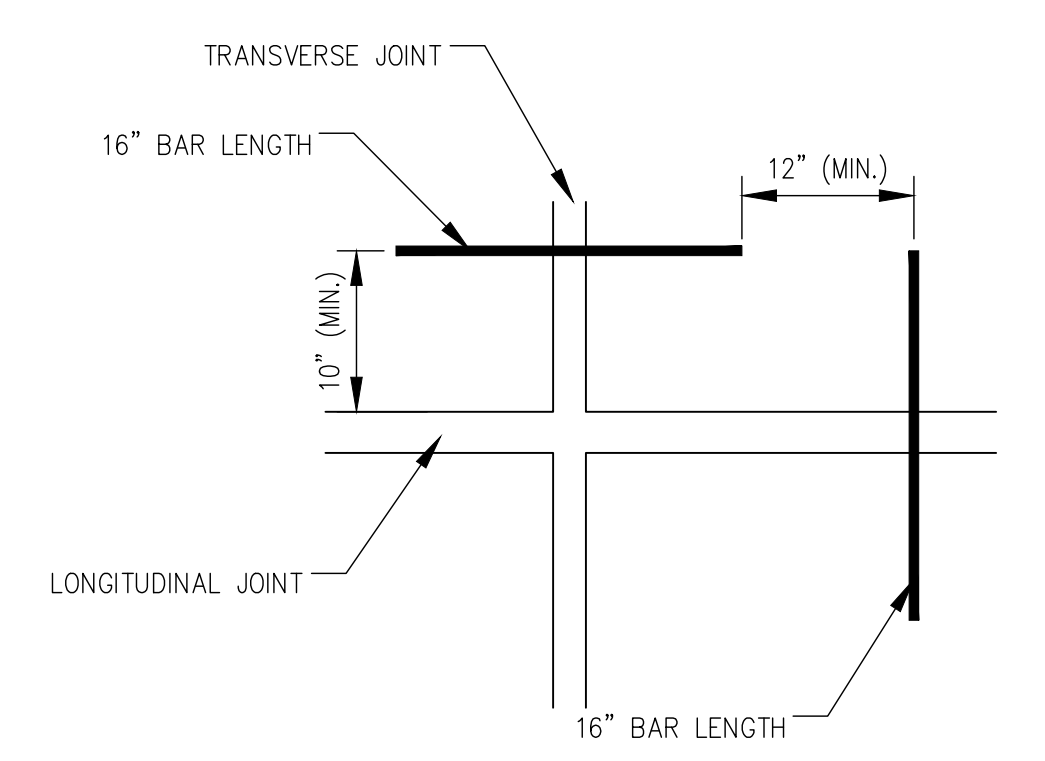
**CONTRACTION JOINT**



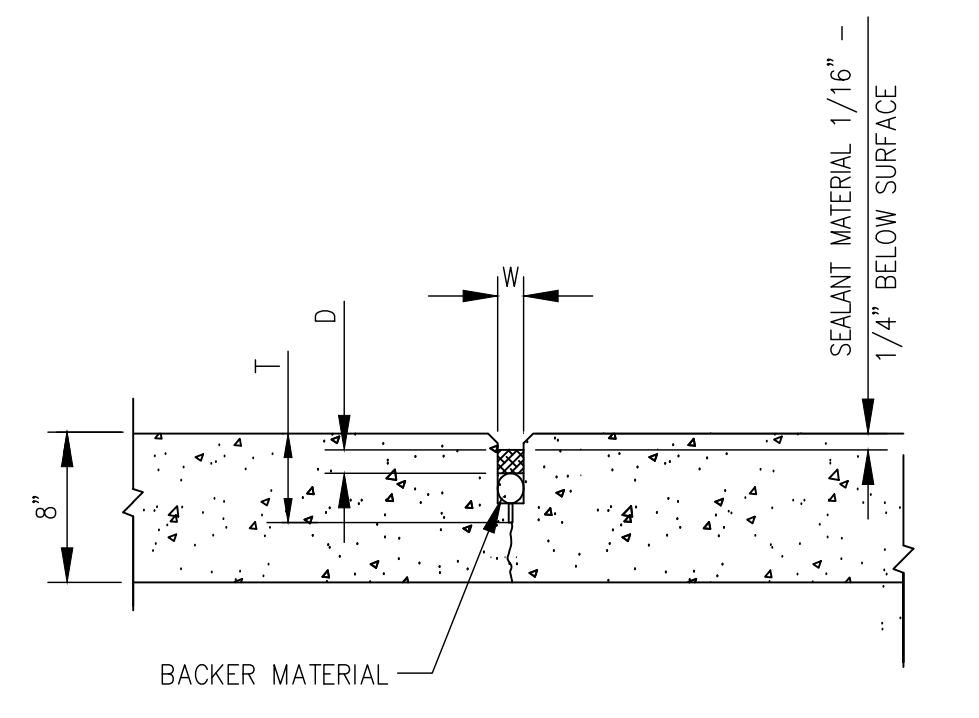
**DOWELED CONSTRUCTION JOINT**



**THICKENED EDGE EXPANSION  
JOINT**



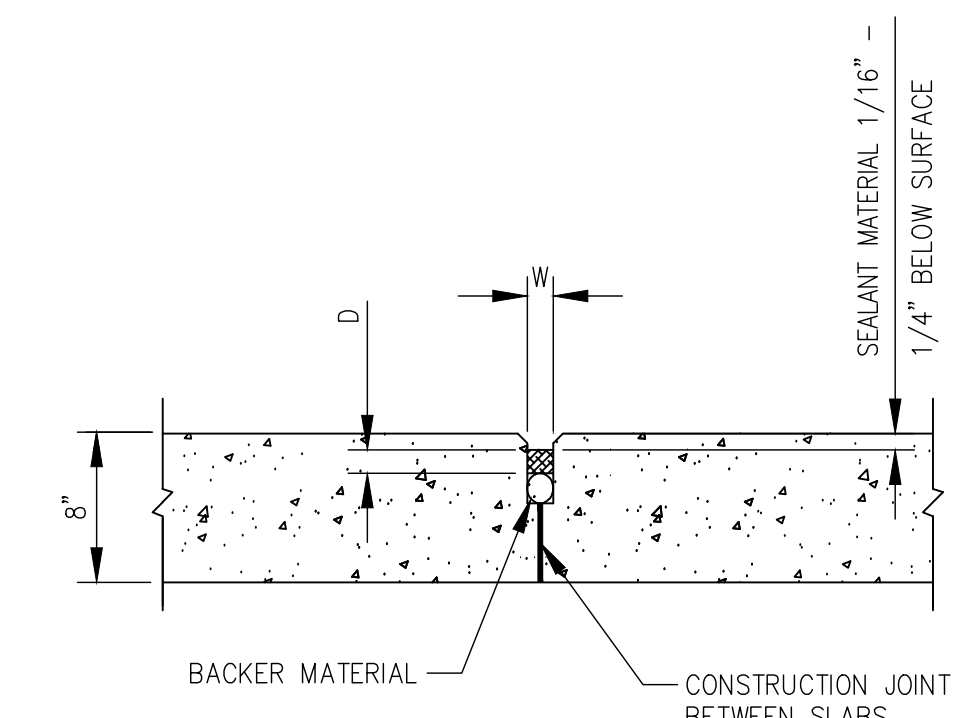
**DOWEL PLAN VIEW**



**NOTE:**  
 W = WIDTH OF SEALANT RESERVOIR (1/2" - 5/8")  
 D = DEPTH OF SEALANT (1.0-1.5 x W FOR Poured SEALANT;  
 0.5W FOR SILICONE SEALANT)  
 T = DEPTH OF INITIAL SAWCUT (2" +/- 1/2")

SEALANT SHALL BE JET FUEL RESISTANT CONFORMING TO FEDERAL SPECIFICATION SS-S-200 OR MEETING ASTM D-3569 AND D-3581 OR SILICONE CONFORMING TO ASTM D-5893

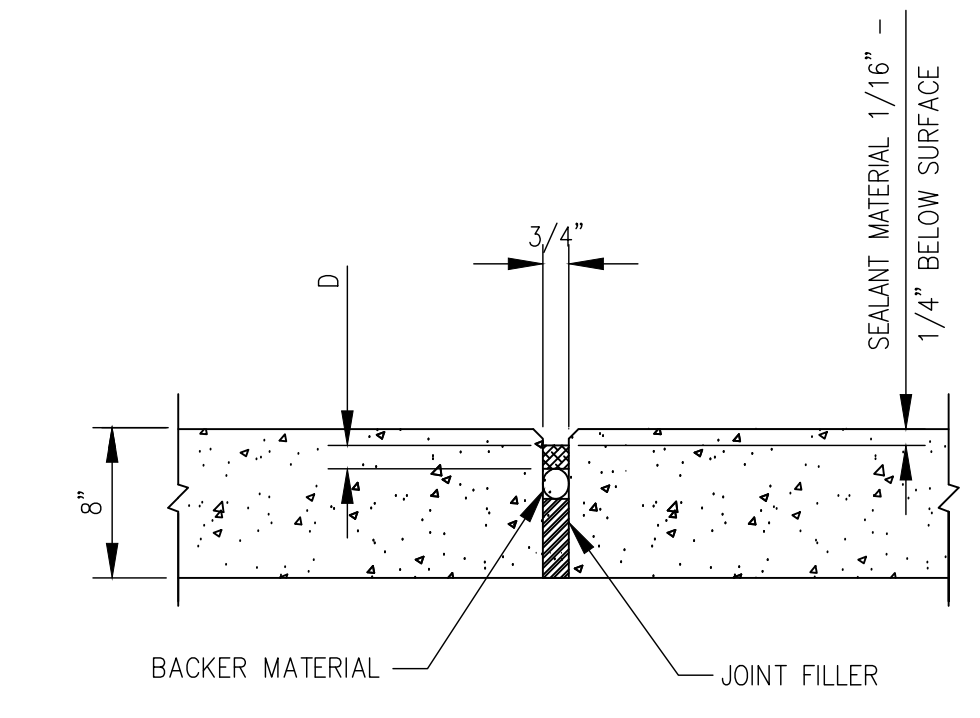
**SEALANT - CONTRACTION**



**NOTE:**  
 W = WIDTH OF SEALANT RESERVOIR (1/2" - 5/8")  
 D = DEPTH OF SEALANT (1.0-1.5 x W FOR Poured SEALANT;  
 0.5W FOR SILICONE SEALANT)

SEALANT SHALL BE JET FUEL RESISTANT CONFORMING TO FEDERAL SPECIFICATION SS-S-200 OR MEETING ASTM D-3569 AND D-3581 OR SILICONE CONFORMING TO ASTM D-5893

**SEALANT - CONSTRUCTION**



**NOTE:**  
 D = DEPTH OF SEALANT (1.0-1.5 x W FOR Poured SEALANT;  
 0.5W FOR SILICONE SEALANT)

SEALANT SHALL BE JET FUEL RESISTANT CONFORMING TO FEDERAL SPECIFICATION SS-S-200 OR MEETING ASTM D-3569 AND D-3581 OR SILICONE CONFORMING TO ASTM D-5893

**SEALANT - ESPANSION**



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**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY:	LDH
DRAWN BY:	LDH
REVIEWED BY:	RMH
PROJECT MANAGER:	NDM

PROJECT NUMBER:  
 20190320  
 SHEET TITLE:  
 PAVEMENT JOINTING DETAILS

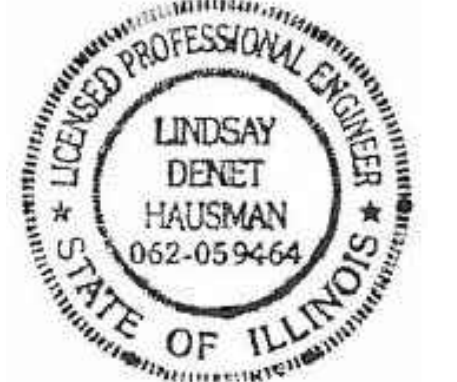
ISSUE DATE:  
 2 AUGUST 2024

SHEET NUMBER:  
**C-404**



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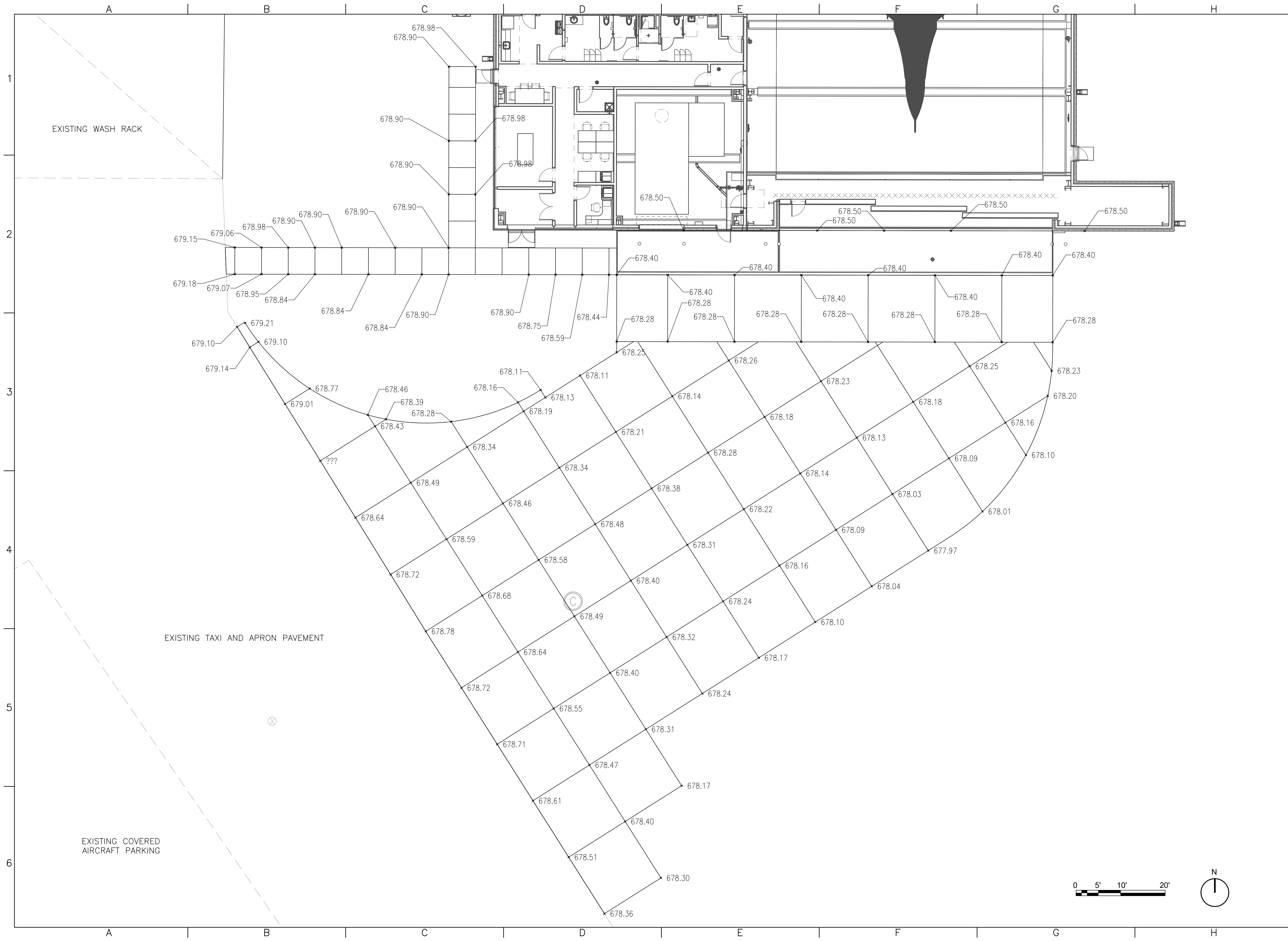
**Texas Air National Guard - 149th FW  
Corrosion Control Facility  
TXANG Project Number: KELL 169014  
JBSA - Kelly Annex, TX**

REVISION HISTORY:		
NO.	DESCRIPTION	DATE

PROJECT INFORMATION:	
DESIGNED BY:	LDH
DRAWN BY:	LDH
REVIEWED BY:	RMH
PROJECT MANAGER:	NDM

PROJECT NUMBER:	20190320
SHEET TITLE:	STAKING PLAN

ISSUE DATE:	2 AUGUST 2024
SHEET NUMBER:	C-405





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**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

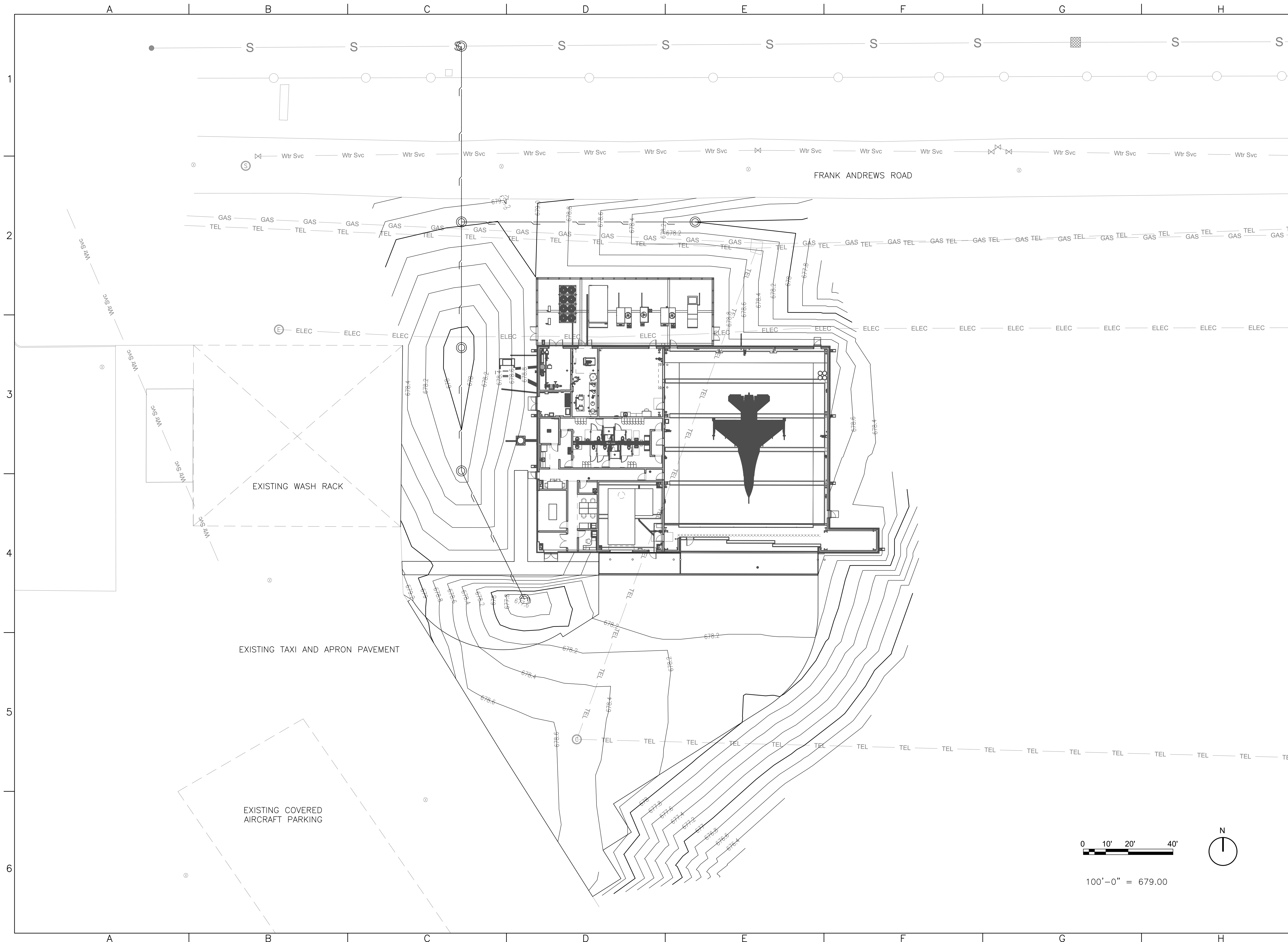
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DRAWN BY:	LDH
REVIEWED BY:	RMH
PROJECT MANAGER:	NDM

PROJECT NUMBER: 20190320

SHEET TITLE: GRADING PLAN

ISSUE DATE: 2 AUGUST 2024

SHEET NUMBER: C-501





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**Texas Air National Guard - 149th FW  
Corrosion Control Facility  
TXANG Project Number: KELL 169014  
JBSA - Kelly Annex, TX**

REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

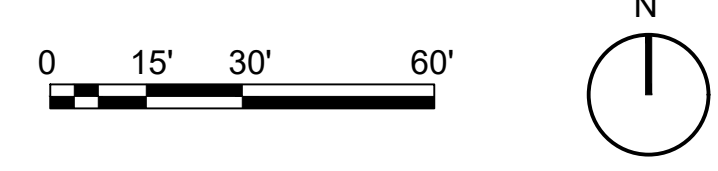
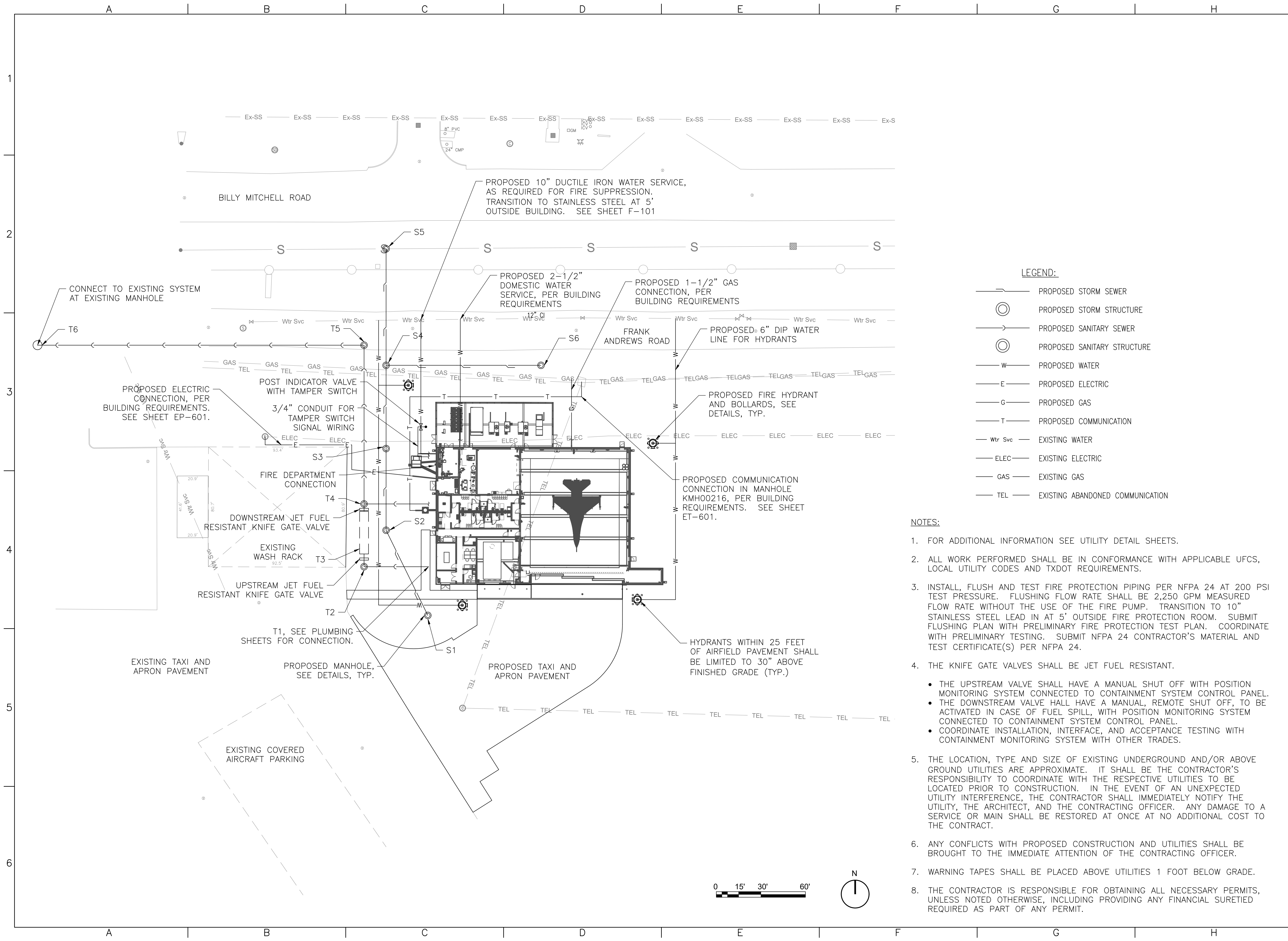
DESIGNED BY:	LDH
DRAWN BY:	LDH
REVIEWED BY:	RMH
PROJECT MANAGER:	NDM

PROJECT NUMBER:  
20190320

SHEET TITLE:  
UTILITY PLAN

ISSUE DATE:  
2 AUGUST 2024

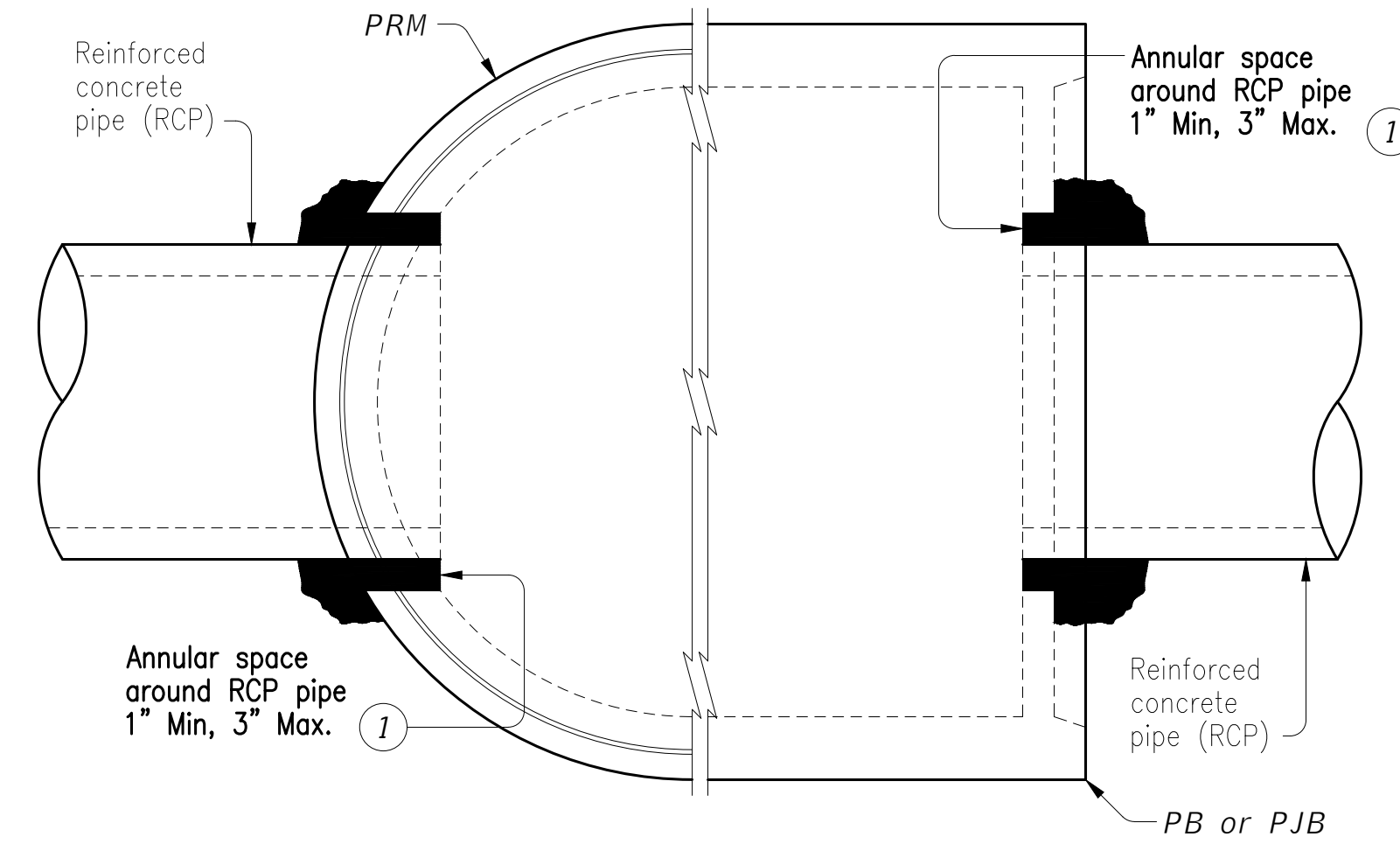
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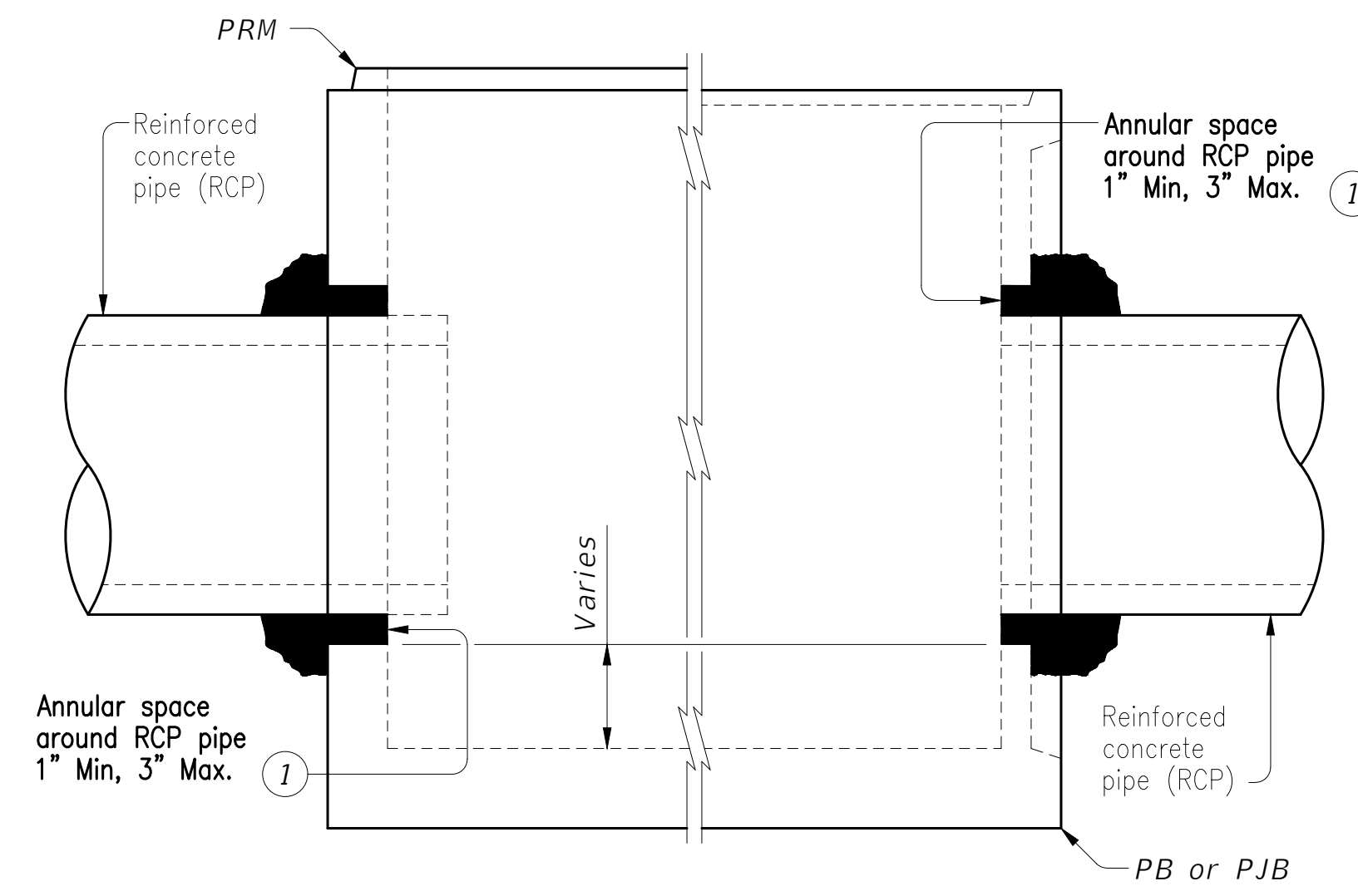
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**Texas Air National Guard - 149th FW  
Corrosion Control Facility  
TXANG Project Number: KELL 169014  
JBSA - Kelly Annex, TX**



PRECAST ROUND MANHOLE (PRM) WITH THROUGH-HOLE  
PRECAST BASE (PB) OR PRECAST JUNCTION BOX (PJB) WITH THIN-WALL KNOCK-OUT

**TYPICAL HALF PLAN**



PRECAST ROUND MANHOLE (PRM) WITH THROUGH-HOLE  
PRECAST BASE (PB) OR PRECAST JUNCTION BOX (PJB) WITH THIN-WALL KNOCK-OUT

**TYPICAL HALF ELEVATION**

**DESCRIPTION**

① Completely fill the void between the precast structure and the connecting pipe or box with cementitious grouts and mortars in accordance with DMS-4675 "Cementitious Grouts and Mortars for Miscellaneous Application".

**CONSTRUCTION NOTES:**

Do not grout rubber gasket joints without Manufacturer's recommendations.  
Do not use bricks, masonry blocks, native stone, or similar materials in conjunction with grouted connections when filling void spaces around pipes or box culverts.

**MATERIAL NOTES:**

Provide grouted connections in accordance with DMS-4675 "Cementitious Grouts and Mortars for Miscellaneous Application".

**GENERAL NOTES:**

See applicable standards for notes and details not shown:  
Precast Base (PB)  
Precast Junction Box (PJB)  
Precast Round Manhole (PRM)  
Precast Safety End Treatments C/D Square (PSET-SC)  
Precast Safety End Treatments P/D Square (PSET-SP)  
Provide Concrete Box Culverts in accordance with Item 462 "Concrete Box Culverts and Drains".  
Provide Reinforced Concrete Pipe (RCP) in accordance with Item 464 "Reinforced Concrete Pipe".  
Provide Thermoplastic Pipe (TP) in accordance with Special Specification Thermoplastic Pipe.  
Payment for grouted connections is considered subsidiary to other bid items.

**STORM SEWER SCHEDULE**

Structure	Northing	Easting	Type	Rim El.	Invert El.	Pipe Pay Length	Size	Type	Slope %
S1	13688372.2811	2096957.9021	4' Manhole	677.54	666.53	59.9	15.0	RCP	1.00
S2	13688429.6115	2096929.7904	4' Manhole	678.10	665.90	51.0	15.0	RCP	1.00
S3	13688484.6115	2096929.7904	4' Manhole	677.80	665.35	52.1	15.0	RCP	1.00
S4	13688540.6906	2096929.7904	4' Manhole	679.04	664.78	72.4	15.0	RCP	1.00
S5	13688619.1444	2096929.7904	10' Doghouse Manhole	678.15	S 664.00 E/W 660.00*	Existing	84.0	RCP	
S6	13688540.6906	2097034.0948	4' Manhole	678.00	665.82	100.3	15.0	RCP	1.00
S4	13688540.6906	2096929.7904	4' Manhole	679.04	E 664.78				

\* VERIFY INVERT ELEVATION OF EXISTING PIPE.

**REVISION HISTORY:**

NO.	DESCRIPTION	DATE

**PROJECT INFORMATION:**

DESIGNED BY:	LDH
DRAWN BY:	LDH
REVIEWED BY:	RMH
PROJECT MANAGER:	NDM

**PROJECT NUMBER:**

20190320

**SHEET TITLE:**

DRAINAGE SCHEDULE AND DETAILS

**ISSUE DATE:**

2 AUGUST 2024

**SHEET NUMBER:**

C-602



*Lindsay Hausman*

**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY:	LDH
DRAWN BY:	LDH
REVIEWED BY:	RMH
PROJECT MANAGER:	NDM

PROJECT NUMBER:

20190320

SHEET TITLE:

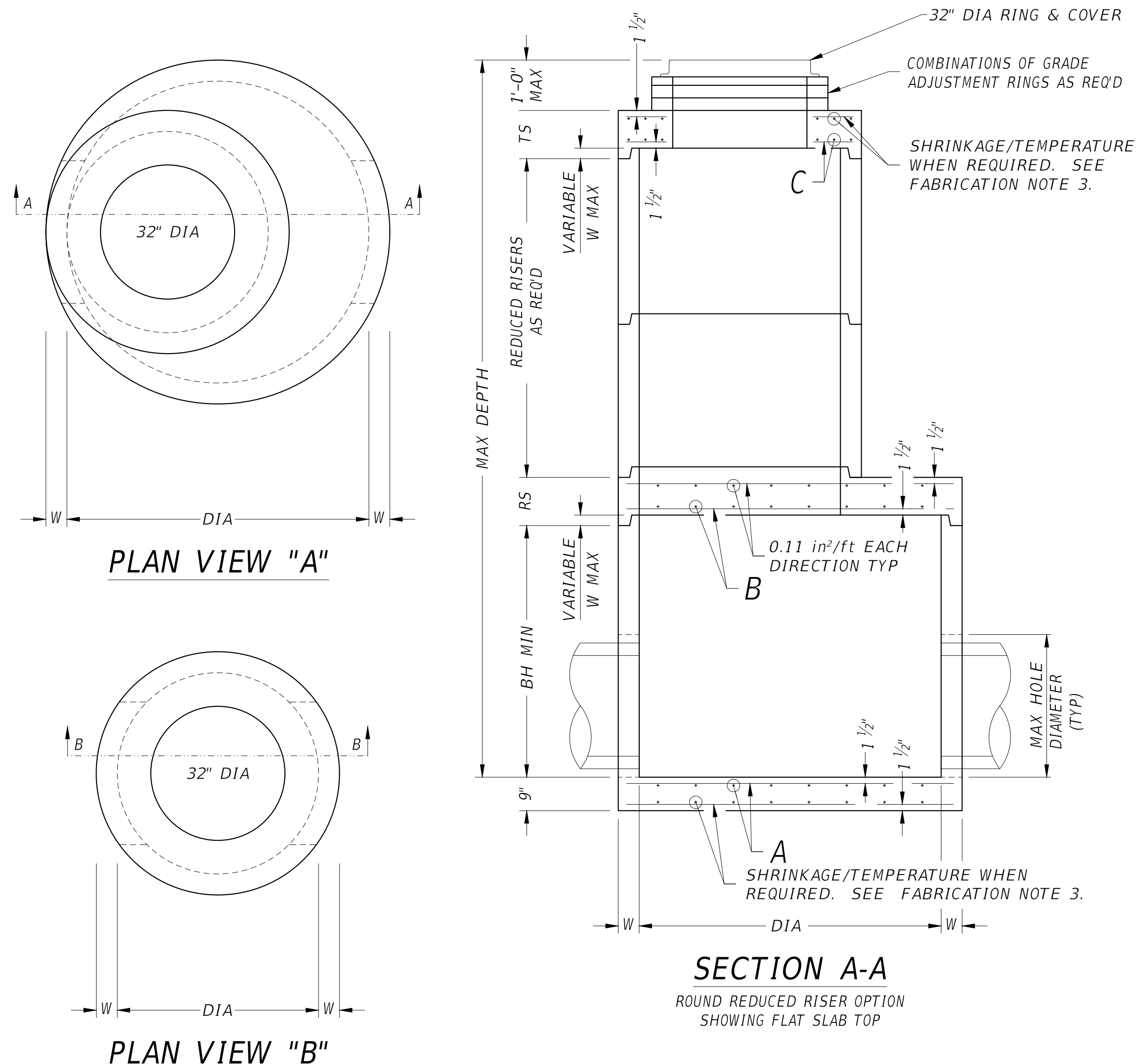
DRAINAGE DETAILS

ISSUE DATE:

2 AUGUST 2024

SHEET NUMBER:

C-603



**FABRICATION NOTES:**

1. Provide Class "H" concrete in accordance with Item 421 and having a minimum compressive strength of 5,000 psi.
2. Provide Grade 60 reinforcing steel or equivalent area of WWR. Provide circumferential reinforcing steel in vertical walls of base, riser and cone in accordance with ASTM C478.
3. Slabs with a thickness of 8" or greater require shrinkage and temperature reinforcing steel. Provide steel area = 0.11 in<sup>2</sup>/ft each way.
4. Manufacture base and risers to nearest 3" increment.
5. Design tongue and groove joints for full closure on both shoulders. Minimum spigot depth is 3/4".
6. Provide lifting devices in conformance with Manufacturer's recommendations.
7. Provide cast iron solid cover, unless noted otherwise elsewhere in the plans.

**INSTALLATION NOTES:**

1. Cones may be concentric or eccentric. Reduction cones are acceptable. See Manufacturer for cone dimensions.
2. Inverts (benching) to be provided by Contractor. Concrete or mortar used for invert is subsidiary to this item.
3. Seal tongue and groove joints with preformed or bulk mastic in conformance with Manufacturer's recommendations. Tongue and groove joints may be grouted no more than 1" between each section, or 1/2 the joint depth, whichever is greater.
4. Do not grout rubber gasket joints without Manufacturer's recommendation.
5. Initial installation of grade adjustment rings is limited to 1'-0" Max as shown.
6. Grade adjustment rings may be increased to 2'-0" Max when future construction affects final grade of structure. Make adjustments greater than 2'-0" with additional risers. Adjustments may be made up to the Max depth shown. Structure must be evaluated if Max depth will be exceeded.

**GENERAL NOTES:**

1. Designed according to ASTM C478.
2. Payment for manhole is per Item 465, "Junction Boxes, Manholes, and Inlets" by type and size.
3. Pipe OD + placement tolerance must be equal or less than Max hole diameter. For rigid pipe, placement tolerance is 4" Max, 2" Min. For flexible pipe, consult boot/seal manufacturer's specification for placement tolerance.

Cover dimensions are clear dimensions, unless noted otherwise.

**MANHOLE SCHEDULE**

Structure Number	Structure Type	Diameter D (in.)	Frame Height (in.)	Grate Diameter (in.)	Frame Type (Neenah/East Jordan/US Foundry or Approved Equal)	Cover/Grate (Neenah/East Jordan/US Foundry or Approved Equal)
S1	Manhole	48	4.5	32	R-1930-30/1495/111 Ring	R-2930-30/V3419/5624
S2	Manhole	48	4.5	32	R-1930-30/1495/111 Ring	R-2930-30/V3419/5624
S3	Manhole	48	4.5	32	R-1930-30/1495/111 Ring	R-2930-30/V3419/5624
S4	Manhole	48	4.5	32	R-1930-30/1495/111 Ring	R-2930-30/V3419/5624
S5	Manhole (Doghouse)	120	4.5	32	R-1930-30/1495/111 Ring	R-2930-30/V3419/5624
S6	Manhole	48	4.5	32	R-1930-30/1495/111 Ring	R-2930-30/V3419/5624

SIZE (DIA)	48 in	60 in	72 in
W	5 in	6 in	7 in
MAX DEPTH	25 ft	25 ft	25 ft
A (EACH WAY)	0.22 in <sup>2</sup> /ft	0.30 in <sup>2</sup> /ft	0.45 in <sup>2</sup> /ft
B (EACH WAY)	N/A	0.37 in <sup>2</sup> /ft	0.62 in <sup>2</sup> /ft
C (EACH WAY)	0.24 in <sup>2</sup> /ft	0.46 in <sup>2</sup> /ft	0.46 in <sup>2</sup> /ft
BH MIN	12 in	36 in	36 in
TS	9 in	9 in	9 in
RS	N/A	9 in	12 in
REDUCED RISER DIA	N/A	48 in	48/60 in
MAX HOLE DIA	32 in	40 in	54 in





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**Texas Air National Guard - 149th FW**  
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**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

REVISION HISTORY:

NO.	DESCRIPTION	DATE

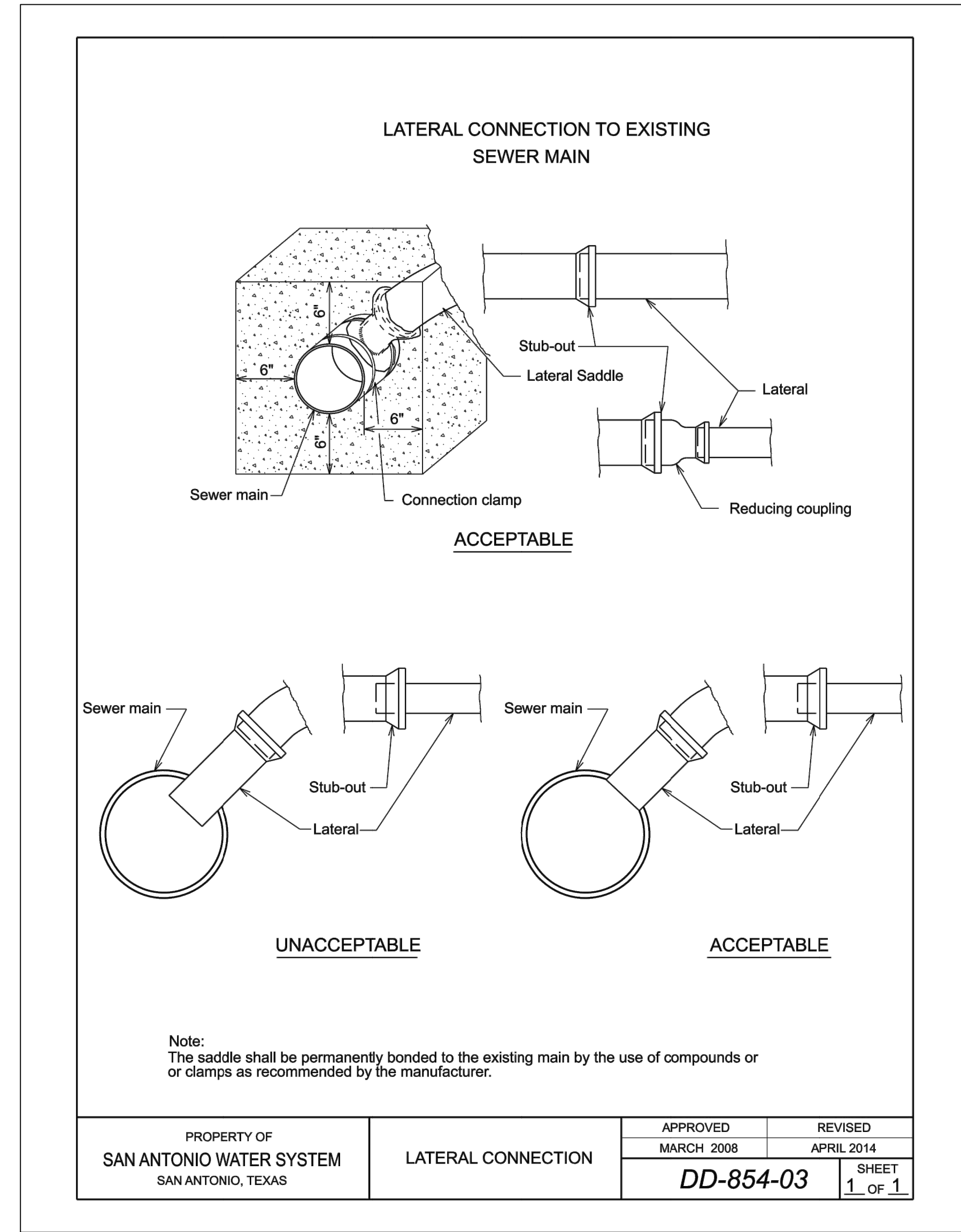
PROJECT INFORMATION:

DESIGNED BY:	LDH
DRAWN BY:	LDH
REVIEWED BY:	RMH
PROJECT MANAGER:	NDM

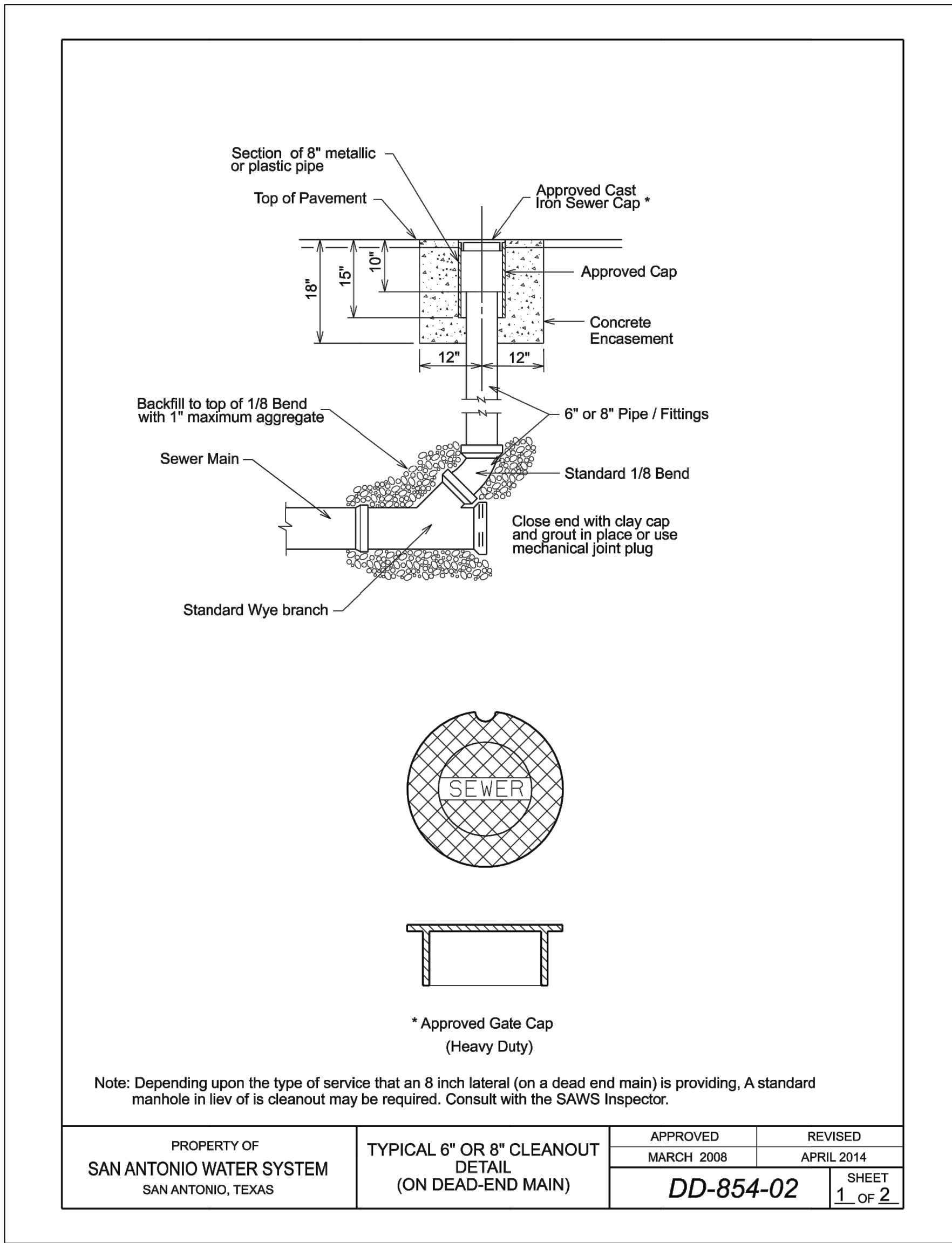
PROJECT NUMBER: 20190320  
SHEET TITLE: SANITARY DETAILS

ISSUE DATE: 2 AUGUST 2024  
SHEET NUMBER:

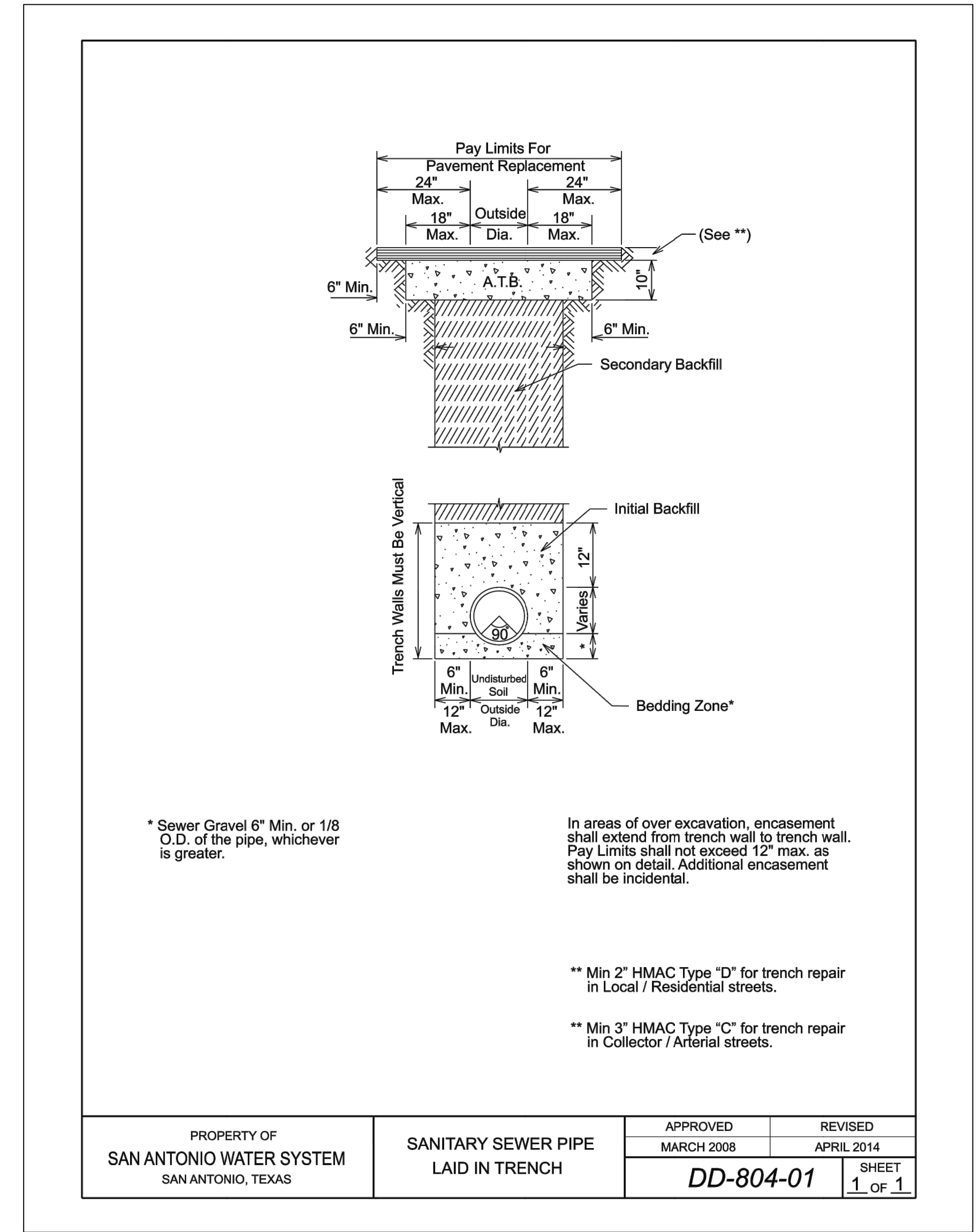
**C-604**



PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	LATERAL CONNECTION	APPROVED MARCH 2008	REVISED APRIL 2014	SHEET 1 OF 1
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PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	TYPICAL 6" OR 8" CLEANOUT DETAIL (ON DEAD-END MAIN)	APPROVED MARCH 2008	REVISED APRIL 2014	SHEET 1 OF 2
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PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	SANITARY SEWER PIPE LAID IN TRENCH	APPROVED MARCH 2008	REVISED APRIL 2014	SHEET 1 OF 1
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\* Sewer Gravel 6" Min. or 1/8 O.D. of the pipe, whichever is greater.

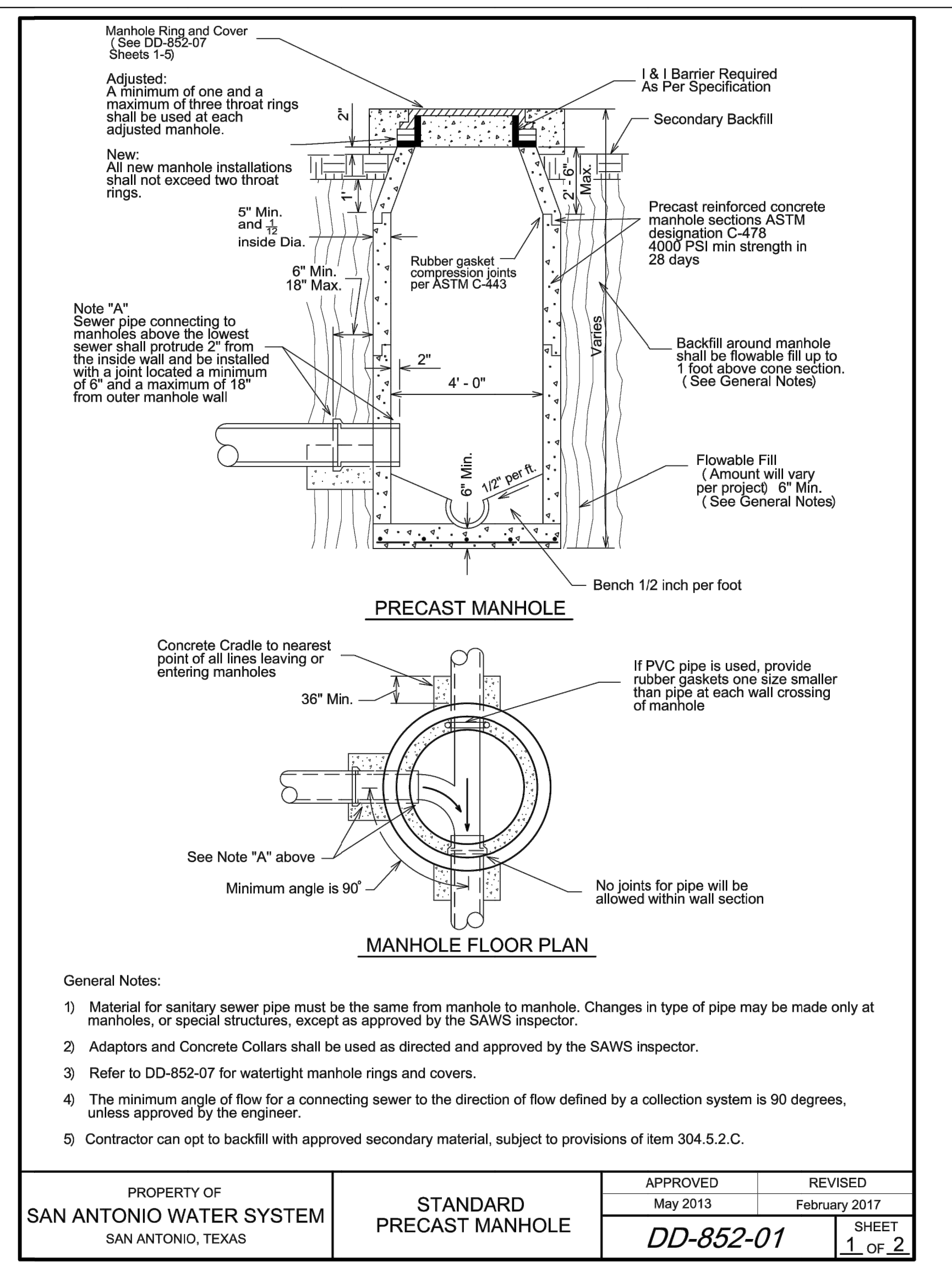
\*\* Min 2" HMAC Type "D" for trench repair in Local / Residential streets.

\*\* Min 3" HMAC Type "C" for trench repair in Collector / Arterial streets.

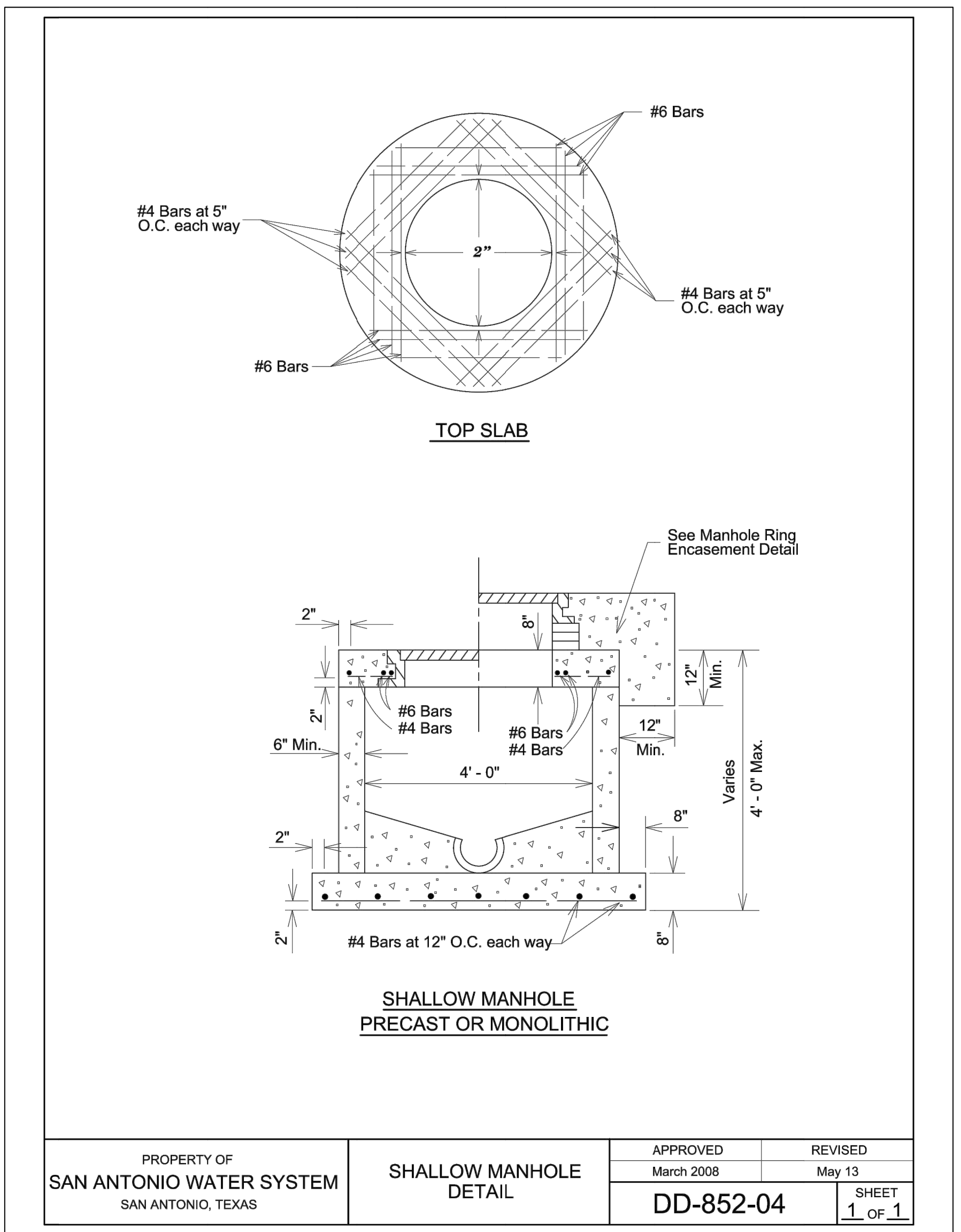


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**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**



PROPERTY OF <b>SAN ANTONIO WATER SYSTEM</b> SAN ANTONIO, TEXAS	<b>STANDARD PRECAST MANHOLE</b>	APPROVED May 2013	REVISED February 2017
		<b>DD-852-01</b>	
		SHEET <b>1 OF 2</b>	



PROPERTY OF <b>SAN ANTONIO WATER SYSTEM</b> SAN ANTONIO, TEXAS	<b>SHALLOW MANHOLE DETAIL</b>	APPROVED March 2008	REVISED May 13
		<b>DD-852-04</b>	
		SHEET <b>1 OF 1</b>	

**SANITARY SEWER SCHEDULE**

Structure	Northing	Easting	Type	Rim El.	Invert El.	Pay Length	Size	Slope %
T1			Meet Building Trench Drain Outlet	---	676.12	43.4	10.0	0.24
T2	13688405.0624	2096914.9495	Manhole	678.74	676.02	8.6	10.0	0.24
T3	13688427.9902	2096914.9495	Oil Water Separator	678.47	676.00	5.0	10.0	0.24
					675.90			
T4	13688447.3235	2096914.9495	Manhole	678.28	675.89	106.9	10.0	0.24
T5	13688554.2361	2096914.9495	Manhole	679.44	675.64	219.9	10.0	0.24
T6			Connection to Existing Manhole	---	675.11			
---			Connection to Building	---	676.11	43.5	4.0	0.50
T4	13688447.3235	2096914.9495	Manhole	678.28	675.89			

REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY:	LDH
DRAWN BY:	LDH
REVIEWED BY:	RMH
PROJECT MANAGER:	NDM

PROJECT NUMBER:  
**20190320**

SHEET TITLE:

**SANITARY SCHEDULE AND  
DETAILS**

ISSUE DATE:

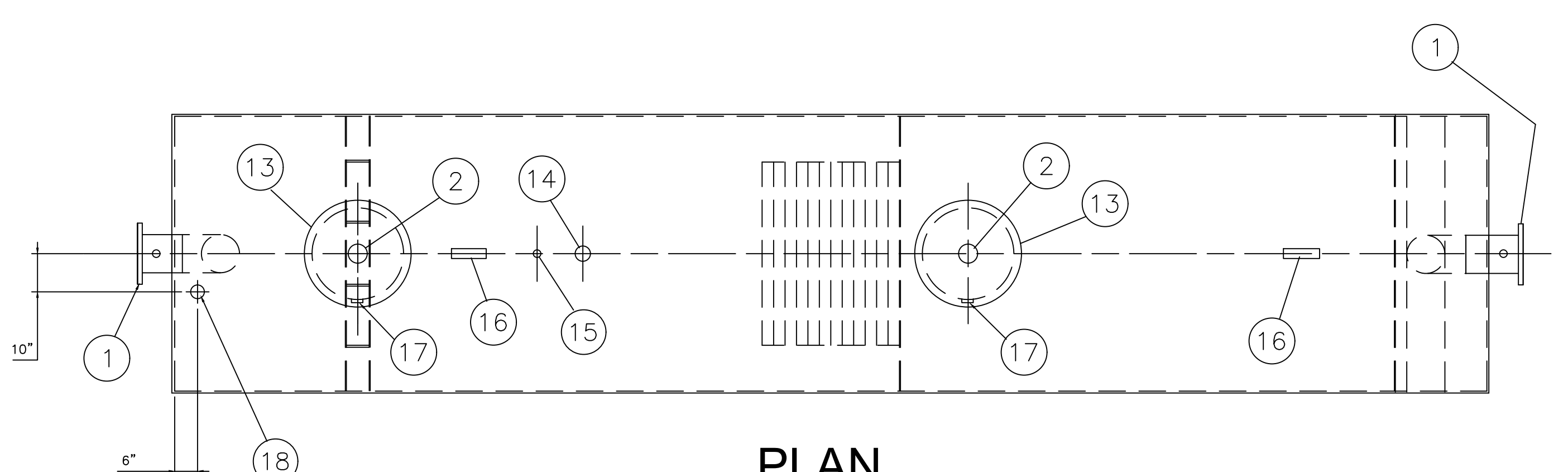
**2 AUGUST 2024**

SHEET NUMBER:

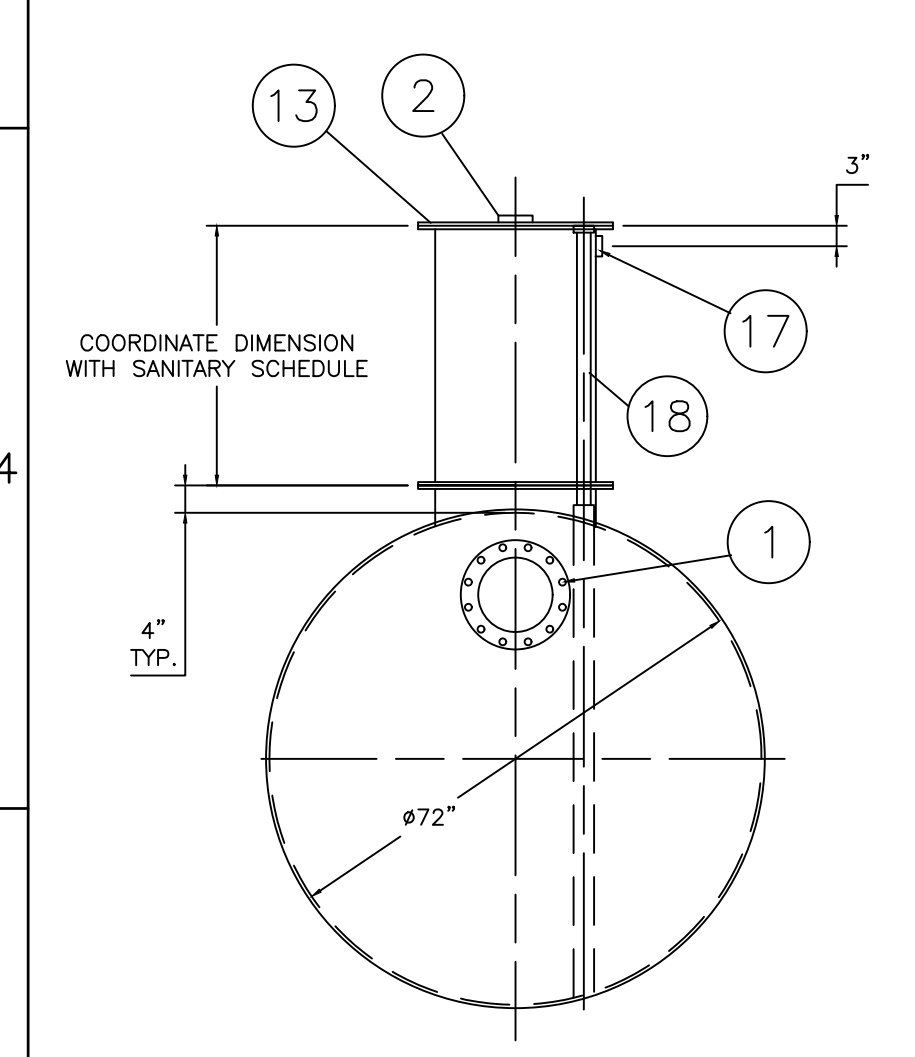
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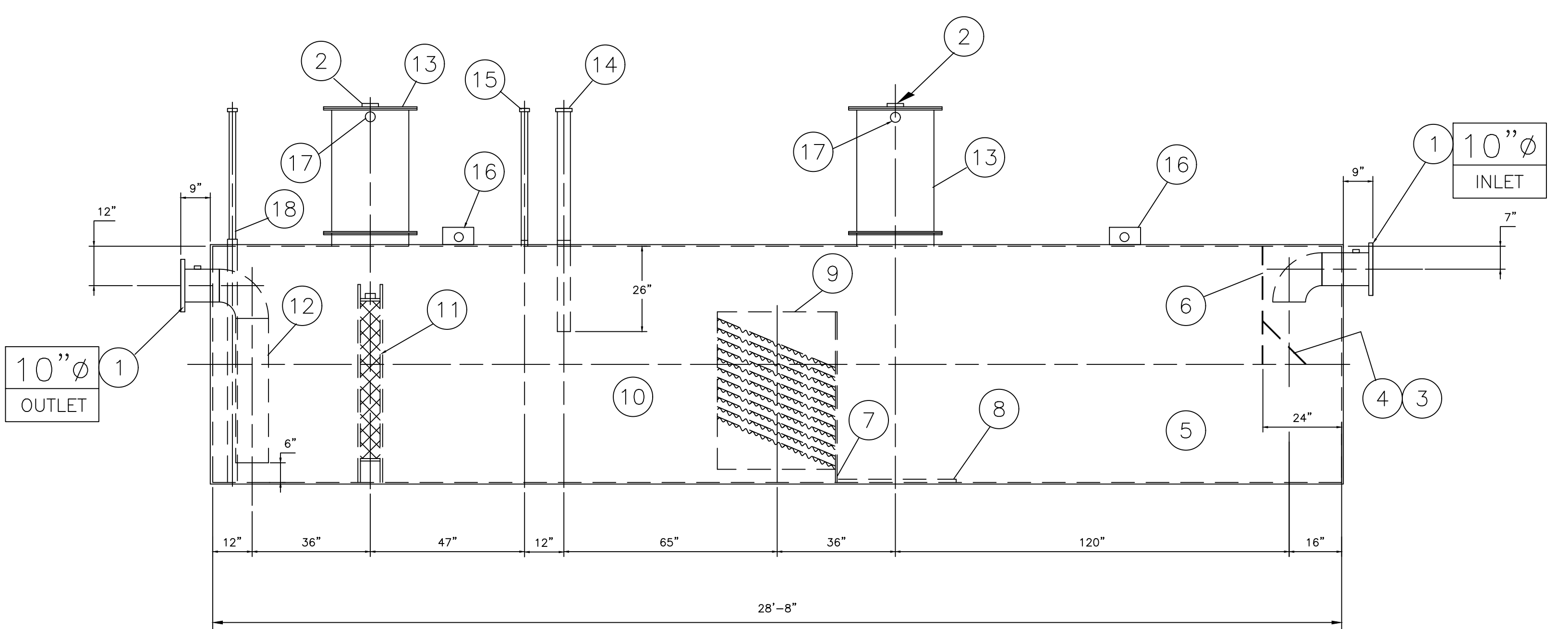
1  
2  
3  
4  
5  
6



PLAN



END VIEW



ELEVATION

6,000 GALLON OIL WATER SEPARATOR

EQUIPMENT

1. 150# R.F.S.O. FLANGE WITH 2" FNPT FOR VENT
2. 4"Ø FNPT FOR GAUGE WITH PLUG
3. VELOCITY HEAD DIFFUSION BAFFLE
4. WEAR PLATE
5. SEDIMENT CHAMBER
6. UNDERFLOW BAFFLE
7. SLUDGE BAFFLE
8. STRIKER PLATES
9. PARALLEL CORRUGATED PLATE COALESCER.
10. OIL/WATER SEPARATOR CHAMBER
11. 6" THICK COALESCER MATERIAL INSTALLED WITH PULL ROD SHIPPED LOOSE
12. STEEL OUTLET DOWNCOMER
13. 24"Ø MANWAY WITH GASKETS.
14. 4"Ø FNPT FOR OIL PUMP-OUT WITH INTERNAL PVC PIPE INSTALLED
15. 2"Ø FNPT FOR LEVEL SENSOR.
16. LIFTING LUG
17. 2"Ø FNPT FOR VENT
18. 2"Ø FNPT FOR LEAK SENSOR WITH RISER PIPE

ANCILLARY EQUIPMENT

- (4) 24" MANWAY GASKETS
- (4) SETS OF NUTS/BOLTS/WASHERS FOR 24" MANWAY

NOTES

1. TANK IS NOT APPROVED FOR THE STORAGE OF HEATED PRODUCTS
2. ALL VENT PIPING BY INSTALLER
3. 15000 VOLT SPARK TEST PROVIDED AT FACTORY
4. SEPARATOR SHALL BE SUPPLIED WITH AN AUDIBLE AND VISUAL ALARM SYSTEM THAT INDICATES HI OIL LEVEL (VISUAL ONLY) AND HI-HI OIL LEVEL (AUDIBLE AND VISUAL) OF OIL STORAGE IN THE OIL/WATER SEPARATOR. AN AUDIBLE AND VISUAL LEAK DETECTION ALARM SYSTEM THAT INDICATES HYDROCARBON AND/OR WATER IN THE INTERSTICE WILL ALSO BE PROVIDED. A SILENCE CONTROL SHALL BE PROVIDED FOR THE AUDIBLE ALARMS. LEVEL SENSOR(S) TO BE INTRINSICALLY SAFE. LEVEL SENSOR FLOATS TO BE MADE OF STAINLESS STEEL. THE CONTROL PANEL SHALL CONTAIN BOTH LEVEL SENSOR AND LEAK DETECTION CONTROL.

Offices Nationwide  
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Hanson Professional Services Inc.  
1525 S. 6th Street  
Springfield, IL 62703  
phone: 217-788-2450  
fax: 217-788-2503

Lindsay Hausman

**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY:	LDH
DRAWN BY:	LDH
REVIEWED BY:	RMH
PROJECT MANAGER:	NDM

PROJECT NUMBER:  
20190320

SHEET TITLE:

SANITARY OIL-WATER SEPARATOR DETAILS

ISSUE DATE:  
2 AUGUST 2024

SHEET NUMBER:  
C-606

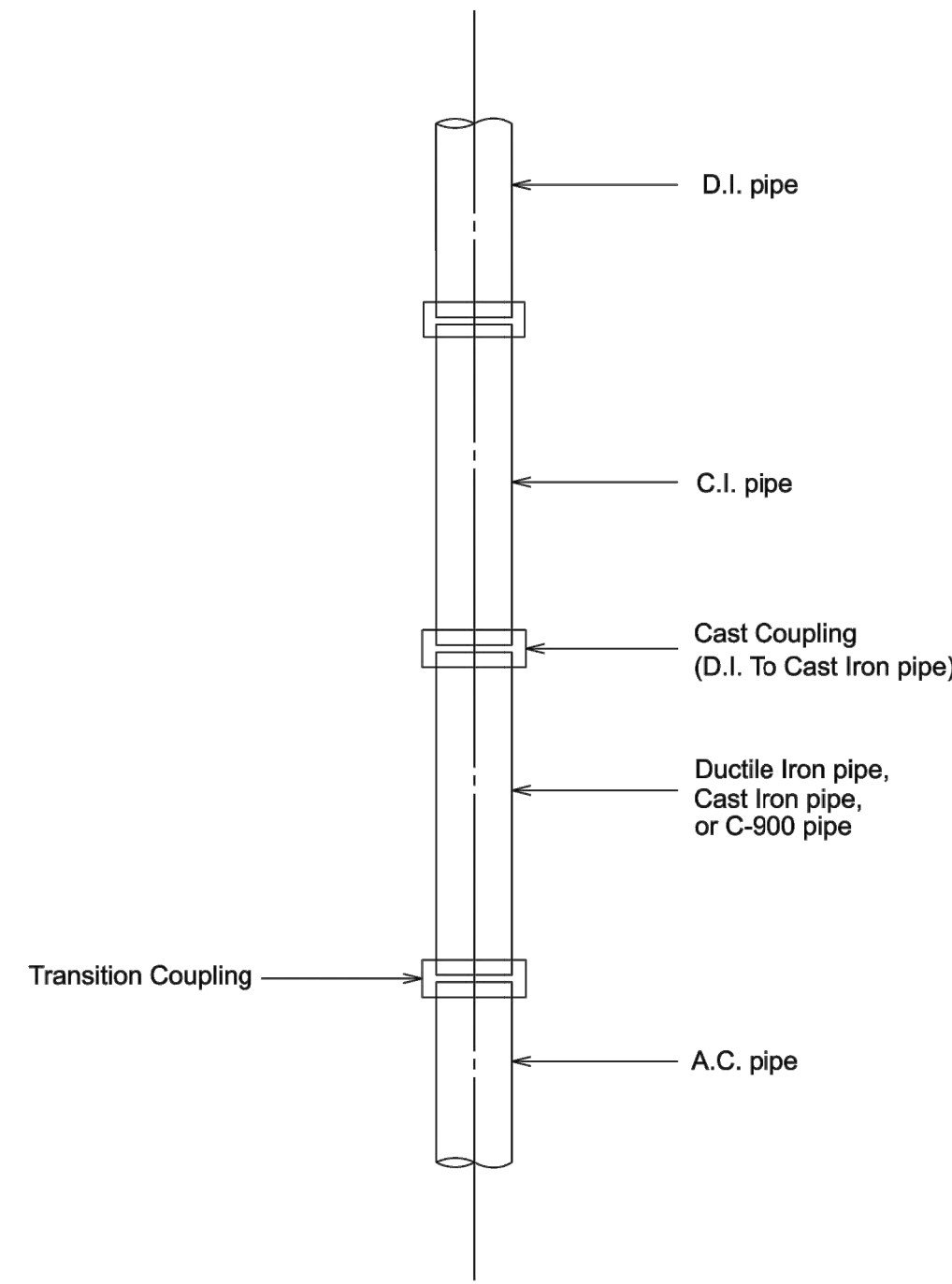
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES  
TOLERANCES ARE + OR - 1"

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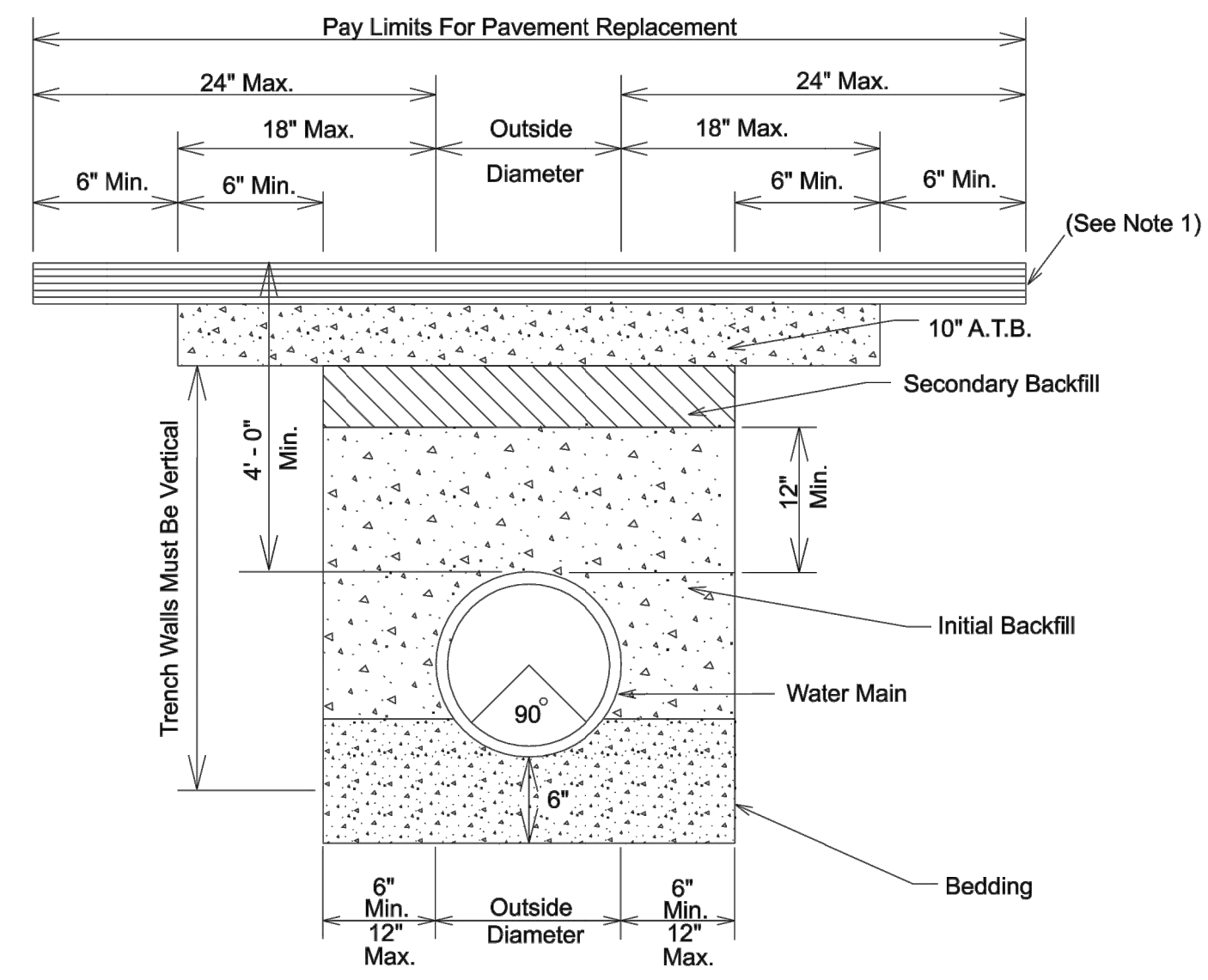


*Lindsay Hausman*

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Corrosion Control Facility  
TXANG Project Number: KELL 169014  
JB SA - Kelly Annex, TX**

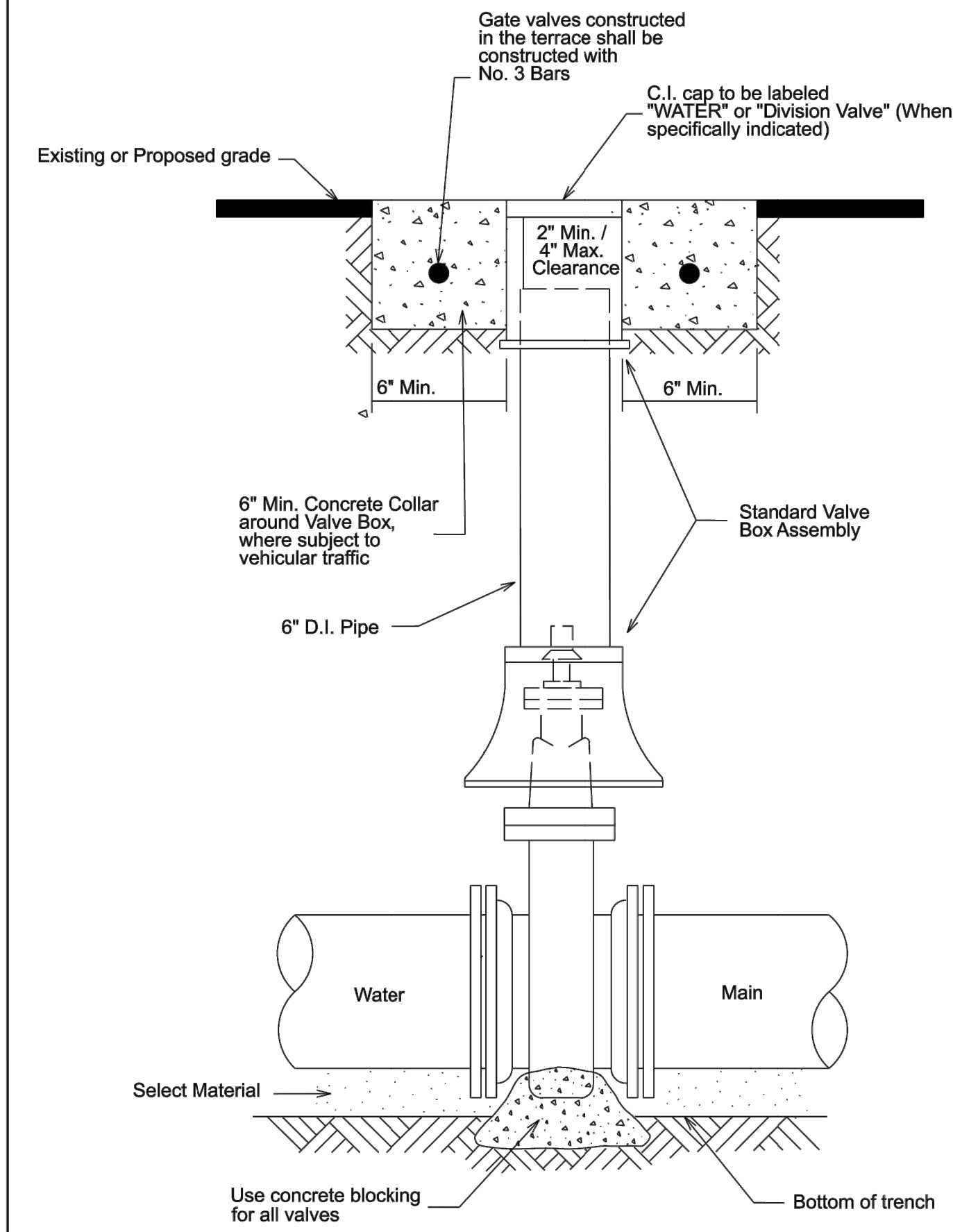


PROPERTY OF <b>SAN ANTONIO WATER SYSTEM</b> SAN ANTONIO, TEXAS	PIPE COUPLINGS	APPROVED	REVISED
		MARCH 2008	APRIL 2014
<b>DD-812-00</b>		SHEET 1 OF 1	



- 1) REPLACEMENT OF SURFACE LAYER SHALL BE OF THE TYPE AND THICKNESS BASED ON FUNCTIONAL CLASSIFICATION.
  - a. Min 2" HMAC Type "D" for trench repair in Local / Residential streets.
  - b. Min 3" HMAC Type "C" for trench repair in Collector / Arterial streets.

PROPERTY OF <b>SAN ANTONIO WATER SYSTEM</b> SAN ANTONIO, TEXAS	POTABLE AND RECYCLED WATER MAIN DETAIL	APPROVED	REVISED
		MARCH 2008	APRIL 2014
<b>DD-812-01</b>		SHEET 1 OF 1	



NOTE: All Concrete to be 3,000 psi  
Note: For all work associated with recycled water valves, refer to DD-110-10, Sheet 1 of 1

PROPERTY OF <b>SAN ANTONIO WATER SYSTEM</b> SAN ANTONIO, TEXAS	INSTALLATION OF NON-GEARED GATE VALVE WITH VALVE BOX AND EXTENSION	APPROVED	REVISED
		MARCH 2008	APRIL 2014
<b>DD-828-01</b>		SHEET 1 OF 1	

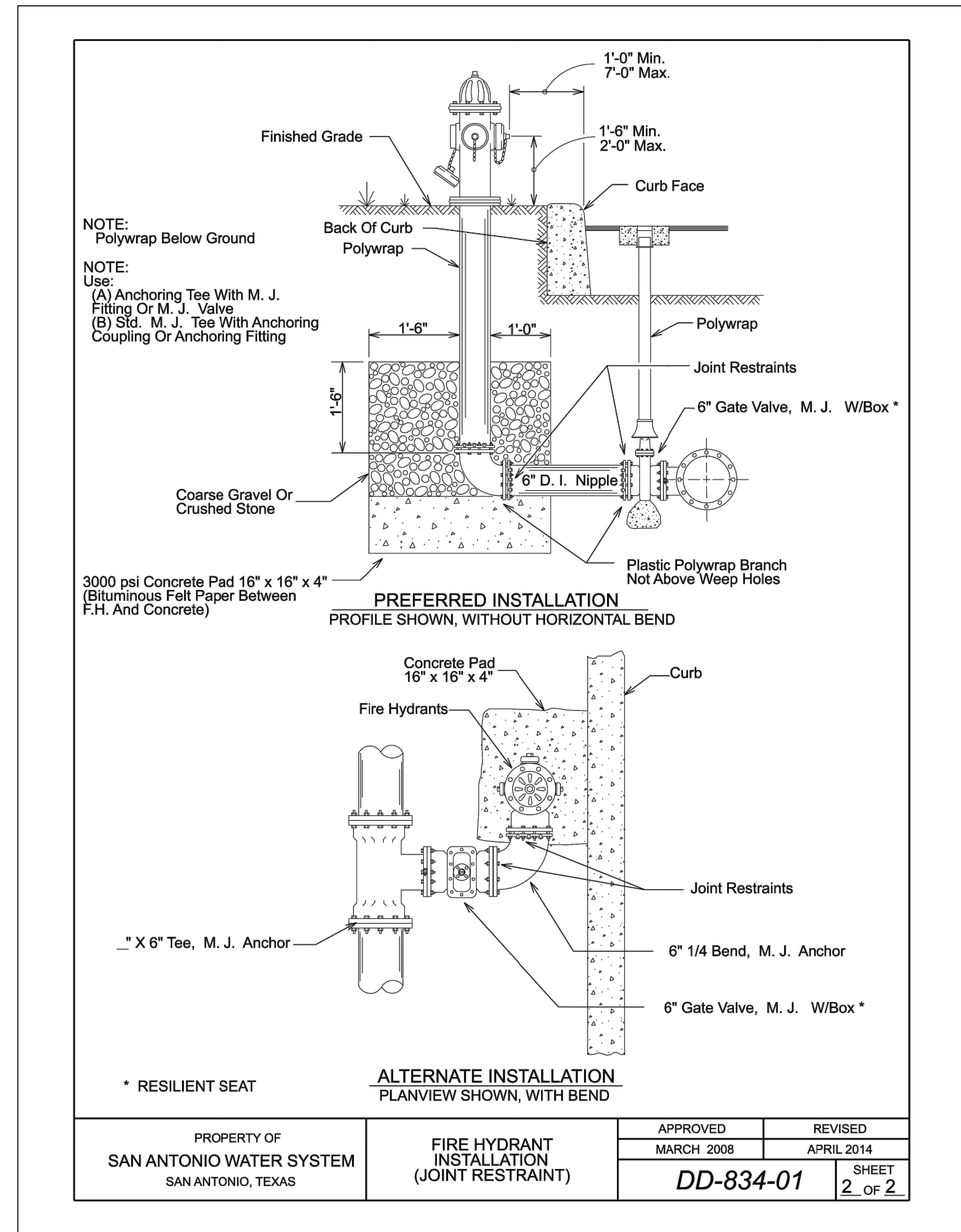
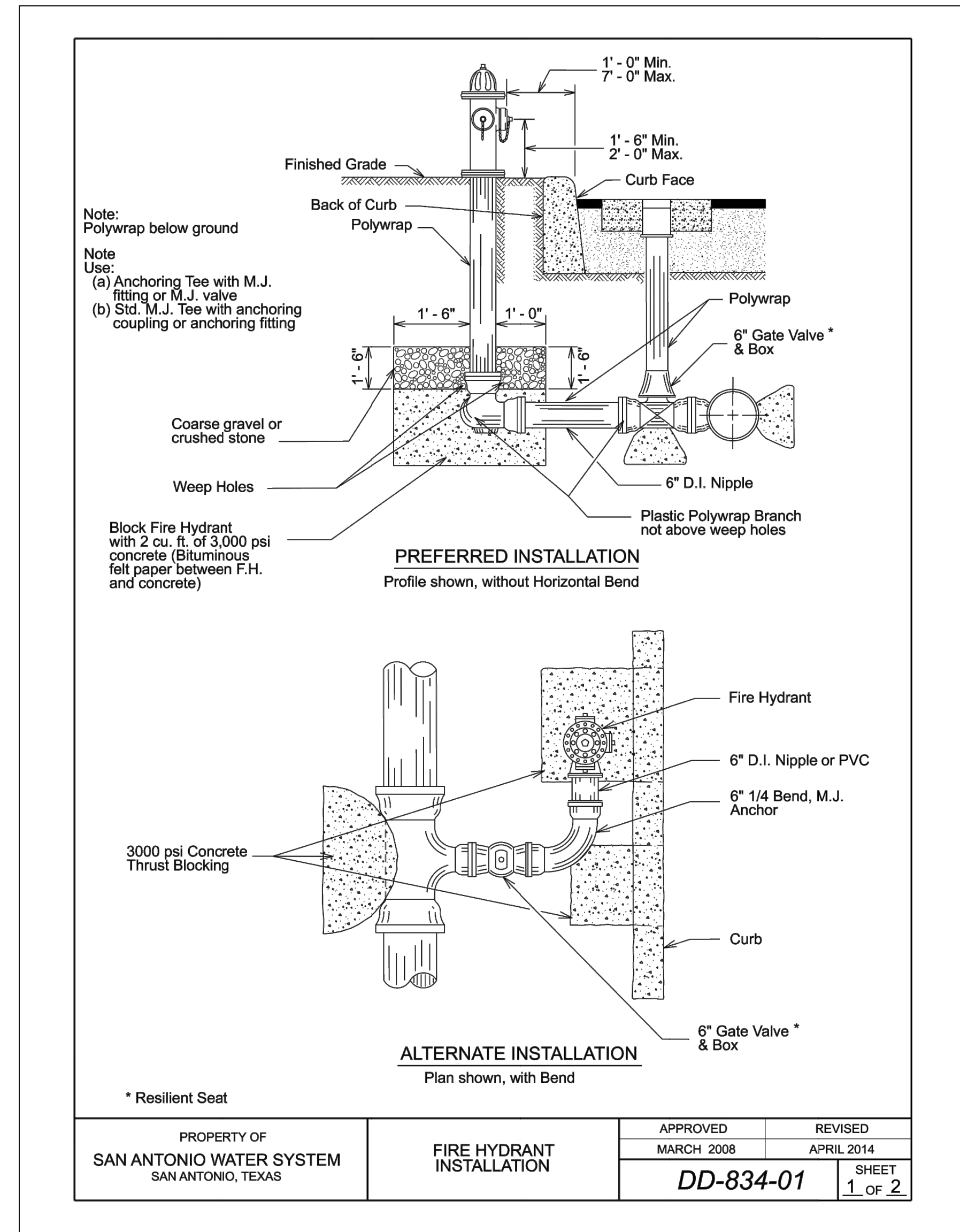
REVISION HISTORY:	
DESCRIPTION	DATE

PROJECT INFORMATION:	
DESIGNED BY:	LDH
DRAWN BY:	LDH
REVIEWED BY:	RMH
PROJECT MANAGER:	NDM
PROJECT NUMBER: 20190320	
SHEET TITLE: WATER DETAILS	
ISSUE DATE: 2 AUGUST 2024	
SHEET NUMBER: <b>C-607</b>	



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**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**



REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY:	LDH
DRAWN BY:	LDH
REVIEWED BY:	RMH
PROJECT MANAGER:	NDM

PROJECT NUMBER:  
20190320

SHEET TITLE:  
WATER DETAILS

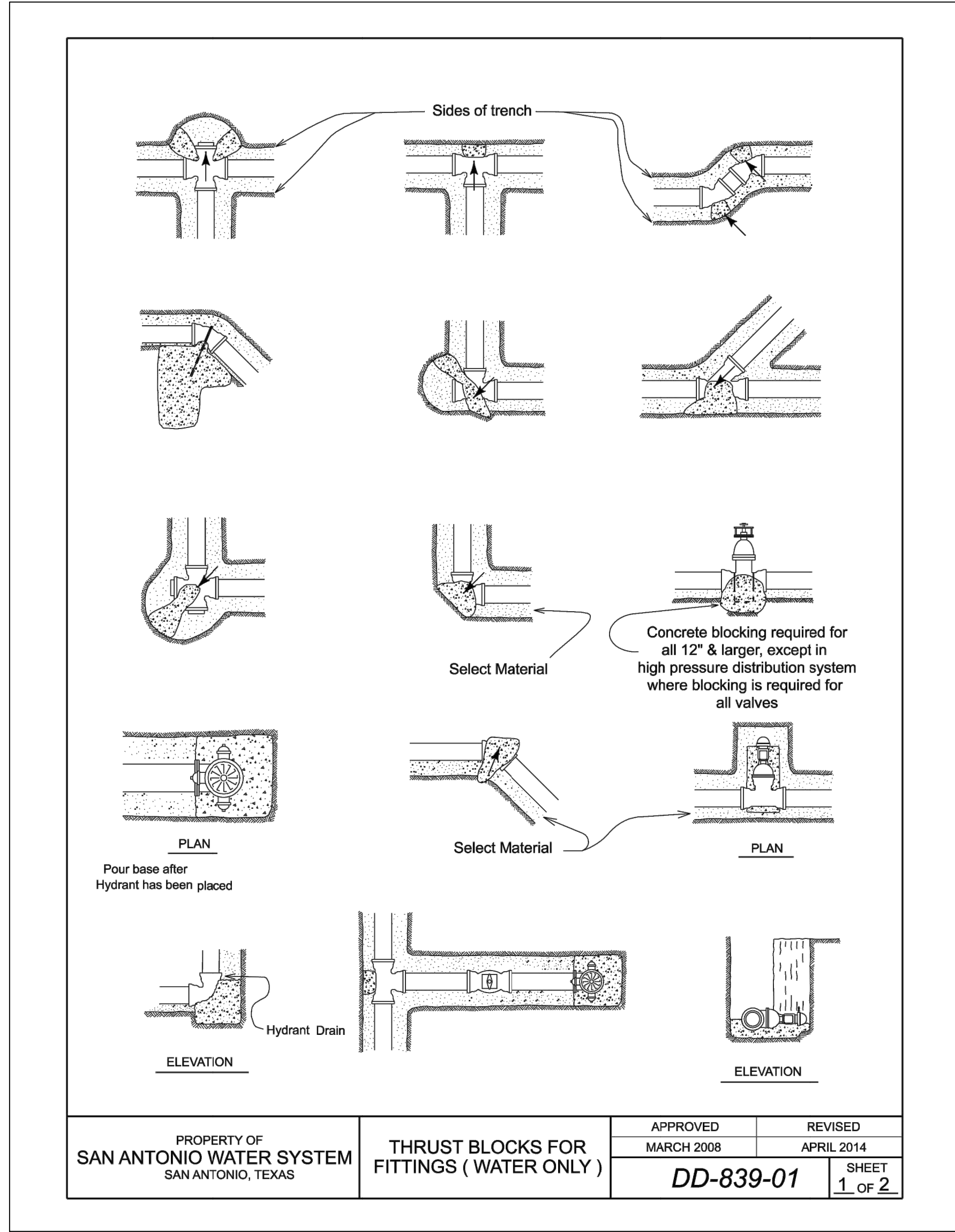
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2 AUGUST 2024

SHEET NUMBER:  
C-608

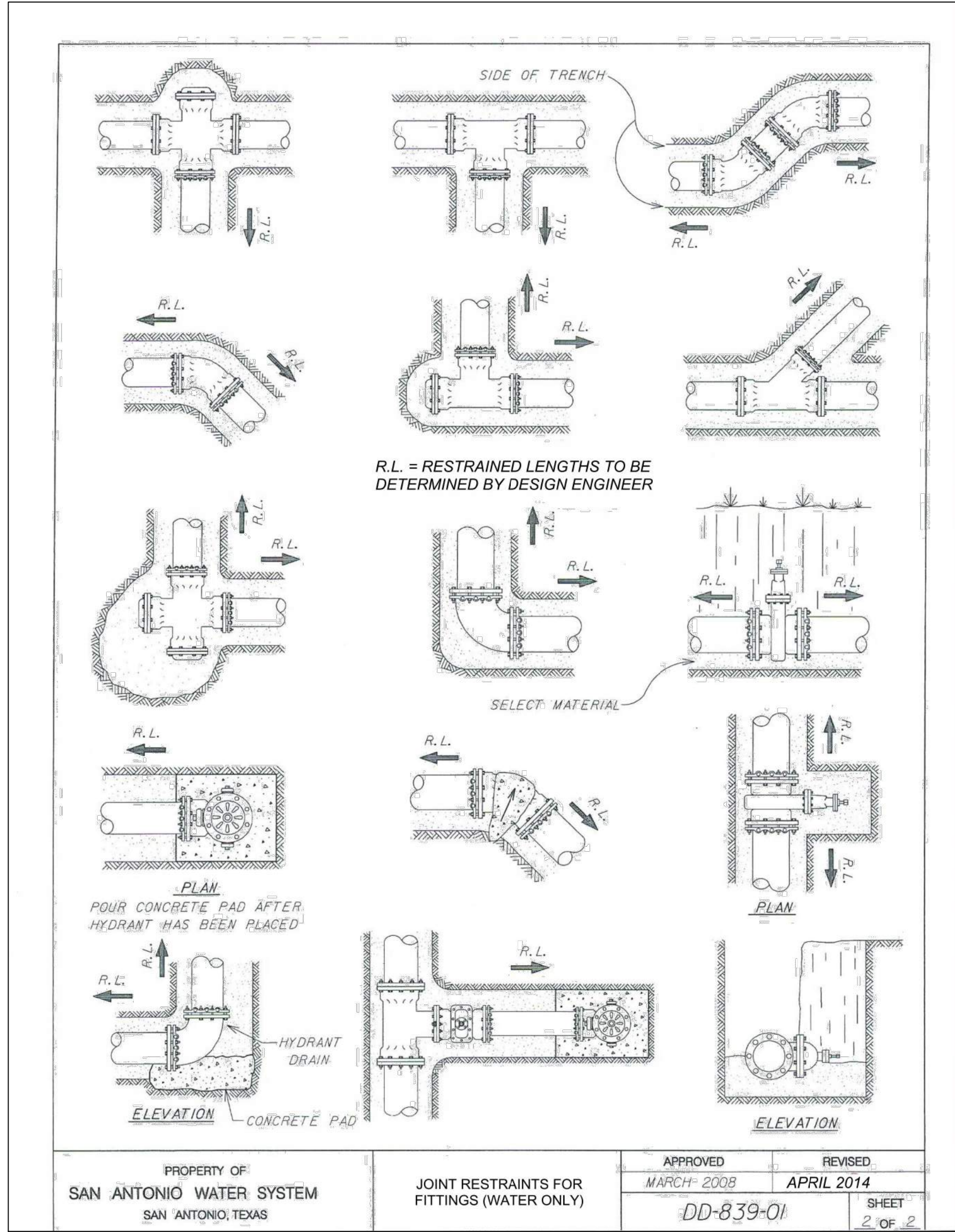


*Lindsay Hausman*

**Texas Air National Guard - 149th FW  
Corrosion Control Facility  
TXANG Project Number: KELL 169014  
JBSA - Kelly Annex, TX**



PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	THRUST BLOCKS FOR FITTINGS ( WATER ONLY )	APPROVED MARCH 2008	REVISED APRIL 2014	DD-839-01	SHEET 1 OF 2
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PROPERTY OF SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	JOINT RESTRAINTS FOR FITTINGS (WATER ONLY)	APPROVED MARCH 2008	REVISED APRIL 2014	DD-839-01	SHEET 2 OF 2
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REVISION HISTORY:	
DESCRIPTION	DATE

PROJECT INFORMATION:	
DESIGNED BY:	LDH
DRAWN BY:	LDH
REVIEWED BY:	RMH
PROJECT MANAGER:	NDM

PROJECT NUMBER:  
20190320

SHEET TITLE:  
WATER DETAILS

ISSUE DATE:  
2 AUGUST 2024

SHEET NUMBER:

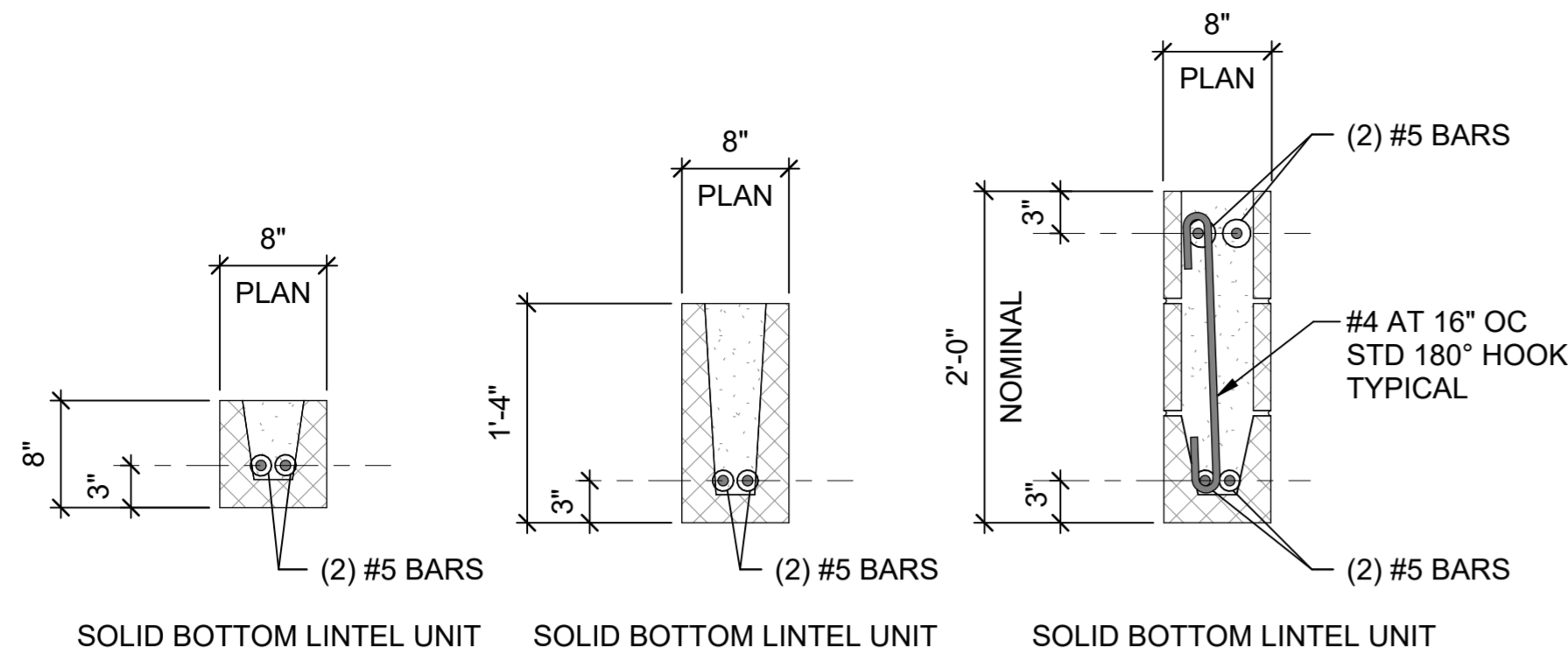
**C-609**







A B C D E F G H

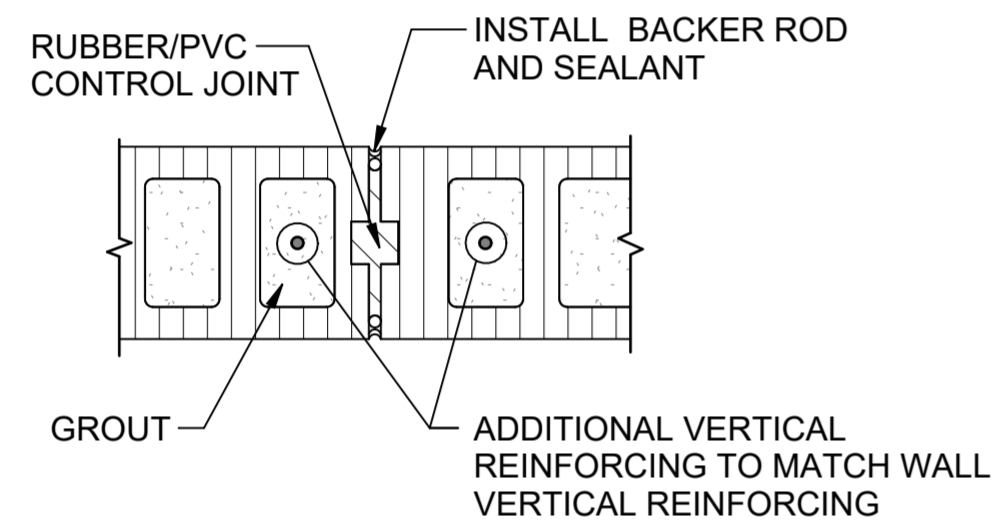


**LINTEL TYPE 1**  
OPENING SPAN  
LESS THAN 6'-0"

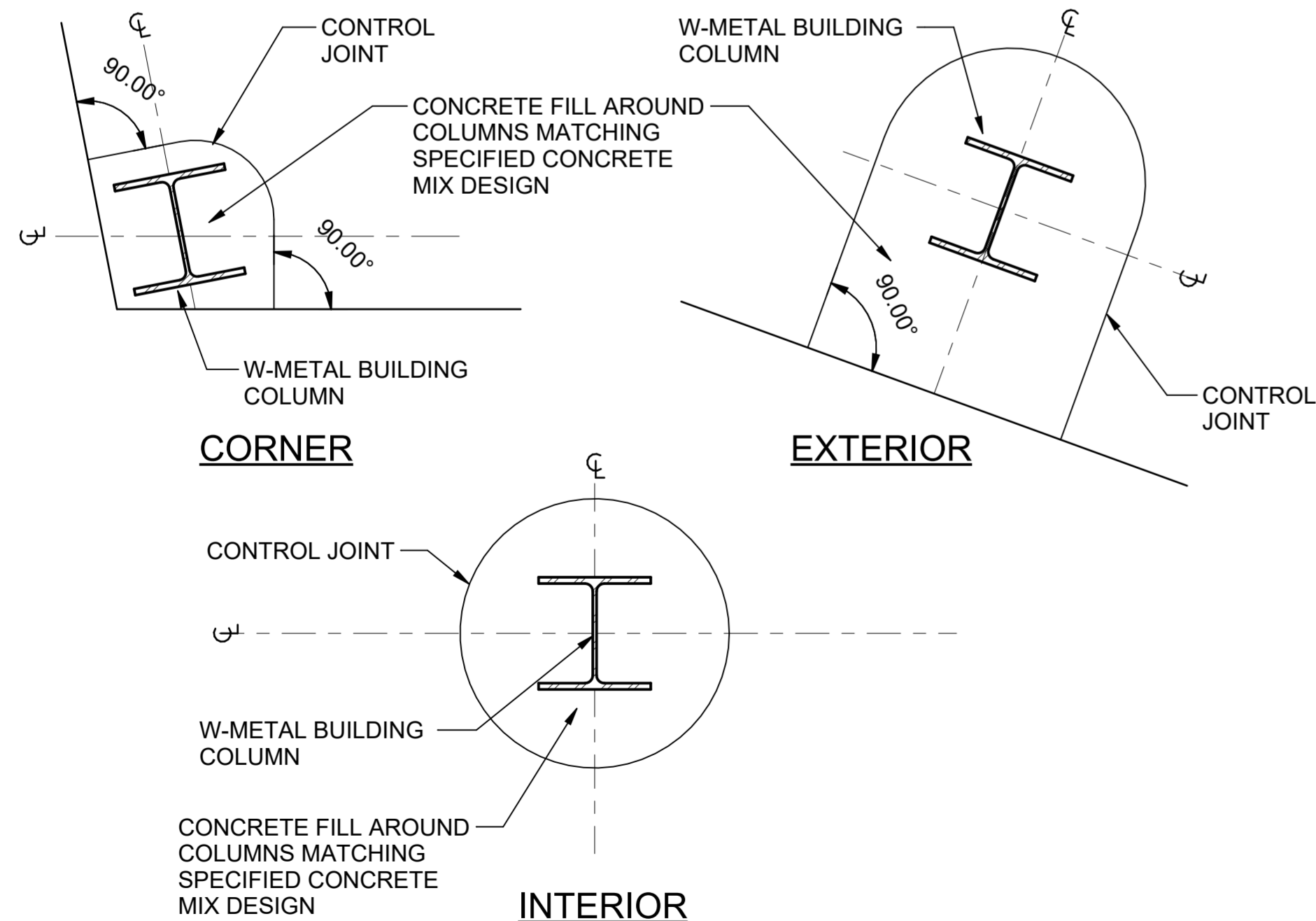
**LINTEL TYPE 2**  
OPENING SPAN  
FROM 6'-0" TO 10'-0"

**LINTEL TYPE 3**  
OPENING SPAN  
FROM 10'-0" TO 16'-0"

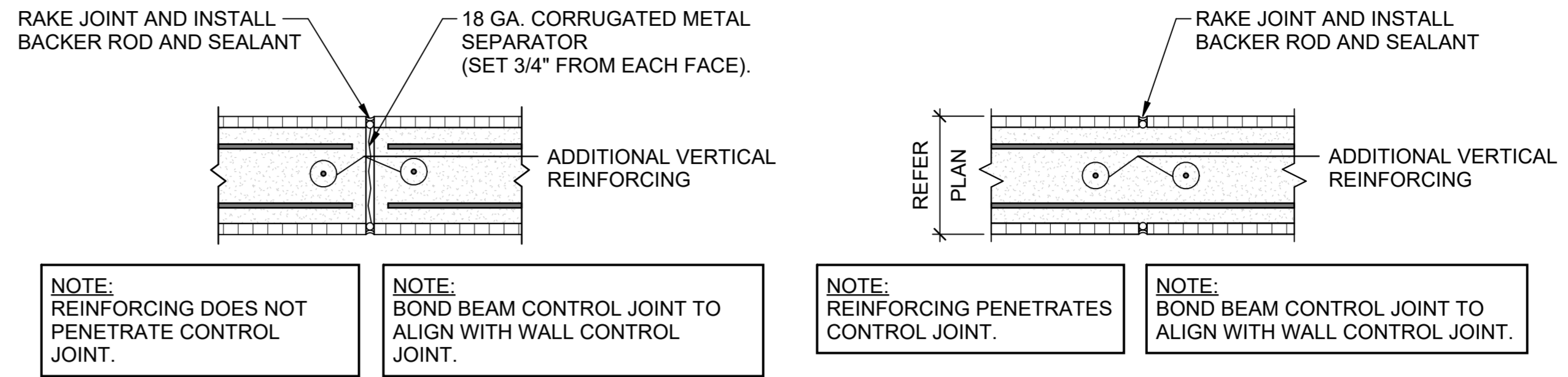
**A2 LINTEL TYPES**  
SCALE: NTS



**A4 CMU REINFORCING**  
SCALE: NTS



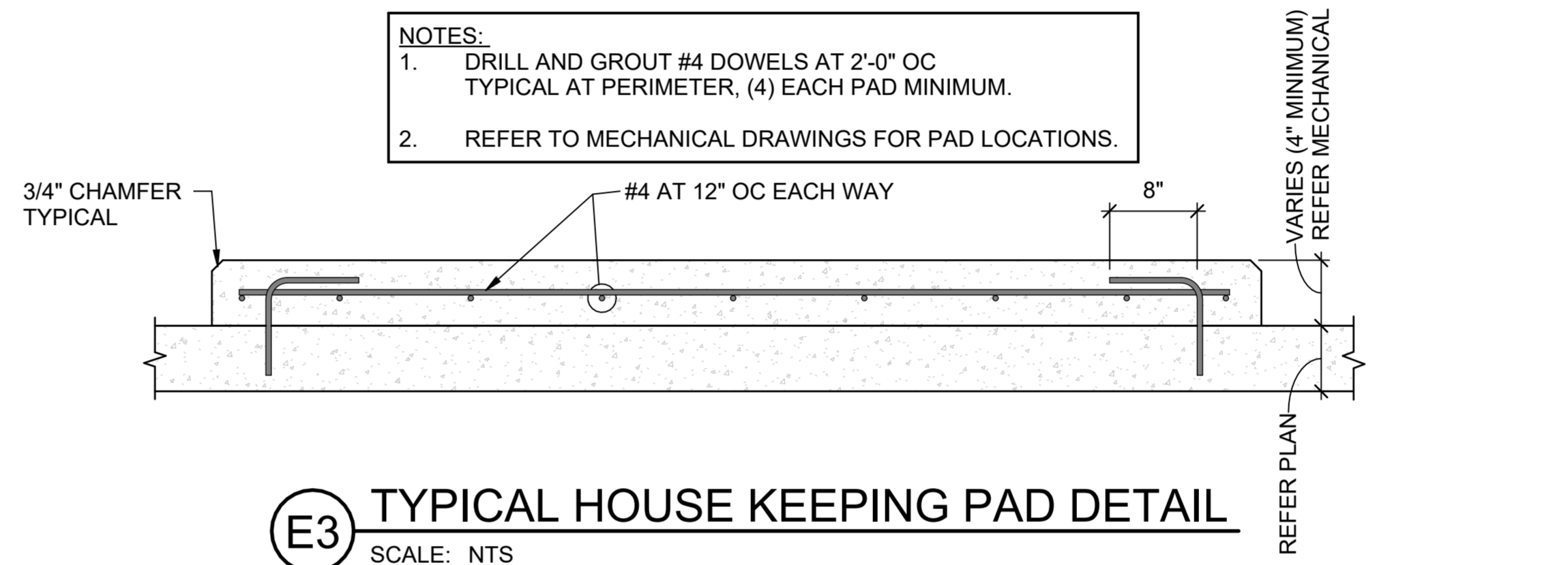
**A6 SLAB BLOCKOUT - CIRCULAR**  
SCALE: NTS



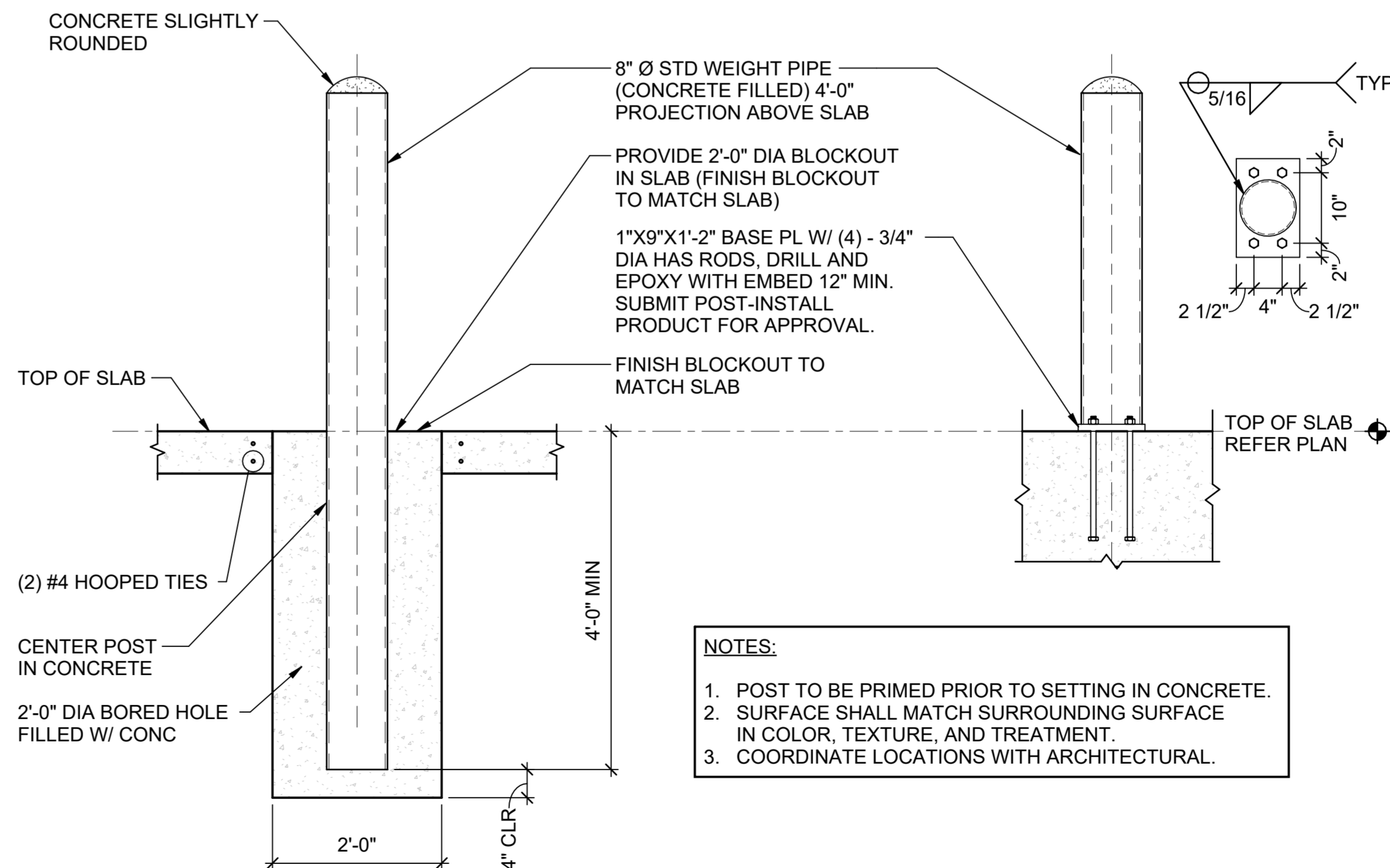
**CONTROL JOINT AT INTERMEDIATE AND TOP BOND BEAMS**

**CONTROL JOINT AT BOTTOM COURSE OF WALL**

**E2 BOND BEAM CONTROL JOINTS**  
SCALE: NTS



**E3 TYPICAL HOUSE KEEPING PAD DETAIL**  
SCALE: NTS

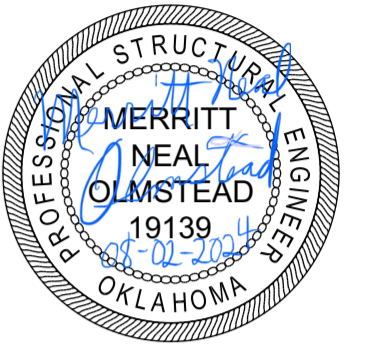


**NOTES:**  
1. POST TO BE PRIMED PRIOR TO SETTING IN CONCRETE.  
2. SURFACE SHALL MATCH SURROUNDING SURFACE IN COLOR, TEXTURE, AND TREATMENT.  
3. COORDINATE LOCATIONS WITH ARCHITECTURAL.

**E6 TYPICAL BOLLARD DETAIL**  
SCALE: NTS

**FSB FEDERAL DESIGN GROUP JV**

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**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

REVISION HISTORY:	
DESCRIPTION	DATE

DESIGNED BY:	<b>CGH</b>
DRAWN BY:	<b>CGH</b>
REVIEWED BY:	<b>BJW</b>
PROJECT MANAGER:	<b>NDM</b>

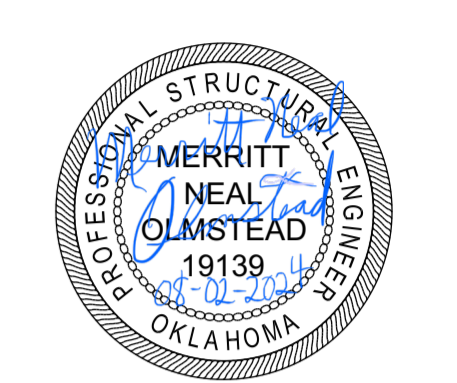
PROJECT NUMBER:  
**20190320**

SHEET TITLE:  
**TYPICAL DETAILS**

ISSUE DATE:  
**2 AUGUST 2024**

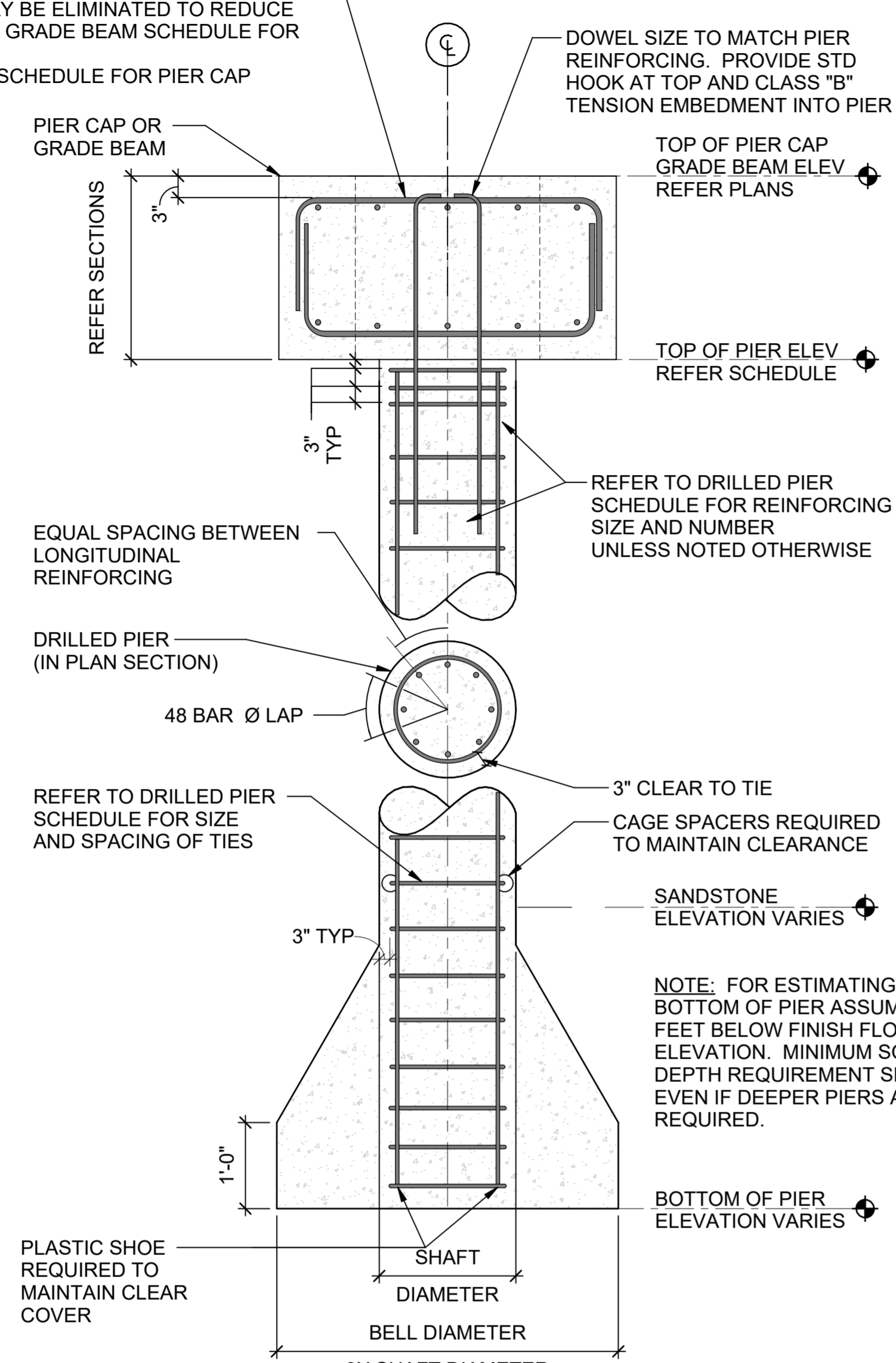
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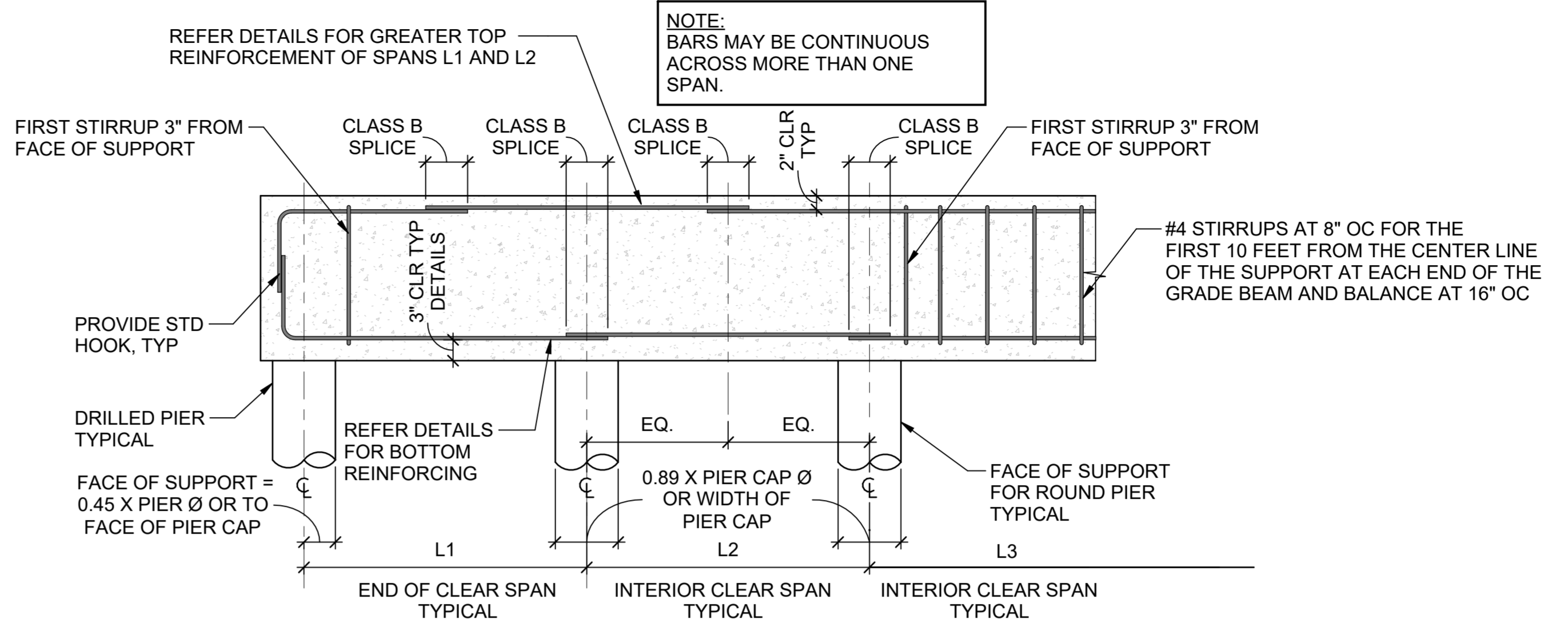


**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

**MINIMUM PIER CAP REINFORCING:**  
 #6 HOOKED BARS AT 6" (MAX) ON CENTER EACH WAY, TOP AND BOTTOM. EXTEND GRADE BEAM REINFORCING THROUGH PIER CAPS TYPICAL. FOR EACH CONTINUOUS #8 BAR FROM GRADE BEAMS, ONE #6 PIER CAP BAR IN THE SAME DIRECTION MAY BE ELIMINATED TO REDUCE CONGESTION. REFER TO GRADE BEAM SCHEDULE FOR SIZE AND REINFORCING. REFER TO DRILLED PIER SCHEDULE FOR PIER CAP THICKNESS



**B5 DRILLED PIER & PIER CAP**  
 SCALE: NTS

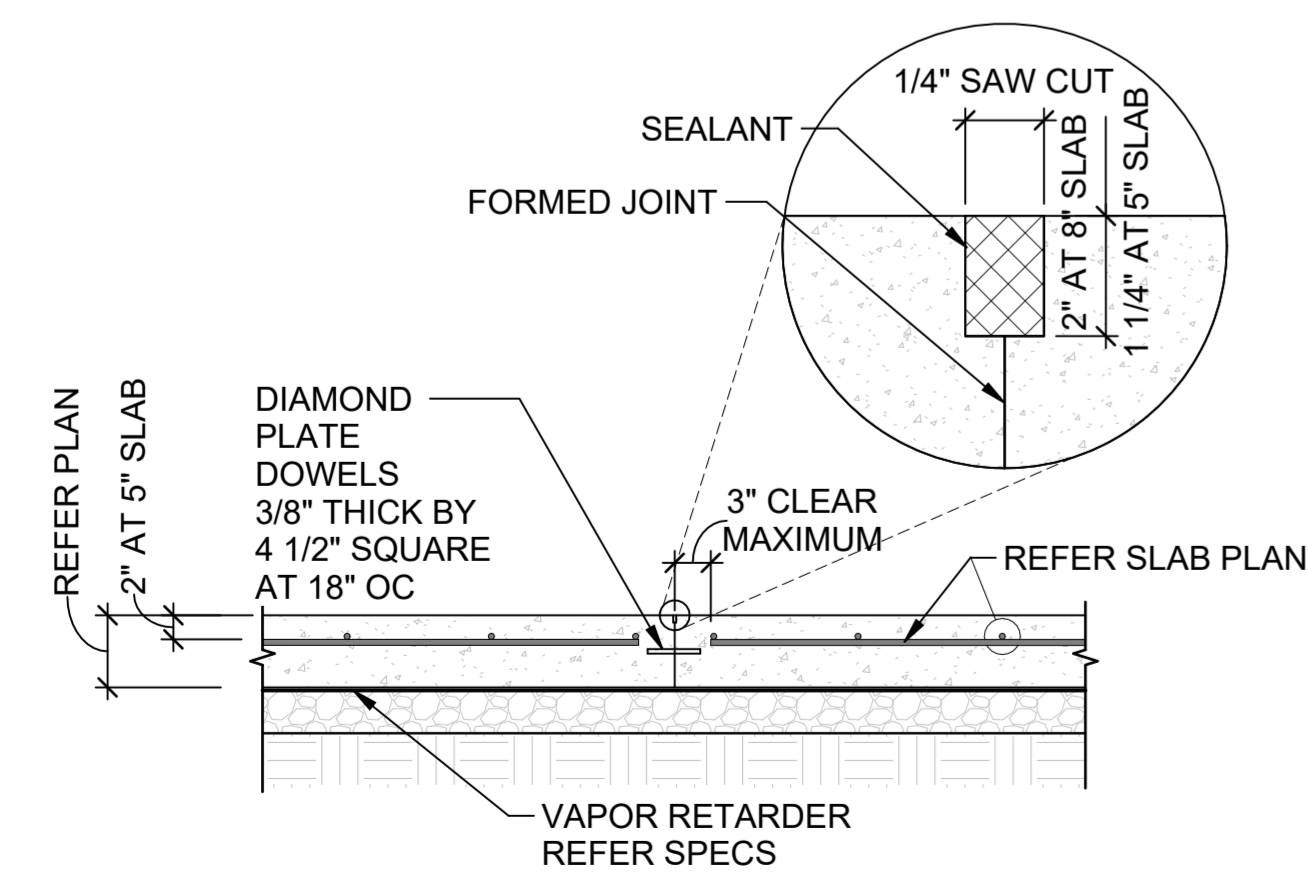


**E2 GRADE BEAM REINFORCING**  
 SCALE: NTS

**DRILLED PIER SCHEDULE**

PIER MARK	SHAFT DIAMETER	BELL DIAMETER	REINFORCING				TOP OF PIER ELEVATION	BOTTOM OF PIER ELEVATION	PIER CAP THICKNESS
			QUANTITY	SIZE	SIZE	SPACING			
P1	1'-6"	4'-6"	6	#7	#4	10" OC	98'-0"	83'-0"	1'-4"
P2	1'-6"	4'-6"	6	#7	#4	10" OC	97'-4"	83'-0"	1'-4"
P3	1'-6"	4'-6"	6	#7	#4	10" OC	96'-6"	83'-0"	1'-8"
P4	1'-6"	4'-6"	6	#7	#4	10" OC	96'-0"	83'-0"	2'-2"
P5	2'-0"	6'-0"	8	#7	#4	10" OC	96'-10"	83'-0"	1'-10"

**E4 DRILLED PIER SCHEDULE**  
 SCALE: NTS

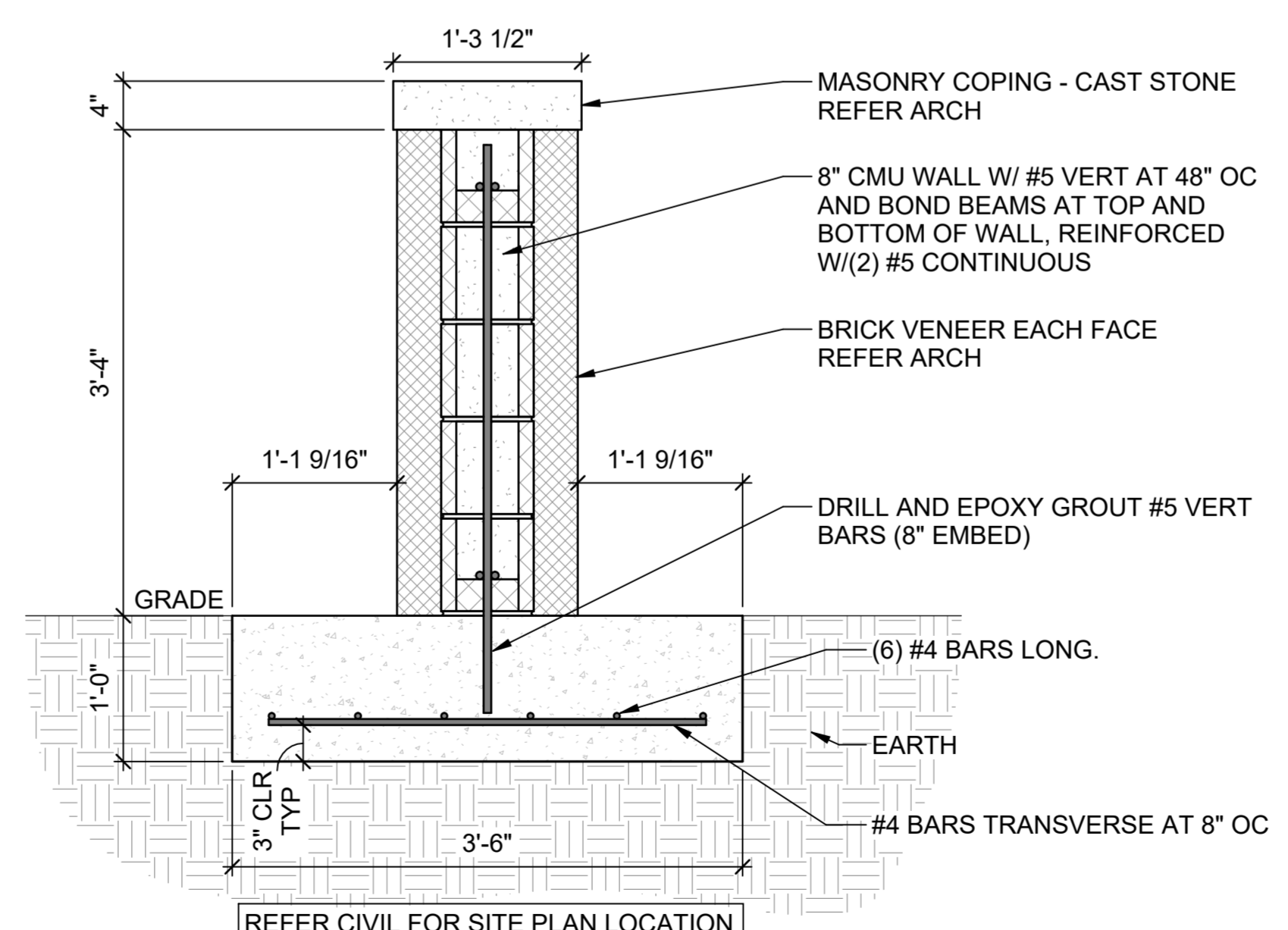


**A6 CONSTRUCTION JOINT (CJ)**  
 SCALE: NTS

**LOOSE LINTEL SCHEDULE**

SPAN	ANGLE SIZE	HORIZ LEG (IN)	REQ'D BEARING LENGTH (IN)
3'-0"	2 1/2 x 3 1/2 x 1/4	3 1/2	4
4'-0"	2 1/2 x 3 1/2 x 1/4	3 1/2	4
5'-0"	4 x 3 1/2 x 1/4	3 1/2	6
6'-0"	4 x 3 1/2 x 1/4	3 1/2	6

**C6 LINTEL TYPES**  
 SCALE: NTS



**D6 SCREEN WALL SECTION BID OPTION NO. 2**  
 SCALE: NTS

**CONCRETE REINFORCEMENT LAP LENGTH SCHEDULE**

BAR SIZE	LAP CLASS	COVER							
		COVER=0.75"		COVER=1.50"		COVER=2.00"		COVER=3.00"	
		UNCOATED	OTHER	UNCOATED	OTHER	UNCOATED	OTHER	UNCOATED	OTHER
#3	A	12	12	12	12	12	12	12	12
	B	15	12	15	12	15	12	15	12
#4	A	19	15	15	12	15	12	15	12
	B	24	19	20	15	20	15	20	15
#5	A	28	21	19	15	19	15	19	15
	B	36	28	24	19	24	19	24	19
#6	A	37	29	22	17	22	17	22	17
	B	48	37	29	22	29	22	29	22
#7	A	60	46	37	28	33	25	33	25
	B	78	60	48	37	42	33	42	33
#8	A	74	57	47	36	37	29	37	29
	B	96	74	60	47	48	37	48	37
#9	A	90	69	57	44	46	48	42	32
	B	117	90	74	57	60	46	55	42
#10	A	108	83	70	54	57	44	47	36
	B	140	108	91	70	74	57	61	47
#11	A	127	98	84	64	68	53	62	40
	B	165	127	109	84	89	68	68	52

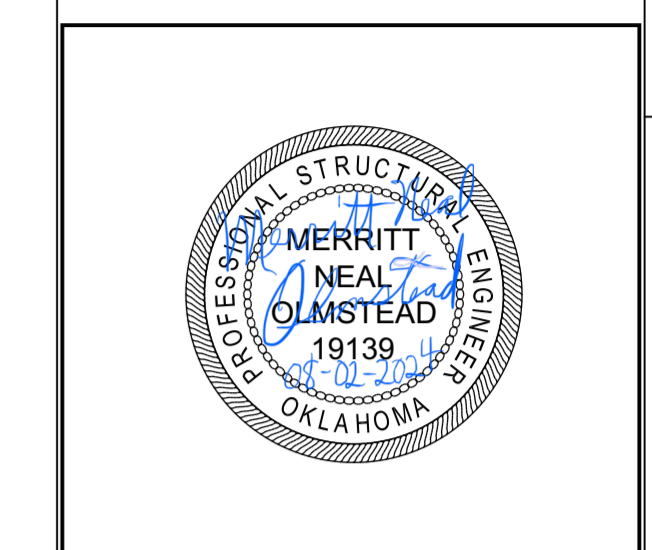
- VALUES ARE BASED ON 4,000 PSI CONCRETE, MINIMUM 60,000 PSI REINFORCEMENT STEEL AND NORMAL WEIGHT CONCRETE. LENGTHS ARE IN INCHES.
- CENTER TO CENTER SPACING WAS ASSUMED TO BE GREATER THAN 1.0 d<sub>b</sub> PLUS TWICE THE CONCRETE COVER
- TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12 INCHES OF CONCRETE CAST BELOW THE BARS.
- FOR GRADE 75 REINFORCING BARS, MULTIPLY THE TABULATED VALUES BY 1.25. FOR GRADE 80 REINFORCING BARS, MULTIPLY THE TABULATED VALUES BY 1.33.
- FOR LIGHTWEIGHT CONCRETE, DIVIDE THE TABULATED VALUES BY 0.75.

REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:  
 DESIGNED BY: **CGH**  
 DRAWN BY: **CGH**  
 REVIEWED BY: **CGH**  
 PROJECT MANAGER: **BJW**  
 PROJECT NUMBER: **20190320**  
 SHEET TITLE: **TYPICAL DETAILS**  
 ISSUE DATE: **2 AUGUST 2024**  
 SHEET NUMBER: **S-004**

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**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

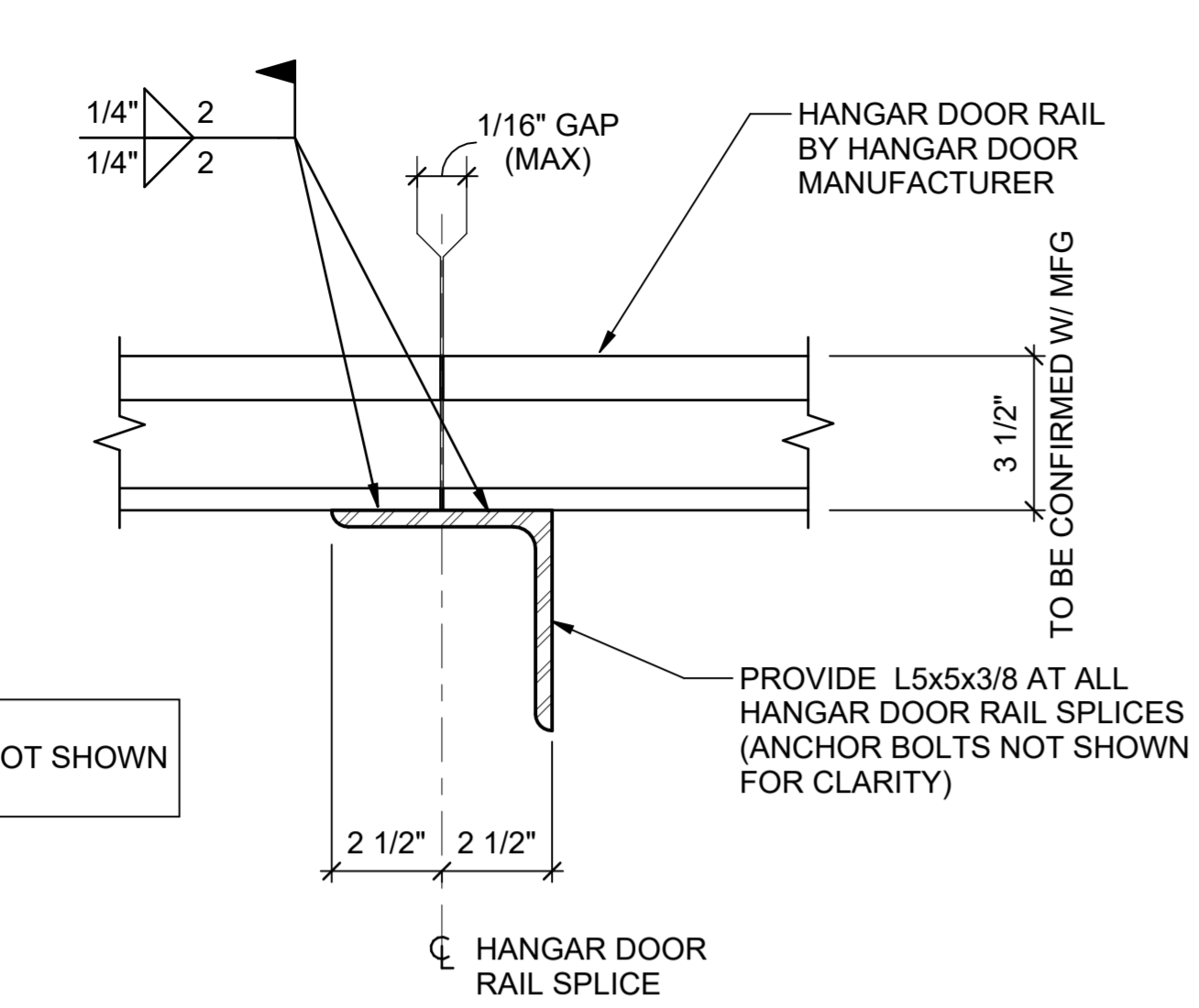
DESIGNED BY:	<b>CGH</b>
DRAWN BY:	<b>CGH</b>
REVIEWED BY:	<b>BJW</b>
PROJECT MANAGER:	<b>NDM</b>

PROJECT NUMBER:  
**20190320**

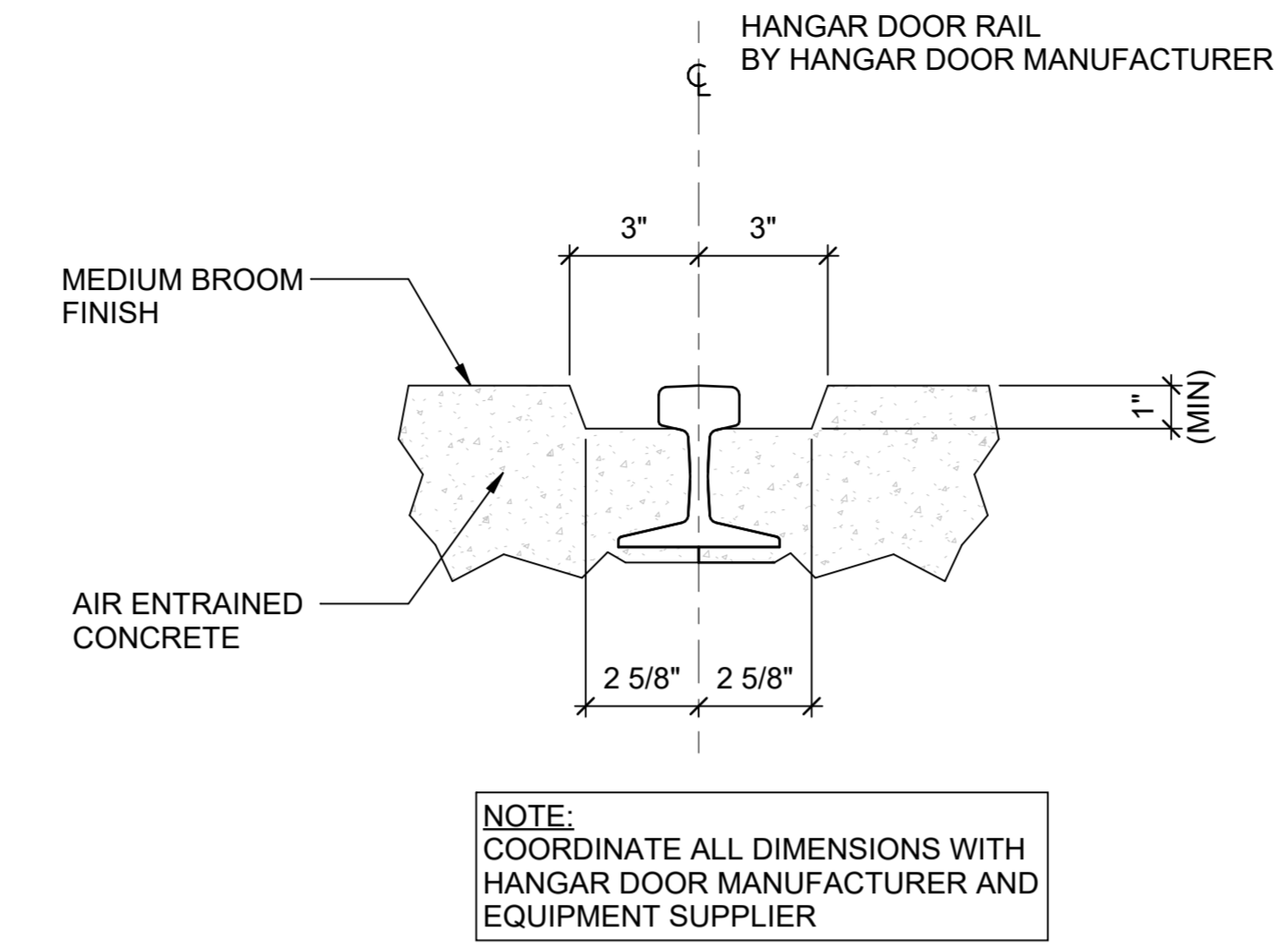
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**TYPICAL DETAILS**

ISSUE DATE:  
**2 AUGUST 2024**

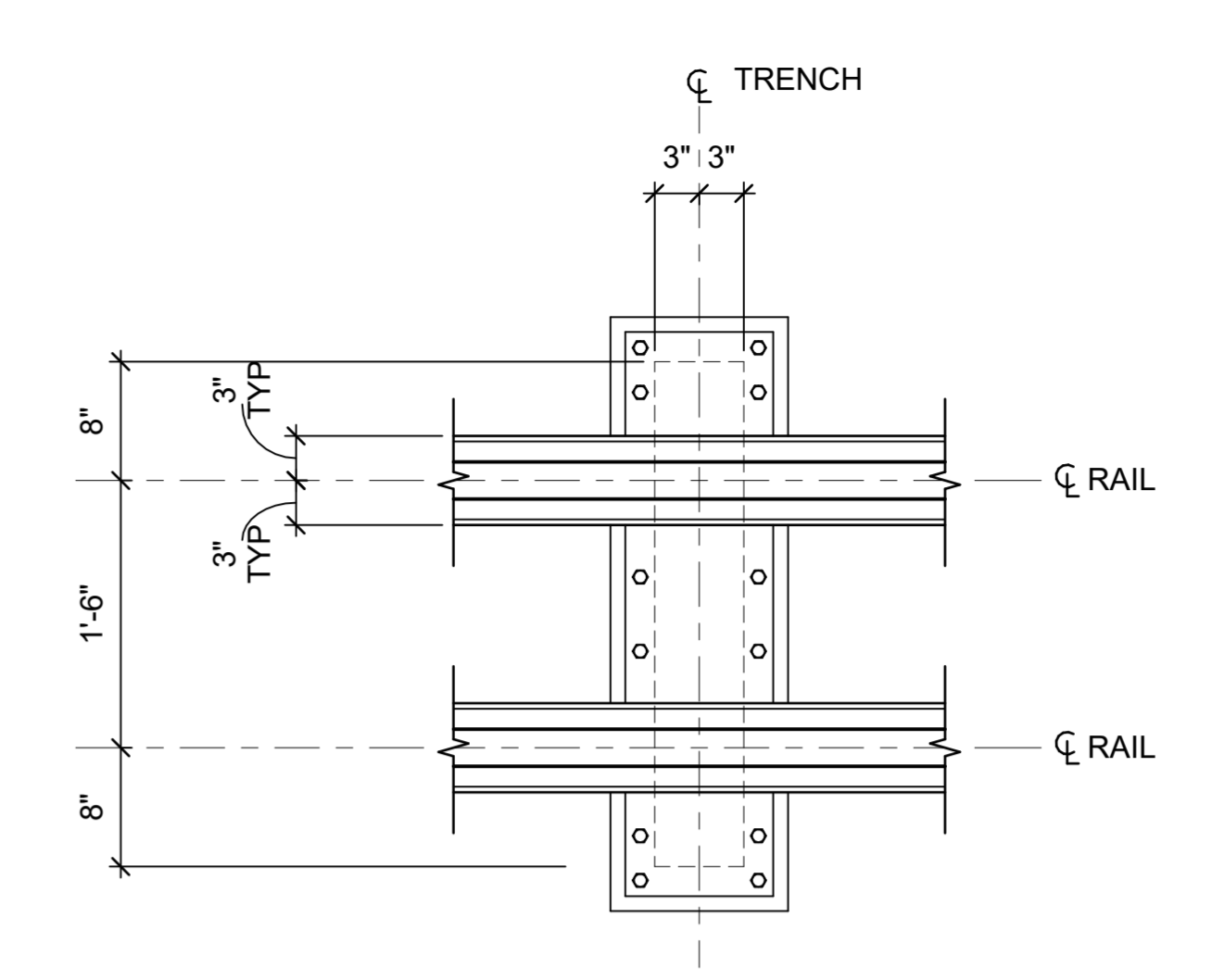
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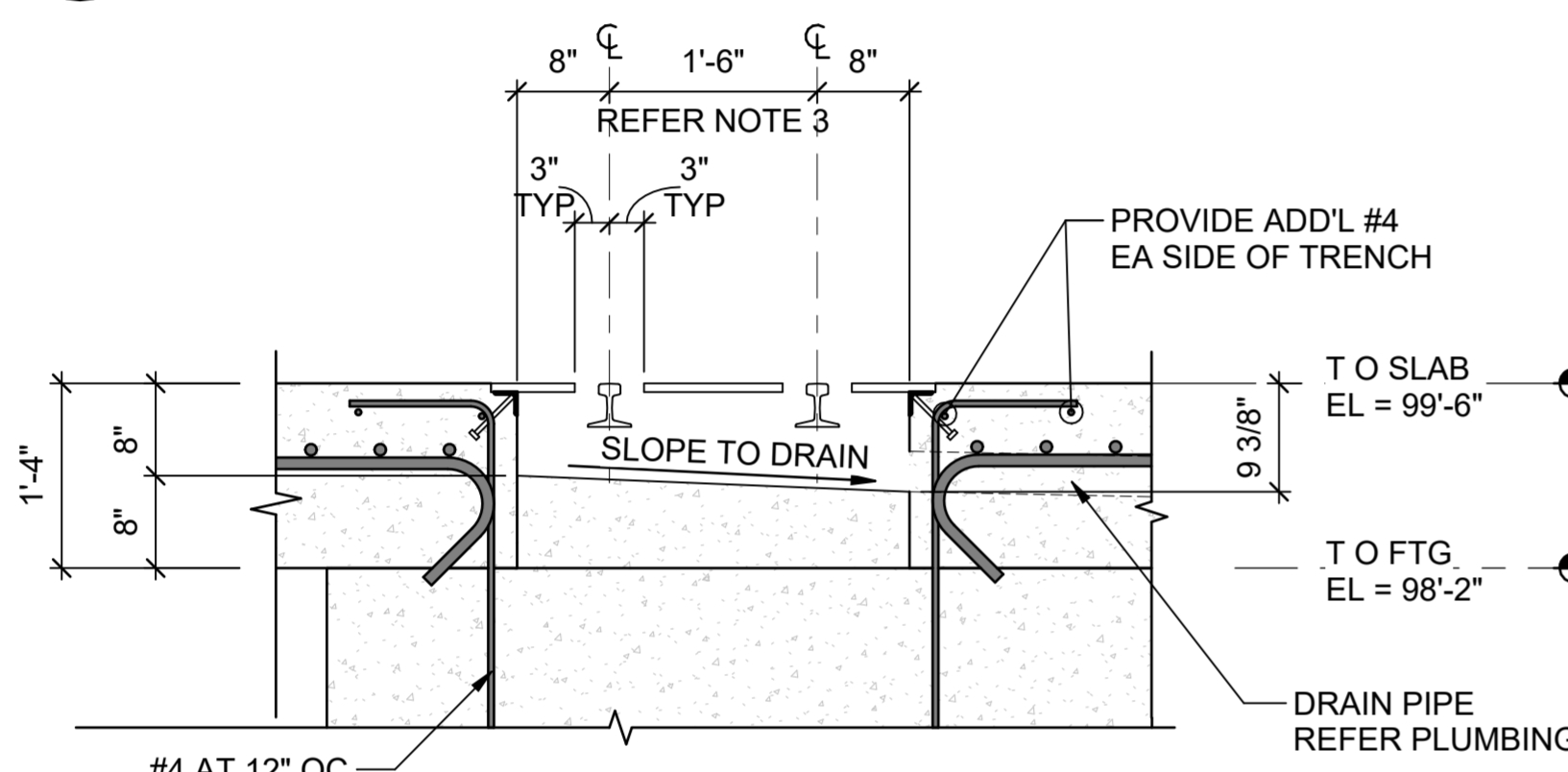
**A2 SECTION AT DOOR GUIDE RAIL**  
SCALE: NTS



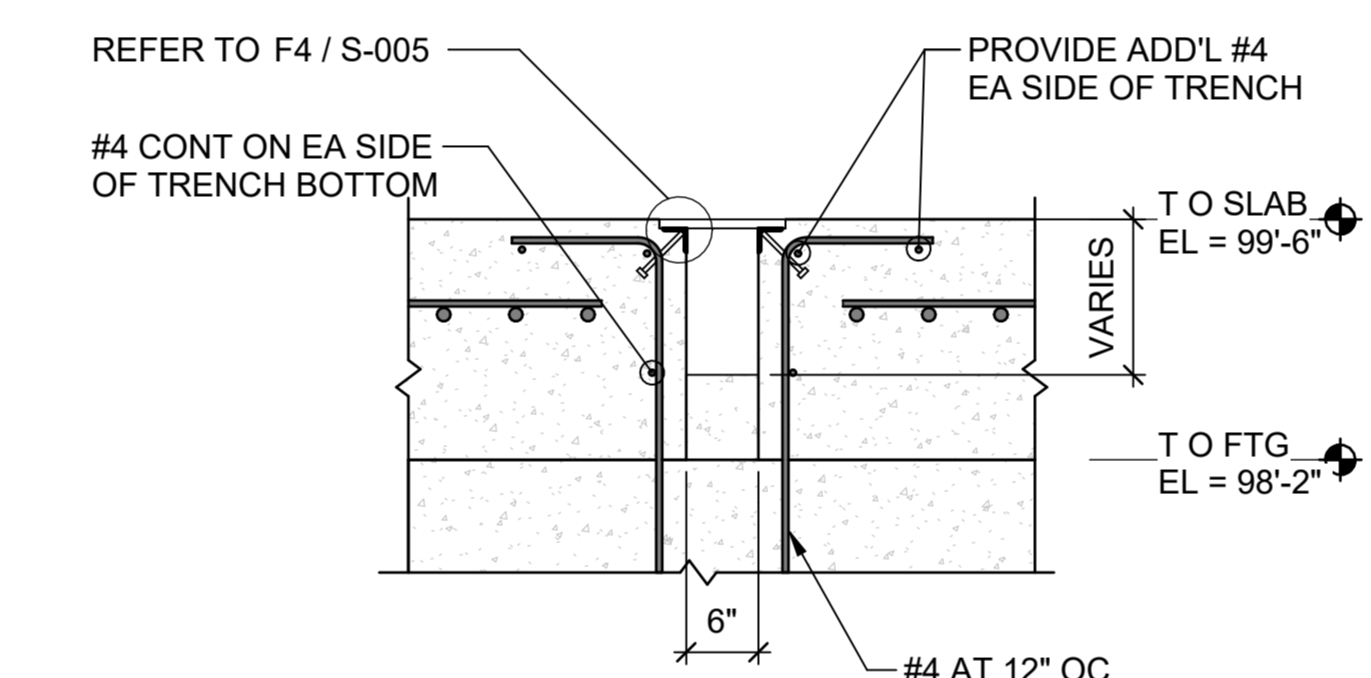
**D2 SECTION AT DOOR GUIDE RAIL**  
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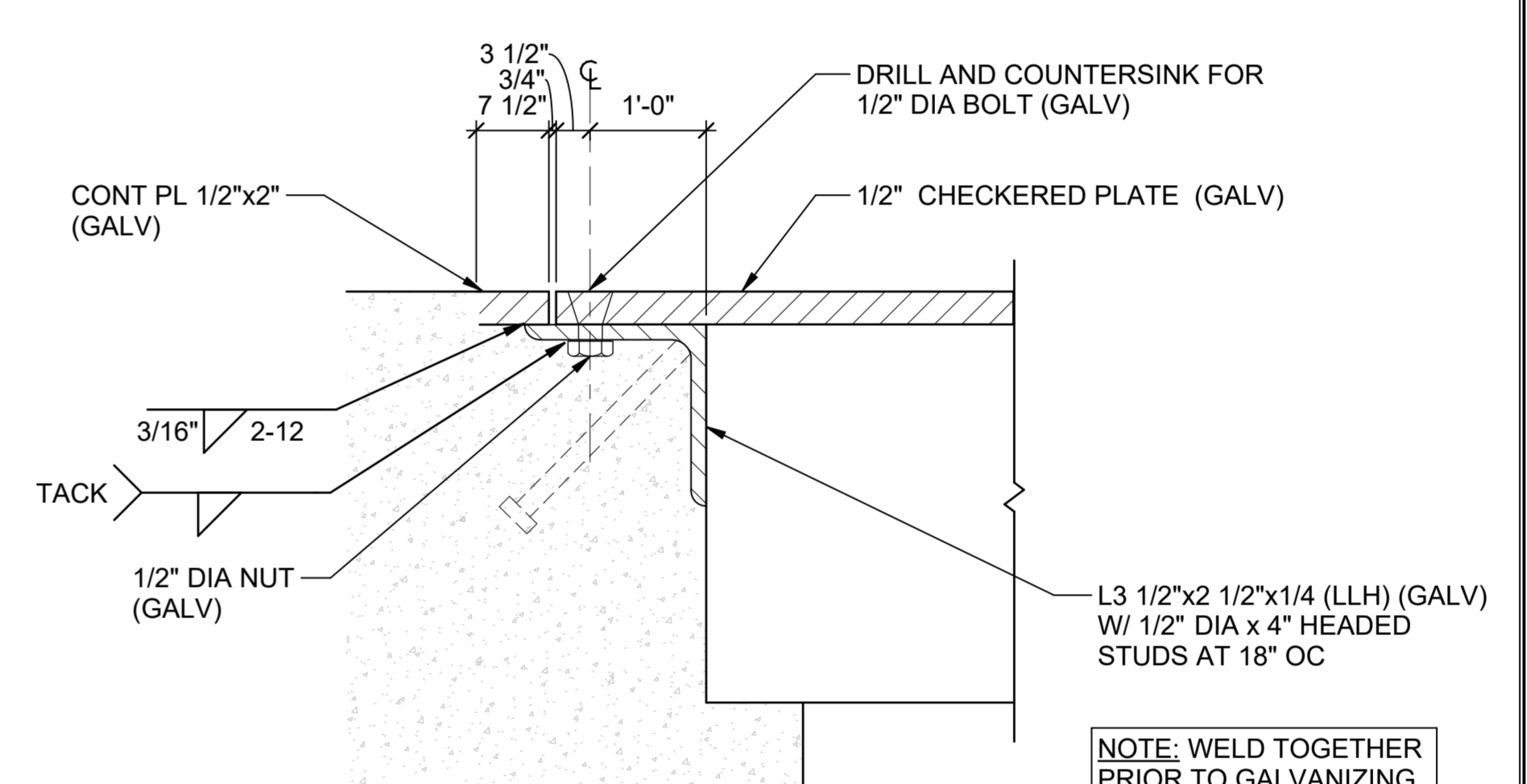
**F2 PLAN AT RAIL TRENCH**  
SCALE: NTS



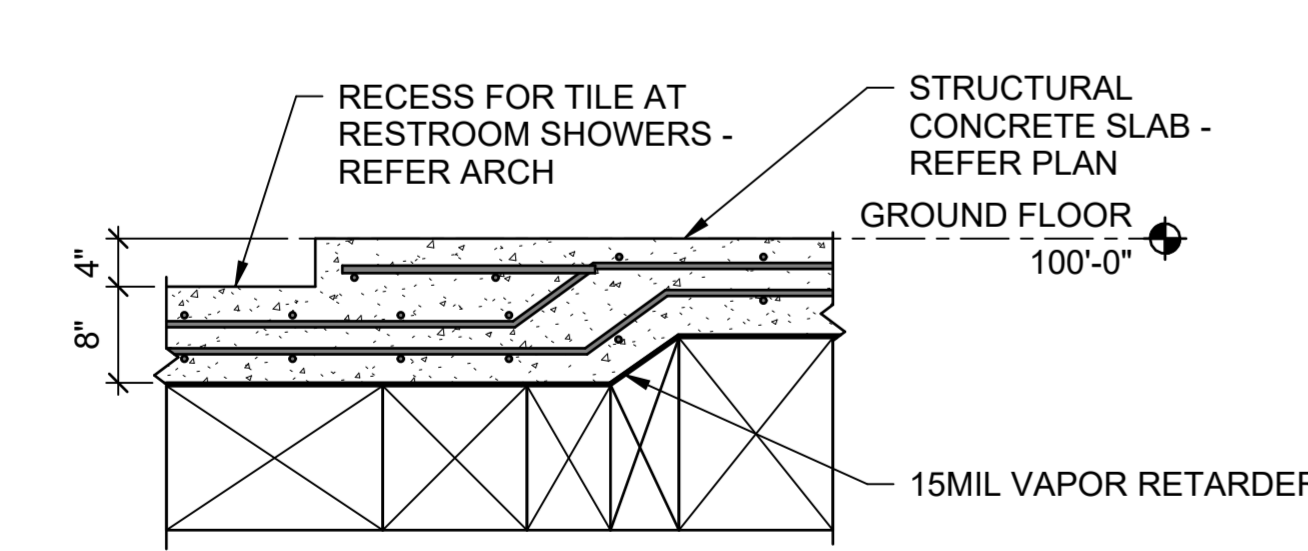
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SCALE: NTS



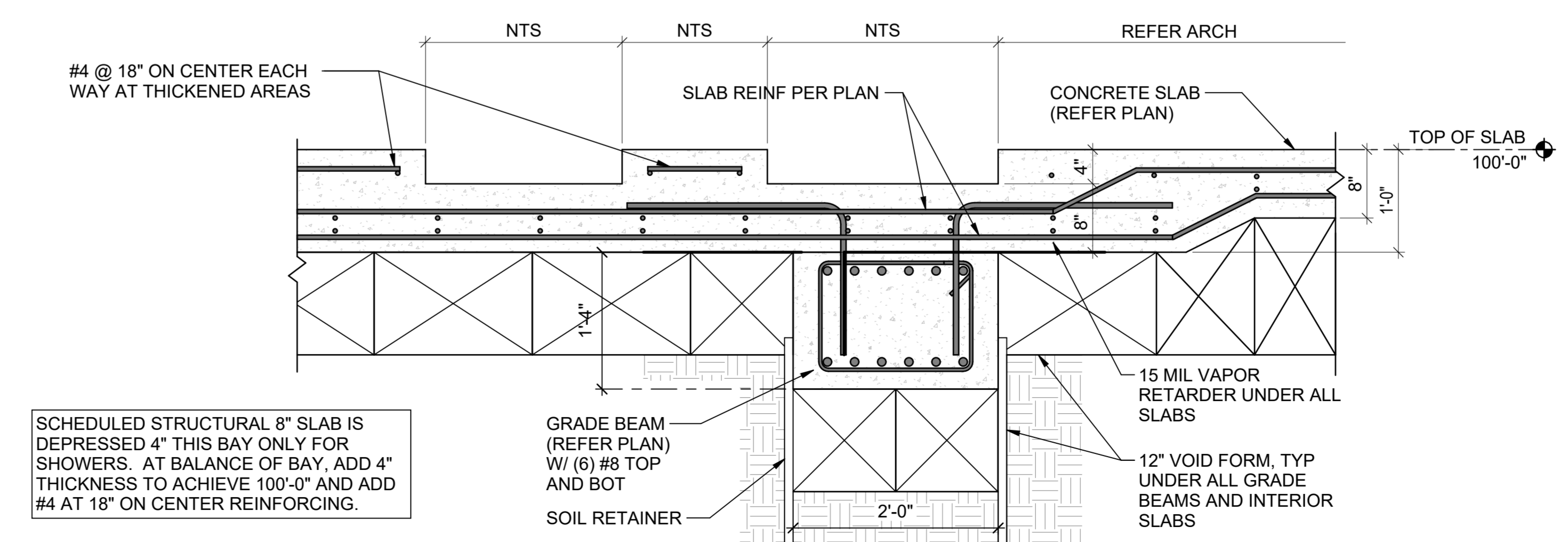
**D4 SECTION AT RAIL TRENCH**  
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**F4 RAIL TRENCH DETAIL**  
SCALE: NTS

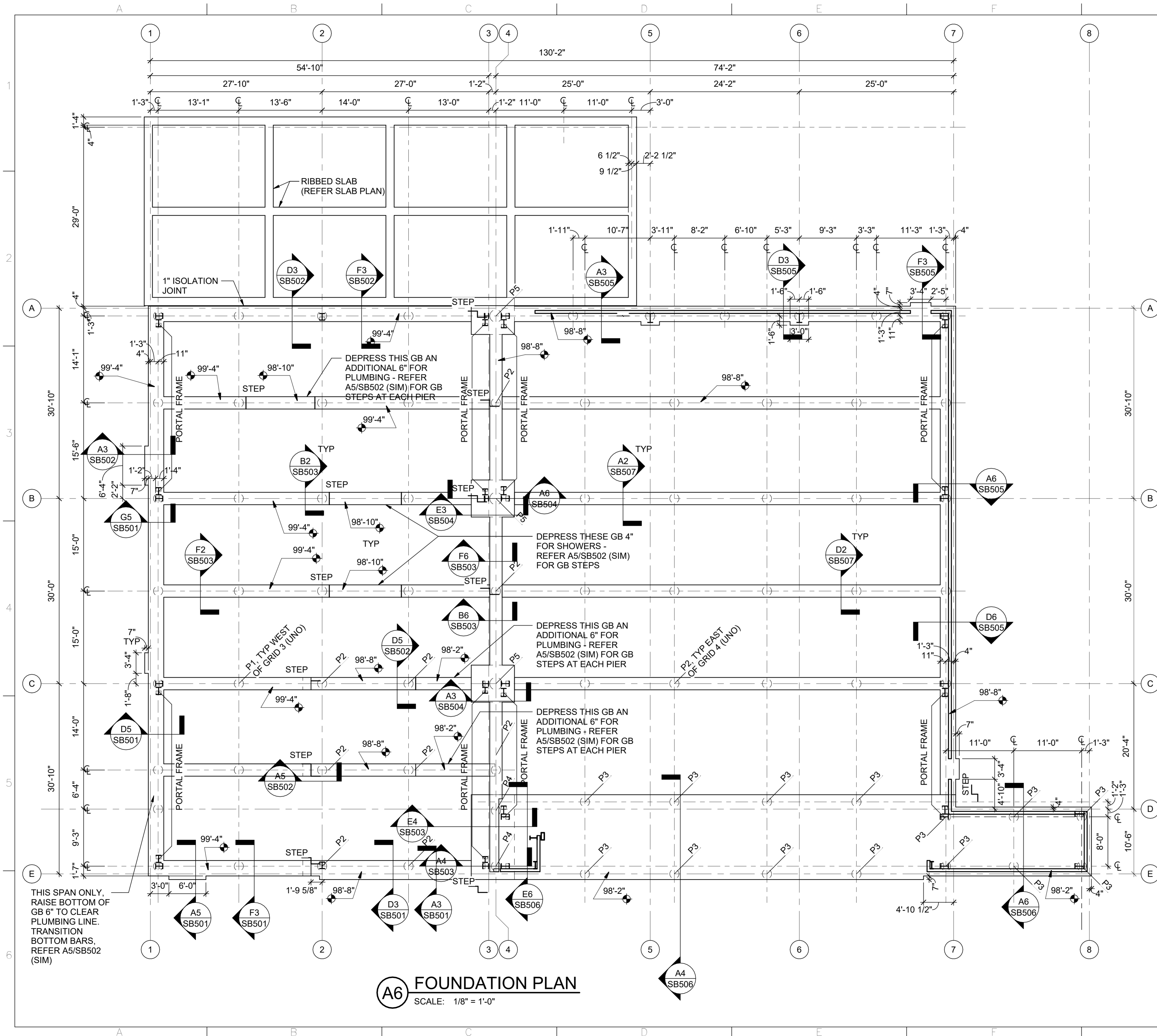


**A5 RECESSED SLAB AT SHOWERS**  
SCALE: NTS



**D6 RECESSED SLAB AT SHOWERS**  
SCALE: NTS

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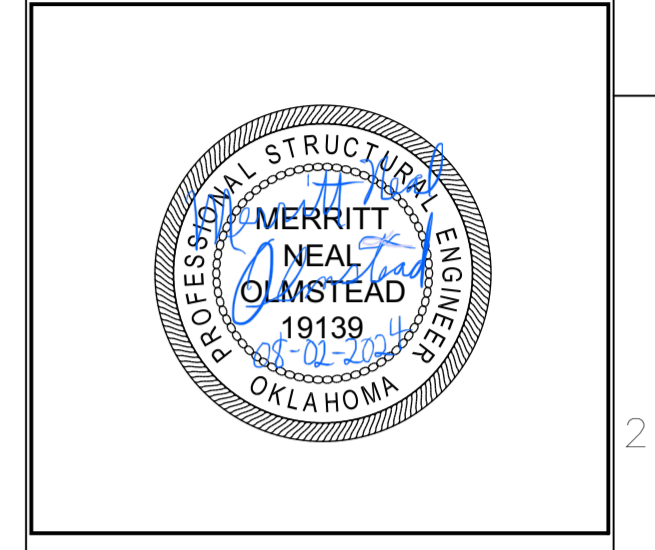
### FOUNDATION PLAN NOTES

**HANGAR FOUNDATION INFORMATION:**  
 PIER CAP THICKNESS = REFER TO PIER SCHEDULE, E4 / S-004  
 GRADE BEAM THICKNESS = REFER TO INDIVIDUAL SECTIONS ON SB500 SERIES SHEETS  
 HANGAR COLUMN BOTTOM OF BASE PLATES EL= 98'-10" (OVER 2" GROUT)

**ADMIN/SHOPS FOUNDATION INFORMATION:**  
 PIER CAP THICKNESS = REFER TO PIER SCHEDULE,  
 GRADE BEAM THICKNESS = REFER TO INDIVIDUAL SECTIONS ON SB500 SERIES SHEETS

- FOR PIER AND PIER CAP INFORMATION, REFER TO DETAIL B5 / S-004
- PORTAL FRAMES ARE ONLY REQUIRED TO CLEAR WALL OPENINGS IN THE HANGAR BAY. ABOVE DOORWAYS, "X" ROD BRACING MAY BE UTILIZED ABOVE A LOWER PORTAL FRAME.
- ADMIN/SHOPS COLUMN BOTTOM OF BASE PLATES:  
 EL=98'-10" AT GRID 3  
 EL=98'-10" AT COLUMN E-2  
 EL=99'-6" WEST OF GRID 3  
 (ALL BASE PLATES OVER 2" GROUT)

Frankfurt-Short-Bruza Associates, P.C.  
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 Oklahoma City, OK 73118-7436  
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**Corrosion Control Facility**  
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PROJECT INFORMATION:

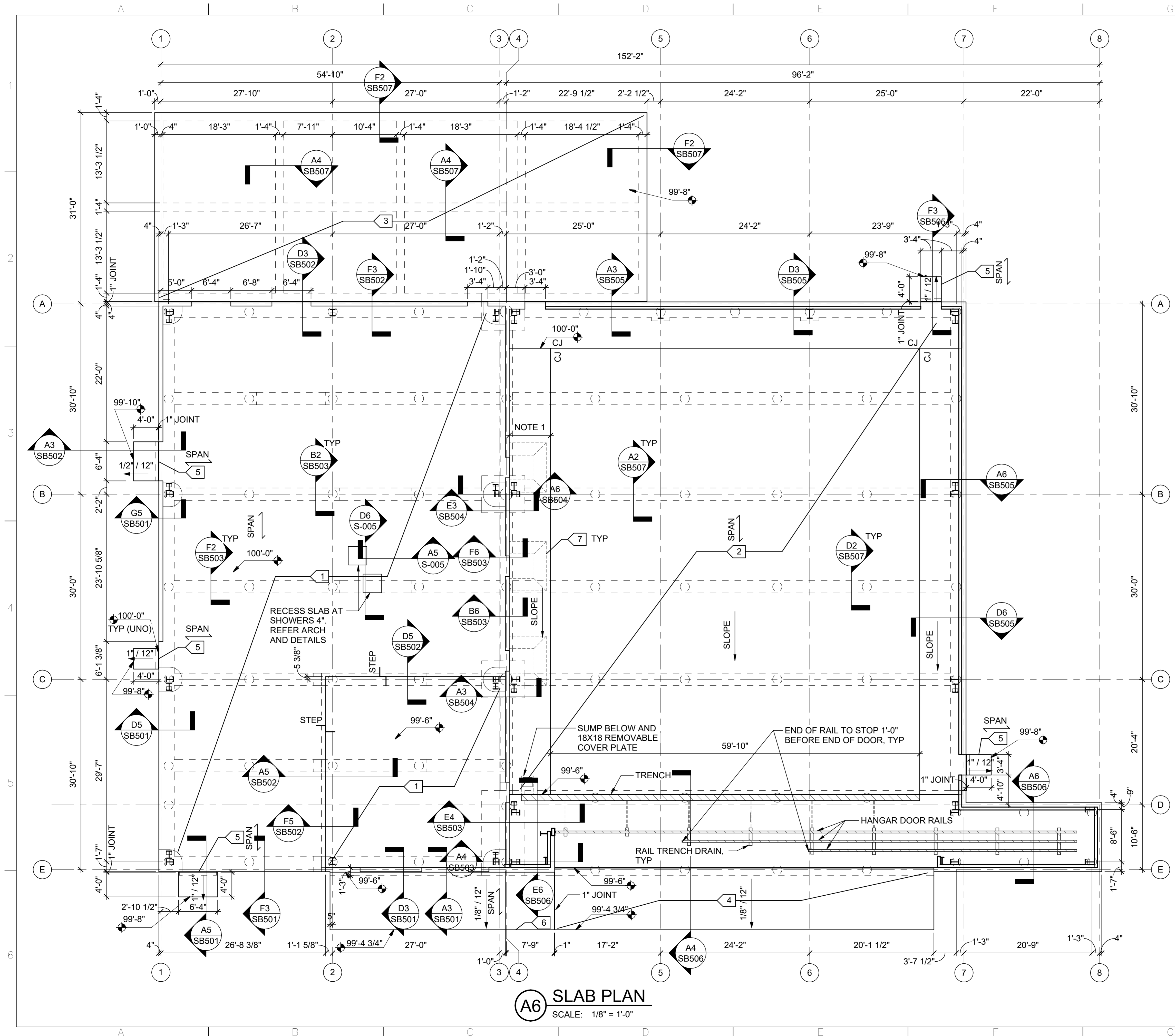
DESIGNED BY: CGH  
 DRAWN BY: CGH  
 REVIEWED BY: BJW  
 PROJECT MANAGER: NDM

PROJECT NUMBER: 20190320  
 SHEET TITLE: FOUNDATION PLAN  
 ISSUE DATE: 2 AUGUST 2024  
 SHEET NUMBER: SB101

**A6 FOUNDATION PLAN**  
 SCALE: 1/8" = 1'-0"

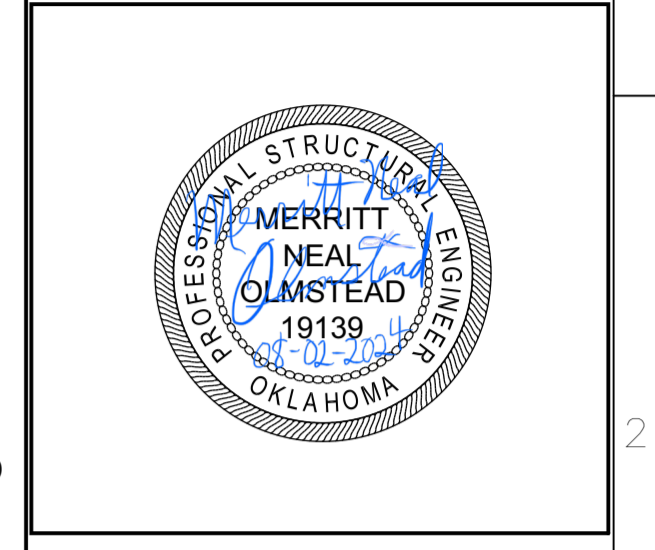


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- ### SLAB PLAN NOTES
- 1 8" STRUCTURAL CONCRETE SLAB OVER 12" VOID FORMS  
 PARALLEL TO SPAN: #6 AT 9" OC T&B  
 PERPENDICULAR TO SPAN: #4 AT 18" OC T&B
  - 2 10" STRUCTURAL CONCRETE SLAB OVER 12" VOID FORMS.  
 PARALLEL TO SPAN: #6 AT 6" OC T&B  
 PERPENDICULAR TO SPAN: #4 AT 16" OC T&B
  - 3 8" RIBBED MAT CONCRETE SLAB  
 SLAB REINFORCEMENT: #6 AT 6" OC EW  
 RIB REINFORCEMENT: (3) #6 BOT  
 (1) ADD'L #6 TOP  
 (NOTE: EXTERIOR RIBBED MAT BEARS DIRECTLY ON SUBGRADE (NO CARTON FORMS THIS AREA)
  - 4 10" STRUCTURAL CONCRETE SLAB OVER 12" VOID FORMS. (APPROACH/BIDGE)  
 PARALLEL TO SPAN: #6 AT 6" OC T&B  
 PERPENDICULAR TO SPAN: #4 AT 12" OC T&B
  - 5 6" CONCRETE STOOP (PROVIDE VOID FORMS AND SOIL RETAINERS FROM BUILDING FOUNDATION EDGE OUT 2'-0")  
 PARALLEL TO SPAN: #4 AT 10" OC MID-DEPTH  
 PERPEND'R TO SPAN: #4 AT 18" OC MID-DEPTH
  - 6 8" CONCRETE STOOP (PROVIDE VOID FORMS AND SOIL RETAINERS FROM BUILDING FOUNDATION EDGE OUT 5'-0")  
 PARALLEL TO SPAN: #6 AT 6" OC BOTTOM  
 PERPEND'R TO SPAN: #4 AT 12" OC BOTTOM
  - 7 FEATHER HANGAR SLAB UP TO DOOR THRESHOLD (SLOPE NOT TO EXCEED 1.5%)
- GC TO COORDINATE POUR STRIP WIDTH NEEDED FOR ENGINEERED METAL BUILDING COLUMN INSTALLATION. CONSTRUCTION JOINT SHALL UTILIZED DIAMOND PLATE DOWELS PER DETAIL 4/S-004.


  
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**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

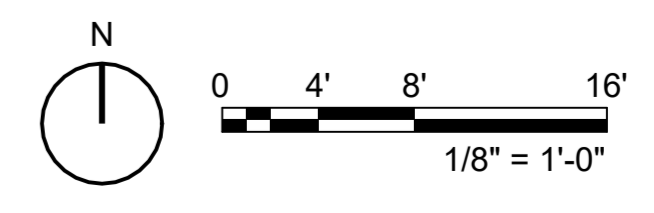
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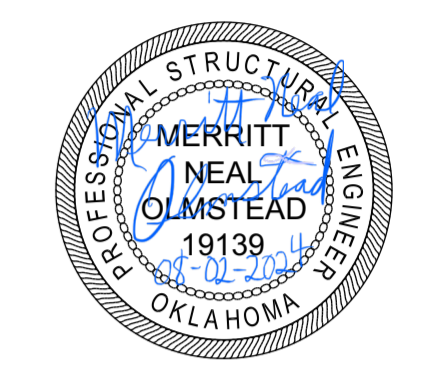
PROJECT INFORMATION:

DESIGNED BY:	CGH
DRAWN BY:	CGH
REVIEWED BY:	BJW
PROJECT MANAGER:	NDM
PROJECT NUMBER:	20190320
SHEET TITLE:	SLAB PLAN
ISSUE DATE:	2 AUGUST 2024
SHEET NUMBER:	SB102

**A6 SLAB PLAN**  
SCALE: 1/8" = 1'-0"



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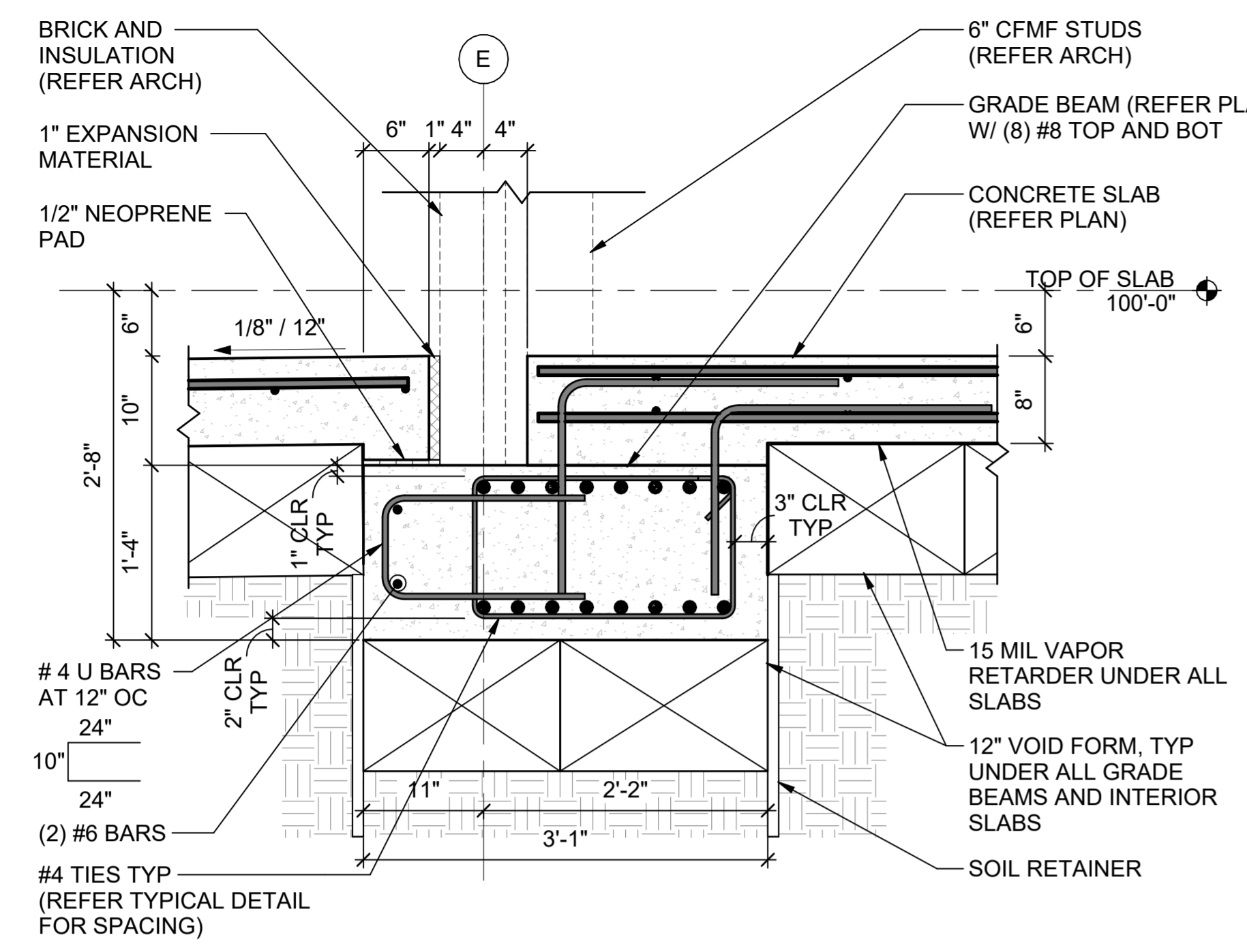
**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

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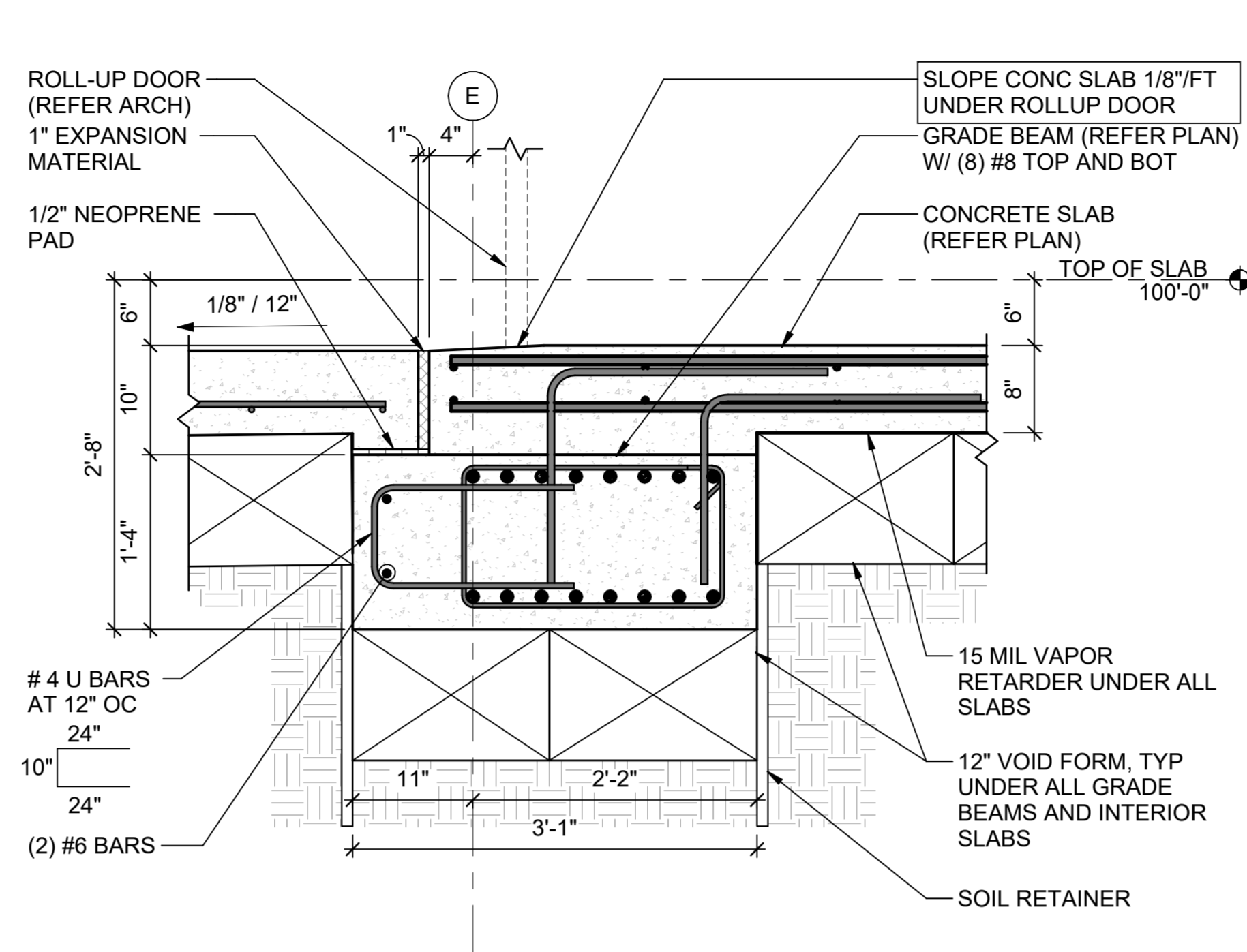
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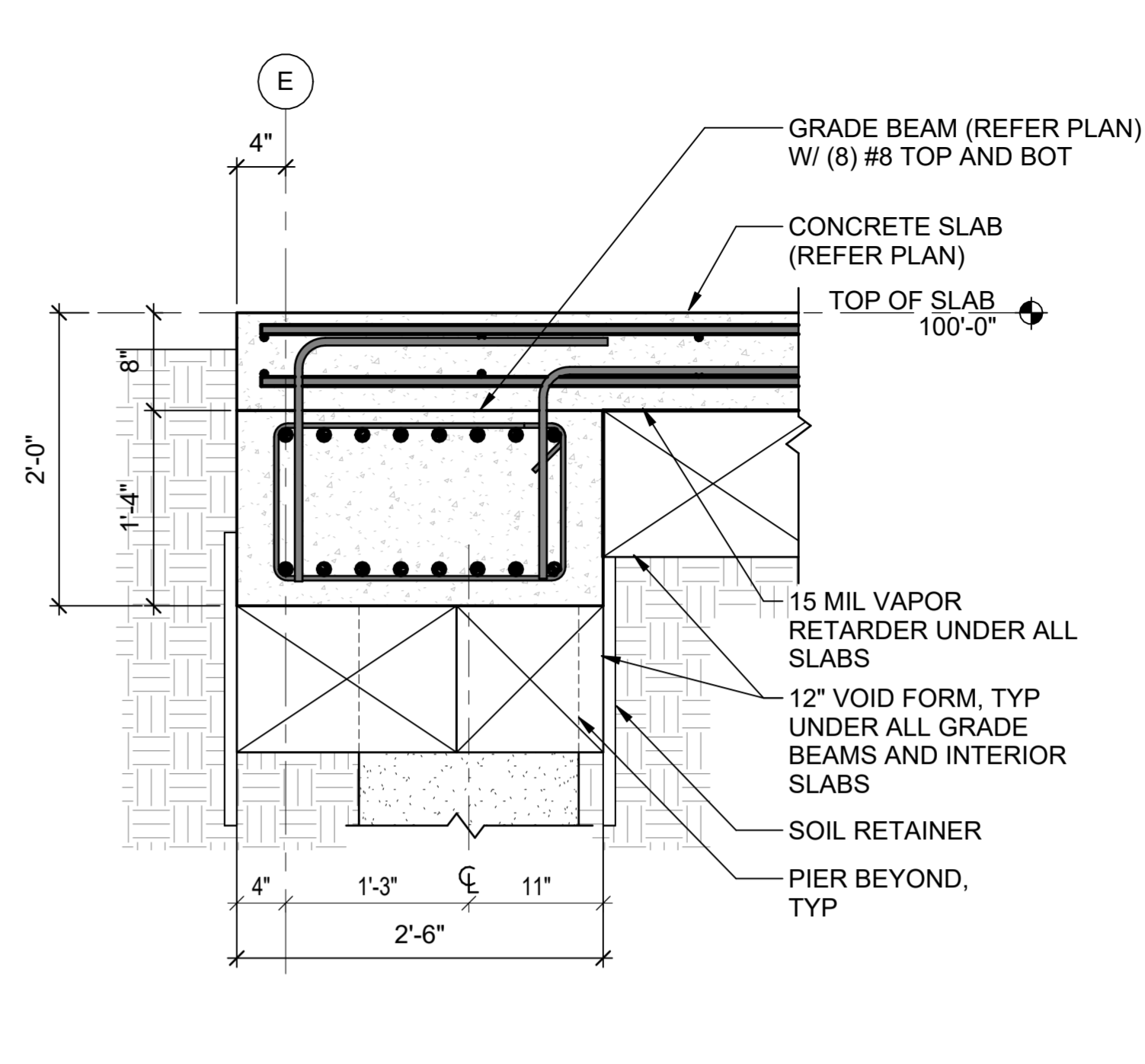
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REVIEWED BY:	BJW
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SHEET TITLE:	FOUNDATION DETAILS
ISSUE DATE:	2 AUGUST 2024
SHEET NUMBER:	SB501



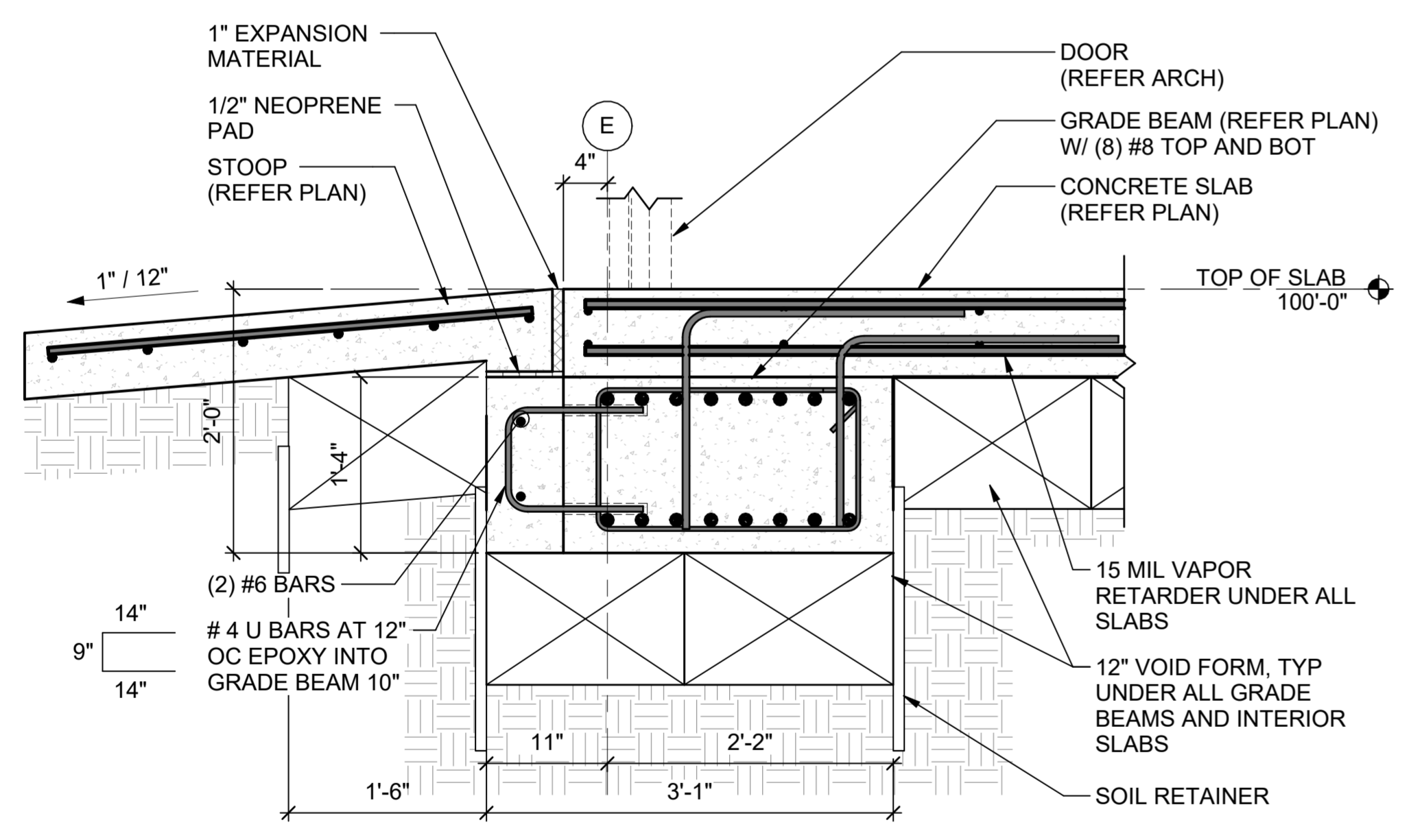
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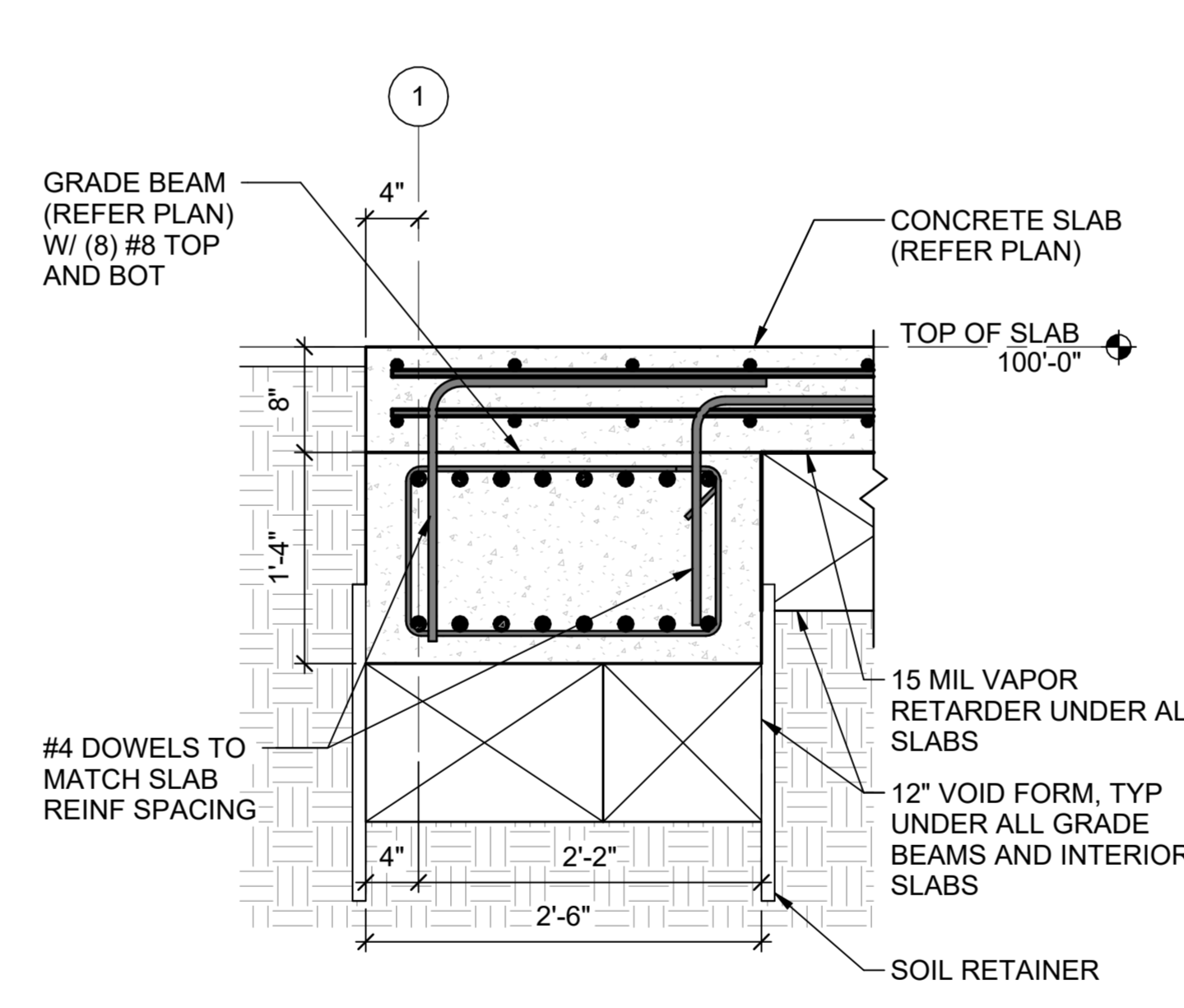
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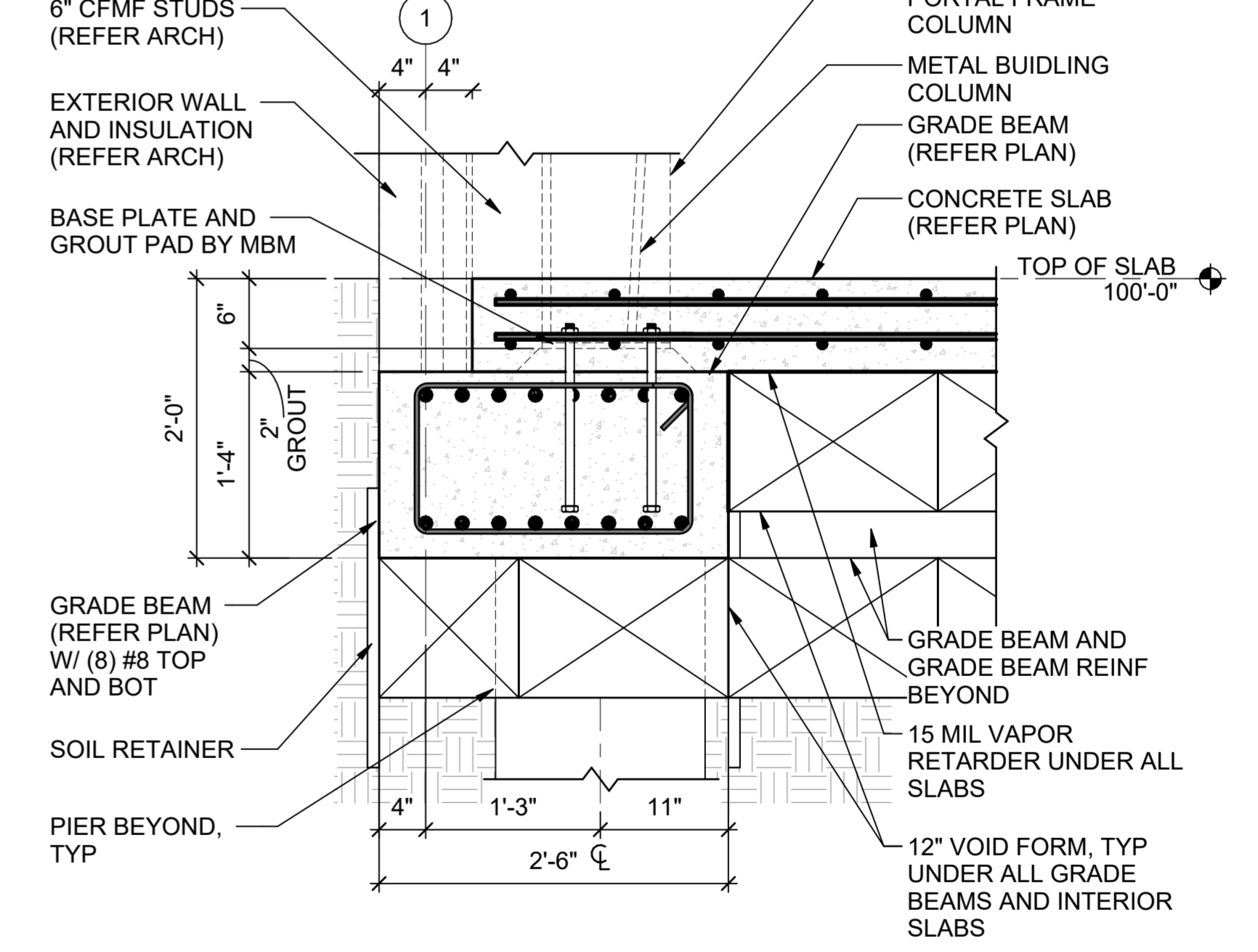
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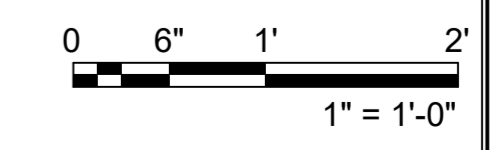
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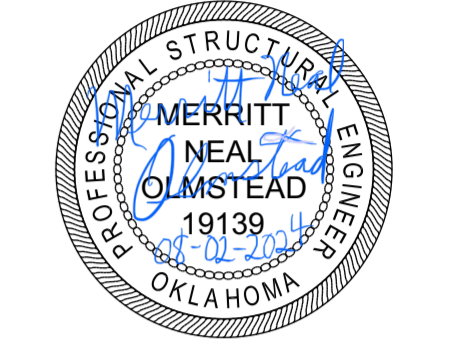
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**G5 SECTION**  
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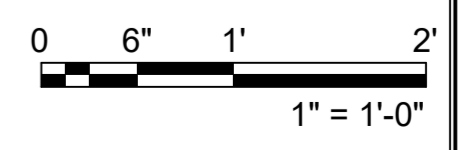
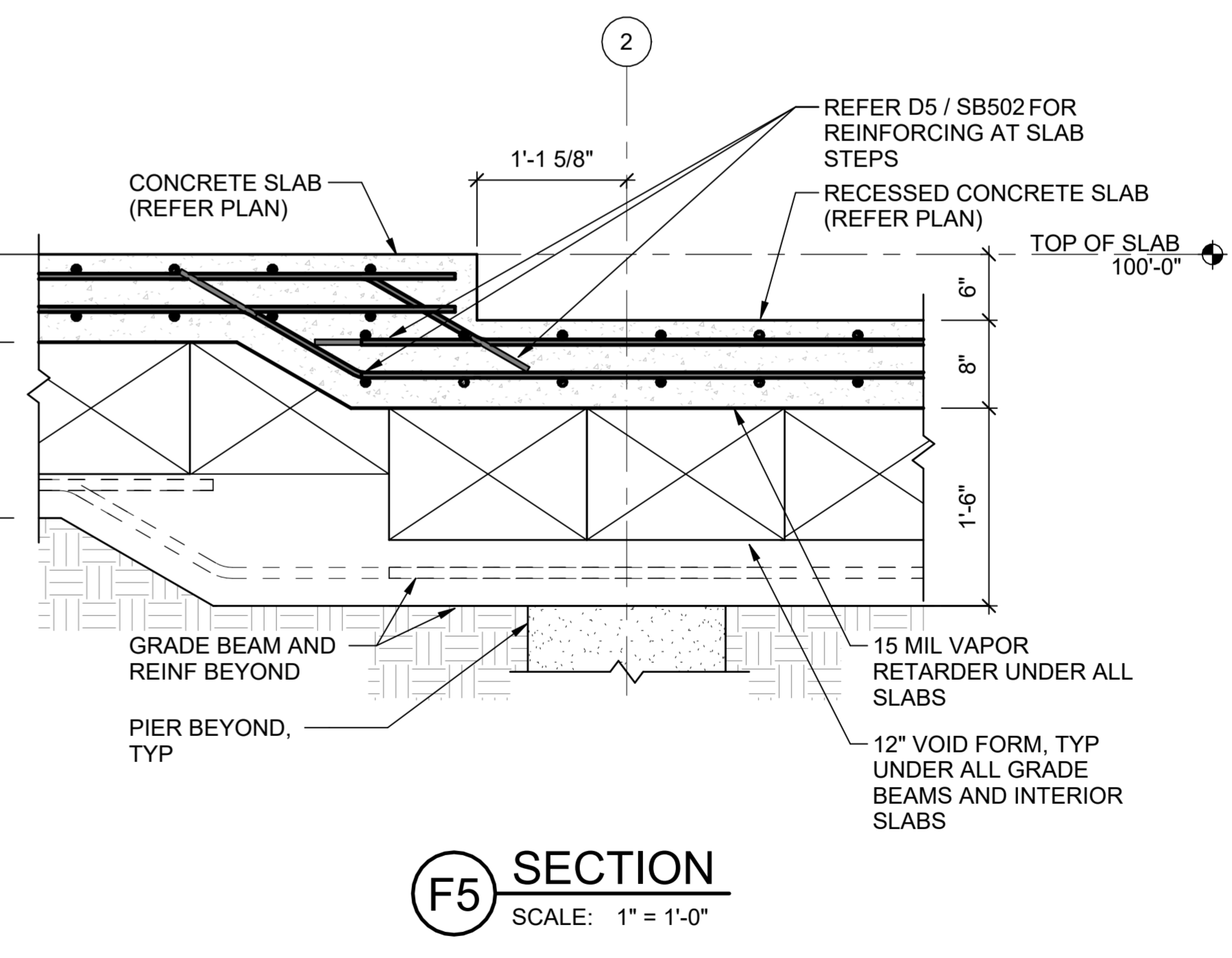
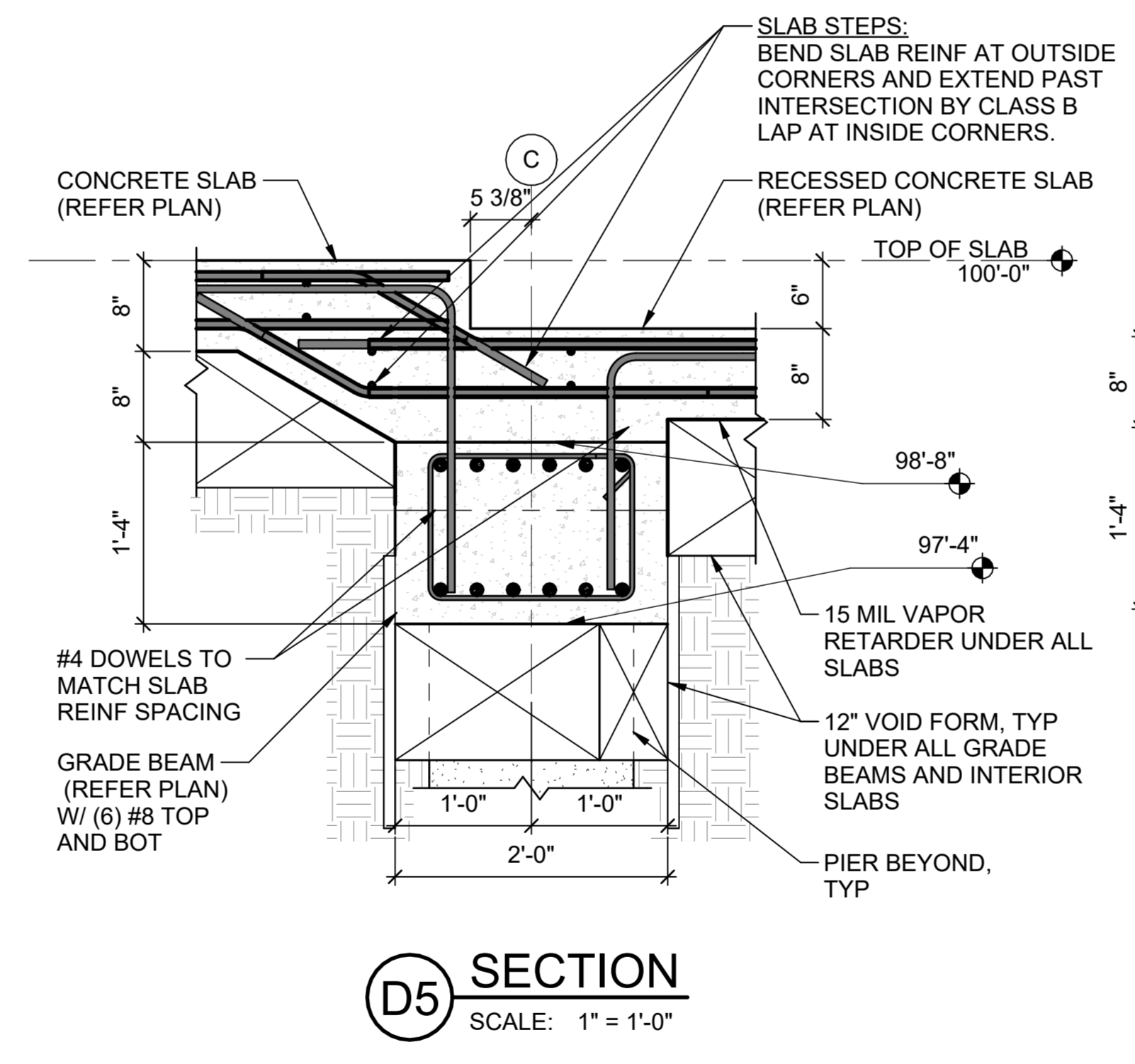
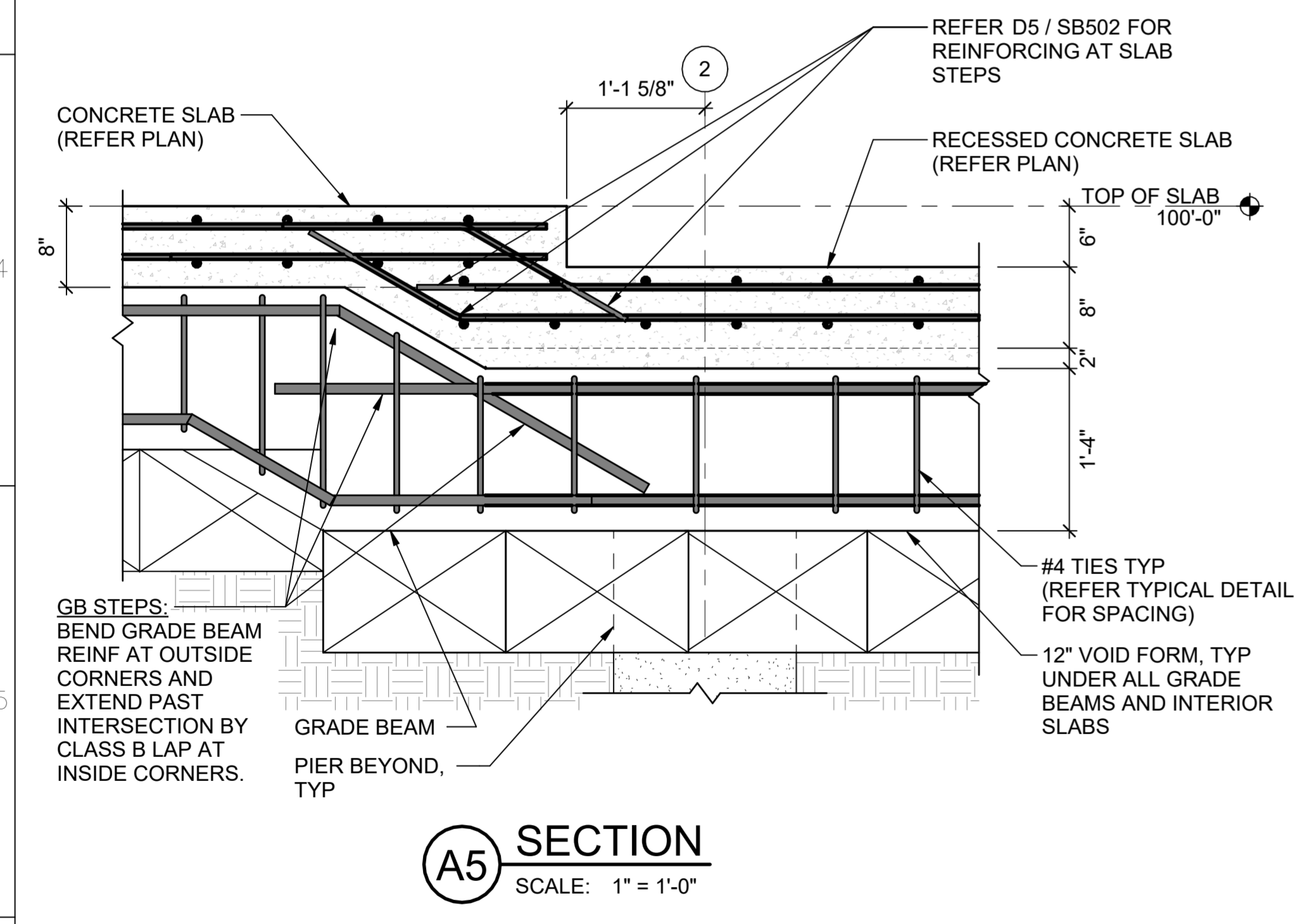
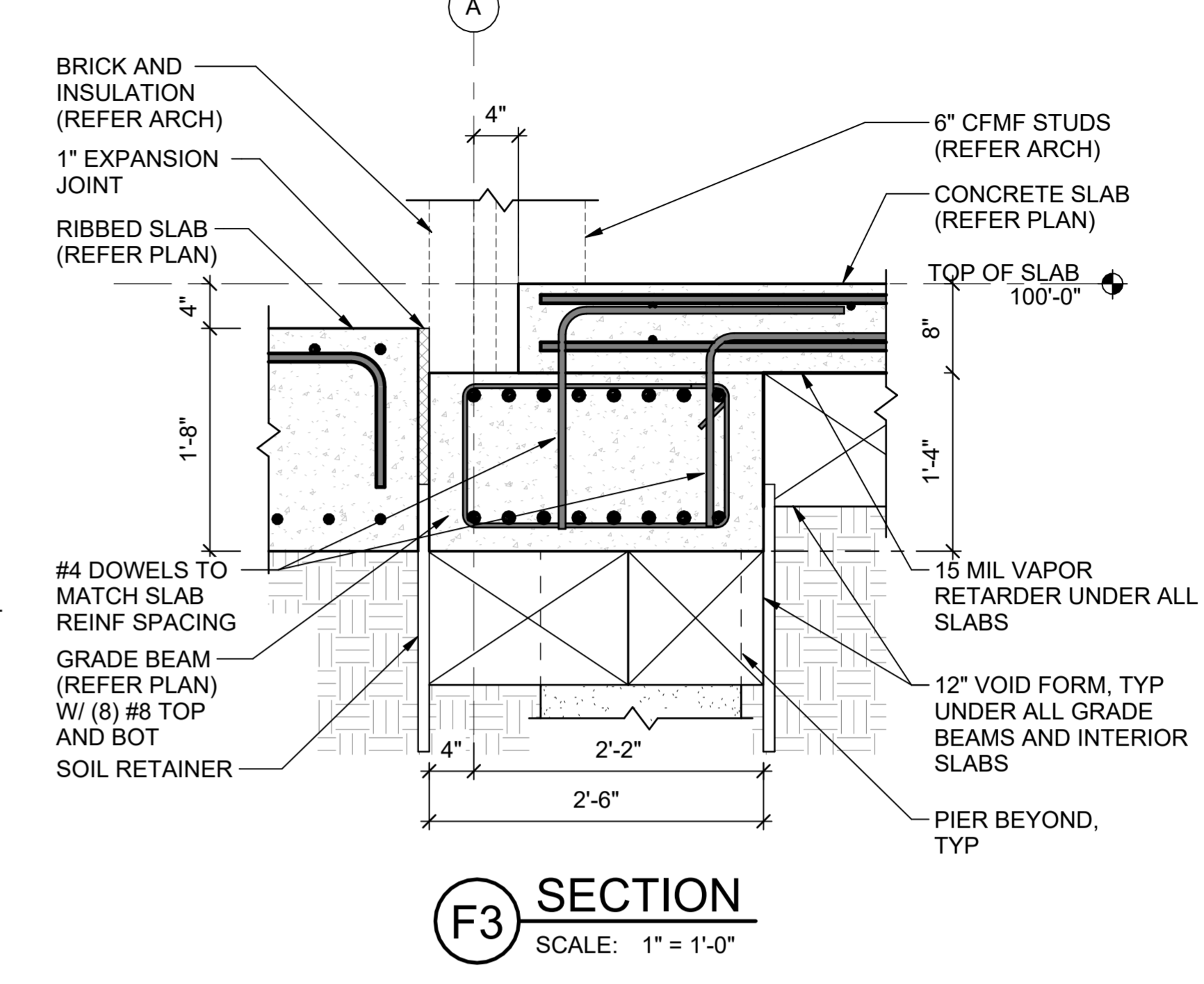
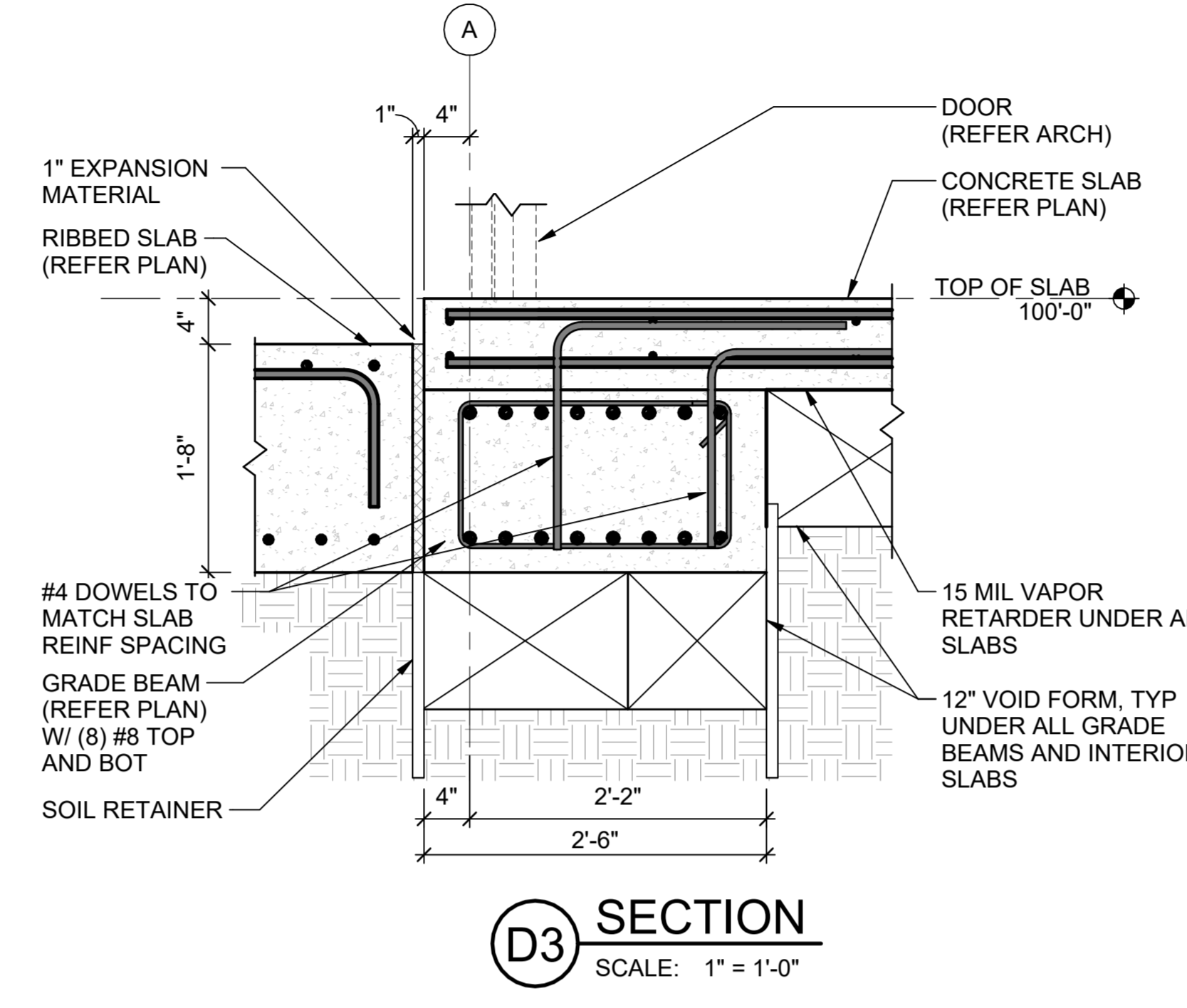
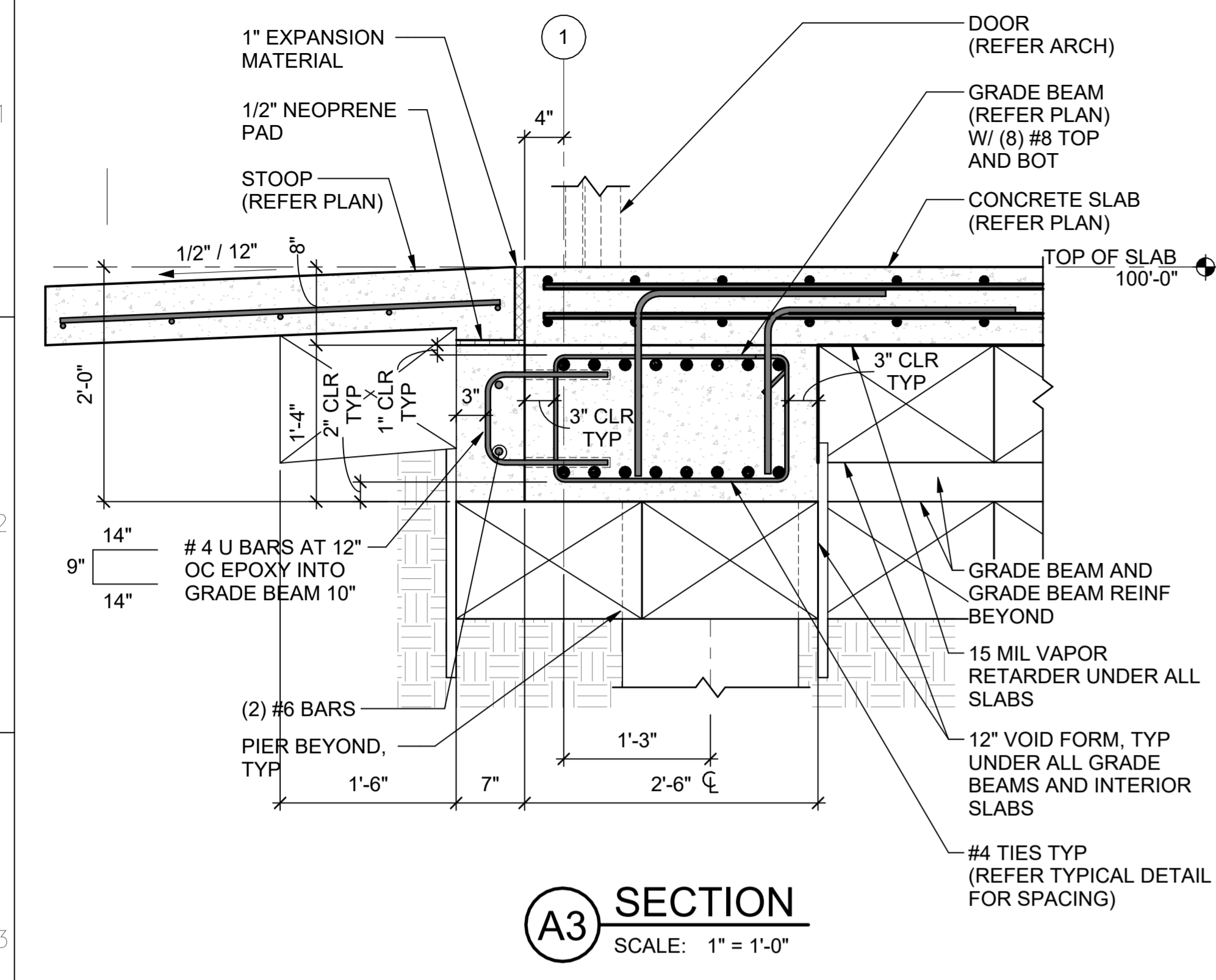
**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

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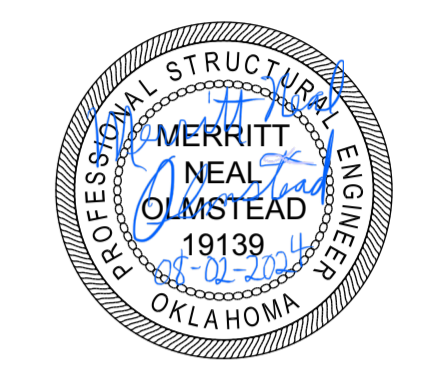
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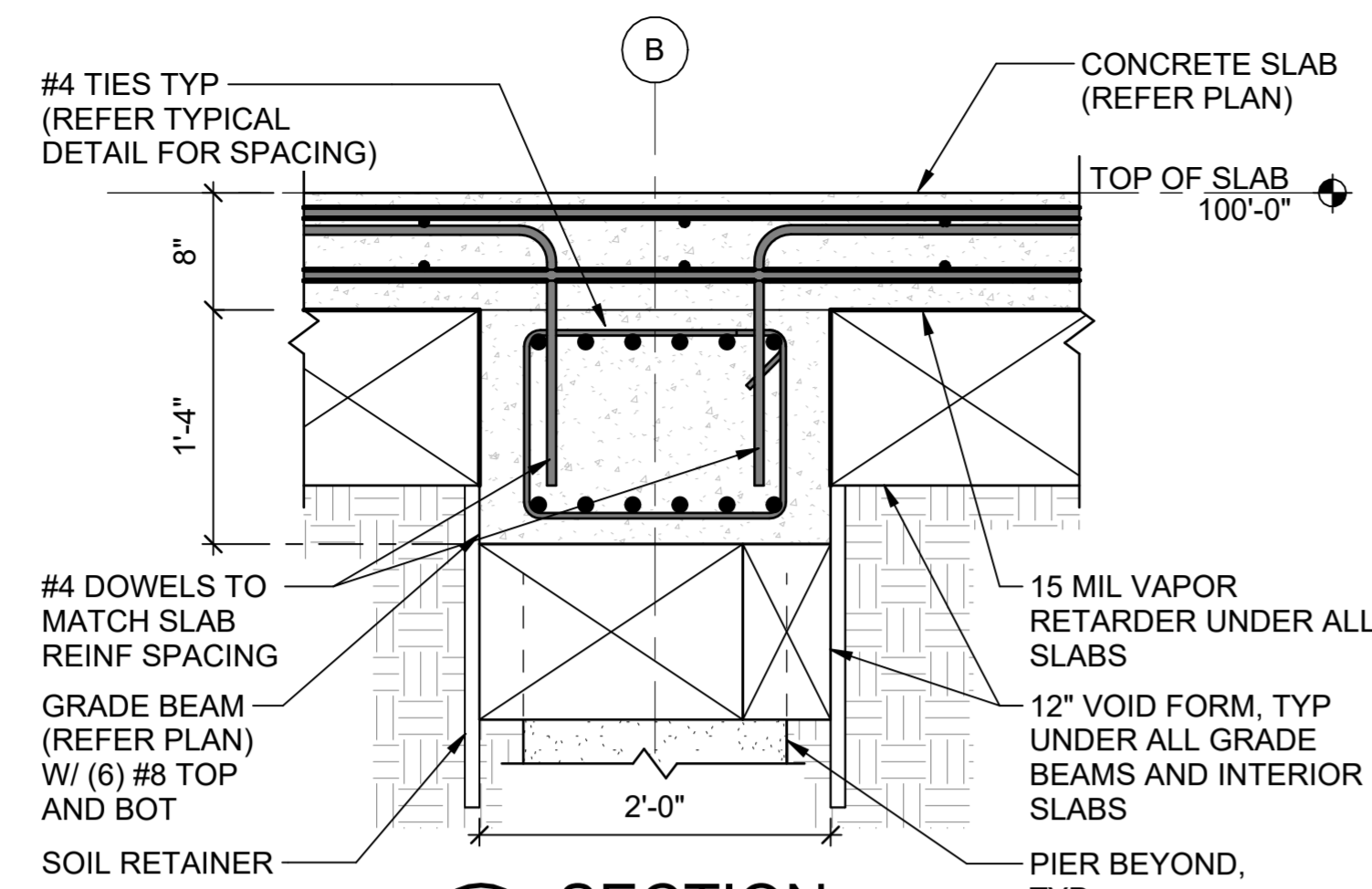
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DRAWN BY:	<b>CGH</b>
REVIEWED BY:	<b>BJW</b>
PROJECT MANAGER:	<b>NDM</b>
PROJECT NUMBER:	<b>20190320</b>
SHEET TITLE:	<b>FOUNDATION DETAILS</b>
ISSUE DATE:	<b>2 AUGUST 2024</b>
SHEET NUMBER:	<b>SB502</b>



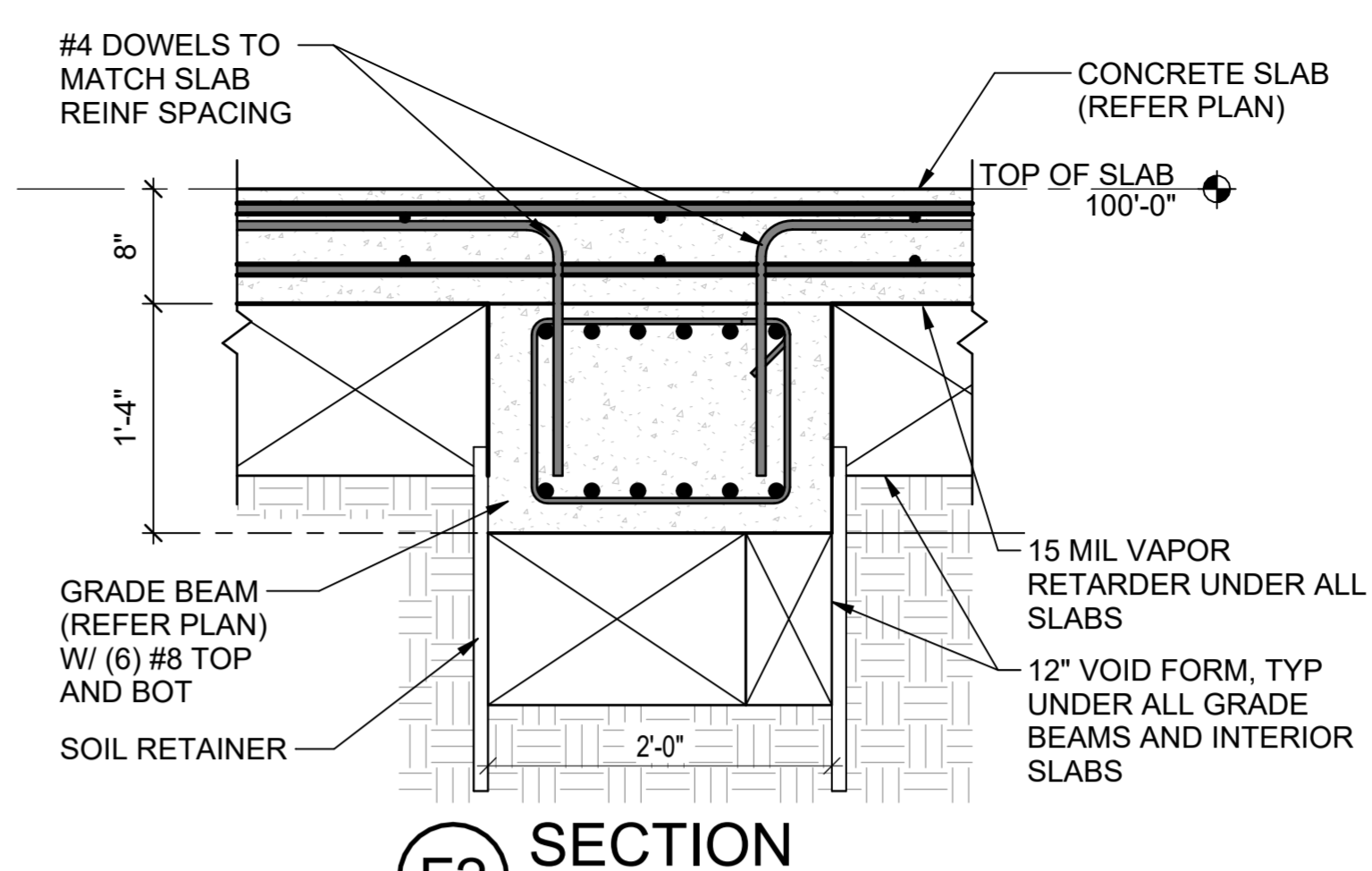
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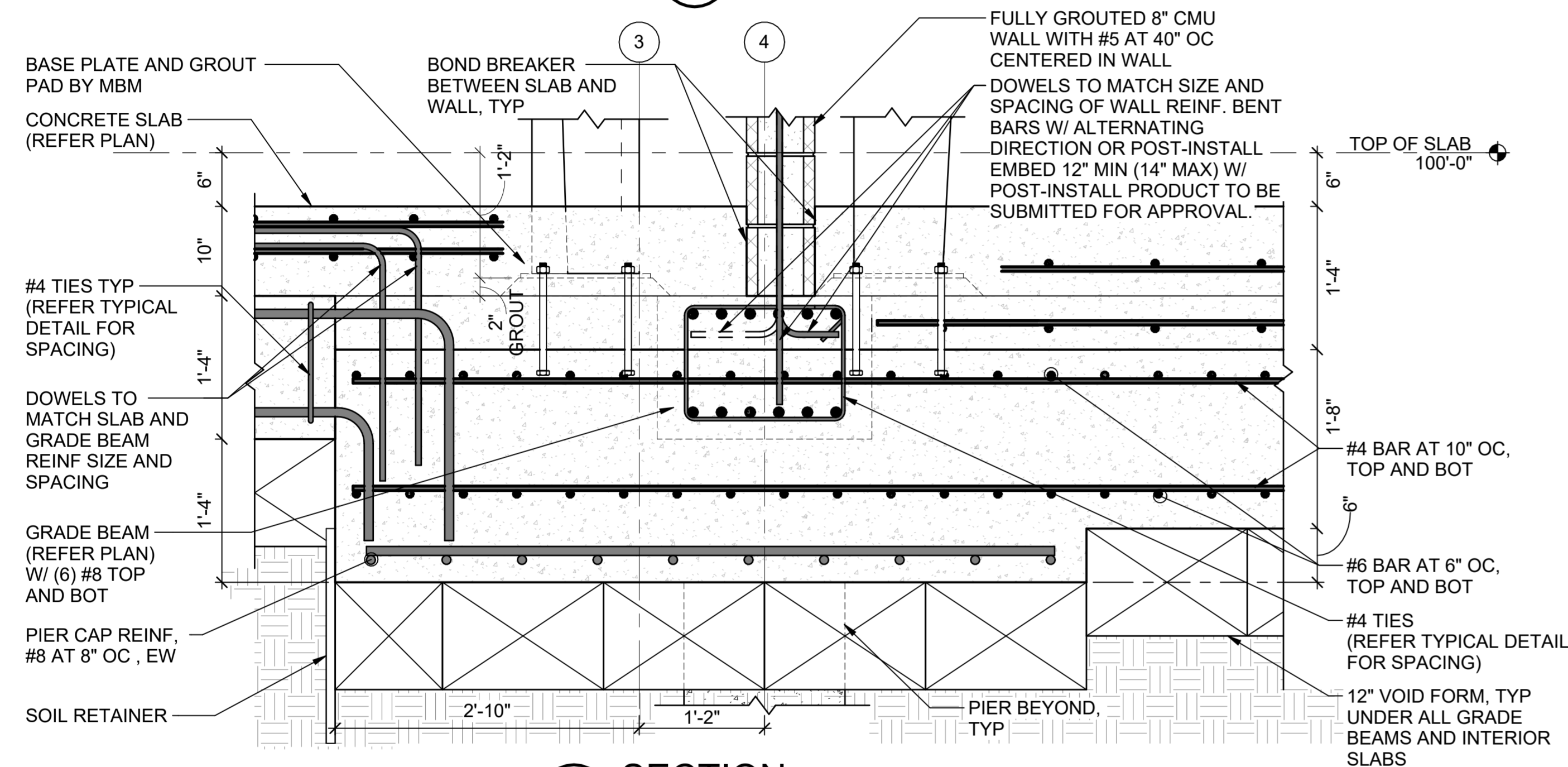
**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**



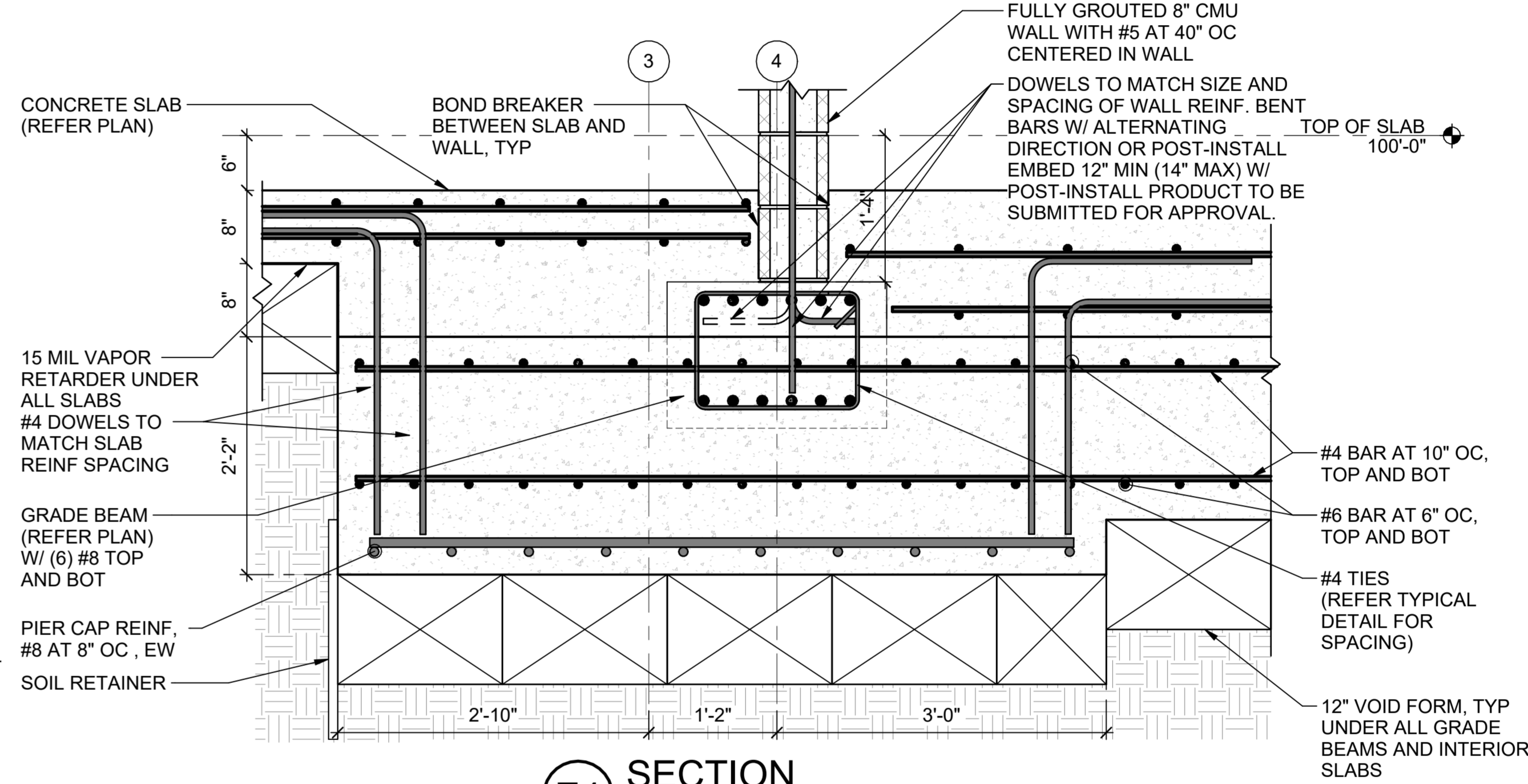
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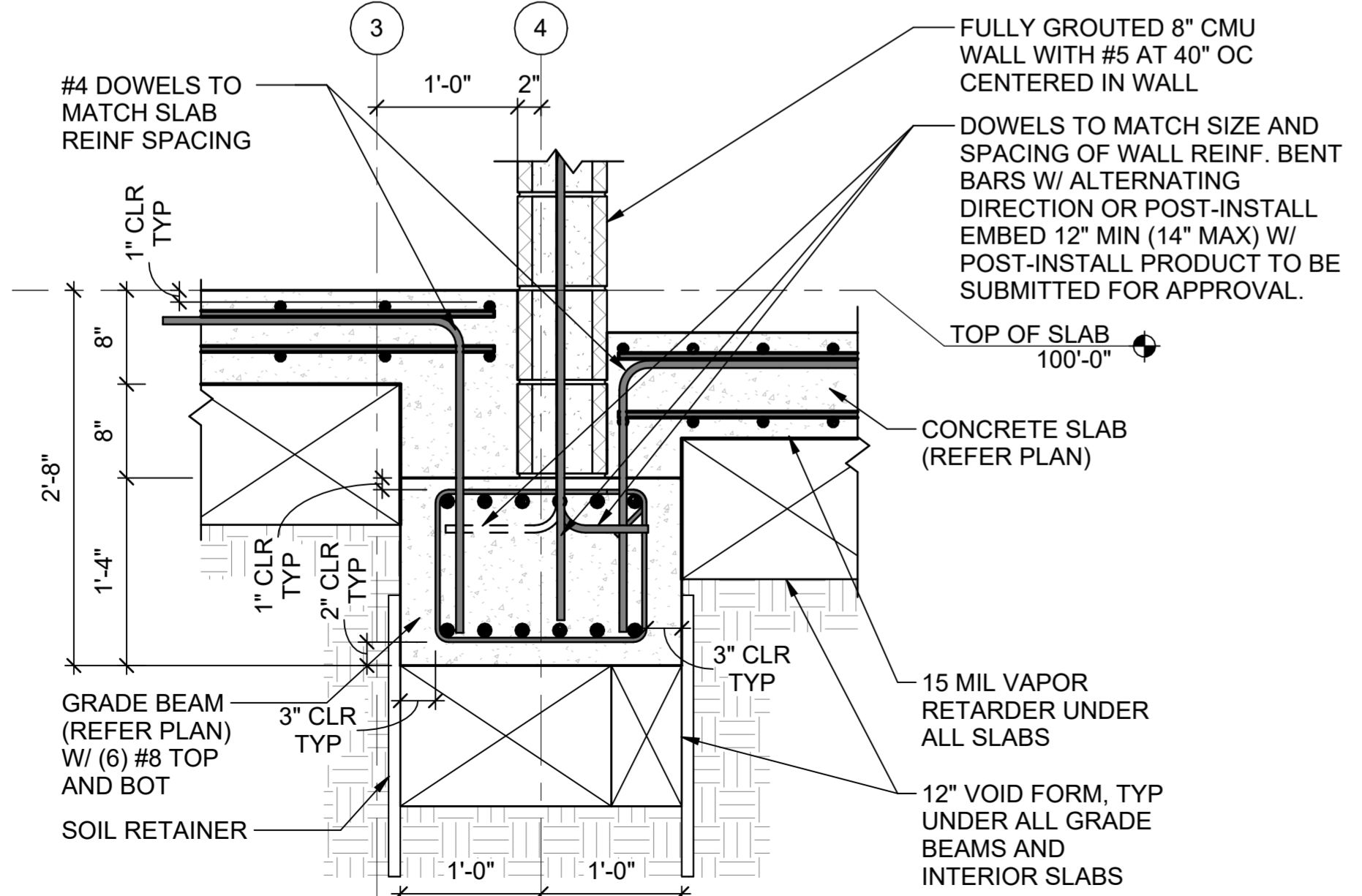
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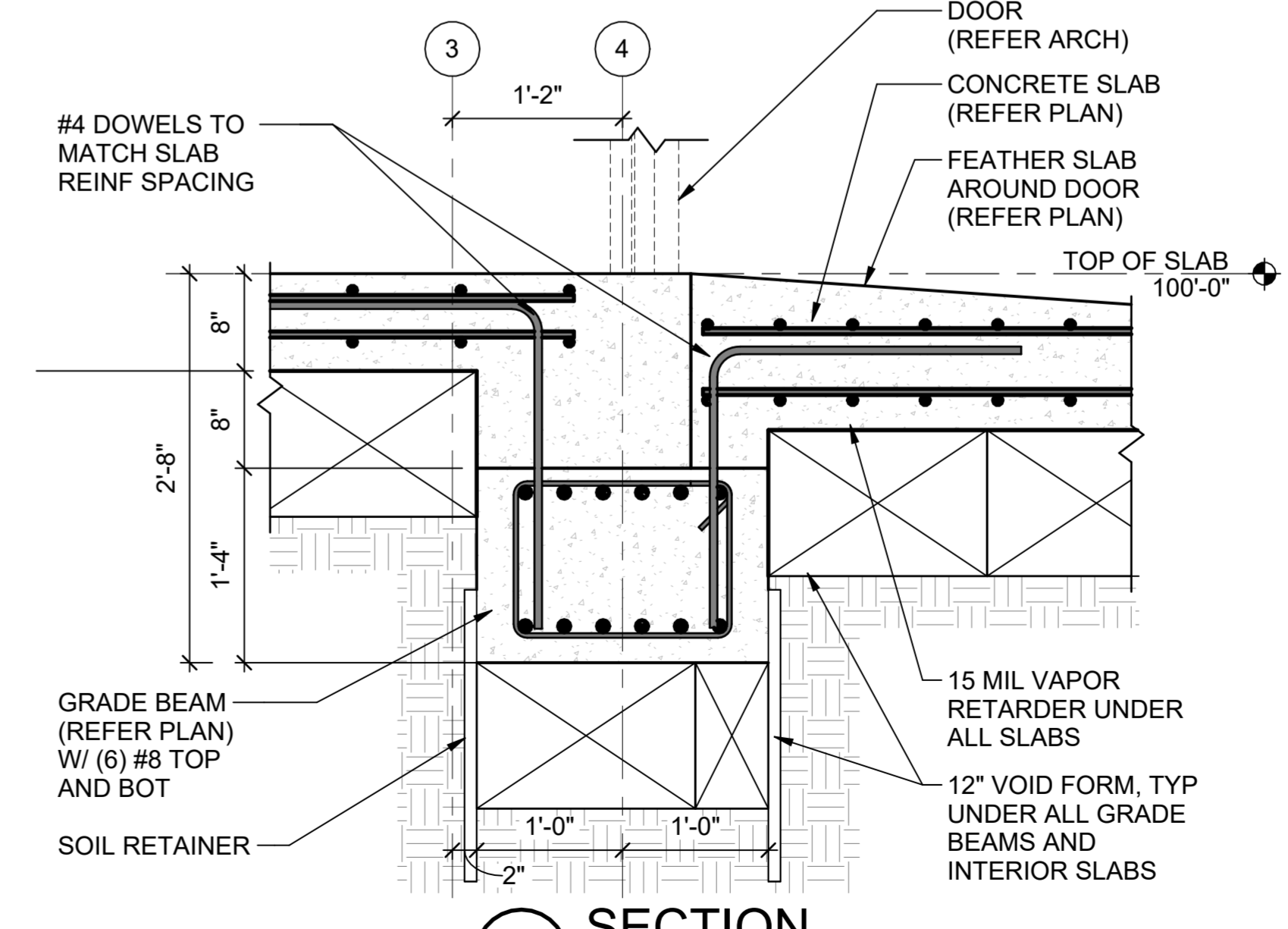
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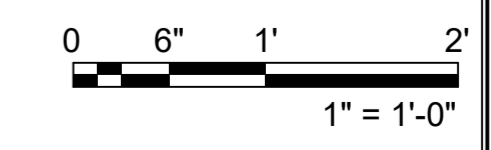
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**B6 SECTION**  
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**F6 SECTION**  
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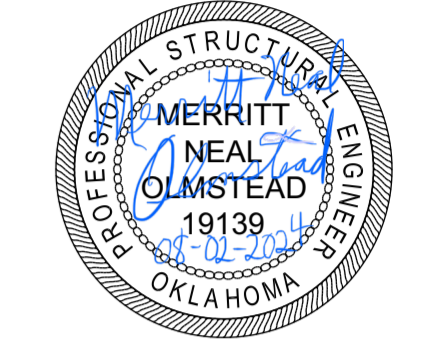
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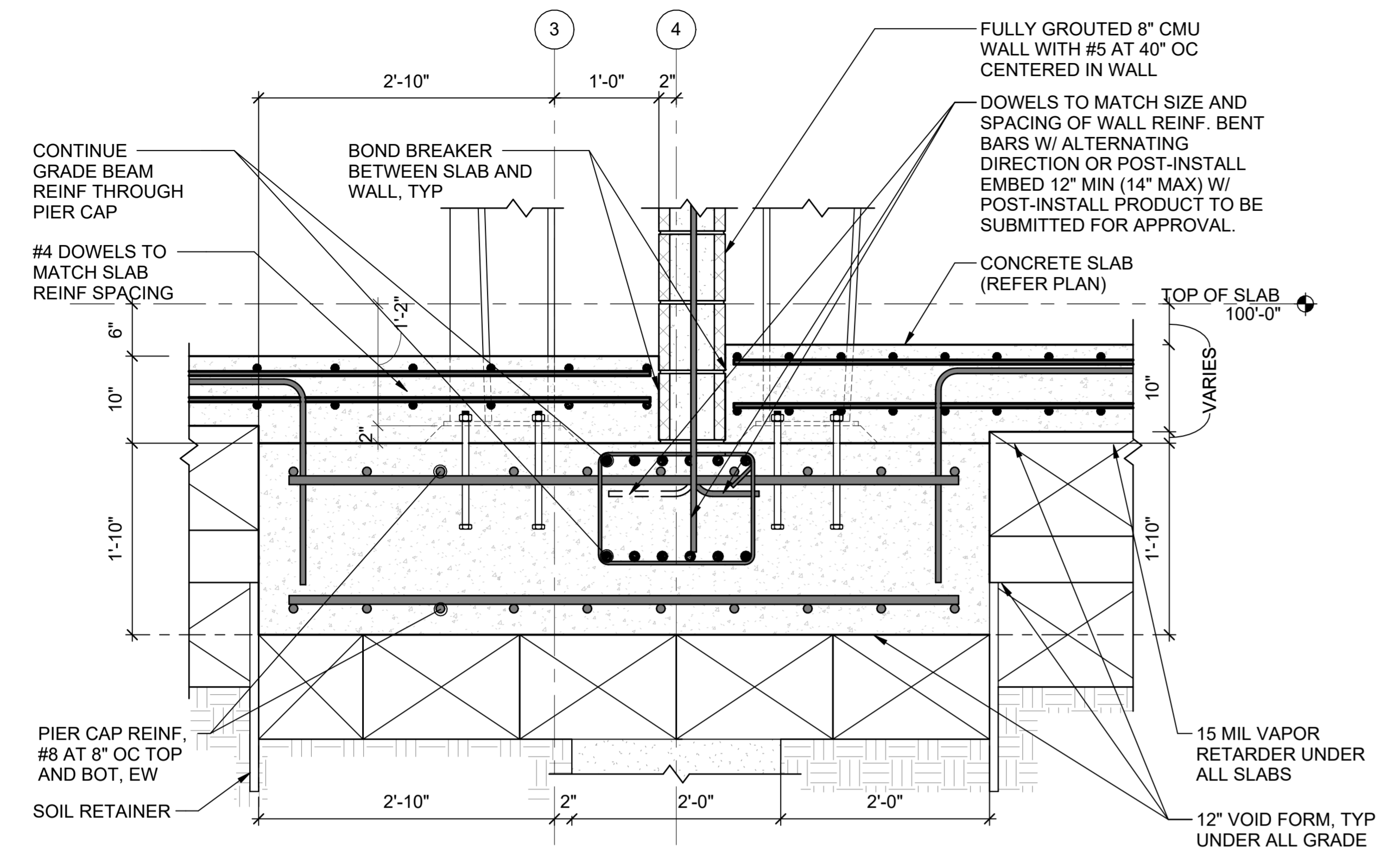
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DRAWN BY:	CGH
REVIEWED BY:	BJW
PROJECT MANAGER:	NDM
PROJECT NUMBER:	20190320
SHEET TITLE:	FOUNDATION DETAILS
ISSUE DATE:	2 AUGUST 2024
SHEET NUMBER:	SB503

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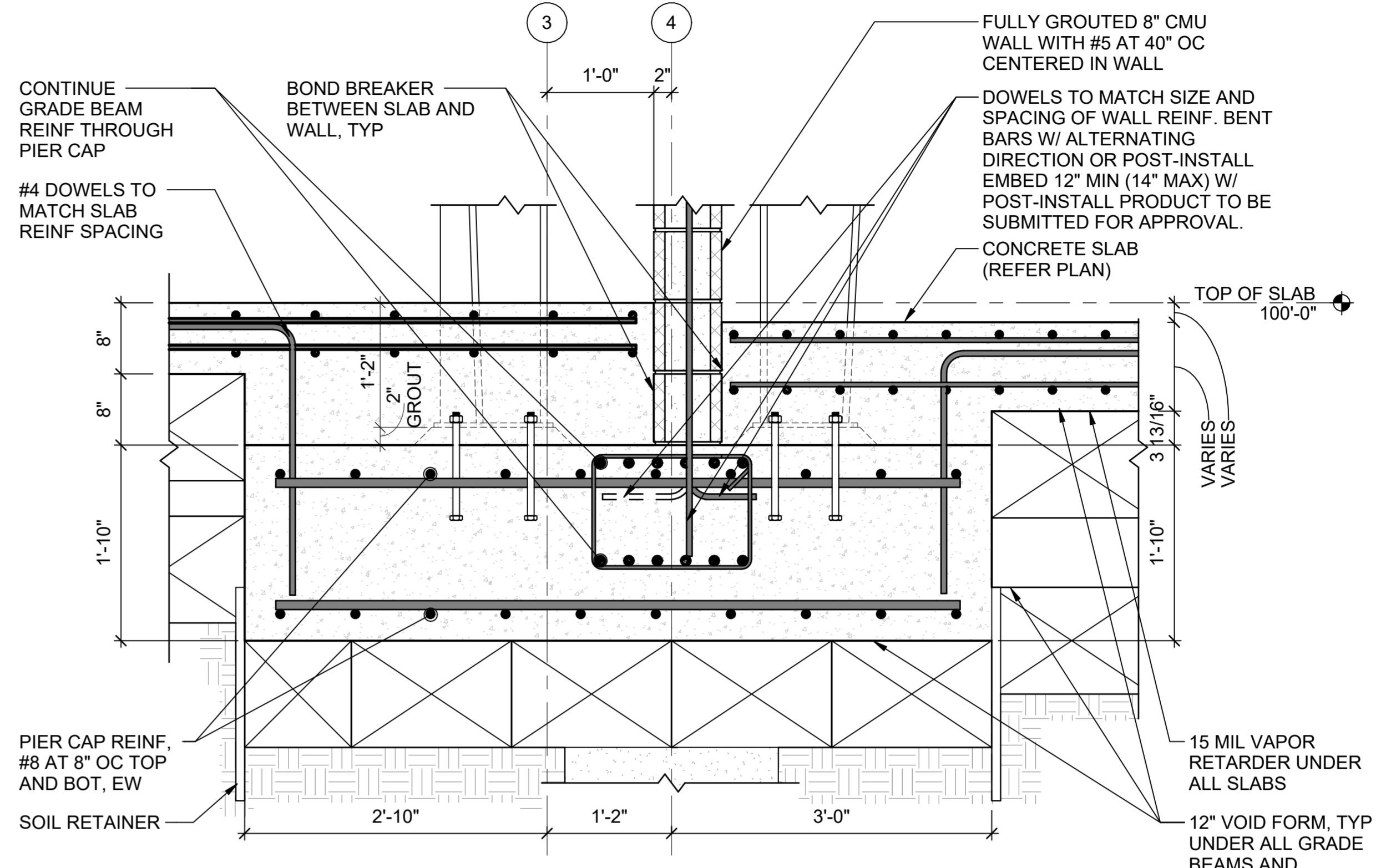




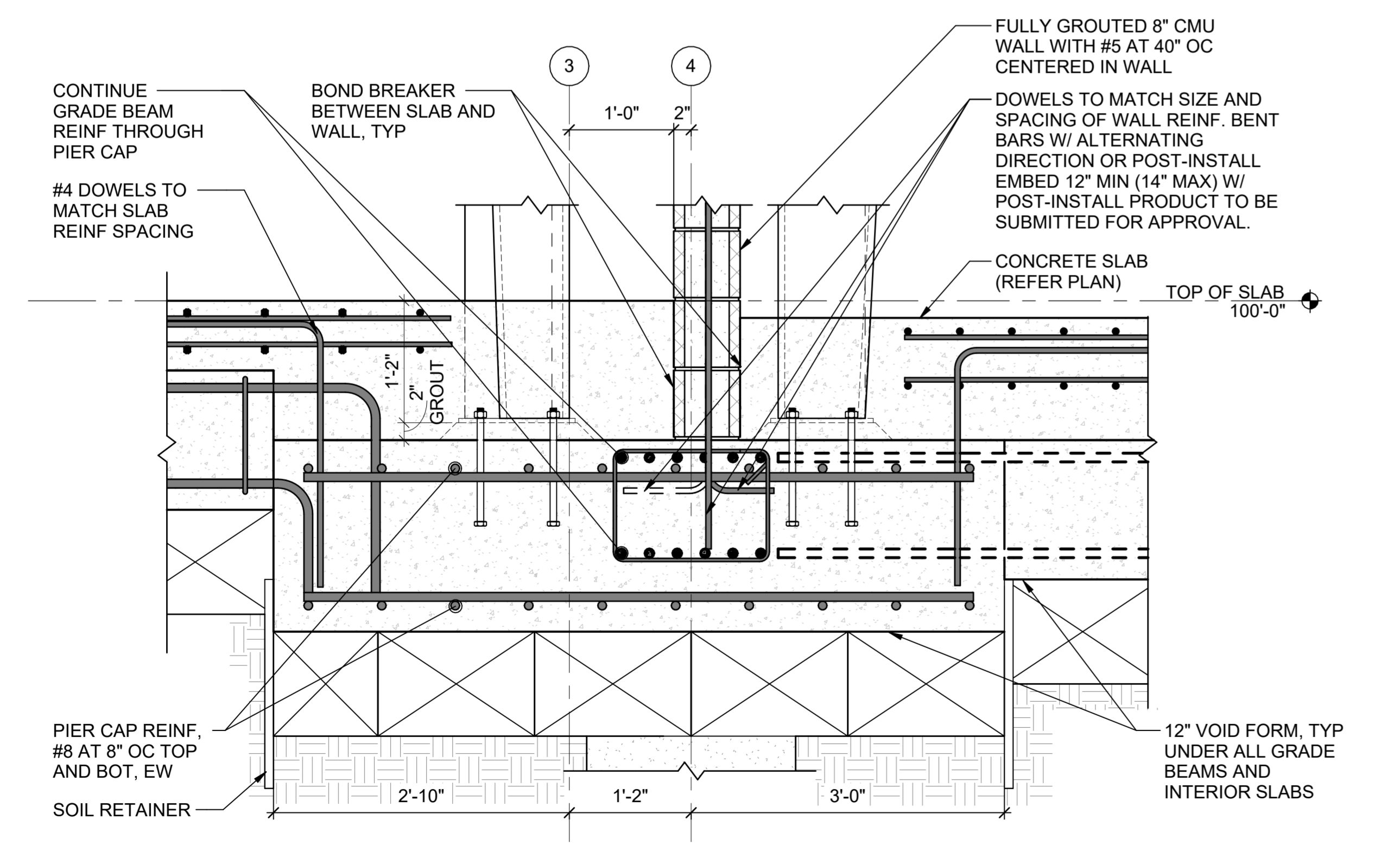
**Texas Air National Guard - 149th FW  
Corrosion Control Facility  
TXANG Project Number: KELL 169014  
JBSA - Kelly Annex, TX**



**A3 SECTION**  
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**E3 SECTION**  
SCALE: 1" = 1'-0"



**A6 SECTION**  
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REVISION HISTORY:

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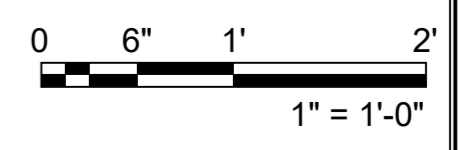
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DRAWN BY:	<b>CGH</b>
REVIEWED BY:	<b>BJW</b>
PROJECT MANAGER:	<b>NDM</b>

PROJECT NUMBER:  
**20190320**

SHEET TITLE:  
**FOUNDATION DETAILS**

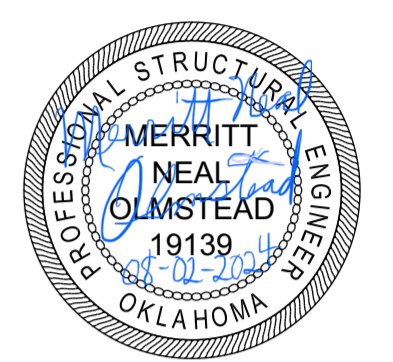
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**2 AUGUST 2024**

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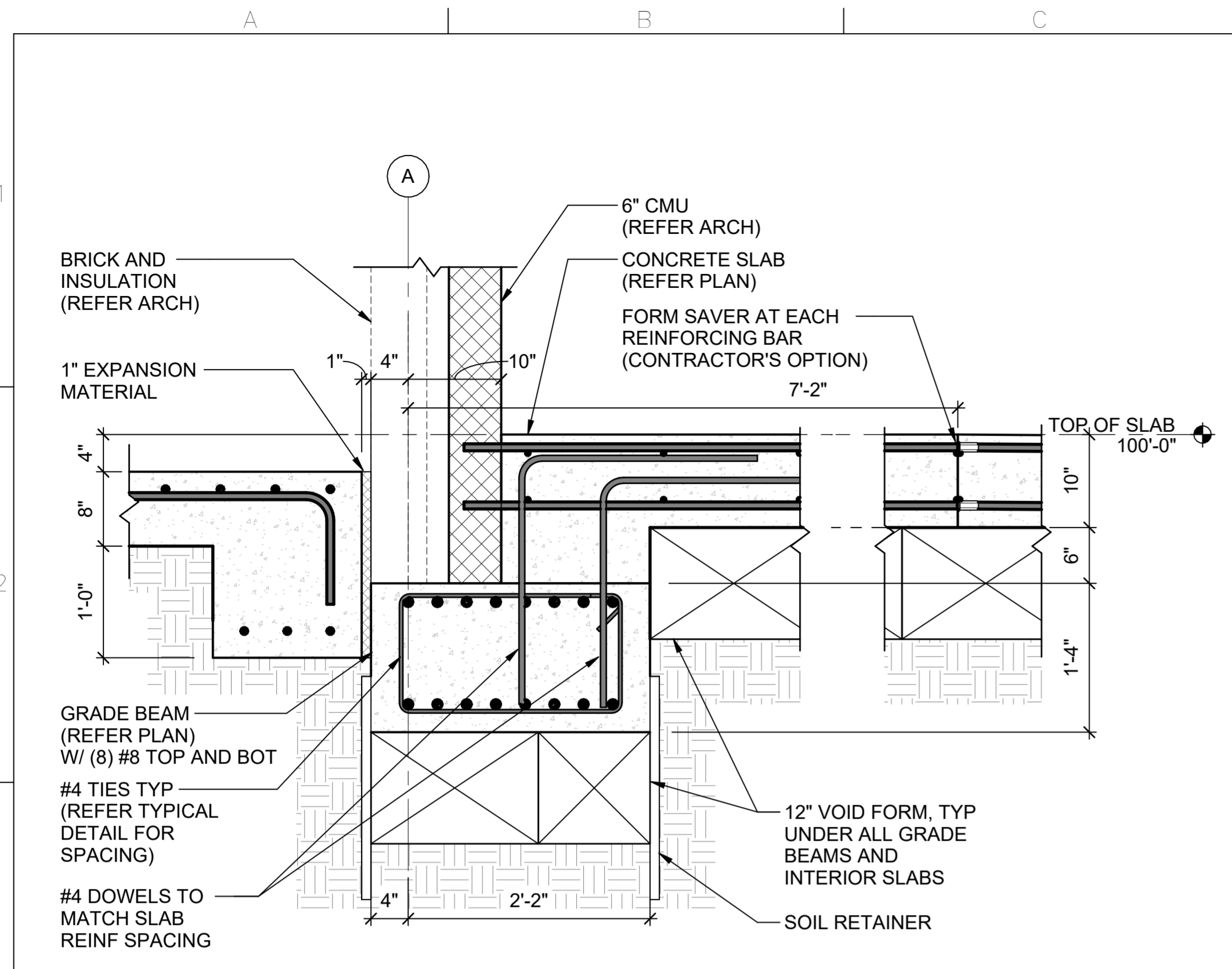
**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

**REVISION HISTORY:**

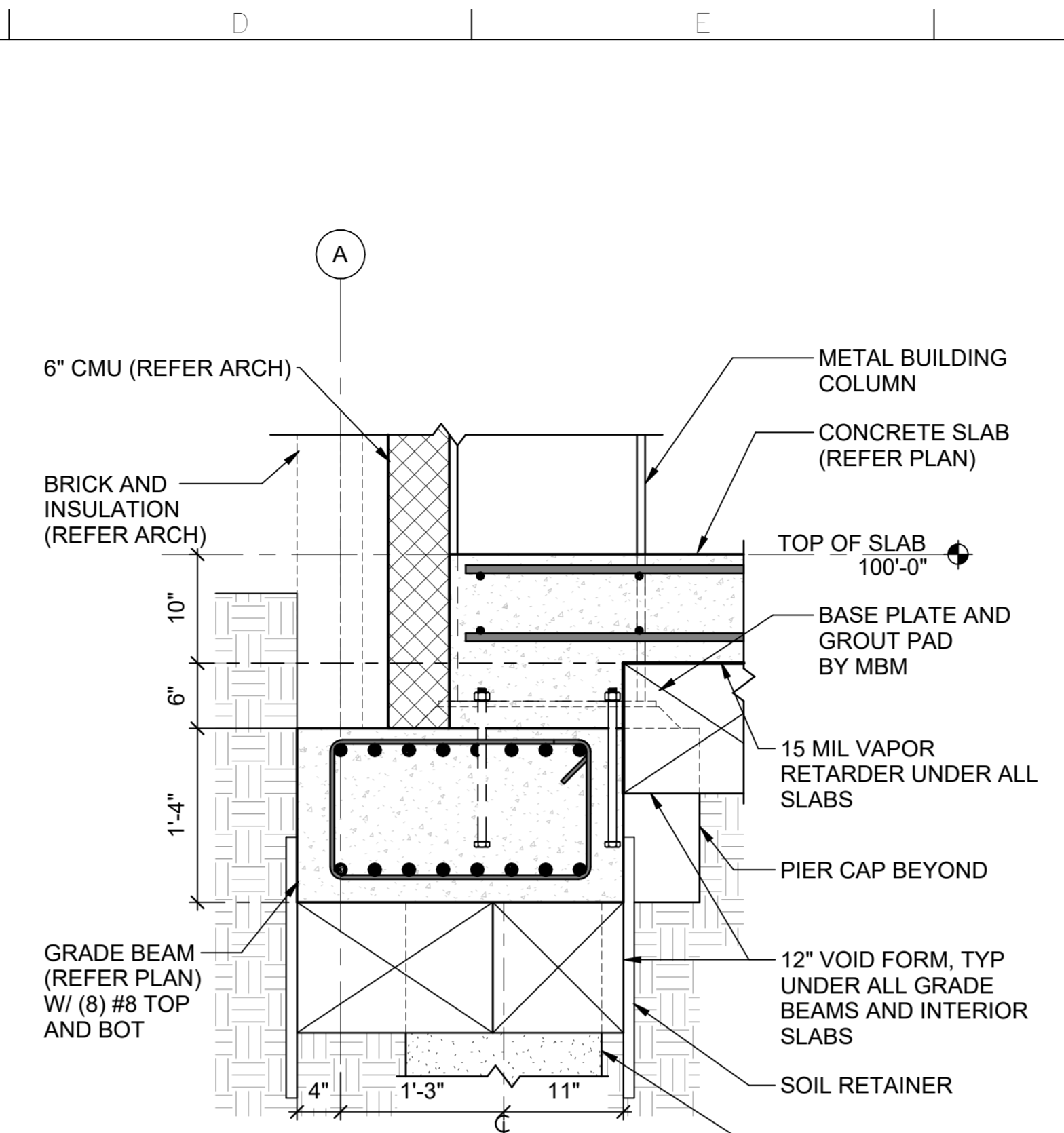
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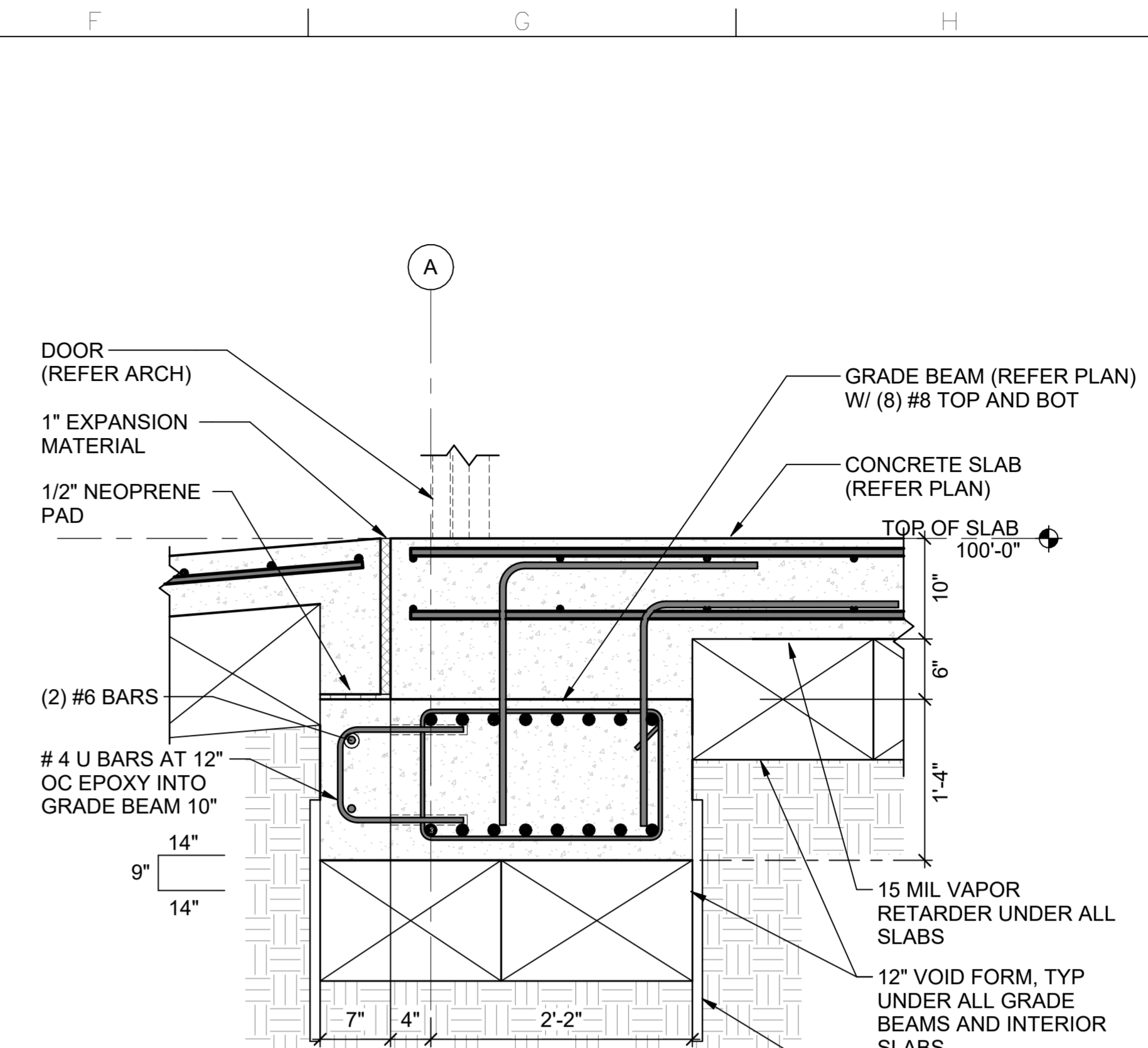
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REVIEWED BY:	<b>BJW</b>
PROJECT MANAGER:	<b>NDM</b>
PROJECT NUMBER:	<b>20190320</b>
SHEET TITLE:	<b>FOUNDATION DETAILS</b>
ISSUE DATE:	<b>2 AUGUST 2024</b>
SHEET NUMBER:	<b>SB505</b>



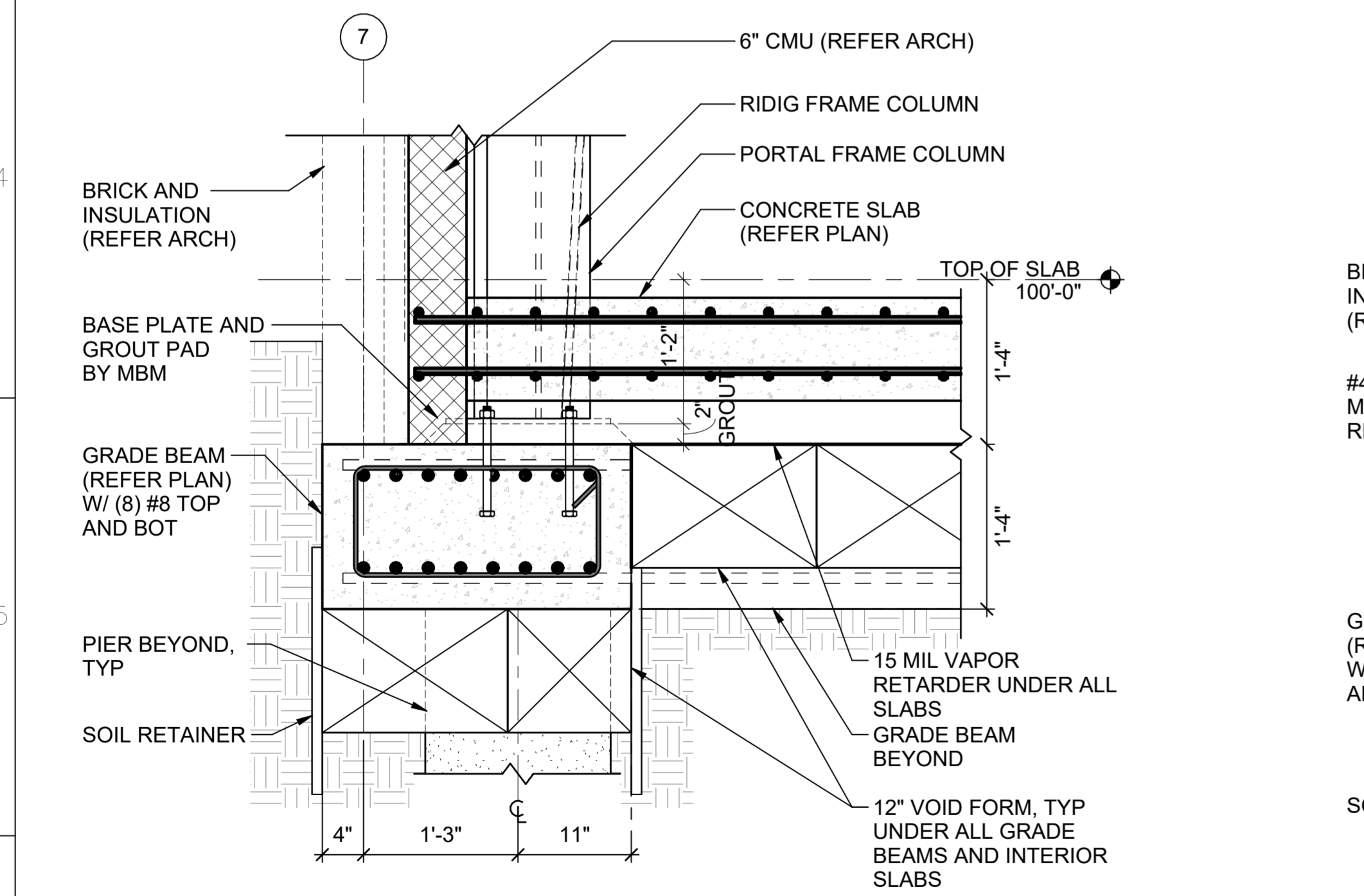
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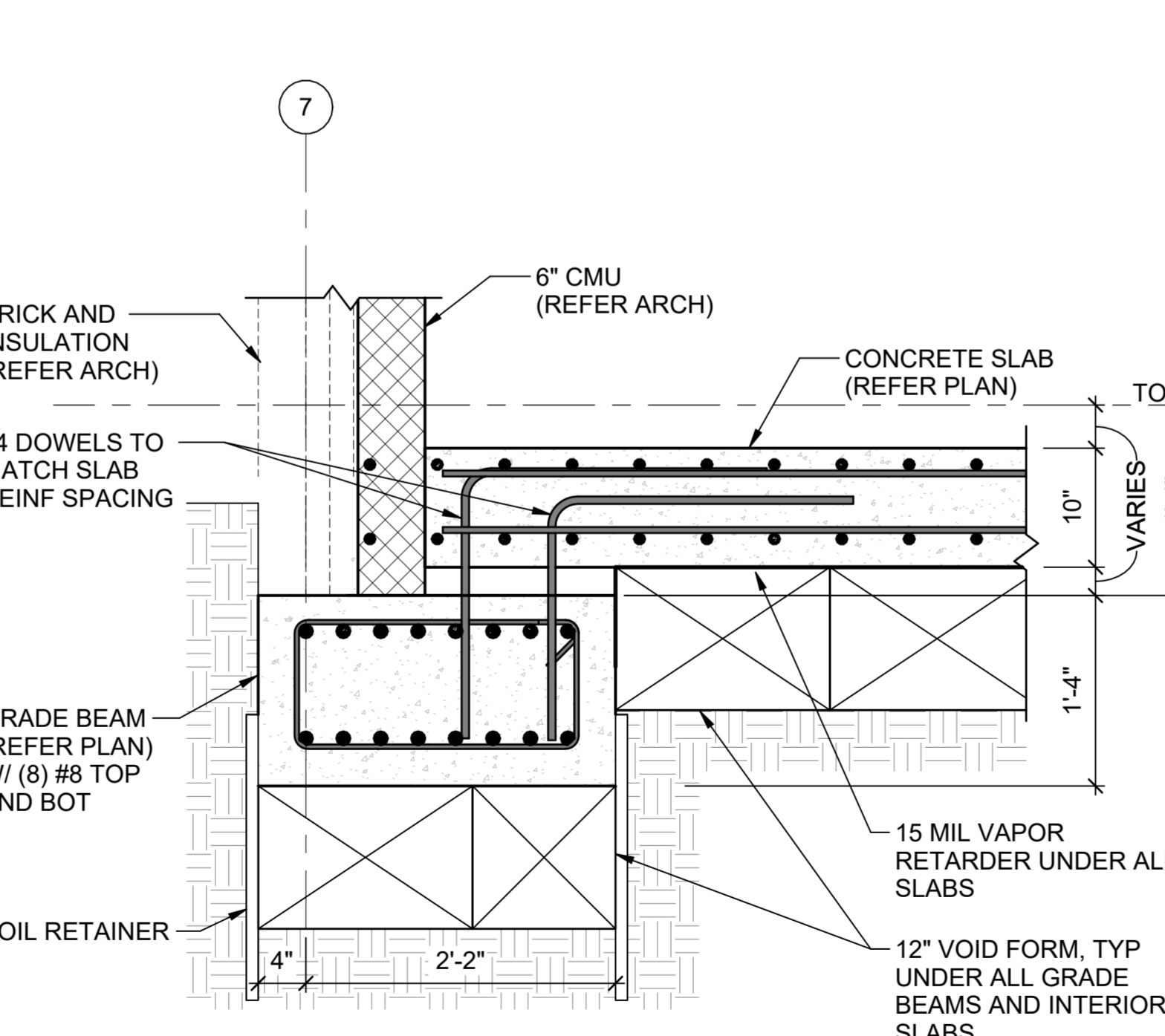
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**D6 SECTION**  
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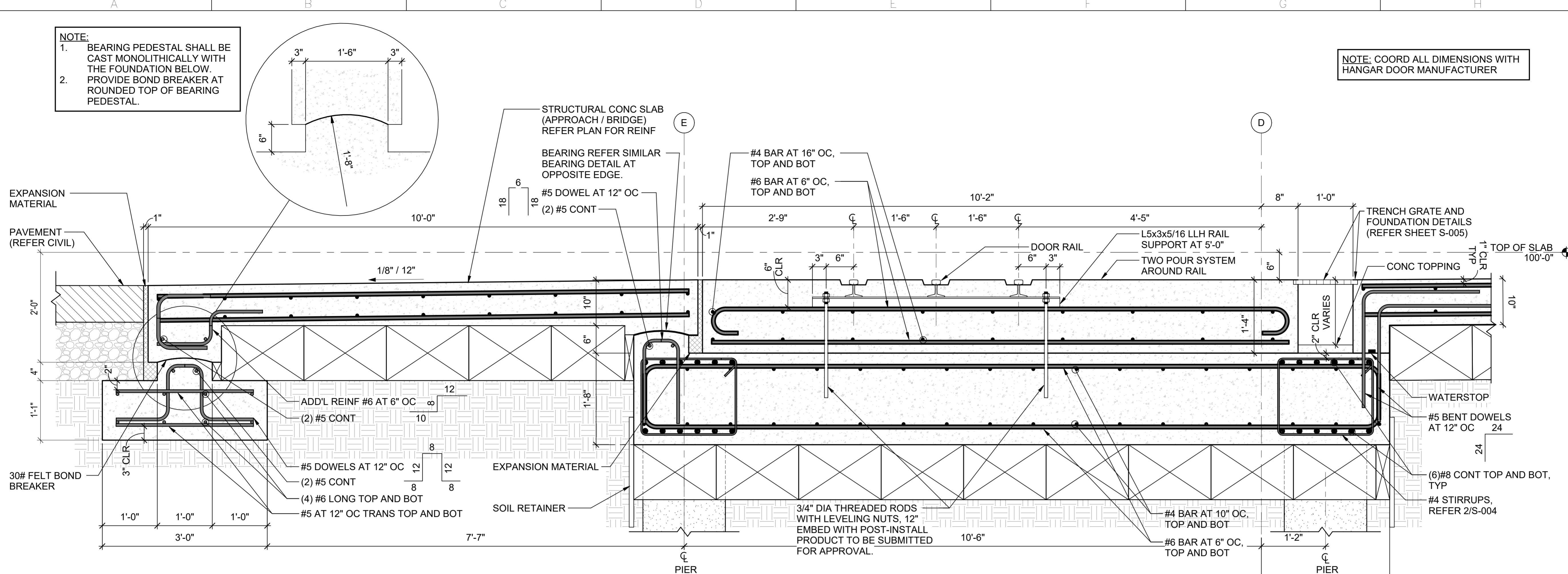
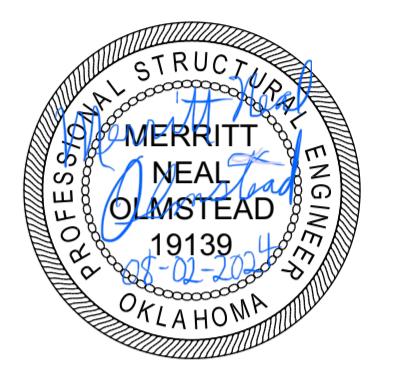
**NOTE:**  
 1. BEARING PEDESTAL SHALL BE CAST MONOLITHICALLY WITH THE FOUNDATION BELOW.  
 2. PROVIDE BOND BREAKER AT ROUNDED TOP OF BEARING PEDESTAL.

**NOTE:** COORD ALL DIMENSIONS WITH HANGAR DOOR MANUFACTURER

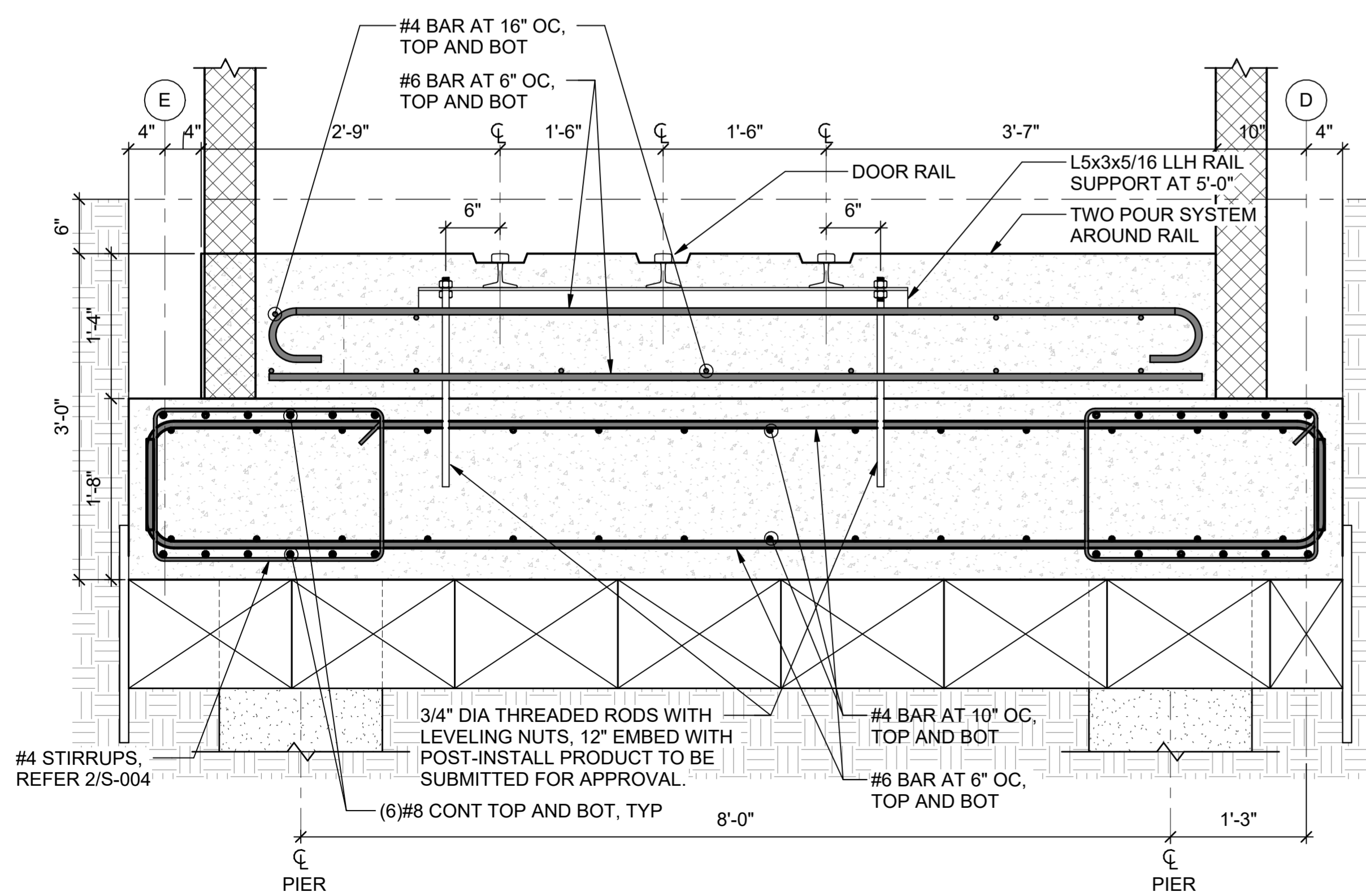
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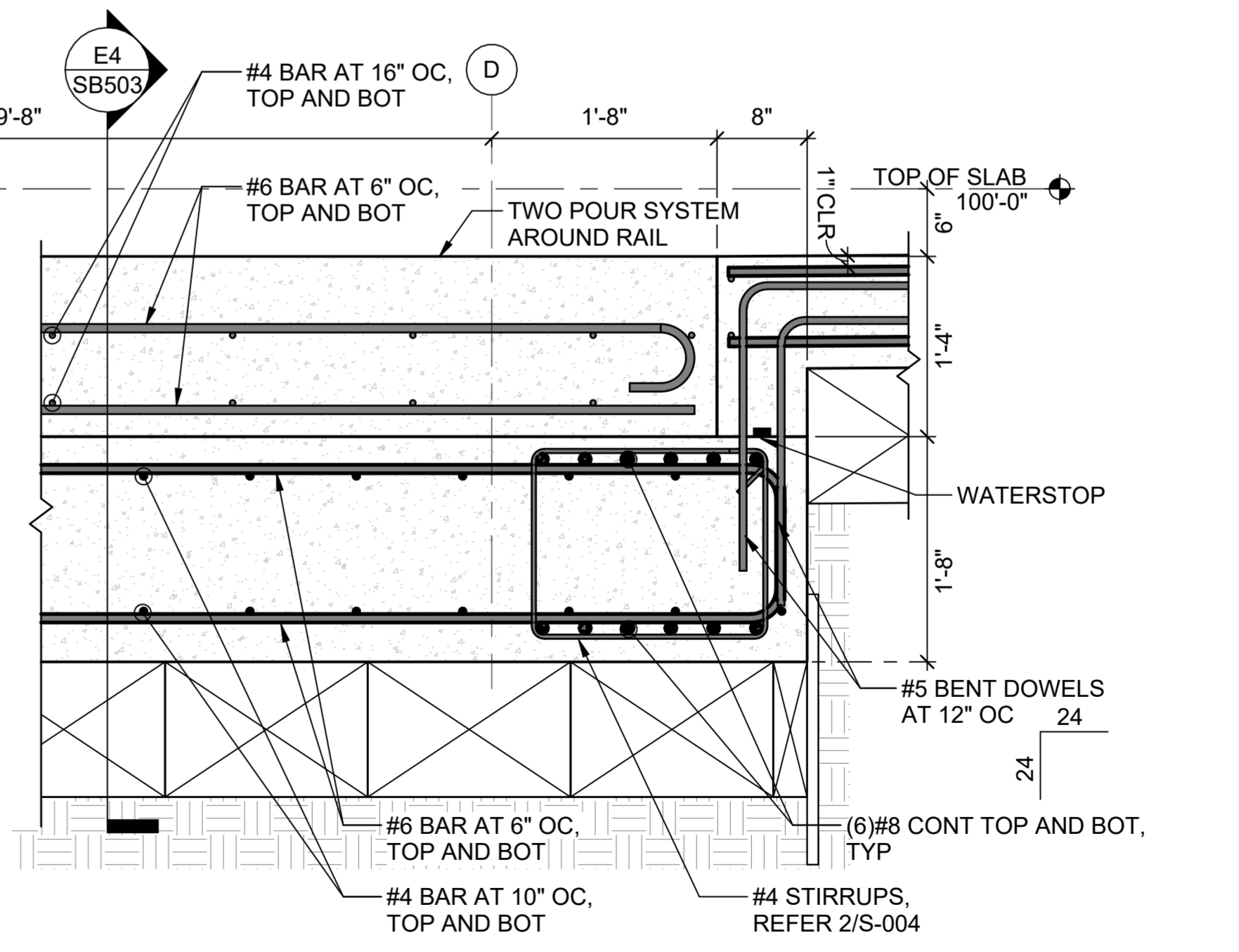
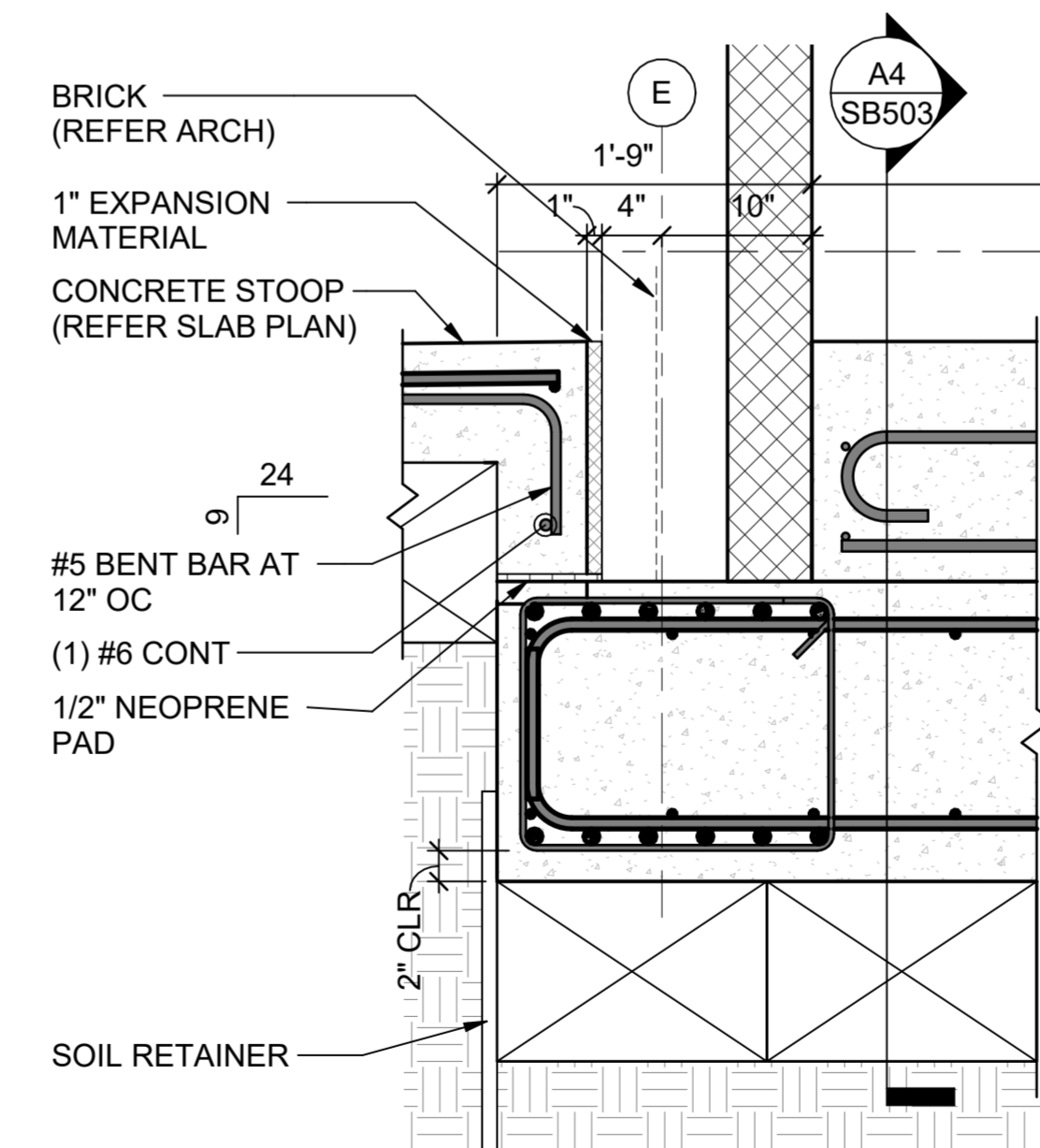
Frankfurt-Short-Bruza Associates, P.C.  
 5801 Broadway Extension, Suite 500  
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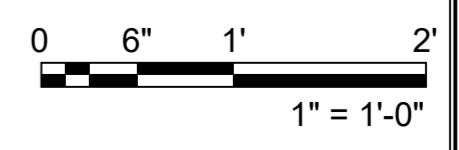
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**E6 SECTION**  
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**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: CGH  
 DRAWN BY: CGH  
 REVIEWED BY: BJW  
 PROJECT MANAGER: NDM

PROJECT NUMBER: 20190320  
 SHEET TITLE: FOUNDATION DETAILS

ISSUE DATE: 2 AUGUST 2024  
 SHEET NUMBER:

**SB506**

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**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

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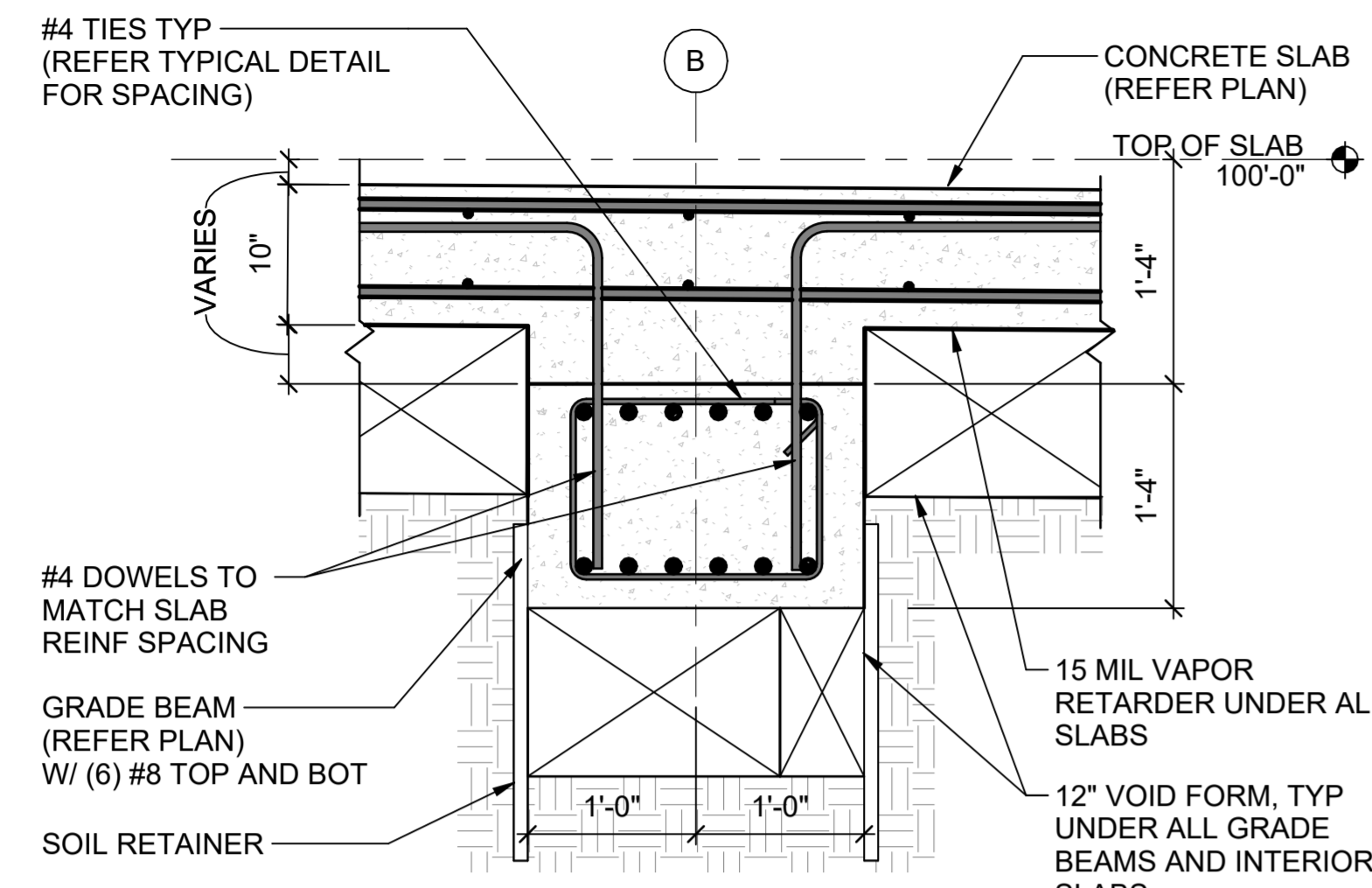
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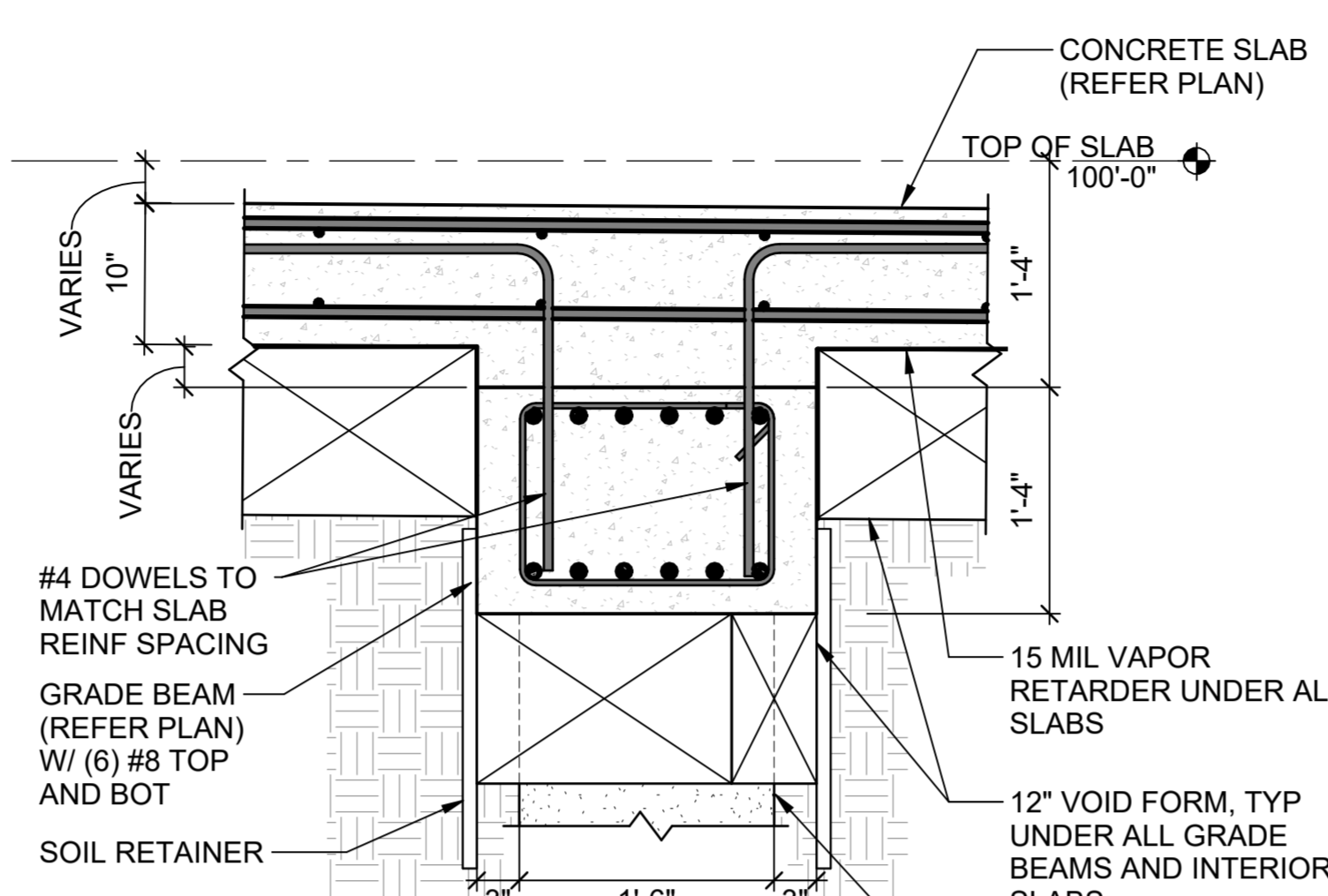
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PROJECT NUMBER:  
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**FOUNDATION DETAILS**

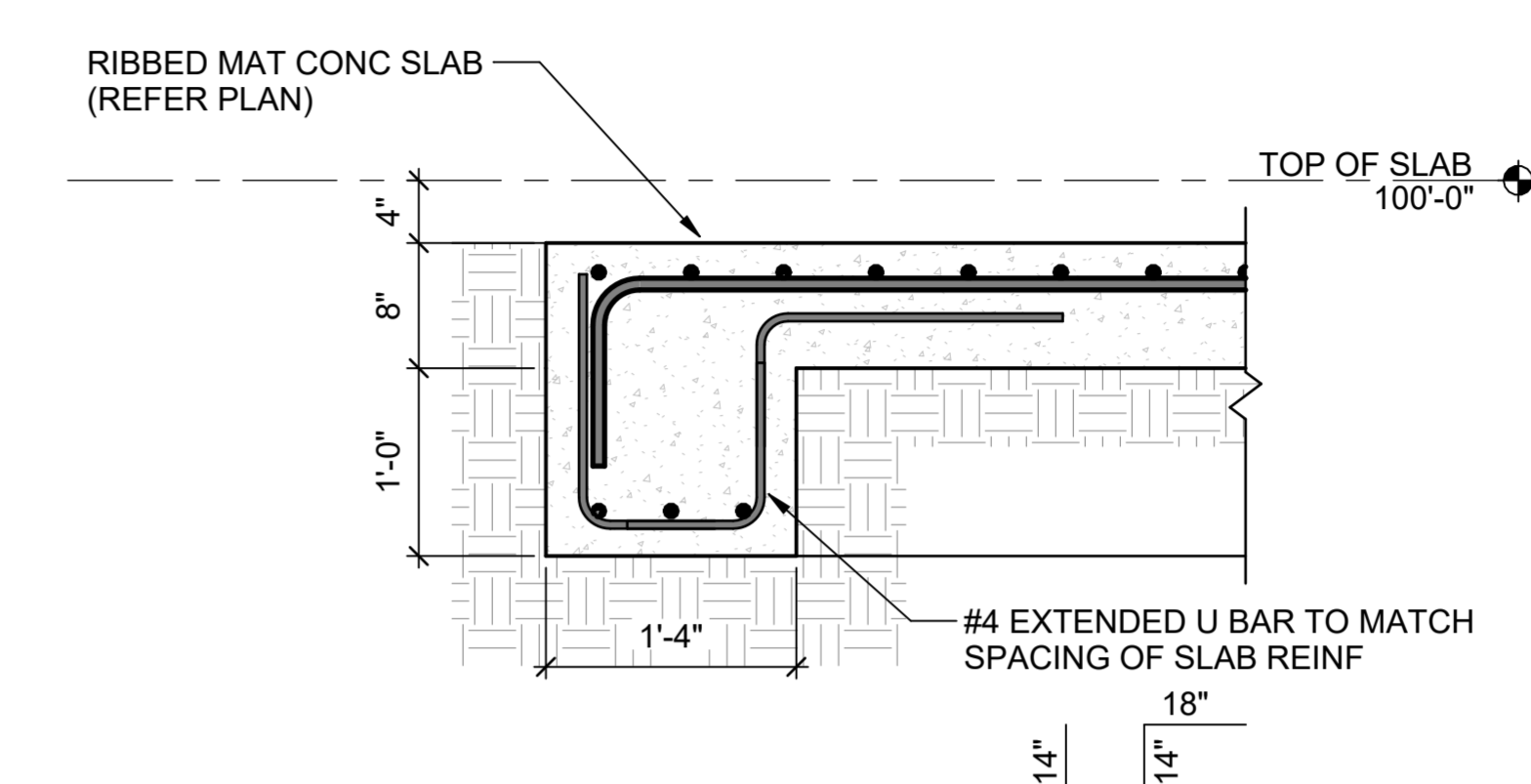
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**SB507**



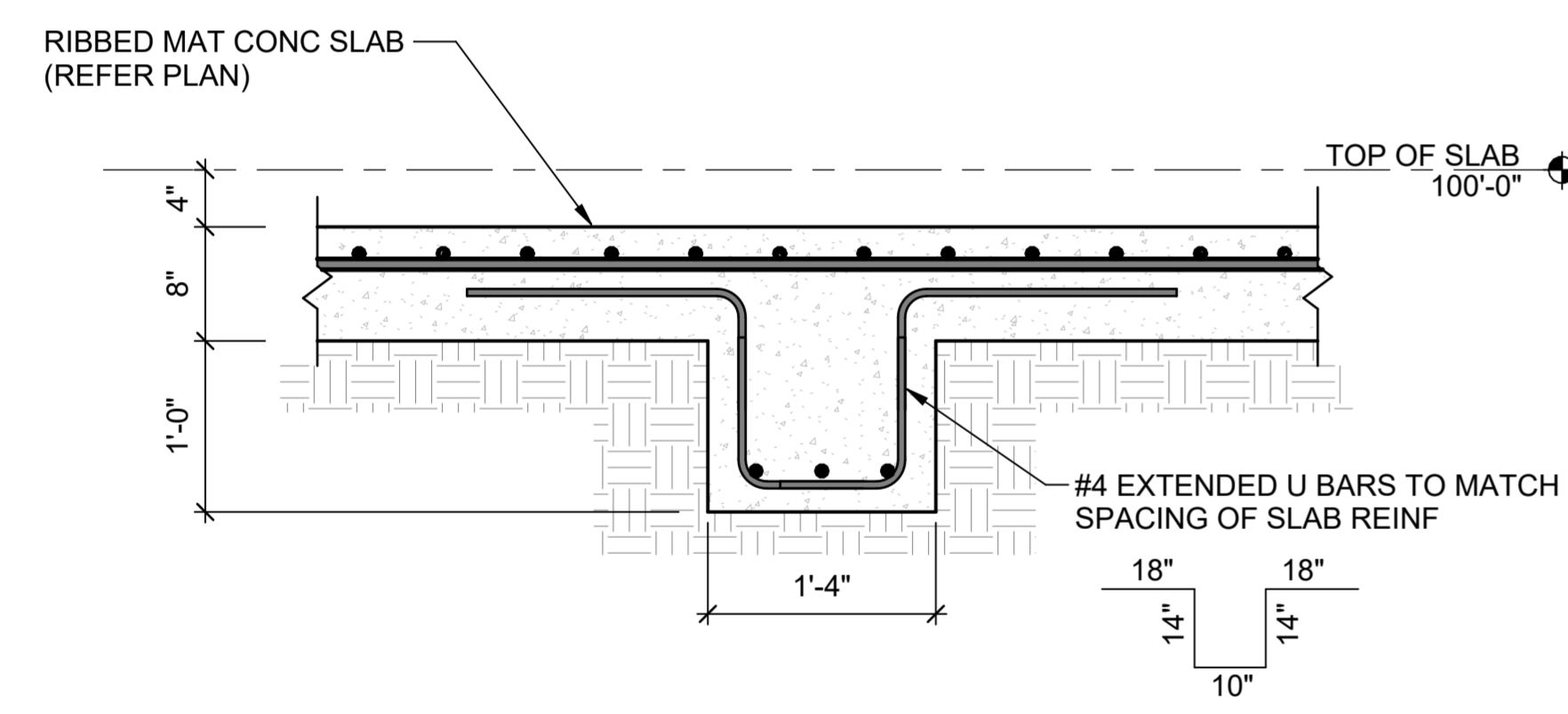
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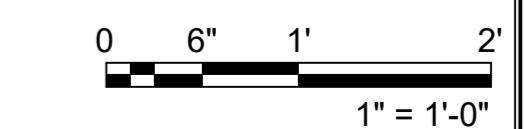
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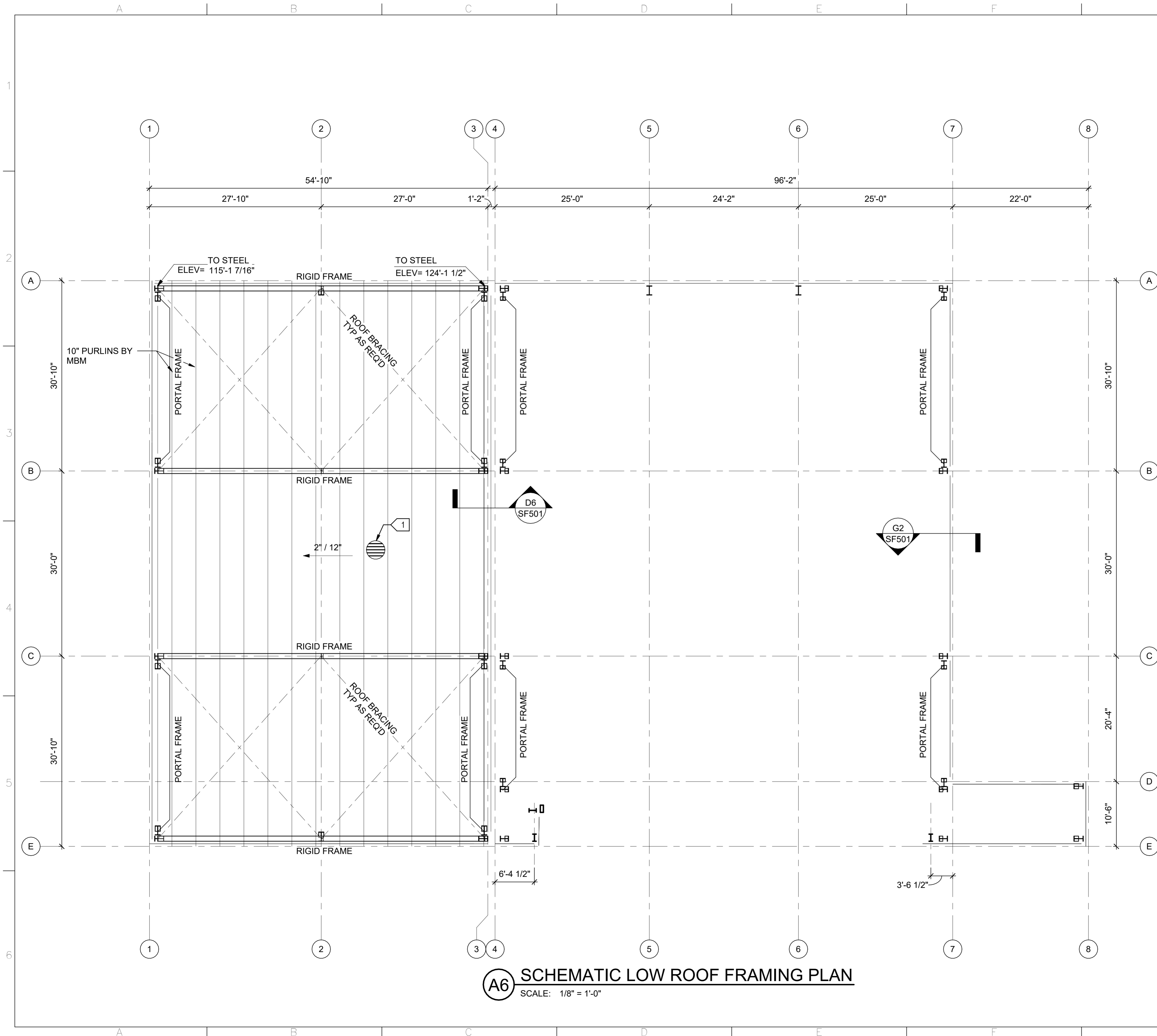
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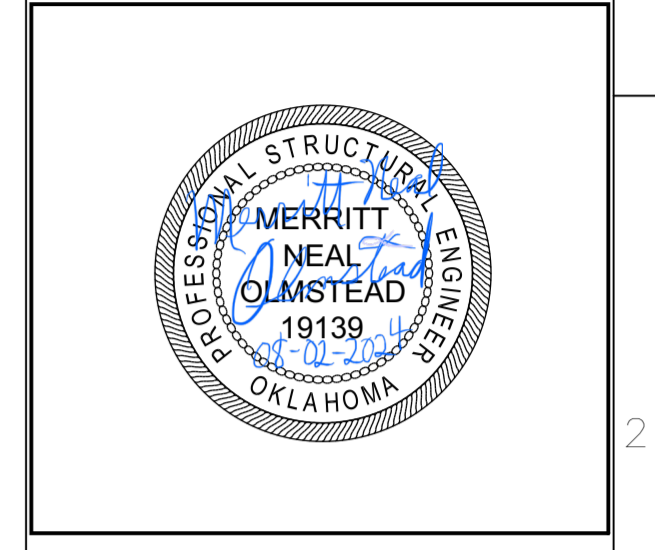
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- ### FRAMING PLAN NOTES
- HVAC EQUIPMENT ABOVE AND SUSPENDED BELOW THE ROOF IS SHOWN FOR REFERENCE ONLY. THE GC IS RESPONSIBLE FOR COORDINATING WITH THE MBM FINAL SIZE, WEIGHT, AND LOCATIONS OF ALL MECHANICAL EQUIPMENT LOCATED BOTH ON THE ROOF AND SUSPENDED BELOW THE ROOF. THE LOCATION AND WEIGHTS OF DUCT WORK SHALL BE INCLUDED. OTHER EQUIPMENT NOT SHOWN WEIGHING 250 LB OR MORE SHALL BE COORDINATED WITH THE MBM.
  - GC TO COORDINATE FINAL WEIGHT AND LOCATION OF FIRE PROTECTION MAIN LINE W/ MBM.
  - BRACING LOCATIONS SHOWN ON THIS PLAN INDICATE POSSIBLE LOCATIONS. MBM SHALL DETERMINE HOW MANY BAYS OF BRACING ARE REQUIRED.
  - ALL BASE PLATES ARE OVER 2" GROUT. BOTTOM OF BASE PLATES AT GRIDS 3, EAST OF GRID 3, AND AT COLUMN E-2 ARE AT EL=98'-10". BOTTOM OF OTHER BASE PLATES WEST OF GRID 3 ARE AT EL=99'-6"
- 1 STRUCTURAL STANDING SEAM METAL DECK AND ATTACHMENTS AS REQUIRED BY MBM

**FSB FEDERAL DESIGN GROUP JV**

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**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: **CGH**

DRAWN BY: **CGH**

REVIEWED BY: **BJW**

PROJECT MANAGER: **NDM**

PROJECT NUMBER: **20190320**

SHEET TITLE: **SCHEMATIC LOW ROOF FRAMING PLAN**

ISSUE DATE: **2 AUGUST 2024**

SHEET NUMBER: **SF101**

**A6 SCHEMATIC LOW ROOF FRAMING PLAN**  
SCALE: 1/8" = 1'-0"



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**FRAMING PLAN NOTES**

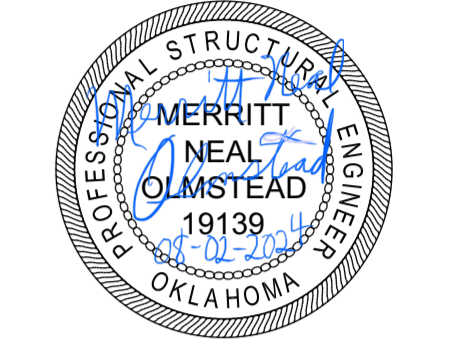
1. HVAC EQUIPMENT ABOVE AND SUSPENDED BELOW THE ROOF IS SHOWN SCHEMATICALLY. THE GC IS RESPONSIBLE FOR COORDINATING WITH THE MBM FINAL SIZE, WEIGHT, AND LOCATIONS OF ALL MECHANICAL EQUIPMENT LOCATED BOTH ON THE ROOF AND SUSPENDED BELOW THE ROOF. THE LOCATION AND WEIGHTS OF DUCT WORK SHALL BE INCLUDED. OTHER EQUIPMENT NOT SHOWN WEIGHING 250 LB OR MORE SHALL BE COORDINATED WITH THE MBM.

2. GC TO COORDINATE FINAL WEIGHT AND LOCATION OF FIRE PROTECTION MAIN LINE W/ MBM.

3. BRACING LOCATIONS SHOWN ON THIS PLAN INDICATE POSSIBLE LOCATIONS. MBM SHALL DETERMINE HOW MANY BAYS OF BRACING ARE REQUIRED.

- 1 STRUCTURAL STANDING SEAM METAL DECK AND ATTACHMENTS AS REQUIRED BY MBM
- 2 FALL ARREST RAIL W/ (3) SELF-RETRACTING LIFELINES
- 3 FALL ARREST RAIL W/ (2) SELF-RETRACTING LIFELINES

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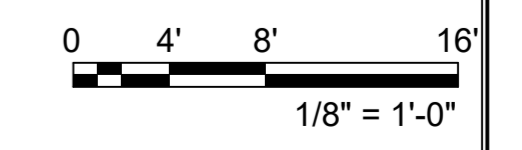
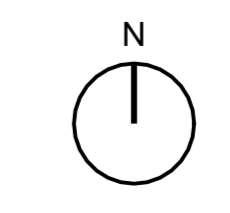


**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

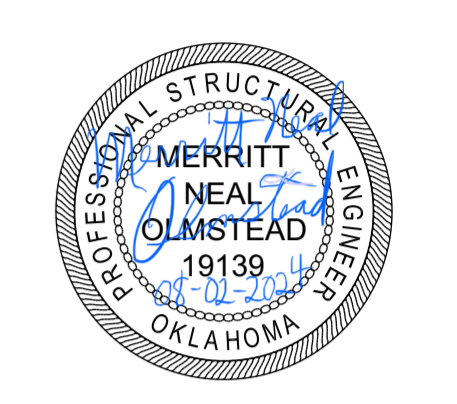
REVISION HISTORY:	
NO.	DESCRIPTION

PROJECT INFORMATION:	
DESIGNED BY:	CGH
DRAWN BY:	CGH
REVIEWED BY:	BJW
PROJECT MANAGER:	NDM
PROJECT NUMBER:	
20190320	
SHEET TITLE:	
SCHEMATIC HIGH ROOF FRAMING PLAN	
ISSUE DATE:	
2 AUGUST 2024	
SHEET NUMBER:	
SF102	

**A6 SCHEMATIC HIGH ROOF FRAMING PLAN**  
SCALE: 1/8" = 1'-0"



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**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

REVISION HISTORY:

NO.	DESCRIPTION	DATE

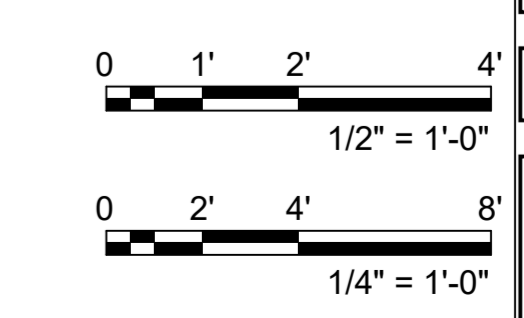
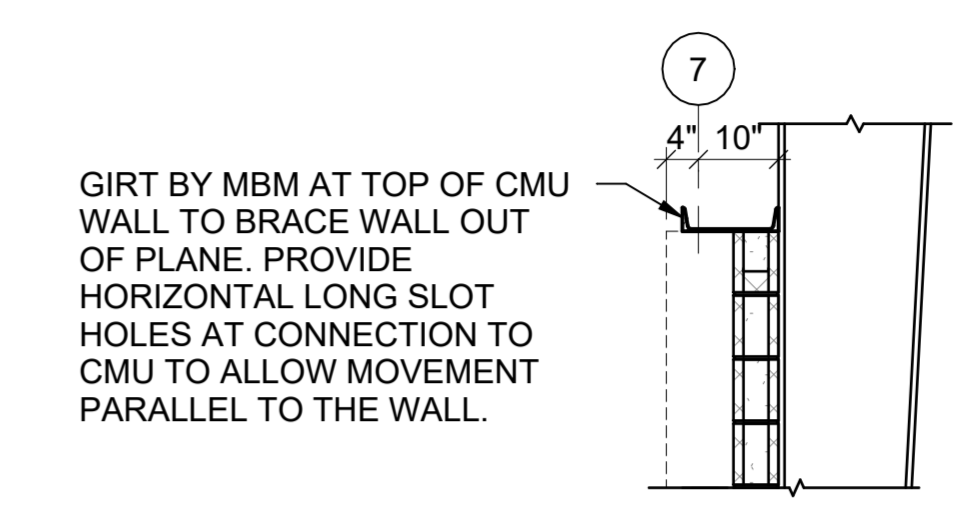
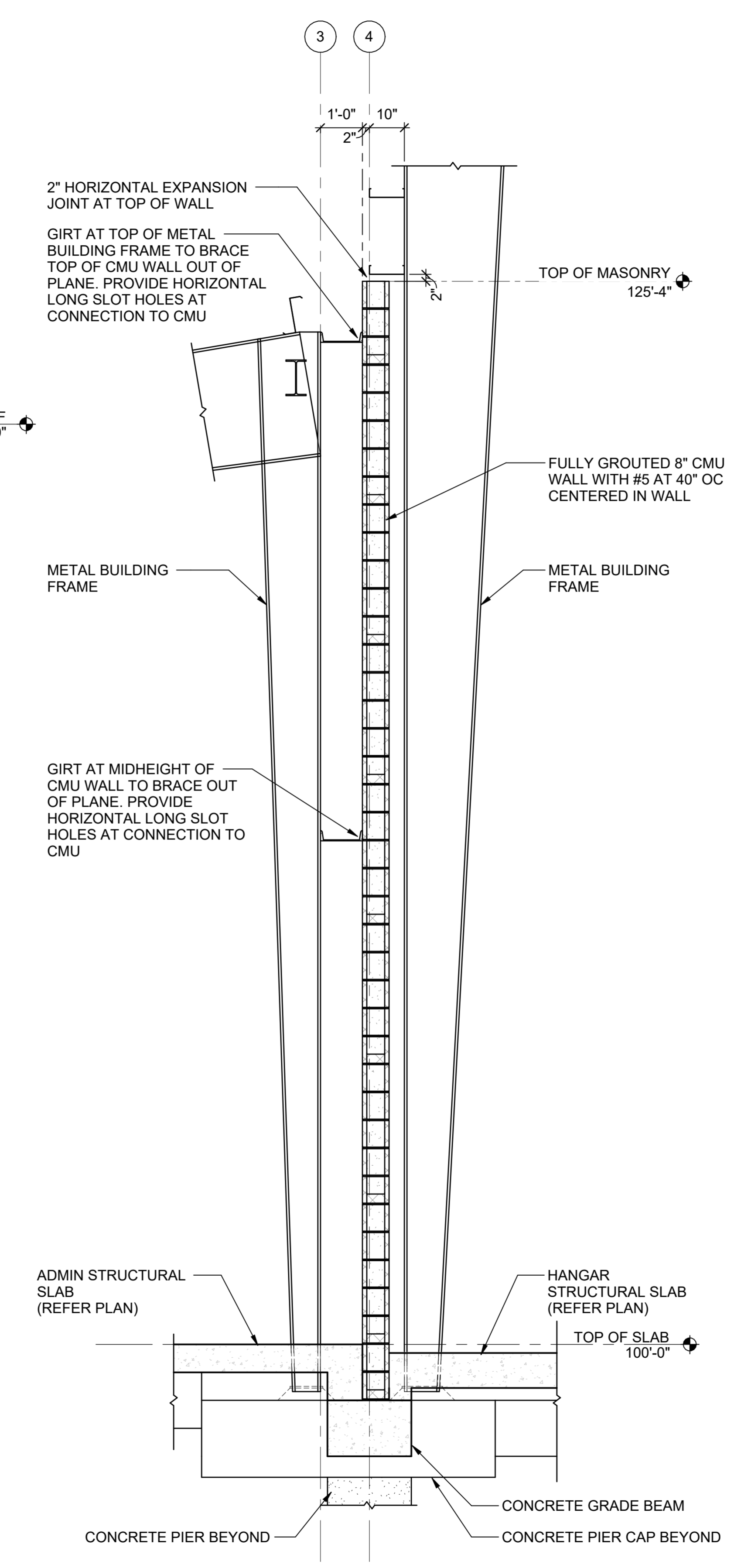
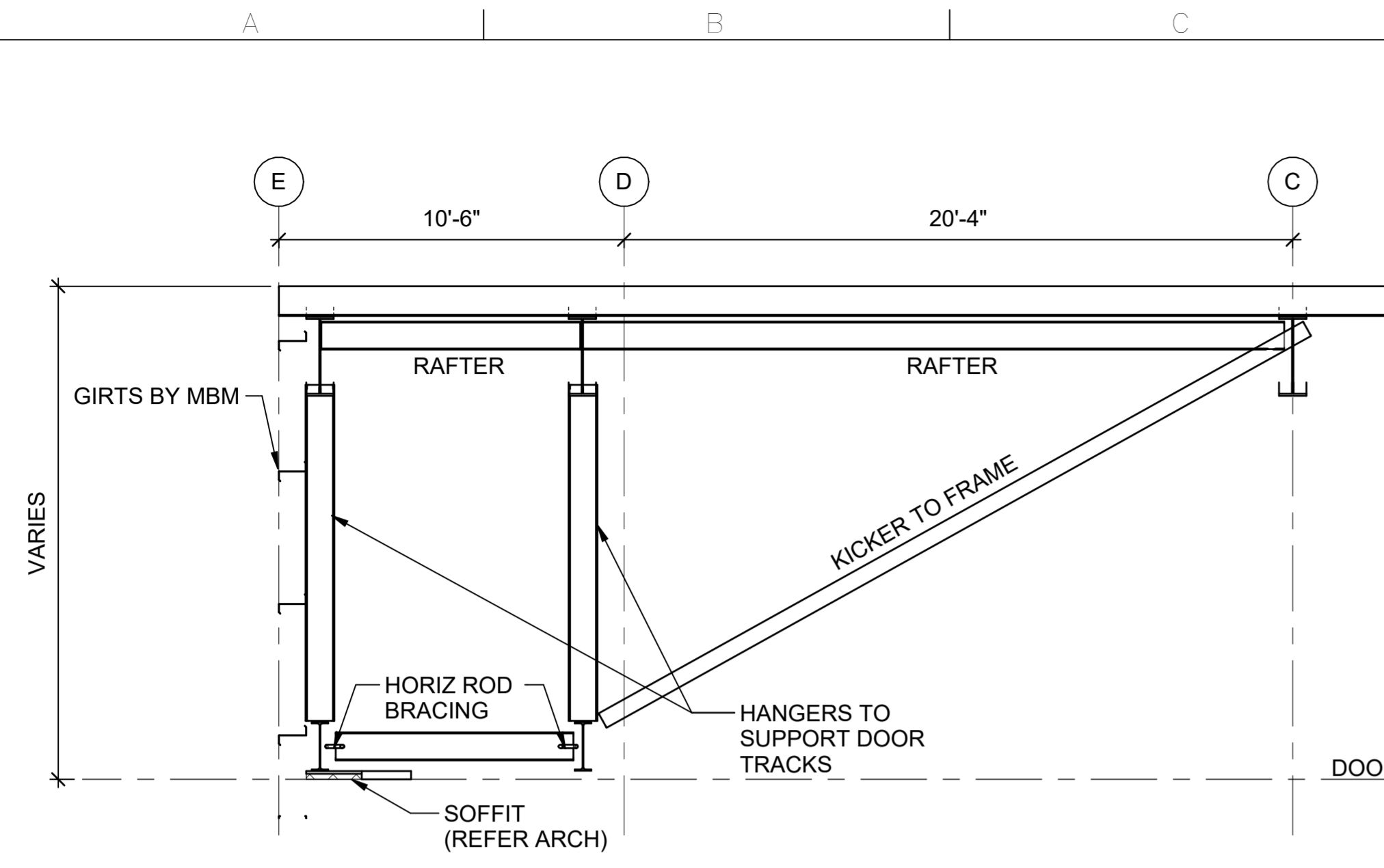
PROJECT INFORMATION:

DESIGNED BY:	<b>CGH</b>
DRAWN BY:	<b>CGH</b>
REVIEWED BY:	<b>BJW</b>
PROJECT MANAGER:	<b>NDM</b>

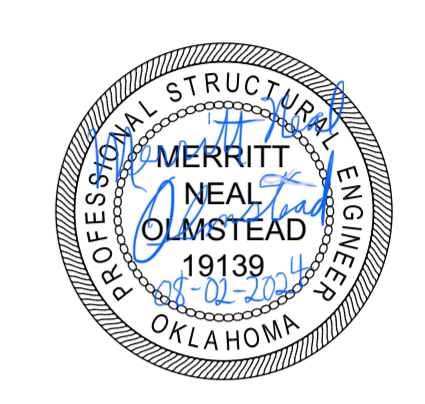
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**20190320**

SHEET TITLE:  
**FRAMING DETAILS**

ISSUE DATE:	<b>2 AUGUST 2024</b>
SHEET NUMBER:	<b>SF501</b>



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**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

REVISION HISTORY:

NO.	DESCRIPTION	DATE

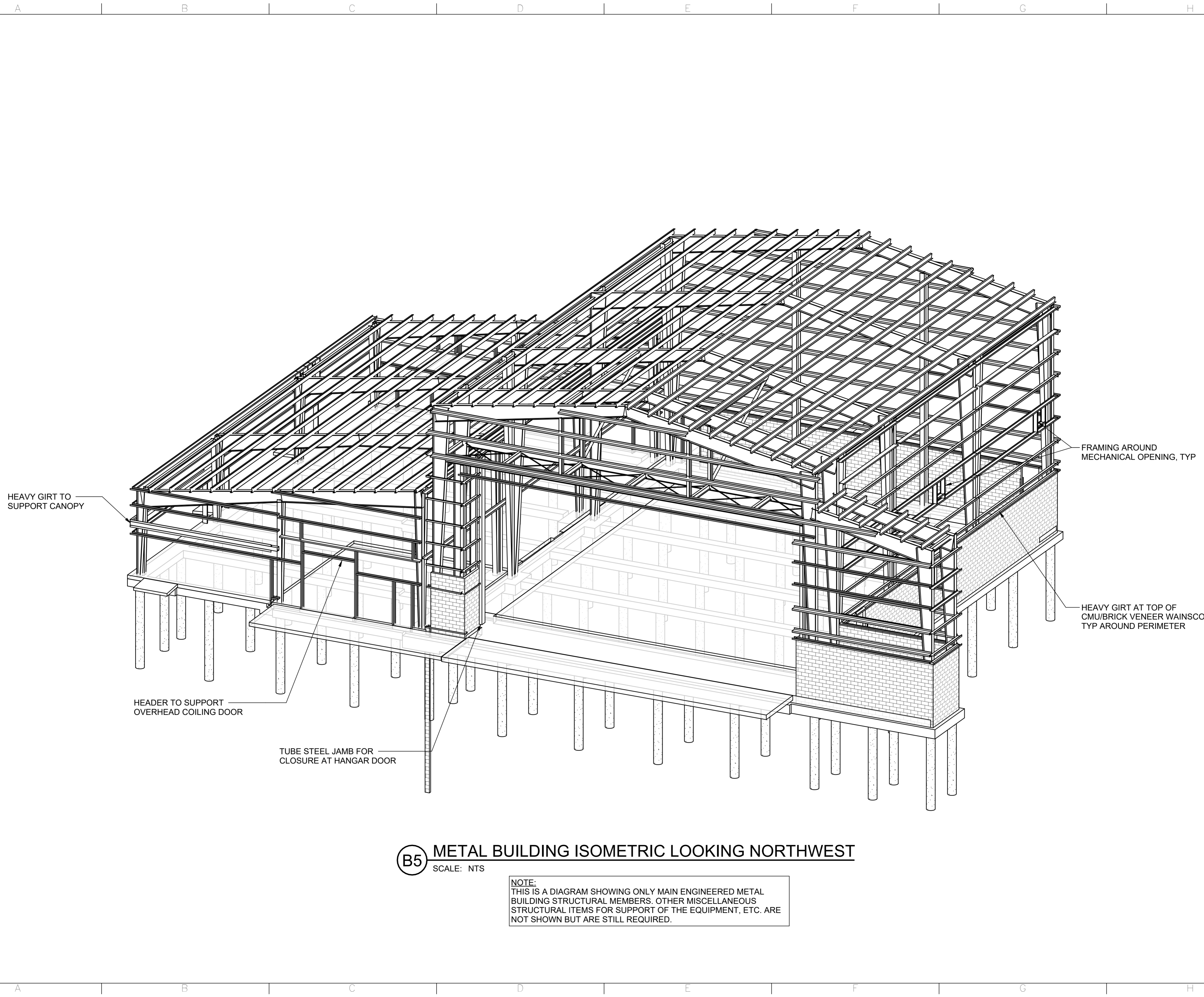
PROJECT INFORMATION:

DESIGNED BY:	<b>CGH</b>
DRAWN BY:	<b>CGH</b>
REVIEWED BY:	<b>BJW</b>
PROJECT MANAGER:	<b>NDM</b>

PROJECT NUMBER:  
 20190320  
 SHEET TITLE:

**ISOMETRIC**  
  
 ISSUE DATE:  
 2 AUGUST 2024  
 SHEET NUMBER:

**SF701**



**B5 METAL BUILDING ISOMETRIC LOOKING NORTHWEST**  
 SCALE: NTS

**NOTE:**  
 THIS IS A DIAGRAM SHOWING ONLY MAIN ENGINEERED METAL BUILDING STRUCTURAL MEMBERS. OTHER MISCELLANEOUS STRUCTURAL ITEMS FOR SUPPORT OF THE EQUIPMENT, ETC. ARE NOT SHOWN BUT ARE STILL REQUIRED.

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A B C D E F G H I

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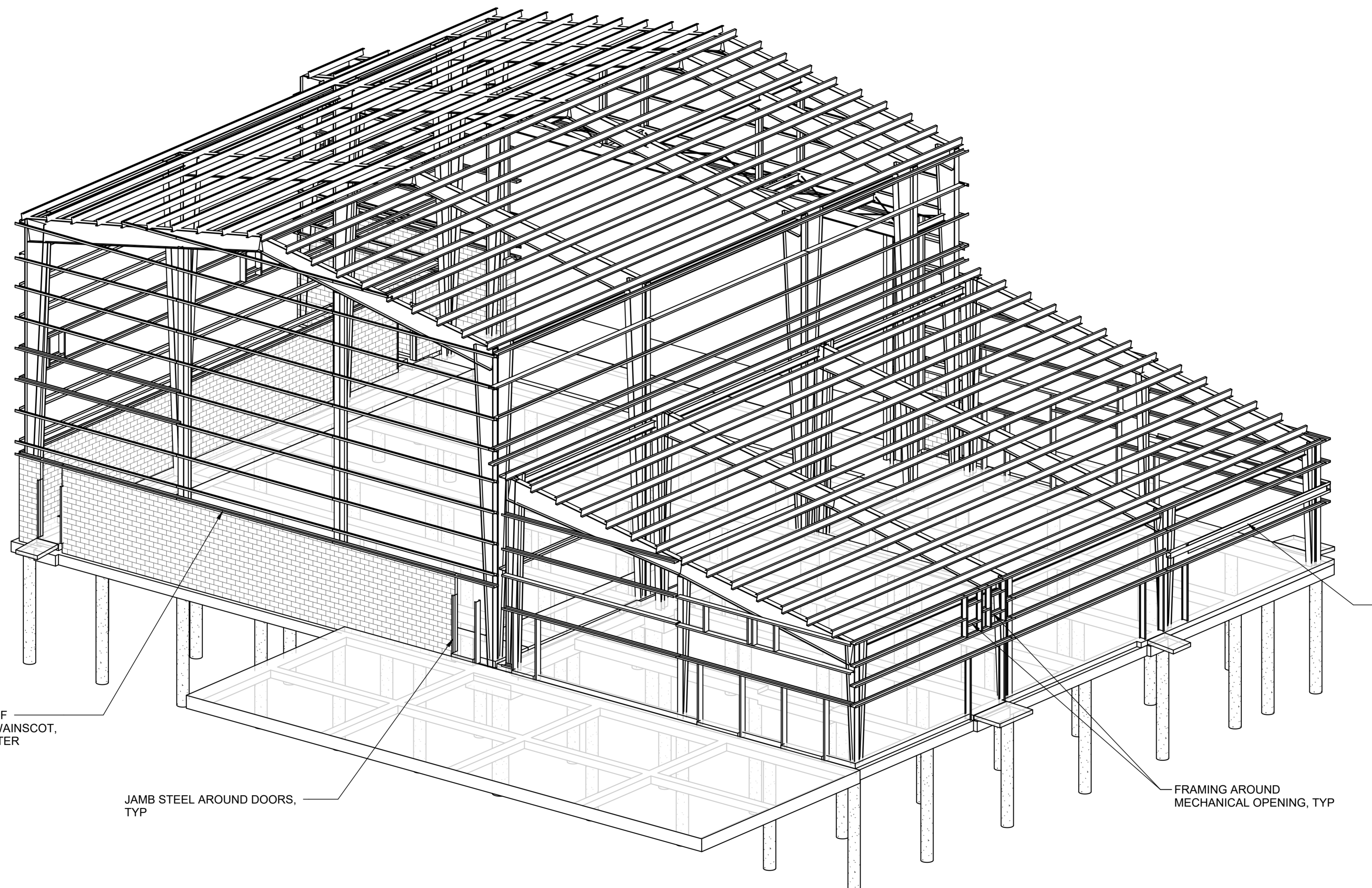
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4


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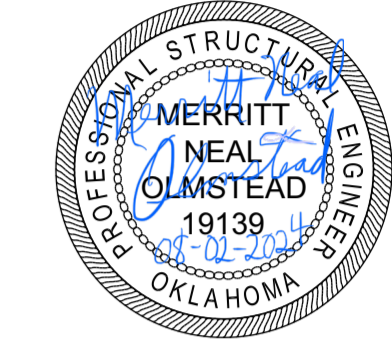
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**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

REVISION HISTORY:	
DESCRIPTION	DATE
PROJECT INFORMATION:	
DESIGNED BY:	CGH
DRAWN BY:	CGH
REVIEWED BY:	BJW
PROJECT MANAGER:	NDM
PROJECT NUMBER:	20190320
SHEET TITLE:	ISOMETRIC
ISSUE DATE:	2 AUGUST 2024
SHEET NUMBER:	SF702

**B5** METAL BUILDING ISOMETRIC LOOKING SOUTHEAST  
SCALE: NTS

**NOTE:**  
THIS IS A DIAGRAM SHOWING ONLY MAIN ENGINEERED METAL BUILDING STRUCTURAL MEMBERS. OTHER MISCELLANEOUS STRUCTURAL ITEMS FOR SUPPORT OF THE EQUIPMENT, ETC. ARE NOT SHOWN BUT ARE STILL REQUIRED.

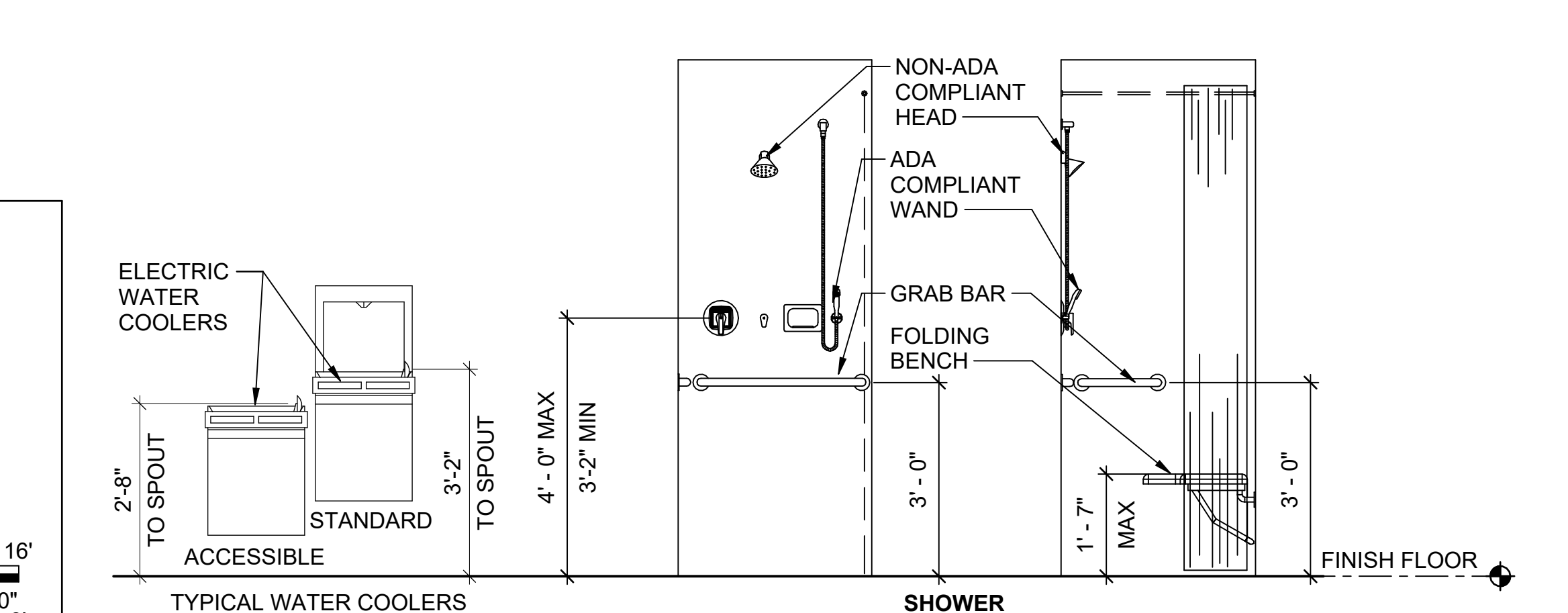
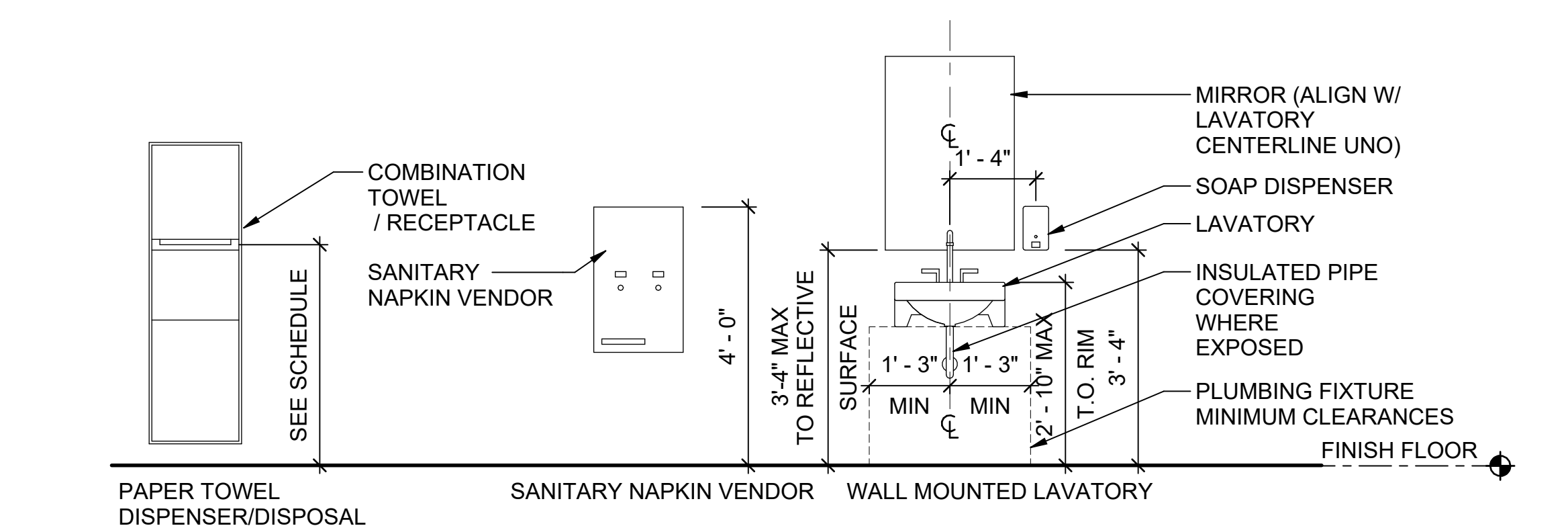
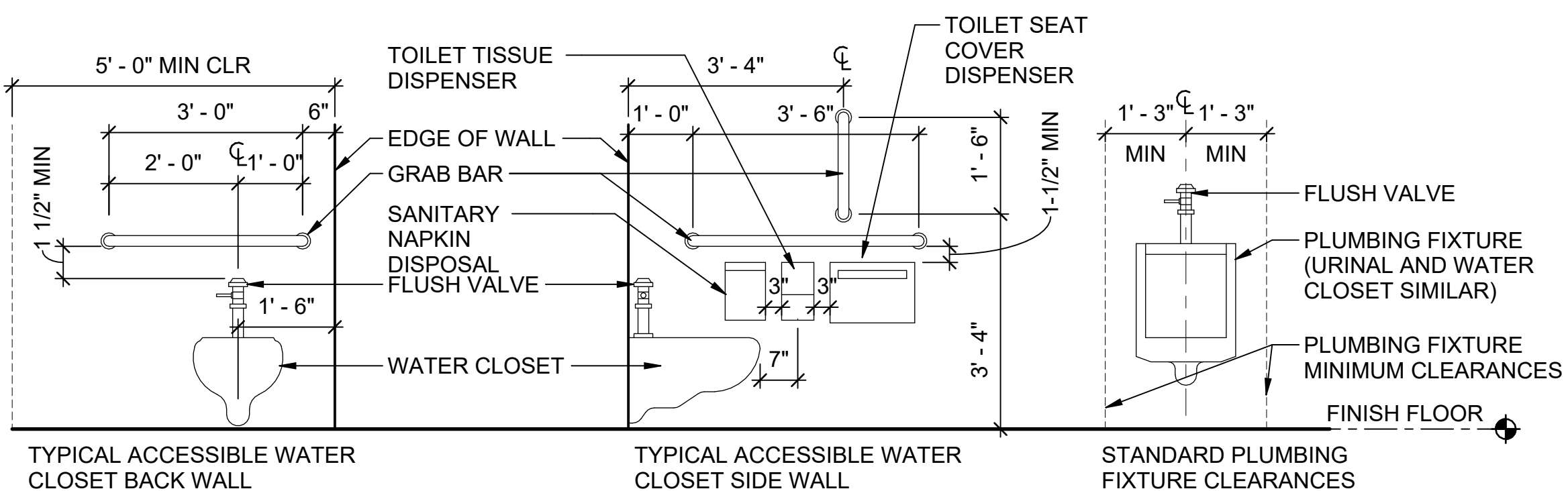
ARCHITECTURAL ABBREVIATIONS

Table listing architectural abbreviations and their meanings, such as ACT (Acoustical Ceiling Tile), ADA (Americans with Disabilities Act), and R (Radius or Riser).

ARCHITECTURAL SYMBOLS LEGEND

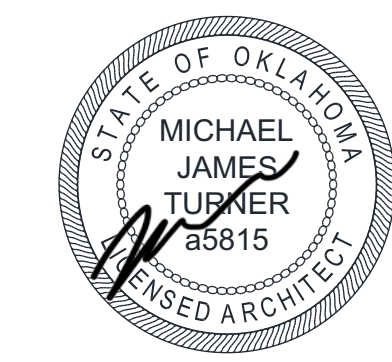
A collection of architectural symbols and their meanings, including drawing types, door symbols, room symbols, section callouts, and structural grids.

TYPICAL ACCESSIBILITY, PLUMBING FIXTURE AND TOILET ACCESSORY CLEARANCES, MOUNTING HEIGHTS AND DIMENSIONS



TOILET ACCESSORY MOUNTING HEIGHT SCHEDULE table listing items like Water Closet, Urinal, Lavatory, Mirror, Paper Towel Dispenser, etc., and their mounting heights.

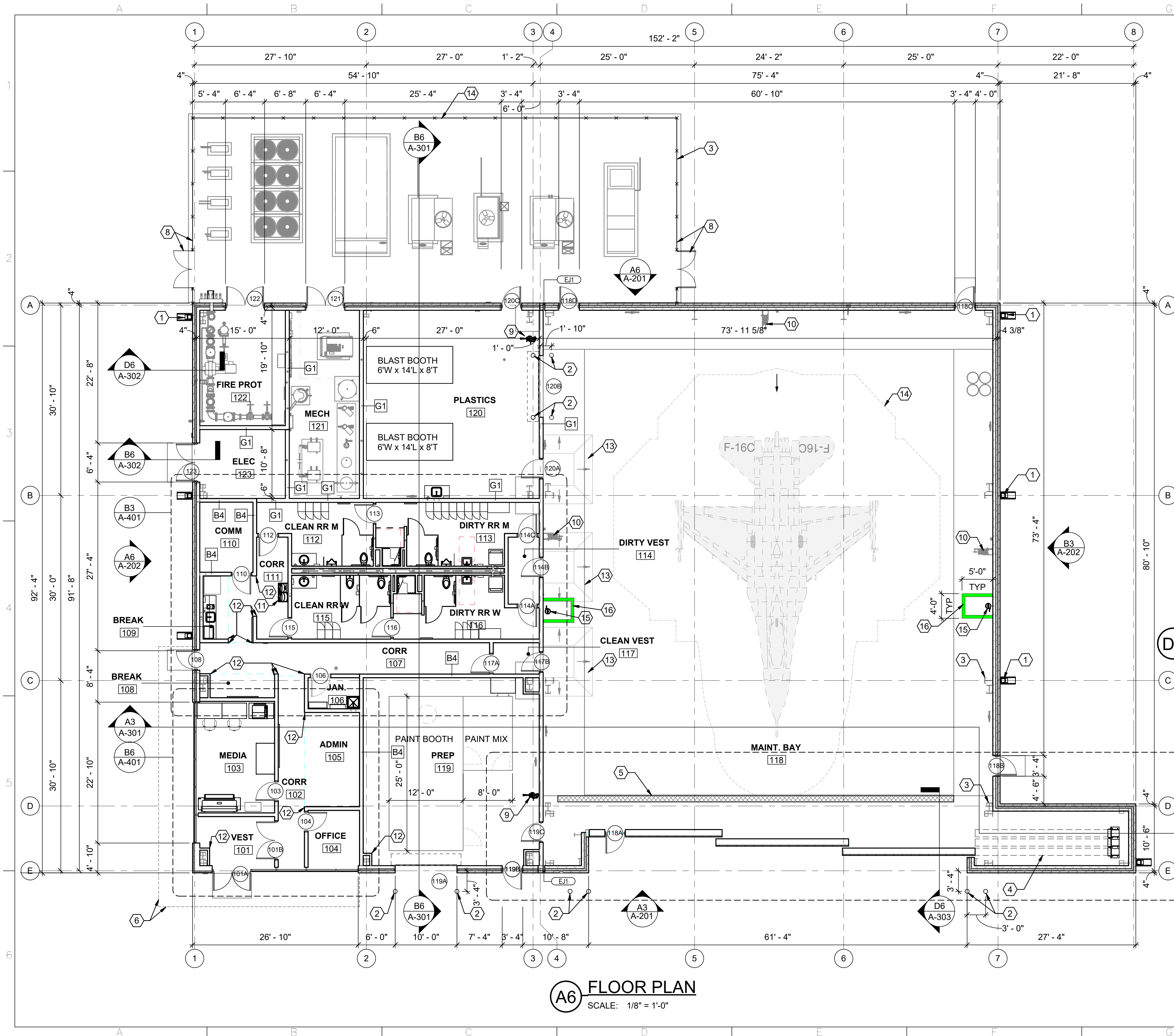
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Texas Air National Guard - 149th FW
Corrosion Control Facility
TXANG Project Number: KELL 169014
JBSA - Kelly Annex, TX

REVISION HISTORY table with columns for Description and Date, and Project Information fields for Design, Draw, Review, and Project Manager.

LEGEND & ABBREVIATIONS
ISSUE DATE: 2 AUGUST 2024
SHEET NUMBER:

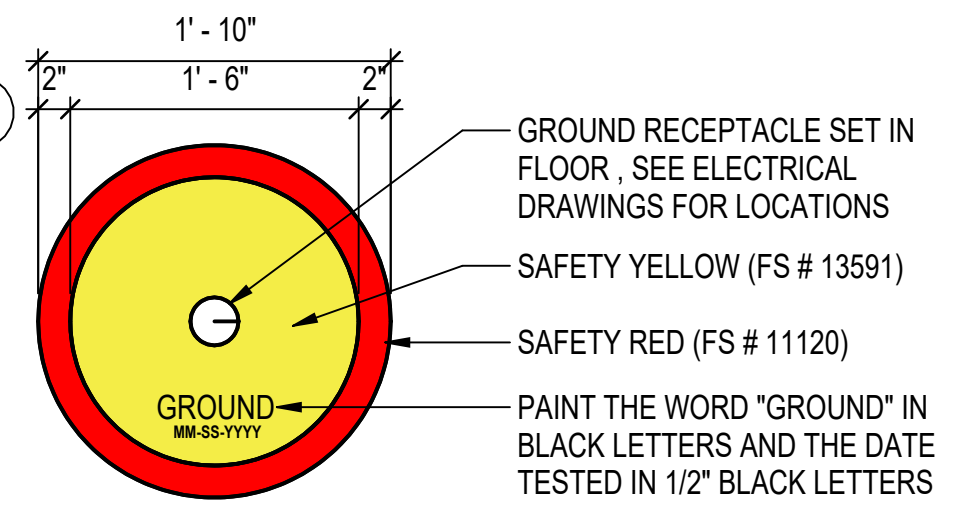


**GENERAL NOTES**

- EXTERIOR DIMENSIONS ARE FROM GRIDLINE OR FACE OF MASONRY.
- INTERIOR DIMENSIONS ARE FROM GRIDLINE, FACE OF CMU OR FACE OF STUD.
- PROVIDE SUPPORT BLOCKING AT ALL WALL MOUNTED EQUIPMENT INCLUDING MILLWORK, MARKER BOARDS, PROJECTION SCREENS AND ALL OTHER ITEMS REQUIRING BLOCKING.
- CENTER TRANSITION STRIPS UNDER DOORS, TYP.
- PROVIDE WINDOW TREATMENTS IN ALL WINDOWS UNO.
- DIMENSIONS AT MASONRY ARE NOMINAL, UNO.
- ALL PARTITIONS SHALL BE TYPE A4 UNLESS NOTED OTHERWISE. REFER TO A-600 FOR PARTITION TYPE.

**SHEET KEYNOTES**

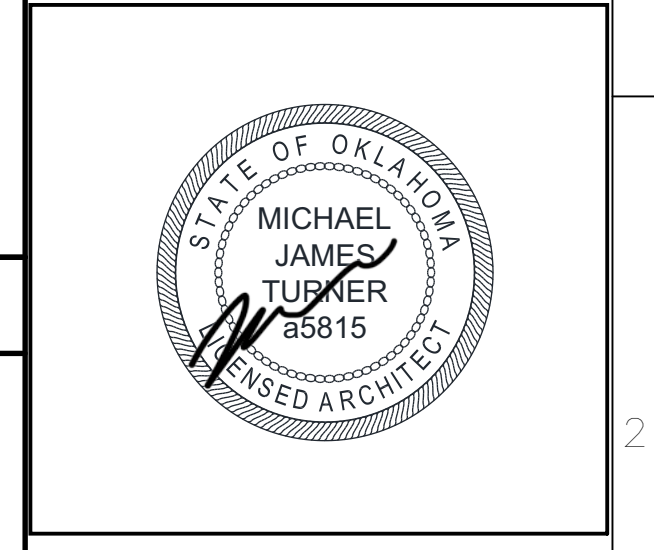
- 8" X 8" PREFINISHED METAL DOWNSPOUT, SPLASH BLOCK RE: C2/A-502.
- CONCRETE FILLED STEEL BOLLARD.
- CONCRETE SLAB.
- HANGAR DOOR POCKET.
- TRENCH DRAIN.
- LINE OF PRE-MANUFACTURED SUN SHADE CANOPY ABOVE.
- 4" WIDE PAINTED YELLOW FLOOR STRIPE.
- MECHANICAL SCREEN-CHAIN LINK FENCE AND GATE.
- EMERGENCY SHOWER/EYE WASH STATION.
- HOSE REEL.
- WATER FOUNTAIN WITH BOTTLE FILLER.
- CORNER GUARD, (CG1).
- CONCRETE FLARE OUT.
- CLEARANCE LINE.
- EMERGENCY EYE WASH STATION.
- CONTINUOUS 6" WIDE GREEN PAINTED EMERGENCY EYEWASH / SHOWER CLEAR ZONE PERIMETER LINE.



**STRIPING DETAIL - GROUNDING RECEPTACLE**  
SCALE: 1" = 1'-0"

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**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: **JCL**

DRAWN BY: **JCL**

REVIEWED BY: **BKG**

PROJECT MANAGER: **NDM**

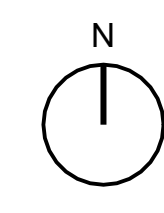
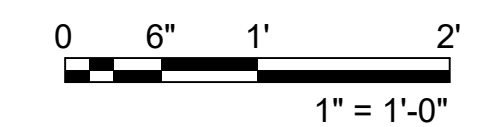
PROJECT NUMBER: **20190320**

SHEET TITLE: **FLOOR PLAN**

ISSUE DATE: **2 AUGUST 2024**

SHEET NUMBER: **A-101**

**A6 FLOOR PLAN**  
SCALE: 1/8" = 1'-0"



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**GENERAL NOTES**  
 A. ALL CEILINGS TO BE 9'-0" AFF UNO.  
 B. ALL ACP TO BE 2 x 2 UNO.

**TYPICAL CEILING LEGEND**

- 2' x 2' CEILING GRID
- GYP BD CEILING
- 2' x 4' LED FIXTURE
- SURFACE MOUNTED CARBON MONOXIDE DETECTOR
- FIRE ALARM - SPEAKER/STROBE
- FIRE ALARM - SPEAKER ONLY
- FIRE ALARM - TEXTUAL
- SUSPENDED HIGH BAY LIGHTING - EMERGENCY
- SUSPENDED HIGH BAY LIGHTING
- PHOTOELECTRIC DUCT DETECTOR
- WALL MOUNTED PHOTOELECTRIC SMOKE DETECTOR
- RECESSED DOWNLIGHT
- RECESSED DOWNLIGHT - EMERGENCY
- EXIT SIGNS
- SUPPLY AIR DIFFUSERS
- RETURN AIR GRILLES

**SHEET KEYNOTES**

1. PAINTED EXPOSED STRUCTURE.
2. CABLE TRAY.
3. PRE-MANUFACTURED SUN SHADE CANOPY.
4. 8" x 8" PREFIN 8X8 METAL GUTTER AND DOWNSPOUT.
5. INSULATED METAL WALL PANEL SOFFIT.
6. CEILING IN BREAK ROOM 109 IS GRID ONLY, NO ACOUSTICAL CEILING PANELS ARE INCLUDED.

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STATE OF OKLAHOMA  
 MICHAEL JAMES TURNER  
 5815  
 LICENSED ARCHITECT

**Texas Air National Guard - 149th FW  
 Corrosion Control Facility  
 TXANG Project Number: KELL 169014  
 JBSA - Kelly Annex, TX**

REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: **JCL**

DRAWN BY: **JCL**

REVIEWED BY: **BKG**

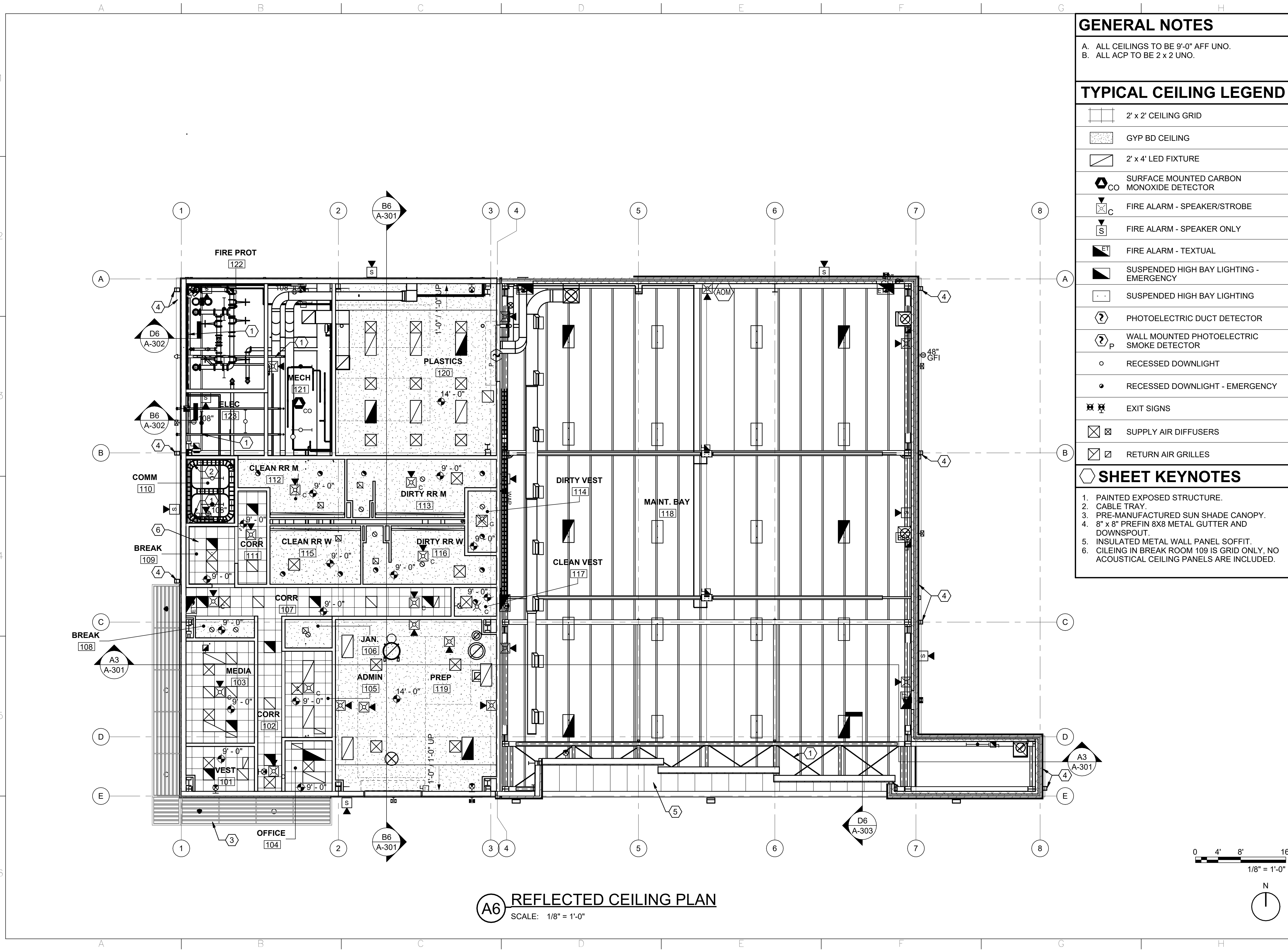
PROJECT MANAGER: **NDM**

PROJECT NUMBER: **20190320**

SHEET TITLE: **REFLECTED CEILING PLAN**

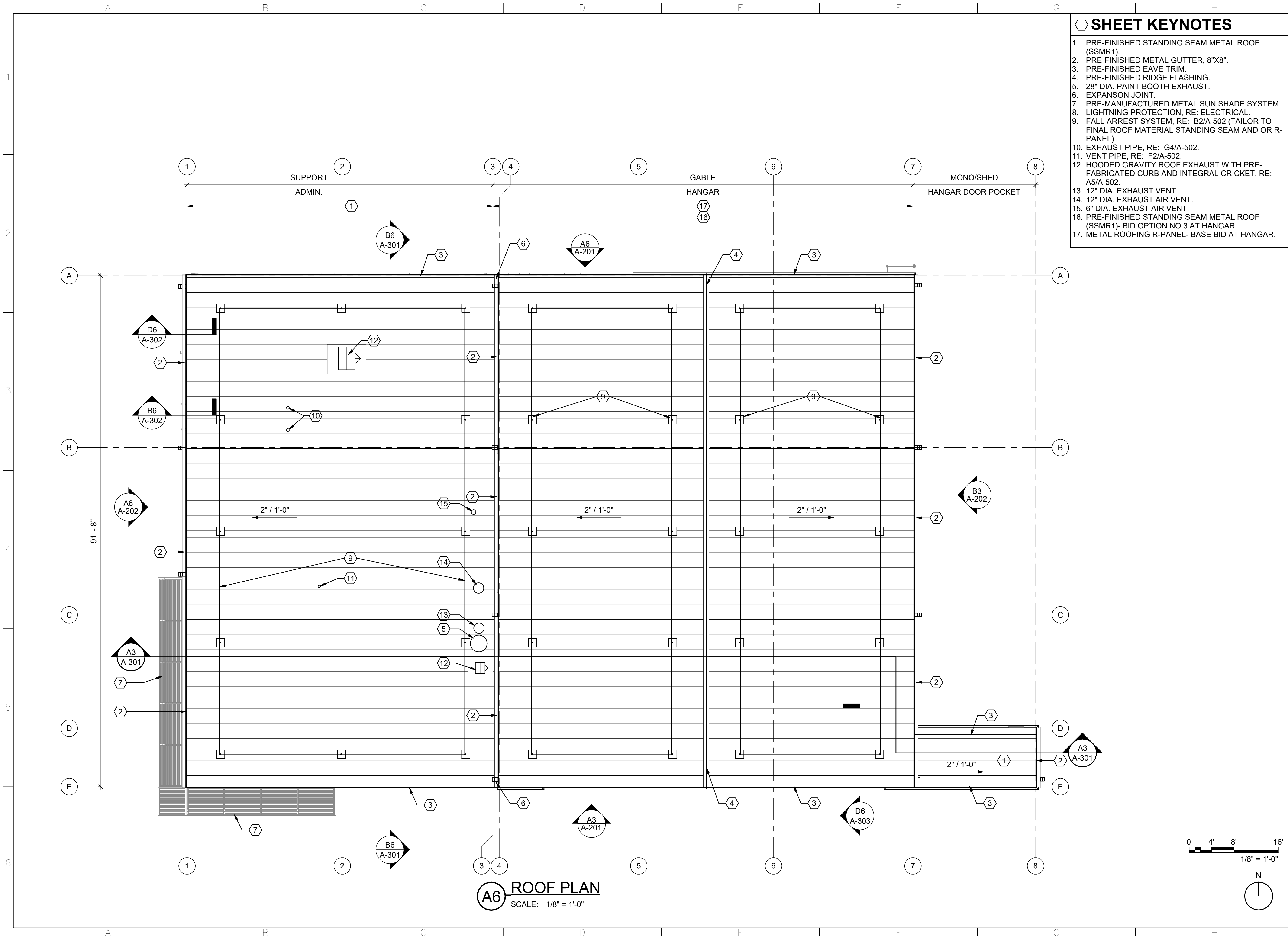
ISSUE DATE: **2 AUGUST 2024**

SHEET NUMBER: **A-102**



**A6 REFLECTED CEILING PLAN**  
 SCALE: 1/8" = 1'-0"

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- ### SHEET KEYNOTES
- PRE-FINISHED STANDING SEAM METAL ROOF (SSMR1).
  - PRE-FINISHED METAL GUTTER, 8"x8".
  - PRE-FINISHED EAVE TRIM.
  - PRE-FINISHED RIDGE FLASHING.
  - 28" DIA. PAINT BOOTH EXHAUST.
  - EXPANSION JOINT.
  - PRE-MANUFACTURED METAL SUN SHADE SYSTEM.
  - LIGHTNING PROTECTION, RE: ELECTRICAL.
  - FALL ARREST SYSTEM, RE: B2/A-502 (TAILOR TO FINAL ROOF MATERIAL STANDING SEAM AND OR R-PANEL)
  - EXHAUST PIPE, RE: G4/A-502.
  - VENT PIPE, RE: F2/A-502.
  - HOODED GRAVITY ROOF EXHAUST WITH PRE-FABRICATED CURB AND INTEGRAL CRICKET, RE: A5/A-502.
  - 12" DIA. EXHAUST VENT.
  - 12" DIA. EXHAUST AIR VENT.
  - 6" DIA. EXHAUST AIR VENT.
  - PRE-FINISHED STANDING SEAM METAL ROOF (SSMR1)- BID OPTION NO.3 AT HANGAR.
  - METAL ROOFING R-PANEL- BASE BID AT HANGAR.

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STATE OF OKLAHOMA  
MICHAEL JAMES TURNER  
5815  
LICENSED ARCHITECT

**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY:	<b>JCL</b>
DRAWN BY:	<b>JCL</b>
REVIEWED BY:	<b>BKG</b>
PROJECT MANAGER:	<b>NDM</b>

PROJECT NUMBER:  
**20190320**

SHEET TITLE:  
**ROOF PLAN**

ISSUE DATE:  
**2 AUGUST 2024**

SHEET NUMBER:  
**A-103**

**A6 ROOF PLAN**  
SCALE: 1/8" = 1'-0"

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**GENERAL NOTES**

A. EXTERIOR COLORS ARE TO MATCH BASE STANDARDS



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**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY:	<b>JCL</b>
DRAWN BY:	<b>JCL</b>
REVIEWED BY:	<b>BKG</b>
PROJECT MANAGER:	<b>NDM</b>

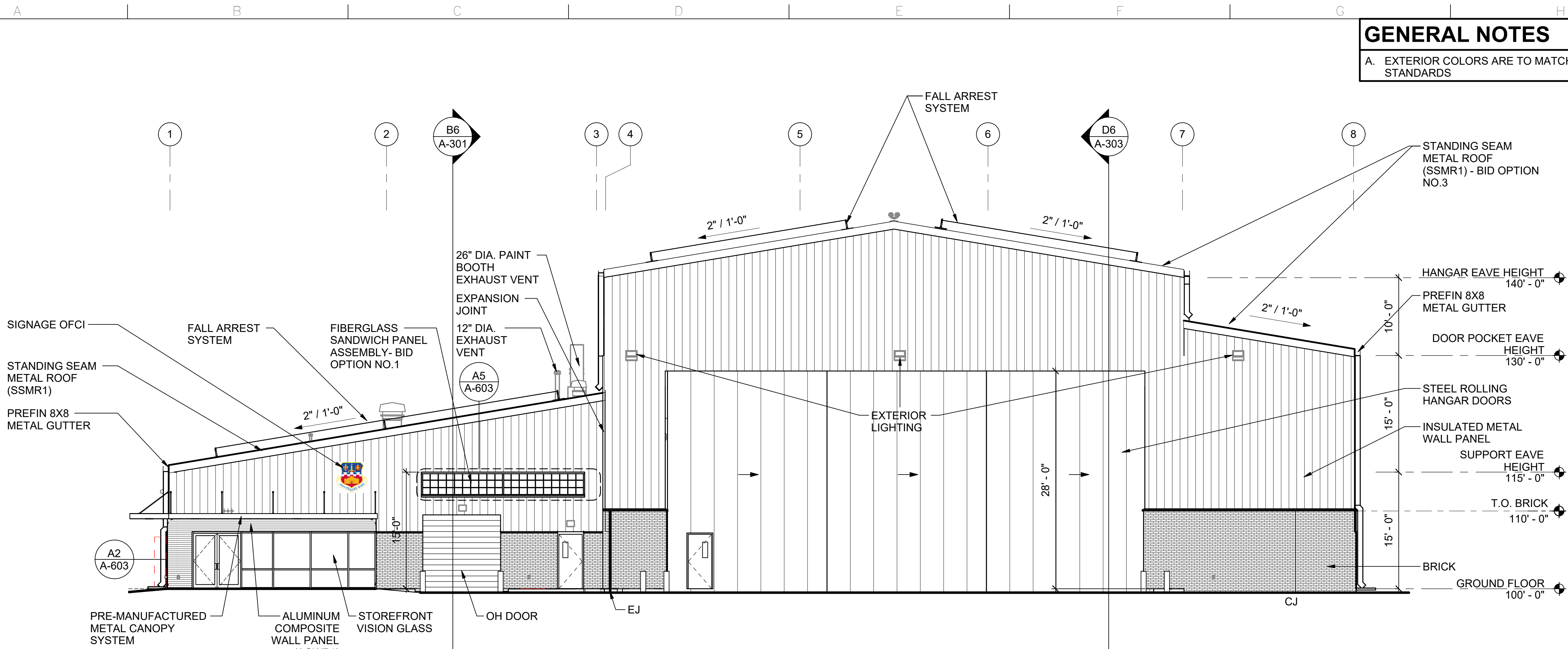
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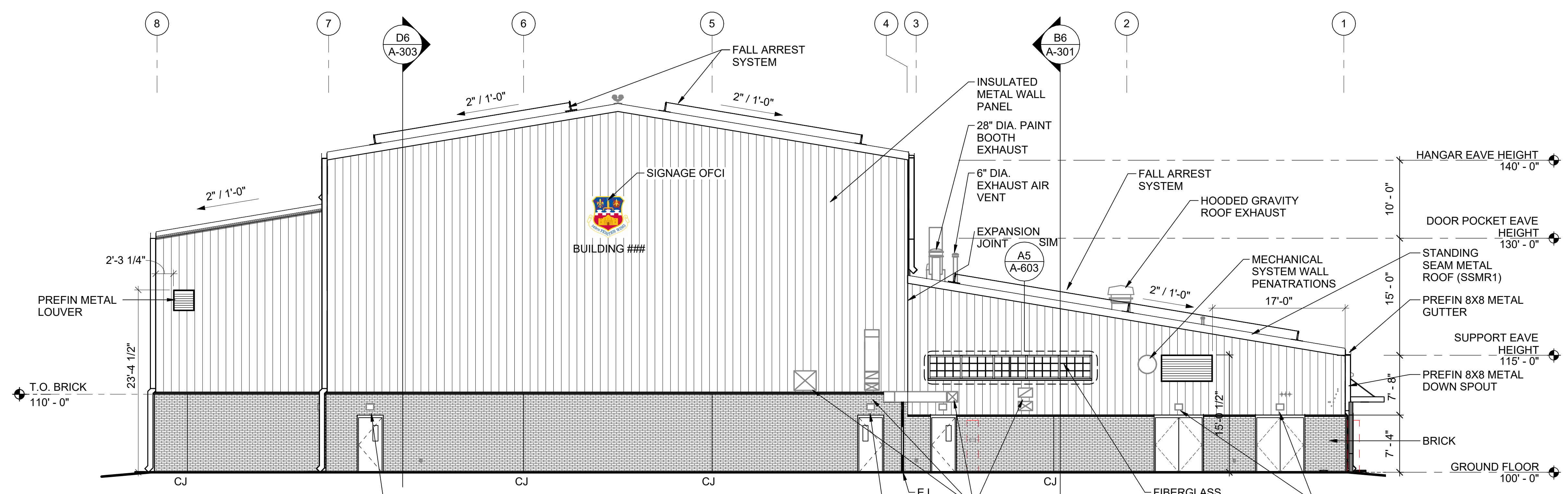
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ISSUE DATE:  
2 AUGUST 2024

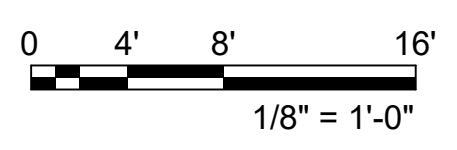
SHEET NUMBER:  
**A-201**



**A3 SOUTH ELEVATION**  
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**A6 NORTH ELEVATION**  
SCALE: 1/8" = 1'-0"



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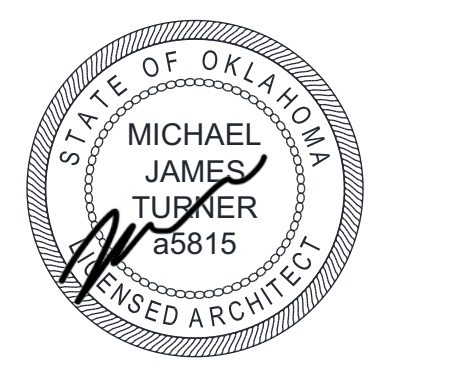
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### GENERAL NOTES

A. EXTERIOR COLORS ARE TO MATCH BASE STANDARDS

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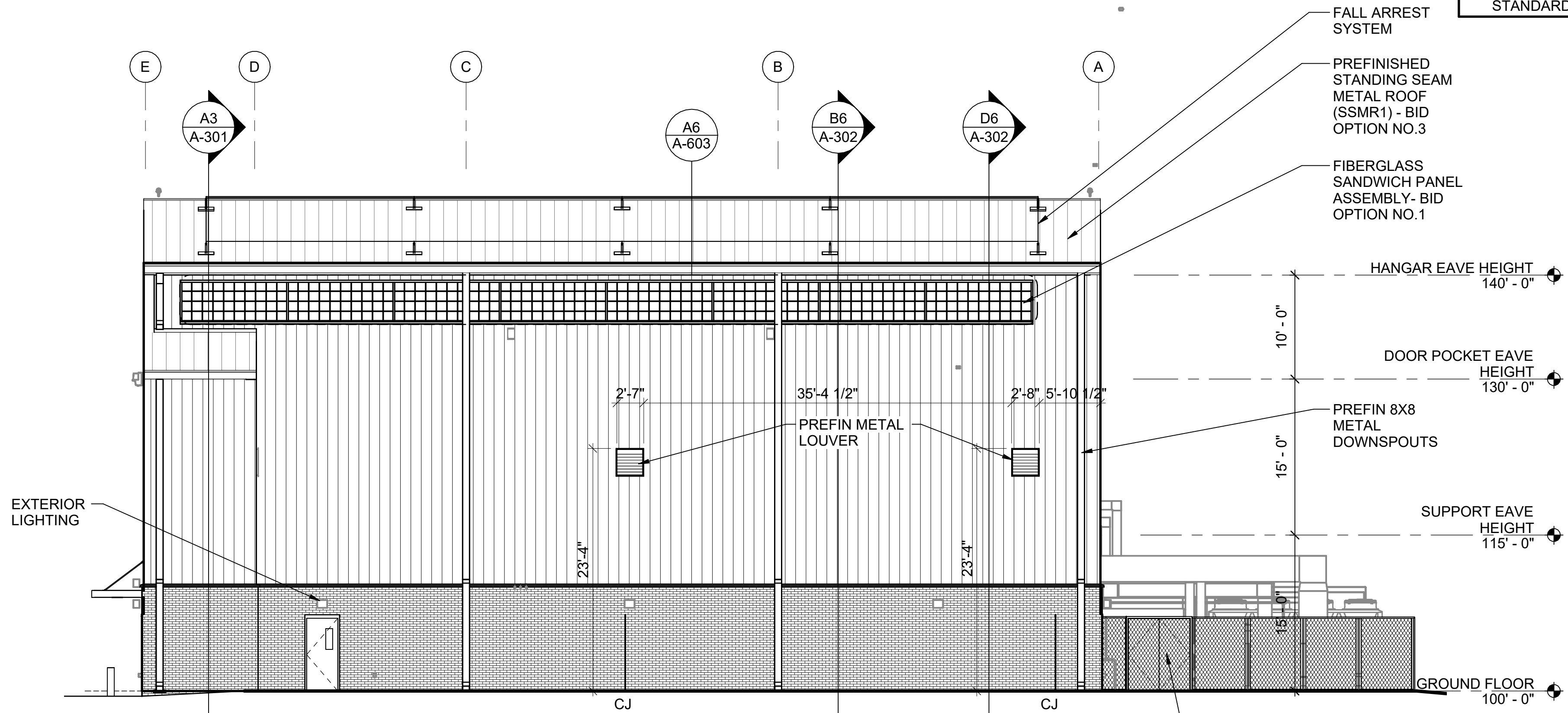
**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

REVISION HISTORY:

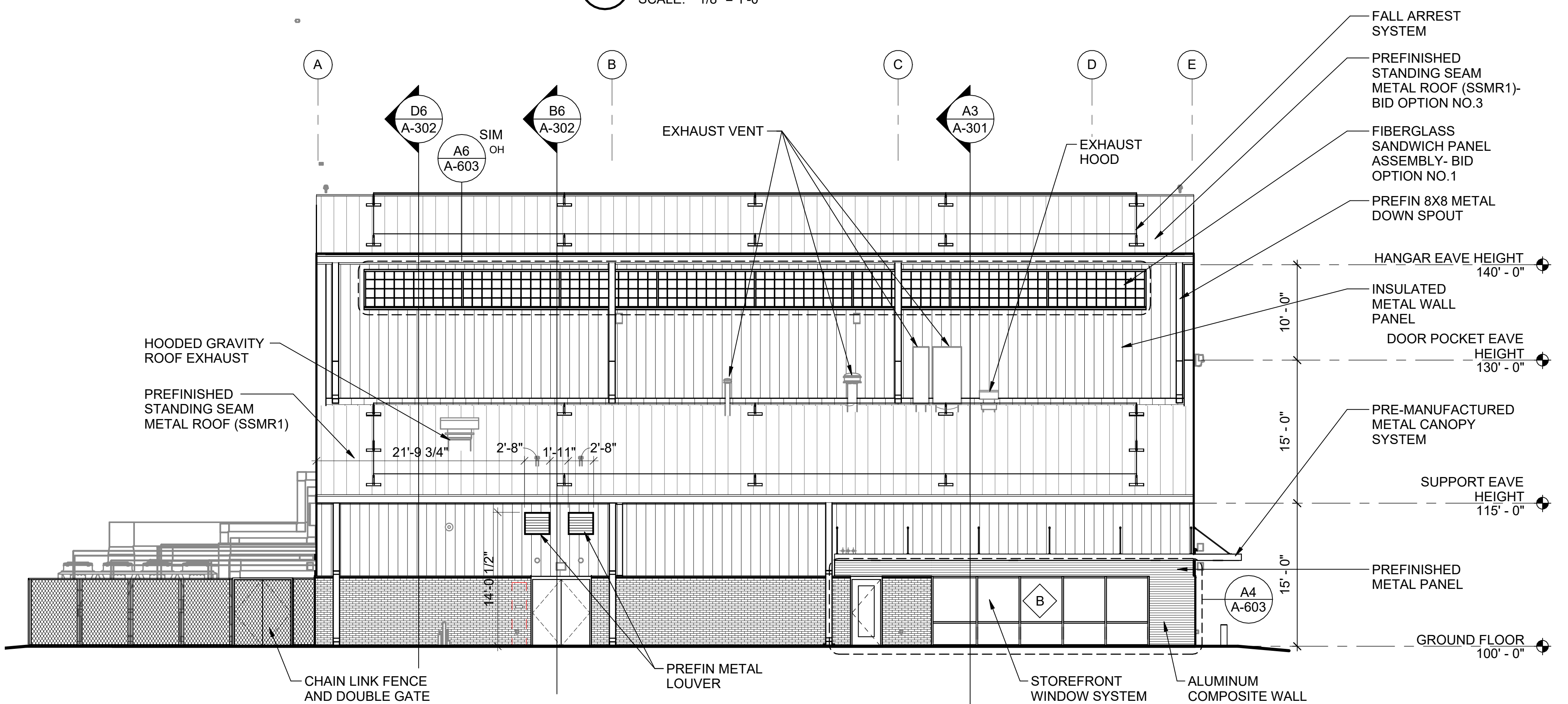
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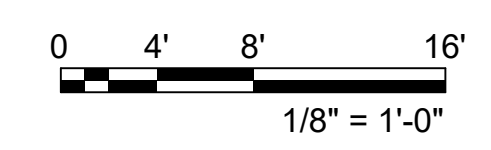
DESIGNED BY:	JCL
DRAWN BY:	JCL
REVIEWED BY:	BKG
PROJECT MANAGER:	NDM
PROJECT NUMBER:	20190320
SHEET TITLE:	BUILDING ELEVATIONS
ISSUE DATE:	2 AUGUST 2024
SHEET NUMBER:	A-202



**B3 EAST ELEVATION**  
SCALE: 1/8" = 1'-0"



**A6 WEST ELEVATION**  
SCALE: 1/8" = 1'-0"



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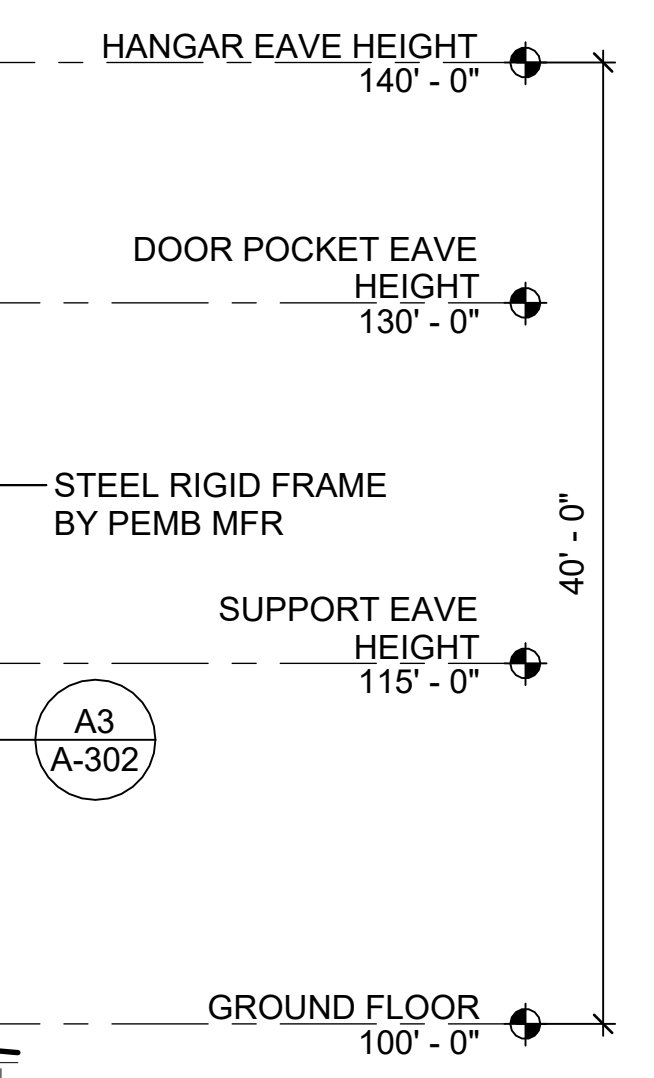
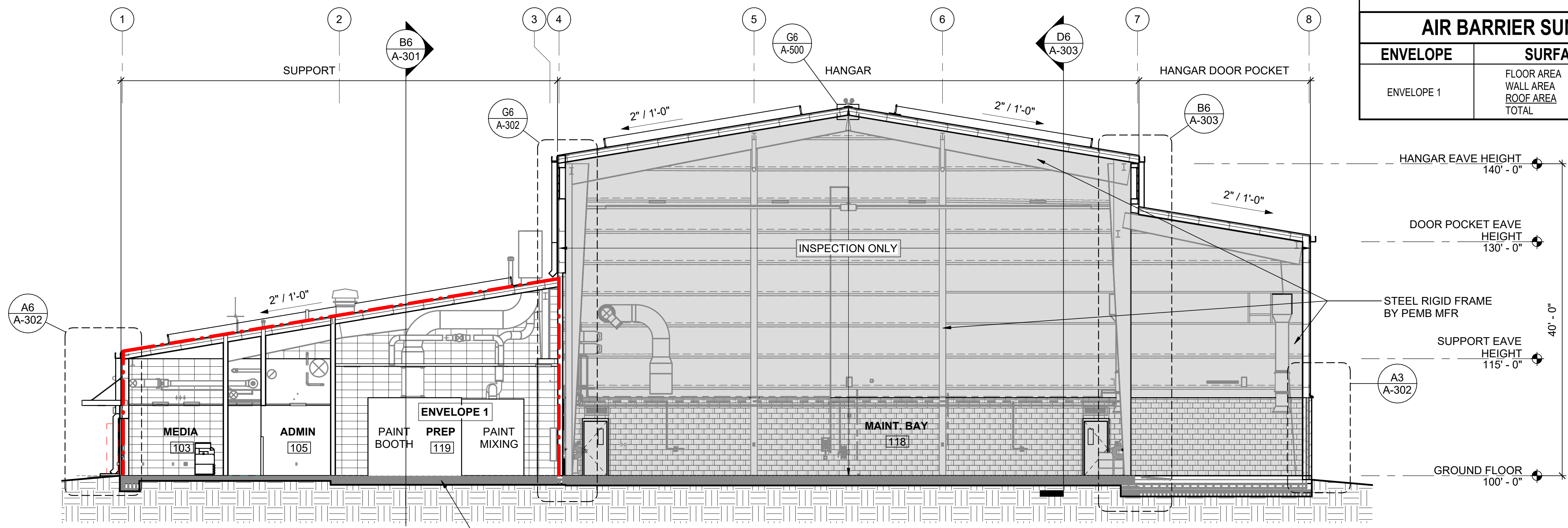
**LEGEND** INDICATES PLANE OF CONTINUOUS AIR BARRIER

**AIR BARRIER SUMMARY**

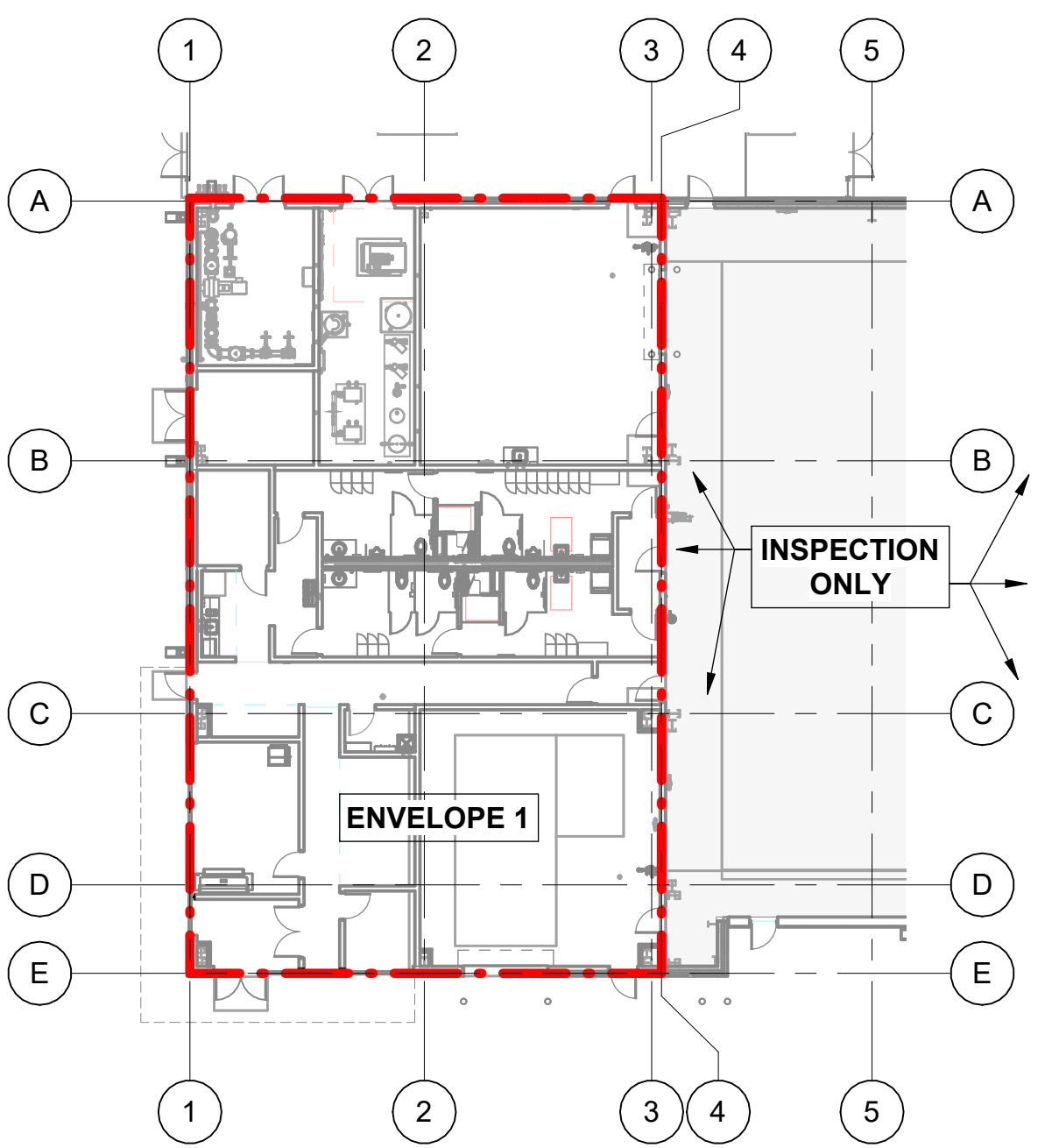
ENVELOPE	SURFACE AREA
ENVELOPE 1	FLOOR AREA = 5,207 SF
	WALL AREA = 5,986 SF
	ROOF AREA = 5,236 SF
	TOTAL = 16,429 SF

FSB FEDERAL DESIGN GROUP JV

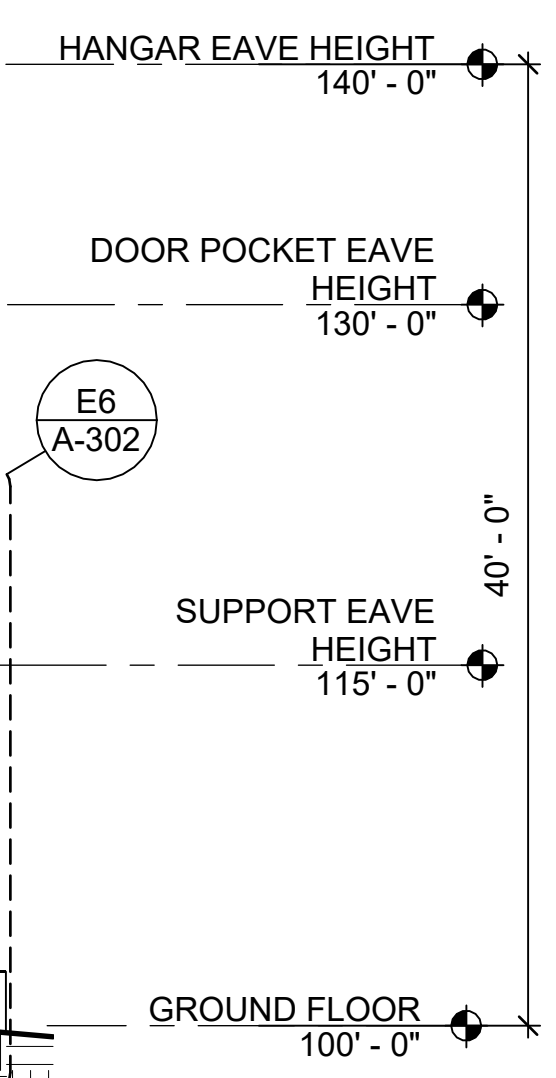
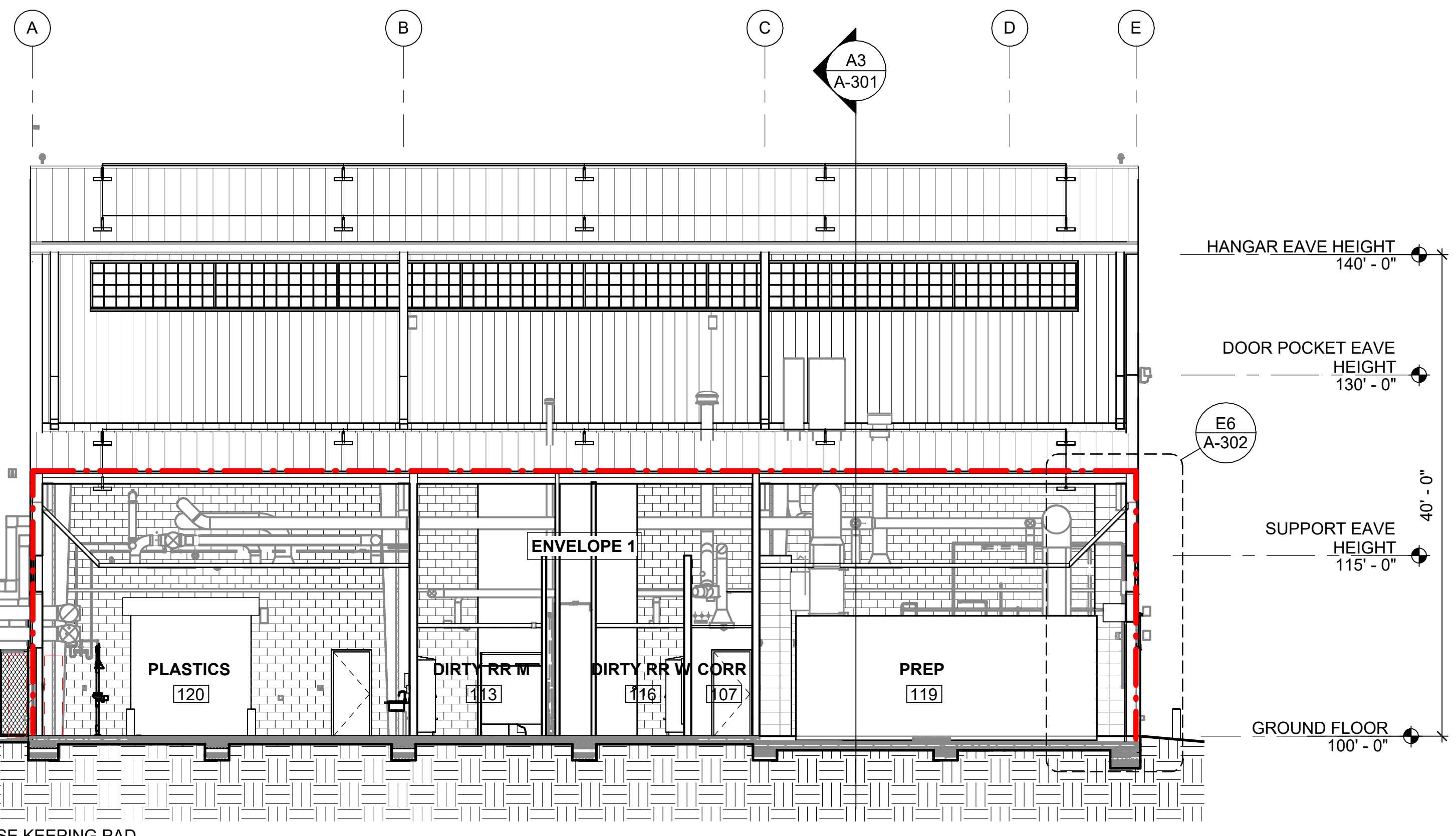
Frankfurt-Short-Bruza Associates, P.C.  
5801 Broadway Extension, Suite 500  
Oklahoma City, OK 73118-7436  
405.840.2931 | fsb-ae.com



**A3 BUILDING SECTION**  
SCALE: 1/8" = 1'-0"

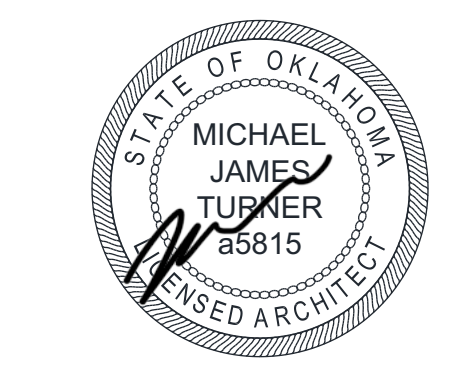


**A5 FLOOR PLAN- AIR BARRIER**  
SCALE: 1" = 20'-0"



**B6 BUILDING SECTION**  
SCALE: 1/8" = 1'-0"

- GENERAL SHEET NOTES**
- THE CONTRACTOR SHALL REFER TO SPECIFICATIONS SECTION 07 05 23 AND 07 27 10.10 FOR ALL AIR BARRIER SYSTEM AND TESTING REQUIREMENTS.
  - THE CONTRACTOR SHALL REFERENCE WALL SECTIONS AND DETAILS THAT GRAPHICALLY INDICATE THE VISUAL PLANE OF THE INTENDED CONTINUOUS AIR BARRIERS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THAT ALL INTENDED CONTINUOUS AIR BARRIERS ARE IN PLACE PRIOR TO TESTING.
  - THE CONTRACTOR SHALL JOIN AND SEAL THE AIR BARRIER MATERIAL OF EACH MATERIAL OF ADJACENT ASSEMBLIES ALLOWING FOR THE RELATIVE MOVEMENT OF THESE ASSEMBLIES AND COMPONENTS.
  - THE CONTRACTOR SHALL MAKE ALL PENETRATIONS AIRTIGHT AT AIR-BARRIER LOCATIONS INCLUDING OPENINGS AT OR AROUND ELECTRICAL BOXES, CONDUIT, PLUMBING, AND OTHER ASSEMBLIES. CONTRACTOR SHALL FILL ALL GAPS AT DISSIMILAR MATERIALS WITH SPRAY-FOAM INSULATION WHERE NOT SPECIFICALLY DETAILED.



**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: **JCL**

DRAWN BY: **JCL**

REVIEWED BY: **BKG**

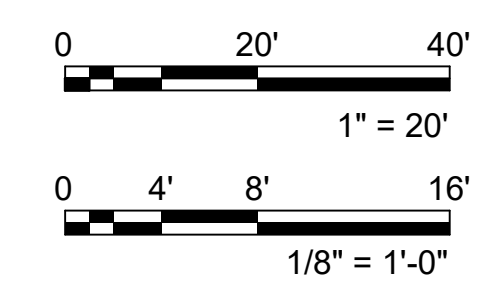
PROJECT MANAGER: **NDM**

PROJECT NUMBER: **20190320**

SHEET TITLE: **BUILDING SECTIONS AND AIR BARRIER**

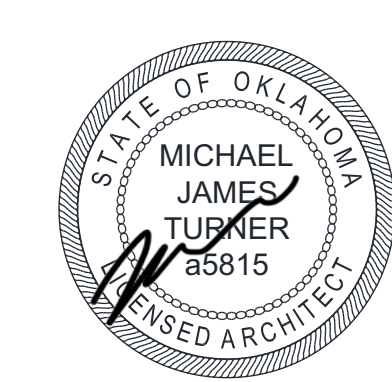
ISSUE DATE: **2 AUGUST 2024**

SHEET NUMBER: **A-301**



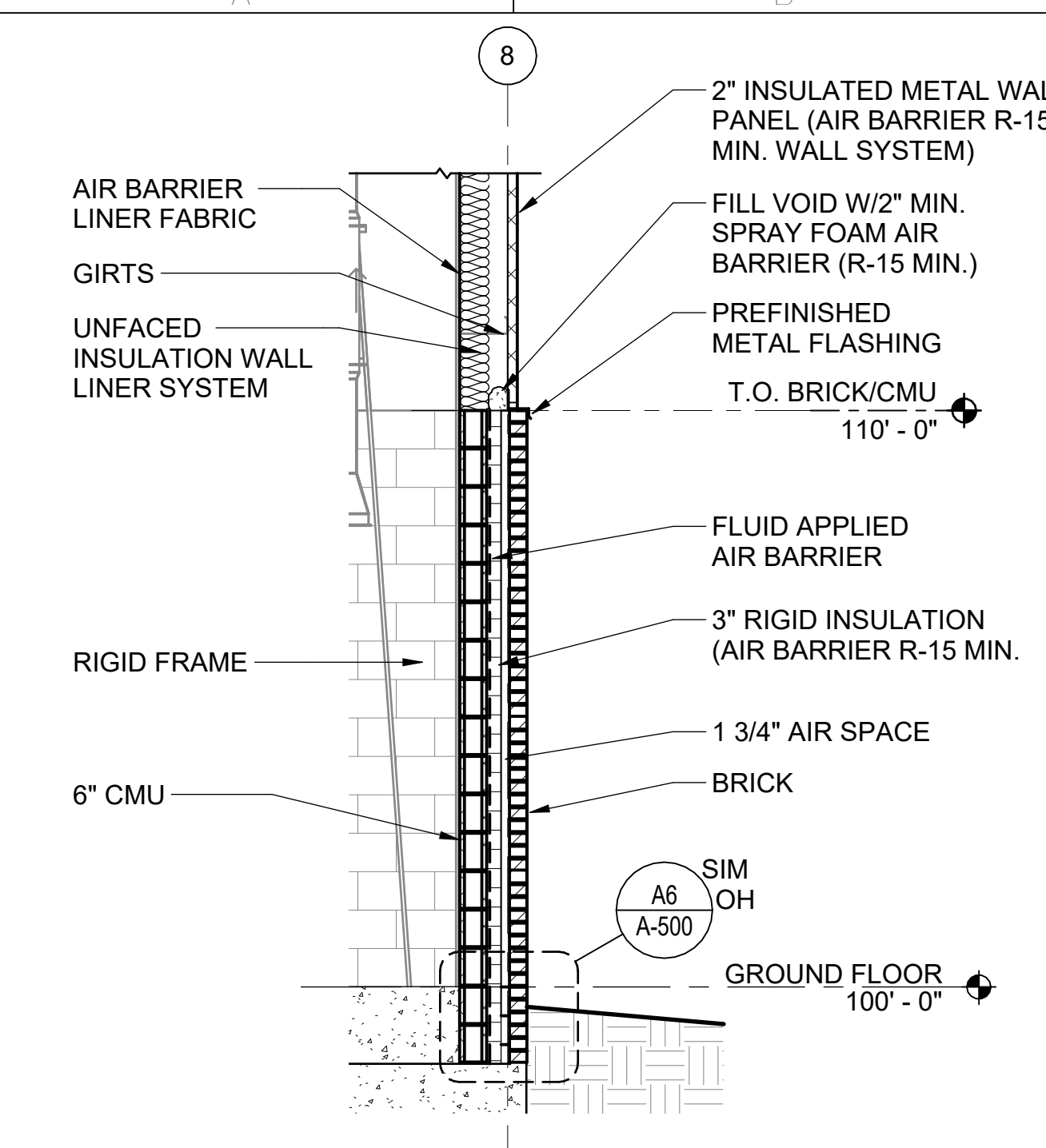
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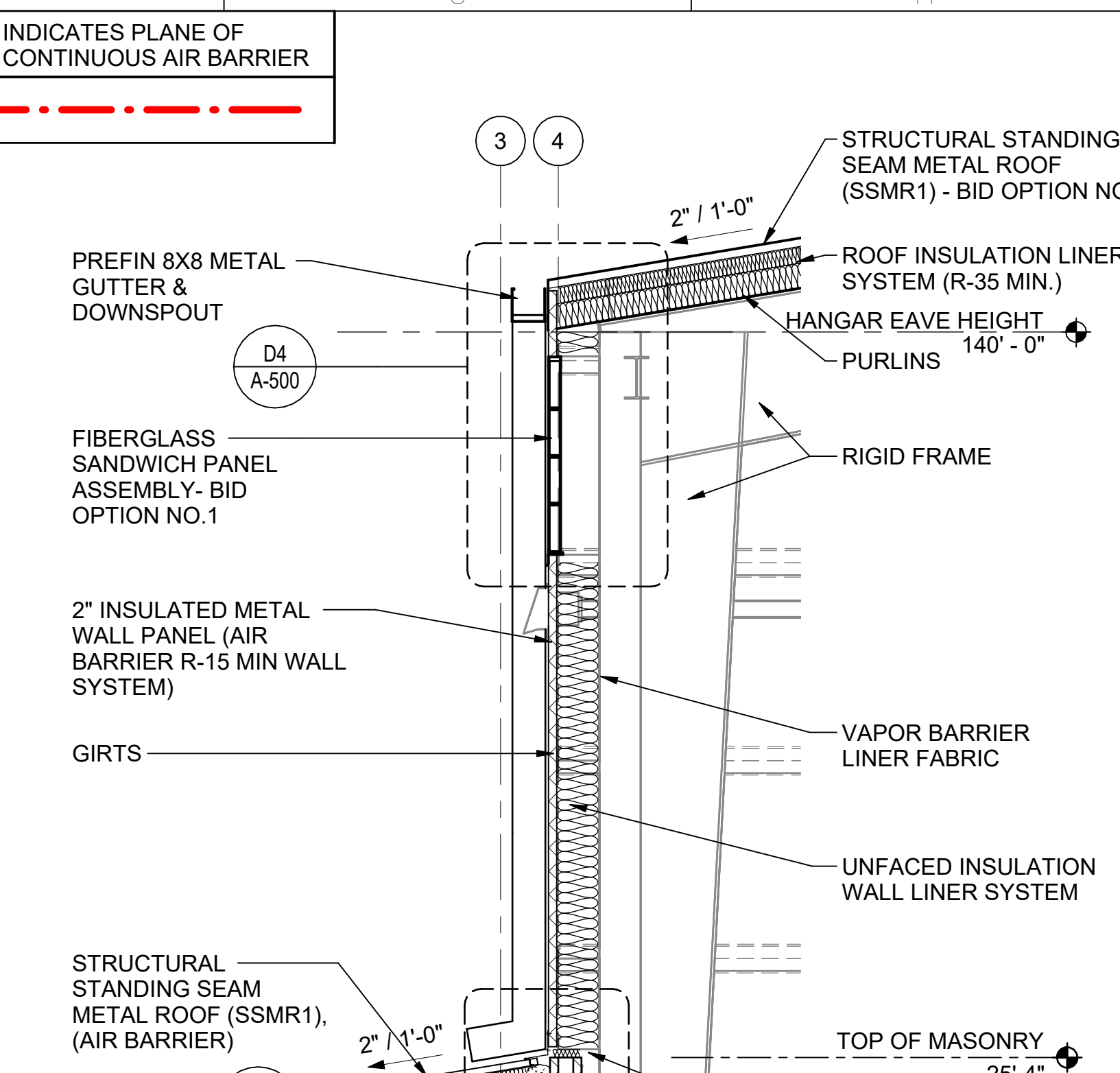


**Texas Air National Guard - 149th FW  
 Corrosion Control Facility  
 TXANG Project Number: KELL 169014  
 JBSA - Kelly Annex, TX**

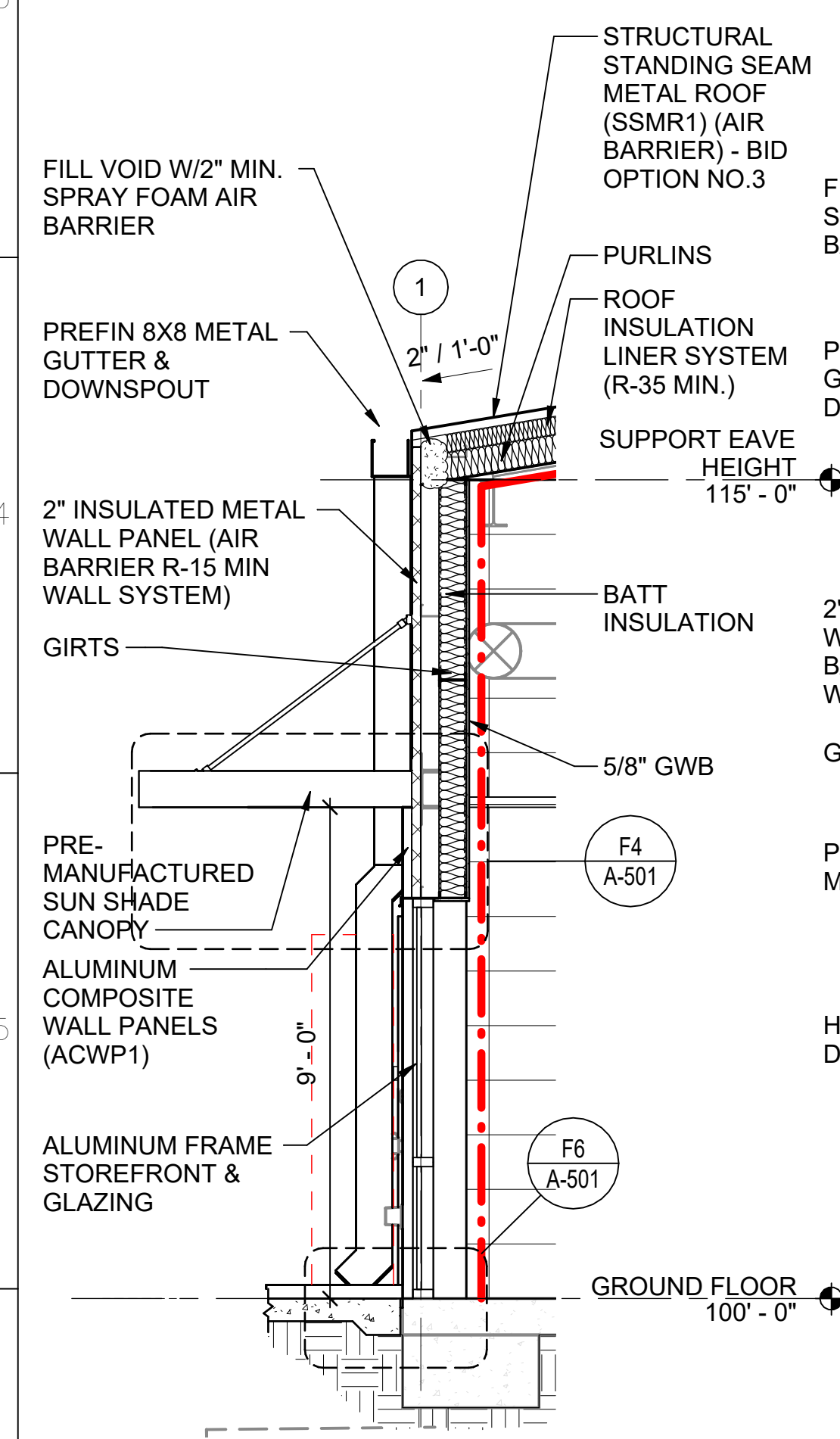
**LEGEND** INDICATES PLANE OF CONTINUOUS AIR BARRIER



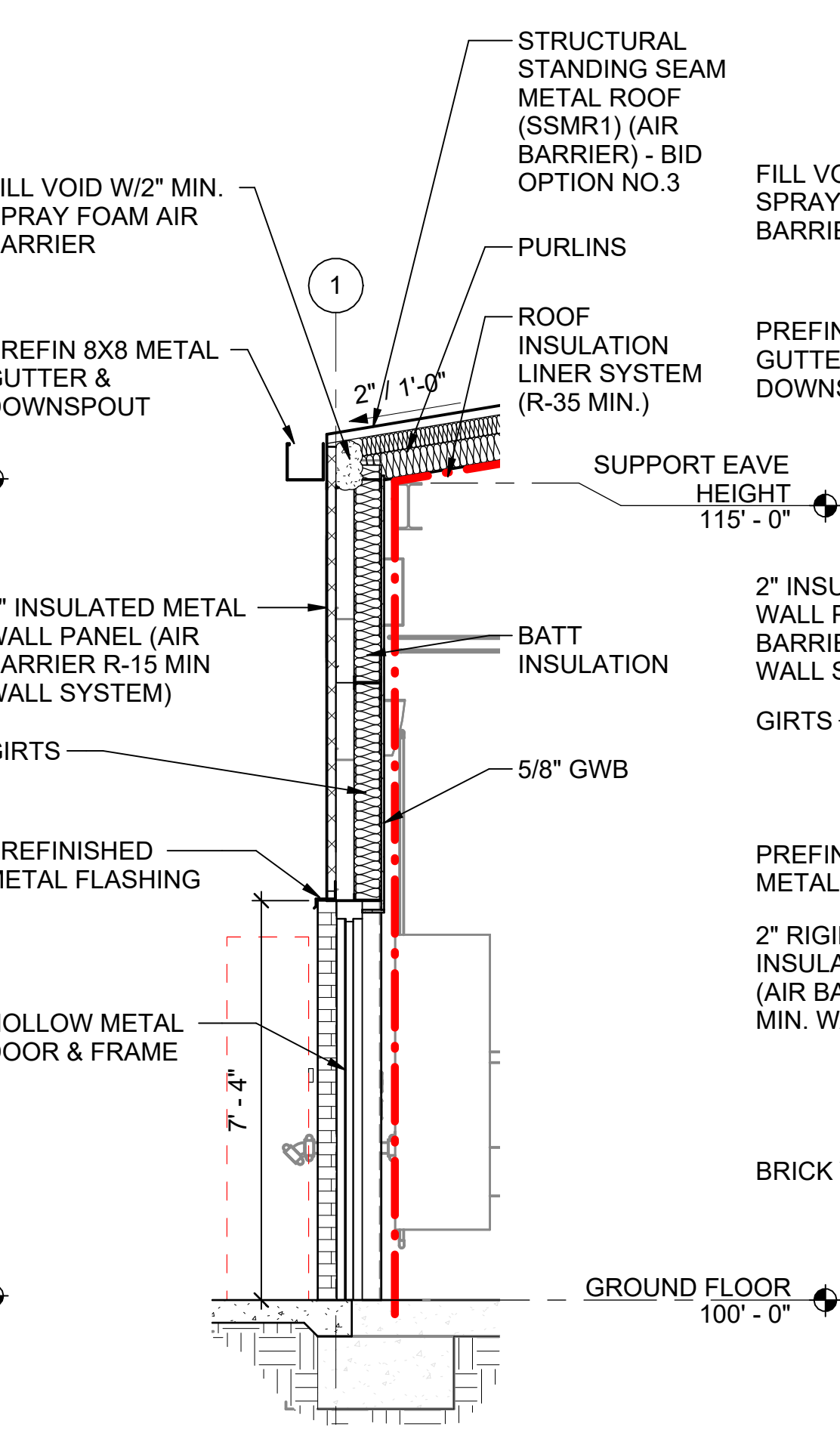
**A3 WALL SECTION**  
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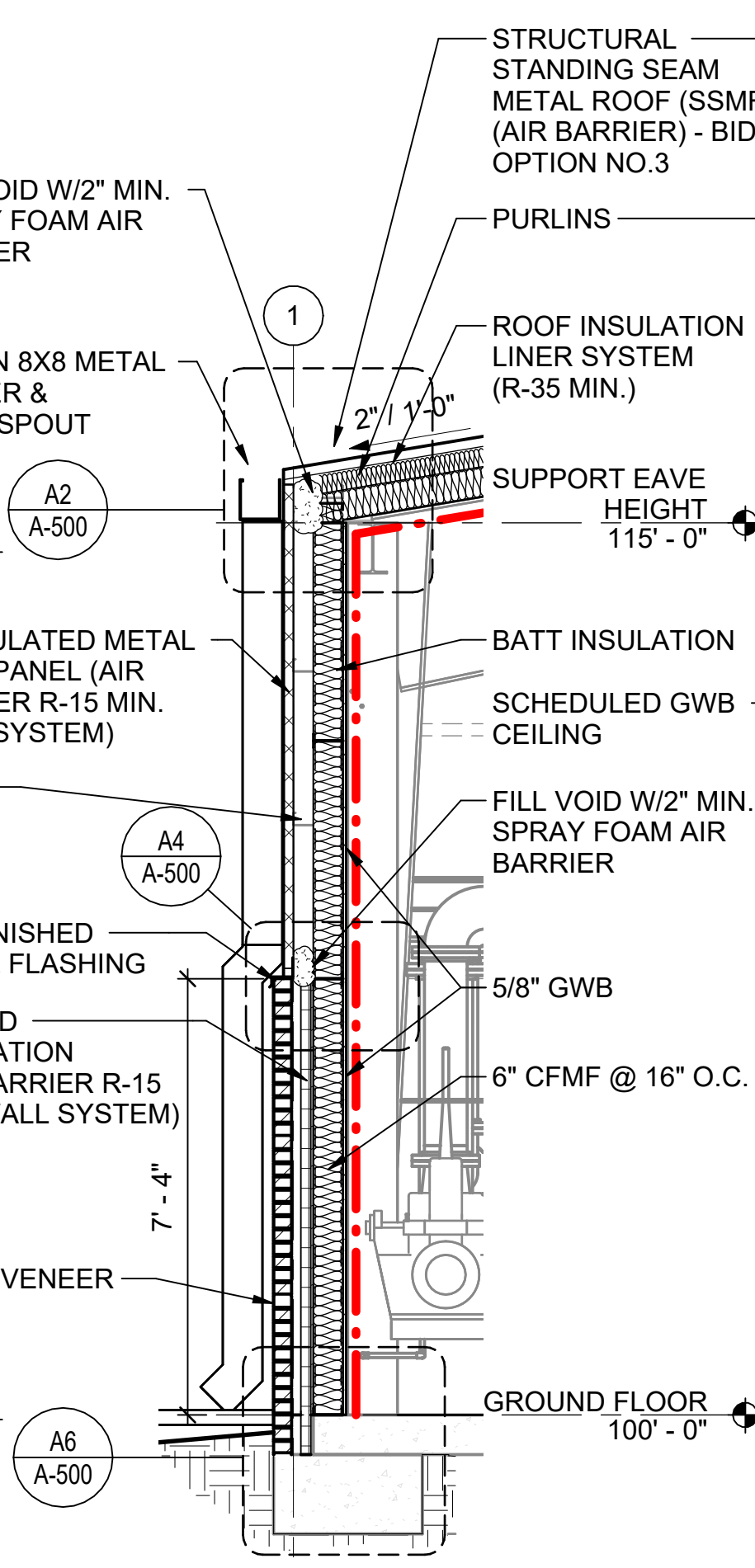
**G6 WALL SECTION**  
 SCALE: 3/8" = 1'-0"



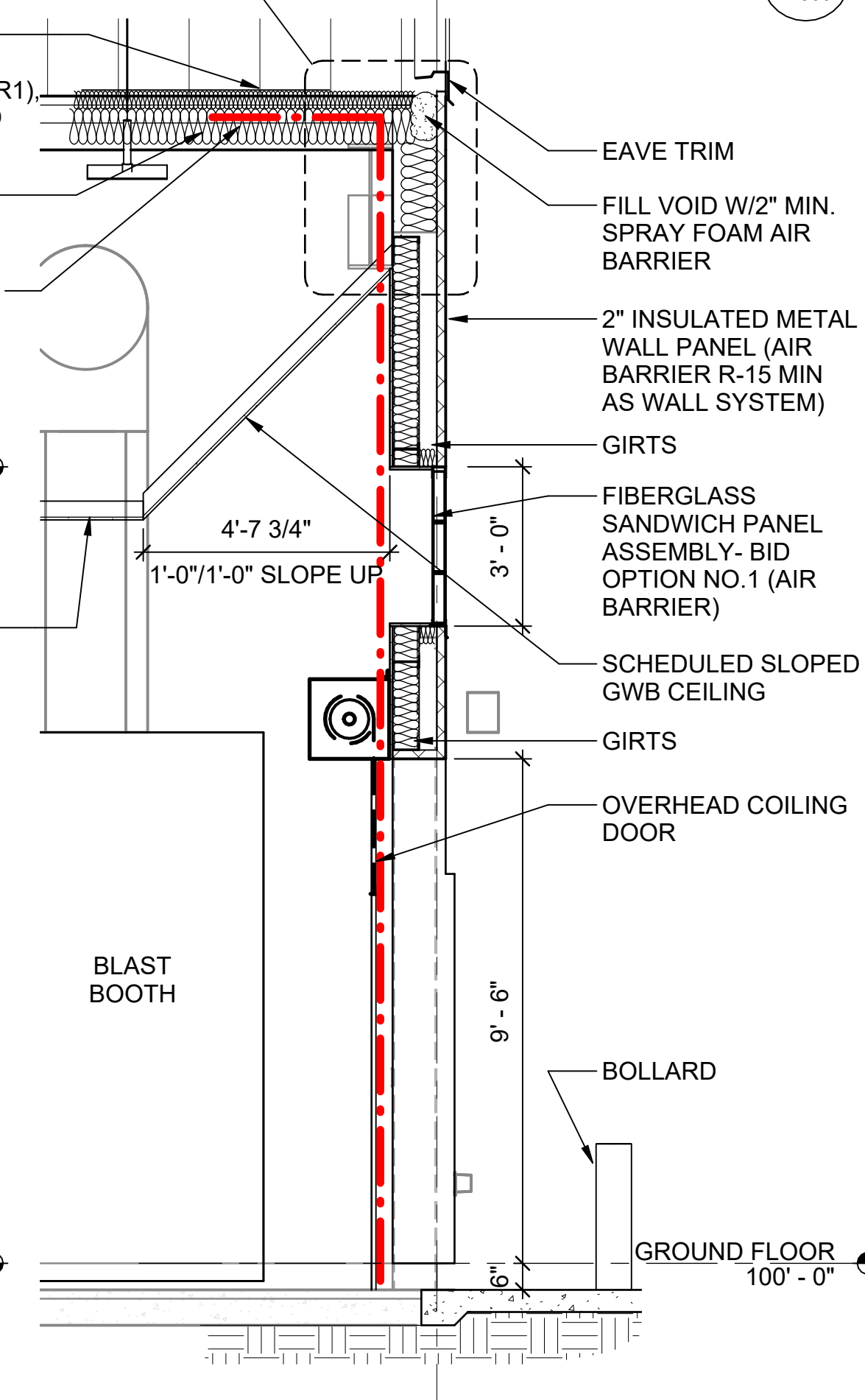
**A6 WALL SECTION**  
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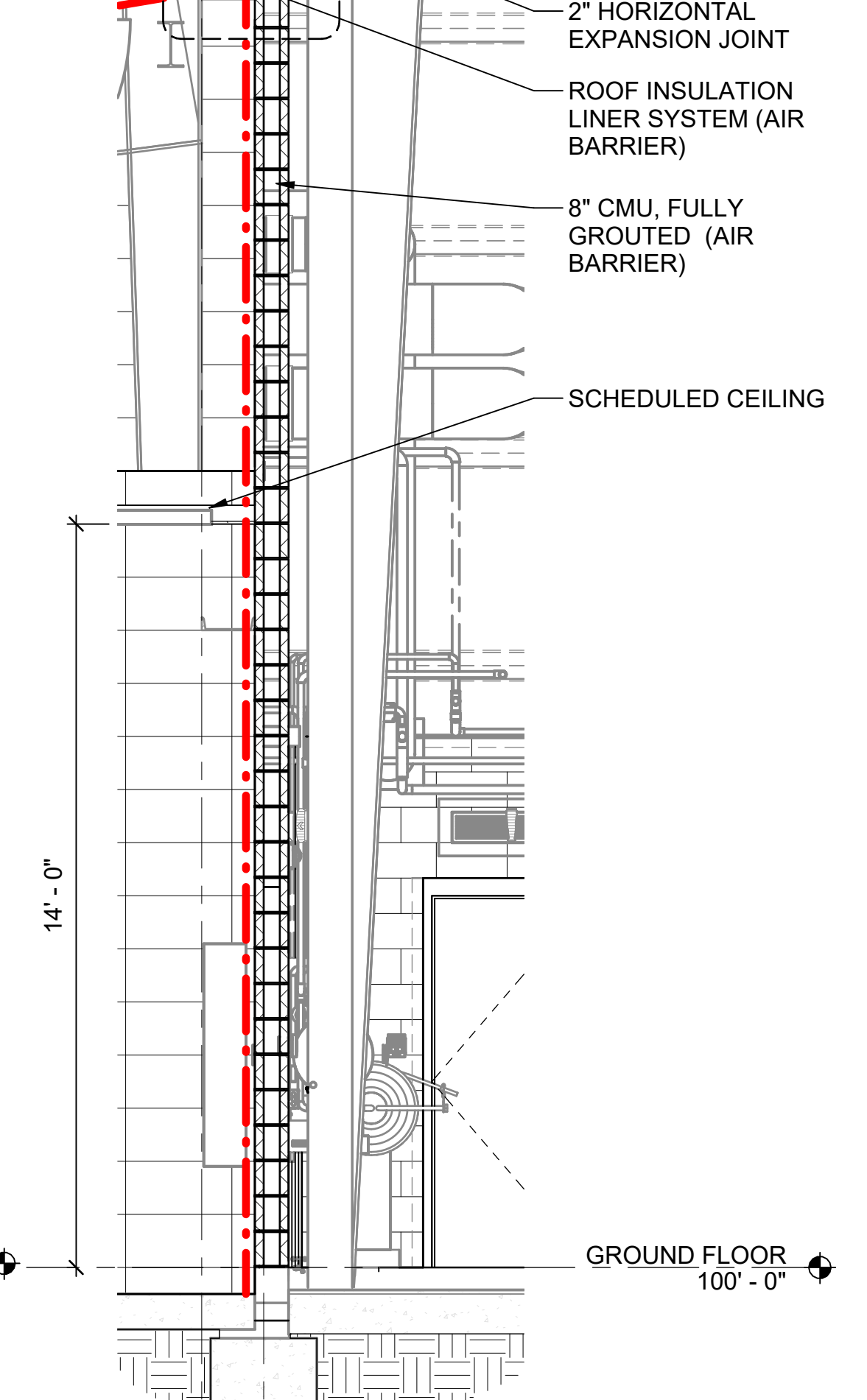
**B6 WALL SECTION**  
 SCALE: 3/8" = 1'-0"



**D6 WALL SECTION**  
 SCALE: 3/8" = 1'-0"

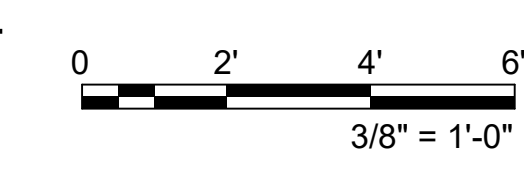


**E6 WALL SECTION**  
 SCALE: 3/8" = 1'-0"

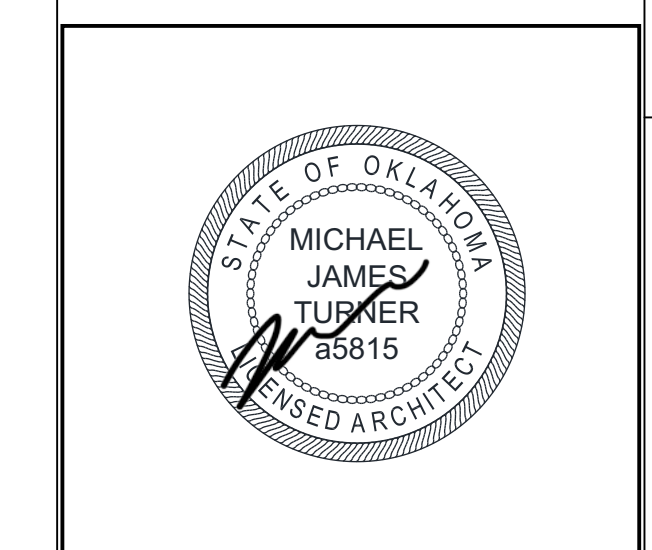


REVISION HISTORY:	
DESCRIPTION	DATE

PROJECT INFORMATION:	
DESIGNED BY:	<b>JCL</b>
DRAWN BY:	<b>JCL</b>
REVIEWED BY:	<b>BKG</b>
PROJECT MANAGER:	<b>NDM</b>
PROJECT NUMBER: 20190320	
SHEET TITLE: <b>WALL SECTIONS</b>	
ISSUE DATE: 2 AUGUST 2024	
SHEET NUMBER: <b>A-302</b>	



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**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

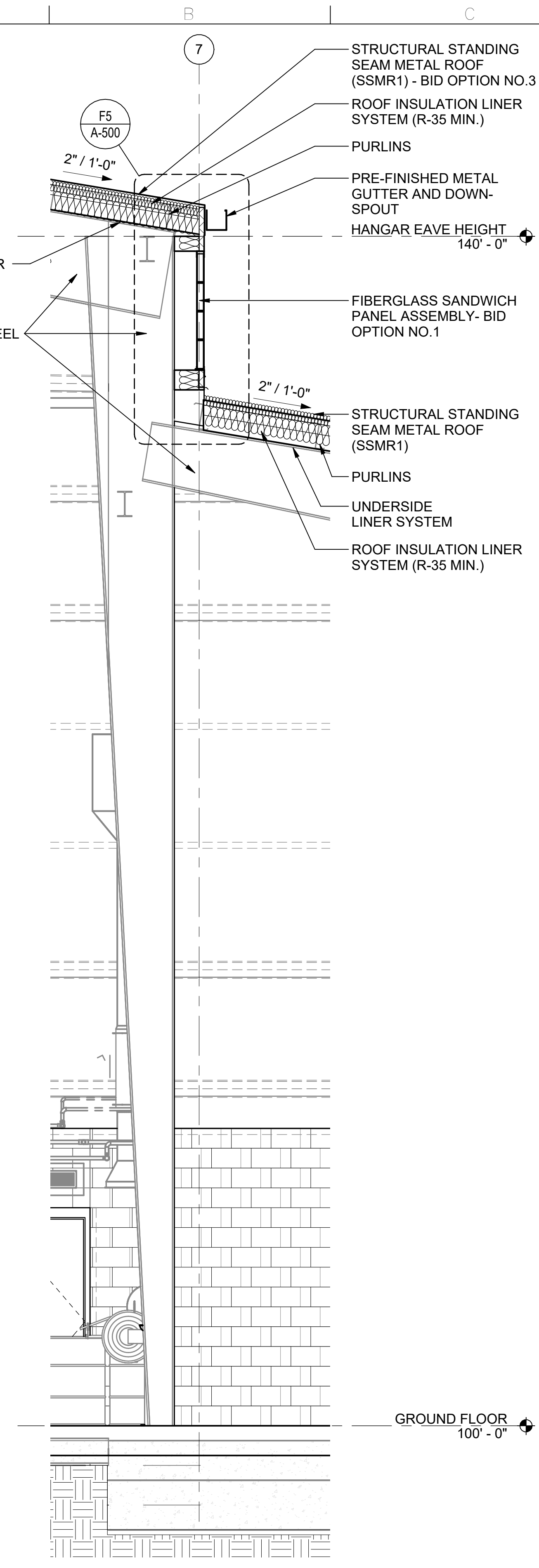
DESIGNED BY:	<b>JCL</b>
DRAWN BY:	<b>JCL</b>
REVIEWED BY:	<b>BKG</b>
PROJECT MANAGER:	<b>NDM</b>

PROJECT NUMBER:  
 20190320  
 SHEET TITLE:

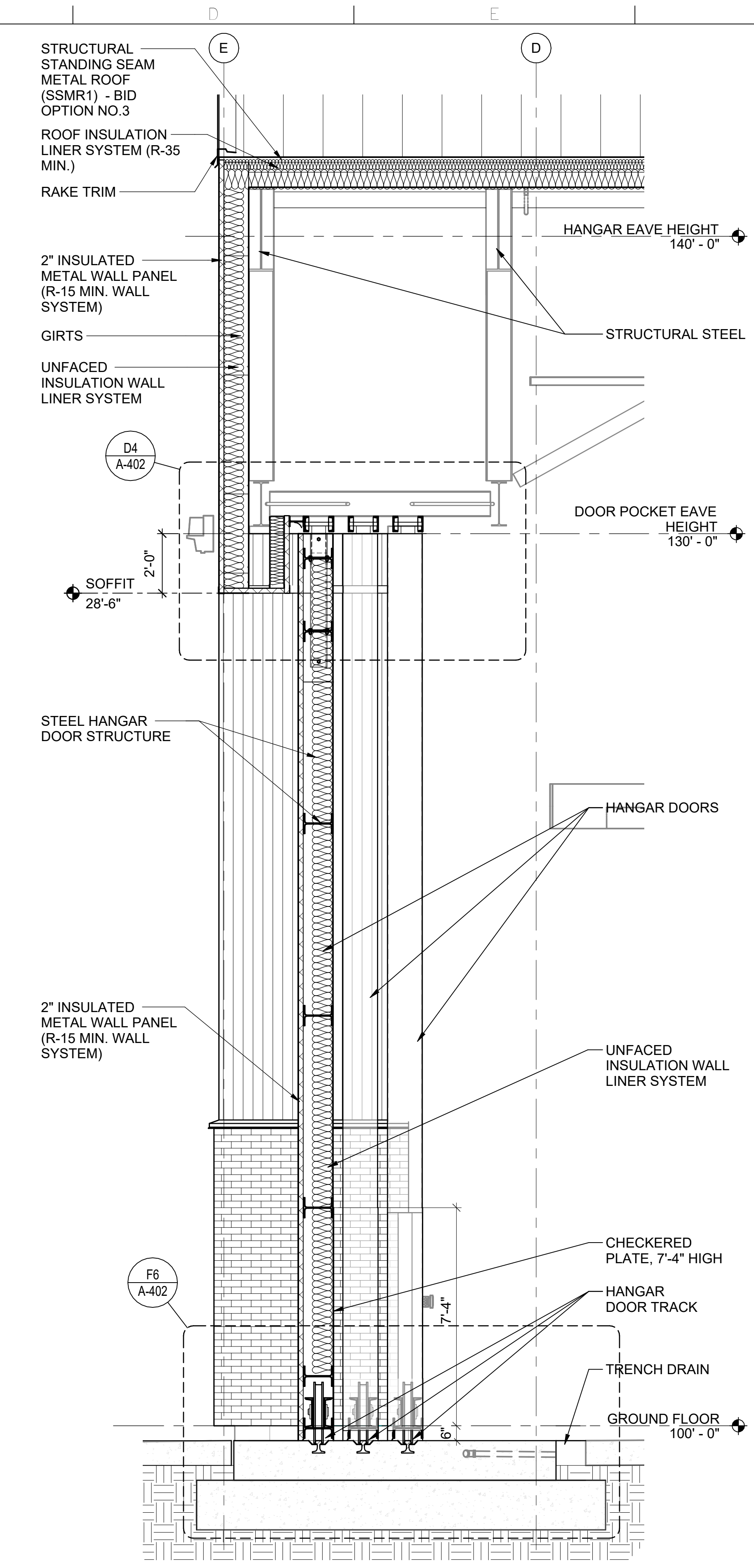
**WALL SECTIONS**

ISSUE DATE:  
 2 AUGUST 2024

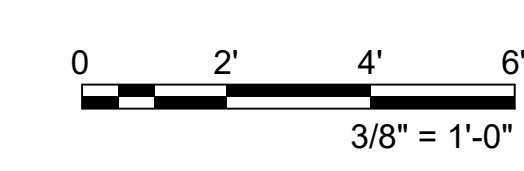
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**A-303**



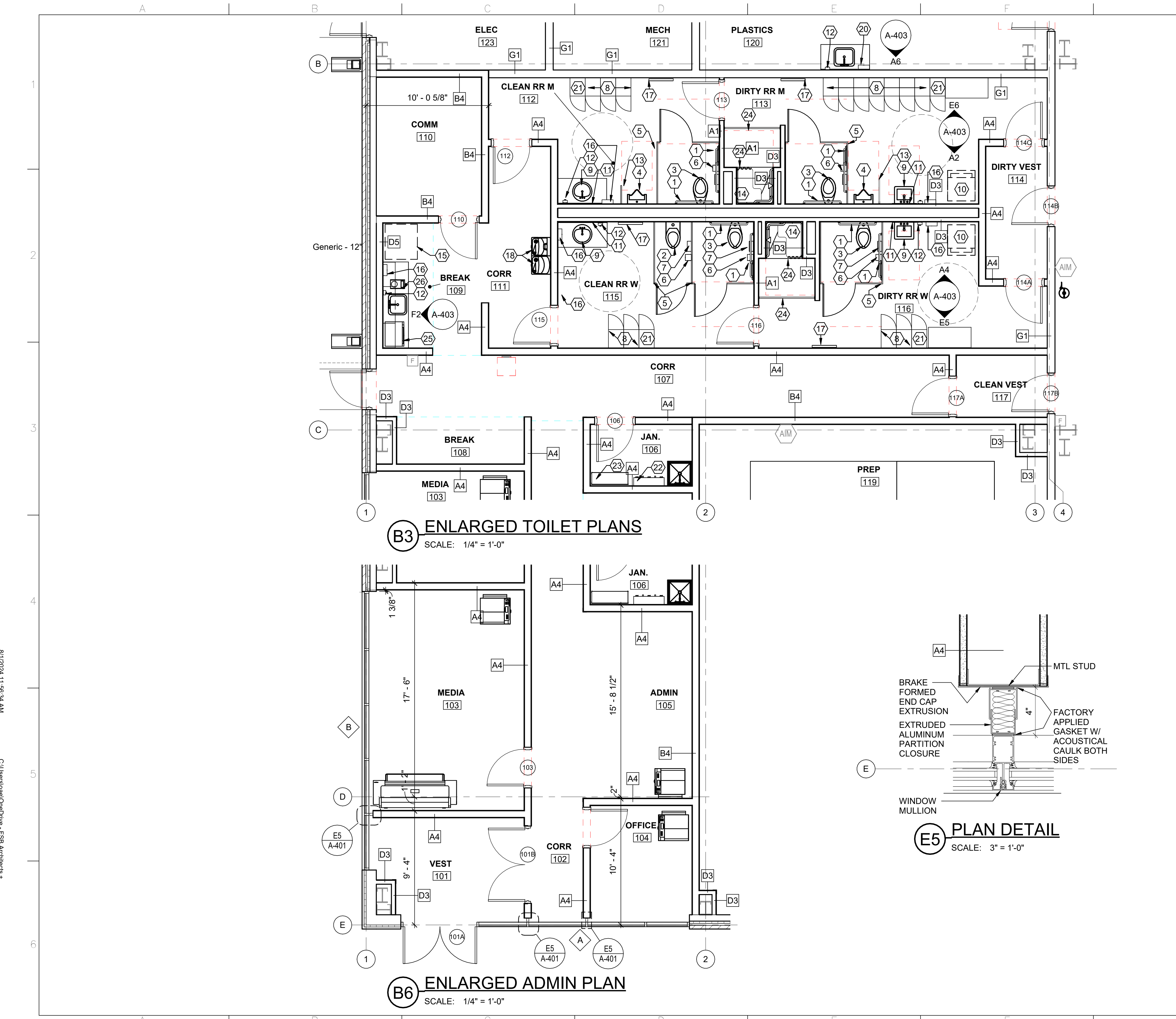
**B6 WALL SECTION**  
SCALE: 3/8" = 1'-0"



**D6 WALL SECTION**  
SCALE: 3/8" = 1'-0"



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### GENERAL NOTES

- A. INTERIOR DIMENSIONS ARE FROM GRIDLINE, FACE OF CMU OR FACE OF STUD UNO.
- B. REFER TO SHEET IF-101 FOR FURNITURE AND EQUIPMENT SCHEDULE.
- C. DIMENSIONS AT MASONRY ARE NOMINAL, UNO.
- D. REFER TO SPECIFICATION SECTION 090690 FOR FINISH INFORMATION.
- E. CONTRACTOR SHALL PROVIDE BLOCKING IN WALL FOR ALL WALL MTD TVS, MONITORS, ACCESSORIES AND CABINETS.

### SHEET KEYNOTES

1. GRAB BARS - 36" BACK WALL, 42" SIDE WALL, 18" H VERTICAL GRAB BAR
2. WATER CLOSET
3. ACCESSIBLE WATER CLOSET
4. ACCESSIBLE URINAL
5. TOILET PARTITION, TYP
6. TOILET TISSUE DISPENSER, GFGI
7. SANITARY NAPKIN DISPOSAL, TYP
8. 15"W x 18"D x 72"H LOCKERS W/ SLOPED TOP, TYP.
9. LAVATORY
10. STACKED WASHING MACHINE AND DRYER, (N.I.C.)
11. 24"W x 36"H MIRROR
12. SOAP DISPENSER, GFGI
13. URINAL SCREEN
14. SHOWER (ACCESSIBLE 3'-0" x 3'-0" INCLUDING FOLLOWING BENCH, GRAB BARS, RECESSED SOAP DISH, CURTAIN ROD, HAND WAND AND CONTROLS)
15. REFRIGERATOR, (N.I.C.) ADD WATER LINE IF ICE IS NEEDED.
16. NOT USED
17. MIRROR, 24"W x 65"H
18. WATER FOUNTAIN WITH BOTTLE FILLER
19. SHOWER ROD
20. PAPER TOWEL DISPENSER, GFGI
21. 15"W x 18"D x 72"H LOCKER W/ ABA CONVERSION PACKAGE
22. MOP SHELF WITH MOP HOOKS
23. INDUSTRIAL STORAGE UNIT
24. SHOWER CURTAIN WITH STAINLESS STEEL RINGS
25. MICROWAVE
26. COFFEE MAKER

**FSB FEDERAL DESIGN GROUP JV**

Frankfurt-Short-Bruza Associates, P.C.  
5801 Broadway Extension, Suite 500  
Oklahoma City, OK 73118-7436  
405.840.2931 | fsb-ae.com

STATE OF OKLAHOMA

MICHAEL JAMES TURNER

5815

REGISTERED ARCHITECT

**Texas Air National Guard - 149th FW**

**Corrosion Control Facility**

**TXANG Project Number: KELL 169014**

**JBSA - Kelly Annex, TX**

REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: **JCL**

DRAWN BY: **JCL**

REVIEWED BY: **BKG**

PROJECT MANAGER: **NDM**

PROJECT NUMBER: **20190320**

SHEET TITLE: **ENLARGED PLAN**

ISSUE DATE: **2 AUGUST 2024**

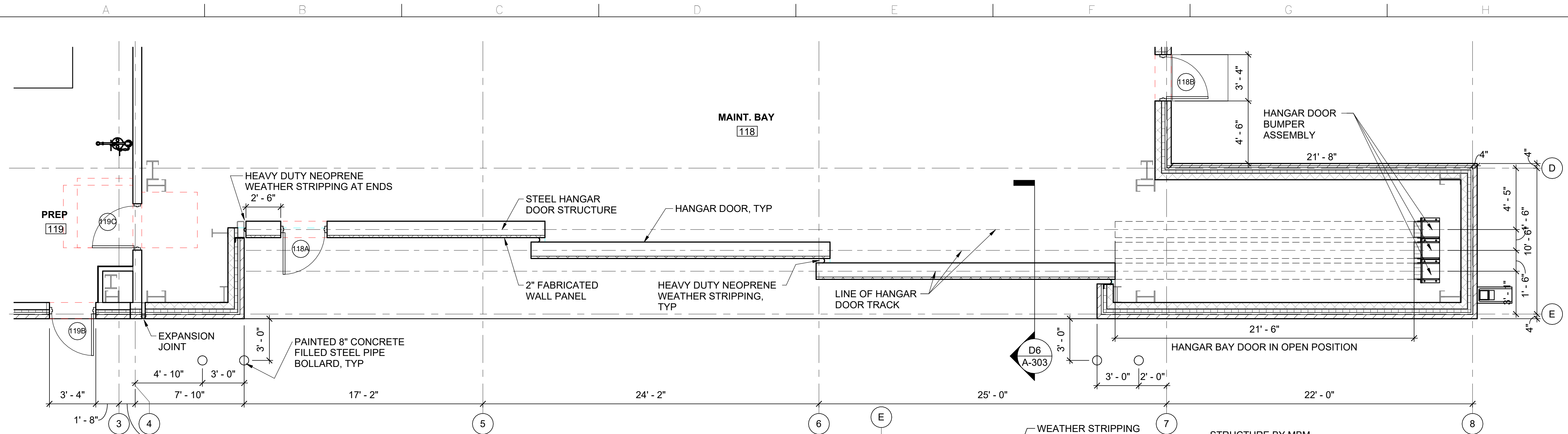
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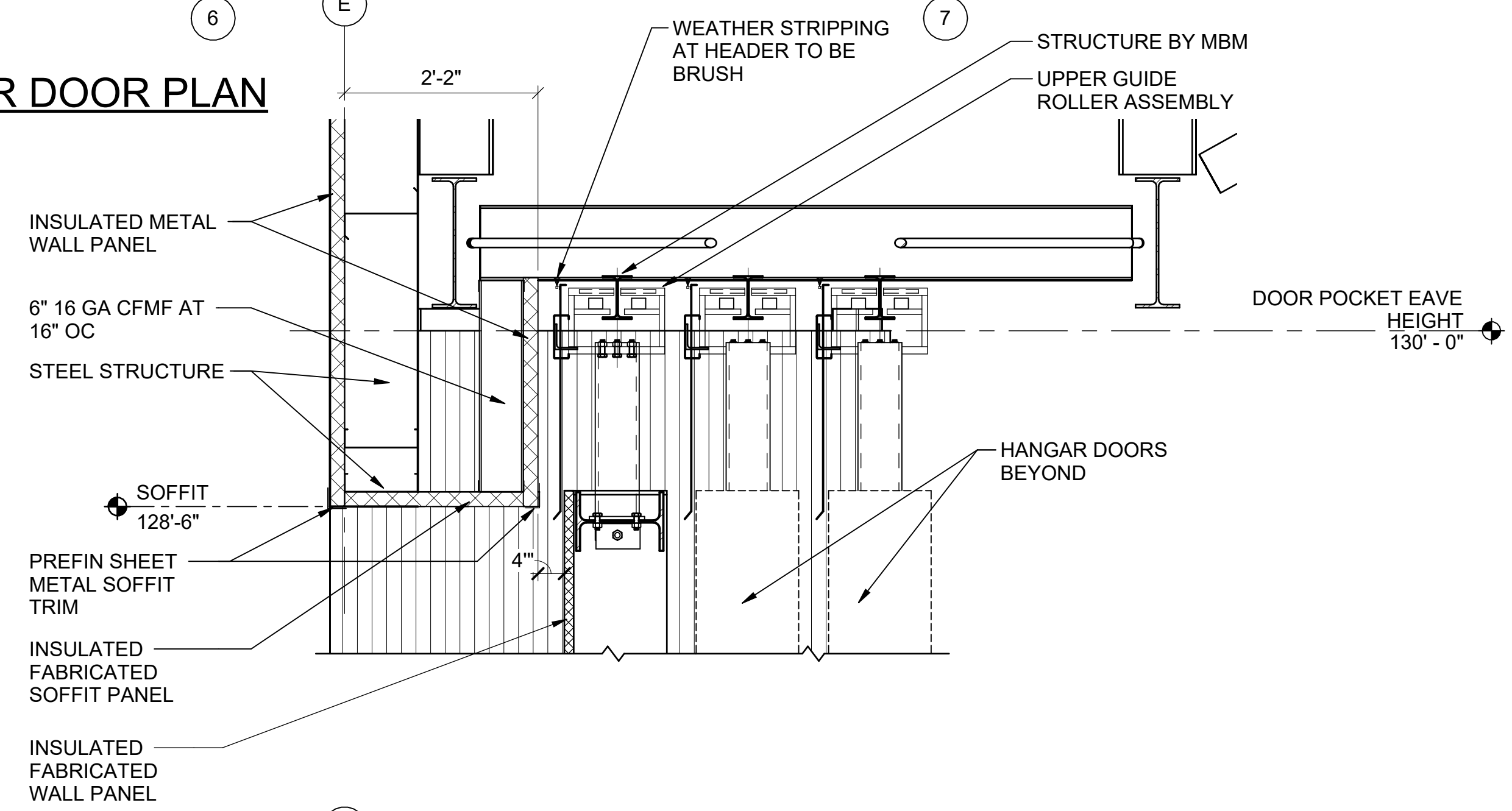
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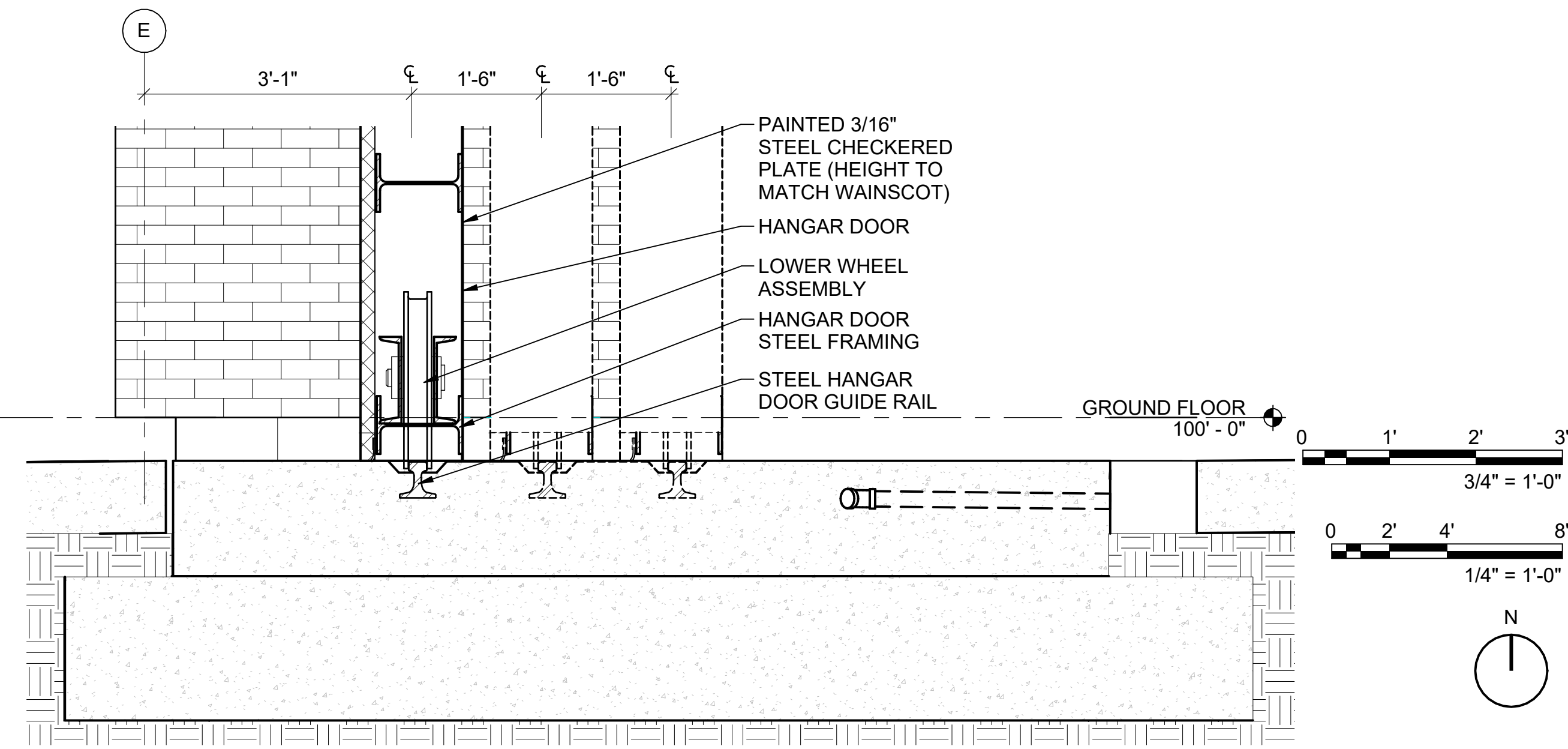
**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**



**A3 ENLARGED HANGAR DOOR PLAN**  
 SCALE: 1/4" = 1'-0"



**D4 SECTION DETAIL**  
 SCALE: 3/4" = 1'-0"



**F6 SECTION DETAIL**  
 SCALE: 3/4" = 1'-0"

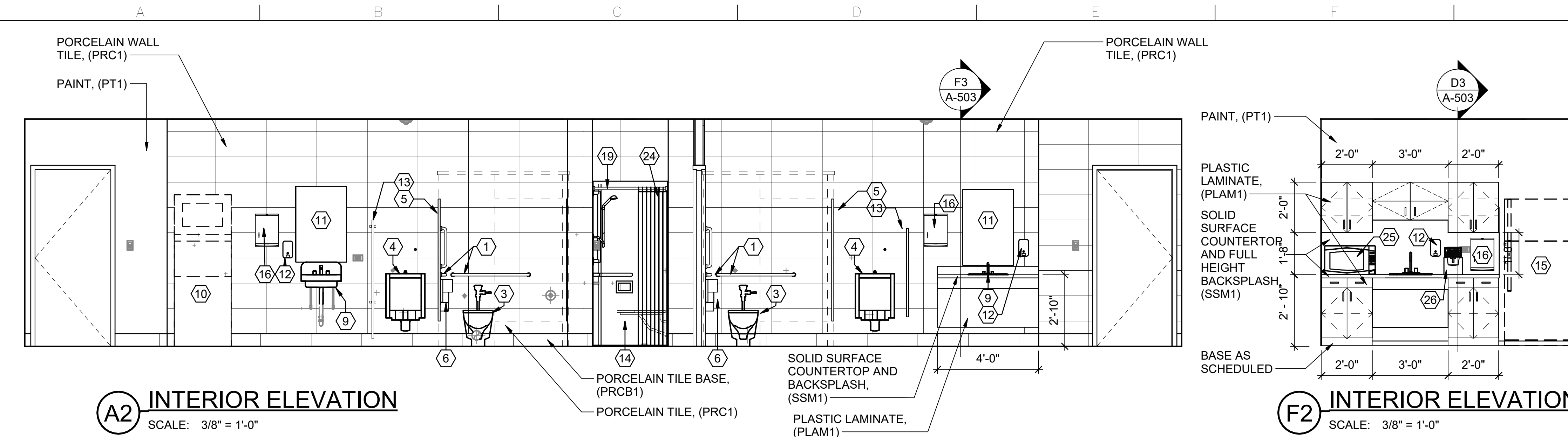
REVISION HISTORY:

NO.	DESCRIPTION	DATE

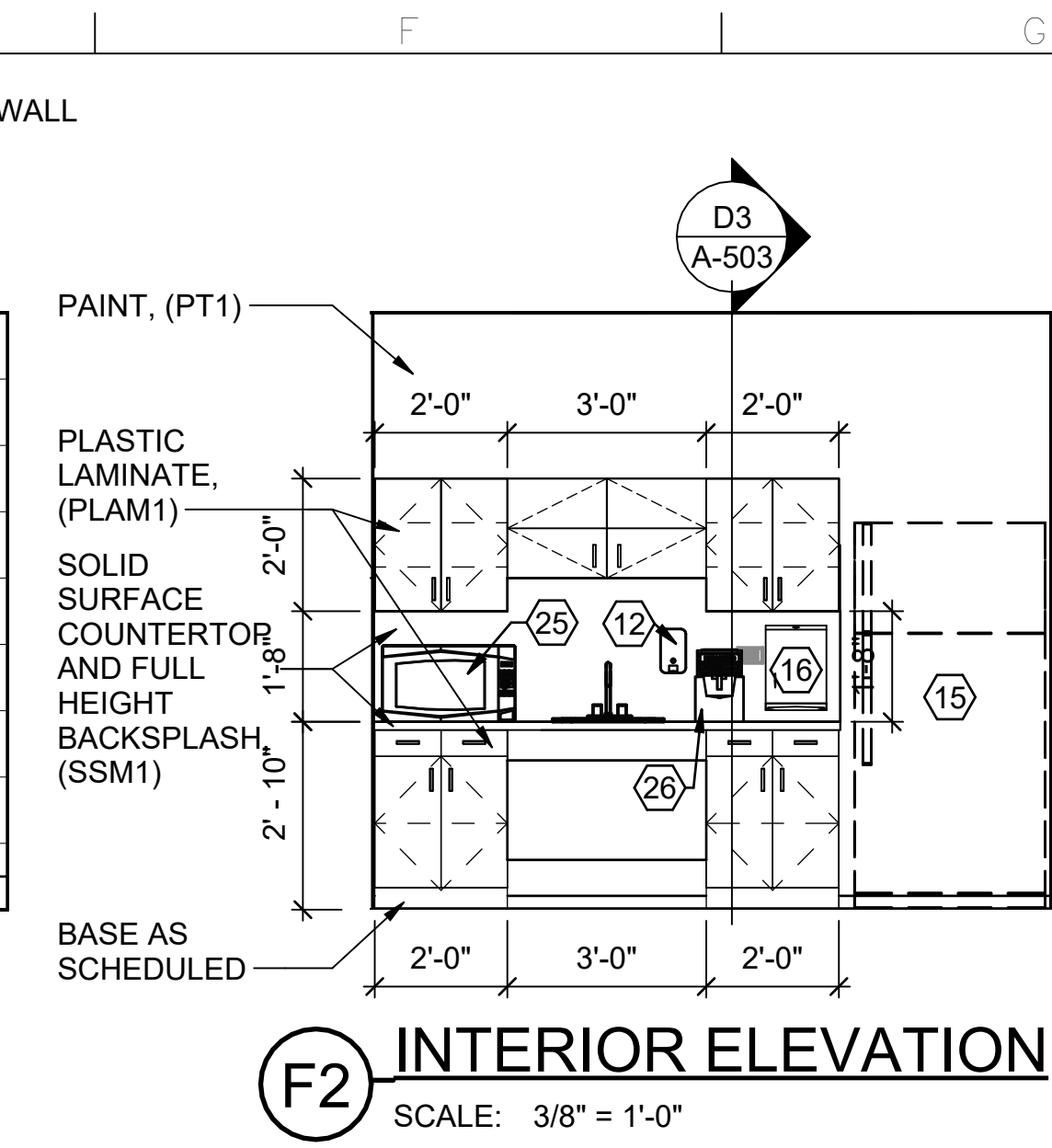
PROJECT INFORMATION:

DESIGNED BY:	<b>JCL</b>
DRAWN BY:	<b>JCL</b>
REVIEWED BY:	<b>BKG</b>
PROJECT MANAGER:	<b>NDM</b>
PROJECT NUMBER:	<b>20190320</b>
SHEET TITLE:	<b>ENLARGED PLAN</b>
ISSUE DATE:	<b>2 AUGUST 2024</b>
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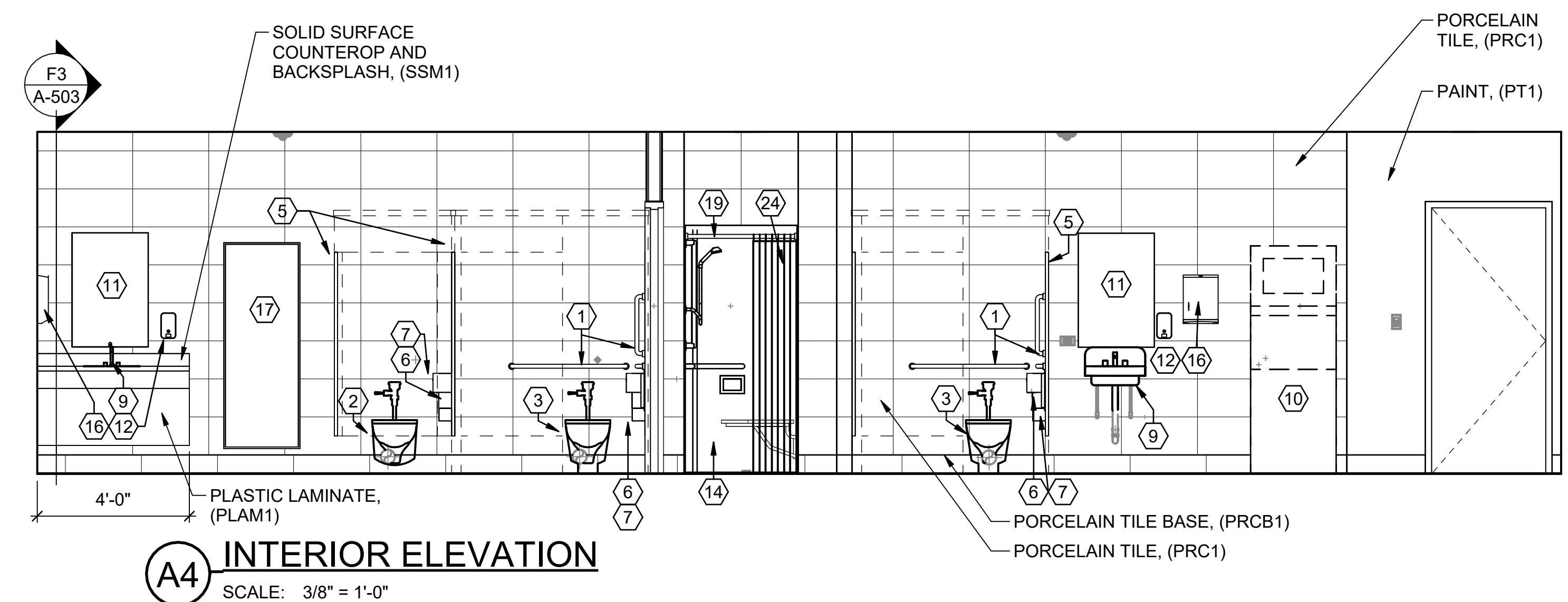
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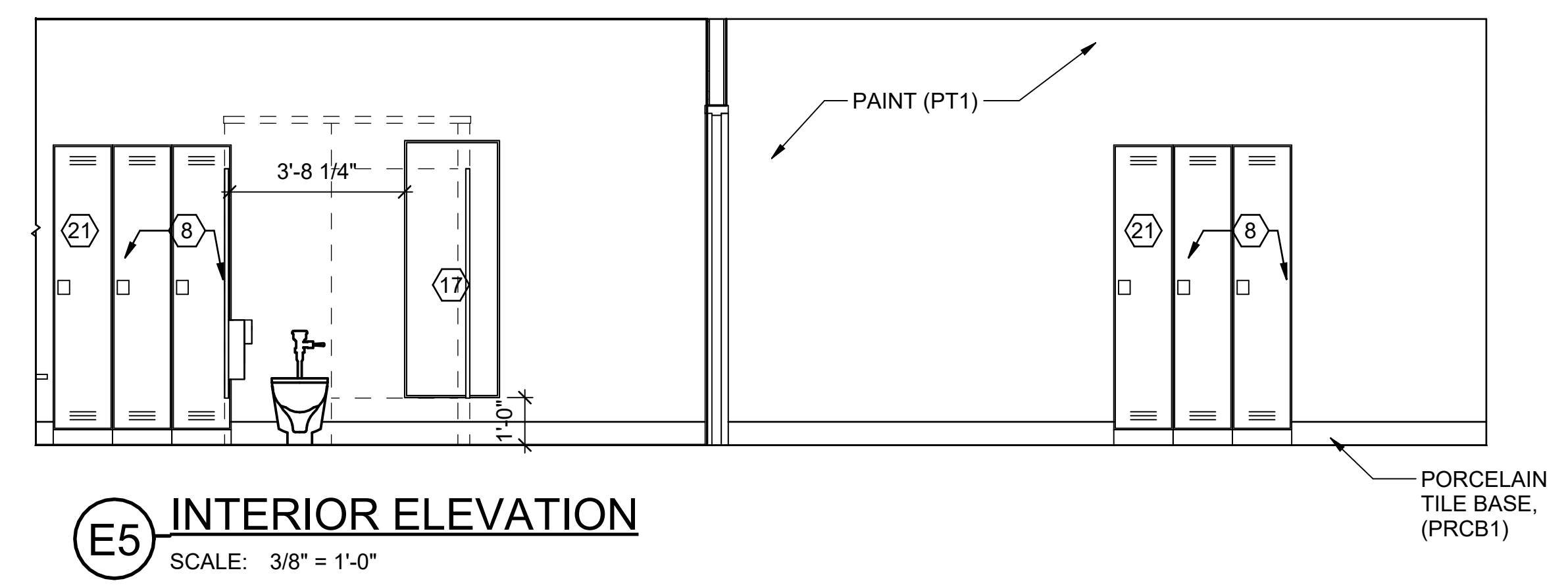
**A2 INTERIOR ELEVATION**  
SCALE: 3/8" = 1'-0"



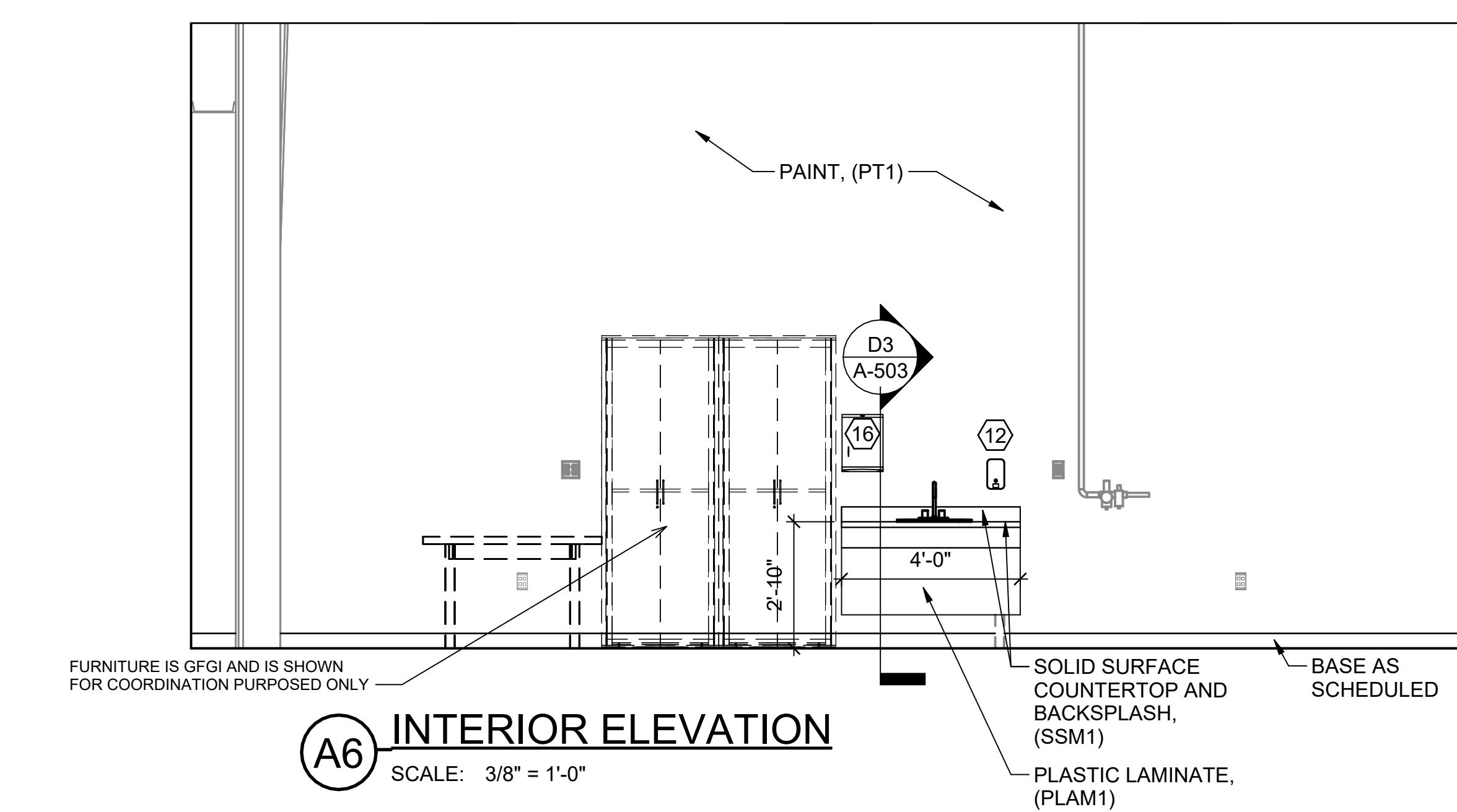
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SCALE: 3/8" = 1'-0"



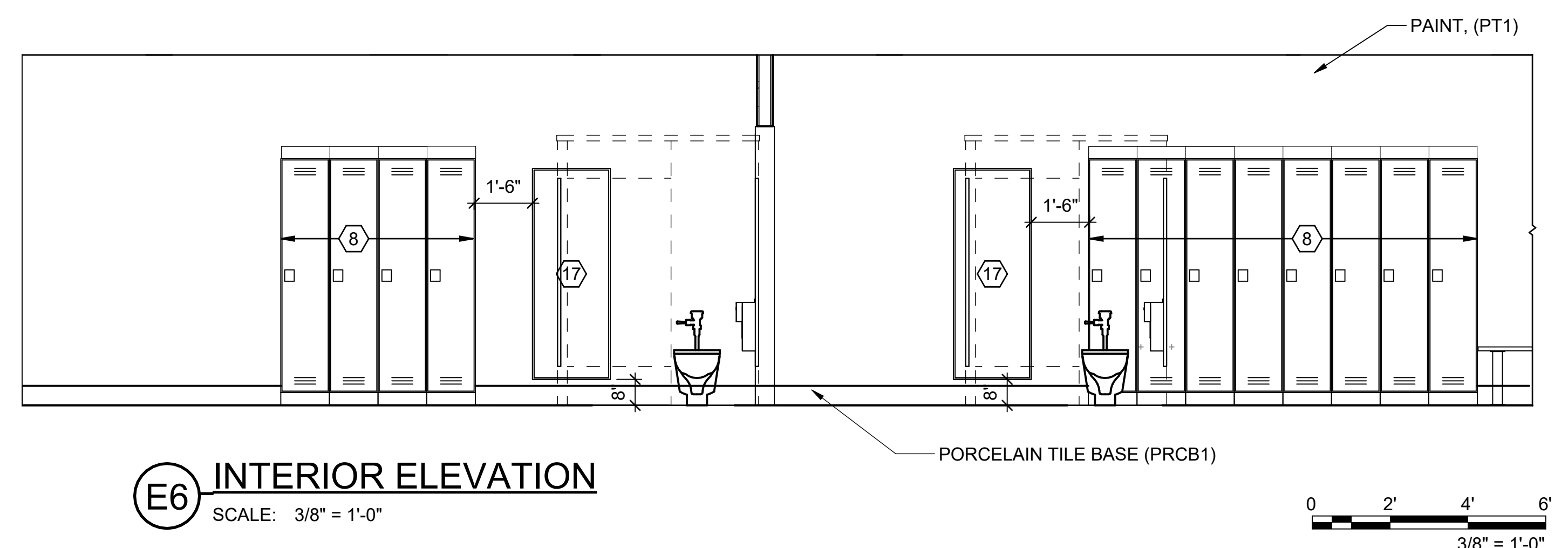
**A4 INTERIOR ELEVATION**  
SCALE: 3/8" = 1'-0"



**E5 INTERIOR ELEVATION**  
SCALE: 3/8" = 1'-0"



**A6 INTERIOR ELEVATION**  
SCALE: 3/8" = 1'-0"



**E6 INTERIOR ELEVATION**  
SCALE: 3/8" = 1'-0"

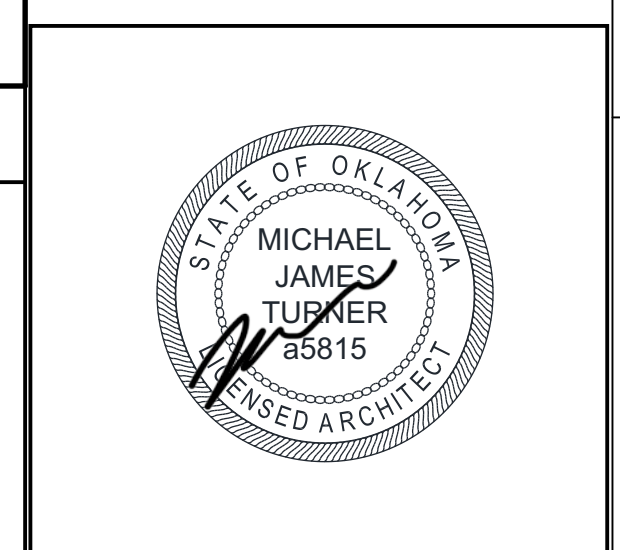
GENERAL NOTES	
A.	INTERIOR DIMENSIONS ARE FROM GRIDLINE, FACE OF CMU OR FACE OF STUD UNO.
B.	REFER TO SHEET IF-101 FOR FURNITURE AND EQUIPMENT SCHEDULE.
C.	DIMENSIONS AT MASONRY ARE NOMINAL, UNO.
D.	REFER TO SPECIFICATION SECTION 090690 FOR FINISH INFORMATION.
E.	CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL BLOCKING AND BACKING IN WALL FOR WALL MOUNTED ITEMS, INCLUDING ACCESSORIES, MARKER BOARDS, MONITORS AND CABINETS.

SHEET KEYNOTES	
1.	GRAB BARS - 36" BACK WALL, 42" SIDE WALL, 18" H VERTICAL GRAB BAR
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3.	ACCESSIBLE WATER CLOSET
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5.	TOILET PARTITION, TYP
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24.	SHOWER CURTAIN WITH STAINLESS STEEL RINGS
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26.	COFFEE MAKER

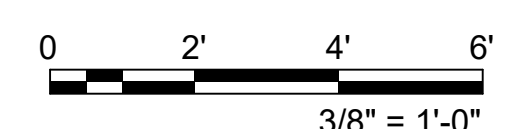
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405.840.2931 | fsb-ae.com



Texas Air National Guard - 149th FW  
 Corrosion Control Facility  
 TXANG Project Number: KELL 169014  
 JBSA - Kelly Annex, TX

REVISION HISTORY:	
PROJECT INFORMATION:	
DESIGNED BY:	JCL
DRAWN BY:	JCL
REVIEWED BY:	BKG
PROJECT MANAGER:	NDM
PROJECT NUMBER: 20190320	
SHEET TITLE: INTERIOR ELEVATIONS	
ISSUE DATE: 2 AUGUST 2024	
SHEET NUMBER: A-403	



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**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

REVISION HISTORY:

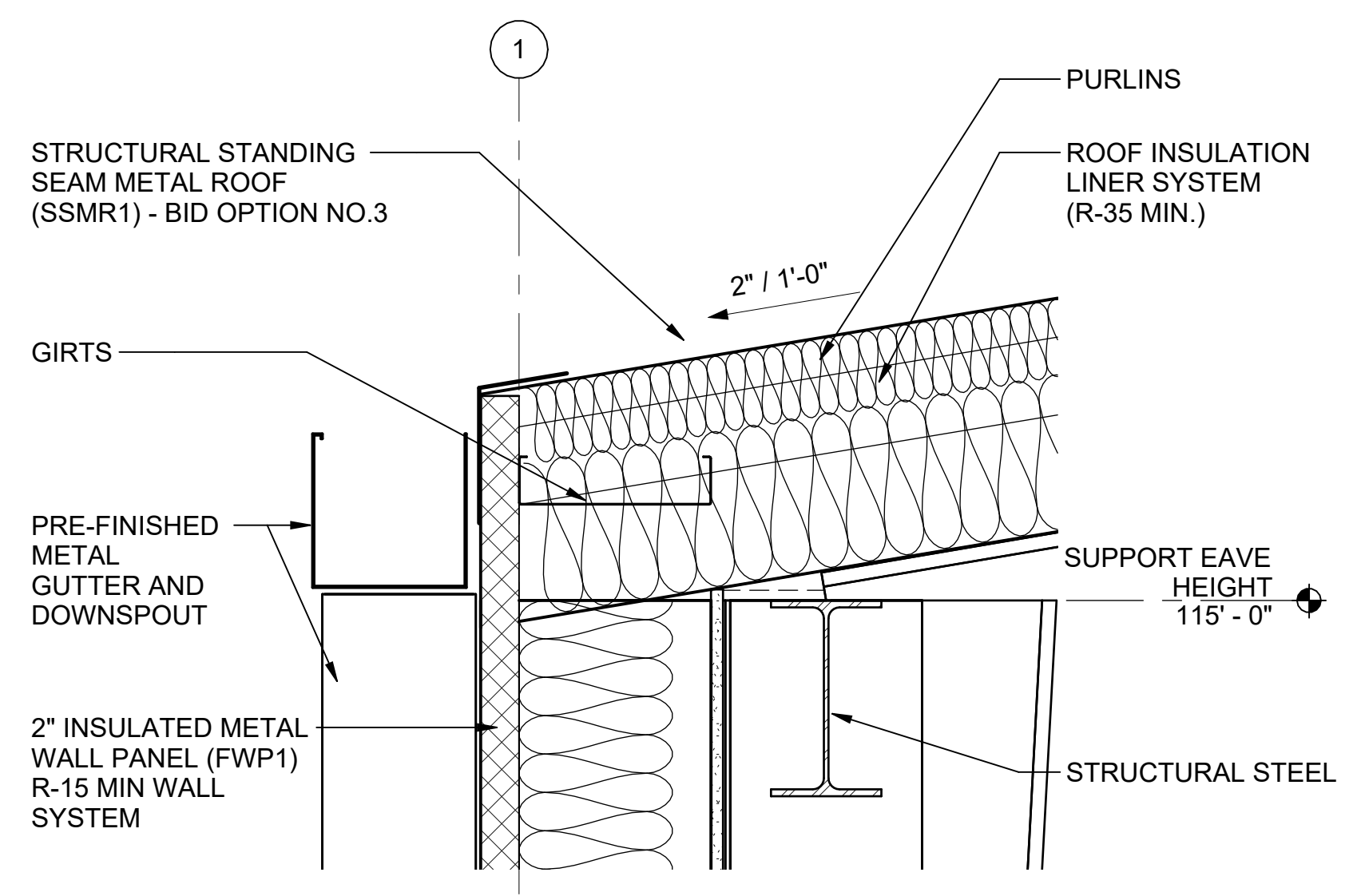
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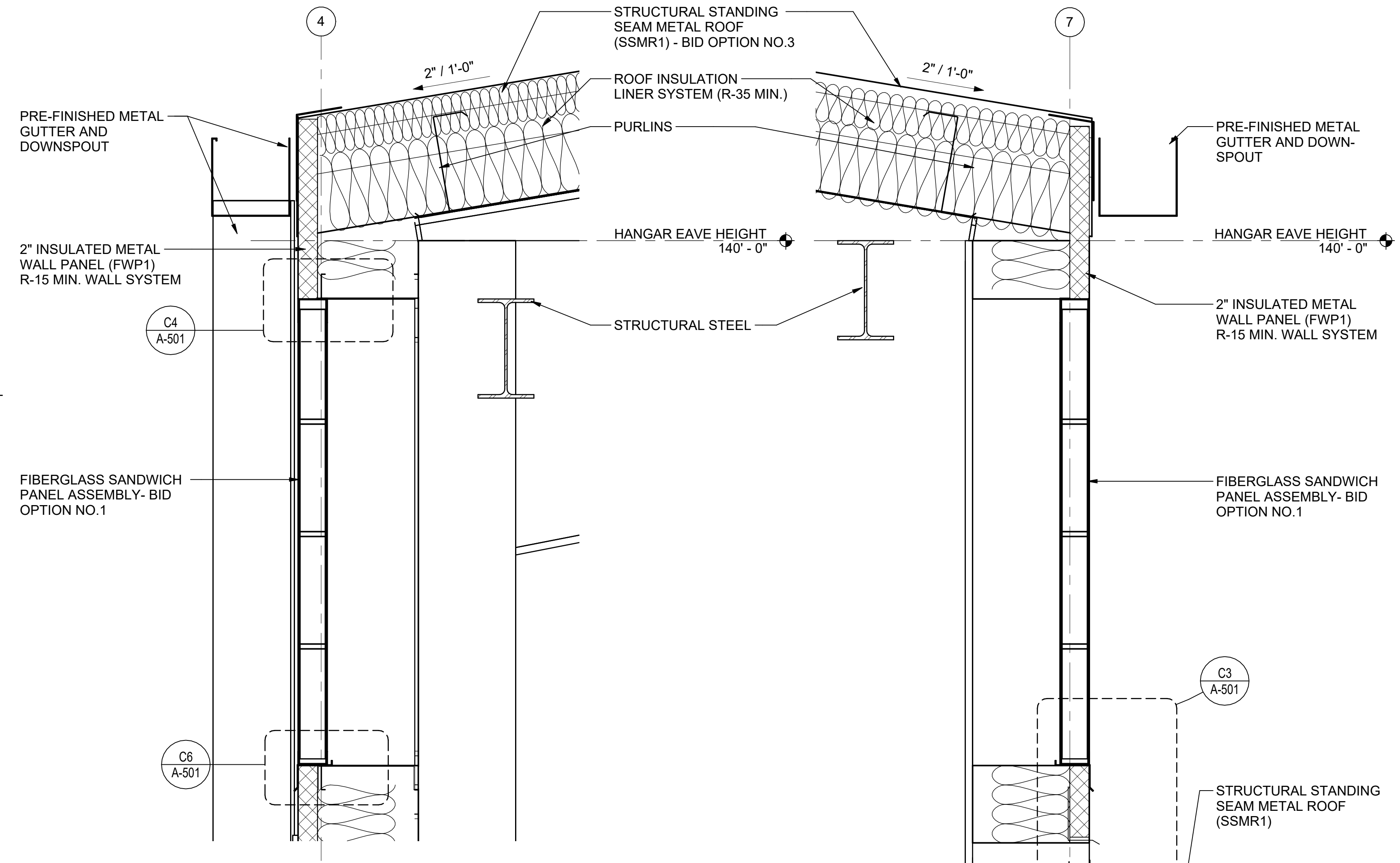
DESIGNED BY:	<b>JCL</b>
DRAWN BY:	<b>JCL</b>
REVIEWED BY:	<b>BKG</b>
PROJECT MANAGER:	<b>NDM</b>

PROJECT NUMBER:	<b>20190320</b>
SHEET TITLE:	<b>DETAILS</b>

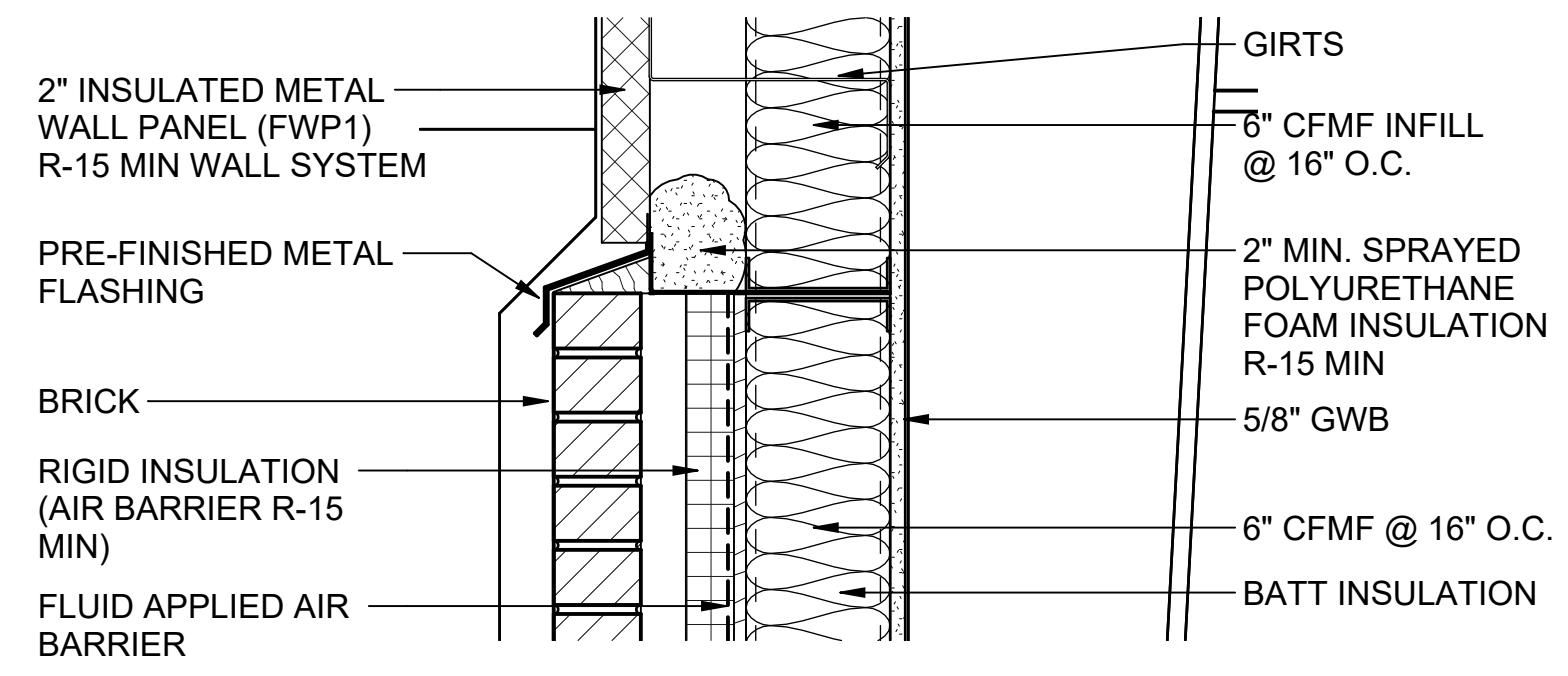
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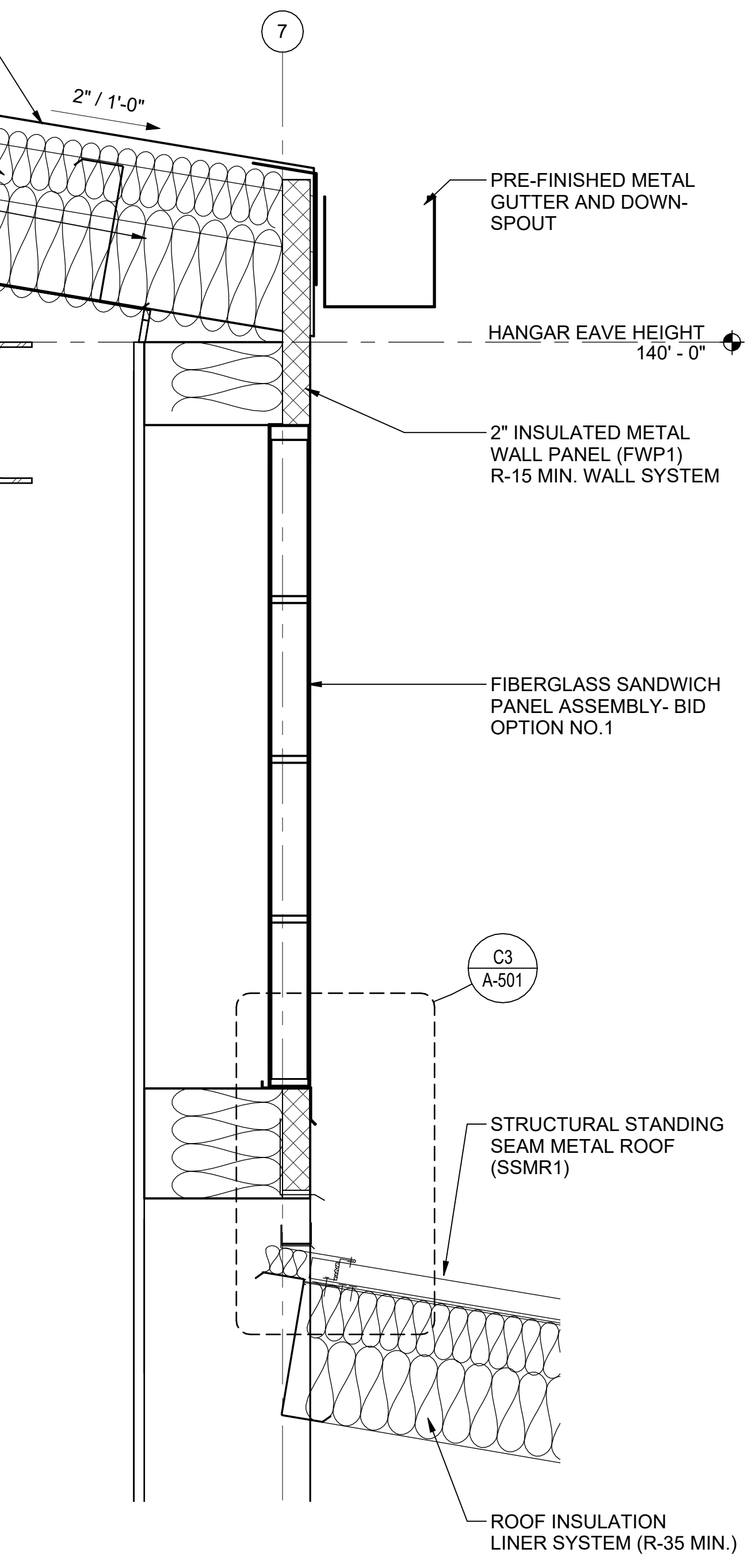
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SCALE: 1 1/2" = 1'-0"



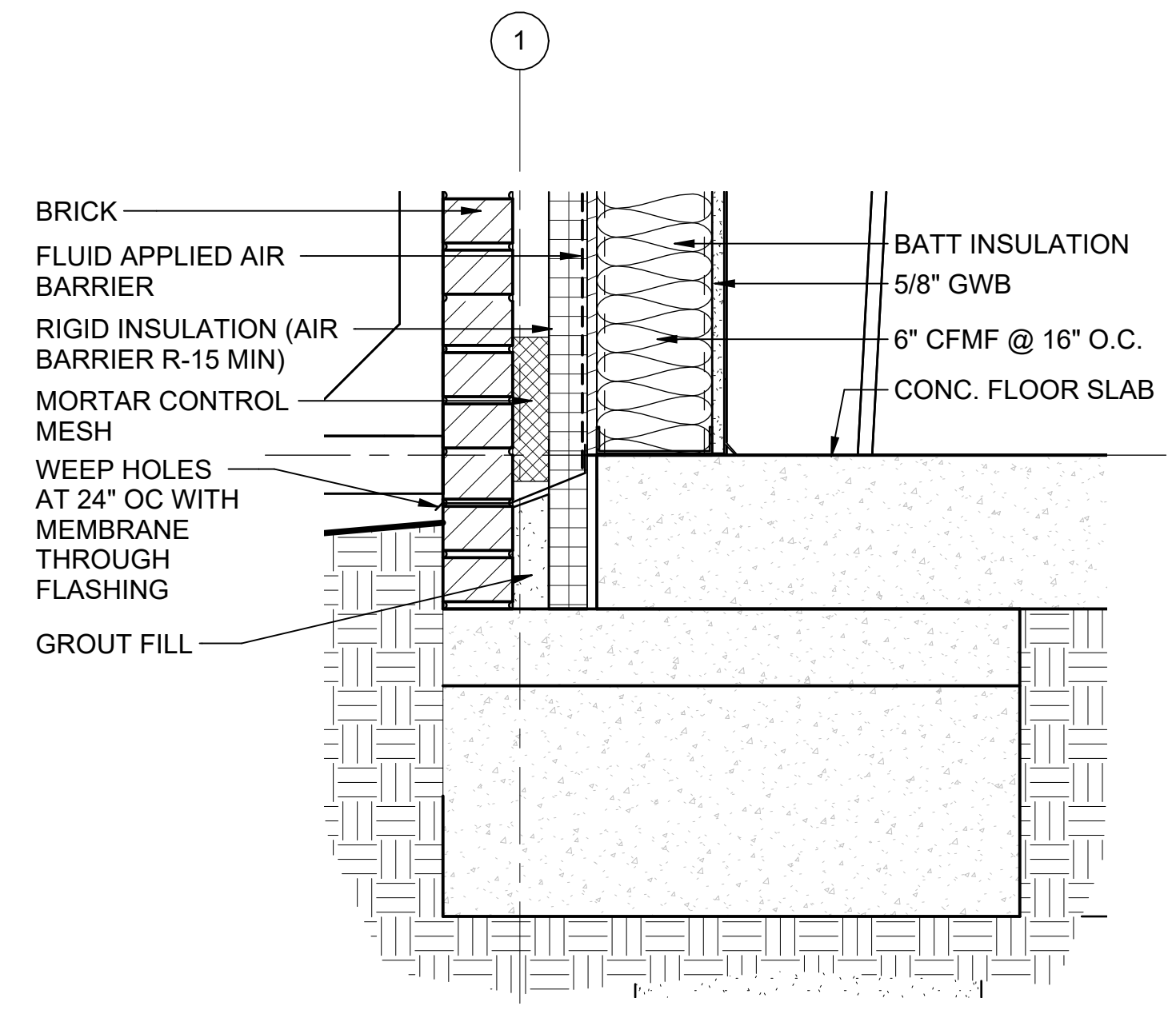
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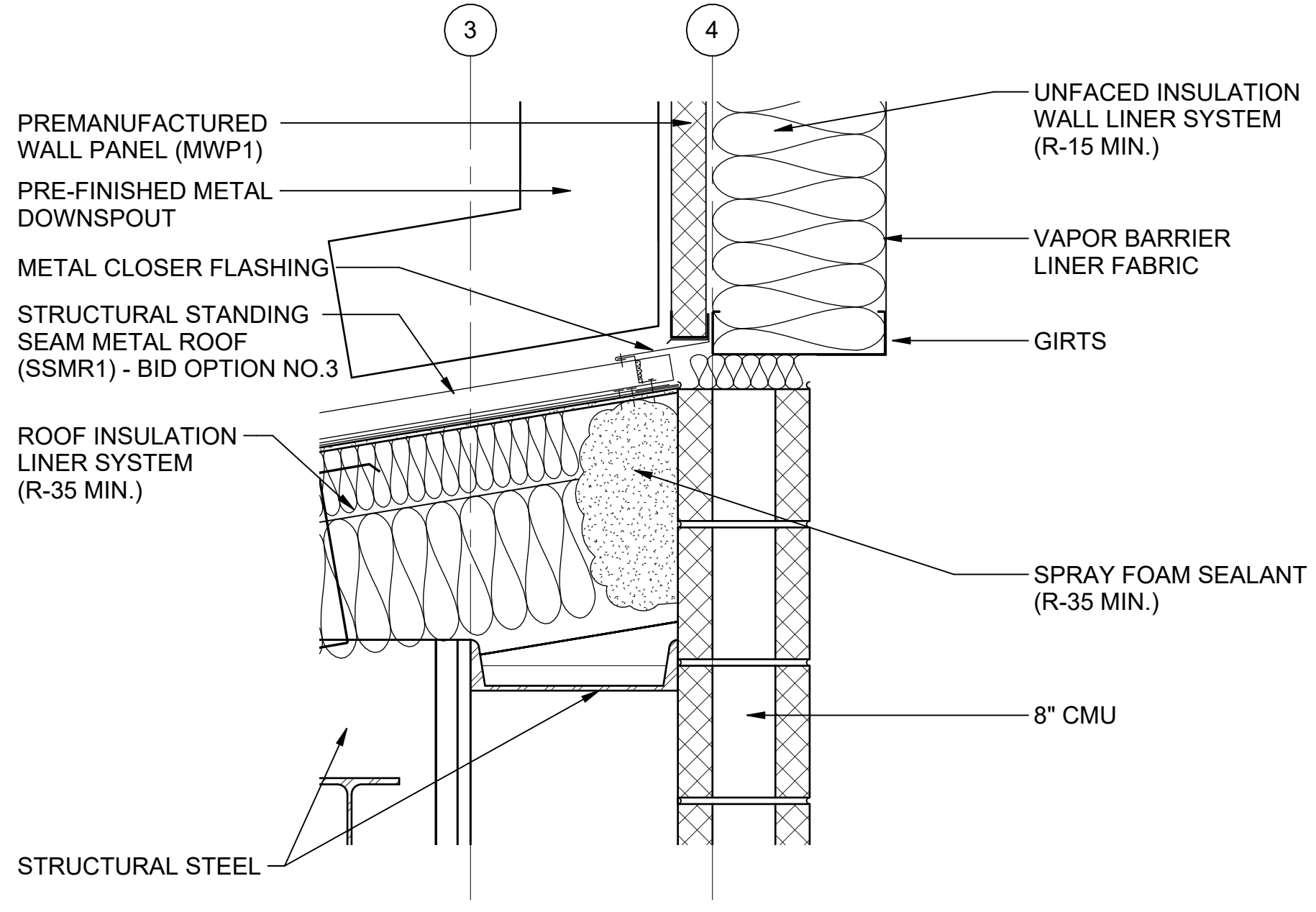
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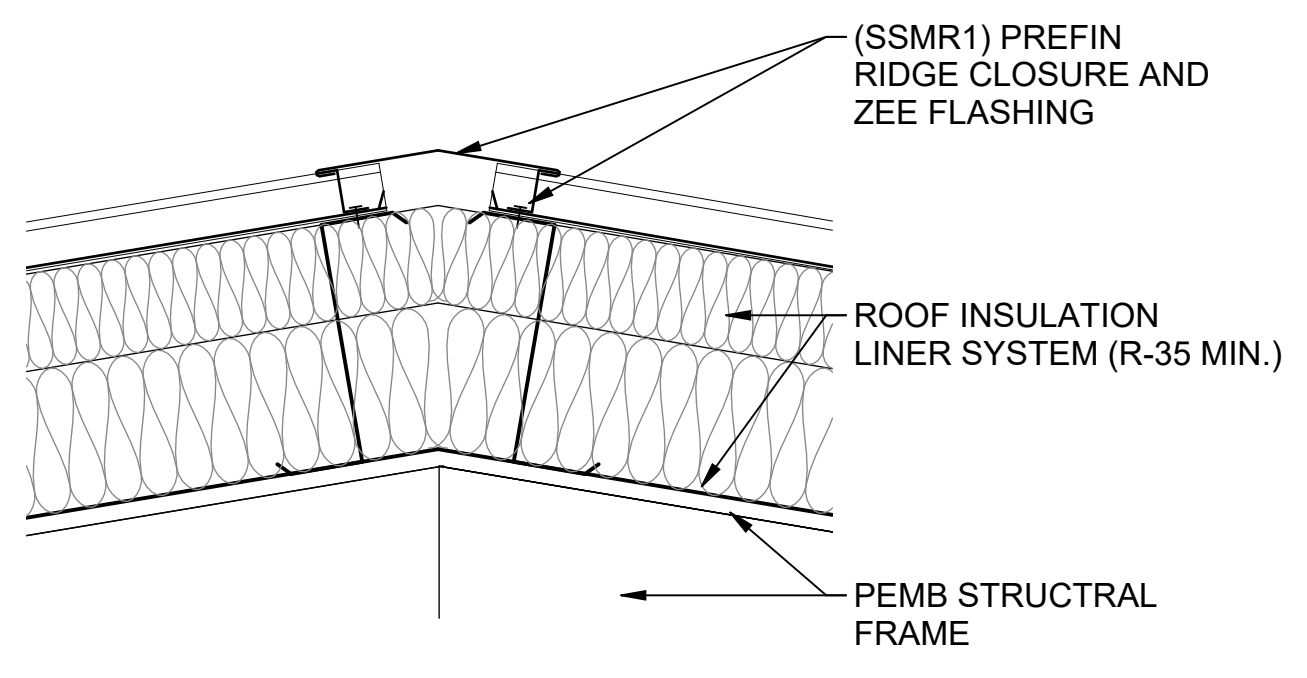
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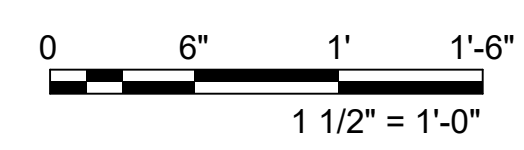
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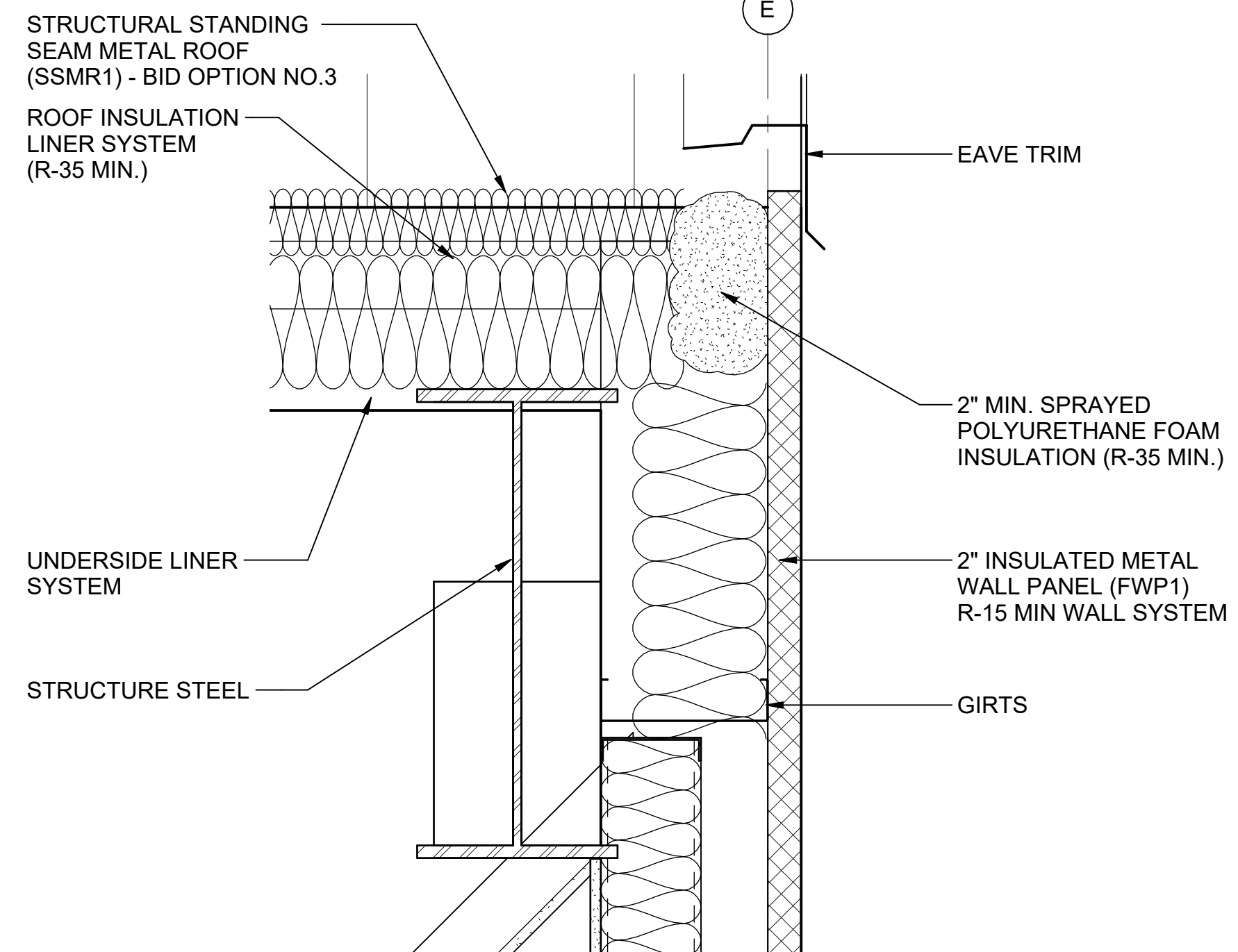
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SCALE: 1 1/2" = 1'-0"



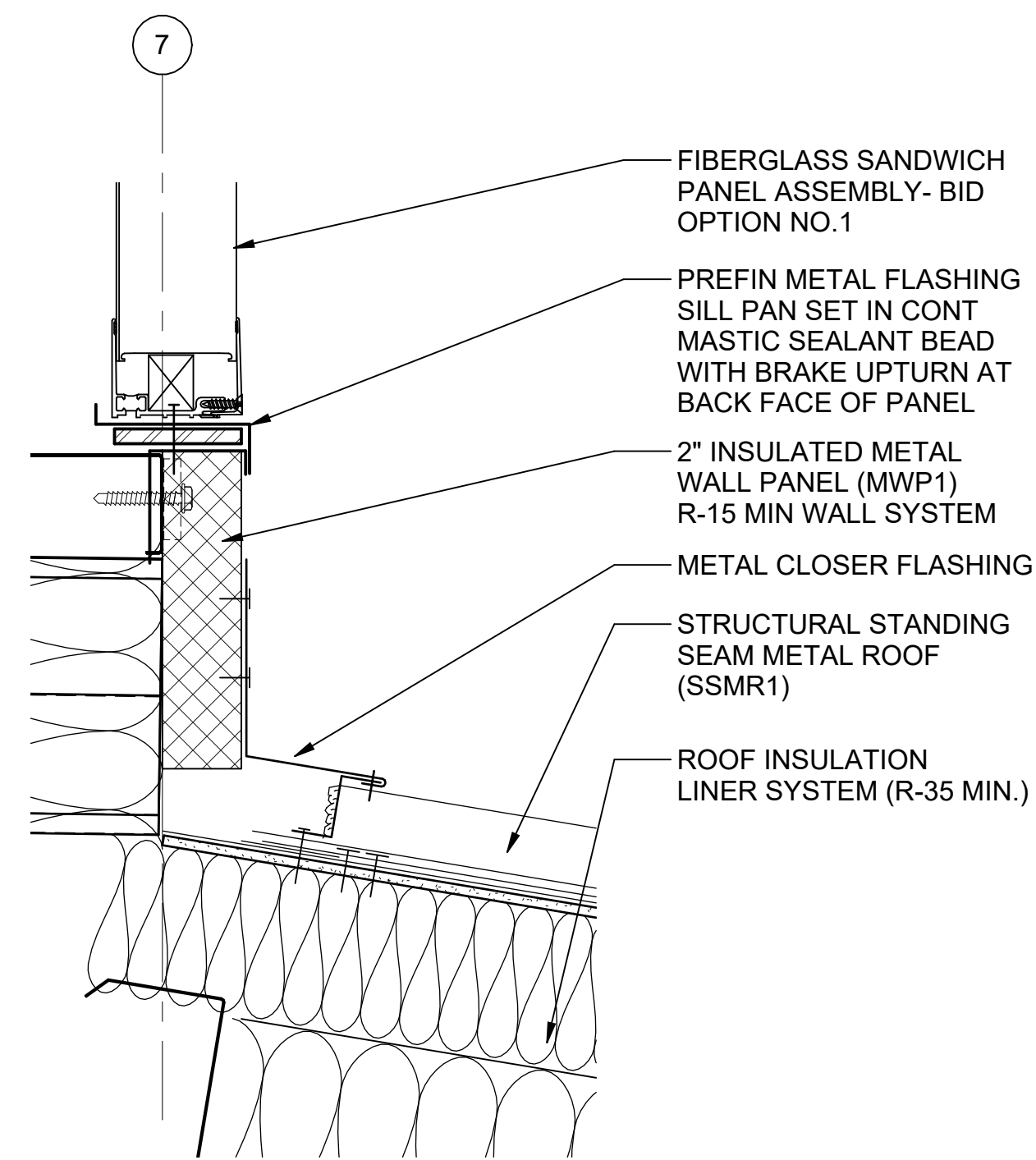
**G6 SECTION DETAIL**  
SCALE: 1 1/2" = 1'-0"



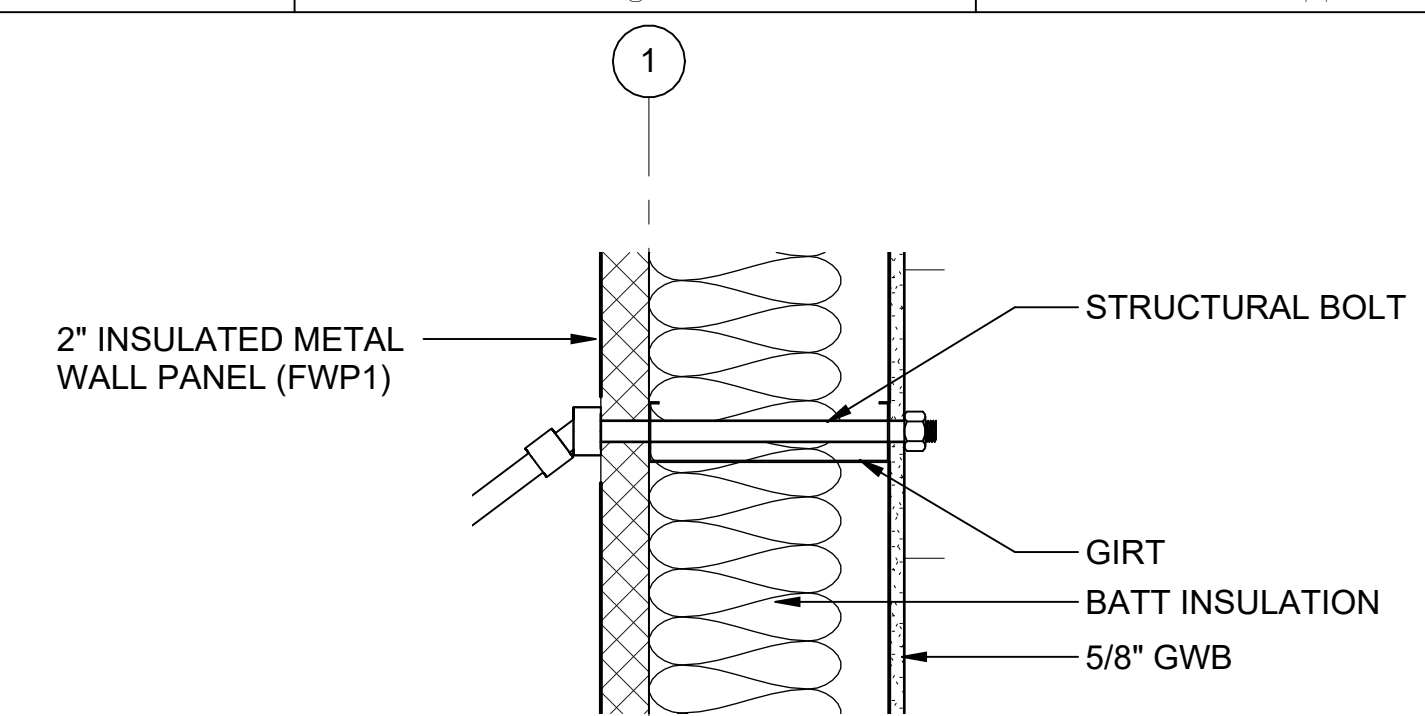
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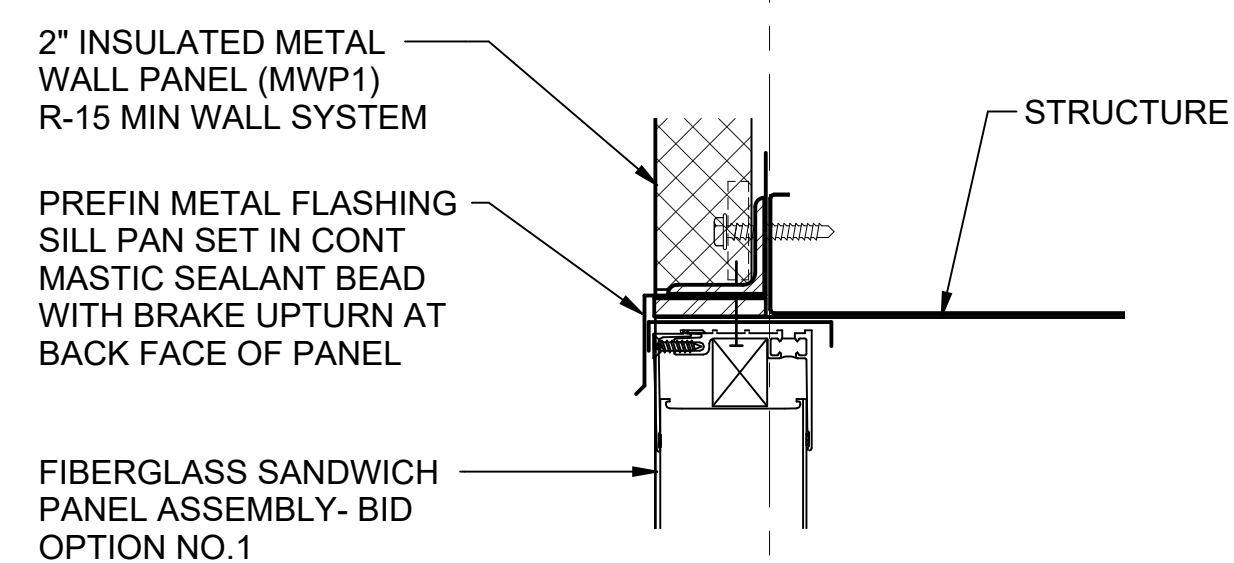
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SCALE: 1 1/2" = 1'-0"



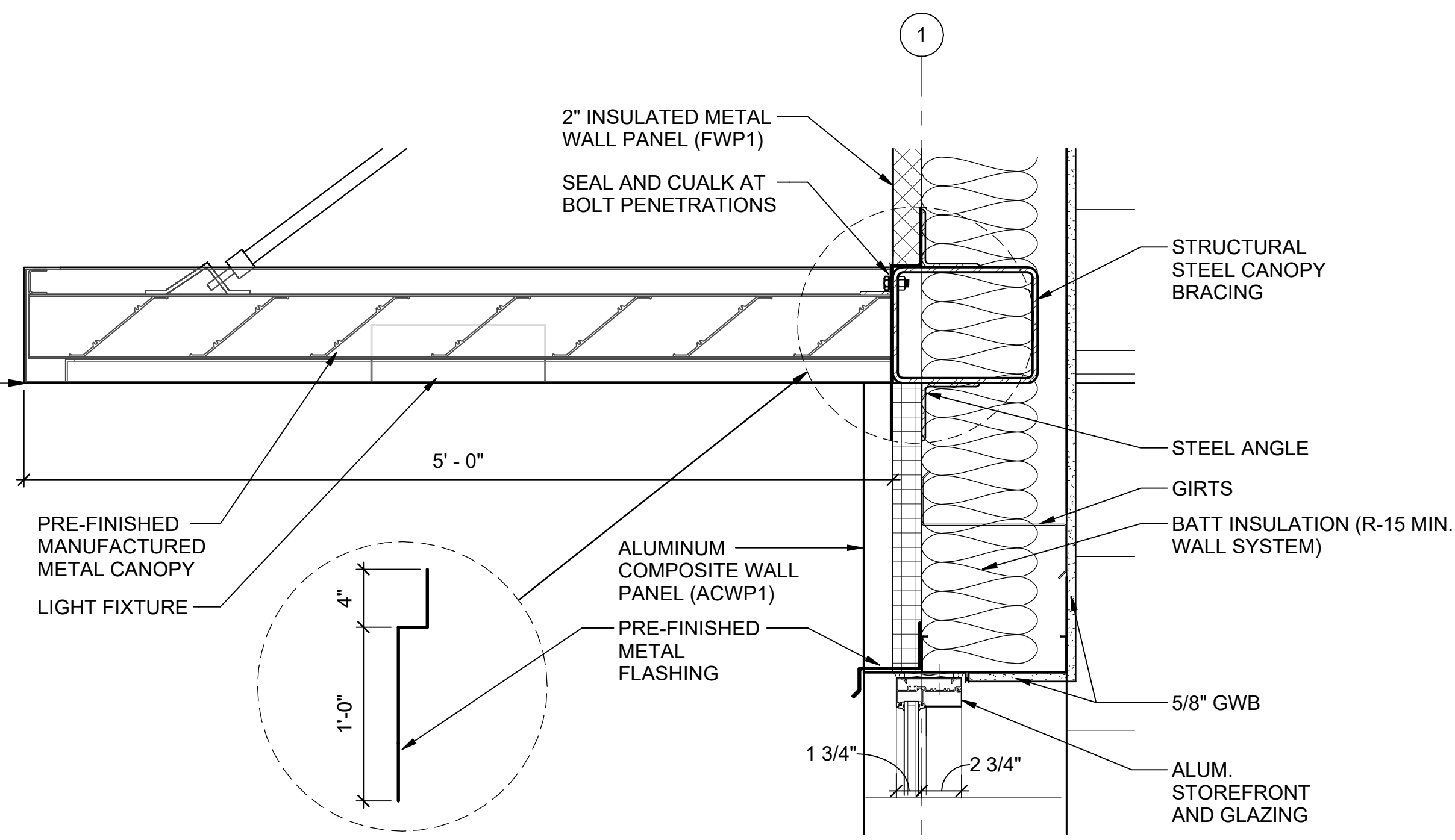
**C3** SECTION DETAIL  
SCALE: 3" = 1'-0"



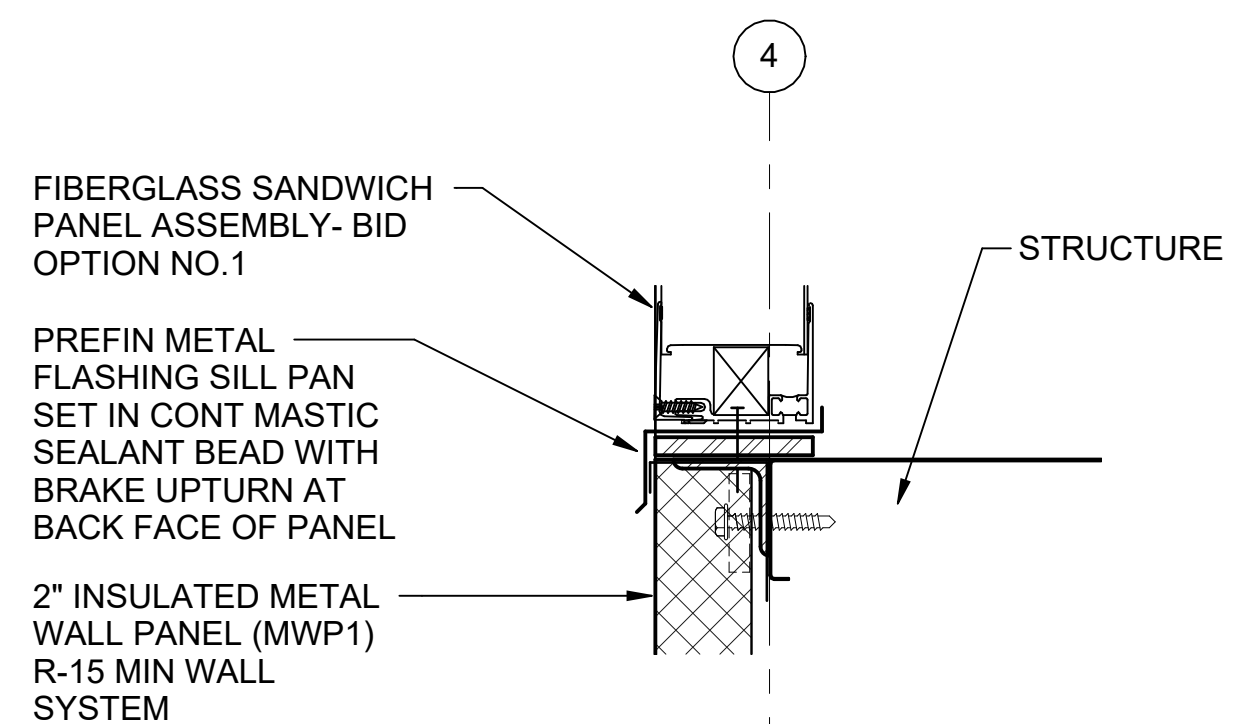
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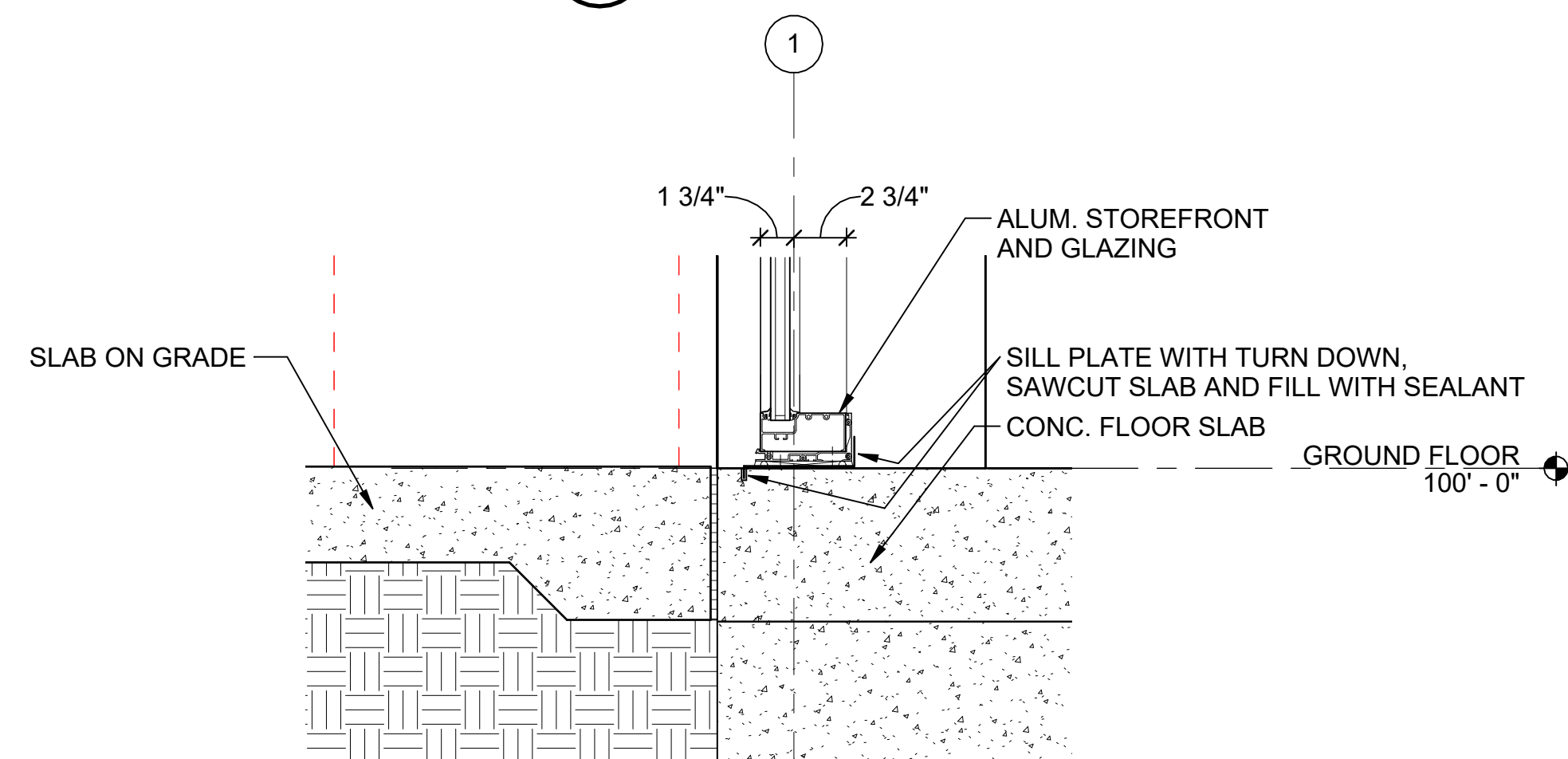
**C4** HEAD/JAMB DETAIL  
SCALE: 3" = 1'-0"



**F4** SECTION DETAIL  
SCALE: 1 1/2" = 1'-0"

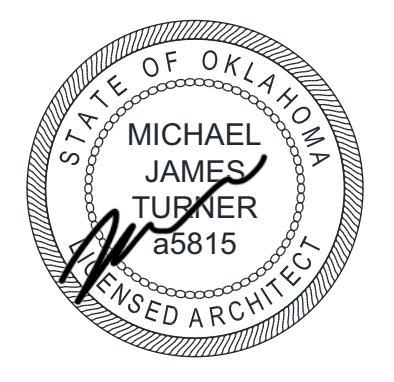


**C6** SILL DETAIL  
SCALE: 3" = 1'-0"



**F6** SECTION DETAIL  
SCALE: 1 1/2" = 1'-0"

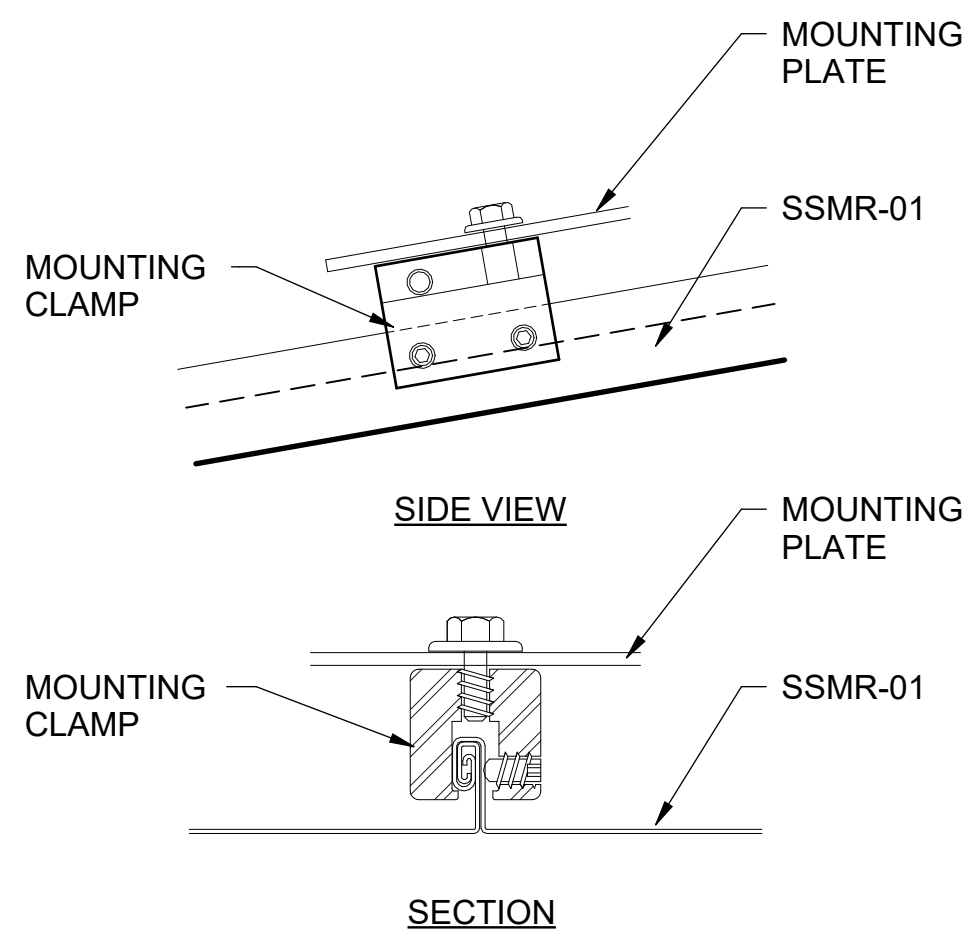
FSB FEDERAL DESIGN GROUP JV  
Frankfurt-Short-Bruza Associates, P.C.  
5801 Broadway Extension, Suite 500  
Oklahoma City, OK 73118-7436  
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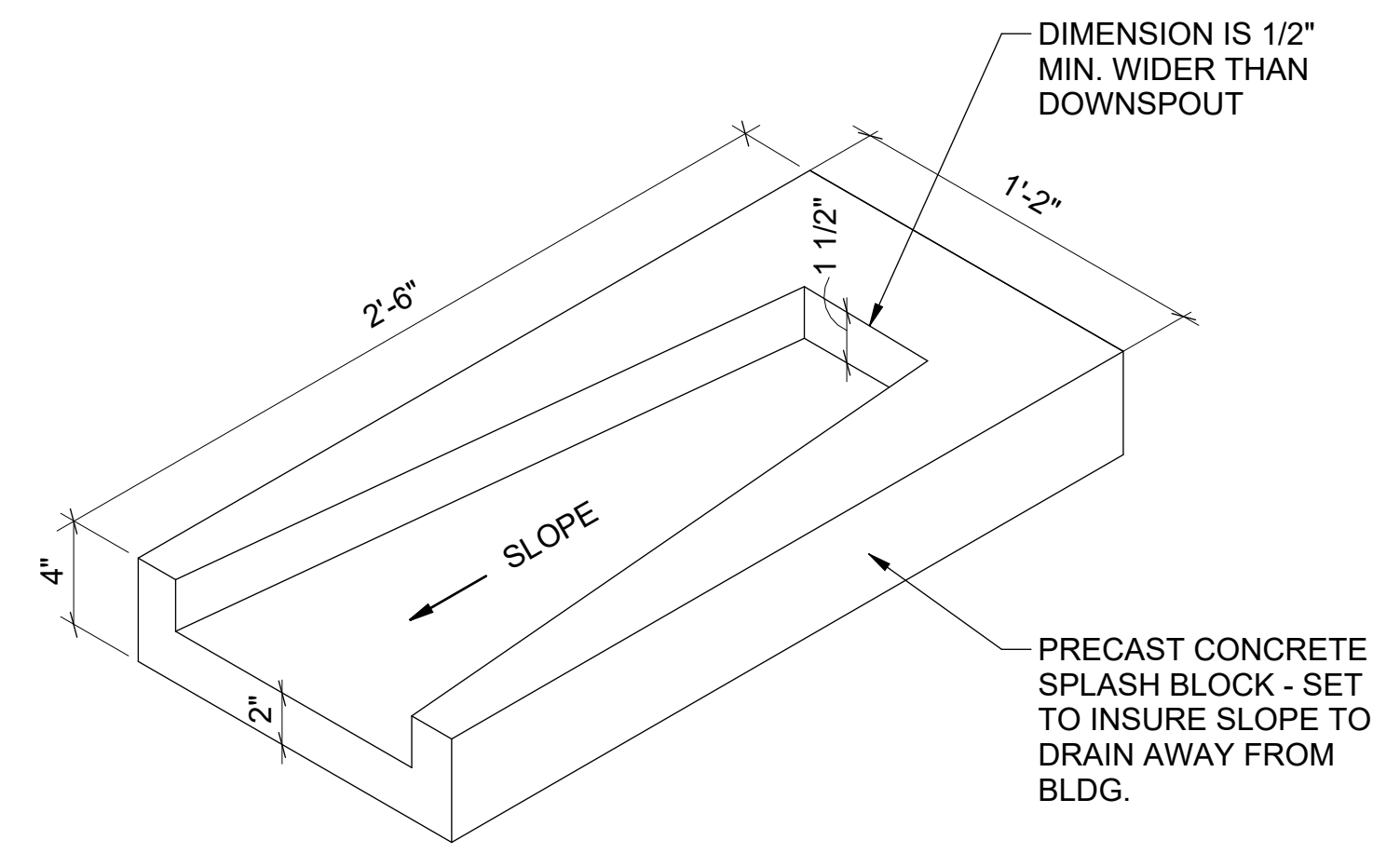
**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

REVISION HISTORY:	
NO.	DESCRIPTION
PROJECT INFORMATION:	
DESIGNED BY:	JCL
DRAWN BY:	JCL
REVIEWED BY:	BKG
PROJECT MANAGER:	NDM
PROJECT NUMBER:	20190320
SHEET TITLE:	DETAILS
ISSUE DATE:	2 AUGUST 2024
SHEET NUMBER:	A-501

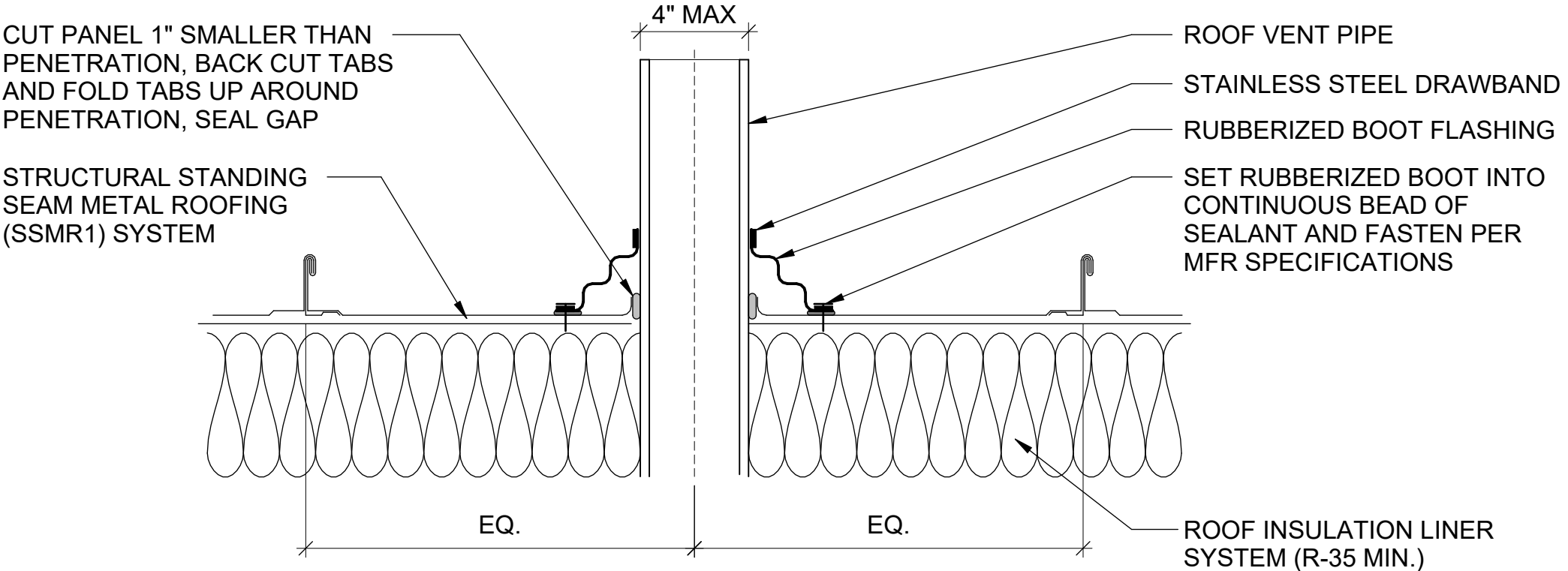
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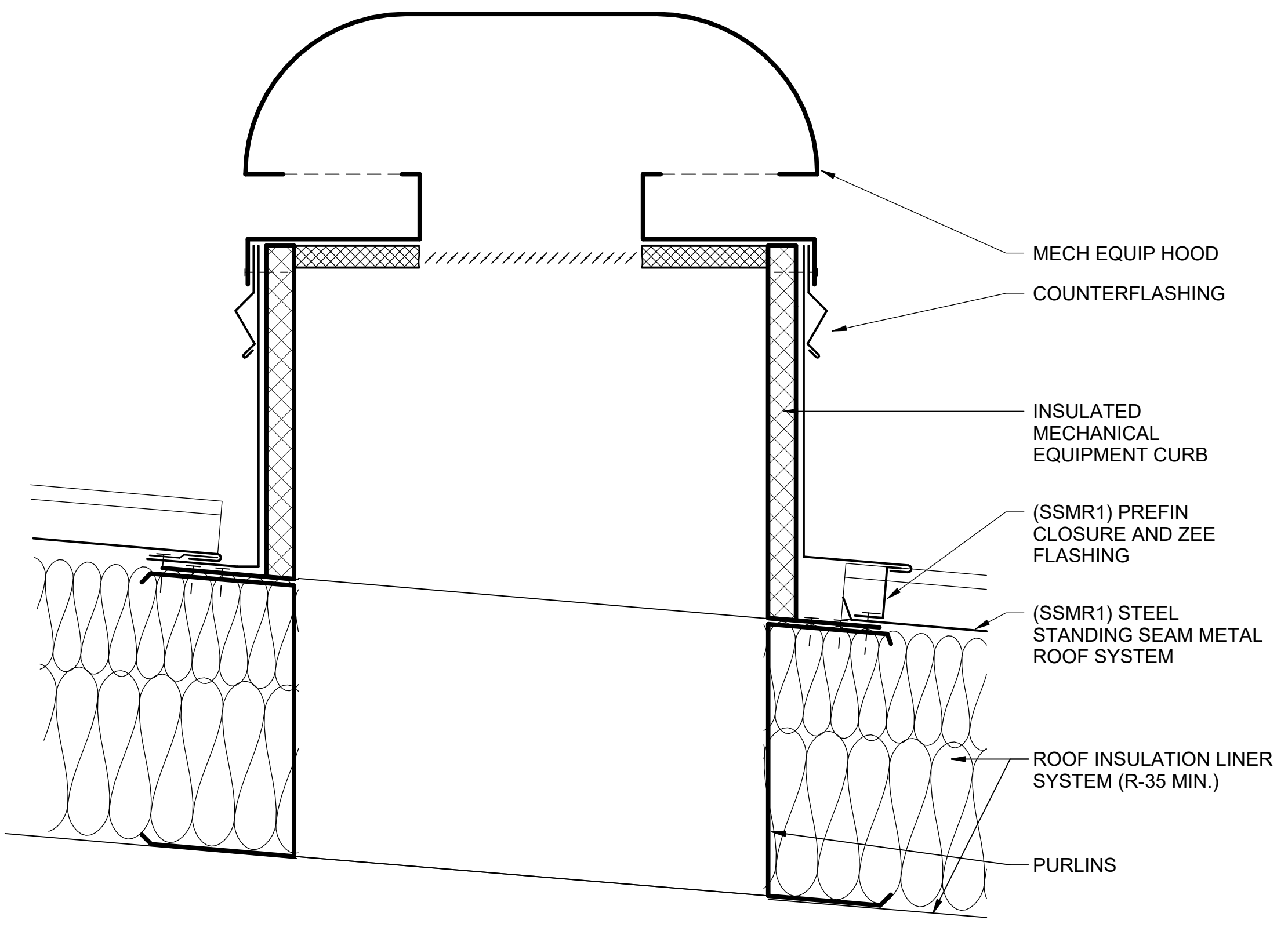
**B2 FALL ARREST MOUNT PLATE DETAIL**  
SCALE: 3" = 1'-0"



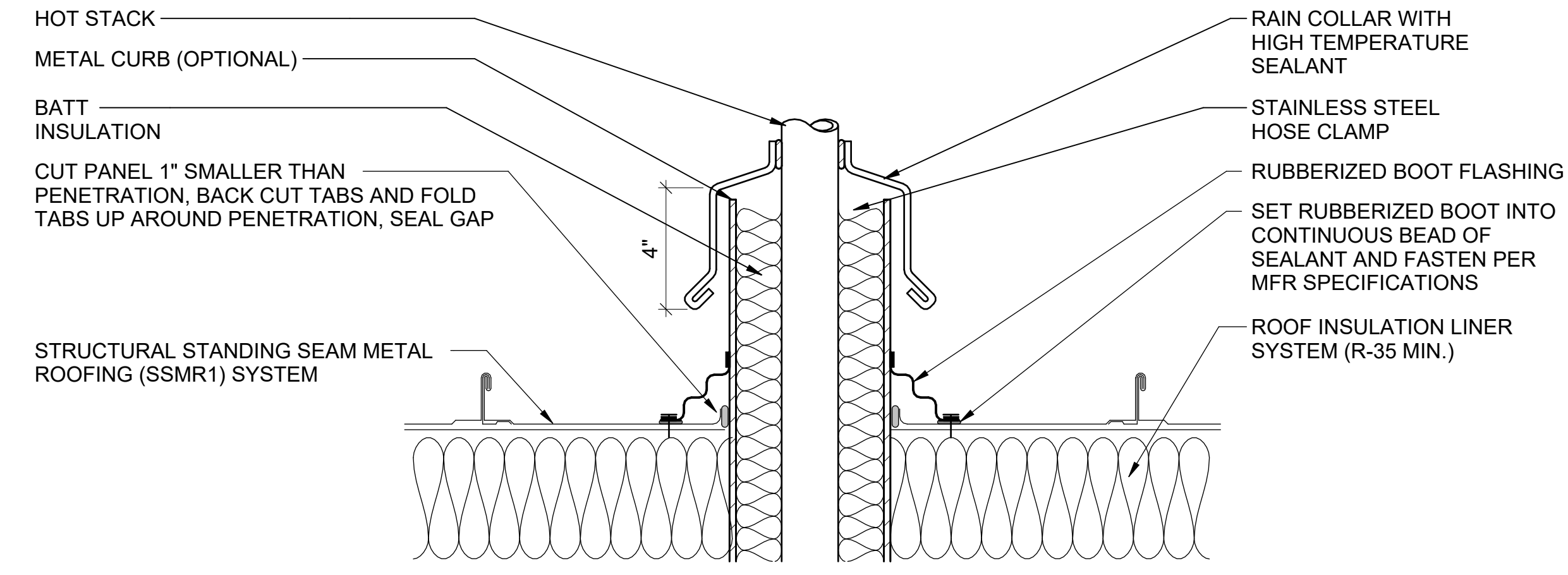
**C2 SPLASH BLOCK DETAIL**  
SCALE: 1 1/2" = 1'-0"



**F2 ROOF VENT PIPE DETAIL**  
SCALE: 3" = 1'-0"



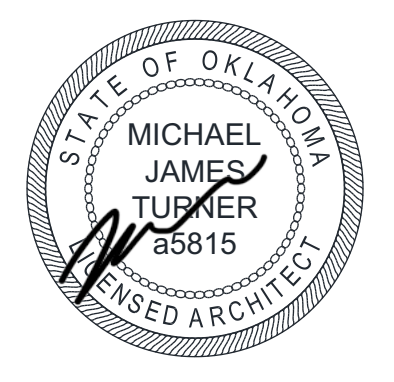
**A5 ROOF CURB DETAIL**  
SCALE: 3" = 1'-0"



**G4 EXHAUST PIPE FLASHING DETAIL**  
SCALE: 3" = 1'-0"

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**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: **JCL**

DRAWN BY: **JCL**

REVIEWED BY: **BKG**

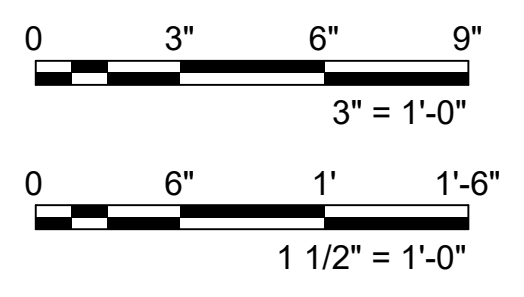
PROJECT MANAGER: **NDM**

PROJECT NUMBER: **20190320**

SHEET TITLE: **DETAILS**

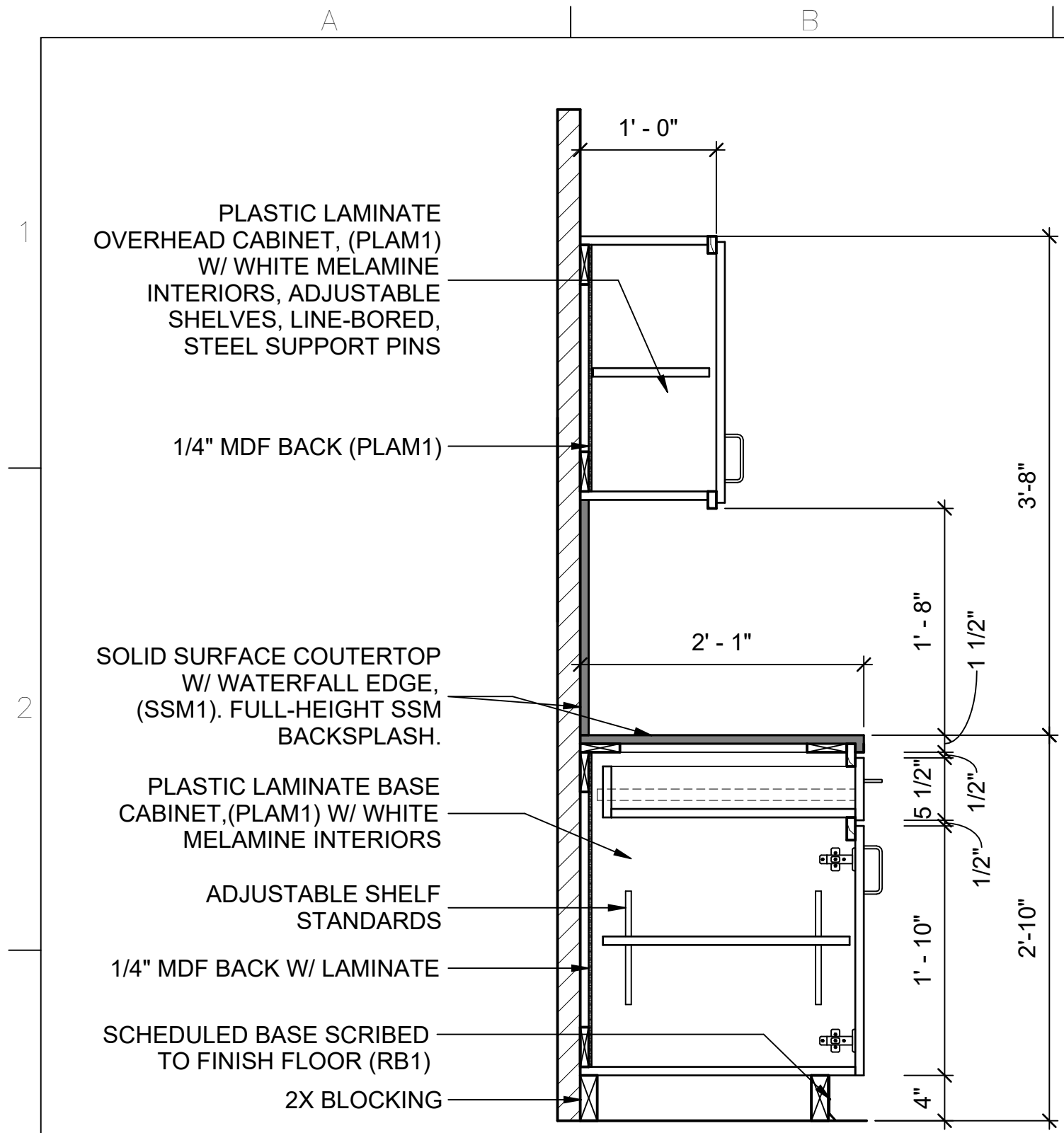
ISSUE DATE: **2 AUGUST 2024**

SHEET NUMBER: **A-502**



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PLASTIC LAMINATE OVERHEAD CABINET, (PLAM1) W/ WHITE MELAMINE INTERIORS, ADJUSTABLE SHELVES, LINE-BORED, STEEL SUPPORT PINS

1/4" MDF BACK (PLAM1)

SOLID SURFACE COUNTERTOP W/ WATERFALL EDGE, (SSM1), FULL-HEIGHT SSM BACKSPLASH.

PLASTIC LAMINATE BASE CABINET, (PLAM1) W/ WHITE MELAMINE INTERIORS

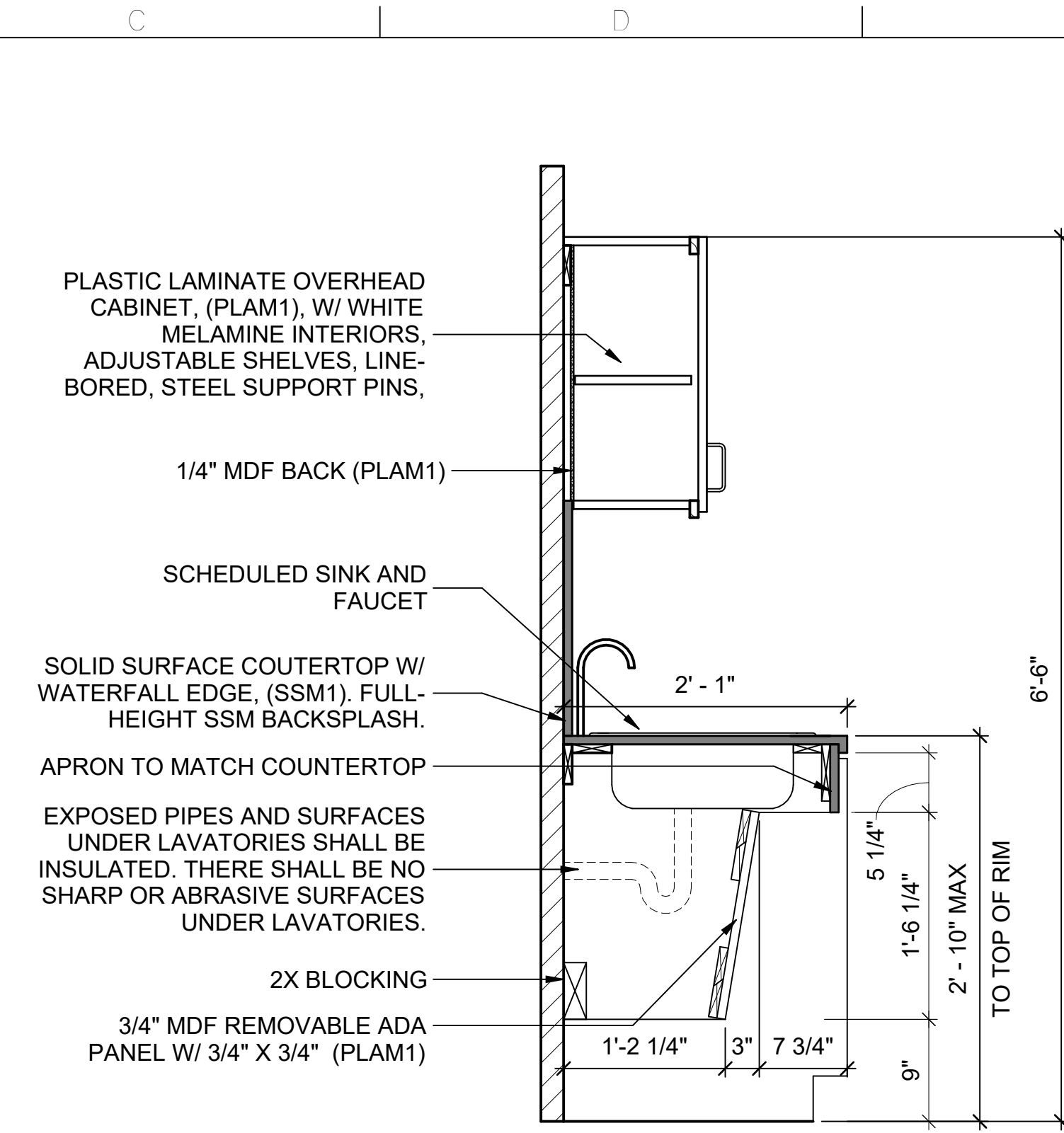
ADJUSTABLE SHELF STANDARDS

1/4" MDF BACK W/ LAMINATE

SCHEDULED BASE SCRIBED TO FINISH FLOOR (RB1)

2X BLOCKING

**B3** MILLWORK SECTION  
SCALE: 1" = 1'-0" ROOM 120



PLASTIC LAMINATE OVERHEAD CABINET, (PLAM1), W/ WHITE MELAMINE INTERIORS, ADJUSTABLE SHELVES, LINE-BORED, STEEL SUPPORT PINS,

1/4" MDF BACK (PLAM1)

SCHEDULED SINK AND FAUCET

SOLID SURFACE COUNTERTOP W/ WATERFALL EDGE, (SSM1), FULL-HEIGHT SSM BACKSPLASH.

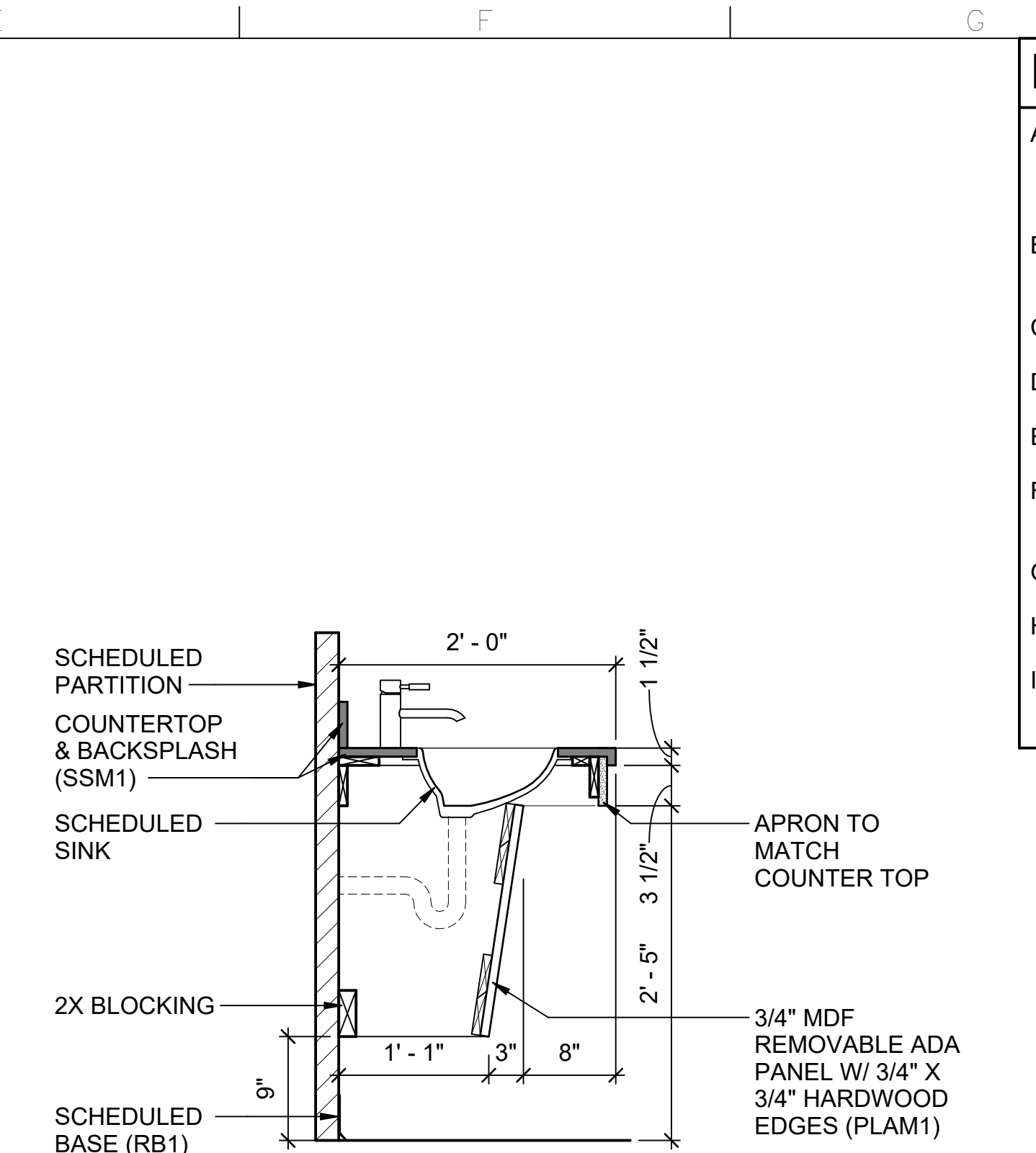
APRON TO MATCH COUNTERTOP

EXPOSED PIPES AND SURFACES UNDER LAVATORIES SHALL BE INSULATED. THERE SHALL BE NO SHARP OR ABRASIVE SURFACES UNDER LAVATORIES.

2X BLOCKING

3/4" MDF REMOVABLE ADA PANEL W/ 3/4" X 3/4" (PLAM1)

**D3** MILLWORK SECTION  
SCALE: 1" = 1'-0" ROOM 109



SCHEDULED PARTITION

COUNTERTOP & BACKSPLASH (SSM1)

SCHEDULED SINK

2X BLOCKING

SCHEDULED BASE (RB1)

APRON TO MATCH COUNTER TOP

**F3** MILLWORK SECTION  
SCALE: 1" = 1'-0" ROOM 112 AND 115

### MILLWORK GENERAL NOTES

- REFER TO SPECIFICATION SECTION 06 41 16.00 10 **PLASTIC-LAMINATE-CLAD ARCHITECTURAL CABINETS** FOR CABINET CONSTRUCTION AND HARDWARE REQUIREMENTS.
- REFER TO SPECIFICATION SECTION 06 61 16 **SOLID SURFACING FABRICATIONS** FOR COUNTERTOP CONSTRUCTION REQUIREMENTS.
- REFER TO PLUMBING FOR SINK AND FAUCET SPECIFICATIONS AND REQUIREMENTS.
- ALL BUILT-IN MILLWORK SHALL MEET [ADA] [ABA] REQUIREMENTS.
- PROVIDE FULLY FINISHED SIDE PANELS AT ALL EXPOSED ENDS OF CASEWORK.
- PROVIDE COLOR MATCHED CAULK AT ALL JOINT WHERE COUNTERTOPS, BACK AND SIDE SPLASHES ABUT MILLWORK AND WALLS.
- ALL BOTTOMS AND TOPS OF UPPER CABINETS TO BE FULLY FINISHED, U.N.O.
- REFER TO INTERIOR ELEVATIONS SHEET A-403 FOR INDICATIONS OF FINISHES.
- CONTRACTOR IS RESPONSIBLE FOR ALL IN-WALL BLOCKING AND BACKING TO SUPPORT MILLWORK.

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STATE OF OKLAHOMA  
MICHAEL JAMES TURNER  
5815  
LICENSED ARCHITECT

**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: **JCL**

DRAWN BY: **JCL**

REVIEWED BY: **BKG**

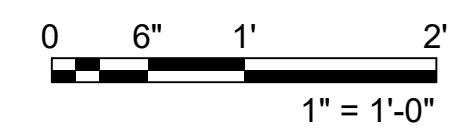
PROJECT MANAGER: **NDM**

PROJECT NUMBER: **20190320**

SHEET TITLE: **MILLWORK DETAILS**

ISSUE DATE: **2 AUGUST 2024**

SHEET NUMBER: **A-503**

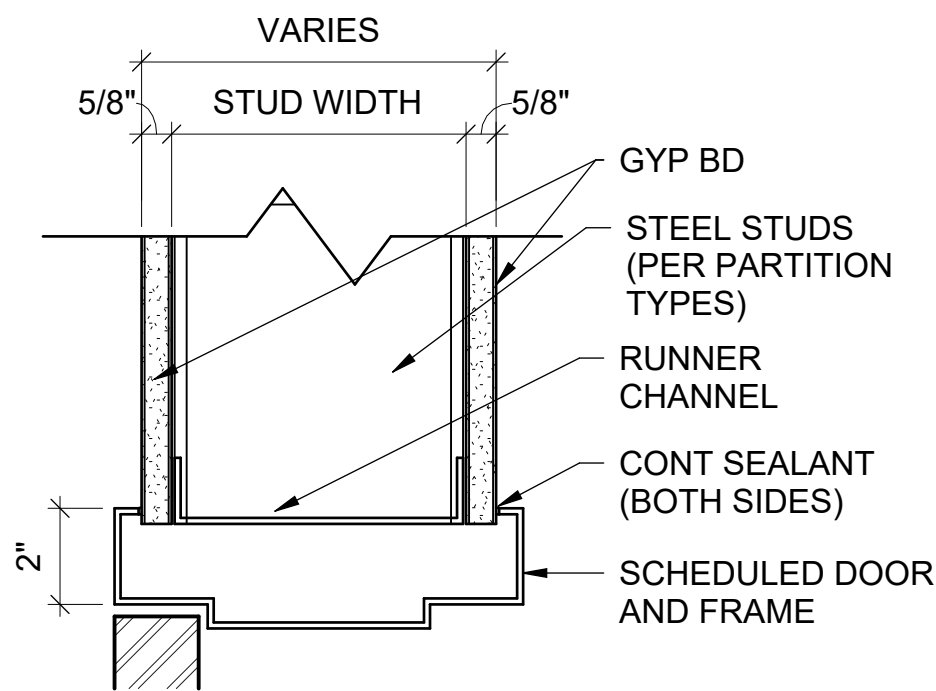


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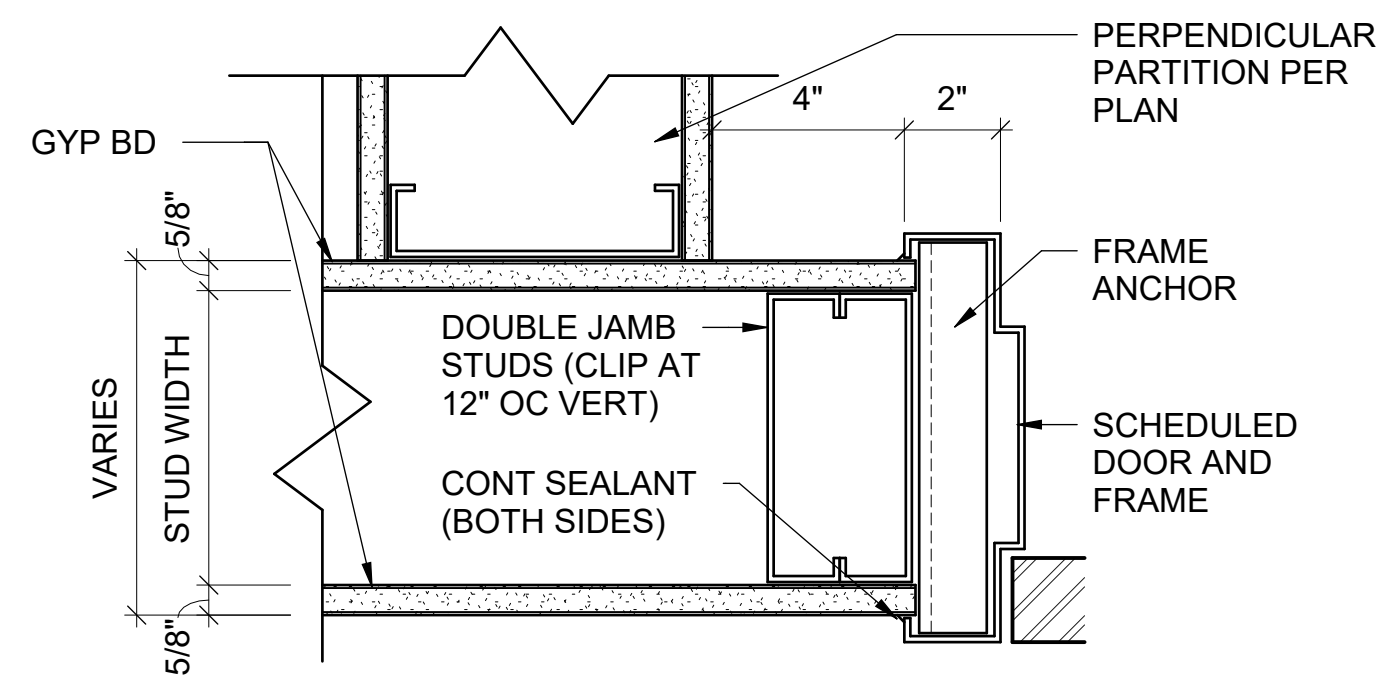
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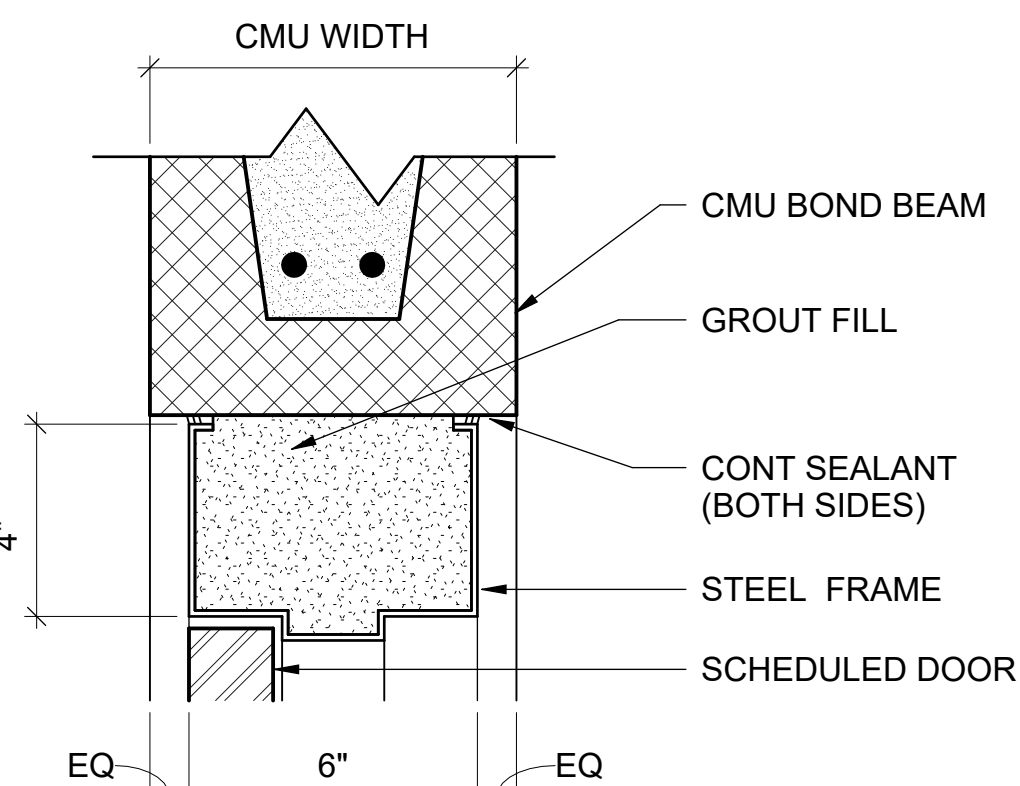
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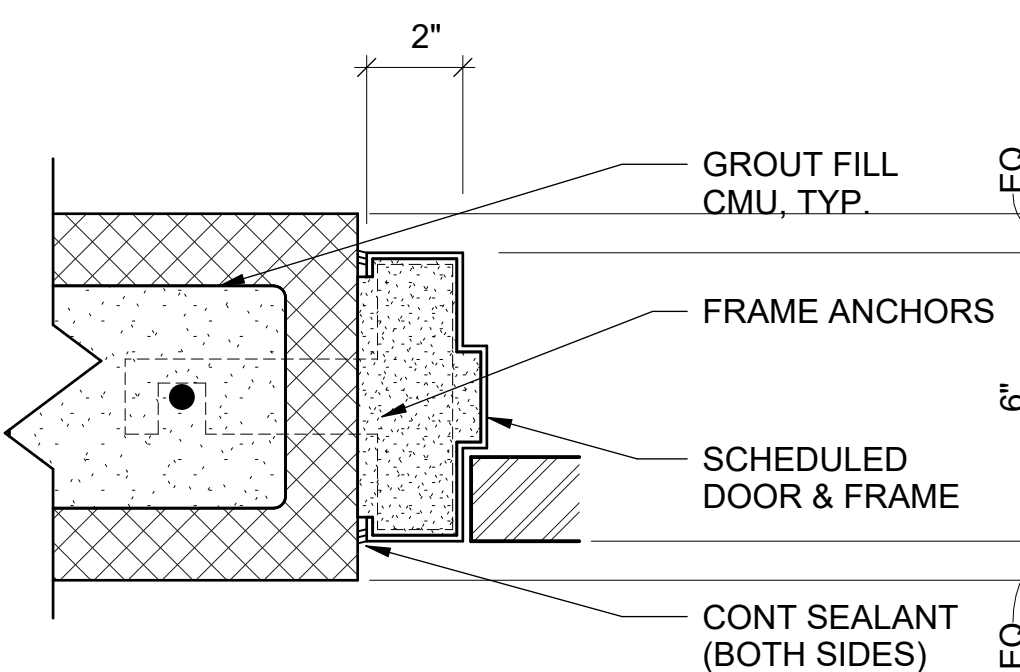
**A2 HEAD DETAIL**  
SCALE: 3" = 1'-0"



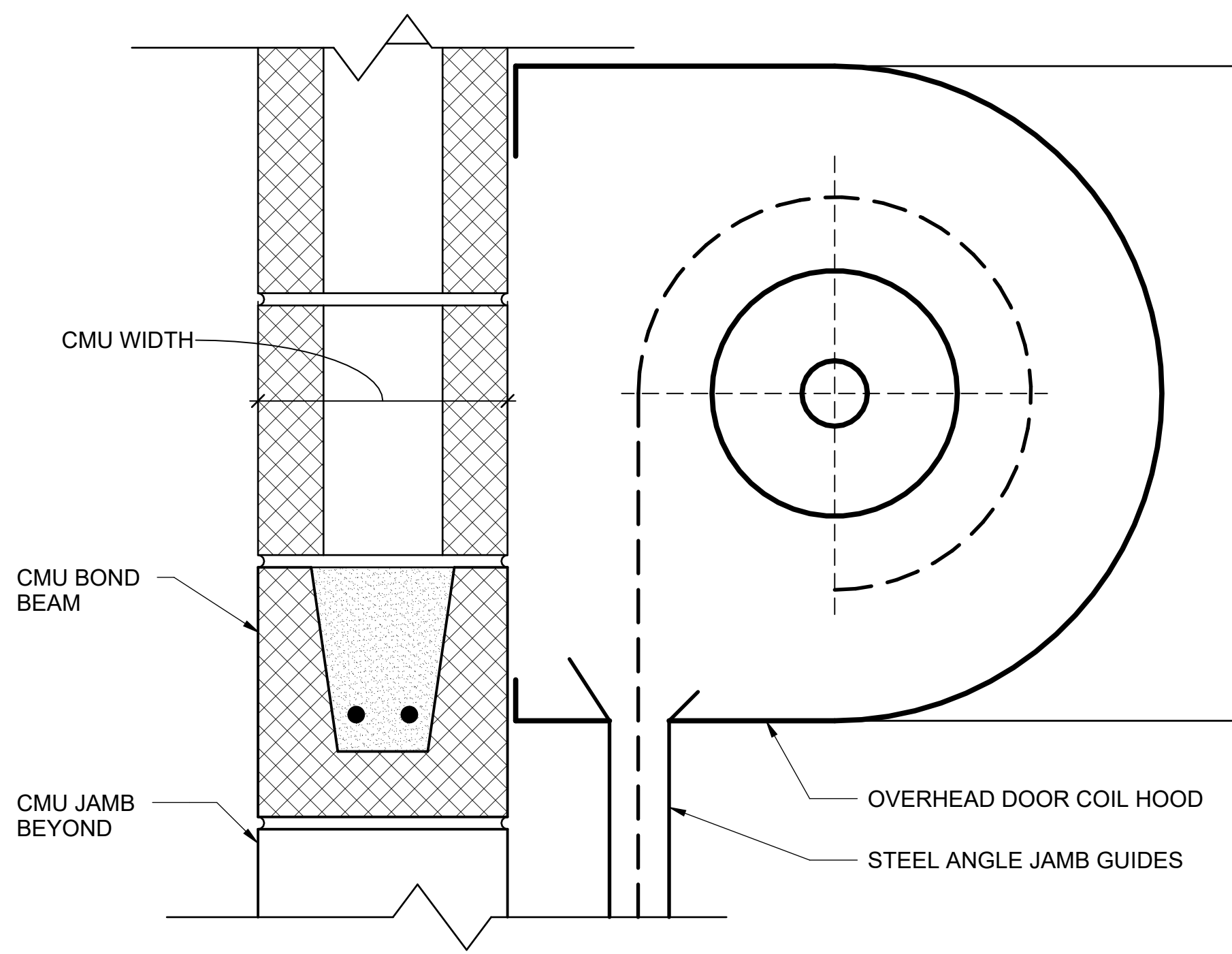
**A3 JAMB DETAIL**  
SCALE: 3" = 1'-0"



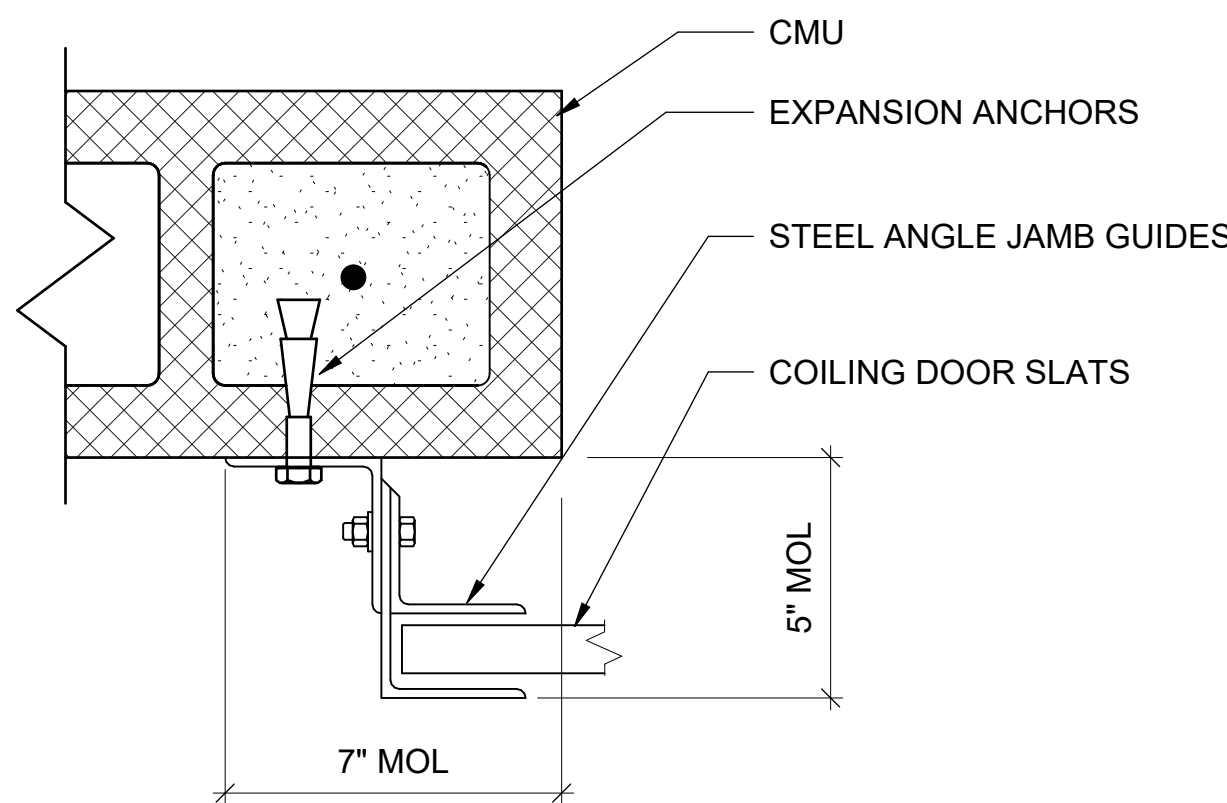
**B4 HEAD DETAIL**  
SCALE: 3" = 1'-0"



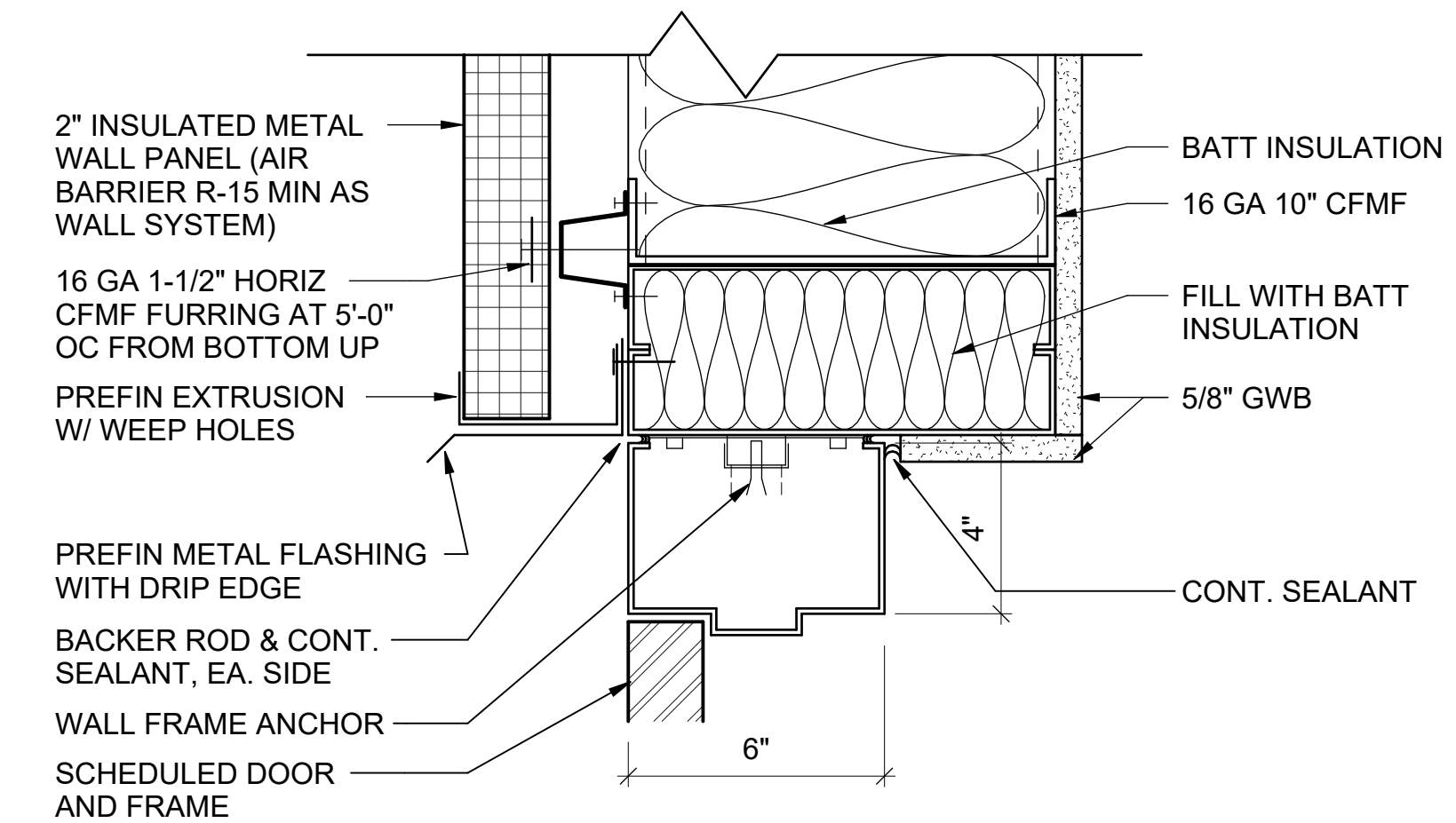
**A6 JAMB DETAIL**  
SCALE: 3" = 1'-0"



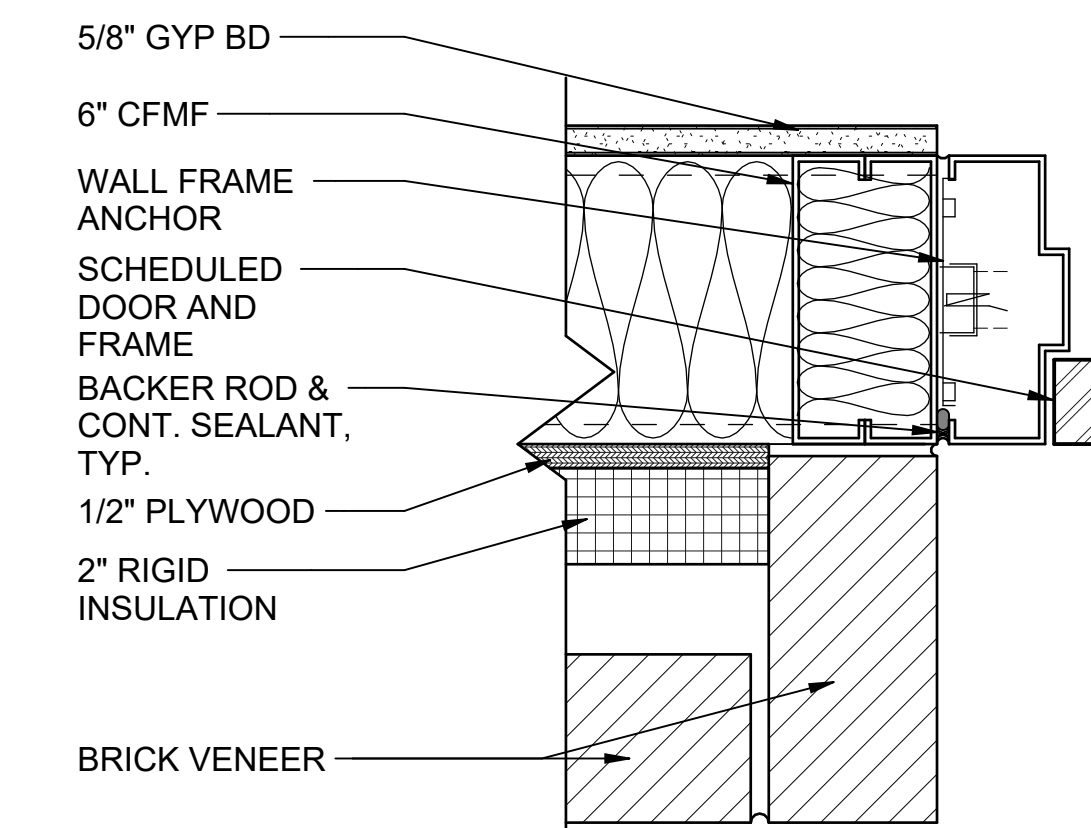
**D3 HEAD DETAIL**  
SCALE: 3" = 1'-0"



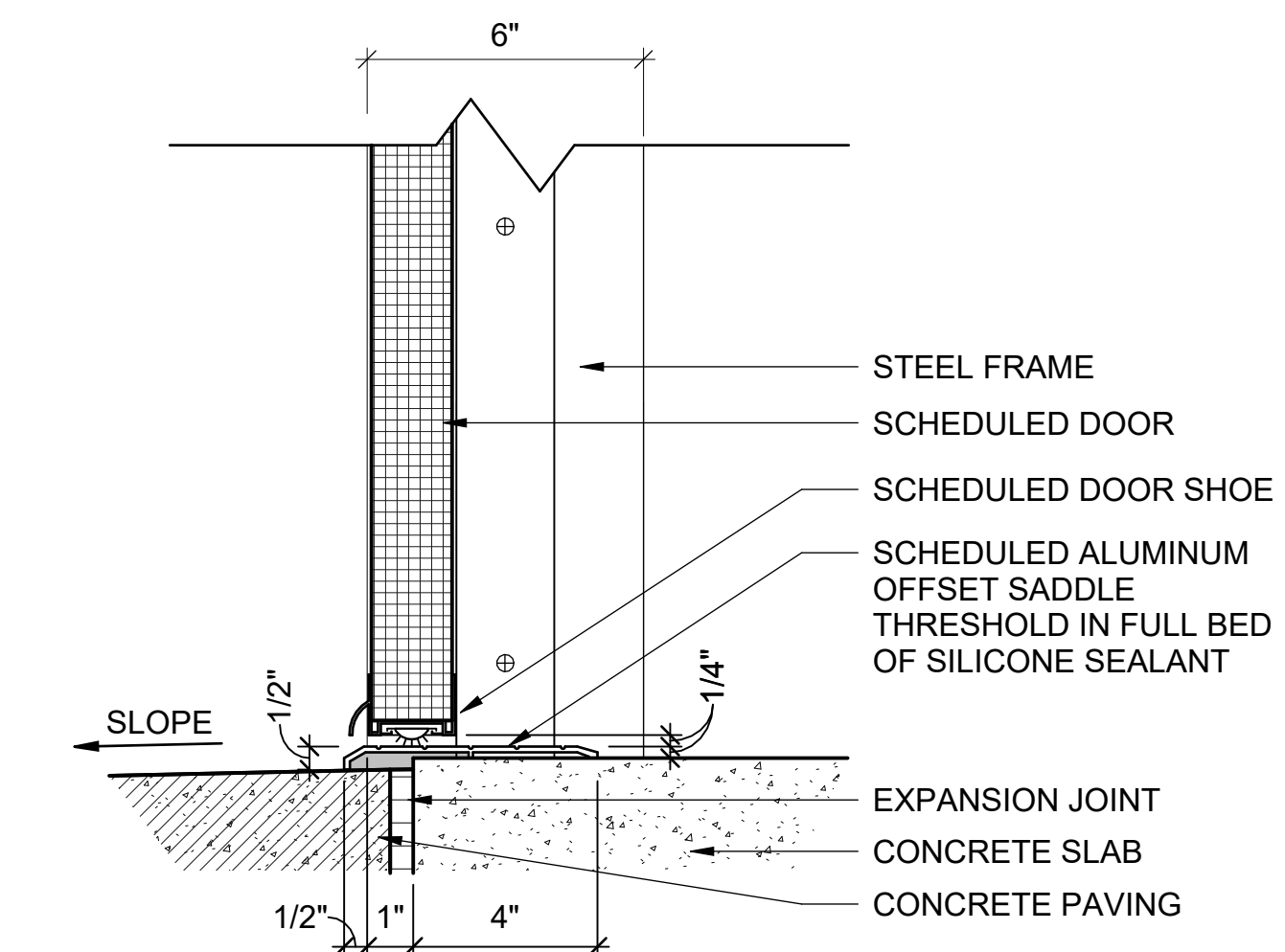
**D4 JAMB DETAIL**  
SCALE: 3" = 1'-0"



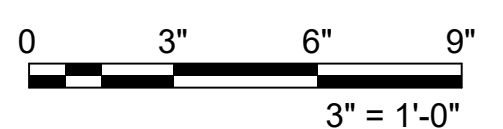
**F2 HEAD DETAIL**  
SCALE: 3" = 1'-0"



**G4 JAMB DETAIL**  
SCALE: 3" = 1'-0"



**G6 SILL DETAIL**  
SCALE: 3" = 1'-0"



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Texas Air National Guard - 149th FW  
Corrosion Control Facility  
TXANG Project Number: KELL 169014  
JBSA - Kelly Annex, TX

REVISION HISTORY:	
NO.	DESCRIPTION

PROJECT INFORMATION:	DATE
DESIGNED BY:	JCL
DRAWN BY:	JCL
REVIEWED BY:	BKG
PROJECT MANAGER:	NDM

PROJECT NUMBER:	20190320
SHEET TITLE:	DOOR DETAILS
ISSUE DATE:	2 AUGUST 2024
SHEET NUMBER:	A-601

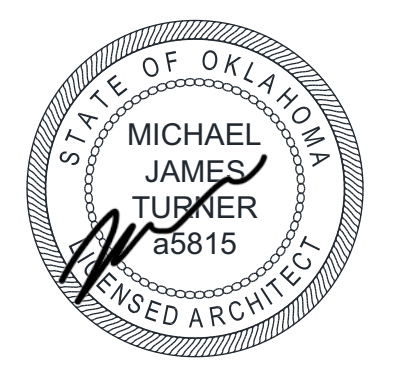
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- SHEET KEYNOTES**
- ALIGN CENTER OF GLAZING MULLION WITH CENTER OF PARTITION, RE: F5/A-401.
  - FIBERGLASS SANDWICH PANEL ASSEMBLY- BID OPTION NO.1.
  - LINE OF A4 PARTITION BEYOND.

**FSB**  
 FEDERAL DESIGN GROUP JV  
 Frankfurt-Short-Bruza Associates, P.C.  
 5801 Broadway Extension, Suite 500  
 Oklahoma City, OK 73118-7436  
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**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: **JCL**

DRAWN BY: **JCL**

REVIEWED BY: **BKG**

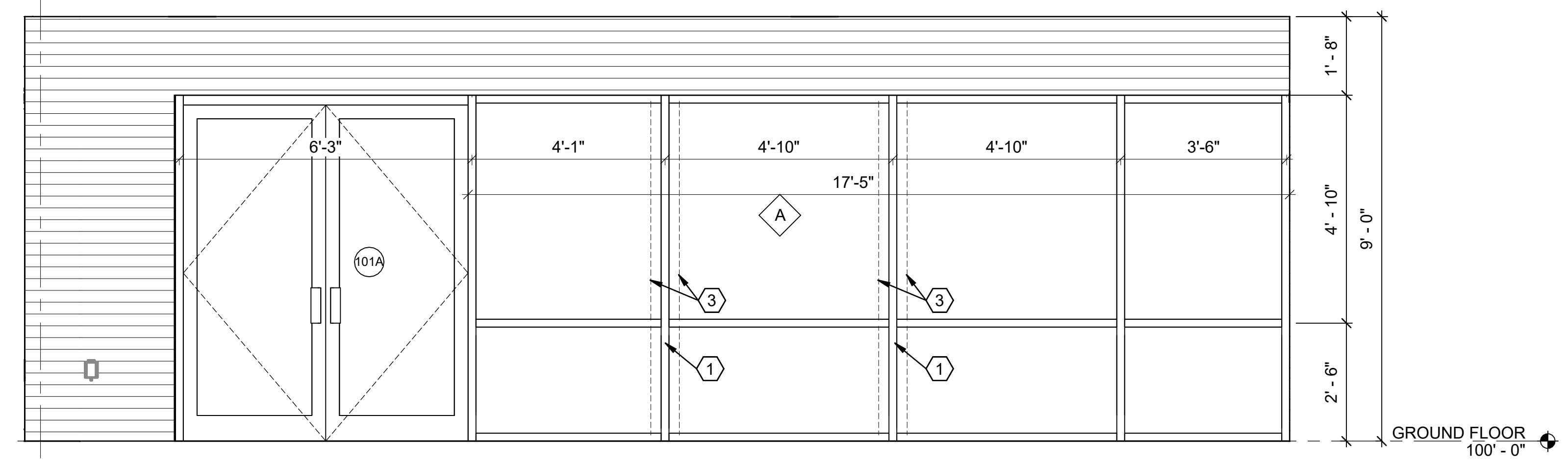
PROJECT MANAGER: **NDM**

PROJECT NUMBER: **20190320**

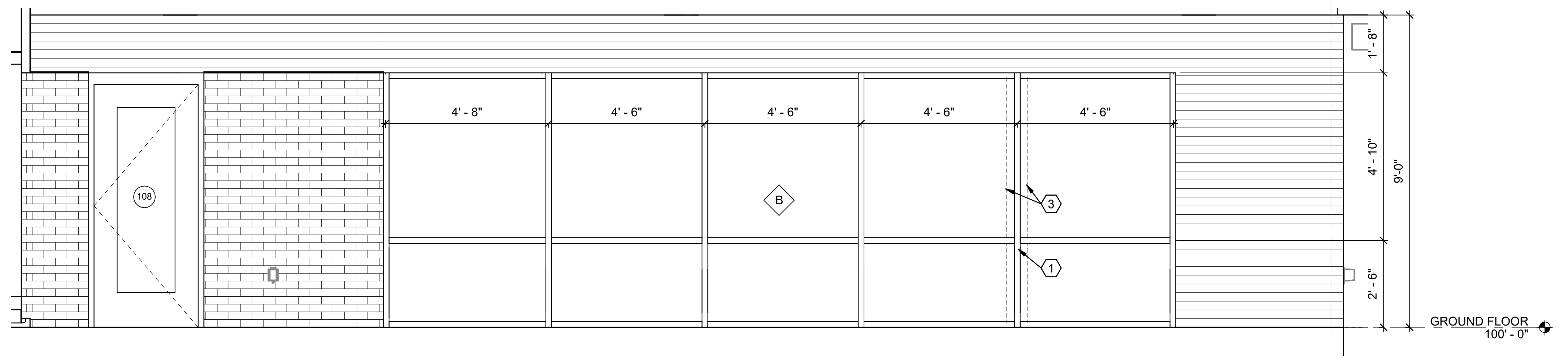
SHEET TITLE: **GLAZING SCHEDULE**

ISSUE DATE: **2 AUGUST 2024**

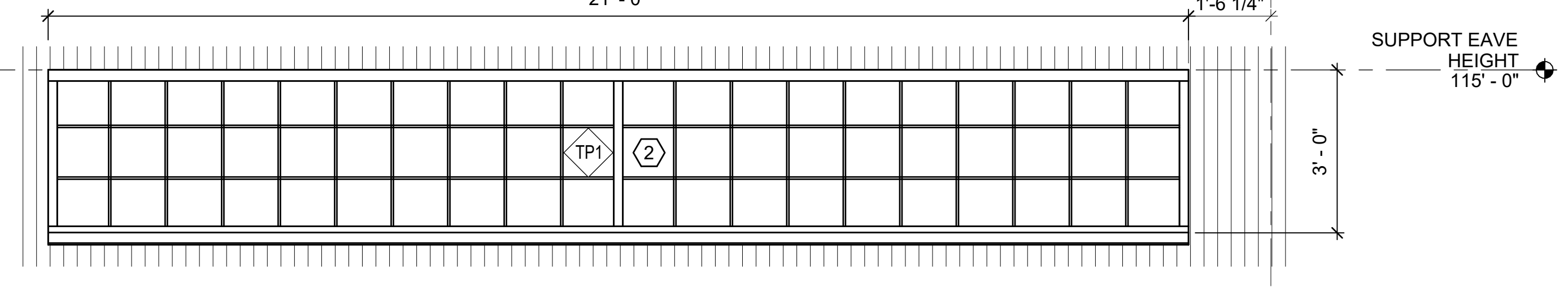
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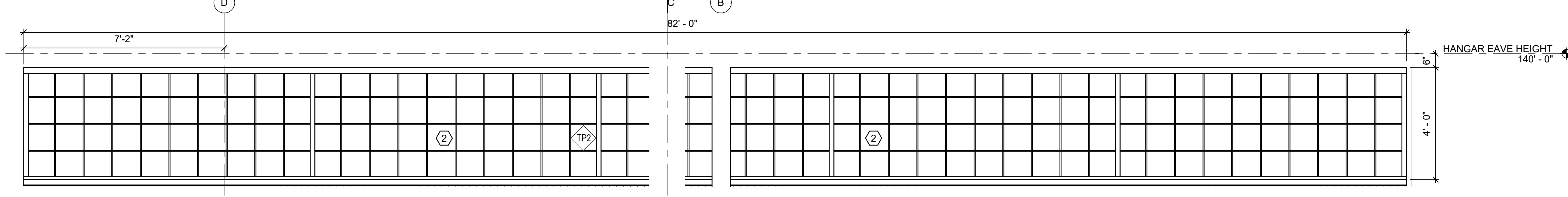
**A2 STOREFRONT GLAZING- SOUTH ELEVATION**  
 SCALE: 1/2" = 1'-0"



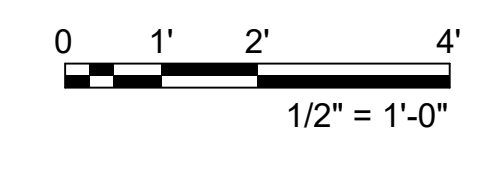
**A4 STOREFRONT GLAZING- WEST ELEVATION**  
 SCALE: 1/2" = 1'-0"



**A5 TRANSLUCENT PANEL- SOUTH AND NORTH ELEVATIONS - BID OPTION NO.1**  
 SCALE: 1/2" = 1'-0"



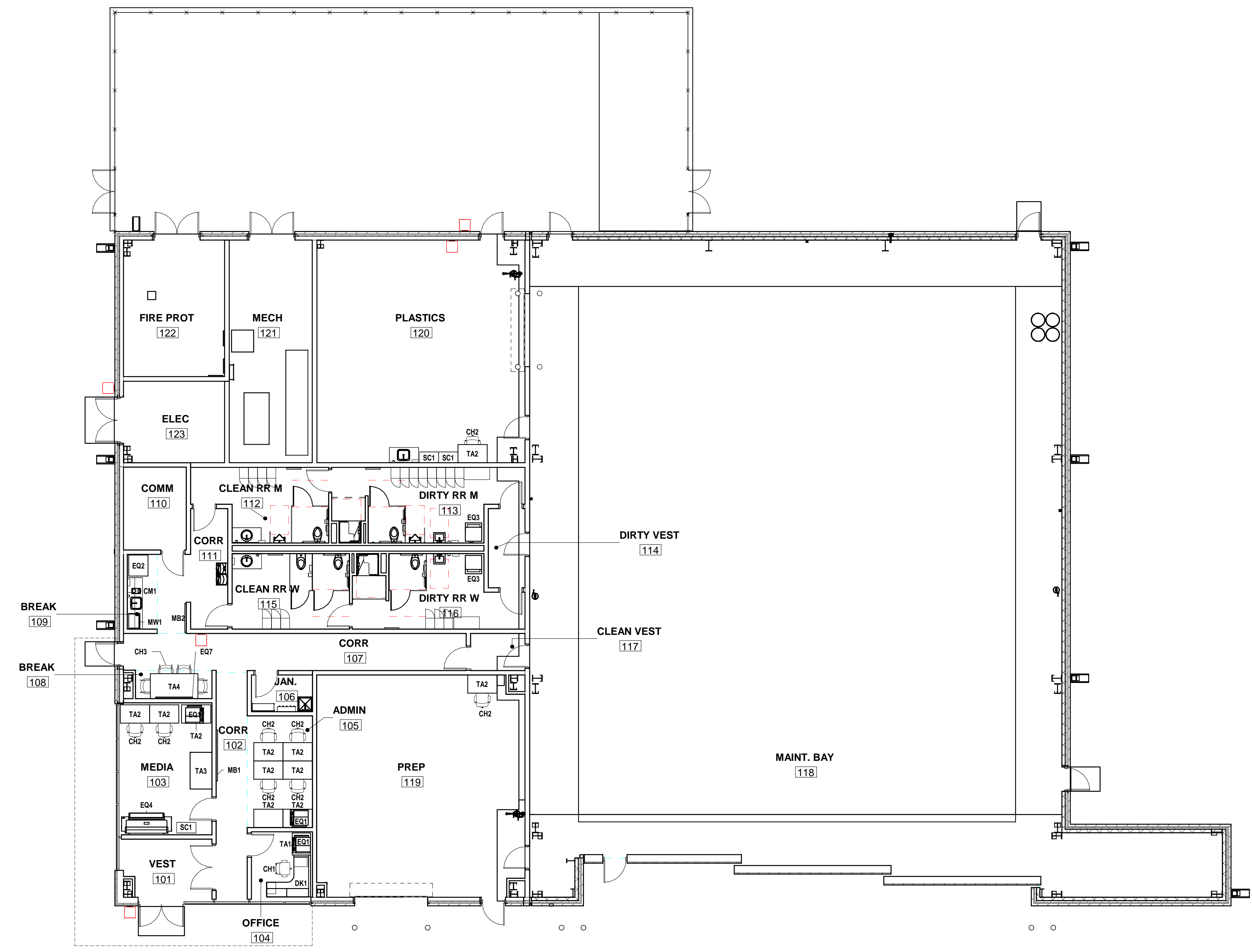
**A6 TRANSLUCENT PANEL- WEST AND EAST ELEVATIONS - BID OPTION NO.1**  
 SCALE: 1/2" = 1'-0"



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6



**GENERAL NOTES**

- A. FURNITURE IS NOT IN CONTRACT AND IS SHOWN FOR COORDINATION PURPOSES ONLY. COORDINATION PURPOSES ONLY. CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF FINAL LOCATIONS FOR POWER AND DATA FOR FURNITURE, EQUIPMENT, AND FURNITURE SYSTEMS WITH VENDOR.
- B. GFGI: GOVERNMENT FURNISHED, GOVERNMENT INSTALLED.
- C. GFCI: GOVERNMENT FURNISHED, CONTRACTOR INSTALLED.
- D. REFER TO MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS FOR INFORMATION RELATED TO POWER, DATA, TELECOM, SECURITY, WATER LINES, ETC. THAT MUST BE COORDINATED WITH FURNITURE & EQUIPMENT. ze
- E. CONTRACTOR SHALL PROVIDE BLOCKING IN WALL FOR ALL WALL MTD TVS, MONITORS, AND/OR DISPLAYS.
- F. CONTRACTOR SHALL PROVIDE BLOCKING IN WALL FOR ALL MARKER BOARDS, TO BE MOUNTED AT 3'-0" A.F.F. TO B.O. MARKER BOARD, U.N.O.
- G. REFER TO SHEET A-401 FOR TOILET ACCESSORY ROSTER WITH OTHER FIXTURES WHICH ARE IN ADDITION TO THIS FURNITURE SCHEDULE.

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**FURNITURE SCHEDULE**

Type Mark	Description	Comments
CH1	TASK CHAIR	GFGI
CH2	TASK CHAIR	GFGI
CH3	GUEST CHAIR	GFGI
CM1	COFFEE MAKER	GFCI
DK1	DESK, 72" x 72"	GFGI
EQ1	MULTIFUNCTION DEVICE COPY/PRINT	GFGI
EQ2	REFRIGERATOR	GFCI
EQ3	STACKED WASHER/DRYER	GFCI
EQ4	PLOTTER	GFGI
EQ7	60" MONITOR	GFCI
MB1	MARKER BOARD 84" X 48"	GFCI
MB2	MARKER BOARD 48" X 48"	GFCI
MW1	MICROWAVE	GFCI
SC1	STORAGE CABINET	GFGI
TA1	TABLE - 36"W x 30"D	GFGI
TA2	TABLE - 48"W x 30"D	GFGI
TA3	WORK TABLE	GFGI
TA4	TABLE - 48"W x 30"D	GFGI

**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

REVISION HISTORY:

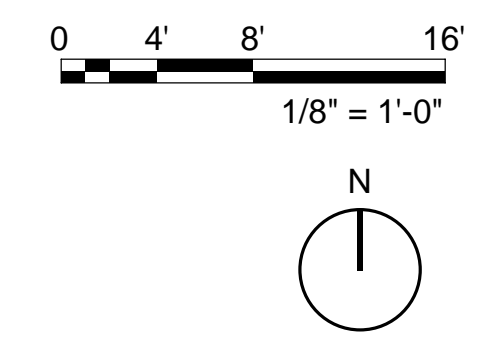
NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY:	KAH
DRAWN BY:	KAH
REVIEWED BY:	BKG
PROJECT MANAGER:	NDM
PROJECT NUMBER:	20190320
SHEET TITLE:	FURNITURE PLAN

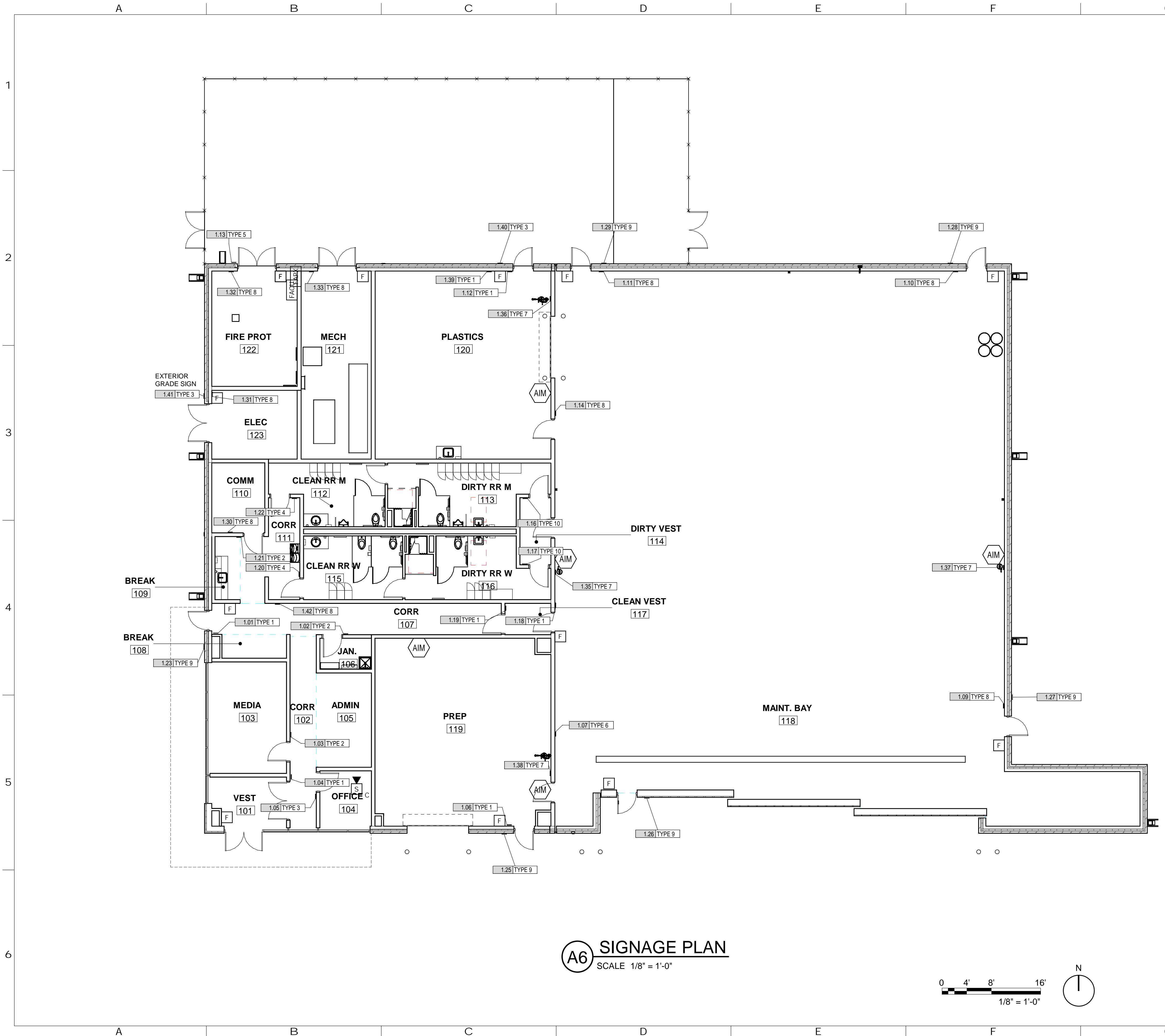
ISSUE DATE:	2 AUGUST 2024
SHEET NUMBER:	IF-101

**A6 FURNITURE PLAN**  
SCALE 1/8" = 1'-0"

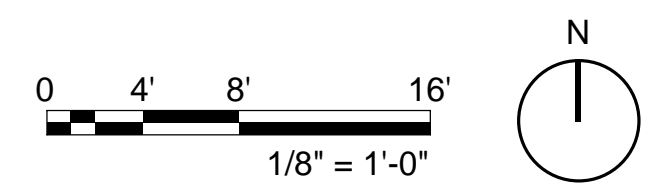


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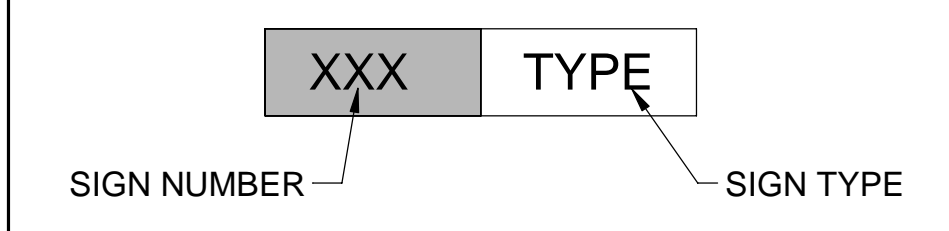
**A6 SIGNAGE PLAN**  
SCALE 1/8" = 1'-0"



**GENERAL NOTES**

- A. REFER TO SHEETS IG500 FOR SIGNAGE SCHEDULE, ELEVATIONS, AND DETAILS.
- B. CONTRACTOR IS TO VERIFY FINAL DIMENSIONS, MATERIALS, FINISHES, AND ROOM NAMES / NUMBERS WITH CONTRACTING OFFICER'S TECHNICAL REPRESENTATIVE PRIOR TO PROCUREMENT OF SIGNAGE.
- C. FOR SIGNS MOUNTED TO GLASS, PROVIDE A MATCHING OPAQUE FILM ON REVERSE SIDE OF GLASS TO CONCEAL MOUNTING TAPE. COLOR TO MATCH SIGN.
- D. SIGNS MUST MEET ABA REQUIREMENTS.
- E. SIGNS MUST COMPLY WITH UFC 3-120-01 DESIGN: SIGN STANDARDS.
- F. SIGNAGE PLAN AND SCHEDULES DO NOT INCLUDE REGULATORY LABELING, ILLUMINATED EXIT SIGNS, AND/OR HAZARD WARNINGS WHICH MAY BE REQUIRED BY BUILDING AND/OR FIRE CODE. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ANY SUCH LABELING IN ACCORDANCE WITH ADOPTED BUILDING CODES AND AS SPECIFIED BY FIRE PROTECTION, ELECTRICAL, MECHANICAL, AND/OR PLUMBING ENGINEER.
- G. SIGNAGE PLAN AND SCHEDULES DO NOT INCLUDE LABELING THAT MAY BE REQUIRED AT SOME DOOR HARDWARE ELEMENTS, SUCH AS AUTOMATIC DOOR OPERATORS OR EMERGENCY PANIC BARS. REFER TO DOOR HARDWARE SPECIFICATIONS AND ANSI/BHMA STANDARDS FOR REQUIRED LABELING AT DOOR HARDWARE.

**SIGNAGE PLAN LEGEND**



**SIGNAGE SCHEDULE**

SIGN NUMBER	SIGN TYPE	SIGN MESSAGE
1.01	TYPE 1	EXIT
1.02	TYPE 2	JANITOR
1.03	TYPE 2	MEDIA
1.04	TYPE 1	EXIT
1.05	TYPE 3	<VERIFY WITH OWNER>
1.06	TYPE 1	EXIT
1.07	TYPE 6	DANGER
1.09	TYPE 8	EXIT
1.10	TYPE 8	EXIT
1.11	TYPE 8	EXIT
1.12	TYPE 1	EXIT
1.13	TYPE 5	FIRE RISER
1.14	TYPE 8	FIRE EXTINGUISHER
1.16	TYPE 10	MEN'S LOCKER ROOM W SHOWER
1.17	TYPE 10	WOMEN'S LOCKER ROOM W SHOWER
1.18	TYPE 1	EXIT
1.19	TYPE 1	EXIT
1.20	TYPE 4	WOMEN'S RESTROOM
1.21	TYPE 2	COMM
1.22	TYPE 4	MEN'S RESTROOM
1.23	TYPE 9	NO SMOKING
1.24	TYPE 9	NO SMOKING
1.25	TYPE 9	NO SMOKING
1.26	TYPE 9	NO SMOKING
1.27	TYPE 9	NO SMOKING
1.28	TYPE 9	NO SMOKING
1.29	TYPE 9	NO SMOKING
1.30	TYPE 8	FIRE EXTINGUISHER
1.31	TYPE 8	FIRE EXTINGUISHER
1.32	TYPE 8	FIRE EXTINGUISHER
1.33	TYPE 8	FIRE EXTINGUISHER
1.35	TYPE 7	EMERGENCY EYEWASH
1.36	TYPE 7	EMERGENCY EYEWASH
1.37	TYPE 7	EMERGENCY EYEWASH
1.38	TYPE 7	EMERGENCY EYEWASH
1.39	TYPE 1	EXIT
1.40	TYPE 3	MECHANICAL
1.41	TYPE 3	ELECTRICAL
1.42	TYPE 8	FIRE EXTINGUISHER

**FSB FEDERAL DESIGN GROUP JV**

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5801 Broadway Extension, Suite 500  
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405.840.2931 | fsb-ae.com

**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: **KAH**

DRAWN BY: **KAH**

REVIEWED BY: **BKG**

PROJECT MANAGER: **NDM**

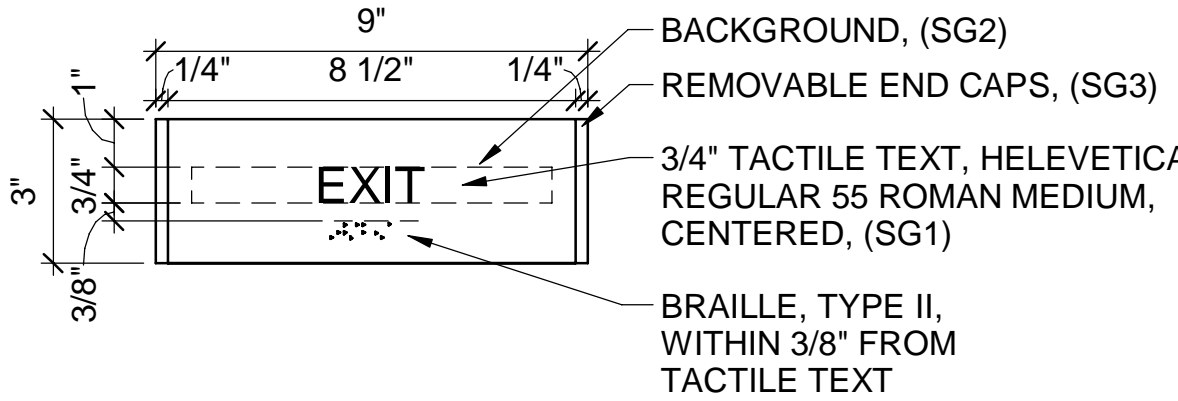
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SHEET TITLE: **SIGNAGE PLAN**

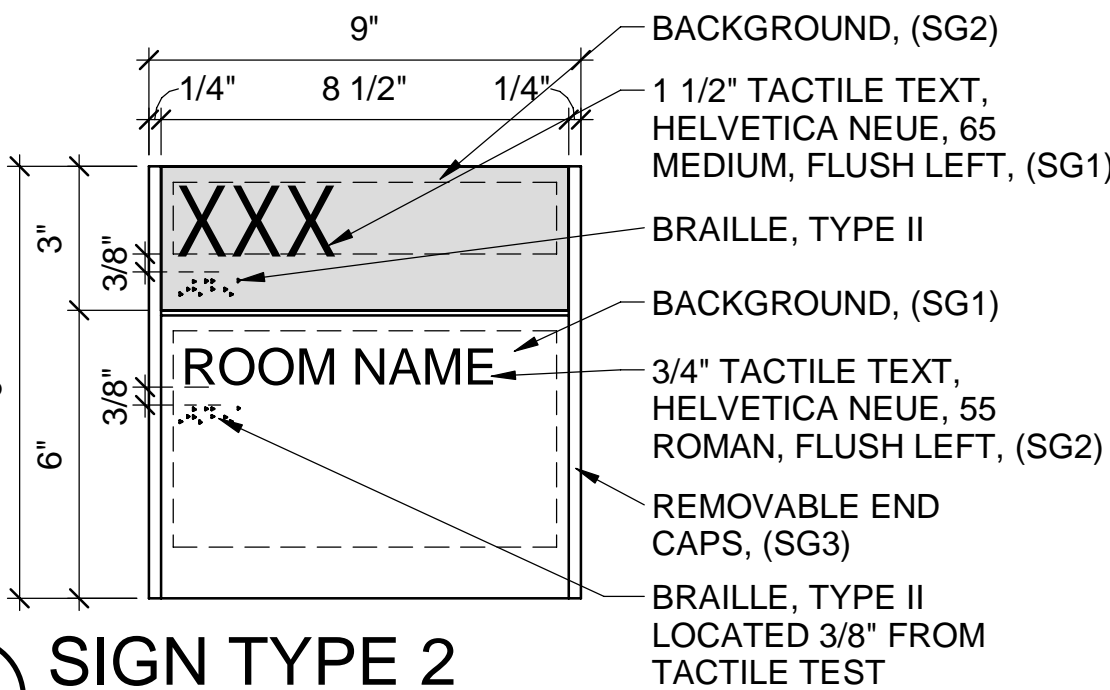
ISSUE DATE: **2 AUGUST 2024**

SHEET NUMBER: **IG-101**

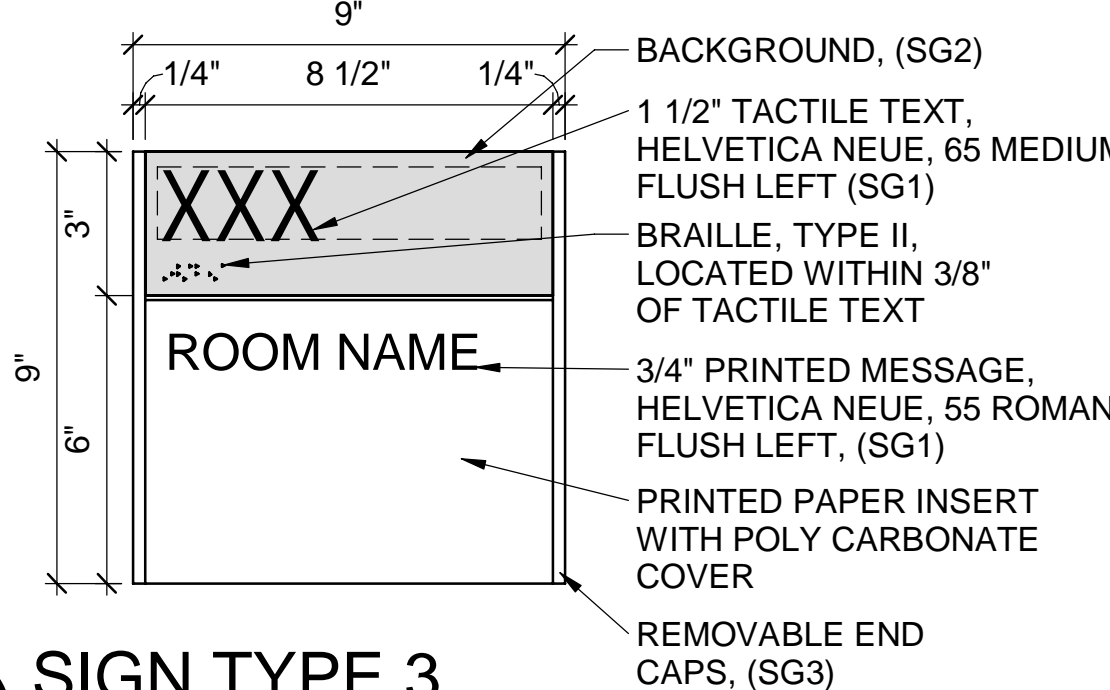
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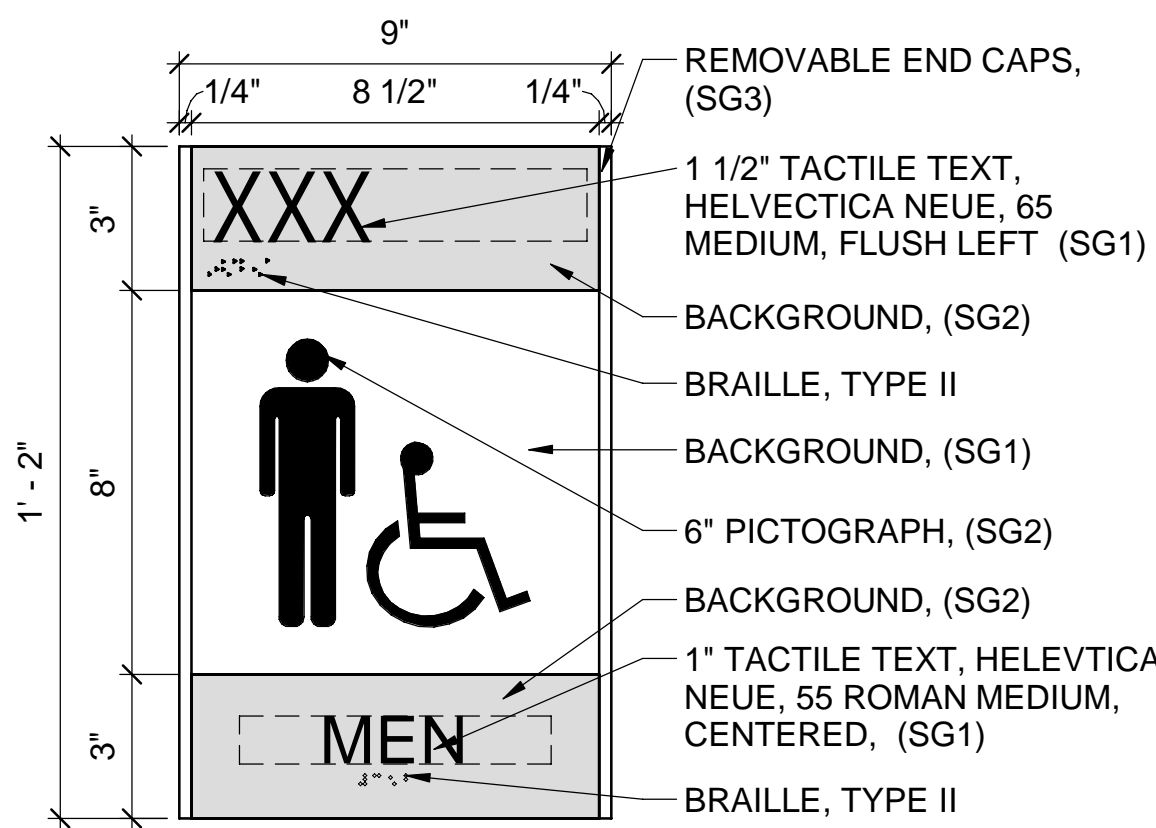
**A1** SIGN TYPE 1  
SCALE 3" = 1'-0"



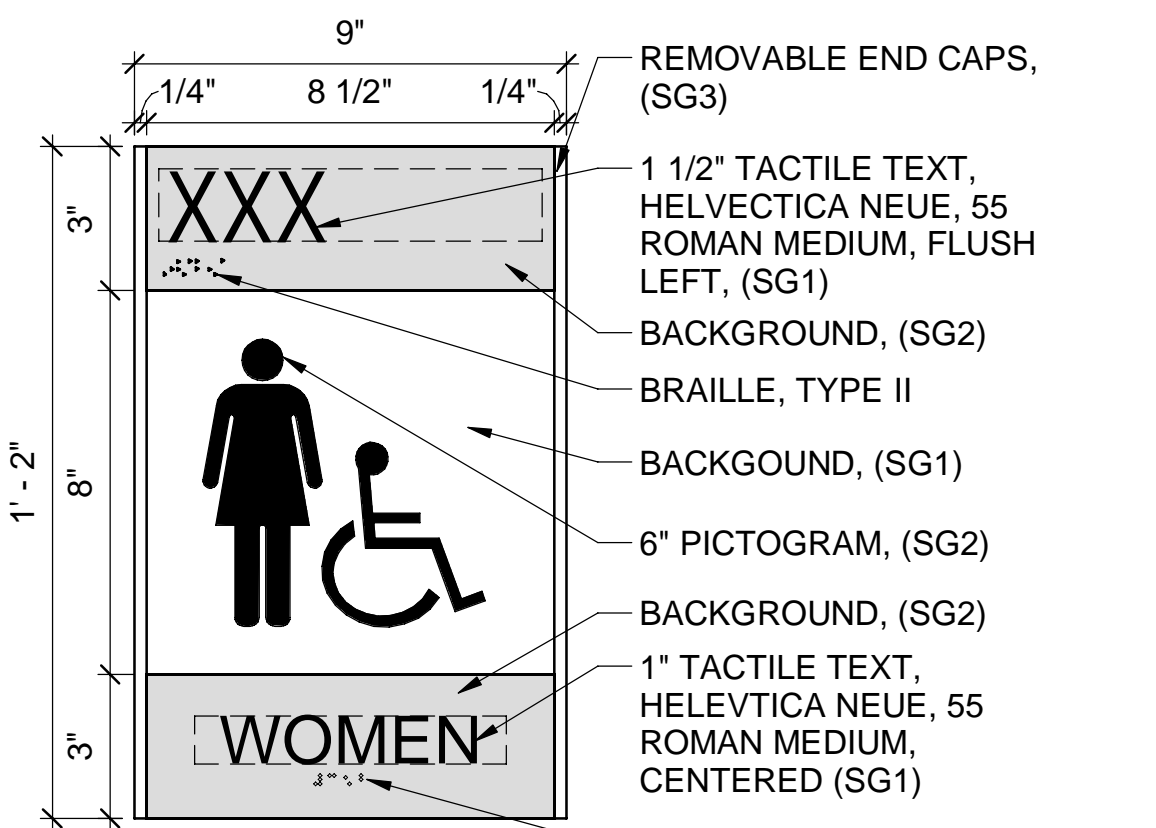
**C1** SIGN TYPE 2  
SCALE 3" = 1'-0"



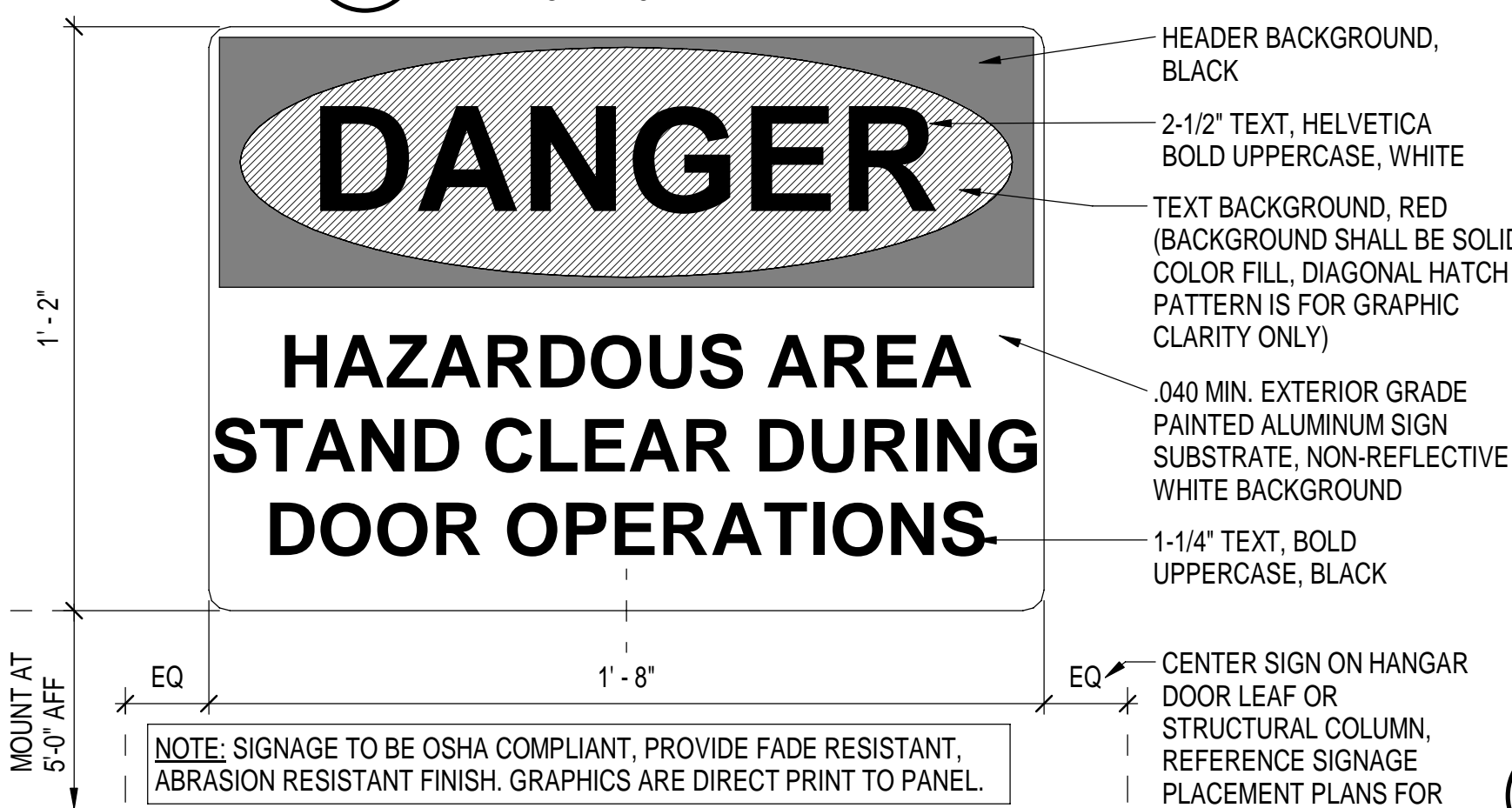
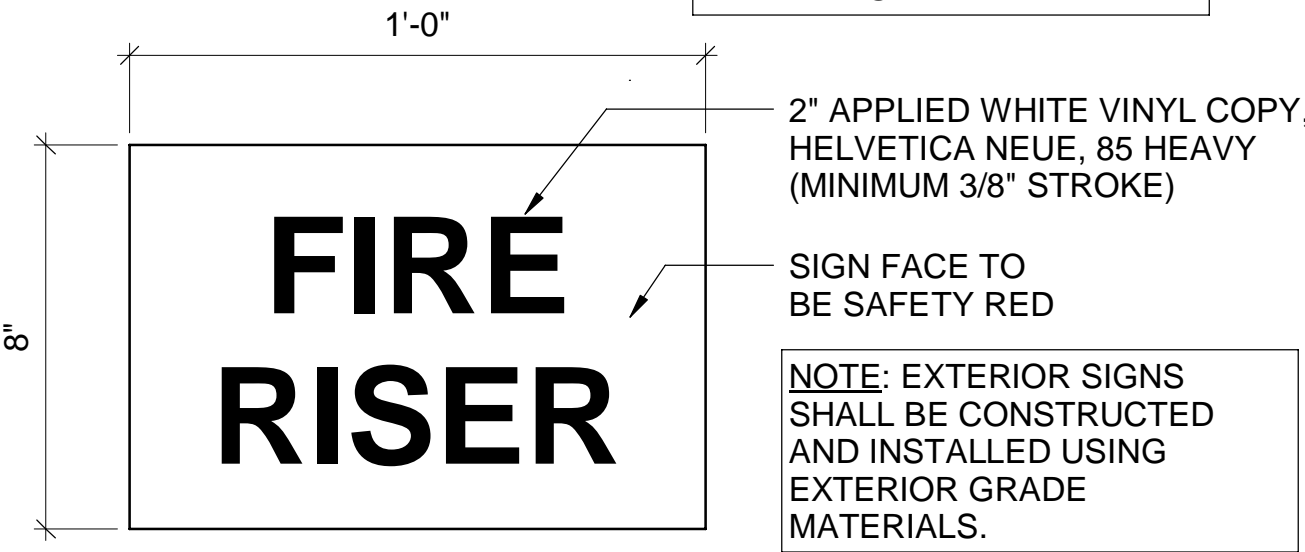
**E1** SIGN TYPE 3  
SCALE 3" = 1'-0"



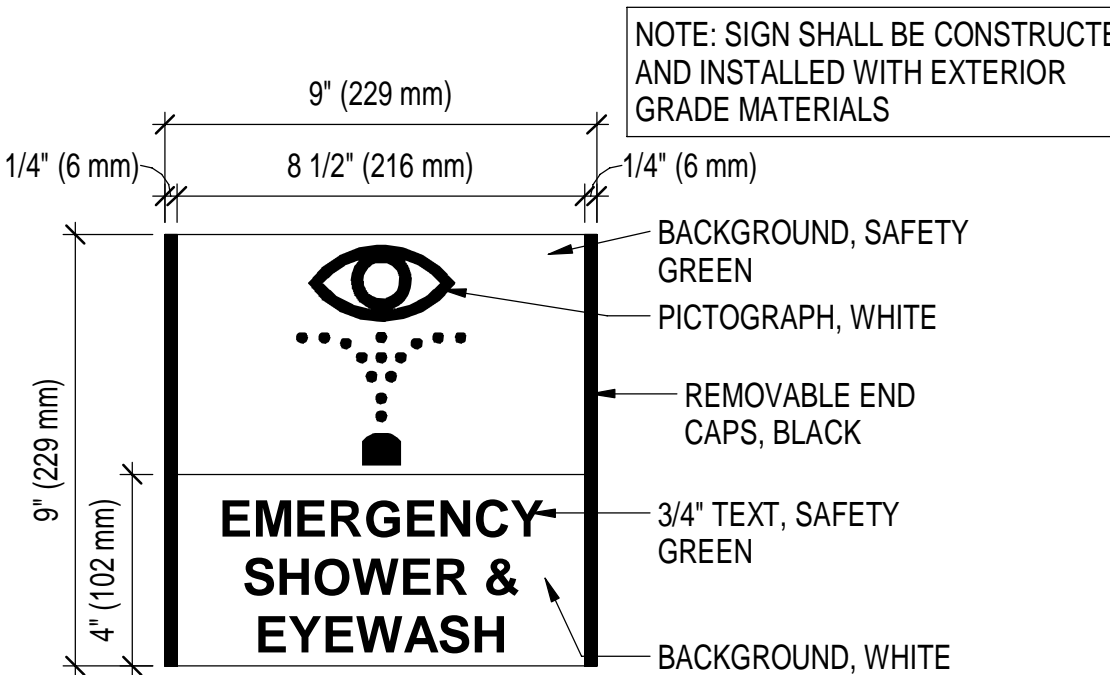
**A3** SIGN TYPE 4  
SCALE 3" = 1'-0"



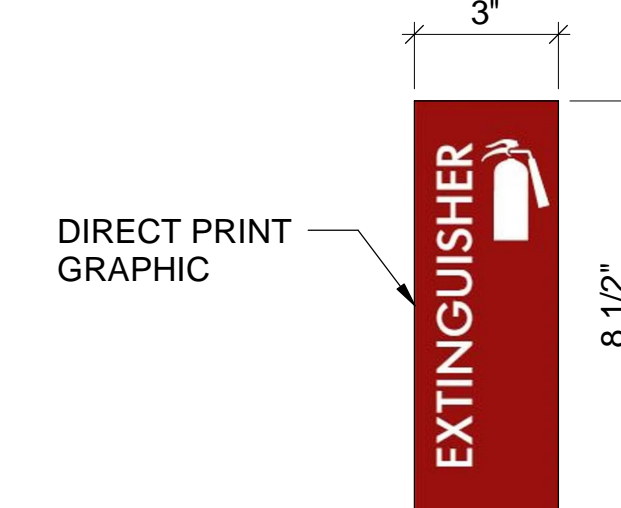
**E3** SIGN TYPE 5  
FIRE RISER ROOM  
SCALE 3" = 1'-0"



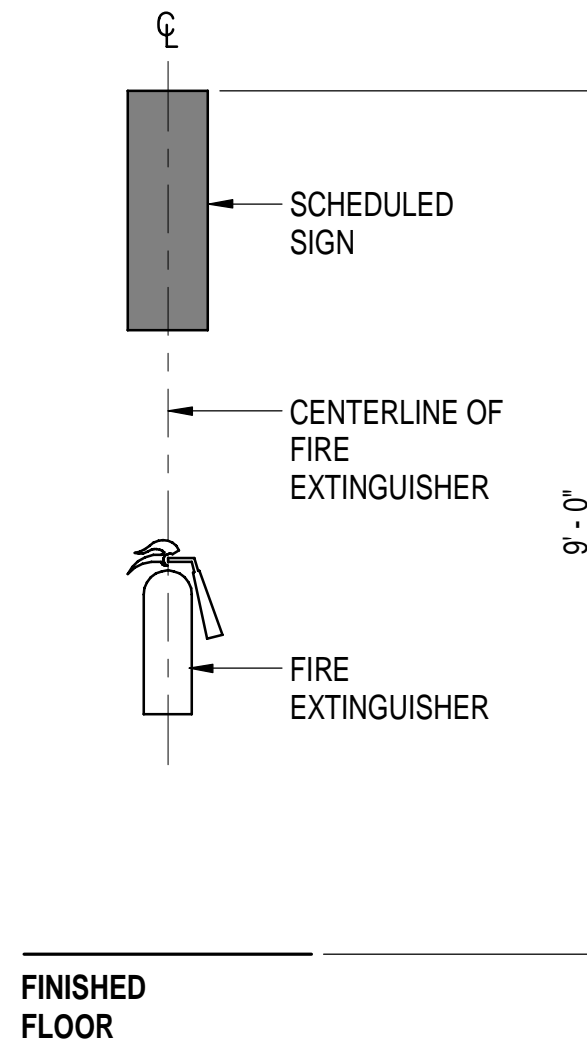
**B4** SIGN TYPE 6  
DANGER - HANGAR DOOR OPERATION  
SCALE 3" = 1'-0"



**D4** SIGN TYPE 7  
EMERGENCY EYEWASH STATION  
SCALE 3" = 1'-0"



**E4** SIGN TYPE 8  
SCALE 3" = 1'-0"



**F4** SIGN MOUNTING - FEX  
SCALE 1/2" = 1'-0"

**GENERAL NOTES**

A. REFER TO SHEETS IG-101 FOR SIGNAGE SCHEDULE, ELEVATIONS, AND DETAILS.

B. CONTRACTOR IS TO VERIFY FINAL DIMENSIONS, MATERIALS, FINISHES, AND ROOM NAMES / NUMBERS WITH CONTRACTING OFFICER'S TECHNICAL REPRESENTATIVE PRIOR TO PROCUREMENT OF SIGNAGE.

C. FOR SIGNS MOUNTED TO GLASS, PROVIDE A MATCHING OPAQUE FILM ON REVERSE SIDE OF GLASS TO CONCEAL MOUNTING TAPE. COLOR TO MATCH SIGN.

D. SIGNS MUST MEET ABA REQUIREMENTS.

E. SIGNS MUST COMPLY WITH UFC 3-120-01 DESIGN: SIGN STANDARDS.

F. SIGNAGE PLAN AND SCHEDULES DO NOT INCLUDE REGULATORY LABELING, ILLUMINATED EXIT SIGNS, AND/OR HAZARD WARNINGS WHICH MAY BE REQUIRED BY BUILDING AND/OR FIRE CODE. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ANY SUCH LABELING IN ACCORDANCE WITH ADOPTED BUILDING CODES AND AS SPECIFIED BY FIRE PROTECTION, ELECTRICAL, MECHANICAL, AND/OR PLUMBING ENGINEER.

G. SIGNAGE PLAN AND SCHEDULES DO NOT INCLUDE LABELING THAT MAY BE REQUIRED AT SOME DOOR HARDWARE ELEMENTS, SUCH AS AUTOMATIC DOOR OPERATORS OR EMERGENCY PANIC BARS. REFER TO DOOR HARDWARE SPECIFICATIONS AND ANSI/BHMA STANDARDS FOR REQUIRED LABELING AT DOOR HARDWARE.

**FSB FEDERAL DESIGN GROUP JV**

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**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

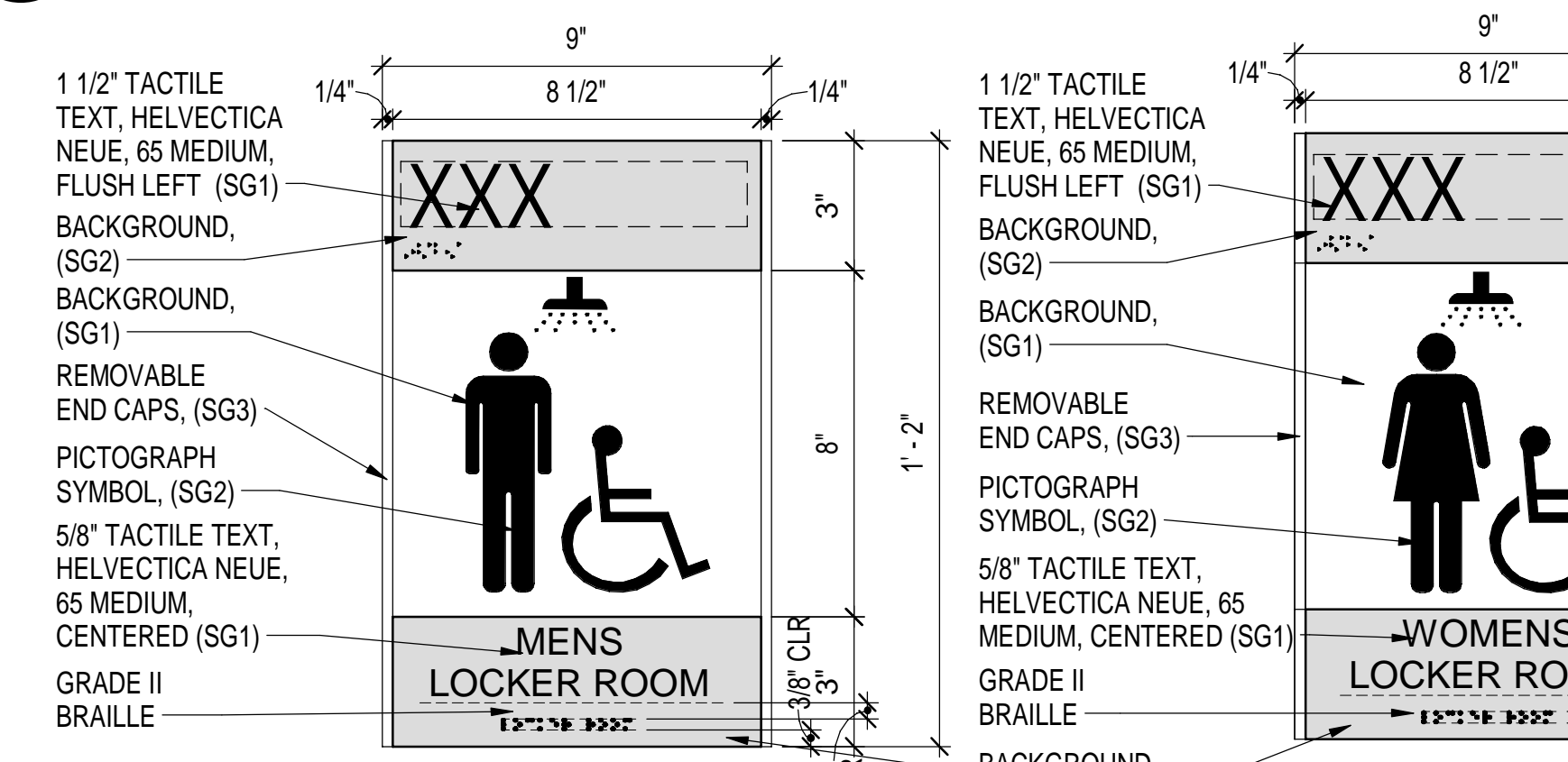
REVISION HISTORY:

NO.	DESCRIPTION	DATE

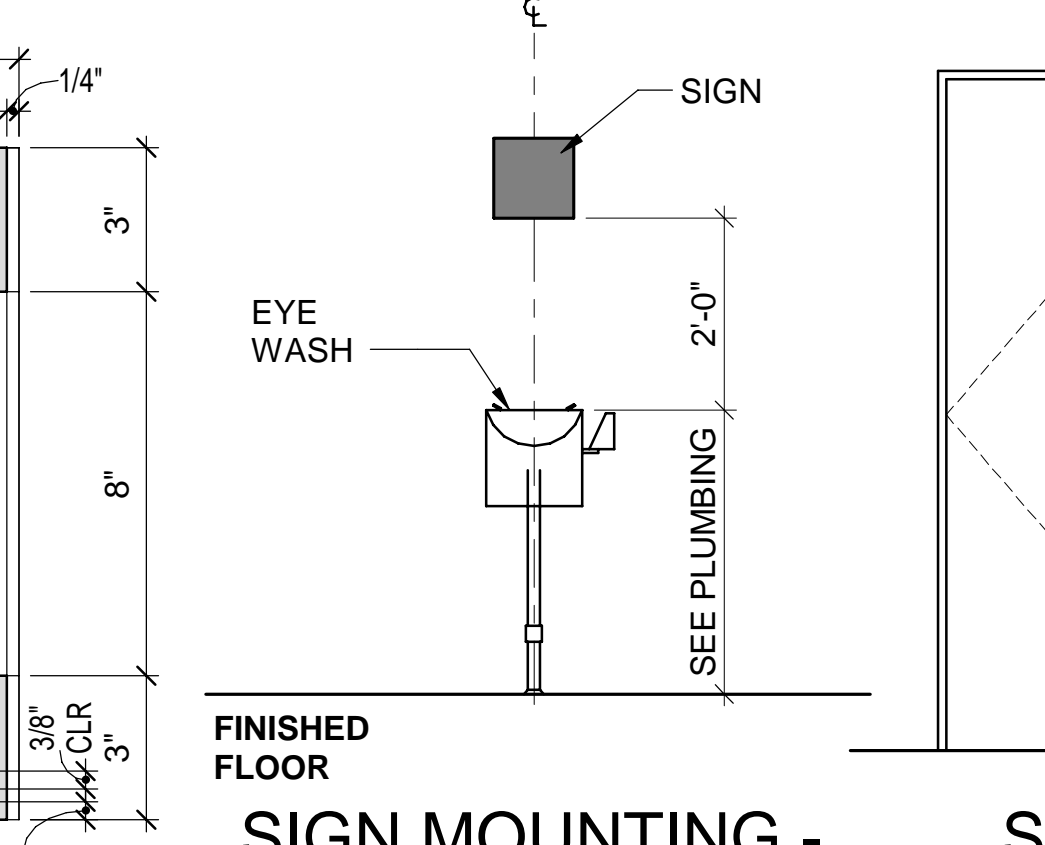
PROJECT INFORMATION:

DESIGNED BY:	<b>KAH</b>
DRAWN BY:	<b>KAH</b>
REVIEWED BY:	<b>BKG</b>
PROJECT MANAGER:	<b>NDM</b>
PROJECT NUMBER:	<b>20190320</b>
SHEET TITLE:	<b>SIGNAGE DETAILS AND ELEVATIONS</b>

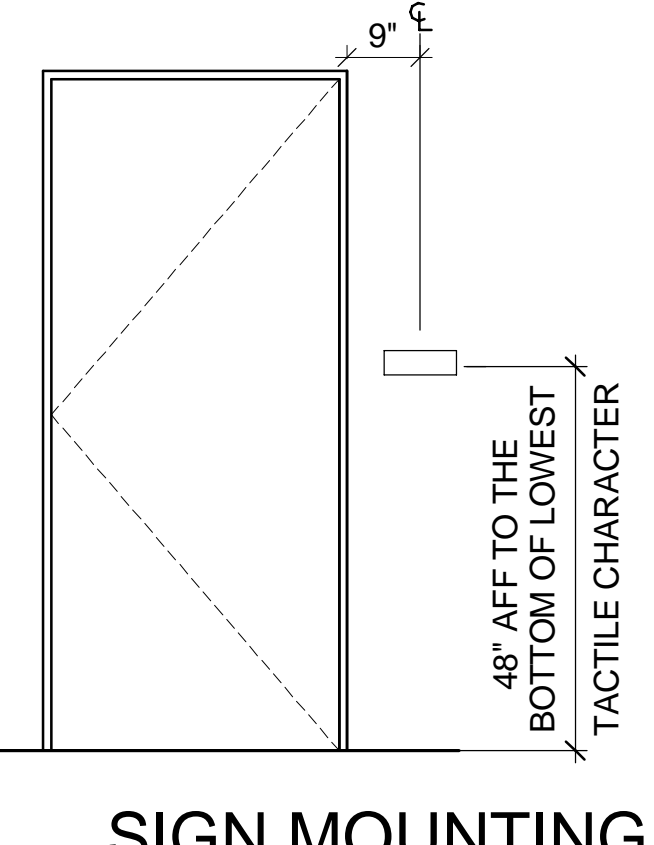
ISSUE DATE:	<b>2 AUGUST 2024</b>
SHEET NUMBER:	<b>IG-501</b>



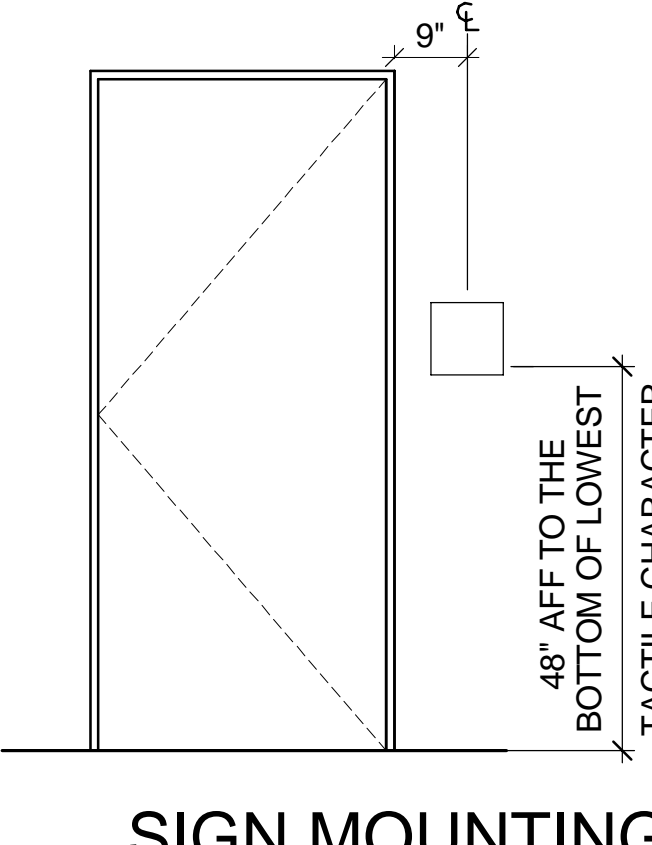
**A6** SIGN TYPE 10  
LOCKER ROOM / SHOWER (MEN, ADA)  
SCALE 3" = 1'-0"



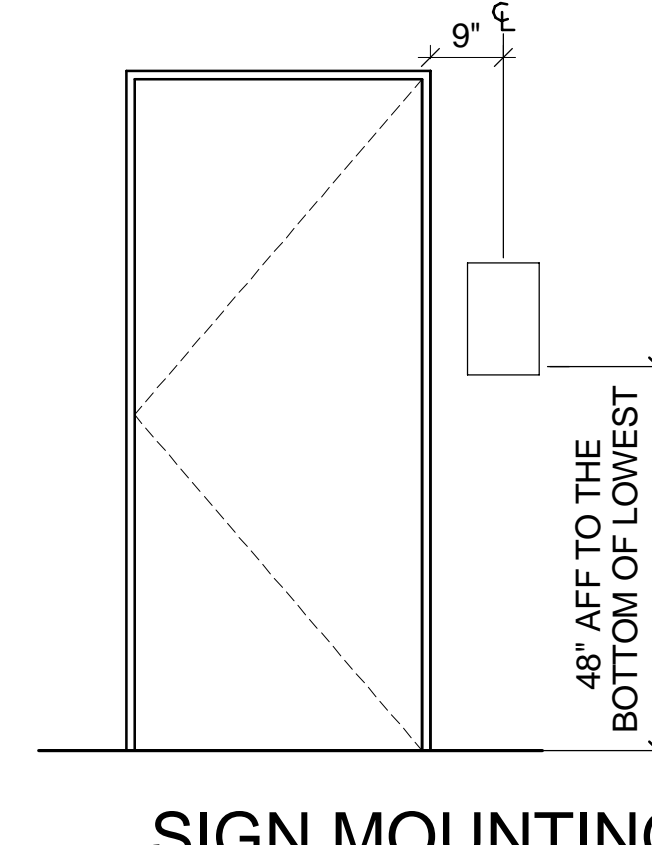
**D6** SIGN MOUNTING - EYE WASH  
SCALE 1/2" = 1'-0"



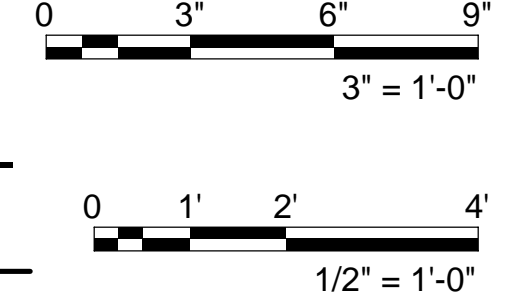
**E6** SIGN MOUNTING - TYPE 1  
SCALE 1/2" = 1'-0"



**F6** SIGN MOUNTING - TYPE 2 / 3 / 5  
SCALE 1/2" = 1'-0"



**G6** SIGN MOUNTING - TYPE 4  
SCALE 1/2" = 1'-0"



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8-2-2024

**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY:	LFO
DRAWN BY:	MLG
REVIEWED BY:	JME
PROJECT MANAGER:	NDM

PROJECT NUMBER:  
20190320

SHEET TITLE:

**FIRE SUPPRESSION SYSTEM PLAN**

ISSUE DATE:

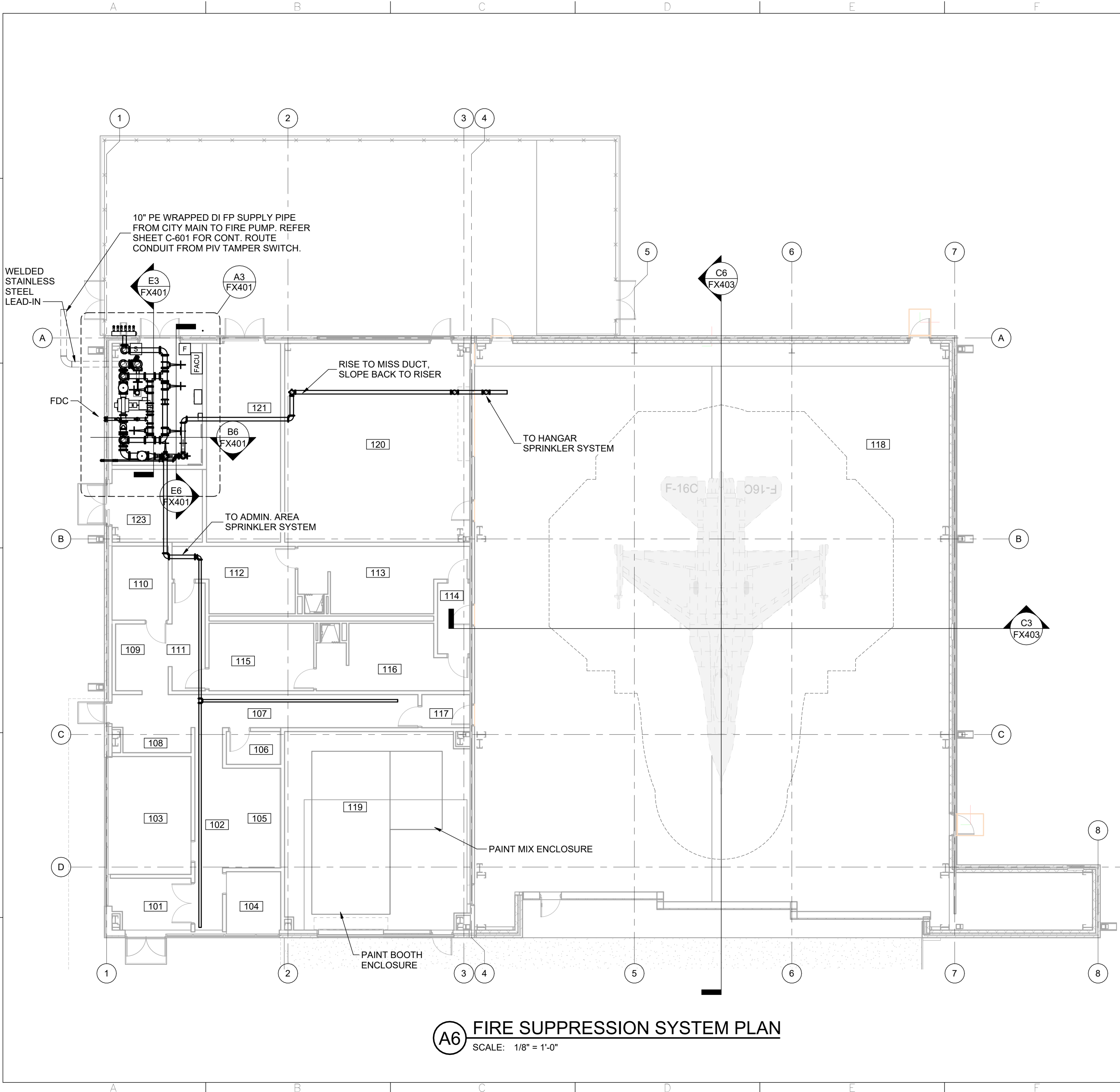
2 AUGUST 2024

SHEET NUMBER:

FX101

FIRE PROTECTION DESIGN SCHEDULE			
NUMBER	NAME	HAZARD	NOTES
101	VEST	LH	6
102	CORR	LH	6
103	MEDIA	LH	6
104	OFFICE	LH	6
105	ADMIN	LH	6
106	JAN.	OH	6
107	CORR	LH	6
108	BREAK	LH	6
109	BREAK	LH	6
110	COMM	OH	2, 3
111	CORR	LH	6
112	CLEAN RR M	LH	6
113	DIRTY RR M	LH	6
114	DIRTY VEST	LH	6
115	CLEAN RR W	LH	6
116	DIRTY RR W	LH	6
117	CLEAN VEST	LH	6
118	MAINT. BAY	HANGAR	4
119	PREP	EH	5
120	PLASTICS	EH	6
121	MECH	OH	6
122	FIRE PROT	OH	6
123	ELEC	OH	1, 2, 6

NOTES:  
 1. ONLY PIPING SERVING THIS ROOM SHALL ENTER THIS ROOM.  
 2. DO NOT ROUTE PIPING ABOVE ELEC. OR COMM. EQUIP. IN THIS ROOM.  
 3. PROVIDE CONCEALED SIDEWALL SPRINKLERS IN THIS ROOM.  
 4. PROVIDE K=11.2 SPRINKLERS WITH TEMPERATURE RATING OF 200° F IN THIS ROOM. DESIGN FOR 0.2 GPM/SF OVER 5000 SF.  
 5. PROVIDE CONTROL VALVE W/TAMPER SWITCH FOR PAINT BOOTH & EXHAUST DUCT SPRINKLERS. PROVIDE GASKETED ACCESS PANEL AT EACH EXHAUST DUCT SPRINKLER. SPRINKLERS PROVIDED IN PAINT BOOTH AND EXHAUST DUCT SPRINKLERS SHALL BE PROVIDED W/BAGS PER NFPA 13. TAMPER SWITCH SHALL BE LOCATED OUTSIDE OF THE CLASSIFIED AREA. REFER EH101 FOR CLASSIFIED AREAS.  
 6. PROVIDE AUTOMATIC WET PIPE SPRINKLER SYSTEM IN ACCORDANCE WITH UFC 3-600-01 REQUIREMENTS WITH DESIGN DENSITY AND DESIGN AREA FOR THE HAZARD CLASSIFICATION LISTED.



**A6 FIRE SUPPRESSION SYSTEM PLAN**  
SCALE: 1/8" = 1'-0"



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**GENERAL NOTES**

1. ALL PIPING SHALL BE SUPPORTED ON THE FLOOR AND THE CONTRACTOR SHALL DESIGN AND PROVIDE SUPPORT FRAMING.

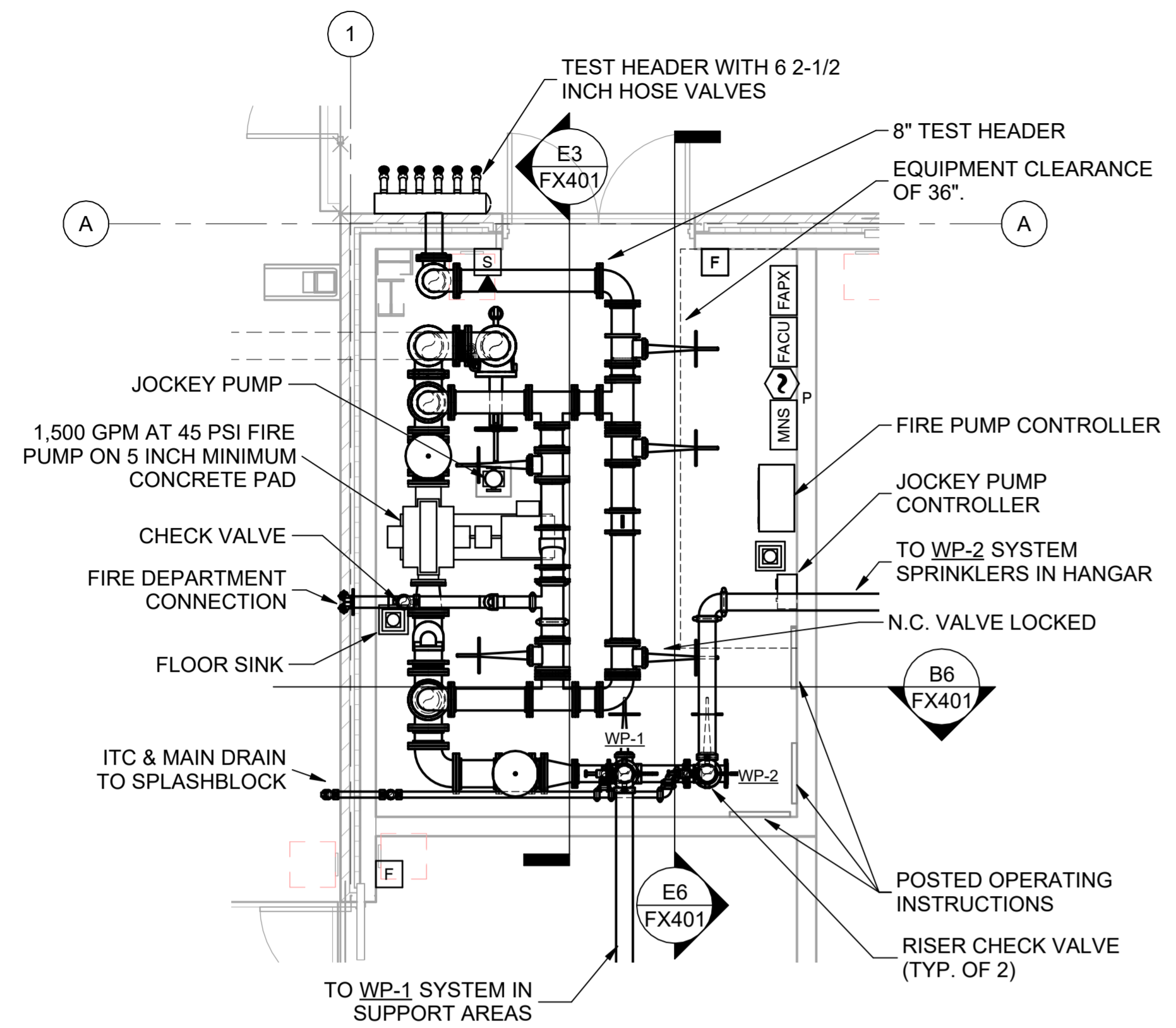
FSB FEDERAL DESIGN GROUP JV



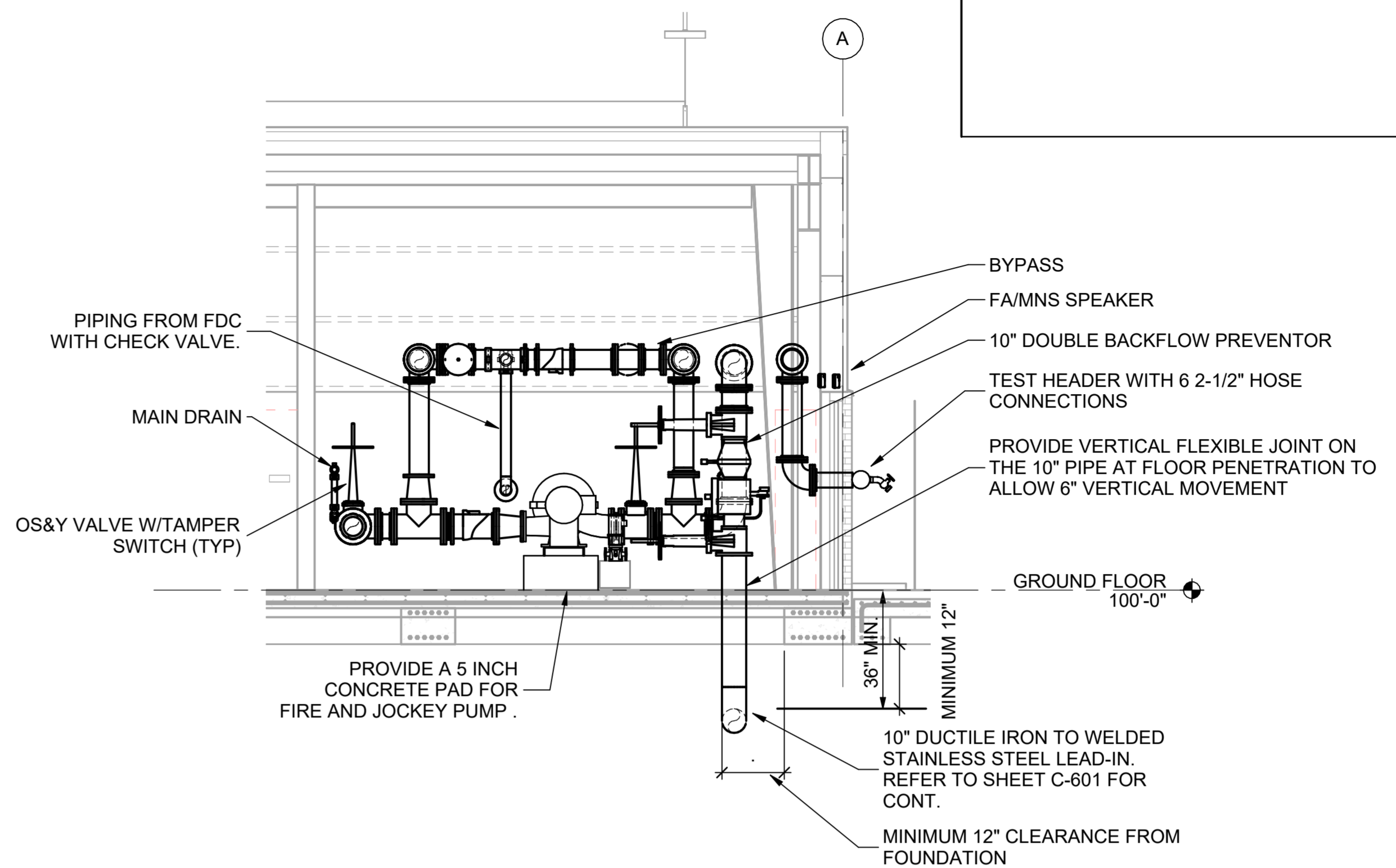
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Oklahoma City, OK 73118-7436  
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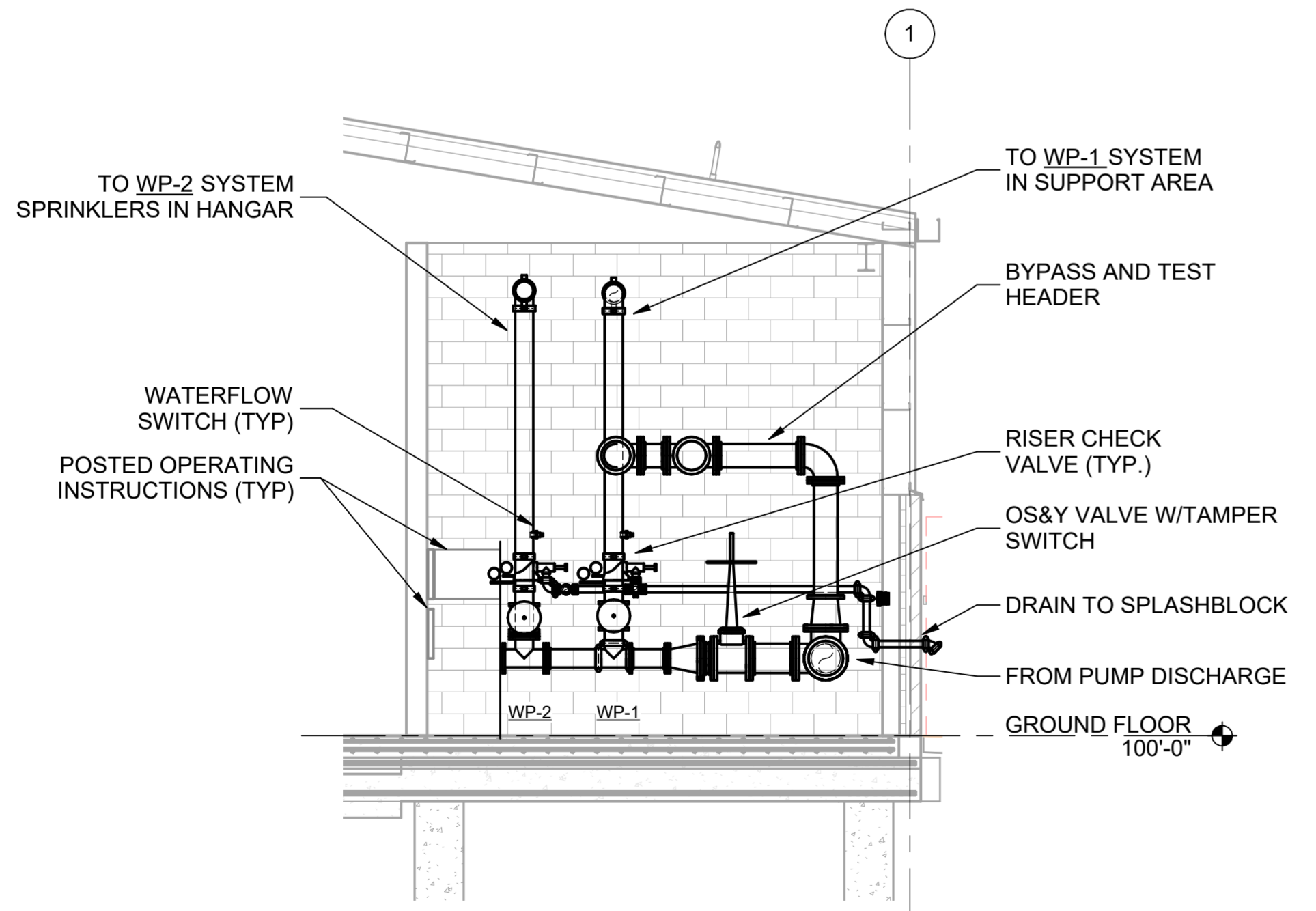
**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**



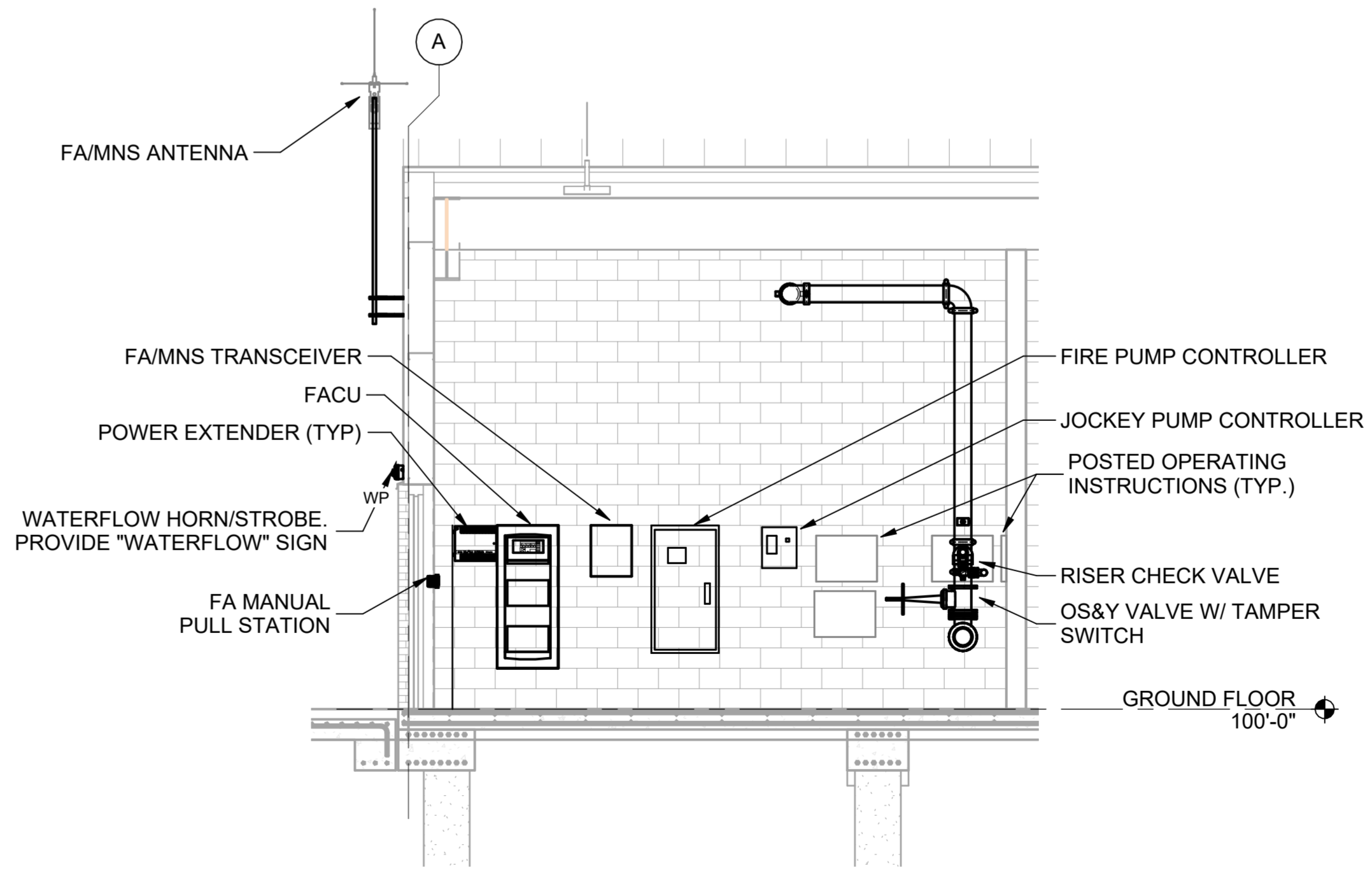
**A3 FIRE PROTECTION ROOM 122 ENLARGED PLAN**  
SCALE: 1/4" = 1'-0"



**E3 FIRE PROTECTION ROOM SECTION - LOOKING WEST**  
SCALE: 1/4" = 1'-0"



**B6 FIRE PROTECTION ROOM SECTION - LOOKING SOUTH**  
SCALE: 1/4" = 1'-0"



**E6 FIRE PROTECTION ROOM SECTION - LOOKING EAST**  
SCALE: 1/4" = 1'-0"

REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: **LFO**

DRAWN BY: **MLG**

REVIEWED BY: **JME**

PROJECT MANAGER: **NDM**

PROJECT NUMBER: **20190320**

SHEET TITLE: **ENLARGED FIRE PROTECTION ROOM PLANS AND SECTIONS**

ISSUE DATE: **2 AUGUST 2024**

SHEET NUMBER: **FX401**



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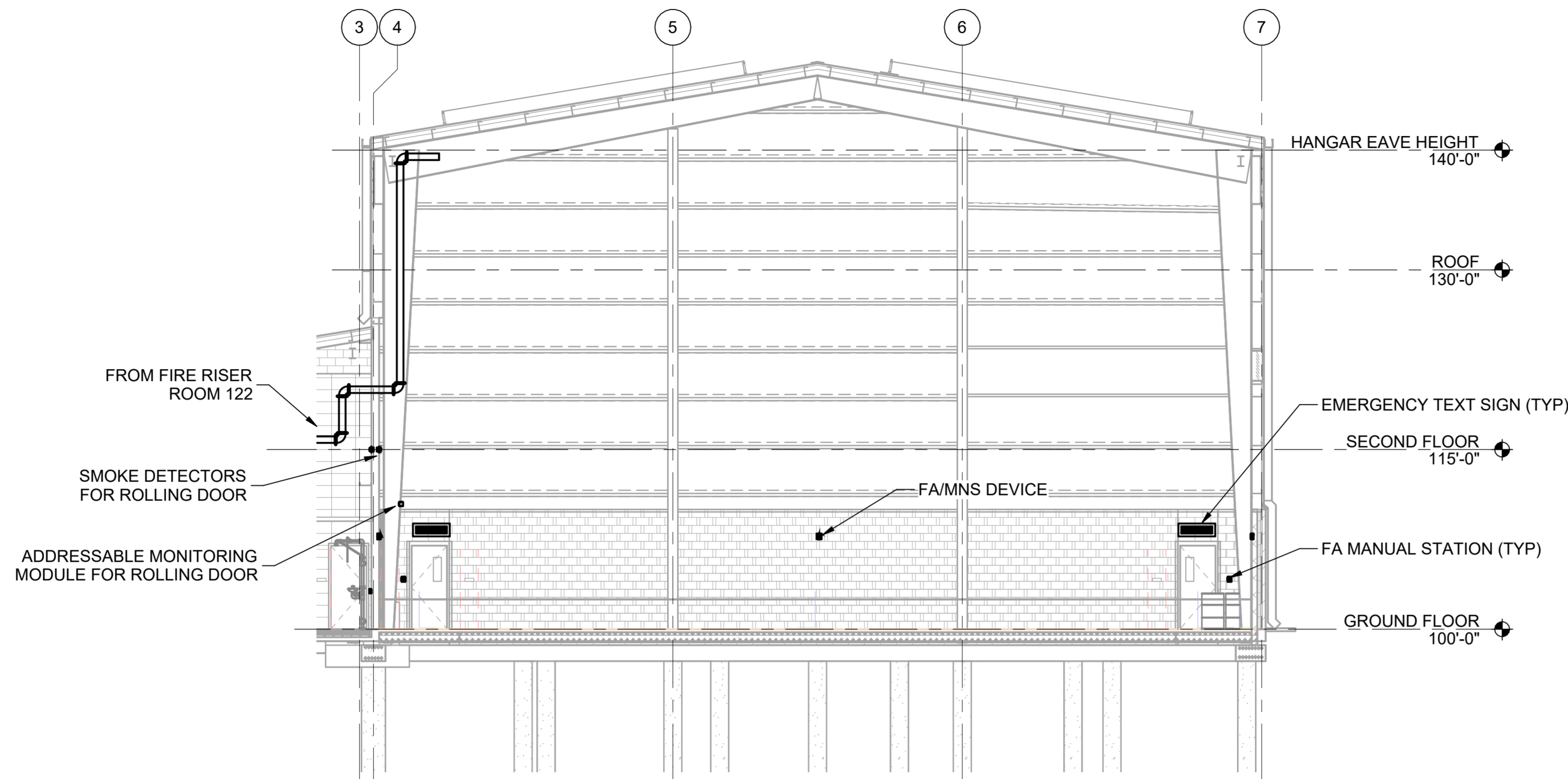
**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

REVISION HISTORY:

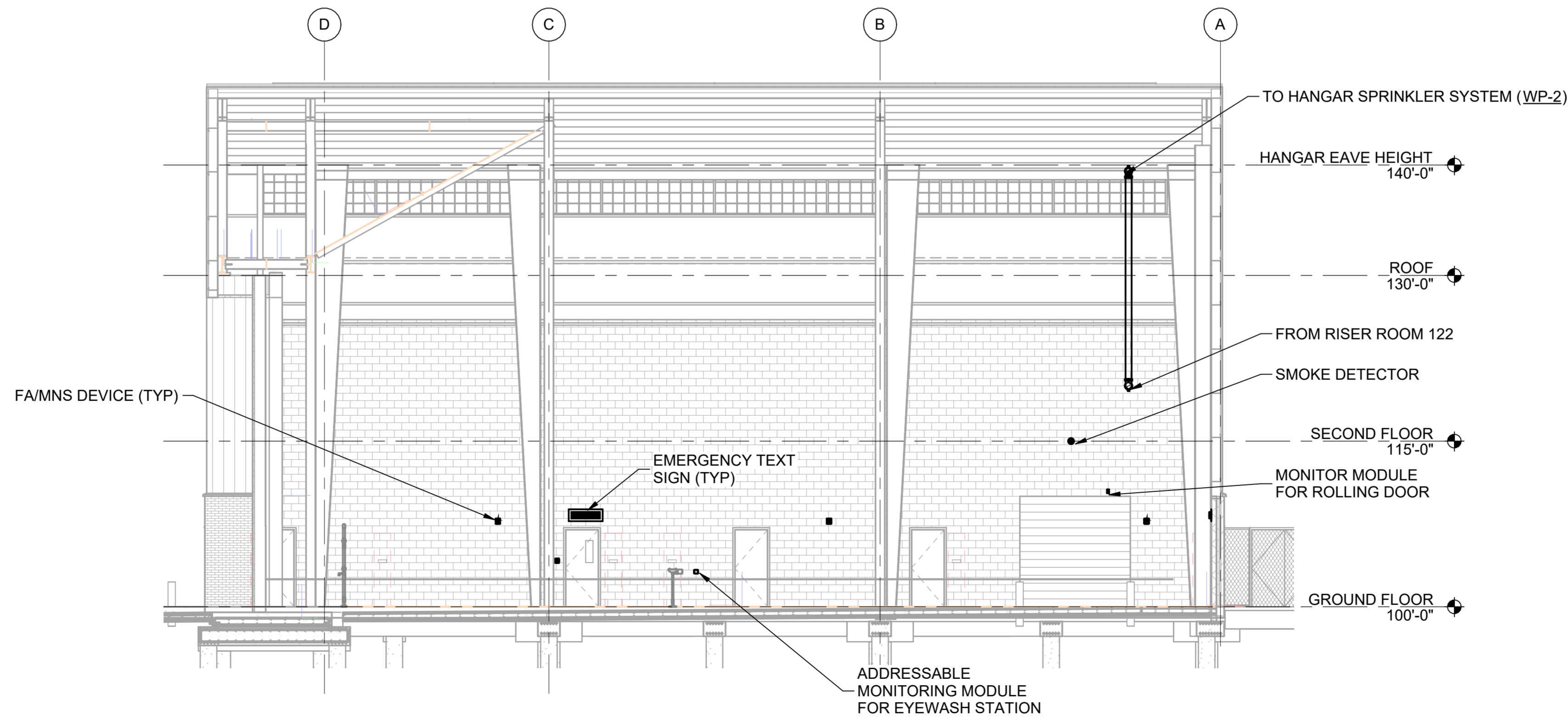
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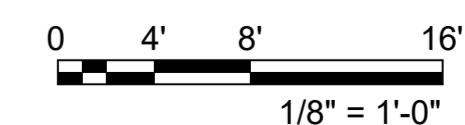
DESIGNED BY:	LFO
DRAWN BY:	MLG
REVIEWED BY:	JME
PROJECT MANAGER:	NDM
PROJECT NUMBER:	20190320
SHEET TITLE:	HANGAR FIRE PROTECTION SECTIONS
ISSUE DATE:	2 AUGUST 2024
SHEET NUMBER:	FX403



**C3 HANGAR FP SECTION - LOOKING NORTH**  
SCALE: 1/8" = 1'-0"



**C6 HANGAR FP SECTION - LOOKING WEST**  
SCALE: 1/8" = 1'-0"



### GENERAL NOTES

- PROVIDE LOCK OR CABLE-TYPE SUPERVISORY SWITCHES ON NORMALLY CLOSED VALVES.

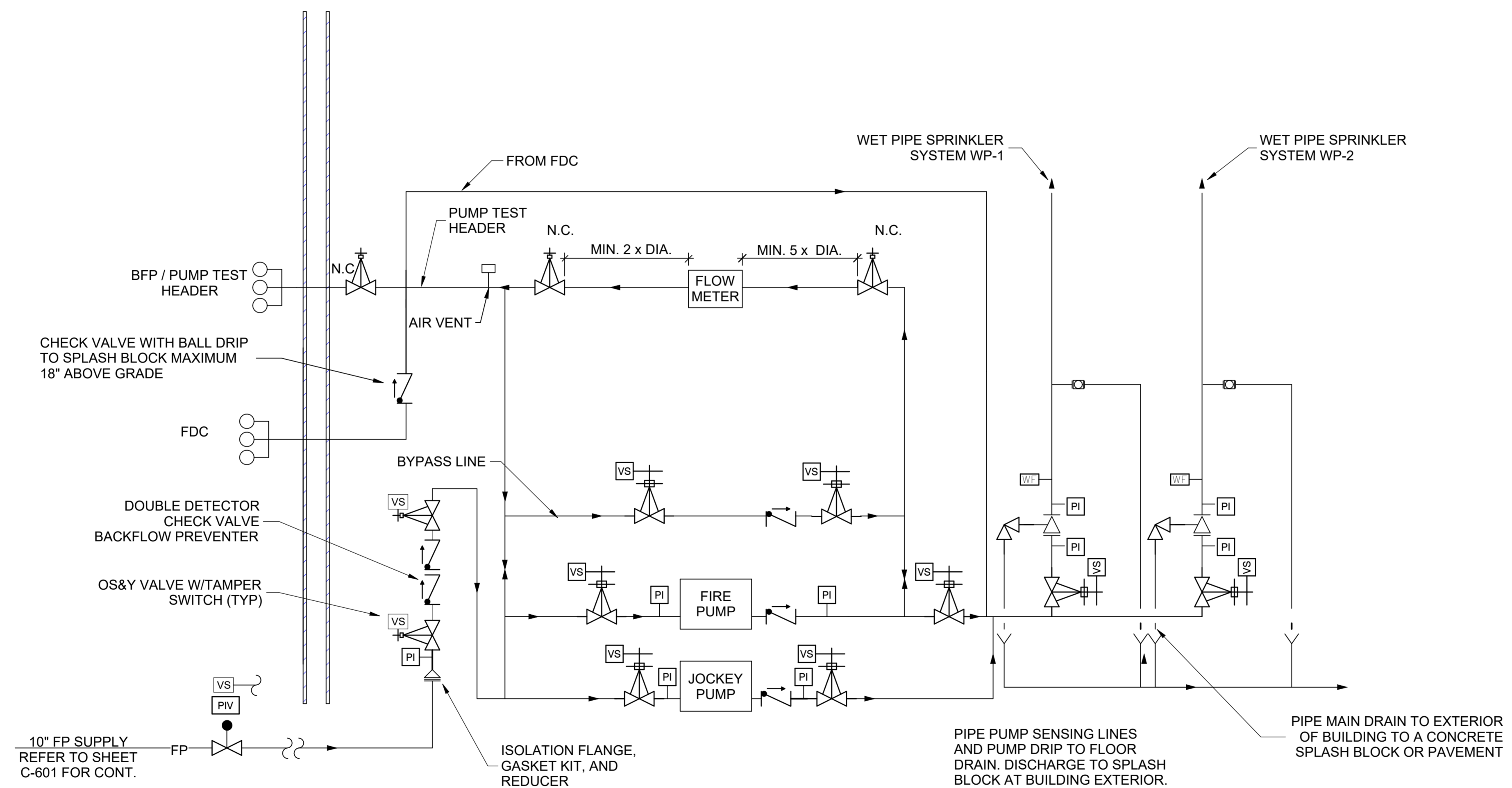


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**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**



**B5** FIRE PROTECTION SCHEMATIC PIPING DIAGRAM  
SCALE: NTS

REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY:	LFO
DRAWN BY:	MLG
REVIEWED BY:	JME
PROJECT MANAGER:	NDM

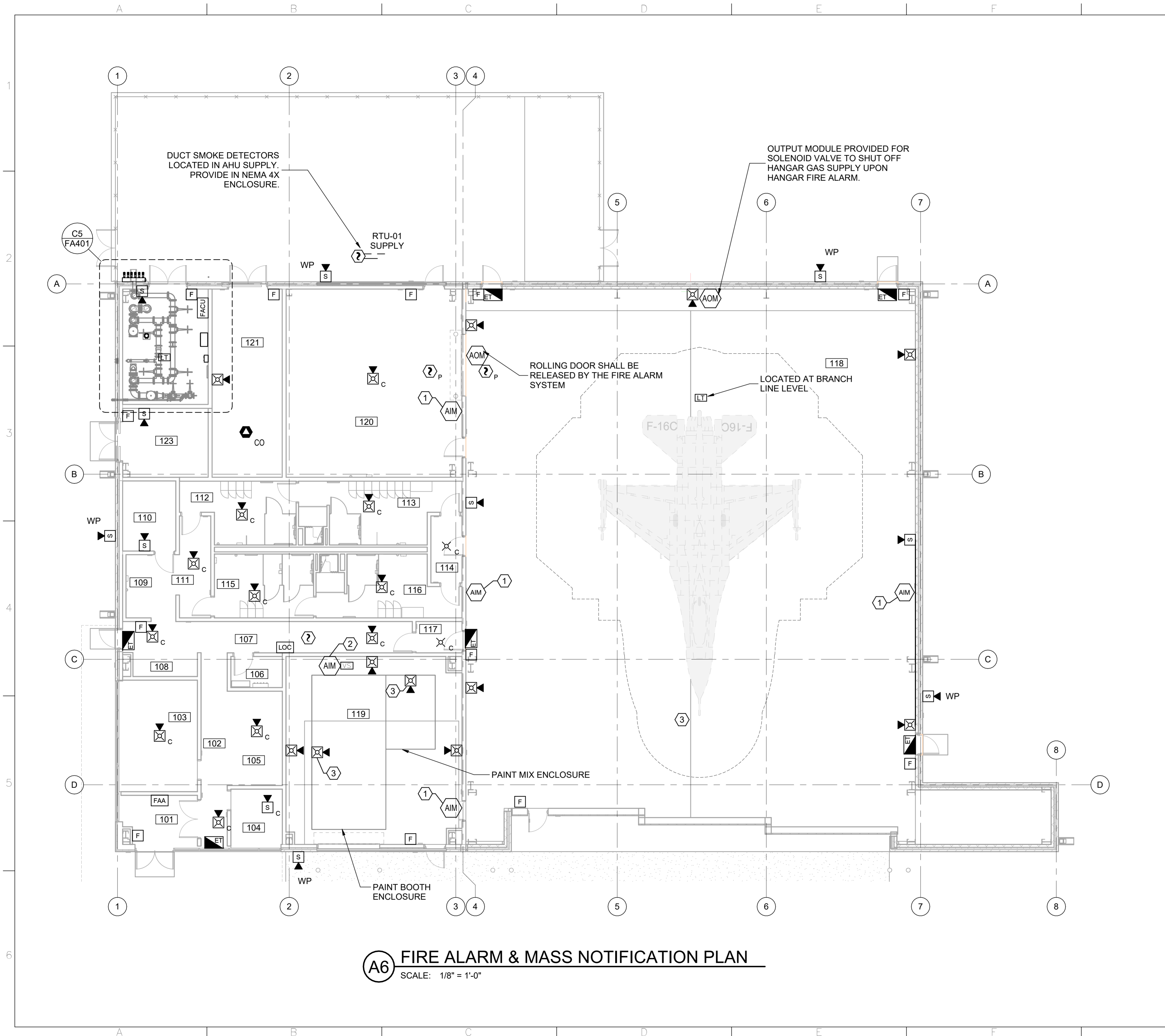
PROJECT NUMBER:  
20190320  
SHEET TITLE:

**FIRE SUPPRESSION SYSTEM SCHEMATIC PIPING DIAGRAM**

ISSUE DATE:  
2 AUGUST 2024

SHEET NUMBER:  
**FX601**

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**SHEET KEYNOTES**

1. MONITOR MODULE FOR EMERGENCY EYEWASH STATION.
2. MONITOR MODULE FOR PAINT BOOTH AND EXHAUST DUCT SPRINKLER CONTROL VALVE.
3. PROVIDE SPEAKER/STROBE RATED FOR CLASS I DIVISION I LOCATION.

**GENERAL NOTES**

1. ALL FIRE ALARM & MASS NOTIFICATION INSTALLED IN THE HANGAR BAY SHALL BE RATED NEMA 4 FOR WET LOCATIONS.
2. THE HANGAR BAY IS CONSIDERED A CAVERNOUS AREA PER UFC 4-021-01, CHAPTER 4.
3. REFER TO SHEET EH101 FOR ELECTRICAL HAZARD CLASSIFICATION PLAN. ALL FIRE ALARM & MASS NOTIFICATION DEVICES SHALL BE RATED FOR THE HAZARD IN WHICH THEY ARE INSTALLED.
4. PROVIDE EASE-EVAC IN HANGAR BAY FOR INTELLIGIBILITY.

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8-2-2024

**ROOM SCHEDULE**

NUMBER	NAME
101	VEST
102	CORR
103	MEDIA
104	OFFICE
105	ADMIN
106	JAN.
107	CORR
108	BREAK
109	BREAK
110	COMM
111	CORR
112	CLEAN RR M
113	DIRTY RR M
114	DIRTY VEST
115	CLEAN RR W
116	DIRTY RR W
117	CLEAN VEST
118	MAINT. BAY
119	PREP
120	PLASTICS
121	MECH
122	FIRE PROT
123	ELEC

**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

**REVISION HISTORY:**

NO.	DESCRIPTION	DATE

**PROJECT INFORMATION:**

DESIGNED BY: **LFO**  
 DRAWN BY: **MLG**  
 REVIEWED BY: **JME**  
 PROJECT MANAGER: **NDM**

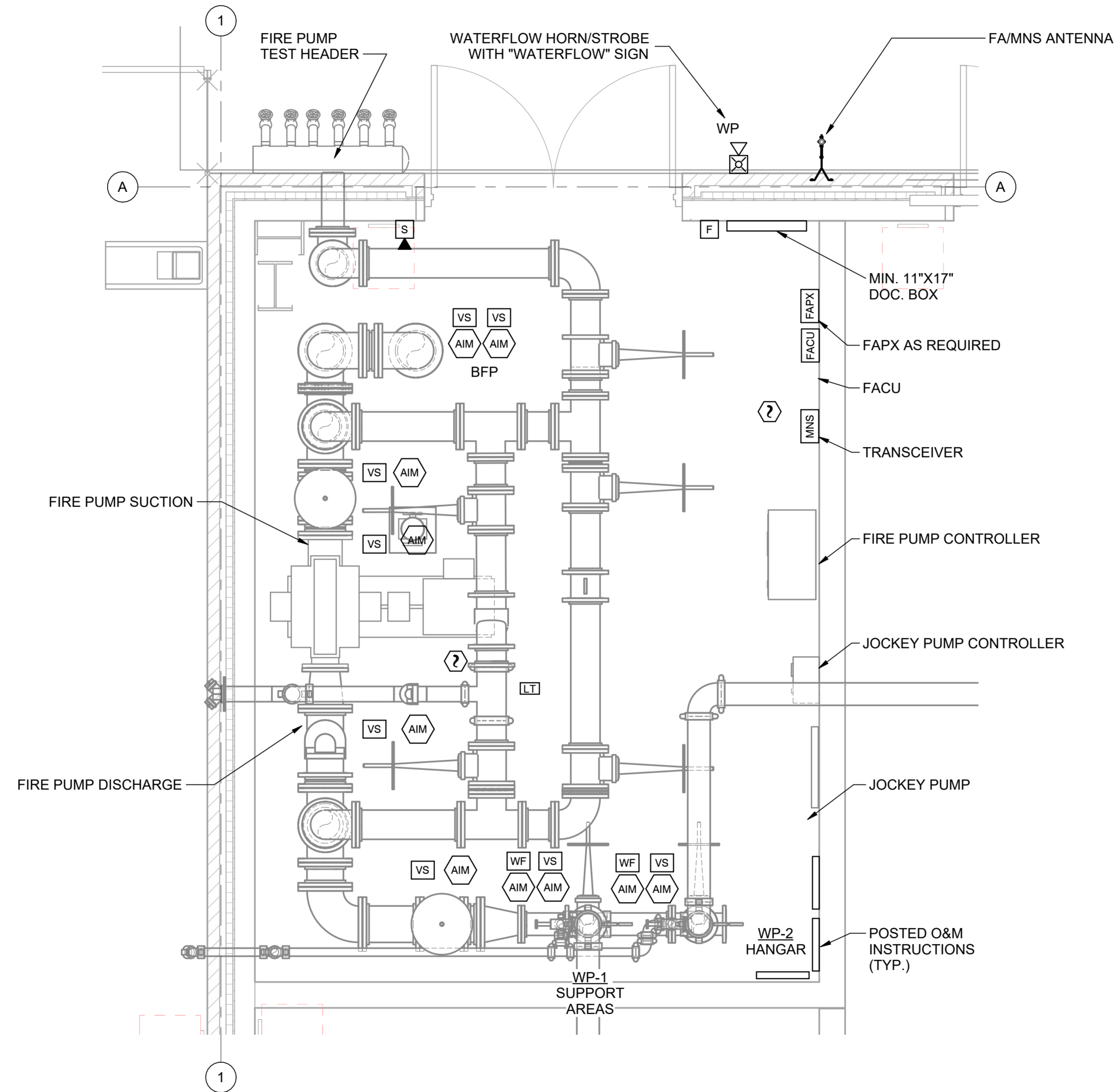
PROJECT NUMBER: **20190320**  
 SHEET TITLE: **FIRE ALARM & MASS NOTIFICATION PLAN**

ISSUE DATE: **2 AUGUST 2024**  
 SHEET NUMBER: **FA101**

**A6 FIRE ALARM & MASS NOTIFICATION PLAN**  
 SCALE: 1/8" = 1'-0"



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**(C5) FIRE PROTECTION ROOM 122 ENLARGED FIRE ALARM PLAN**  
 SCALE: 1/2" = 1'-0"

**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY:	<b>LFO</b>
DRAWN BY:	<b>MLG</b>
REVIEWED BY:	<b>JME</b>
PROJECT MANAGER:	<b>NDM</b>

PROJECT NUMBER:  
**20190320**

SHEET TITLE:  
**FIRE ALARM ENLARGED PLANS AND SECTIONS**

ISSUE DATE:

**2 AUGUST 2024**

SHEET NUMBER:

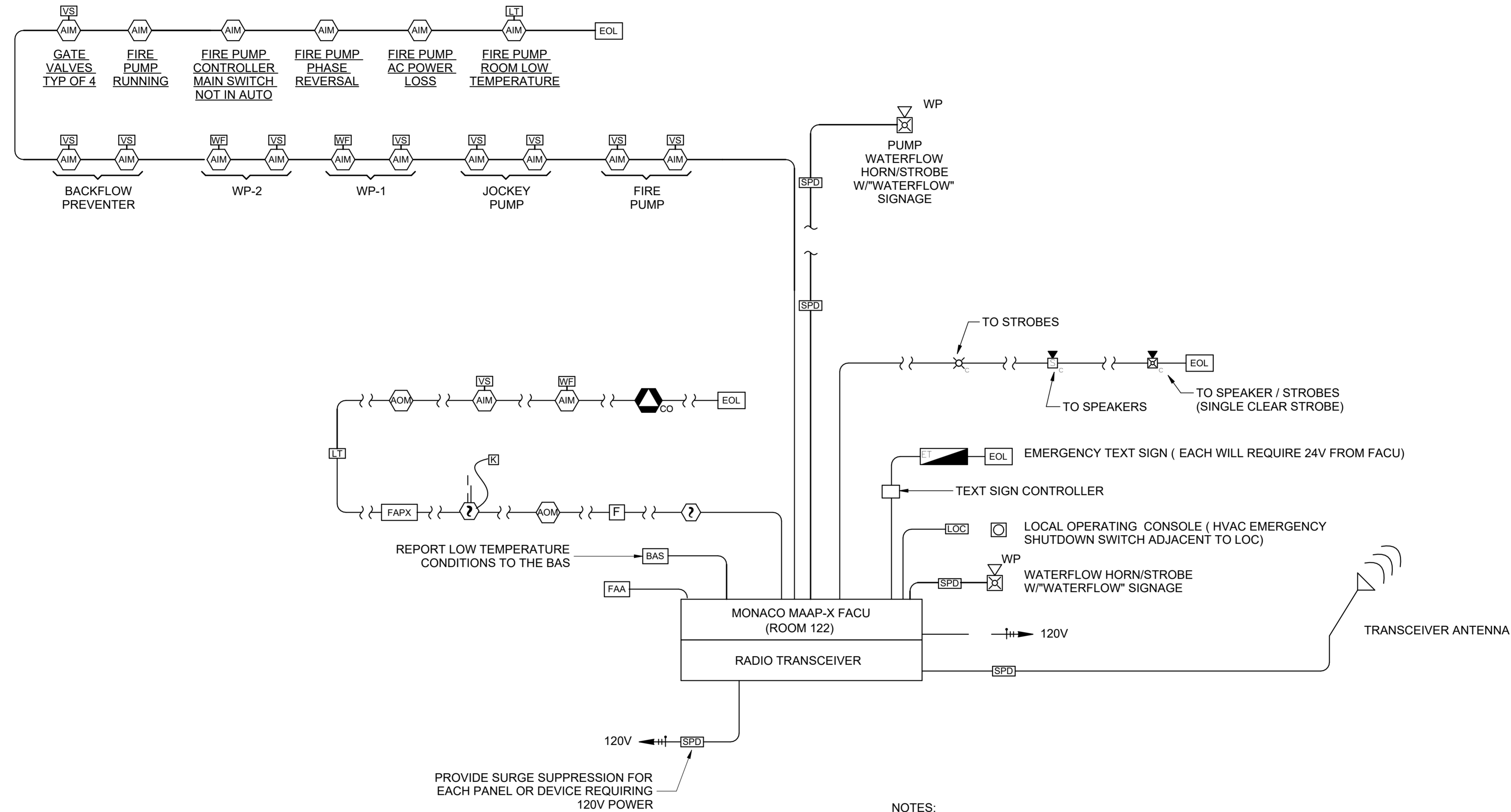
**FA401**





8-2-2024

**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**



- NOTES:**
1. FACU SHALL BE PROVIDED WITH CLASS B CIRCUITS, ROUTED IN CONDUIT. INSTALLATION IN THE HANGAR BAY SHALL BE SUITABLE FOR WET LOCATIONS, NEMA 4.
  2. PROVIDE POWER EXTENDER PANELS AS REQUIRED, EACH WITH SMOKE DETECTOR (POWER EXTENDER PANELS REQUIRE 120V POWER).

**B5 FIRE ALARM & MASS NOTIFICATION RISER DIAGRAM**  
SCALE: NTS

REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY:	<b>LFO</b>
DRAWN BY:	<b>MLG</b>
REVIEWED BY:	<b>JME</b>
PROJECT MANAGER:	<b>NDM</b>
PROJECT NUMBER:	<b>20190320</b>
SHEET TITLE:	<b>FIRE ALARM &amp; MASS NOTIFICATION RISER DIAGRAM</b>
ISSUE DATE:	<b>2 AUGUST 2024</b>
SHEET NUMBER:	<b>FA601</b>

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SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	ABBREVIATIONS	ABBREVIATIONS
-----	DOMESTIC COLD WATER		ASME RELIEF VALVE	ABV* ABOVE	FV FLUSH VALVE
NPW	NON-POTABLE WATER (MAKE-UP)		PRESSURE AND TEMPERATURE RELIEF	AFF ABOVE FINISHED FLOOR	FIG FIGURE
-----	DOMESTIC HOT WATER		REDUCER, ECCENTRIC	AGA AMERICAN GAS ASSOCIATION	FIXT FIXTURE
-----	DOMESTIC HOT WATER RETURN		REDUCER, CONCENTRIC	ALT ALTERNATE	
- - - V - - -	SOIL OR WASTE VENT		CLEANOUT, FLOOR	APPROX APPROXIMATE	G NATURAL GAS
SS	SOIL OR WASTE - ABOVE FLOOR		CLEANOUT, WALL	ARCH ARCHITECT, ARCHITECTURAL	GA GAGE, GAUGE
- - - SS - - -	SOIL OR WASTE - BELOW FLOOR OR GRADE		WATER HAMMER ARRESTOR	AUTO AUTOMATIC	GAL GALLON
CA	COMPRESSED AIR - ABOVE FLOOR		STRAINER, "Y" TYPE	AUX AUXILIARY	GALV GALVANIZED
BA	BREATHING AIR - ABOVE FLOOR		DOUBLE CHECK VALVE BACKFLOW PREVENTION DEVICE	AVG AVERAGE	GC GENERAL CONTRACTOR
D	DRAIN		REDUCED PRESSURE BACKFLOW PREVENTER W/STRAINER	B/B BACK TO BACK	GPH GALLON PER HOUR
G	NATURAL GAS, LOW PRESSURE (0.5 PSI)		HOSE BIBB	BFF BELOW FINISHED FLOOR	GPM GALLON PER MINUTE
MG	NATURAL GAS, MEDIUM PRESSURE (50 PSIG)		WALL HYDRANT	BFP BACKFLOW PREVENTER	
FP	FIRE PROTECTION MAIN		PIPE ANCHOR	BLDG BUILDING	
CD	CONDENSATE DRAIN		PIPE SLEEVE THRU WALL, FOOTING ETC	BTU BRITISH THERMAL UNIT	
			FLOW IN DIRECTION OF ARROW	BTUH BTU/HOUR	
			PIPE SLOPE IN DIRECTION OF ARROW	CA* COMPRESSED AIR	
	RISER DOWN (ELBOW)		THERMOMETER	CAP CAPACITY	
	RISER UP (ELBOW)		THERMOMETER WELL	CBV* CIRCUIT BALANCING VALVE	
	RISE OR DROP		PRESSURE GAUGE WITH GAUGE COCK (C-COMPOUND GAUGE)	CFH* CUBIC FEET PER HOUR	
	TEE DOWN		LUBRICATED PLUG VALVE	CI CAST IRON	
	TEE UP		UNION	CL CENTER LINE	
	BOTTOM CONNECTION		BLIND FLANGE	CLG CEILING	
	SIDE CONNECTION		CAP	CO CLEAN OUT	
	BALL VALVE		COMPRESSED AIR RELIEF VALVE	COL COLUMN	
	GATE VALVE OR ISOLATION VALVE		RELIEF VALVE	COMB COMBINATION	
	CIRCUIT BALANCING VALVE - SET FOR GPM SHOWN IN ( )		PIPE ROUTED TO FLOOR DRAIN	CONC CONCRETE	
	ANGLE VALVE		LAVATORY	CONN CONNECT	
	CHECK VALVE (STRAIGHT)		WATER CLOSET	CONT CONTINUE, CONTINUOUS	
	CHECK VALVE (SWING GATE)		URINAL	CORD COORDINATE	
	GLOBE VALVE		SERVICE SINK/BASIN	CORR CORRIDOR	
	PRESSURE REDUCING VALVE		SINK	CP* CHROME PLATED	
<b>TEXT SYMBOLS</b>			SHOWER HEAD	CTR CENTER	
∠.....	ANGLE		DRINKING FOUNTAIN	CW COLD WATER	
°.....	DEGREE		FLOOR DRAIN	D DRAIN	
Ø.....	DIAMETER		COMPRESSED AIR OUTLET STATION	DEG DEGREE	
φ.....	PHASE		EMERGENCY EYEWASH	DEMO DEMOLITION	
⊖.....	ROUND		EMERGENCY DRENCH SHOWER / EYEWASH	DF DRINKING FOUNTAIN	
%.....	PERCENT			DIA DIAMETER	

**NOTES:**  
1. NOT ALL SYMBOLS OR ABBREVIATIONS ARE USED ON THIS PROJECT.  
2. ABBREVIATIONS WITH \* PREFIX ARE NOT INCLUDED IN THE CURRENT NATIONAL CAD STANDARDS.

**GENERAL NOTES**

(APPLIES TO ALL SHEETS)

A. SLOPE SOIL AND WASTE PIPE 3" AND LARGER AT 1/8" PER FT. MINIMUM, SIZE LESS THAN 3" SLOPE 1/4" PER FT. MINIMUM, UNLESS NOTED OTHERWISE.

B. ALL PIPING SHALL BE COORDINATED WITH CIVIL UTILITY PIPING, FIRE PROTECTION, DUCTWORK, MECHANICAL PIPING, LIGHTING, STRUCTURAL AND ARCHITECTURAL SYSTEMS.

C. PIPE CLEANOUTS SHALL BE LINE SIZE (6" MAX.). LOCATE 100' APART MAXIMUM FOR SIZES UP THROUGH 6".

D. PLUMBING VENTS THROUGH ROOF (VTR) SHALL BE 3" MINIMUM. SMALLER VTR'S INDICATED SHALL INCREASE TO 3" PIPE, 12" BELOW ROOF.

E. ACCESS PANELS SHALL BE PROVIDED FOR ALL WATER HAMMER ARRESTORS LOCATED IN WALLS TO ACCESS EQUIPMENT. PANEL SHALL BE AS LARGE AS PRACTICAL FOR THE FUNCTION THEY ARE INTENDED.

F. TRAP PRIMERS SHALL BE PROVIDED ON ALL DRAINS SUBJECT TO EVAPORATION.

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CHRISTIAN L. FOSHEE  
30767  
OKLAHOMA  
08/02/2024

**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY:	CLD
DRAWN BY:	CLD
REVIEWED BY:	APC
PROJECT MANAGER:	NDM

PROJECT NUMBER:  
20190320

SHEET TITLE:

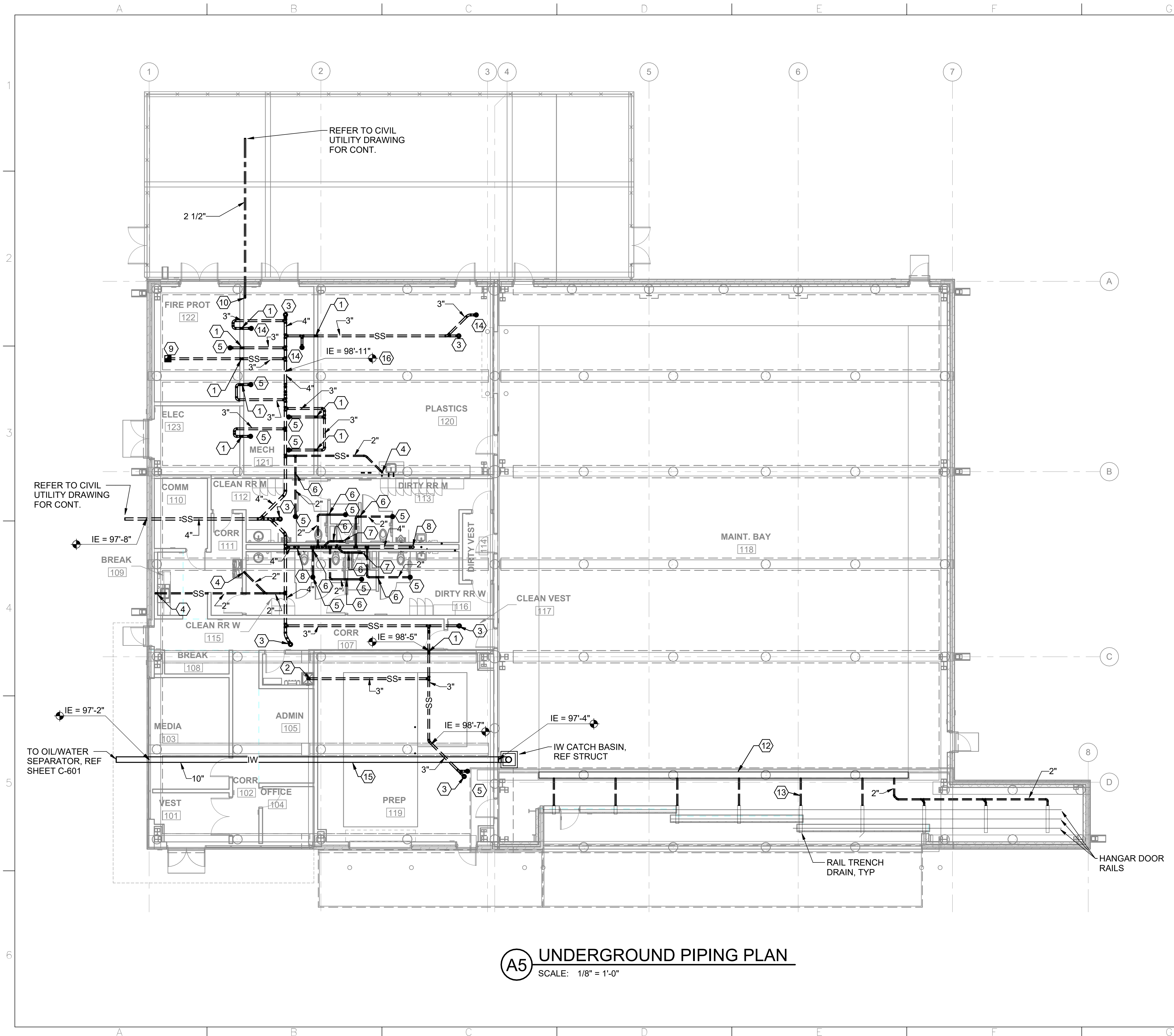
**LEGEND & ABBREVIATIONS**

ISSUE DATE:  
2 AUGUST 2024

SHEET NUMBER:

**P-001**

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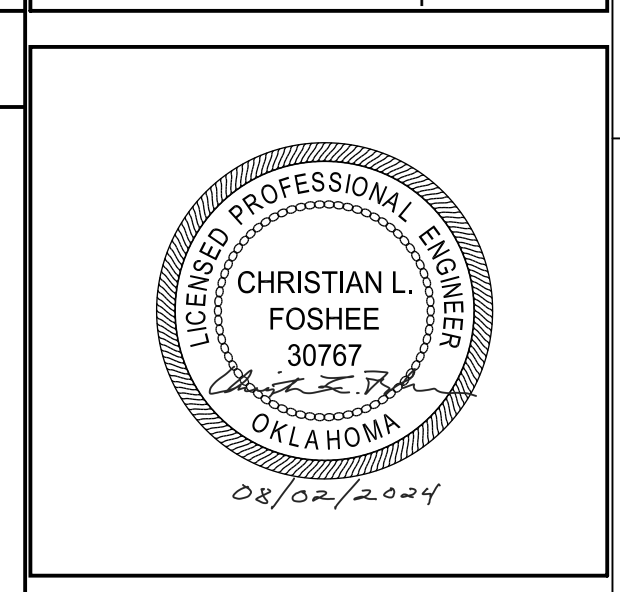
**GENERAL NOTES**

A. REFER TO SHEET P-001 FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES APPLICABLE TO THIS SHEET.

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- SHEET KEYNOTES**
- 2" VENT UP TO ABOVE FLOOR.
  - 3" SS UP TO MOP BASIN ABOVE.
  - UP TO FLOOR CLEANOUT.
  - 2" SS FROM ABOVE FLOOR.
  - 2" SS FROM FLOOR DRAIN ABOVE.
  - 1 1/2" VENT UP TO ABOVE FLOOR.
  - 2" SS FROM SHOWER DRAIN ABOVE.
  - 4" SS FROM ABOVE FLOOR.
  - 3" SS FROM FLOOR SINK ABOVE.
  - 2 1/2" CW UP TO ABOVE FLOOR.
  - UP TO EXTERIOR CLEANOUT.
  - HANGAR TRENCH DRAIN. REFER TO STRUCTURAL DRAWINGS.
  - 2" IW FROM DOOR RAIL TRENCH DRAIN TO HANGAR TRENCH DRAIN. TYP OF 9.
  - 3" SS FROM FLOOR DRAIN ABOVE.
  - SLOPE AT 1/32" PER FOOT.
  - SLEEVE THRU MIDDLE OF GRADE BEAM. REFER TO STRUCTURAL.



**Texas Air National Guard - 149th FW**  
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PROJECT NUMBER:  
20190320

SHEET TITLE:

**UNDERGROUND PIPING PLAN**

ISSUE DATE:  
2 AUGUST 2024

SHEET NUMBER:  
**P-100**

**A5 UNDERGROUND PIPING PLAN**  
SCALE: 1/8" = 1'-0"



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**GENERAL NOTES**

A. REFER TO SHEET P-001 FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES APPLICABLE TO THIS SHEET.



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**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

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PROJECT INFORMATION:

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REVIEWED BY:	APC
PROJECT MANAGER:	NDM

PROJECT NUMBER:

20190320

SHEET TITLE:

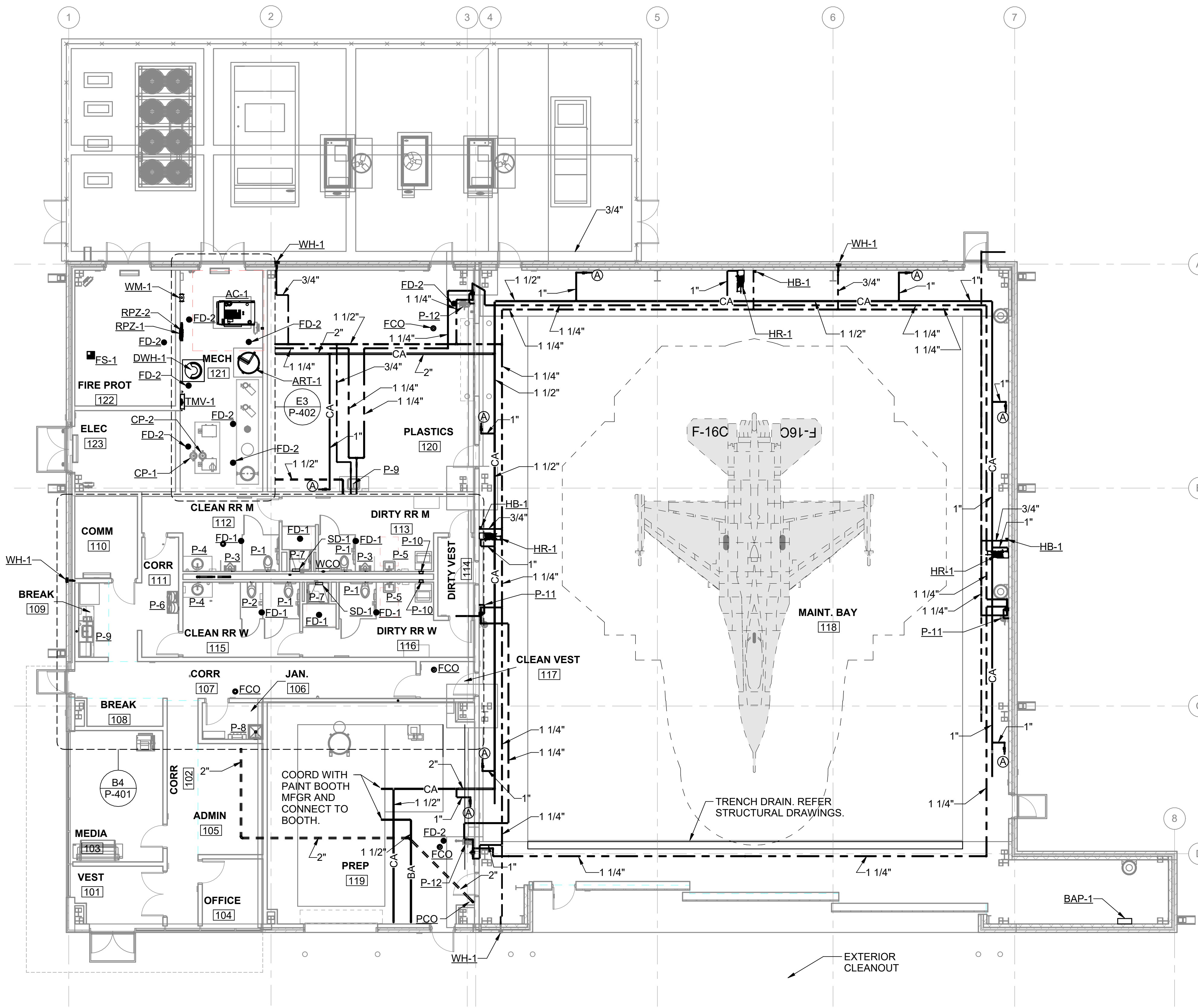
**GROUND FLOOR PLAN**

ISSUE DATE:

2 AUGUST 2024

SHEET NUMBER:

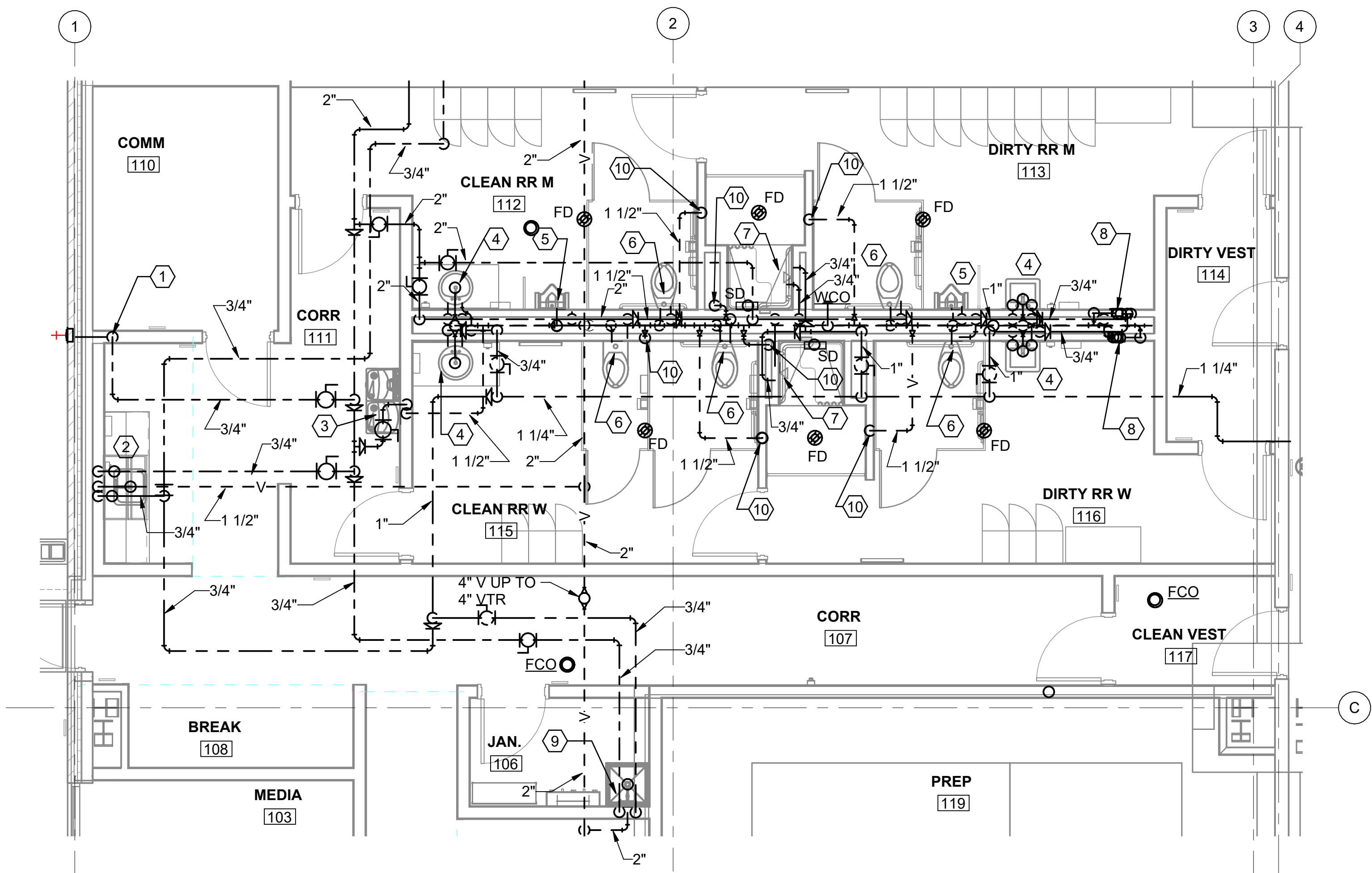
**P-101**



**A5 GROUND FLOOR PLAN**  
SCALE: 1/8" = 1'-0"



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**B4 PARTIAL ENLARGED PLAN**  
SCALE: 1/4" = 1'-0"

**GENERAL NOTES**

A. REFER TO SHEET P-001 FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES APPLICABLE TO THIS SHEET.

**SHEET KEYNOTES**

1. 3/4" CW DOWN IN WALL TO WH-1.
2. 3/4" HW AND 3/4" CW DOWN IN WALL, 1-1/2" VENT UP IN WALL AND 1-1/2" SS DOWN IN WALL TO 2" SS THRU FLOOR, SERVING SINK. PROVIDE TEE IN CW ROUGH-IN WITH NEEDLE VALVE AND 3/8" COPPER TUBING TO BE ROUTED TO ICE MAKER CONNECTION IN REFRIGERATOR.
3. 1/2" CW DOWN IN WALL, 1-1/4" VENT UP IN WALL AND 1-1/2" SS DOWN TO 2" SS THRU FLOOR SERVING DUAL STATION WATER COOLER.
4. 1/2" HW AND 1/2" CW, 1-1/2" COMMON VENT UP IN CHASE AND 1-1/2" COMMON SS SERVING BACK-TO-BACK LAVATORIES.
5. 1" CW, 2" SS AND 1-1/2" VENT SERVING URINAL.
6. 1-1/4" CW, 2" VENT AND 4" SS SERVING WATER CLOSET.
7. 3/4" HW AND 3/4" CW IN CHASE TO MIXING VALVE SERVING SHOWER.
8. 3/4" HW AND 3/4" CW, 1-1/2" SS AND 1-1/2" VENT SERVING UTILITY BOX SERVING STACKABLE CLOTHES WASHER / DRYER.
9. 3/4" HW AND 3/4" CW DOWN IN WALL, 2" VENT UP IN WALL AND 3" SS SERVING MOP BASIN.
10. 1-1/2" VENT UP FROM BELOW FLOOR.

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**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY:	<b>CLD</b>
DRAWN BY:	<b>CLD</b>
REVIEWED BY:	<b>APC</b>
PROJECT MANAGER:	<b>NDM</b>

PROJECT NUMBER:  
**20190320**

SHEET TITLE:  
**PARTIAL ENLARGED PLAN**

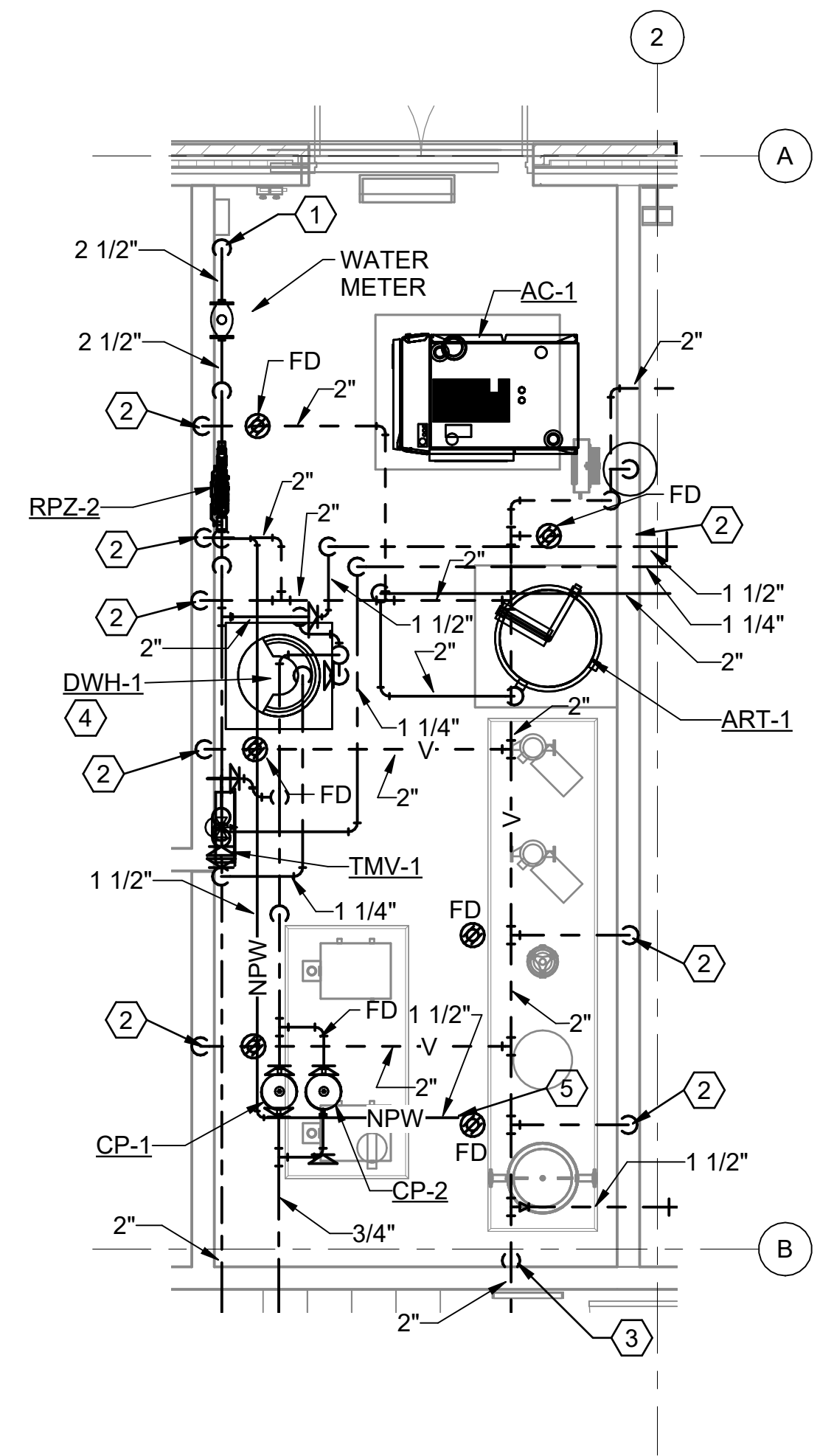
ISSUE DATE:  
**2 AUGUST 2024**

SHEET NUMBER:  
**P-401**



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**E3 PARTIAL ENLARGED PLAN**  
SCALE: 1/4" = 1'-0"

**GENERAL NOTES**

A. REFER TO SHEET P-001 FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES APPLICABLE TO THIS SHEET.

**SHEET KEYNOTES**

1. 2-1/2" CW FROM FLOOR BELOW.
2. 2" VENT UP FROM BELOW FLOOR.
3. 1-1/2" VENT UP FROM BELOW FLOOR.
4. REFER 5/P-402 FOR WATER HEATER DETAIL.

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**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

REVISION HISTORY:

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PROJECT INFORMATION:

DESIGNED BY:	CLD
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REVIEWED BY:	APC
PROJECT MANAGER:	NDM

PROJECT NUMBER:  
20190320

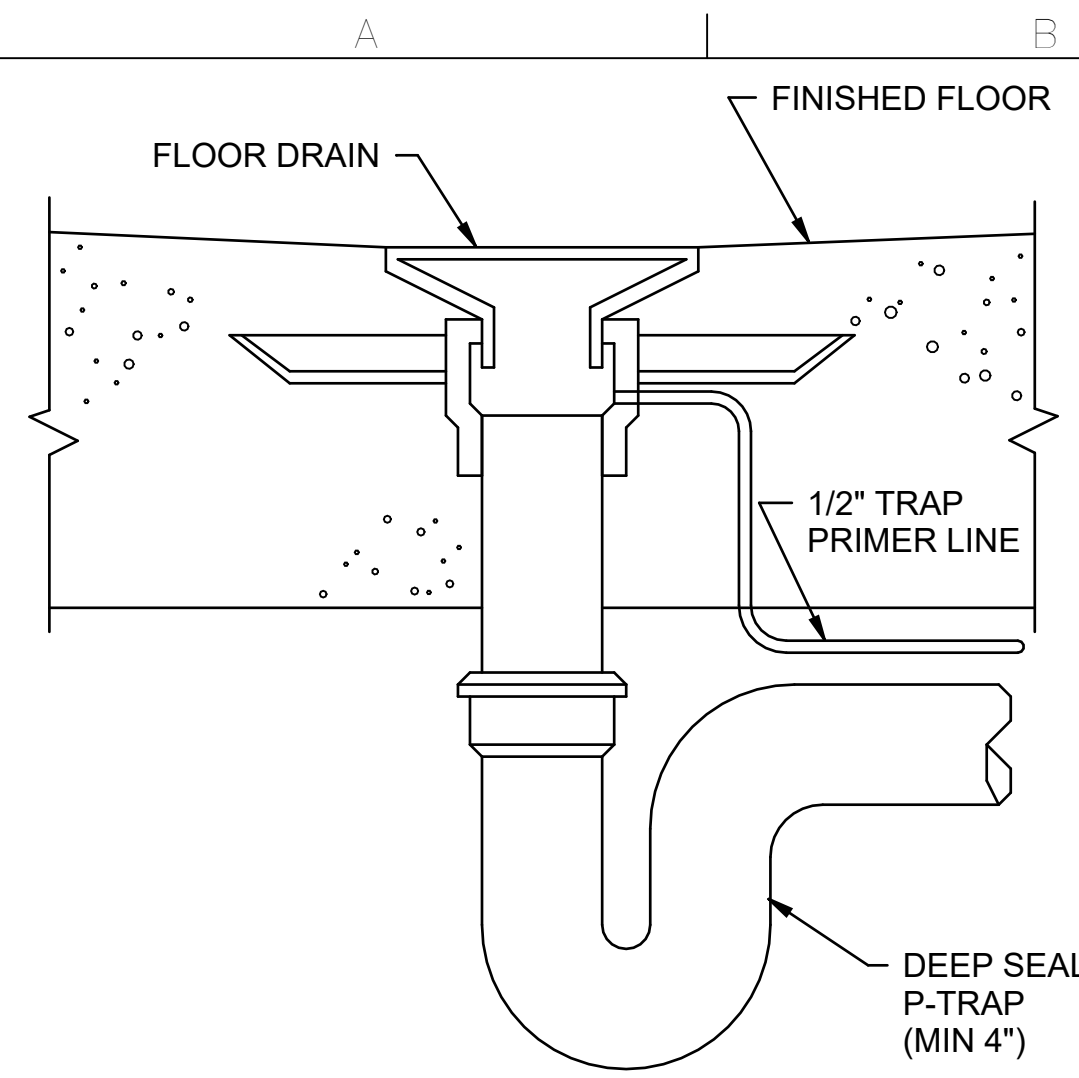
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ISSUE DATE:  
2 AUGUST 2024

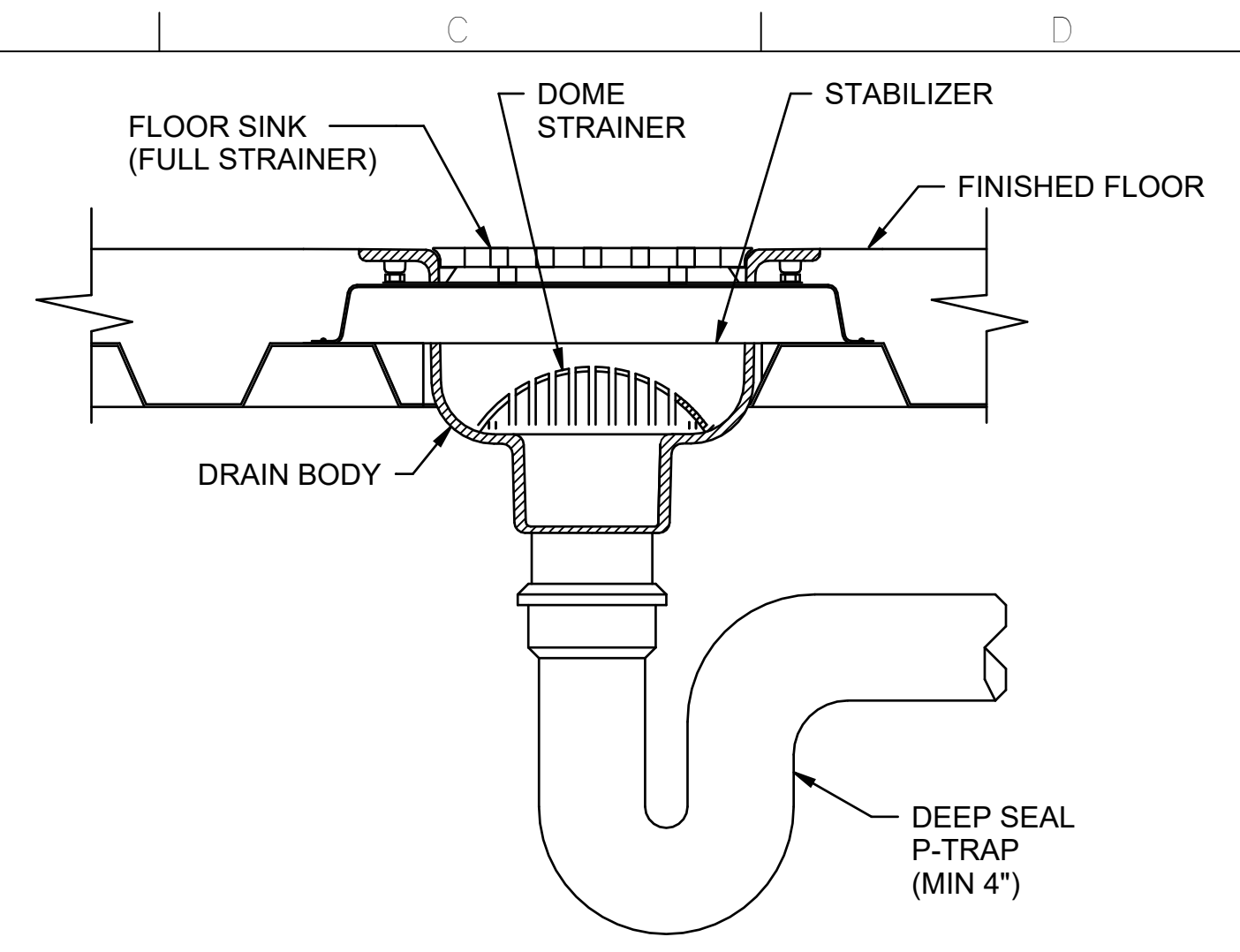
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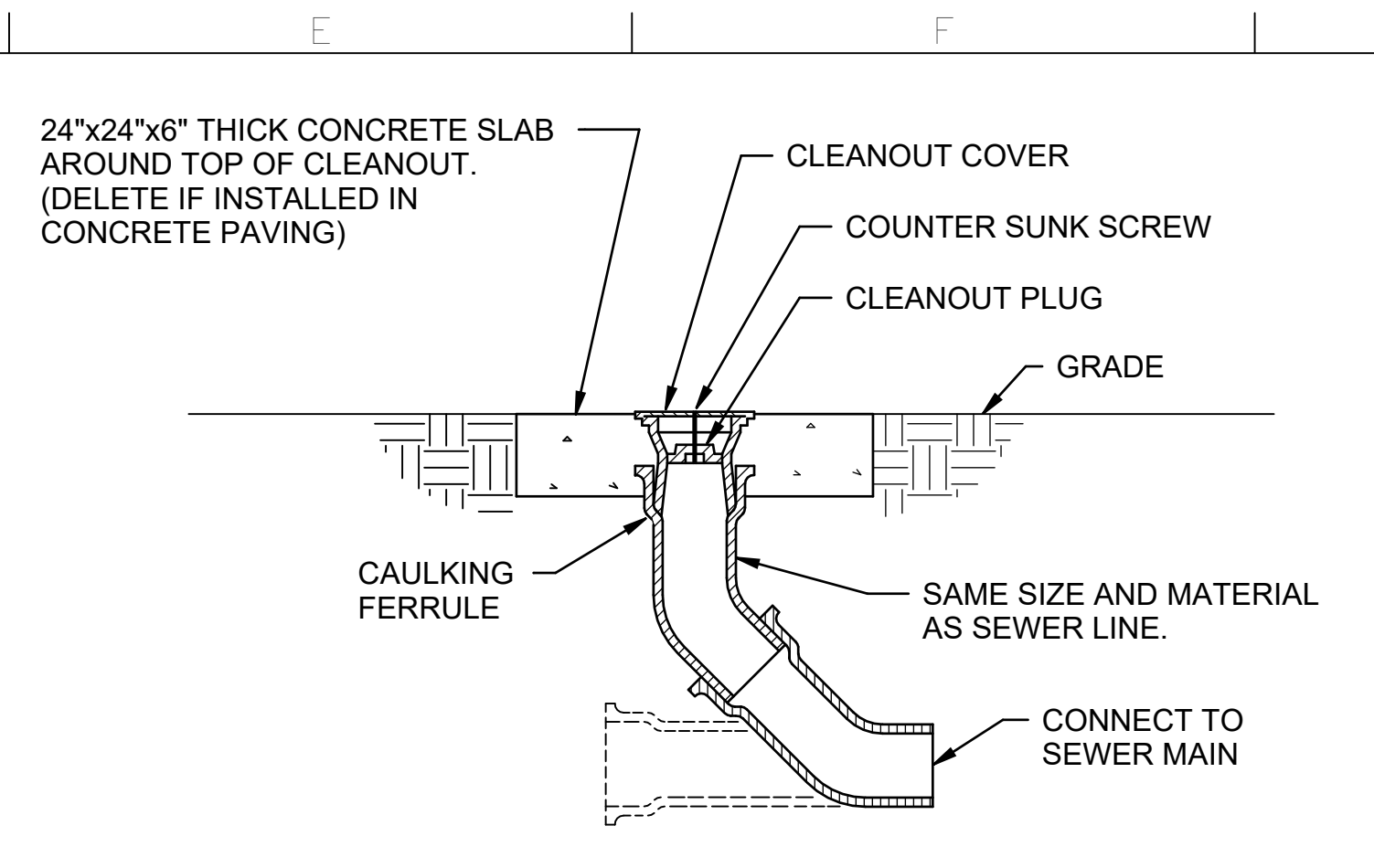
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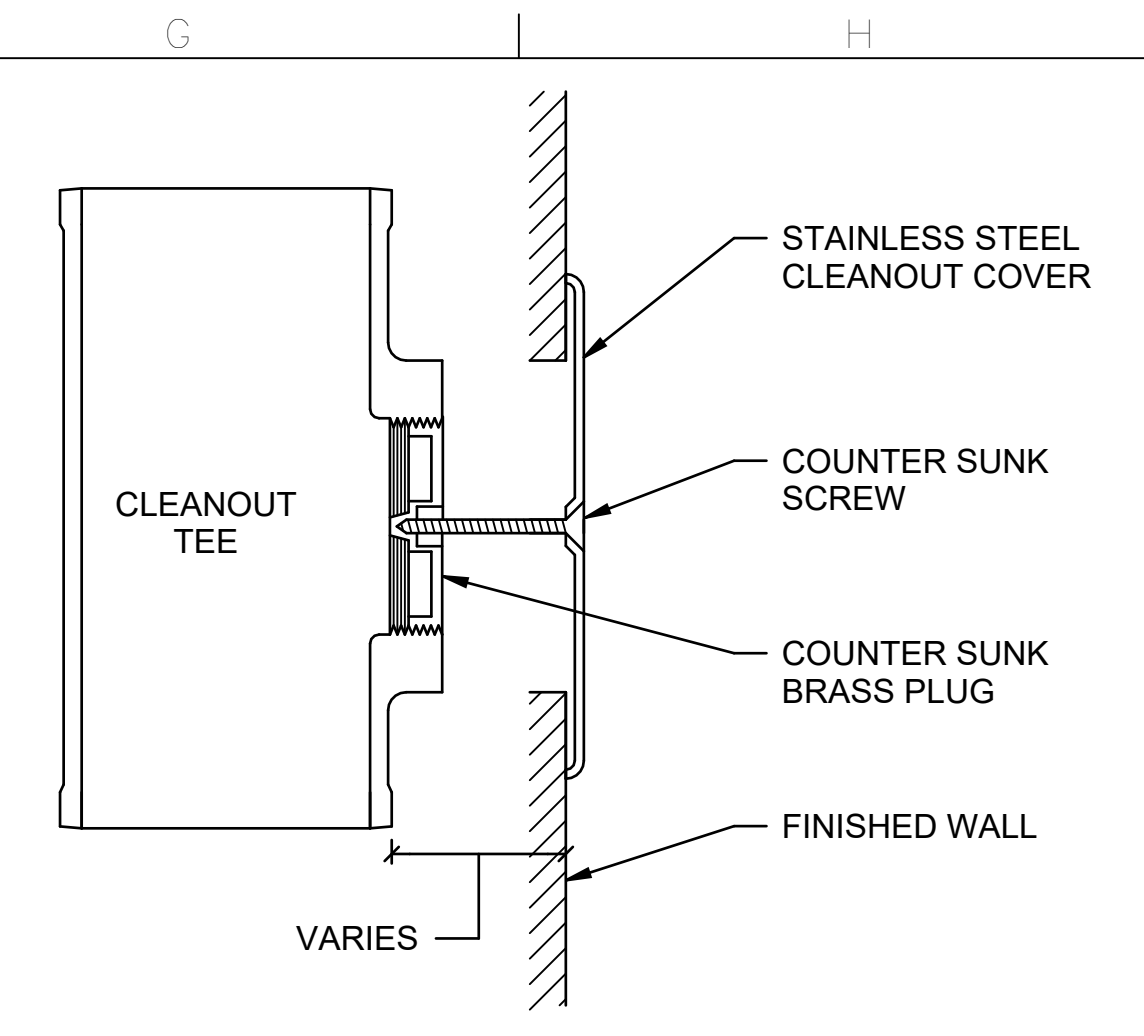
**A2 FLOOR DRAIN DETAIL**  
SCALE: NTS



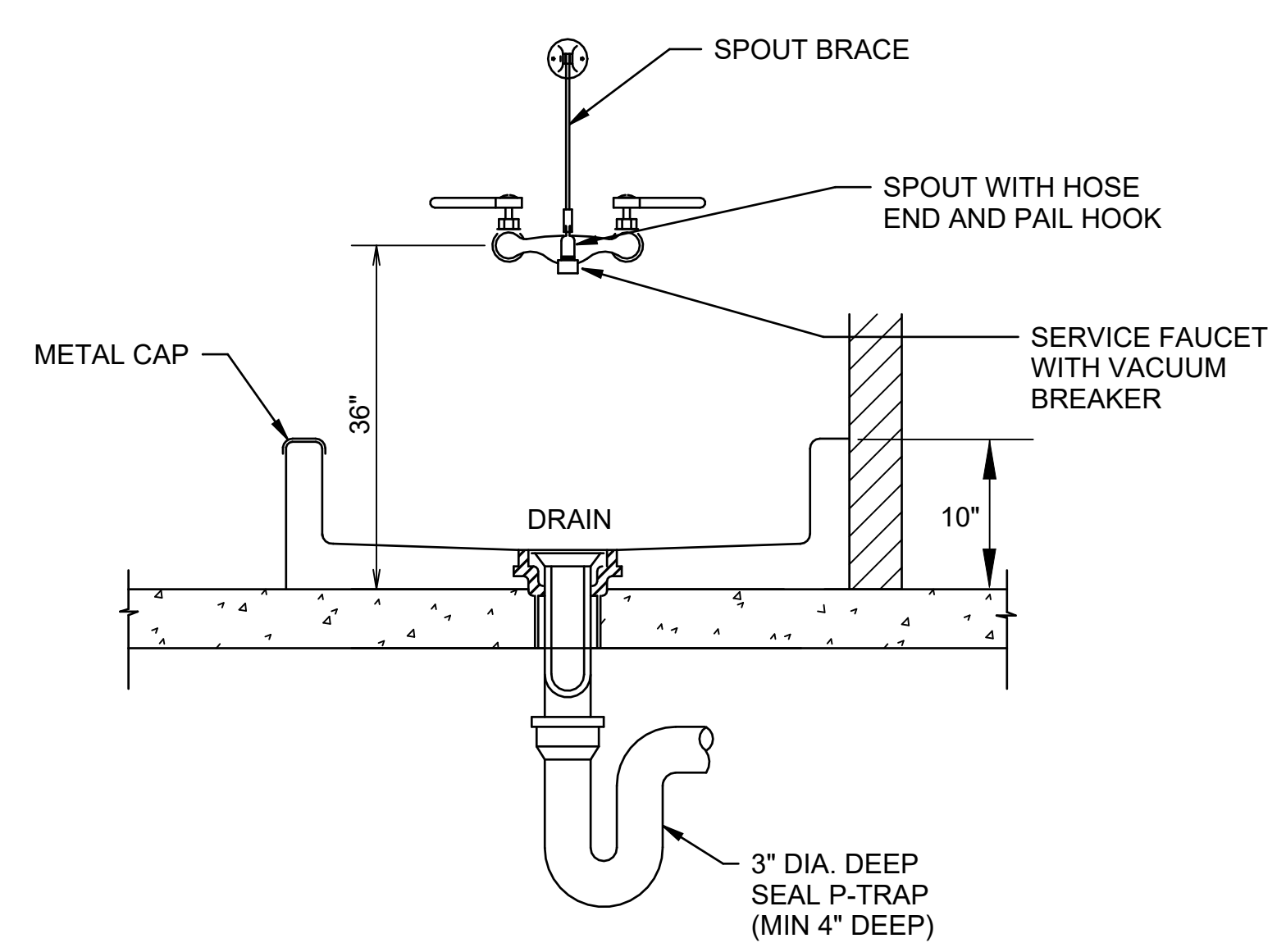
**B2 FLOOR SINK DETAIL**  
SCALE: NTS



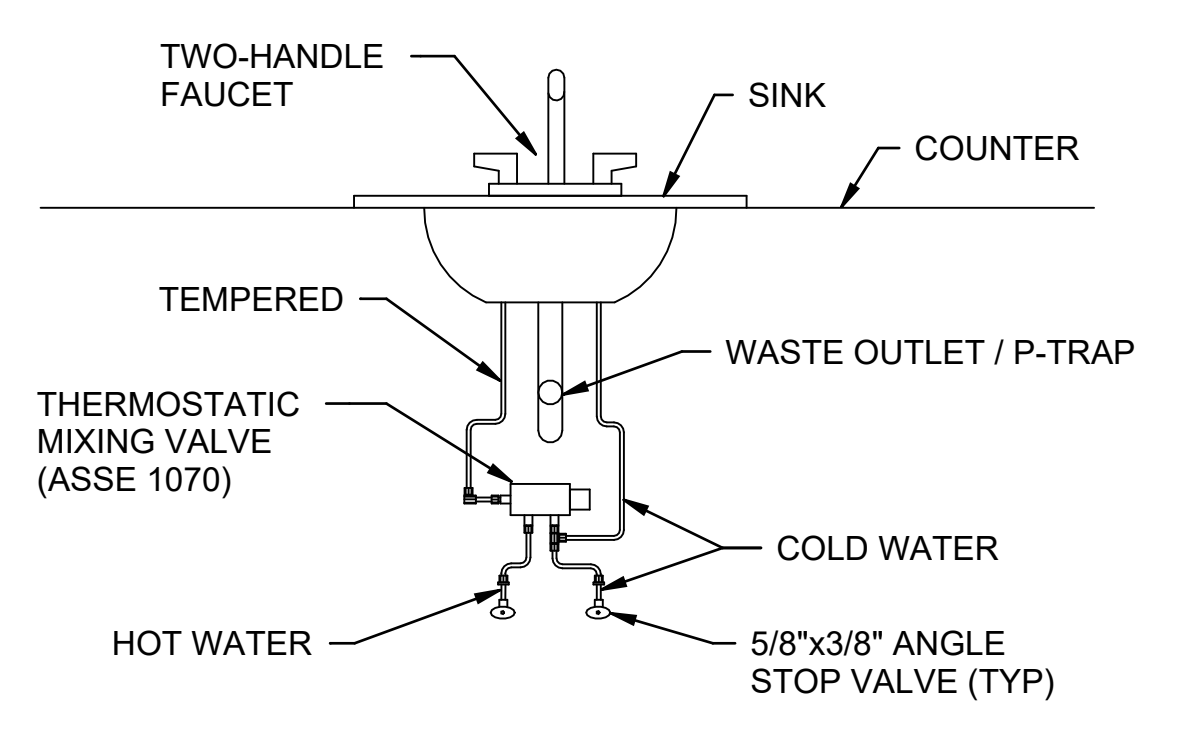
**E2 EXTERIOR CLEANOUT DETAIL**  
SCALE: NTS



**G2 WALL CLEANOUT DETAIL**  
SCALE: NTS

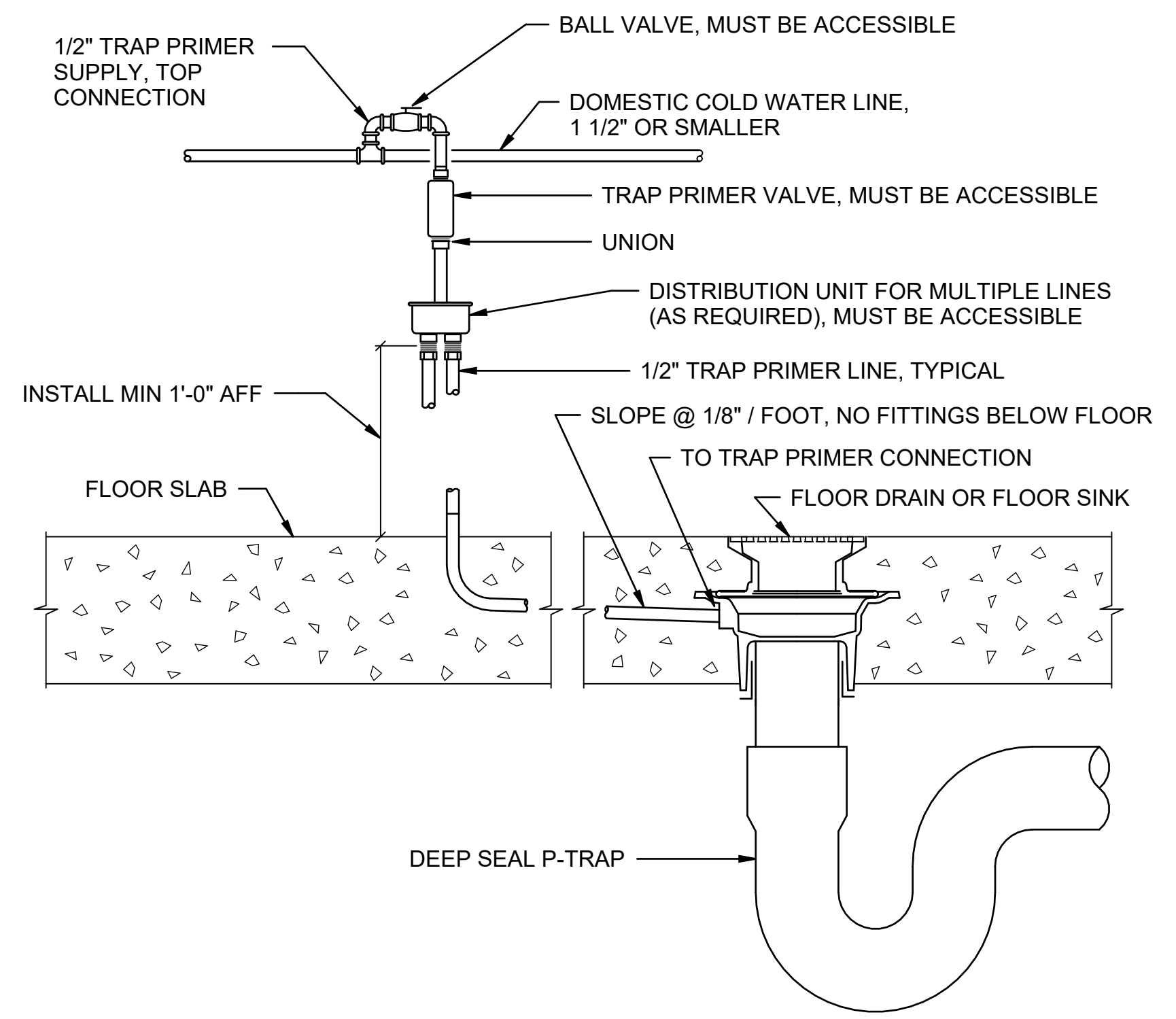


**A4 MOP SINK DETAIL**  
SCALE: NTS



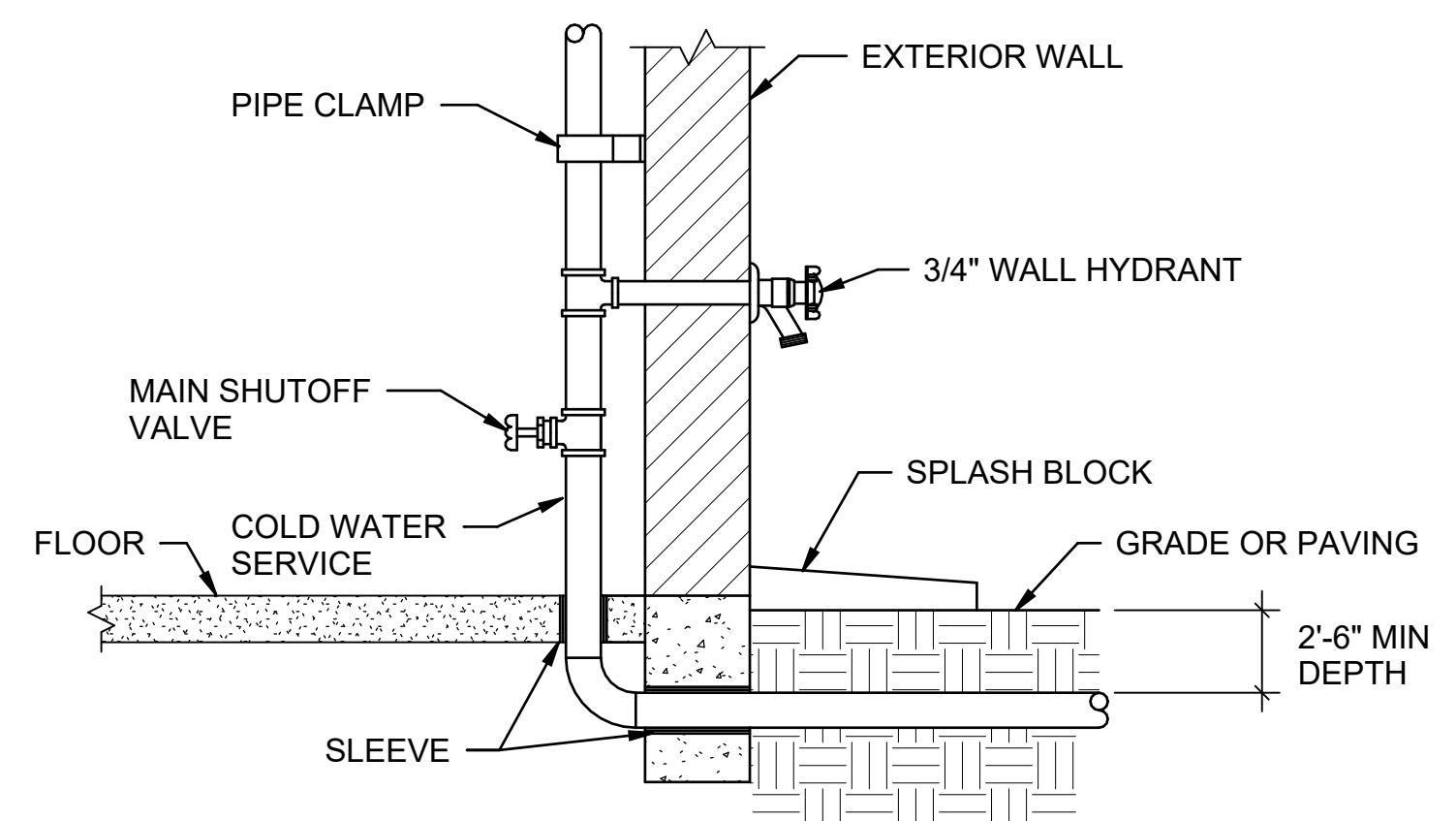
**C4 SINK MIXING VALVE DETAIL**  
SCALE: NTS

NOTE: FOR LAVATORY SINGLE SUPPLY SENSOR FAUCET CONNECT THE TEMPERED LINE TO THE FAUCET AND DO NOT RUN THE COLD WATER TO THE FAUCET.

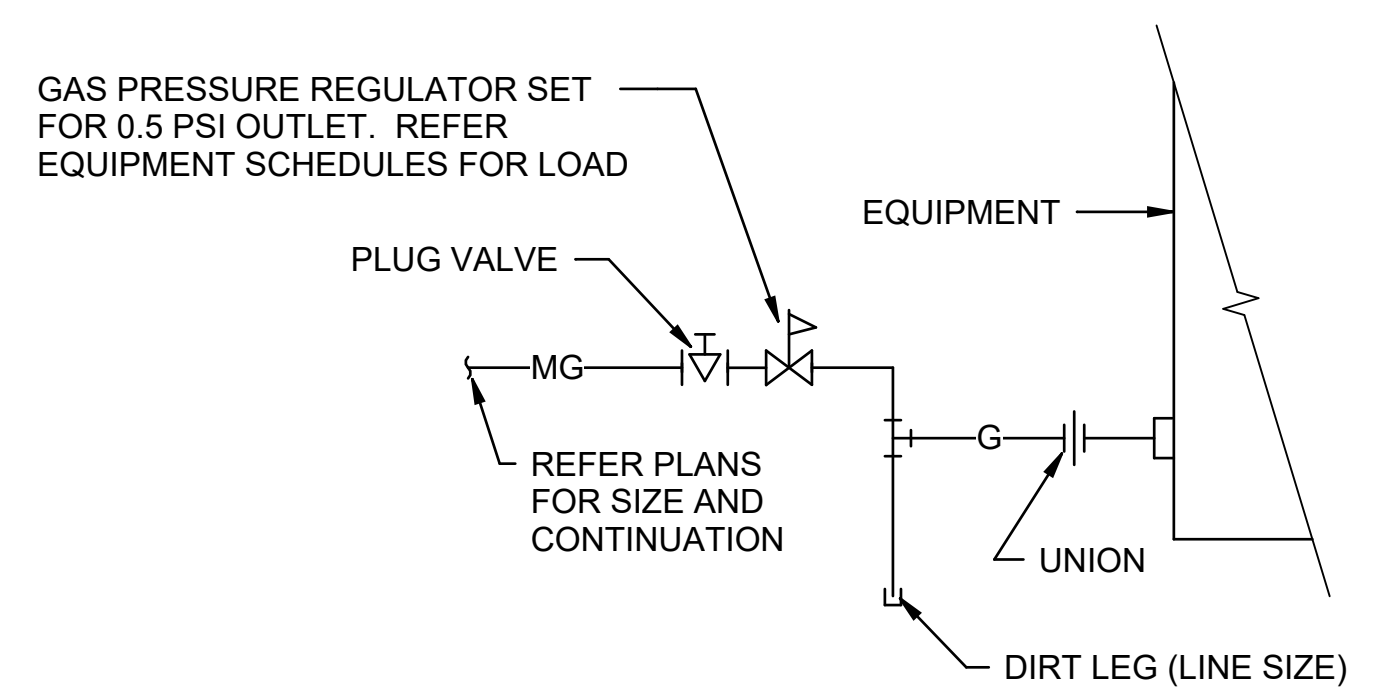


**F4 TRAP PRIMER DETAIL**  
SCALE: NTS

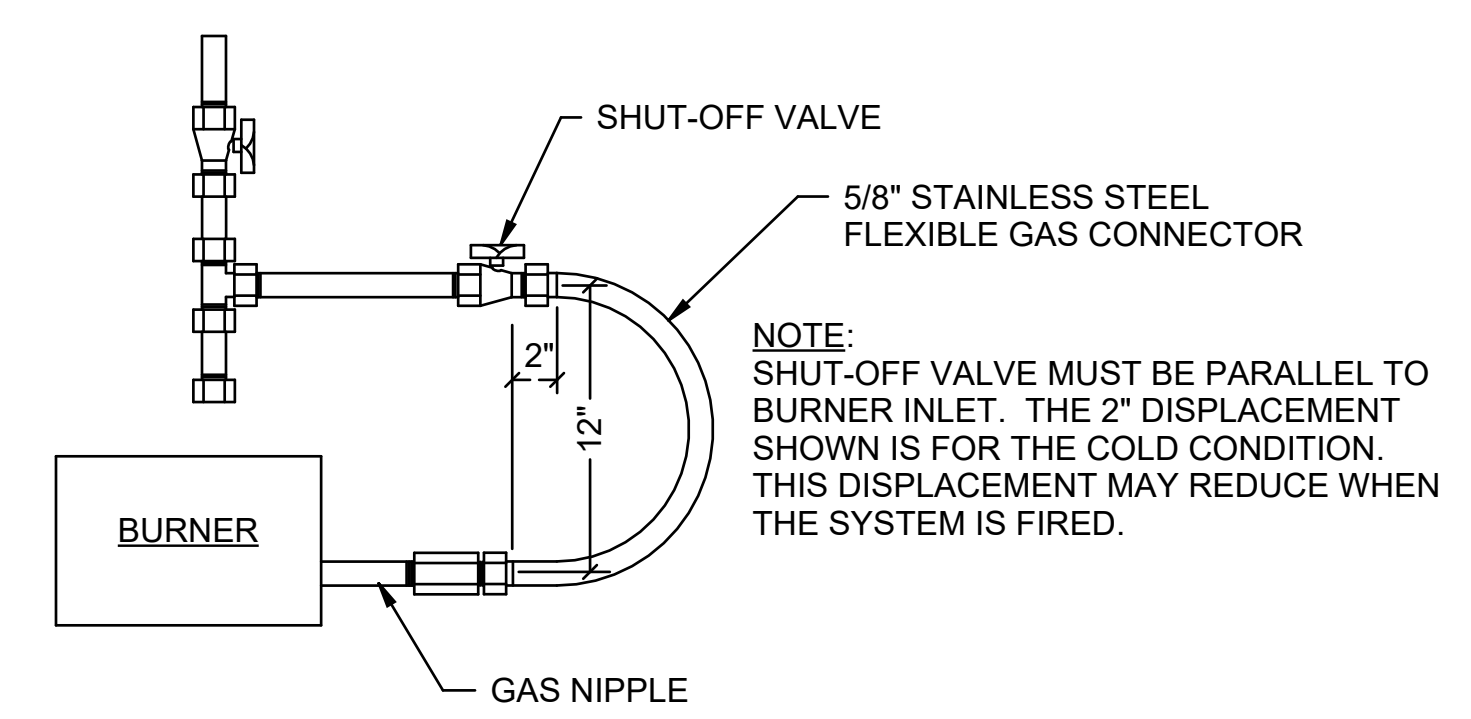
NOTE: SHUT-OFF VALVE MUST BE PARALLEL TO BURNER INLET. THE 2" DISPLACEMENT SHOWN IS FOR THE COLD CONDITION. THIS DISPLACEMENT MAY REDUCE WHEN THE SYSTEM IS FIRED.



**A5 TYPICAL COLD WATER ENTRY DETAIL**  
SCALE: NTS



**C5 TYPICAL GAS CONNECTION DETAIL**  
SCALE: NTS



**F5 RADIANT HEATER GAS PIPING DETAIL**  
SCALE: NTS

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**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

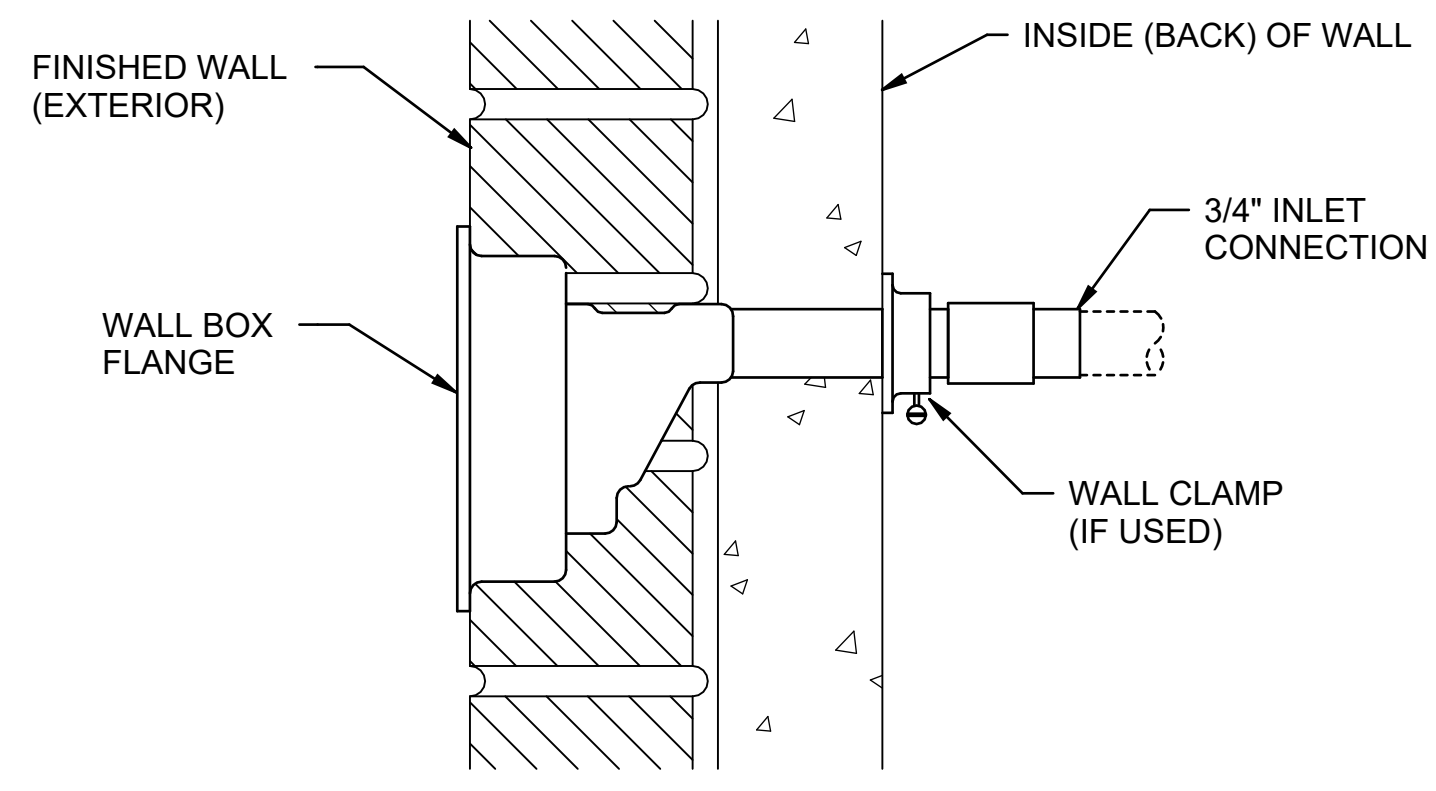
DESIGNED BY:	CLD
DRAWN BY:	CLD
REVIEWED BY:	APC
PROJECT MANAGER:	NDM
PROJECT NUMBER:	20190320
SHEET TITLE:	

**DETAILS**

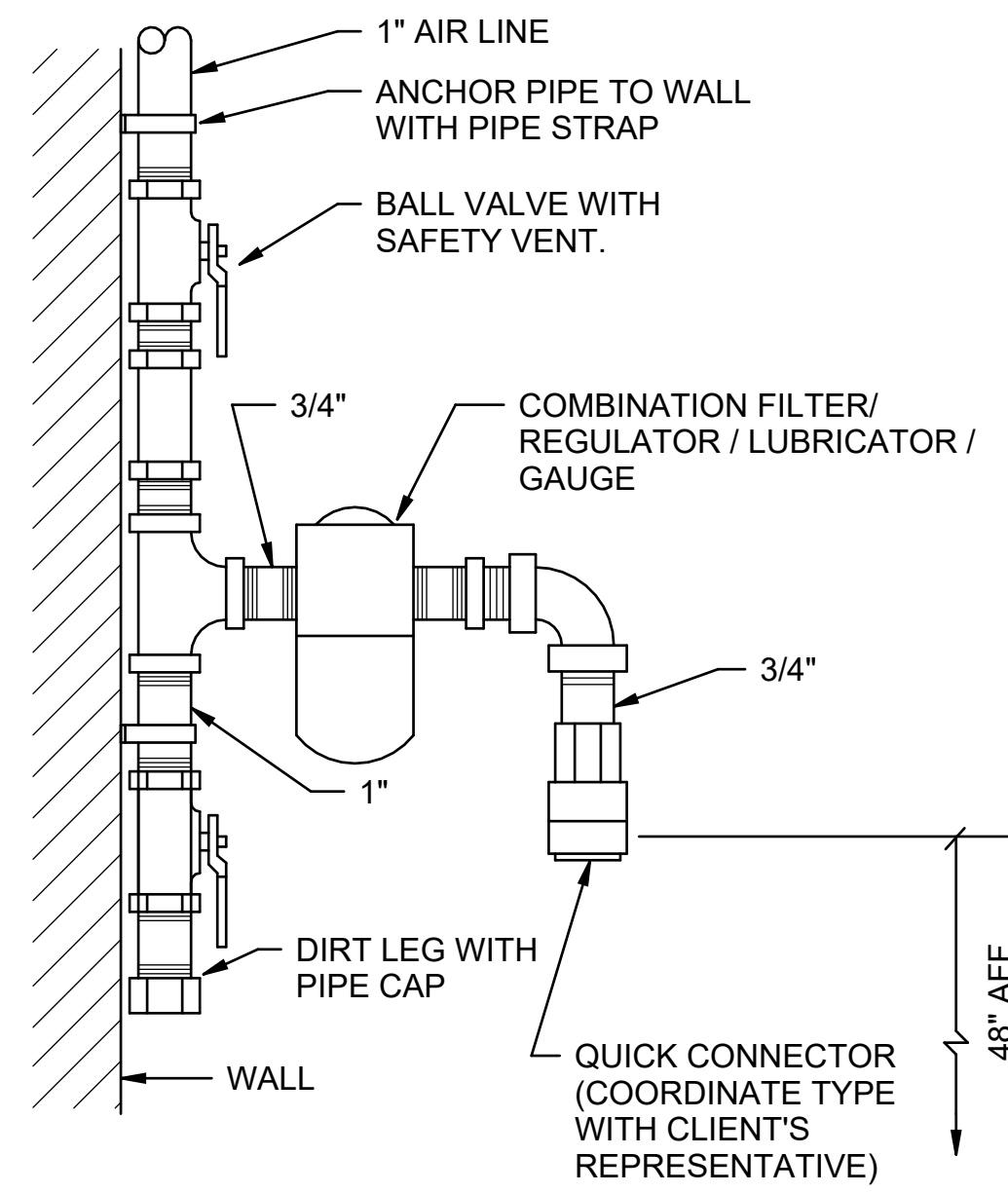
ISSUE DATE:  
2 AUGUST 2024

SHEET NUMBER:  
**P-501**

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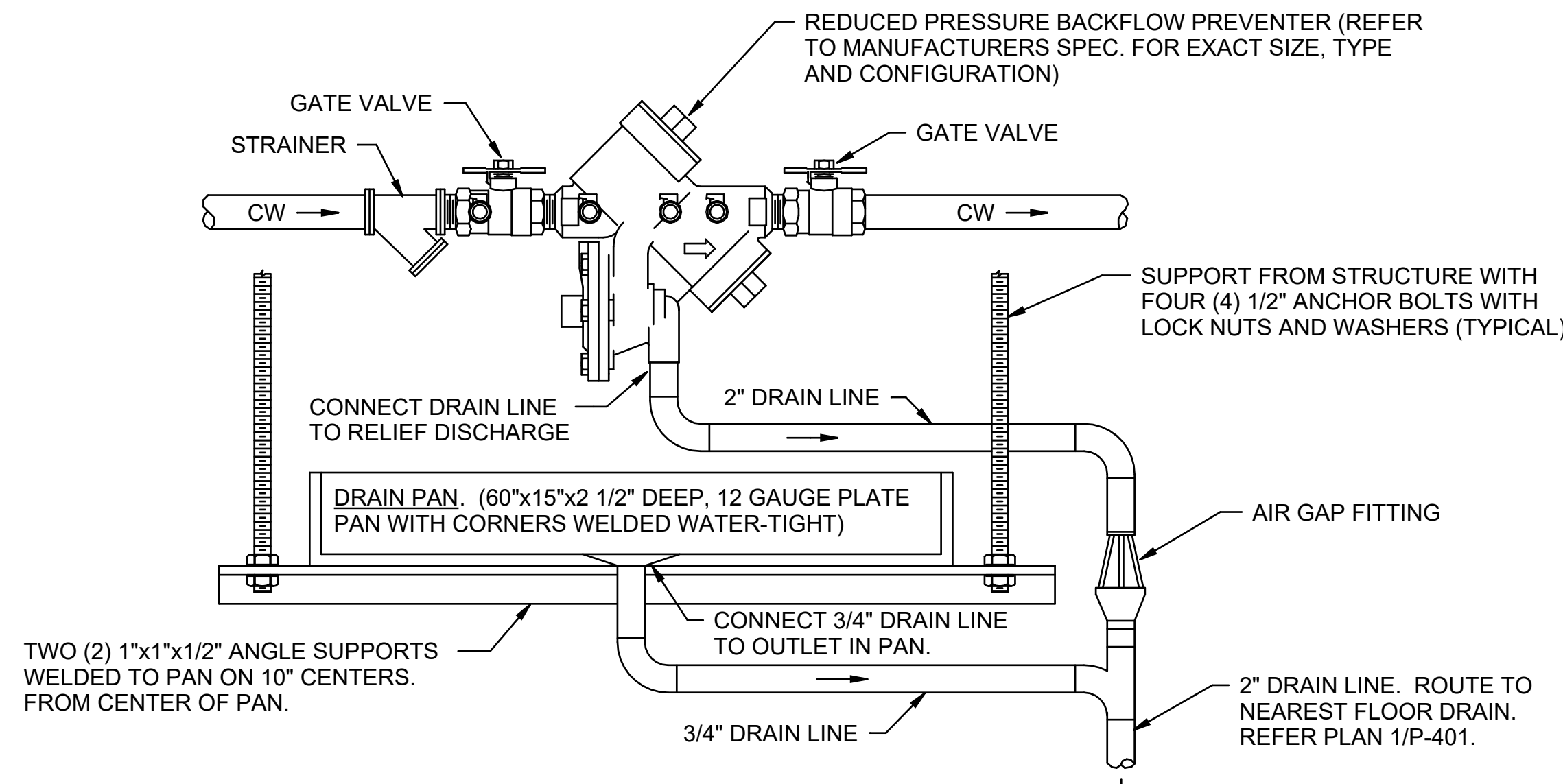
**A2 WALL HYDRANT DETAIL**  
SCALE: NTS



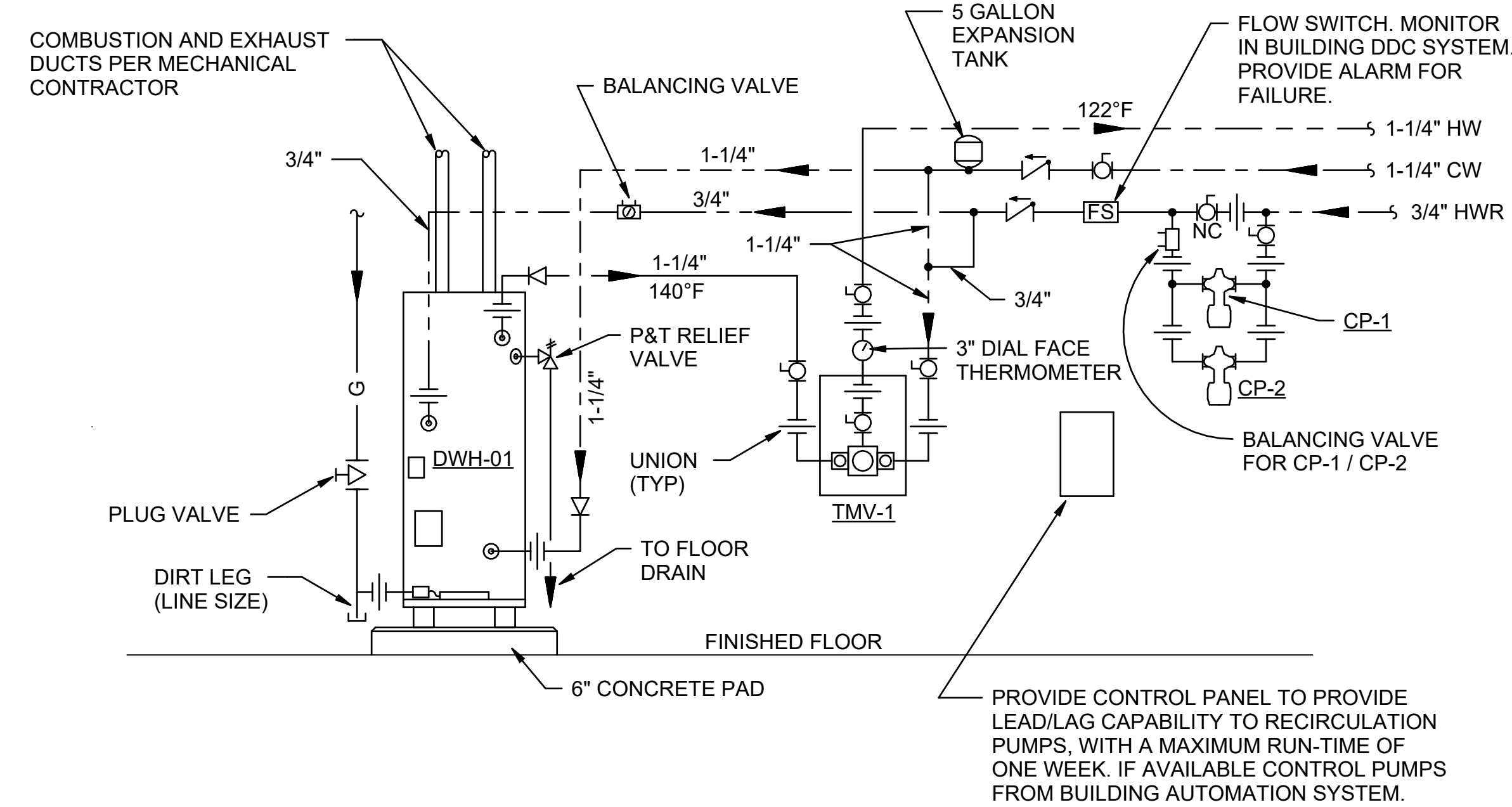
**BASIS OF DESIGN:**

1. QUICK-CONNECT: TO MATCH OWNERS EXISTING.
2. COMBINATION FILTER / REGULATOR / LUBRICATOR / GAUGE: TO MATCH OWNERS EXISTING.

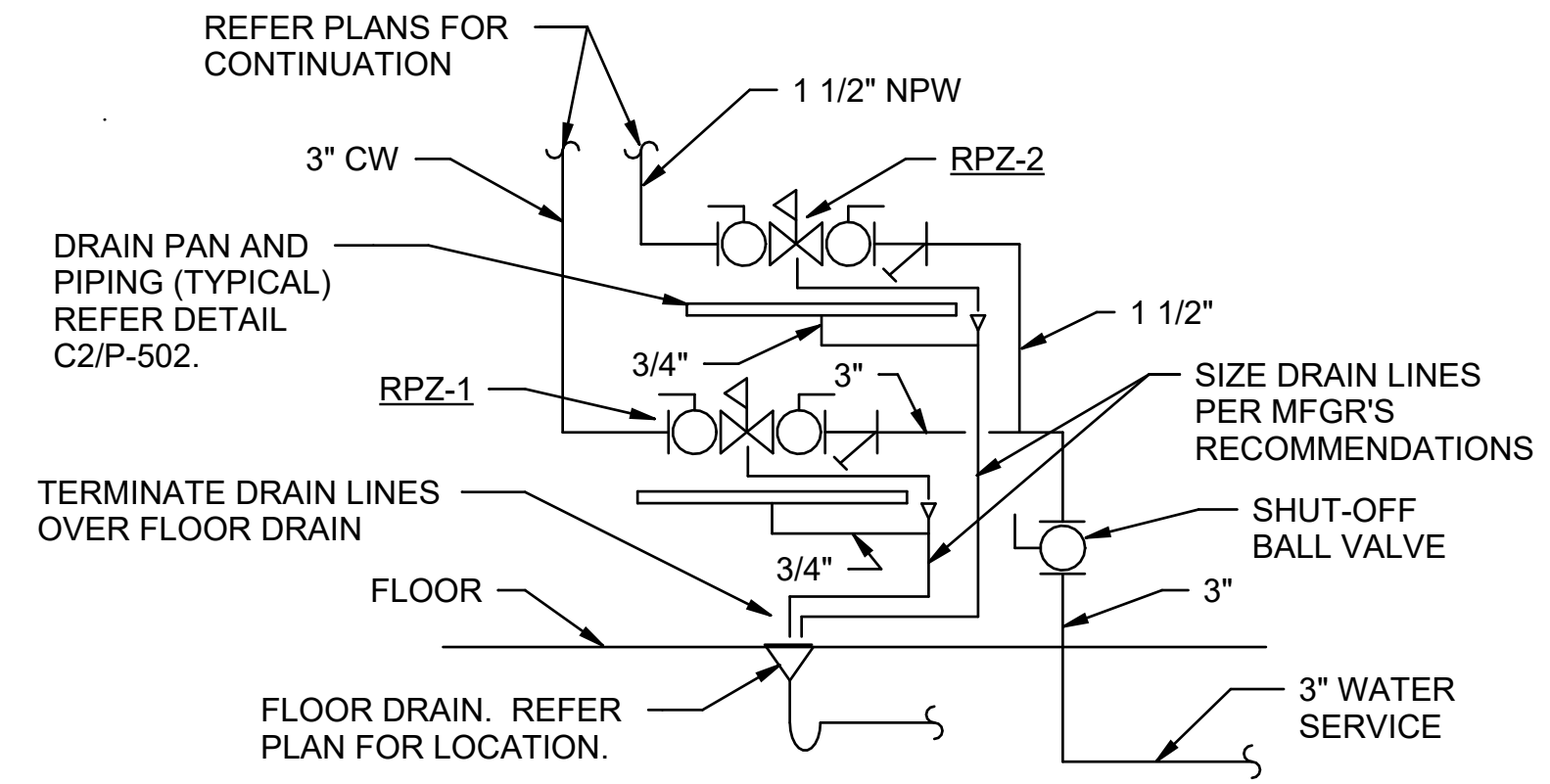
**A4 COMPRESSED AIR OUTLET DETAIL**  
SCALE: NTS



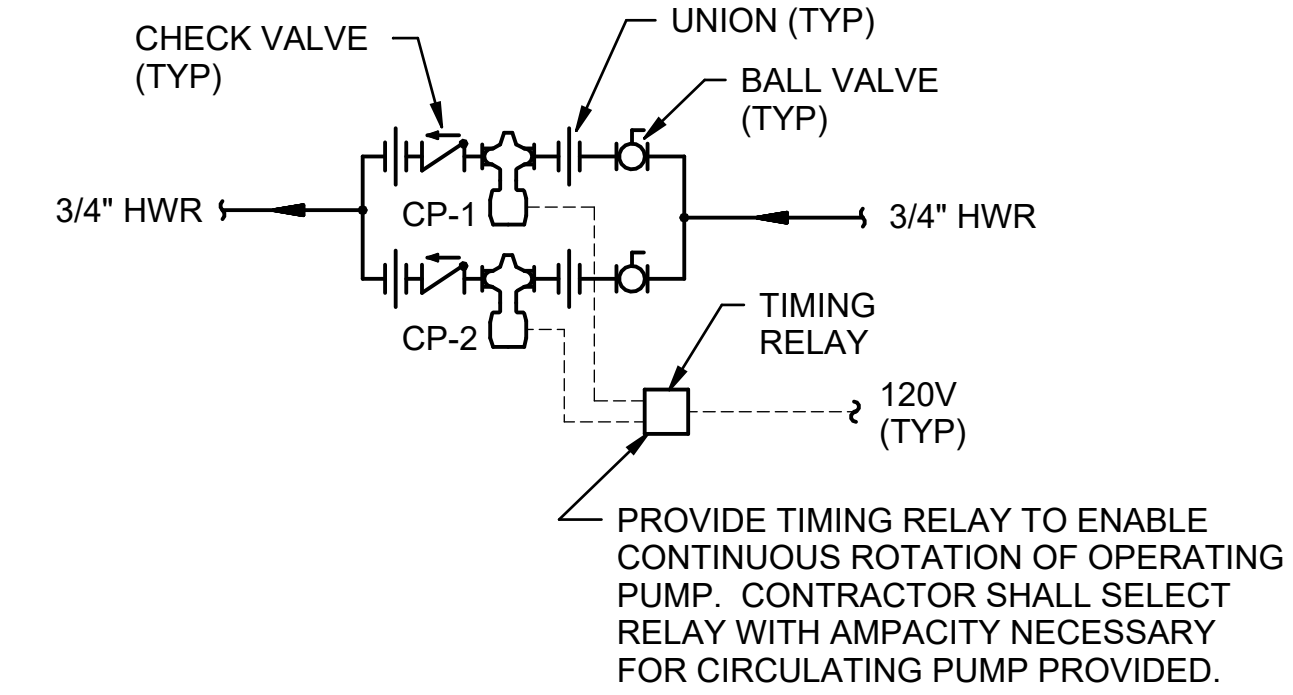
**C2 BACKFLOW PREVENTER DETAIL**  
SCALE: NTS



**C4 DOMESTIC WATER HEATER DETAIL**  
SCALE: NTS



**F2 ONE LINE RPZ INSTALL**  
SCALE: NTS



**SEQUENCE OF OPERATION:**

CIRCULATING PUMP CP-1 SHALL BE THE DEFAULT OPERATING PUMP. RELAY SHALL BE SET TO ALTERNATE THE OPERATION OF THE PUMPS ONE WEEK AT A TIME.

**F4 CONTROL - DUAL RE-CIRC CONTROL**  
SCALE: NTS

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**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

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REVIEWED BY:	APC
PROJECT MANAGER:	NDM
PROJECT NUMBER:	20190320
SHEET TITLE:	

**DETAILS**

ISSUE DATE:	2 AUGUST 2024
SHEET NUMBER:	P-502

8/7/2024 11:35:19 AM

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WATER HAMMER ARRESTOR	
PDI SYMBOL	FIXTURE UNITS
A	1 - 11
B	12 - 32
C	33 - 60
D	61 - 113
E	114 - 154
F	155 - 330

PLUMBING FIXTURE SCHEDULE						
MARK	FIXTURE	PIPING ROUGH-IN				DESCRIPTION
		WASTE (IN)	VENT (IN)	CW (IN)	HW (IN)	
P-1	WATER CLOSET	4"	2"	1 1/4"	--	WALL MOUNTED, HARD-WIRED SENSOR OPERATED FLUSH VALVE WITH 120 VOLT/24 VAC 50 VA TRANSFORMER, WHITE OPEN-FRONT SEAT AND CARRIER TO MOUNT TOP OF SEAT AT 17" ABOVE FINISHED FLOOR.
P-2	WATER CLOSET	4"	2"	1 1/4"	--	WALL MOUNTED, HARD-WIRED SENSOR OPERATED FLUSH VALVE WITH 120 VOLT/24 VAC 50 VA TRANSFORMER, WHITE OPEN-FRONT SEAT AND CARRIER TO MOUNT TOP OF SEAT AT 14" ABOVE FINISHED FLOOR.
P-3	URINAL	2"	1 1/2"	1"	--	WALL MOUNT, RIM AT 24" ABOVE FLOOR, COMPLETE WITH HARD WIRED SENSOR OPERATED ULTRA HIGH EFFICIENCY PINT URINAL FLUSH VALVE, WITH 120 VOLT/24 VAC 50 VA TRANSFORMER AND CARRIER.
P-4	LAVATORY	1 1/4"	1 1/4"	1/2"	1/2"	17" X 14", UNDER COUNTERTOP LAVATORY, WITH 0.5 GPM HARD WIRED SENSOR OPERATED SINGLE INLET FAUCET WITH BELOW DECK THERMOSTATIC MIXING VALVE AND 120 VOLT/24 VAC 50 VA BOX MOUNT TRANSFORMER, 4" TRIM PLATE, C.P. GRID STRAINER, CP 'P' TRAP WITH CLEANOUT, CP SUPPLIES WITH STOPS AND ESCUTCHEONS. PROVIDE TRAP AND SUPPLY COVERS.
P-5	LAVATORY	1 1/4"	1 1/4"	1/2"	1/2"	20-1/2" X 18-1/4" WHITE VITREOUS CHINA, WALL HUNG, RIM AT 34" ABOVE FINISHED FLOOR, WITH FAUCET WITH LEVER HANDLES AND GRID STRAINER AND CONCEALED ARM CARRIER. PROVIDE CP SUPPLIES WITH LOOSE KEY STOPS, CP 'P' TRAP WITH CLEANOUT, WALL ESCUTCHEONS AND FITTING COVERS.
P-6	EWC W/BOTTLE FILLER	1 1/2"	1 1/4"	3/4"	--	BOTTLE FILLING STATION WITH BI-LEVEL FILTERED COOLER, 8.0 GPH CAPACITY, 5.0 FLA, 370 RATED WATTS, 120 VOLT. STANDARD IMPACT RESISTANT LIGHT GRAY GRANITE VINYL CLAD CABINET, FLEXI-GUARD STREAM-SAVER SAFETY BUBBLER, CP P-TRAP WITH CLEANOUT AND CARRIER.
P-7	SHOWER FITTINGS (ADA)	2"	1 1/2"	3/4"	3/4"	PRESSURE-BALANCING MIXING VALVE WITH LEVER HANDLE AND ADJUSTABLE SCREW TO LIMIT HANDLE TURN. LEVER DIVERTER WITH INTEGRAL VOLUME CONTROL. SINGLE MODE SHOWER HEAD WITH ARM AND FLANGE. SINGLE MODE WALL/HAND SHOWER WITH FLEXIBLE METAL HOSE, IN-LINE VACUUM BREAKER, WALL CONNECTION AND FLANGE. 24" SLIDE BAR.
P-8	MOP BASIN	3"	2"	3/4"	3/4"	FLOOR MOUNTED, 24" x 24" MOLDED-STONE MOP BASIN. WITH FLAT STRAINER, UTILITY SINK FAUCET, HOSE AND HOSE BRACKET, MOP HANGER AND SILICONE SEALANT.
P-9	SINGLE SINK (ADA)	1 1/2"	1 1/2"	3/4"	3/4"	SINGLE BOWL, STAINLESS STEEL, SELF-RIMMING, ADA COMPLIANT SINK, 5" DEEP, OFF-CENTER REAR DRAIN OPENING FOR TYPE 304 STAINLESS STEEL GRID STRAINER, AND TOP MOUNT 1.5 GPM GOOSENECK FAUCET.
P-10	WASHER UTILITY BOX	2"	1 1/2"	3/4"	3/4"	WATER-TITE PLASTIC OUTLET BOX WITH LEAD FREE QUARTER TURN VALVE. VALVES COMPLY WITH ASME A112.18.1, NSF/ANSI 372 (ANNEX G) AND THE US SAFE DRINKING WATER ACT.
P-11	EMERGENCY EYE/FACE WASH	--	--	1"	1"	PEDESTAL-MOUNT EYE/FACE WASH UNIT WITH HOSE SPRAY, ANSI Z358.1 COMPLIANT, 10 3/4" DIAMETER CORROSION RESISTANT STAINLESS STEEL EYE WASH BOWL, 8' LONG YELLOW REINFORCED THERMOPLASTIC HOSE SPRAY, GALVANIZED STEEL PIPE AND FITTINGS PROTECTED WITH SAFETY YELLOW COATING. UNIT COMPLETE WITH EMERGENCY THERMOSTATIC MIXING VALVE. AND ALARM AND STROBE.
P-12	EMERGENCY COMBINATION UNIT	--	--	1 1/4"	1 1/4"	PEDESTAL-MOUNT COMBINATION DRENCH SHOWER / EYE-FACE WASH UNIT WITH HOSE SPRAY, ANSI Z358.1 COMPLIANT, 10 3/4" DIAMETER CORROSION RESISTANT STAINLESS STEEL EYE WASH BOWL, 8' LONG YELLOW REINFORCED THERMOPLASTIC HOSE SPRAY, GALVANIZED STEEL PIPE AND FITTINGS PROTECTED WITH SAFETY YELLOW COATING. UNIT COMPLETE WITH EMERGENCY THERMOSTATIC MIXING VALVE AND ALARM WITH STROBE.

PLUMBING EQUIPMENT SCHEDULE				
MARK	DESCRIPTION	CAPACITY	ELECTRICAL CHARACTERISTICS	NOTES
CP-1	CIRCULATING PUMP	10 GPM @ 45 FT HEAD	2/5 HP, 120 VOLT	ALL BRONZE CONSTRUCTION FOR POTABLE WATER, VARIABLE SPEED PUMP, PERMANENTLY LUBRICATED BEARINGS, CONTROL UNIT, MANUAL SPEED OVERRIDE AND BUILT-IN DIAGNOSTIC INDICATOR.
CP-2	CIRCULATING PUMP	10 GPM @ 45 FT HEAD	2/5 HP, 120 VOLT	ALL BRONZE CONSTRUCTION FOR POTABLE WATER, VARIABLE SPEED PUMP, PERMANENTLY LUBRICATED BEARINGS, CONTROL UNIT, MANUAL SPEED OVERRIDE AND BUILT-IN DIAGNOSTIC INDICATOR.
HB-1	HOSE BIBB	---	---	ANTI-SIPHON VACUUM BREAKER, NIDEL MODEL 34HF WITH 3/4" MALE HOSE THREAD, MEETS ASSE STANDARD 1011 AND IAPMO LISTED.
RPZ-1	BACKFLOW PREVENTER	---	---	REDUCED PRESSURE ZONE ASSEMBLY CONSISTING OF A PRESSURE DIFFERENTIAL RELIEF VALVE BETWEEN TWO POSITIVE SEATING CHECK VALVES, AIR-IN / WATER-OUT, WITH TWO QUARTER TURN SHUTOFF VALVES, STRAINER TEST COCKS, SHALL MEET THE REQUIREMENTS OF ASSE STANDARD 1013, LISTED BY IAPMO. COMPLETE WITH AIR GAP FOR INDIRECT DRAIN PIPING.
RPZ-2	BACKFLOW PREVENTER	---	---	REDUCED PRESSURE ZONE ASSEMBLY CONSISTING OF A PRESSURE DIFFERENTIAL RELIEF VALVE BETWEEN TWO POSITIVE SEATING CHECK VALVES, AIR-IN / WATER-OUT, WITH TWO QUARTER TURN SHUTOFF VALVES, STRAINER TEST COCKS, SHALL MEET THE REQUIREMENTS OF ASSE STANDARD 1013, LISTED BY IAPMO. COMPLETE WITH AIR GAP FOR INDIRECT DRAIN PIPING.
TMV-1	THERMOSTATIC MIXING VALVE	---	---	THERMOSTATIC MIXING VALVE WITH CHECK STOPS, REMOVABLE CATRIDGE WITH STAINLESS STEEL PISTON AND THERMAL MOTOR AND TURBULATOR, VOLUME CONTROL SHUTOFF VALVE, BIMETAL 3" DIAL THERMOMETER, BOTTOM SUPPLIES TOP OUTLET IN (-M) SURFACE MOUNTED BAKED WHITE ENAMEL FINISH CABINET. MOUNT 3" DIAL THERMOMETER IN SUPPLY OUTLET PIPE JUST ABOVE CABINET TO ALLOW CABINET TO REMAIN LOCKED TO PREVENT TAMPERING WITH VALVE.
WH-1	WALL HYDRANT	---	---	SINGLE CHECK VACUUM BREAKER, FLUSH MOUNTED WALL BOX WITH HINGED DOOR, 3/4" MALE HOSE THREAD, APPROVED UNDER ASSE STANDARD 1019-B, WITH ASSE 1011 ANTI-SIPHON VACUUM BREAKER.
WM-1	WATER METER	---	---	ELECTRONIC REGISTER, AMR RESOLUTION UNITS THAT ARE FULLY PROGRAMMABLE WITH FULLY PROGRAMMABLE PULSE OUTPUT FREQUENCY CUSTOMER DATA LOGGING CAPABILITY AND LARGE EASY TO READ LCD DISPLAY.


  
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**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY:	CLD
DRAWN BY:	CLD
REVIEWED BY:	APC
PROJECT MANAGER:	NDM

PROJECT NUMBER:

20190320

SHEET TITLE:

SCHEDULES

ISSUE DATE:

2 AUGUST 2024

SHEET NUMBER:

P-601

FLOOR DRAINS / CLEANOUT SCHEDULE					
MARK	DESCRIPTION	LOCATION	OUTLET SIZE	NOTES	
FCO	FLOOR CLEANOUT	REFER PLANS	REFER PLANS	CAST IRON CLEANOUT WITH THREADED ADJUSTABLE HOUSING, REMOVABLE THREAD SHIELD, PLASTIC GASKETED PLUG AND ROUND SECURED NICKEL BRONZE SCORATED TOP.	
FD-1	FLOOR DRAIN	REFER PLANS	2"	CAST IRON FLOOR DRAIN WITH FLANGE, INTEGRAL REVERSIBLE CLAMPING COLLAR, SEEPAGE OPENINGS 1/2" PRIMER TAP, 6" DIAMETER NICKEL BRONZE STRAINER WITH VANDAL PROOF SCREWS.	
FD-2	FLOOR DRAIN	REFER PLANS	REFER PLANS	CAST IRON FLOOR DRAIN WITH INTEGRAL CLAMPING COLLAR, DUCTILE IRON GRATE, 1/2" TRAP PRIMER TAP AND SEDIMENT BUCKET.	
FS-1	FLOOR SINK	FIRE 122	3"	8"W x 8"L x 6" D SANITARY FLOOR SINK WITH HALF GRATE, NO-HUB FITTING, WHITE LOOSE PORCELAIN ENAMEL COATED CAST IRON GRATE, AND ALUMINUM BOTTOM STRAINER.	
SD-1	SHOWER DRAIN	REFER PLANS	2"	CAST IRON FLOOR DRAIN WITH FLANGE, INTEGRAL CLAMPING COLLAR, SEEPAGE OPENINGS ADJUSTABLE TYPE H4X12 RECTANGULAR TOP ASSEMBLY.	
WCO	WALL CLEANOUT	REFER PLANS	REFER PLANS	ROUND STAINLESS STEEL ACCESS COVER WITH 1/4-20NC VANDAL PROOF CENTER SECURING SCREW. WITH 8560-NH CAST IRON CLEANOUT FERRULE WITH COUNTERSUNK ABS PLUG.	

WATER HEATER SCHEDULE					
MARK	LOCATION	RECOVERY (GPH AT 100° RISE)	CAPACITY (GAL)	NATURAL GAS INPUT (BTU/HR)	NOTES
DWH-1	MECH 121	116	75	100,000	96% THERMAL EFFICIENCY CONDENSING HEATER, 75 GALLON STEEL TANK WITH GLASS LINING, 150 PSI HYDROSTATIC WORKING PRESSURE, 3 YEAR LIMITED WARRANTY, AND SHALL MEET ASHRAE/IES 90.1.ELECTRICAL CONTROL 120 VOLT, LESS THAN 5 AMPS

COMPRESSED AIR EQUIPMENT SCHEDULE							
MARK	DESCRIPTION	LOCATION	TYPE	CAPACITY (SFCM)	WORKING PRESSURE (PSIG)	ELECTRICAL	NOTES
AC-1	AIR COMPRESSOR	MECH 121	ROTARY SCREW	235	125	50 HP - 480/3/60	SINGLE-STAGE, DIRECT DRIVE ROTARY SCREW, ELECTRIC MOTOR, MAGNETIC WYE-DELTA REDUCED VOLTAGE STARTER, DIRECT DRIVE, PC-BASED CONTROL SYSTEM, AIR COOLED WITH SOUND PROOFED BY A SHEET METAL ENCLOSURE.
ART-1	VERTICAL RECEIVING TANK	MECH 121	VERTICAL	---	125	---	ASME RATED VERTICAL STORAGE TANK, 92" TALL x 36" DIAMETER, 400 GALLON.
BAP-1	BREATHING AIR PURIFIER	PREP 119	WALL MOUNT	50	125	---	PRE-FILTER PROVIDES PARTICULATE REMOVAL, COALESCING ACTION FOR LIQUID CONTAMINATES, ACTIVATED CHARCOAL FOR REMOVAL OF GASEOUS HYDROCARBONS TASTES AND ODORS, LOW TEMPERATURE CATALYST FOR REMOVAL OF CARBON MONOXIDE AND OTHER TOXIC GASES, FLOW METER, PRESSURE RELIEF VALVE, AND HIGH FLOW EGULATOR WITH GAUGE.
HR-1	HOSE REEL	MAINTENANCE BAY 118	WALL MOUNT	---	125	---	HEAVY DUTY, SPRING RETURN, STEEL SPOOL RIDES ON SEALED ROLLER BEARINGS, 50 FEET OF 1/2" HOSE FOR COMPRESSED AIR.

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**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

REVISION HISTORY:		
NO.	DESCRIPTION	DATE

PROJECT INFORMATION:	
DESIGNED BY:	<b>CLD</b>
DRAWN BY:	<b>CLD</b>
REVIEWED BY:	<b>APC</b>
PROJECT MANAGER:	<b>NDM</b>
PROJECT NUMBER:	<b>20190320</b>
SHEET TITLE:	<b>SCHEDULES</b>

ISSUE DATE:	<b>2 AUGUST 2024</b>
SHEET NUMBER:	<b>P-602</b>

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**GENERAL NOTES**

A. REFER TO SHEET P-001 FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES APPLICABLE TO THIS SHEET.



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**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

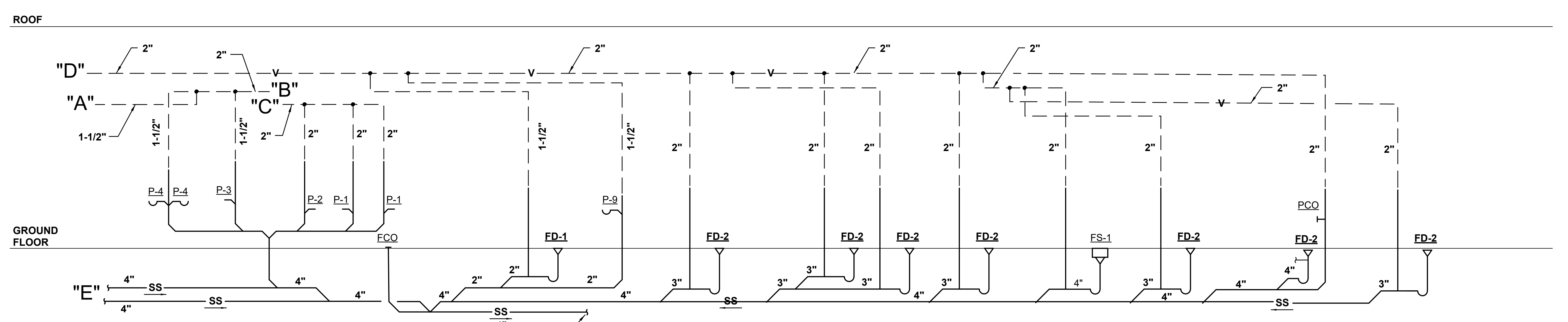
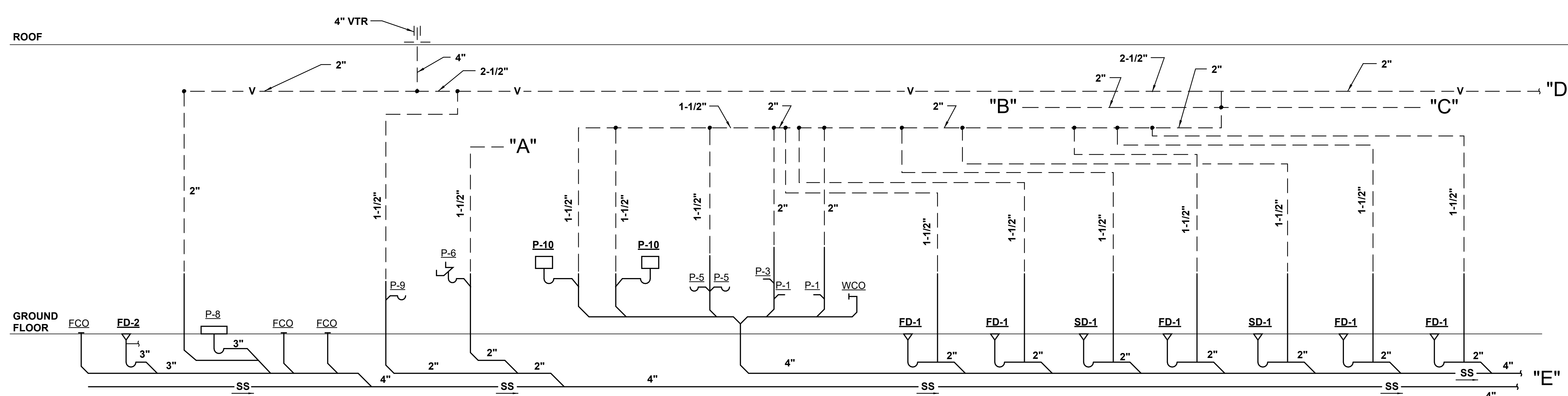
DESIGNED BY:	CLD
DRAWN BY:	CLD
REVIEWED BY:	APC
PROJECT MANAGER:	NDM

PROJECT NUMBER:  
20190320  
SHEET TITLE:

**SANITARY SEWER / VENT RISER DIAGRAM**

ISSUE DATE:  
2 AUGUST 2024

SHEET NUMBER:  
**P-701**



**A6 SANITARY SEWER / VENT RISER DIAGRAM**  
SCALE: NTS

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### GENERAL NOTES

A. REFER TO SHEET P-001 FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES APPLICABLE TO THIS SHEET.



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**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY:	<b>CLD</b>
DRAWN BY:	<b>CLD</b>
REVIEWED BY:	<b>APC</b>
PROJECT MANAGER:	<b>NDM</b>

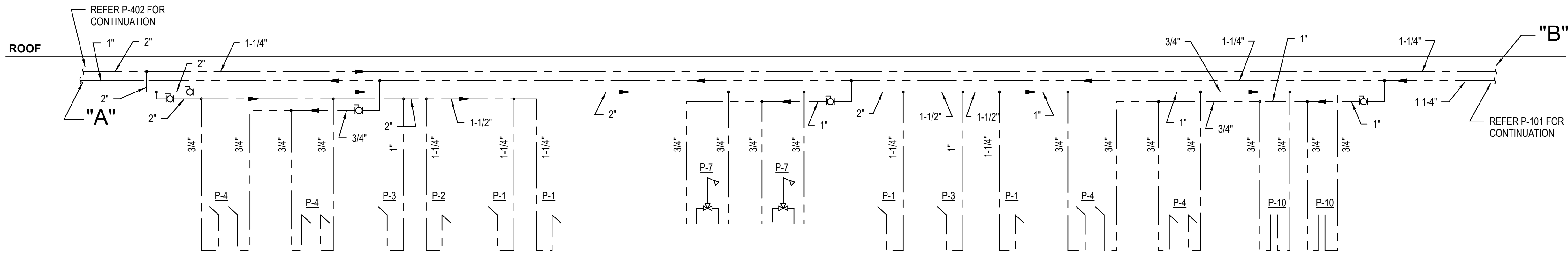
PROJECT NUMBER:  
**20190320**

SHEET TITLE:

**DOMESTIC WATER RISER DIAGRAM**

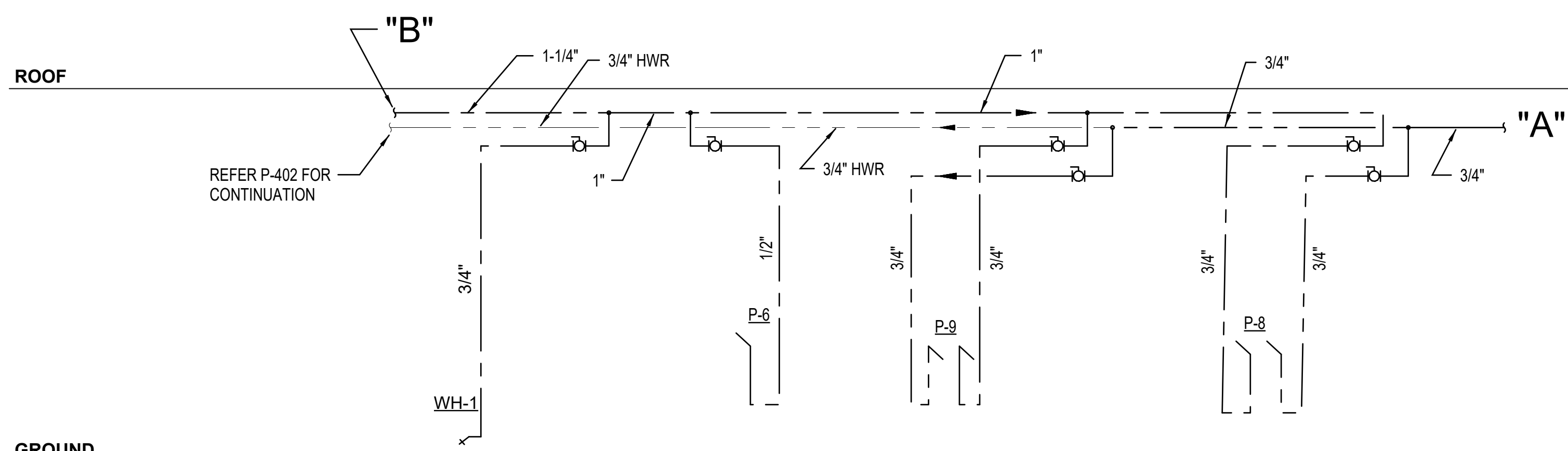
ISSUE DATE:  
**2 AUGUST 2024**

SHEET NUMBER:  
**P-702**



ROOF

GROUND FLOOR



ROOF

GROUND FLOOR

**A5** DOMESTIC WATER RISER DIAGRAM  
SCALE: NTS

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**GENERAL NOTES**

A. REFER TO SHEET P-001 FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES APPLICABLE TO THIS SHEET.



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**JBSA - Kelly Annex, TX**

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NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

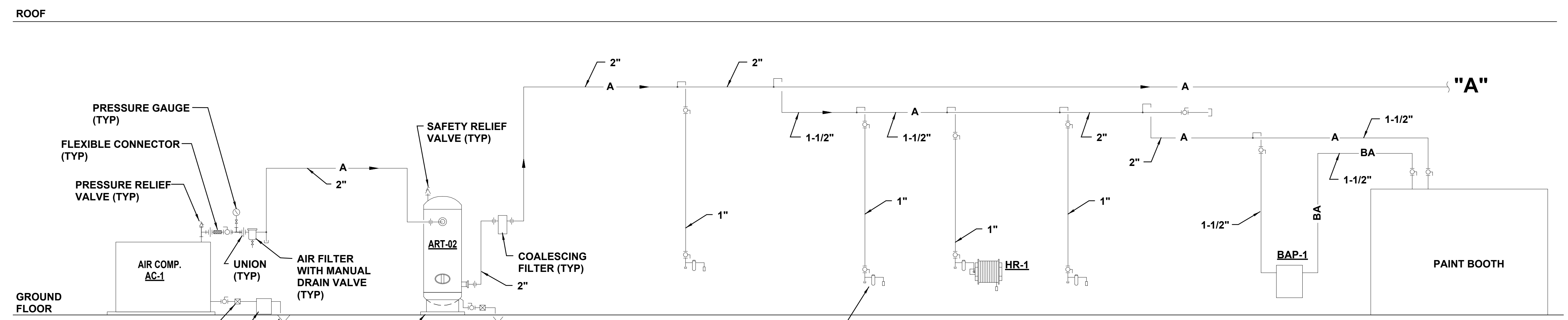
DESIGNED BY:	CLD
DRAWN BY:	CLD
REVIEWED BY:	APC
PROJECT MANAGER:	NDM

PROJECT NUMBER:  
20190320

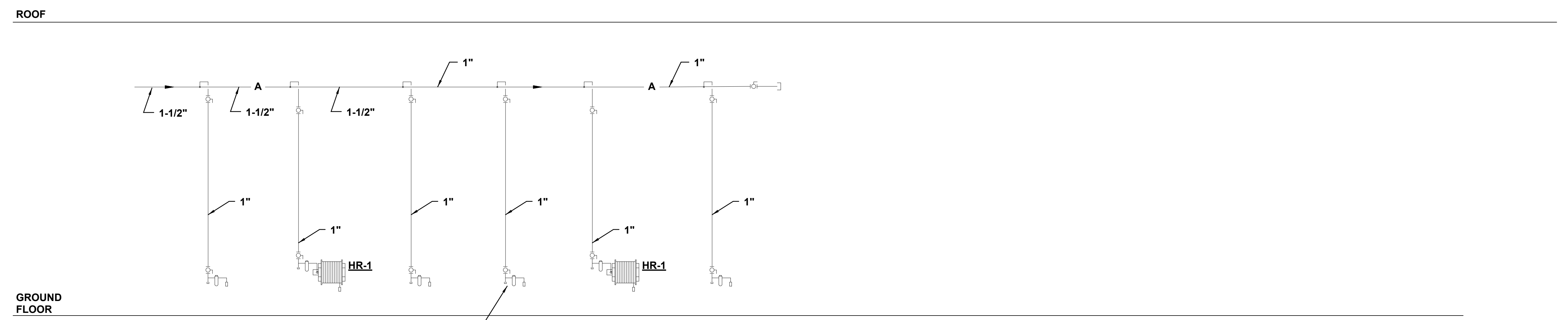
SHEET TITLE:  
**COMPRESSED AIR RISER DIAGRAM**

ISSUE DATE:  
2 AUGUST 2024

SHEET NUMBER:  
**P-703**



TYPICAL COMPRESSED AIR OUTLET STATION. REF 4/P-502. COMB. FILTER. REGULATOR, LUBRICATOR

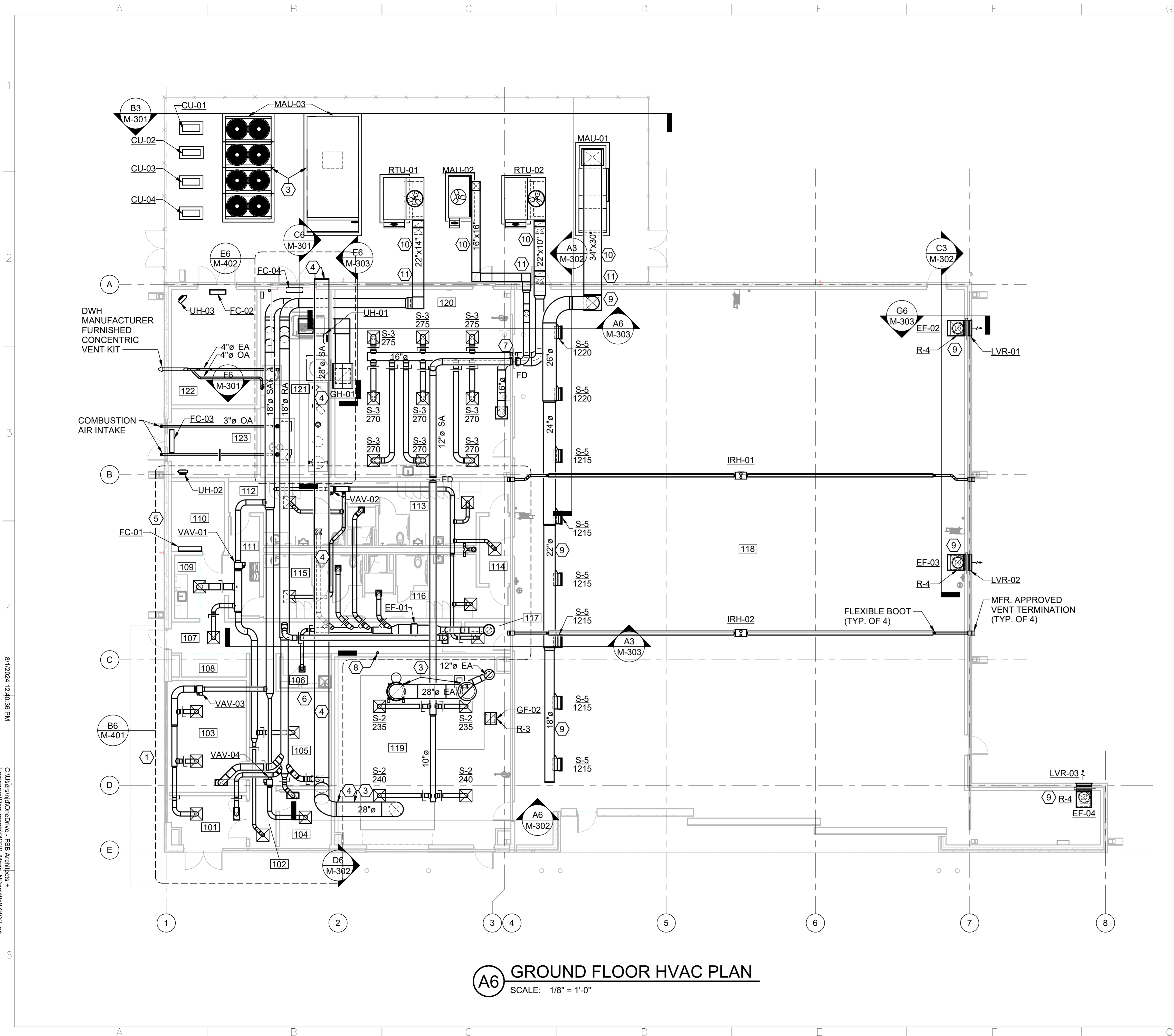


TYPICAL COMPRESSED AIR OUTLET STATION. REF 4/P-502. COMB. FILTER. REGULATOR, LUBRICATOR

**(A6) COMPRESSED AIR RISER DIAGRAM**  
SCALE: NTS

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**A6** GROUND FLOOR HVAC PLAN  
SCALE: 1/8" = 1'-0"

**GENERAL NOTES**

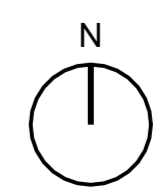
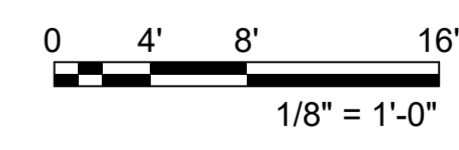
- A. REFER TO SHEET M-001 FOR ADDITIONAL NOTES AND DETAILS PERTAINING TO THIS SHEET.
- B. SEAL ALL DUCTWORK IN ACCORDANCE WITH SMACNA SEAL CLASS "A".
- C. DUCT RUNOUTS TO DIFFUSERS ARE SIZED PER DIFFUSER NECK, UNLESS NOTED OTHERWISE.
- D. INTEGRAL BALANCING DAMPER REQUIRED WHERE DIFFUSER/GRILLE ASSOCIATED DUCT RUNOUT IS NOT SHOWN ON PLANS WITH A DUCT MOUNTED MANUAL BALANCING DAMPER.

**SHEET KEYNOTES**

- 1. REFER TO ENLARGED PLAN FOR DIFFUSERS AIRFLOWS AND SIZES, DUCT SIZES, ADDITIONAL INTEGRAL BALANCING DAMPERS, AND ADDITIONAL DETAILS.
- 2. BIRD SCREEN AT DUCT OPENING.
- 3. DESIGN AND CONSTRUCTION OF ALL MECHANICAL EQUIPMENT, DUCTWORK, ACCESSORIES, ETC. ASSOCIATED WITH MAU-03, EF-06, AND EF-07 SHALL BE COMPLETED BY THE PAINT BOOTH EQUIPMENT MANUFACTURER, EXCEPT AS DETAILED IN MH101 KEYNOTE 5.
- 4. CONTRACTOR SHALL FURNISH AND INSTALL MAU-03 SUPPLY AIR DUCTWORK BETWEEN ROOM 119 WALL-TO-DECK PENETRATION AND NORTH EXTERIOR WALL PENETRATION. EXTEND DUCTWORK 6 INCHES BEYOND PENETRATIONS FOR FUTURE CONNECTION BY PAINT BOOTH MANUFACTURER AND PROVIDE INSULATED CAPS ON DUCT OPENINGS.
- 5. OUTDOOR BUILDING PRESSURE SENSOR FOR RTU-01 AND RTU-02.
- 6. INDOOR BUILDING PRESSURE SENSOR FOR RTU-01.
- 7. INDOOR BUILDING PRESSURE SENSOR FOR RTU-02.
- 8. EMERGENCY AIR DISTRIBUTION SHUTOFF SWITCH.
- 9. PROTECT EXPOSED DUCTWORK WITH HIGH DURABILITY ISO 12944 PROTECTIVE COATING FOR CORROSION CATEGORY C3 IN ACCORDANCE WITH SPECIFICATION SECTIONS 09 90 00 AND 09 96 00.
- 10. PROVIDE OUTDOOR DUCTWORK WITH WEATHERPROOF INSULATION SYSTEM AND JACKETING IN ACCORDANCE WITH SPECIFICATION SECTION 23 07 00 2.4.4.
- 11. OUTDOOR DUCTWORK PENETRATES WALL ABOVE MASONRY 8' 0" MIN.

ROOM SCHEDULE

NUMBER	NAME
101	VEST
102	CORR
103	MEDIA
104	OFFICE
105	ADMIN
106	JAN.
107	CORR
108	BREAK
109	BREAK
110	COMM
111	CORR
112	CLEAN RR M
113	DIRTY RR M
114	DIRTY VEST
115	CLEAN RR W
116	DIRTY RR W
117	CLEAN VEST
118	MAINT. BAY
119	PREP
120	PLASTICS
121	MECH
122	FIRE PROT
123	ELEC



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**LICENSED PROFESSIONAL ENGINEER**

CHRISTIAN L. FOSHEE  
30767  
OKLAHOMA  
08/02/2024

**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: **AMF**

DRAWN BY: **AMF**

REVIEWED BY: **RRS**

PROJECT MANAGER: **NDM**

PROJECT NUMBER: **20190320**

SHEET TITLE: **MECHANICAL HVAC**

ISSUE DATE: **2 AUGUST 2024**

SHEET NUMBER: **MH101**

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**Texas Air National Guard - 149th FW  
Corrosion Control Facility  
TXANG Project Number: KELL 169014  
JBSA - Kelly Annex, TX**

### GENERAL NOTES

- A. REFER TO SHEET M-001 FOR ADDITIONAL NOTES AND DETAILS PERTAINING TO THIS SHEET.
- B. ARCING HIDDEN LINES SHOWN ON THIS SHEET THAT CONNECT MECHANICAL EQUIPMENT AND THERMOSTATS REPRESENT AN OPERATIONAL RELATIONSHIP ONLY AND ARE NOT INTENDED TO DEPICT ANY SPECIFIC METHOD OF WIRING OR COMMUNICATION.
- C. PLUMBING EQUIPMENT (HALFTONE) SHOWN ON SHEET FOR REFERENCE AND COORDINATION ONLY.
- D. ALL PIPE RUNOUTS TO VAV BOXES AND UNIT HEATERS ARE 3/4", UNLESS NOTED OTHERWISE.
- E. REFRIGERANT PIPING SHOWN ON THIS SHEET IS TO INDICATE ROUTING PURPOSES ONLY. ALL REFRIGERANT PIPING SHALL BE SIZED AND INSTALLED IN ACCORDANCE WITH ASSOCIATED EQUIPMENT MANUFACTURER'S RECOMMENDATIONS.
- F. PROVIDE ISOLATION VALVES AS INDICATED ON THE DRAWINGS AND AT EACH BRANCH CONNECTION TO HYDRONIC PIPING MAINS. PROVIDE DRAIN VALVE AT THE LOW POINT AND MANUAL AIR VENT AT THE HIGH POINT FOR EACH ISOLATED BRANCH.

### SHEET KEYNOTES

1. THERMOSTAT FOR MAU-02
2. THERMOSTAT FOR RTU-02
3. DESIGN OF ALL MECHANICAL EQUIPMENT, DUCTWORK, ACCESSORIES, ETC. ASSOCIATED WITH MAU-03, THE PAINT BOOTH SUPPLY AND EXHAUST SYSTEMS, AND THE PAINT MIX EXHAUST SYSTEM SHALL BE COMPLETED BY THE PAINT BOOTH EQUIPMENT MANUFACTURER/PROVIDER.
4. ROUTE CONDENSATE TO FLOOR DRAIN. SPACE TEMPERATURE SENSOR FOR HANGAR BAY.
5. HWS AND HWR PIPE ANCHOR LOCATION. REFER TO M-601 FOR ASSOCIATED FLOW DIAGRAM.
6. PROVIDE 2'x2' ACCESS DOOR FOR VAV TERMINAL UNIT WITH ACCESS TO ALL VALVES, ACTUATORS, SENSORS, ETC. VENT CAP ON ROOF.
7. VENT CAP ON ROOF.
8. SEE GAS METER DETAIL A6 M-503 AND FLOW DIAGRAM A6 M-602.
- 9.

#### ROOM SCHEDULE

NUMBER	NAME
101	VEST
102	CORR
103	MEDIA
104	OFFICE
105	ADMIN
106	JAN.
107	CORR
108	BREAK
109	BREAK
110	COMM
111	CORR
112	CLEAN RR M
113	DIRTY RR M
114	DIRTY VEST
115	CLEAN RR W
116	DIRTY RR W
117	CLEAN VEST
118	MAINT. BAY
119	PREP
120	PLASTICS
121	MECH
122	FIRE PROT
123	ELEC

REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: **AMF**

DRAWN BY: **AMF**

REVIEWED BY: **RRS**

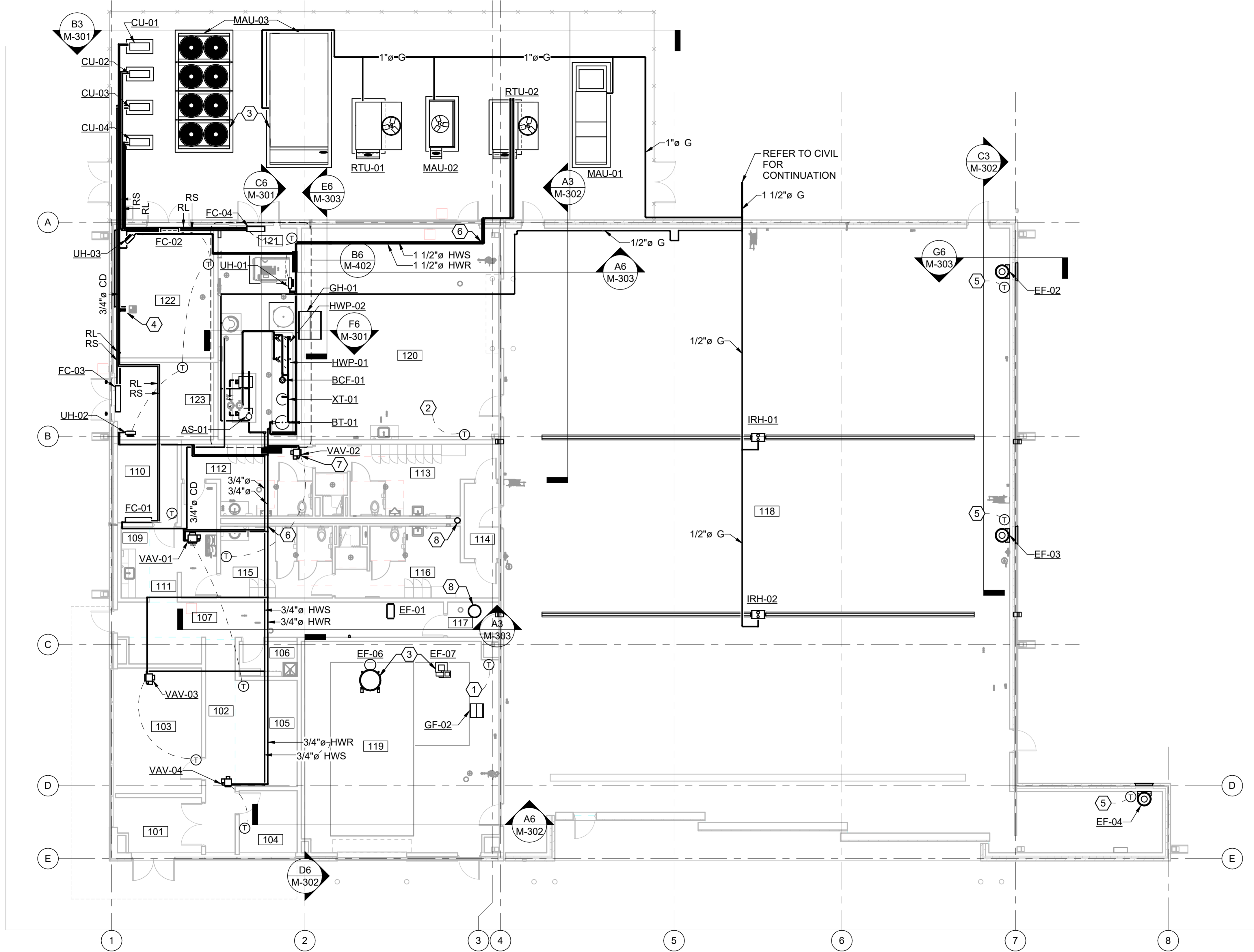
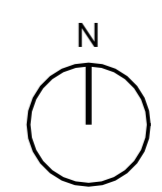
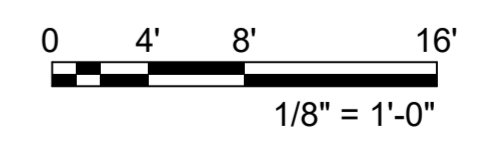
PROJECT MANAGER: **NDM**

PROJECT NUMBER: **20190320**

SHEET TITLE: **MECHANICAL PIPING**

ISSUE DATE: **2 AUGUST 2024**

SHEET NUMBER: **MP101**



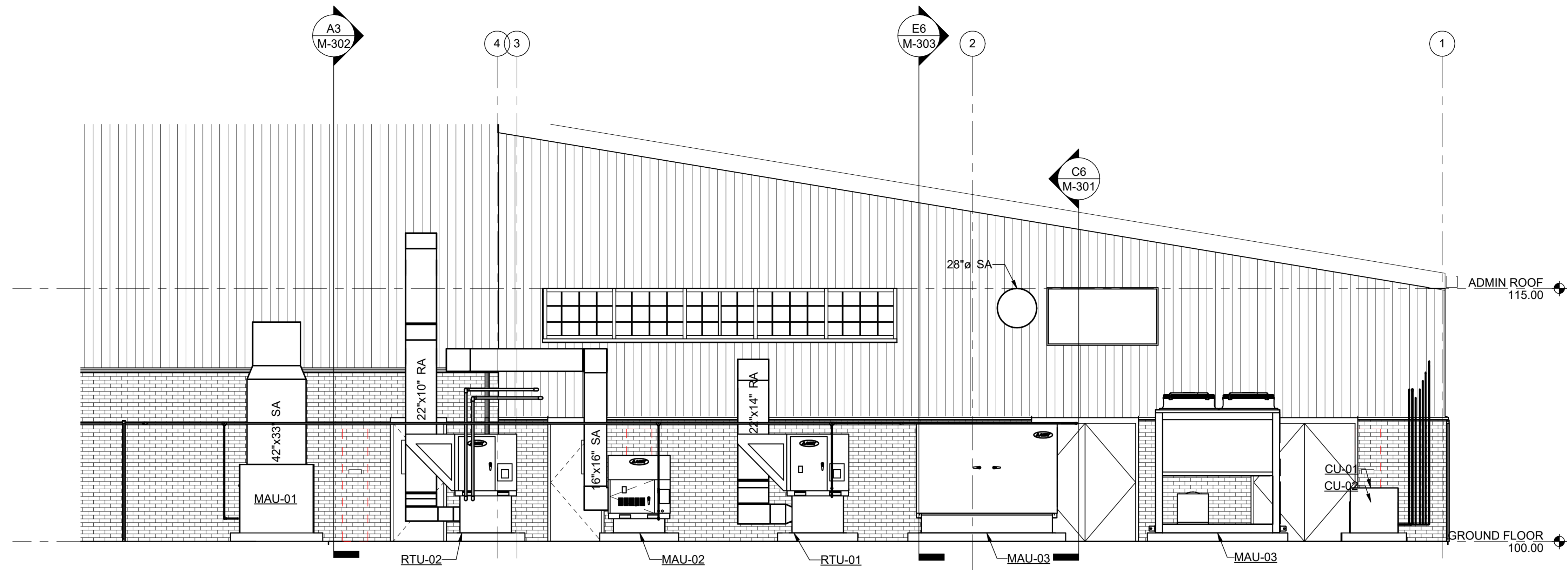
**A6** GROUND FLOOR PIPING PLAN  
SCALE: 1/8" = 1'-0"

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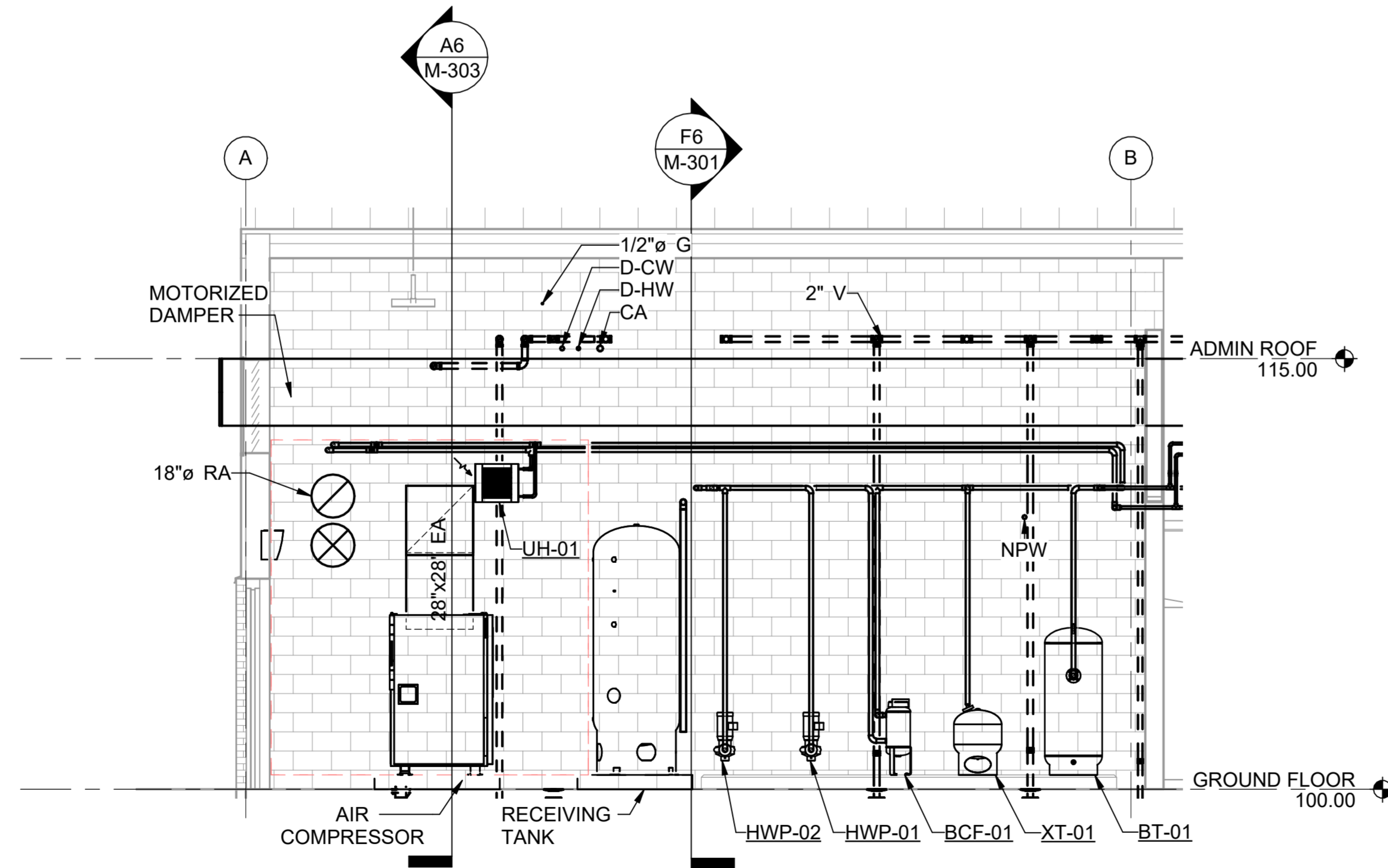




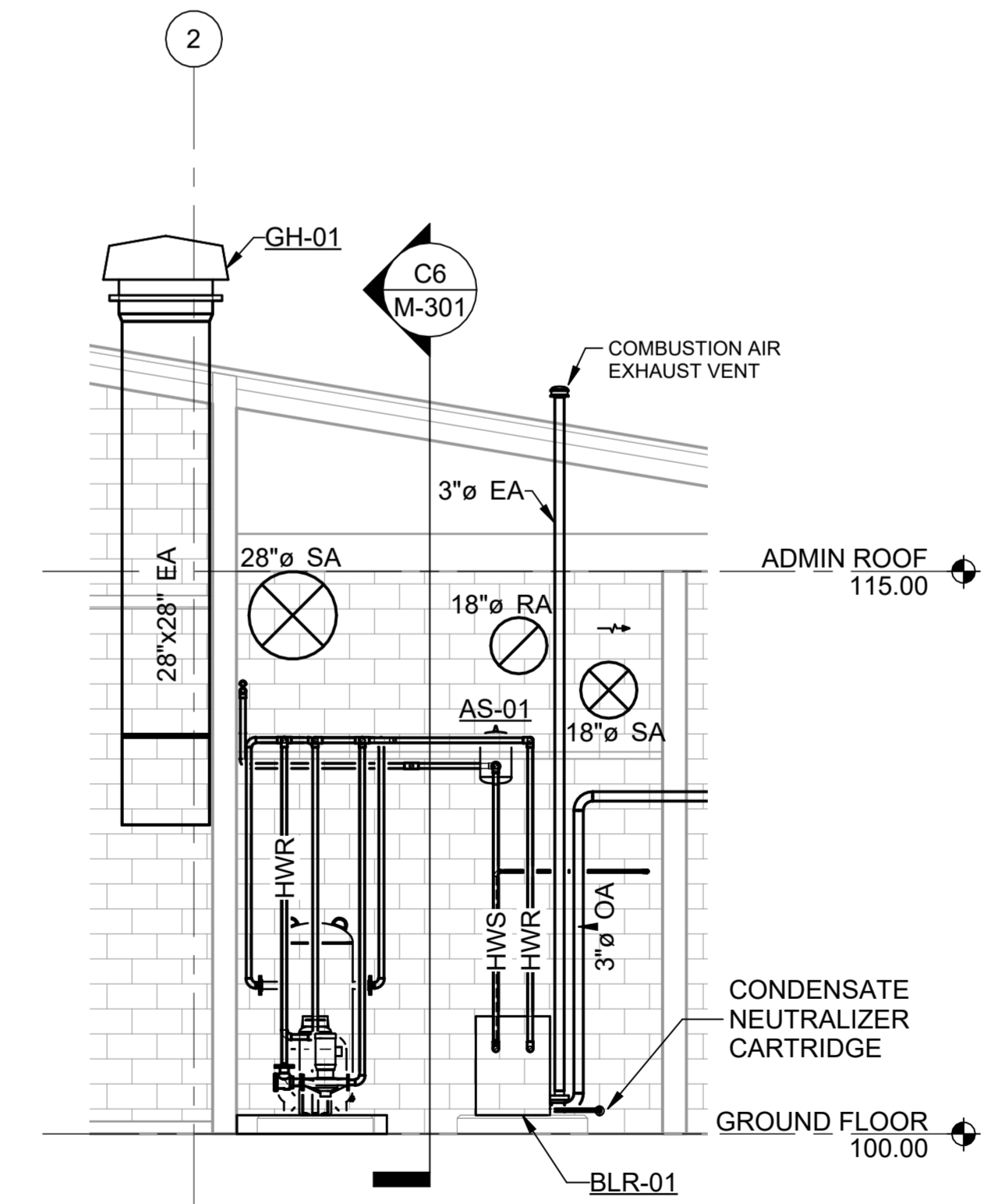
**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
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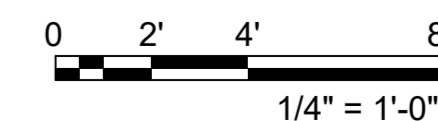
**B3 MECHANICAL EQUIPMENT YARD SECTION VIEW**  
 SCALE: 1/4" = 1'-0"



**C6 MECHANICAL ROOM SECTION VIEW 1**  
 SCALE: 1/4" = 1'-0"



**F6 MECHANICAL ROOM SECTION VIEW 2**  
 SCALE: 1/4" = 1'-0"



REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY:	AMF
DRAWN BY:	AMF
REVIEWED BY:	RRS
PROJECT MANAGER:	NDM

PROJECT NUMBER:  
20190320

SHEET TITLE:  
SECTIONS

ISSUE DATE:  
2 AUGUST 2024

SHEET NUMBER:  
M-301

**SHEET KEYNOTES**

- CONTRACTOR SHALL FURNISH AND INSTALL MAU-03 SUPPLY AIR DUCTWORK BETWEEN ROOM 119 WALL-TO-DECK PENETRATION AND NORTH EXTERIOR WALL PENETRATION. EXTEND DUCTWORK 6 INCHES BEYOND PENETRATIONS FOR FUTURE CONNECTION BY PAINT BOOTH MANUFACTURER AND PROVIDE INSULATED CAPS ON DUCT OPENINGS.
- PAINT BOOTH MANUFACTURER SHALL FURNISH AND INSTALL SUPPLY AIR DUCTWORK FROM CAPPED POINT OF CONNECTION TO ASSOCIATED MECHANICAL EQUIPMENT. PAINT BOOTH AND PAINT MIX ROOM EXHAUST SYSTEMS BY PAINT BOOTH MANUFACTURER.

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PROJECT INFORMATION:

DESIGNED BY: **AMF**

DRAWN BY: **AMF**

REVIEWED BY: **RRS**

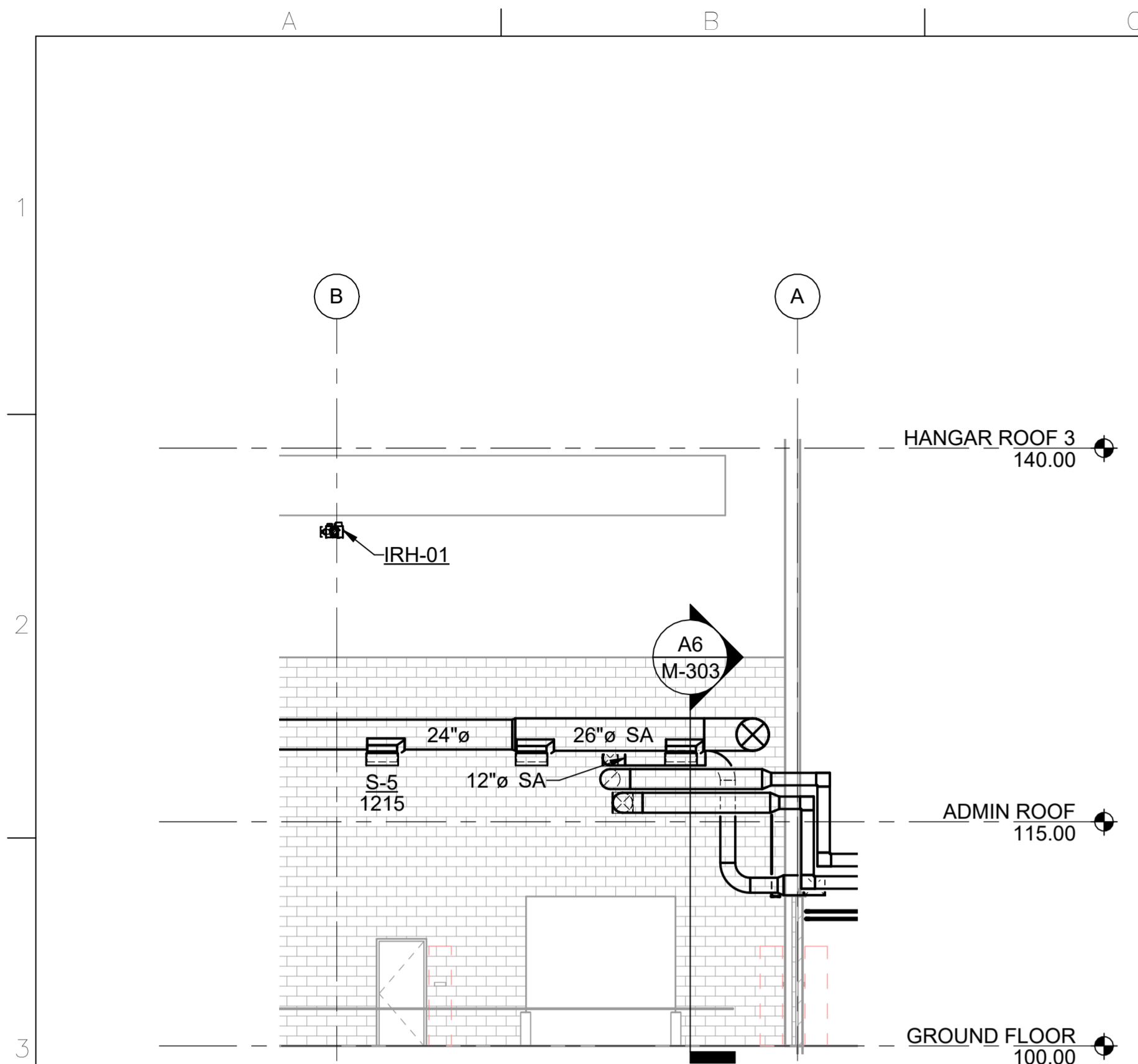
PROJECT MANAGER: **NDM**

PROJECT NUMBER: **20190320**

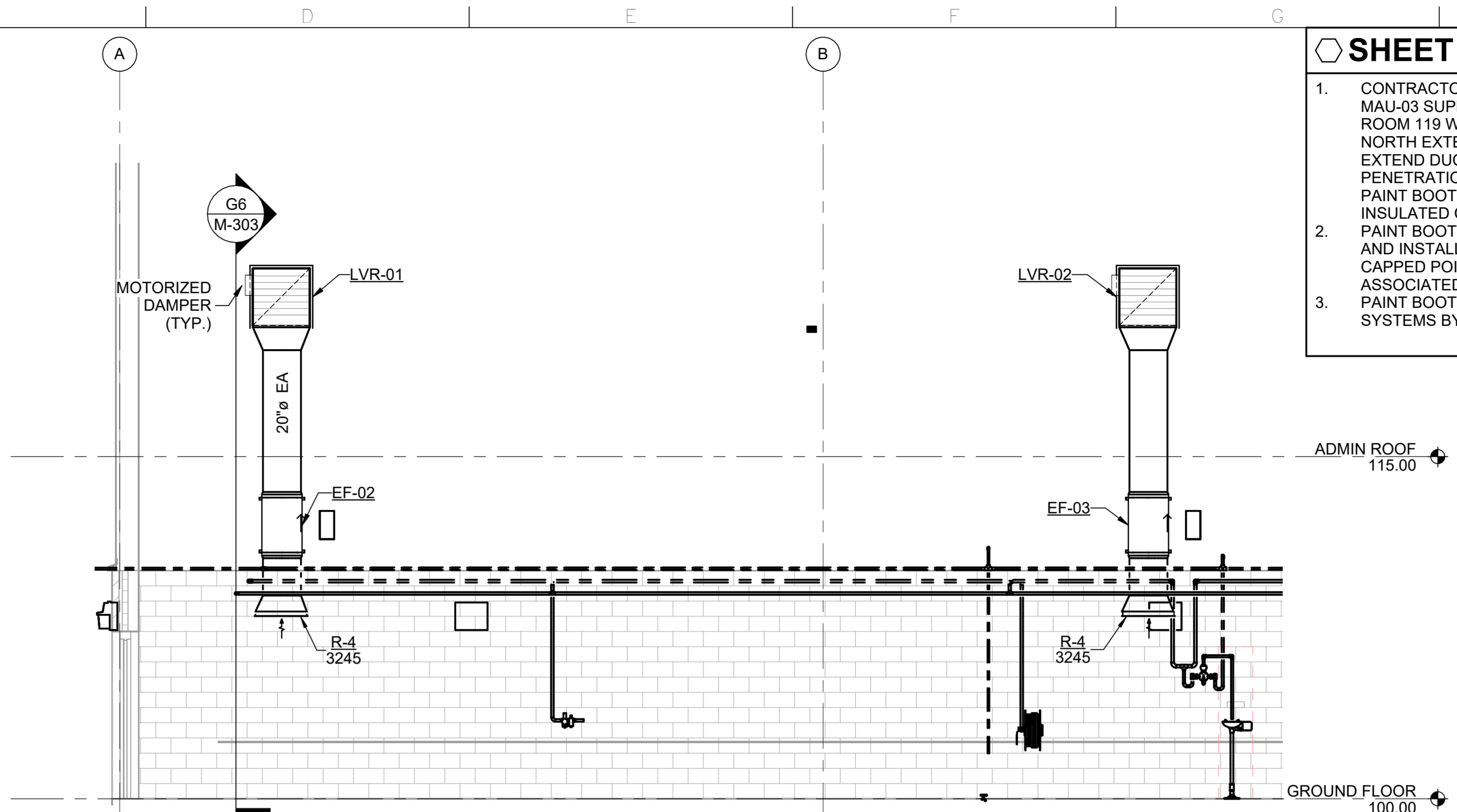
SHEET TITLE: **SECTIONS**

ISSUE DATE: **2 AUGUST 2024**

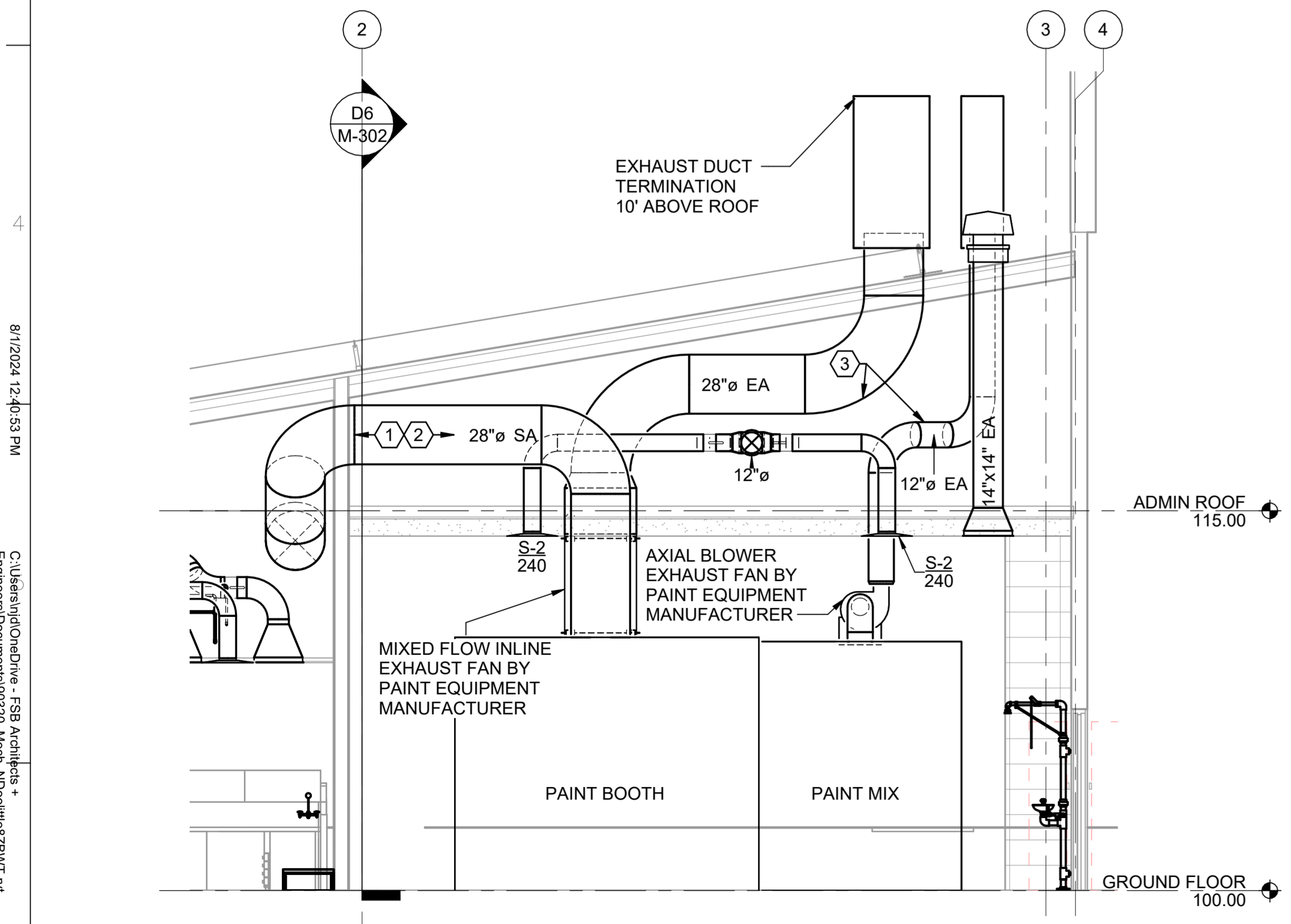
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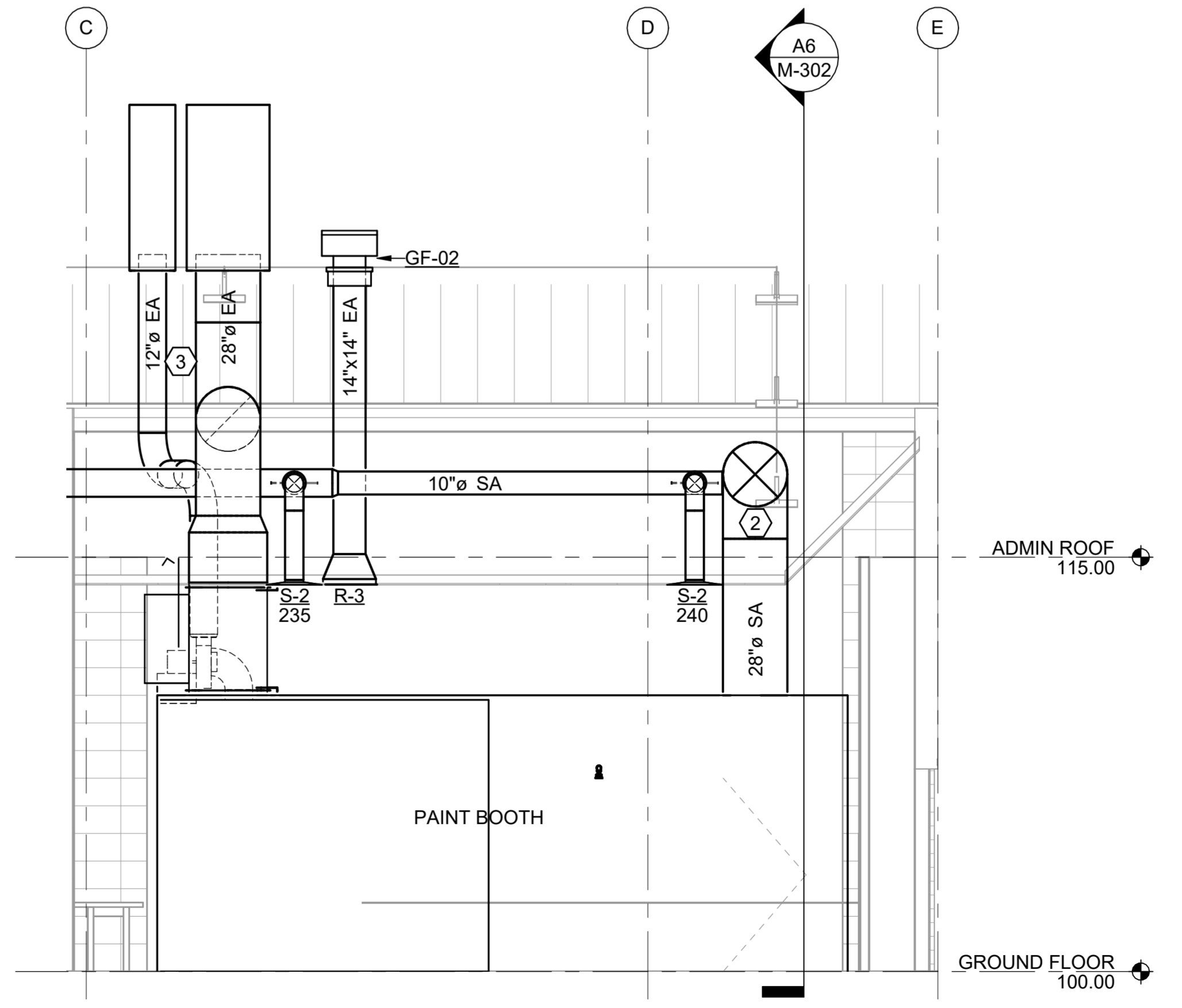
**A3** MAINTENANCE BAY SECTION VIEW-WEST  
SCALE: 1/8" = 1'-0"



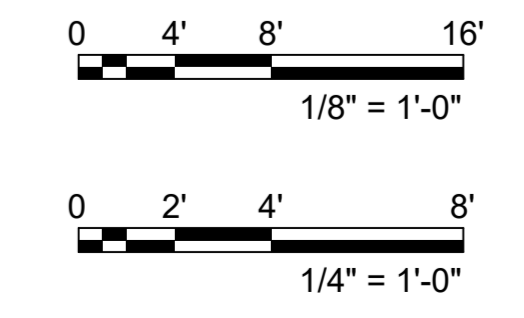
**C3** MAINTENANCE BAY SECTION VIEW-EAST  
SCALE: 1/4" = 1'-0"



**A6** PAINT BOOTH SECTION VIEW - LOOKING NORTH  
SCALE: 1/4" = 1'-0"



**D6** PAINT BOOTH SECTION VIEW - LOOKING EAST  
SCALE: 1/4" = 1'-0"



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**SHEET KEYNOTES**

- CONTRACTOR SHALL FURNISH AND INSTALL MAU-03 SUPPLY AIR DUCTWORK BETWEEN ROOM 119 WALL-TO-DECK PENETRATION AND NORTH EXTERIOR WALL PENETRATION. EXTEND DUCTWORK 6 INCHES BEYOND PENETRATIONS FOR FUTURE CONNECTION BY PAINT BOOTH MANUFACTURER AND PROVIDE INSULATED CAPS ON DUCT OPENINGS.

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Oklahoma City, OK 73118-7436  
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**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

REVISION HISTORY:

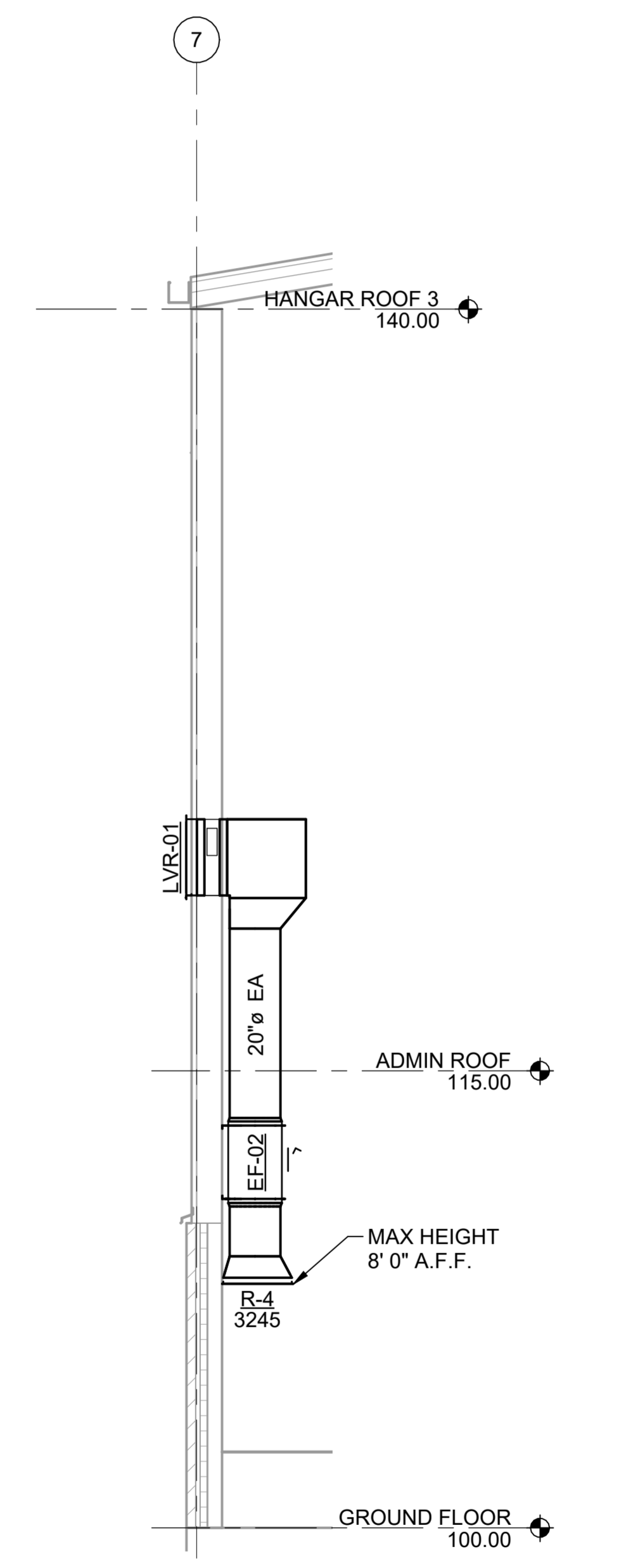
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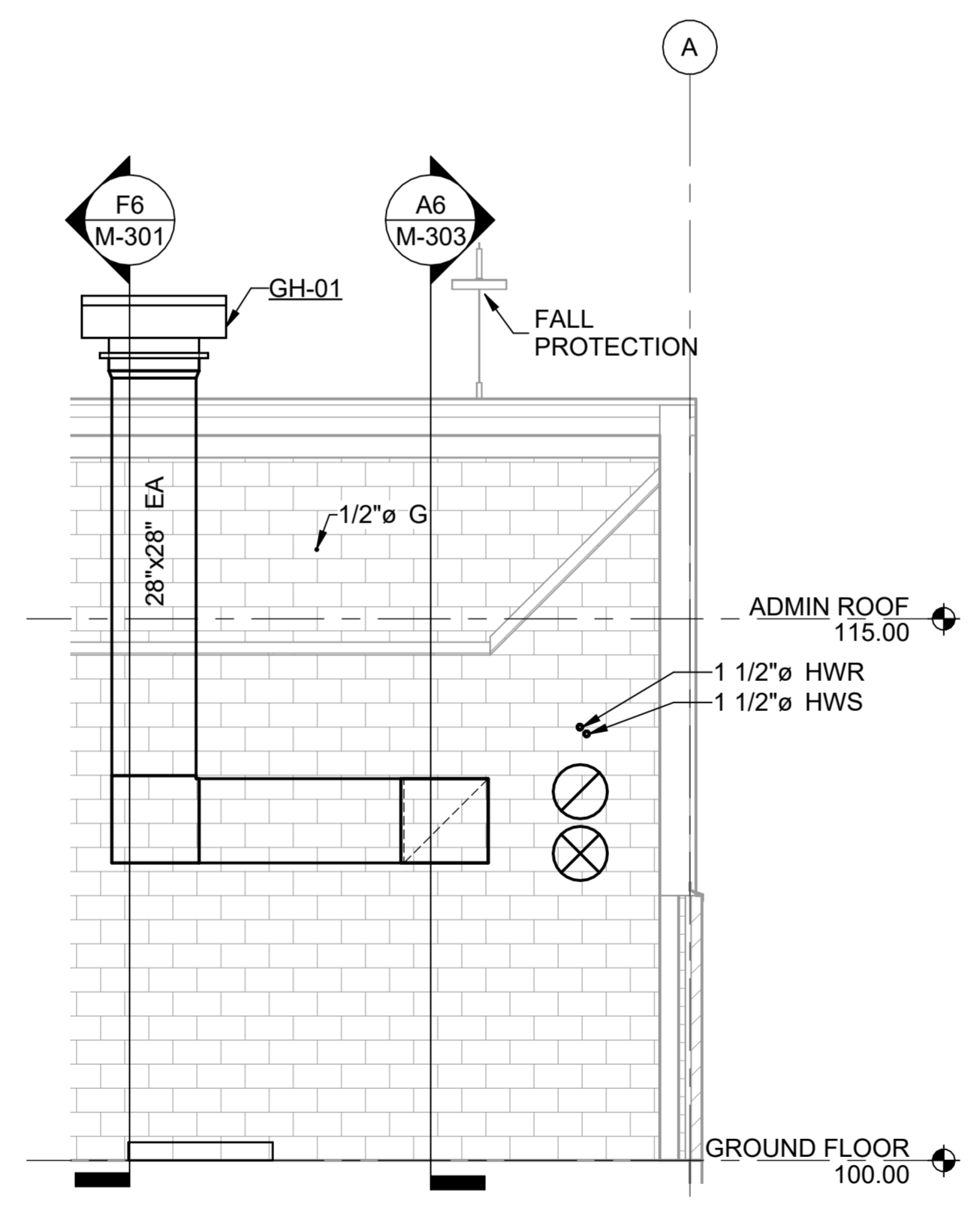
DESIGNED BY:	<b>AMF</b>
DRAWN BY:	<b>AMF</b>
REVIEWED BY:	<b>RRS</b>
PROJECT MANAGER:	<b>NDM</b>
PROJECT NUMBER:	20190320
SHEET TITLE:	<b>M-303</b>

ISSUE DATE:  
2 AUGUST 2024

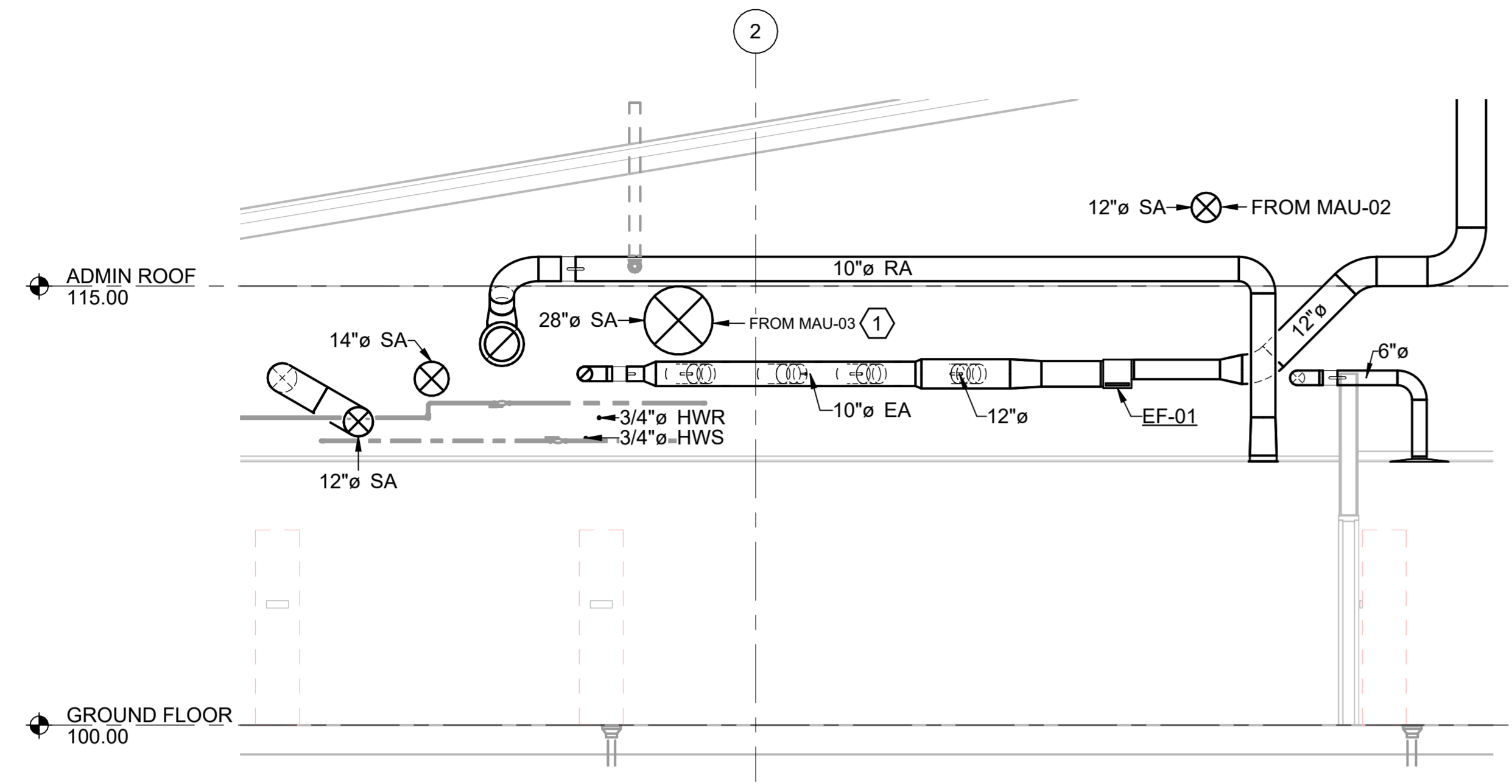
SHEET NUMBER:  
**M-303**



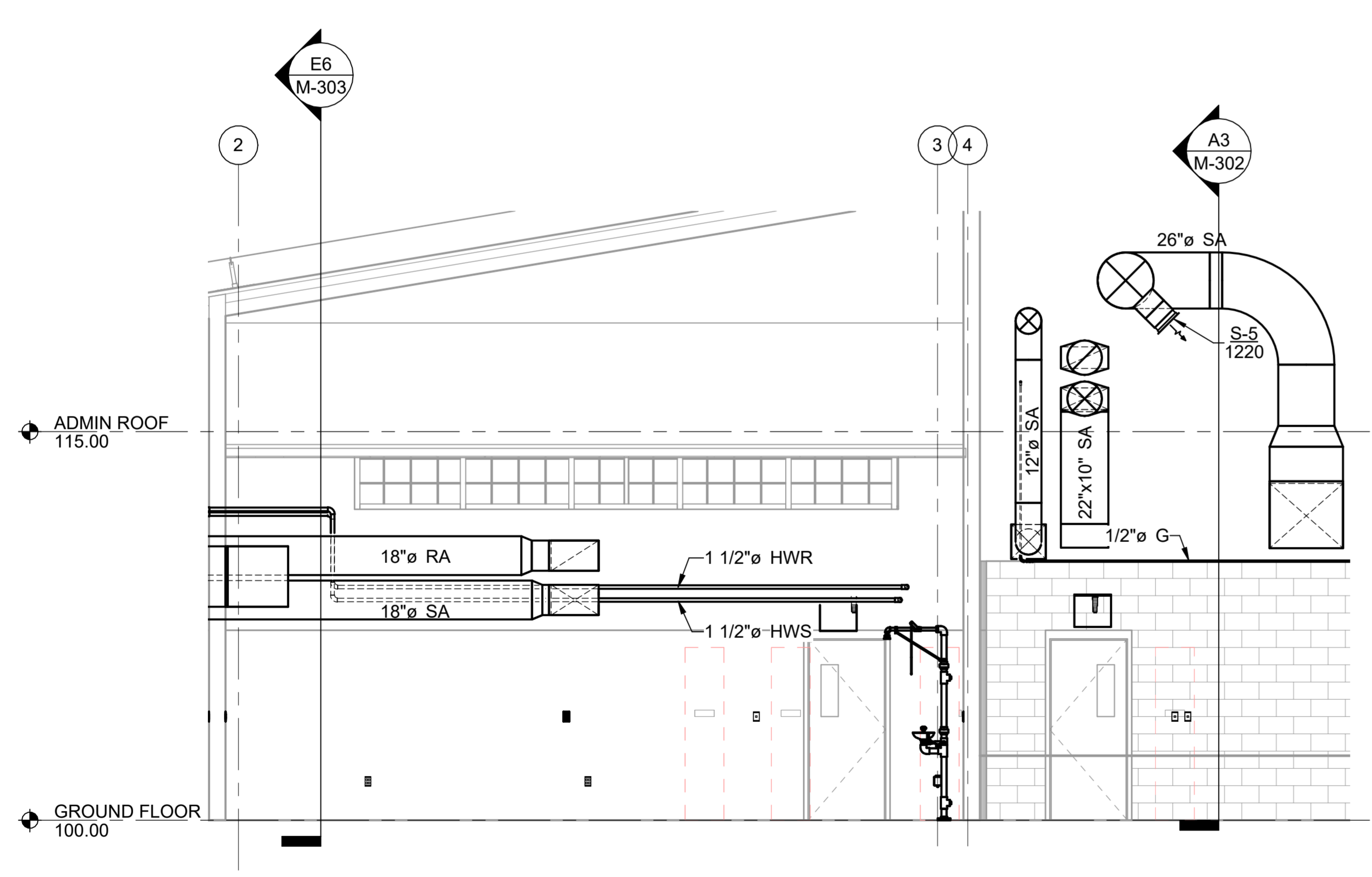
**G6 HANGAR EXHAUST FAN**  
SCALE: 1/4" = 1'-0"



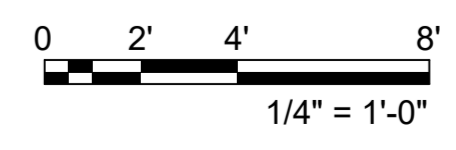
**E6 AIR COMPRESSOR EXHAUST AT WEST WALL**  
SCALE: 1/4" = 1'-0"



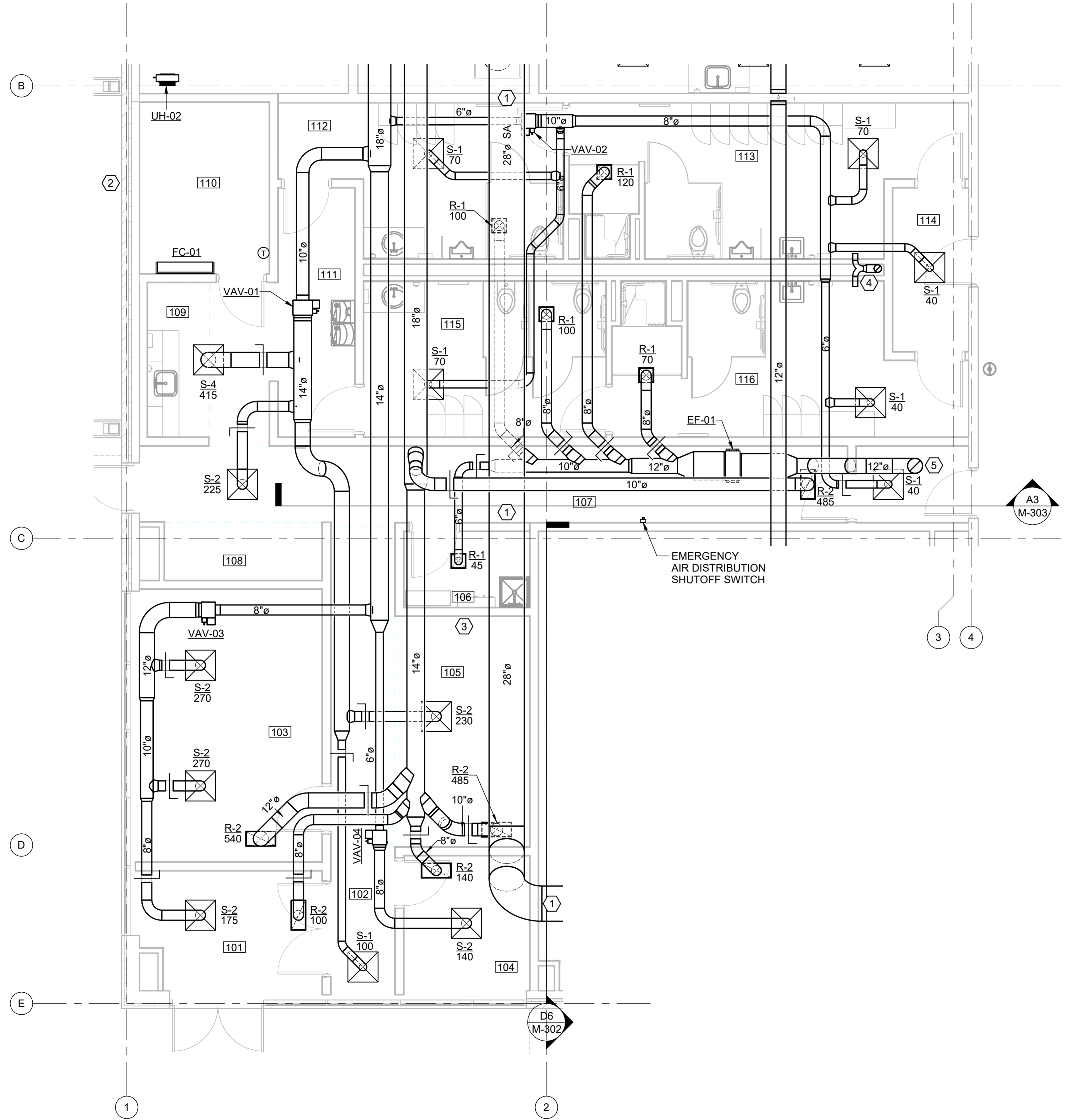
**A3 CORRIDOR SECTION VIEW**  
SCALE: 1/4" = 1'-0"



**A6 RTU, MAU DUCT WALL PENETRATIONS**  
SCALE: 1/4" = 1'-0"



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**GENERAL NOTES**

- A. REFER TO SHEET M-001 FOR ADDITIONAL NOTES AND DETAILS PERTAINING TO THIS SHEET.
- B. SEAL ALL DUCTWORK IN ACCORDANCE WITH SMACNA SEAL CLASS "A"
- C. DUCT RUNOUTS TO DIFFUSERS ARE SIZED PER DIFFUSER NECK, UNLESS NOTED OTHERWISE.
- D. INTEGRAL BALANCING DAMPER REQUIRED WHERE DIFFUSER/GRILLE ASSOCIATED DUCT RUNOUT IS NOT SHOWN ON PLANS WITH A DUCT MOUNTED MANUAL BALANCING DAMPER.

**SHEET KEYNOTES**

1. CONTRACTOR SHALL FURNISH AND INSTALL MAU-03 SUPPLY AIR DUCTWORK BETWEEN ROOM 119 WALL-TO-DECK PENETRATION AND NORTH EXTERIOR WALL PENETRATION. EXTEND DUCTWORK 6 INCHES BEYOND PENETRATIONS FOR FUTURE CONNECTION BY PAINT BOOTH MANUFACTURER AND PROVIDE INSULATED CAPS ON DUCT OPENINGS.
2. OUTDOOR BUILDING PRESSURE SENSOR FOR RTU-01 AND RTU-02.
3. INDOOR BUILDING PRESSURE SENSOR FOR RTU-01.
4. CLOTHES DRYER EXHAUST UP THROUGH ROOF IN ACCORDANCE WITH MANUFACTURER REQUIREMENTS. EXHAUST CAN BE COMBINED INTO A COMMON 6" DUCT AS SHOWN, OR SEPARATELY DUCTED. VERTICAL RISER SHALL BE PROVIDED WITH A MEANS FOR CLEANOUT FROM ROOM 113. PROVIDE ESCUTCHEONS AT WALL DUCT PENETRATIONS. PROVIDE BACKDRAFT DAMPER AND TERMINATE WITH APPROVED VENT CAP. DUCT SCREENS SHALL NOT BE INSTALLED AT THE DUCT TERMINATION. 12" EA UP TO VENT CAP ON ROOF.

ROOM SCHEDULE

NUMBER	NAME
101	VEST
102	CORR
103	MEDIA
104	OFFICE
105	ADMIN
106	JAN.
107	CORR
108	BREAK
109	BREAK
110	COMM
111	CORR
112	CLEAN RR M
113	DIRTY RR M
114	DIRTY VEST
115	CLEAN RR W
116	DIRTY RR W
117	CLEAN VEST
118	MAINT. BAY
119	PREP
120	PLASTICS
121	MECH
122	FIRE PROT
123	ELEC

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**Texas Air National Guard - 149th FW  
Corrosion Control Facility  
TXANG Project Number: KELL 169014  
JBSA - Kelly Annex, TX**

REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY:	<b>AMF</b>
DRAWN BY:	<b>AMF</b>
REVIEWED BY:	<b>RRS</b>
PROJECT MANAGER:	<b>NDM</b>

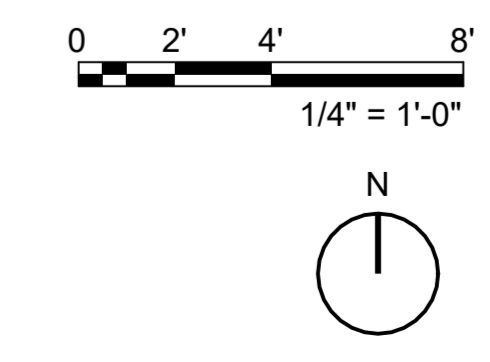
PROJECT NUMBER:  
**20190320**

SHEET TITLE:  
**ENLARGED GROUND FLOOR PLAN**

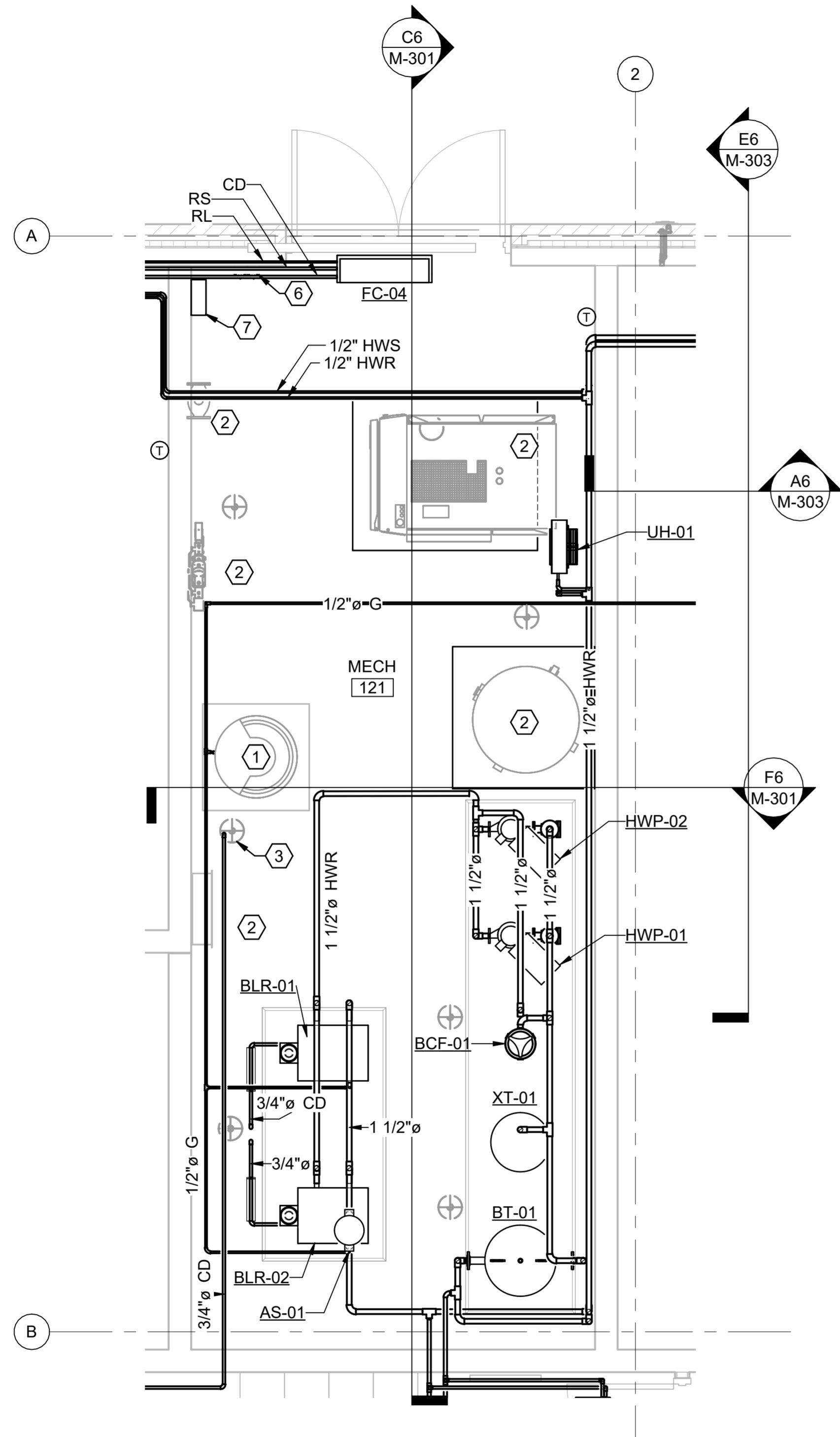
ISSUE DATE:  
**2 AUGUST 2024**

SHEET NUMBER:  
**M-401**

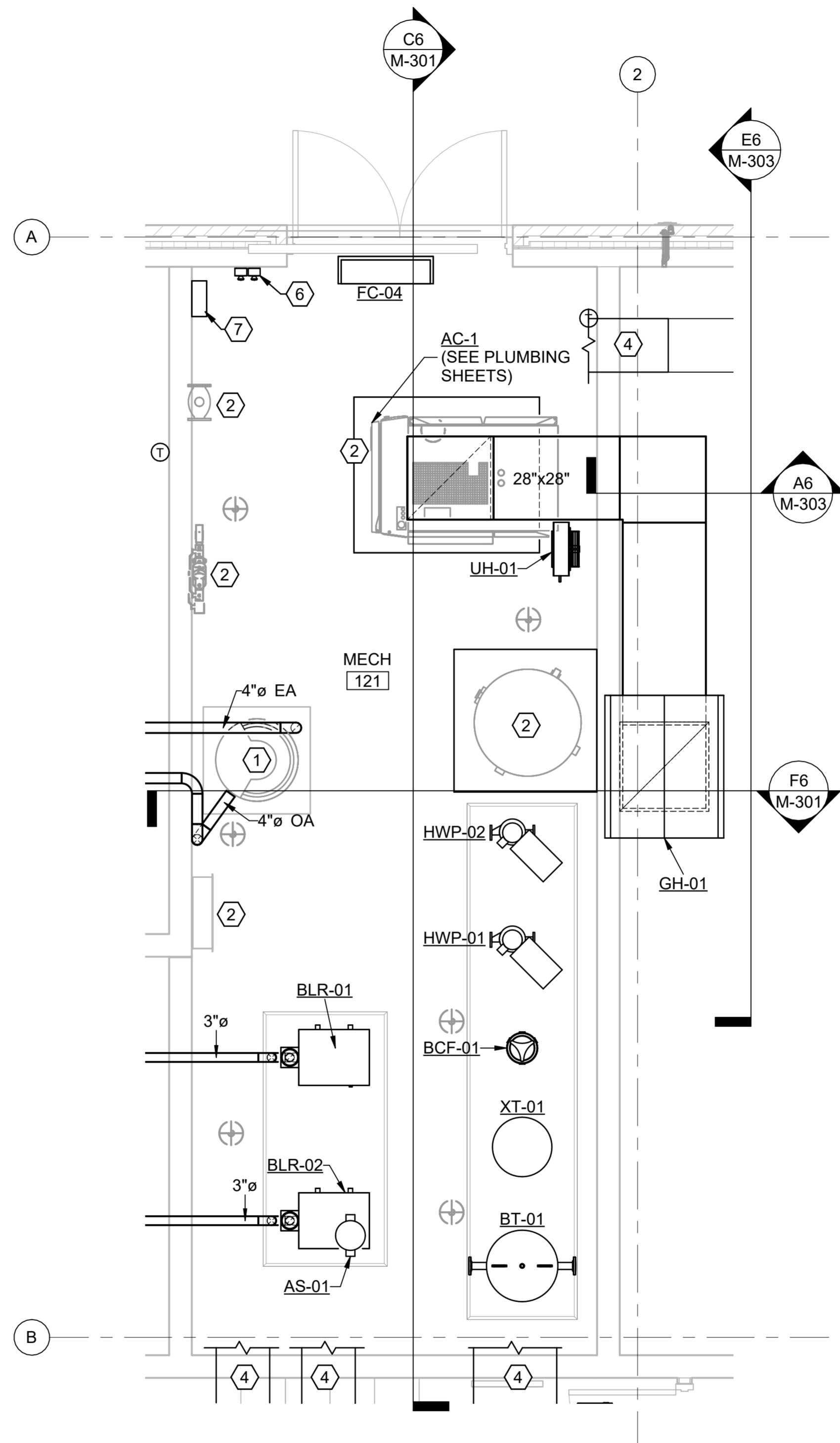
**B6 ENLARGED GROUND FLOOR HVAC PLAN**  
SCALE: 1/4" = 1'-0"



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**B6** ENLARGED MECHANICAL ROOM PIPING PLAN  
SCALE: 3/8" = 1'-0"



**E6** ENLARGED MECHANICAL ROOM HVAC PLAN  
SCALE: 3/8" = 1'-0"

**GENERAL NOTES**

- A. REFER TO SHEET M-001 FOR ADDITIONAL NOTES AND DETAILS PERTAINING TO THIS SHEET.
- B. PLUMBING EQUIPMENT (HALFTONE) SHOWN ON SHEET FOR REFERENCE AND COORDINATION ONLY.

**SHEET KEYNOTES**

- 1. PLUMBING EQUIPMENT: DOMESTIC WATER HEATER
- 2. PLUMBING EQUIPMENT.
- 3. ROUTE 3/4" CONDENSATE TO FLOOR DRAIN DUCTS SERVING MAU-03 AND RTU-01 HAVE BEEN HIDDEN FROM THIS VIEW. REFER TO MH101 FOR ADDITIONAL OVERHEAD DUCTS AND FITTINGS.
- 5. REMOVED.
- 6. BOILER EMERGENCY SHUTDOWN SWITCH FOR BLR-01 AND BLR-02.
- 7. BUILDING DDC CONTROLLER LOCATION.

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**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

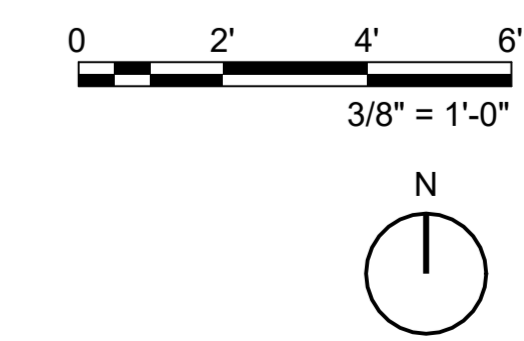
DESIGNED BY:	<b>AMF</b>
DRAWN BY:	<b>AMF</b>
REVIEWED BY:	<b>RRS</b>
PROJECT MANAGER:	<b>NDM</b>

PROJECT NUMBER:  
20190320  
SHEET TITLE:

**ENLARGED GROUND FLOOR PLAN**

ISSUE DATE:  
2 AUGUST 2024

SHEET NUMBER:  
**M-402**



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REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY:	AMF
DRAWN BY:	AMF
REVIEWED BY:	RRS
PROJECT MANAGER:	NDM

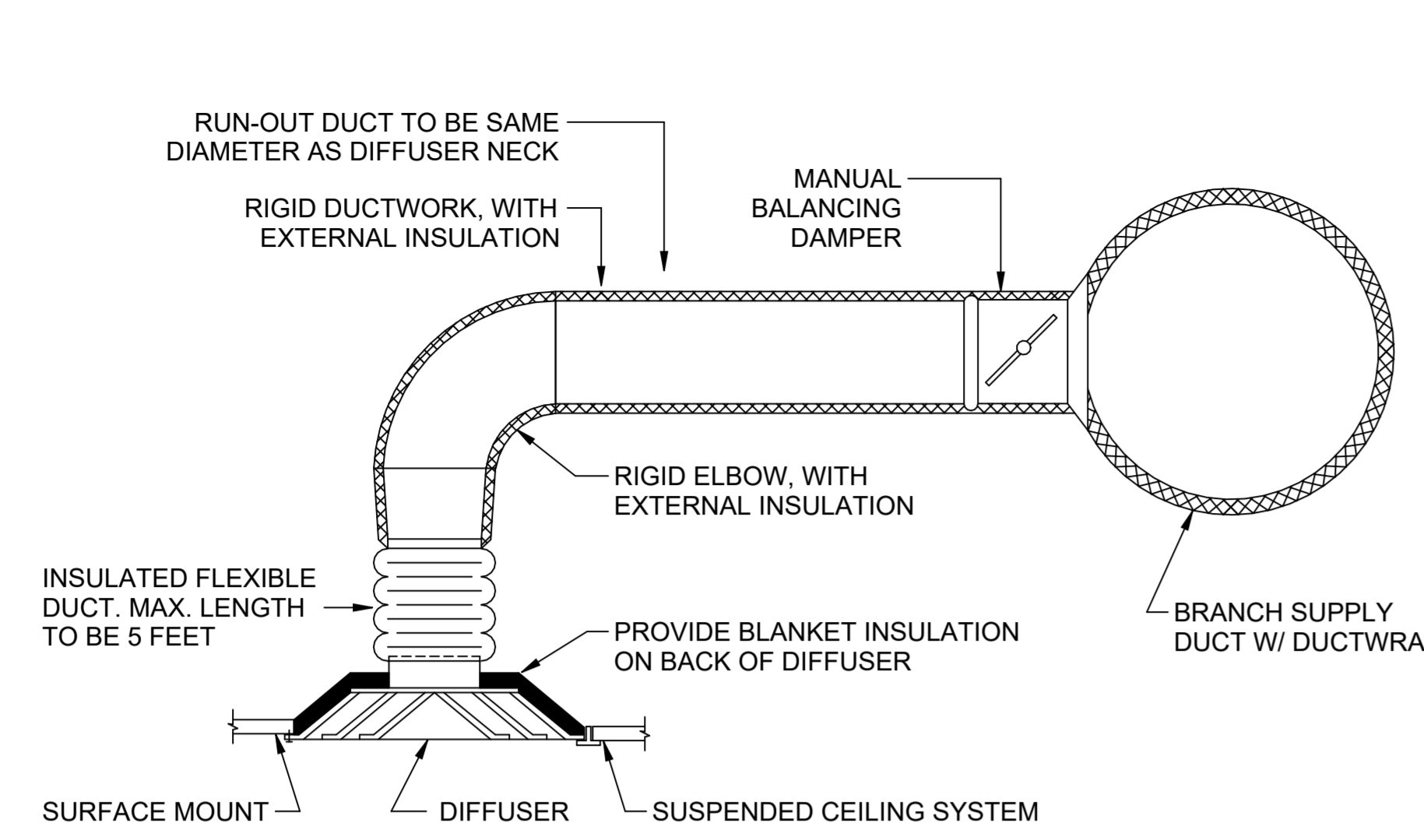
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SHEET TITLE:  
DETAILS

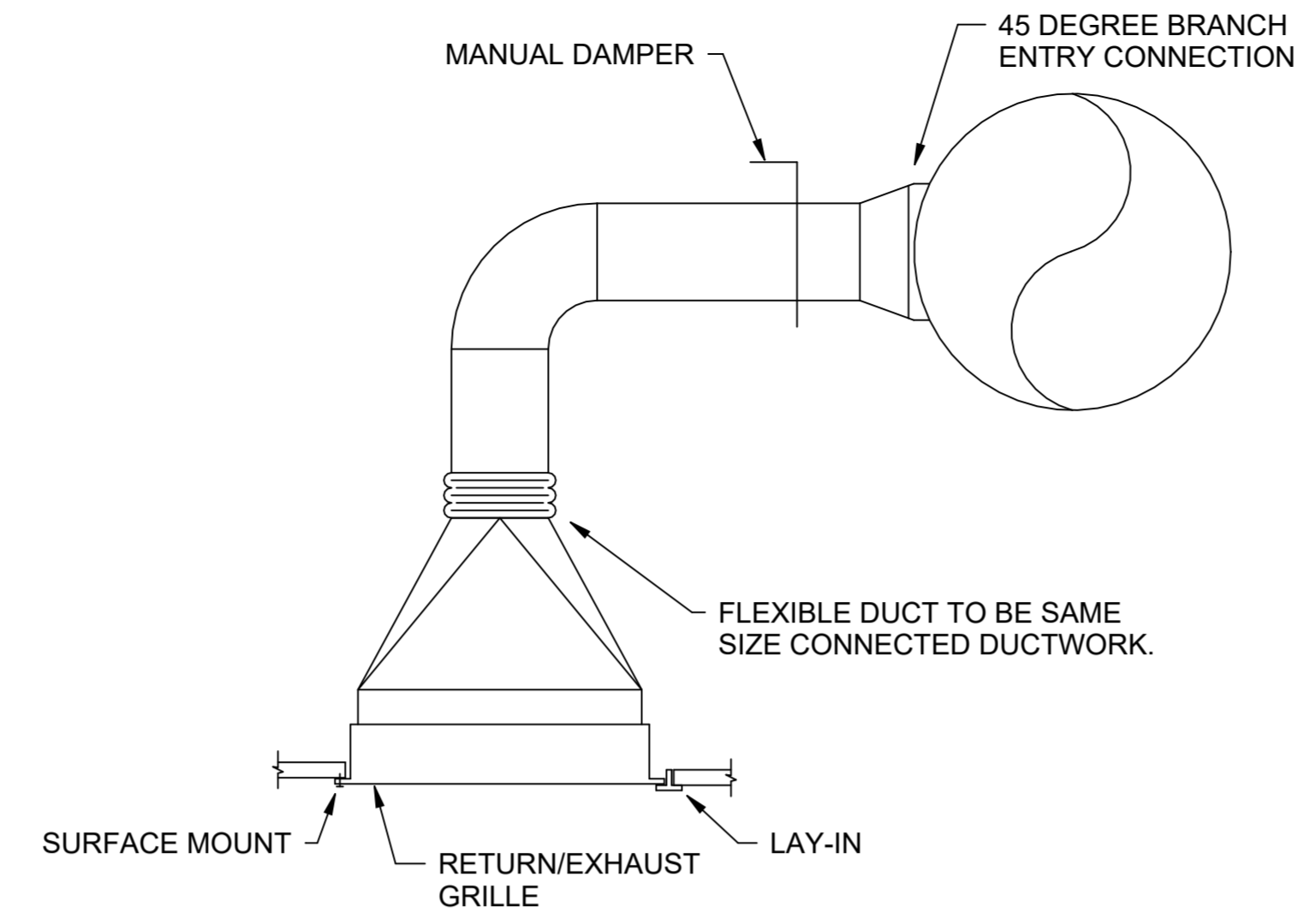
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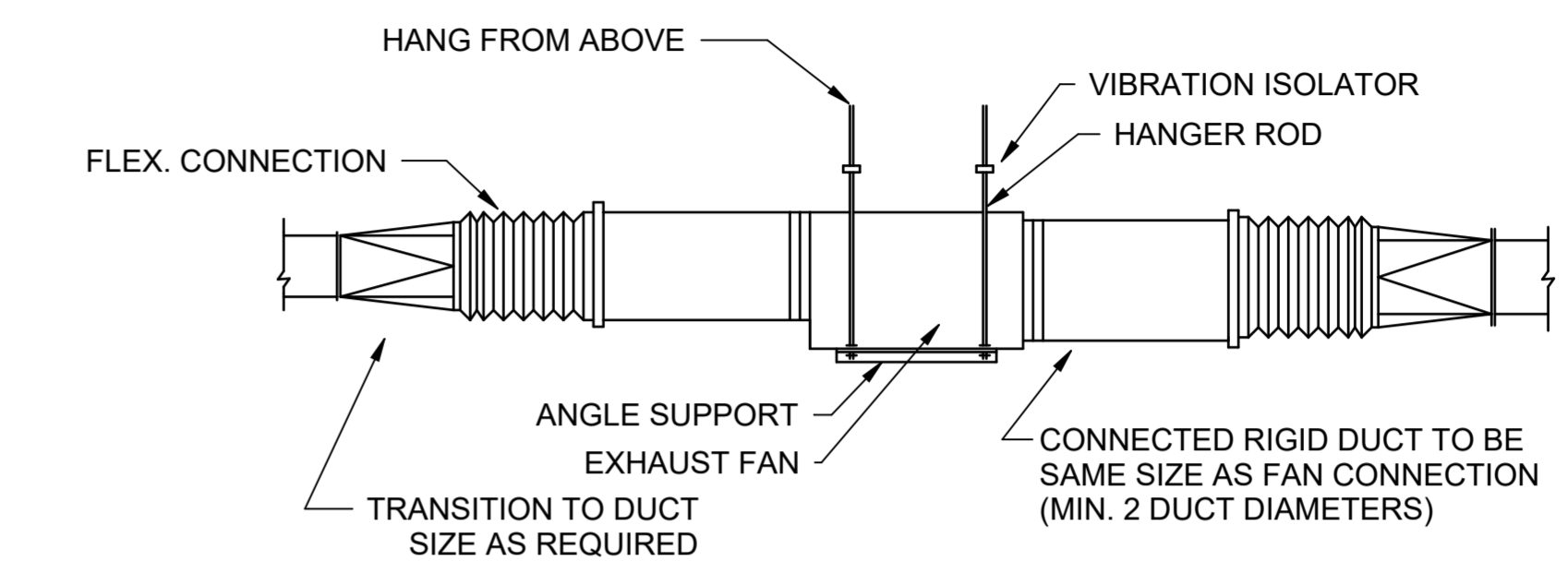
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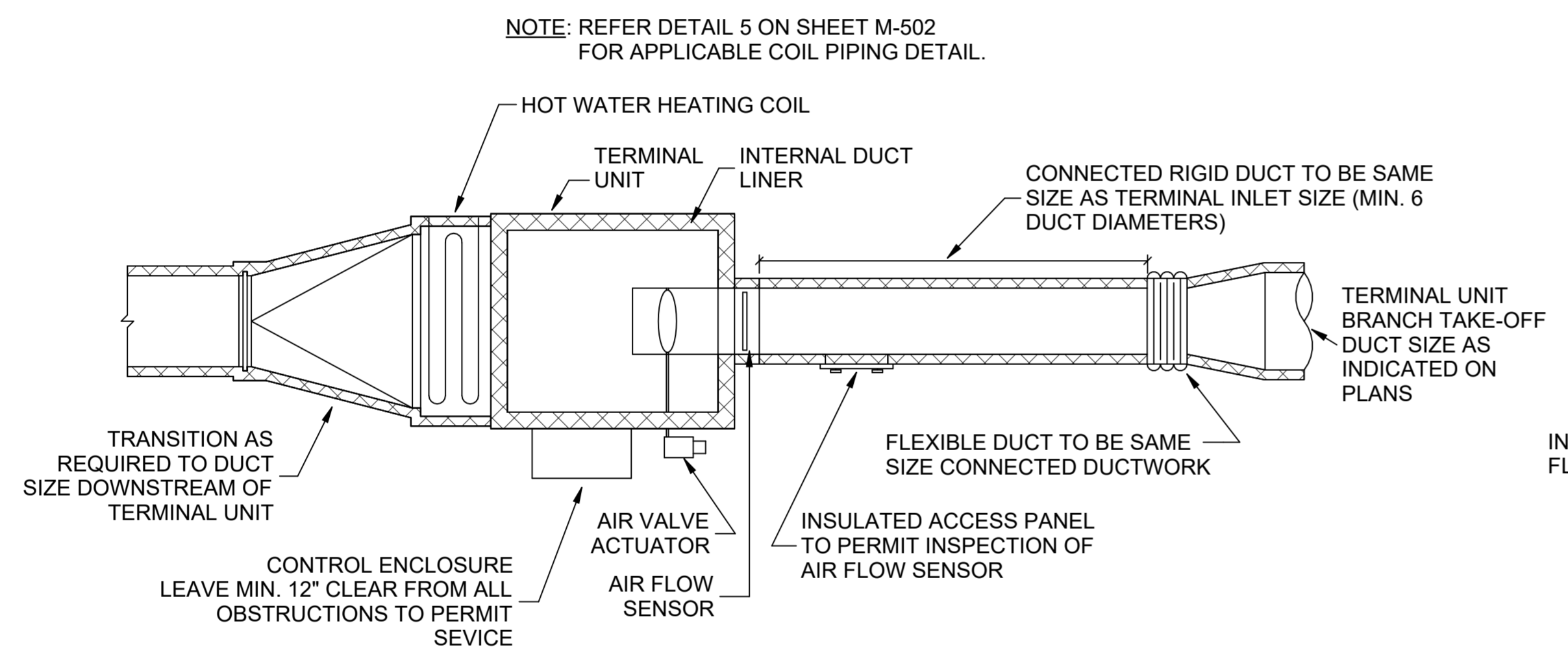
**A2** TYPICAL DIFFUSER INSTALLATION  
SCALE: NTS



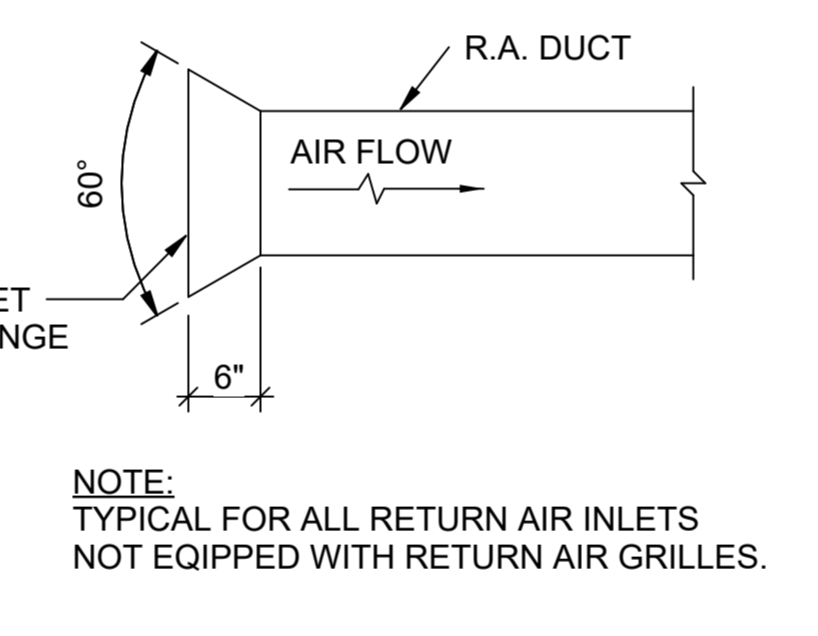
**D2** TYPICAL RETURN GRILLE INSTALLATION DETAIL  
SCALE: NTS



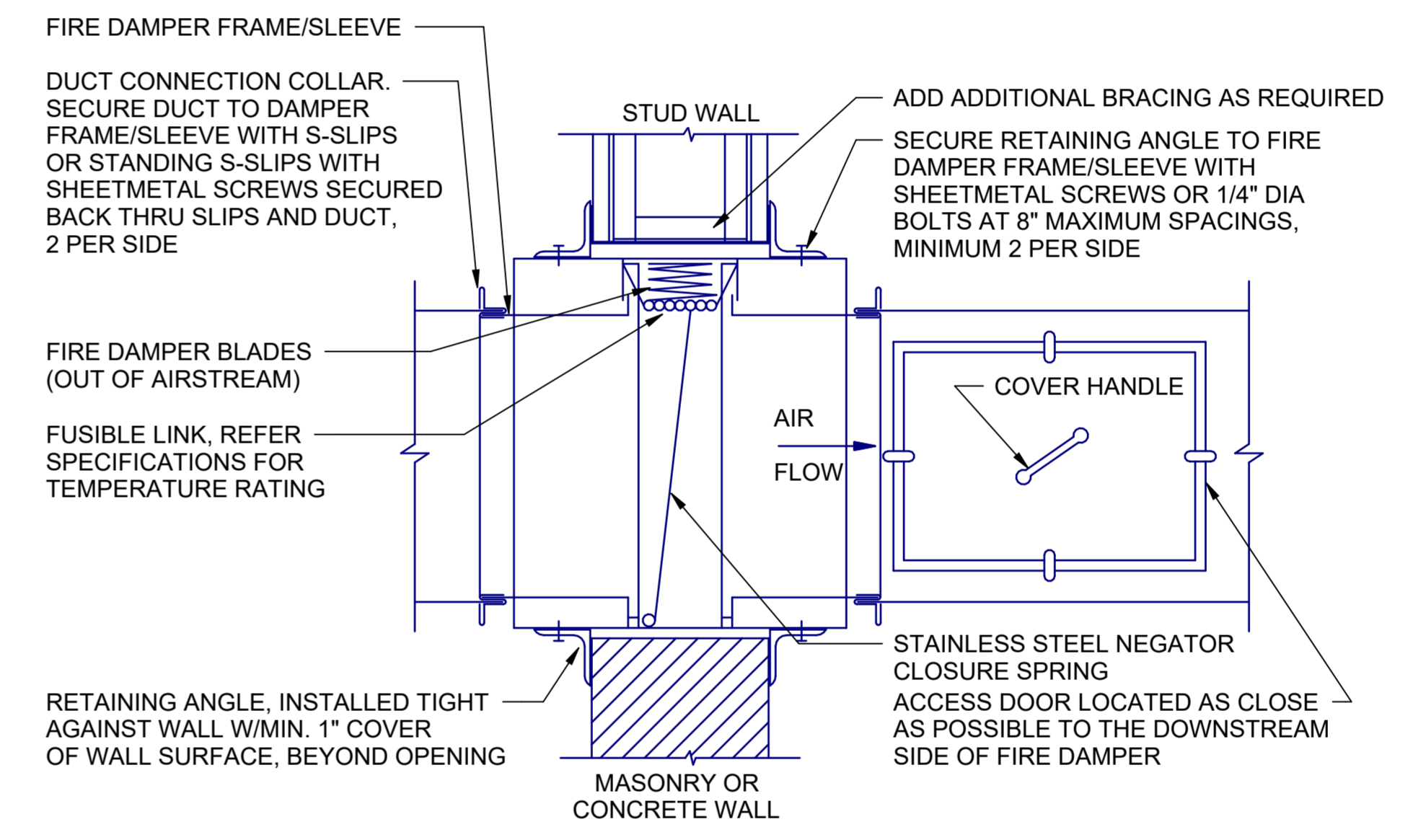
**F2** IN-LINE FAN INSTALLATION DETAIL  
SCALE: NTS



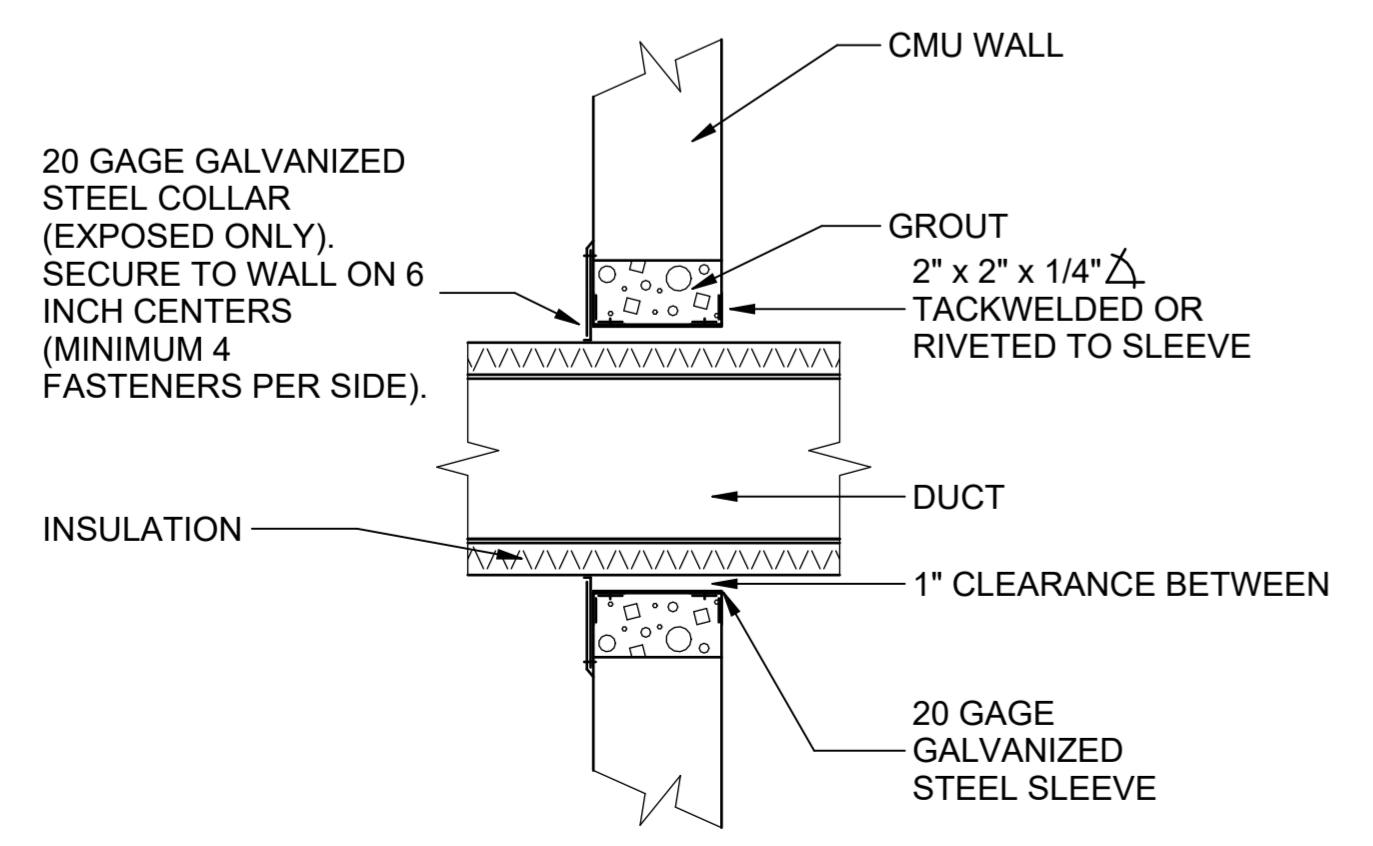
**A4** TYPICAL VAV TERMINAL UNIT INSTALLATION DETAIL  
SCALE: NTS



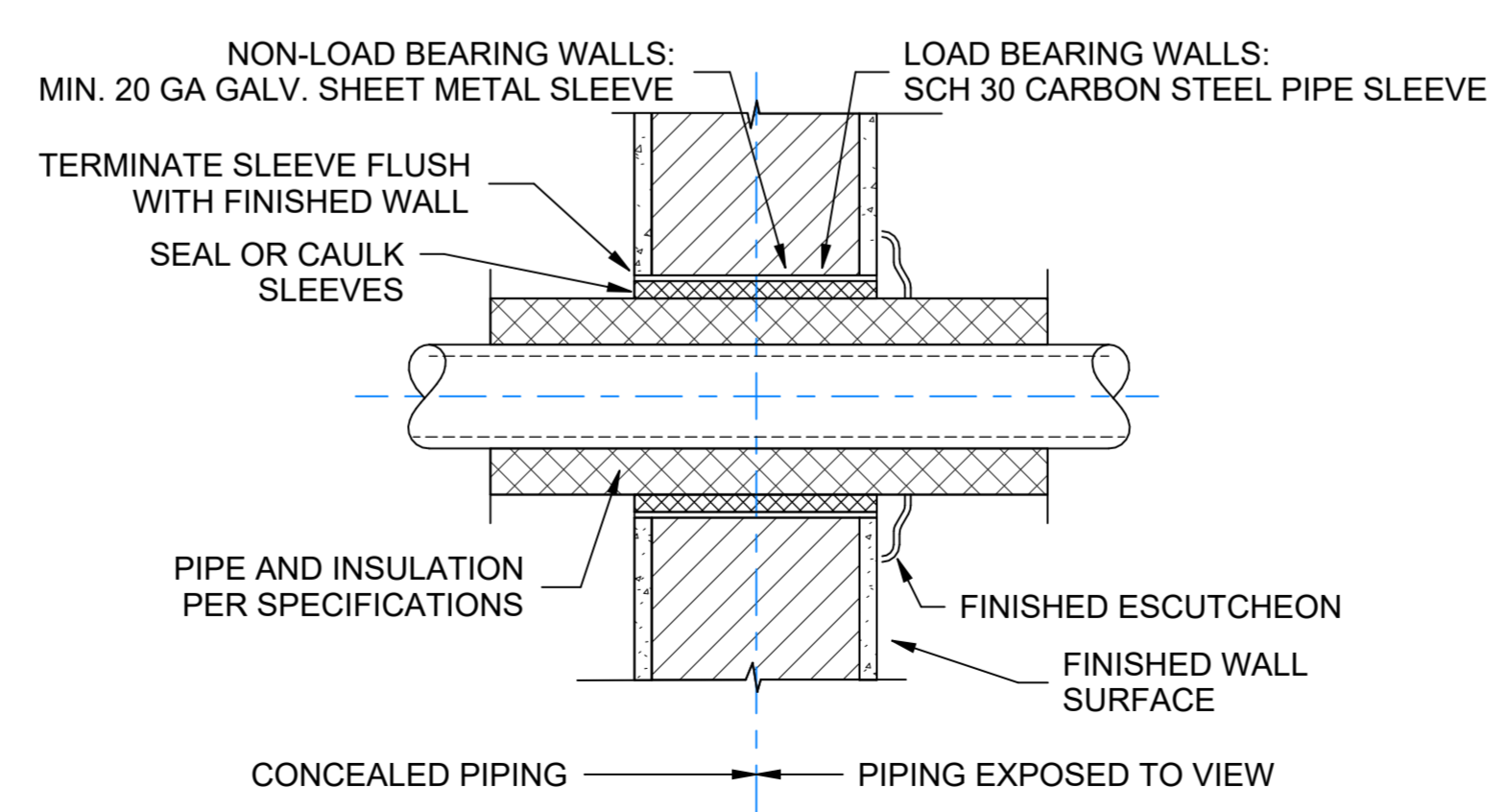
**D4** RETURN AIR INLET DETAIL  
SCALE: NTS



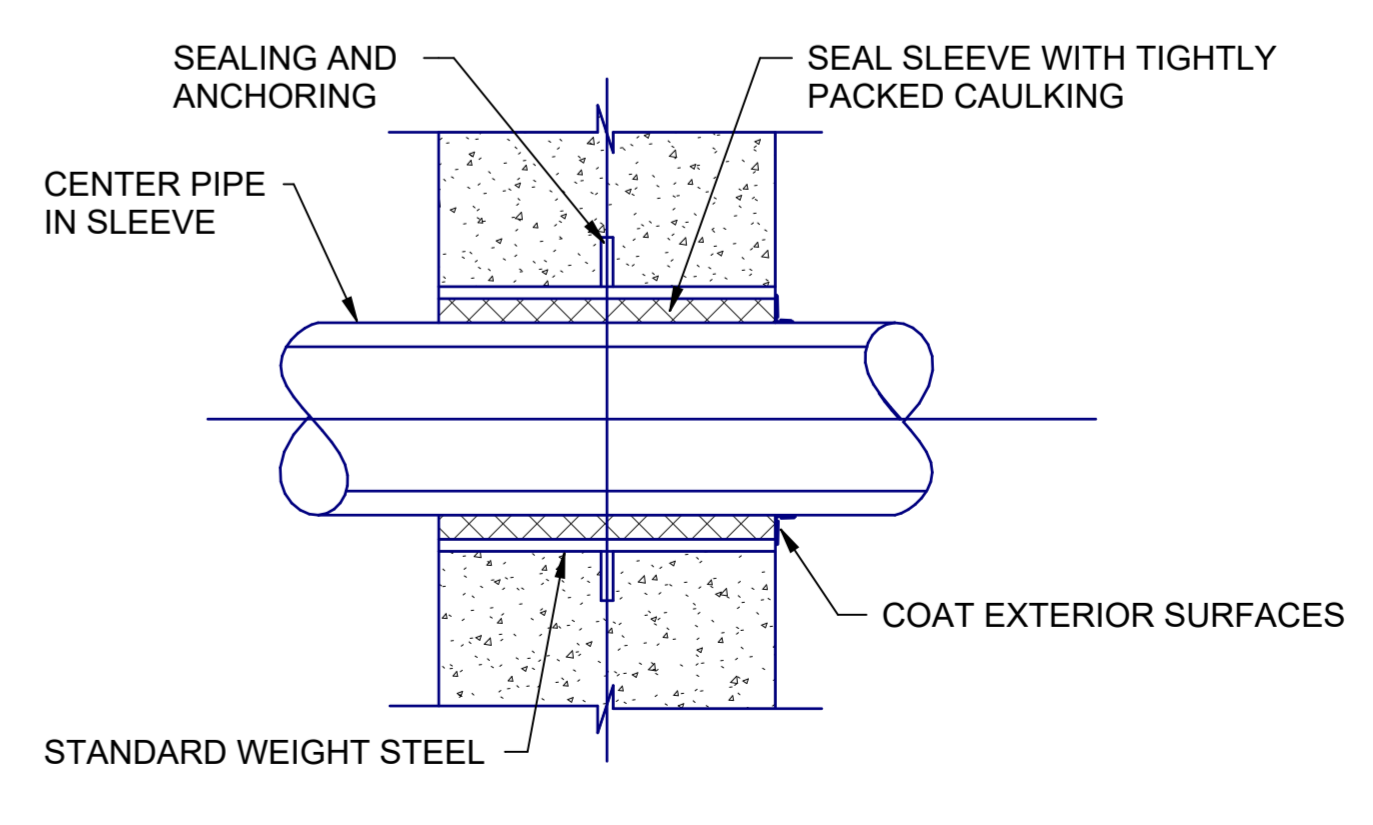
**E4** TYPICAL FIRE DAMPER DETAIL  
SCALE: NTS



**B6** DUCT PENETRATION NON-FIRE RATED WALLS  
SCALE: NTS

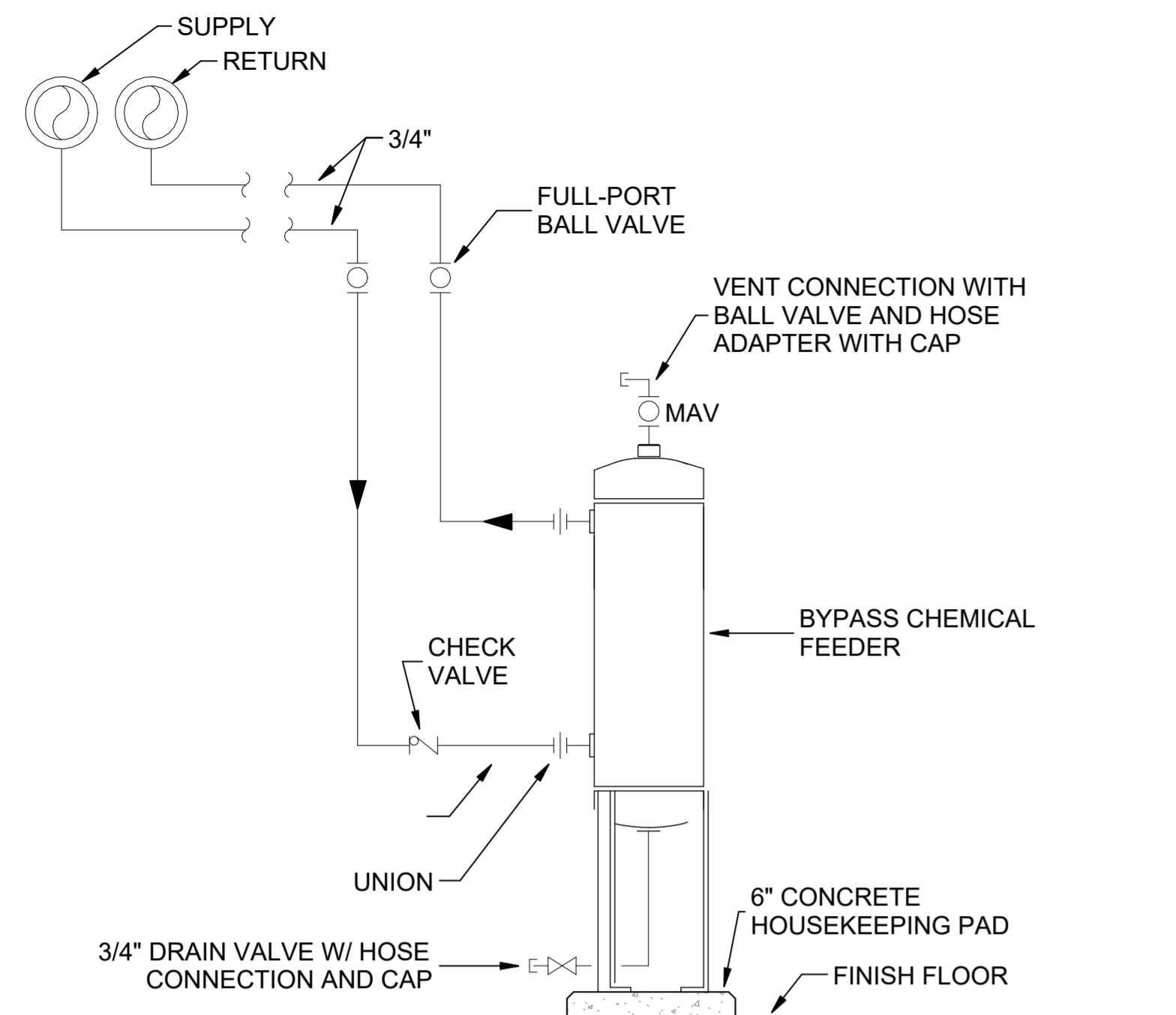


**D6** PIPE PENETRATION INTERIOR WALL  
SCALE: NTS

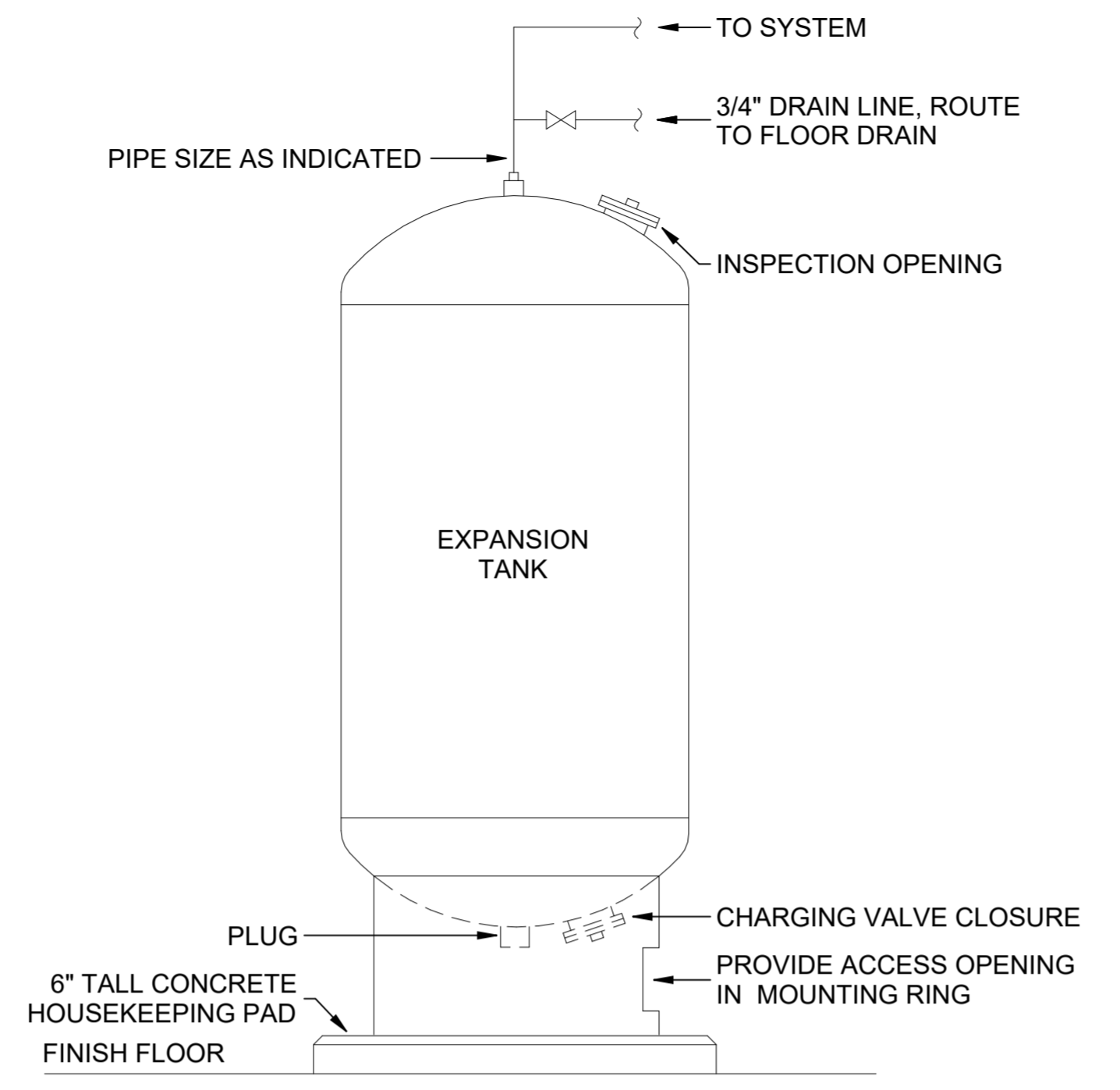


**G6** PIPE PENETRATION EXTERIOR WALL  
SCALE: NTS

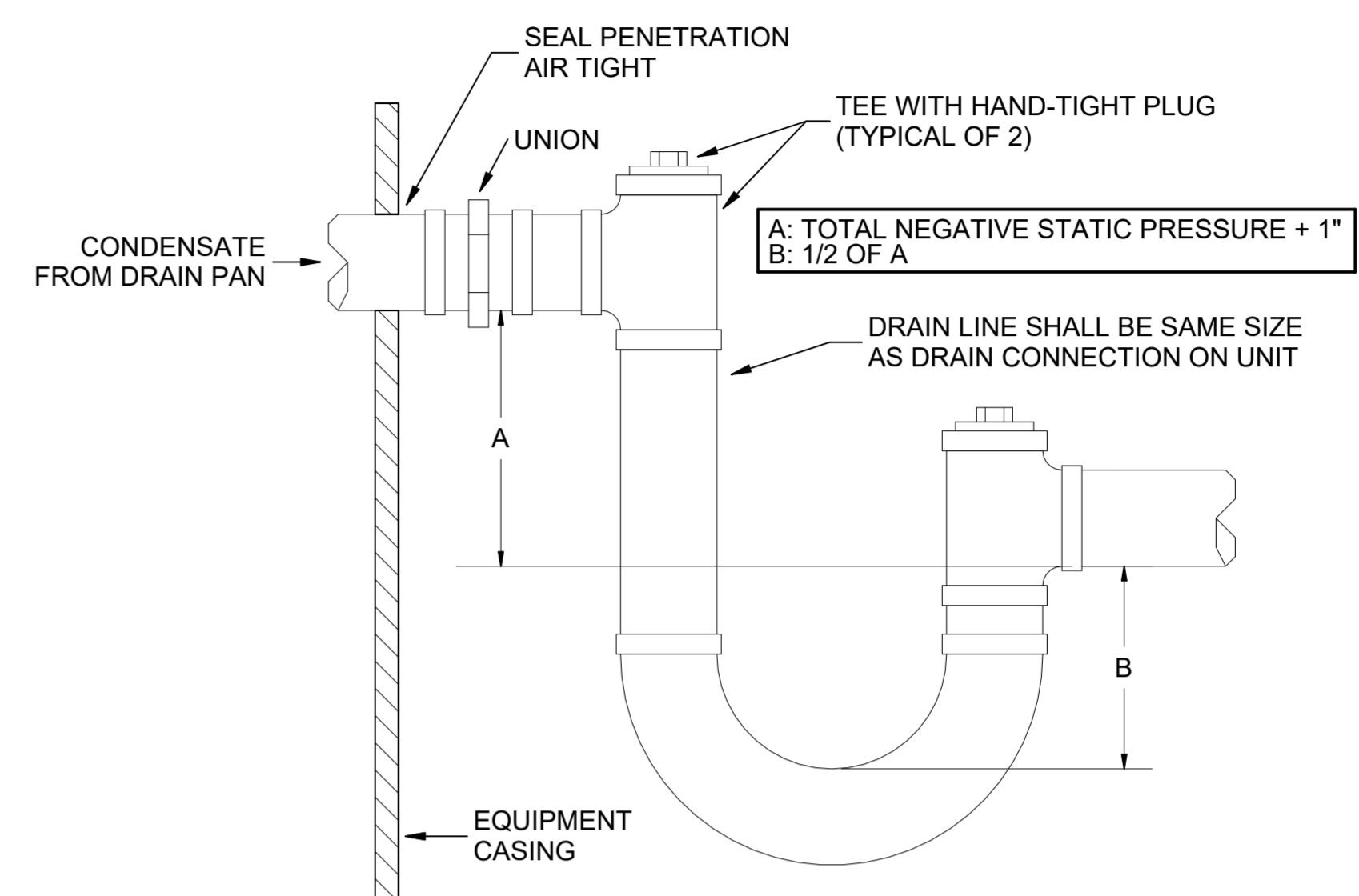
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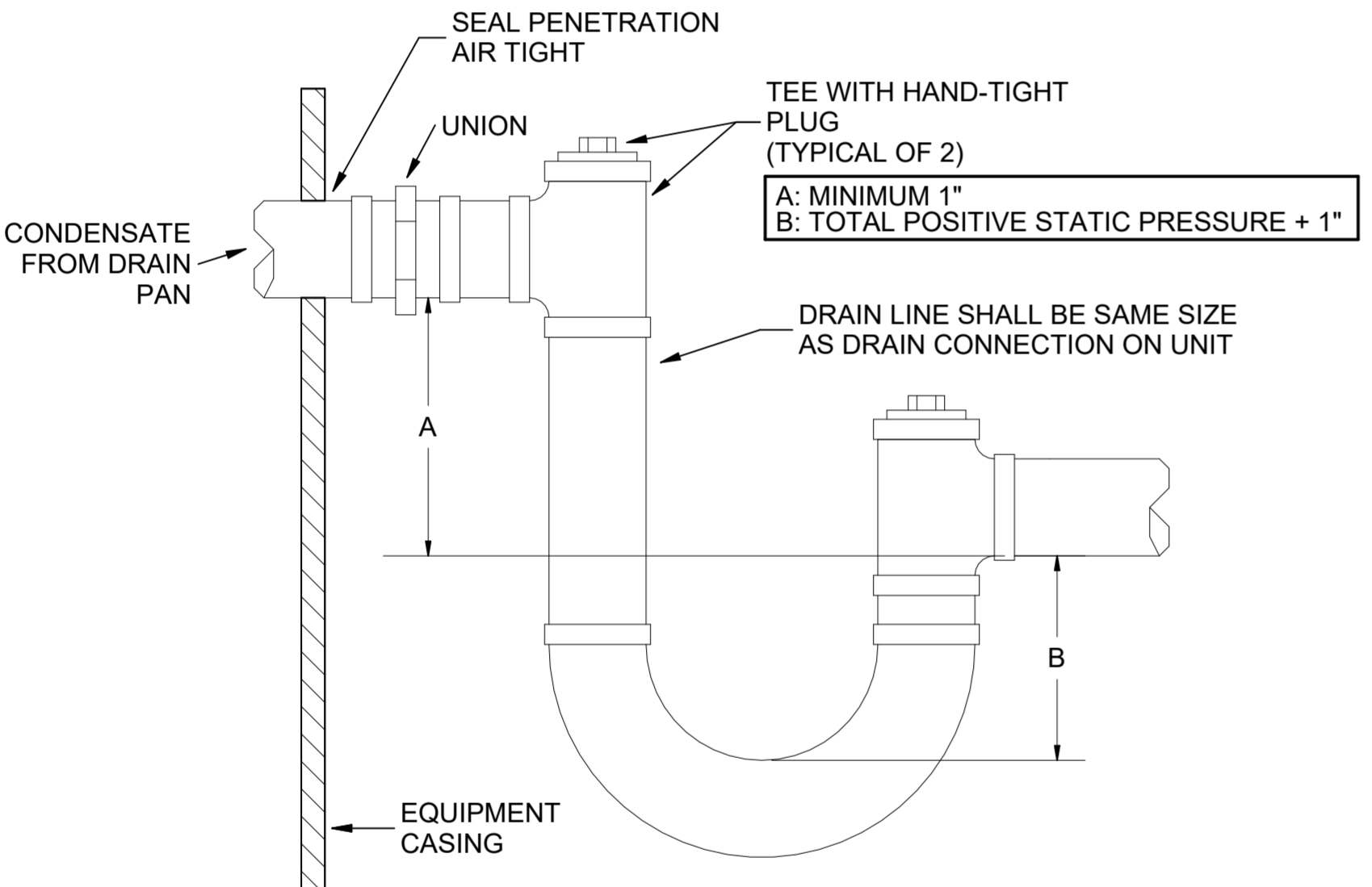
**A3 CHEMICAL BYPASS FEEDER DETAIL**  
SCALE: NTS



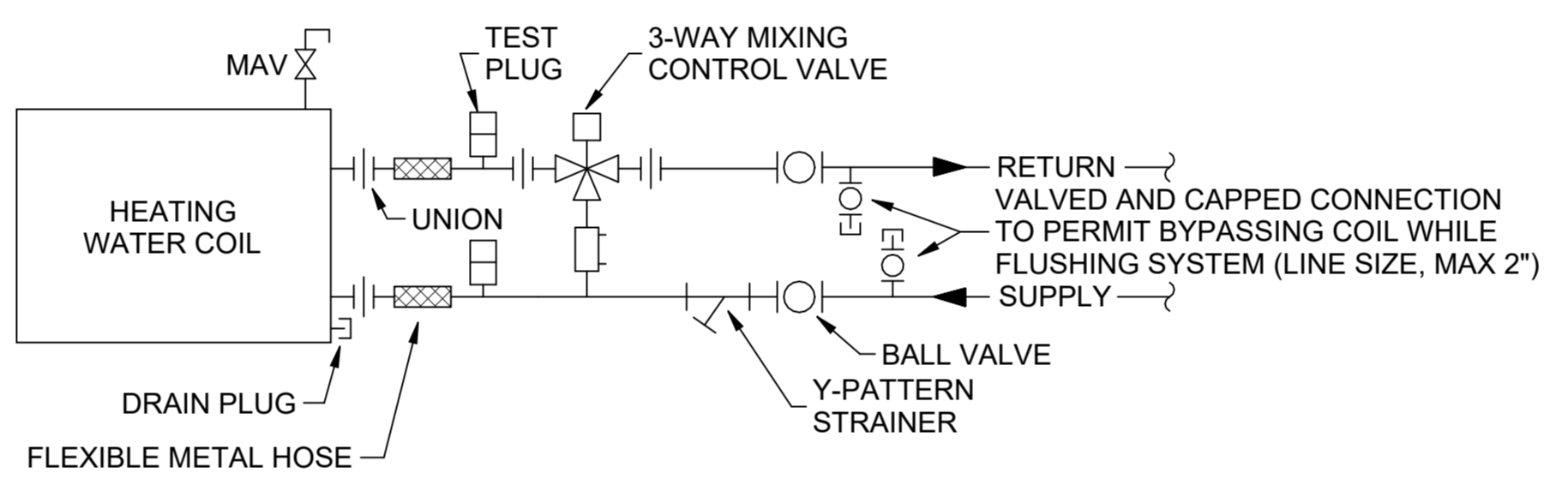
**C3 EXPANSION TANK DETAIL**  
SCALE: NTS



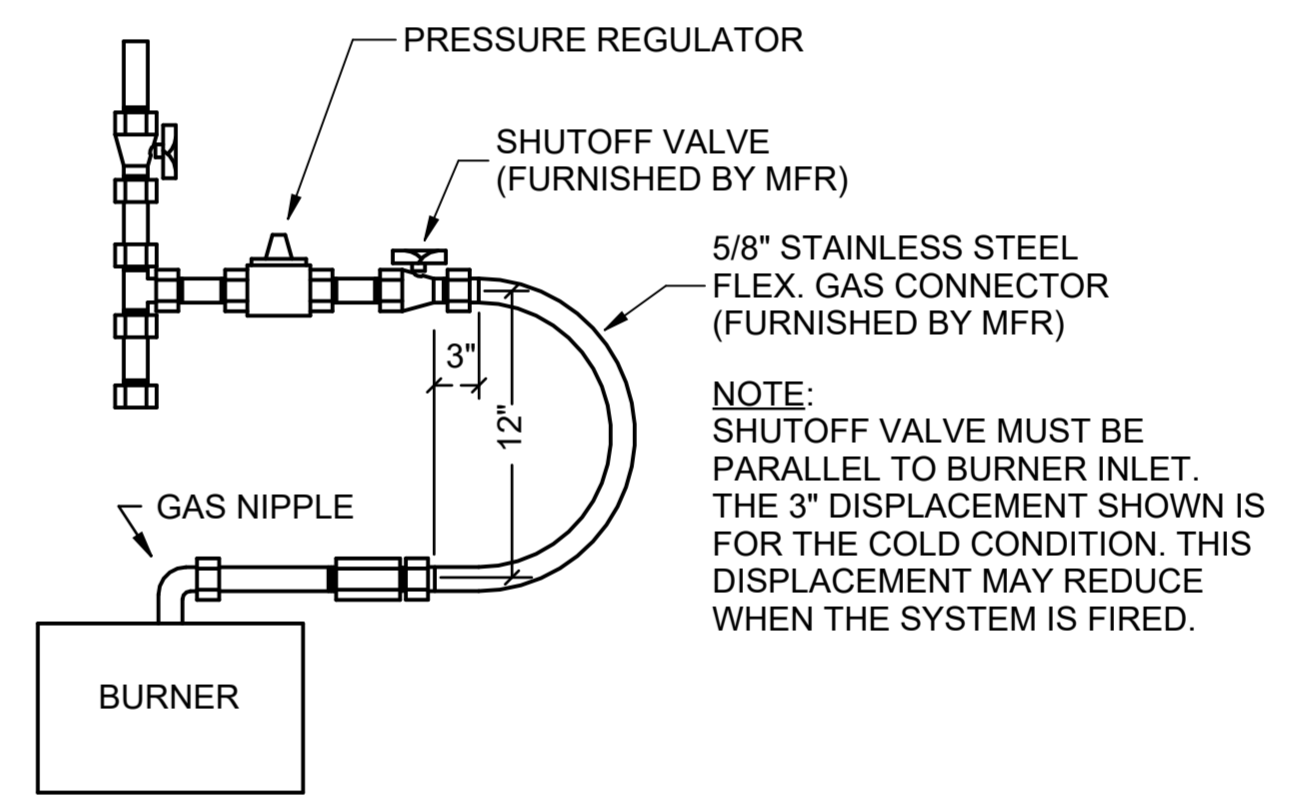
**F3 TYPICAL DRAW-THRU CONDENSATE DRAIN DETAIL**  
SCALE: NTS



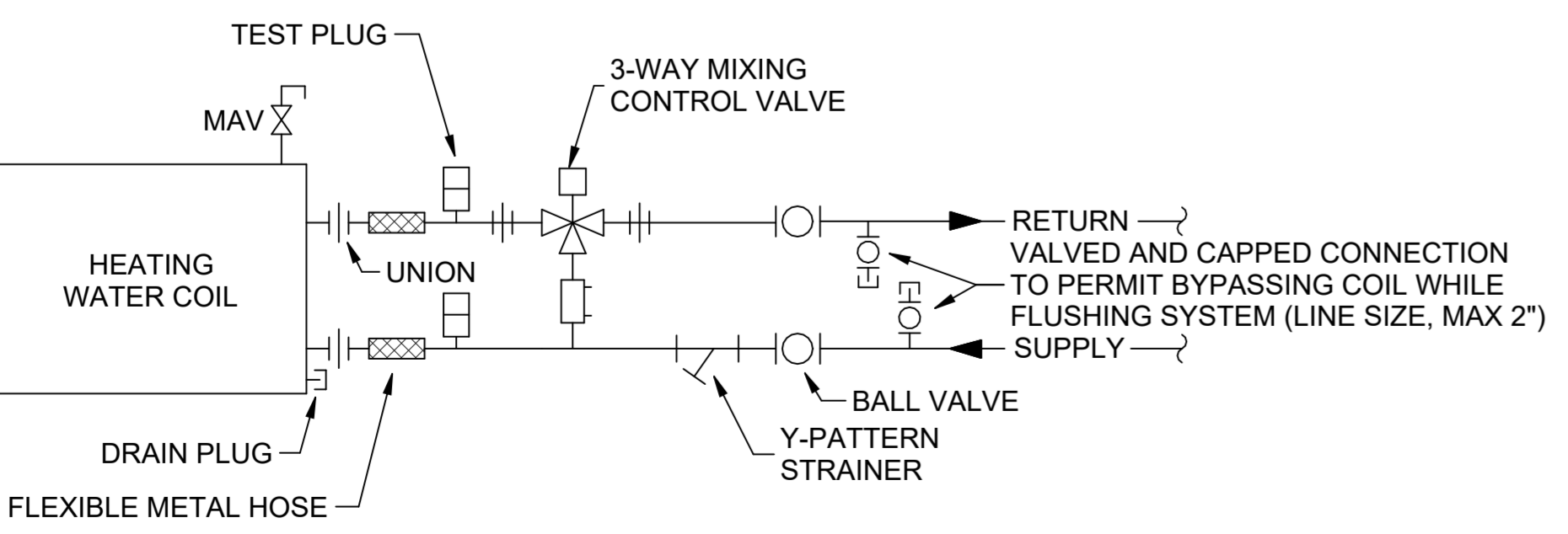
**A5 TYPICAL BLOW-THRU CONDENSATE DRAIN DETAIL**  
SCALE: NTS



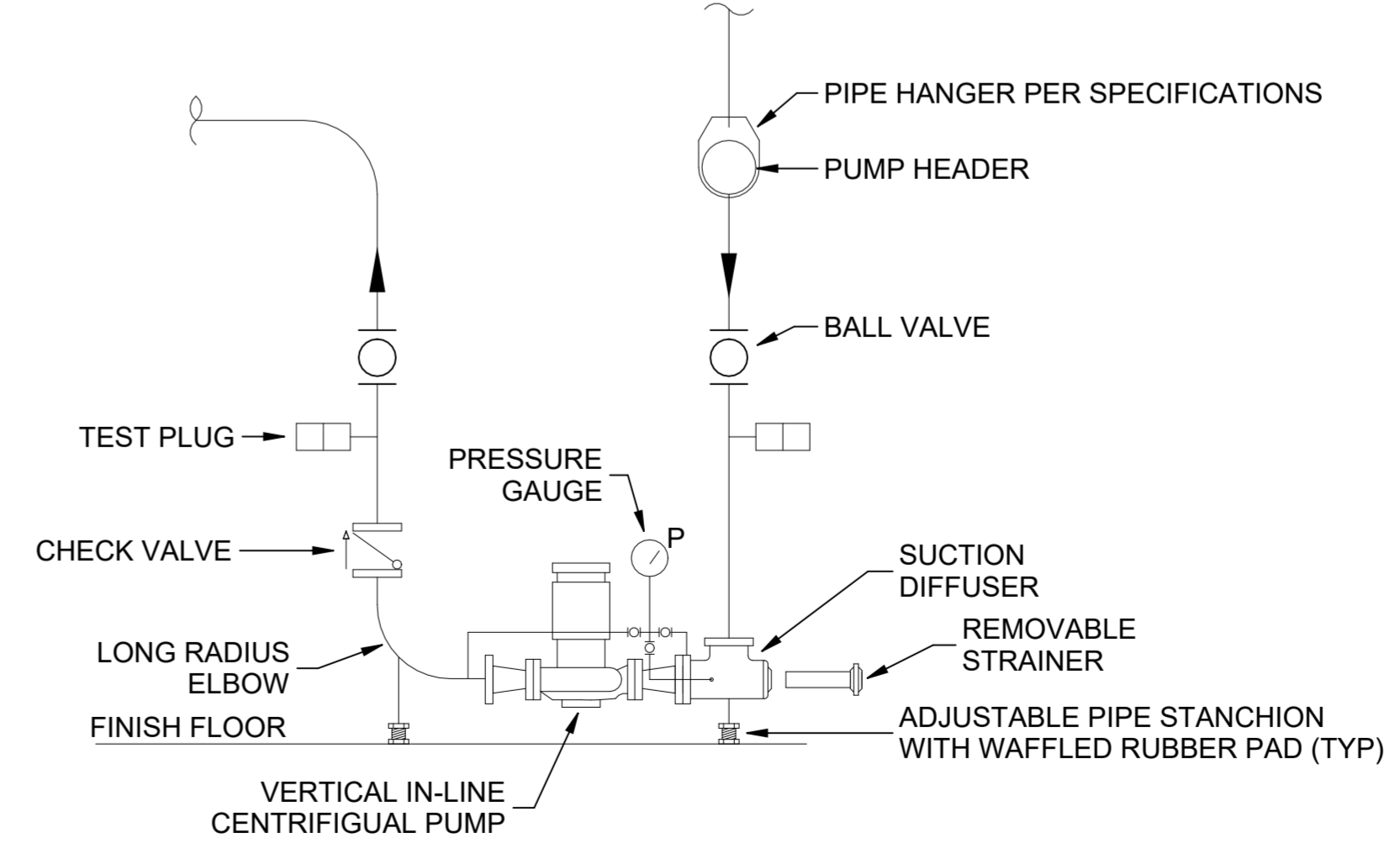
**D4 TERMINAL UNIT PIPING DETAIL**  
SCALE: NTS



**F4 RADIANT HEATER GAS PIPING DETAIL**  
SCALE: NTS



**A6 UNIT HEATER PIPING DETAIL**  
SCALE: NTS



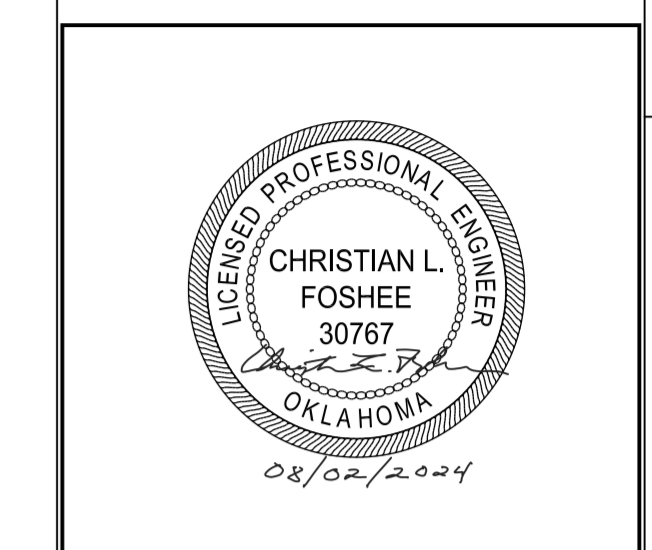
**F6 VERTICAL CLOSE-COUPLED INLINE CENTRIFUGAL PUMP DETAIL**  
SCALE: NTS

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**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

REVISION HISTORY:	
NO.	DESCRIPTION
PROJECT INFORMATION:	
DESIGNED BY:	AMF
DRAWN BY:	AMF
REVIEWED BY:	RRS
PROJECT MANAGER:	NDM
PROJECT NUMBER: 20190320	
SHEET TITLE:	
<b>DETAILS</b>	
ISSUE DATE:	2 AUGUST 2024
SHEET NUMBER:	M-502



**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

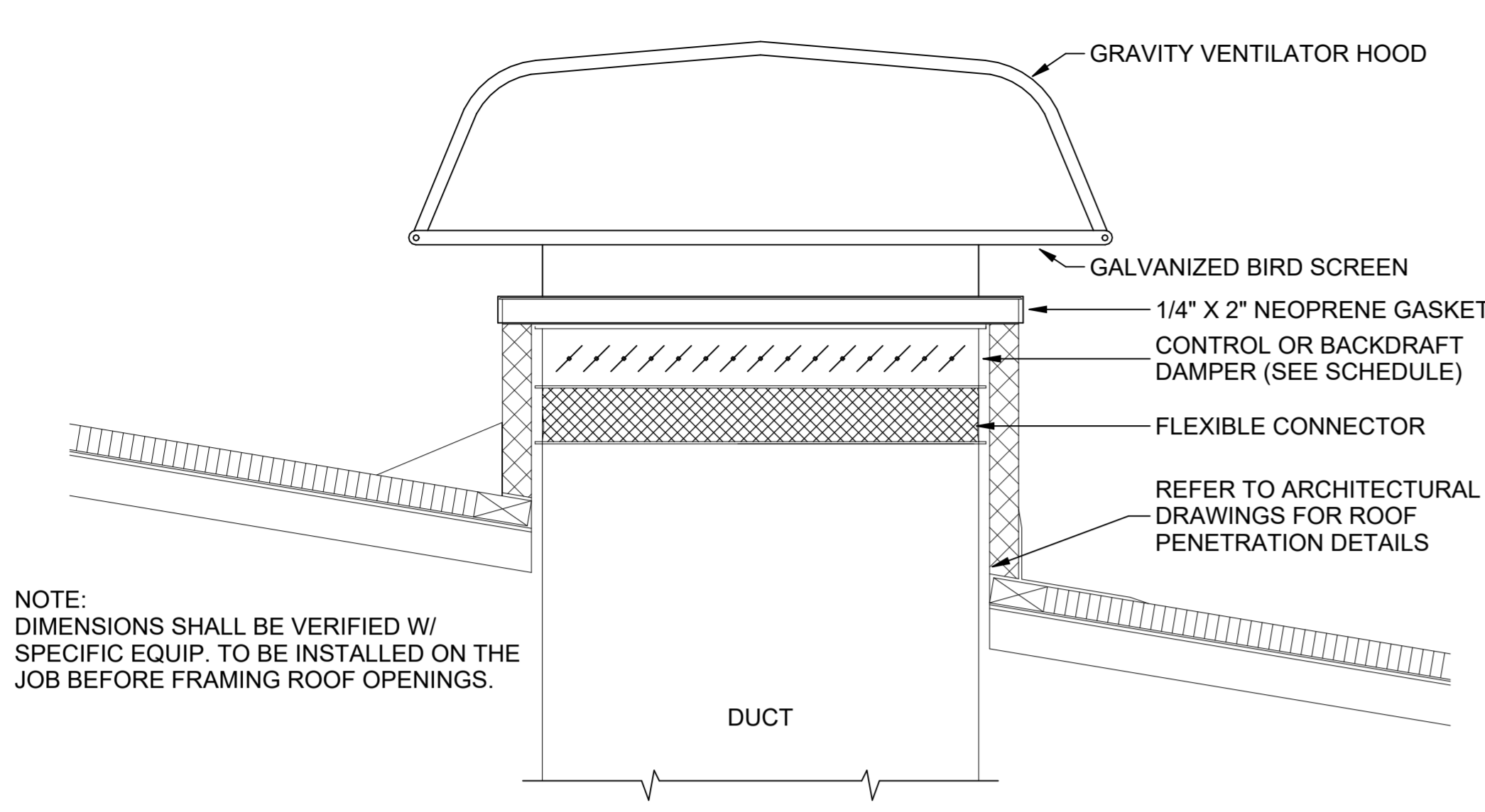
DESIGNED BY:	AMF
DRAWN BY:	AMF
REVIEWED BY:	RRS
PROJECT MANAGER:	NDM

PROJECT NUMBER:  
 20190320

SHEET TITLE:  
**DETAILS**

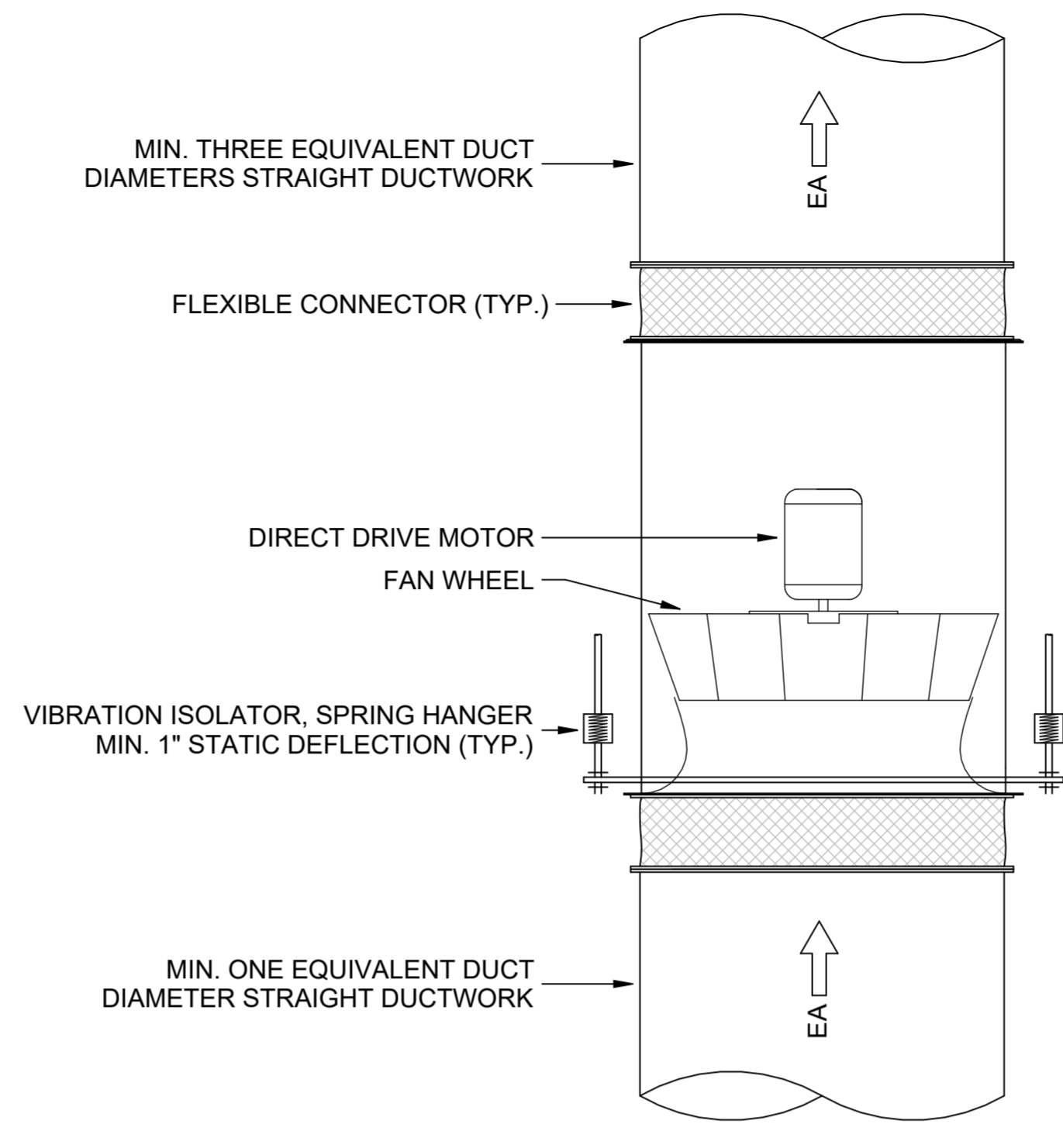
ISSUE DATE:  
 2 AUGUST 2024

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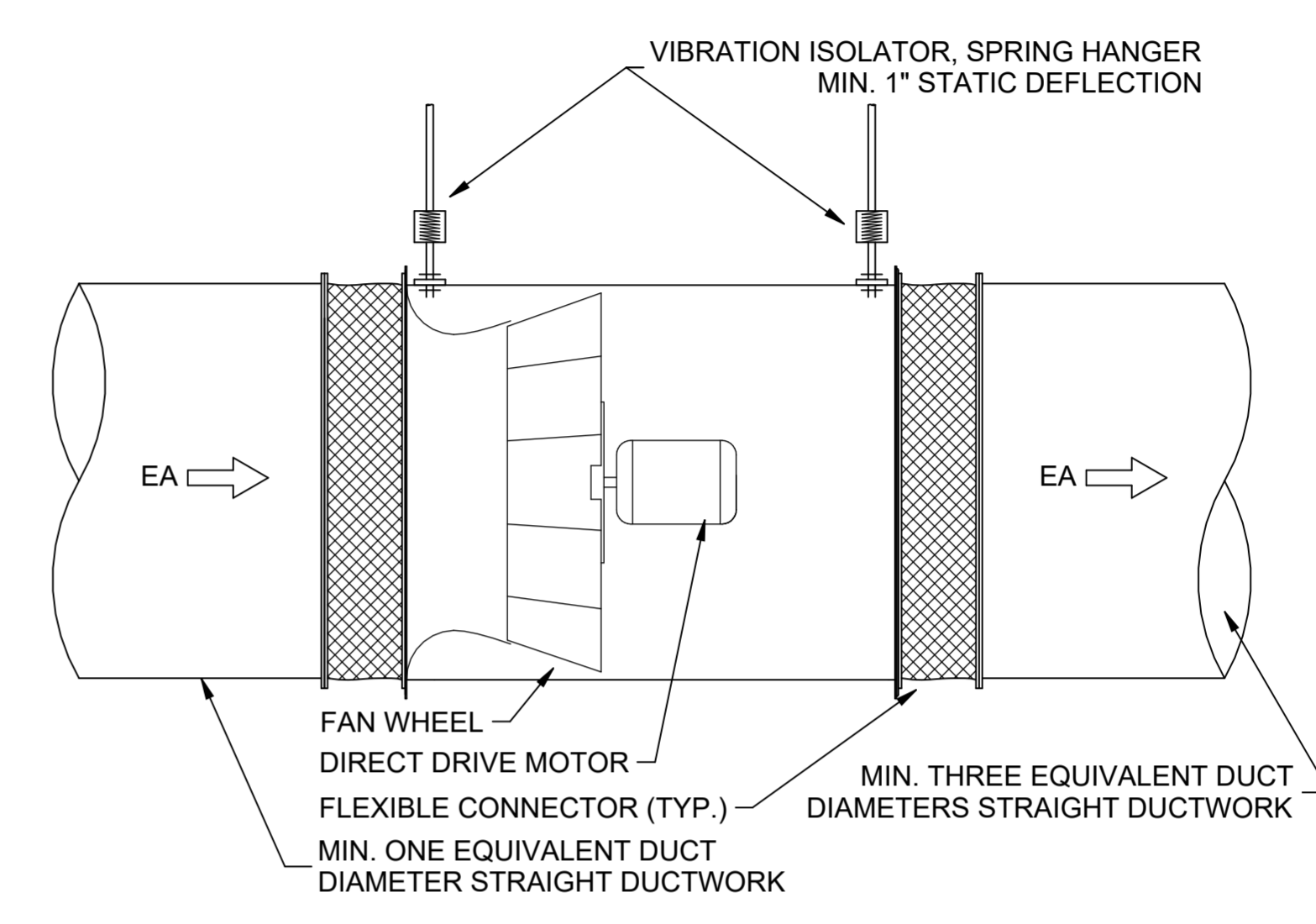


**A2** TYPICAL GRAVITY HOOD INSTALLATION DETAIL  
 SCALE: NTS

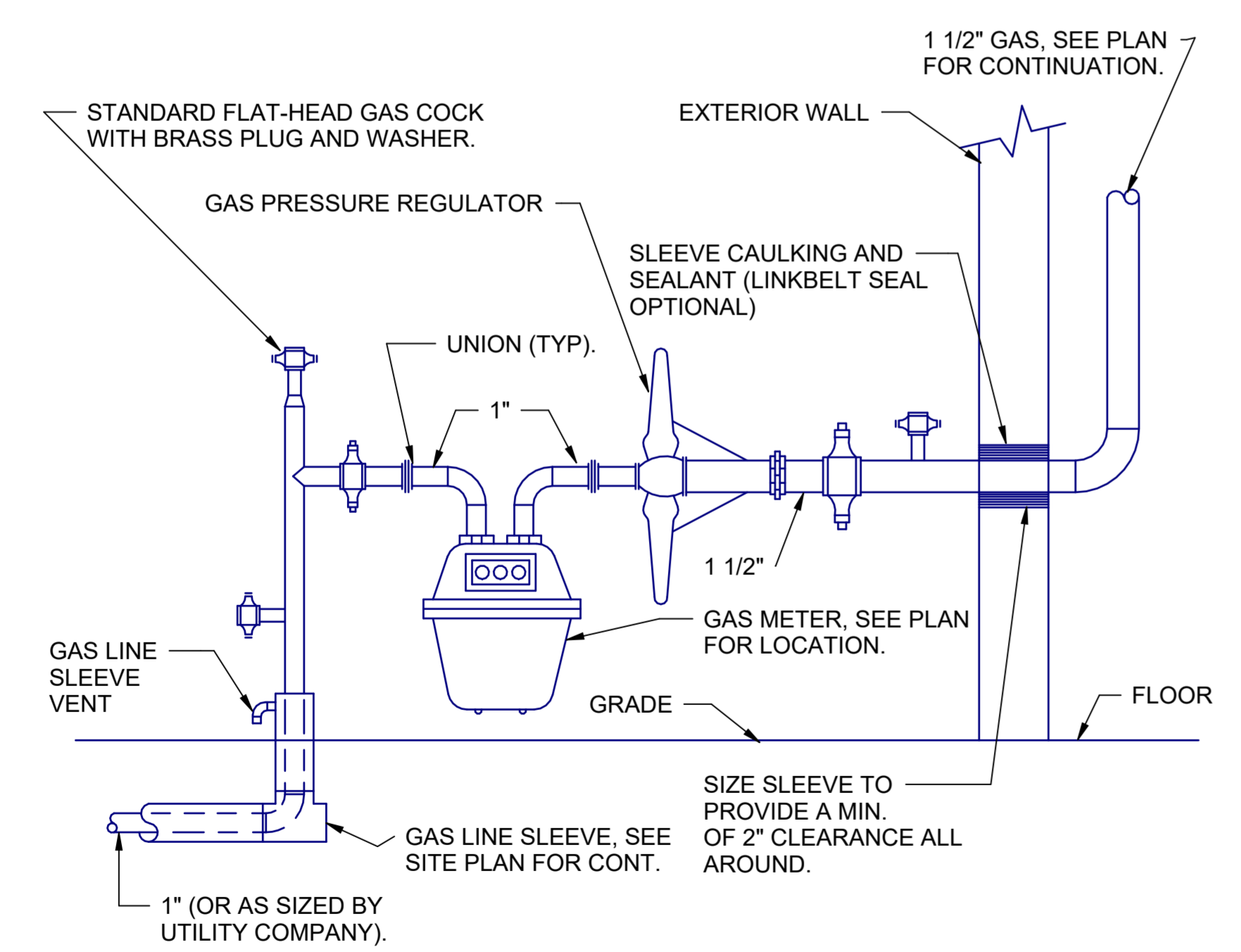
NOTE:  
 DIMENSIONS SHALL BE VERIFIED W/  
 SPECIFIC EQUIP. TO BE INSTALLED ON THE  
 JOB BEFORE FRAMING ROOF OPENINGS.



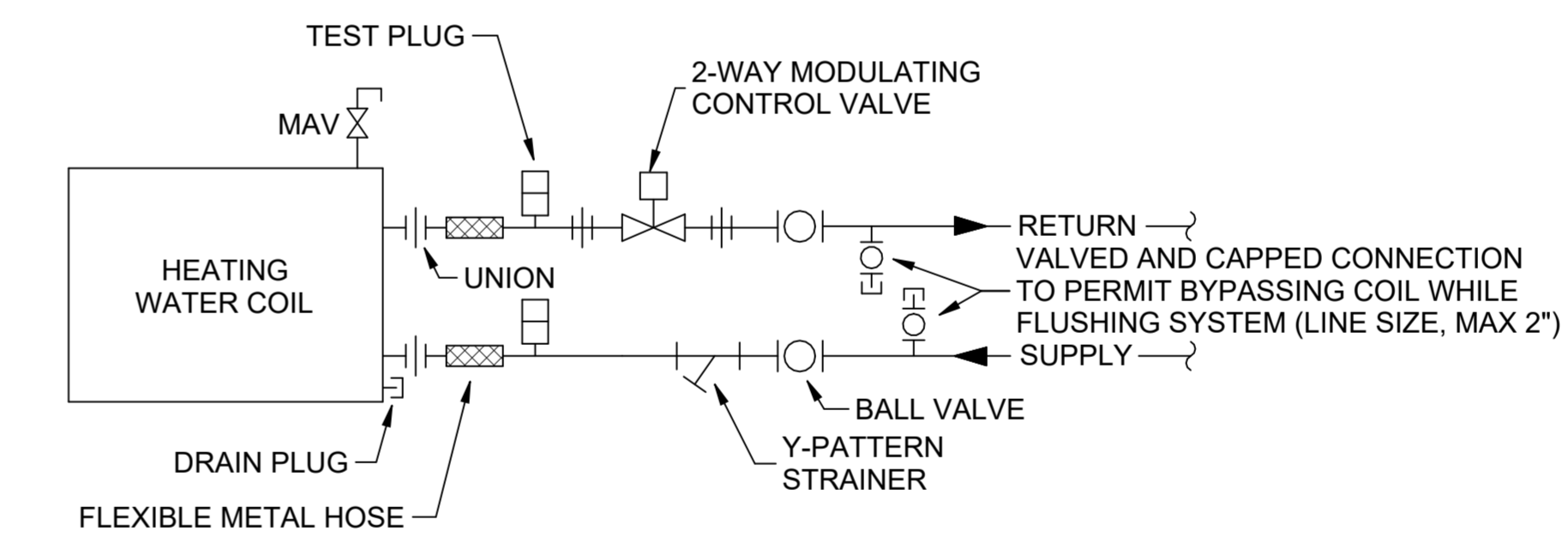
**E3** VERTICAL MOUNTED MIXED-FLOW  
 INLINE FAN INSTALLATION DETAIL  
 SCALE: NTS



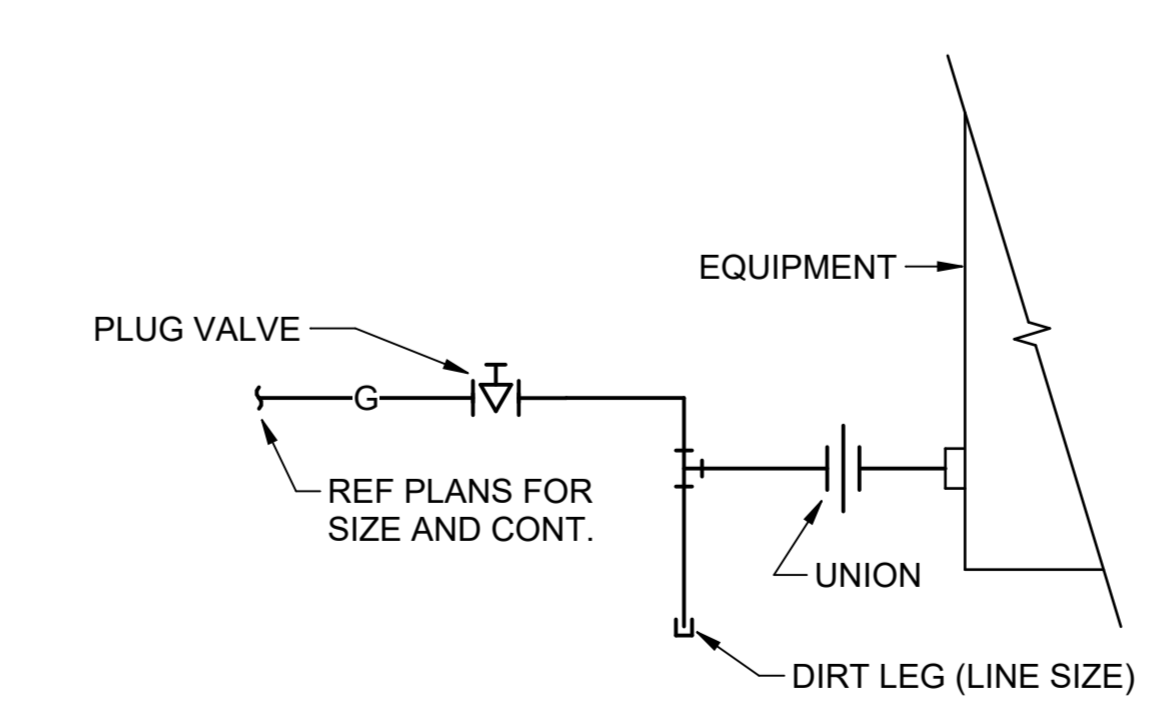
**F3** HORIZONTAL MOUNTED MIXED-FLOW  
 INLINE FAN INSTALLATION DETAIL  
 SCALE: NTS



**A6** GAS METER / REGULATOR ENTRY DETAIL  
 SCALE: NTS



**E5** RTU-02 HEATING COIL PIPING DETAIL  
 SCALE: NTS



**D6** TYPICAL GAS CONNECTION DETAIL  
 SCALE: NTS

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**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

REVISION HISTORY:

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PROJECT INFORMATION:

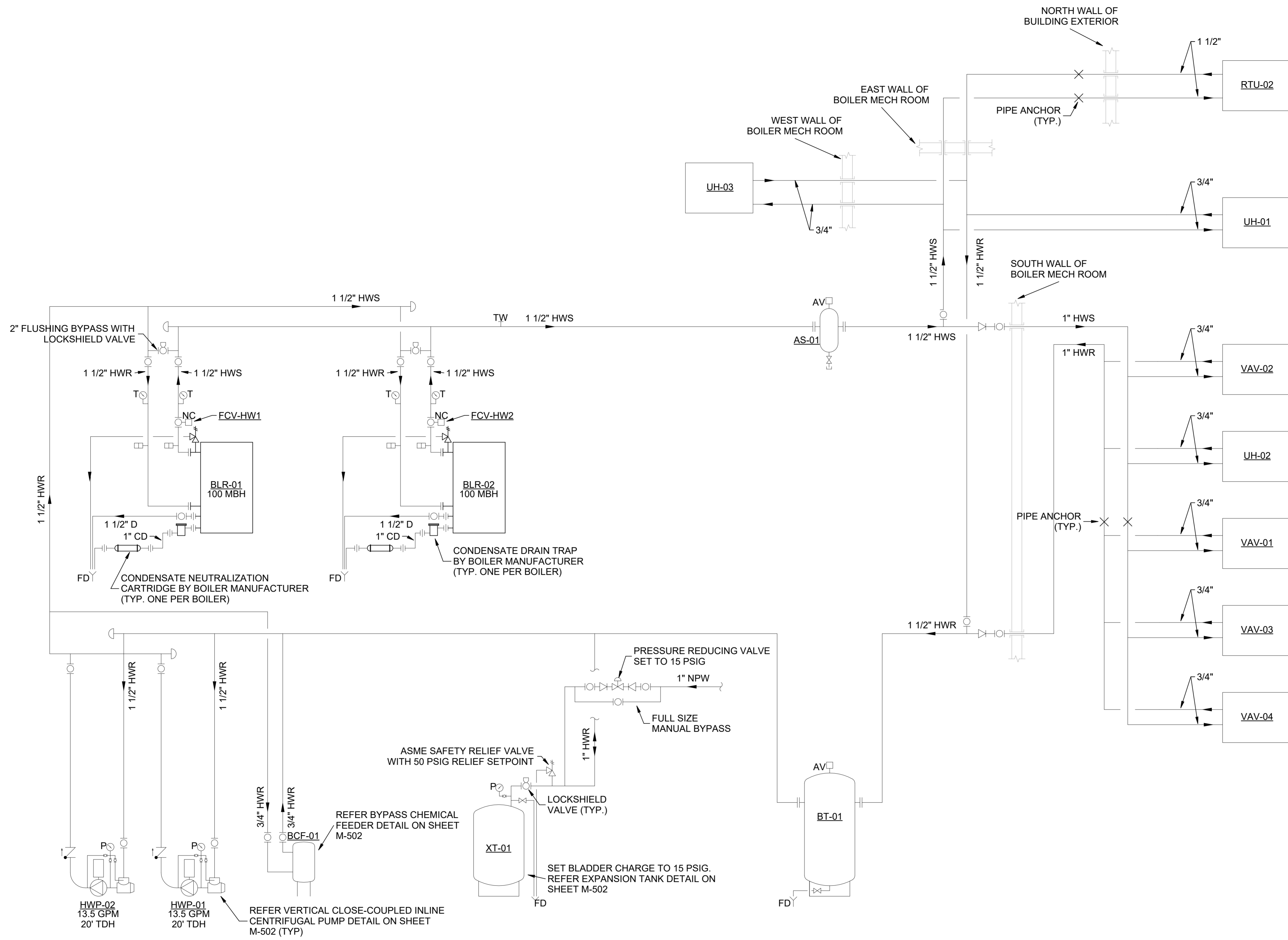
DESIGNED BY:	AMF
DRAWN BY:	AMF
REVIEWED BY:	RRS
PROJECT MANAGER:	NDM

PROJECT NUMBER:	20190320
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SHEET TITLE:	FLOW DIAGRAMS
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ISSUE DATE:	2 AUGUST 2024
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SHEET NUMBER:	M-601
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**A6** HEATING WATER FLOW DIAGRAM  
SCALE: NTS

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NO.	DESCRIPTION	DATE

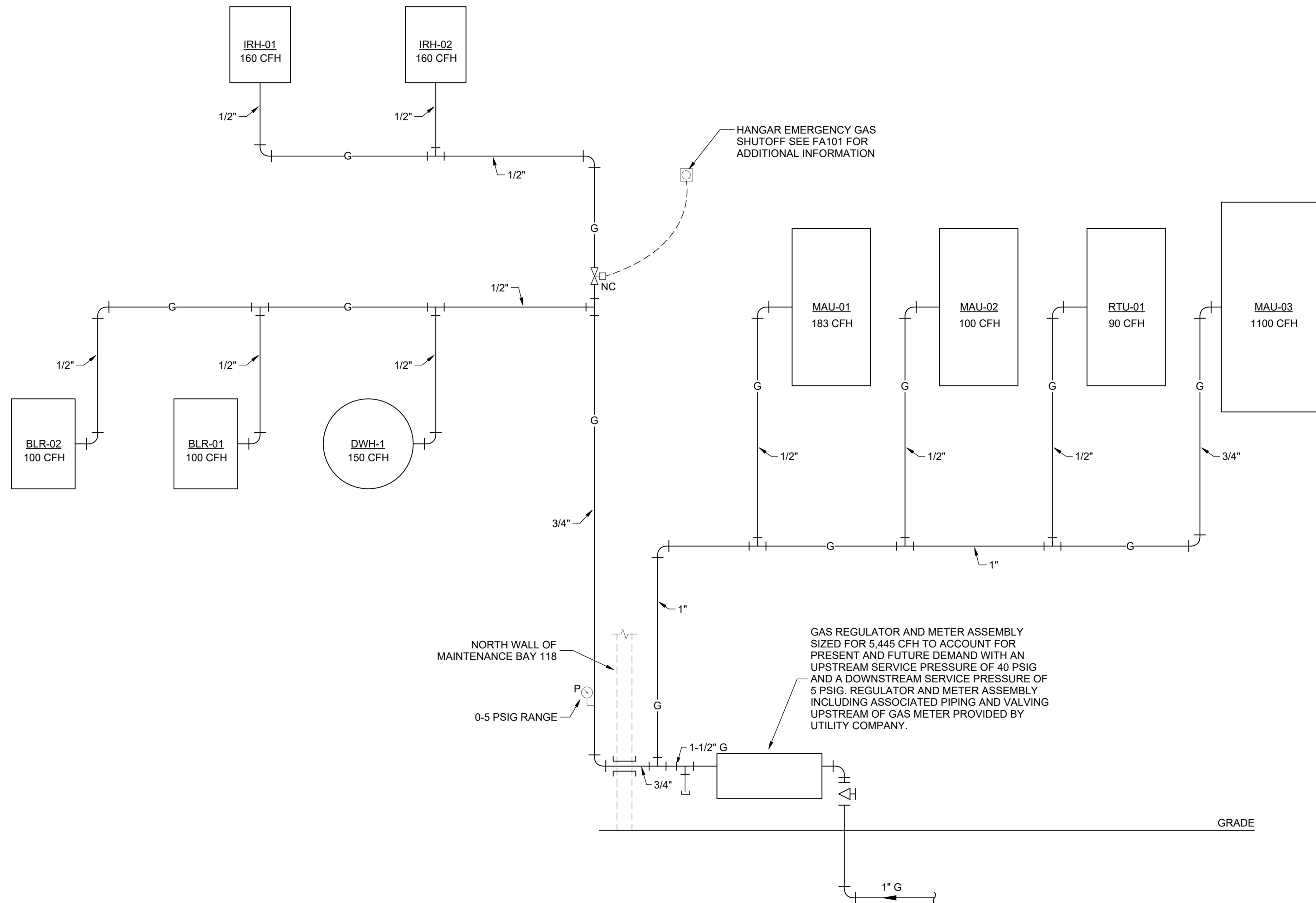
PROJECT INFORMATION:

DESIGNED BY:	<b>AMF</b>
DRAWN BY:	<b>AMF</b>
REVIEWED BY:	<b>RRS</b>
PROJECT MANAGER:	<b>NDM</b>

PROJECT NUMBER:	20190320
SHEET TITLE:	FLOW DIAGRAMS

ISSUE DATE:	2 AUGUST 2024
SHEET NUMBER:	M-602

**A6 NATURAL GAS FLOW DIAGRAM**  
SCALE: NTS



AIR HANDLING UNIT SCHEDULE

Table with columns: MARK, SUPPLY FAN DATA, EXHAUST FAN DATA, DX COOLING COIL DATA, HYDRONIC HEATING COIL DATA, GAS HEATING COIL DATA, ELECTRICAL DATA, NOTES. Rows include MAU-01, MAU-02, MAU-03, RTU-01, RTU-02.

NOTES:

- 1. MINIMUM 10:1 TURNDOWN MODULATING GAS VALVE.
2. MINIMUM 25:1 TURNDOWN MODULATING GAS VALVE.
3. HORIZONTAL DISCHARGE THROUGH MANUFACTURER FURNISHED INSULATED CURB, OR HORIZONTAL DISCHARGE FROM UNIT.
4. MODULATING HOT GAS REHEAT.
5. 100% OUTSIDE AIR COMPARATIVE ENTHALPY ECONOMIZER.
6. VFD-CONTROLLED CONDENSER FANS.
7. BACKWARD CURVED PLENUM, DIRECT-DRIVE, NEMA PREMIUM EFFICIENCY SUPPLY FANS WITH FACTORY-INSTALLED VFD AND MOTOR SHAFT GROUNDING.
8. ONE VARIABLE CAPACITY COMPRESSOR.
9. COMPRESSOR SOUND BLANKET.
10. PROVIDE INTAKE HOOD-MOUNTED CALIBRATED SCREEN DIFFERENTIAL PRESSURE STYLE OUTDOOR AIR FLOW MEASURING STATION. COORDINATE SCREEN SIZE AND BLANK-OFF PLATES, WHERE REQUIRED, WITH RTU PROVIDED.
11. MIXED FLOW PLENUM, DIRECT-DRIVE, NEMA PREMIUM EFFICIENCY FANS WITH FACTORY-INSTALLED VFD AND MOTOR SHAFT GROUNDING.
12. 2" MERV 8 FILTER.
13. 2" MERV 8 PRE FILTER, 4" MERV 13 FINAL FILTER.
14. MANUFACTURER FURNISHED DISCONNECT.
15. BY PAINT BOOTH MANUFACTURER.
16. PROVIDE DX UNITS WITH A2L REFRIGERANT IN COMPLIANCE WITH AIM ACT.

AIR DISTRIBUTION DEVICE SCHEDULE

Table with columns: MARK, TYPE, SERVICE, FACE SIZE (IN.xIN.), NECK SIZE (IN.xIN. OR IN.), NOTES. Rows include R-1, R-2, R-3, R-4, S-1, S-2, S-3, S-4, S-5.

NOTES:

- 1. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS AND MECHANICAL DRAWINGS TO COORDINATE DEVICE MOUNTING AND BORDER TYPE TO MATCH CEILING TYPE OR SURFACE MOUNT.
2. REFER TO ARCHITECT FOR FINISH.
3. PROVIDE INTEGRAL BALANCING DAMPER WHERE AN UPSTREAM BALANCING DAMPER IS NOT INDICATED ON PLANS.

MINI-SPLIT INDOOR UNIT SCHEDULE

Table with columns: MARK, TYPE, FAN DATA, COOLING DATA, HEATING DATA, ELECTRICAL DATA, NOTES. Rows include FC-01, FC-02, FC-03, FC-04.

NOTES:

- 1. FIELD INSTALLED CONDENSATE PUMP.
2. POWERED FROM ASSOCIATED OUTDOOR CONDENSING UNIT.
3. MANUFACTURER FURNISHED DISCONNECT.

OUTDOOR CONDENSING UNIT SCHEDULE

Table with columns: MARK, ASSOCIATED EQUIPMENT, TYPE, REFRIGERANT, COOLING DATA, HEATING DATA, ELECTRICAL DATA, NOTES. Rows include CU-01, CU-02, CU-03, CU-04.

NOTES:

- 1. MANUFACTURER FURNISHED DISCONNECT.
2. HAIL GUARD.
3. PROVIDE WITH LOW-AMBIENT KIT.
4. PROVIDE UNIT WITH A2L REFRIGERANT IN COMPLIANCE WITH AIM ACT.
5. PROVIDE WITH PRECAST CONCRETE EQUIPMENT PAD.

VAV BOX SCHEDULE

Table with columns: MARK, AIRFLOW, HOT WATER COIL, CAPACITY, EAT, LAT, FLOW, MIN. ROWS, MAX. WPD, MAX. APD, MAX. RAD. NC, INLET SIZE, NOTES. Rows include VAV-01, VAV-02, VAV-03, VAV-04.

NOTES:

- 1. CONTRACTOR SHALL FURNISH AND INSTALL EACH INDIVIDUAL TERMINAL UNIT WITH THE SAME CONFIGURATION, I.E. LOCATION OF COIL CONNECTIONS, CONTROL ENCLOSERS, ETC. AS SHOWN ON THE DRAWINGS.
2. RATED AT 1.0 IN. W.C. INLET PRESSURE, 0.5 IN. W.C. OUTLET PRESSURE.
3. VAV CONTROLLERS SHALL BE FURNISHED BY THE CONTRACTOR FOR FACTORY INSTALLATION BY VAV TERMINAL UNIT MANUFACTURER.
4. INTEGRAL 24V CONTROL TRANSFORMER.
5. MANUFACTURER FURNISHED DISCONNECT.

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LICENSED PROFESSIONAL ENGINEER seal for CHRISTIAN L. FOSHEE, 30767, OKLAHOMA, 08/02/2024.

Texas Air National Guard - 149th FW
Corrosion Control Facility
TXANG Project Number: KELL 169014
JBSA - Kelly Annex, TX

REVISION HISTORY table with columns: NO., DESCRIPTION, DATE.

PROJECT INFORMATION table with fields: DESIGNED BY: AMF, DRAWN BY: AMF, REVIEWED BY: RRS, PROJECT MANAGER: NDM.

PROJECT NUMBER: 20190320

SHEET TITLE: SCHEDULES

ISSUE DATE: 2 AUGUST 2024

SHEET NUMBER:

M-701

**FLOW CONTROL VALVE SCHEDULE**

MARK	ASSOCIATED EQUIPMENT	FLUID / SERVICE	FLUID TEMP (°F)	FLOW RATE (GPM)	NOMINAL VALVE SIZE	VALVE TYPE	CONFIGURATION	ACTION	NOTES
FCV-HW1	BLR-01 ISO VALVE	WATER	150	5.7	1 1/2"	BALL VALVE	2-WAY	2-POSITION	ALL
FCV-HW2	BLR-02 ISO VALVE	WATER	150	5.7	1 1/2"	BALL VALVE	2-WAY	2-POSITION	ALL

**NOTES:**

1. PROVIDE ACTUATOR FOR USE WITH 24V POWER SOURCE.
2. PROVIDE ACTUATOR WITH LIMIT SWITCHES.
3. REFER TO CONTROL DIAGRAMS FOR NECESSARY ACTUATOR FAILURE POSITIONS.

**PUMP SCHEDULE**

MARK	TYPE	SERVICE	DUTY POINT		MOTOR				NOTES
			CAPACITY (GPM)	TDH (FT. WC.)	RPM	RLA	HP	V / φ / Hz	
HWP-01	ECM, VERTICAL CLOSE-COUPLED IN-LINE CENTRIFUGAL	HEATING WATER	11.4	20	1100-4400	2.5	1/4	115 / 1 / 60	ALL
HWP-02	ECM, VERTICAL CLOSE-COUPLED IN-LINE CENTRIFUGAL	HEATING WATER	11.4	20	1100-4400	2.5	1/4	115 / 1 / 60	ALL

**NOTES:**

1. PROVIDE SUCTION DIFFUSER WITH REMOVABLE STRAINER AND LINE SIZE SYSTEM CONNECTION. INCLUDE 10-MESH OR BETTER START-UP STRAINER AND FINAL STAINLESS STEEL STRAINER.
2. CAPABLE OF INTEGRATION INTO BACNET FRONT-END CONTROL SYSTEM.

**EXPANSION TANK SCHEDULE**

MARK	TYPE	SERVICE	MIN. TANK VOLUME (GAL)	MIN. VOLUME ACCEPTANCE (GAL)	MIN. SYSTEM FILL PRESSURE (PSIG)	RELIEF VALVE WORKING PRES. (PSIG)	NOTES
XT-01	DIAPHRAGM, VERTICAL FLOOR-MOUNTED	HEATING WATER	7.8	3.1	15	50	ALL

**NOTES:**

1. PROVIDE ASME STAMPED VESSEL RATED FOR 125 PSIG OR GREATER WORKING PRESSURE.

**AIR SEPARATOR SCHEDULE**

MARK	TYPE	SERVICE	SYSTEM CONNECTION	MIN. FLOW (GPM)	MAX. WPD (PSIG)	NOTES
AS-01	IN-LINE COALESCING AIR/DIRT SEPARATOR	HEATING WATER	2	13.5	0.1	ALL

**NOTES:**

1. PROVIDE ASME STAMPED VESSEL RATED FOR 125 PSIG OR GREATER WORKING PRESSURE.

**CONDENSING HOT WATER BOILER SCHEDULE**

MARK	FLUID	DESIGN FLOW (GPM)	EWT (°F)	LWT (°F)	INPUT (MBH)	MIN OUTPUT (MBH)	MAX WPD (FT. W.C.)	FUEL	ELECTRICAL DATA	NOTES
									V / φ / Hz	
BLR-01	WATER	5.7	120	150	100	85	0.1	NATURAL GAS	115/1/60	ALL
BLR-02	WATER	5.7	120	150	100	85	0.1	NATURAL GAS	115/1/60	ALL

**NOTES:**

1. PROVIDE BOILER WITH LOW NOX BURNER (<20 PPM CORRECTED FOR 3% OXYGEN).
2. PROVIDE ASME GSD-1 COMPLIANT AND UL-LISTED FUEL TRAIN.
3. PROVIDE FACTORY-FURNISHED OR FACTORY-INSTALLED COMPONENTS AND ACCESSORIES TO INCLUDE BUT NOT BE LIMITED TO: SUPPLY WATER TEMPERATURE SENSOR, RETURN WATER TEMPERATURE SENSOR, MANUAL RESET HIGH-LIMIT AQUASTAT, SAFETY RELIEF VALVE, AND LOW WATER CUTOFF.
4. PROVIDE FACTORY-FURNISHED CONDENSATE TRAP AND CONDENSATE NEUTRALIZER CARTRIDGE.
5. BOILER'S PACKAGED CONTROLLER SHALL HAVE THE BUILT-IN CAPABILITY TO SEQUENCE A MINIMUM OF TWO BOILERS WITHOUT THE ADDITION OF AN EXTERNAL SEQUENCING CONTROL PANEL, OR ELSE AN EXTERNAL DEDICATED SEQUENCING CONTROL PANEL SHALL BE PROVIDED.
6. BOILER'S PACKAGED CONTROLLER SHALL HAVE NON-VOLATILE MEMORY THAT RETAINS ITS PROGRAMMING AFTER LOSS OF POWER.
7. CONFIGURED FOR CONDENSING OPERATION.

**BYPASS CHEMICAL FEEDER SCHEDULE**

MARK	SERVICE	VOLUME (GAL)	NOTES
BCF-01	HEATING WATER	2	ALL

**NOTES:**

1. PROVIDE DOME-BOTTOM, ASME STAMPED VESSEL RATED FOR 125 PSIG OR GREATER WORKING PRESSURE.
2. PROVIDE WITH LEGS TO KEEP FEEDER ABOVE MECHANICAL ROOM FLOOR.
3. PROVIDE UNIT MANUFACTURER'S FILTER BAG KIT INCLUDING ONE SPARE FILTER.

**BUFFER TANK SCHEDULE**

MARK	TYPE	SERVICE	VOLUME (GAL.)
BT-01	VERTICAL	HEATING WATER	100

**NOTES:**

1. PROVIDE ASME STAMPED VESSEL RATED FOR 125 PSIG OR GREATER WORKING PRESSURE.



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**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

REVISION HISTORY:

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PROJECT INFORMATION:

DESIGNED BY:	<b>AMF</b>
DRAWN BY:	<b>AMF</b>
REVIEWED BY:	<b>RRS</b>
PROJECT MANAGER:	<b>NDM</b>

PROJECT NUMBER:	20190320
SHEET TITLE:	<b>SCHEDULES</b>

ISSUE DATE:	2 AUGUST 2024
SHEET NUMBER:	<b>M-702</b>

LOUVER SCHEDULE											
MARK	SERVICE	ASSOCIATED EQUIPMENT	TYPE	WIDTH (IN.)	HEIGHT (IN.)	MIN. FREE AREA (SQ. FT.)	AIRFLOW (SCFM)	AIR VELOCITY (FPM)	PRESSURE DROP (IN. WC.)	NOTES	
LVR-01	EXHAUST	EF-02	EXTRUDED ALUMINUM DRAINABLE STATIONARY LOUVER	30	30	3.16	3245	1028	0.14	ALL	
LVR-02	EXHAUST	EF-03	EXTRUDED ALUMINUM DRAINABLE STATIONARY LOUVER	30	30	3.16	3245	1028	0.14	ALL	
LVR-03	EXHAUST	EF-04	EXTRUDED ALUMINUM DRAINABLE STATIONARY LOUVER	30	30	3.16	3245	1028	0.14	ALL	

NOTES:  
1. PROVIDE 2-COAT PROTECTIVE FINISH. CONTRACTOR SHALL COORDINATE WITH ARCHITECTURAL FINISHES TO SELECT COLOR TO MATCH SURROUNDING WALL.  
2. PROVIDE BIRD SCREEN.  
3. PROVIDE WITH MOTORIZED LOW-LEAK DAMPERS.

GRAVITY HOOD						
MARK	SERVICE	CAPACITY (CFM)	THROAT SIZE		ESP (IN. W.C.)	NOTES
			WIDTH (IN)	LENGTH (IN)		
GH-01	EXHAUST	4825	30	30	0.08	1,2,3,4
GH-02	EXHAUST	950	14	14	0.08	1,2,3,5

NOTES:  
1. 12" MANUFACTURED ROOF CURB WITH INTEGRAL CRICKET. REFER TO SPECIFICATION SECTION 074113.16.  
2. HINGED HOOD.  
3. BIRD SCREEN.  
4. DAMPER WITH TWO-POSITION 24V DC DAMPER ACTUATOR.  
5. PROVIDE WITH MOTORIZED LOW-LEAK DAMPERS.

FAN SCHEDULE												
MARK	TYPE	SERVES	FAN DATA			MOTOR DATA				INLET DIAMETER (IN. XIN. OR IN. Ø)	SOUND DATA INLET (dBA)	NOTES
			CAPACITY (CFM)	ESP (IN. W.C.)	SPEED (RPM)	DRIVE TYPE	OPERATING POWER (BHP)	SIZE (HP)	V / φ / Hz			
EF-01	SQUARE CENTRIFUGAL INLINE FAN	RESTROOM EXHAUST	435	0.75	1322	DIRECT	0.14	1/3	115 / 1 / 60	22X10	34	4
EF-02	MIXED FLOW INLINE FAN	HANGAR EXHAUST	3245	0.75	1322	DIRECT	0.8	1	480 / 3 / 60	20	74	1,2,3,4
EF-03	MIXED FLOW INLINE FAN	HANGAR EXHAUST	3245	0.75	1770	DIRECT	0.8	1	480 / 3 / 60	20	74	1,2,3,4
EF-04	MIXED FLOW INLINE FAN	HANGAR EXHAUST	3245	0.75	1770	DIRECT	0.8	1	480 / 3 / 60	20	74	1,2,3,4
EF-06	-	PAINT BOOTH	-	-	-	-	-	-	480 / 3 / 60	-	-	5
EF-07	-	PAINT MIX ROOM	950	-	-	-	-	-	480 / 3 / 60	-	-	5

NOTES:  
1. MOTOR RATED FOR 40°C.  
2. UNIT SHALL BE UL-705 LISTED FOR POWER VENTILATION SERVICE.  
3. L(10) 200K-HOUR BEARINGS.  
4. MANUFACTURER FURNISHED DISCONNECT.  
5. BY PAINT BOOTH MANUFACTURER.

UNIT HEATER												
MARK	LOCATION	TYPE	CAPACITY (MBH)	AIRFLOW (CFM)	FLOW (GPM)	MAX. WPD (FT. W.C.)	EWT (°F)	LWT (°F)	MOTOR SIZE (W)	V / φ / Hz	FLA	NOTES
UH-01	121 MECH	HORIZONTAL	7.2	245	0.5	0.3	150	120	16	115 / 1 / 60	1	ALL
UH-02	123 ELEC	HORIZONTAL	7.2	245	0.5	0.3	150	120	16	115 / 1 / 60	1	ALL
UH-03	122 FIRE PROT	HORIZONTAL	7.2	245	0.5	0.3	150	120	16	115 / 1 / 60	1	ALL

NOTES:  
1. MANUFACTURER FURNISHED DISCONNECT.

GAS FIRED RADIANT TUBE HEATER					
MARK	INPUT (MBH)	NATURAL GAS INLET PRESSURE (IN. W.C.)	ELECTRICAL DATA		NOTES
			V/Ø/HZ	FLA	
IRH-01	160	5.0	120/1/60	1.0	ALL
IRH-02	160	5.0	120/1/60	1.0	ALL

NOTES:  
1. HIGH EFFICIENCY REFLECTOR.  
2. MANUFACTURER FURNISHED DISCONNECT.  
3. PROVIDE WITH VENTING KIT.

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**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

REVISION HISTORY:

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PROJECT INFORMATION:  
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DRAWN BY: **AMF**  
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PROJECT MANAGER: **NDM**

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**20190320**

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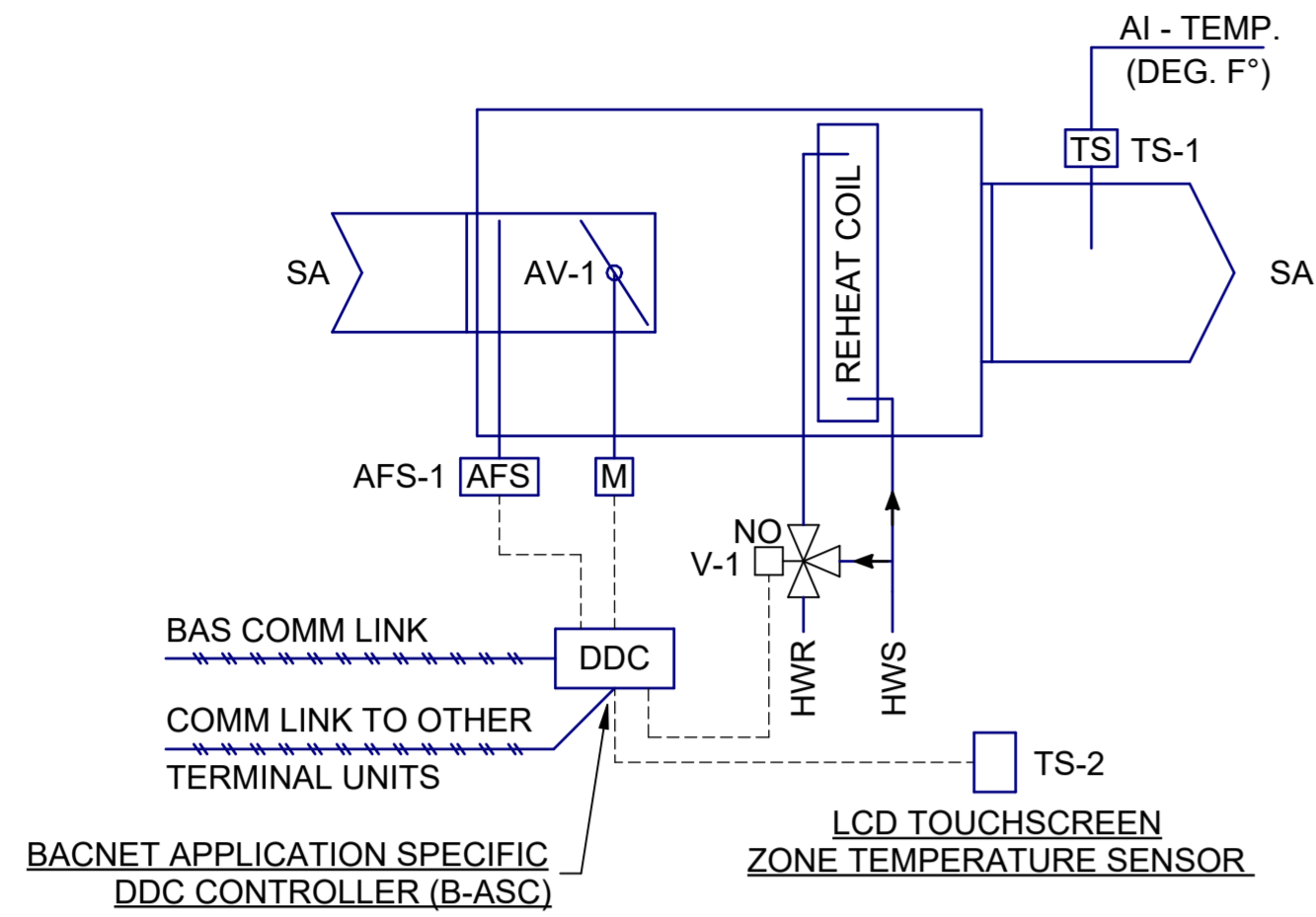
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**M-703**

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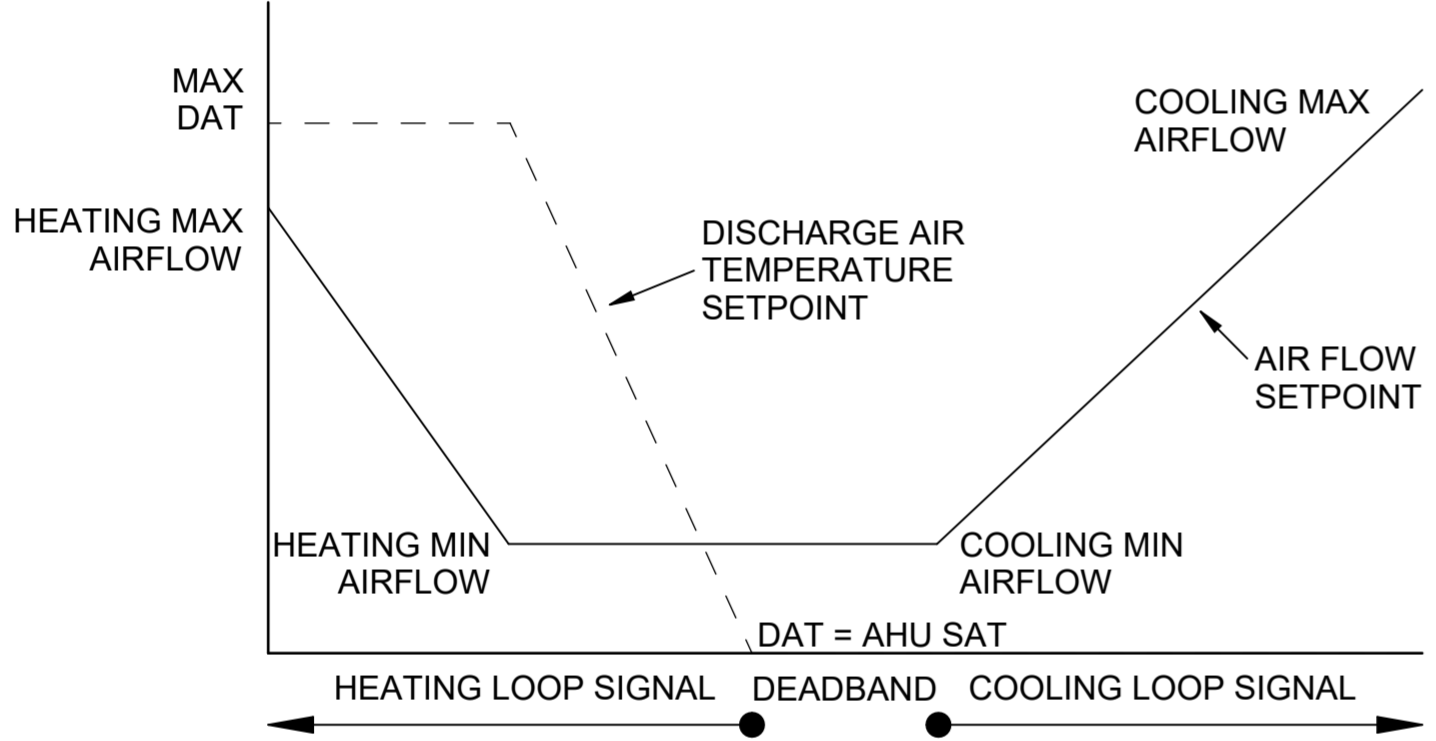
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**A2 VAV TERMINAL UNIT CONTROL DIAGRAM**  
SCALE: NTS



**SEQUENCE OF OPERATION**

WHEN TERMINAL UNIT IS IN UNOCCUPIED MODE, TERMINAL UNIT AIR VALVE AND REHEAT COIL CONTROL VALVE SHALL REMAIN FULLY CLOSED. IF TERMINAL UNIT DDC CONTROLLER DETECTS A FAULT CONDITION, TERMINAL UNIT AIR VALVE SHALL FAIL IN POSITION, REHEAT COIL CONTROL VALVE SHALL OPERATE ACCORDING TO NORMAL SEQUENCE OF OPERATION, AND A LEVEL 4 ALARM SHALL BE GENERATED AT THE BAS.

**OCCUPANCY:** OCCUPANCY RECEIVED FROM THE BAS NETWORK BY TIME SCHEDULE AND OPTIMIZED START. IF NO UPDATE IS RECEIVED FROM THE BAS NETWORK FOR MORE THAN THE COMMUNICATIONS FAILURE DELAY OF 15 MINUTES (ADJ.), OCCUPANCY COMMAND FALLS BACK INTO OCCUPIED MODE.

**OCCUPANCY STATUS:** IS DERIVED AS MENTIONED ABOVE. THE OCCUPANT CAN FORCE THE SYSTEM INTO BYPASS MODE DURING UNOCCUPIED MODE VIA THE LCD TOUCHSCREEN ZONE TEMPERATURE SENSOR. THE OVERRIDE DELAY CAN BE ADJUSTED THROUGH BYPASS TIME 120 MIN. (ADJ.).

**SPACE TEMPERATURE SETPOINTS:**

UNOCCUPIED COOLING SETPOINT:	COOLING SETPOINT DURING UNOCCUPIED MODE.	85°F
OCCUPIED COOLING SETPOINT:	COOLING SETPOINT DURING OCCUPIED MODE.	78°F
OCCUPIED HEATING SETPOINT:	HEATING SETPOINT DURING OCCUPIED MODE.	68°F
UNOCCUPIED HEATING SETPOINT:	HEATING SETPOINT DURING UNOCCUPIED MODE.	55°F
SETPOINT OFFSET:	SETPOINT ADJUSTMENT VIA LCD TOUCHSCREEN ZONE SENSOR.	+/- 2°F

THE ACTUAL COOLING SETPOINT IS DERIVED BASED ON OCCUPANCY STATUS AND SETPOINT OFFSET. THE ACTUAL HEATING SETPOINT IS DERIVED BASED ON OCCUPANCY STATUS AND SETPOINT OFFSET. THE EFFECT SETPOINT REFLECTS ACTUAL COOLING SETPOINT OR ACTUAL HEATING SETPOINT DEPENDING ON HVAC MODE STATUS.

**HVAC MODE COMMAND:** HVAC MODE COMMAND IS RECEIVED FROM THE BAS NETWORK. IF NO UPDATE IS RECEIVED FROM THE NETWORK FOR MORE THAN COMMUNICATION FAILURE DELAY 15 MIN. (ADJ.), HVAC MODE COMMAND FALLS BACK TO AUTO. THE MODES ARE: AUTO, HEAT, MORNING WARM UP, COOL, PRE COOL, AND OFF.

**AIR FLOW CONTROL SETPOINTS:**

MINIMUM FLOW SETPOINT:	MINIMUM FLOW SETPOINT DURING OCCUPIED MODE.
MAXIMUM COOLING FLOW SETPOINT:	MAXIMUM FLOW SETPOINT DURING COOLING MODE.
MINIMUM HEATING FLOW SETPOINT:	MINIMUM FLOW SETPOINT WHEN REHEAT COIL IS ACTIVE.
MAXIMUM HEATING FLOW SETPOINT:	MAXIMUM FLOW SETPOINT DURING HEATING MODE.
MINIMUM UNOCCUPIED FLOW SETPOINT:	MINIMUM FLOW SETPOINT DURING UNOCCUPIED MODE.

THE ACTUAL FLOW SETPOINT IS CALCULATED BASED ON THE CONTROL VARIABLES DESCRIBED BELOW.

**DUCT INLET TEMPERATURE:** DUCT INLET TEMPERATURE IS RECEIVED FROM THE AHU SERVING THE TERMINAL UNIT VIA THE BAS NETWORK. USING DUCT INLET TEMPERATURE AND TEMPERATURE SETPOINT AVERAGE (ACTUAL COOLING SETPOINT AND ACTUAL HEATING SETPOINT) THE SYSTEM EVALUATES WHETHER THE INLET TEMPERATURE IS SUITABLE FOR COOLING OR HEATING THE SPACE. IF HVAC MODE STATUS IS IN MORNING WARM-UP, THE AIR IS BY DEFAULT CONSIDERED SUITABLE FOR HEATING THE SPACE.

**COOLING MODE:** WHEN THE AIR IS SUITABLE FOR COOLING THE SPACE, ACTUAL FLOW SETPOINT MODULATES BETWEEN MINIMUM FLOW SETPOINT AND MAXIMUM COOLING FLOW SETPOINT BASED ON TERMINAL LOAD. OTHERWISE, WHEN THE AIR IS TOO WARM, ACTUAL FLOW SETPOINT IS BY DEFAULT EQUAL TO MINIMUM FLOW SETPOINT.

**HEATING MODE:** WHEN THE AIR IS SUITABLE FOR HEATING THE SPACE, ACTUAL FLOW SETPOINT MODULATES BETWEEN MINIMUM FLOW SETPOINT AND MAXIMUM HEATING FLOW SETPOINT. OTHERWISE, WHEN THE AIR IS TOO COLD, ACTUAL FLOW SETPOINT IS BY DEFAULT EQUAL TO MINIMUM FLOW SETPOINT. REGARDLESS, WHEN DUCT HEATING IS REQUIRED, MINIMUM FLOW SETPOINT IS REPLACED BY THE HIGHEST VALUE BETWEEN MINIMUM FLOW SETPOINT AND MINIMUM HEATING FLOW SETPOINT.

**OCCUPANCY STATUS:** WHEN IN UNOCCUPIED MODE, THE MINIMUM FLOW SETPOINT IS REPLACED BY MINIMUM UNOCCUPIED FLOW SETPOINT.

**DUAL MAXIMUM:** IN HEATING MODE, THE ACTUAL FLOW SETPOINT IS CONTROLLED BY THE FOLLOWING METHOD. THE FIRST 50 PERCENT OF THE HEATING LOAD ADJUSTS THE DISCHARGE AIR SETPOINT BETWEEN 55°F AND 85°F (ADJ.). THE SECOND 50 PERCENT OF THE HEATING LOAD ADJUSTS THE ACTUAL FLOW SETPOINT BETWEEN MINIMUM HEATING FLOW SETPOINT AND MAXIMUM HEATING FLOW SETPOINT.

**AIR FLOW CALCULATION:** THE ACTUAL FLOW IS CALCULATED USING THE DIFFERENTIAL PRESSURE FROM THE ONBOARD SENSOR AND THE VAV BOX K-FACTOR CALIBRATED DURING TEST & BALANCE.

**HOT WATER REHEAT:** WHEN ACTUAL FLOW IS AT HEATING MINIMUM AND SPACE TEMPERATURE DROPS BELOW THE ACTUAL HEATING SETPOINT, THEN MODE SHALL BE HEATING. FROM 0% TO 50% HEATING, THE AIR VALVE SHALL MODULATE TO MAINTAIN HEATING MINIMUM AIRFLOW AND REHEAT COIL CONTROL VALVE SHALL MODULATE TO PROVIDE DISCHARGE AIR TEMPERATURE BETWEEN 55°F AND 85°F (ADJ.) AS NEEDED TO MAINTAIN THE ACTUAL HEATING SETPOINT. FROM 51% TO 100% HEATING THE REHEAT COIL CONTROL VALVE SHALL MODULATE TO MAINTAIN A DISCHARGE AIR TEMPERATURE SETPOINT OF 85°F (ADJ.) AND TERMINAL UNIT AIR VALVE SHALL MODULATE AIR FLOW BETWEEN THE HEATING MINIMUM AND HEATING MAXIMUM VALUES TO MAINTAIN SPACE TEMPERATURE ACTUAL HEATING SETPOINT.

EQUIPMENT INPUT / OUTPUT SUMMARY VAV TERMINAL UNITS	BO	BI	AI	AO	PROGRAMS
SINGLE DUCT TERMINAL UNIT WITH REHEAT, VARIABLE VOLUME	ENABLE / DISABLE				
TERMINAL UNIT OCCUPIED / UNOCCUPIED	OPEN / CLOSE	●			
TERMINAL UNIT DDC CONTROLLER STATUS	OCCUPIED / UNOCCUPIED				
SUPPLY AIR VOLUME, AFS-1	STATUS OPEN				
SUPPLY AIR VALVE POSITION, AV-1	ALARM		●		
REHEAT COIL CONTROL VALVE, V-1	STATUS OPEN		●		
LEAVING SUPPLY AIR TEMPERATURE, TS-1	AIRFLOW (CFM)				
ZONE TEMPERATURE SENSOR, TS-2	POSITION (% OPEN)				
RTU-01 SUPPLY AIR TEMPERATURE	FREQUENCY (HZ)				
	RELATIVE HUMIDITY (%)				
	FREQUENCY (HZ)				
	ELECTRIC				
	POSITION (% OPEN)				
	RESET				
	HIGH LIMIT ALARM				
	LOW LIMIT ALARM				
	ALARM / ABNORMAL OFF				
	RUN TIME TOTAL				
	GRAPHIC				●

**A6 DUAL-MAX VAV CONTROLS**  
SCALE: NTS

Texas Air National Guard - 149th FW  
Corrosion Control Facility  
TXANG Project Number: KELL 169014  
JBSA - Kelly Annex, TX

REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: **AMF**

DRAWN BY: **AMF**

REVIEWED BY: **RRS**

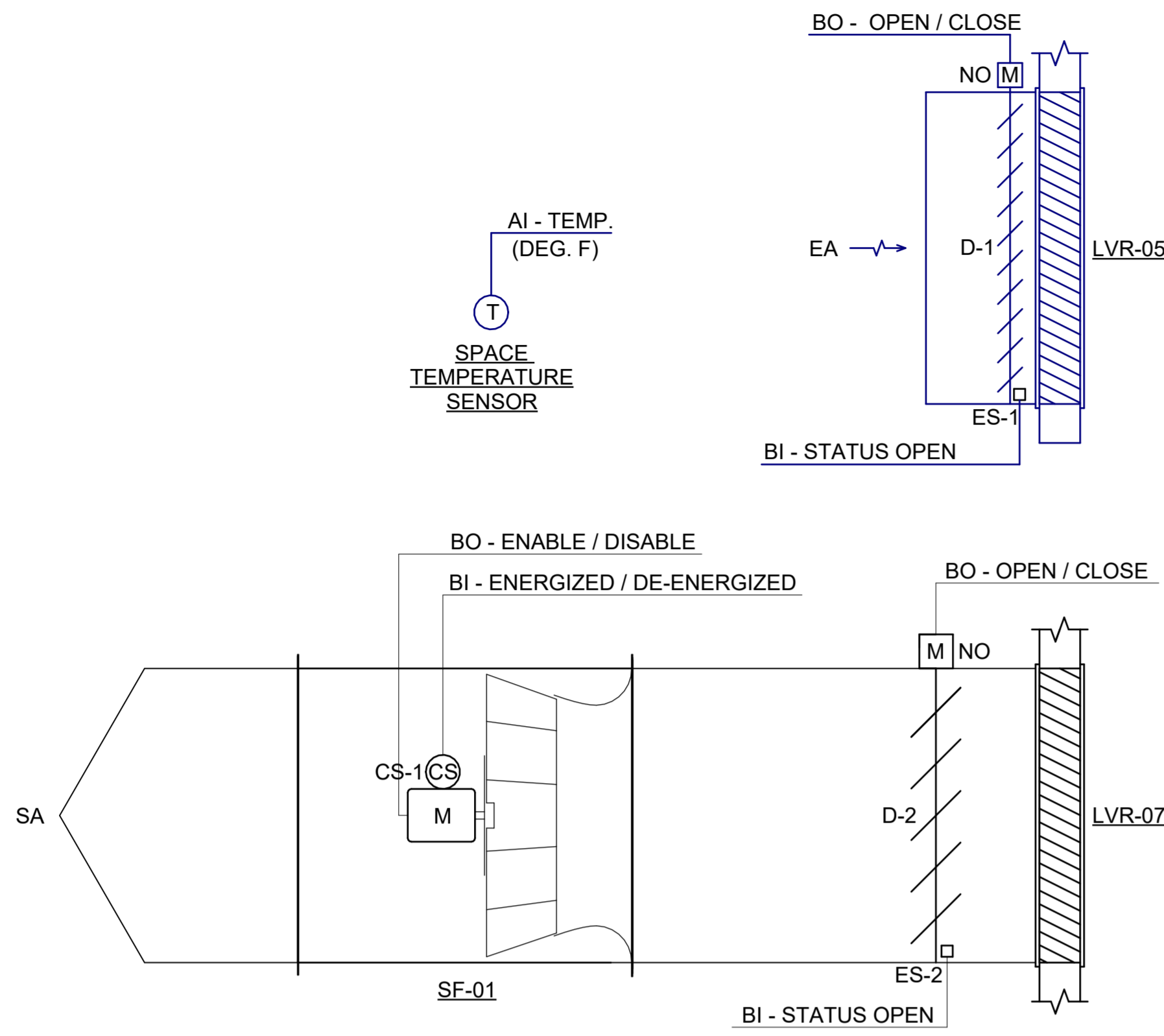
PROJECT MANAGER: **NDM**

PROJECT NUMBER: **20190320**

SHEET TITLE: **CONTROLS**

ISSUE DATE: **2 AUGUST 2024**

SHEET NUMBER: **M-801**



**A3 SINGLE SUPPLY FAN VENTILATION SYSTEM CONTROLS**  
SCALE: NTS

**SEQUENCE OF OPERATION - VENTILATION SUPPLY FAN SF-01**

**GENERAL:**  
SUPPLY FAN SF-01 SHALL BE ENABLED / DISABLED AUTOMATICALLY ACCORDING TO SEQUENCE OF OPERATIONS OUTLINED BELOW, UNLESS OTHERWISE COMMANDED BY BAS OPERATOR OR LOCAL COMMAND.

**SPACE TEMPERATURE CONTROL:**  
WHEN SPACE TEMPERATURE EXCEEDS 85°F (ADJ.), DAMPER MOTORS FOR DAMPERS D-1 AND D-2 SHALL BE COMMANDED TO OPEN DAMPERS D-1 AND D-2, AND END SWITCHES ES-1 AND ES-2 SHALL VERIFY DAMPER OPEN STATUS. UPON PROOF OF DAMPER OPEN STATUS, SUPPLY FAN SHALL BE ENERGIZED.

WHEN SPACE TEMPERATURE DROPS BELOW 83°F (ADJ.), SUPPLY FAN SHALL BE DE-ENERGIZED AND DAMPER MOTORS FOR DAMPERS D-1 AND D-2 SHALL BE CONTROLLED TO CLOSE DAMPERS D-1 AND D-2.

IF CURRENT SENSING RELAY INDICATES SUPPLY FAN HAS FAILED, A LEVEL 3 ALARM SHALL BE GENERATED AT THE BAS. STATUS OF FAN AS INDICATED BY CURRENT SENSING RELAY SHALL BE MONITORED AT THE BAS.

EQUIPMENT INPUT / OUTPUT SUMMARY SF-01	BO		BI		AI		AO		PROGRAMS									
	ENABLE / DISABLE	OPEN / CLOSE	STATUS	STATUS OPEN	ENERGIZED / DE-ENERGIZED	AIRFLOW (CFM)	PRESSURE (IN. W.G.)	FREQUENCY (HZ)	TEMPERATURE (DEG. F.)	RELATIVE HUMIDITY (%)	ELECTRIC	POSITION (% OPEN)	RESET	HIGH LIMIT ALARM	LOW LIMIT ALARM	ALARM / ABNORMAL OFF	RUN TIME TOTAL	GRAPHIC
SF-01 ENABLE / DISABLE	●																	
SF-01 CURRENT SENSING RELAY, CS-1			●															
DAMPER D-1 ACTUATOR				●														
DAMPER D-1 END SWITCH, ES-1					●													
DAMPER D-2 ACTUATOR				●														
DAMPER D-2 END SWITCH, ES-2					●													
SPACE TEMPERATURE SENSOR, TS-1								●										

**D2 HYDRONIC UNIT HEATER CONTROLS**  
SCALE: NTS

**SEQUENCE OF OPERATION**

UNIT HEATER SHALL REMAIN CONTINUOUSLY ENABLED UNLESS DISABLED BY LOCAL OPERATOR COMMAND AT DISCONNECT SWITCH. WHEN SPACE TEMPERATURE AS SENSED BY SPACE TEMPERATURE SENSOR DROPS BELOW 50°F (ADJ.), UNIT HEATER SUPPLY FAN SHALL BE ENERGIZED AND HEATING COIL CONTROL VALVE SHALL OPEN. WHEN SPACE TEMPERATURE REACHES 55°F (ADJ.), UNIT HEATER SUPPLY FAN SHALL BE DE-ENERGIZED AND HEATING COIL CONTROL VALVE SHALL CLOSE.

BAS SHALL MONITOR SPACE TEMPERATURE SENSOR. IF SPACE TEMPERATURE DROPS BELOW 40°F (ADJ.), BAS SHALL GENERATE A LEVEL 3 ALARM.

EQUIPMENT INPUT / OUTPUT SUMMARY SF-01	BO		BI		AI		AO		PROGRAMS									
	ENABLE / DISABLE	OPEN / CLOSE	STATUS	STATUS OPEN	ENERGIZED / DE-ENERGIZED	AIRFLOW (CFM)	POSITION (% OPEN)	FREQUENCY (HZ)	TEMPERATURE (DEG. F.)	RELATIVE HUMIDITY (%)	ELECTRIC	POSITION (% OPEN)	RESET	HIGH LIMIT ALARM	LOW LIMIT ALARM	ALARM / ABNORMAL OFF	RUN TIME TOTAL	GRAPHIC
SPACE TEMPERATURE SENSOR, TS-1																		
HEATING WATER CONTROL VALVE									●									

**F2 DX SPLIT SYSTEM CONTROLS**  
SCALE: NTS

**SEQUENCE OF OPERATION: DX SPLIT SYSTEMS**

EQUIPMENT SHALL BE ASSOCIATED AS FOLLOWS:

- EVAPORATING UNIT FC-01, CONDENSING UNIT CU-01
- EVAPORATING UNIT FC-02, CONDENSING UNIT CU-02
- EVAPORATING UNIT FC-03, CONDENSING UNIT CU-03
- EVAPORATING UNIT FC-04, CONDENSING UNIT CU-04

DX SPLIT SYSTEM EVAPORATING UNIT SHALL BE ENABLED LOCALLY BY OPERATOR COMMAND AT WALL-MOUNTED SYSTEM CONTROLLER FURNISHED BY DX SPLIT SYSTEM MANUFACTURER AND SHALL REMAIN CONTINUOUSLY ENABLED UNLESS COMMANDED OFF AT WALL-MOUNTED CONTROLLER. CONDENSING UNIT AND EVAPORATING UNIT SHALL OPERATE IN ACCORDANCE WITH PACKAGED CONTROL SEQUENCE TO MAINTAIN SPACE TEMPERATURE AS SENSED AND SET AT WALL-MOUNTED SYSTEM CONTROLLER. BAS SHALL MONITOR SPACE TEMPERATURE AS SIGNALLED BY WALL-MOUNTED SYSTEM CONTROLLER AND SHALL GENERATE A LEVEL 3 ALARM IF SPACE TEMPERATURE FALLS MORE THAN 10 DEG F (ADJ.) OUTSIDE OF SETPOINT. IF A CONDENSATE OVERFLOW ALARM IS GENERATED BY CONDENSATE PUMP, SIGNAL FROM PUMP SHALL DISABLE EVAPORATING UNIT AND SHALL GENERATE AN ALARM AT THE BAS. BACNET COMMUNICATION CARD BY EQUIPMENT SUPPLIER.

EQUIPMENT INPUT / OUTPUT SUMMARY SF-01	BO		BI		AI		AO		PROGRAMS									
	ENABLE / DISABLE	OPEN / CLOSE	STATUS	STATUS OPEN	ENERGIZED / DE-ENERGIZED	AIRFLOW (CFM)	PRESSURE (IN. W.G.)	FREQUENCY (HZ)	TEMPERATURE (DEG. F.)	RELATIVE HUMIDITY (%)	ELECTRIC	POSITION (% OPEN)	RESET	HIGH LIMIT ALARM	LOW LIMIT ALARM	ALARM / ABNORMAL OFF	RUN TIME TOTAL	GRAPHIC
WALL MOUNTED SYSTEM CONTROLLER			●															
CONDENSATE PUMP, OVERFLOW																		
SPACE TEMPERATURE									●									



**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

REVISION HISTORY:

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PROJECT INFORMATION:

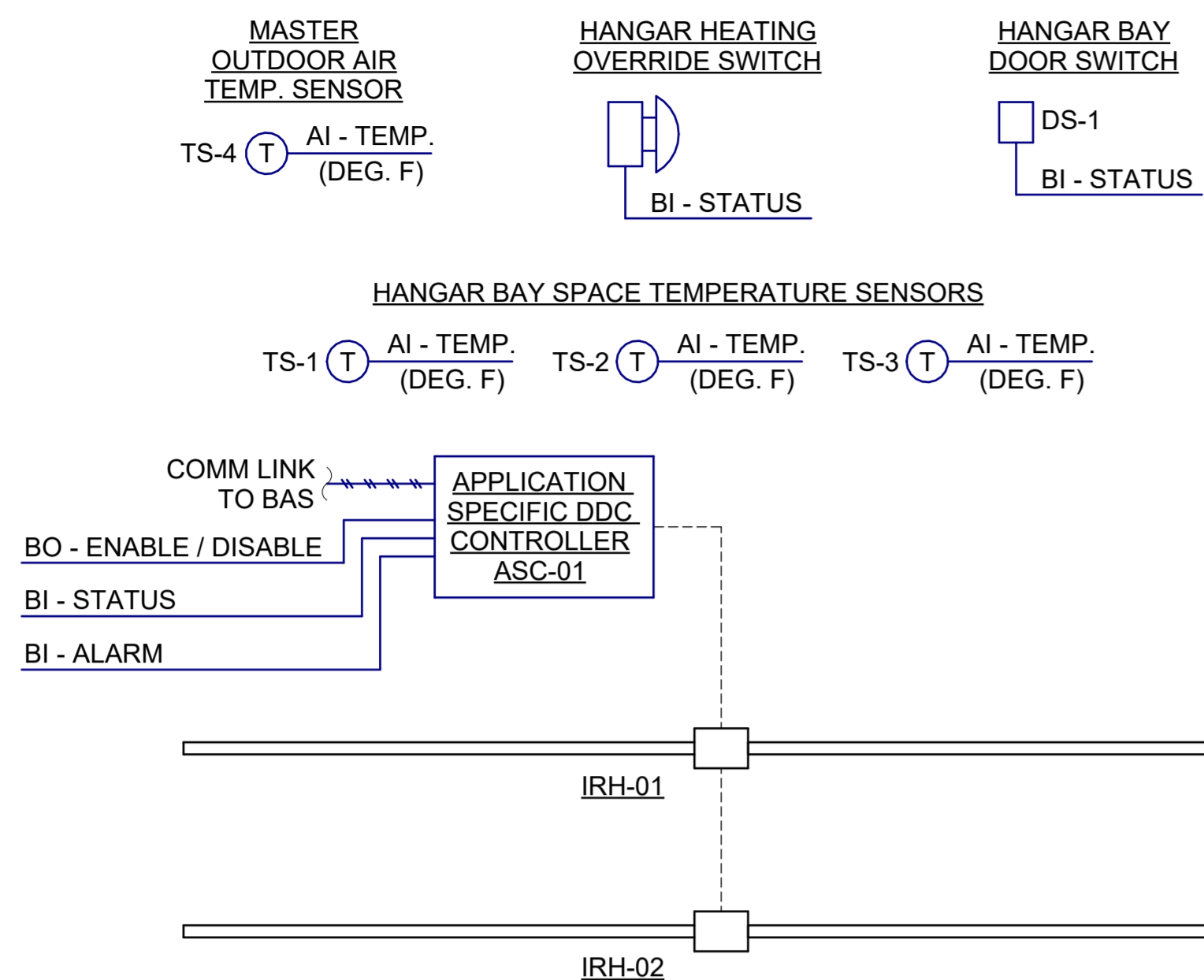
DESIGNED BY:	AMF
DRAWN BY:	AMF
REVIEWED BY:	RRS
PROJECT MANAGER:	NDM

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**CONTROLS**

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**M-802**



### A3 OVERHEAD RADIANT HEATER CONTROLS

SCALE: NTS

#### SEQUENCE OF OPERATION: OVERHEAD RADIANT HEAT SYSTEM

APPLICATION SPECIFIC DDC CONTROLLER ASC-01 SHALL REMAIN CONTINUOUSLY ENABLED UNLESS DISABLED REMOTELY BY BAS OPERATOR COMMAND OR BY LOCAL OPERATOR COMMAND AT APPLICATION ASC-01.

WHEN ASC-01 IS ENABLED, ASC-01 SHALL ENERGIZE AND DE-ENERGIZE OVERHEAD RADIANT HEATER BURNERS IRH-01 AND IRH-02 AS REQUIRED TO MAINTAIN SPACE TEMPERATURE, AS SENSED BY ALL SPACE TEMPERATURE SENSORS TS-1 THROUGH TS-3. WHEN SPACE TEMPERATURE DROPS BELOW 55°F (ADJ.), IRH-01 AND IRH-02 SHALL BE ENERGIZED. ONCE SPACE TEMPERATURE EXCEEDS 57°F (ADJ.), IRH-01 AND IRH-02 SHALL BE DE-ENERGIZED.

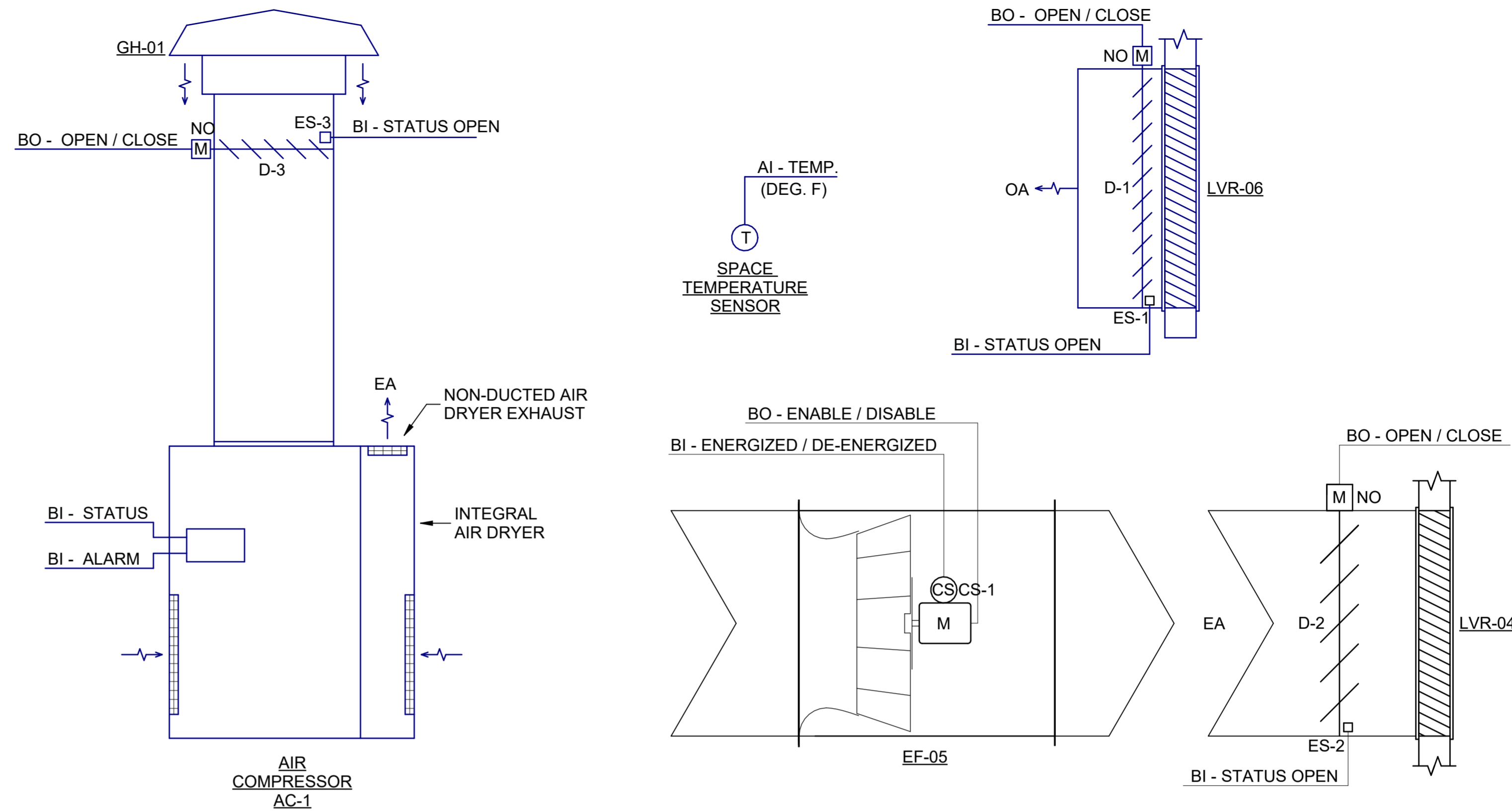
WHEN OUTDOOR AIR TEMPERATURE, AS SENSED BY BAS MASTER OUTDOOR AIR TEMPERATURE SENSOR TS-4, IS AT OR ABOVE 40°F, AND DOOR SWITCH DS-1 INDICATES THAT THE HANGAR BAY DOOR HAS BEEN OPEN FOR MORE THAN 30 SECONDS (ADJ.), ASC-01 SHALL DE-ENERGIZE BURNERS IRH-01 AND IRH-02. WHEN DS-1 INDICATES THAT THE HANGAR BAY DOOR HAS BEEN CLOSED, NORMAL CONTROL OF BURNERS SHALL BE RESTORED TO ASC-01.

IF THE HANGAR HEATING OVERRIDE SWITCH IS ACTIVATED WHILE ASC-01 HAS BEEN DISABLED DUE TO OPEN HANGAR BAY DOOR, NORMAL CONTROL OF BURNERS IRH-01 AND IRH-02 SHALL IMMEDIATELY BE RESTORED TO ASC-01 FOR A PERIOD OF 120 MINUTES (ADJ.).

WHEN OUTDOOR AIR TEMPERATURE AS SENSED BY EMCS MASTER OUTDOOR AIR TEMPERATURE SENSOR IS BELOW 40°F, ASC-01 SHALL MAINTAIN IRH-01 AND IRH-02 BURNER CONTROL REGARDLESS OF HANGAR BAY DOOR POSITION.

EQUIPMENT INPUT / OUTPUT SUMMARY OVERHEAD RADIANT HEAT SYSTEM	BO	BI	AI	AO	PROGRAMS
ASC-01 ENABLE / DISABLE	●				
ASC-01 STATUS		●			
ASC-01 ALARM					●
HANGAR BAY SPACE TEMPERATURE SENSOR, TS-1			●		●
HANGAR BAY SPACE TEMPERATURE SENSOR, TS-2			●		●
HANGAR BAY SPACE TEMPERATURE SENSOR, TS-3			●		●
MASTER OUTDOOR AIR TEMPERATURE SENSOR, TS-4			●		●
EMERGENCY AIR DISTRIBUTION SHUTOFF SWITCH		●			●
HANGAR BAY DOOR SWITCH, DS-1		●			●

\* CONTROL AND MONITORING PROVIDED THROUGH BAS COMM LINK WITH ASC-01 APPLICATION SPECIFIC DDC CONTROLLER



### D3 MECH ROOM VENTILATION SYSTEM CONTROLS

SCALE: NTS

#### SEQUENCE OF OPERATION - MECH ROOM VENTILATION SYSTEM

**GENERAL:**  
VENTILATION SYSTEM SHALL BE ENABLED / DISABLED BY THE BAS DUE TO EITHER SPACE TEMPERATURES OR OPERATION OF AIR COMPRESSOR AC-1, UNLESS OTHERWISE COMMANDED BY BAS OPERATOR OR LOCAL COMMAND.

**SPACE TEMPERATURE CONTROL:**  
WHEN SPACE TEMPERATURE EXCEEDS 85°F (ADJ.), DAMPER MOTORS FOR DAMPERS D-1 AND D-2 SHALL BE COMMANDED TO OPEN DAMPERS D-1 AND D-2, AND END SWITCHES ES-1 AND ES-2 SHALL VERIFY DAMPER OPEN STATUS. UPON PROOF OF DAMPER OPEN STATUS, EXHAUST FAN SHALL BE ENERGIZED.

WHEN SPACE TEMPERATURE DROPS BELOW 83°F (ADJ.), EXHAUST FAN SHALL BE DE-ENERGIZED, DAMPER MOTOR FOR DAMPER D-2 SHALL BE COMMANDED TO CLOSE DAMPER D-2, AND DAMPER MOTOR FOR DAMPER D-1 SHALL BE COMMANDED TO CLOSE DAMPER D-1 ONLY IF "OFF" OPERATING STATUS OF AIR COMPRESSOR AC-1 IS INDICATED AT THE BAS.

IF CURRENT SENSING RELAY INDICATES EXHAUST FAN HAS FAILED, A LEVEL 3 ALARM SHALL BE GENERATED AT THE BAS. STATUS OF FAN AS INDICATED BY CURRENT SENSING RELAY SHALL BE MONITORED AT THE BAS.

**AIR COMPRESSOR EXHAUST:**  
UPON "ON" OPERATING STATUS OF AIR COMPRESSOR AC-1, AS MONITORED AT BAS, DAMPER MOTORS FOR DAMPERS D-1 AND D-3 SHALL BE COMMANDED TO OPEN DAMPERS D-1 AND D-3. UPON "OFF" OPERATING STATUS OF AIR COMPRESSOR AC-1, AS MONITORED AT BAS, DAMPER MOTOR FOR DAMPER D-3 SHALL BE COMMANDED TO CLOSE DAMPER D-3, AND DAMPER MOTOR FOR DAMPER D-1 SHALL BE COMMANDED TO CLOSE DAMPER D-1 ONLY IF "OFF" OPERATING STATUS OF EXHAUST FAN EF-05 IS INDICATED AT THE BAS.

EQUIPMENT INPUT / OUTPUT SUMMARY AC-1, EF-05	BO	BI	AI	AO	PROGRAMS
AIR COMPRESSOR AC-01 STATUS		●			●
AIR COMPRESSOR AC-01 ALARM					●
DAMPER D-3 ACTUATOR		●			●
DAMPER D-3 END SWITCH, ES-3			●		●
EF-05 ENABLE / DISABLE	●				
EF-05 CURRENT SENSING RELAY, CS-1		●			●
DAMPER D-2 ACTUATOR		●			●
DAMPER D-2 END SWITCH, ES-2			●		●
DAMPER D-1 ACTUATOR		●			●
DAMPER D-1 END SWITCH, ES-1			●		●
SPACE TEMPERATURE SENSOR, TS-1			●		●

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Texas Air National Guard - 149th FW  
Corrosion Control Facility  
TXANG Project Number: KELL 169014  
JBSA - Kelly Annex, TX

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SHEET TITLE: CONTROLS

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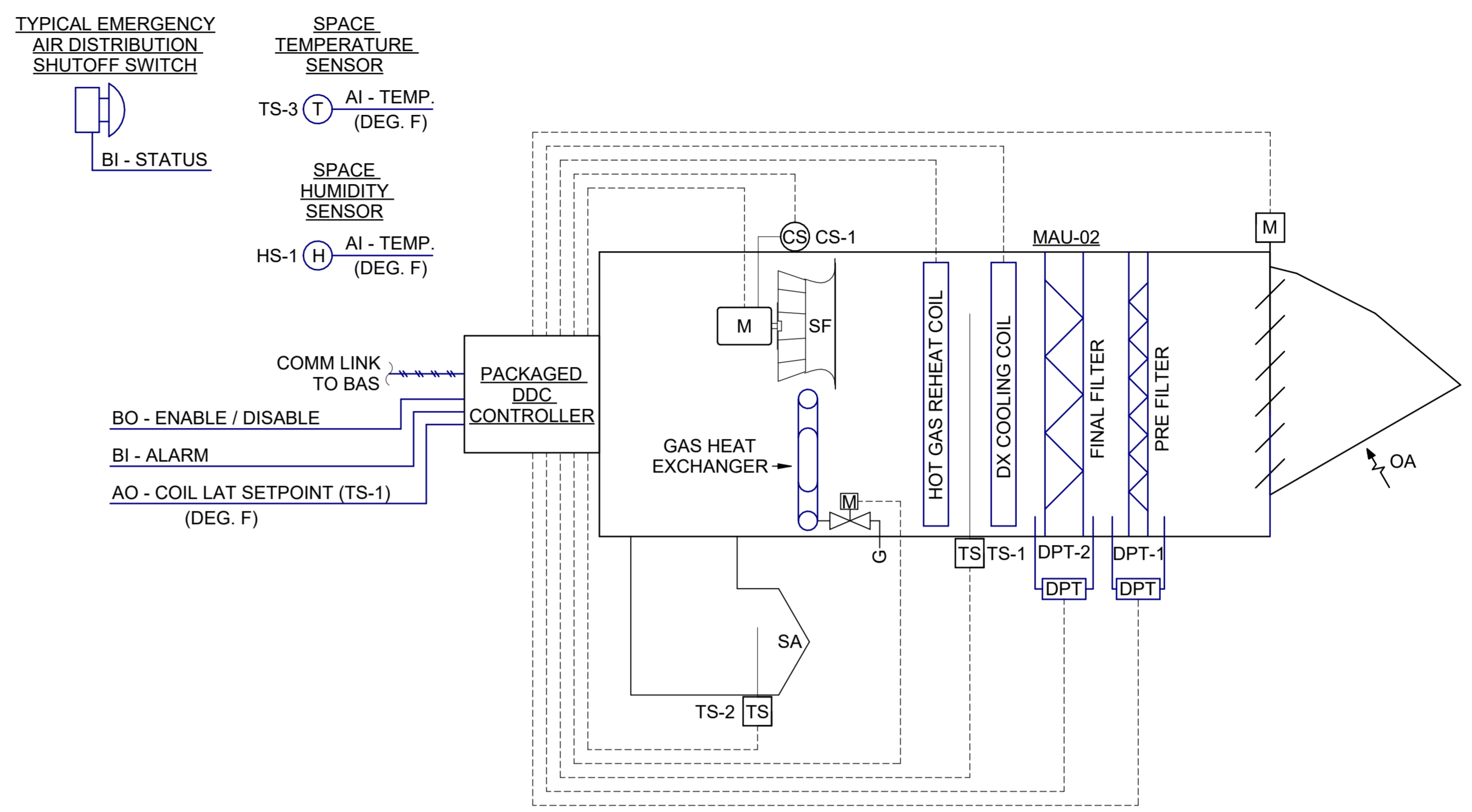








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**SEQUENCE OF OPERATION**

**MODES OF OPERATION:** MAU-02 AND PAINT MIX ROOM EXHAUST FAN EF-07 SHALL BE INTERLOCKED AND SHALL BE ENABLED CONTINUOUSLY, UNLESS MANUALLY DISABLED AT BAS BY BAS OPERATOR COMMAND OR AT PAINT MIX ROOM SPACE MOUNTED CONTROLLER.

**ENABLED MODE:**  
 WHEN ENABLE SIGNAL IS RECEIVED FROM THE BAS, MAU PACKAGED DDC CONTROLLER SHALL EXECUTE START-UP SEQUENCE IN ACCORDANCE WITH PACKAGED CONTROLS INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

- 1) OPEN OUTSIDE AIR DAMPER.
- 2) VERIFY OPEN STATUS OF OUTSIDE AIR DAMPER (UNLESS FACTORY-PROVIDED PRESSURE SWITCHES OR ALTERNATE MEANS ARE PROVIDED TO PROTECT FANS).
- 3) ENABLE SUPPLY FAN ELECTRONICALLY COMMUTATED MOTOR (ECM) CONTROLLER.
- 4) EXECUTE SOFT START OF SUPPLY FAN. SUPPLY FAN SHALL OPERATE AT CONSTANT SPEED TO MAINTAIN SCHEDULED AIRFLOW.
- 5) ENABLE DX COOLING COIL, HOT GAS REHEAT COIL, AND HOT WATER HEATING COIL AS DESCRIBED BELOW TO MAINTAIN SPACE TEMPERATURE AND RELATIVE HUMIDITY SETPOINTS.
  - A) COOLING MODE: MAU-02 SHALL BE IN COOLING MODE WHEN SPACE TEMPERATURE, AS SENSED BY SPACE TEMPERATURE SENSOR TS-3, RISES ABOVE COOLING SPACE TEMPERATURE SETPOINT OF 75°F (ADJ.) PLUS DEADBAND. WHEN IN COOLING MODE, DX COOLING COIL CAPACITY SHALL MODULATE IN ACCORDANCE WITH PACKAGED SOFTWARE SEQUENCE TO MAINTAIN COIL LEAVING AIR TEMPERATURE SETPOINT OF 57°F (ADJ.), AS SENSED BY TEMPERATURE SENSOR TS-1. WHEN SPACE RELATIVE HUMIDITY, AS SENSED BY SPACE RELATIVE HUMIDITY SENSOR HS-1, EXCEEDS 55% FOR A DURATION OF 5 MINUTES (ADJ.), COIL LEAVING AIR TEMPERATURE SETPOINT SHALL BE RESET TO 51°F (ADJ.) UNTIL SPACE RELATIVE HUMIDITY DROPS TO 50% (ADJ.), THEN COIL LEAVING AIR TEMPERATURE SETPOINT SHALL RETURN TO NORMAL. WHEN SPACE TEMPERATURE, AS SENSED BY SPACE TEMPERATURE SENSOR TS-3, DROPS BELOW COOLING SPACE TEMPERATURE SETPOINT, MODULATE HOT GAS REHEAT COIL CAPACITY IN ACCORDANCE WITH PACKAGED SOFTWARE SEQUENCE TO MAINTAIN COOLING SPACE TEMPERATURE SETPOINT.
  - B) HEATING MODE: MAU-02 SHALL BE IN HEATING MODE WHEN SPACE TEMPERATURE, AS SENSED BY SPACE TEMPERATURE SENSOR TS-3, DROPS BELOW 73°F (ADJ.) HEATING SPACE TEMPERATURE SETPOINT PLUS DEADBAND. WHEN IN HEATING MODE, GAS HEAT EXCHANGER CAPACITY SHALL MODULATE CAPACITY IN ACCORDANCE WITH PACKAGED SOFTWARE SEQUENCE TO MAINTAIN HEATING SPACE TEMPERATURE SETPOINT.

**MONITORING AND ALARMS:**  
 FILTERS: MAU PACKAGED DDC CONTROLLER SHALL MONITOR FILTER STATUS VIA PACKAGED CLOGGED FILTER SWITCH. FILTER SWITCH SETPOINT SHALL BE FIELD ADJUSTED TO 0.25" W.C. EITHER A FILTER-SPECIFIC OR A COMMON ALARM SHALL BE TRANSMITTED TO THE BAS WHEN FILTER ALARM IS GENERATED AT THE MAU.

**TEMPERATURES:** BAS SHALL CONTINUOUSLY MONITOR AND PROMINENTLY DISPLAY ON BAS MAU GRAPHICS SCREEN COIL LEAVING AIR TEMPERATURE AND UNIT LEAVING AIR TEMPERATURE. AN ALARM SHALL BE GENERATED AT THE BAS IF COIL LEAVING AIR TEMPERATURE EXCEEDS 62°F (ADJ.) OR IF UNIT LEAVING AIR TEMPERATURE EXCEEDS 78°F (ADJ.) IN COOLING MODE. AN ALARM SHALL BE GENERATED AT THE BAS IF UNIT LEAVING AIR TEMPERATURE IS LESS THAN 50°F (ADJ.) OR IF UNIT LEAVING AIR TEMPERATURE EXCEEDS 100°F (ADJ.) IN HEATING MODE. LOW LIMIT AND HIGH LIMIT TEMPERATURE ALARM SHALL BE DELAYED OR IGNORED WITHIN THE FIRST 5 MIN (ADJ.) OF MAU START-UP.

**EMERGENCY AIR DISTRIBUTION SHUTOFF SWITCH:** UPON ACTIVATION OF ANY FACILITY EMERGENCY AIR DISTRIBUTION SHUTOFF SWITCH, THE BAS SHALL FULLY CLOSE OUTSIDE AIR DAMPER. WHEN SIGNAL IS CLEARED AT THE BAS, NORMAL EQUIPMENT CONTROL SHALL BE RESTORED TO THE BAS.

**GENERAL MONITORING:** ALL POINTS INDICATED ON MAU CONTROL DIAGRAM THAT ARE AVAILABLE FROM THE MAU PACKAGED DDC CONTROLLER SHALL BE DISPLAYED AT THE BAS WITH FULL GRAPHICS.

**D4 MAU-02 CONTROLS**  
 SCALE: NTS

EQUIPMENT INPUT / OUTPUT SUMMARY MAU-02	BO	BI	AI	AO	PROGRAMS
	ENABLE / DISABLE OPEN / CLOSE	STATUS STATUS OPEN ALARM	ENERGIZED / DE-ENERGIZED AIRFLOW (CFM) PRESSURE (IN. W.G.) FREQUENCY (HZ) TEMPERATURE (DEG. F.) RELATIVE HUMIDITY (%) FREQUENCY (HZ) ELECTRIC POSITION (% OPEN) RESET	HIGH LIMIT ALARM LOW LIMIT ALARM ALARM / ABNORMAL OFF RUN TIME TOTAL GRAPHIC	
* MAKEUP AIR UNIT MAU-02					
PAINT MIX ROOM EXHAUST FAN EF-07					
MAU-02 ENABLE / DISABLE	●				
* SUPPLY FAN STATUS		●			
* SUPPLY FAN FAULT			●		
* SUPPLY FAN CURRENT SENSING RELAY, CS-1			●		
* OUTSIDE AIR DAMPER ACTUATOR		●			
* OUTSIDE AIR DAMPER END SWITCH		●			
* COIL LEAVING AIR TEMPERATURE, TS-1			●		
* COIL LEAVING AIR TEMPERATURE SETPOINT				●	
* UNIT LEAVING AIR TEMPERATURE, TS-2			●		
* SPACE TEMPERATURE, TS-3			●		
* SPACE HUMIDITY, HS-1				●	
* PRE FILTER PRESSURE DROP, DPT-1			●		
* FINAL FILTER PRESSURE DROP, DPT-2			●		
* GAS HEAT EXCHANGER VALVE				●	
* DX COOLING COIL VALVE				●	
EMERGENCY AIR DISTRIBUTION SHUTOFF SWITCH		●			
* CONTROL AND MONITORING PROVIDED THROUGH BAS COMM LINK WITH RTU-02 PACKAGED DDC CONTROLLER					

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DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: **AMF**

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BAS SHALL INCLUDE A MINIMUM OF FOUR USER LEVELS AND SHALL ESTABLISH ASSOCIATED PERMISSIONS AS OUTLINED BELOW.

1. VIEW/READ ONLY
  - A. SELF EXPLANATORY
2. MECHANICAL TECH
  - A. BASIC ZONE SETPOINT ADJUSTMENTS
  - B. EQUIPMENT ROTATION
  - C. SHUTDOWN/START-UP A PIECE OF EQUIPMENT.
  - D. LEVEL 1 AFTER-HOURS ALARM NOTIFICATIONS TO ON-CALL TECH.
  - E. LEVEL 1, 2, 3, & 5 ALARM CONSOLE ACCESS DURING WORKING HOURS NOTIFICATIONS
3. BAS TECH
  - A. CALIBRATE SENSORS (NOT A NORMAL OCCURRENCE)
  - B. ADJUST EQUIPMENT SETPOINTS.
  - C. ALL ALARM CONSOLE ACCESS.
4. ENERGY MANAGER
  - A. REPORTING
  - B. TIME SCHEDULES
  - C. LEVEL 4 ENERGY ALARM CONSOLE ACCESS

**A2** BAS USER LEVELS  
SCALE: NTS

ALARM LEVELS	
LEVEL	DESCRIPTION
1	CRITICAL / LIFE SAFETY
2	SIGNIFICANT EQUIPMENT FAILURE
3	NON-CRITICAL EQUIPMENT FAILURE
4	ENERGY CONSERVATION ALERT
5	MAINTENANCE NOTIFICATION

1. CRITICAL/LIFE SAFETY
  - A. LIFE SAFETY
    - a. FIRE ALARM MONITOR POINTS
    - b. SMOKE CONTROL EVENTS/FAILURE
    - c. ELEVATOR MONITORING POINTS
  - B. ELECTRICAL
    - a. GENERATOR FAILED TO START
    - b. GENERATOR BATTERY CHARGER FAILURE
    - c. UPS PROBLEM
    - d. BREAKER TRIPPED UNDER FAULT
  - C. CRITICAL
    - a. AFTER-HOURS HEATING FAILURE WHEN IT'S COLD OUTSIDE.
    - b. SOME DATA CENTER ALARMS
    - c. ISOLATION ROOM PRESSURE FAILURE
    - d. LABORATORY CONTROLS MAJOR FAILURE
    - e. IN SOME CASES, CHILLER OR BOILER FAILURE
    - f. FREEZE STATS
    - g. PERIMETER HEATING FAULTS
    - h. FREEZE ALARMS
  - D. SECURITY
    - a. SECURITY PANIC BUTTONS
    - b. PERIMETER DOOR FORCED
    - c. PANIC ALARMS
2. SIGNIFICANT EQUIPMENT FAILURE
  - A. THESE SHOULD BE FAIRLY OBVIOUS FROM THE CUSTOMER TYPE.
  - B. MAJOR CHILLED WATER, HEATING WATER, AHU EQUIPMENT FAILURES/ALARMS
  - C. LOSS OF A CAMERA OR ACCESS CONTROL
  - D. GENERATOR ALARMS NOT RELATED TO STARTING OR COMPROMISING THE GENERATOR'S OPERATION.
  - E. UPS BATTERY MONITOR ALARM
  - F. FAN FAILURE ALARM
3. NON-CRITICAL EQUIPMENT FAILURE
  - A. HOA IN HAND
  - B. MINOR EQUIPMENT FAILURE WHEN FREEZING IS NOT A CONCERN.
4. ENERGY CONSERVATION ALERT
  - A. RUNTIME EXCEEDED
  - B. T&R ALARM
  - C. AFTER-HOURS OVERRIDE
  - D. ECONOMIZER NOT FUNCTIONING
5. MAINTENANCE NOTIFICATION
  - A. DIRTY FILTER
  - B. CHANGE THE BACKUP BATTERIES
  - C. SENSOR FAILURE

**C4** BAS ALARM LEVELS AND TYPICAL ALARMS  
SCALE: NTS

THE FOLLOWING UTILITIES MUST BE METERED AND MONITORED AT THE BASE WIDE ENERGY AND UTILITY MONITORING SYSTEM:

- A. ELECTRICAL POWER USAGE
  - a. TOTAL PERIOD CONSUMPTION
  - b. DEMAND INTERVAL PEAK FOR THE PERIOD, WITH TIME OF OCCURRENCE
  - c. ENERGY CONSUMPTION (KWH) OVER EACH DEMAND INTERVAL
  - d. TIME-OF-USE PEAK, SEMI-PEAK, OFF-PEAK, OR BASELINE TOTAL KWH CONSUMPTION
  - e. REACTIVE POWER DURING EACH DEMAND INTERVAL
  - f. POWER FACTOR DURING EACH DEMAND INTERVAL
  - g. OUTSIDE AIR (OA) TEMPERATURE AND RELATIVE HUMIDITY (RH) TAKEN AT THE MAXIMUM AND MINIMUM OF OA TEMPERATURE OF THE REPORT PERIOD WITH THE TIME AND DATES OF OCCURRENCE
  - h. CALCULATED HEATING AND COOLING DEGREE DAYS BASED ON A 65°F BALANCE POINT
- B. ELECTRICAL PEAK DEMAND
  - a. ACTUAL PEAK FOR EACH DEMAND INTERVAL FOR THAT DAY
- C. WATER USAGE
  - a. BEGINNING AND ENDING DATES AND TIMES
  - b. TOTAL ENERGY WATER USAGE FOR THE CURRENT AND PREVIOUS DAY
  - c. TOTAL WATER USAGE FOR THE CURRENT AND PREVIOUS MONTH
- D. WATER PEAK DEMAND
  - a. ACTUAL PEAK FOR EACH DEMAND INTERVAL FOR THAT DAY
- E. GAS USAGE
  - a. BEGINNING AND ENDING DATES AND TIMES
  - b. TOTAL ENERGY WATER USAGE FOR THE CURRENT AND PREVIOUS DAY
  - c. TOTAL WATER USAGE FOR THE CURRENT AND PREVIOUS MONTH
- F. GAS PEAK DEMAND
  - a. ACTUAL PEAK FOR EACH DEMAND INTERVAL FOR THAT DAY

**E3** UTILITY METERING  
SCALE: NTS



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**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

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PROJECT INFORMATION:

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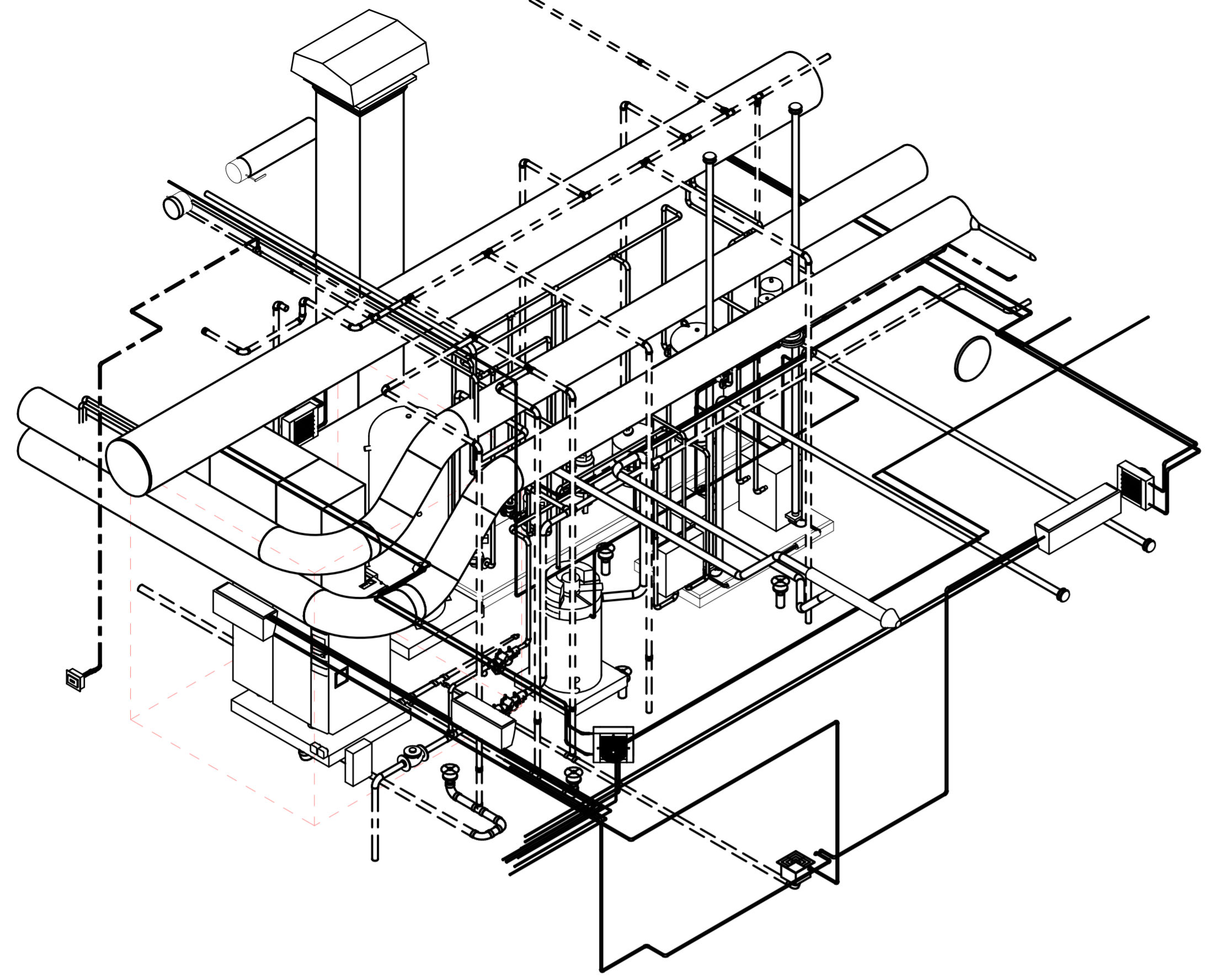
PROJECT NUMBER:  
**20190320**

SHEET TITLE:  
**CONTROLS**

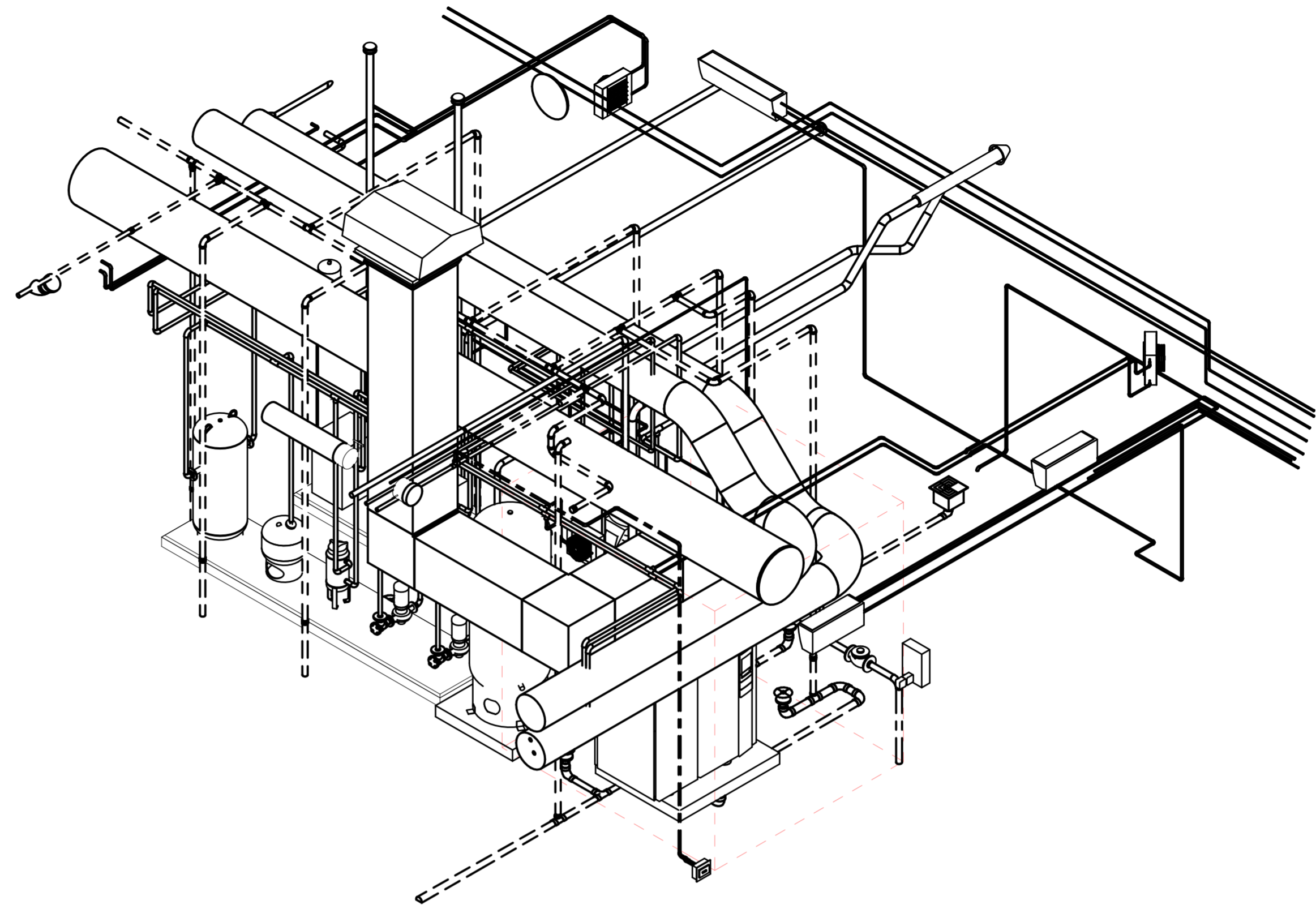
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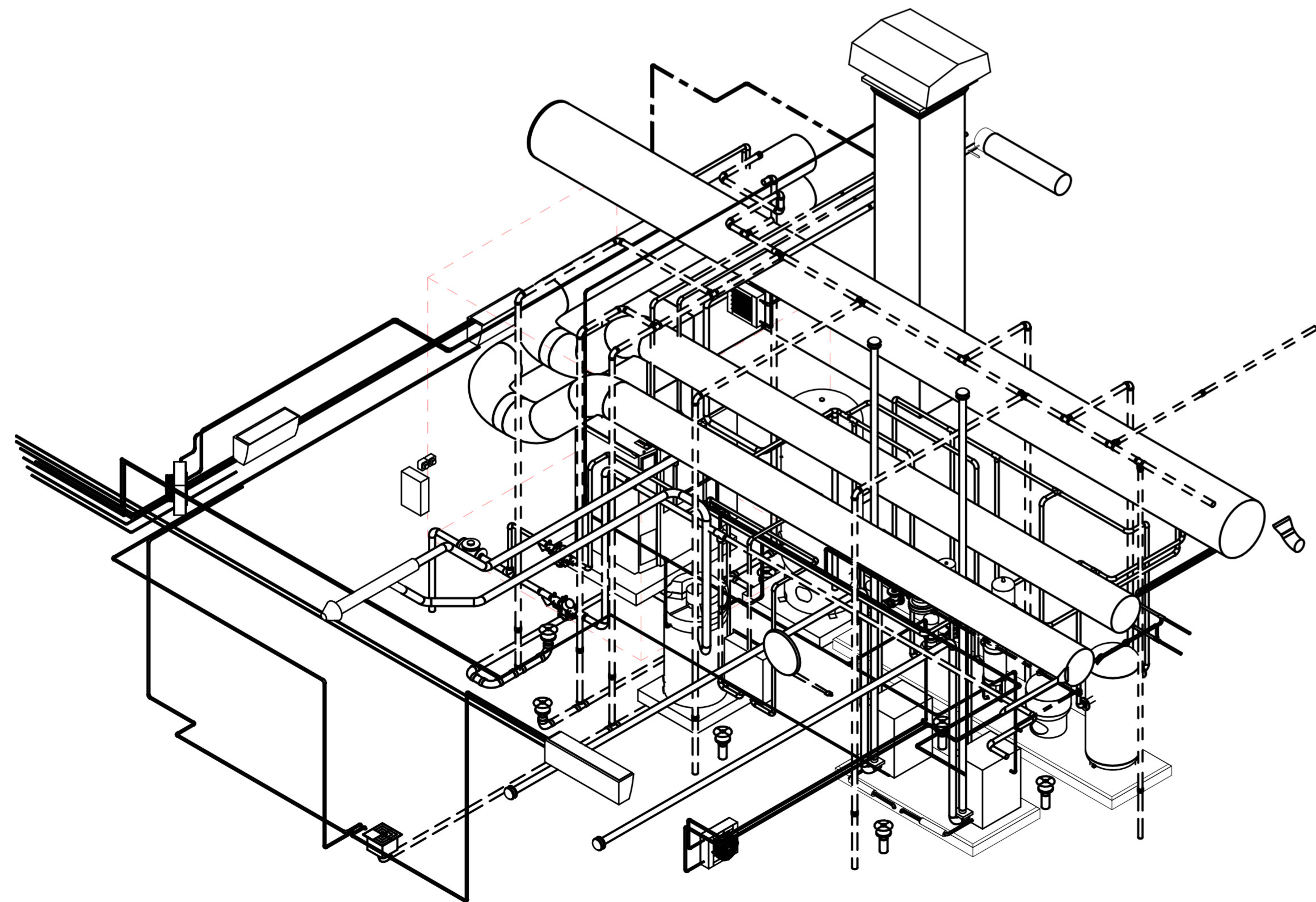
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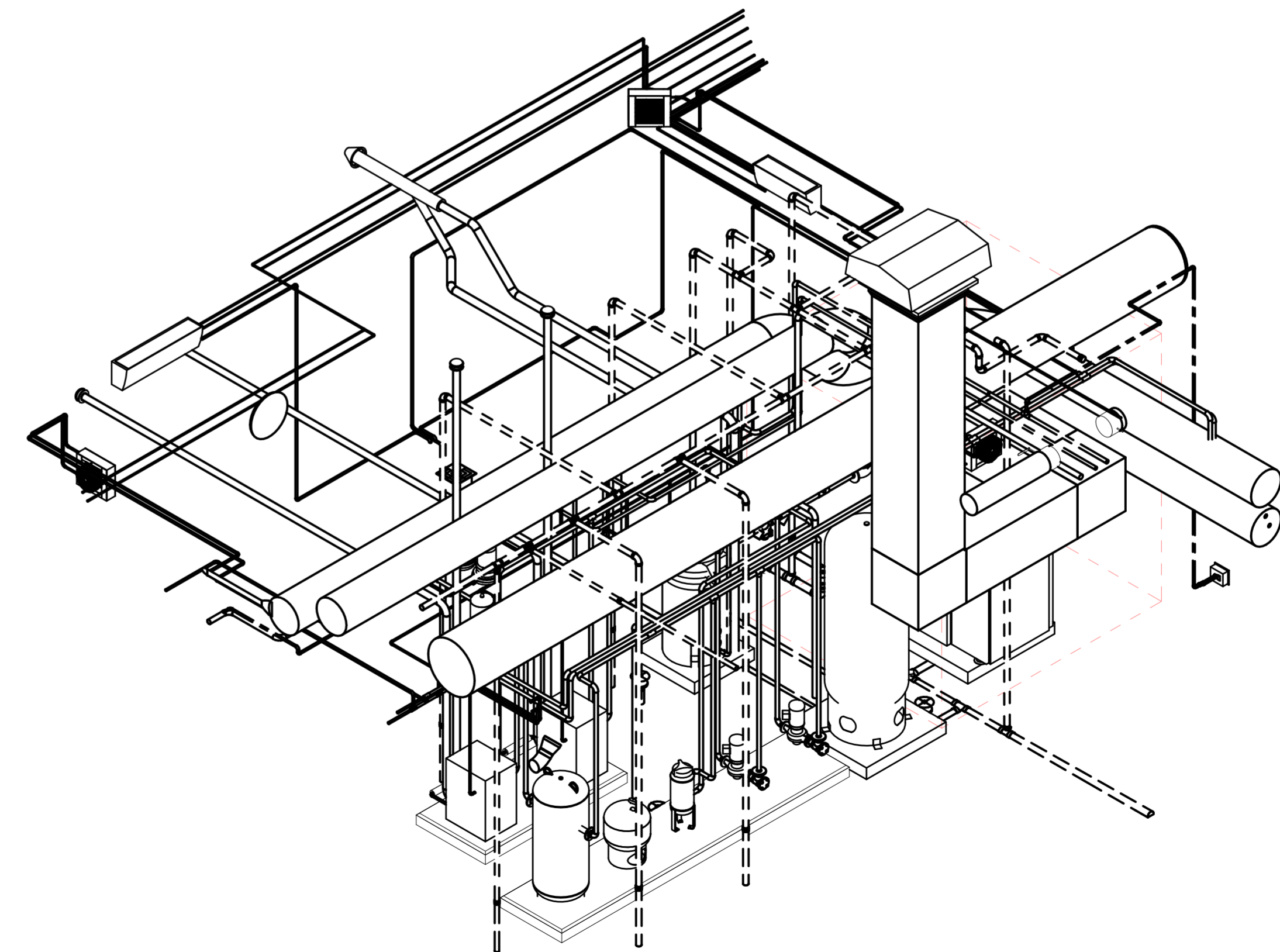
**A3** MECHANICAL ROOM ISOMETRIC - FACING SOUTHEAST  
SCALE: NTS



**E3** MECHANICAL ROOM ISOMETRIC - FACING SOUTHWEST  
SCALE: NTS



**A6** MECHANICAL ROOM ISOMETRIC - FACING NORTHEAST  
SCALE: NTS



**E6** MECHANICAL ROOM ISOMETRIC - FACING NORTHWEST  
SCALE: NTS

  
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**JBSA - Kelly Annex, TX**

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**3D COORDINATION VIEW -  
MECHANICAL ROOM**

ISSUE DATE:

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**M-901**

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**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

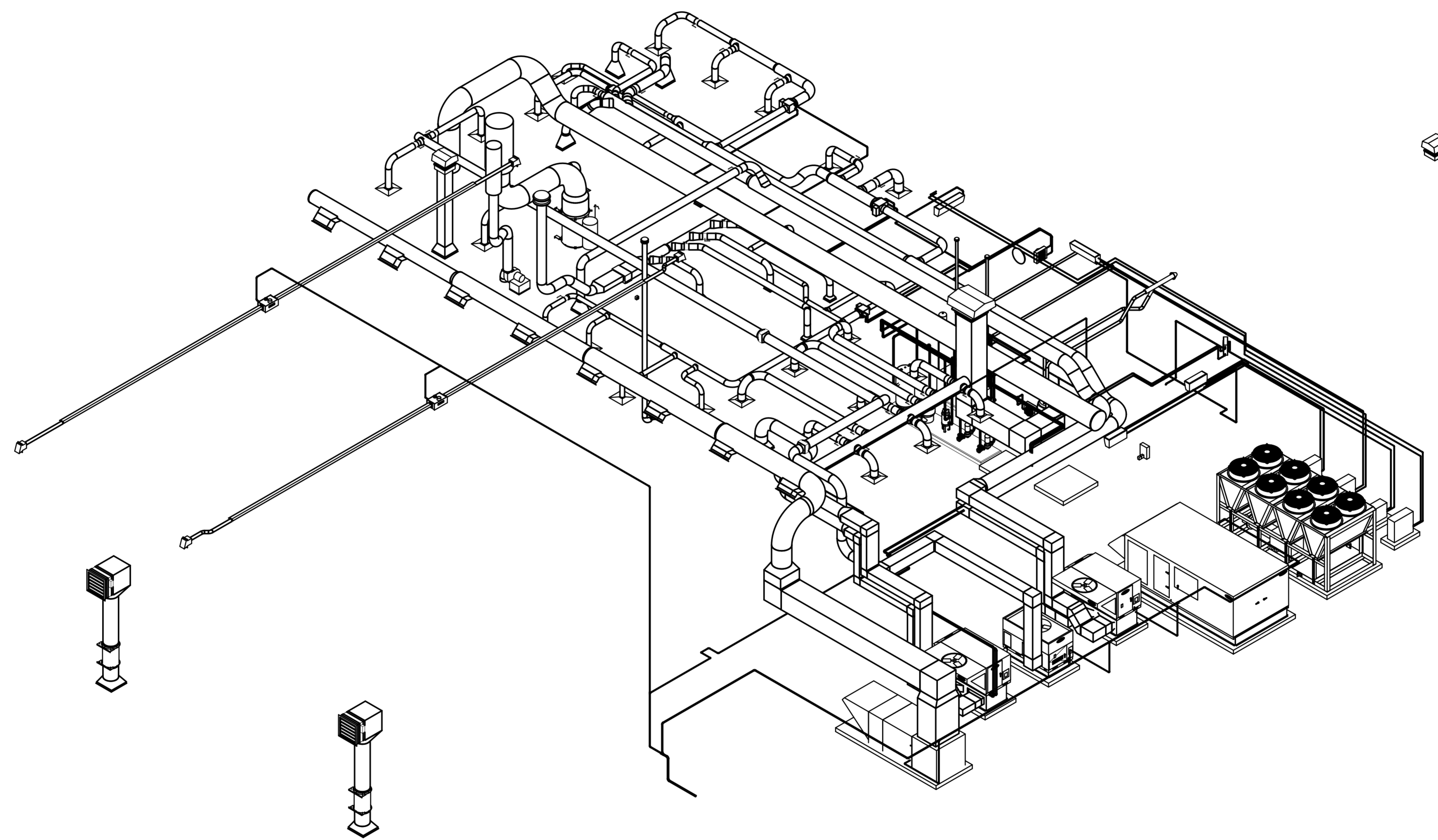
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PROJECT MANAGER:	NDM

PROJECT NUMBER: 20190320

SHEET TITLE: **OVERALL MECHANICAL ISOMETRIC**

ISSUE DATE: 2 AUGUST 2024

SHEET NUMBER: M-902



**A5 OVERALL MECHANICAL ISOMETRIC**  
 SCALE: NTS



ELECTRICAL LEGEND

Table with columns: SYMBOL, DESCRIPTION, SYMBOL, DESCRIPTION, SYMBOL, DESCRIPTION, SYMBOL, DESCRIPTION, ABBREVIATIONS, DESCRIPTION. Rows include categories like LIGHT FIXTURES, ELECTRICAL FIXTURES, ELECTRICAL EQUIPMENT, and DATA DEVICES.

GENERAL NOTES

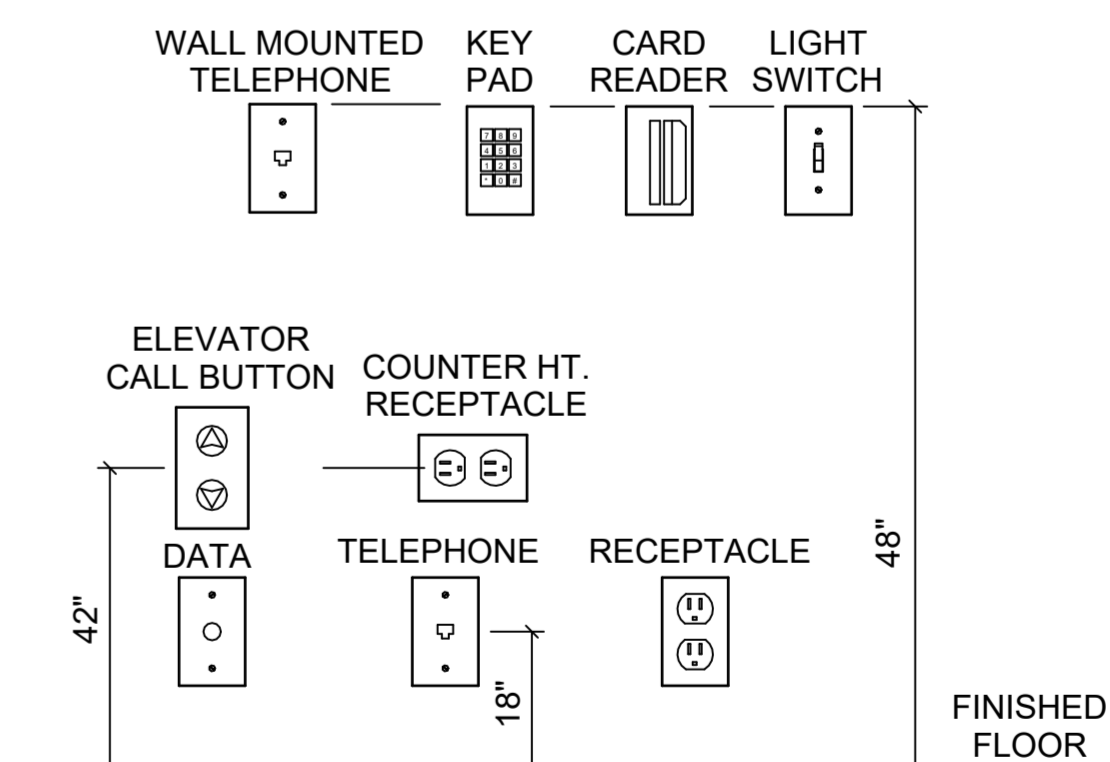
- A. NOT ALL SYMBOLS SHOWN ON THIS LEGEND ARE USED IN THE SET OF DRAWINGS.
B. ELECTRICAL INSTALLATION SHALL BE IN ACCORDANCE WITH THE LATEST ADOPTED VERSION OF THE NATIONAL ELECTRICAL CODE, ALL APPLICABLE LOCAL CODES, AND ALL APPLICABLE NECA STANDARDS.
C. DO NOT SHARE NEUTRALS BETWEEN CIRCUITS UNO.



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TXANG Project Number: KELL 169014
JBSA - Kelly Annex, TX



- NOTES:
A. VERIFY EXACT MOUNTING HEIGHTS WITH PROJECT REQUIREMENTS. DEVICES MAY OR MAY NOT APPLY TO THIS PROJECT. REFER TO PLANS.
B. ALL NEW DEVICES SHALL BE INSTALLED ACCORDING TO THE MOUNTING HEIGHTS INDICATED U.N.O.

(G6) MOUNTING HEIGHT DETAIL
SCALE: NTS

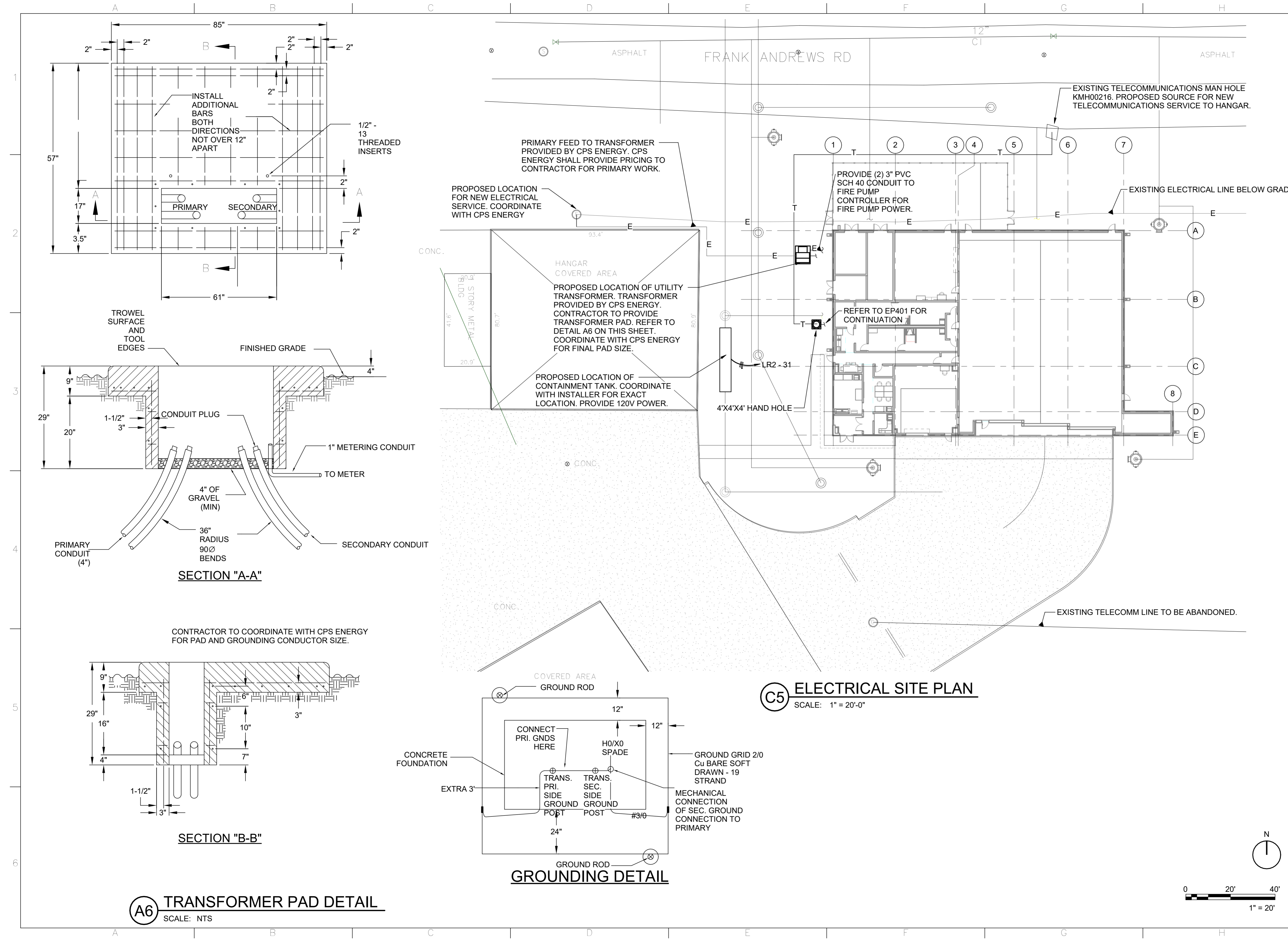
REVISION HISTORY table and PROJECT INFORMATION section containing fields for DESIGNED BY, DRAWN BY, REVIEWED BY, PROJECT MANAGER, PROJECT NUMBER, SHEET TITLE, ISSUE DATE, and SHEET NUMBER.

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**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**



PRIMARY FEED TO TRANSFORMER PROVIDED BY CPS ENERGY. CPS ENERGY SHALL PROVIDE PRICING TO CONTRACTOR FOR PRIMARY WORK.

PROPOSED LOCATION FOR NEW ELECTRICAL SERVICE. COORDINATE WITH CPS ENERGY

HANGAR COVERED AREA  
 PROPOSED LOCATION OF UTILITY TRANSFORMER. TRANSFORMER PROVIDED BY CPS ENERGY. CONTRACTOR TO PROVIDE TRANSFORMER PAD. REFER TO DETAIL A6 ON THIS SHEET. COORDINATE WITH CPS ENERGY FOR FINAL PAD SIZE.

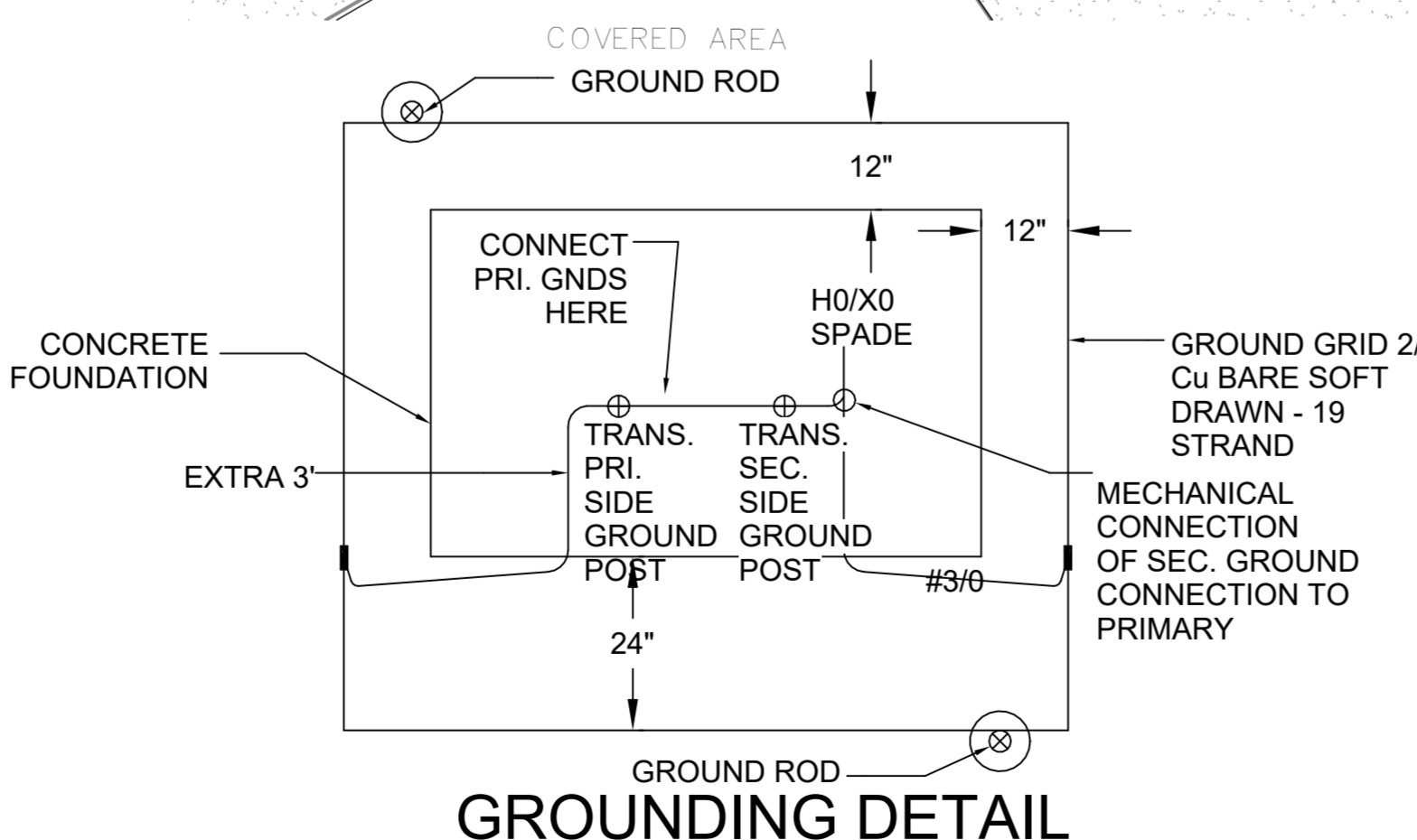
PROPOSED LOCATION OF CONTAINMENT TANK. COORDINATE WITH INSTALLER FOR EXACT LOCATION. PROVIDE 120V POWER.

PROVIDE (2) 3" PVC SCH 40 CONDUIT TO FIRE PUMP CONTROLLER FOR FIRE PUMP POWER.

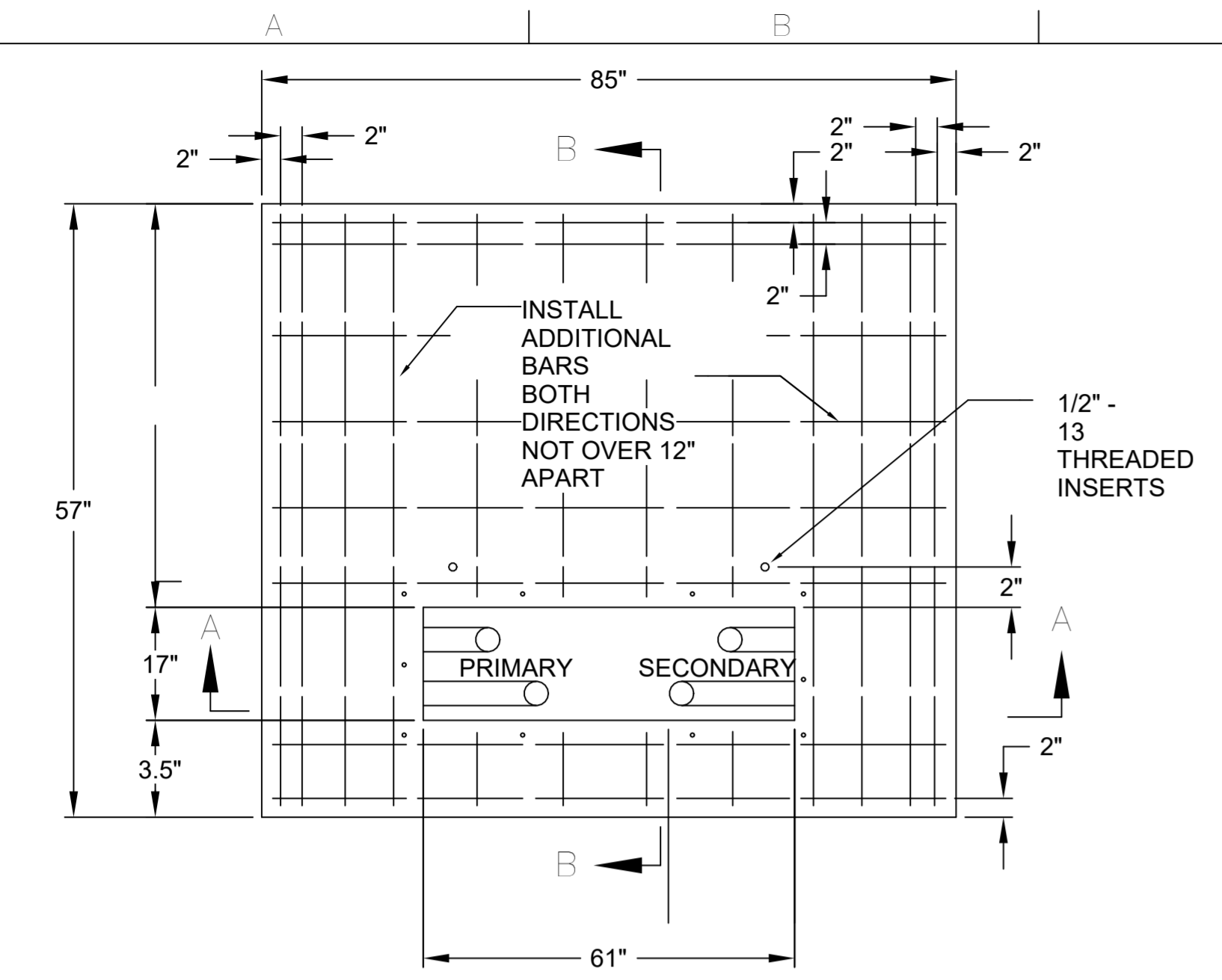
EXISTING ELECTRICAL LINE BELOW GRADE

EXISTING TELECOMM LINE TO BE ABANDONED.

**C5 ELECTRICAL SITE PLAN**  
 SCALE: 1" = 20'-0"

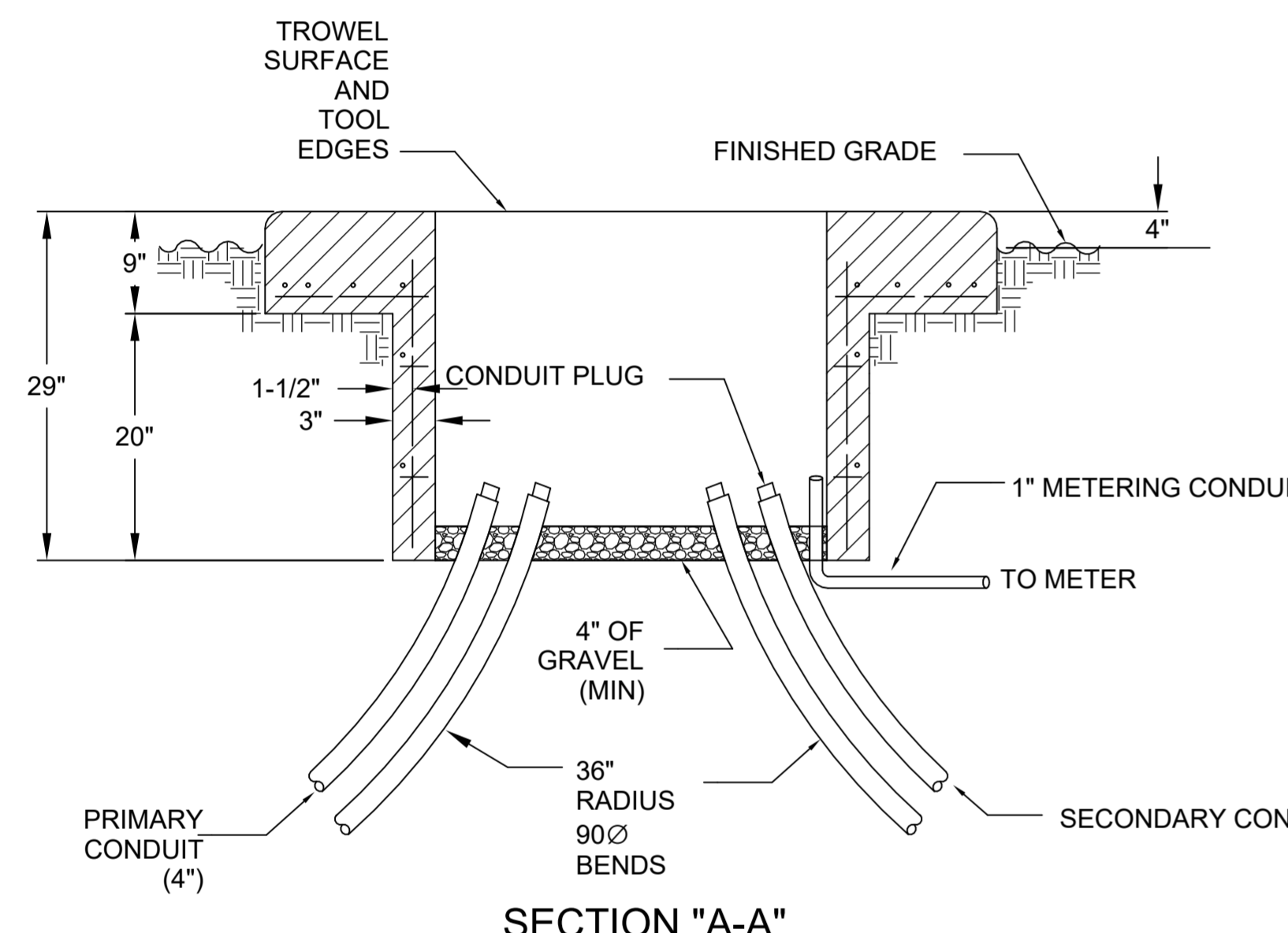


**GROUNDING DETAIL**



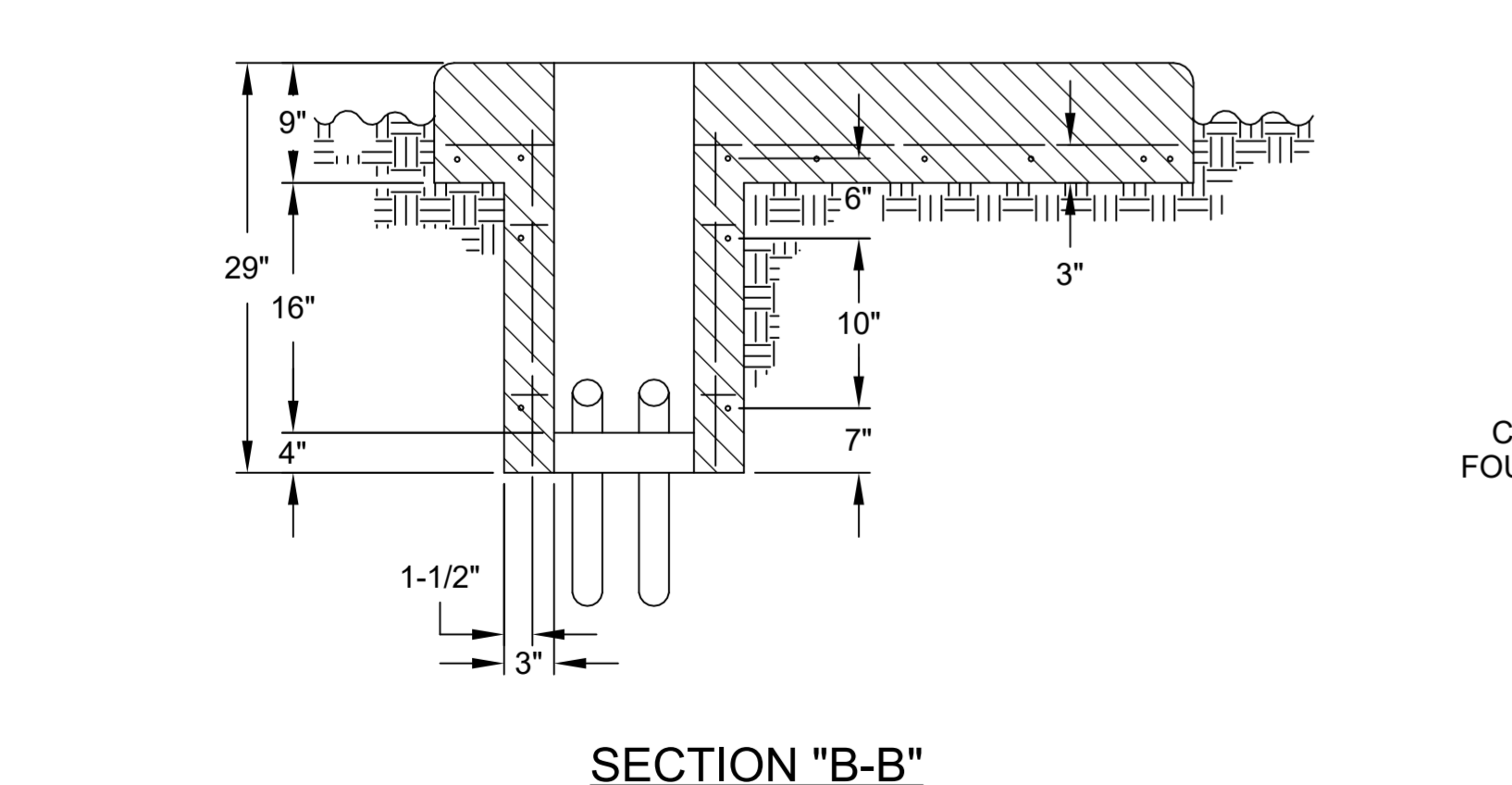
PRIMARY SECONDARY

1/2" - 13 THREADED INSERTS



**SECTION "A-A"**

CONTRACTOR TO COORDINATE WITH CPS ENERGY FOR PAD AND GROUNDING CONDUCTOR SIZE.



**SECTION "B-B"**

**A6 TRANSFORMER PAD DETAIL**  
 SCALE: NTS

REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: **SMS**

DRAWN BY: **ATJ**

REVIEWED BY: **WCM**

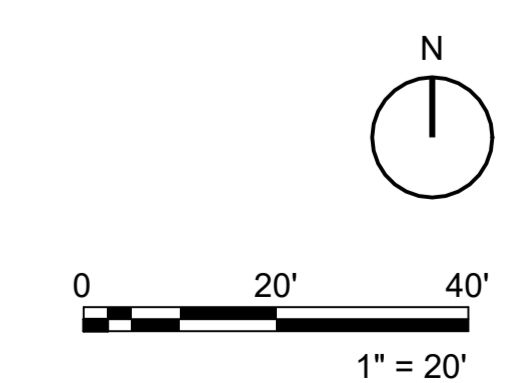
PROJECT MANAGER: **NDM**

PROJECT NUMBER: **20190320**

SHEET TITLE: **ELECTRICAL SITE PLAN**

ISSUE DATE: **2 AUGUST 2024**

SHEET NUMBER: **ES101**

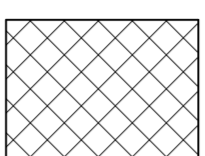


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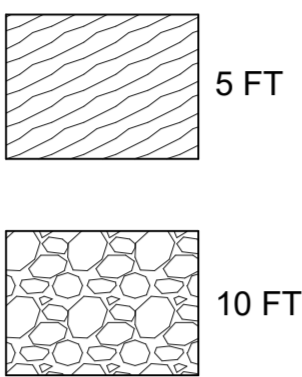
**HANGAR BAY**

ANY PIT OR DEPRESSION BELOW THE LEVEL OF THE HANGAR FLOOR SHALL BE CLASSIFIED AS A CLASS I, DIVISION 1 AND WET LOCATION THAT SHALL EXTEND UP TO FLOOR LEVEL. THE ENTIRE AREA OF THE HANGAR SHALL BE CLASSIFIED AS A CLASS I, DIVISION 2 LOCATION UP TO A LEVEL 18 IN. ABOVE THE FLOOR.



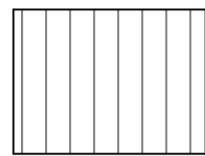
**VICINITY OF AIRCRAFT**

THE AREA WITHIN 5 FT HORIZONTALLY FROM AIRCRAFT POWER PLANTS OR AIRCRAFT FUEL TANKS SHALL BE CLASSIFIED AS A CLASS I, DIVISION 2 THAT SHALL EXTEND UPWARD FROM THE FLOOR TO A LEVEL 5 FT ABOVE THE UPPER SURFACE OF WINGS AND OF ENGINE ENCLOSURES. THE AREA WITHIN 10 FT OF THE AIRCRAFT ENVELOPE SHALL BE WET LOCATION.



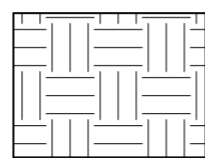
**PAINT BOOTH**

THIS AREA IS CLASS I DIVISION 1, ALL ELECTRICAL DEVICES LOCATED WITHIN THIS AREA SHALL BE RATED FOR CLASS I DIVISION 1 OPERATION. ALL CONDUCTIVE OBJECTS IN THE SPRAY AREA SHALL BE ADEQUATELY GROUNDED AS PER NFPA 70. ALL ELECTRICAL EQUIPMENT IN THIS AREA SHALL BE INTERLOCKED WITH THE VENTILATION SYSTEM SO THAT THE EQUIPMENT CANNOT BE OPERATED UNLESS VENTILATION FANS ARE IN OPERATION.



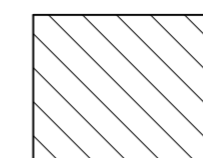
**PAINT BOOTH CLEARANCE**

THE AREA WITHIN 3' RADIUS OF THE PAINT BOOTH OPENINGS IS CLASS I DIVISION 2, ALL ELECTRICAL DEVICES LOCATED WITHIN THIS AREA SHALL BE RATED FOR CLASS I DIVISION 2 OPERATION, HAZARDOUS AREA RADIUS BASED UPON NFPA 70 ARTICLE 516 PARAGRAPH 516.3(4).



**ADJOINING AREAS NOT SUITABLY CUT OFF FROM HANGAR BAY**

CLASS I, DIVISION 2 FROM FINISHED FLOOR LEVEL UP TO 18" AFF.



**FLOOR TRENCH LOCATION**

ALL TRENCHES ARE NEC CLASS I, DIVISION 1, HAZARDOUS AREAS. ALL EQUIPMENT ENERGIZED WITHIN THE TRENCHES SHALL BE APPROVED FOR CLASS I, DIVISION 1 ENVIRONMENT.



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**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: **SMS**

DRAWN BY: **ATJ**

REVIEWED BY: **WCM**

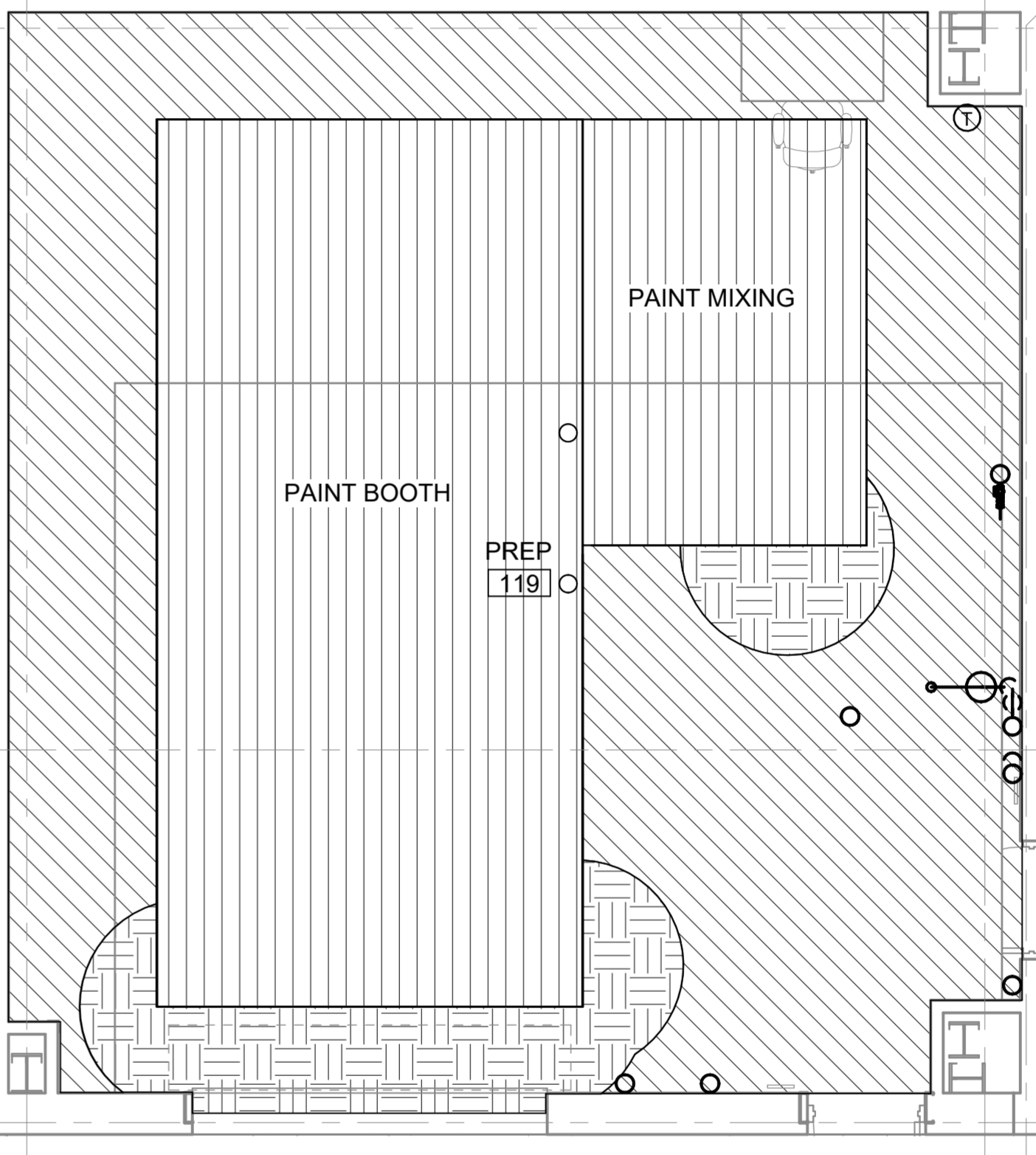
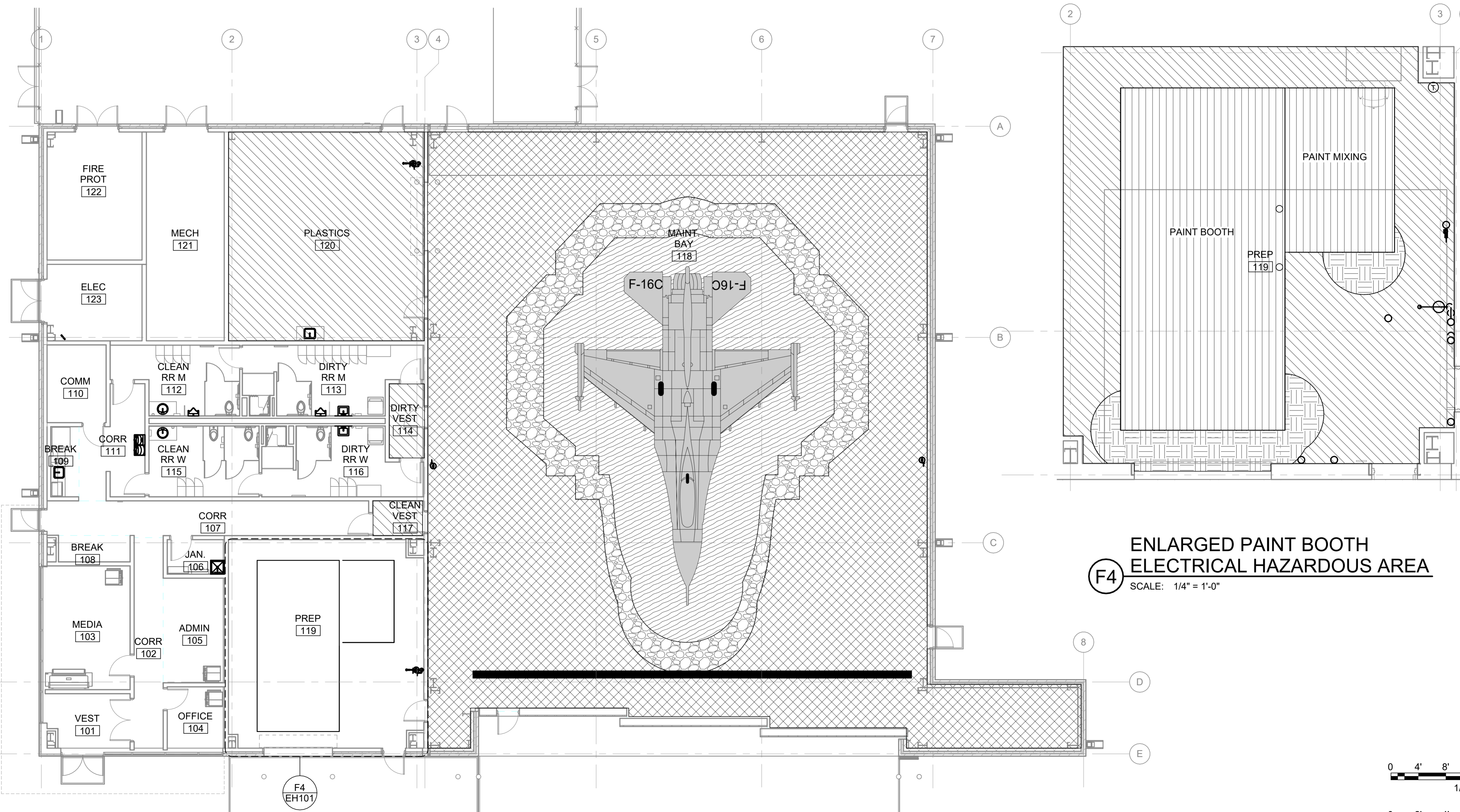
PROJECT MANAGER: **NDM**

PROJECT NUMBER: **20190320**

SHEET TITLE: **ELECTRICAL HAZARDOUS AREA PLAN**

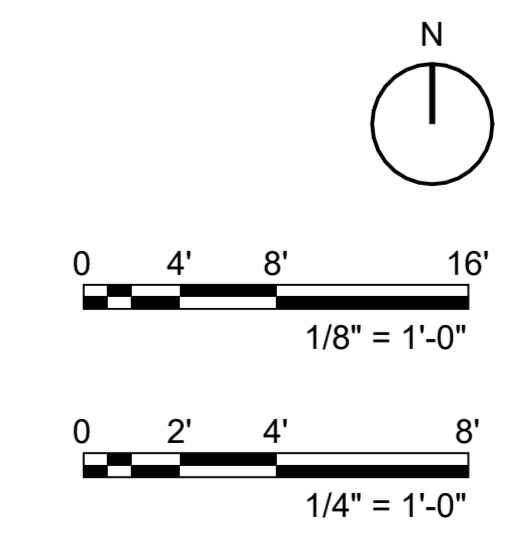
ISSUE DATE: **2 AUGUST 2024**

SHEET NUMBER: **EH101**

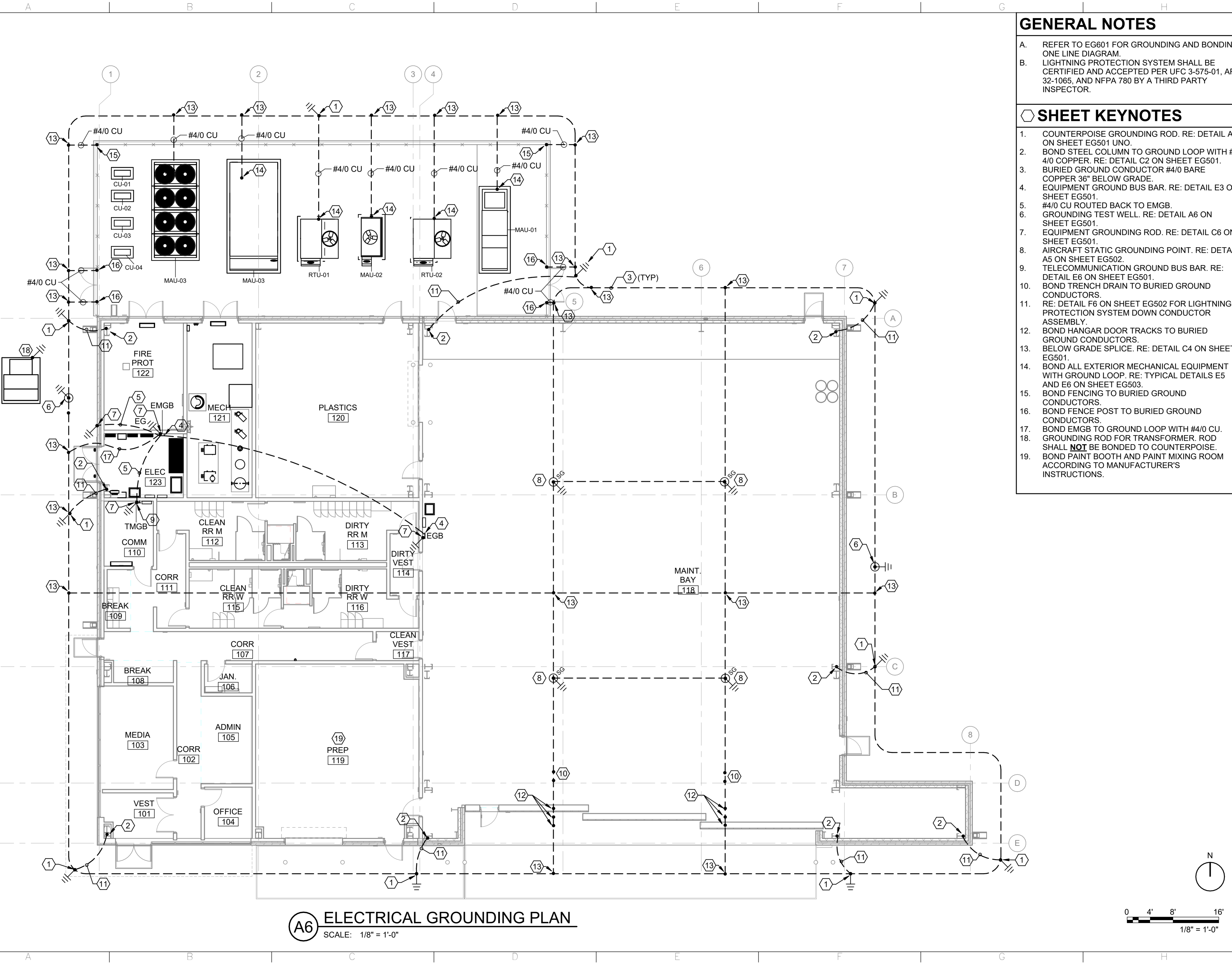


**(F4) ENLARGED PAINT BOOTH ELECTRICAL HAZARDOUS AREA**  
SCALE: 1/4" = 1'-0"

**(A6) ELECTRICAL HAZARDOUS AREA PLAN**  
SCALE: 1/8" = 1'-0"



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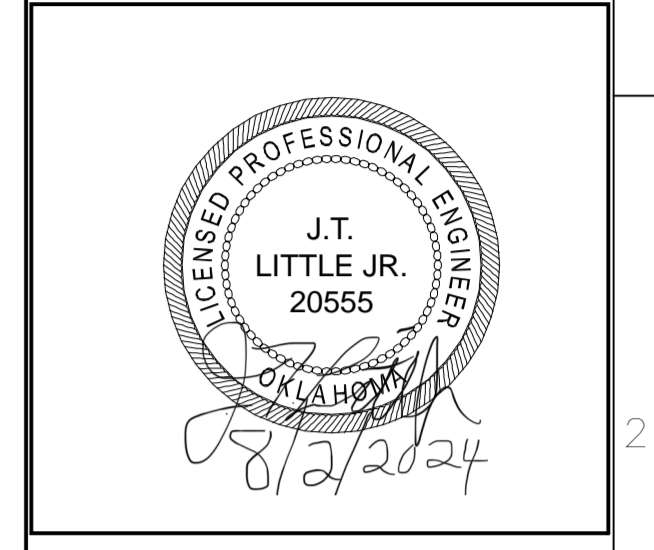
**GENERAL NOTES**

- A. REFER TO EG601 FOR GROUNDING AND BONDING ONE LINE DIAGRAM.
- B. LIGHTNING PROTECTION SYSTEM SHALL BE CERTIFIED AND ACCEPTED PER UFC 3-575-01, AFI 32-1065, AND NFPA 780 BY A THIRD PARTY INSPECTOR.

**SHEET KEYNOTES**

- 1. COUNTERPOISE GROUNDING ROD. RE: DETAIL A2 ON SHEET EG501 UNO.
- 2. BOND STEEL COLUMN TO GROUND LOOP WITH #4/0 COPPER. RE: DETAIL C2 ON SHEET EG501.
- 3. BURIED GROUND CONDUCTOR #4/0 BARE COPPER 36" BELOW GRADE.
- 4. EQUIPMENT GROUND BUS BAR. RE: DETAIL E3 ON SHEET EG501.
- 5. #4/0 CU ROUTED BACK TO EMGB.
- 6. GROUNDING TEST WELL. RE: DETAIL A6 ON SHEET EG501.
- 7. EQUIPMENT GROUNDING ROD. RE: DETAIL C6 ON SHEET EG501.
- 8. AIRCRAFT STATIC GROUNDING POINT. RE: DETAIL A5 ON SHEET EG502.
- 9. TELECOMMUNICATION GROUND BUS BAR. RE: DETAIL E6 ON SHEET EG501.
- 10. BOND TRENCH DRAIN TO BURIED GROUND CONDUCTORS.
- 11. RE: DETAIL F6 ON SHEET EG502 FOR LIGHTNING PROTECTION SYSTEM DOWN CONDUCTOR ASSEMBLY.
- 12. BOND HANGAR DOOR TRACKS TO BURIED GROUND CONDUCTORS.
- 13. BELOW GRADE SPLICE. RE: DETAIL C4 ON SHEET EG501.
- 14. BOND ALL EXTERIOR MECHANICAL EQUIPMENT WITH GROUND LOOP. RE: TYPICAL DETAILS E5 AND E6 ON SHEET EG503.
- 15. BOND FENCING TO BURIED GROUND CONDUCTORS.
- 16. BOND FENCE POST TO BURIED GROUND CONDUCTORS.
- 17. BOND EMGB TO GROUND LOOP WITH #4/0 CU.
- 18. GROUNDING ROD FOR TRANSFORMER. ROD SHALL **NOT** BE BONDED TO COUNTERPOISE.
- 19. BOND PAINT BOOTH AND PAINT MIXING ROOM ACCORDING TO MANUFACTURER'S INSTRUCTIONS.


  
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 J.T. LITTLE JR.
   
 20555
   
 8/2/2024

**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

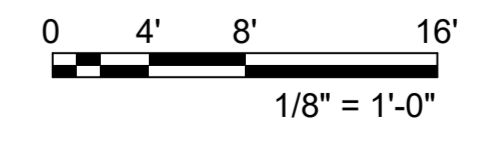
REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY:	SMS
DRAWN BY:	ATJ
REVIEWED BY:	WCM
PROJECT MANAGER:	NDM
PROJECT NUMBER:	20190320
SHEET TITLE:	ELECTRICAL GROUNDING PLAN
ISSUE DATE:	2 AUGUST 2024
SHEET NUMBER:	EG101

**A6 ELECTRICAL GROUNDING PLAN**  
SCALE: 1/8" = 1'-0"



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A B C D E F G H

**GENERAL NOTES**

- A. COORDINATE DOWN CONDUCTORS WITH COLUMN LOCATIONS.
- B. ROOF PENETRATIONS SHALL BE MADE IN A MANNER THAT DOES NOT VOID OR ALTER ROOF WARRANTY.
- C. ALL CONNECTIONS ABOVE GRADE SHALL BE BOLTED UNO (EXO BONDED TO COLUMNS). REFER TO DETAIL D3 ON SHEET EG503.
- D. LIGHTNING PROTECTION SYSTEM SHALL BE CERTIFIED AND ACCEPTED PER UFC 3-575-01, AFI 32-1065, AND NFPA 780 BY A THIRD PARTY INSPECTOR.
- E. ALL AIR TERMINALS AND ROOF MOUNTED LPS BONDED ELECTRICAL, MECHANICAL, AND STEEL ROOF PENETRATIONS ON THE ENTIRE FACILITY SHALL BE THIRD PARTY TESTED AND CERTIFIED.



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**SHEET KEYNOTES**

- 1. AIR TERMINAL TYPE "A". RE: DETAIL D3 ON SHEET EG502.
- 2. LIGHTNING PROTECTION MAIN CONDUCTOR. PROVIDE CLASS I CONDUCTOR.
- 3. TO GROUND ROD AND COUNTERPOISE. REFER TO SHEET EG101 FOR CONTINUATION.
- 4. LIGHTNING PROTECTION DOWN CONDUCTOR. BOND TO BUILDING STEEL. RE: DETAIL F6 ON SHEET EG502.
- 5. BOND STEEL COLUMN TO GROUND LOOP WITH # 4/0 COPPER. RE: DETAIL F6 ON SHEET EG502.
- 6. THROUGH ROOF CONNECTION. PENETRATION SHALL NOT VOID ROOF WARRANTY. COORDINATE PENETRATION WITH ROOF INSTALLER.
- 7. AIR TERMINAL TYPE "B". RE: DETAIL A3 ON SHEET EG503.
- 8. ABOVE GRADE SPLICE. RE: DETAIL D3 ON SHEET EG503.
- 9. BOND ALL OBSTRUCTION LIGHTS WITH LIGHTNING PROTECTION SYSTEM. RE: DETAIL F3 ON SHEET EG503.
- 10. BOND GUTTER TO LIGHTNING PROTECTION SYSTEM.
- 11. BOND EXHAUST VENTS TO LIGHTNING PROTECTION SYSTEM. RE: DETAIL A5 ON SHEET EG503.
- 12. BOND FALL PROTECTION SYSTEM TO LIGHTNING PROTECTION SYSTEM.

**Texas Air National Guard - 149th FW**  
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REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: **SMS**

DRAWN BY: **ATJ**

REVIEWED BY: **WCM**

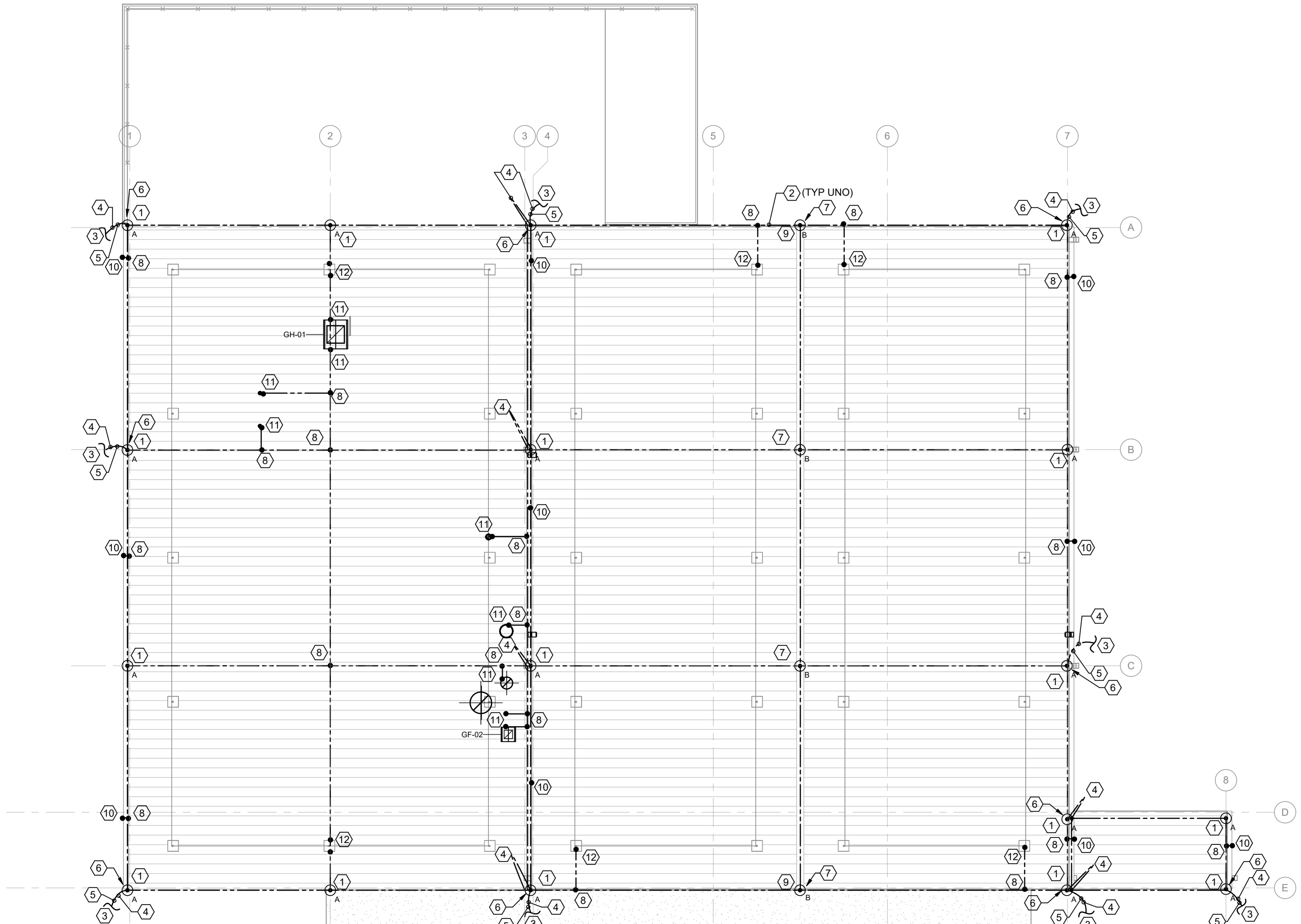
PROJECT MANAGER: **NDM**

PROJECT NUMBER: **20190320**

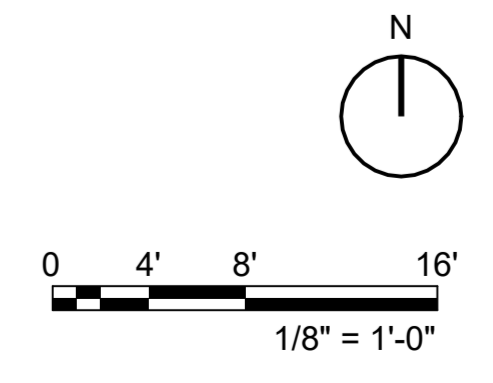
SHEET TITLE: **ELECTRICAL LIGHTNING PROTECTION PLAN**

ISSUE DATE: **2 AUGUST 2024**

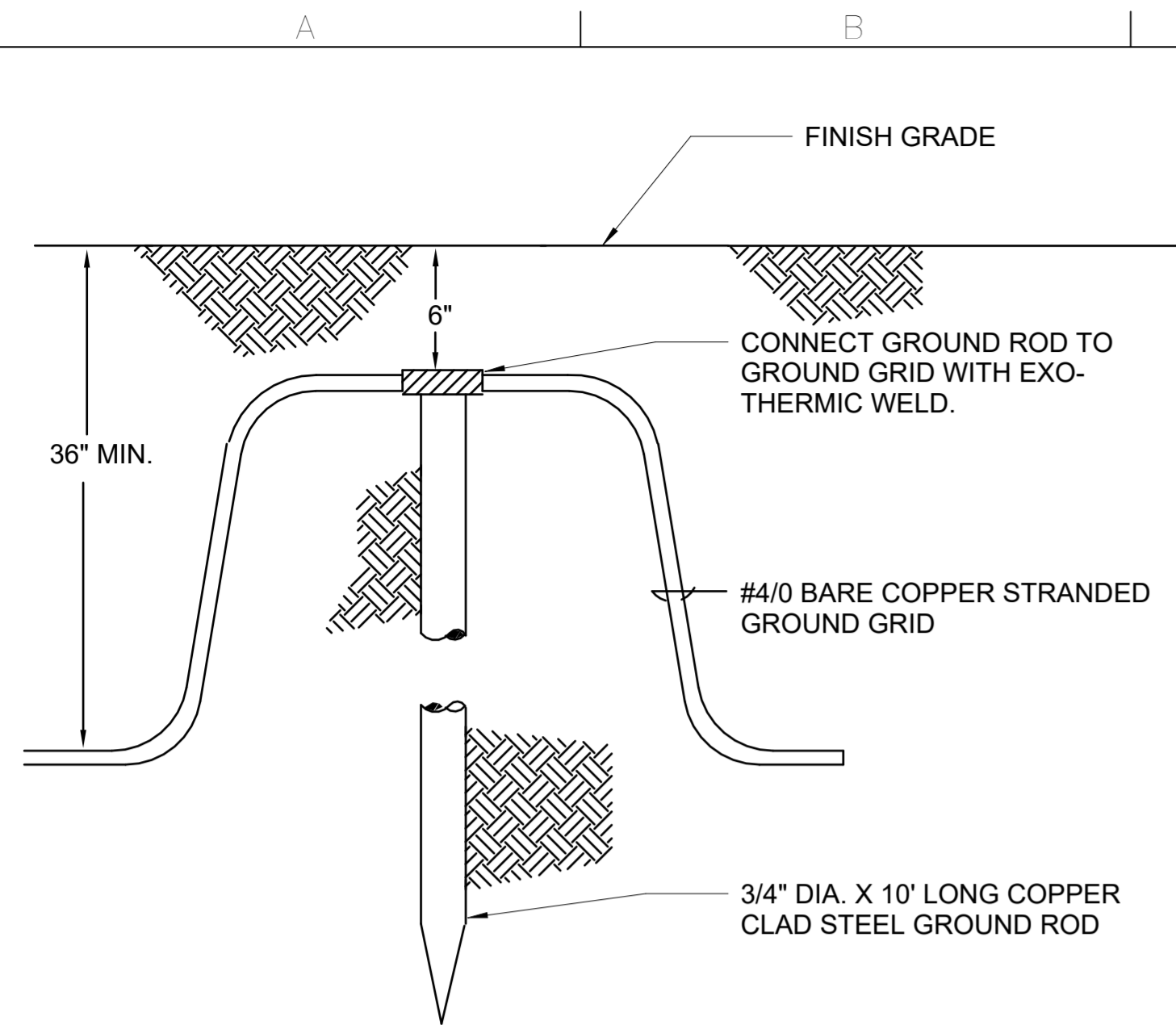
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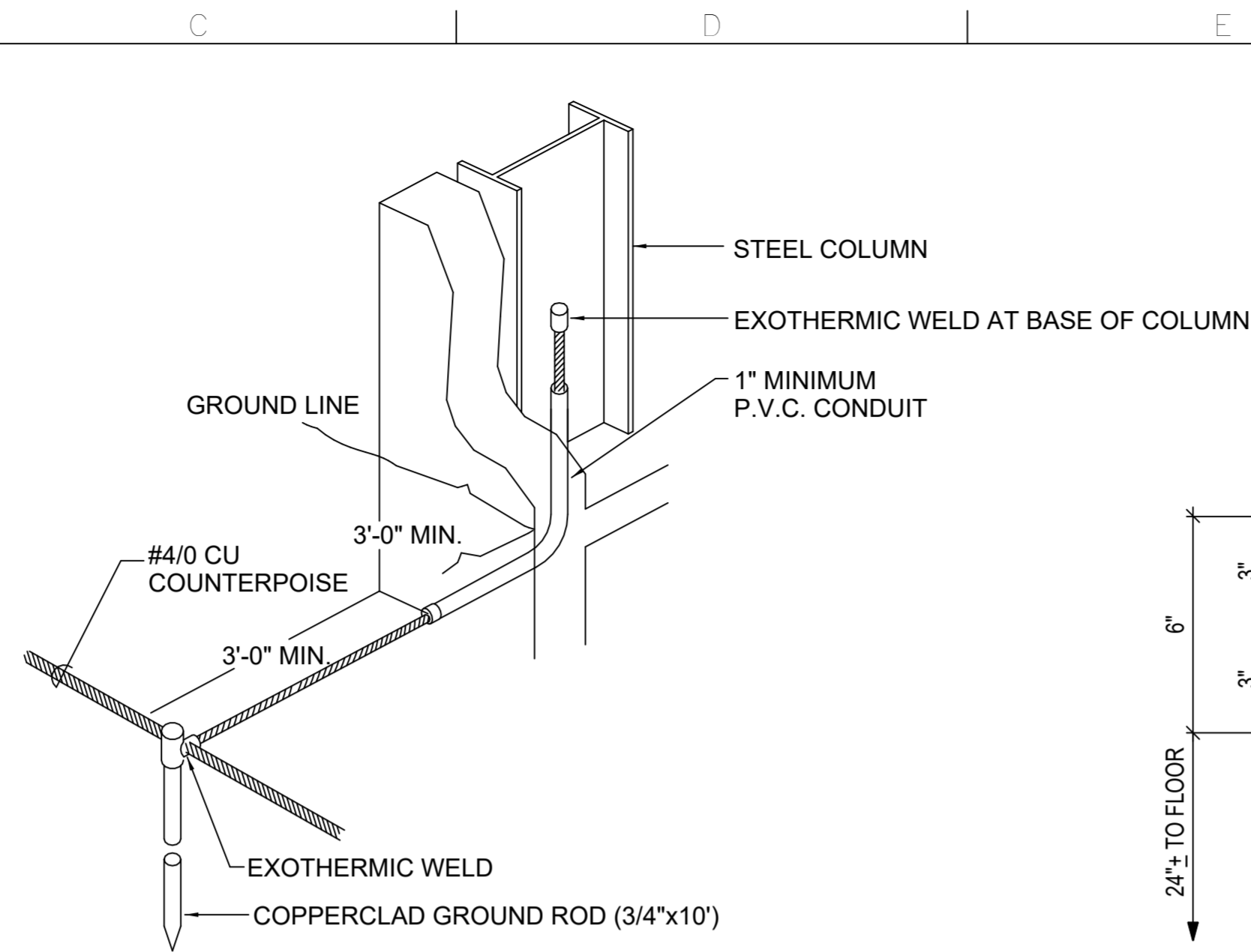
**A6 ELECTRICAL LIGHTNING PROTECTION PLAN**  
SCALE: 1/8" = 1'-0"



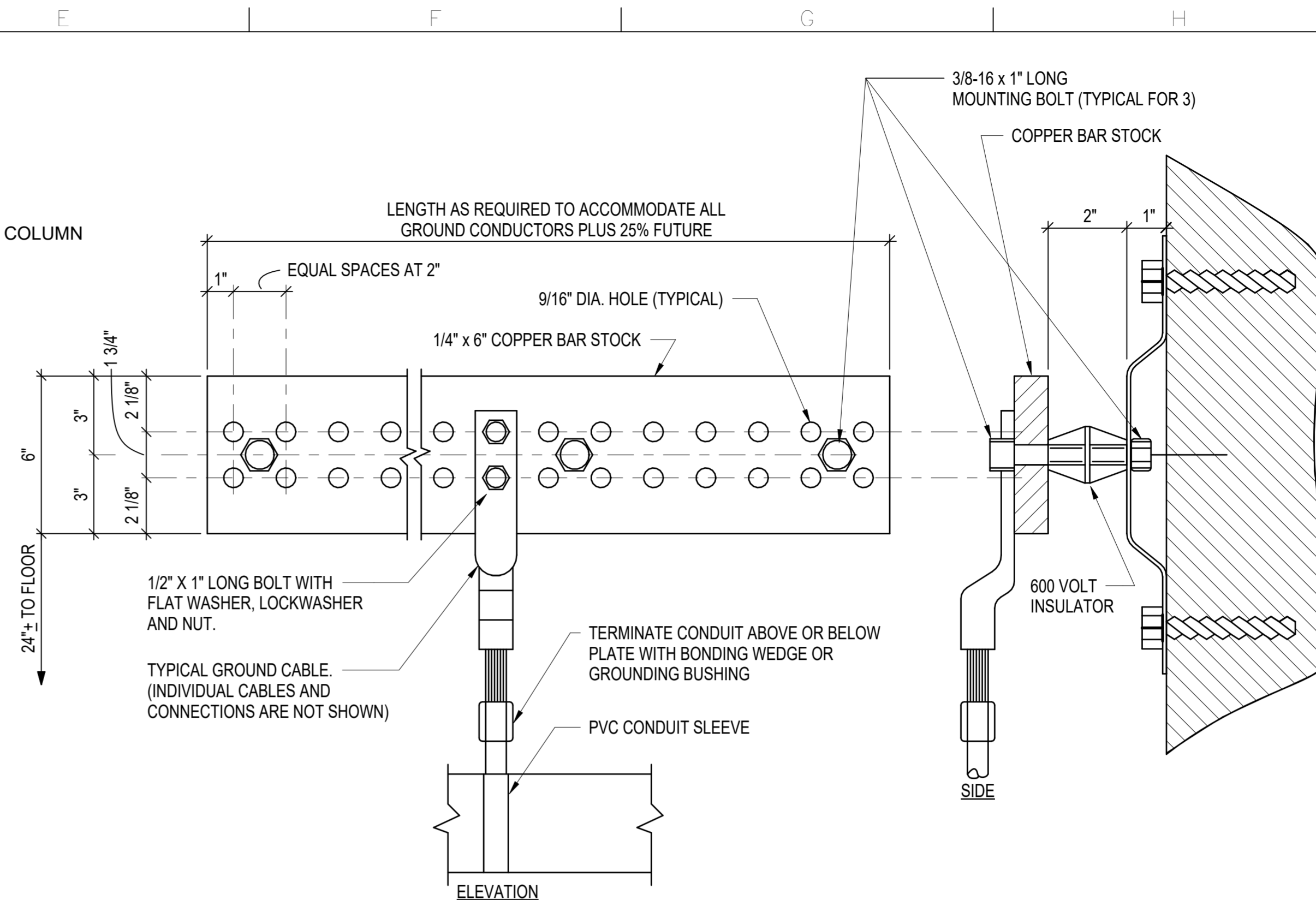
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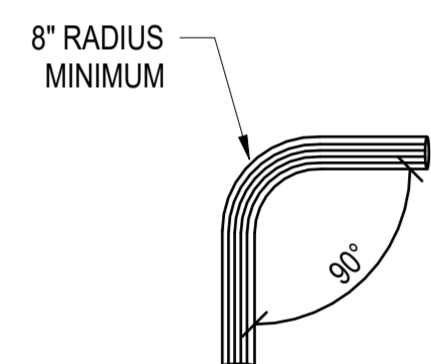
**A2** GROUND ROD CONNECTION  
SCALE: NTS



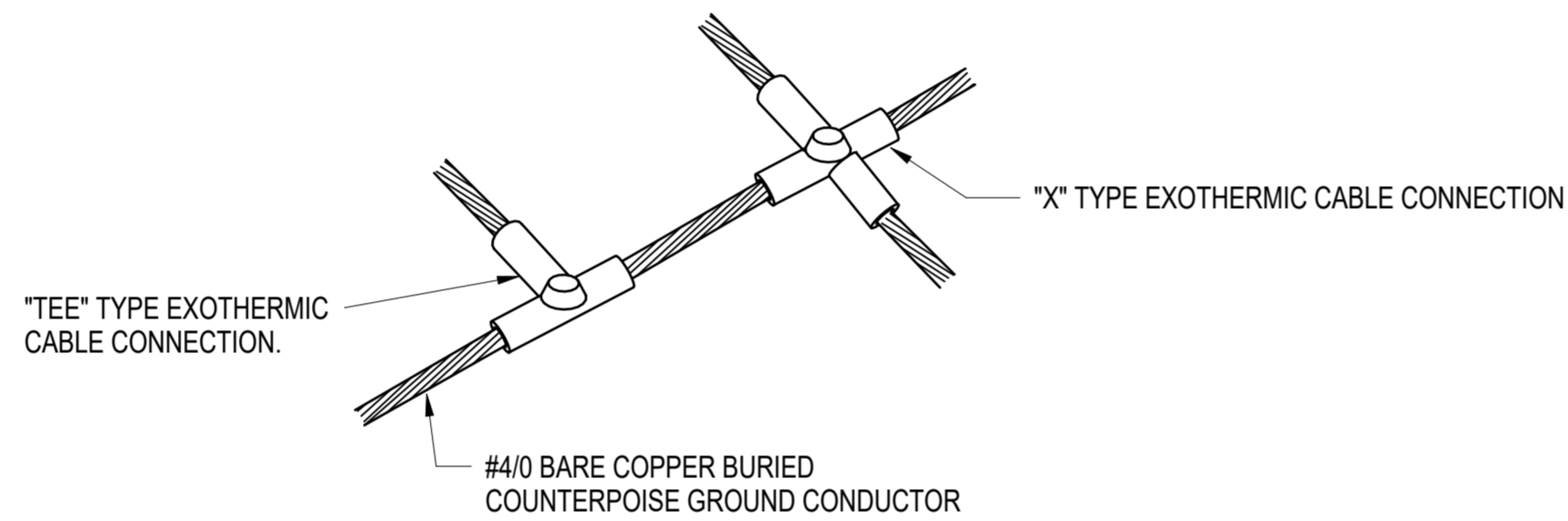
**C2** BUILDING STEEL CONNECTION DETAIL  
SCALE: NTS



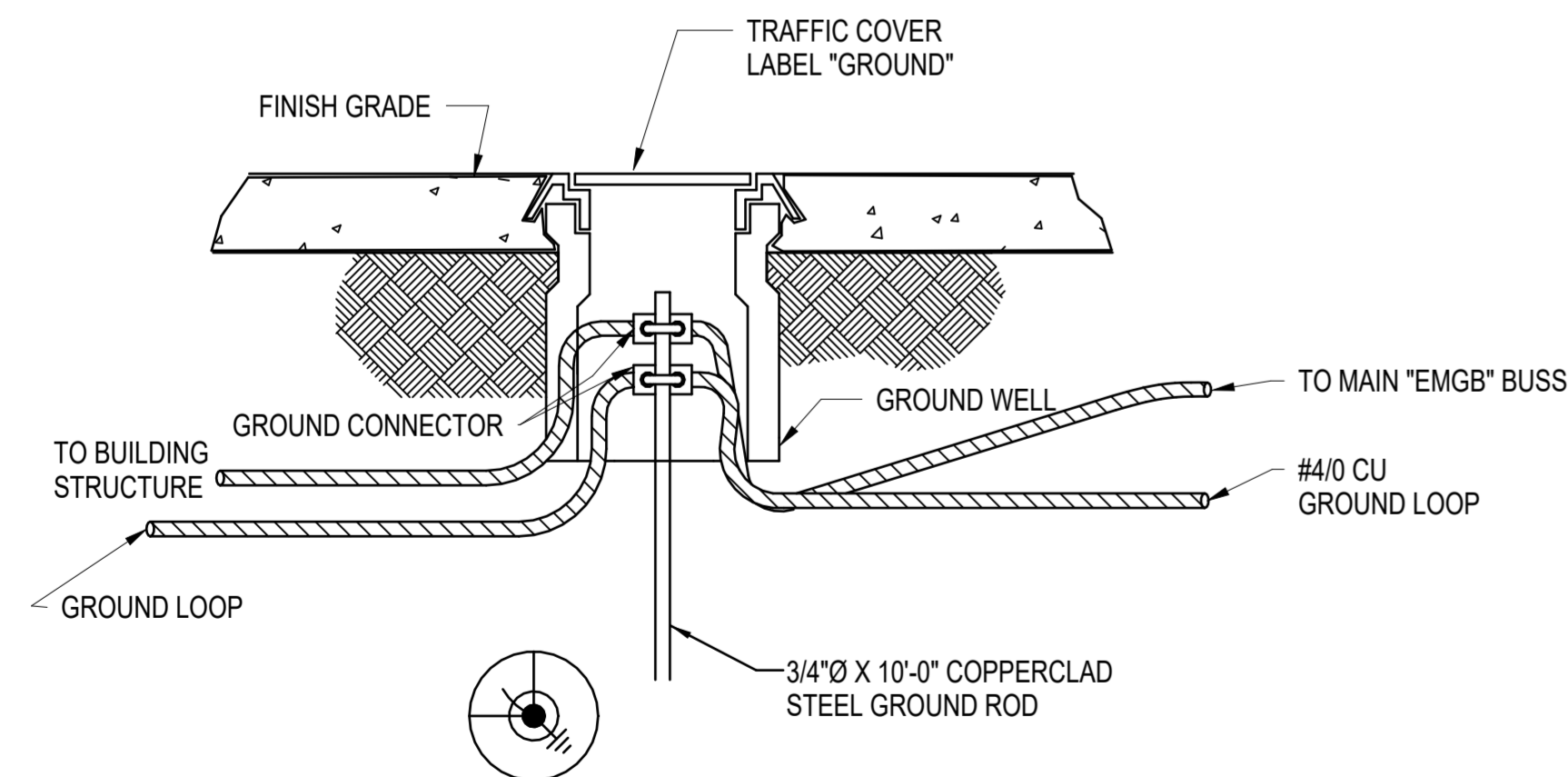
**E3** ELECTRICAL MAIN GROUND BUS "EMGB" DETAIL  
SCALE: NTS



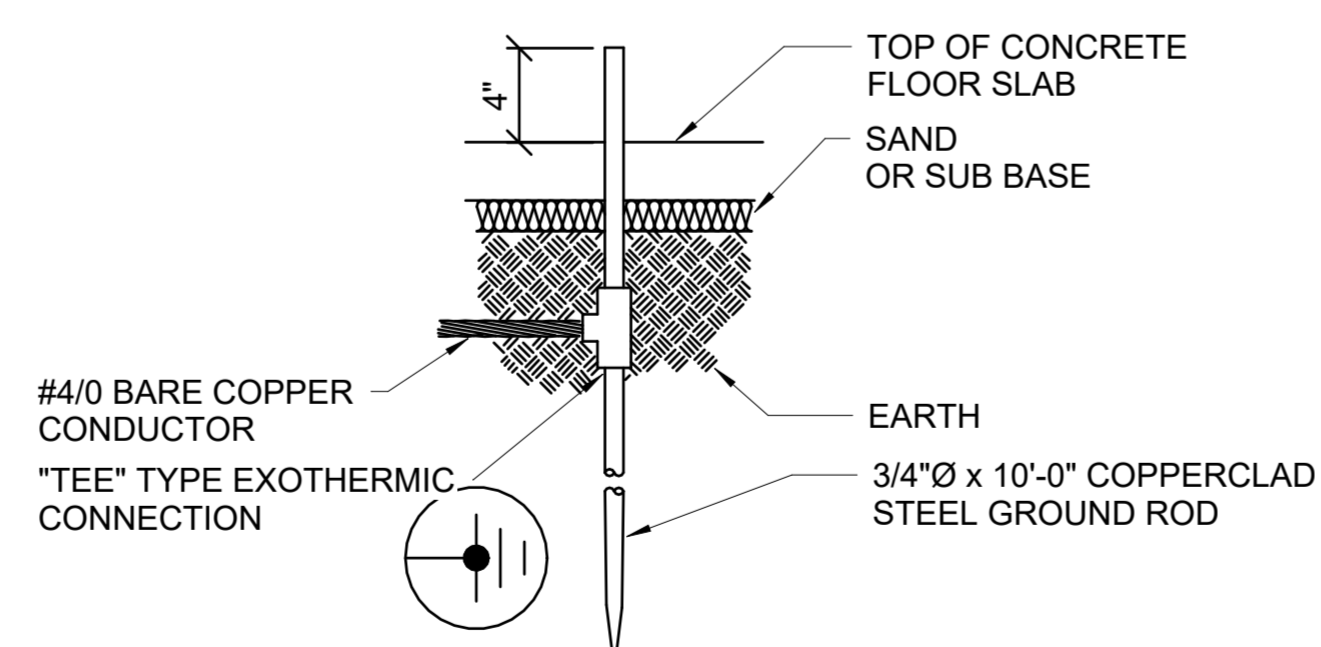
**A4** TYPICAL ACCEPTABLE CABLE BEND  
SCALE: NTS



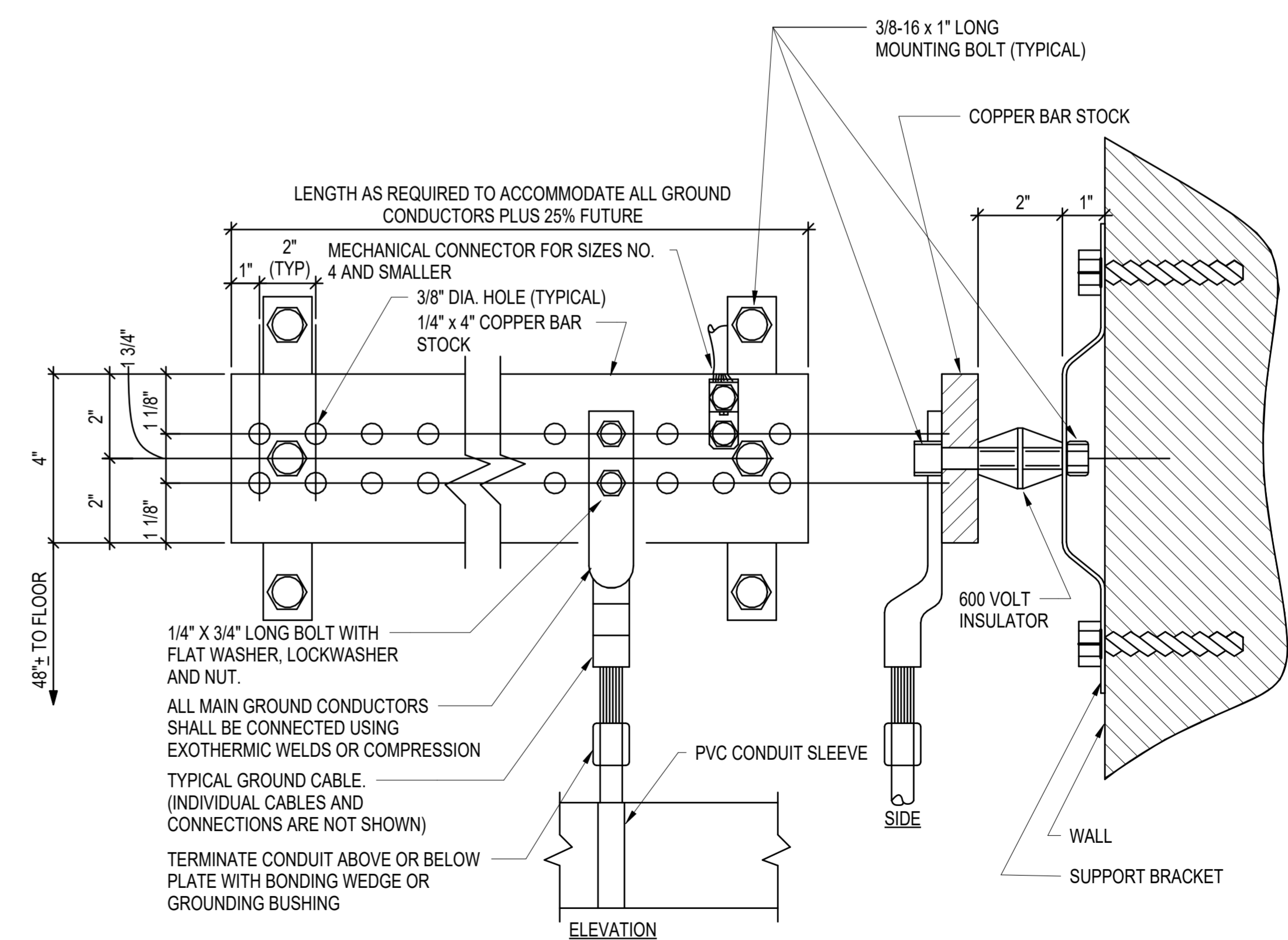
**C4** BELOW FLOOR GRADE TEE SPLICE  
SCALE: NTS



**A6** GROUND TEST WELL DETAIL  
SCALE: NTS



**C6** EQUIPMENT GROUNDING ROD  
SCALE: NTS



**E6** TELECOMMUNICATIONS MAIN GROUND BUS (TMGB) DETAIL  
SCALE: NTS

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**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

REVISION HISTORY:

DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY:	SMS
DRAWN BY:	ATJ
REVIEWED BY:	WCM
PROJECT MANAGER:	NDM

PROJECT NUMBER:

20190320

SHEET TITLE:

**GROUNDING DETAILS**

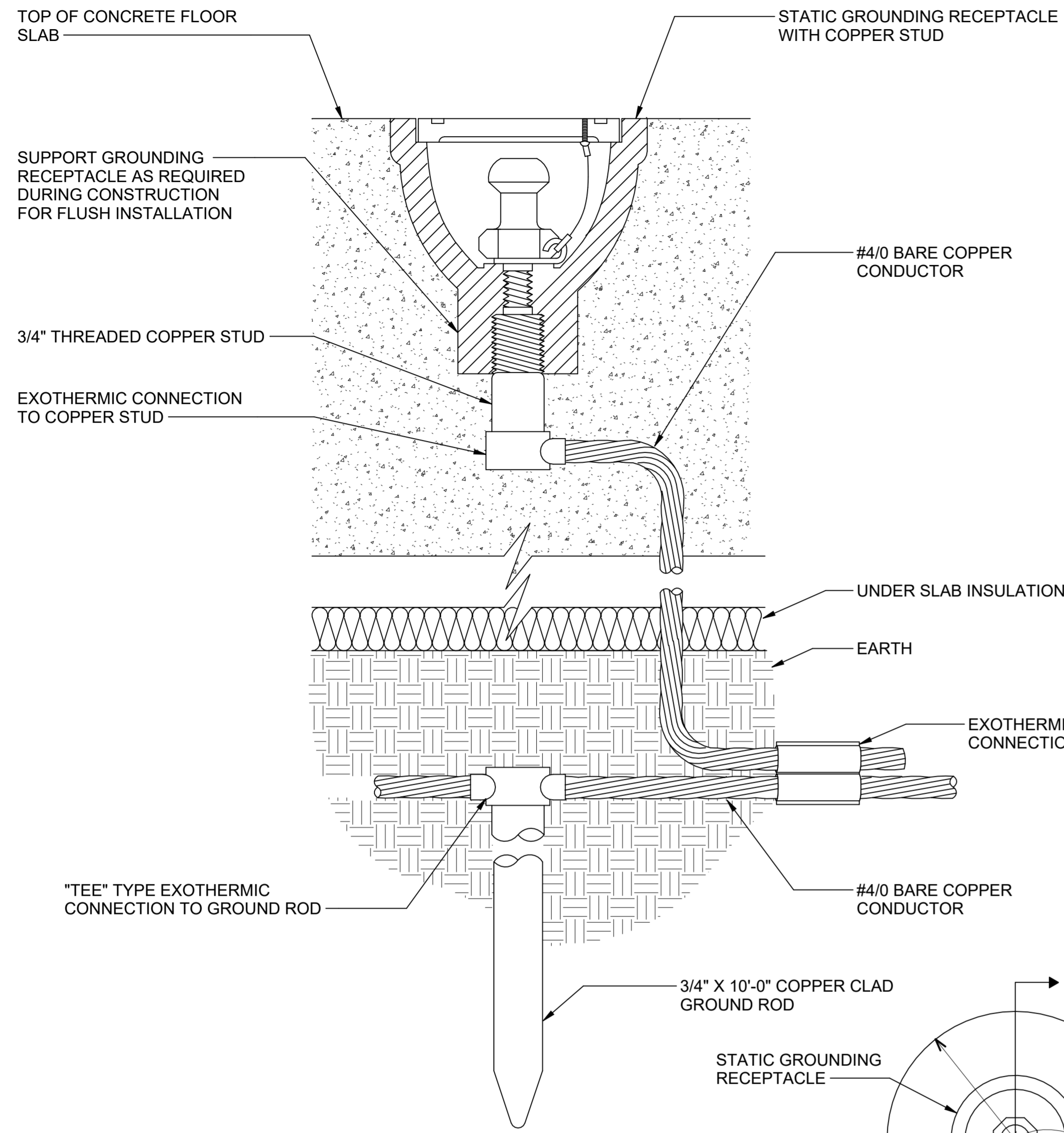
ISSUE DATE:

2 AUGUST 2024

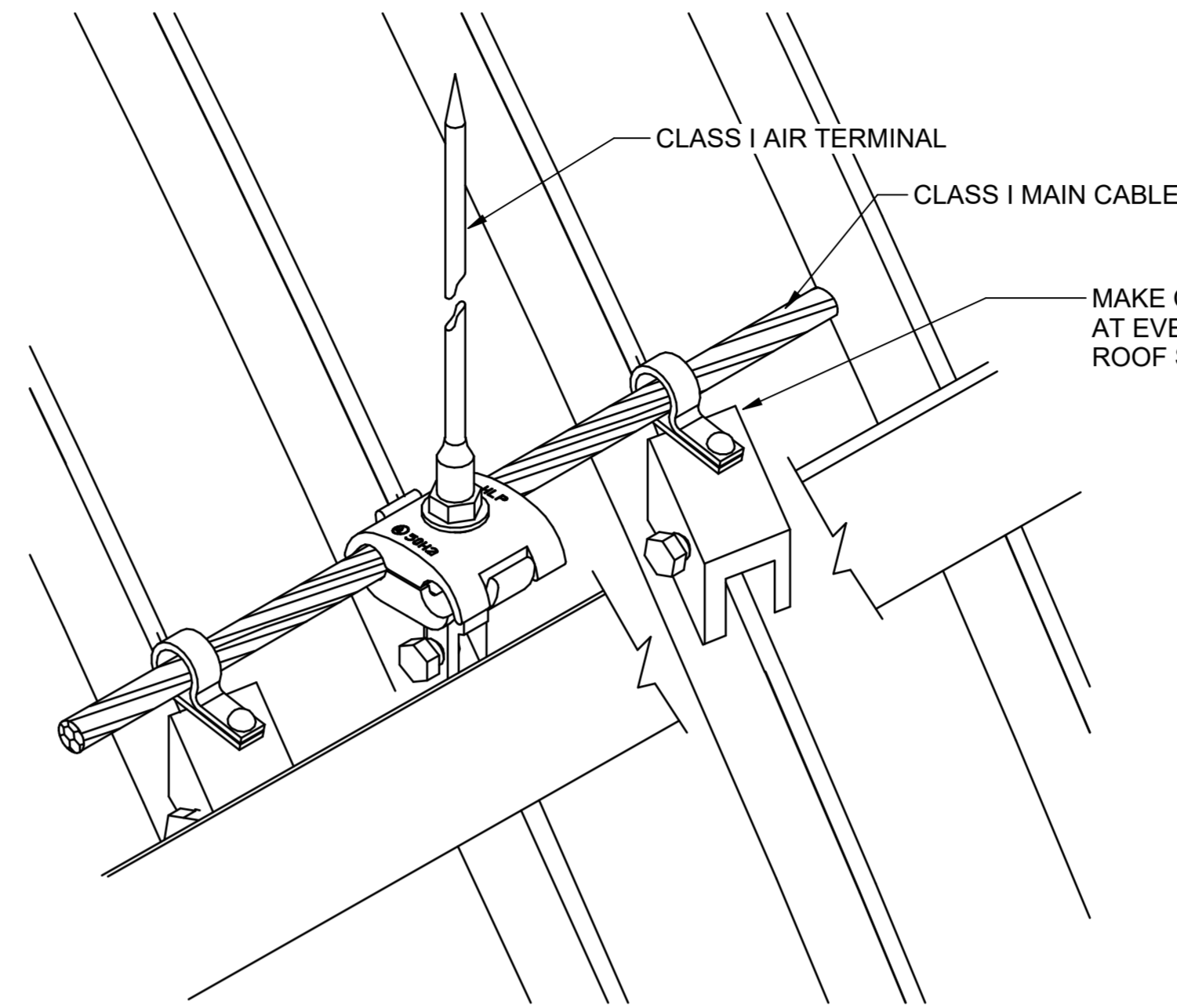
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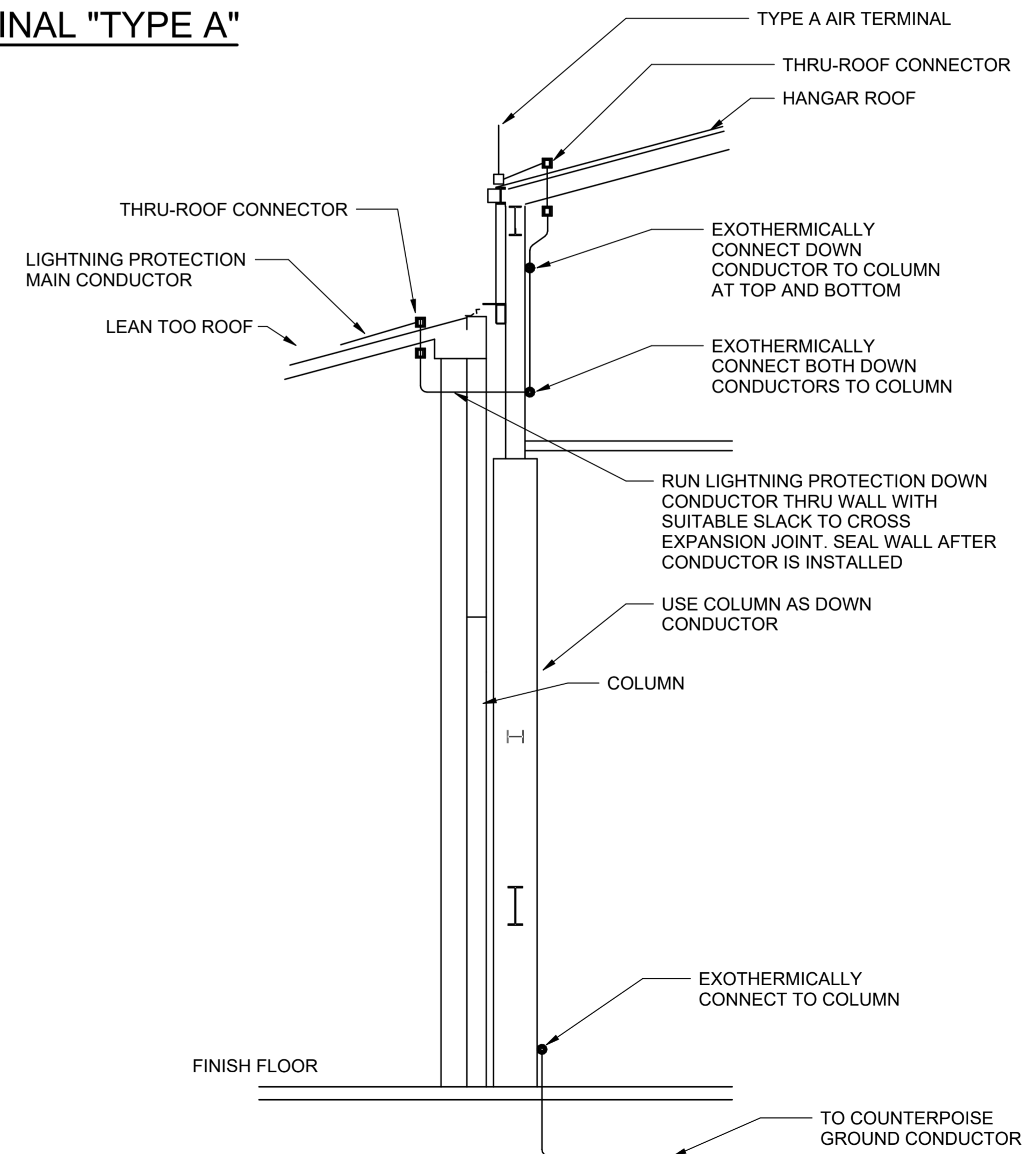
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**A5** STATIC GROUNDING RECEPTACLE INSTALLED IN GROUND LEVEL FLOOR DETAIL  
SCALE: NTS



**D3** TYPICAL AIR TERMINAL "TYPE A"  
SCALE: NTS



**F6** LIGHTNING PROTECTION DOWN CONDUCTOR THRU ROOF DETAIL  
SCALE: NTS

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PROJECT MANAGER:	<b>NDM</b>

PROJECT NUMBER:  
**20190320**

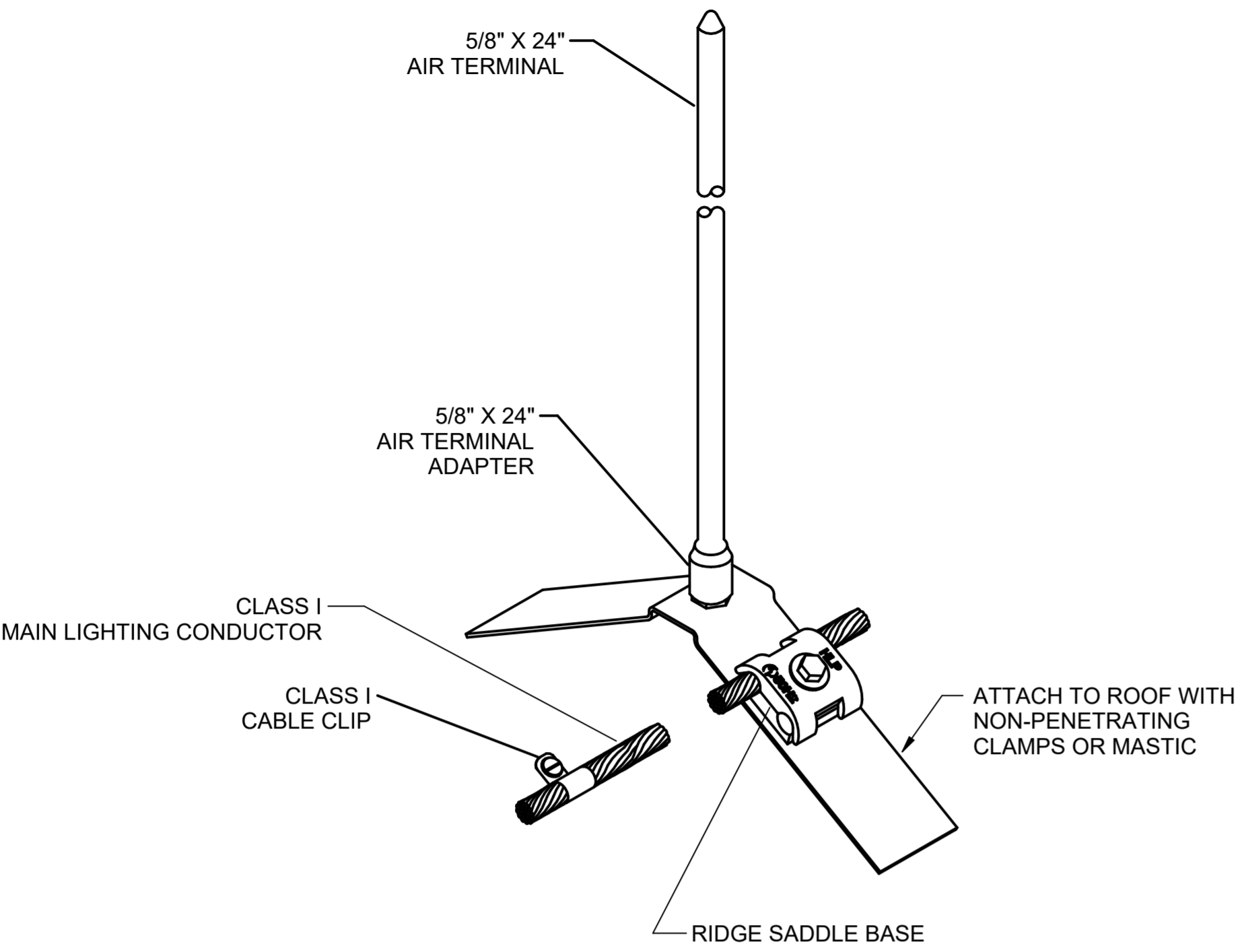
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**GROUNDING AND LIGHTNING PROTECTION DETAILS**

ISSUE DATE:  
**2 AUGUST 2024**

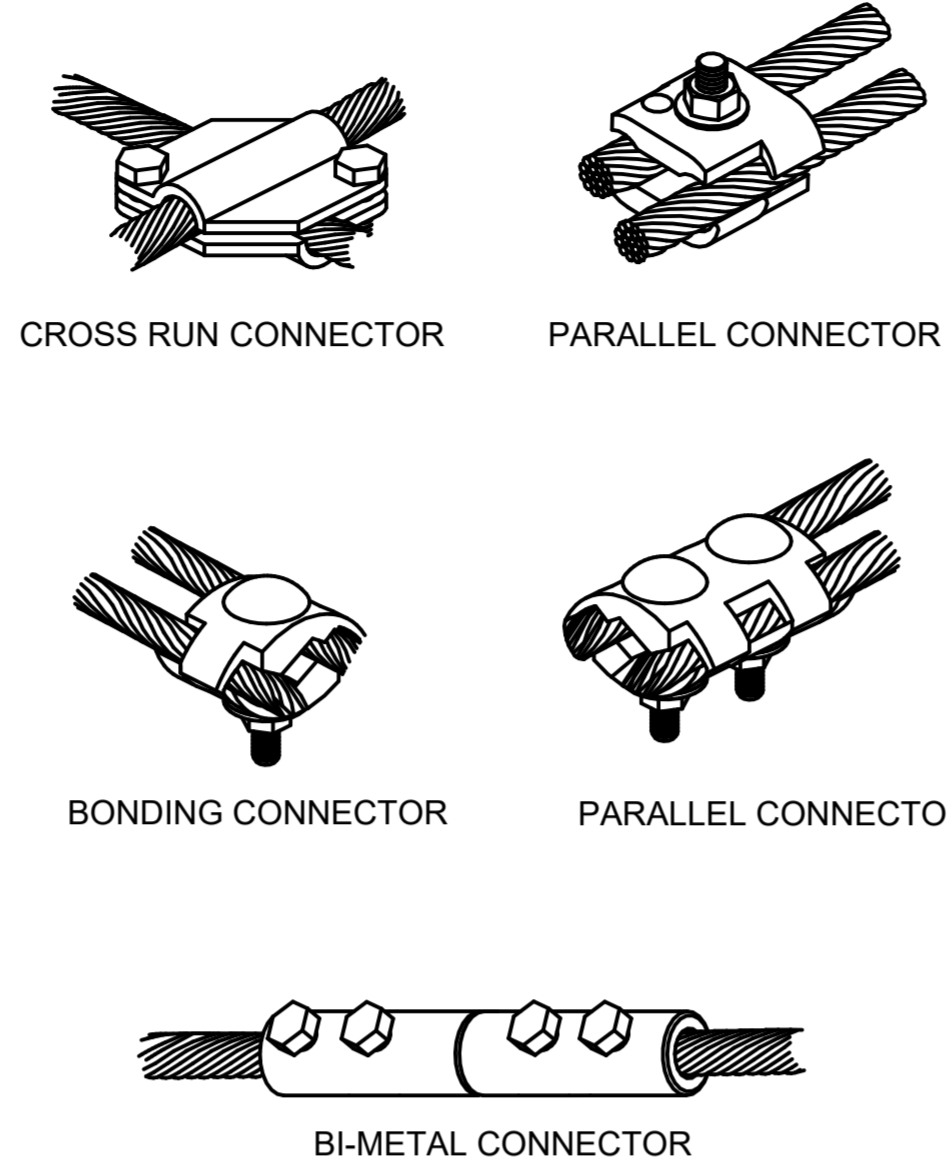
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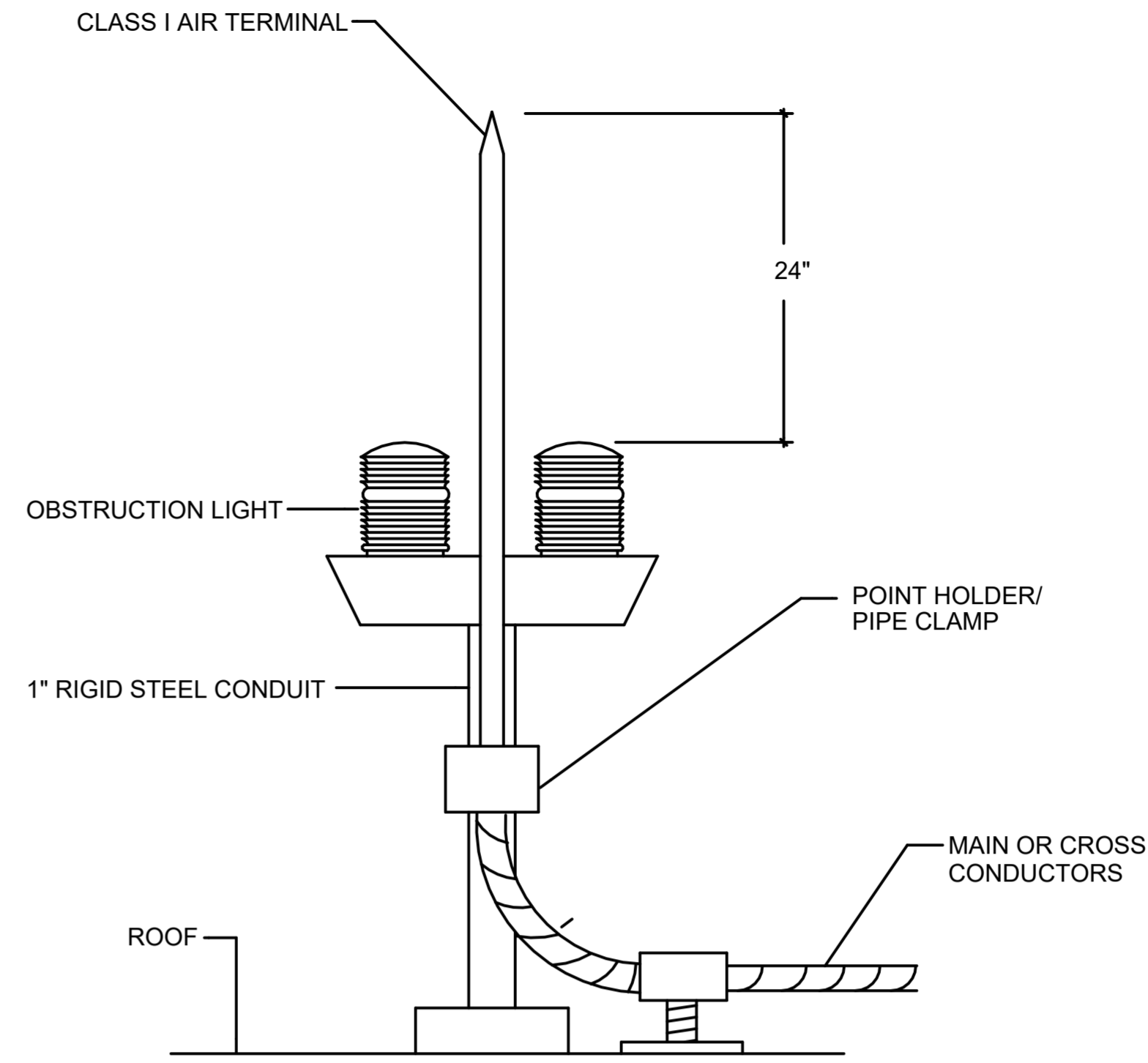
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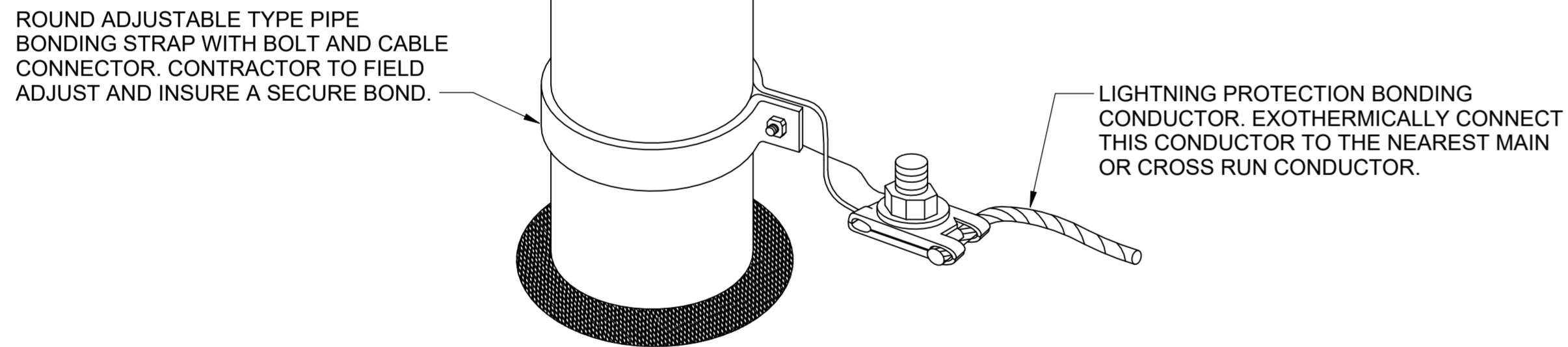
**A3** TYPICAL AIR TERMINAL "TYPE B"  
SCALE: NTS



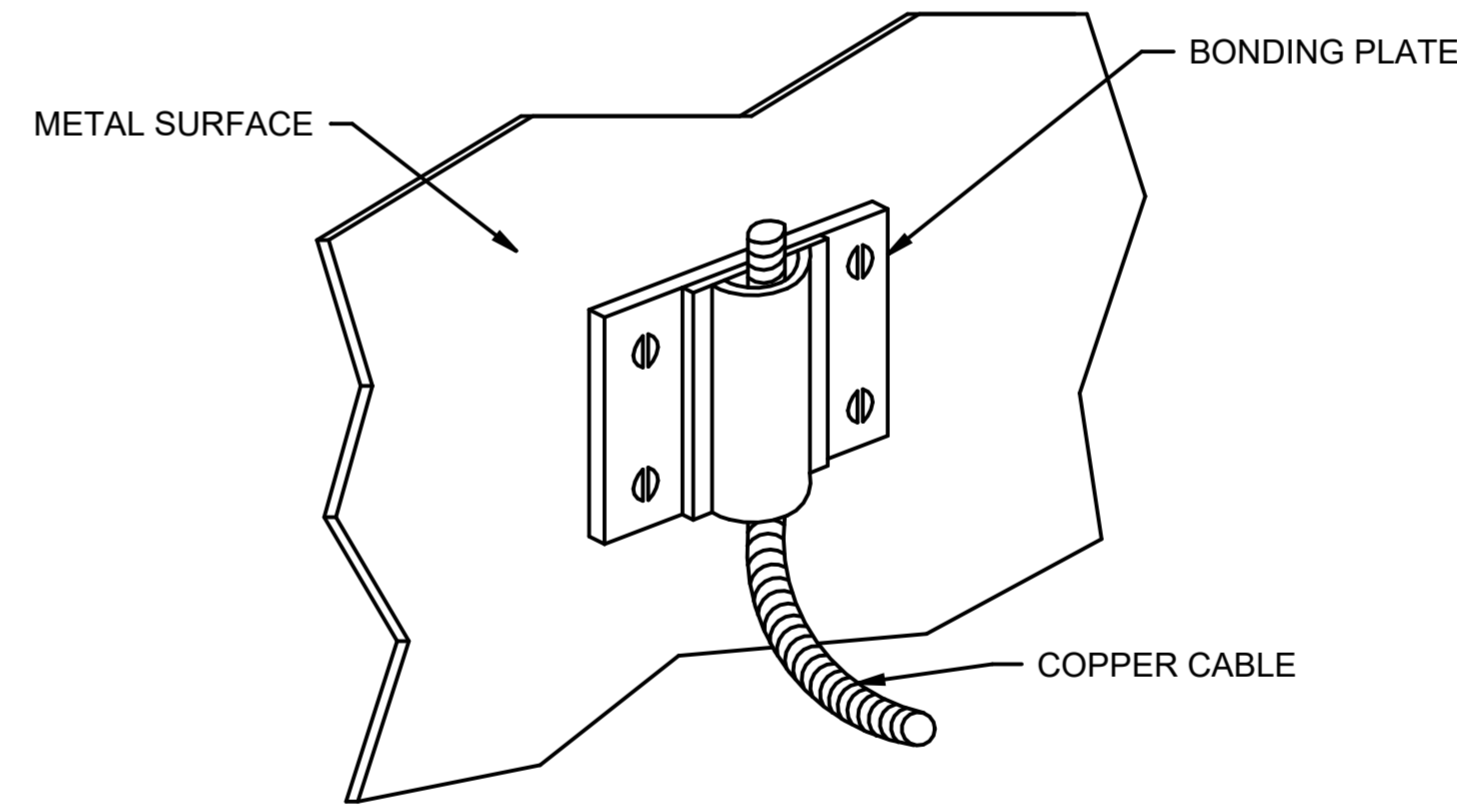
**D3** LIGHTNING PROTECTION SYSTEM ABOVE GRADE TYPICAL CABLE CONNECTOR DETAIL  
SCALE: NTS



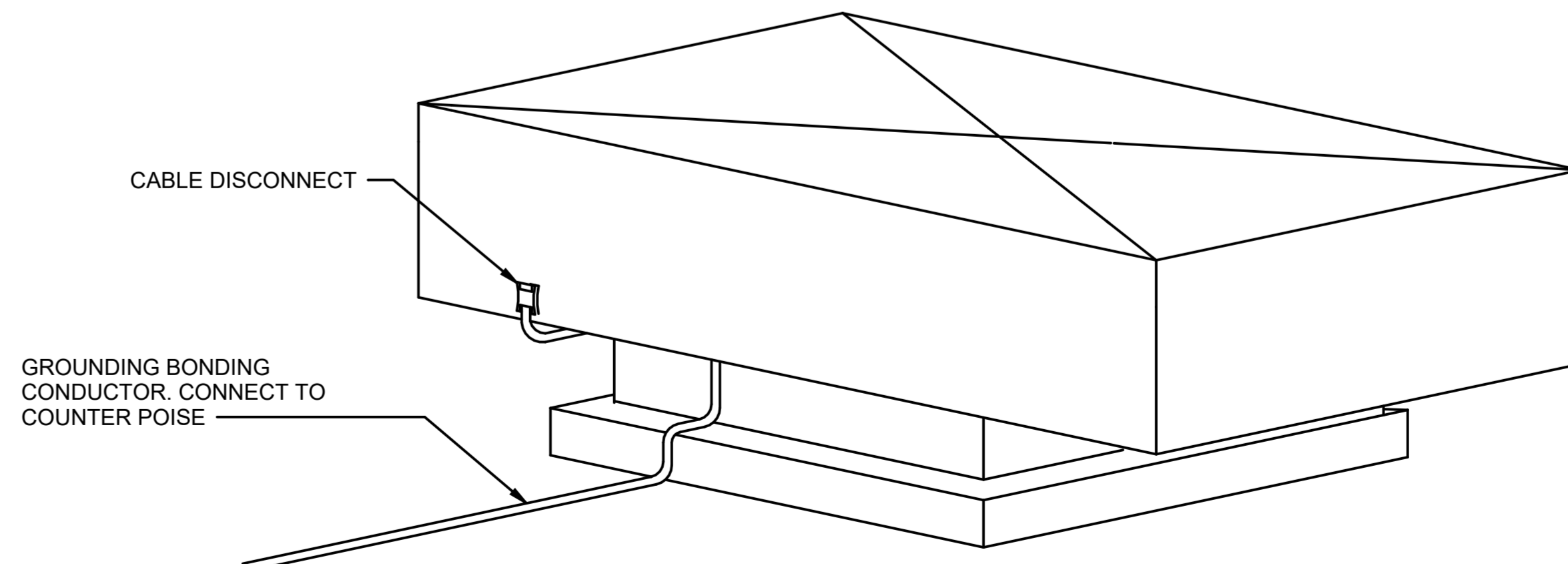
**F3** TYPICAL AIR TERMINAL MOUNTED ON OBSTRUCTION LIGHT  
SCALE: NTS



**A5** TYPICAL VENT THRU-ROOF CABLE CONNECTION  
SCALE: NTS



**E5** BONDING PLATE DETAIL  
SCALE: NTS



**E6** TYPICAL AIR HANDLING UNIT GROUNDING DETAIL  
SCALE: NTS

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REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY:	<b>SMS</b>
DRAWN BY:	<b>ATJ</b>
REVIEWED BY:	<b>WCM</b>
PROJECT MANAGER:	<b>NDM</b>

PROJECT NUMBER:  
20190320

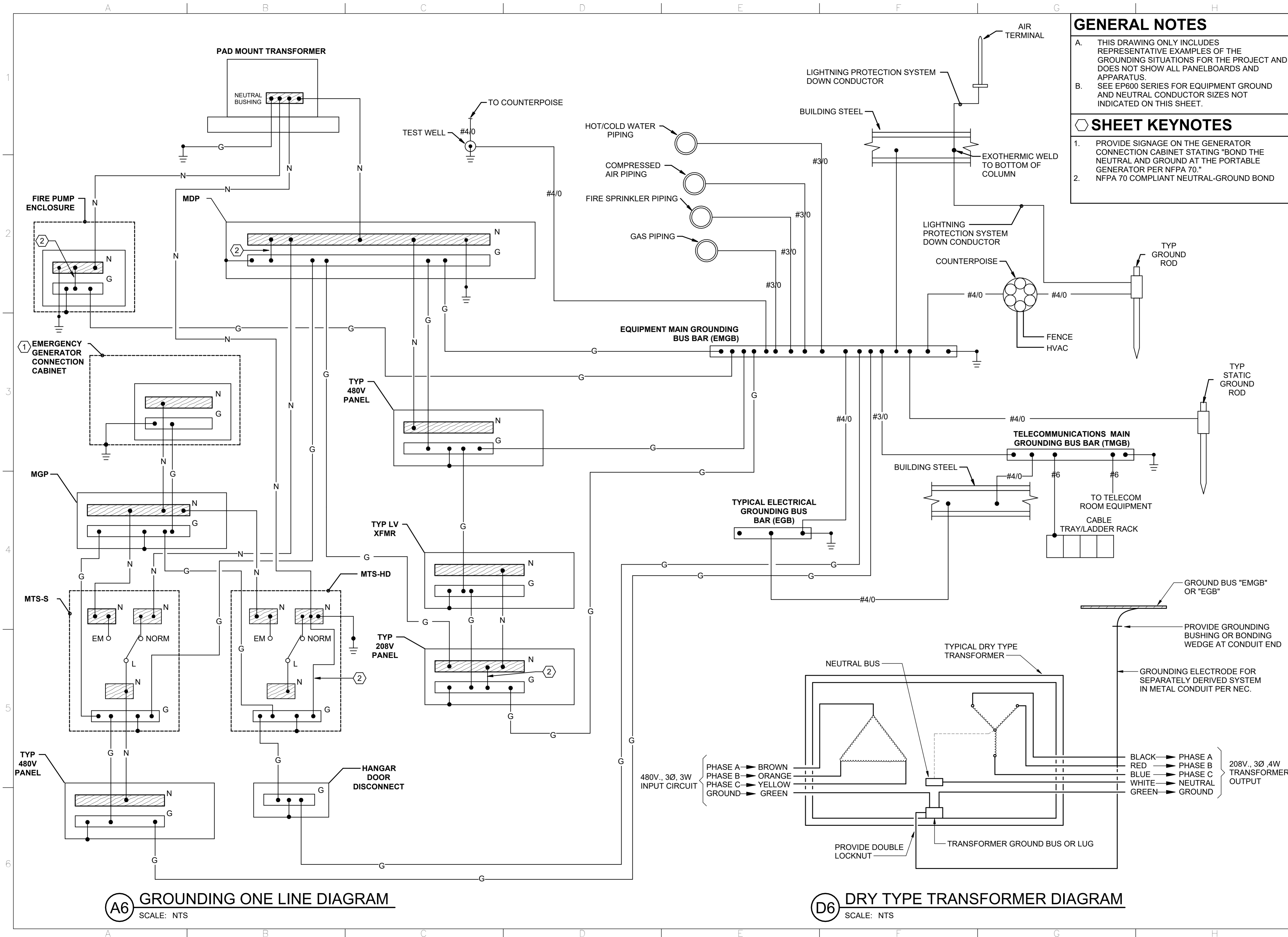
SHEET TITLE:  
**GROUNDING AND LIGHTNING PROTECTION DETAILS**

ISSUE DATE:  
2 AUGUST 2024

SHEET NUMBER:  
**EG503**

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**GENERAL NOTES**

A. THIS DRAWING ONLY INCLUDES REPRESENTATIVE EXAMPLES OF THE GROUNDING SITUATIONS FOR THE PROJECT AND DOES NOT SHOW ALL PANELBOARDS AND APPARATUS.

B. SEE EP600 SERIES FOR EQUIPMENT GROUND AND NEUTRAL CONDUCTOR SIZES NOT INDICATED ON THIS SHEET.

**SHEET KEYNOTES**

1. PROVIDE SIGNAGE ON THE GENERATOR CONNECTION CABINET STATING "BOND THE NEUTRAL AND GROUND AT THE PORTABLE GENERATOR PER NFPA 70."

2. NFPA 70 COMPLIANT NEUTRAL-GROUND BOND

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Oklahoma City, OK 73118-7436  
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LICENSED PROFESSIONAL ENGINEER  
J.T. LITTLE JR.  
20555  
OKLAHOMA  
8/2/2024

**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: **SMS**

DRAWN BY: **ATJ**

REVIEWED BY: **WCM**

PROJECT MANAGER: **NDM**

PROJECT NUMBER: **20190320**

SHEET TITLE: **GROUNDING AND BONDING SINGLE LINE DIAGRAM**

ISSUE DATE: **2 AUGUST 2024**

SHEET NUMBER: **EG601**

**A6 GROUNDING ONE LINE DIAGRAM**  
SCALE: NTS

**D6 DRY TYPE TRANSFORMER DIAGRAM**  
SCALE: NTS

480V., 3Ø, 3W INPUT CIRCUIT

PHASE A → BROWN  
PHASE B → ORANGE  
PHASE C → YELLOW  
GROUND → GREEN

208V., 3Ø, 4W TRANSFORMER OUTPUT

BLACK → PHASE A  
RED → PHASE B  
BLUE → PHASE C  
WHITE → NEUTRAL  
GREEN → GROUND

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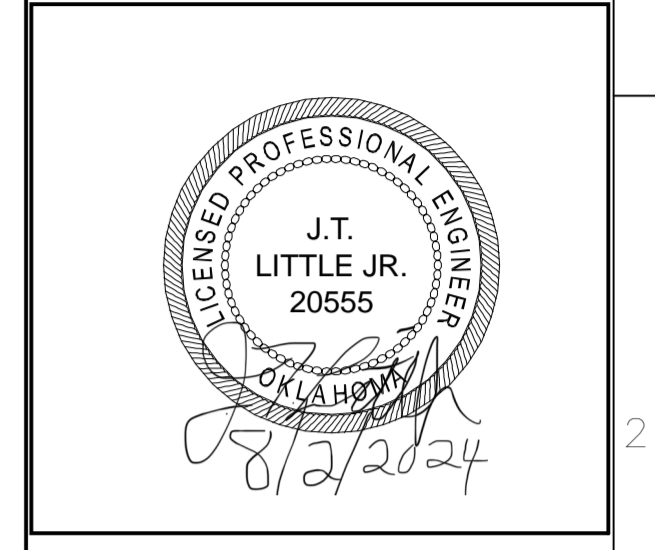
**GENERAL NOTES**

- ALL PANELS AND ELECTRICAL EQUIPMENT IN HANGAR MAINTENANCE BAY 100 SHALL BE INSTALLED WITH BOTTOM OF EQUIPMENT AT MINIMUM 18" AFF.
- ALL CONDUITS ENTERING OR LEAVING A HAZARDOUS AREA SHALL BE SEALED AS PER NFPA 70, ARTICLE 501.
- REFER TO EP501/DETAIL A2 FOR SWITCHED RECEPTACLES CONTROL AND WIRING DIAGRAM.
- ALL EXPOSED CONDUIT, ENCLOSURES, AND MOUNTING HARDWARE SHALL BE CORROSION RESISTANT FOR MAINT BAY 118.
- ALL DISCONNECTS IN MAINT BAY 118 SHALL BE IN A NEMA TYPE 3R ENCLOSURE.

**SHEET KEYNOTES**

- POWER ALL ELECTRICAL DEVICES TO THIS PANEL UNO. NUMBER NEXT TO ELECTRICAL DEVICE INDICATES CIRCUIT NUMBER IN PANEL.
- CLASS 1, DIVISION 2 RATED CORD REEL WITH EXPLOSION-PROOF BOX. CORD REEL SHALL CONTAIN (2) DUPLEXES. MOUNT CORD REEL 48" AFF UNO.
- 3P30A 600V NEMA 1 HEAVY DUTY SINGLE THROW DISCONNECT SWITCH FOR OH DOOR. COORDINATE WITH INSTALLER FOR EXACT LOCATION.
- PUSH BUTTON FOR OVER HEAD DOOR. COORDINATE WITH INSTALLER FOR EXACT LOCATION.
- POWER FOR AUTOMATIC FLUSH VALVES. COORDINATE FINAL LOCATION WITH PLUMBER.
- 20A 1P HALF-SWITCHED QUADPLEX RECEPTACLE. DEDICATED RECEPTACLE FOR INDOOR CONDENSATE PUMP. COORDINATE FINAL LOCATION WITH MECHANICAL CONTRACTOR.
- COORDINATE FINAL TERMINATIONS WITH MECHANICAL CONTRACTOR FOR GAS FIRED RADIANT TUBE HEATER.
- 100A PORTABLE GENERATOR CONNECTION CABINET.
- 3P30A 600V NEMA 1 HEAVY DUTY SINGLE THROW DISCONNECT SWITCH FOR OWNER EQUIPMENT.
- 3P60A 600V NEMA 1 HEAVY DUTY SINGLE THROW DISCONNECT SWITCH FOR HANGAR DOOR POWER.
- POWER FOR FIRE ALARM EQUIPMENT. PROVIDE RED LABELED LOCK-ON BREAKER. COORDINATE FINAL TERMINATIONS WITH FIRE ALARM CONTRACTOR.
- COORDINATE TERMINATION WITH MECHANICAL CONTRACTOR. SPLIT SYSTEM POWERED WITH 2-# 12, 1-#12 E.G., 3/4" C FROM OUTDOOR UNIT.
- DISCONNECT FOR PAINT BOOTH MAIN CONTROL PANEL. COORDINATE TERMINATIONS WITH PAINT BOOTH PROVIDER.
- DISCONNECT FOR PAINT BOOTH EXHAUST FAN. COORDINATE FINAL TERMINATIONS WITH PAINT BOOTH PROVIDER.
- DISCONNECT FOR PAINT MIX ROOM MAIN CONTROL PANEL. COORDINATE TERMINATIONS WITH PAINT BOOTH PROVIDER.
- 3P150A RECEPTACLE. NEMA 4X ENCLOSURE. COORDINATE WITH OWNER FOR FINAL PIN CONFIGURATION.
- TRANSFORMER SHALL BE NEMA TYPE 3R. REFER TO SHEET EP501/DETAIL A5 FOR TYPICAL TRANSFORMER HAZARDOUS LOCATION STAND. 2P30A L6-30R RECEPTACLE. ROUTE 2-#10, 1-# 10E.G., IN 3/4" C.
- POWER FOR HAND DRYERS. RECEPTACLES SHALL BE CONCEALED BEHIND WATER COOLER. COORDINATE FINAL MOUNTING HEIGHT AND LOCATION WITH PROVIDED EQUIPMENT.
- USE A GFCI BREAKER.
- 120V POWER FOR PLUG LOAD CONTROLLER.
- 120V POWER FOR EMERGENCY TEXT SIGN.
- RECESSED BOX FOR POWER AND DATA MOUNTED AT 84" AFF, UNO.
- 120V POWER FOR MOTORIZED DAMPERS ON GRAVITY HOODS.

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**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY: **SMS**

DRAWN BY: **ATJ**

REVIEWED BY: **WCM**

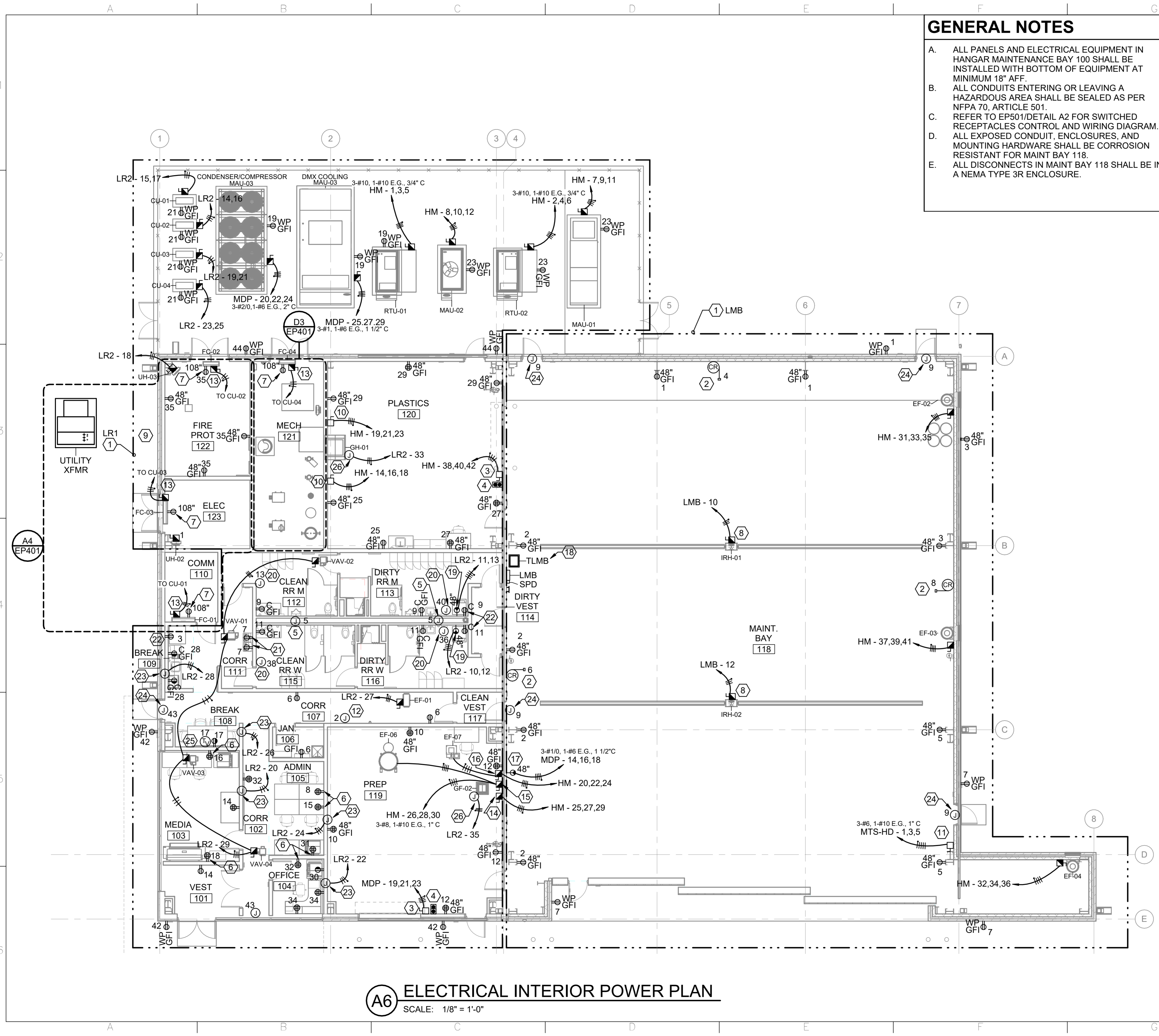
PROJECT MANAGER: **NDM**

PROJECT NUMBER: **20190320**

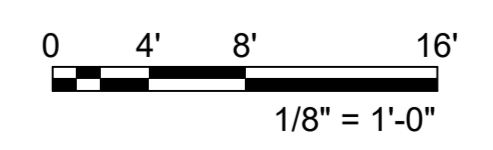
SHEET TITLE: **ELECTRICAL INTERIOR POWER PLAN**

ISSUE DATE: **2 AUGUST 2024**

SHEET NUMBER: **EP101**

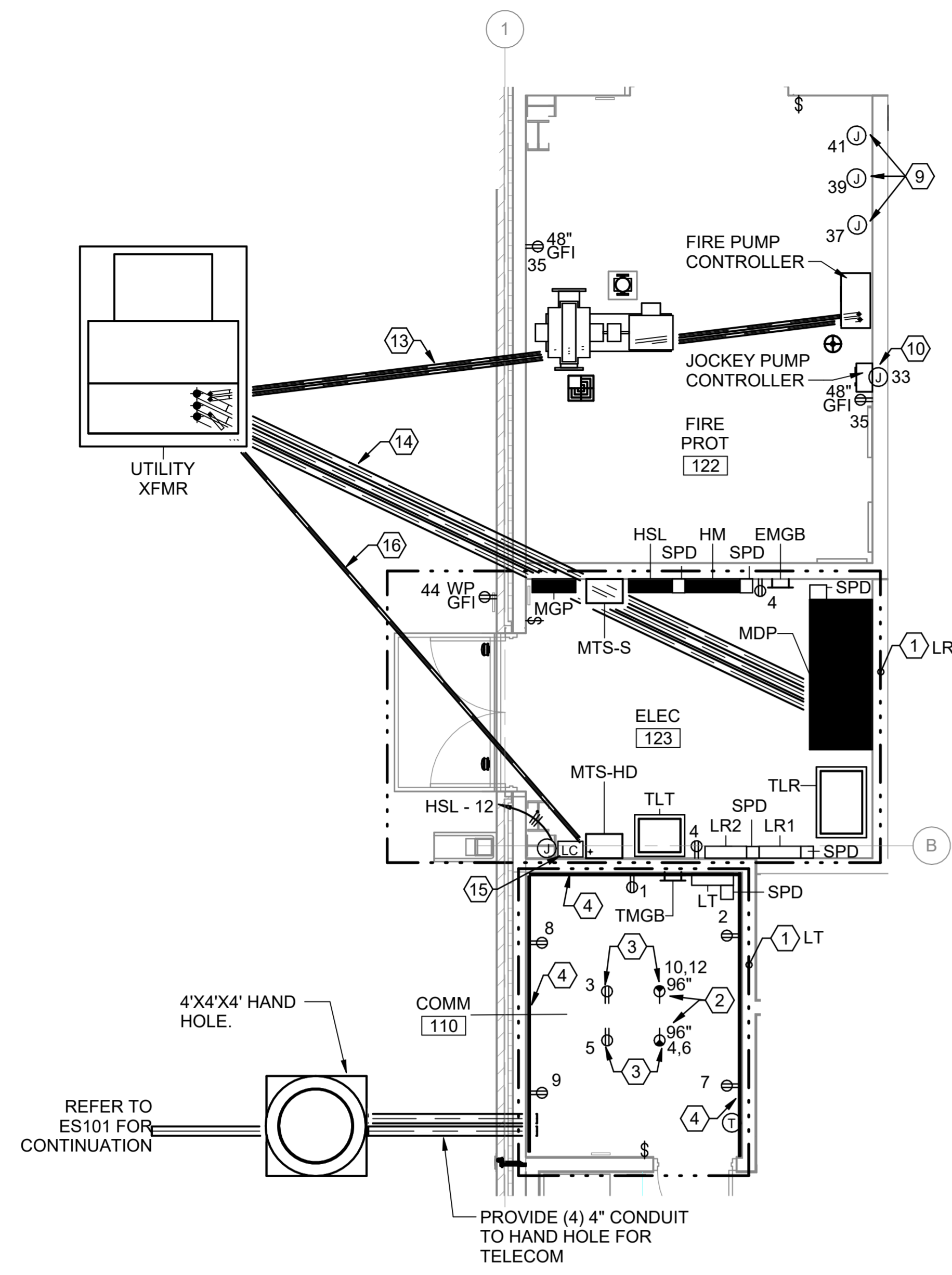


**A6 ELECTRICAL INTERIOR POWER PLAN**  
 SCALE: 1/8" = 1'-0"



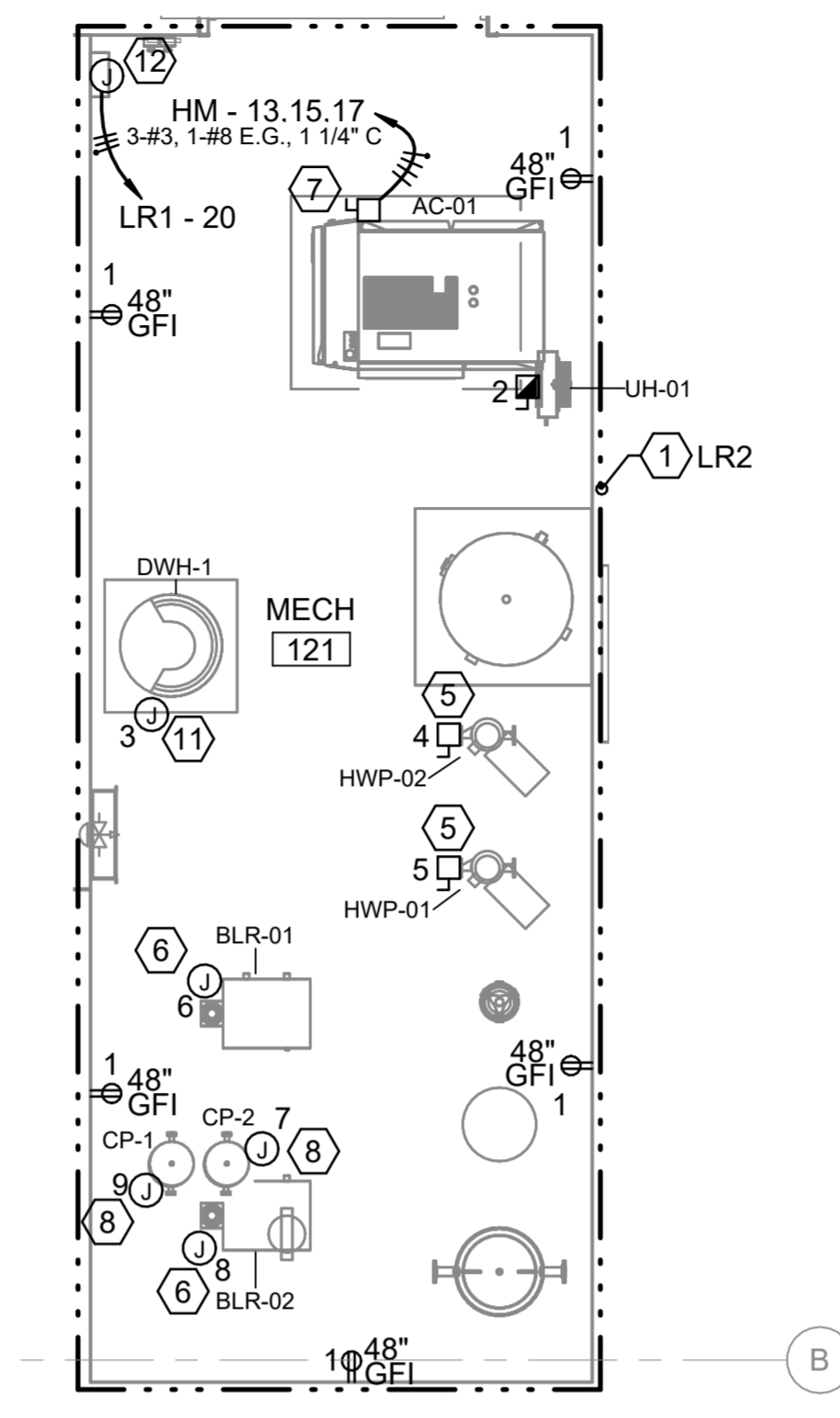
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A B C D E F G H I



**A4** ENLARGED POWER PLAN -  
COMM ROOM 110 AND ELEC ROOM 123  
SCALE: 1/4" = 1'-0"

**D3** ENLARGED POWER PLAN - MECH ROOM 121  
SCALE: 1/4" = 1'-0"



**GENERAL NOTES**

- A. ALL PANELS AND ELECTRICAL EQUIPMENT IN HANGAR MAINTENANCE BAY 100 SHALL BE INSTALLED WITH BOTTOM OF EQUIPMENT AT MINIMUM 18" AFF.
- B. UNDERGROUND CONDUIT RUNS ARE DIAGRAMMATIC. CONTRACTOR IS RESPONSIBLE FOR FINAL ROUTING OF CONDUIT.

**SHEET KEYNOTES**

- 1. POWER ALL ELECTRICAL DEVICES TO THIS PANEL UNO. NUMBER NEXT TO ELECTRICAL DEVICE INDICATES CIRCUIT NUMBER IN PANEL.
- 2. 2P30A RECEPTACLE DETERMINED BY OWNER. ROUTE 3-#10, 1-#10 E.G., IN 3/4" C. PROVIDE NEUTRAL CONDUCTOR TO RECEPTACLE.
- 3. MOUNT RECEPTACLE ON CABLE TRAY FACING TELECOMM RACK UNO. COORDINATE WITH TELECOMM INSTALLER.
- 4. 4'X8' SHEET OF 3/4" FIRE RATED PLYWOOD. INSTALL 2" AFF.
- 5. 1P30A 240V NEMA 1 HEAVY DUTY SINGLE THROW DISCONNECT SWITCH FOR HWP. COORDINATE WITH HWP INSTALLER FOR FINAL LOCATION.
- 6. POWER FOR CONDENSING HOT WATER BOILER. COORDINATE WITH WATER BOILER INSTALLER FOR FINAL LOCATION.
- 7. 3P100A 600V NEMA 1 HEAVY DUTY SINGLE THROW DISCONNECT SWITCH FOR AIR COMPRESSOR. COORDINATE FINAL TERMINATIONS WITH AIR COMPRESSOR INSTALLER.
- 8. POWER FOR CIRCULATING PUMP. COORDINATE FINAL TERMINATIONS WITH CIRCULATING PUMP INSTALLER.
- 9. POWER FOR FIRE ALARM EQUIPMENT. PROVIDE RED LABELED LOCK-ON BREAKER. COORDINATE FINAL TERMINATIONS WITH FIRE ALARM INSTALLER.
- 10. POWER FOR FIRE PROTECTION JOCKEY PUMP CONTROLLER. PROVIDE RED LABELED LOCK-ON BREAKER. COORDINATE FINAL TERMINATIONS WITH FIRE ALARM INSTALLER.
- 11. POWER FOR SPARK IGNITION TO HOT WATER HEATER. COORDINATE FINAL TERMINATIONS WITH HOT WATER HEATER INSTALLER.
- 12. POWER FOR DDC PANEL. COORDINATE ALL REQUIREMENTS WITH INSTALLER PRIOR TO ROUGH-IN.
- 13. PROVIDE (1) 1 1/4" CONDUIT TO FIRE PUMP CONTROLLER.
- 14. PROVIDE (3) 4" CONDUIT TO MDP.
- 15. 277V CIRCUIT FOR LIGHTING CONTROL PANEL.
- 16. PROVIDE (1) 1 1/4" CONDUIT TO MTS-HD.

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**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

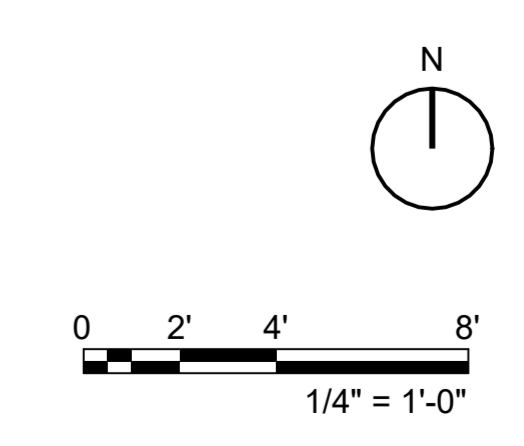
DESIGNED BY:	SMS
DRAWN BY:	ATJ
REVIEWED BY:	WCM
PROJECT MANAGER:	NDM

PROJECT NUMBER:  
20190320

SHEET TITLE:  
**ENLARGED POWER PLANS**

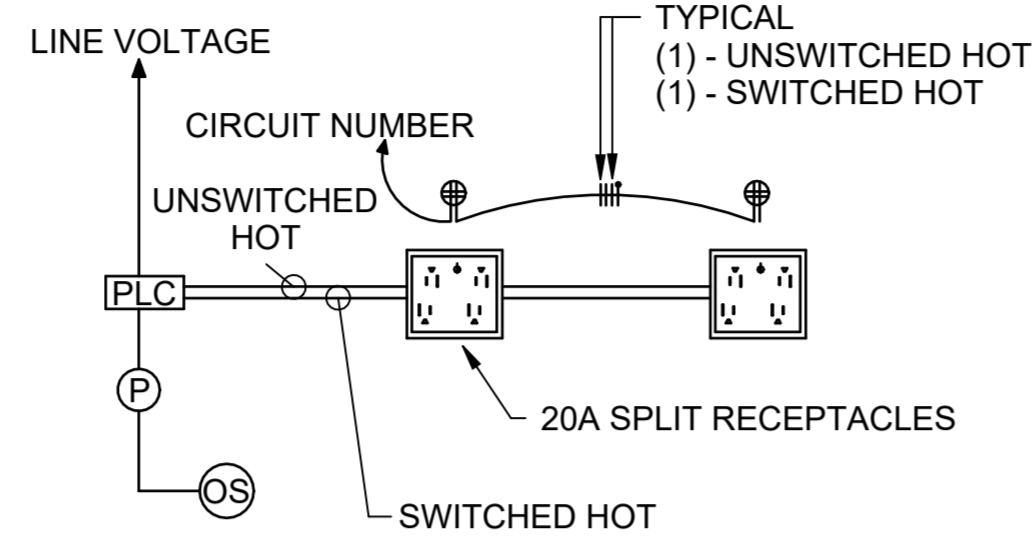
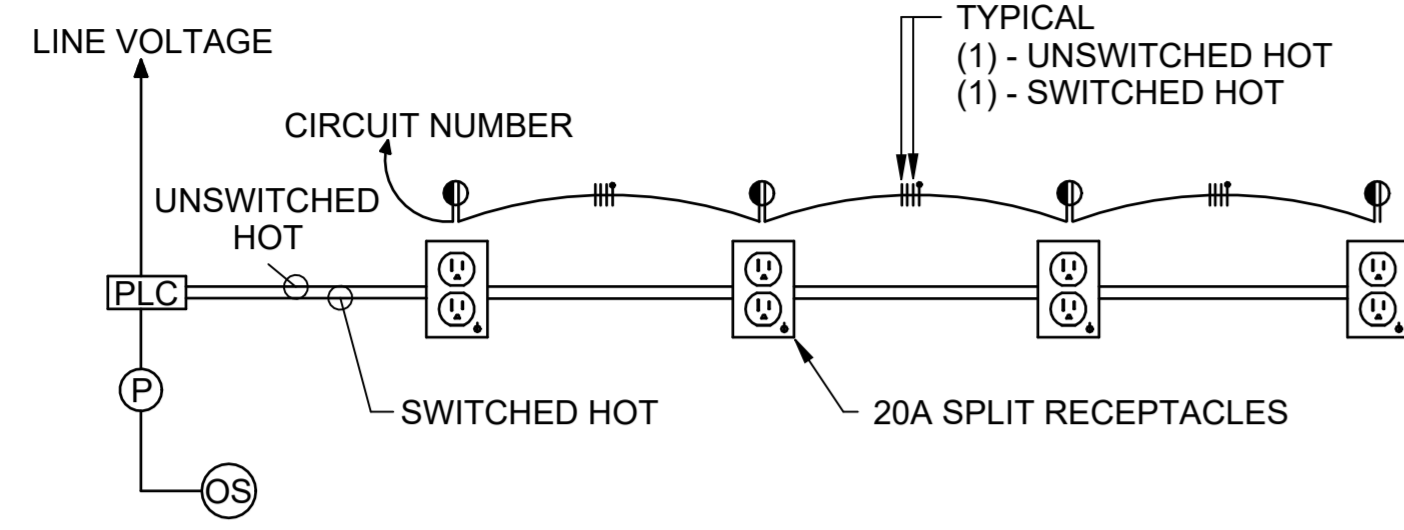
ISSUE DATE:  
2 AUGUST 2024

SHEET NUMBER:  
**EP401**



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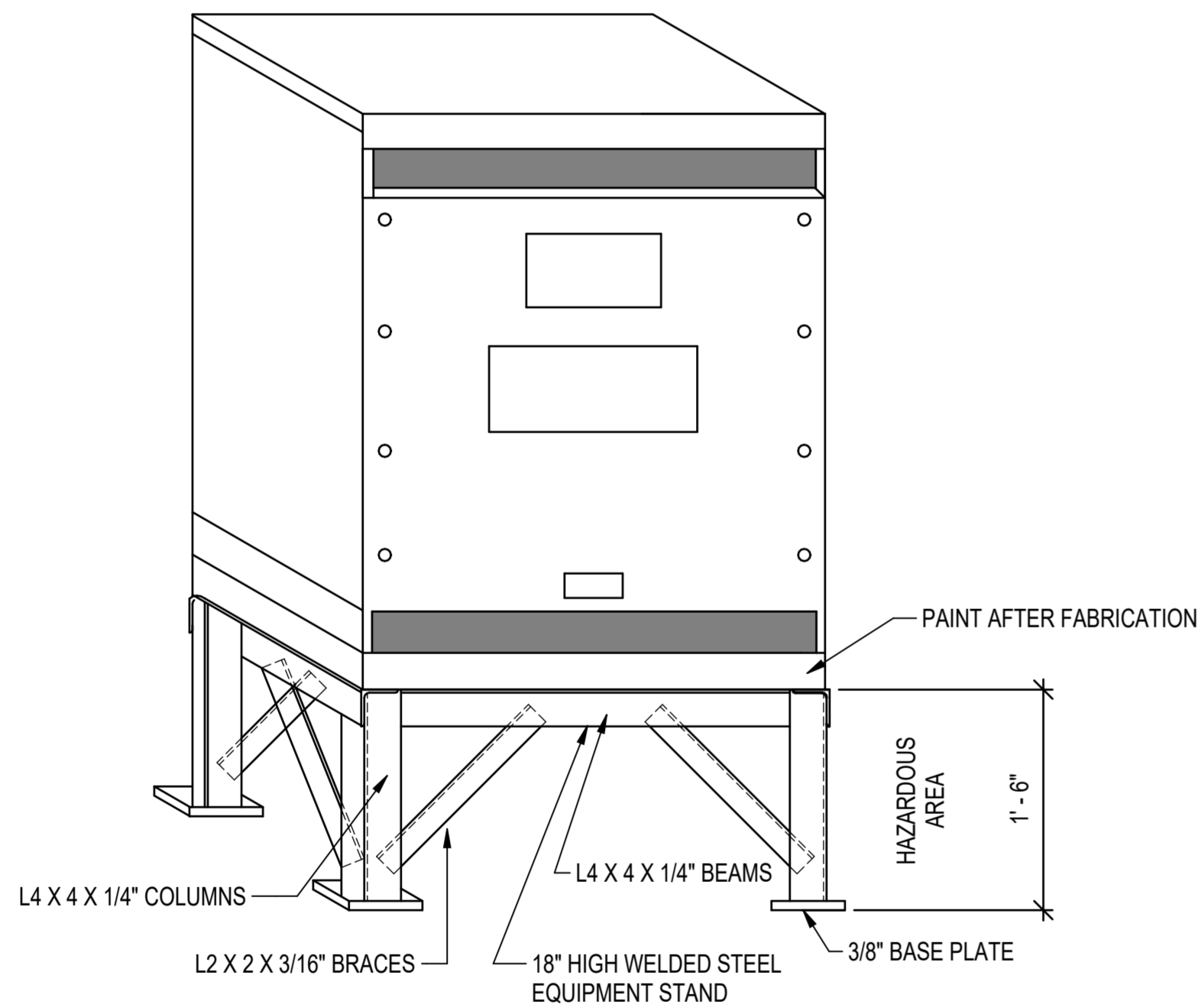


OS	OCCUPANCY/VACANCY SENSOR
PLC	PLUG LOAD CONTROLLER
P	ROOM LIGHTING POWER PACK

TYPICAL FOR OFFICES, RESTROOMS, AND BREAKROOMS

GROUND FLOOR

**A2** TYPICAL SECTOR RECEPTACLE CONTROL AND CIRCUITING DIAGRAM  
SCALE: NTS



**A5** TYPICAL TRANSFORMER HAZARADOUS LOCATION STAND  
SCALE: NTS

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Oklahoma City, OK 73118-7436  
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Texas Air National Guard - 149th FW  
Corrosion Control Facility  
TXANG Project Number: KELL 169014  
JBSA - Kelly Annex, TX

REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY:	SMS
DRAWN BY:	ATJ
REVIEWED BY:	WCM
PROJECT MANAGER:	NDM

PROJECT NUMBER:  
20190320

SHEET TITLE:  
ELECTRICAL POWER DETAILS

ISSUE DATE:  
2 AUGUST 2024

SHEET NUMBER:

EP501

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FEEDER SCHEDULE					
NO	WIRE AND CONDUIT	AMPS	NO	WIRE AND CONDUIT	AMPS
1	3-#12 & 1-#12 EG, 3/4" C	20	2	4-#12 & 1-#12 EG, 3/4" C	20
3	3-#10 & 1-#10 EG, 3/4" C	30	4	4-#10 & 1-#10 EG, 3/4" C	30
5	3-#8 & 1-#10 EG, 1" C	40	6	4-#8 & 1-#10 EG, 1" C	40
7	3-#6 & 1-#10 EG, 1" C	55	8	4-#6 & 1-#10 EG, 1" C	55
9	3-#4 & 1-#8 EG, 1 1/4" C	70	10	4-#4 & 1-#8 EG, 1 1/4" C	70
11	3-#3 & 1-#8 EG, 1 1/4" C	85	12	4-#3 & 1-#8 EG, 1 1/4" C	85
13	3-#2 & 1-#8 EG, 1 1/4" C	95	14	4-#2 & 1-#8 EG, 1 1/4" C	95
15	3-#1 & 1-#6 EG, 1 1/2" C	110	16	4-#1 & 1-#6 EG, 1 1/2" C	110
17	3-#1/0 & 1-#6 EG, 1 1/2" C	150	18	4-#1/0 & 1-#6 EG, 1 1/2" C	150
19	3-#2/0 & 1-#6 EG, 2" C	175	20	4-#2/0 & 1-#6 EG, 2" C	175
21	3-#3/0 & 1-#6 EG, 2" C	200	22	4-#3/0 & 1-#6 EG, 2" C	200
23	3-#4/0 & 1-#4 EG, 2" C	230	24	4-#4/0 & 1-#4 EG, 2 1/2" C	230
25	3-#250kcmil & 1-#4 EG, 2 1/2" C	255	26	4-#250kcmil & 1-#4 EG, 2 1/2" C	255
27	3-#300kcmil & 1-#4 EG, 2 1/2" C	285	28	4-#300kcmil & 1-#4 EG, 3" C	285
29	3-#350kcmil & 1-#3 EG, 2 1/2" C	310	30	4-#350kcmil & 1-#3 EG, 3" C	310
31	3-#400kcmil & 1-#3 EG, 2 1/2" C	335	32	4-#400kcmil & 1-#3 EG, 3" C	335
33	3-#500kcmil & 1-#3 EG, 3" C	380	34	4-#500kcmil & 1-#3 EG, 3 1/2" C	380
35	3-#600kcmil & 1-#3 EG, 3 1/2" C	420	36	4-#600kcmil & 1-#3 EG, 4" C	420

**SCHEDULE NOTES:**  
 1. RESIZE GROUND CONDUCTOR FOR PARALLEL FEEDERS AS REQUIRED PER SECTION #250-122 OF THE NEC. INCREASE SIZE OF CONDUIT AS REQUIRED FOR ADDITIONAL GROUNDING.  
 2. ALL AMPACITIES INDICATED ARE COPPER BASED ON TEMPERATURE RATING OF 60°C INSULATION ON CONDUCTORS #1 AND SMALLER AND 75°C INSULATION ON CONDUCTORS #1/0 AND LARGER.

SEPARATELY DERIVED SERVICE FEEDER SCHEDULE					
NO	WIRE AND CONDUIT	AMPS	NO	WIRE AND CONDUIT	AMPS
37	3-#12 & 1-#8 EG, 3/4" C	20	38	4-#12 & 1-#8 EG, 3/4" C	20
39	3-#10 & 1-#8 EG, 3/4" C	30	40	4-#10 & 1-#8 EG, 3/4" C	30
41	3-#8 & 1-#8 EG, 1" C	40	42	4-#8 & 1-#8 EG, 1" C	40
43	3-#6 & 1-#8 EG, 1" C	55	44	4-#6 & 1-#8 EG, 1" C	55
45	3-#4 & 1-#8 EG, 1 1/4" C	70	46	4-#4 & 1-#8 EG, 1 1/4" C	70
47	3-#3 & 1-#8 EG, 1 1/4" C	85	48	4-#3 & 1-#8 EG, 1 1/4" C	85
49	3-#2 & 1-#8 EG, 1 1/4" C	95	50	4-#2 & 1-#8 EG, 1 1/4" C	95
51	3-#1 & 1-#6 EG, 1 1/2" C	110	52	4-#1 & 1-#6 EG, 1 1/2" C	110
53	3-#1/0 & 1-#6 EG, 1 1/2" C	150	54	4-#1/0 & 1-#6 EG, 1 1/2" C	150
55	3-#2/0 & 1-#4 EG, 2" C	175	56	4-#2/0 & 1-#4 EG, 2" C	175
57	3-#3/0 & 1-#2 EG, 2" C	200	58	4-#3/0 & 1-#4 EG, 2" C	200
59	3-#4/0 & 1-#2 EG, 2" C	230	60	4-#4/0 & 1-#2 EG, 2 1/2" C	230
61	3-#250kcmil & 1-#2 EG, 2 1/2" C	255	62	4-#250kcmil & 1-#2 EG, 2 1/2" C	255
63	3-#300kcmil & 1-#2 EG, 2 1/2" C	285	64	4-#300kcmil & 1-#2 EG, 3" C	285
65	3-#350kcmil & 1-#2 EG, 2 1/2" C	310	66	4-#350kcmil & 1-#2 EG, 3" C	310
67	3-#400kcmil & 1-#1/0 EG, 2 1/2" C	335	68	4-#400kcmil & 1-#1/0 EG, 3" C	335
69	3-#500kcmil & 1-#1/0 EG, 3" C	380	70	4-#500kcmil & 1-#1/0 EG, 3 1/2" C	380
71	3-#600kcmil & 1-#1/0 EG, 3 1/2" C	420	72	4-#600kcmil & 1-#1/0 EG, 4" C	420

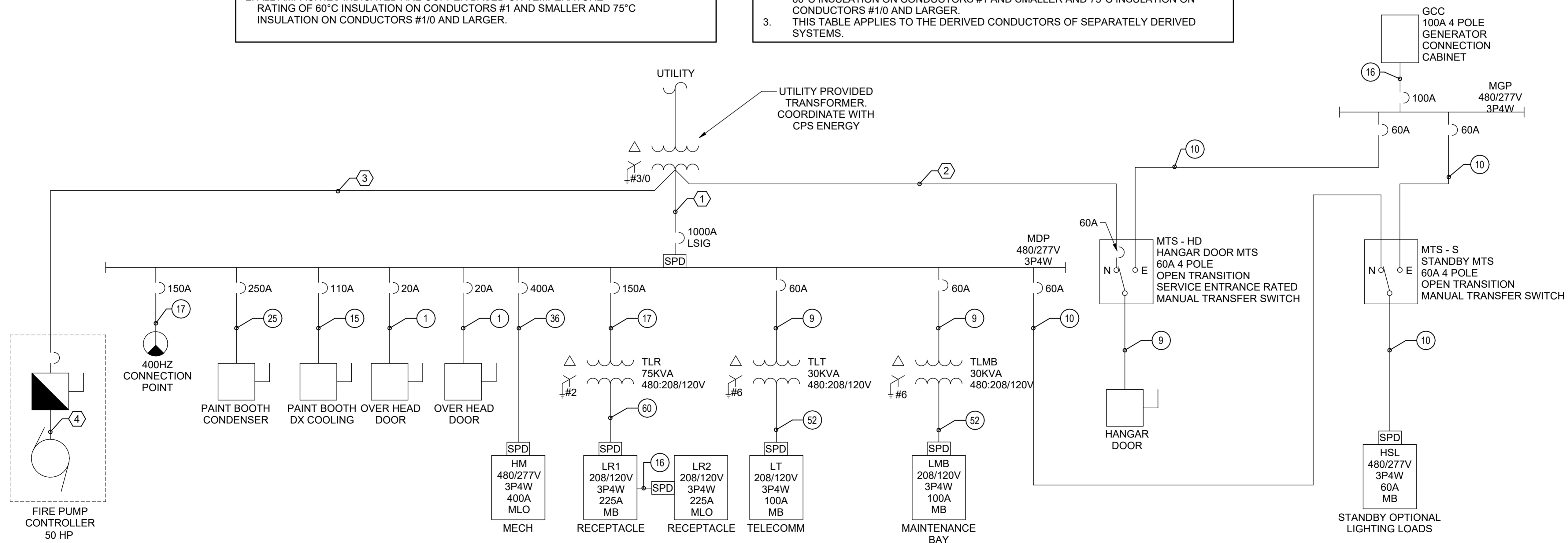
**SCHEDULE NOTES:**  
 1. RESIZE GROUND CONDUCTOR FOR PARALLEL SERVICE FEEDERS AS REQUIRED PER TABLE 250.66 OF THE NEC. INCREASE SIZE OF CONDUIT AS REQUIRED FOR ADDITIONAL GROUNDING.  
 2. ALL AMPACITIES INDICATED ARE COPPER BASED ON TEMPERATURE RATING OF 60°C INSULATION ON CONDUCTORS #1 AND SMALLER AND 75°C INSULATION ON CONDUCTORS #1/0 AND LARGER.  
 3. THIS TABLE APPLIES TO THE DERIVED CONDUCTORS OF SEPARATELY DERIVED SYSTEMS.

**SHEET KEYNOTES**  
 1. ROUTE (3) SETS OF 4-#400KCMIL IN 4" CONDUIT.  
 2. ROUTE (1) SET OF 4-#4 IN 1 1/4" CONDUIT.  
 3. ROUTE (1) SET OF 4-#3 IN 1 1/4" CONDUIT.  
 4. ROUTE (1) SET OF 3-#3, #3 E.G. IN 1 1/4" CONDUIT.

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**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**



**A6 SINGLE LINE DIAGRAM**  
 SCALE: NTS

**REVISION HISTORY:**

NO.	DESCRIPTION	DATE

**PROJECT INFORMATION:**  
 DESIGNED BY: **SMS**  
 DRAWN BY: **ATJ**  
 REVIEWED BY: **WCM**  
 PROJECT MANAGER: **NDM**

**PROJECT NUMBER:**  
 20190320

**SHEET TITLE:**  
 ONE-LINE DIAGRAMS

**ISSUE DATE:**  
 2 AUGUST 2024

**SHEET NUMBER:**  
 EP601

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Branch Panel: MDP

Location: ELEC 123
Supply From: UTILITY XFMR
Mounting: SURFACE
Enclosure: NEMA 1

Volts: 480/277 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 50000
Mains Type: MAIN BREAKER
Mains Rating: 1200 A
MCB Rating: 1000 A

Notes:
PROVIDE LSI MAIN BREAKER
PROVIDE SURGE PROTECTION DEVICE ON EXTERIOR

Table with 12 columns: CKT, Circuit Description, Trip, Poles, A, B, C, Poles, Trip, Circuit Description, CKT. Lists various electrical loads and their specifications.

Total Load: 186911 VA
Total Amps: 675 A

Legend:

Table with 5 columns: Load Classification, Connected Load, Demand Factor, Estimated Demand, Panel Totals. Summarizes load data for the MDP panel.

Notes:

Branch Panel: LMB

Location: MAINT. BAY 118
Supply From: TLMB
Mounting: SURFACE
Enclosure: NEMA 3R

Volts: 208/120 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 10000
Mains Type: MAIN BREAKER
Mains Rating: 100 A
MCB Rating: 100 A

Notes:
PROVIDE SURGE PROTECTION DEVICE ON EXTERIOR

Table with 12 columns: CKT, Circuit Description, Trip, Poles, A, B, C, Poles, Trip, Circuit Description, CKT. Lists electrical loads for the LMB panel.

Total Load: 2300 VA
Total Amps: 20 A

Legend:

Table with 5 columns: Load Classification, Connected Load, Demand Factor, Estimated Demand, Panel Totals. Summarizes load data for the LMB panel.

Notes:

+ PROVIDE GFCI BREAKER

Branch Panel: HM

Location: ELEC 123
Supply From: MDP
Mounting: SURFACE
Enclosure: NEMA 1

Volts: 480/277 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 50000
Mains Type: MLO
Mains Rating: 400 A

PROVIDE SURGE PROTECTION DEVICE ON EXTERIOR

Table with 12 columns: CKT, Circuit Description, Trip, Poles, A, B, C, Poles, Trip, Circuit Description, CKT. Lists electrical loads for the HM panel.

Total Load: 53219 VA
Total Amps: 192 A

Legend:

Table with 5 columns: Load Classification, Connected Load, Demand Factor, Estimated Demand, Panel Totals. Summarizes load data for the HM panel.

Notes:

Branch Panel: HSL

Location: ELEC 123
Supply From: MTS-S
Mounting: SURFACE
Enclosure: NEMA 1

Volts: 480/277 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 35000
Mains Type: MAIN BREAKER
Mains Rating: 100 A
MCB Rating: 60 A

Notes:
PROVIDE SURGE PROTECTION DEVICE ON EXTERIOR

Table with 12 columns: CKT, Circuit Description, Trip, Poles, A, B, C, Poles, Trip, Circuit Description, CKT. Lists electrical loads for the HSL panel.

Total Load: 1216 VA
Total Amps: 4 A

Legend:

Table with 5 columns: Load Classification, Connected Load, Demand Factor, Estimated Demand, Panel Totals. Summarizes load data for the HSL panel.

Notes:

FSB FEDERAL DESIGN GROUP JV logo and contact information for Frankfurt-Short-Bruza Associates, P.C.



Texas Air National Guard - 149th FW
Corrosion Control Facility
TXANG Project Number: KELL 169014
JBSA - Kelly Annex, TX

Revision history and project information table including designer (SMS), reviewer (WCM), and sheet title (EP700).

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Branch Panel: LR1

Location: ELEC 123
Supply From: TLR
Mounting: SURFACE
Enclosure: NEMA 1

Volts: 208/120 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 10000
Mains Type: MAIN BREAKER
Mains Rating: 225 A
MCB Rating: 225 A

Notes: PROVIDE SURGE PROTECTION DEVICE ON EXTERIOR

Table with columns: CKT, Circuit Description, Trip, Poles, A, B, C, Poles, Trip, Circuit Description, CKT. Lists various electrical loads like receptacles, mechanical units, and dryers with their respective ratings and VA.

Legend:

Load Classification table with columns: Load Classification, Connected Load, Demand Factor, Estimated Demand, Panel Totals. Includes sub-totals for RECEPTACLE, MECHANICAL, FLUSH VALVES, etc.

Notes: \* PROVIDE RED LOCK ON BREAKER
+ PROVIDE GFCI BREAKER

Branch Panel: MGP

Location: ELEC 123
Supply From:
Mounting: SURFACE
Enclosure: NEMA 1

Volts: 480/277 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 14000
Mains Type: MAIN BREAKER
Mains Rating: 100 A
MCB Rating: 100 A

Notes:

Table with columns: CKT, Circuit Description, Trip, Poles, A, B, C, Poles, Trip, Circuit Description, CKT. Lists loads for lighting and hangar doors.

Legend:

Load Classification table with columns: Load Classification, Connected Load, Demand Factor, Estimated Demand, Panel Totals. Includes sub-totals for LIGHTING and HANGAR DOOR.

Notes:

Branch Panel: LR2

Location: ELEC 123
Supply From: LR1
Mounting: SURFACE
Enclosure: NEMA 1

Volts: 208/120 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 10000
Mains Type: MLO
Mains Rating: 225 A

Notes: PROVIDE SURGE PROTECTION DEVICE ON EXTERIOR

Table with columns: CKT, Circuit Description, Trip, Poles, A, B, C, Poles, Trip, Circuit Description, CKT. Lists various electrical loads like receptacles, mechanical units, and dryers.

Legend:

Load Classification table with columns: Load Classification, Connected Load, Demand Factor, Estimated Demand, Panel Totals. Includes sub-totals for RECEPTACLE, MECHANICAL, ELECTRIC DRYER, etc.

Notes: + PROVIDE GFCI BREAKER

Branch Panel: LT

Location: COMM 110
Supply From: TLT
Mounting: SURFACE
Enclosure: NEMA 1

Volts: 208/120 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 10000
Mains Type: MAIN BREAKER
Mains Rating: 100 A
MCB Rating: 100 A

Notes: PROVIDE SURGE PROTECTION DEVICE ON EXTERIOR

Table with columns: CKT, Circuit Description, Trip, Poles, A, B, C, Poles, Trip, Circuit Description, CKT. Lists various electrical loads like receptacles and provisions.

Legend:

Load Classification table with columns: Load Classification, Connected Load, Demand Factor, Estimated Demand, Panel Totals. Includes sub-totals for RECEPTACLE.

Notes:



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Oklahoma City, OK 73118-7436
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Texas Air National Guard - 149th FW
Corrosion Control Facility
TXANG Project Number: KELL 169014
JBSA - Kelly Annex, TX

REVISION HISTORY table with columns: DESCRIPTION, DATE. Also includes PROJECT INFORMATION table with fields for DESIGNED BY (SMS), DRAWN BY (ATJ), REVIEWED BY (WCM), PROJECT MANAGER (NDM), PROJECT NUMBER (20190320), SHEET TITLE.

PANEL SCHEDULES table with columns: ISSUE DATE (2 AUGUST 2024), SHEET NUMBER.

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### GENERAL NOTES

A. PULL ADDITIONAL UNSWITCHED HOT CONDUCTOR TO BATTERY PACKS OF EMERGENCY FIXTURES.

### SHEET KEYNOTES

1. ALL HANGAR BAY FIXTURES SHALL BE CONTROLLED FROM LIGHTING RELAY PANEL LC.
2. ALL EXTERIOR FIXTURES (TYPE A1, D1, W1, AND W1E), SHALL BE CONTROLLED FROM LIGHTING RELAY PANEL LC.
3. MOUNT TYPE U1 LIGHT FIXTURE FLUSH IN CEILING AND 6" OFF OF BACK WALL. PROVIDE FIXTURE LENGTH TO FIT WIDTH OF SPACE FOR INSTALLATION. CONTRACTOR SHALL VERIFY EXACT SPACE WIDTH PRIOR TO ORDERING FIXTURE.
4. MOUNT LIGHT FIXTURE TO WALL AT 8' 0" AFF.
5. MOUNT LIGHT FIXTURE TO WALL AT 10' 0" AFF.
6. POWER TYPE X1 FIXTURES FROM UNSWITCHED HOT CONDUCTOR FROM THE NEAREST CIRCUIT.

FSB FEDERAL DESIGN GROUP JV  
 Frankfurt-Short-Bruza Associates, P.C.  
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 Oklahoma City, OK 73118-7436  
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**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

#### REVISION HISTORY:

NO.	DESCRIPTION	DATE

#### PROJECT INFORMATION:

DESIGNED BY:	<b>SMS</b>
DRAWN BY:	<b>ATJ</b>
REVIEWED BY:	<b>WCM</b>
PROJECT MANAGER:	<b>NDM</b>

#### PROJECT NUMBER:

20190320

#### SHEET TITLE:

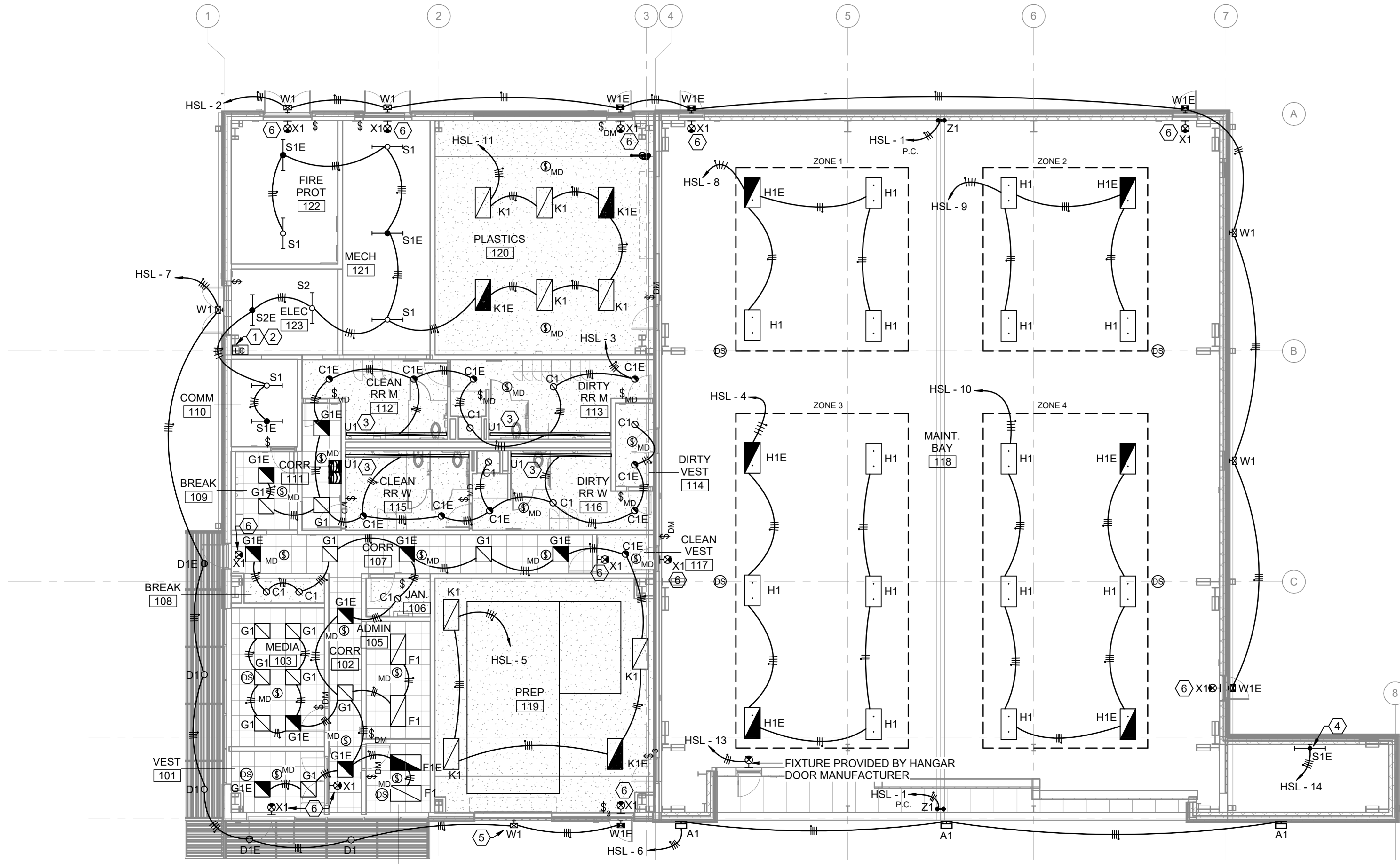
**ELECTRICAL INTERIOR LIGHTING**

#### ISSUE DATE:

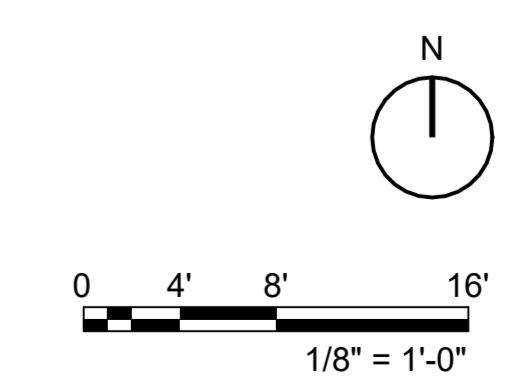
2 AUGUST 2024

#### SHEET NUMBER:

**EL101**

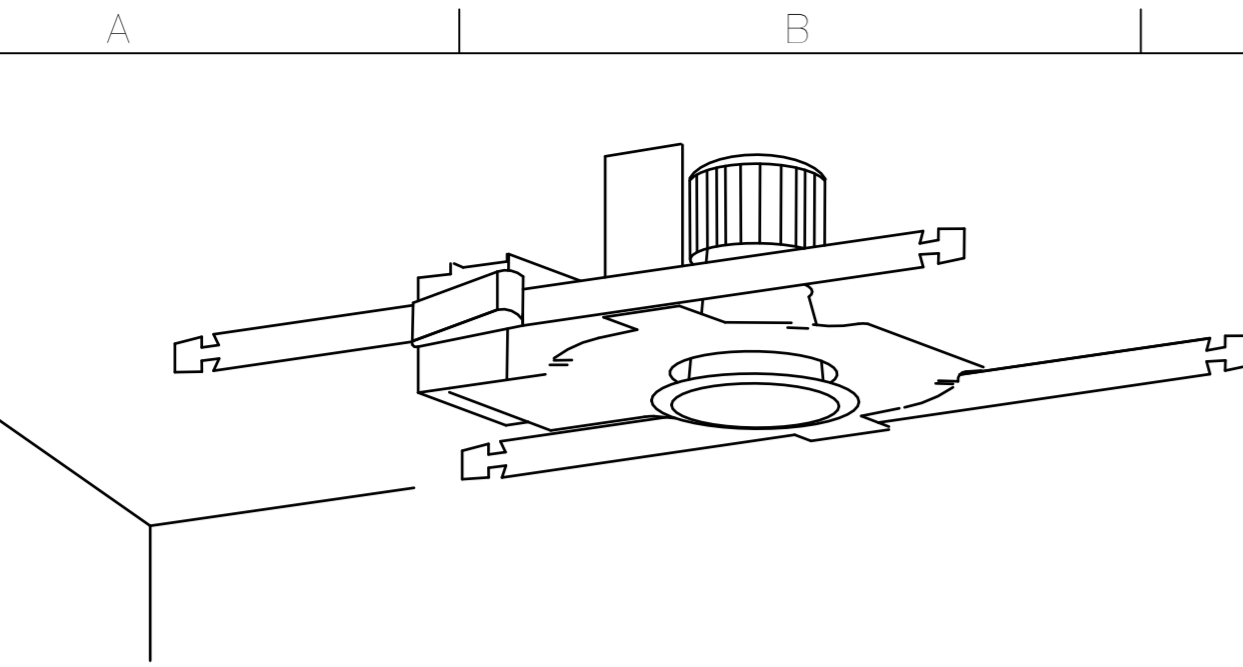


**A6 ELECTRICAL INTERIOR LIGHTING PLAN**  
 SCALE: 1/8" = 1'-0"



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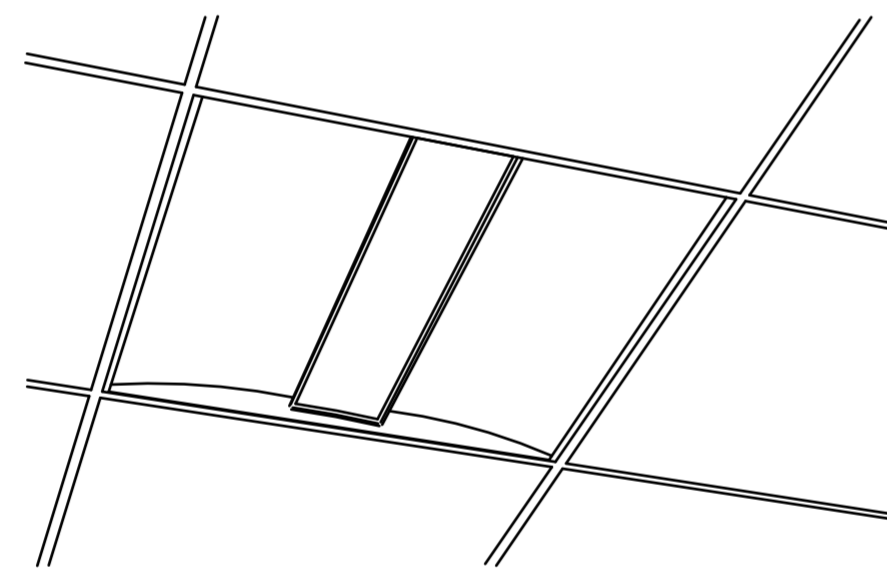


NOTE: THIS SKETCH IS A NON-PROPRIETARY GRAPHIC REPRESENTATION OF A LUMINAIRE THAT MAY MEET THE SPECIFICATION REQUIREMENTS. IT IS NOT INTENDED TO INDICATE A CERTAIN MANUFACTURER OR PREFERENCE.

LUMINAIRE REQUIREMENTS:

- 1. HOUSING - COLD-ROLLED STEEL OR DIE CAST ALUMINUM, WITH HEAT SINK. APERTURE SIZE AND SHAPE AS INDICATED IN LUMINAIRE SCHEDULE.
2. LIGHT SOURCE - SOLID STATE LEDS, 3500K CCT UON, MINIMUM 80 CRI UON, AND MINIMUM EFFICACY OF 70 LUMENS/WATT UON. INITIAL LUMEN OUTPUT AS INDICATED IN LUMINAIRE SCHEDULE.
3. DRIVER - REPLACEABLE, INTEGRAL, HIGH-EFFICIENCY DIMMABLE DRIVER WITH MINIMUM 0.9 PF, OPERATING VOLTAGE OF 120-277V, THERMAL MANAGEMENT, AND < 20% THD. ON/OFF CONTROL AND FULLY DIMMABLE DOWN TO 10% MINIMUM OR AS INDICATED IN LUMINAIRE SCHEDULE.
4. CERTIFICATION - UL LISTED FOR DRY OR DAMP LOCATION, ROHS COMPLIANT. COMPLIES WITH IES LM79, LM80 AND TM21 TESTING STANDARDS.
5. MOUNTING - RECESSED IN HARD OR ACOUSTICAL TILE CEILING. PROVIDE T-BAR HANGERS FOR INSTALLATION IN ACOUSTICAL TILE CEILINGS OR TABS WHEN MOUNTING IN HARD CEILINGS.
6. OPTIONS - EMERGENCY BATTERY BACK-UP, VARIOUS ACRYLIC OR POLYCARBONATE LENSES, REFLECTORS, LOUVERS, AND TRIMS. VARIOUS BEAM ANGLES. IC-RATED HOUSING.

A3 FIXED RECESSED DOWNLIGHT DETAIL SCALE: NTS

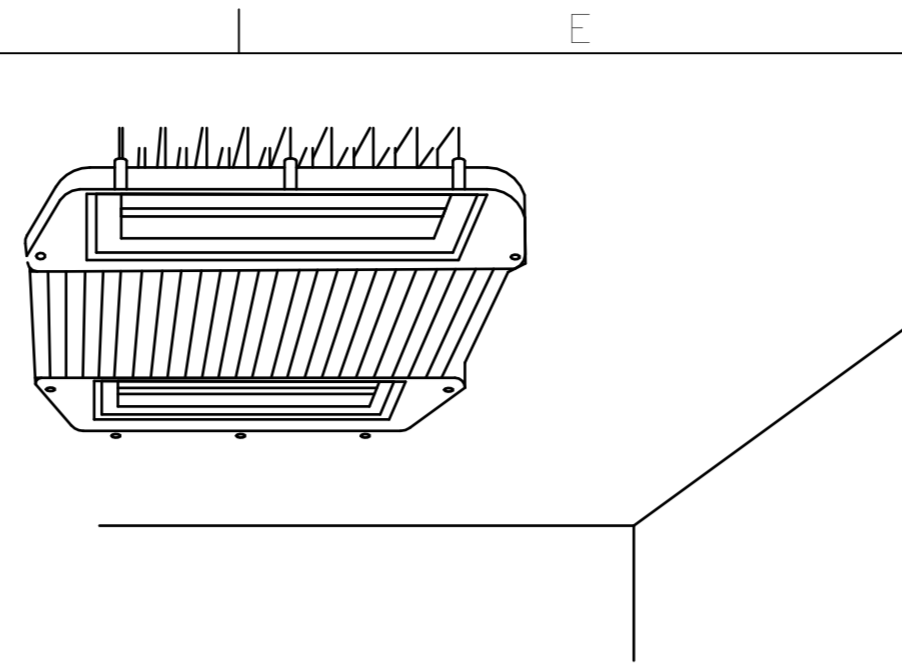


NOTE: THIS SKETCH IS A NON-PROPRIETARY GRAPHIC REPRESENTATION OF A LUMINAIRE THAT MAY MEET THE SPECIFICATION REQUIREMENTS. IT IS NOT INTENDED TO INDICATE A CERTAIN MANUFACTURER OR PREFERENCE.

LUMINAIRE REQUIREMENTS:

- 1. HOUSING - HEAVY GAUGE COLD ROLLED STEEL OR DIE CAST ALUMINUM. SIZE SHOWN AS INDICATED IN LUMINAIRE SCHEDULE.
2. OPTICS - FROSTED ACRYLIC OR POLYCARBONATE LENS WITH DIE FORMED COLD ROLLED SHEET STEEL REFLECTORS.
3. LIGHT SOURCE - SOLID STATE LEDS, 3500K CCT UON, MINIMUM 80 CRI UON, AND MINIMUM EFFICACY OF 100 LUMENS/WATT UON. INITIAL LUMEN OUTPUT AS INDICATED IN LUMINAIRE SCHEDULE.
4. DRIVER - REPLACEABLE, INTEGRAL, HIGH-EFFICIENCY DIMMABLE DRIVER WITH MINIMUM 0.9 PF, OPERATING VOLTAGE OF 120-277V, THERMAL MANAGEMENT, AND < 20% THD. ON/OFF CONTROL AND FULLY DIMMABLE DOWN TO 10% MINIMUM OR AS INDICATED IN LUMINAIRE SCHEDULE.
5. CERTIFICATION - UL LISTED FOR DRY OR DAMP LOCATION, ROHS COMPLIANT. DLC QUALIFIED. COMPLIES WITH IES LM79, LM80 AND TM21 TESTING STANDARDS.
6. MOUNTING - RECESSED IN HARD OR ACOUSTICAL TILE CEILING.
7. OPTIONS - EMERGENCY BATTERY BACK-UP, INTEGRAL OCCUPANCY/VACANCY SENSOR, VARIOUS SIZE AND OUTPUT OPTIONS, SURFACE-MOUNTING KIT.

A6 DIRECT/INDIRECT LED LUMINAIRE DETAIL SCALE: NTS

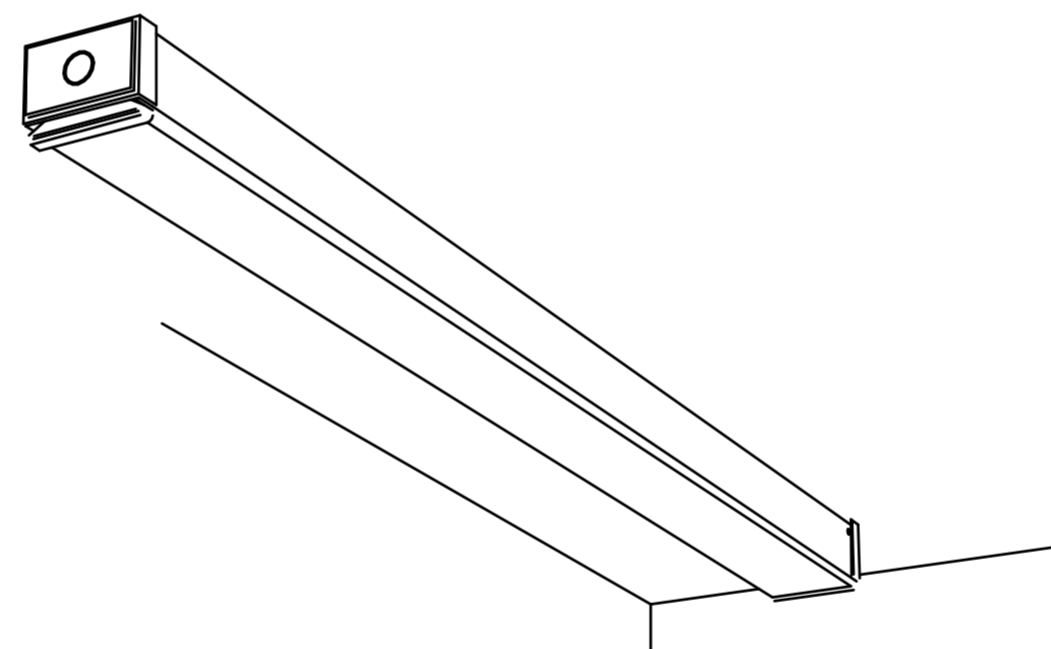


NOTE: THIS SKETCH IS A NON-PROPRIETARY GRAPHIC REPRESENTATION OF A LUMINAIRE THAT MAY MEET THE SPECIFICATION REQUIREMENTS. IT IS NOT INTENDED TO INDICATE A CERTAIN MANUFACTURER OR PREFERENCE.

LUMINAIRE REQUIREMENTS:

- 1. HOUSING - CORROSION RESISTANT HOUSING, STAINLESS STEEL.
2. OPTICS - POLYCARBONATE DIFFUSE LENS.
3. LIGHT SOURCE - SOLID STATE LEDS, 3500K CCT UON, MINIMUM 80 CRI UON, AND MINIMUM EFFICACY OF 140 LUMENS/WATT UON. INITIAL LUMEN OUTPUT AS INDICATED IN LUMINAIRE SCHEDULE.
4. DRIVER - REPLACEABLE, INTEGRAL, HIGH-EFFICIENCY DIMMABLE DRIVER WITH MINIMUM 0.9 PF, OPERATING VOLTAGE OF 120-277V, THERMAL MANAGEMENT, AND < 20% THD. ON/OFF CONTROL AND FULLY DIMMABLE DOWN TO 10% MINIMUM OR AS INDICATED IN LUMINAIRE SCHEDULE.
5. CERTIFICATION - UL LISTED FOR DAMP OR WET LOCATION, ROHS COMPLIANT. DLC QUALIFIED. COMPLIES WITH IES LM79, LM80 AND TM21 TESTING STANDARDS.
6. MOUNTING - PENDANT, STEM, OR SURFACE MOUNTED WITH STAINLESS STEEL MOUNTING HARDWARE.
7. OPTIONS - INTEGRAL OCCUPANCY SENSOR, EMERGENCY BATTERY BACK-UP, VARIOUS OPTICAL DISTRIBUTIONS.

D3 LED INDUSTRIAL HIGH-BAY DETAIL SCALE: NTS

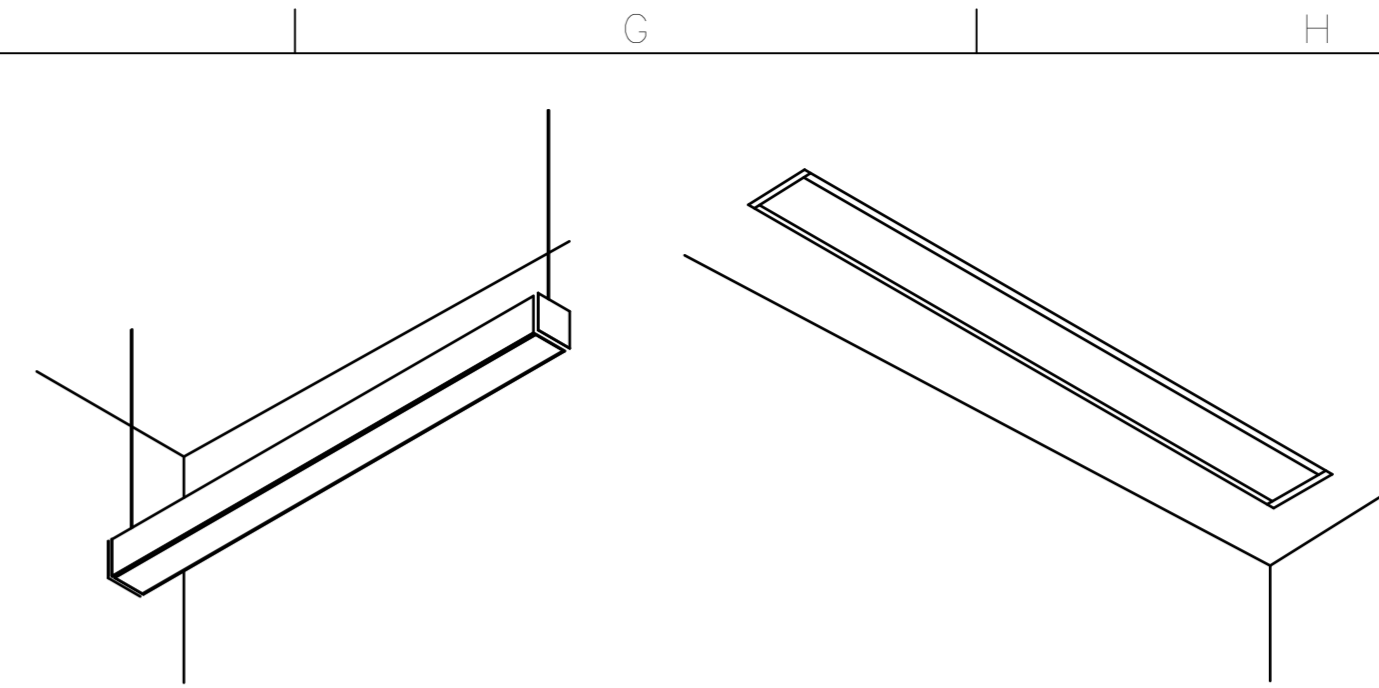


NOTE: THIS SKETCH IS A NON-PROPRIETARY GRAPHIC REPRESENTATION OF A LUMINAIRE THAT MAY MEET THE SPECIFICATION REQUIREMENTS. IT IS NOT INTENDED TO INDICATE A CERTAIN MANUFACTURER OR PREFERENCE.

LUMINAIRE REQUIREMENTS:

- 1. HOUSING - CORROSION RESISTANT HOUSING, STAINLESS STEEL, WELDED STEEL HOUSING WITH SNAP-ON END CAPS. SIZE AS INDICATED IN LUMINAIRE SCHEDULE.
2. OPTICS - DIFFUSE ACRYLIC LENS.
3. LIGHT SOURCE - SOLID STATE LEDS, 4000K CCT UON, MINIMUM 80 CRI UON, AND MINIMUM EFFICACY OF 90 LUMENS/WATT UON. INITIAL LUMEN OUTPUT AS INDICATED IN LUMINAIRE SCHEDULE.
4. DRIVER - REPLACEABLE, INTEGRAL, HIGH-EFFICIENCY DIMMABLE DRIVER WITH MINIMUM 0.9 PF, OPERATING VOLTAGE OF 120-277V, THERMAL MANAGEMENT, AND < 20% THD. ON/OFF CONTROL AND FULLY DIMMABLE DOWN TO 10% MINIMUM OR AS INDICATED IN LUMINAIRE SCHEDULE.
5. CERTIFICATION - UL LISTED FOR DAMP OR WET LOCATION, ROHS COMPLIANT. DLC QUALIFIED. COMPLIES WITH IES LM79, LM80 AND TM21 TESTING STANDARDS.
6. MOUNTING - PENDANT, STEM, OR SURFACE MOUNTED WITH STAINLESS STEEL MOUNTING HARDWARE.
7. OPTIONS - INTEGRAL OCCUPANCY SENSOR, EMERGENCY BATTERY BACK-UP, VARIOUS PROFILE DIMENSIONS AND RUN LENGTHS, AND VARIOUS CLEAR OR FROSTED POLYCARBONATE LENSES.

D6 LED INDUSTRIAL LIGHT DETAIL SCALE: NTS



NOTE: THIS SKETCH IS A NON-PROPRIETARY GRAPHIC REPRESENTATION OF A LUMINAIRE THAT MAY MEET THE SPECIFICATION REQUIREMENTS. IT IS NOT INTENDED TO INDICATE A CERTAIN MANUFACTURER OR PREFERENCE.

LUMINAIRE REQUIREMENTS:

- 1. HOUSING - HEAVY GAUGE COLD ROLLED STEEL, EXTRUDED ALUMINUM, OR DIE CAST ALUMINUM BODY. SIZE AS INDICATED IN LUMINAIRE SCHEDULE.
2. OPTICS - FROSTED ACRYLIC OR POLYCARBONATE LENS. LAMBERTIAN, NARROW, WIDE, OR ASYMMETRIC LIGHT DISTRIBUTION AS INDICATED IN LUMINAIRE SCHEDULE.
3. LIGHT SOURCE - SOLID STATE LEDS, 3500K CCT UON, MINIMUM 80 CRI UON, AND MINIMUM EFFICACY OF 90 LUMENS/WATT UON. INITIAL LUMEN OUTPUT AS INDICATED IN LUMINAIRE SCHEDULE.
4. DRIVER - REPLACEABLE, INTEGRAL, HIGH-EFFICIENCY DRIVER WITH MINIMUM 0.9 PF, OPERATING VOLTAGE OF 120-277V, THERMAL MANAGEMENT, AND < 20% THD. ON-OFF CONTROL AND FULLY DIMMABLE DOWN TO 10% MINIMUM OR AS INDICATED IN LUMINAIRE SCHEDULE.
5. CERTIFICATION - UL LISTED FOR DRY OR DAMP LOCATION, ROHS COMPLIANT, DLC QUALIFIED. COMPLIES WITH IES LM79, LM80 AND TM21 TESTING STANDARDS.
6. MOUNTING - PENDANT, STEM, OR SURFACE MOUNTED WITH STAINLESS STEEL MOUNTING HARDWARE, OR RECESSED IN HARD OR ACOUSTICAL TILE CEILING.
7. OPTIONS - EMERGENCY BATTERY BACK-UP, INTEGRAL OCCUPANCY/VACANCY SENSOR, VARIOUS PROFILE DIMENSIONS AND RUN LENGTHS, AND VARIOUS CLEAR OR FROSTED POLYCARBONATE LENSES, BAFFLES, OR LOUVERS.

F3 LINEAR LED SLOT DETAIL SCALE: NTS



Texas Air National Guard - 149th FW
Corrosion Control Facility
TXANG Project Number: KELL 169014
JBSA - Kelly Annex, TX

Table with 2 columns: DESCRIPTION, DATE. Includes a revision history header.

Table with 2 columns: PROJECT INFORMATION, DESIGNED BY, DRAWN BY, REVIEWED BY, PROJECT MANAGER. Includes names SMS, ATJ, WCM, NDM.

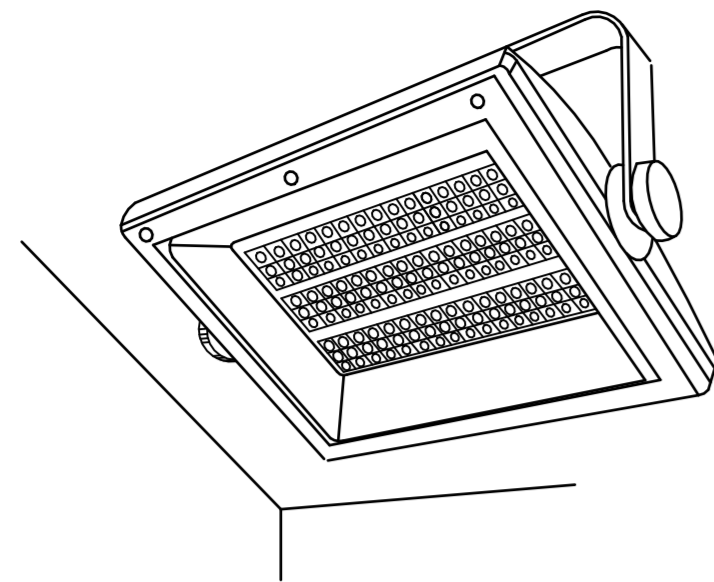
Table with 2 columns: PROJECT NUMBER, SHEET TITLE. Includes values 20190320, LIGHTING FIXTURE DETAILS.

Table with 2 columns: ISSUE DATE, SHEET NUMBER. Includes values 2 AUGUST 2024, EL501.

EL501

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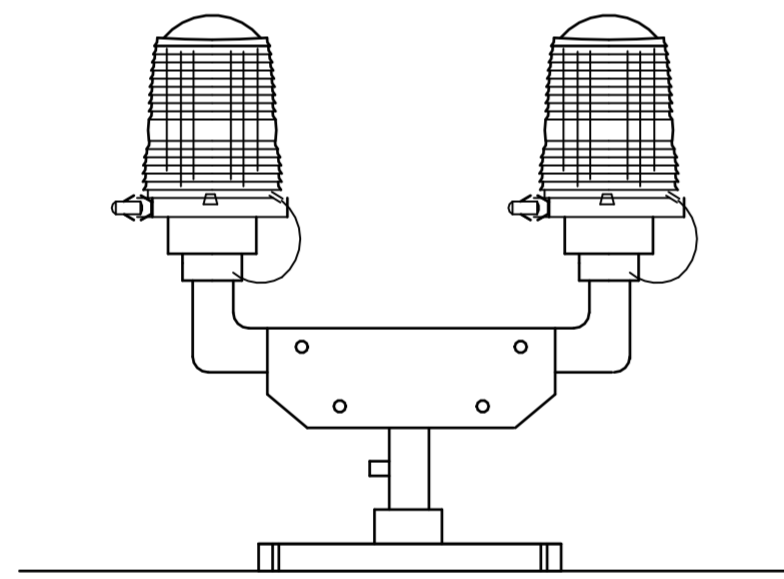


NOTE: THIS SKETCH IS A NON-PROPRIETARY GRAPHIC REPRESENTATION OF A LUMINAIRE THAT MAY MEET THE SPECIFICATION REQUIREMENTS. IT IS NOT INTENDED TO INDICATE A CERTAIN MANUFACTURER OR PREFERENCE.

LUMINAIRE REQUIREMENTS:

1. HOUSING - DIE-CAST ALUMINUM HOUSING WITH POWDER COAT FINISH.
2. OPTICS - TEMPERED GLASS LENS. BUG RATING AS DETERMINED BY LIGHTING ZONE INSTALLED.
3. LIGHT SOURCE - SOLID STATE LEDS, 3000K CCT UON, MINIMUM 80 CRI UON, AND MINIMUM EFFICACY OF 70 LUMENS/WATT UON. INITIAL LUMEN OUTPUT AS INDICATED IN LUMINAIRE SCHEDULE.
4. DRIVER - REPLACEABLE, INTEGRAL, HIGH-EFFICIENCY DIMMABLE DRIVER WITH MINIMUM 0.9 PF, OPERATING VOLTAGE OF 120-277V, THERMAL MANAGEMENT, AND < 20% THD. ON-OFF CONTROL AND FULLY DIMMABLE DOWN TO 10% MINIMUM OR AS INDICATED IN LUMINAIRE SCHEDULE.
5. CERTIFICATION - UL LISTED FOR WET LOCATION, ROHS COMPLIANT. COMPLIES WITH IES LM79, LM80 AND TM21 TESTING STANDARDS.
6. MOUNTING - SUITABLE FOR PROJECT SPECIFICATIONS.
7. OPTIONS - RGBW COLOR CHANGING, VARIOUS SHAPES AND SIZES, VARIOUS BEAM ANGLES.

**A3** LED FLOOD LUMINAIRE DETAIL  
SCALE: NTS

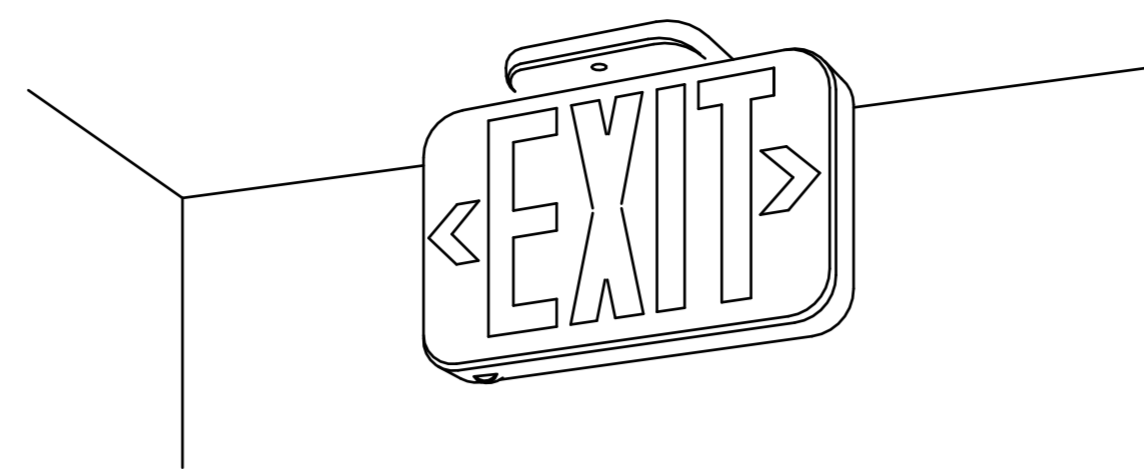


NOTE: THIS SKETCH IS A NON-PROPRIETARY GRAPHIC REPRESENTATION OF A LUMINAIRE THAT MAY MEET THE SPECIFICATION REQUIREMENTS. IT IS NOT INTENDED TO INDICATE A CERTAIN MANUFACTURER OR PREFERENCE.

LUMINAIRE REQUIREMENTS:

1. HOUSING - DIE-CAST ALUMINUM WITH POLYESTER POWDER COAT FINISH AND STAINLESS STEEL HARDWARE.
2. OPTICS - TWIN-GLOBE IS TEMPERED RED OR CLEAR FRESNEL GLASS WITH STAINLESS STEEL LATCHING SYSTEM TO HOLD TWIN-GLOBE FIRMLY ONTO BASE. PROVIDE CABLE TETHER WIRE.
3. LIGHT SOURCE - SOLID STATE LEDS, RED AND MINIMUM EFFICACY OF 90 LUMENS/WATT UON. INITIAL LUMEN OUTPUT AS INDICATED IN LUMINAIRE SCHEDULE.
4. DRIVER - REPLACEABLE, INTEGRAL, HIGH-EFFICIENCY DIMMABLE DRIVER WITH MINIMUM 0.9 PF, OPERATING VOLTAGE OF 120-277V, THERMAL MANAGEMENT, AND < 20% THD. ON-OFF CONTROL OR AS INDICATED IN LUMINAIRE SCHEDULE.
5. CERTIFICATION - FAA L810 PER FAA ADVISORY CIRCULAR 150/5345-43G. UL LISTED FOR WET LOCATION, ROHS COMPLIANT, DLC QUALIFIED. COMPLIES WITH LM79, LM80 AND TM21 TESTING STANDARDS.
6. MOUNTING - GROUND MOUNTED WITH 3/4 IN OR 1 IN BOTTOM CONDUIT ENTRY.

**A6** AVIATION OBSTRUCTION LUMINAIRE DETAIL  
SCALE: NTS

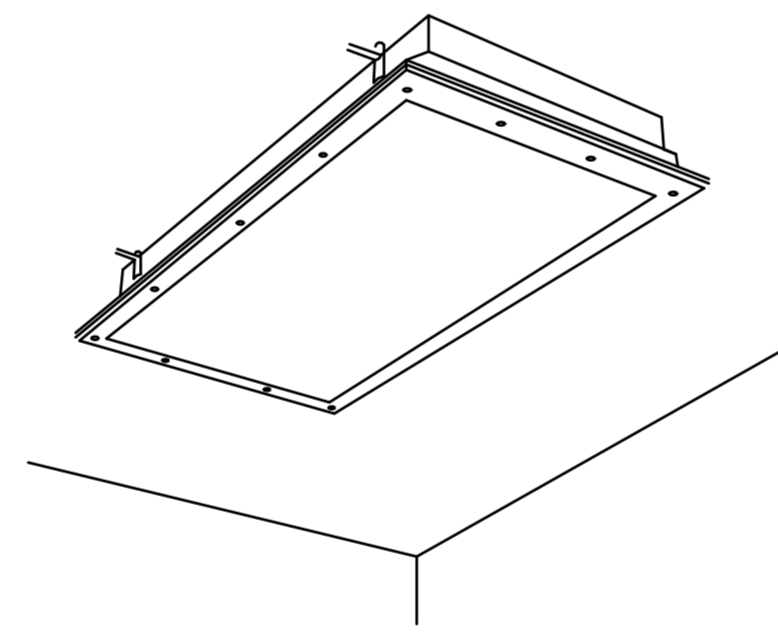


NOTE: THIS SKETCH IS A NON-PROPRIETARY GRAPHIC REPRESENTATION OF A LUMINAIRE THAT MAY MEET THE SPECIFICATION REQUIREMENTS. IT IS NOT INTENDED TO INDICATE A CERTAIN MANUFACTURER OR PREFERENCE.

LUMINAIRE REQUIREMENTS:

1. HOUSING - DIE-CAST ALUMINUM OR HIGH-IMPACT, UV-STABILIZED, INJECTION-MOLDED THERMOPLASTIC.
2. LIGHT SOURCE - SOLID STATE LEDS.
3. DRIVER - INTEGRAL, HIGH-EFFICIENCY DRIVER WITH MINIMUM 0.9 PF, OPERATING VOLTAGE OF 120-277V, THERMAL MANAGEMENT, AND < 20% THD.
4. CERTIFICATION - NFPA 101. UL LISTED FOR DAMP OR WET LOCATION AND ROHS COMPLIANT.
5. MOUNTING - SURFACE MOUNTED ON CEILING AND/OR WALL.
6. OPTIONS - RED OR GREEN LETTERING, ONE- OR TWO-SIDED. ELU REMOTE HEAD CAPABILITIES. BATTERY BACKUP.

**C3** EDGE-LIT EXIT SIGN DETAIL  
SCALE: NTS

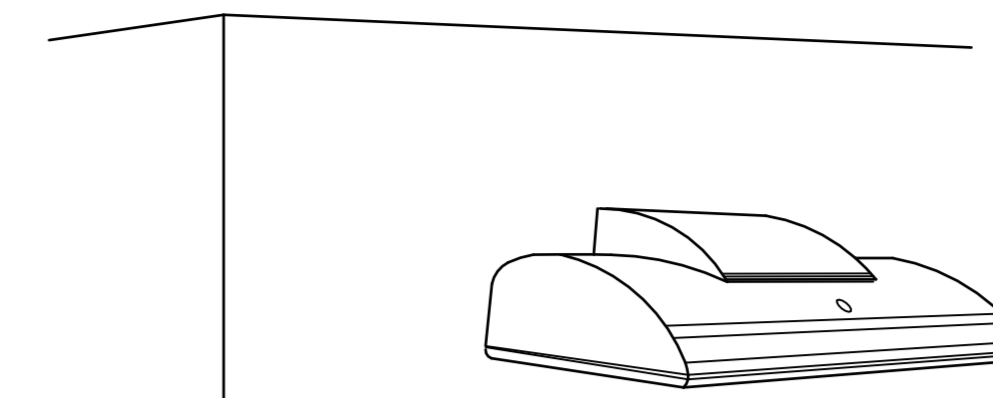


NOTE: THIS SKETCH IS A NON-PROPRIETARY GRAPHIC REPRESENTATION OF A LUMINAIRE THAT MAY MEET THE SPECIFICATION REQUIREMENTS. IT IS NOT INTENDED TO INDICATE A CERTAIN MANUFACTURER OR PREFERENCE.

LUMINAIRE REQUIREMENTS:

1. HOUSING - HEAVY GAUGE COLD ROLLED STEEL OR DIE CAST ALUMINUM. STAINLESS STEEL FASTENERS. SIZE AS INDICATED IN LUMINAIRE SCHEDULE.
2. OPTICS - POLYCARBONATE OR GLASS LENS.
3. LIGHT SOURCE - SOLID STATE LEDS, 3500K CCT UONO, MINIMUM 80 CRI UONO, AND MINIMUM EFFICACY OF 90 LUMENS/WATT UONO. INITIAL LUMEN OUTPUT AS INDICATED IN LUMINAIRE SCHEDULE.
4. DRIVER - REPLACEABLE, INTEGRAL, HIGH-EFFICIENCY DIMMABLE DRIVER WITH MINIMUM 0.9 PF, OPERATING VOLTAGE OF 120-277V, THERMAL MANAGEMENT, AND < 20% THD. ON/OFF CONTROL AND FULLY DIMMABLE DOWN TO 10% MINIMUM OR AS INDICATED IN LUMINAIRE SCHEDULE.
5. CERTIFICATION - UL LISTED FOR WET LOCATION, ROHS COMPLIANT. NSF CERTIFIED. COMPLIES WITH IES LM79, LM80 AND TM21 TESTING STANDARDS.
6. MOUNTING - RECESSED IN HARD CEILING OR SURFACE MOUNTED WITH STAINLESS STEEL MOUNTING HARDWARE.
7. OPTIONS - EMERGENCY BATTERY BACK-UP, INTEGRAL OCCUPANCY/VACANCY SENSOR, VARIOUS SIZE AND OUTPUT OPTIONS.

**C6** CLEAN ROOM LUMINAIRE DETAIL  
SCALE: NTS



NOTE: THIS SKETCH IS A NON-PROPRIETARY GRAPHIC REPRESENTATION OF A LUMINAIRE THAT MAY MEET THE SPECIFICATION REQUIREMENTS. IT IS NOT INTENDED TO INDICATE A CERTAIN MANUFACTURER OR PREFERENCE.

LUMINAIRE REQUIREMENTS:

1. HOUSING - DIE-CAST OR EXTRUDED ALUMINUM WITH INTEGRAL PASSIVE COOLING MECHANISM. HEAT SINK INCORPORATED DIRECTLY INTO HOUSING OR DRIVER COMPARTMENT.
2. OPTICS - PRECISION MOLDED ACRYLIC LENS WITH TYPE II, III, OR IV DISTRIBUTIONS. BUG UPLIGHT RATING OF U0, WITH GLARE RATING AS DETERMINED BY LIGHTING ZONE INSTALLED.
3. LIGHT SOURCE - SOLID STATE LEDS, 3000K CCT UON, MINIMUM 70 CRI UON, AND MINIMUM EFFICACY OF 80 LUMENS/WATT UON. INITIAL LUMEN OUTPUT AS INDICATED IN LUMINAIRE SCHEDULE.
4. DRIVER - REPLACEABLE, INTEGRAL, HIGH-EFFICIENCY DIMMABLE DRIVER WITH MINIMUM 0.9 PF, OPERATING VOLTAGE OF 120-277V, THERMAL MANAGEMENT, AND < 20% THD. ON-OFF CONTROL AND FULLY DIMMABLE DOWN TO 10% MINIMUM OR AS INDICATED IN LUMINAIRE SCHEDULE.
5. CERTIFICATION - UL LISTED FOR WET LOCATION, ROHS COMPLIANT. COMPLIES WITH IES LM79, LM80 AND TM21 TESTING STANDARDS.
6. MOUNTING - SURFACE MOUNTED WITH STAINLESS STEEL MOUNTING HARDWARE.
7. OPTIONS - VARIOUS LIGHT DISTRIBUTIONS. INTEGRAL MOTION SENSOR, PHOTOCELL, BATTERY BACK-UP.

**F3** LED WALL PACK DETAIL  
SCALE: NTS



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**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

REVISION HISTORY:	
DESCRIPTION	DATE

PROJECT INFORMATION:	
DESIGNED BY:	<b>SMS</b>
DRAWN BY:	<b>ATJ</b>
REVIEWED BY:	<b>WCM</b>
PROJECT MANAGER:	<b>NDM</b>

PROJECT NUMBER:	<b>20190320</b>
SHEET TITLE:	<b>LIGHTING FIXTURE DETAILS</b>

ISSUE DATE:	<b>2 AUGUST 2024</b>
SHEET NUMBER:	<b>EL502</b>

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**LIGHTING FIXTURE SCHEDULE**

ID	SHEET/DETAIL	DESCRIPTION	VOLTS	LAMPS		WATTAGE	EFFICACY	COLOR TEMPERATURE	CRI	LUMENS	NOTES
				TYPE							
A1	EL502/A3	LED EXTERIOR FLOOD LIGHT, OUTDOOR RATED, STAINLESS STEEL, CORROSION RESISTANT HOUSING, IP66, MINIMUM NEMA-3R ENCLOSURE, EXPECTED LIFE OF >100,000 HOURS, POWER FACTOR > 0.9	277	LED		300 W	163 lm/W	4000 K	80	49418 lm	MOUNT 30' 0" AFF.
C1	EL501/A3	4" RECESSED ROUND DOWNLIGHT FOR WET LOCATIONS, SELF-FLANGED ALUMINUM CONICAL REFLECTORS WITH 60 DEGREE BEAM ANGLE DISTRIBUTION, WHITE FINISH	277	LED		15 W	100 lm/W	3500 K	80	1500 lm	
C1E	EL501/A3	4" RECESSED ROUND DOWNLIGHT EMERGENCY BATTERY PACK, 14 WATT BATTERY WITH INTEGRAL TEST AND INDICATOR LIGHT, SELF-FLANGED ALUMINUM CONICAL REFLECTORS WITH 60 DEGREE BEAM ANGLE DISTRIBUTION, WHITE FINISH, 90-MINUTE BATTERY BACK-UP.	277	LED		15 W	100 lm/W	3500 K	80	1500 lm	
D1	EL501/A3	12" RECESSED MOUNTED ROUND DOWNLIGHT WET RATED, STAINLESS STEEL HARDWARE, WHITE FINISH, IP56, UV AND CORROSION RESISTANT, 5 YEAR WARRANTY	277	LED		30 W	68 lm/W	4000 K	80	2051 lm	SURFACE MOUNT TO CANOPY.
D1E	EL501/A3	12" RECESSED MOUNTED ROUND DOWNLIGHT WET RATED, STAINLESS STEEL HARDWARE, WHITE FINISH, IP56, UV AND CORROSION RESISTANT, 90-MINUTE BATTERY BACK-UP, 5 YEAR WARRANTY	277	LED		30 W	68 lm/W	4000 K	80	2051 lm	SURFACE MOUNT TO CANOPY.
F1	EL501/A6	2'X4' LOW-PROFILE EDGE LIT, RECESSED TROFFER, WHITE FROST LENS WITH SMOOTH PATTERN, SCRATCH AND IMPACT RESISTANT, DUST RESISTANT, IP5X COMPLIANT	277	LED		29 W	135 lm/W	3500 K	80	3849 lm	
F1E	EL501/A6	2'X4' LOW-PROFILE EDGE LIT, RECESSED TROFFER, 14 WATT EMERGENCY BACKUP BATTERY WITH MINIMUM 90-MINUTE BACKUP AND SELF DIAGNOSTICS, WHITE FROST LENS WITH SMOOTH PATTERN, SCRATCH AND IMPACT RESISTANT, DUST RESISTANT, IP5X COMPLIANT	277	LED		29 W	135 lm/W	3500 K	80	3849 lm	
G1	EL501/A6	2'X2' LOW-PROFILE EDGE LIT, RECESSED TROFFER, WHITE FROST LENS WITH SMOOTH PATTERN, SCRATCH AND IMPACT RESISTANT, DUST RESISTANT, IP5X COMPLIANT	277	LED		20 W	130 lm/W	3500 K	80	2610 lm	
G1E	EL501/A6	2'X2' LOW-PROFILE EDGE LIT, RECESSED TROFFER, 14 WATT EMERGENCY BACKUP BATTERY WITH MINIMUM 90-MINUTE BACKUP AND SELF DIAGNOSTICS, WHITE FROST LENS WITH SMOOTH PATTERN, SCRATCH AND IMPACT RESISTANT, DUST RESISTANT, IP5X COMPLIANT	277	LED		20 W	130 lm/W	3500 K	80	2610 lm	
H1	EL501/D3	2'X4' HIGH BAY LED, CORROSION RESISTANT HOUSING, STAINLESS STEEL, SINGLE-POINT MOUNTING HANGER, 5 YEAR WARRANTY	277	LED		168 W	190 lm/W	3500 K	80	31969 lm	INCLUDE SAFETY CHAIN, MOUNT TO PURLINS.
H1E	EL501/D3	2'X4' HIGH BAY LED, 90 MINUTE BATTERY BACKUP WITH SELF DIAGNOSTICS, CORROSION RESISTANT HOUSING, STAINLESS STEEL, SINGLE-POINT MOUNTING HANGER, 5 YEAR WARRANTY	277	LED		168 W	190 lm/W	3500 K	80	31969 lm	INCLUDE SAFETY CHAIN, MOUNT TO PURLINS.
K1	EL502/C6	2'X4' RECESSED CLEAN ROOM FIXTURE, WET LOCATION RATED, DIE-FORMED HEAVY GAUGE STEEL OR STAINLESS STEEL HOUSING AND DOOR, PATTERN 12 ACRYLIC LENS, IP66 RATED, 5 YEAR WARRANTY	277	LED		86 W	120 lm/W	3500 K	80	10394 lm	
K1E	EL502/C6	2'X4' RECESSED CLEAN ROOM FIXTURE, WET LOCATION RATED, 90 MINUTE BATTERY BACKUP WITH SELF-DIAGNOSTICS, DIE-FORMED HEAVY GAUGE STEEL OR STAINLESS STEEL HOUSING AND DOOR, PATTERN 12 ACRYLIC LENS, IP66 RATED, 5 YEAR WARRANTY	277	LED		86 W	120 lm/W	3500 K	80	10394 lm	
S1	EL501/D6	4' STRIP LIGHT, HIGH-OUTPUT LED, CORROSION RESISTANT HOUSING, STAINLESS STEEL, PREMIUM EFFICACY, 0-10V DIMMING, 5-YEAR WARRANTY	277	LED		44 W	159 lm/W	3500 K	80	6975 lm	MOUNT 12' 0" AF
S1E	EL501/D6	4' STRIP LIGHT, EMERGENCY 90 MINUTE BATTERY PACK, PREMIUM EFFICACY, HIGH-OUTPUT LED, CORROSION RESISTANT HOUSING, STAINLESS STEEL, 0-10V DIMMING, 5-YEAR WARRANTY	277	LED		44 W	159 lm/W	3500 K	80	6975 lm	MOUNT 12' 0" AFF, UNO.
S2	EL501/D6	4' STRIP LIGHT, HIGH-OUTPUT LED, CORROSION RESISTANT HOUSING, STAINLESS STEEL, PREMIUM EFFICACY, 0-10V DIMMING, 5-YEAR WARRANTY	277	LED		58 W	152 lm/W	3500 K	80	8842 lm	MOUNT 12' 0" AFF
S2E	EL501/D6	4' STRIP LIGHT, EMERGENCY 90 MINUTE BATTERY PACK, PREMIUM EFFICACY, HIGH-OUTPUT LED, CORROSION RESISTANT HOUSING, STAINLESS STEEL, 0-10V DIMMING, 5-YEAR WARRANTY	277	LED		58 W	152 lm/W	3500 K	80	8842 lm	MOUNT 12' 0" AFF
U1	EL501/F3	4 IN WIDTH LED LINEAR SLOT FIXTURE, 314 DELIVERED LUMENS/FT, 4 INPUT WATTS/FT, 92 LUMENS/WATT, RECESSED, WET LOCATION RATED, 5-YEAR WARRANTY.	277	LED		4 W	91 lm/W	3500 K	80	314 lm	CONTINUOUS ROWS IN 1" INCREMENTS.
W1	EL502/F3	EXTERIOR LED WALL PACK WITH DIE-CAST, BLACK HOUSING, CORROSION RESISTANT, WEATHER PROOF STAINLESS STEEL, IP66 COMPLIANT	277	LED		26 W	104 lm/W	4000 K	70	2700 lm	MOUNT 8' 0" AFF, UNO.
W1E	EL502/F3	EXTERIOR LED WALL PACK WITH DIE-CAST, BLACK HOUSING, CORROSION RESISTANT, WEATHER PROOF STAINLESS STEEL, IP66 COMPLIANT, 90-MINUTE BATTERY BACK-UP.	277	LED		26 W	104 lm/W	4000 K	70	2700 lm	MOUNT 8' 0" AFF.
X1	EL502/C3	WHITE THERMOPLASTIC, RED LETTERED, EXIT SIGN	277	LED		1 W					MOUNT 8' 0" AFF.
Z1	EL502/A6	FAA L-810 DOUBLE LAMP RED OBSTRUCTION LIGHT, WITH INTEGRAL PHOTOCELL	277	INCANDESCENT		8 W					MOUNT ON PEAK OF ROOF.

**LIGHTING CONTROL MATRIX**

ROOM NUMBER	NAME	WALL SWITCH	DIMMING	OCCUPANCY (AUTO ON/OFF)	DAYLIGHT
101	VEST	NO	YES	YES	YES
102	CORR	NO	YES	YES	NO
103	MEDIA	YES	YES	YES	YES
104	OFFICE	YES	YES	YES	YES
105	ADMIN	YES	YES	YES	NO
106	JAN.	YES	NO	NO	NO
107	CORR	NO	YES	YES	NO
108	BREAK	NO	YES	YES	NO
109	BREAK	NO	YES	YES	NO
110	COMM	YES	NO	NO	NO
111	CORR	NO	YES	YES	NO
112	CLEAN RR M	YES	NO	YES	NO
113	DIRTY RR M	YES	NO	YES	NO
114	DIRTY VEST	NO	YES	YES	NO
115	CLEAN RR W	YES	NO	YES	NO
116	DIRTY RR W	YES	NO	YES	NO
117	CLEAN VEST	NO	YES	YES	NO
118	MAINT. BAY	YES	YES	NO	YES
119	PREP	YES	NO	NO	NO
120	PLASTICS	YES	YES	YES	NO
121	MECH	YES	NO	NO	NO
122	FIRE PROT	YES	NO	NO	NO
123	ELEC	YES	NO	NO	NO



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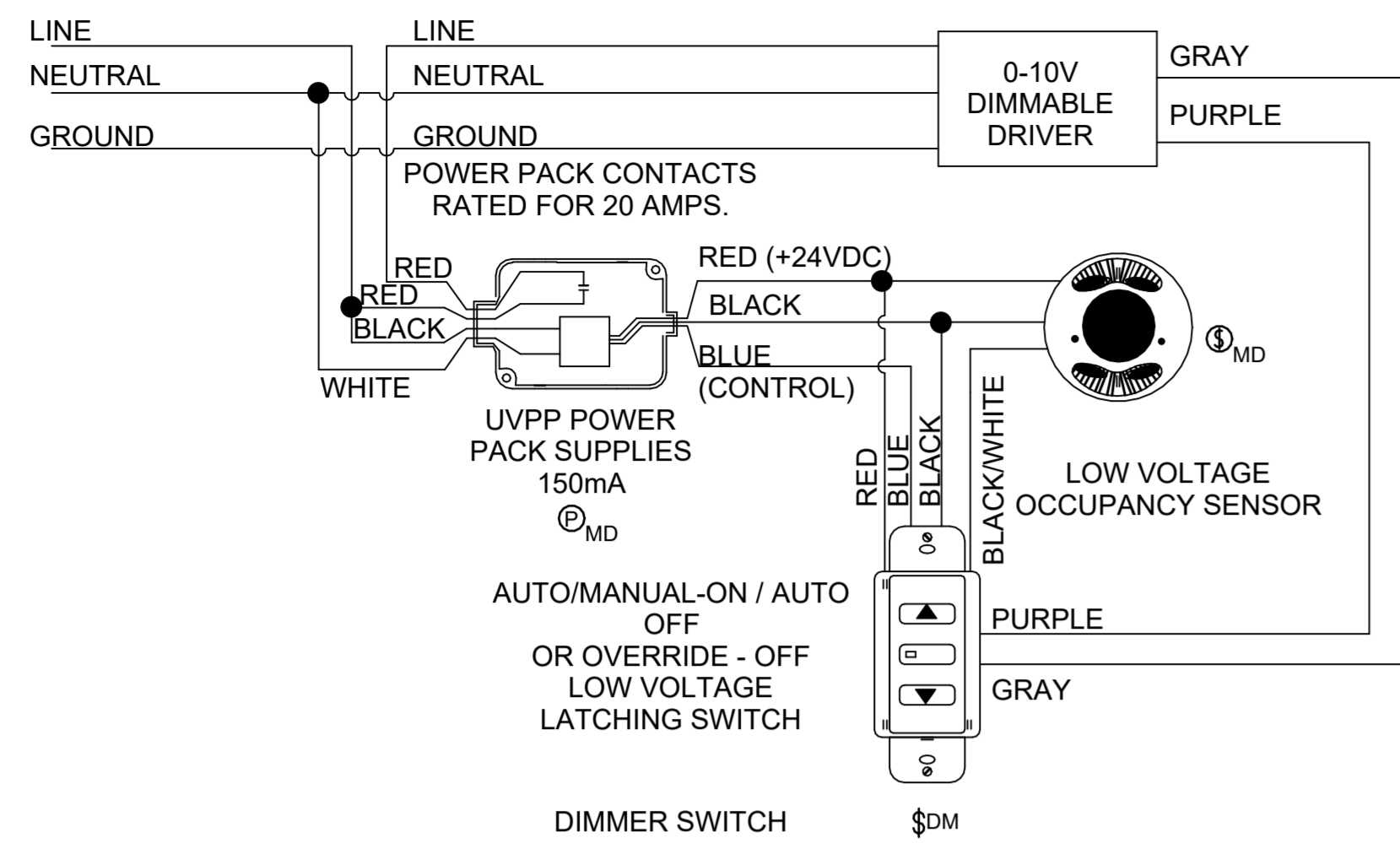


**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

NO.	DESCRIPTION	DATE

DESIGNED BY:	<b>SMS</b>
DRAWN BY:	<b>ATJ</b>
REVIEWED BY:	<b>WCM</b>
PROJECT MANAGER:	<b>NDM</b>
PROJECT NUMBER:	<b>20190320</b>
SHEET TITLE:	<b>LIGHTING FIXTURE SCHEDULE AND LIGHTING CONTROL MATRIX</b>
ISSUE DATE:	<b>2 AUGUST 2024</b>
SHEET NUMBER:	EL601

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**A2** TYPICAL CONTROL DIAGRAM - DIMMER SWITCH

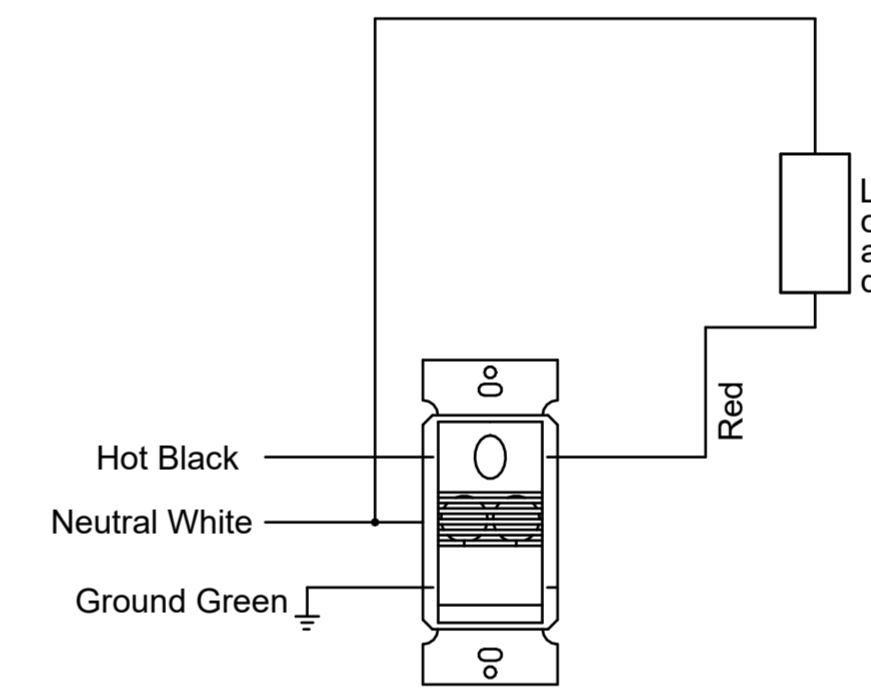
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(4) H1 1P20A CONTROLLED CIRCUITS FROM RELAY PANEL TO HIGH BAY LTS.  
 (3) 1P20A CONTROLLED CIRCUITS FROM RELAY PANEL TO EXTERIOR LTS.



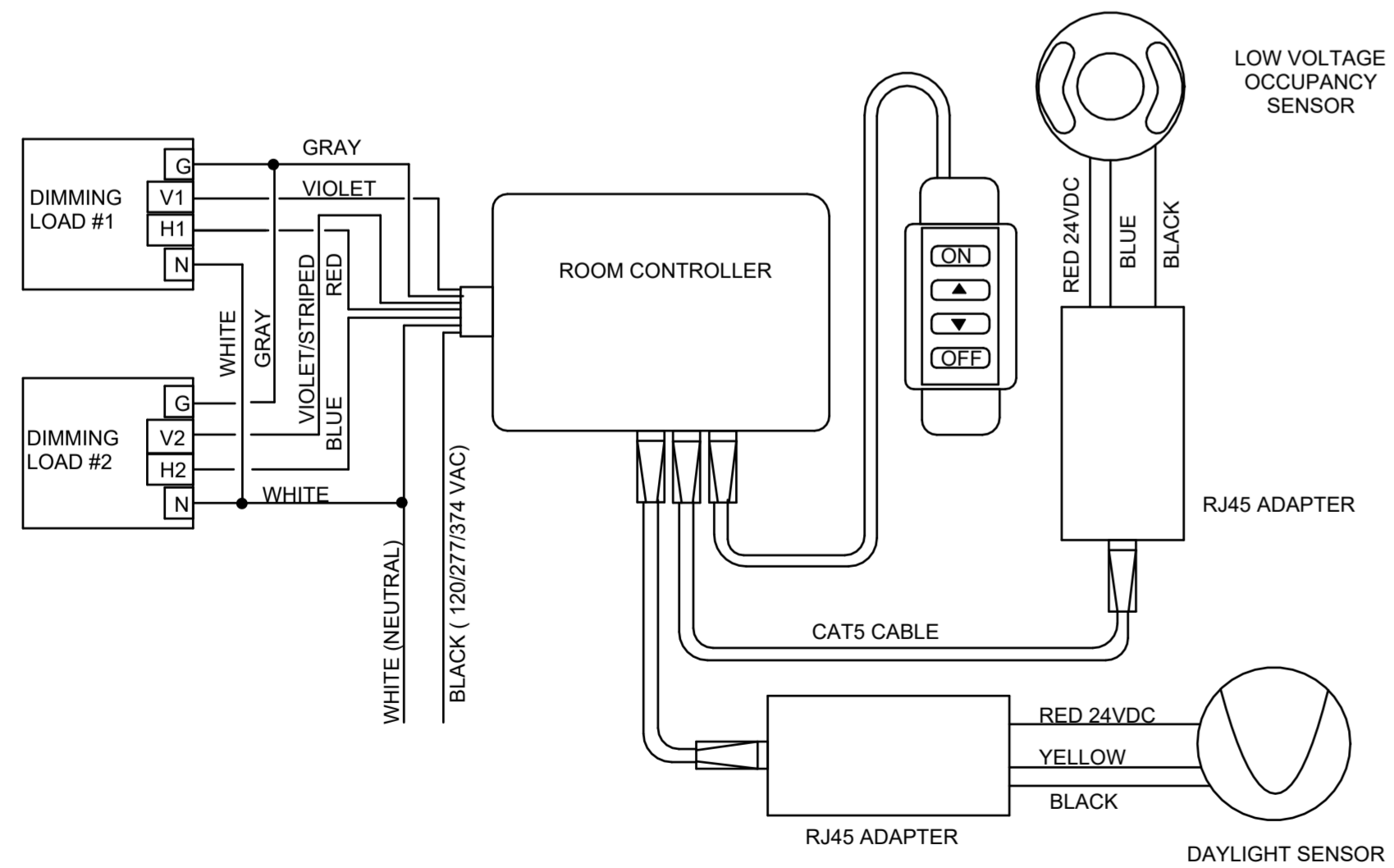
**D3** HANGAR LIGHTING CONTROLS

SCALE: NTS



**F4** TYPICAL WALL MOUNT OCCUPANCY SENSOR

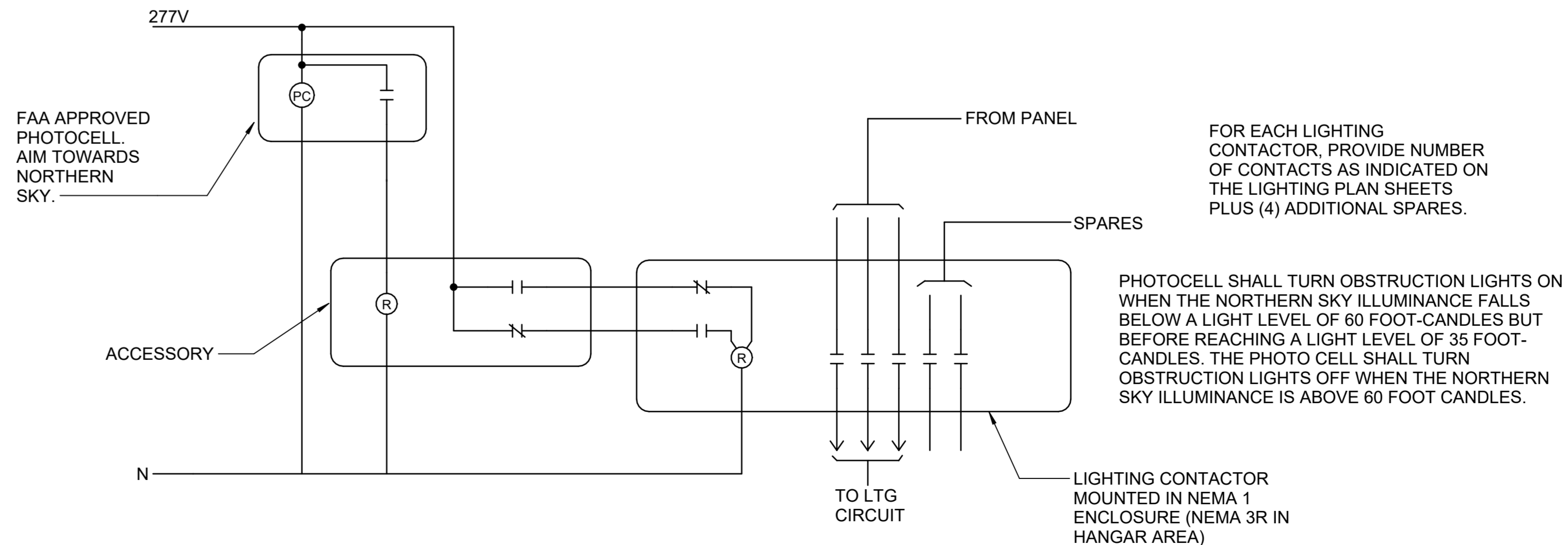
SCALE: NTS



**A6** TYPICAL CONTROL DIAGRAM - DAYLIGHT/OCCUPANCY SENSOR WITH SWITCH

SCALE: NTS

\* REFER TO EP SERIES FOR CONTROL CIRCUIT INFORMATION



**D6** OBSTRUCTION LIGHTING CONTROLS

SCALE: NTS

FSB FEDERAL DESIGN GROUP JV

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 Corrosion Control Facility  
 TXANG Project Number: KELL 169014  
 JBSA - Kelly Annex, TX

REVISION HISTORY:	
NO.	DESCRIPTION

PROJECT INFORMATION:	
DESIGNED BY:	SMS
DRAWN BY:	ATJ
REVIEWED BY:	WCM
PROJECT MANAGER:	NDM
PROJECT NUMBER:	20190320
SHEET TITLE:	LIGHTING CONTROL DIAGRAMS
ISSUE DATE:	2 AUGUST 2024
SHEET NUMBER:	EL602

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**GENERAL NOTES**

- A. ANY DIMENSIONS SHOWN ON THESE DRAWINGS ARE INTENDED TO PROVIDE A GENERAL LOCATION AS REQUESTED BY THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFIRMING ALL DIMENSIONS PRIOR TO ROUGH-IN AND IMMEDIATELY REPORT ANY CONFLICTS WITH THE OUTLET PLACEMENT TO THE GENERAL CONTRACTOR.
- B. ALL CABLE BUNDLES WILL BE SUPPORTED EVERY 48"-60" OC WITH A J-HOOK OR OTHER APPROVED PATHWAY DEVICE. REFERENCE SPECIFICATIONS AND DETAILS FOR ADDITIONAL CABLING PATHWAY INSTALLATION REQUIREMENTS. CONTRACTOR WHO VIOLATES THESE REQUIREMENTS WILL BE REQUIRED TO REPLACE THE AFFECTED CABLE PLANT AT THEIR EXPENSE.
- C. PLASTIC TIE WRAPS ARE NOT PERMITTED AT ANY TIME ON THIS INSTALLATION. ALL CABLE ROUGH-IN AND DRESS-OUT WILL BE WITH HOOK AND LOOP ONLY. ALL CABLES BUNDLED WITH PLASTIC TIE WRAPS SHALL BE IMMEDIATELY REPLACED AT THE CONTRACTOR'S EXPENSE.
- D. DO NOT INSTALL ANY CABLES IN ANY CONDUIT SLEEVE, STUB UP, OR WALL CAP WITHOUT A PROTECTIVE BUSHING. CABLES PULLED INTO UNPROTECTED CONDUITS WILL BE REPLACED AT THE CONTRACTOR'S EXPENSE. DO NOT INSTALL ANY CABLING INTO ANY CONDUIT THAT HAS NOT BEEN CONFIRMED TO BE BLOWN CLEAR. COORDINATE WITH ELECTRICAL PRIOR TO ROUGH IN OF ANY CABLING.
- E. ANY CABLING FOUND PAINTED DURING THE CONSTRUCTION PROCESS WILL BE REPLACED AT CONTRACTOR'S EXPENSE. CONTRACTOR SHALL COORDINATE WITH THE GENERAL CONTRACTOR AND PAINTER TO AVOID CONFLICTS.
- F. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REFERENCE BOTH THE PROJECT DRAWINGS AND THE PROJECT SPECIFICATIONS. TOGETHER THEY FORM THE COMPLETE CONTRACT DOCUMENTS. PLEASE REFERENCE THE PROJECT SPECIFICATIONS FOR ALL MATERIALS, EQUIPMENT AND COMPONENTS NOT INDICATED ON THE DRAWING SET.
- G. ALL CABLING INSTALLED IN AREAS WITH EXPOSED CEILINGS SHALL BE INSTALLED IN A PROPERLY SIZED CONDUIT PATHWAY. CONDUIT PATHWAYS SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR. THE CONDUIT MAY BE PAINTED TO MATCH CEILING COLOR AS DIRECTED BY THE CONTRACT DOCUMENTS.
- H. CONTRACTOR SHALL BE RESPONSIBLE FOR STOPPING ALL TECHNOLOGY, TELECOM, SECURITY AND AUDIO VISUAL CONDUIT PENETRATIONS FROM WATER OR RODENT INGRESS IN ALL BUILDINGS UPON COMPLETION OF THE PROJECT



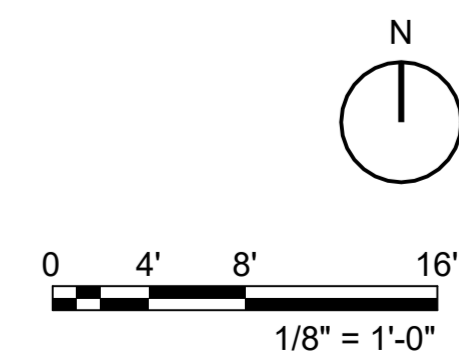
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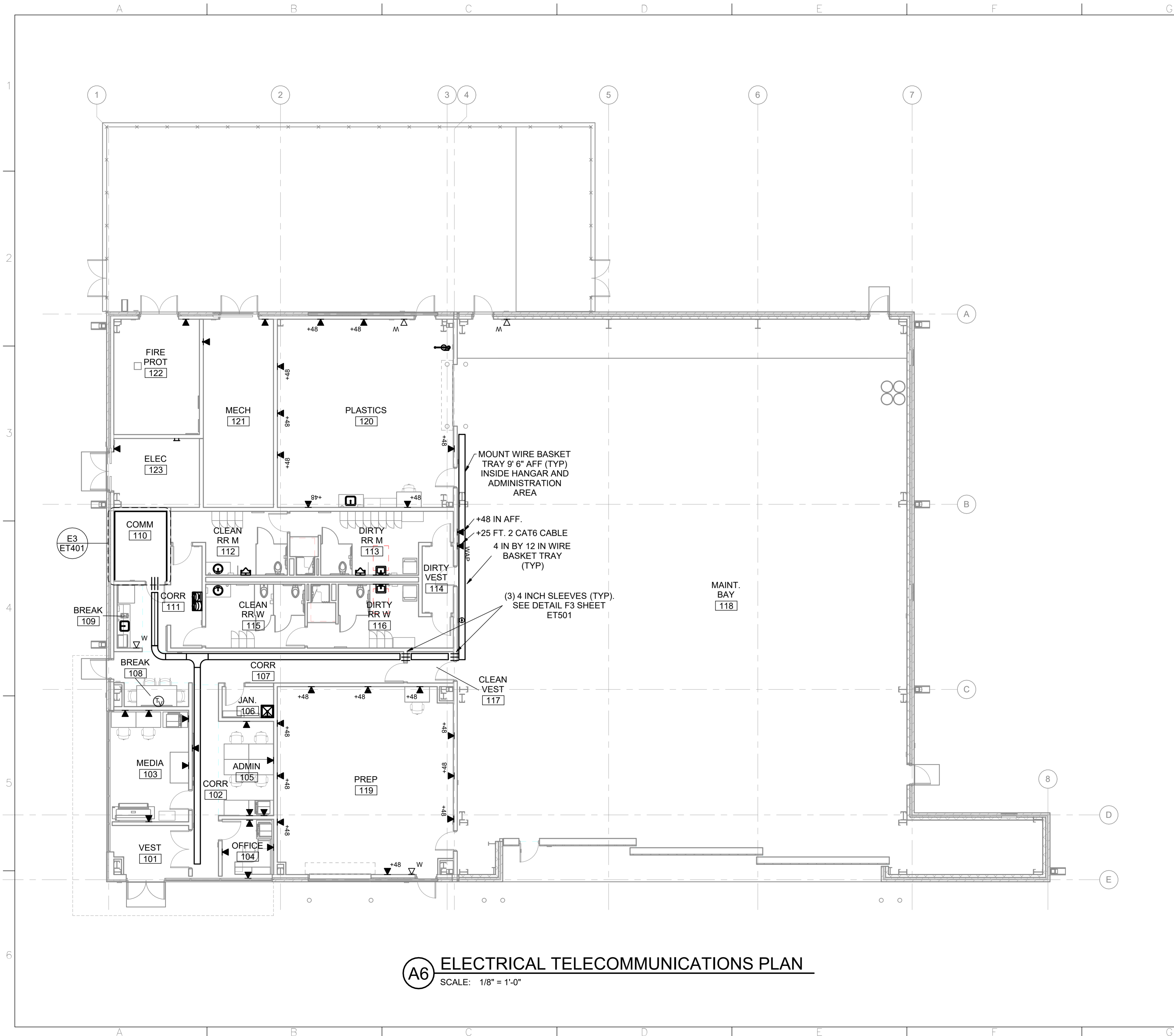
**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

REVISION HISTORY:	
DESCRIPTION	DATE


PROJECT INFORMATION:	
DESIGNED BY:	LLL
DRAWN BY:	LLL
REVIEWED BY:	WCM
PROJECT MANAGER:	NDM
PROJECT NUMBER:	20190320
SHEET TITLE:	ELECTRICAL TELECOMMUNICATIONS PLAN
ISSUE DATE:	2 AUGUST 2024
SHEET NUMBER:	ET101

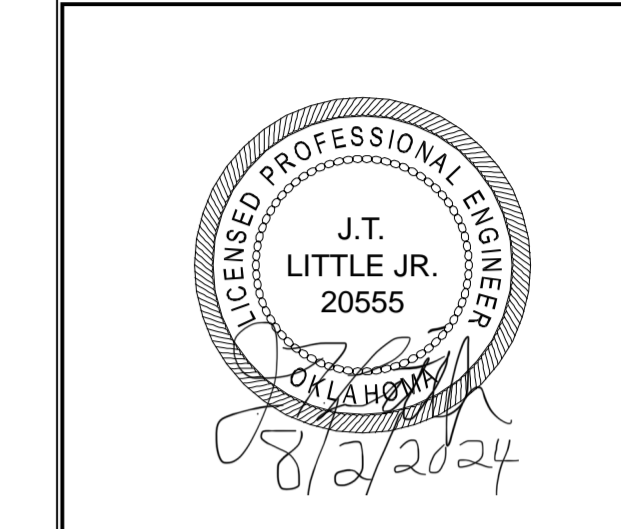


**A6** ELECTRICAL TELECOMMUNICATIONS PLAN  
SCALE: 1/8" = 1'-0"

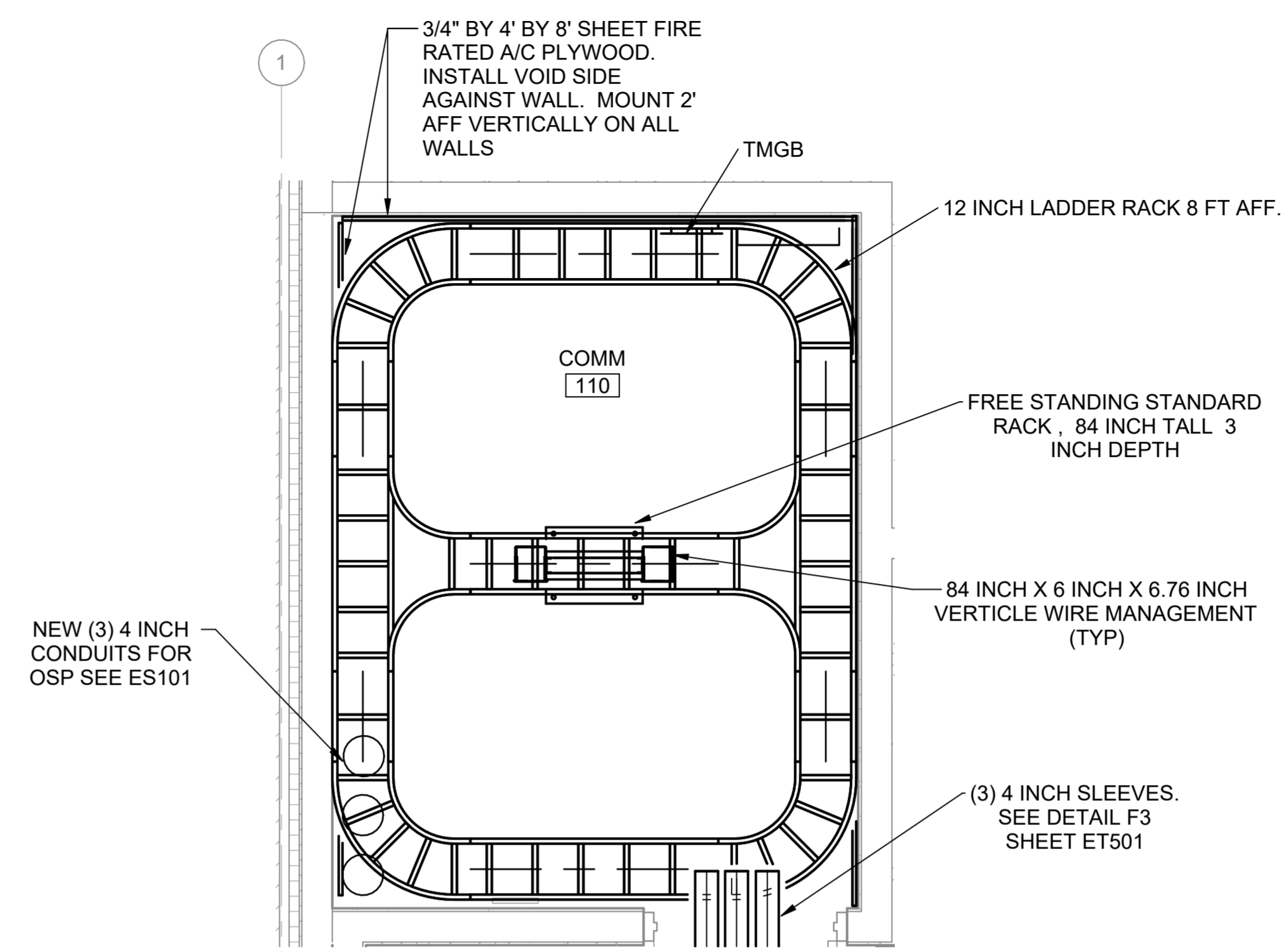


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**E3 ENLARGED TELECOMM PLAN -COMM ROOM 110**  
 SCALE: 1/2" = 1'-0"

REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

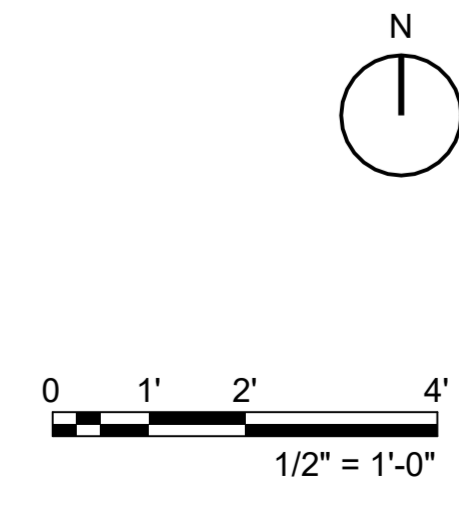
DESIGNED BY:	LLL
DRAWN BY:	LLL
REVIEWED BY:	WCM
PROJECT MANAGER:	NDM

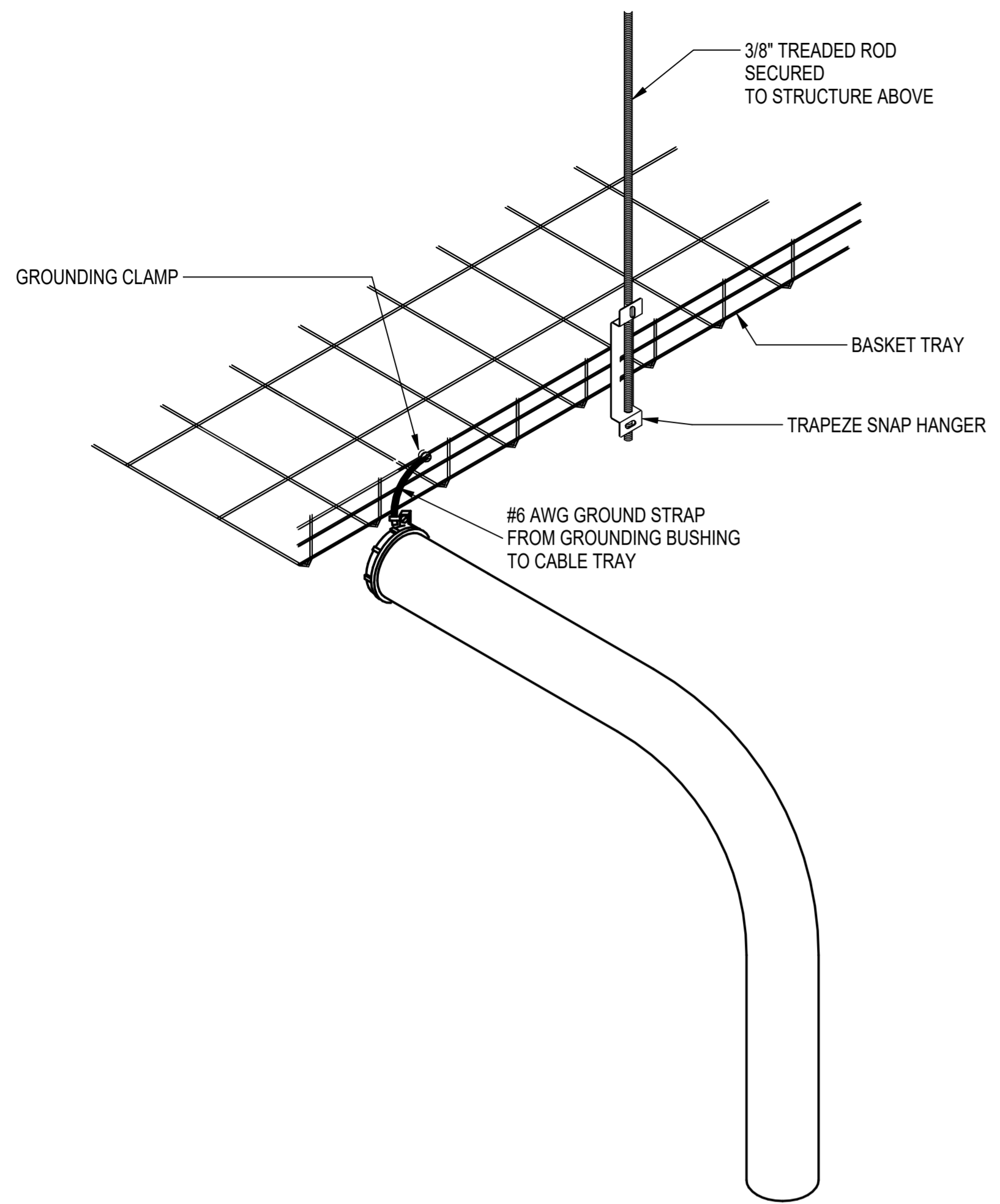
PROJECT NUMBER: 20190320

SHEET TITLE: TELECOM ENLARGED PLANS

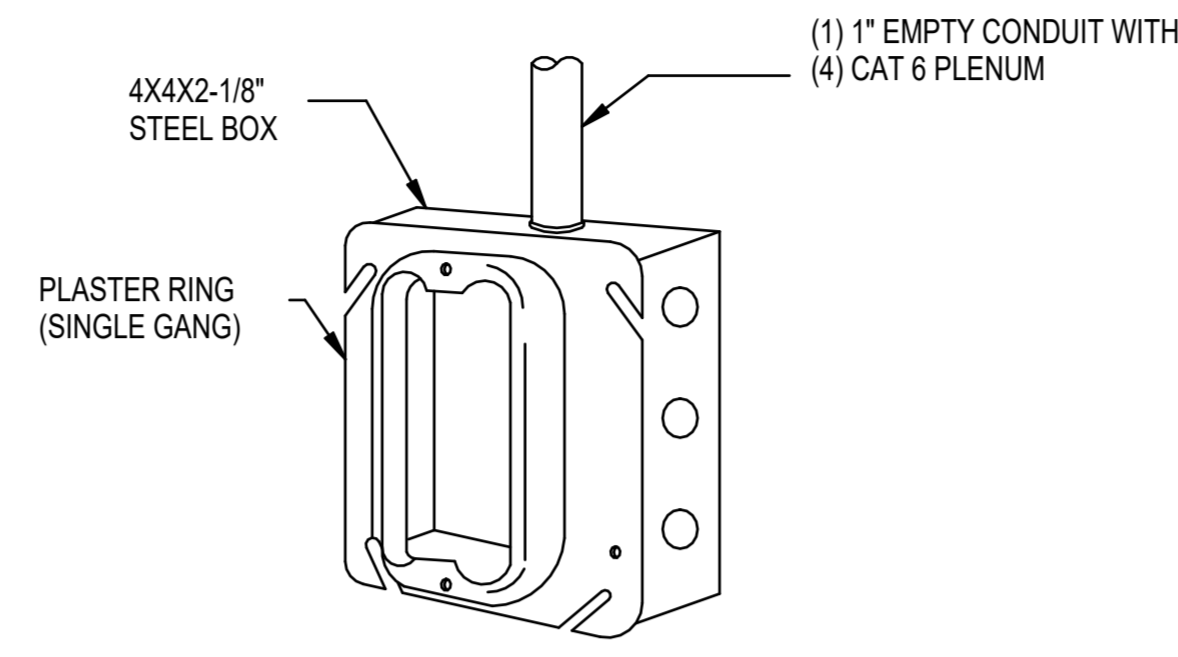
ISSUE DATE: 2 AUGUST 2024

SHEET NUMBER: ET401



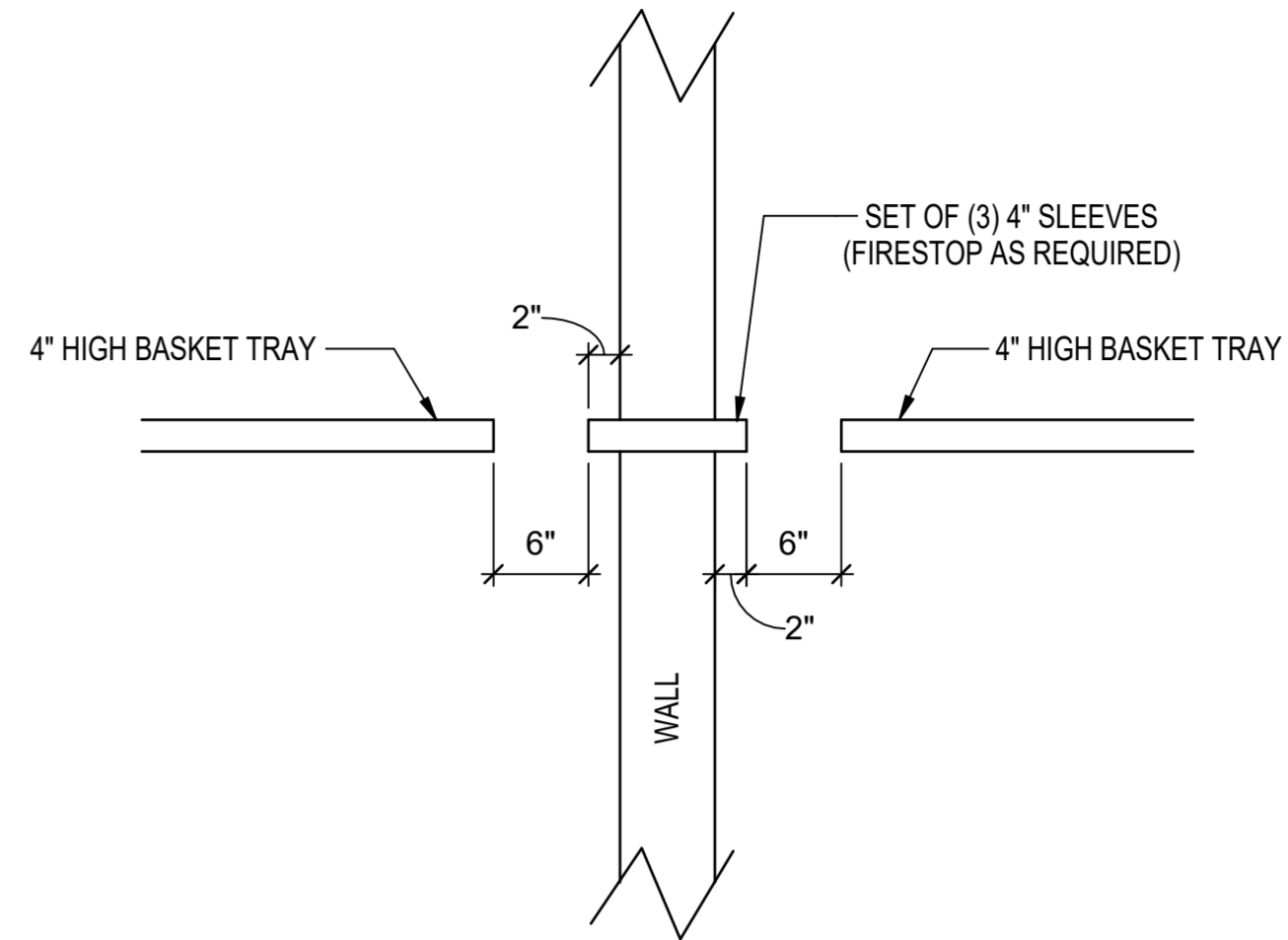


**A4** TYPICAL CONDUIT CONNECTION TO BASKET TRAY  
SCALE: NTS

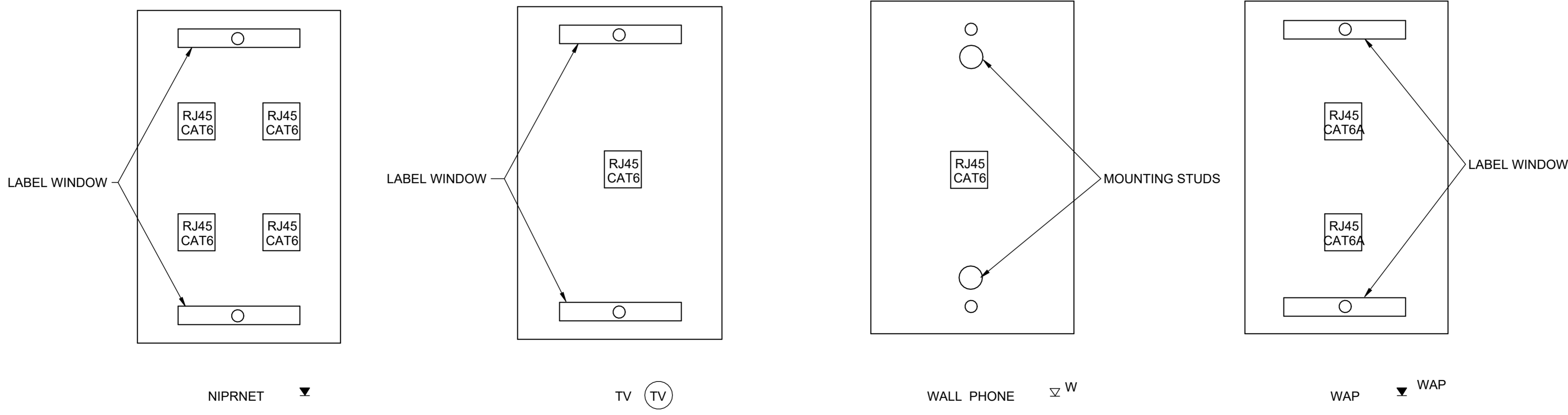


NOTE:  
 1. MOUNT AT 18" AFF UNO.  
 2. SEE DETAIL B6 ON SHEET ET501 FOR FACEPLATE DETAILS.  
 3. AT BOX, USE 1" INSULATED CONNECTOR TO PROTECT CABLING.

**D3** TYPICAL NIPRNET ROUGH-IN  
SCALE: NTS



**F3** TELECOM SLEEVE DETAIL  
SCALE: NTS



**B6** TELECOM FACEPLATES  
SCALE: NTS



**Texas Air National Guard - 149th FW**  
**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
**JBSA - Kelly Annex, TX**

REVISION HISTORY:

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:

DESIGNED BY:	LLL
DRAWN BY:	LLL
REVIEWED BY:	WCM
PROJECT MANAGER:	NDM
PROJECT NUMBER:	20190320
SHEET TITLE:	TELECOM DETAILS

ISSUE DATE:	2 AUGUST 2024
SHEET NUMBER:	ET501

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**Corrosion Control Facility**  
**TXANG Project Number: KELL 169014**  
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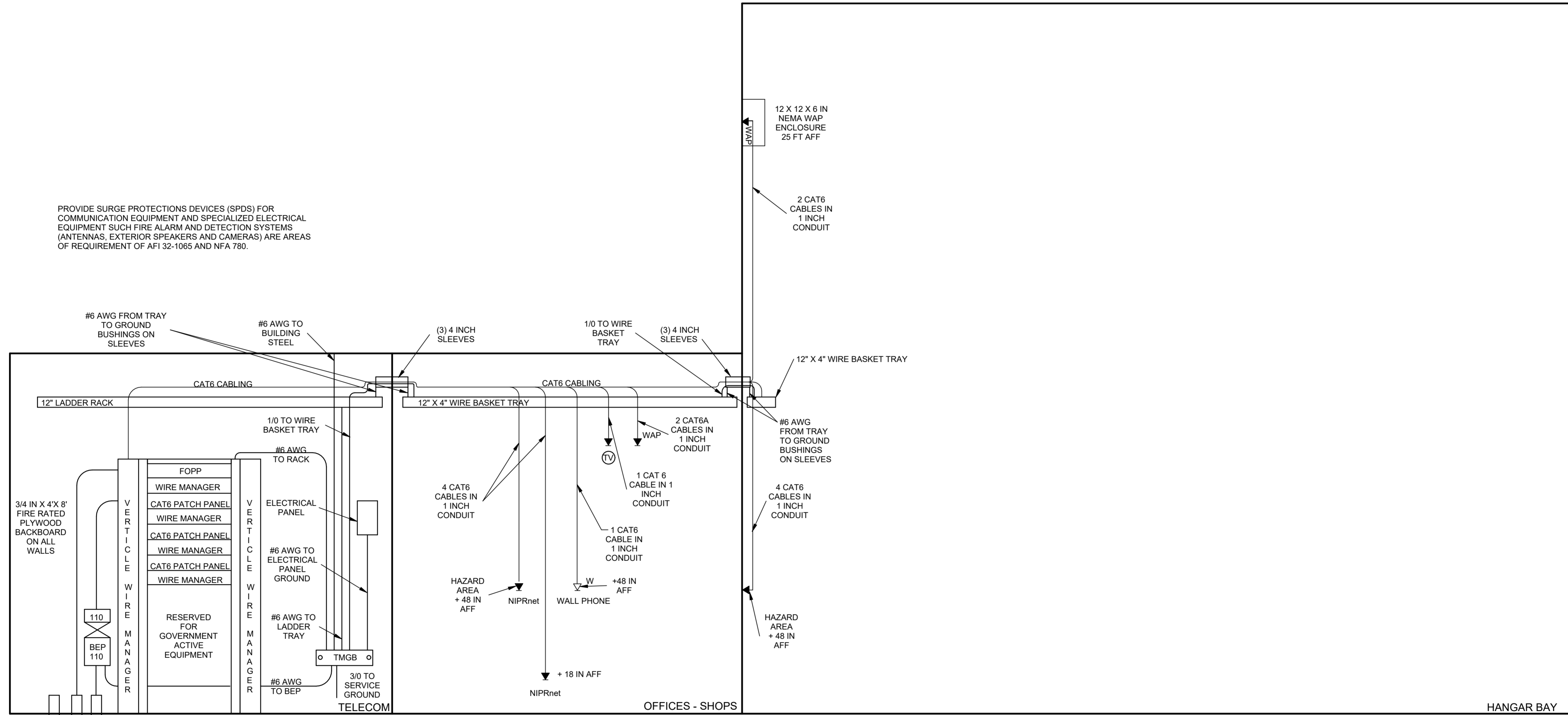
**REVISION HISTORY:**

NO.	DESCRIPTION	DATE

PROJECT INFORMATION:	
DESIGNED BY:	LLL
DRAWN BY:	LLL
REVIEWED BY:	WCM
PROJECT MANAGER:	NDM
PROJECT NUMBER:	20190320
SHEET TITLE:	

**TELECOM RISER DIAGRAM**

ISSUE DATE:	2 AUGUST 2024
SHEET NUMBER:	ET601



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