

ADDENDUM NO. 6
TO GENERAL, MECHANICAL AND ELECTRICAL
ABERDEEN PUBLIC WORKS
MAINTENANCE BUILDING
ABERDEEN, SOUTH DAKOTA

Addendum Dated: March 27, 2026

Original Plans and Specifications Dated: February 20, 2026

NOTE: The Plans, details and accompanying specifications shall be amended as follows, but where any article is amended the original article shall remain in effect and shall become a part of the original plans and specifications.

A. GENERAL NOTES:

1. Pages A2-A, A2-B, A2-C, A2-D, A3, A36, A37, & A40. On Wall Schedule, Wall Type 9, delete the double layer of gypsum drywall type X on each side. Refer to Wall Type 9 detail, a single layer of gypsum drywall on each side.
2. Per structural details, 16 gauge studs are to be used for the walls at the pitched roof center portion of the office area and in the pre-engineered metal building. 18 gauge studs are to be used for the walls at the flat roof portions of the office area on the east and west side of the center pitched roof.
3. Staking is to be by the contractor.
4. All pavement painting, inside and outside, is to be done by the owner.
5. Delete tie downs depicted in Welding 212 on sheets A1, A2, A2-D, A6, A6-D, A10, A27, A28, A35, & A37. Replace with attached layout 1/1. See attached detail 2/1.
6. Restroom mirrors shown on sheets A24-1, A24-2, & A24-3, delete dimensions 2'-0" wide x 3'-0" tall, and replace with 18" wide x 36" tall. Refer to specification section 10 28 13 – Toilet and Bath Accessories.
7. For clarification on Oil 211 wall construction, see attached details 1/2 and 1/3.
8. For clarifying information on the mezzanine railing and gates, see attached details 1/4, 2/4, 1/5, 2/5, & 3/5. The Washbay catwalk railing is to follow the same design requirements shown in the attached details.
9. Add the attached detail 1/6. Floors are to be sloped to floor drains as shown.
10. See attached details 1/7, 2/7, & 4/7 for clarification on the operable wall.
11. See attached elevation, 3/7, for casework depicted in Street HQ Conference 119, Traffic HQ Conference 120, Pump Conference 125, Pipe & Meter Conference 126, Mech. HQ 127, & Solid Waste Conference Room 131, on sheets A6, A6-A, A6-B, & A35.
12. Exterior Cedar Cladding, shall be Cedar WP4 Tight Knot, 1 X 6, V Groove with Clear Finish.
13. Elevations and pipe support lengths for overhead Support for Pipe Racks 1. Eave Height East Wall = 122'-8 5/8", Elevation at Racking Support Elev. = 123'-1 5/8", Approx pipe support length 123'-1 5/8" – 109'-10 3/4" = 13'-2

- 7/8". 2. Elevation at Racking Support Elev Interior. = 133'-3 1/8", Approx pipe support length 133'-3 1/8" – 109'-10 3/4" = 23'-4 3/8".
14. The 3 rooftop curbs called out are for the 3 rooftop fans units.
 15. Contractor/Metal Building supplier to provide all required lintels, wood blocking, flashing and trim at all overhead doors, coiling doors, doors, and windows.
 16. General Contractor to provide all construction staking with their proposal.
 17. Pre-engineered Metal Building Supplier/General Contractor to furnish and install standing seam metal roof at office area, color to be determined from manufacturers standard colors.
 18. Snow Guards to be furnished and install by standing metal roof installer under 1. Base Bid, 450 Snow Defender 7500 Powder Coated Snow Guards, 2. Alternate #1, 150 Snow Defender 7500 Powder Coated Snow Guards. Made with type 304 stainless steel, 410 stainless steel set screws, powder coated.
 19. General Contractor to provide GPDW expansion control joints every 30'-0" vertical and 10'-0" horizontal.

B. PLAN CHANGES AND CLARIFICATIONS:

1. Sheet A2-D:

- a) Boot wash station to be Regency 24" x 60" 14-Gauge Stainless Steel Floor Trough with Grate: Model 600FT2460SS, trough to be formed and recessed into concrete floor slab.

2. Sheet A3:

- a) Details 1/A3, 2/A3, & 3/A3:
 - I) Delete notes "REMOVABLE GATES" and replace notes with "OPEN GATES". See attached details 1/4, 2/4, 1/5, 2/5, & 3/5 for updated mezzanine railing and gate information.
 - II) Wall Containing door 301C, delete "2HR FIRE PARTITION" and replace with "1HR FIRE BARRIER". See attached details 1/4, 2/4, and Wall Type 4B.

3. Sheet A21:

- a) Door 212B:
 - I) Delete "WIDTH 18'-0\"", and replace with "WIDTH 10'-0\"".
 - II) Delete "HEIGHT 16'-0\"", and replace with "HEIGHT 10'-0\"".
 - III) Delete "DOOR MODEL, OVERHEAD DOOR" and replace with "DOOR MODEL, OVERHEAD COILING DOOR".

4. Sheet S9:

- a) Detail 9/S9, delete 12" footing and replace with 14" footing per Foundation Plan.

5. Sheet S11:

- a) Detail 6/S11, delete overhang.
- b) Detail 1/S11, delete "EL. 113'-4\"", and replace with EL. 110'-0\"".

C. SPECIFICATION CHANGES AND CLARIFICATIONS:

1. Section 03 35 43 – Polished Concrete Finishing

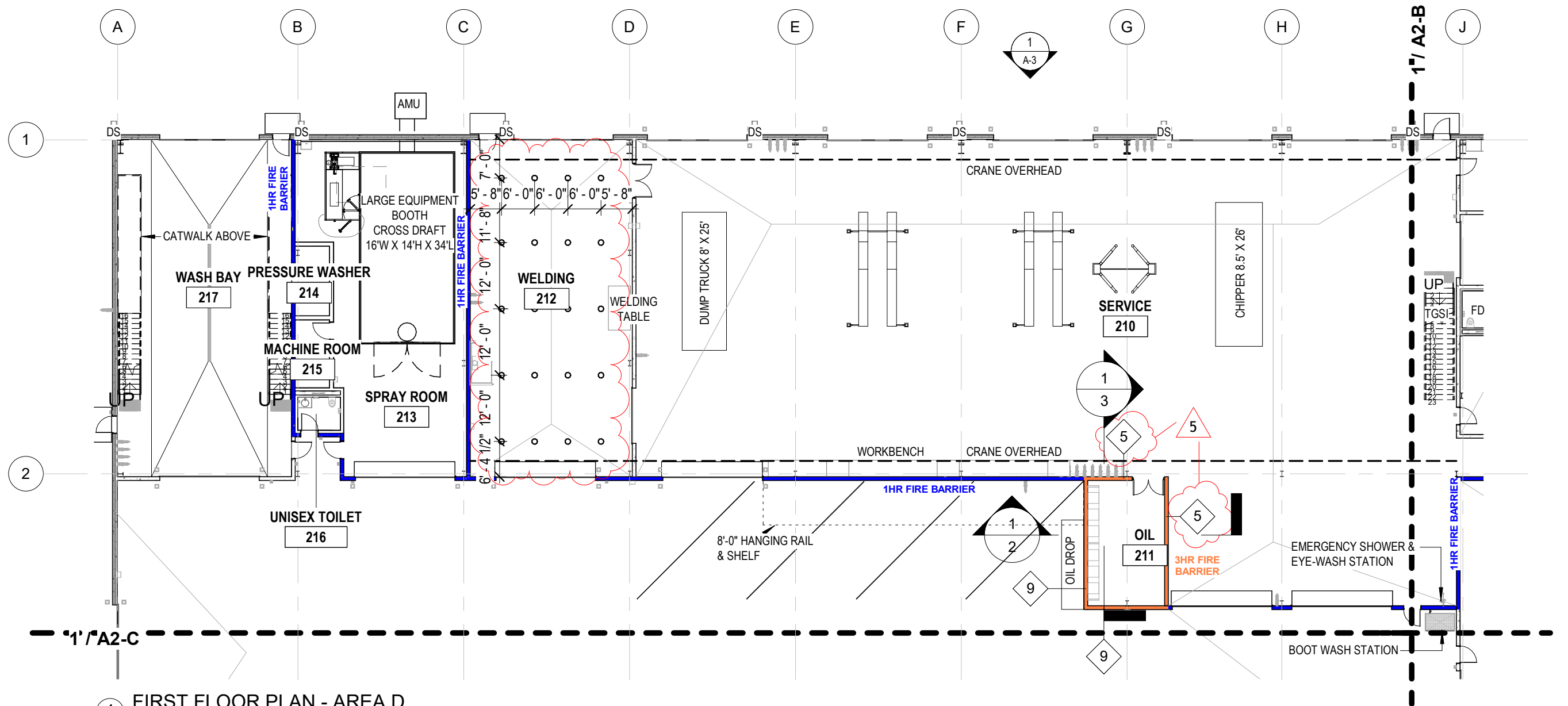
- a) Delete 3.1.B.2., “Apply reactive stain for polished concrete in polishing sequence and according to manufacturer’s written instructions.”
There is no concrete stain in the project.
- 2. Section 05 53 00 – Metal Gratings
 - a) Delete Section in its entirety. See mechanical specifications for metal gratings.
- 3. Section 05 53 10 – Oil/ Sediment Interceptor
 - a) Delete Section in its entirety. See mechanical specifications for metal gratings.
- 4. Section 08 14 16 – Flush Wood Doors
 - a) Factory finish wood doors are acceptable.
- 5. Section 08 33 00 – Overhead Coiling Doors
 - a) Add 2.2.B. Overhead Coiling Service Doors, non-insulated, non-fire rated, Industrial Duty - 203C, 212B (attached 2 pages).
- 6. Section 08 36 00 – Sectional Overhead Doors
 - a) Delete 1.4.C.1. “Follow Roof/Incline pitch type.” And replace with “High Lift Track”.
- 7. Section 10 11 16 – Visual Display Surfaces
 - a) Provide and Install 4’-0” X 8’-0” Marker Boards, Rooms 111 & 112 - West Wall, Rooms 119, 120, 125, 126, 127, 131, 132, 146 - South Wall, Room 143 – North Wall, Room 209 – East Wall.
- 8. Section 21 22 13 – Bridge Cranes
 - a) Service 210 – 7.5 Ton Bridge Crane
 - b) Welding 212 – 2.5 Ton Bridge Crane
 - c) Pump 203 – 1 Ton Gorbelt Bridge Crane (See attached crane detail 42130).
 - I) Pump 203, Design criteria: 30’ is the maximum support center distance allowed and 34’ is the longest available runway section, maximum cantilever is 4’-0. Bridge length of 23’-0 or less does not require extended-length endtrucks. Hook height is 15’-0” minimum.

D. APPROVED EQUALS:

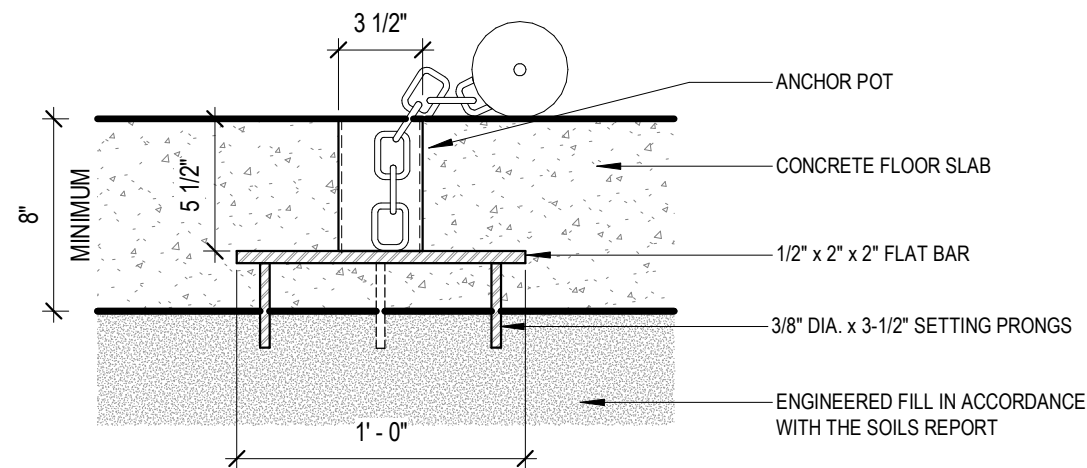
- 1. Section 10 22 26 – Operable Partitions: Kwik-Wall
- 2. Section 10 21 13 – Toilet Compartments:
 - a) General Partitions
 - b) ASI Accurate Partitions
 - c) Scranton Products

Attached: SLE Addendum 4 – 7 Pages
WPE Addendum 6 – 63 Pages

HKG ARCHITECTS, INC., ARCHITECTS, AIA, ABERDEEN, SD



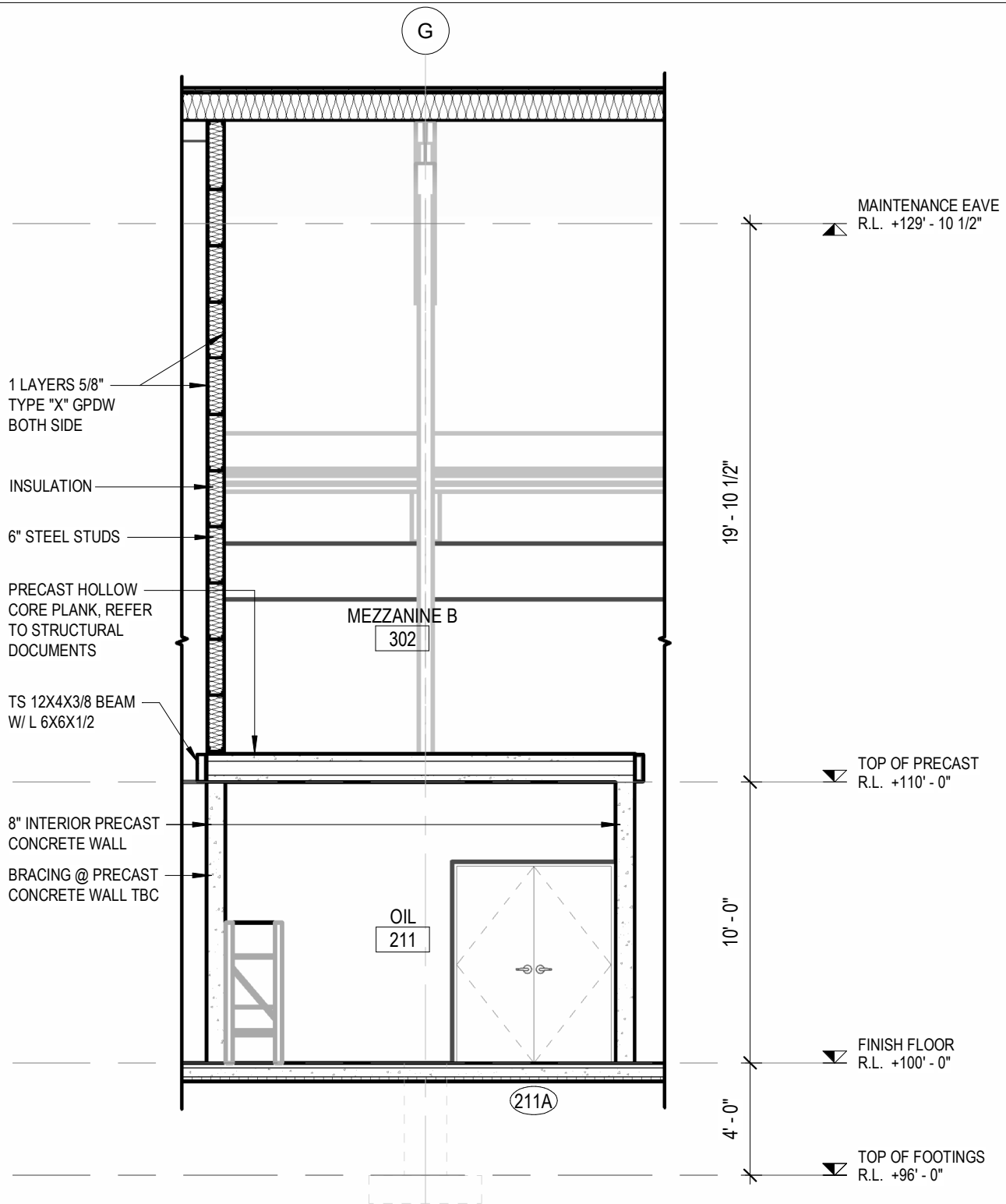
1 FIRST FLOOR PLAN - AREA D
1" = 20'-0"



2 ANCHOR POT DETAIL
1 1/2" = 1'-0"

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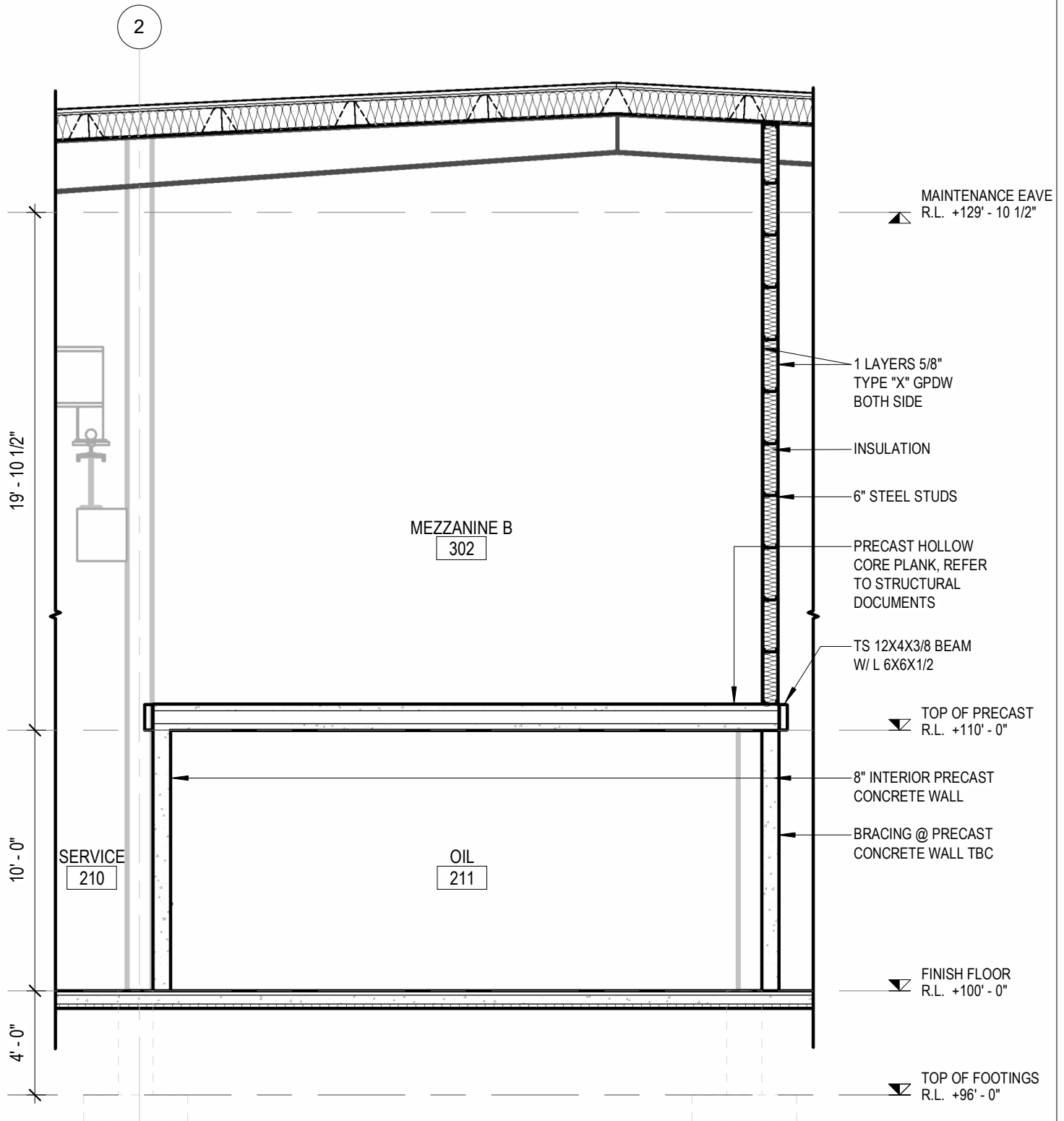
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CERT. NO.	HKG Architects, Inc.	Aberdeen, S.D.	TRACED BY _____	OF-4
			CHECKED BY <u>DM</u>	PROJECT NO. 2023-0032
			DATE 3/27/26	



1 WALL SECTION @ OIL ROOM
3/16" = 1'-0"

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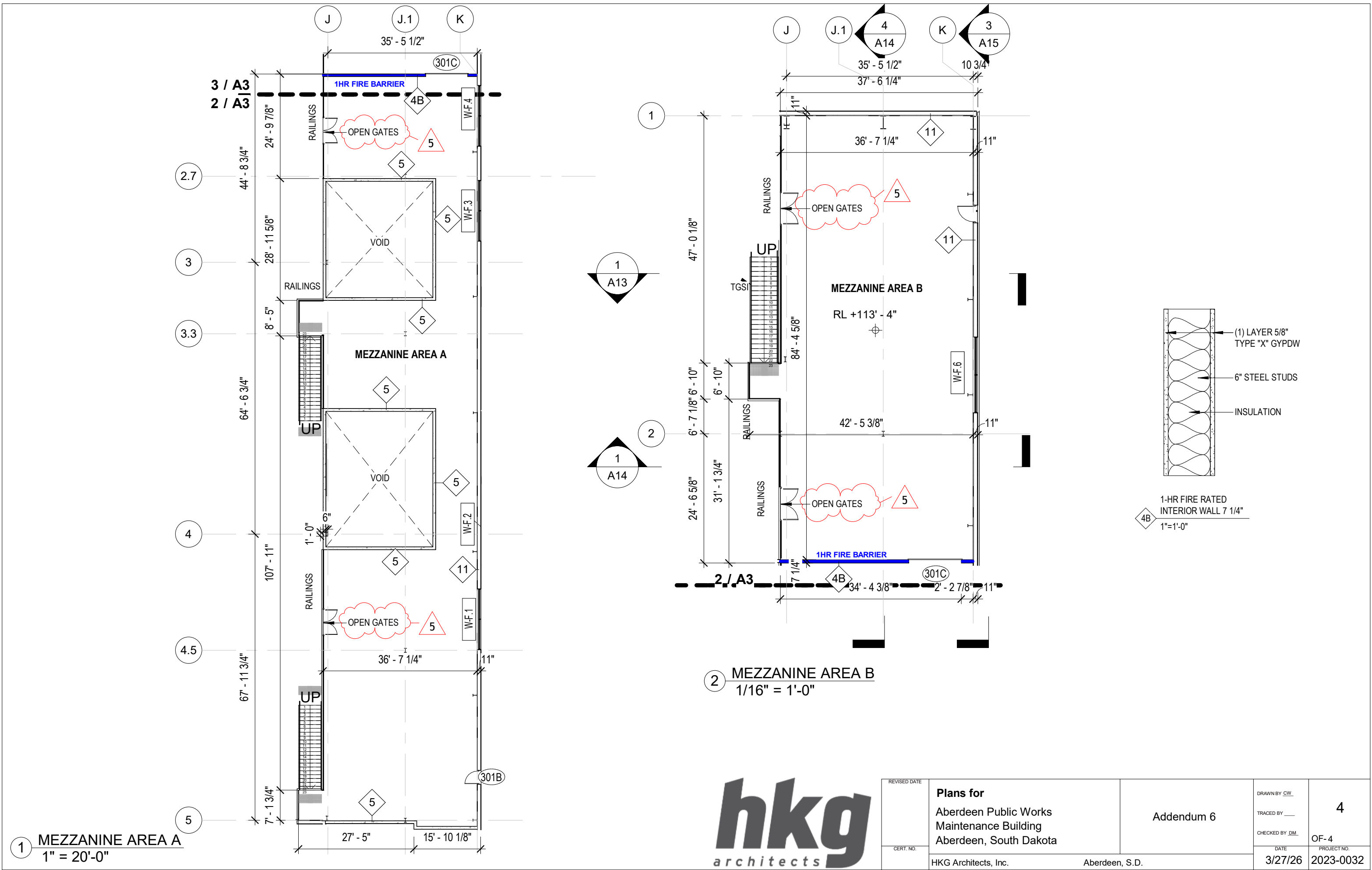
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			DATE 3/27/26	PROJECT NO. 2023-0032



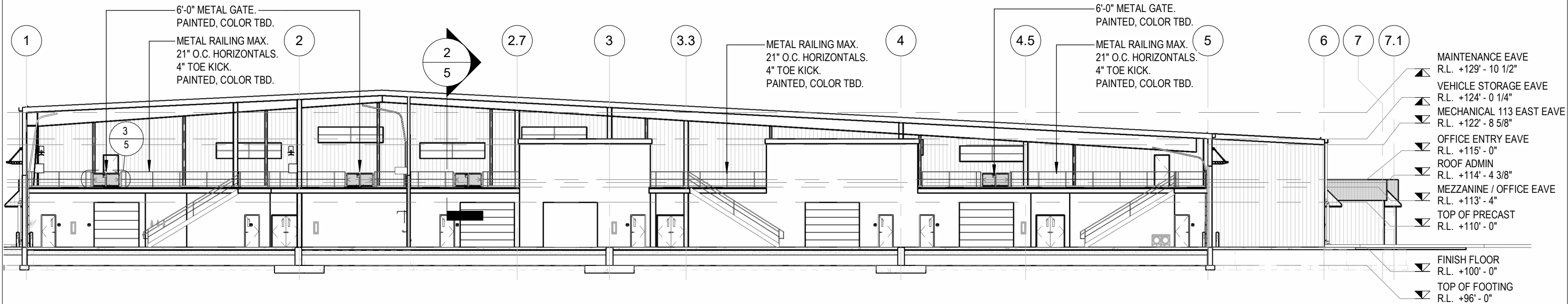
1 WALL SECTION @ OIL ROOM
3/16" = 1'-0"

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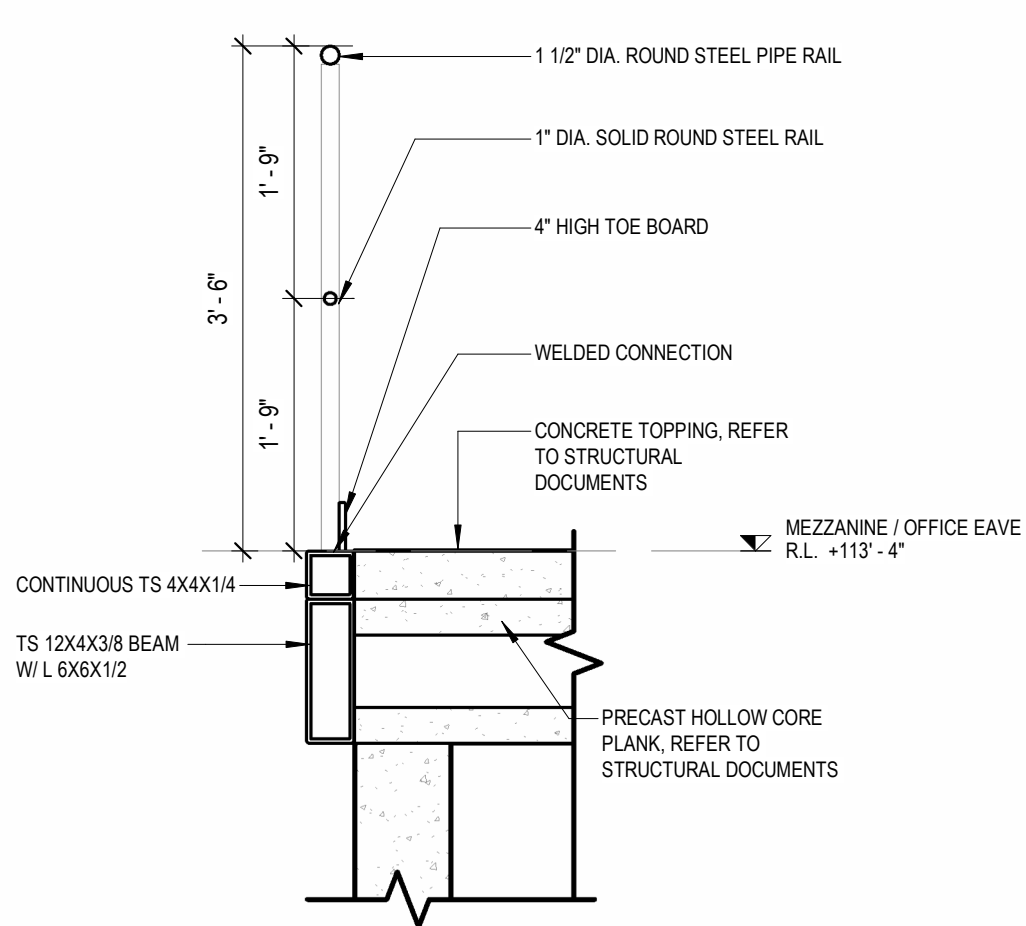
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			CHECKED BY <u>DM</u>	PROJECT NO.
			DATE 3/27/26	2023-0032



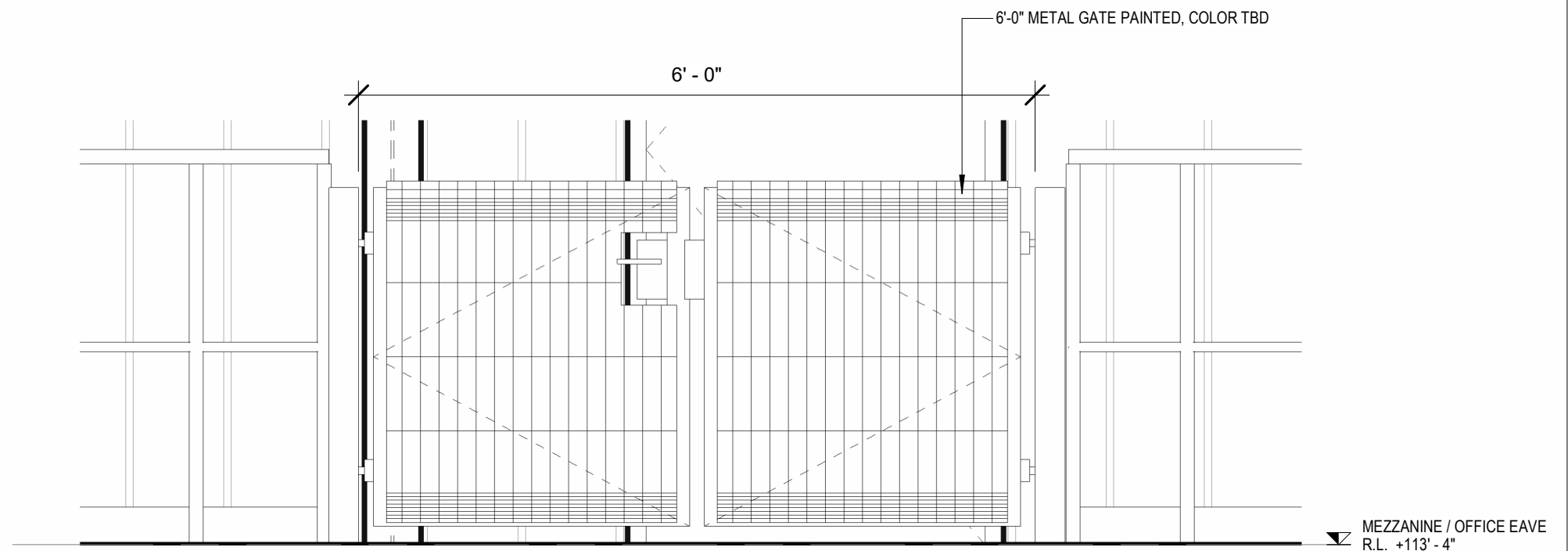
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CERT. NO.			TRACED BY _____	
			CHECKED BY <u>DM</u>	
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1 SECTION 1
3/64" = 1'-0"



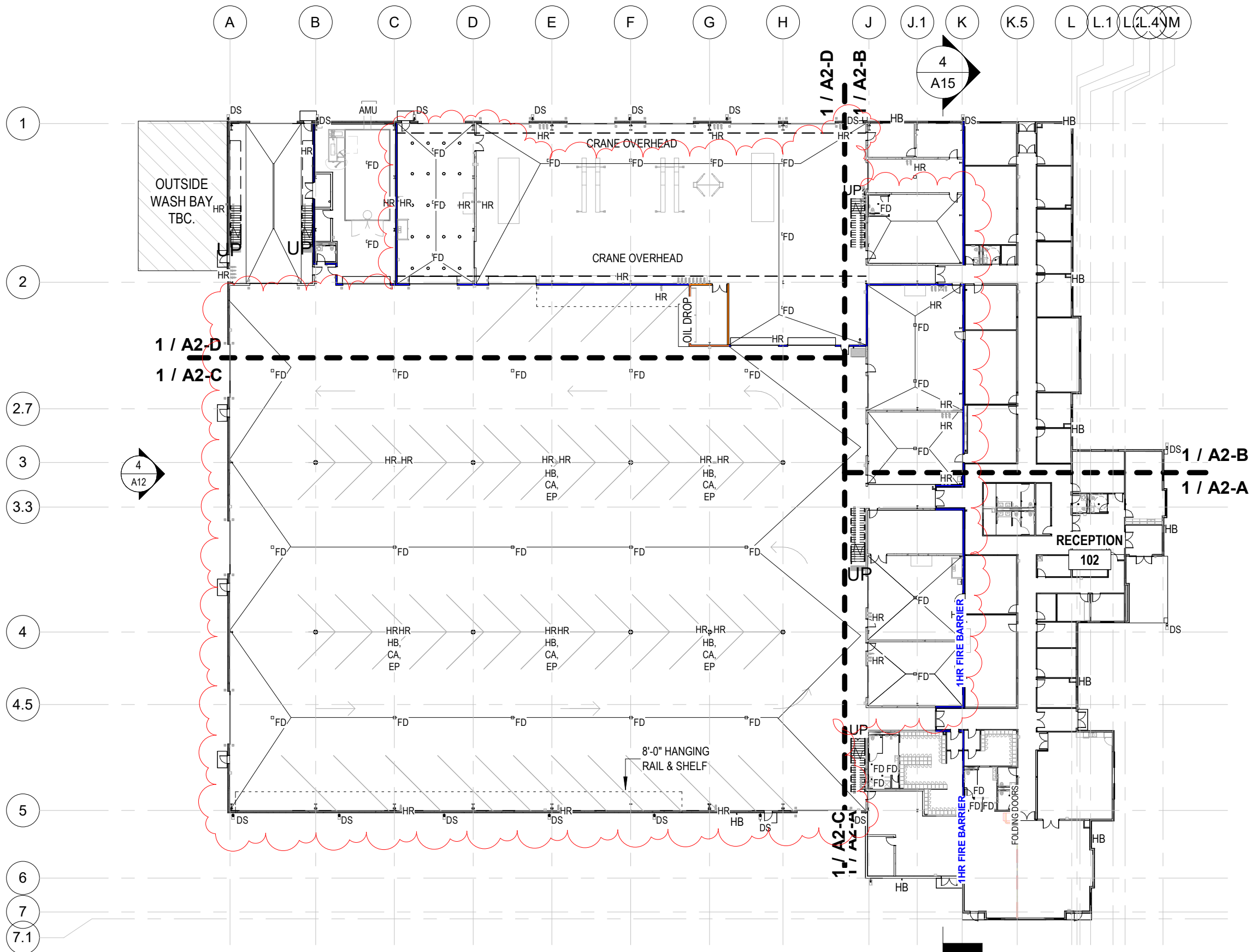
2 RAILING DETAIL
3/4" = 1'-0"



3 GATE DETAIL
3/4" = 1'-0"

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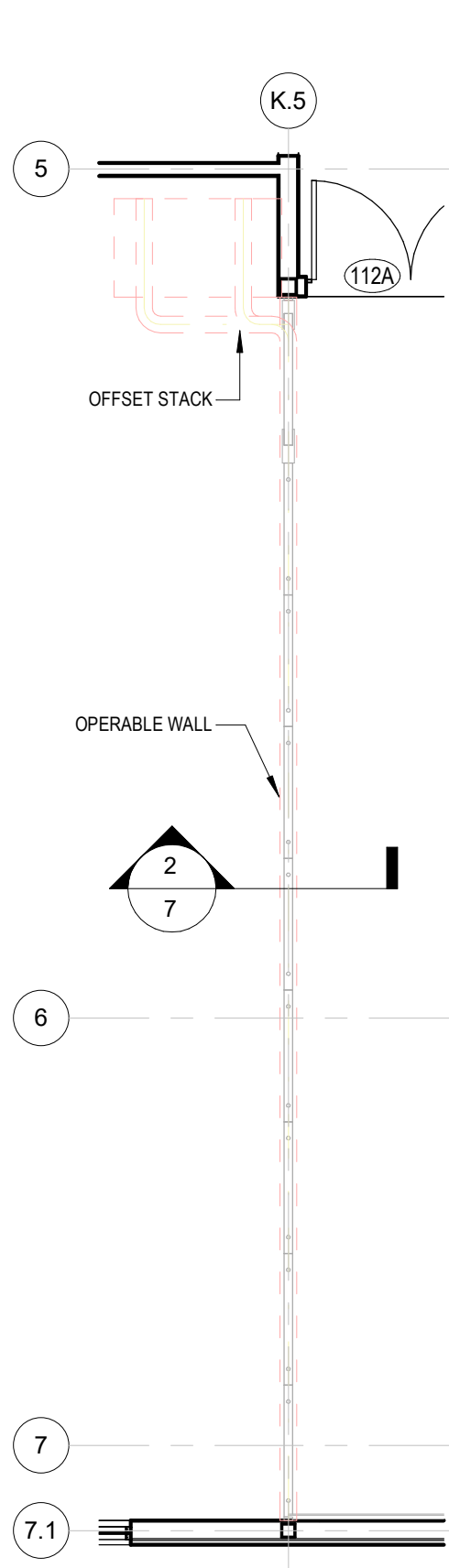
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CERT. NO.			TRACED BY _____	
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	HKG Architects, Inc.	Aberdeen, S.D.	DATE 3/27/26	PROJECT NO. 2023-0032



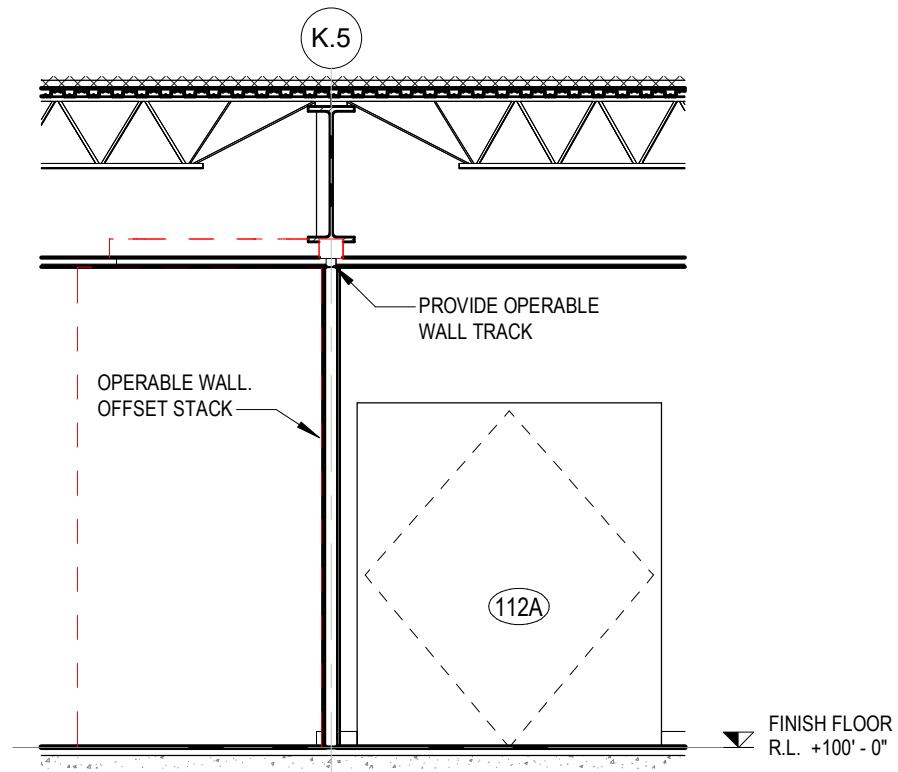
1 OVERALL FIRST FLOOR PLAN Addendum 5
1" = 40'-0"



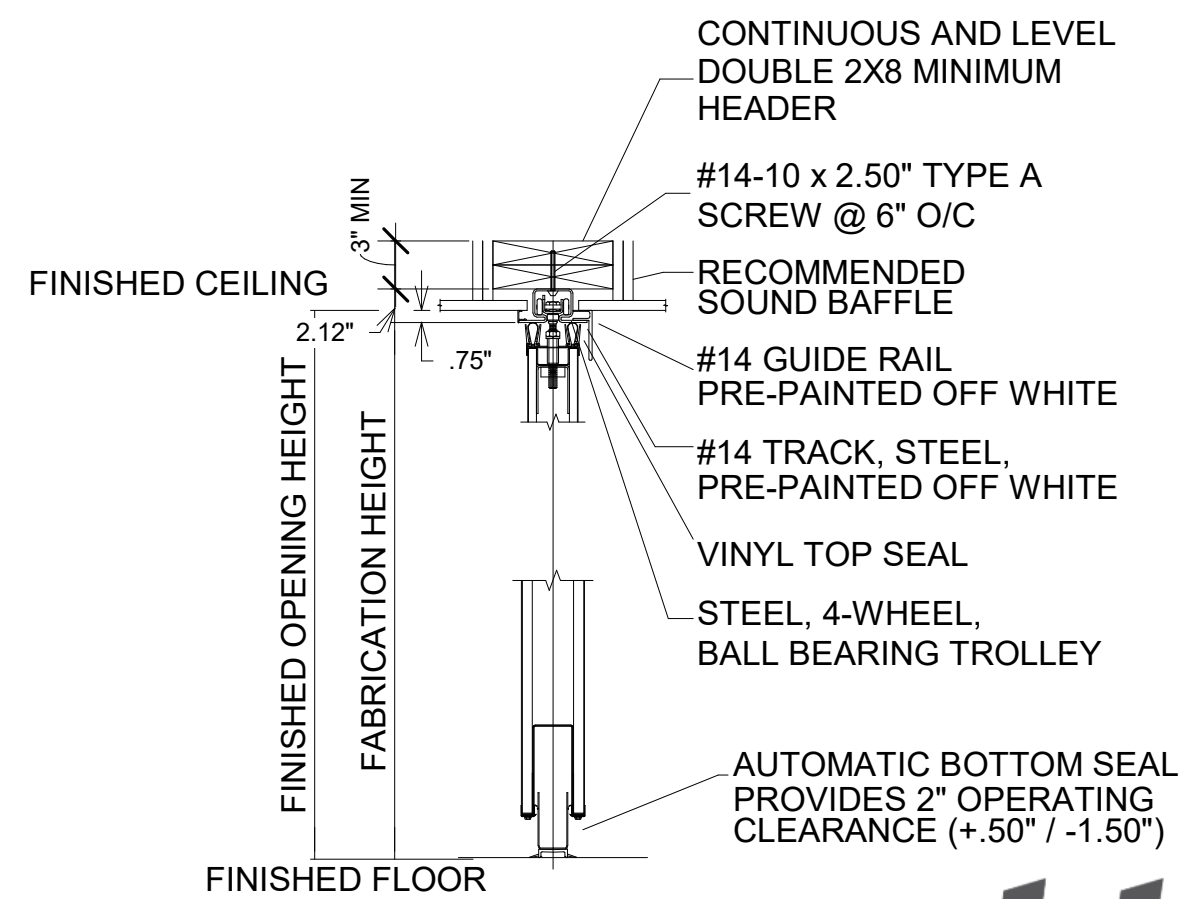
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			CHECKED BY <u>DM</u>	
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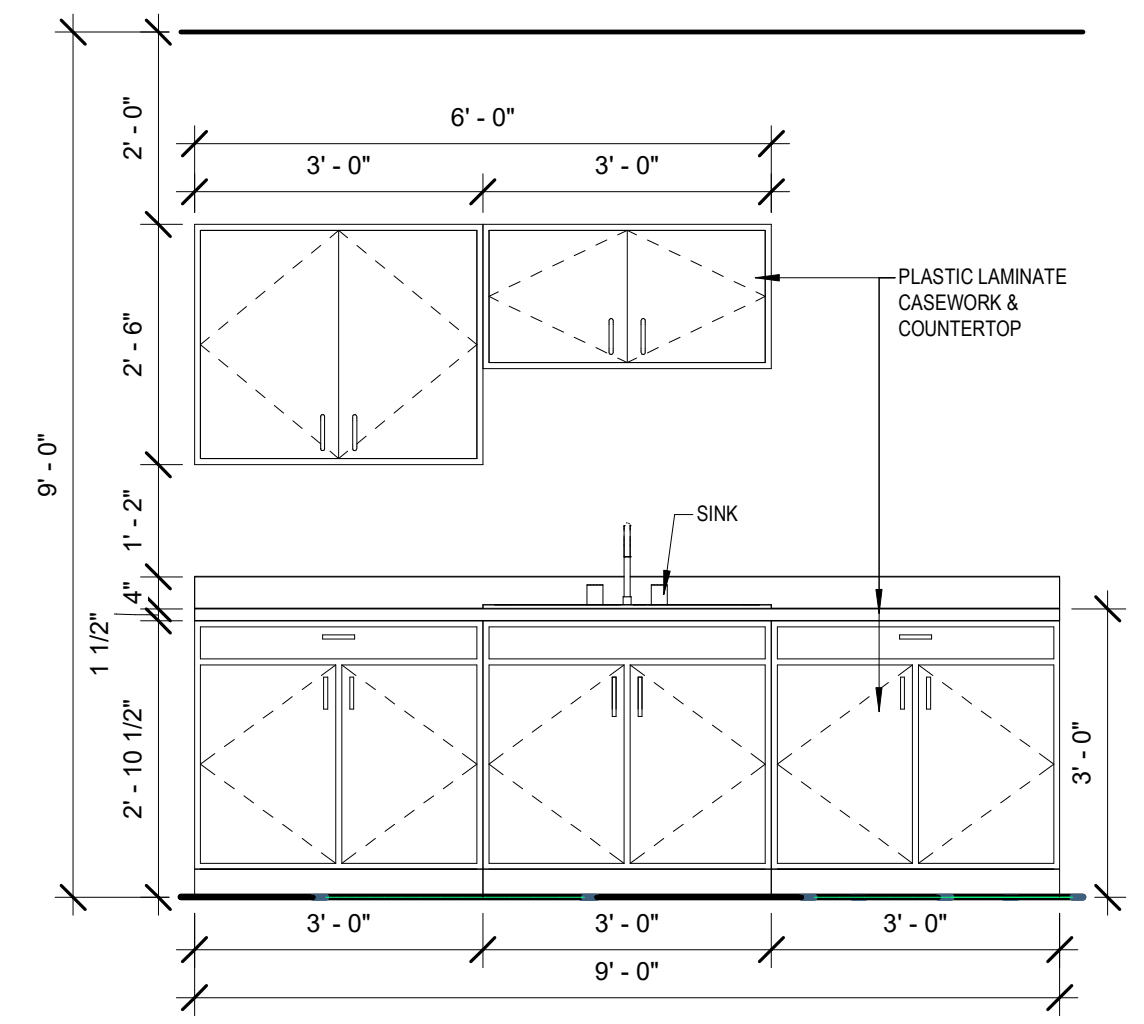
① Training Room Operable Wall
3/16" = 1'-0"



② Operable Wall Section
1/4" = 1'-0"



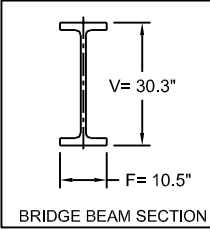
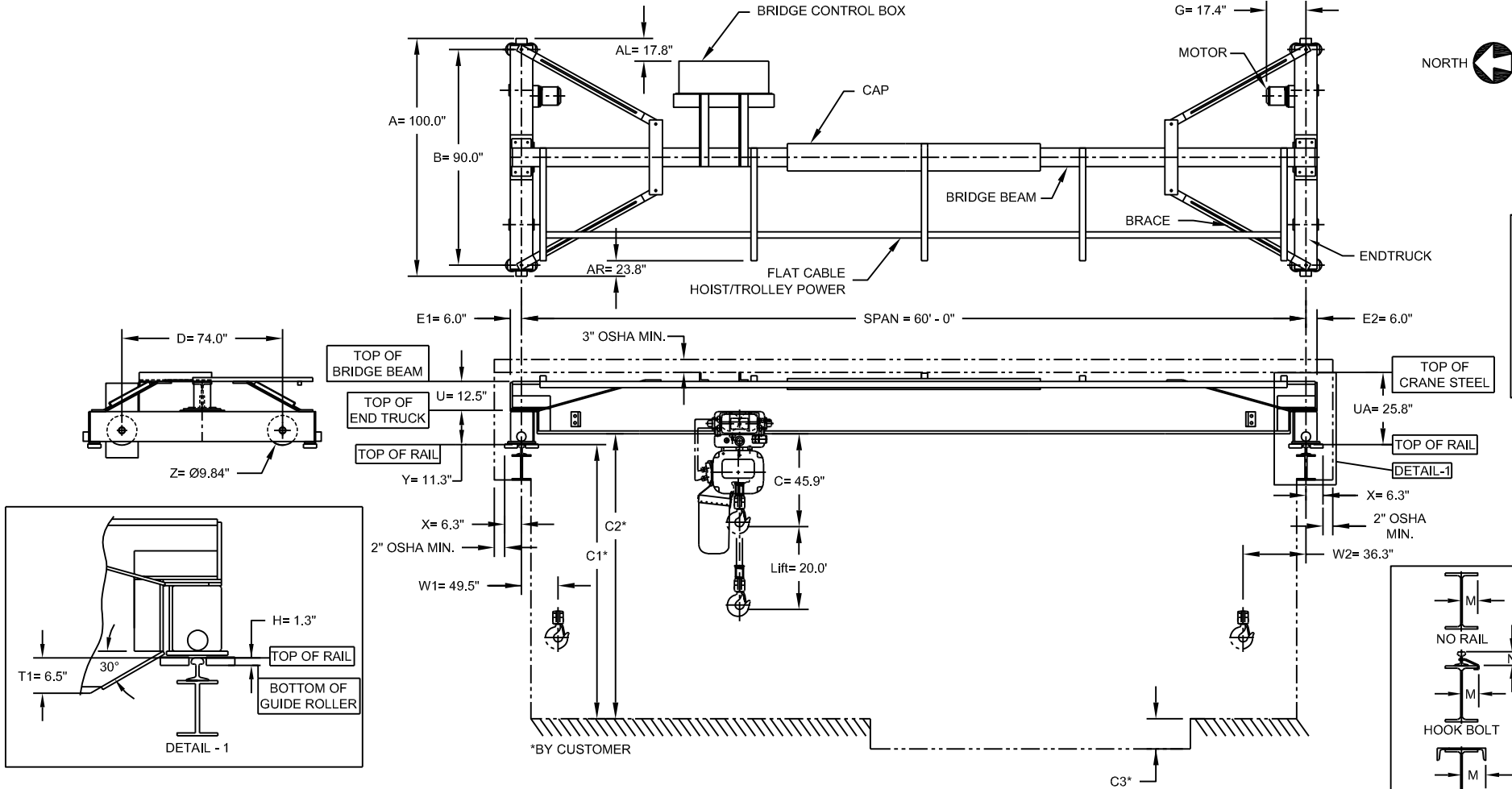
④ Operable Wall Vertical Details
Not to Scale



③ Typ. Casework Elevation
1/2" = 1'-0"



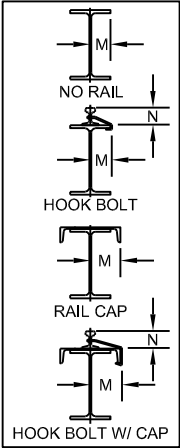
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CERT. NO.	HKG Architects, Inc.	Aberdeen, S.D.	DATE 3/27/26	PROJECT NO. 2023-0032



WILL		
CONFIG NO:	CRANE-1401666	
DATE:	8/13/2025	
C1* =	C2* =	C3* =

SPAN: 60' - 0"	
MODEL END TRUCK:	TMS-3-1060
MODEL TROLLEY/HOIST:	ER2M080SD-LD
CAPACITY:	7.5 US Ton
RUNWAY RAIL SIZE*:	60# ASCE (2.38")
RUNWAY BEAM SIZE*:	Advise
BRIDGE BEAM SIZE:	W30X132 w/ MC18X42.7
LIFTING SPEED:	7.5 / 2.5 FPM
TROLLEY SPEED:	4 - 40 FPM
CRANE SPEED:	8 - 80 FPM

QTY.		H.P.	AMPERAGE
2	CRANE MOTORS:	1.0 hp ea.	1.8 A ea.
1	TROLLEY MOTOR:	1.0 hp	2.7 A
1	HOIST MOTOR:	4.7 hp	8.3 A
LINE VOLTAGE:		460V-3ph-60Hz	
CONTROL VOLTAGE:		110VAC	



CRANE WEIGHTS AND LOADS	
END TRUCKS:	1129 lbf
BRIDGE BEAM:	10176 lbf
TROLLEY/HOIST:	689 lbf
MISCELLANEOUS:	300 lbf
MAX. WHEEL LOAD (DYNAMIC):	12198 lbf per wheel
MAX. WHEEL LOAD (STATIC):	10748 lbf per wheel
LIFTED LOAD:	15000 lbf

FOR REFERENCE ONLY

Notes:
1. Crane system includes radio controls (not depicted).

DIMENSIONS	
M = _____	N = _____
CONCEPT DRAWING FOR REFERENCE ONLY	
NOT FOR APPROVAL	

NO.	REVISION DESCRIPTION		DRAWN BY	DATE	CHECKED BY	DATE
	TOLERANCES (EXCEPT AS NOTED)		SERIES 3 TOP RUNNING SINGLE GIRDER NOTCHED CRANE APPROVAL DRAWING			
	DECIMAL: +/- X.XX = .01 X.X = .05		HARRINGTON A KITO GROUP COMPANY			
	FRACTIONAL: +/- 1/32"		DRAWN BY: NLP	SCALE: NTS	DRAWING NO:	REV. NO.
	ANGULAR: +/- 1°		CHK'D BY: LJW	DATE: 8/5/19	42130	0

2.2.B OVERHEAD COILING SERVICE DOORS; NON-INSULATED, INDUSTRIAL DUTY

Doors 203C, 212B

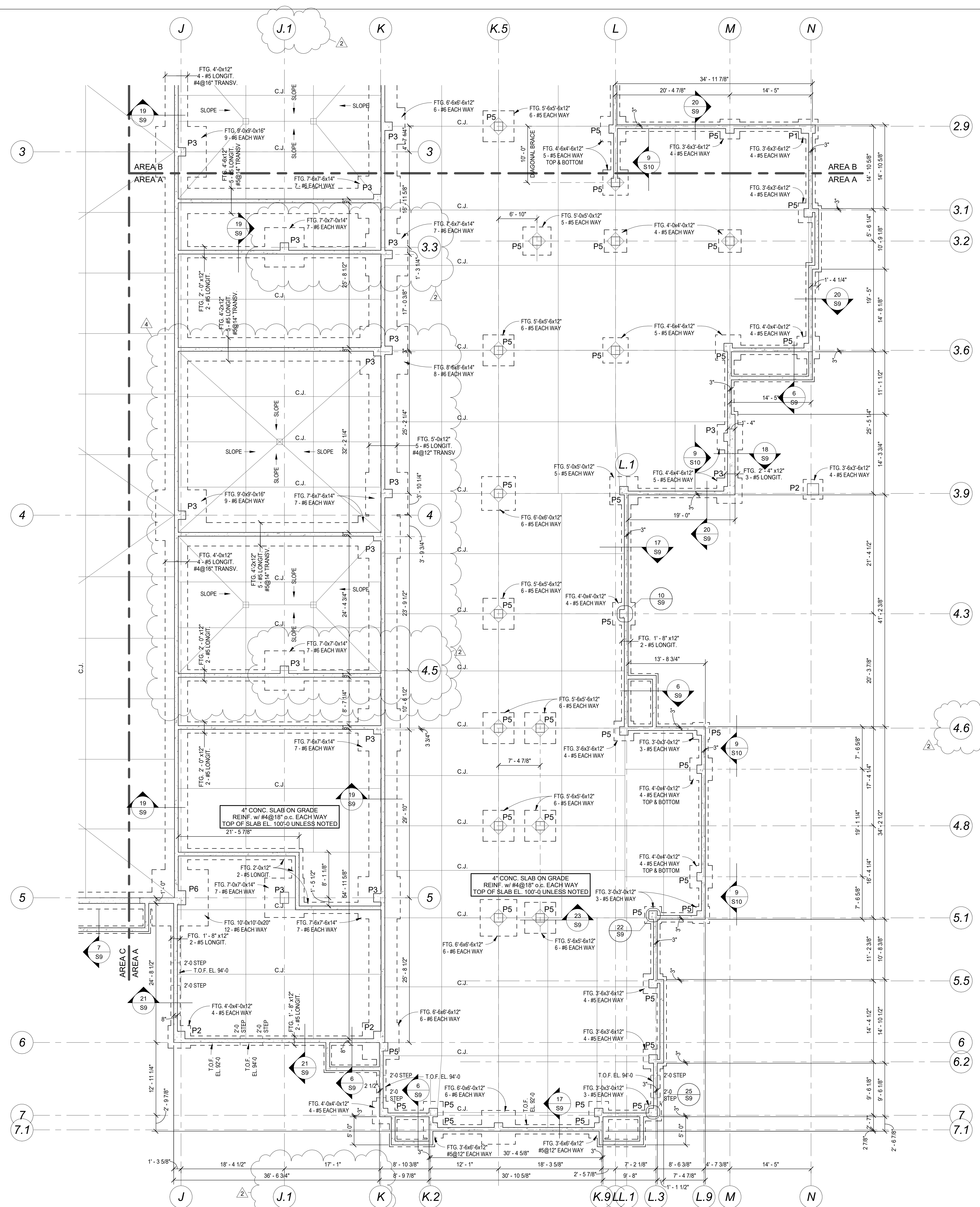
- A. Performance Requirements:
 - 1. Wind Loads: Door assembly to withstand 20 psf (958 Pa) per ASTM E330 using a 1.0 factor of safety. Certified wind load is also available.
 - 2. Windborne-Debris Impact Resistance: Design door assembly to pass missile impact and cyclic pressure tests in accordance with ANSI/ DASHMA 108 and/or ANSI/DASHMA 115 and to withstand wind load pressures indicated.
 - 3. Seismic Performance: Evaluated to withstand earthquake motions determined per ASCE/SEI 7.
 - 4. Operation: 20,000 cycles for door assembly including operator.
- B. Model 6201 as manufactured by C.H.I. Overhead Doors:
 - 1. Max Width: 28 ft 4 inches (8636 mm). Max height limited by width due to overall curtain size.
 - 2. Curtain: Flat faced, full width, interlocking roll formed slats. Individual slat profile is 2-1/2 x 3/4 inch (64 x 19 mm)
 - a. Slat Material: 20 ga, .034-inch (.87 mm) polyester painted (G90 coating) galvanized steel.
 - 1) Finish: Owner to select color from manufacturers standard color chart.
 - b. Slat Design: Curtain Profile - Flat [F2.5]
 - c. Standard Max (WxH): 22 ft 4 inch x 24 ft 4 inch (6807 x 7417 mm).
 - d. End Locks: Galvanized malleable iron, attached to every other slat to act as wearing surface and prevent lateral movement. Riveted in place.
 - e. Wind Locks: Per design and wind load requirements.
 - f. Bottom Bar: Extruded aluminum tube type bottom bar, 2 x 4 inches (51 x 102 mm). Available up to 20 ft 4 inches (6198 mm).
 - 1) Finish: Powder coat to match curtain.
 - 3. Guides: Three, minimum 3/16 inch (4.76 mm) structural angles bolted together to form guide and mounting surface. Removable 24-inch (610 mm) service panel for easy access to slats and bottom bar.
 - a. Finish: Powder coat to match curtain.
 - 4. Head Plate: Minimum 1/4 inch (6.34 mm) rectangular steel plate. Precision sealed ball bearings supporting drive side axle.
 - a. Finish: Powder coat to match curtain interior.
 - 5. Barrel Assembly:
 - a. Barrel: Steel pipe sized for maximum deflection under full load to not exceed .03 inch (.76 mm) per 1 ft (305 mm) of span. Welded rings or threaded lugs to barrel assembly for curtain attachment.
 - b. Springs: Tension assembly supported in barrel by precision ball bearings. Curtain weight counterbalanced by oil tempered, helically wound torsion springs, grease packed and mounted on steel torsion shafts with cast spring plug.
 - 6. Hood: Half-hexagonal hood for structural rigidity and aesthetic appeal. Fits within head plates with intermediate supports as required.
 - a. Material: 24 ga, .022-inch (.57 mm) polyester painted (G90 coating) galvanized steel.
 - 1) Finish: To match curtain interior.
 - 7. Weather Seals: Bottom astragal.
 - 8. Weather Seals: Vinyl guide seal.
 - 9. Weather Seals: Rubber hood baffle.
 - 10. Weather Seals: Jamb brush.
 - 11. Weather Seals: Header brush.

12. Locking Mechanism: Cylinder lock for bottom bar.
 - a. Keyed on exterior of door with handle throw on interior.
13. Interlock Switches: Equip power-operated doors with safety interlock switch to disengage power supply when door is locked.
14. Mounting: Face of wall and above lintel.
15. Operation:
 - a. Electric: See article "Electric Motor Operation for Overhead Coiling Service Doors." in this specification.

1 FOUNDATION PLAN - AREA A
SCALE: 1/8" = 1'-0"

- P1 = 18"x30" CONC. PILE
6 - #8 VERT/DWLS
#3@16" TIES, (3) TIES @ TOP
- P2 = 24"x24" CONC. PILE
8 - #8 VERT/DWLS
#3@16" TIES, (3) TIES @ TOP
- P3 = 18"x24" CONC. PILE
8 - #8 VERT/DWLS
#3@16" TIES, (3) TIES @ TOP
- P4 = 24"x30" CONC. PILE
4 - #8 VERT/DWLS
#3@16" TIES, (3) TIES @ TOP
- P5 = 18"x18" CONC. PIER/PILASTER
4 - #8 VERT/DWLS
#3@16" TIES, (3) TIES @ TOP
- P6 = 24"x30" CONC. PILE
8 - #8 VERT/DWLS
#3@16" TIES, (3) TIES @ TOP

- NOTE: 1). TOP OF FOOTING EL. 96'-0" U.N.O.
2). PRE-ENGINEERED METAL BLDG. COLS.
TOP OF PIER/PILASTER EL. 100'-0" U.N.O.
3). TS COLUMNS:
TOP OF PIER/PILASTER EL. 99'-4" U.N.O.



- 4 ADDENDUM NO. 4
3/27/2026
- 2 ADDENDUM NO. 2
3/11/2026

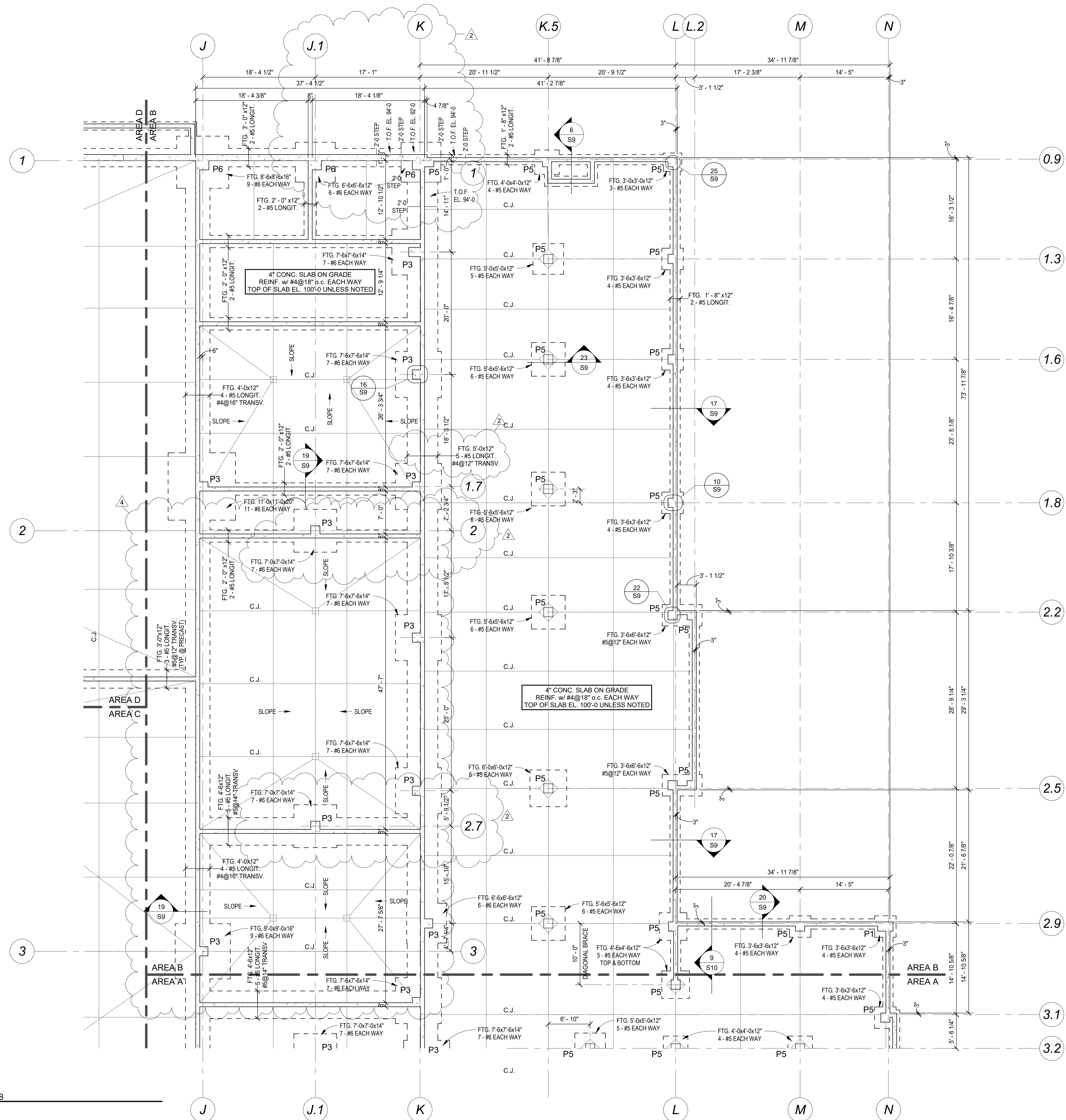
SOLIER & LARSON
ENGINEERING
CONSULTING STRUCTURAL ENGINEERS
3330 FLEETWATER DRIVE, SUITE 200
ABERDEEN, SOUTH DAKOTA 58505
TELEPHONE (605) 251-3555 FAX (605) 251-3555

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Plans for
ABERDEEN PUBLIC WORKS
Maintenance Building
Aberdeen, South Dakota

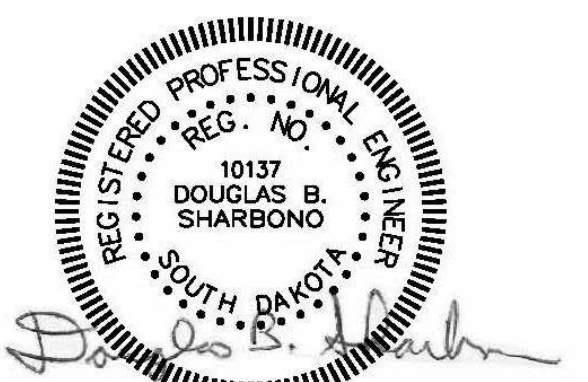
FOUNDATION
PLAN - AREA A

2/20/2026 25036



1 FOUNDATION PLAN - AREA B
SCALE: 1/8" = 1'-0"

- P1 = 18'x30" CONC. PILASTER
6 - #8 VERT/DWLS
#3@16" TIES, (3) TIES @ TOP
- P2 = 24'x24" CONC. PILASTER
8 - #8 VERT/DWLS
#3@16" TIES, (3) TIES @ TOP
- P3 = 18'x24" CONC. PILASTER
8 - #8 VERT/DWLS
#3@16" TIES, (3) TIES @ TOP
- P4 = 24"x8 CONC. PILASTER
4 - #8 VERT/DWLS
#3@16" TIES, (3) TIES @ TOP
- P5 = 18'x18" CONC. PIER/PILASTER
4 - #8 VERT/DWLS
#3@16" TIES, (3) TIES @ TOP
- P6 = 24'x30" CONC. PILASTER
8 - #8 VERT/DWLS
#3@16" TIES, (3) TIES @ TOP
- NOTE: 1). TOP OF FOOTING EL. 96'-0 U.N.O.
2). PRE-ENGINEERED METAL BLDG. COL'S:
TOP OF PIER/PILASTER EL. 100'-0 U.N.O.
3). TS COLUMNS:
TOP OF PIER/PILASTER EL. 99'-4 U.N.O.



2/20/2026

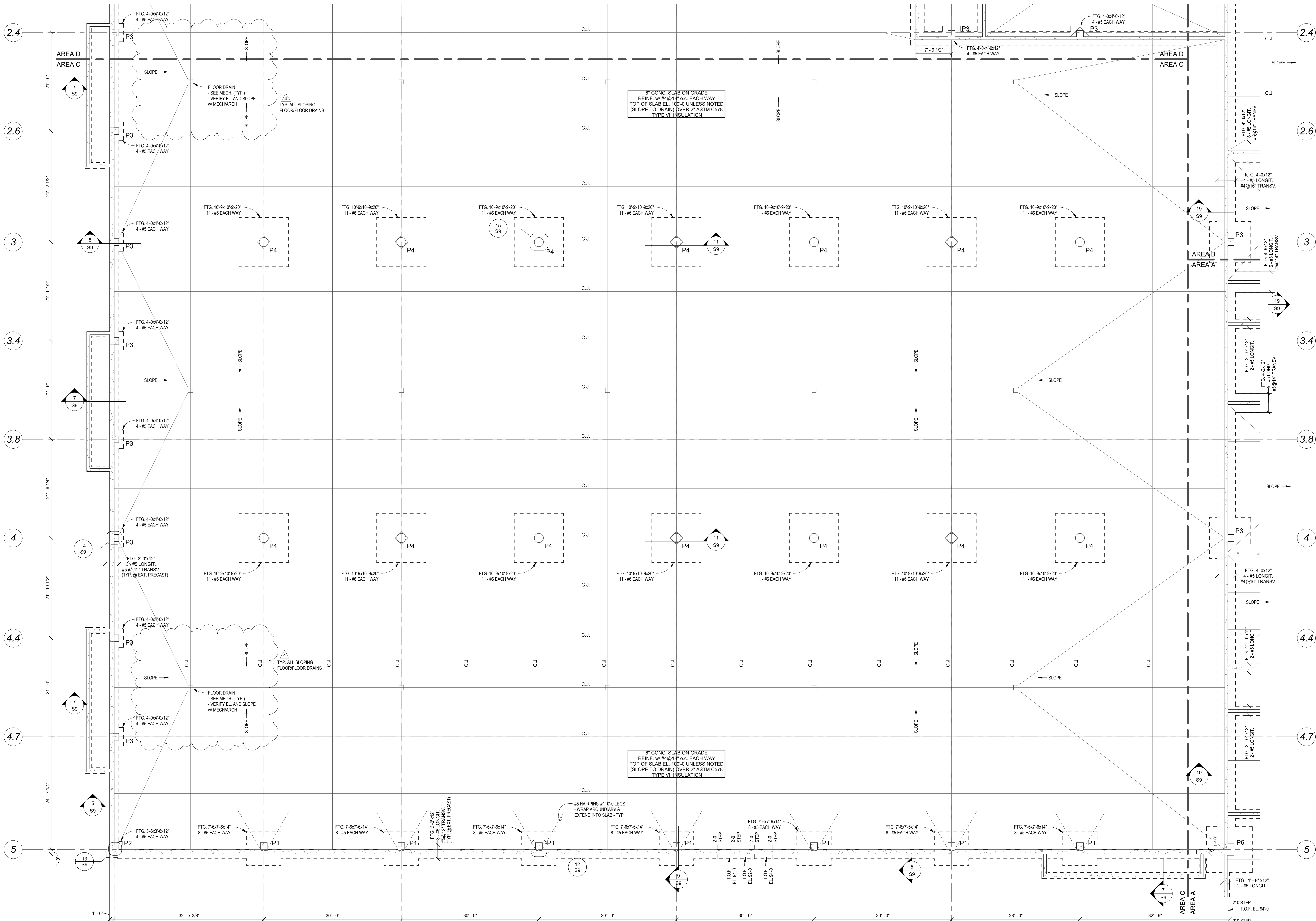
4 ADDENDUM NO. 4
3/27/2026

2 ADDENDUM NO. 2
3/11/2026

SOLIEN & LARSON
ENGINEERING
CONSULTING STRUCTURAL ENGINEERS
3330 FLEETWATER DRIVE, SUITE 200
PARKERSBURG, WEST VIRGINIA 26101-1200
TELEPHONE (701) 255-3555 FAX (701) 255-3555

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PROJECT NO.	FOUNDATION PLAN - AREA B	DATE	2/20/2026
CLIENT	ABERDEEN PUBLIC WORKS Maintenance Building Aberdeen, South Dakota	DESIGNED BY	LT
DRAWN BY	25036	CHECKED BY	S2



1 FOUNDATION PLAN - AREA C
S3 SCALE: 1/8" = 1'-0"
P1 = 18"x30" CONC. PILLASTER
8-#8 VERT/DWLS
#3@16" TIES, (3) TIES @ TOP
P2 = 24"x24" CONC. PILLASTER
8-#8 VERT/DWLS
#3@16" TIES, (3) TIES @ TOP
P3 = 18"x24" CONC. PILLASTER
8-#8 VERT/DWLS
#3@16" TIES, (3) TIES @ TOP

P4 = 24"x30" CONC. PILLASTER
4-#8 VERT/DWLS
#3@16" TIES, (3) TIES @ TOP
P5 = 18"x18" CONC. PIER/PILLASTER
4-#8 VERT/DWLS
#3@16" TIES, (3) TIES @ TOP
P6 = 24"x30" CONC. PILLASTER
8-#8 VERT/DWLS
#3@16" TIES, (3) TIES @ TOP

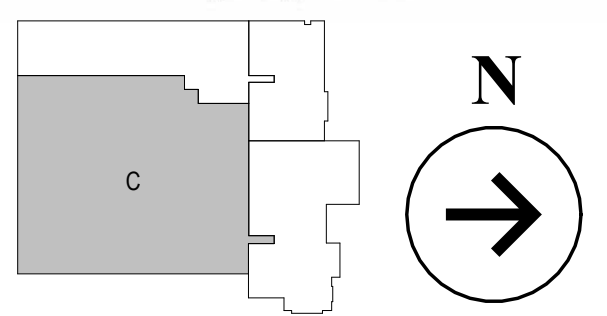
NOTE: 1). TOP OF FOOTING EL. 96'-0 U.N.O.
2). PRE-ENGINEERED METAL BLDG. COL'S.
TOP OF PIER/PILLASTER EL. 100'-0 U.N.O.
3). TS COLUMNS:
TOP OF PIER/PILLASTER EL. 99'-4 U.N.O.

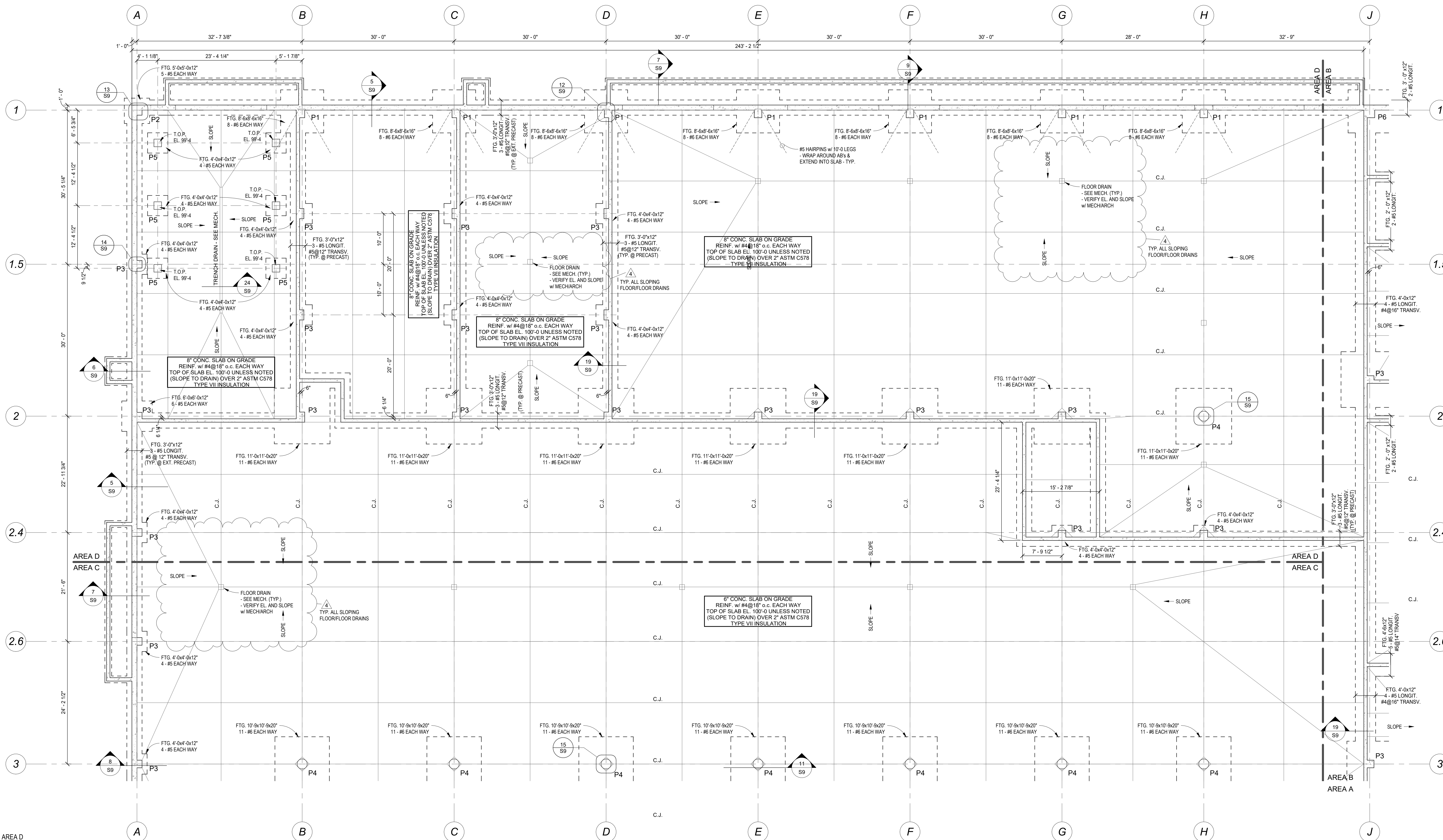
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CONSULTING STRUCTURAL ENGINEERS
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DALLAS, TEXAS 75244-1201
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Plans for ABERDEEN PUBLIC WORKS Maintenance Building Aberdeen, South Dakota	FOUNDATION PLAN - AREA C	2/20/2026	25036
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4 ADDENDUM NO. 4
3/27/2026
REGISTERED PROFESSIONAL ENGINEER
REG. NO. 10137
DOUGLAS B. SHARBONO
SOUTH DAKOTA
2/20/2026





1 FOUNDATION PLAN - AREA D
S4 SCALE: 1/8" = 1'-0"

- P1 = 18"x30" CONC. PILASTER
6 - #8 VERT/DWLS
#3@16" TIES, (3) TIES @ TOP
- P2 = 24"x24" CONC. PILASTER
8 - #8 VERT/DWLS
#3@16" TIES, (3) TIES @ TOP
- P3 = 18"x24" CONC. PILASTER
8 - #8 VERT/DWLS
#3@16" TIES, (3) TIES @ TOP
- P4 = 24"x24" CONC. PILASTER
4 - #8 VERT/DWLS
#3@16" TIES, (3) TIES @ TOP
- P5 = 18"x18" CONC. PIER/PILASTER
4 - #8 VERT/DWLS
#3@16" TIES, (3) TIES @ TOP
- P6 = 24"x30" CONC. PILASTER
8 - #8 VERT/DWLS
#3@16" TIES, (3) TIES @ TOP

NOTE: 1). TOP OF FOOTING EL. 96'-0 U.N.O.
2). PRE-ENGINEERED METAL BLDG. COL'S:
TOP OF PIER/PILASTER EL. 100'-0 U.N.O.
3). TS COLUMNS:
TOP OF PIER/PILASTER EL. 99'-4 U.N.O.

4 ADDENDUM NO. 4
3/27/2026

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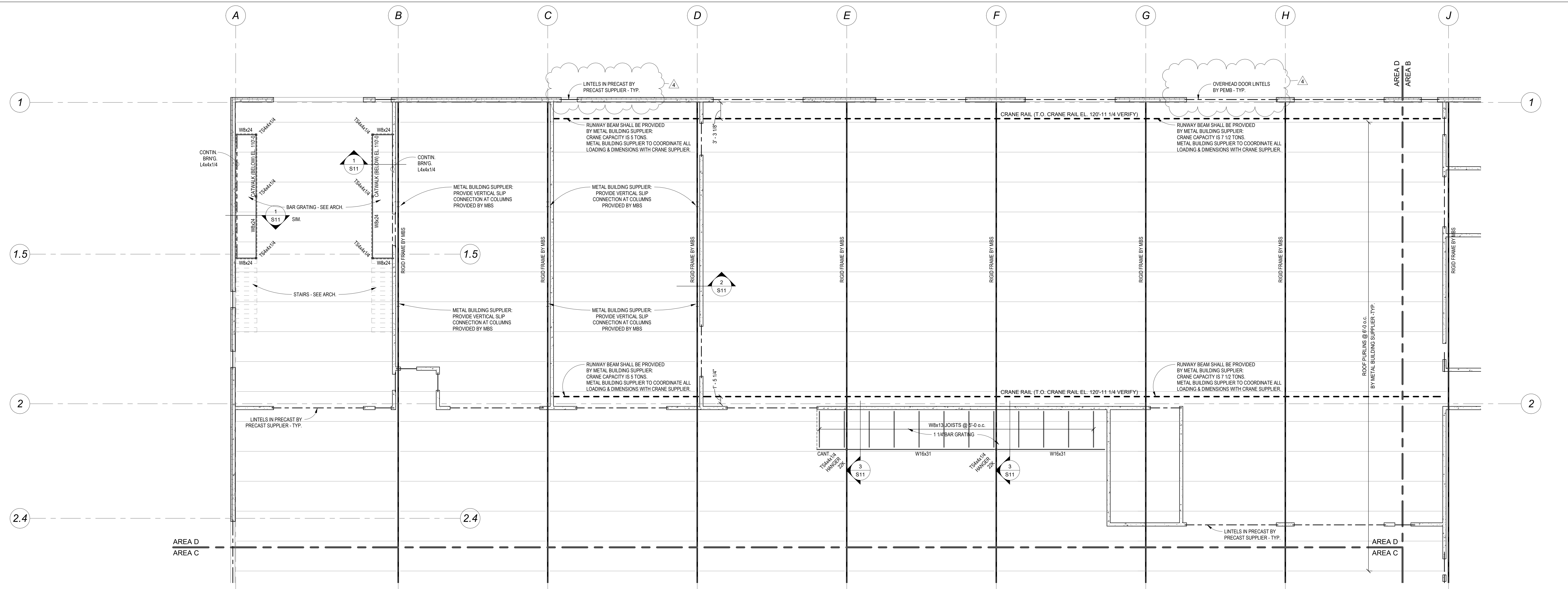
2/20/2026

Plans for
ABERDEEN PUBLIC WORKS
Maintenance Building
Aberdeen, South Dakota

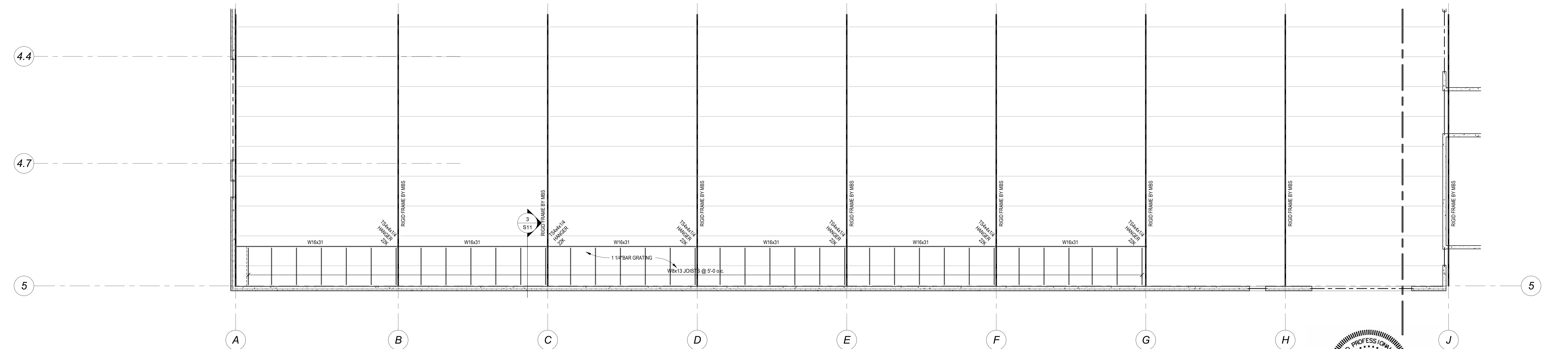
HKG Architects, Inc. Aberdeen, S.D.

FOUNDATION
PLAN - AREA D

2/20/2026 25036



1 METAL BUILDING ROOF FRAMING PLAN
S8 SCALE: 1/8" = 1'-0"

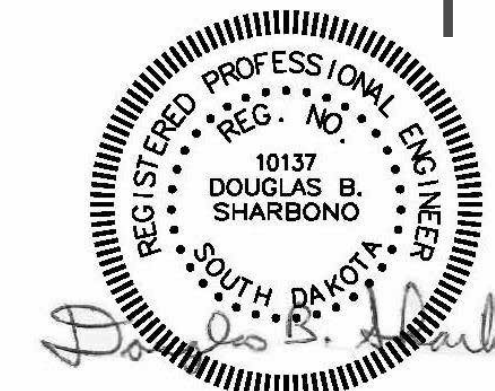


2 METAL BUILDING ROOF FRAMING PLAN ZONE C
S8 SCALE: 1/8" = 1'-0"

4 ADDENDUM NO. 4
3/27/2026

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2/20/2026

Plans for
ABERDEEN PUBLIC WORKS
Maintenance Building
Aberdeen, South Dakota

MEZZANINEHIGH
ROOF FRAMING
PLAN

LT
S8
2/20/2026
25036

GENERAL STRUCTURAL NOTES

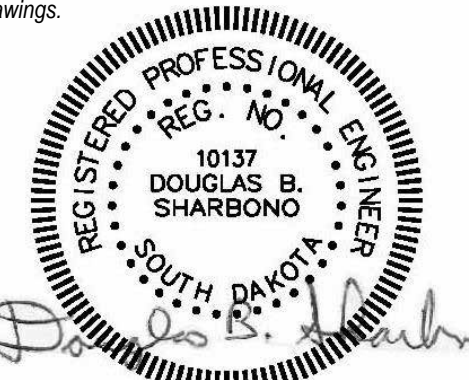
- Design Codes Used:
IBC 2021
ACI Concrete Code
AISC Code - ASD
- Design Loads:
Roof Snow Load:
 $P_s = 40 \text{ PSF} + \text{Draft (Balanced)}$
Unbalanced snow load as per ASCE 7-16 Section 7
 $P_{\text{unb}} = 50 \text{ PSF}$
 $C_e = 1.0$
 $C_d = 1.0$
 $C_t = 1.0$
Live Load:
Storage
Mechanical
Metal Building Colateral
125 PSF
125 PSF
5 PSF
Wind Load:
 $V_{\text{ult}} = 120 \text{ MPH}$ Basic Wind Speed
Risk Category = III
Wind Exposure C
Internal Pressure Coefficient ± 0.18
- Design Stresses Used:
Concrete:
- Slabs on Grade
- Footings & Foundation Walls
- Exterior Exposed
- Masonry Strength
4000 PSI @ 28 Days
3000 PSI @ 28 Days
4500 PSI @ 28 Days (air entrained)
 $f_m = 1500 \text{ PSI}$
Steel:
- W Shapes
- Tubes
- Angles, Channels, Bars
- Pipes
- Reinforcing Steel
Soil Bearing Pressure
 $F_y = 50 \text{ KSI (ASTM A992)}$
 $F_y = 45 \text{ KSI (ASTM A500 Grade B)}$
 $F_y = 36 \text{ KSI (ASTM A36)}$
 $F_y = 35 \text{ KSI (ASTM A53)}$
 $60 \text{ KSI (ASTM A615-60)}$
2000 PSF (See Geotechnical Report)
- CONCRETE COVERAGE for reinforcing shall be as follows:
Footings 3 inches
Columns and Piers 1 1/2 inches
Slabs on Grade midheight for a single layer
Walls 1 1/2 inches @ exterior
3/4 inch @ interior
3/4 inch unless noted
PROVIDE BAR SUPPORTS AND SPACERS in accordance with the ACI Detailing Manual.
- REINFORCING STEEL to be bent and placed in accordance with ACI code. All splices to be 38db for #6 bar or smaller, 48 db for #7 bar and larger.
- FOOTINGS to rest on undisturbed soil or engineered backfill. All walls and piers to center on footing unless otherwise noted. All footing elevations are given to the top of footings.
- See Scale report for Site Recommendations.
- ALL FOUNDATION WALLS to be laterally supported before backfilling. Vertical construction joints to be keyed.
- OPENINGS in concrete FOUNDATION WALLS shall be reinforced with 2 #4 bars each side, extending 2'-0" past the face of the opening unless otherwise noted.
- FOUNDATIONS SHALL BE BUILT from approved, fully dimensioned shop drawings coordinated with construction documents and field conditions. Foundation shop drawings shall consist of the anchor bolt setting plan, concrete mix design, and concrete reinforcement plan with wall & pier dimensions. All subsequent shop drawings shall be coordinated with approved foundation shop drawings.
- SHOP DRAWINGS
a. Submit electronic copies of the following shop drawings to the architect/engineer for review prior to fabrication.
1. CONCRETE REINFORCING and mix designs for each class of concrete.
2. STRUCTURAL STEEL
3. ROOF JOISTS AND DECK
4. PRE-CAST CONCRETE
5. METAL BUILDING
b. The contractor shall review and accept full responsibility for dimensional correctness. All shop drawings must bear the approval stamp of the contractor (to include initials, date and disposition), prior to review by the Architect or Engineer. The Engineer will return all shop drawings, unreviewed, that do not bear the approval stamp of the contractor.
- PORTLAND CEMENT to be ASTM C150, Type 1 & 1A.
- CONCRETE to be in accordance with ACI 301. Maximum shale content shall not exceed 0.5% for exposed concrete.
- CONTROL AND CONSTRUCTION JOINTS to be located as shown on the plan or at contractor's option - not to exceed 15'-0" o.c. (6" concrete) or 10'-0" o.c. (4" concrete).
- PROVIDE NON-SHRINK Metallic Grout under Base Plates and Non-Shrink Grout for all Dowels.
- Not Required of Pre-Engineered Metal Building columns.
- PRECAST CONCRETE MEMBERS TO BE designed by Supplier. The Supplier is to submit stamped Design Calculations when Design is not based on Standard Load Tables. Shop Drawings shall indicate strand and reinforcement locations, and steel grade used. All openings larger than 6 inches, in any direction required by other Trades through Precast Units are to be cast into Units. Core openings, drilled in the field are to miss Prestressing Strands. Use Non-Shrink grout with minimum yield of 4000 PSI @ 28 days. Derive member forces from specified area loads and wind speed/exposure.
- ROOF JOISTS to be designed for 10 PSF net uplift - Typical.
- ALL STRUCTURAL STEEL to be fabricated and erected in accordance with the AISC code. Connections not detailed are to be designed in accordance with the AISC detailing for steel construction. Shop connections to be welded. Field connections to be double clip angle connection bolted with 3/4" diameter high strength bolts (ASTM A325).
- Cold formed steel "C" studs/Joists
18 GA. - 20 GA. $F_y = 33 \text{ KSI}$
16 GA. or thicker $F_y = 50 \text{ KSI}$
General Contractor shall provide all lateral roof bracing as required by Field Installation Guide for cold form steel roof trusses by Light Gauge Steel Engineers Association.
- Steel Stud Partition Walls & Lintels to be designed by Supplier. If they do not come off of standard charts provide Engineered Calculations and shops.
- Provide 200 linear feet of L 3-1/2" x 3-1/2" x 5/16" to be used at the Architect/Engineer's discretion, or for mechanical lintels through existing walls.
- SEE MECHANICAL, ELECTRICAL & ARCHITECTURAL DRAWINGS for all openings and inserts not shown on the plan. All opening sizes and locations to be verified with mechanical and electrical contractors.
- CONTRACTOR VERIFY all dimensions with Architectural Plan.

PRE-ENGINEERED BUILDING

- a. Building components supporting masonry shall have the following deflection requirements:
Wall girts $\Delta/240$
Endwall columns $\Delta/240$
Rigid frames $\Delta/120$ horizontal drift at the height of the masonry
See Arch. plans for building elevations, clearances, etc.
b. Submit Pre-engineered Building Calculations and Anchor Bolt Plan to Foundation Engineer prior to construction for review and possible revision to the Foundation Plan.
- Submit Pre-engineered Building Calculations and Anchor Bolt Plan to Foundation Engineer prior to construction for review and possible revision to the Foundation Plan.
- Pre-engineered metal building supplier shall provide hot-rolled wide-flanged sections for girts at top of precast walls, both base bid & alternates. Coordinate with precast supplier.
- Contractor shall verify all precast wall sizes, and overall dimensions to be correct for the pre-engineered building system actually supplied.
- Verify stop locations and sizes with the Architectural drawings. Section 6510 is generic. See plan for correct footing elevations at the various stop locations.

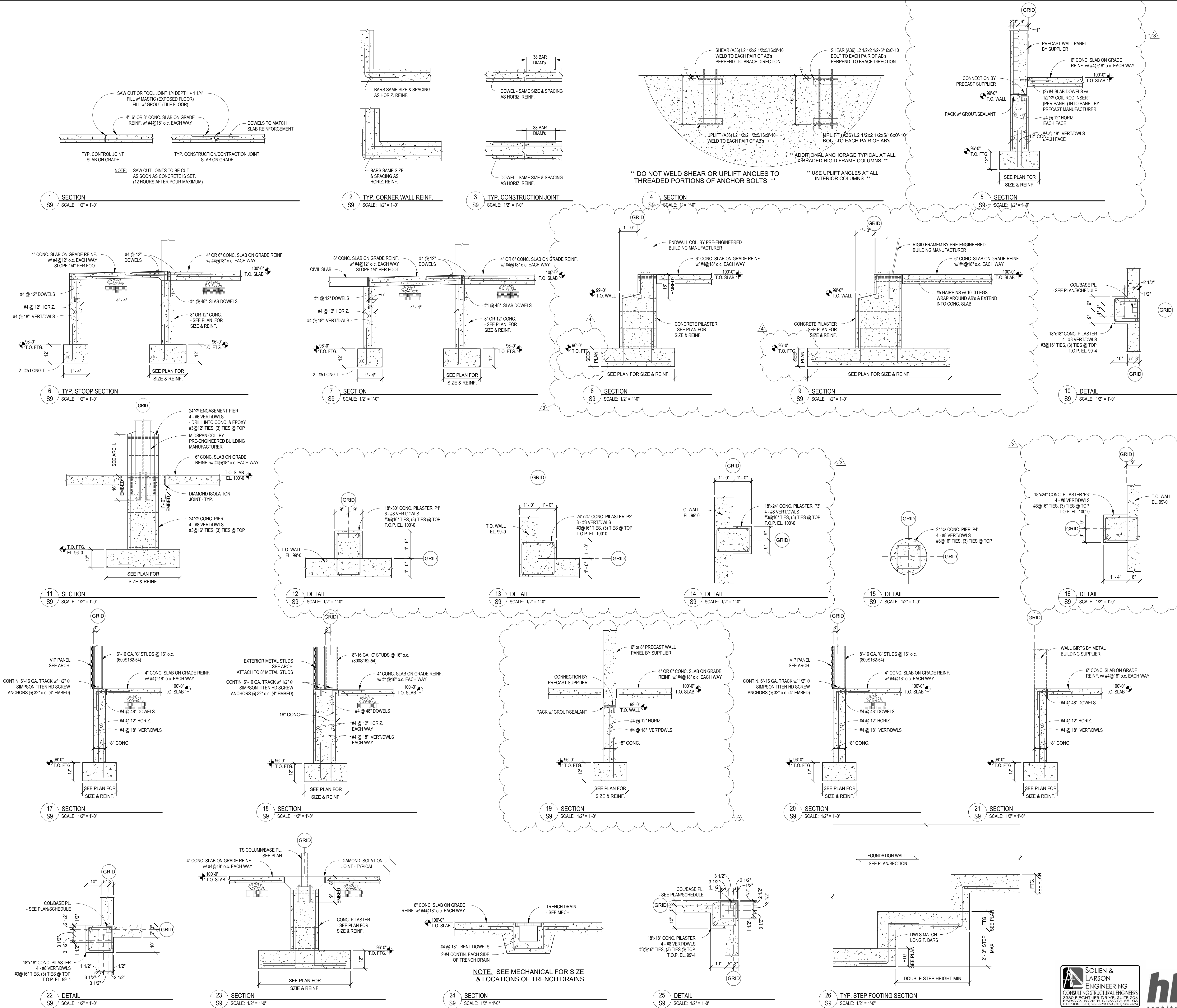
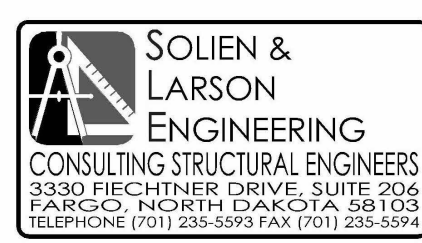
4 ADDENDUM NO. 4
3/27/2026

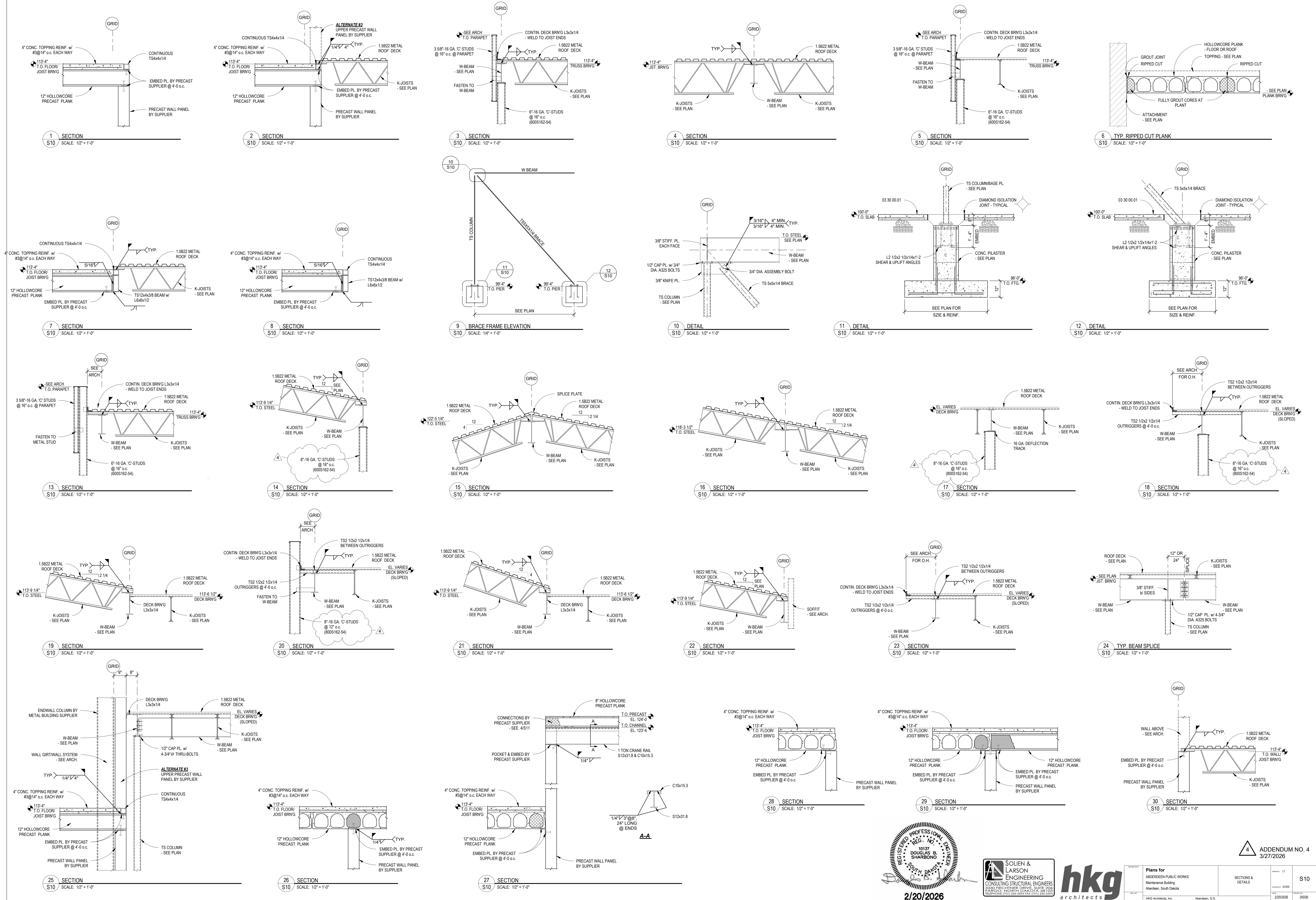
3 ADDENDUM NO. 3
3/20/2026



2/20/2026

PROJECT	SECTIONS & DETAILS	DATE	BY
Plans for ABERDEEN PUBLIC WORKS Maintenance Building Aberdeen, South Dakota		2/20/2026	S9
HKG Architects, Inc.	Aberdeen, S.D.		25038





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Plans for ABERDEEN PUBLIC WORKS Maintenance Building Aberdeen, South Dakota	SECTIONS & DETAILS	1/1 DIVISION 2/20/2026 25036
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Date: March 27, 2026**Project:** Aberdeen Public Works Facility**To:** HKG Architects**Project #:** BS23045**From:** Nick Carr, Nate Reynhout**Project Location:** Aberdeen, SD**Addendum Number:** 6

To: All prime contract bidders and all others to whom Drawings and Specifications have been issued by the Engineer. Acknowledge receipt of the Addendum by inserting its number and date on the Bid Form. Failure to do so may subject bidder to disqualification. This Addendum forms a part of the Contract Documents. It modifies them as follows:

Clarifications

- *Question: A portion of the fire protection specifications call for compressed air filled piping in Wash Bay 217, is this required?*
 - *No, the inclusion of "compressed air filled piping" was a mistake. The fire sprinkler in Wash Bay 217 is a wet system and will not required compressed air filled piping.*
- *Question: Do we need to supply and install the HDMI Cables they are calling out or will the city IT install and provide those?*
 - *Answer: Any HDMI cabling shall be provided by the owner.*
- *Question: Is this paint booth internally prewired and do we just need to make the connections shown on top of the booth?*
 - *Answer: The paint booth supplier has indicated the following: "The electrician will need to provide the circuits, plus wire the motors and lighting. Our installers will install the lights in the booth which have a pigtail, and electrician wires a group of them to a junction box."*
- *Question: For Add Alternate #7 Emergency Radio Responder System, does this just include the Base Bid or does it encapsulate the alternates 1 & 2 as well?*
 - *Answer: Provide a system that has coverage for the entire building, including the alternates.*

Specifications

23 0993 – Sequence of Operations for HVAC Controls

1. See attached spec section for the following revisions:
 - a. Replace the current Sequence of Operations specification section in it's entirety with the attached and updated Sequence of Operation specification section.

Drawings

Sheet M201 – Mezzanine Plumbing Plans

1. See attached sheet for the following revisions:

1 of 5

- a. Multiple vent through roof locations were adjusted to maintain clearances for fresh air intakes.

Sheet M300A – First Floor HVAC Ventilation Plan – Area A

1. See attached sheet for the following revisions:
 - a. Air inlets and outlets and some ductwork were added in areas that were previously missing these items.
 - b. A large amount of notes added to the drawing to better clarify the drawings intent.

Sheet M300B – First Floor HVAC Ventilation Plan – Area B

1. See attached sheet for the following revisions:
 - a. Air inlets and outlets and some ductwork were added in areas that were previously missing these items.
 - b. A large amount of notes added to the drawing to better clarify the drawings intent.

Sheet M300C – First Floor HVAC Ventilation Plan – Area C

1. See attached sheet for the following revisions:
 - a. High Volume Low Speed (HVLS) fans were added to the scope.
 - b. Notes added to the drawing to better clarify the drawings intent.

Sheet M300D – First Floor HVAC Ventilation Plan – Area D

1. See attached sheet for the following revisions:
 - a. Air inlets and outlets and some ductwork were added in areas that were previously missing these items.
 - b. A large amount of notes added to the drawing to better clarify the drawings intent.

Sheet M301 – Mezzanine HVAC Ventilation Plans

1. See attached sheet for the following revisions:
 - a. The vehicle exhaust fan was added to the scope and located on the mezzanine.
 - b. Exhaust air ductwork serving the fan coil units was re-worked.
 - c. A large amount of notes added to the drawing to better clarify the drawings intent.

Sheet M302 – Mechanical Low Roof Plan

1. See attached sheet for the following revisions:
 - a. A large amount of notes added to the drawing to better clarify the drawings intent.

Sheet M303 – Mechanical High Roof Plan

1. See attached sheet for the following revisions:
 - a. Intake and relief hoods added to scope and tagged for clarification.
 - b. Items not intended to show on the roof plan removed.
 - c. Notes added to the drawing to better clarify the drawings intent.

Sheet M400D – First Floor HVAC Piping Plan – Area D

1. See attached sheet for the following revisions:
 - a. BAS pressure sensors added to Service 210 and Welding 212.

Sheet M504 – First Floor HVAC Ventilation Plan – Alternate #1

1. See attached sheet for the following revisions:
 - a. Intake hood ductwork added to the scope.
 - b. Notes added to the drawing to better clarify the drawings intent.

Sheet M505 – First Floor HVAC Ventilation Plan – Alternate #2

1. See attached sheet for the following revisions:
 - a. Intake hood ductwork added to the scope.
 - b. High Volume Low Speed (HVLS) fans were added to the scope.
 - c. Notes added to the drawing to better clarify the drawings intent.

Sheet M510 – Mechanical High Roof Plan – Alternate #1

1. See attached sheet for the following revisions:
 - a. Intake hoods added to the scope.
 - b. Notes added to the drawing to better clarify the drawings intent.

Sheet M511 – Mechanical High Roof Plan – Alternate #2

1. See attached sheet for the following revisions:
 - a. Intake hoods added to the scope.
 - b. Notes added to the drawing to better clarify the drawings intent.

Sheet M604 – Mechanical Details

1. See attached sheet for the following revisions:
 - a. Details added to further define the scope.

Sheet M606 – Mechanical Controls Details

1. See attached sheet for the following revisions:
 - a. BAS controls details added to further define the scope.

Sheet M608 – Mechanical Controls Details

1. See attached sheet for the following revisions:
 - a. BAS controls details added to further define the scope.

Sheet M609 – Mechanical Schedules

1. See attached sheet for the following revisions:
 - a. Some comments added or modified in some of the mechanical schedules.
 - b. Registers, Grilles and Diffusers schedule finished, not previously compete.

Sheet M610 – Mechanical Schedules

1. See attached sheet for the following revisions:
 - a. Comment modified in the make-up air unit schedule.
 - b. Exhaust Hood Schedule added to scope.

Sheet E100A – First Floor Power Plan – Area A

1. See attached sheet for the following revisions:
 - a. Removed circuit for motorized operable panel in TRAINING 112. This will be manually operated.
 - b. Added TV receptacles in STREET HQ CONFERENCE 119 and revised the height of other TV receptacles.
 - c. Updated mark for humidifier from H-1 to HU-1.
 - d. Added motor starters to various exhaust fans.

Sheet E100B – First Floor Power Plan – Area B

1. See attached sheet for the following revisions:
 - a. Added TV receptacles in MECH HQ 127 and SOLID WASTE CONFERENCE ROOM 131.
 - b. Added motor starters to various exhaust fans.

Sheet E100C – First Floor Power Plan – Area C

1. See attached sheet for the following revisions:
 - a. Added motor starters to various exhaust fans.

Sheet E100D – First Floor Power Plan – Area D

1. See attached sheet for the following revisions:
 - a. Added (4) welding receptacles in SERVICE 210.
 - b. Added keynotes for (2) combination fire/smoke dampers in E316.
 - c. Added motor starters to various exhaust fans.

Sheet E101 – Mezzanine and Roof Power Plans

1. See attached sheet for the following revisions:
 - a. Added motor starters to various exhaust fans.

Sheet E200A – First Floor Communications Plan – Area A

1. See attached sheet for the following revisions:
 - a. Added TV data outlet in STREET HQ CONFERENCE 119.

Sheet E200B – First Floor Communications Plan – Area B

1. See attached sheet for the following revisions:
 - a. Added TV data outlets in MECH HQ 127 and SOLID WASTE CONFERENCE ROOM 131.

Sheet E200D – First Floor Communications Plan – Area D

1. See attached sheet for the following revisions:
 - a. Revised keynote E311 to include capacity for the data cabinet.

Sheet E300A – First Floor Lighting Plan – Area A

1. See attached sheet for the following revisions:
 - a. Clarified fixture heights for specific Type G/GE fixtures.
 - b. Moved one Type G in STREETS 200 to the wall as a Type GW.
 - c. Added (3) Type GW fixtures noted as being task lights.

Sheet E300B – First Floor Lighting Plan – Area B

1. See attached sheet for the following revisions:
 - a. Moved one Type G in GARAGE 207 to the wall as a Type GW.
 - b. Added (2) Type GW fixtures noted as being task lights.
 - c. Shifted location for light switch in STORE 208.

Sheet E300C – First Floor Lighting Plan – Area C

1. See attached sheet for the following revisions:
 - a. Clarified fixture heights for all Type H1/H1E fixtures.

Sheet E300D – First Floor Lighting Plan – Area D

1. See attached sheet for the following revisions:
 - a. Clarified fixture heights for all Type H1/H1E fixtures.

Sheet E301 – Mezzanine Lighting Plans

1. See attached sheet for the following revisions:
 - a. Clarified fixture heights for all Type G/GE fixtures.

Sheet E401 – First Floor Power Plans – Alternates #1 & #2

1. See attached sheet for the following revisions:
 - a. Added motor starters to various exhaust fans.

Sheet E403 – First Floor Lighting Plans – Alternates #1 & #2

1. See attached sheet for the following revisions:
 - a. Clarified fixture heights for all Type H1/H1E fixtures.

Sheet E500 – Electrical Details

1. See attached sheet for the following revisions:
 - a. One-Line Diagram: increase wired size for panels L4A & L4B.
 - b. Grounding Electrode and Bonding Diagram: updated “MDP” to “MSWB” to coincide with previous changes.

Sheet E501 – Electrical Schedules

1. See attached sheet for the following revisions:
 - a. Revised schedule for panel H1.

Sheet E502 – Electrical Schedules

1. See attached sheet for the following revisions:
 - a. Revised schedule for panel LDP.

Sheet E503 – Electrical Schedules

1. See attached sheet for the following revisions:
 - a. Revised schedules for panels L3, L4A, L4B, and L5.

Sheet E505 – Electrical Schedules

1. See attached sheet for the following revisions:
 - a. Starter Disconnect Schedule: revised information for various mechanical equipment. Added Note 2.
 - b. Lighting Fixture Schedule: clarified mounting heights for Type G/GE fixtures. Added Type GW fixture.

END OF DOCUMENT – NC / NR

SECTION 230993 - SEQUENCE OF OPERATIONS FOR HVAC CONTROLS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. This section defines the manner and method by which controls function. Requirements for each type of control system operation are specified. Equipment, devices, and system components required for control systems are specified in other sections.
- B. Sequence of operation for:
 - 1. Air terminal units.
 - 2. Cabinet heaters.
 - 3. Central refrigeration systems.
 - 4. Central fan systems.
 - 5. Water to Air Heat Pumps.
 - 6. Furnace/Condensing Unit.
 - 7. Exhaust Fans
 - 8. Fan coil units.
 - 9. Air to Air Heat Exchanger
 - 10. Pumps
 - 11. Unit heaters.

1.2 RELATED REQUIREMENTS

- A. Section 230913 - Instrumentation and Control Devices for HVAC.
- B. Section 230923 - Direct-Digital Control System for HVAC.
- C. Section 262816.13 - Enclosed Circuit Breakers.

1.3 REFERENCE STANDARDS

- A. ASHRAE Guideline 36-2021 - High-Performance Sequences of Operation for HVAC Systems

1.4 SUBMITTALS

- A. See Section 230010 - GENERAL PROVISIONS for submittal procedures.
- B. Control System Diagrams: Submit graphic schematic of the control system showing each control component and each component controlled, monitored, or enabled.
 - 1. Label with settings, adjustable range of control and limits.

2. Include written description of control sequence.
 3. Include flow diagrams for each control system, graphically depicting control logic.
 4. Include draft copies of graphic displays indicating mechanical system components, control system components, and controlled function status and value.
- C. Project Record Documents: Record actual locations of components and setpoints of controls, including changes to sequences made after submission of shop drawings.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.1 MISCELLANEOUS

- A. The Temperature Control Contractor shall provide all control wiring for all equipment provided under Division 23 unless specifically stated otherwise herein. All wiring shall be installed within conduit. Refer to Division 26.
- B. Unless otherwise indicated, control loops shall be enabled and disabled based on the status of the system being controlled to prevent windup.
- C. When a control loop is enabled or re-enabled, it and all its constituents (such as the proportional and integral terms) shall be set initially to a Neutral value.
- D. A control loop in Neutral shall correspond to a condition that applies the minimum control effect, i.e., valves/dampers closed, VFDs at minimum speed, etc.
- E. When there are multiple outdoor air temperature sensors, the system shall use the valid sensor that most accurately represents the outdoor air conditions at the equipment being controlled.
 1. Outdoor air temperature sensors at air handler outdoor air intakes shall be considered valid only when the supply fan is proven on and unit is in Occupied Mode or in any other Mode with the economizer enabled.
 2. The outdoor air temperature used for optimum start, plant lockout, and other global sequences shall be the average of all valid sensor readings. If there are four or more valid outdoor air temperature sensors, discard the highest and lowest temperature readings.
- F. The term “proven” (i.e., “proven on”/ “proven off”) shall mean that the equipment’s DI status point (where provided, e.g. current switch, DP switch, or VFD status) matches the state set by the equipment’s DO command point.
- G. The term “software point” shall mean an analog variable, and “software switch” shall mean a digital (binary) variable, that are not associated with real I/O points. They shall be read/write capable (e.g., BACnet analog variable and binary variable).
- H. The term “control loop” or “loop” is used generically for all control loops. These will typically be PID loops, but proportional plus integral plus derivative gains are not required on all loops. Unless specifically indicated otherwise, the following guidelines shall be followed:
 1. Use proportional only (P-only) loops for limiting loops (such as zone CO2 control loops, etc.).

2. Do not use the derivative term on any loops unless field tuning is not possible without it.
- I. To avoid abrupt changes in equipment operation, the output of every control loop shall be capable of being limited by a user adjustable maximum rate of change, with a default of 25% per minute.
- J. All setpoints, timers, deadbands, PID gains, etc., listed in sequences shall be adjustable by the user with appropriate access level whether indicated as adjustable in sequences or not. Software points shall be used for these variables. Fixed scalar numbers shall not be embedded in programs except for physical constants and conversion factors.
- K. Values for all points, including real (hardware) points used in control sequences shall be capable of being overridden by the user with appropriate access level (e.g., for testing and commissioning). If hardware design prevents this for hardware points, they shall be equated to a software point and the software point shall be used in all sequences.
- L. VFD Speed Points
 1. The speed analog output sent to VFDs shall be configured such that 0% speed corresponds to 0 Hz and 100% speed corresponds to maximum speed configured in the VFD.
 2. For each piece of equipment, the minimum speed shall be stored in a single software point. This value shall be written to the VFD's minimum speed setpoint via the drive's network interface; in the case of a hard-wired VFD interface, the minimum speed shall be the lowest speed command sent to the drive by the BAS. See 3.2A.2 for minimum speed setpoints.

3.2 AIR TERMINAL UNITS

A. Single-duct Variable Volume:

1. Cooling with Reheat:
 - a. Occupied Mode:
 - 1) An individual zone sensor (one per zone/box) transmits zone temperature and zone set point information to the VAV box controller. The controller in turn modulates the primary air damper in order to deliver the appropriate amount of cool air from the medium pressure duct into the zone.
 - (a) When the damper reaches the 90% open position, the VAV shall signal the associated air handling unit to increase the supply air duct static pressure.
 - 2) As the zone temperature falls toward set point, the damper is modulated closed toward its minimum position. If the temperature in the zone continues to fall, then the hot water heat is engaged and the hot water valve is modulated. The further the temperature falls from zone set point, the more hot water is allowed to flow through the coil.
 - (a) When the two-way control valve serving the reheat coil reaches the 90% open position, the VAV shall signal the heating water pumps to increase the heating water differential pressure.

- 3) Boxes with supplemental heat (radiant ceiling panels) shall modulate the control valve for the radiant ceiling panels open as the first stage of heat before increasing airflow at the VAV box.
 - b. Unoccupied Mode:
 - 1) The air handling unit fan and two-way control valve shall operate to maintain heating setpoint (adjustable).
 2. CO2 sensors located as shown on the drawings shall signal the air handling unit to adjust the outside air cfm minimum to maintain 800 ppm (adj.) CO2 between the space and outside conditions.
- B. Display:
1. System graphic.
 2. System on/off indication.
 3. System day/night mode.
 4. System fan on/off indication.
 5. Discharge air temperature indication.
 6. Zone air temperature indication.
 7. Zone discharge temperature control point adjustment.
 8. Zone control point adjustment.
 9. Zone on/off auto switch.
 10. Zone day/night/auto switch.
 11. Zone reheat valve position.
- C. Alarms:
1. Equipment fault (Status not equaling command)
 2. High Temp (10 degrees adj above controlling setpoint)
 3. Low Temp (10 degrees adj below controlling setpoint)
 4. High CO2 (1200 PPM above OA CO2)

3.3 CABINET HEATERS

- A. Enabled only when the outside air temperature is at or below 45 degrees F. Single temperature electric room thermostat set at 60 degrees F (15.5 degrees C) (adj) maintains constant space temperature by cycling unit fan motor and opening or closing 3-way control valve.
- B. Display:

C. System graphic.

1. System on/off indication.
2. System day/night mode.
3. System fan on/off indication.
4. Zone air temperature indication.
5. Zone discharge temperature control point adjustment.
6. Zone control point adjustment.
7. Zone on/off auto switch.
8. Zone day/night/auto switch.
9. Zone reheat valve position.

D. Alarms:

1. Equipment fault (Status not equaling command)
2. Low Temp (10 degrees adj below controlling setpoint)

3.4 CENTRAL FAN SYSTEMS

A. Air Handling Unit System Modes

1. AHU system Modes are the same as the Mode of the Zone Group served by the system. When Zone Group served by an air handling system are in different modes, the following hierarchy applies (highest one sets AHU mode).
 - a. Occupied Mode
 - b. Cool-down Mode
 - c. Setup Mode
 - d. Warmup Mode
 - e. Setback Mode
 - f. Freeze Protection Setback Mode
 - g. Unoccupied Mode
2. Multiple Zone VAV Air Handling Unit
 - a. Supply Fan Control
 - 1) Supply Fan Start/Stop

- (a) Supply fan shall run when system is in the Cool-down Mode, Setup Mode, or Occupied Mode.
 - (b) If there are any VAV-reheat boxes on perimeter zones, supply fan shall also run when system is in Setback Mode or Warmup Mode (i.e., all Modes except Unoccupied).
 - (c) Totalize current airflow rate from VAV boxes to a software point, Vps.
- b. Static Pressure Setpoint Reset
 - 1) Static pressure setpoint: Setpoint shall be reset using Trim & Respond logic using the following parameters:
 - (a) Variable: Value
 - (b) Device: Supply Fan
 - (c) SP(0): 0.5 inches (120 Pa.)
 - (d) SP(min): 0.1 inches (25 Pa.)
 - (e) SP(max): Max_DSP (See 3.2A.1) NEEDS TO BE CONFIRMED.
 - (f) T(d): 10 minutes
 - (g) T: 2 minutes
 - (h) I: 2
 - (i) R: Zone Static Pressure Reset Requests
 - (j) SP(trim): -0.05 inches (-12 Pa)
 - (k) SP(res): +0.06 inches (15 Pa)
 - (l) SP(res-max): +13 inches (32 Pa)
- c. Static Pressure Control
 - 1) Supply fan speed is controlled to maintain duct static pressure at setpoint when the fan is proven on. Where the Zone Groups served by the system are small, provide multiple sets of gains that are used in the control loop as a function of a load indicator (such as supply fan airflow rate, the area of the Zone Groups that are occupied, etc.).
- d. Supply Air Temperature Control
 - 1) Control loop is enabled when the supply air fan is proven on, and disabled and output set to Deadband (no heating, minimum economizer) otherwise.
- e. Supply Air Temperature Setpoint
 - 1) See 0) for Min_SAT, Des_SAT, Max_SAT, OAT_Min, and OAT_Max setpoints.

- 2) During Occupied Mode: Setpoint shall be reset from Min_SAT when the outdoor air temperature is OAT_Max and above, proportionally up to T-max when the outdoor air temperature is OAT_Min and below.
 - (a) T-max shall be reset using Trim & Respond logic between Des_SAT and Max_SAT. The following parameters are suggested as a starting place, but they will require adjustment during the commissioning/tuning phase:
 - (1) Variable: Value
 - (2) Device: Supply Fan
 - (3) SP(0): SP(max)
 - (4) SP(min): Des_SAT
 - (5) SP(max): Max_SAT
 - (6) T(d): 10 minutes
 - (7) T: 2 minutes
 - (8) I: 2
 - (9) R: Zone Cooling SAT Requests
 - (10) SP(trim): +0.2 degrees F (+0.1 degrees C)
 - (11) SP(res): -0.3 degrees F (-0.2 degrees C)
 - (12) SP(res-max): -1.0 degrees F (-0.6 degrees C)
- 3) During Setup or Cool-Down Modes: Setpoint shall be Min_SAT.
- 4) During Warmup and Setback Modes: Setpoint shall be 95 degrees F (35 degrees C).
- f. Supply air temperature shall be controlled to setpoint using a control loop whose output is mapped to sequence the hot water valve or modulating electric heating coil (if applicable), outdoor air damper, return air damper, and chilled water valve as shown in the diagram below.
 - 1) Economizer damper maximum (MaxOA-P) position is limited for economizer high limit lockout.

B. Variable Air Volume Air Handling Units (AHU-1, AHU-2):

1. Occupied Mode:
 - a. In the occupied position, the air handling unit shall run continuous. The fresh air damper shall modulate to its minimum cfm position (per Air Handling Unit schedule) as determined by the airflow station (by this contractor) and the return air damper shall open or close a corresponding amount. A discharge air sensor shall modulate the fresh air damper past this minimum position to maintain the cooling setpoint. The setpoint shall be reset between 55 and 65 degs. depending on the variable air volume box (VAV) calling for the most cooling.

- b. The fresh air dampers shall modulate to their minimum position when outdoor air can no longer be used for cooling.
- c. When outdoor air can no longer be used for cooling based on the VAV calling for the most cooling, the discharge thermostat shall signal the DX system to operate. The discharge thermostat shall also modulate the compressor on the DX system to maintain the discharge setpoint.
- d. When mixed air temperature falls below the discharge air setpoint, the fresh air dampers shall return to their minimum position as determined by the air flow station and the normally open two-way control valve shall modulate to maintain setpoint
- e. A duct static pressure sensor located at 3/4 of the overall duct length shall control the variable frequency drive on the supply fan to maintain a minimum static pressure.
- f. A second static pressure sensor located at the discharge of the air handling unit shall stop the unit fan when a high static pressure is sensed.
- g. The motorized dampers at relief hoods RH-1 and RH-2 shall be modulated in tandem to maintain the building static pressure setpoint, 0.02" W.C. (adj.), as sensed at the building static pressure sensor shown on the plans.

C. Make-up Air Unit (MAU-1)

- 1. The BAS shall monitor the building static pressure in Service 210. The building static pressure setpoint shall be -0.02" W.C. If the space pressure becomes more negative than the set point the BAS shall open the outdoor air intake motorized damper at the associated intake hood and shall enable the supply fan. The BAS shall modulate the fan speed to meet the building static pressure setpoint.
- 2. If the discharge air falls below 60 degrees F the heating water two way control valve shall be modulated open to meet the discharge air setpoint of 60 degrees F (adj.).

D. Make-up Air Unit (MAU-2)

- 1. The BAS shall monitor the building static pressure in Welding 212. The building static pressure setpoint shall be -0.02" W.C. If the space pressure becomes more negative than the set point the BAS shall open the outdoor air intake motorized damper at the associated intake hood and shall enable the supply fan. The BAS shall modulate the fan speed to meet the building static pressure setpoint.
- 2. If the discharge air falls below 60 degrees F the heating water two way control valve shall be modulated open to meet the discharge air setpoint of 60 degrees F (adj.).

E. Make-up Air Unit (MAU-3)

- 1. Anytime exhaust fan EF-16 is running then the BAS shall open the outside air intake motorized damper at the associated intake hood and shall enable the supply fan. The supply fan shall run at constant volume as set during balancing.
- 2. If the discharge air falls below 70 degrees F the heating water two way control valve shall be modulated open to meet the discharge air setpoint of 70 degrees F (adj.)

F. Time Schedule: Start and stop supply and return fans. Determine fan status through auxiliary contactors in motor starter. If fan fails to start as commanded, signal alarm.

G. Safety Devices:

1. Freeze Protection: Stop fans and close outside air dampers if temperature before supply fan is below 37 degrees F; signal alarm.
2. High Temperature Protection: Stop fans and close outside dampers if temperature in return air is above 300 degrees F; signal alarm.
3. Smoke Detector: Stop fans, close outside dampers, and close smoke dampers if smoke is detected; signal alarm.

H. Display:

1. System graphic.
2. System on/off indication.
3. System day/night mode.
4. Supply fan on/off indication.
5. Supply fan speed
6. Outside air temperature indication.
7. Mixed air temperature indication.
8. Fan discharge air temperature indication.
9. Reheat zone air temperature indication.
10. Return humidity indication.
11. Fan discharge temperature control point adjustment.
12. Return humidity control point adjustment.
13. Reheat zone control point adjustment.
14. Supply static pressure indication.
15. Supply static pressure control point adjustment.
16. Building static pressure indication.
17. Building static pressure control point adjustment.
18. System on/off auto switch.
19. System day/night/auto switch.
20. Supply fan on/off switch.

21. Heating water valve position.
22. Outside air CFM (from airflow station)

I. Alarms:

1. Equipment Fault (Status not equaling command)
2. High Temp (10 degrees adj above controlling setpoint)
3. Low Temp (10 degrees adj below controlling setpoint)
4. Low Return Static Pressure
5. High Supply Static Pressure
6. Freeze Protection
7. Smoke Protection
8. High CO2 (1200 PPM above OA CO2)

3.5 HUMIDIFIER (HU-1)

- A. The factory controls provided with the humidifier shall control the functionality of the unit. Provide interface to factory controls to sequence and monitor the humidifier as described herein.
- B. The BAS shall monitor the alarm contact on the humidifier control panel and report any alarm to the operator workstation.
- C. The BAS shall input the space relative humidity setpoint, which shall be 45% RH (adj.), to the factory control panel. The BAS shall disable the dehumidification mode at RTU-2 when H-1 is called upon to operate.
- D. The BAS shall monitor the space relative humidity in Signs 202 at the wall mount humidistat located in the space. The BAS shall input the space relative humidity to the humidifier factory control panel. The space humidistat shall be locally adjustable

3.6 EXHAUST FANS

- A. EF-1, 2 and 3:
 1. These fans shall run continuously during the occupied schedule associated with AHU-1 and AHU-2. The associated motorized dampers shall be commanded open while fans are running and closed when fans are off.
- B. EF-4, 5, 6, 7, 8, 9
 1. These fans shall be engaged by a BAS illuminated wall switch located as shown on the plans. The BAS shall limit the continuous run time of these fans to 60 mins, at which point the fan shall need to be manually engaged at the wall switch again.
 2. If any of the fans EF-4, 5 or 6 are running the motorized damper at relief hood RH-3 and intake hood IH-6 shall be open.

3. If any of the fans EF-7, 8 or 9 are running the motorized damper at relief hood RH-4 and intake hood IH-7 shall be open.
 - C. CO/NO₂ Exhaust Fans (EF-11, EF-12, EF-18, EF-19, EF-20, EF-21, EF-22, EF-23, EF-24, EF-25)
 1. EF-18, EF-21 and EF-23
 - a. These fans shall run continuously during occupied conditions.
 2. EF-11, EF-12, EF-19, EF-20, EF-22, EF-24 and EF-25
 - a. The BAS shall monitor the Brasch Gas Detector Panel for all states of alarm. Upon a low level alarm in a zone the fans in the corresponding zone shall all be turned on and run at constant volume until the alarm is eliminated at the Gas Detector Panel. The associated exhaust air and intake air motorized dampers shall be open while these fans are running.
 - D. EF-13, EF-14
 1. These fans shall run continuously during occupied conditions.
 - E. EF-15
 1. These fans shall be engaged by a BAS illuminated wall switch located as shown on the plans. These fans shall continue to run turned off at the same wall switch. The associated exhaust air and intake air dampers shall be open when these fans are operating and closed when the fans are off.
 - F. Display:
 1. System graphic.
 2. System on/off indication.
 3. System day/night mode.
 4. Fan on/off indication.
 5. Building static pressure indication.
 6. Building static pressure control point adjustment.
 7. System on/off auto switch.
 8. System day/night/auto switch.
 - G. Alarms:
 1. Equipment Fault (Status not equaling command)
- 3.7 ELECTRONICS 124
- A. The space temperature shall be monitored by a BAS temperature sensor. On room temperature above 85 degrees F the BAS shall send an alarm to the operator workstation.

3.8 EMERGENCY GENERATOR AND GENERATOR TRANSFER SWITCH

A. Scenario 1 – Generator operating in test mode (no loss of normal utility power)

1. The automatic transfer switches shall monitor the normal incoming utility power and provide a unique status to the building automation system indicating normal utility power is present.
2. A test (scheduled or manual) is initiated through either automatic transfer switches. The test shall not only start the generator, but also transfer the ATS so that the generator is allowed to operate full building load. In this scenario, the generator will start, and the automatic transfer switch will transfer once all required criteria are achieved (voltage, frequency, pitch, etc.)
3. The permanent load bank shall be activated. The permanent load bank shall have multiple load steps and shall operate such that the generator maintains approximately 30% minimum load
4. Building automation load control is not required in scenario 1, provided that normal utility power is available. The automatic transfer switch shall also transmit a signal to the BAS indicating the status of the switch (normal or emergency).

B. Scenario 2 – Generator operating in emergency mode (loss of normal utility power).

1. The automatic transfer switches shall monitor the normal incoming utility power and provide a unique status to the building automation system indicating normal utility power is lost. Note: an adjustable deadband shall be required. The intent of providing an adjustable deadband is to allow momentary power “blips” to occur without requiring the generator to start. A loss of normal power signal shall be sent to the BAS only if the outage is longer than the preset deadband.
 - a. The building automation system shall instruct the following loads to stop until further input:
 - 1) AHU-1
 - 2) AHU-2
 - 3) HWP-1
 - 4) HWP-2
 - 5) HWP-3
 - 6) HWP-4
 - 7) B-1
 - 8) B-2
 - 9) HUH-1
 - 10) HUH-2
2. The automatic transfer switch(es), upon sensing loss of power, shall instruct the generator to start and transfer.

3. ATS-700 shall transfer within 10-seconds of power loss (not including deadband setting). This transfer switch serves NEC Article 700 Emergency loads and the intent is to transfer within the time required of Emergency/Life Safety load as required by all applicable codes.
4. ATS-702 shall transfer within 20-seconds of power loss (not including deadband setting). This transfer switch serves NEC Article 702 Optional Standby loads.
5. The controlled loads listed in 2.a.i above shall be allowed to turn back on per the following control schedule:
 - a. AHU-1
 - 1) Turn on 30 seconds after the ATS-702 has fully transferred.
 - b. AHU-2
 - 1) Turn on 40 seconds after the ATS-702 has fully transferred
 - c. HWP-1
 - 1) Turn on 50 seconds after the ATS-702 has fully transferred.
 - d. HWP-2
 - 1) Turn on 60 seconds after the ATS-702 has fully transferred.
 - e. HWP-3
 - 1) Turn on 70 seconds after the ATS-702 has fully transferred.
 - f. HWP-4
 - 1) Turn on 80 seconds after the ATS-702 has fully transferred.
 - g. B-1, B-2, HUH-1, HUH-2
 - 1) Turn on 90 seconds after the ATS-702 has fully transferred.
6. The permanent load bank may be activated. The design intent is to maintain a minimum 30% load on the generator. The load bank, in conjunction with the generator controller and the Automatic Transfer Switch(es) controllers shall monitor generator load and maintain a minimum 30% load on the generator. The permanent load bank shall have multiple load steps that can be turned ON and OFF depending on the overall generator connected load.
7. Upon return of normal utility power, the ATS shall again engage a clock/timer before allowing a transfer from emergency back to normal power. The intent of this timer is to avoid transfer of power back in the event of momentary power “blips” that may be occurring due to fluctuations on the utility/normal power side.
8. The ATS shall provide a signal to the building automation system (after satisfying the clock/timer countdown) that normal power is restored.
9. The ATS shall transfer from emergency to normal power.

10. The BAS shall operate in normal status.

3.9 FAN COIL UNITS

A. FCU-1, FCU-2, FCU-4, FCU-5, and FCU-6

1. If the exhaust fan serving the same space, i.e. FCU-1 and EF-4, is running then the motorized damper in the outside air duct shall be open and the motorized damper in the return air duct shall be closed. If the exhaust fan serving the same space is not running, then the outside air damper shall be closed and the return air motorized damper shall be open
2. Occupied Mode:
 - a. Single temperature unit mounted thermostat set at 72 degrees F (adj) maintains constant space temperature by modulating two-way control heating valve and modulating the DX compressors at the associated condensing unit depending on call for heating and/or cooling.
3. Unoccupied Mode:
 - a. Single temperature unit mounted thermostat set maintains a reduced space temperature by modulating two-way control heating valve and two-way cooling control valve depending on call for heating and/or cooling.

B. FCU-3

1. If the exhaust fan, EF-6, is not running then the motorized damper located in the outside air duct shall be closed. If EF-6 is running then outside air damper shall be open.
2. Occupied Mode:
 - a. Single temperature unit mounted thermostat set at [72] degrees F (adj) maintains constant space temperature[<>] by modulating two-way control heating valve[<>] and modulating the DX compressors at the associated condensing unit depending on call for heating and/or cooling.
 - b. If the space relative humidity rises above 50% RH but the space temperature setpoint is being met then the DX cooling coil shall be engaged and the two-way control heating valve shall be modulated to maintain a discharge air temperature equal to the space temperature setpoint.
3. Unoccupied Mode:
 - a. Single temperature unit mounted thermostat set maintains a reduced space temperature by modulating two-way control heating valve and two-way cooling control valve depending on call for heating and/or cooling.

C. Display:

D. System graphic.

1. System on/off indication.
2. System day/night mode.

3. System fan on/off indication.
4. Discharge air temperature indication.
5. Zone air temperature indication.
6. Zone discharge temperature control point adjustment.
7. Zone control point adjustment.
8. Zone on/off auto switch.
9. Zone day/night/auto switch.
10. Zone heating valve position.
11. Zone cooling valve position.

E. Alarms:

1. Equipment Fault (Status not equaling command)
2. High Temp (10 degrees adj above controlling setpoint)
3. Low Temp (10 degrees adj below controlling setpoint)
4. Freeze Protection
5. High CO2 (1200 PPM above OA CO2)

3.10 PRIMARY HEATING WATER PUMPS (HWP-1 AND HWP-2) AND GAS FIRED BOILERS (B-1 AND B2):

- A. The boilers shall be provided with factory controls capable of controlling the functionality of the boilers, including the boiler staging, lead/lag of boilers, and capacity modulation. Provide interface to boiler controls as required to sequence and monitor the boilers as described herein.
- B. System enable: Whenever any of the heating system two-way or three-way control vales are commanded greater than 5% open (indicating a call for heating), the lead boiler shall be engaged. The boiler controller will start the boiler recirculation pump when the boiler is engaged. Pump runtime shall be totalized and automatically switch to the boiler/pump with the lowest runtime at 10:00 am on the first Wednesday of each month.
- C. The BAS shall monitor the primary system common heating water supply and return temperatures.
- D. The BAS shall input the controlling hot water supply temperature to the boiler factory controls to allow the factory controls to modulate the boiler capacity. The BAS shall reset the heating water supply temperature from 160 degrees F at outdoor temperature of 0 degrees F to a minimum of 100 degrees F at outdoor temperature of 75 degrees F, with straight line relationship between.
- E. The BAS shall monitor the alarm contact on the boiler controls and report any alarm to the operator workstation.

3.11 PUMPS

A. DOMESTIC HOT WATER RECIRCULATING PUMPS:

1. Pump shall be controlled by domestic hot water temperature sensor to maintain water temperature at 130 deg. F (adj.) during occupied conditions. The occupancy schedule shall be occupied Monday through Friday from 7 am to 6 pm. Outside of these hours the system shall be unoccupied, including weekends and holidays. The schedule shall be adjustable in the BAS. The BAS operator shall also be able to manually override the current occupied/unoccupied mode to the other mode of operation

B. SECONDARY HEATING WATER PUMPS (HWP-3 AND HWP-4):

1. System Enable: Whenever any of the heating system two-way or three-way control valves are commanded greater than 5% open (indicating a call for heating), the lead secondary heating water pump shall start. If the lead pump fails to operate when called upon to do so, send an alarm to the BAS operator workstation and start the standby pump. Pump runtime shall be totalize and the BAS shall automatically select the pump with the lowest runtime to be the lead pump, this shall occur at 10:00 am on the first Wednesday of every month. When status is proven with pump, the BAS shall engage the lead boiler.
2. The BAS shall send an analog signal to control the lead pump speed to maintain the worst case differential pressure in the piping system (see the plans for differential pressure sensor locations). The minimum pump speed shall correspond to the speed required to produce the GPM through the three-way control valves while in full bypass and all of the two-way control valves closed. As the two-way heating control valves begin to open and the controlling differential pressure falls below the set point the BAS shall increase the lead pump speed to maintain the pressure set point.
3. Differential Pressure Reset: The BAS shall reset the differential pressure setpoint to maintain the most open two-way heating control valve in the system at 90% open. The maximum differential pressure setpoint shall be set during final system balancing.
4. Sensors, control wiring, and conduit shall be provided by this contractor.

C. COIL PUMPS (HCP-1, HCP-2, HCP-3)

1. Coil pumps shall be enabled and run continuously at constant volume whenever the outdoor air temperature is below 30 degrees F.

D. Display:

1. System graphic.
2. System on/off indication.
3. System day/night mode.
4. Pump on/off indication.
5. Pump speed
6. System differential pressure indication.

7. System differential pressure control point adjustment.

E. Alarms:

1. Equipment Fault (Status not equaling command)
2. High Temp (10 degrees adj above controlling setpoint)
3. Low Temp (10 degrees adj below controlling setpoint)
4. Low Differential Pressure
5. High Differential Pressure

3.12 PRESSURE BOOSTER PUMP FOR DOMESTIC WATER

- A. The control panel supplied with the booster pump skid will contain a common alarm contact. The BAS shall connect to this contact for alarm initiation at the BAS operator workstation. Coordinate requirements with booster pump manufacturer

3.13 IN-FLOOR HEAT SYSTEM

- A. The in-floor heat system shall be enabled when the outside temperature falls below 50 degrees F.
- B. The three-way control valves at each manifold shall modulate to supply water to the in-floor piping circuits to meet the slab temperature setpoint. When the space temperature falls below the space temperature setpoint the slab temperature setpoint shall be 79 degrees F (adj.). As the space temperature approaches the space temperature setpoint the slab temperature setpoint shall be decreased by 1 degree F every 5 minutes.
- C. The system three-way control valve shall modulate to meet the in-floor heat supply water temperature

3.14 HYDRONIC UNIT HEATERS

- A. Single temperature room thermostat set at 60 degrees F (15.5 degrees C) (adj.) maintains constant space temperature by cycling unit fan motor and opening or closing the 3-way control valve.
- B. Display:
1. System graphic.
 2. System on/off indication.
 3. System day/night mode.
 4. System on/off auto switch.
 5. System day/night/auto switch.
 6. Heating water valve position.
- C. Alarms:
1. Equipment Fault (Status not equaling command)

2. High Temp (10 degrees adj above controlling setpoint)
3. Low Temp (10 degrees adj below controlling setpoint)

3.15 BACKFLOW PREVENTER:

- A. A water bug sensor shall be provided at the floor against the wall below the water service backflow preventer. Upon detection of water the BAS shall send an alarm indicating the backflow preventer has tripped.
- B. Display:
 1. System graphic.
- C. Alarms:
 1. Equipment Fault

3.16 HYDRONIC SYSTEMS PRESSURE MONITORING (ET-1)

- A. Monitor each hydronic system's pressure via a pressure sensor in the piping from the connection to the system from the expansion tank. The BAS shall send alarm to the operator workstation whenever the pressure falls below 5 psi less than the initial system fill pressure. Final fill pressure to be determined by the HVAC Piping Contractor and coordinated with the Temperature Controls Contractor to set control point.

3.17 ALARMS

- A. Alarm Reporting and Display:
 1. All alarms shall include a time/date stamp using the standalone control module time and date.
 2. Each alarm can be configured in terms of level, latching (Requires Acknowledgment of a Return to Normal/Does Not Require Acknowledgment of a Return to Normal), entry delay, exit deadband, and postsuppression period.
 3. An operator shall be able to sort alarms based on level, time/date, and current status.
- B. Alarms should be reported with the following information:
 1. Date and time of the alarm
 2. Level of the alarm
 3. Description of the alarm
 4. Equipment tags for the units in alarm
 5. Possible causes of the alarm if provided by the fault detection routines
 6. The source that serves the equipment in alarm.

- C. Temperature control system shall report user selected alarms via text message or email based on specific alarm preference.

END OF SECTION 230993

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- A DRAWINGS ARE SCHEMATIC IN NATURE. MECHANICAL CONTRACTOR SHALL FIELD VERIFY ALL CONDITIONS BEFORE BEGINNING WORK. REPORT DISCREPANCIES TO ARCHITECT/ENGINEER.
- B DO NOT ROUTE PIPING ABOVE OR IN FRONT OF ELECTRICAL GEAR. MAINTAIN CODE REQUIRED CLEARANCES.
- C PROVIDE AND INSTALL INDIVIDUAL SHUT OFF VALVES TO ALL WALL HANDYRANS AND HOSE BIBS. INSTALL SHUT OFF VALVES IN AN ACCESSIBLE LOCATION.
- D MAINTAIN CURRENT AND ACCURATE FIELD DRAWINGS OF "AS-BUILT" CONDITIONS. THESE DRAWINGS SHALL BE REVIEWED AT EACH CONSTRUCTION PROGRESS MEETING.
- E COORDINATE LOCATIONS OF ALL SERVICES WITH SITE CONTRACTOR.

M321 2" VENT UP TO 4" VTR. MAINTAIN COVE REQUIRED CLEARANCES FROM ALL FRESH AIR INTAKES. SEE VENT DETAIL.

M344 COMPRESSED AIR MAIN TO HAVE A MINIMUM SLOPE OF 1% BACK TO DRAIN DOWN LOCATIONS.

M355 2" CA DN TO AIR COMPRESSOR SYSTEM. MOUNT AIR COMPRESSOR AND MOUNT AIR LINE TO CONCRETE HOUSEKEEPING PAD. EXTEND PAD 6" BEYOND UNIT IN ALL DIMENSIONS. COORDINATE WITH GENERATOR CONTRACTOR.

M356 2" VENT DN. SEE FIRST FLOOR PLUMBING PLAN FOR CONTINUATION.

M359 ROUTE FULL SIZE AIR HANDLINS UNIT CONDENSATE DRAIN TO FLOOR DRAIN. SEE ARIU DRAIN TRAY DETAIL FOR MORE INFORMATION.

M362 1-1/4" CW, 2" SCW, 1-1/4" SHW, AND 3/4" SHW DN. SEE FIRST FLOOR PLUMBING PLAN FOR CONTINUATION.

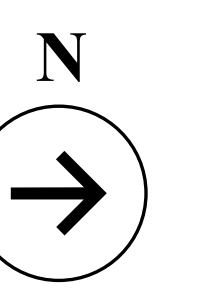
M386 3/4" CA DN. SEE FIRST FLOOR PLUMBING PLAN FOR CONTINUATION.

M387 1" VENT DN FROM PLUMBING PLAN FOR CONTINUATION.

M617 INSTALL GAS COCK AND REGULATOR. MUST HAVE A MINIMUM 10" DIF FROM GAS CONNECTION TO BOILER FOR A MAXIMUM PRESSURE DROP OF 1" W.C. REGULATOR TO BE INSTALLED IN A HORIZONTAL POSITION AND MATCHED TO THE BOILER. THE SIZE OF THE BOILER, IF THE PIPE DIAMETER MUST BE INCREASED, A REDUCTION TYPE FITTING MUST BE LOCATED BETWEEN THE BOILER OUTLET AND THE BOILER INLET. PROVIDE ADDITIONAL PIPING BEYOND WHAT IS SHOWN AS NEEDED TO MAINTAIN A MINIMUM CLEARANCE OF 18" FROM THE BOILER TO 2 PSI INLET TO INCHES OUTLET AND RATED FOR INTERIOR USE (VENTLESS REGULATORS NOT PERMITTED). VENT DETAIL SEE MANUFACTURERS INSTRUCTION. SEE GAS RISER DIAGRAM FOR GAS PIPE SIZES.

M618 2" NPWC DN. SEE FIRST FLOOR PLUMBING PLAN FOR CONTINUATION.

M629 ROUTE 3/4" COND ALONG FLOOR AND INDIRECT DRAIN INTO DRAIN FLOOR.



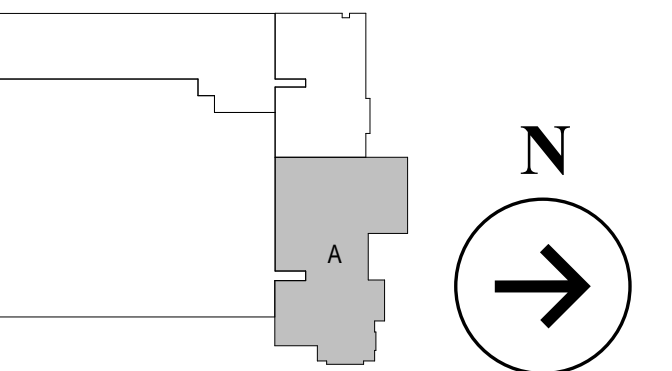
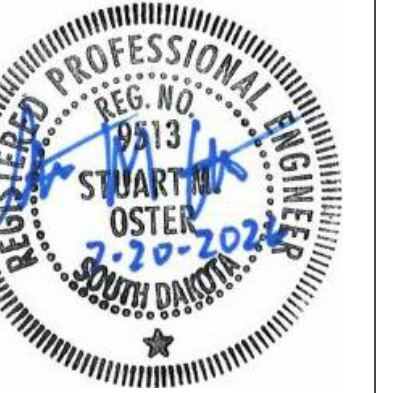
① FIRST FLOOR HVAC VENTILATION PLAN - AREA A
1/8" = 1'-0"

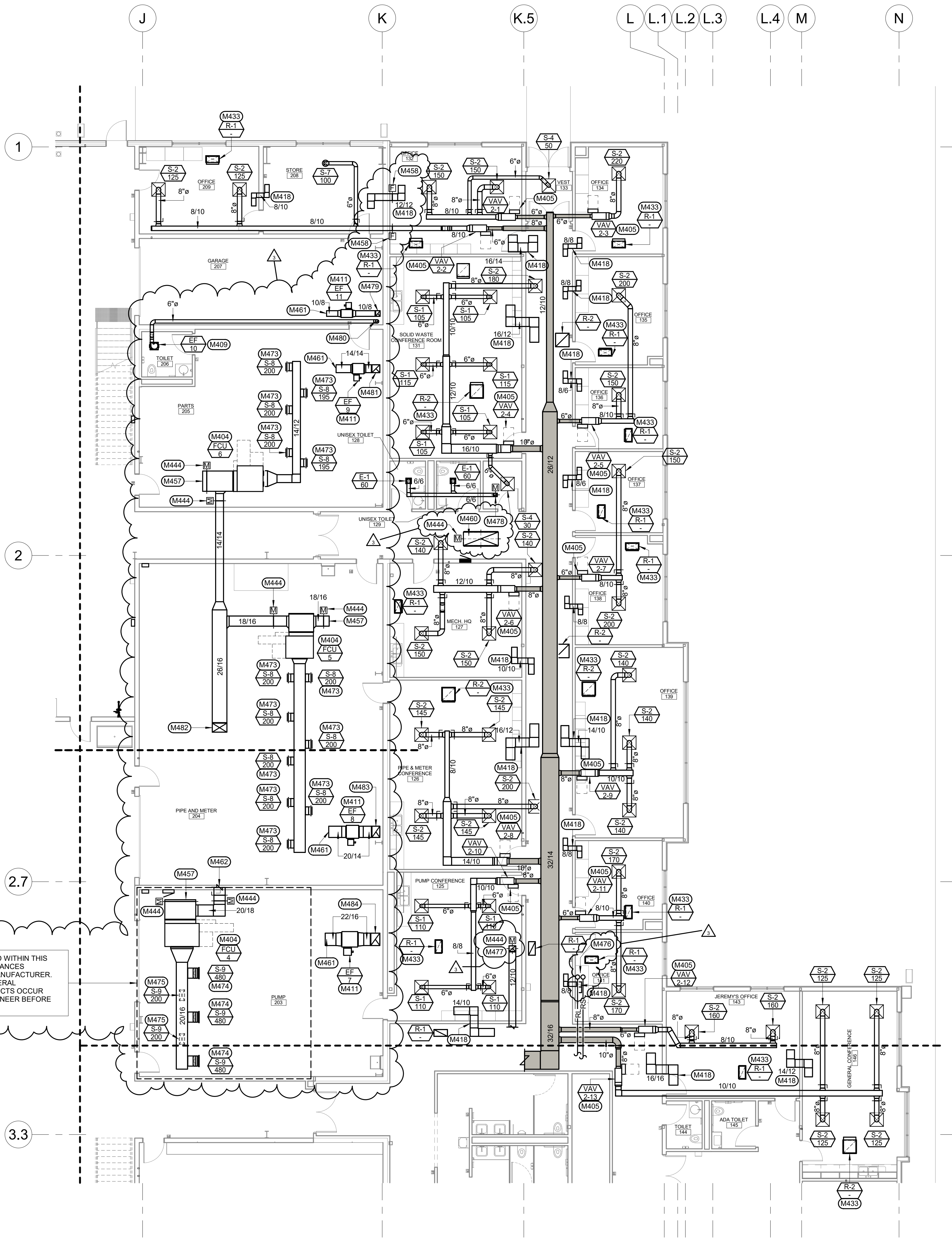
$$1/8'' = 1'-0''$$

- ### HVAC VENTILATION MISCELLANEOUS NOTES
- A DRAWINGS ARE SCHEMATIC IN NATURE. MECHANICAL CONTRACTOR SHALL VERIFY ALL CONDITIONS BEFORE BEGINNING WORK. REPORT DISCREPANCIES TO ARCHITECT AND ENGINEER.
 - B DO NOT ROUTE DUCTWORK ABOVE OR IN FRONT OF ELECTRICAL GENS. MAINTAIN CLEAR REQUIRED CLEARANCES.
 - C COORDINATE CUTTING AND PATCHING OF ALL SURFACES WITH GENERAL CONTRACTOR.
 - D PROVIDE ADEQUATE VENTILATION AS PER OWNER AND OSHA TO PROPERLY REMOVE ODORS AND FUMES FROM SPACES WHERE WORK IS BEING PERFORMED TO OUTDOORS.
 - E FLEXIBLE DUCTWORK SHALL BE LIMITED TO 3'-0" MAXIMUM LENGTH.
 - F NO FLEXIBLE DUCTWORK IS ALLOWED ON THE RETURN AIR DUCTWORK.
 - G TEMPERATURE CONTROL CONTRACTOR SHALL PROVIDE ALL VOLTAGE AND LINE VOLTAGE CONTROL WIRING AS REQUIRED FOR COMPLETE OPERATION OF ALL MECHANICAL EQUIPMENT.
 - H ALL WORK SHALL BE ACCURATE FIELD DRAWINGS OF "AS-BUILT" CONDITIONS. THESE DRAWINGS SHALL BE REVIEWED AT EACH CONSTRUCTION PROGRESS MEETING. ALL DUCTWORK WHICH NOT LOCATED COMPLETELY WITHIN BUILDING SHALL BE PROTECTED AGAINST INSULATED AS PER SPECIFICATIONS FOR DUCTWORK EXPOSED TO OUTDOOR WEATHER.
 - K DUCTWORK ELBOWS SHALL BE OF RADIUS BEND UNLESS SPEC PROHIBITS AS PER SPECIFICATIONS.

- MECHANICAL SPECIFIC NOTES**

 - M403 WELDING EXHAUST HOODS SUPPORTED FROM WALL. CONNECT EA DUCT TO HOOD DUCT COLLAR MAKE TRANSITION AS REQUIRED FOR CONNECTION. SEE WELDING EXHAUST BENCH CANOPY HOOD DETAIL.
 - M404 SUPPORT FAN COIL UNIT FROM STRUCTURE. MAKE TRANSITION TO 1" RIGID DUCT AS NECESSARY. DUCT CONNECTIONS TO UNIT SHALL BE MADE WITH FLEXIBLE DUCT CONNECTORS.
 - M405 SUSPEND VAN BOX FROM STRUCTURE. MAINTAIN MANUFACTURER'S RECOMMENDED CLEARANCE. PROVIDE DUCT ACCESS DOOR SHALL BE LOCATED TO REHAT FAN. ACCESS DOOR SHALL BE LOCATED TO ALLOW FOR MAXIMUM ACCESSIBILITY. SEE VERTICAL DUCT ON MECHANICAL DETAILS SHEET.
 - M408 INSULATE DUCTS FROM UNIT TO UNIT. PROVIDE CEILING COORDINATE EXCAV LOCATION WITH ALL OTHER TRADES. ROUTE REFRIGERANT PIPING TO ISOLATED CONDENSER. PROVIDE REFRIGERANT REFRIGERANT PIPING AS PER MANUFACTURER'S RECOMMENDATIONS. INSTALL MANUFACTURER PROVIDED WIRELESS THERMOSTAT MOUNTED ON WALL.
 - M410 SUPPORT EXHAUST FAN FROM STRUCTURE. SUSPEND AT APPROX 11'-0" A.F.F. ROUTE 'E' AS SHOWN.
 - M411 SUPPORT LINE EXHAUST FAN FROM STRUCTURE USING THREADED RODS WITH VIBRATION ISOLATORS. MAKE TRANSITION TO FULL SIZE UNIT OPENINGS AS NECESSARY. DUCT CONNECTIONS TO UNIT SHALL BE MADE WITH FLEXIBLE DUCT CONNECTORS.
 - M413 16"IS UP TO EXHAUST FAN LOCATED ON ROOF. TRANSITION UP TO FULL SIZE OPENING AS REQUIRED. SEE POWER ROOF PENETRATION DETAIL ON MECHANICAL DETAILS SHEET.
 - M432 PROVIDE TRANSFER DUCT AS HIGH AS POSSIBLE TO EXHAUST FAN. SEE POWER ROOF PENETRATION DETAIL ON MECHANICAL DETAILS SHEET.
 - M433 PROVIDE FIELD FABRICATED INSULATED RETURN AIR DUCT. SET DETAIL ON MECHANICAL DETAILS SHEET FOR DETAIL.
 - M440 TEMPERATURE CONTROL PANEL. COORDINATE POWER REQUIREMENTS WITH ELECTRICAL CONTRACTOR. COORDINATE EXCAV LOCATION WITH GENERAL CONTRACTOR.
 - M444 TEMPERATURE CONTROLS CONTRACTOR SHALL PROVIDE LOW VOLTAGE TRANSITION TO EXHAUST FAN WITH OPEN END AT 1'-6" AFF. ROUT 4 DRYER EXHAUST DUCT UP AND TRANSITION TO 12" RIGID WALL. UPWARDS ALONG STAIRS ABOVE WITH TWO 45 DEGREE ELBOWS. CONTINUE DRYER EXHAUST DUCT HORIZONTALLY AT 9'-0" AFF. TO EXHAUST WALL. TOTAL EQUIVALENT DRYER EXHAUST DUCT LENGTH SHALL NOT EXCEED 35 FT. COORDINATE EXCAV FOR OTHER DRYER LOCATION WITH GENERAL CONTRACTOR.
 - M446 TERMINATE DRYER EXHAUST DUCT WITH WALL CAP. PROVIDE PACKED DUCT DETAIL. MAINTAIN MINIMUM OPENING AREA REQUIRED BY THE MECHANICAL CODE. MAINTAIN MINIMUM 3'-0" HORIZONTAL DISTANCE FROM EXHAUST DUCT TO SEAL WALL PENETRATION WEATHER TIGHT.
 - M447 ROUTE REFRIGERANT PIPING ABOVE CEILING.
 - M448 MOUNT HUMIDIFIER ON WALL PER MANUFACTURER'S RECOMMENDATIONS. MOUNT WITH BLOWER CAP AT 9'-0" AFF.
 - M452 141/2 EA UP. ASSOCIATED MEZZANINE LEVEL HVAC VENTILATION PLAN FOR CONTINUATION.
 - M453 141/2 OA UP. ASSOCIATED MEZZANINE LEVEL HVAC VENTILATION PLAN FOR CONTINUATION.
 - M454 6" ROUND EA UP. ASSOCIATED MEZZANINE LEVEL HVAC VENTILATION PLAN FOR CONTINUATION.
 - M455 TERMINATE RETURN AIR DUCT WITH OPEN END. PROVIDE EXPANDED METAL SCREEN OVER OPENING.
 - M456 MECHANICAL CONTRACTOR SHALL PROVIDE FIRE DAMPER IN THE CORRIDOR TO PREVENT WALL PENETRATION. DAMPER SHALL BE 1.5 HR RATED. INSTALL PER MANUFACTURERS RECOMMENDATIONS.
 - M459 ELBOW SA DUCT MAIN DN TO ELEVATION REQUIRED FOR ROUTING DUCT IN CORRIDOR.
 - M460 3/22" RELIEF AIR DUCT UP TO RELIEF HOOD. LOCATED ON DUCTWORK ABOVE OPENINGS ON BOTH SIDES OF DUCT DROP. PROVIDE EXPANDED METAL SCREEN OVER OPENING. PROVIDE DOWN PLAN IN BOTTOM OF DUCT. TRANSITION TO HOOD OPENING AS REQUIRED. SEE LOW ROOF PLAN FOR CONTINUATION.
 - M461 TERMINATE EXHAUST AIR DUCT WITH OPEN END. PROVIDE EXPANDED METAL SCREEN OVER OPENING.
 - M462 PROVIDE ASSOCIATED MEZZANINE LEVEL HVAC VENTILATION PLAN FOR CONTINUATION.
 - M463 68 OUTSIDE AIR DUCT DOWN ALONG WALL. CONTINUE THROUGH CORRIDOR AND CONNECT TO RETURN AIR DUCT OF FCJ-3.
 - M464 EQUIPMENT AND DUCTWORK MOUNTED AT APPROXIMATELY 21'-0" TO CENTERLINE. COORDINATE WITH ARCHITECT.
 - M472 261/2 EA DUCT ON WALL GND DN TO WELDING HOOD. MAKE TRANSITION TO HOOD CONNECTION AS REQUIRED.
 - M473 INSTALL SUPPLY GRILLE ON SIDE OF SUPPLY DUCT WITH BOOT. ADJUST THROW DOWNWARD APPROXIMATELY 30 DEGREE.
 - M474 INSTALL SUPPLY GRILLE ON BOOT WITH 45 DEGREE ELBOW DOWNWARDS OFF SIDE OF SUPPLY DUCT. ADJUST THROW DOWNWARD APPROXIMATELY 30 DEGREE. PROVIDE AIR BLADES TO SPREAD AIRFLOW ACROSS SPACE.
 - M475 INSTALL SUPPLY GRILLE ON BOTTOM OF SUPPLY DUCT WITH BOOT. ADJUST THROW WITH VERTICAL DUCT TO SPREAD AIRFLOW ACROSS SPACE.





1 FIRST FLOOR HVAC VENTILATION PLAN - AREA B
1/8" = 1'-0"

HVAC VENTILATION MISCELLANEOUS NOTES

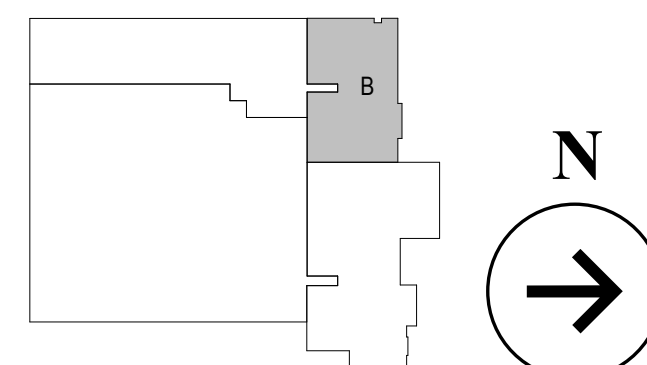
- DRAWINGS ARE SCHEMATIC IN NATURE. MECHANICAL CONTRACTOR SHALL FIELD VERIFY ALL CONDITIONS BEFORE BEGINNING WORK. REPORT DISCREPANCIES TO ARCHITECT AND ENGINEER.
- DO NOT ROUTE DUCTWORK ABOVE OR IN FRONT OF ELECTRICAL GEAR. MAINTAIN CODE REQUIRED CLEARANCES.
- COORDINATE CUTTING AND PATCHING OF ALL SURFACES WITH GENERAL CONTRACTOR.
- PROVIDE ADEQUATE VENTILATION AS PER OWNER AND OSHA TO PROPERLY REMOVE ODORS AND FUMES FROM SPACES WHERE WORK IS BEING PERFORMED TO OUTDOORS.
- FLEXIBLE DUCTWORK SHALL BE LIMITED TO 3'-0" MAXIMUM LENGTH.
- NO FLEXIBLE DUCTWORK IS ALLOWED ON THE RETURN AIR DUCTWORK.
- TEMPERATURE CONTROL CONTRACTOR SHALL PROVIDE ALL LOW VOLTAGE AND LINE VOLTAGE CONTROL WIRING AS REQUIRED FOR COMPLETE OPERATION OF ALL MECHANICAL EQUIPMENT.
- MAINTAIN CURRENT AND ACCURATE FIELD DRAWINGS OF "AS-BUILT" CONDITIONS. THESE DRAWINGS SHALL BE REVIEWED AT EACH CONSTRUCTION PROGRESS MEETING.
- ALL DUCTWORK WHICH NOT LOCATED COMPLETELY WITHIN BUILDING SHALL BE CONSTRUCTED AND INSULATED AS PER SPECIFICATIONS FOR DUCTWORK EXPOSED TO OUTDOORS.
- DUCTWORK ELBOWS SHALL BE OF RADIUS BEND UNLESS SPACE PROHIBITS AS PER SPECIFICATIONS.

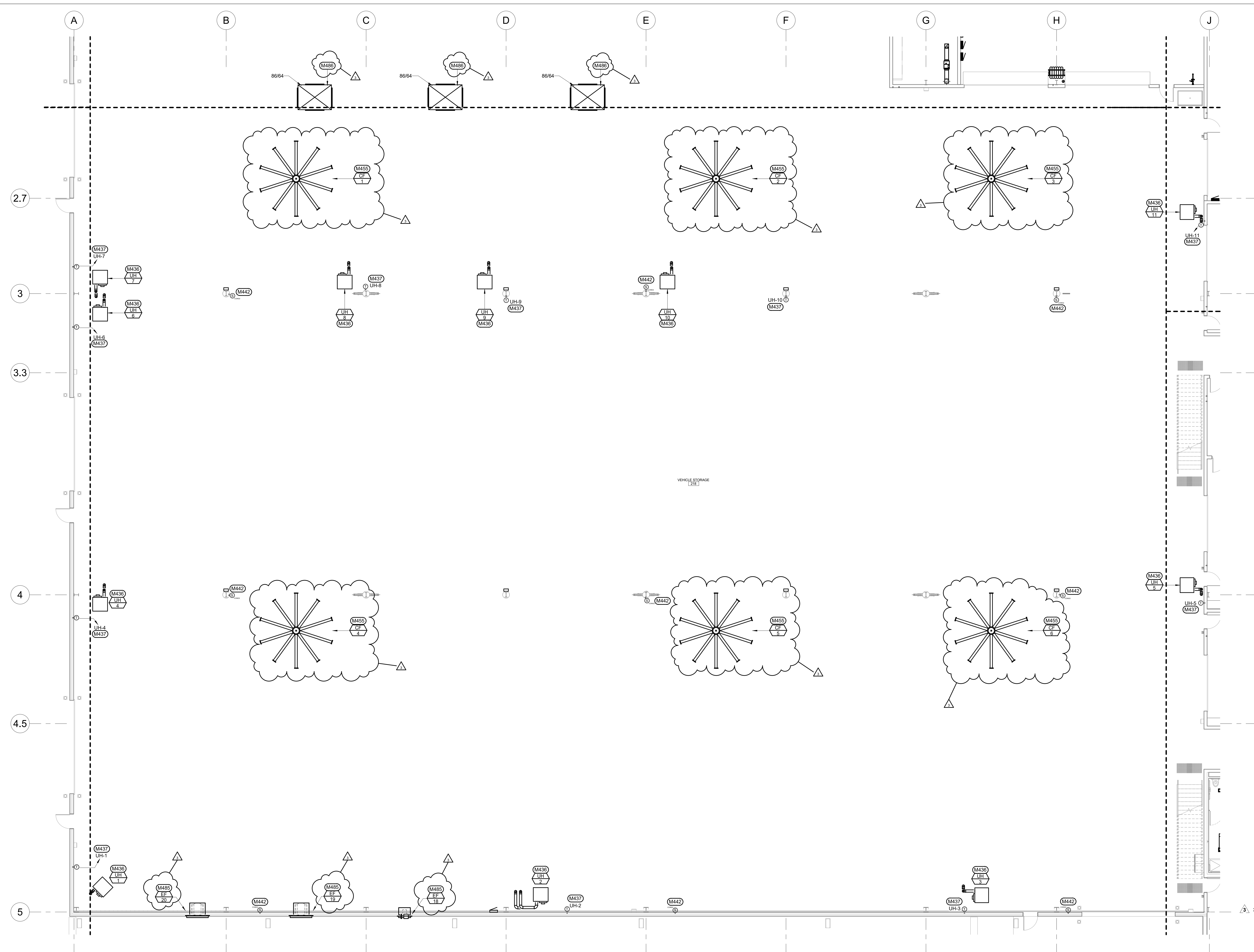
MECHANICAL SPECIFIC NOTES

- SUPPORT FAN COIL UNIT FROM STRUCTURE. MAKE TRANSITION TO FULL SIZE UNIT OPENINGS AS NECESSARY. DUCT CONNECTIONS TO UNIT SHALL BE MADE WITH FLEXIBLE DUCT CONNECTORS.
- MOUNT VAV BOX IN ACCESSIBLE LOCATION. MAINTAIN MANUFACTURER'S RECOMMENDED CLEARANCE. PROVIDE DUCT ACCESS DOOR FOR ACCESS TO REHEAT COIL. ACCESS DOOR SHALL BE LOCATED TO ALLOW FOR MAXIMUM ACCESSIBILITY. SEE VAV DETAIL ON MECHANICAL DETAILS SHEET.
- SUPPORT EXHAUST FAN FROM STRUCTURE. FAN SHALL BE INTERLOCKED WITH LIGHTS IN THE SAME SPACE. ROUTE 6" EA UP TO CURB MOUNTED ROOF CAP. COORDINATE ROOF PENETRATION WITH GENERAL CONTRACTOR.
- SUPPORT INLINE EXHAUST FAN FROM STRUCTURE USING THREADED RODS WITH VIBRATION ISOLATORS. MAKE TRANSITION TO FULL SIZE UNIT OPENINGS AS NECESSARY. DUCT CONNECTIONS TO UNIT SHALL BE MADE WITH FLEXIBLE DUCT CONNECTORS.
- PROVIDE TRANSFER DUCT AS HIGH AS POSSIBLE ABOVE CEILING. SEE RETURN AIR TRANSFER DETAIL ON MECHANICAL DETAILS SHEET.
- PROVIDE FIELD FABRICATED INSULATED RETURN AIR BOOT. SEE DETAIL ON MECHANICAL DETAILS SHEET FOR DETAIL.
- TEMPERATURE CONTROLS CONTRACTOR SHALL PROVIDE LOW VOLTAGE MOTORIZED DAMPER. TERMINATE RETURN AIR DUCT WITH OPEN END. PROVIDE EXPANDED METAL SCREEN OVER OPENING.
- MECHANICAL CONTRACTOR SHALL PROVIDE FIRE DAMPER IN THE HORIZONTAL DUCT INDICATED AT WALL PENETRATION. DAMPER SHALL BE 1.5 HR RATED. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
- 6224 RELIEF AIR DUCT UP TO RELIEF HOOD LOCATED ON ROOF. PROVIDE 8014 OPENINGS ON BOTH SIDES OF DUCT DROP. PROVIDE EXPANDED METAL SCREEN OVER OPENINGS. PROVIDE DRAIN PAN IN BOTTOM OF DUCT. TRANSITION TO HOOD OPENING AS REQUIRED. SEE LOW ROOF PLAN FOR CONTINUATION.
- TERMINATE EXHAUST AIR DUCT WITH OPEN END. PROVIDE EXPANDED METAL SCREEN OVER OPENING.
- SEE ASSOCIATED MEZZANINE LEVEL HVAC VENTILATION PLAN FOR CONTINUATION.
- INSTALL SUPPLY GRILLE ON SIDE OF SUPPLY DUCT WITH BOOT. ADJUST THROW DOWNWARD APPROXIMATELY 30 DEGREES.
- INSTALL SUPPLY GRILLE ON BOOT WITH 45 DEGREE ELBOW DOWNWARD OFF SIDE OF SUPPLY DUCT MAIN. ADJUST THROW WITH VERTICAL BLADES TO SPREAD AIRFLOW ACROSS SPACE.
- INSTALL SUPPLY GRILLE ON BOTTOM OF SUPPLY DUCT WITH BOOT. ADJUST THROW WITH VERTICAL BLADES TO SPREAD AIRFLOW ACROSS SPACE.
- DUCTLESS SPLIT REFRIGERANT PIPING UP THROUGH ROOF. SEE LOW ROOF PLAN FOR CONTINUATION.
- 12/10 UP TO EXHAUST FAN LOCATED ON ROOF. TRANSITION UP TO FULL SIZE OPENING AS REQUIRED. SEE POWER ROOF VENTILATOR DETAIL ON MECHANICAL DETAILS SHEET.
- 6/6 UP TO EXHAUST FAN LOCATED ON ROOF. TRANSITION UP TO FULL SIZE OPENING AS REQUIRED. SEE POWER ROOF VENTILATOR DETAIL ON MECHANICAL DETAILS SHEET.
- 10/8 EA UP. SEE ASSOCIATED MEZZANINE LEVEL HVAC VENTILATION PLAN FOR CONTINUATION.
- 8" ROUND EA UP. SEE ASSOCIATED MEZZANINE LEVEL HVAC VENTILATION PLAN FOR CONTINUATION.
- 14/14 EA UP. SEE ASSOCIATED MEZZANINE LEVEL HVAC VENTILATION PLAN FOR CONTINUATION.
- 20/16 OA UP. SEE ASSOCIATED MEZZANINE LEVEL HVAC VENTILATION PLAN FOR CONTINUATION.
- 20/14 EA UP. SEE ASSOCIATED MEZZANINE LEVEL HVAC VENTILATION PLAN FOR CONTINUATION.
- 22/16 EA UP. SEE ASSOCIATED MEZZANINE LEVEL HVAC VENTILATION PLAN FOR CONTINUATION.



3/27/26 ADDENDUM 6 CHANGES

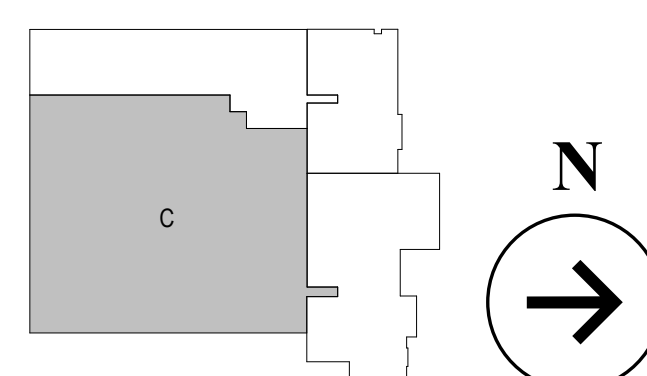


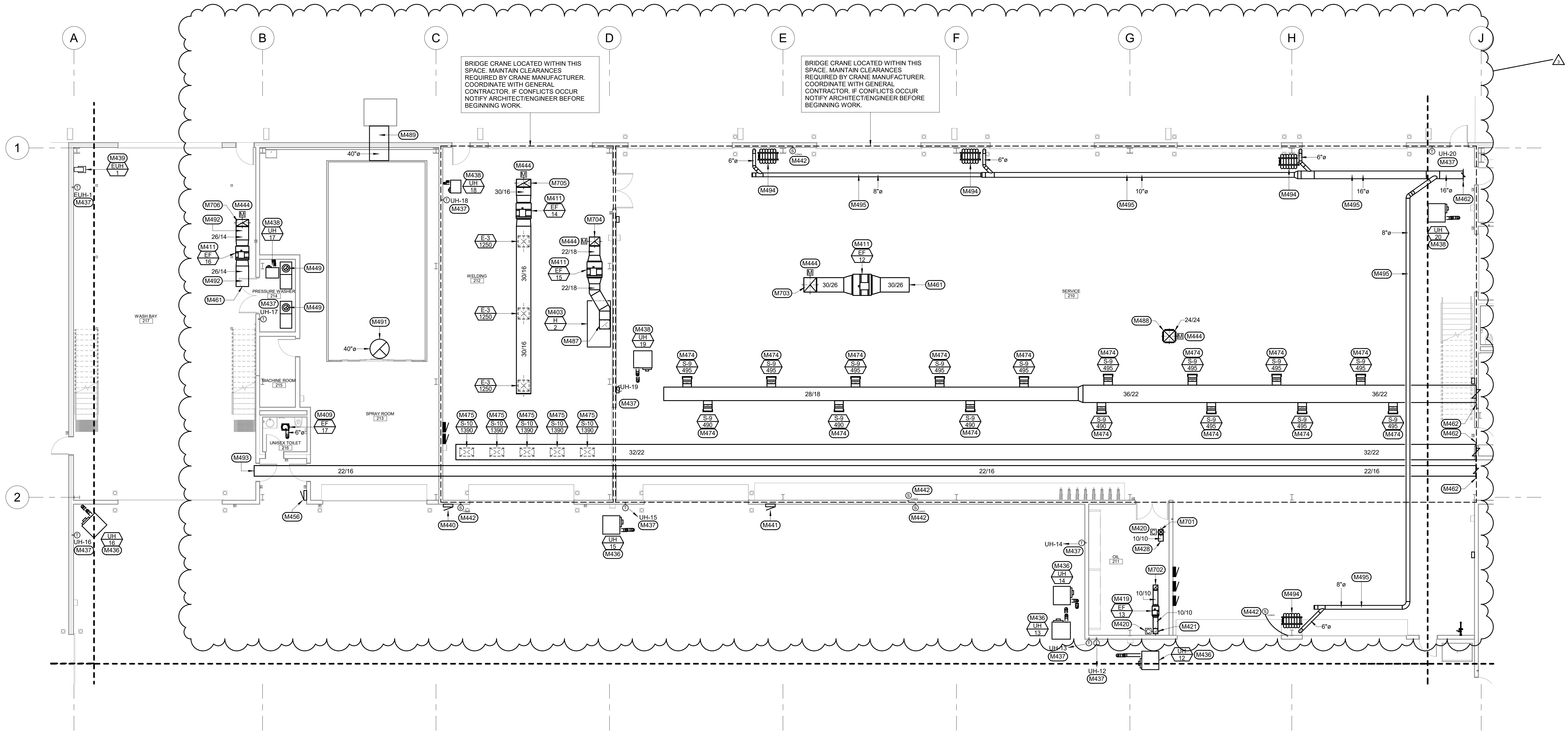


- HVAC VENTILATION MISCELLANEOUS NOTES**
- A. DRAWINGS ARE SCHEMATIC IN NATURE. MECHANICAL CONTRACTOR SHALL FIELD VERIFY ALL CONDITIONS BEFORE BEGINNING WORK. REPORT DISCREPANCIES TO ARCHITECT AND ENGINEER.
 - B. DO NOT ROUTE DUCTWORK ABOVE OR IN FRONT OF ELECTRICAL GEAR. MAINTAIN CODE REQUIRED CLEARANCES.
 - C. COORDINATE CUTTING AND PATCHING OF ALL SURFACES WITH GENERAL CONTRACTOR.
 - D. PROVIDE ADEQUATE VENTILATION AS PER OWNER AND CSBA TO PROPERLY REMOVE ODORS AND FLAMES FROM SPACES WHERE WORK IS BEING PERFORMED TO OUTDOORS.
 - E. FLEXIBLE DUCTWORK SHALL BE LIMITED TO 3'-0" MAXIMUM LENGTH.
 - F. NO FLEXIBLE DUCTWORK IS ALLOWED ON THE RETURN AIR DUCTWORK.
 - G. TEMPERATURE CONTROL CONTRACTOR SHALL PROVIDE ALL LOW VOLTAGE AND LINE VOLTAGE CONTROL WIRING AS REQUIRED FOR COMPLETE OPERATION OF ALL MECHANICAL EQUIPMENT.
 - H. MAINTAIN CURRENT AND ACCURATE FIELD DRAWINGS OF "AS-BUILT" CONDITIONS. THESE DRAWINGS SHALL BE REVIEWED AT EACH CONSTRUCTION PROGRESS MEETING.
 - J. ALL DUCTWORK WHICH NOT LOCATED COMPLETELY WITHIN BUILDING SHALL BE CONSTRUCTED AND INSULATED AS PER SPECIFICATIONS FOR DUCTWORK EXPOSED TO OUTDOORS.
 - K. DUCTWORK ELBOWS SHALL BE OF RADIUS BEND UNLESS SPACE PROHIBITS AS PER SPECIFICATIONS.

- MECHANICAL SPECIFIC NOTES**
- M438 SUSPEND UNIT HEATER FROM STRUCTURE PER MANUFACTURER'S RECOMMENDATIONS. MOUNT UNIT HEATER AT 18'-0" A.F.F. SET LOUVERED DISCHARGE BLADES AT 45 DEGREES DOWNWARD. ROUTE INTAKE AND VENT UP THROUGH ROOF AND TERMINATE PER MANUFACTURER'S RECOMMENDATIONS. SIZE VENT AND INTAKE PIPING PER MANUFACTURER'S RECOMMENDATIONS. SEE GAS VENT DETAIL.
 - M437 MECHANICAL CONTRACTOR SHALL PROVIDE DIGITAL HEATING ONLY THERMOSTAT ON WALL AT 48" A.F.F. THERMOSTAT SHALL BE MOUNTED ON INSULATED BOX WHERE INSTALLED ON AN EXTERIOR WALL. CONTROL WIRING SHALL BE INSTALLED IN CONDUIT.
 - M442 COMBINATION CARBON MONOXIDE/NITROGEN DIOXIDE SENSORS TO BE BRASCH SENSOR AND TRANSMITTER OR APPROVED EQUAL. MOUNT AT 60" A.F.F. MECHANICAL CONTRACTOR SHALL DAISSY CHAIN WIRE ALL TRANSMITTERS BACK TO MAIN GAS DETECTOR PANEL PER MANUFACTURER'S RECOMMENDATIONS.
 - M455 MECHANICAL CONTRACTOR SHALL PROVIDE HIGH VOLUME LOW SPEED FAN MOUNTED FROM MANUFACTURER PROVIDED PURLIN. MOUNTING PURLIN SHALL BE CONNECTED TO PRE-ENGINEERED METAL BUILDING STRUCTURE. COORDINATE METAL BUILDING STRUCTURE WITH GENERAL CONTRACTOR. MOUNT H.V.L.S FAN MOUNTED BETWEEN STRUCTURE AT 21'-0" A.F.F. TO FAN BLADES. FAN TO BE WIRED BACK TO MANUFACTURER PROVIDED CONTROL PANEL. COORDINATE WITH ELECTRICAL CONTRACTOR.
 - M485 PROVIDE WALL MOUNT EXHAUST FAN MOUNTED AT APPROXIMATELY 17'-0" A.F.F. COORDINATE WALL PENETRATION WITH GENERAL CONTRACTOR. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
 - M486 62/24 OUTSIDE AIR DUCT UP TO INTAKE HOOD LOCATED ON ROOF. PROVIDE 60/24 OPENINGS ON FOUR SIDES OF DUCT DROP. PROVIDE EXPANDED METAL SCREEN OVER OPENINGS. PROVIDE DRAIN PAN IN BOTTOM OF DUCT. TRANSITION TO HOOD OPENING AS REQUIRED. SEE HIGH ROOF PLAN FOR CONTINUATION.

① FIRST FLOOR HVAC VENTILATION PLAN - AREA C
1/8" = 1'-0"





1 FIRST FLOOR HVAC VENTILATION PLAN - AREA D
1/8" = 1'-0"

HVAC VENTILATION MISCELLANEOUS NOTES

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- DO NOT ROUTE DUCTWORK ABOVE OR IN FRONT OF ELECTRICAL GEAR. MAINTAIN CODE REQUIRED CLEARANCES.
- COORDINATE CUTTING AND PATCHING OF ALL SURFACES WITH GENERAL CONTRACTOR.
- PROVIDE ADEQUATE VENTILATION AS PER OWNER AND OSHA TO PROPERLY REMOVE ODORS AND FUMES FROM SPACES WHERE WORK IS BEING PERFORMED TO OUTDOORS.
- FLEXIBLE DUCTWORK SHALL BE LIMITED TO 3'-0" MAXIMUM LENGTH.
- NO FLEXIBLE DUCTWORK IS ALLOWED ON THE RETURN AIR DUCTWORK.
- TEMPERATURE CONTROL CONTRACTOR SHALL PROVIDE ALL LOW VOLTAGE AND LINE VOLTAGE CONTROL WIRING AS REQUIRED FOR COMPLETE OPERATION OF ALL MECHANICAL EQUIPMENT.
- MAINTAIN CURRENT AND ACCURATE FIELD DRAWINGS OF "AS-BUILT" CONDITIONS. THESE DRAWINGS SHALL BE REVIEWED AT EACH CONSTRUCTION PROGRESS MEETING.
- ALL DUCTWORK WHICH NOT LOCATED COMPLETELY WITHIN BUILDING SHALL BE CONSTRUCTED AND INSULATED AS PER SPECIFICATIONS FOR DUCTWORK EXPOSED TO OUTDOORS.
- DUCTWORK ELBOWS SHALL BE OF RADIUS BEND UNLESS SPACE PROHIBITS AS PER SPECIFICATIONS.

MECHANICAL SPECIFIC NOTES

- M403 WELDING EXHAUST HOOD SUPPORTED FROM WALL. CONNECT EA DUCT TO HOOD DUCT COLLAR MAKE TRANSITION AS REQUIRED FOR CONNECTION. SEE WELDING EXHAUST BENCH CANOPY HOOD DETAIL.
- M409 SUPPORT EXHAUST FAN FROM STRUCTURE. FAN SHALL BE INTERLOCKED WITH LIGHTS IN THE SAME SPACE. ROUTE 6" EA UP TO CURB MOUNTED ROOF CAP. COORDINATE ROOF PENETRATION WITH GENERAL CONTRACTOR.
- M411 SUPPORT INLINE EXHAUST FAN FROM STRUCTURE USING THREADED RODS WITH VIBRATION ISOLATORS. MAKE TRANSITION TO FULL SIZE UNIT OPENINGS AS NECESSARY. DUCT CONNECTIONS TO UNIT SHALL BE MADE WITH FLEXIBLE DUCT CONNECTORS.
- M419 SUPPORT INLINE EXHAUST FAN FROM STRUCTURE USING THREADED RODS WITH VIBRATION ISOLATORS. INSTALL FAN ABOVE PRECAST LID. MAKE TRANSITION TO FULL SIZE UNIT OPENINGS AS NECESSARY. DUCT CONNECTIONS TO UNIT SHALL BE MADE WITH FLEXIBLE DUCT CONNECTORS.
- M420 MECHANICAL CONTRACTOR SHALL PROVIDE COMBINATION FIRE/SMOKE DAMPER IN THE VERTICAL DUCT AT THE PRECAST LID PENETRATION. DAMPER SHALL BE 3 HR FIRE RATED. DAMPER SHALL BE TIED INTO THE FIRE ALARM SYSTEM. COORDINATE WITH ELECTRICAL CONTRACTOR.
- M421 10/10 EXHAUST AIR DN ALONG WALL THROUGH PRECAST LID. TERMINATE 12 INCHES A.F.F. WITH OPEN END. PROVIDE EXPANDED METAL SCREEN OVER OPENING.
- M428 TERMINATE OUTSIDE AIR DUCT WITH OPEN END. PROVIDE EXPANDED METAL SCREEN OVER OPENING.
- M436 SUSPEND UNIT HEATER FROM STRUCTURE PER MANUFACTURER'S RECOMMENDATIONS. MOUNT UNIT HEATER AT 18'-0" A.F.F. SET LOUVERED DISCHARGE BLADES AT 45 DEGREES DOWNWARD. ROUTE INTAKE AND VENT UP THROUGH ROOF AND TERMINATE PER MANUFACTURER'S RECOMMENDATIONS. SIZE VENT AND INTAKE PIPING PER MANUFACTURER'S RECOMMENDATIONS. SEE GAS VENT DETAIL.
- M437 MECHANICAL CONTRACTOR SHALL PROVIDE DIGITAL HEATING ONLY THERMOSTAT ON WALL AT 48" A.F.F. THERMOSTAT SHALL BE MOUNTED ON INSULATED BOX WHERE INSTALLED ON AN EXTERIOR WALL. CONTROL WIRING SHALL BE INSTALLED IN CONDUIT.
- M438 SUSPEND UNIT HEATER FROM STRUCTURE PER MANUFACTURER'S RECOMMENDATIONS. MOUNT UNIT HEATER AT 14'-0" A.F.F. SET LOUVERED DISCHARGE BLADES AT 45 DEGREES DOWNWARD. ROUTE INTAKE AND VENT UP THROUGH ROOF AND TERMINATE PER MANUFACTURER'S RECOMMENDATIONS. SIZE VENT AND INTAKE PIPING PER MANUFACTURER'S RECOMMENDATIONS. SEE GAS VENT DETAIL.

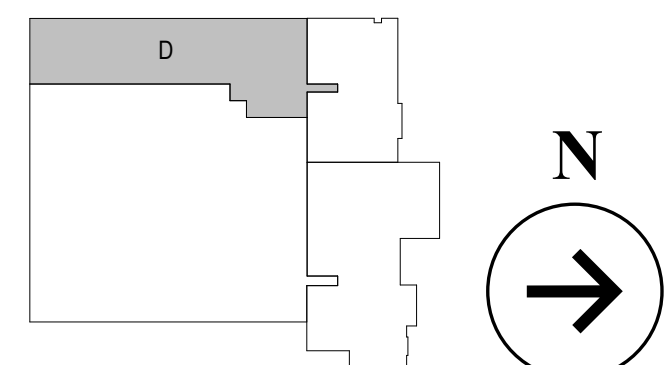
MECHANICAL SPECIFIC NOTES

- M439 MOUNT ELECTRIC UNIT HEATER ON WALL AT 15'-6" A.F.F. WITH MANUFACTURER PROVIDED WALL MOUNT. ADJUST LOUVERED DISCHARGE BLADES DOWNWARD.
- M440 TEMPERATURE CONTROL PANEL. COORDINATE POWER REQUIREMENTS WITH ELECTRICAL CONTRACTOR. COORDINATE EXACT LOCATION WITH GENERAL CONTRACTOR.
- M441 BRASCH GDCP-TOUGH GAS DETECTOR PANEL OR APPROVED EQUAL. PROVIDE EXPANSION PACKS AS REQUIRED. MECHANICAL CONTRACTOR SHALL DAISY CHAIN WIRE ALL TRANSMITTERS BACK TO CONTROL PANEL. BAS SHALL MONITOR ALARM STATUS OF THE CONTROL PANEL FOR CONTROL OF ASSOCIATED HVAC EQUIPMENT.
- M442 COMBINATION CARBON MONOXIDE/NITROGEN DIOXIDE SENSORS TO BE BRASCH SENSOR AND TRANSMITTER OR APPROVED EQUAL. MOUNT AT 60" A.F.F. MECHANICAL CONTRACTOR SHALL DAISY CHAIN WIRE ALL TRANSMITTERS BACK TO MAIN GAS DETECTOR PANEL PER MANUFACTURER'S RECOMMENDATIONS.
- M444 TEMPERATURE CONTROLS CONTRACTOR SHALL PROVIDE LOW VOLTAGE MOTORIZED DAMPER.
- M449 ROUTE 10" CATEGORY I VENT UP FROM PRESSURE WASHER THROUGH ROOF. PROVIDE MOTORIZED DAMPER INTERLOCKED WITH PRESSURE WASHER IN VENTING. SEE GAS VENT DETAIL FOR TERMINATION.
- M456 MECHANICAL CONTRACTOR SHALL PROVIDE HVLS FAN CONTROL PANEL. MOUNT EXPOSED ON WALL AT 48" A.F.F. COORDINATE POWER CONNECTION WITH ELECTRICAL CONTRACTOR.
- M461 TERMINATE EXHAUST AIR DUCT WITH OPEN END. PROVIDE EXPANDED METAL SCREEN OVER OPENING.
- M462 SEE ASSOCIATED MEZZANINE LEVEL HVAC VENTILATION PLAN FOR CONTINUATION.
- M474 INSTALL SUPPLY GRILLE ON BOOT WITH 45 DEGREE ELBOW DOWNWARD OFF SIDE OF SUPPLY DUCT MAIN. ADJUST THROW WITH VERTICAL BLADES TO SPREAD AIRFLOW ACROSS SPACE.
- M475 INSTALL SUPPLY GRILLE ON BOTTOM OF SUPPLY DUCT WITH BOOT. ADJUST THROW WITH VERTICAL BLADES TO SPREAD AIRFLOW ACROSS SPACE.
- M487 22/18 EA DUCT DN ALONG WALL DN TO WELDING HOOD. MAKE TRANSITION TO HOOD CONNECTION AS REQUIRED.
- M488 24/24 OUTSIDE AIR DUCT UP TO INTAKE HOOD LOCATED ON ROOF. PROVIDE 18/12 OPENINGS ON FOUR SIDES OF DUCT DROP. PROVIDE EXPANDED METAL SCREEN OVER OPENINGS. PROVIDE DRAIN PAN IN BOTTOM OF DUCT. TRANSITION TO HOOD OPENING AS REQUIRED. SEE HIGH ROOF PLAN FOR CONTINUATION.

MECHANICAL SPECIFIC NOTES

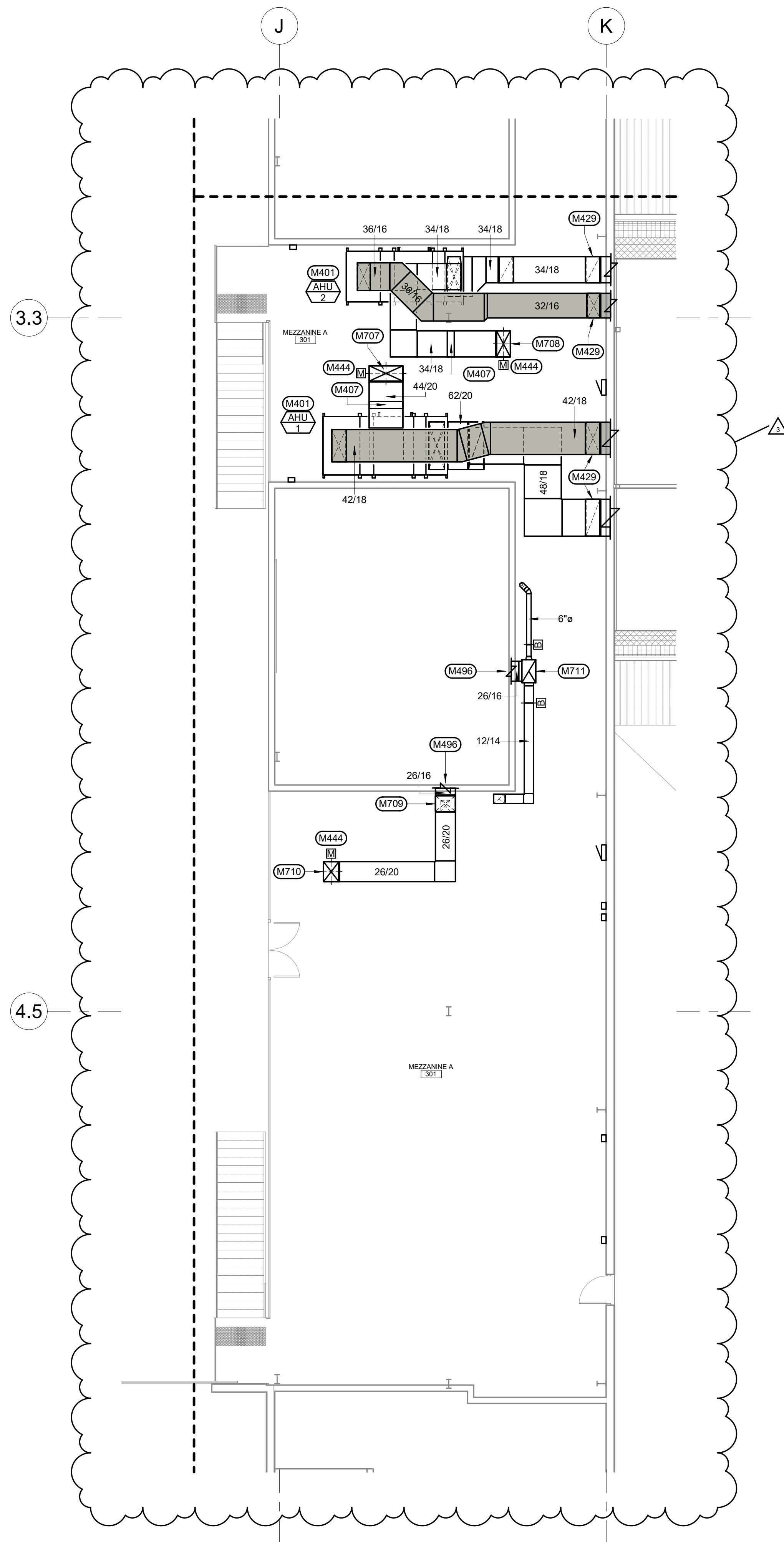
- M489 MECHANICAL CONTRACTOR SHALL PROVIDE 40" ROUND SUPPLY DUCT FROM MAKE-UP AIR UNIT LOCATED OUTSIDE TO CONNECTION ON PAINT BOOTH. MAKE-UP AIR UNIT PROVIDED BY PAINT BOOTH SUPPLIER. COORDINATE CONNECTIONS WITH PAINT BOOTH SUPPLIER.
- M491 MECHANICAL CONTRACTOR SHALL PROVIDE 40" ROUND EXHAUST DUCT FROM CONNECTION ON PAINT BOOTH UP THROUGH ROOF. PAINT BOOTH EXHAUST FAN PROVIDED BY PAINT BOOTH SUPPLIER. COORDINATE CONNECTIONS WITH PAINT BOOTH SUPPLIER. TERMINATE EXHAUST DUCT WITH INDUSTRIAL LOW LEAKAGE GRAVITY BUTTERFLY DAMPER.
- M492 ALL DUCTWORK LOCATED IN WASH BAY SHALL BE ALUMINUM. INSTALL DUCTWORK AND EXHAUST FAN AS HIGH AS POSSIBLE.
- M493 TERMINATE SUPPLY AIR DUCT WITH OPEN END. PROVIDE EXPANDED METAL SCREEN OVER OPENING.
- M494 INSTALL VEHICLE EXHAUST HOSE REEL AT APPROXIMATELY 13'-6" A.F.F. COORDINATE EXACT ELEVATION WITH OVERHEAD CRANE AND OVERHEAD DOORS. MECHANICAL CONTRACTOR SHALL PROVIDE WIRING FROM MICROSWITCH ON HOSE REEL TO EXHAUST FAN CONTROL PANEL AT VEHICLE EXHAUST FAN.
- M495 ROUTE VEHICLE EXHAUST DUCTWORK AS HIGH AS POSSIBLE. COORDINATE EXACT ELEVATION WITH OVERHEAD CRANE AND OVERHEAD DOORS. PROVIDE 6" HARD DUCT DROPS DN TO EACH HOSE REEL AS SHOWN.
- M701 10/10 OA DUCT UP TO INTAKE HOOD. TRANSITION TO HOOD OPENING AS REQUIRED. SEE HIGH ROOF PLAN FOR CONTINUATION.
- M702 10/10 EA DUCT UP TO RELIEF HOOD. TRANSITION TO HOOD OPENING AS REQUIRED. SEE HIGH ROOF PLAN FOR CONTINUATION.
- M703 30/26 EA DUCT UP TO RELIEF HOOD. TRANSITION TO HOOD OPENING AS REQUIRED. SEE HIGH ROOF PLAN FOR CONTINUATION.
- M704 22/18 EA DUCT UP TO RELIEF HOOD. TRANSITION TO HOOD OPENING AS REQUIRED. SEE HIGH ROOF PLAN FOR CONTINUATION.
- M705 30/16 EA DUCT UP TO RELIEF HOOD. TRANSITION TO HOOD OPENING AS REQUIRED. SEE HIGH ROOF PLAN FOR CONTINUATION.
- M706 26/14 EA DUCT UP TO RELIEF HOOD. TRANSITION TO HOOD OPENING AS REQUIRED. SEE HIGH ROOF PLAN FOR CONTINUATION.

3/27/26 ADDENDUM 6 CHANGES

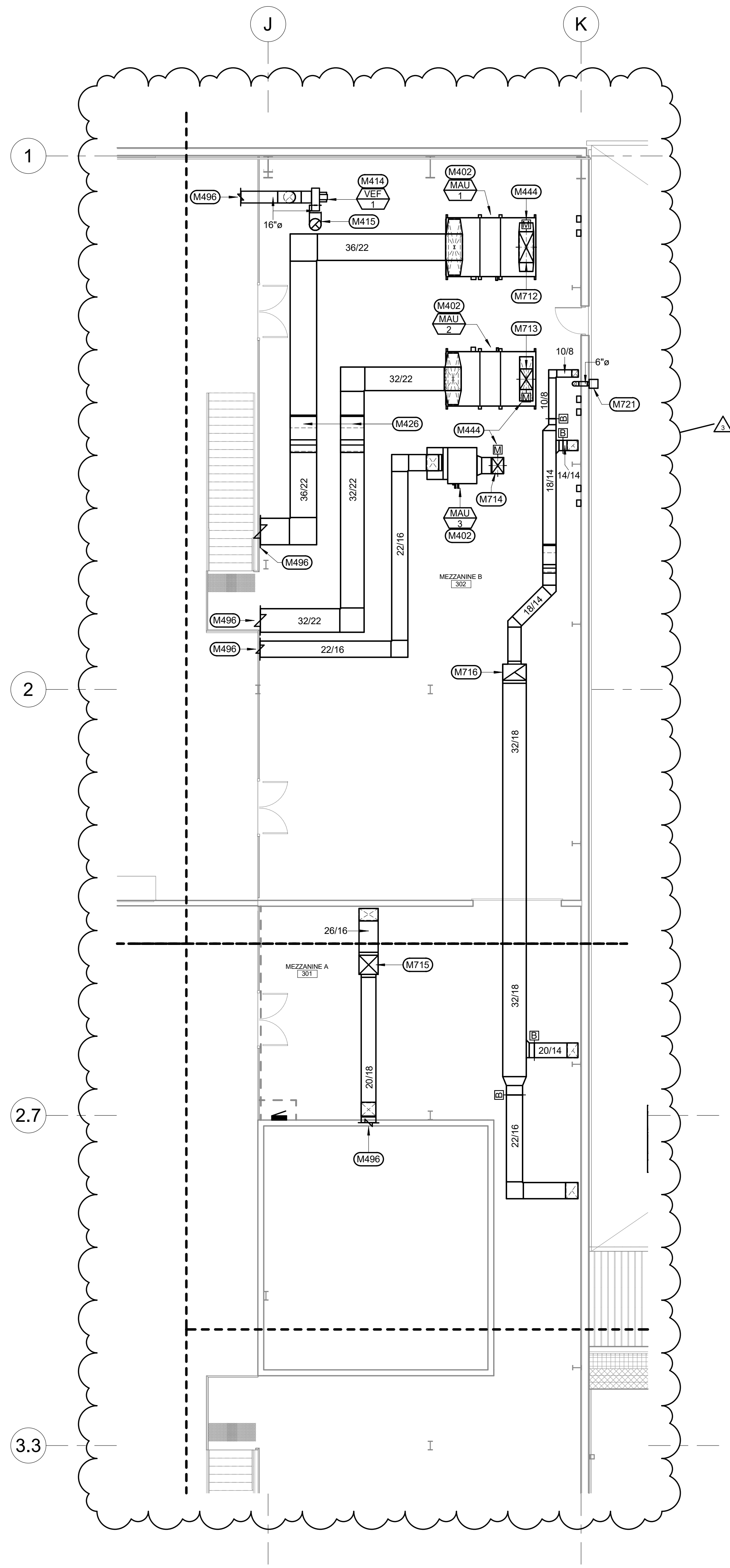


Plans for ABERDEEN PUBLIC WORKS Maintenance Building Aberdeen	FIRST FLOOR HVAC VENTILATION PLAN - AREA D	Revision: NC Project: NC Date: 02/20/26 8823045
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① MEZZANINE FLOOR HVAC VENTILATION PLAN - AREA A
1/8" = 1'-0"



② MEZZANINE FLOOR HVAC VENTILATION PLAN - AREA B
1/8" = 1'-0"

HVAC VENTILATION MISCELLANEOUS NOTES

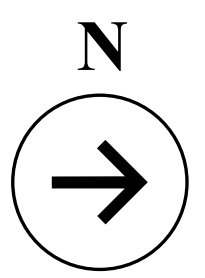
- DRAWINGS ARE SCHEMATIC IN NATURE. MECHANICAL CONTRACTOR SHALL FIELD VERIFY ALL CONDITIONS BEFORE BEGINNING WORK. REPORT DISCREPANCIES TO ARCHITECT AND ENGINEER.
- DO NOT ROUTE DUCTWORK ABOVE OR IN FRONT OF ELECTRICAL GEAR. MAINTAIN CODE REQUIRED CLEARANCES.
- COORDINATE CUTTING AND PATCHING OF ALL SURFACES WITH GENERAL CONTRACTOR.
- PROVIDE ADEQUATE VENTILATION AS PER OWNER AND OSHA TO PROPERLY REMOVE ODORS AND FUMES FROM SPACES WHERE WORK IS BEING PERFORMED TO OUTDOORS.
- FLEXIBLE DUCTWORK SHALL BE LIMITED TO 3'-0" MAXIMUM LENGTH.
- NO FLEXIBLE DUCTWORK IS ALLOWED ON THE RETURN AIR DUCTWORK.
- TEMPERATURE CONTROL CONTRACTOR SHALL PROVIDE ALL LOW VOLTAGE AND LINE VOLTAGE CONTROL WIRING AS REQUIRED FOR COMPLETE OPERATION OF ALL MECHANICAL EQUIPMENT.
- MAINTAIN CURRENT AND ACCURATE FIELD DRAWINGS OF "AS-BUILT" CONDITIONS. THESE DRAWINGS SHALL BE REVIEWED AT EACH CONSTRUCTION PROGRESS MEETING.
- ALL DUCTWORK WHICH NOT LOCATED COMPLETELY WITHIN BUILDING SHALL BE CONSTRUCTED AND INSULATED AS PER SPECIFICATIONS FOR DUCTWORK EXPOSED TO OUTDOORS.
- DUCTWORK ELBOWS SHALL BE OF RADIUS BEND UNLESS SPACE PROHIBITS AS PER SPECIFICATIONS.

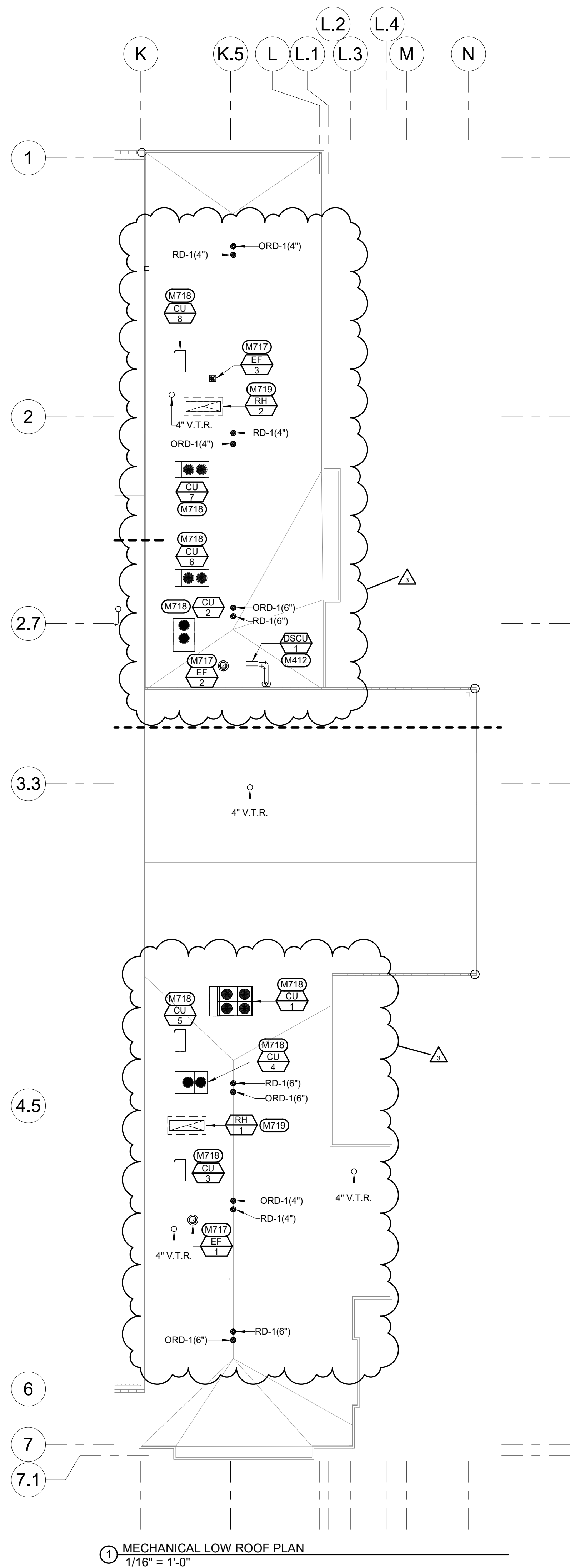
MECHANICAL SPECIFIC NOTES

- CONNECT SUPPLY AIR, FRESH AIR, AND RETURN AIR TO AIR HANDLING UNIT. MAKE TRANSITION FROM DUCT SIZE INDICATED TO FULL SIZE UNIT OPENINGS AS NECESSARY. DUCT CONNECTIONS TO AIR HANDLING UNIT SHALL BE MADE WITH FLEXIBLE DUCT CONNECTORS. MOUNT AIR HANDLING UNIT ON 4" THICK CONCRETE HOUSEKEEPING PADS. PADS SHOULD BE MINIMUM OF 6" LARGER THAN UNIT IN ALL DIMENSIONS. COORDINATE PAD WITH GENERAL CONTRACTOR.
- CONNECT SUPPLY AIR AND FRESH AIR TO MAKE-UP AIR UNIT. MAKE TRANSITION FROM DUCT SIZE INDICATED TO FULL SIZE UNIT OPENINGS AS NECESSARY. DUCT CONNECTIONS TO AIR HANDLING UNIT SHALL BE MADE WITH FLEXIBLE DUCT CONNECTORS. MOUNT MAKE-UP AIR UNIT ON 4" THICK CONCRETE HOUSEKEEPING PADS. PADS SHOULD BE MINIMUM OF 6" LARGER THAN UNIT IN ALL DIMENSIONS. COORDINATE PAD WITH GENERAL CONTRACTOR.
- TEMPERATURE CONTROLS CONTRACTOR SHALL PROVIDE AIR FLOW MEASURING STATION IN OUTSIDE AIR DUCTWORK IN THIS APPROXIMATE LOCATION. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
- INSTALL VEHICLE EXHAUST UTILITY SET FAN ON MEZZANINE FLOOR. INSTALL PER MANUFACTURER'S RECOMMENDATIONS. INSTALL CONTROL PANEL ON WALL NEAR FAN.
- 16" EA DUCT FROM OUTLET OF UTILITY SET FAN ROUTED UP THROUGH ROOF. SEE HIGH ROOF PLAN FOR CONTINUATION.
- OFFSET DUCTWORK AS REQUIRED TO AVOID CONFLICT WITH STRUCTURE OR OTHER TRADES. ROUTE MEDIUM PRESSURE SA AND LOW PRESSURE RETURN AIR DUCTWORK DN ALONG WALL AND ELBOW THROUGH WALL INTO OFFICE AREA. SEE ASSOCIATED FIRST FLOOR HVAC VENTILATION PLAN FOR CONTINUATION.
- TEMPERATURE CONTROLS CONTRACTOR SHALL PROVIDE LOW VOLTAGE MOTORIZED DAMPER.
- SEE ASSOCIATED FIRST FLOOR HVAC VENTILATION PLAN FOR CONTINUATION.
- 44/20 OA DUCT UP TO INTAKE HOOD. TRANSITION TO HOOD OPENING AS REQUIRED. SEE HIGH ROOF PLAN FOR CONTINUATION.
- 34/18 OA DUCT UP TO INTAKE HOOD. TRANSITION TO HOOD OPENING AS REQUIRED. SEE HIGH ROOF PLAN FOR CONTINUATION.
- 26/20 OA DUCT DN ALONG WALL. 26/16 BRANCH OFF FROM VERTICAL DROP. CONTINUE DN WITH 14/12 THROUGH MEZZANINE FLOOR. SEE ASSOCIATED FIRST FLOOR HVAC VENTILATION PLAN FOR CONTINUATION.
- 26/20 OA DUCT UP TO INTAKE HOOD. TRANSITION TO HOOD OPENING AS REQUIRED. SEE HIGH ROOF PLAN FOR CONTINUATION.
- 30/18 EA DUCT UP TO RELIEF HOOD. TRANSITION TO HOOD OPENING AS REQUIRED. SEE HIGH ROOF PLAN FOR CONTINUATION.
- 20/42 OA DUCT UP TO INTAKE HOOD. TRANSITION TO HOOD OPENING AS REQUIRED. SEE HIGH ROOF PLAN FOR CONTINUATION.
- 18/28 OA DUCT UP TO INTAKE HOOD. TRANSITION TO HOOD OPENING AS REQUIRED. SEE HIGH ROOF PLAN FOR CONTINUATION.
- 16/22 OA DUCT UP TO INTAKE HOOD. TRANSITION TO HOOD OPENING AS REQUIRED. SEE HIGH ROOF PLAN FOR CONTINUATION.
- 26/26 OA DUCT UP TO INTAKE HOOD. TRANSITION TO HOOD OPENING AS REQUIRED. SEE HIGH ROOF PLAN FOR CONTINUATION.
- 22/32 EA DUCT UP TO RELIEF HOOD. TRANSITION TO HOOD OPENING AS REQUIRED. SEE HIGH ROOF PLAN FOR CONTINUATION.
- 6" ROUND EA DUCT TO WALL CAP. SEAL WALL PENETRATION WEATHER TIGHT. COORDINATE WITH GENERAL CONTRACTOR.



3/27/26 ADDENDUM 6 CHANGES





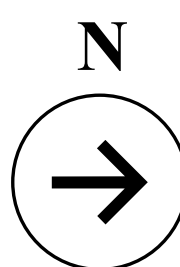
1 MECHANICAL LOW ROOF PLAN
1/16" = 1'-0"

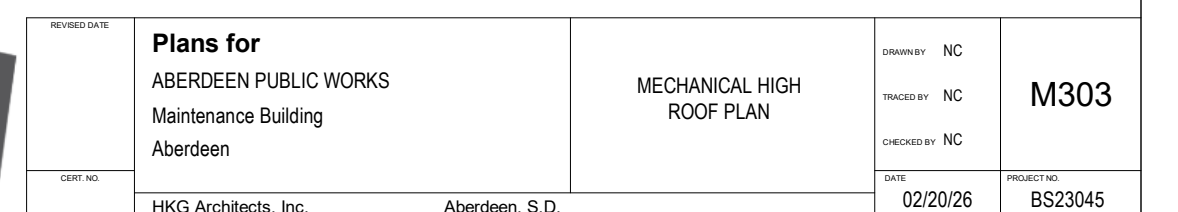
- PLUMBING MISCELLANEOUS NOTES**
- A DRAWINGS ARE SCHEMATIC IN NATURE. MECHANICAL CONTRACTOR SHALL FIELD VERIFY ALL CONDITIONS BEFORE BEGINNING WORK. REPORT DISCREPANCIES TO ARCHITECT AND ENGINEER.
- B DO NOT ROUTE PIPING ABOVE OR IN FRONT OF ELECTRICAL GEAR. MAINTAIN CODE REQUIRED CLEARANCES.
- C PROVIDE AND INSTALL INDIVIDUAL SHUT OFF VALVES TO ALL WALL HYDRANTS AND HOSE BIBS. INSTALL SHUT OFF VALVES IN AN ACCESSIBLE LOCATION.
- D MAINTAIN CURRENT AND ACCURATE FIELD DRAWINGS OF "AS-BUILT" CONDITIONS. THESE DRAWINGS SHALL BE REVIEWED AT EACH CONSTRUCTION PROGRESS MEETING.
- E COORDINATE LOCATIONS OF ALL SERVICES WITH SITE CONTRACTOR.

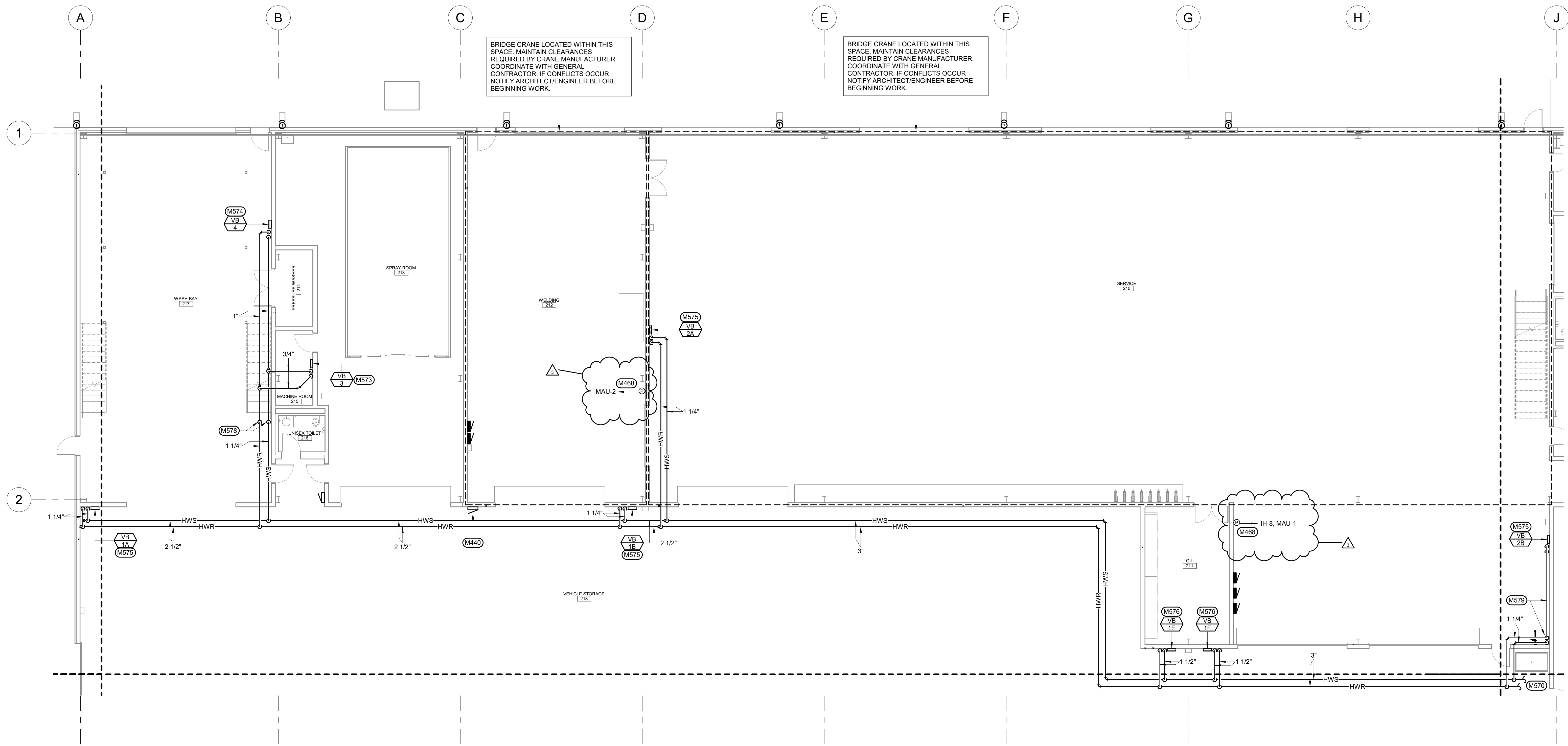
- HVAC VENTILATION MISCELLANEOUS NOTES**
- A DRAWINGS ARE SCHEMATIC IN NATURE. MECHANICAL CONTRACTOR SHALL FIELD VERIFY ALL CONDITIONS BEFORE BEGINNING WORK. REPORT DISCREPANCIES TO ARCHITECT AND ENGINEER.
- B DO NOT ROUTE DUCTWORK ABOVE OR IN FRONT OF ELECTRICAL GEAR. MAINTAIN CODE REQUIRED CLEARANCES.
- C COORDINATE CUTTING AND PATCHING OF ALL SURFACES WITH GENERAL CONTRACTOR.
- D PROVIDE ADEQUATE VENTILATION AS PER OWNER AND OSHA TO PROPERLY REMOVE ODORS AND FUMES FROM SPACES WHERE WORK IS BEING PERFORMED TO OUTDOORS.
- E FLEXIBLE DUCTWORK SHALL BE LIMITED TO 3'-0" MAXIMUM LENGTH.
- F NO FLEXIBLE DUCTWORK IS ALLOWED ON THE RETURN AIR DUCTWORK.
- G TEMPERATURE CONTROL CONTRACTOR SHALL PROVIDE ALL LOW VOLTAGE AND LINE VOLTAGE CONTROL WIRING AS REQUIRED FOR COMPLETE OPERATION OF ALL MECHANICAL EQUIPMENT.
- H MAINTAIN CURRENT AND ACCURATE FIELD DRAWINGS OF "AS-BUILT" CONDITIONS. THESE DRAWINGS SHALL BE REVIEWED AT EACH CONSTRUCTION PROGRESS MEETING.
- J ALL DUCTWORK WHICH NOT LOCATED COMPLETELY WITHIN BUILDING SHALL BE CONSTRUCTED AND INSULATED AS PER SPECIFICATIONS FOR DUCTWORK EXPOSED TO OUTDOORS.
- K DUCTWORK ELBOWS SHALL BE OF RADIUS BEND UNLESS SPACE PROHIBITS AS PER SPECIFICATIONS.

- MECHANICAL SPECIFIC NOTES**
- M412 MOUNT DUCTLESS SPLIT CONDENSING UNIT ON MANUFACTURER'S STAND. MOUNT STAND ON TREATED 4X4 WOOD RAILS. BOLT STAND TO WOOD RAILS. PROVIDE AN EXTRA LAYER OF NEOPRENE ROOF MATERIAL UNDER THE WOOD RAILS TO PROTECT ROOFING SYSTEM. MAINTAIN MANUFACTURER'S RECOMMENDED CLEARANCE. ROUTE REFRIGERANT PIPING TO ASSOCIATED INDOOR UNIT. SIZE PIPING PER MANUFACTURER'S RECOMMENDATIONS.
- M717 SEE POWER ROOF VENTILATOR DETAIL ON MECHANICAL DETAILS SHEET.
- M718 MOUNT CONDENSING UNIT ON EQUIPMENT CURBS. SEE EQUIPMENT CURB DETAIL ON MECHANICAL DETAILS SHEET. COORDINATE WITH GENERAL CONTRACTOR.
- M719 SEE GRAVITY VENTILATOR DETAIL ON MECHANICAL DETAILS SHEET.

3/27/26 ADDENDUM 6 CHANGES





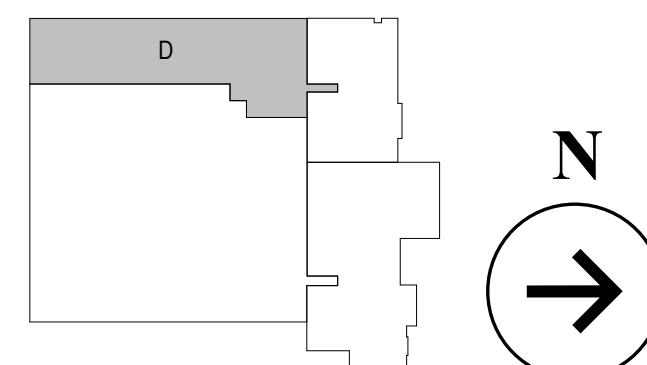


1 FIRST FLOOR HVAC PIPING PLAN - AREA D
1/8" = 1'-0"

- HVAC PIPING MISCELLANEOUS NOTES**
- A. DRAWINGS ARE SCHEMATIC IN NATURE. MECHANICAL CONTRACTOR SHALL FIELD VERIFY ALL CONDITIONS BEFORE BEGINNING WORK. REPORT DISCREPANCIES TO ARCHITECT/ENGINEER.
 - B. DO NOT ROUTE PIPING ABOVE OR IN FRONT OF ELECTRICAL GEAR. MAINTAIN CODE REQUIRED CLEARANCES.
 - C. COORDINATE PIPING LAYOUTS WITH ALL TRADES. PROVIDE OFFSET AS REQUIRED TO AVOID CONFLICT.
 - D. PROVIDE ADEQUATE VENTILATION AS PER OWNER AND OSHA TO PROPERLY REMOVE ODORS AND FUMES FROM SPACES WHERE WORK IS BEING PERFORMED TO OUTDOORS.
 - K. COORDINATE LOCATION OF ALL UNDER FLOOR PIPING WITH GENERAL CONTRACTOR BEFORE FLOOR IS POURED.
 - L. NO BUGGIES WILL BE ALLOWED TO RUN OVER INFLOOR PIPING WHILE FLOOR IS BEING POURED.
 - M. CONTRACTOR SHALL PROVIDE AN AUTOCAD OR ELECTRONIC PIPING LAYOUT TO ENGINEER FOR APPROVAL BEFORE ANY PIPING IS INSTALLED.
 - N. MAINTAIN CURRENT AND ACCURATE FIELD DRAWINGS OF "AS-BUILT" CONDITIONS. THESE DRAWINGS SHALL BE REVIEWED AT EACH CONSTRUCTION PROGRESS MEETING.

- MECHANICAL SPECIFIC NOTES**
- M440 TEMPERATURE CONTROL PANEL. COORDINATE POWER REQUIREMENTS WITH ELECTRICAL CONTRACTOR. COORDINATE EXACT LOCATION WITH GENERAL CONTRACTOR.
 - M468 TEMPERATURE CONTROLS CONTRACTOR SHALL PROVIDE BUILDING PRESSURE SENSOR ON WALL AT 48" A.F.F.
 - M570 SEE ASSOCIATED MEZZANINE LEVEL HVAC PIPING PLAN FOR CONTINUATION.
 - M573 3/4" HWS/R DN TO IN-FLOOR HEAT MANIFOLD. TEMPERATURE CONTROLS CONTRACTOR SHALL PROVIDE A SINGLE MODULATING 3-WAY CONTROL VALVE TO SERVE THE MANIFOLD. MECHANICAL CONTRACTOR SHALL PROVIDE A SHUT OFF VALVE AND STRAINER ON THE SUPPLY TO THE MANIFOLD AND A SHUT-OFF VALVE AND MANUAL BALANCING VALVE ON THE RETURN FROM THE MANIFOLD. SEE ASSOCIATED IN-FLOOR HEAT PIPING SHEETS. SEE IN-FLOOR HEAT DETAILS ON MECHANICAL DETAILS SHEETS.
 - M574 1" HWS/R DN TO IN-FLOOR HEAT MANIFOLD. TEMPERATURE CONTROLS CONTRACTOR SHALL PROVIDE A SINGLE MODULATING 3-WAY CONTROL VALVE TO SERVE THE MANIFOLD. MECHANICAL CONTRACTOR SHALL PROVIDE A SHUT OFF VALVE AND STRAINER ON THE SUPPLY TO THE MANIFOLD AND A SHUT-OFF VALVE AND MANUAL BALANCING VALVE ON THE RETURN FROM THE MANIFOLD. SEE ASSOCIATED IN-FLOOR HEAT PIPING SHEETS. SEE IN-FLOOR HEAT DETAILS ON MECHANICAL DETAILS SHEETS.
 - M575 1-1/4" HWS/R DN TO IN-FLOOR HEAT MANIFOLD. TEMPERATURE CONTROLS CONTRACTOR SHALL PROVIDE A SINGLE MODULATING 3-WAY CONTROL VALVE TO SERVE THE MANIFOLD. MECHANICAL CONTRACTOR SHALL PROVIDE A SHUT OFF VALVE AND STRAINER ON THE SUPPLY TO THE MANIFOLD AND A SHUT-OFF VALVE AND MANUAL BALANCING VALVE ON THE RETURN FROM THE MANIFOLD. SEE ASSOCIATED IN-FLOOR HEAT PIPING SHEETS. SEE IN-FLOOR HEAT DETAILS ON MECHANICAL DETAILS SHEETS.
 - M576 1-1/2" HWS/R DN TO IN-FLOOR HEAT MANIFOLD. TEMPERATURE CONTROLS CONTRACTOR SHALL PROVIDE A SINGLE MODULATING 3-WAY CONTROL VALVE TO SERVE THE MANIFOLD. MECHANICAL CONTRACTOR SHALL PROVIDE A SHUT OFF VALVE AND STRAINER ON THE SUPPLY TO THE MANIFOLD AND A SHUT-OFF VALVE AND MANUAL BALANCING VALVE AND PT PORTS ON THE RETURN FROM THE MANIFOLD. SEE ASSOCIATED IN-FLOOR HEAT PIPING SHEETS. SEE IN-FLOOR HEAT DETAILS ON MECHANICAL DETAILS SHEETS.
 - M578 OFFSET PIPING DOWN TO MAINTAIN PIPE ROUTING BELOW CEILING.
 - M579 ROUTE 1-1/4" HWS/R PIPING DOWN ALONG WALL. ROUTE PIPING STACKED ALONG WALL AS SHOWN AT APPROX 106" A.F.F.

- 2 3/20/26 ADDENDUM 3 CHANGES
- 3 3/27/26 ADDENDUM 6 CHANGES



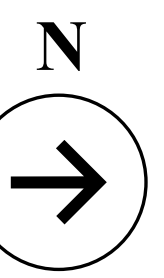
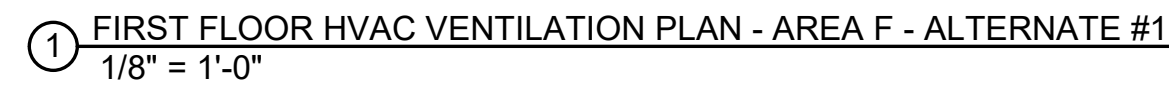
HVAC VENTILATION MISCELLANEOUS NOTES

- A DRAWINGS ARE SCHEMATIC IN NATURE. MECHANICAL CONTRACTOR SHALL FIELD VERIFY ALL CONDITIONS BEFORE BEGINNING WORK. REPORT DISCREPANCIES TO ARCHITECT AND ENGINEER.
- B DO NOT ROUTE DUCTWORK ABOVE OR IN FRONT OF ELECTRICAL GEAR. MAINTAIN CODE REQUIRED CLEARANCES.
- C COORDINATE CUTTING AND PATCHING OF ALL SURFACES WITH GENERAL CONTRACTOR.
- D PROVIDE ADEQUATE VENTILATION AS PER OWNER AND OSHA TO PROPERLY REMOVE ODORS AND FUMES FROM SPACES WHERE WORK IS BEING PERFORMED TO OUTDOORS.
- E FLEXIBLE DUCTWORK SHALL BE LIMITED TO 3'-0" MAXIMUM LENGTH.
- F NO FLEXIBLE DUCTWORK IS ALLOWED ON THE RETURN AIR DUCTWORK.
- G TEMPERATURE CONTROL CONTRACTOR SHALL PROVIDE ALL VOLTAGE AND LINE VOLTAGE CONTROL WIRING AS REQUIRED FOR COMPLETE OPERATION OF ALL MECHANICAL EQUIPMENT.
- H VERIFY CURRENTLY EXISTING ACCURATE FIELD DRAWINGS OF "AS-BUILT" CONDITIONS. THESE DRAWINGS SHALL BE REVIEWED AT EACH CONSTRUCTION PROGRESS MEETING.
- I ALL DUCTWORK WHICH IS NOT LOCATED COMPLETELY WITHIN BUILDING SHALL BE PROPERLY SEALED AND INSULATED AS PER SPECIFICATIONS FOR DUCTWORK EXPOSED TO OUTDOOR AIR.
- K DUCTWORK ELBOWS SHALL BE OF RADIUS BEND UNLESS SPEC AS PROHIBITS AS PER SPECIFICATIONS.

- A DRAWINGS ARE SCHEMATIC IN NATURE. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR IDENTIFYING CONDITIONS BEFORE BEGINNING WORK. REPORT DISCREPANCIES TO ARCHITECT AND ENGINEER.
- B DO NOT ROUTE DUCTWORK ABOVE OR IN FRONT OF ELECTRICAL GEAR. MAINTAIN CODE REQUIRED CLEARANCES.
- C COORDINATE CUTTING AND PATCHING OF ALL SURFACES WITH GENERAL CONTRACTOR.
- D PROVIDE ADEQUATE VENTILATION AS PER OWNER AND CODE TO PROPERLY EXHAUST DOORS AND FUMES FROM SPACES WHERE WORK IS BEING PERFORMED TO OUTDOORS.
- E FLEXIBLE DUCTWORK SHALL BE LIMITED TO 3'-0" MAXIMUM LENGTH.
- F NO FLEXIBLE DUCTWORK IS ALLOWED ON THE RETURN AIR OUTLET.
- G TEMPERATURE CONTROL CONTRACTOR SHALL PROVIDE ALL LOW VOLTAGE AND LINE VOLTAGE CONTROL WIRING AND WIRING DEVICES FOR THE PROPER OPERATION OF ALL MECHANICAL EQUIPMENT.
- H MAINTAIN CURRENT AND ACCURATE FIELD DRAWINGS OF WORK CONDITIONS. ALL THE CONSTRUCTION SHALL BE REVIEWED AT EACH CONSTRUCTION PROGRESS MEETING.
- J ALL DUCTWORK WHICH NOT LOCATED COMPLETELY INSIDE BUILDING SHALL BE PROPERLY INSULATED AND INSULATED AS PER SPECIFICATIONS FOR DUCTWORK EXPOSED TO OUTDOORS.
- K DUCTWORK ELBOW SHALL BE OF RADIUS BEND UNLESS SPEC PROHIBITS AS PER SPECIFICATIONS.

MECHANICAL SPECIFIC NOTES	
M436	SUSPEND UNIT HEATER FROM STRUCTURE PER MANUFACTURER'S RECOMMENDATIONS. MOUNT UNIT HEATER AT 18" ABOVE FLOOR. DISCHARGE BLADES AT 45 DEGREES DOWNWARD. ROUTE INTAKE AND VENT UP THROUGH ROOF AND PROVIDE COMPLETE PER MANUFACTURER'S RECOMMENDATIONS. SIZE VENT AND INTAKE PIPING PER MANUFACTURER'S RECOMMENDATIONS. SEE GAS VENT DETAIL.
M437	MECHANICAL CONTRACTOR SHALL PROVIDE DIGITAL HEATING ONLY THERMOSTAT ON WALL AT 48" A.F.F. THERMOSTAT SHALL BE MOUNTED ON INSULATED BOARD. PROVIDE INSTANT-ON THERMOSTAT. WIRE CONTROL WIRING SHALL BE INSTALLED IN CONDUIT.
M440	TEMPERATURE CONTROL PANEL. COORDINATE WITH OWNER REQUIREMENTS. PROVIDE TIE BACK TO MAIN GAS CONTRACTOR. COORDINATE EXIST LOCATION WITH GENERAL CONTRACTOR.
M442	COMBINATION CARBON MONOXIDE/NITROGEN DETECTOR. PROVIDE 1" BRASS/CS SENSOR AND TRANSMITTER OR APPROVED EQUIV. MOUNT AT 60" A.F.F. MECHANICAL CONTRACTOR SHALL DAISY CHAIN ALL TIE BACKS TO MAIN GAS CONTRACTOR. PROVIDE DETECTOR PANEL PER MANUFACTURER'S RECOMMENDATIONS.
M444	TEMPERATURE CONTROLS CONTRACTOR SHALL PROVIDE LOW VOLTAGE MOTORIZED DAMPER.
M450	PROVIDE IN SCOPE OF AID ALTERNATE #1.
M450S	PROVIDE WALL MOUNT EXHAUST PAN MOUNTED AT APPROXIMATELY 6' TO 6'6" ABOVE FLOOR. WALL PENETRATION WITH GENERAL CONTRACTOR. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
M725	10/10 OUTSIDE AIR DUCT UP TO INTAKE HOOD LOCATED ON ROOF. PROVIDE 8" OPENINGS ON FOUR SIDES OF DUCT DROP. PROVIDE EXPANDED POLY STAINLESS STEEL SCREEN OVER OPENINGS. DRAIN PAN IN BOTTOM OF DUCT. TRANSITION TO HOOD AS REQUIRED. SEE HIGH ROOF PLAN FOR CONTINUATION.
M725S	32/20 OUTSIDE AIR DUCT UP TO INTAKE HOOD LOCATED ON ROOF. PROVIDE 16/16 OPENINGS ON FOUR SIDES OF DUCT. PROVIDE EXPANDED POLY METAL SCREEN OVER OPENINGS. PROVIDE DRAIN PAN IN BOTTOM OF DUCT. TRANSITION TO HOOD AS REQUIRED. SEE HIGH ROOF PLAN FOR CONTINUATION.

- M436 SUSPEND UNIT HANGER FROM STRUCTURE PER MANUFACTURER'S RECOMMENDATIONS. COORDINATE UNIT HANGER AT 18" O.A.F.F. SET LOWEST DISCHARGE BLADES AT 45 DEGREES DOWNWARD TO INTAKE AND EXHAUST. COORDINATE WITH CONTRACTOR AND TERMINATE PER MANUFACTURER'S RECOMMENDATIONS. SIZE VENT AND INTAKE PIPING PER MANUFACTURER'S RECOMMENDATIONS. SEE GAS VENT DETAIL.
- M437 MECHANICAL CONTRACTOR SHALL PROVIDE DIGITAL THERMISTAT WITH 24 HOUR THERMOSTAT SHALL BE MOUNTED ON INSULATED BOX WHERE INSTALLED ON AN EXTERIOR WALL. WIRING SHALL BE IN CONDUIT.
- M438 TEMPERATURE CONTROL PANEL COORDINATE POWER REQUIREMENTS WITH ELECTRICAL CONTRACTOR. COORDINATE EXACT LOCATION WITH GENERAL CONTRACTOR.
- M442 COMBINATION CARBON MONOXIDE/NITROGEN DIOXIDE SENSORS TO BE BRASCH SENSOR AND TRANSMITTER OR EQUIVALENT. LOCATE AT 60" A.F.F. MECHANICAL CONTRACTOR SHALL DAISY CHAIN WIRE ALL TRANSMITTERS BACK TO MAIN GAS TROL PANEL. TERMINATE PER MANUFACTURER'S RECOMMENDATIONS.
- M444 TEMPERATURE CONTROLS CONTRACTOR SHALL PROVIDE LOW VOLTAGE WIRING IN CONDUIT.
- M446 PROVIDE IN SCOPE OF ALD ALTERNATE #1.
- M448B SHALL WALL MOUNT EXHAUST FAN MOUNTED AT APPROXIMATELY 17'-0" A.F.F. COORDINATE WALL LOCATION WITH ELECTRICAL CONTRACTOR. INSTALL PER MANUFACTURERS RECOMMENDATIONS.
- M725A 10" O.D. OUTSIDE AIR DUCT UP TO INTAKE HOOD LOCATED ON ROOF. PROVIDE 18" OPENINGS ON FOUR SIDES OF DUCT DROP. PROVIDE EXPANDED METAL SCREEN OVER OPENINGS. PROVIDE DRAIN PAN IN BOTTOM OF DUCT TRANSITION TO HOOD. OPENING AS REQUIRED. SEE HIGH ROOF PLAN FOR COORDINATION.
- M725B 32" O.D. OUTSIDE AIR DUCT UP TO INTAKE HOOD LOCATED ON ROOF. PROVIDE 16" OPENINGS ON FOUR SIDES OF DUCT DROP. PROVIDE EXPANDED METAL SCREEN OVER OPENINGS. PROVIDE DRAIN PAN IN BOTTOM OF DUCT TRANSITION TO HOOD. OPENING AS REQUIRED. SEE HIGH ROOF PLAN FOR COORDINATION.

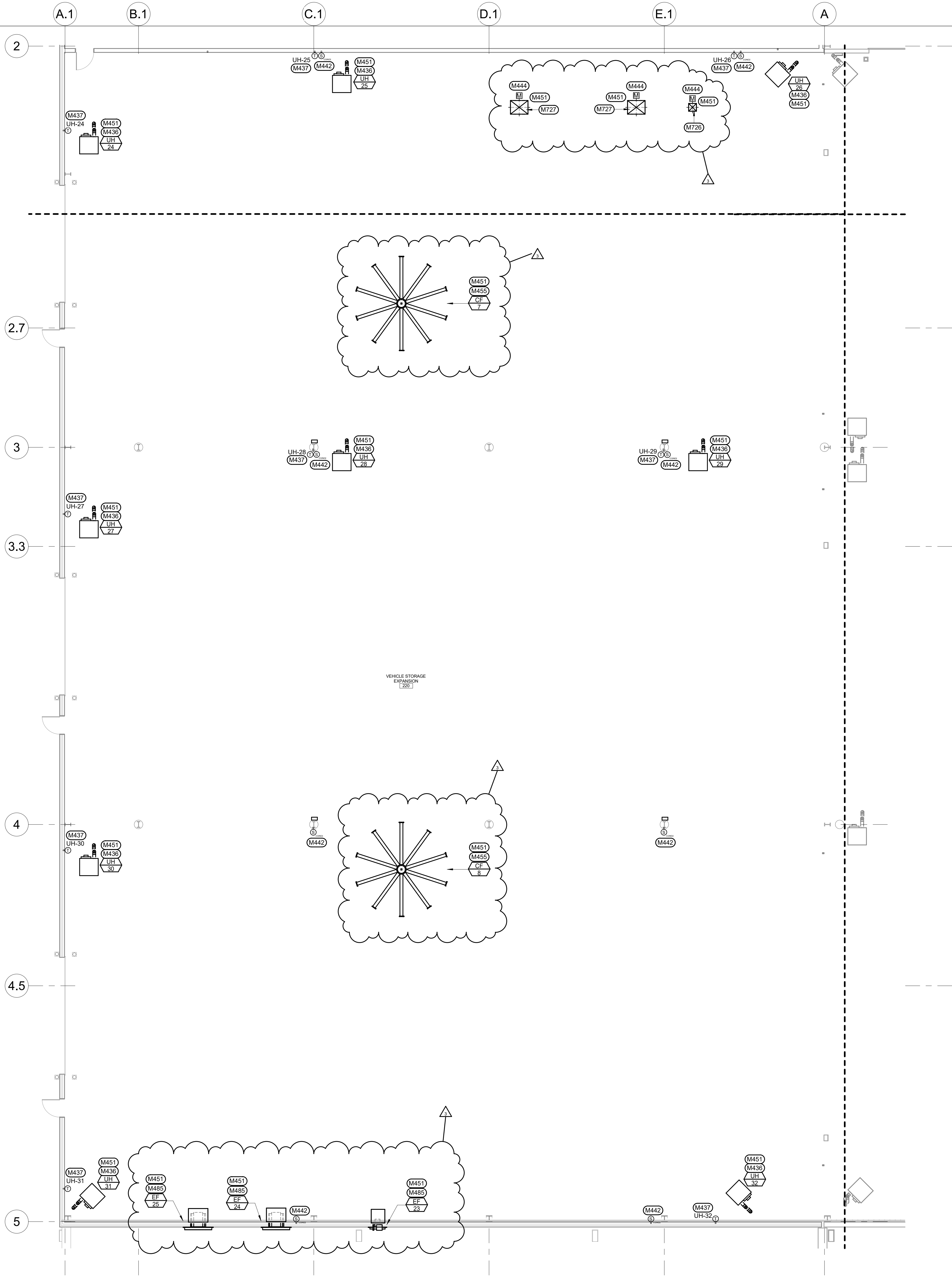


WPE # 0525045

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REVISION NO.	Plans for ABERDEEN PUBLIC WORKS Maintenance Building Aberdeen	FIRST FLOOR HVAC VENTILATION PLANS - ALTERNATE #1	ISSUED BY: NC	M504
			CHECKED BY: NC CREAMED BY: NC	
CLIENT NAME	HKG Architects, Inc.	Aberdeen, S.D.	DATE	PROJECT NO.
			02/20/26	BS23045



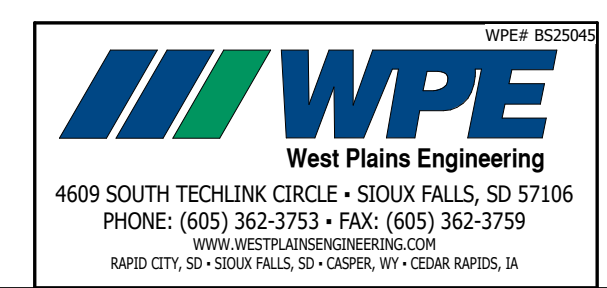
1 FIRST FLOOR HVAC VENTILATION PLAN - AREA E - ALTERNATE #2
1/8" = 1'-0"

- HVAC VENTILATION MISCELLANEOUS NOTES**
- A DRAWINGS ARE SCHEMATIC IN NATURE. MECHANICAL CONTRACTOR SHALL FIELD VERIFY ALL CONDITIONS BEFORE BEGINNING WORK. REPORT DISCREPANCIES TO ARCHITECT AND ENGINEER.
 - B DO NOT ROUTE DUCTWORK ABOVE OR IN FRONT OF ELECTRICAL GEAR. MAINTAIN CODE REQUIRED CLEARANCES.
 - C COORDINATE CUTTING AND PATCHING OF ALL SURFACES WITH GENERAL CONTRACTOR.
 - D PROVIDE ADEQUATE VENTILATION AS PER OWNER AND OSHA TO PROPERLY REMOVE ODORS AND FUMES FROM SPACES WHERE WORK IS BEING PERFORMED TO OUTDOORS.
 - E FLEXIBLE DUCTWORK SHALL BE LIMITED TO 3'-0" MAXIMUM LENGTH.
 - F NO FLEXIBLE DUCTWORK IS ALLOWED ON THE RETURN AIR DUCTWORK.
 - G TEMPERATURE CONTROL CONTRACTOR SHALL PROVIDE ALL LOW VOLTAGE AND LINE VOLTAGE CONTROL WIRING AS REQUIRED FOR COMPLETE OPERATION OF ALL MECHANICAL EQUIPMENT.
 - H MAINTAIN CURRENT AND ACCURATE FIELD DRAWINGS OF "AS-BUILT" CONDITIONS. THESE DRAWINGS SHALL BE REVIEWED AT EACH CONSTRUCTION PROGRESS MEETING.
 - J ALL DUCTWORK WHICH NOT LOCATED COMPLETELY WITHIN BUILDING SHALL BE CONSTRUCTED AND INSULATED AS PER SPECIFICATIONS FOR DUCTWORK EXPOSED TO OUTDOORS.
 - K DUCTWORK ELBOWS SHALL BE OF RADIUS BEND UNLESS SPACE PROHIBITS AS PER SPECIFICATIONS.

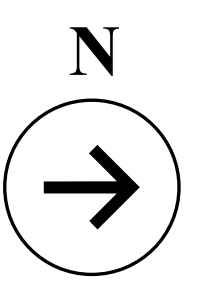
- MECHANICAL SPECIFIC NOTES**
- M436 SUSPEND UNIT HEATER FROM STRUCTURE PER MANUFACTURER'S RECOMMENDATIONS. MOUNT UNIT HEATER AT 18'-0" A.F.F. SET LOUVERED DISCHARGE BLADES AT 45 DEGREES DOWNWARD. ROUTE INTAKE AND VENT UP THROUGH ROOF AND TERMINATE PER MANUFACTURER'S RECOMMENDATIONS. SIZE VENT AND INTAKE PIPING PER MANUFACTURER'S RECOMMENDATIONS. SEE GAS VENT DETAIL.
 - M437 MECHANICAL CONTRACTOR SHALL PROVIDE DIGITAL HEATING ONLY THERMOSTAT ON WALL AT 48" A.F.F. THERMOSTAT SHALL BE MOUNTED ON INSULATED BOX WHERE INSTALLED ON AN EXTERIOR WALL. CONTROL WIRING SHALL BE INSTALLED IN CONDUIT.
 - M442 COMBINATION CARBON MONOXIDE/NITROGEN DIOXIDE SENSORS TO BE BRASCH SENSOR AND TRANSMITTER OR APPROVED EQUAL. MOUNT AT 60" A.F.F. MECHANICAL CONTRACTOR SHALL DAISSY CHAIN WIRE ALL TRANSMITTERS BACK TO MAIN GAS DETECTOR PANEL PER MANUFACTURER'S RECOMMENDATIONS.
 - M444 TEMPERATURE CONTROLS CONTRACTOR SHALL PROVIDE LOW VOLTAGE MOTORIZED DAMPER.
 - M451 PROVIDE IN SCOPE OF ADD ALTERNATE #2.
 - M455 MECHANICAL CONTRACTOR SHALL PROVIDE HIGH VOLUME LOW SPEED FAN MOUNTED FROM MANUFACTURER PROVIDED PURLIN. MOUNTING PURLIN SHALL BE CONNECTED TO PRE-ENGINEERED METAL BUILDING STRUCTURE. COORDINATE METAL BUILDING STRUCTURE WITH GENERAL CONTRACTOR. MOUNT HVLS FAN MOUNTED BETWEEN STRUCTURE AT 21'-0" A.F.F. TO FAN BLADES. FAN TO BE WIRED BACK TO MANUFACTURER PROVIDED CONTROL PANEL. COORDINATE WITH ELECTRICAL CONTRACTOR.
 - M485 PROVIDE WALL MOUNT EXHAUST FAN MOUNTED AT APPROXIMATELY 17'-0" A.F.F. COORDINATE WALL PENETRATION WITH GENERAL CONTRACTOR. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
 - M726 16/16 OUTSIDE AIR DUCT UP TO INTAKE HOOD LOCATED ON ROOF. PROVIDE 12/10 OPENINGS ON FOUR SIDES OF DUCT DROP. PROVIDE EXPANDED METAL SCREEN OVER OPENINGS. PROVIDE DRAIN PAN IN BOTTOM OF DUCT. TRANSITION TO HOOD OPENING AS REQUIRED. SEE HIGH ROOF PLAN FOR CONTINUATION.
 - M727 36/28 OUTSIDE AIR DUCT UP TO INTAKE HOOD LOCATED ON ROOF. PROVIDE 24/16 OPENINGS ON FOUR SIDES OF DUCT DROP. PROVIDE EXPANDED METAL SCREEN OVER OPENINGS. PROVIDE DRAIN PAN IN BOTTOM OF DUCT. TRANSITION TO HOOD OPENING AS REQUIRED. SEE HIGH ROOF PLAN FOR CONTINUATION.

ITEMS INDICATED AS LIGHT ARE A PART OF THE BASE BID SCOPE. ITEMS INDICATED AS DARK ARE A PART OF ADD ALTERNATE #2 SCOPE.

3 3/27/26 ADDENDUM 6 CHANGES



Plans for ABERDEEN PUBLIC WORKS Maintenance Building Aberdeen		FIRST FLOOR HVAC VENTILATION PLANS ALTERNATE #2	Project: NC Revision: NC Location: NC	M505
HKG Architects, Inc.		Aberdeen, S.D.	Date: 02/20/26	Sheet: 8523045



PLUMBING MISCELLANEOUS NOTES

A	DRAWINGS ARE SCHEMATIC IN NATURE. MECHANICAL CONTRACTOR SHALL FIELD VERIFY ALL CONDITIONS BEFORE BEGINNING WORK. REPORT DISCREPANCIES TO ARCHITECT/ENGINEER.
B	DO NOT ROUTE PIPING ABOVE OR IN FRONT OF ELECTRICAL GEAR. MAINTAIN CODE REQUIRED CLEARANCES.
C	PROVIDE AND INSTALL INDIVIDUAL SHUT OFF VALVES TO ALL WALL HYDRANTS AND HOSE BIBS. INSTALL SHUT OFF VALVES IN AN ACCESSIBLE LOCATION.
D	MAINTAIN CURRENT AND ACCURATE FIELD DRAWINGS OF "AS-BUILT" CONDITIONS. THESE DRAWINGS SHALL BE REVIEWED AT EACH CONSTRUCTION PROGRESS MEETING.
E	COORDINATE LOCATIONS OF ALL SERVICES WITH SITE CONTRACTOR.

HVAC VENTILATION MISCELLANEOUS NOTES

A DRAWINGS ARE SCHEMATIC IN NATURE. MECHANICAL CONTRACTOR SHALL VERIFY ALL CONDITIONS BEFORE BEGINNING WORK. REPORT DISCREPANCIES TO ARCHITECT AND ENGINEER.

B DO NOT ROUTE DUCTWORK ABOVE OR IN FRONT OF ELECTRICAL GENERATORS. MAINTAIN CODE REQUIRED CLEARANCES.

C COORDINATE CUTTING AND PATCHING OF ALL SURFACES TO BE EXPOSED BY DUCTWORK.

D PROVIDE ADEQUATE VENTILATION AS PER OWNER AND OSHA TO PROPERLY REMOVE ODORS AND FUMES FROM SPACES WHERE WORK IS BEING PERFORMED TO OUTDOORS.

E FLEXIBLE DUCTWORK SHALL BE LIMITED TO 3'-0" MAXIMUM LENGTH.

F NO FLEXIBLE DUCTWORK IS ALLOWED ON THE RETURN AIR DUCTWORK.

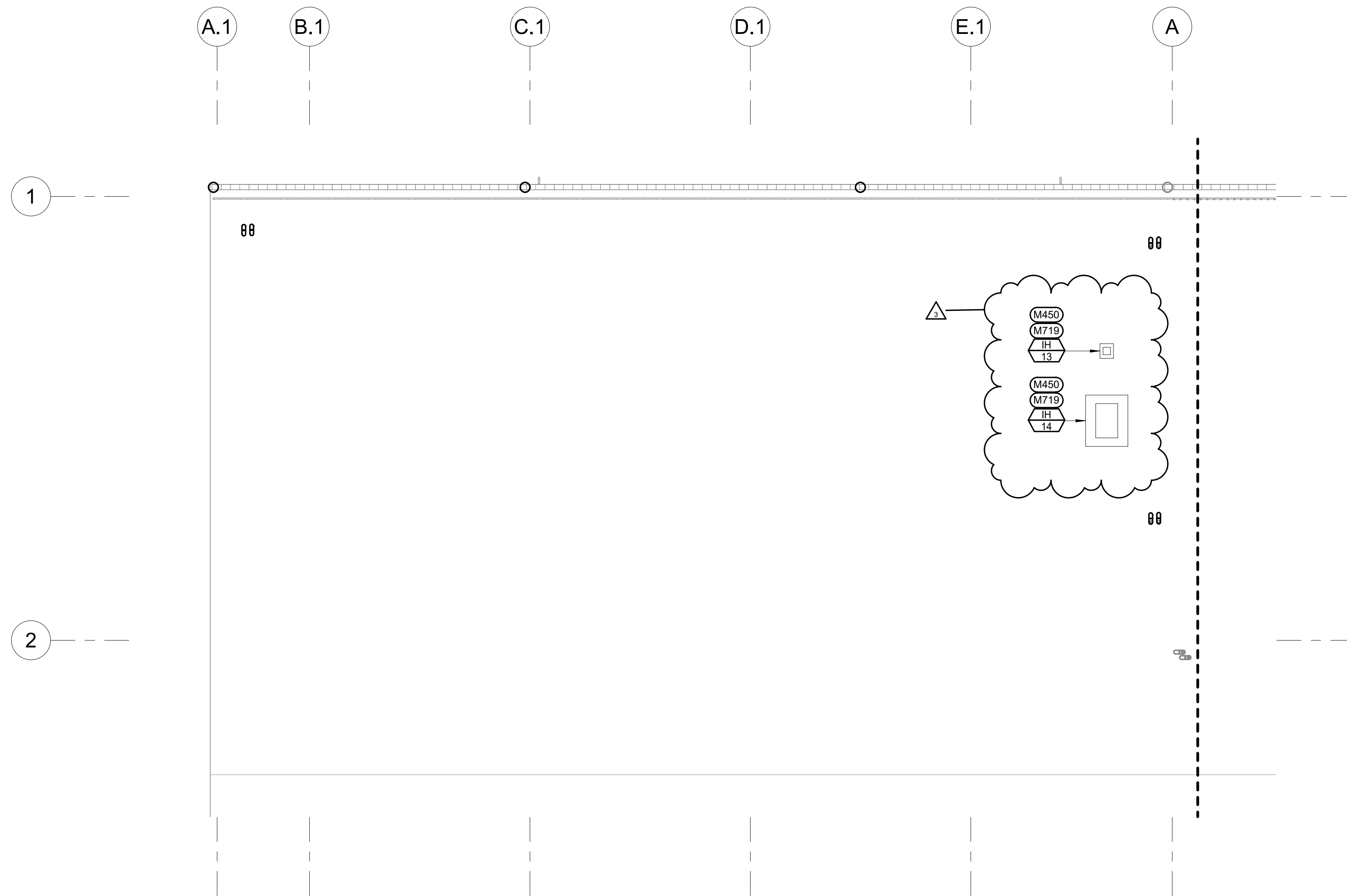
G TEMPERATURE CONTROL CONTRACTOR SHALL PROVIDE LOW VOLTAGE AND LINE VOLTAGE CONTROL WIRING AS REQUIRED FOR COMPLETE OPERATION OF ALL MECHANICAL EQUIPMENT.

H ELECTRICAL CONTRACTOR SHALL ACCURATE FIELD DRAWINGS OF "AS-BUILT" CONDITIONS. THESE DRAWINGS SHALL BE REVIEWED AT EACH CONSTRUCTION PROGRESS MEETING.

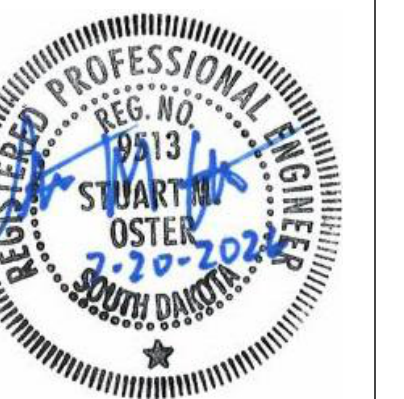
I ALL DUCTWORK WHICH IS NOT COMPLETELY INSULATED SHALL BE PROTECTED AS CONSTRUCTED AND INSULATED AS PER SPECIFICATIONS FOR DUCTWORK ABOVE.

K DUCTWORK ELBOWS SHALL BE OF RADIUS BEND UNLESS SPEC. PROHIBITS AS PER SPECIFICATIONS.

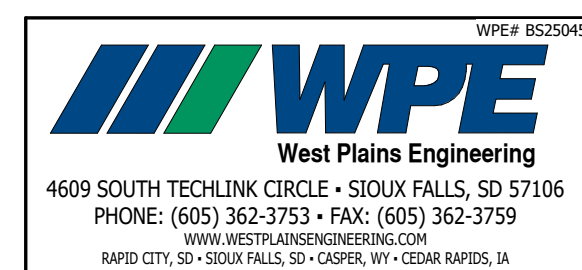
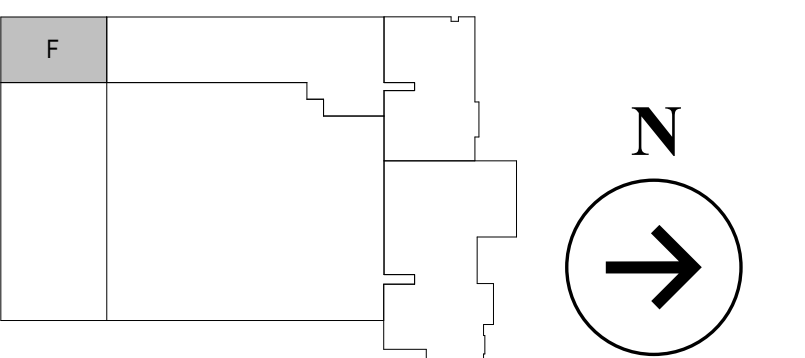
M450 PROVIDE IN SCOPE OF ADD ALTERNATE #1.
M719 SEE GRAVITY VENTILATOR DETAIL ON MECHANICAL
DETAILS SHEET.



① MECHANICAL HIGH ROOF PLAN - ALTERNATE #1
3/32" = 1'-0"



3 3/27/26 ADDENDUM 6 CHANGES



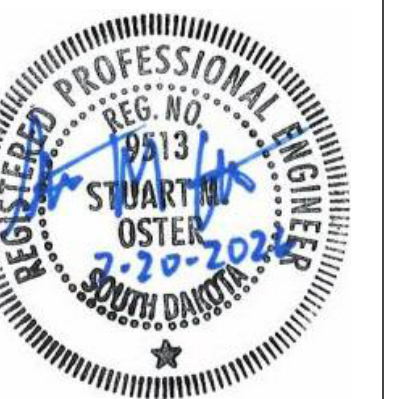
REVISION DATE	Plans for ABERDEEN PUBLIC WORKS Maintenance Building Aberdeen	MECHANICAL HIGH ROOF PLAN - ALTERNATE #1	ISSUED BY NC	M510
			REVISION BY NC	
CLIENT NAME	H&K Architects, Inc. Aberdeen, S.D.		CHECKED BY NC	
			DATE 02/20/26	PROJECT NO. BS23045

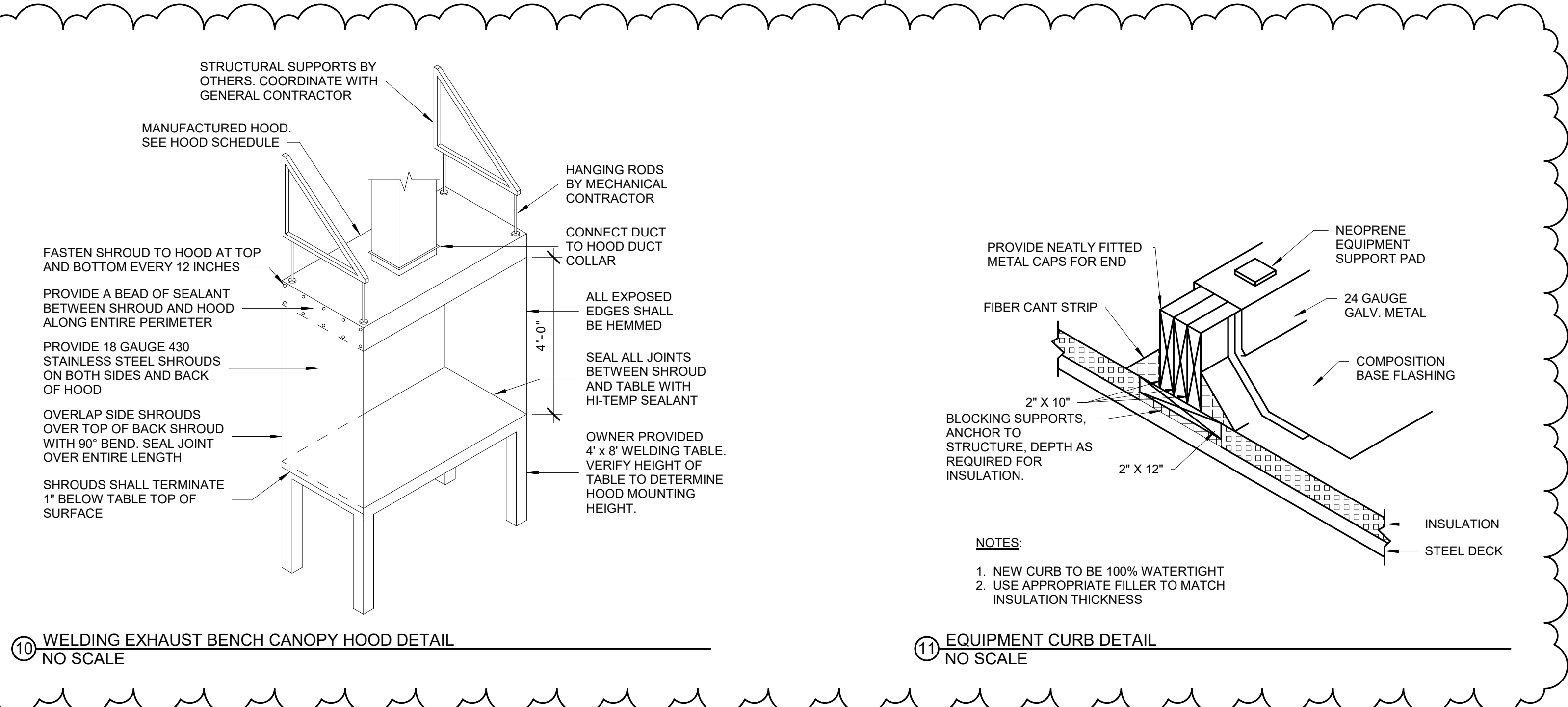
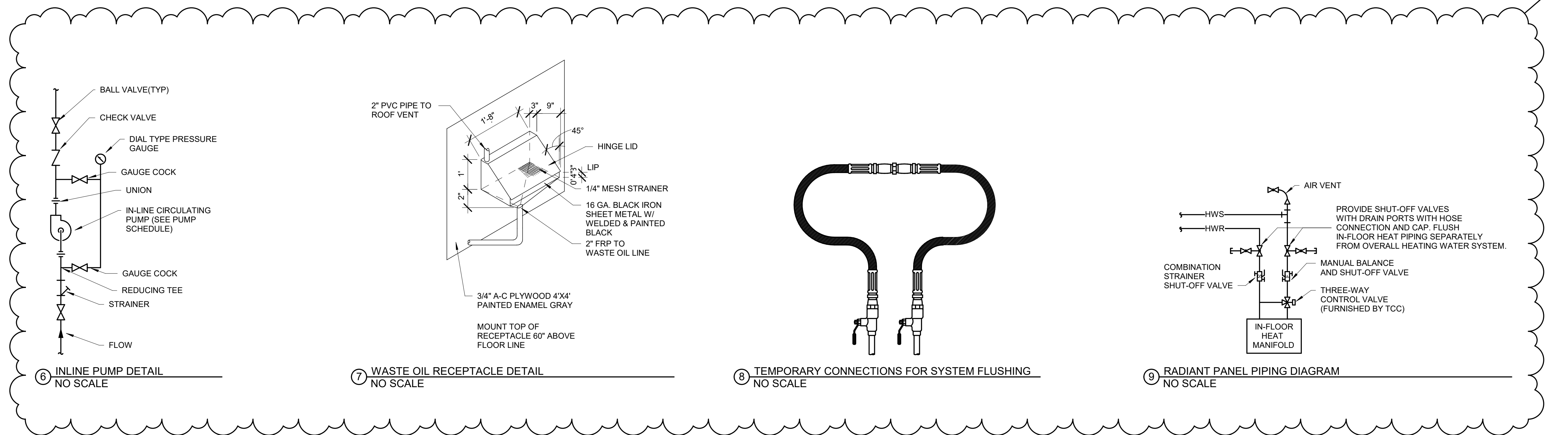
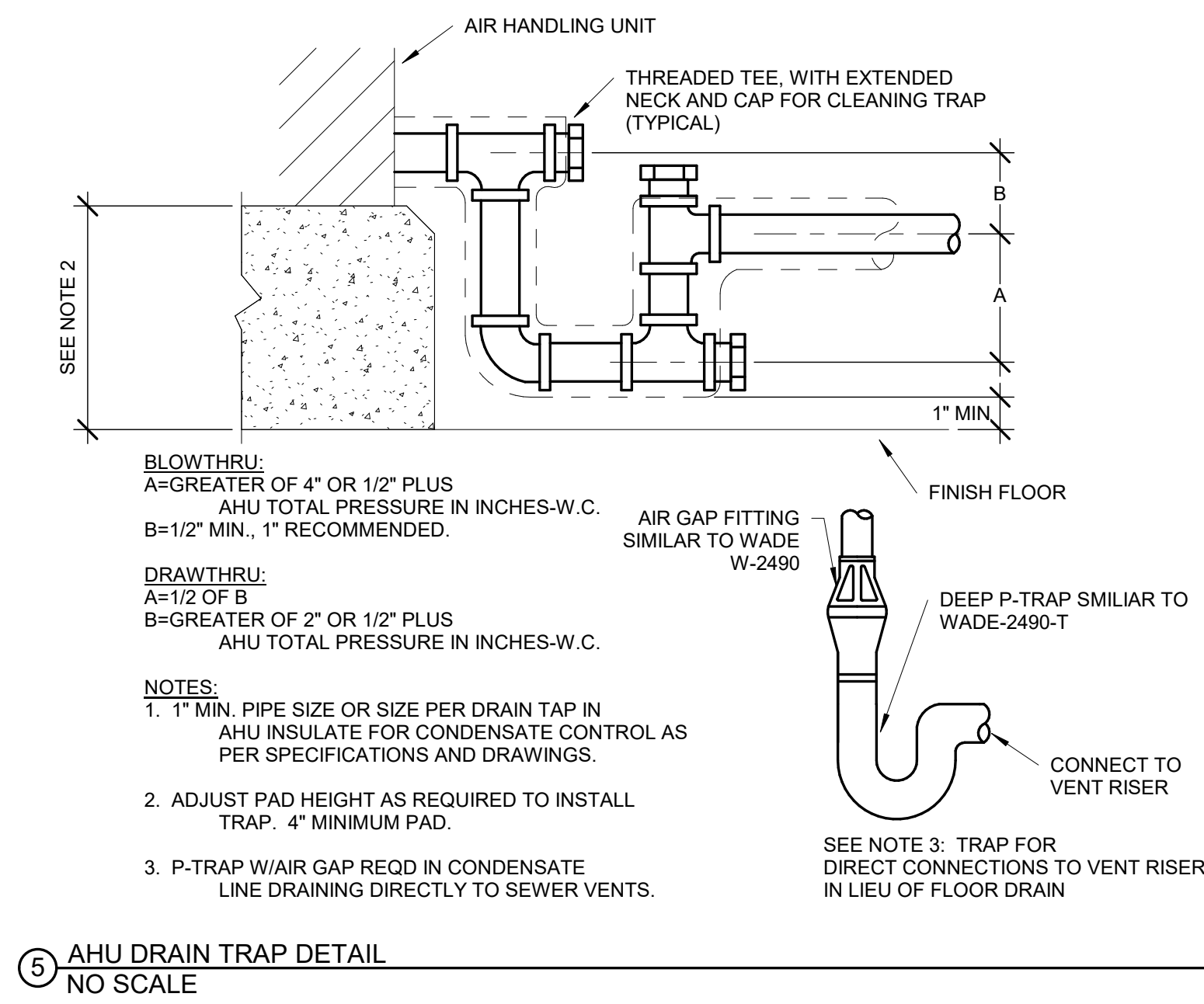
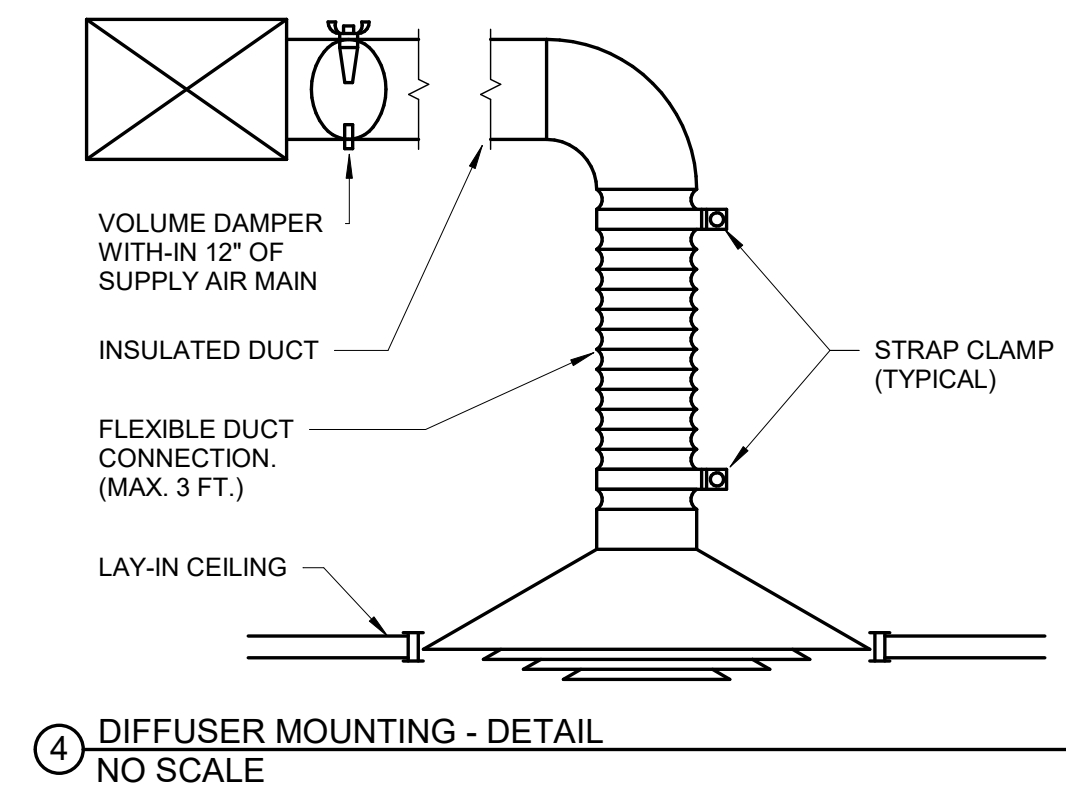
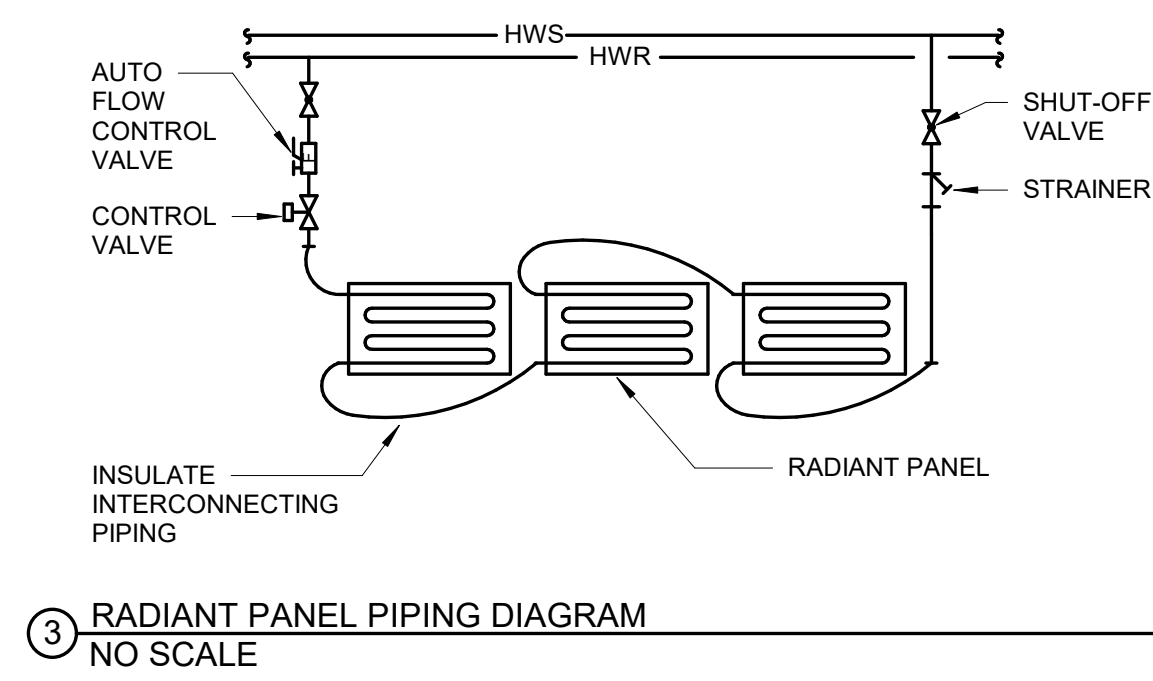
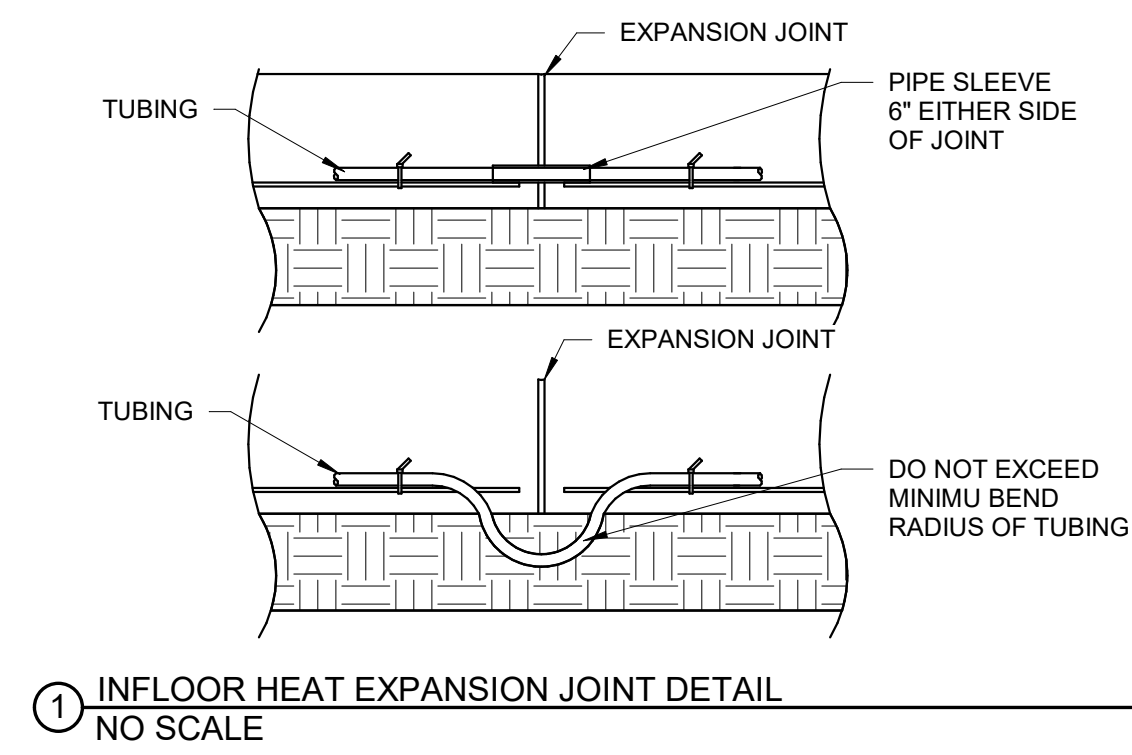
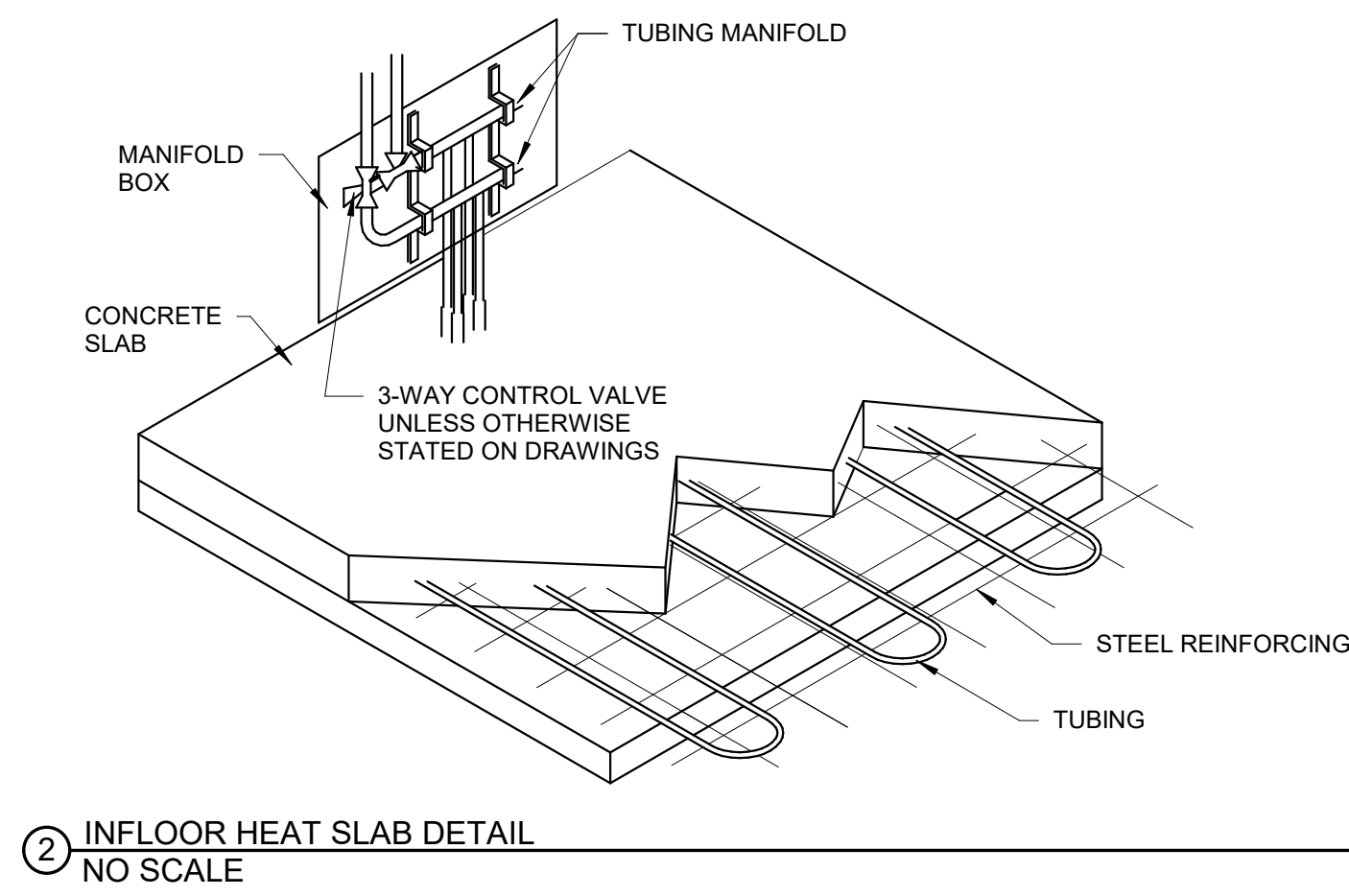


HVAC VENTILATION MISCELLANEOUS NOTES

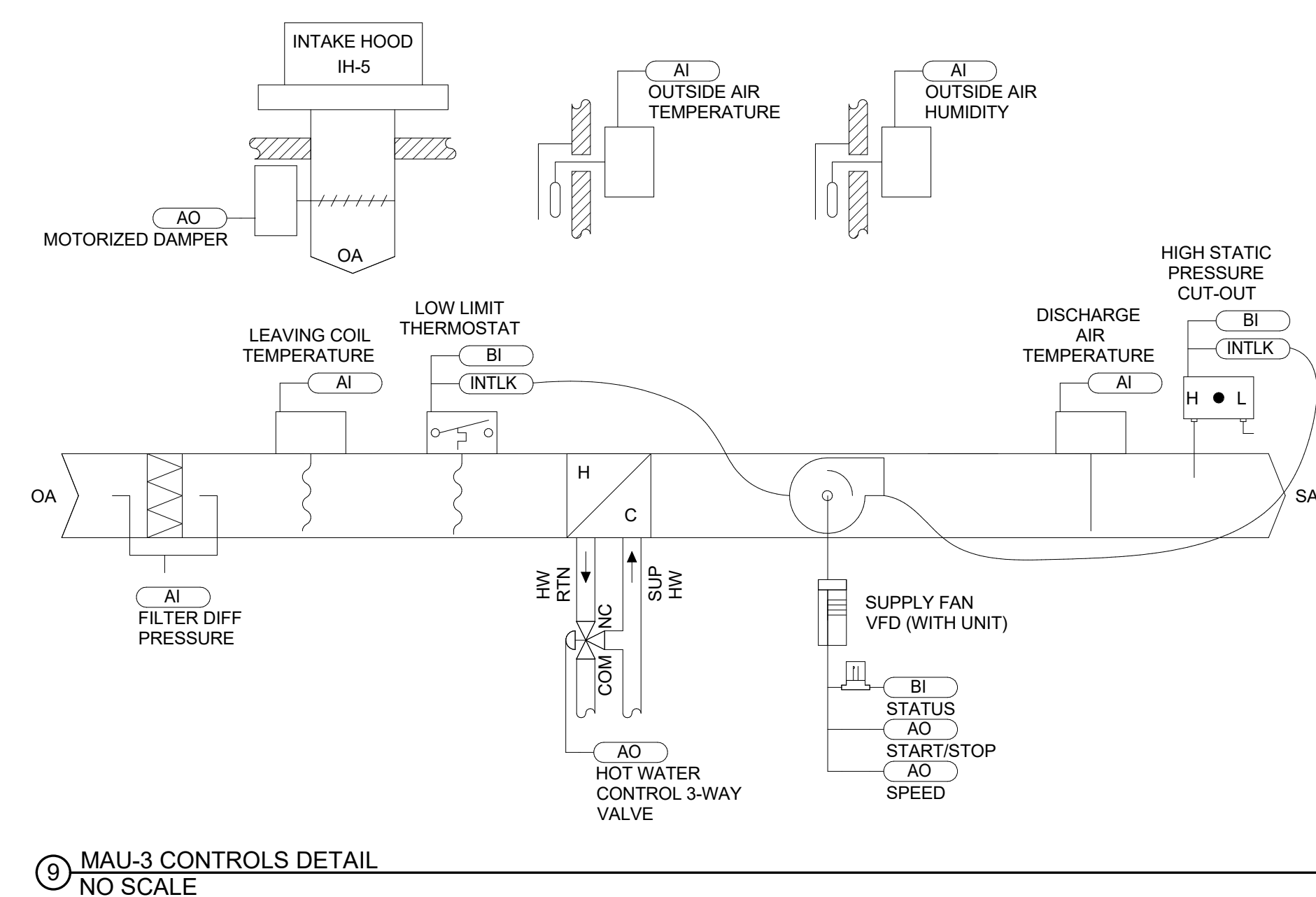
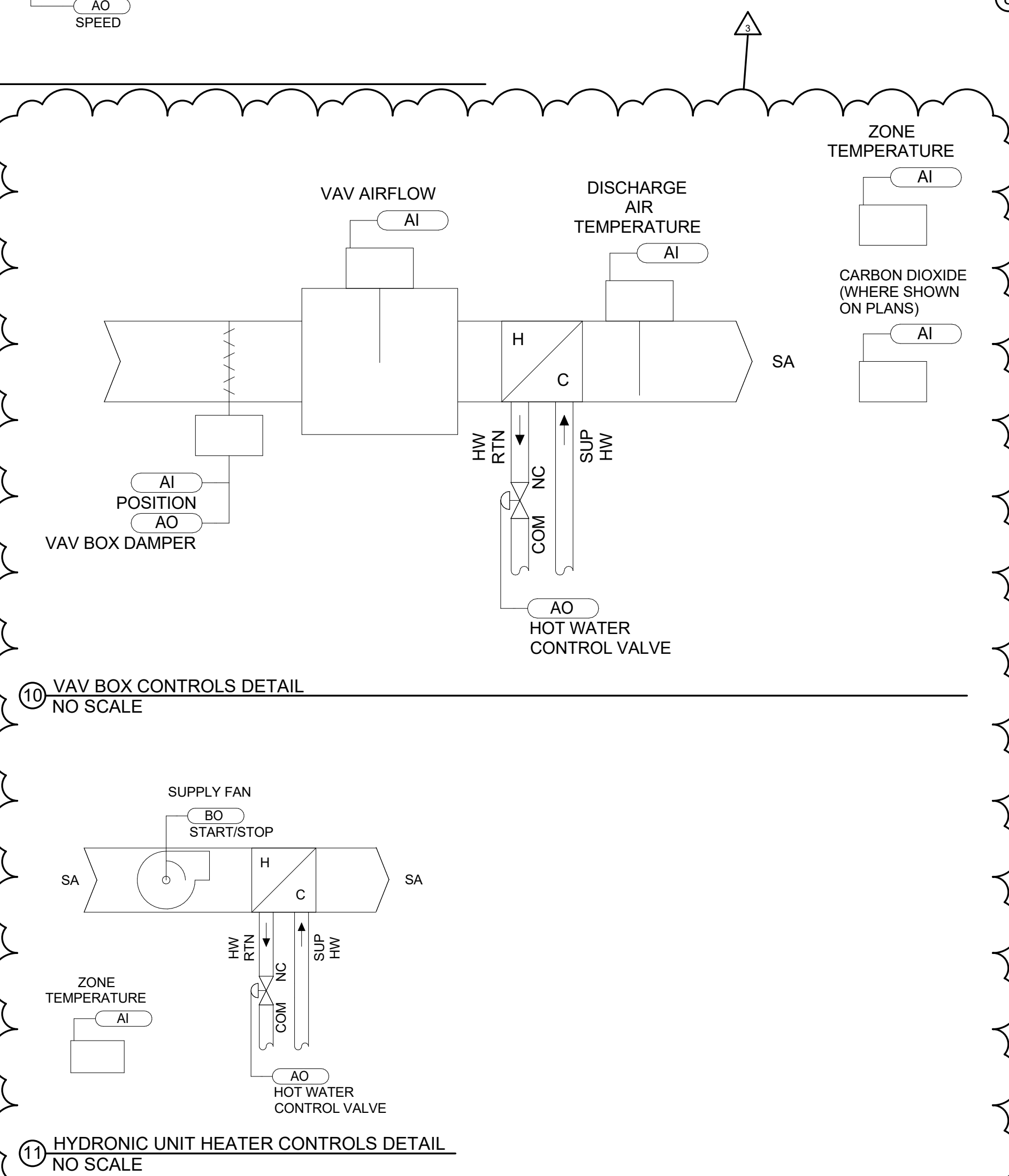
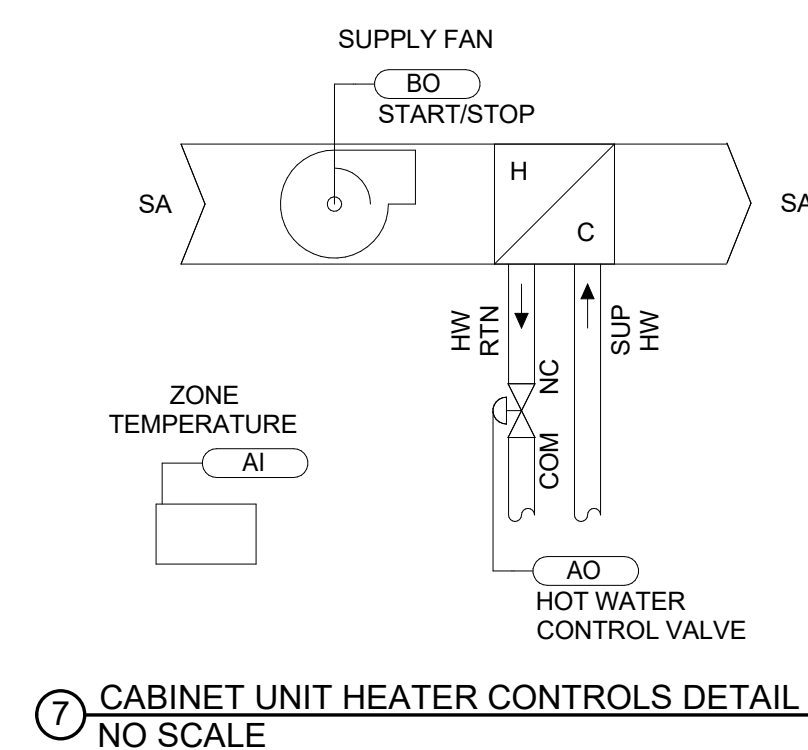
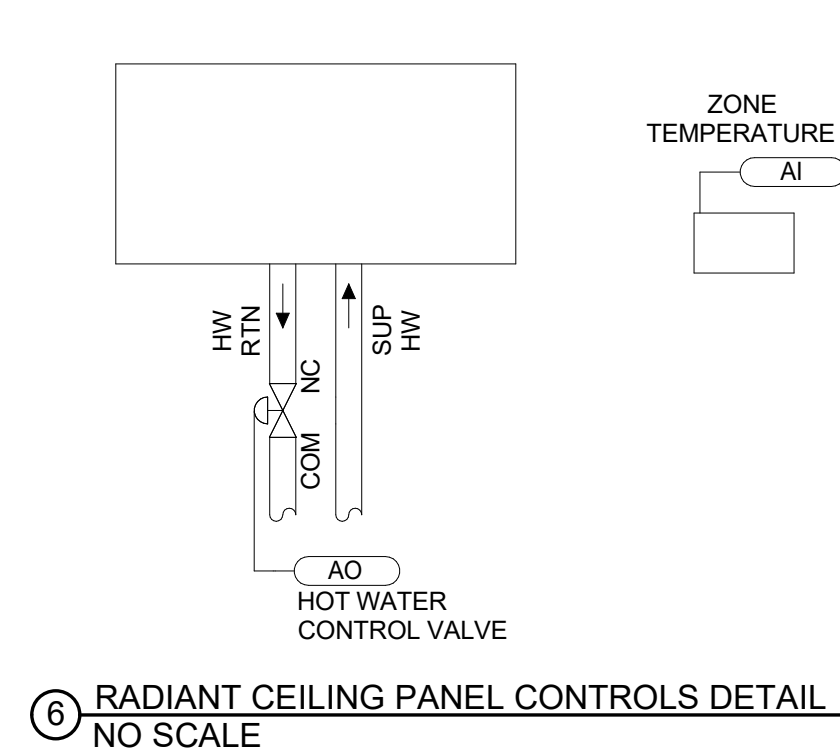
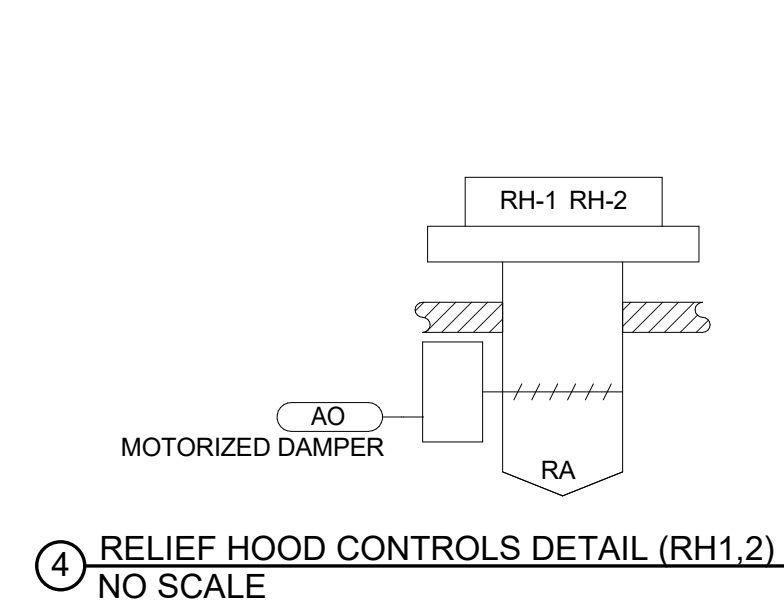
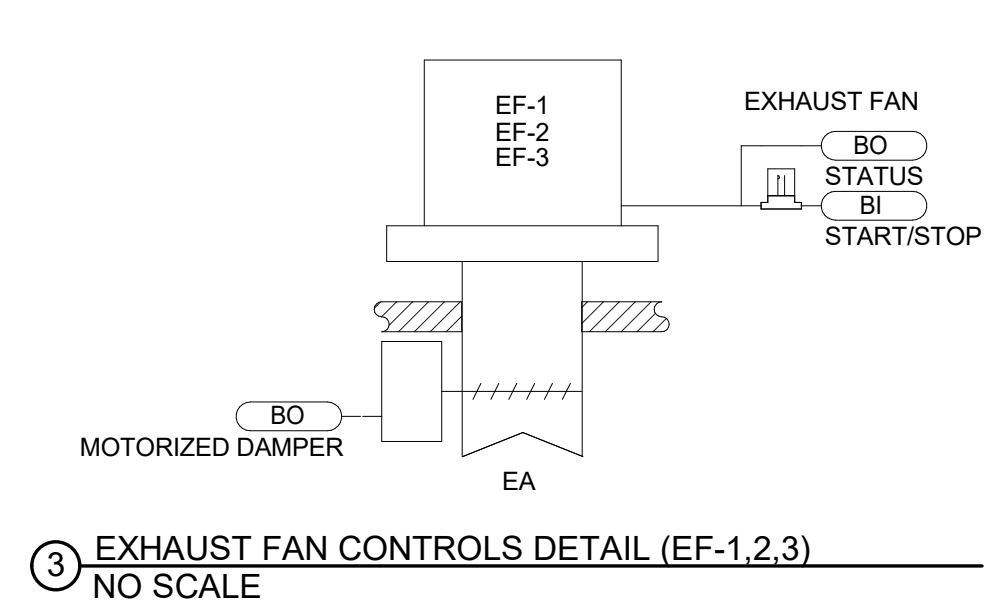
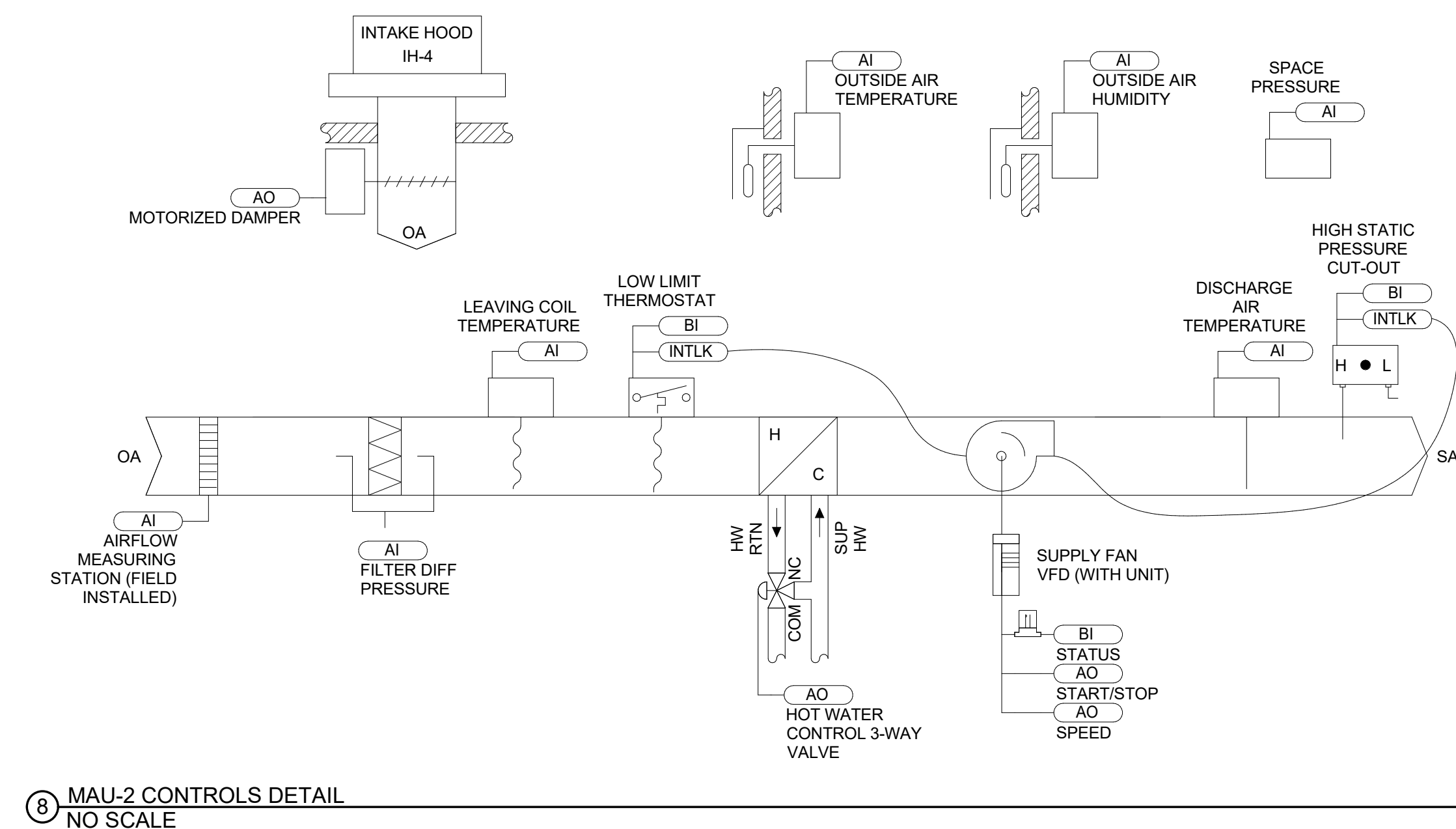
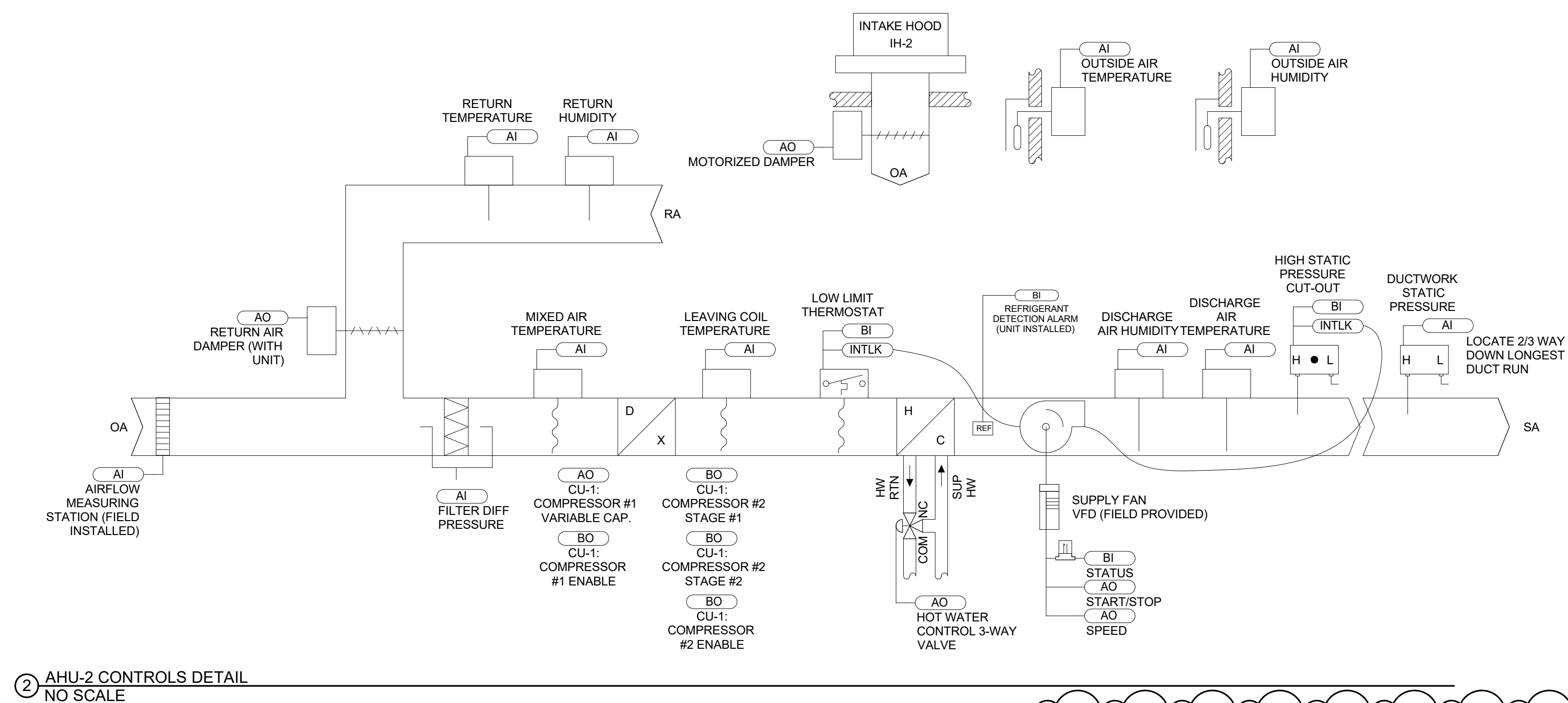
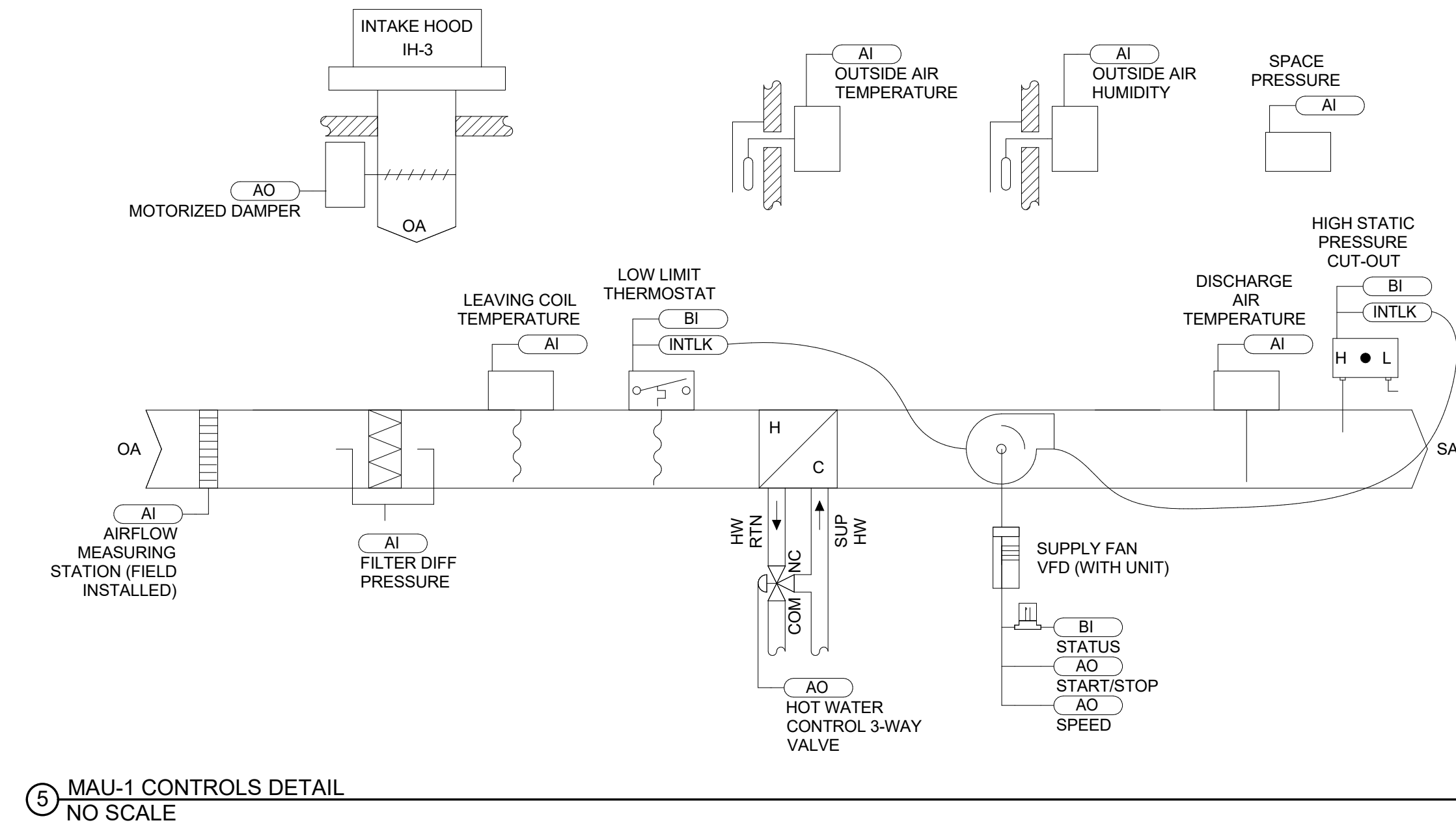
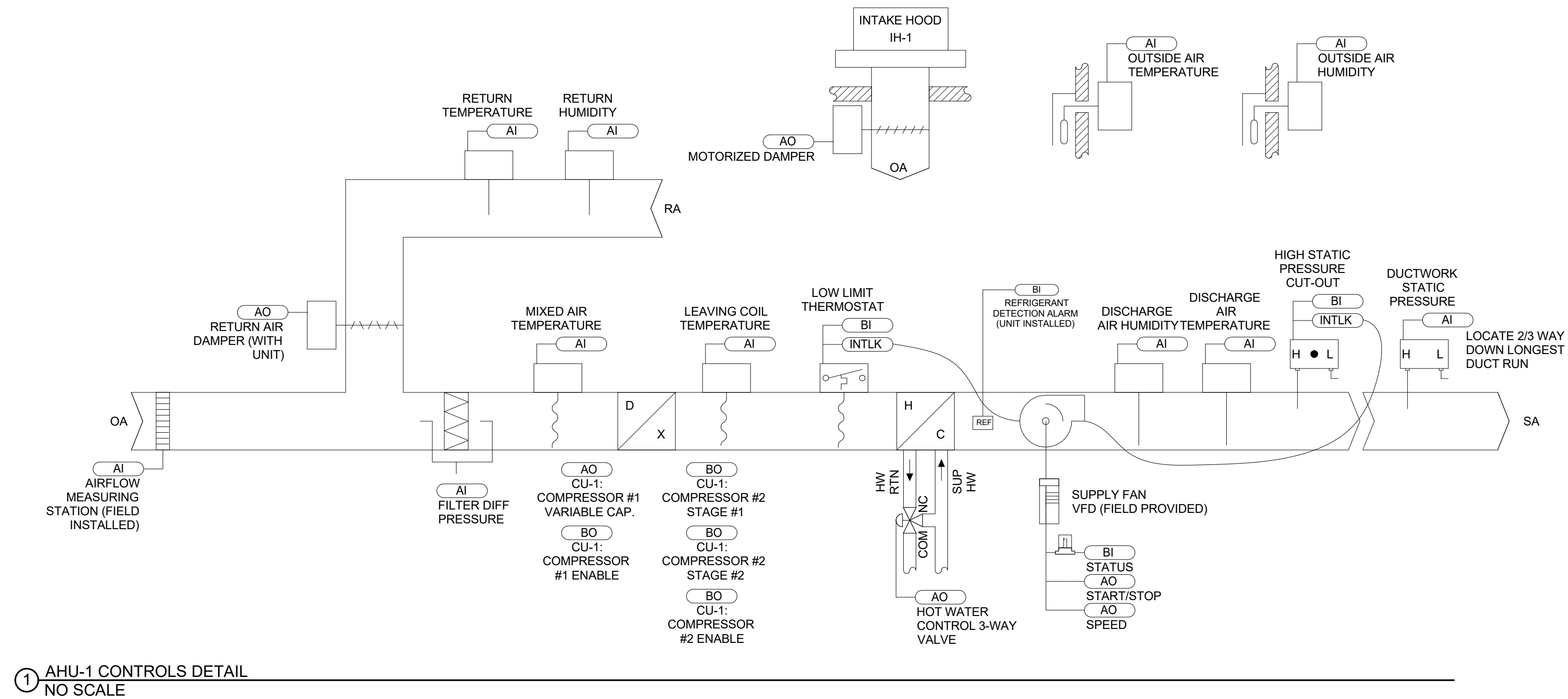
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- K DUCTWORK ELBOWS SHALL BE OF RADIUS BEND UNLESS SPECAS PROHIBITS AS PER SPECIFICATIONS.

3 3/27/26 ADDENDUM 6 CHANGES

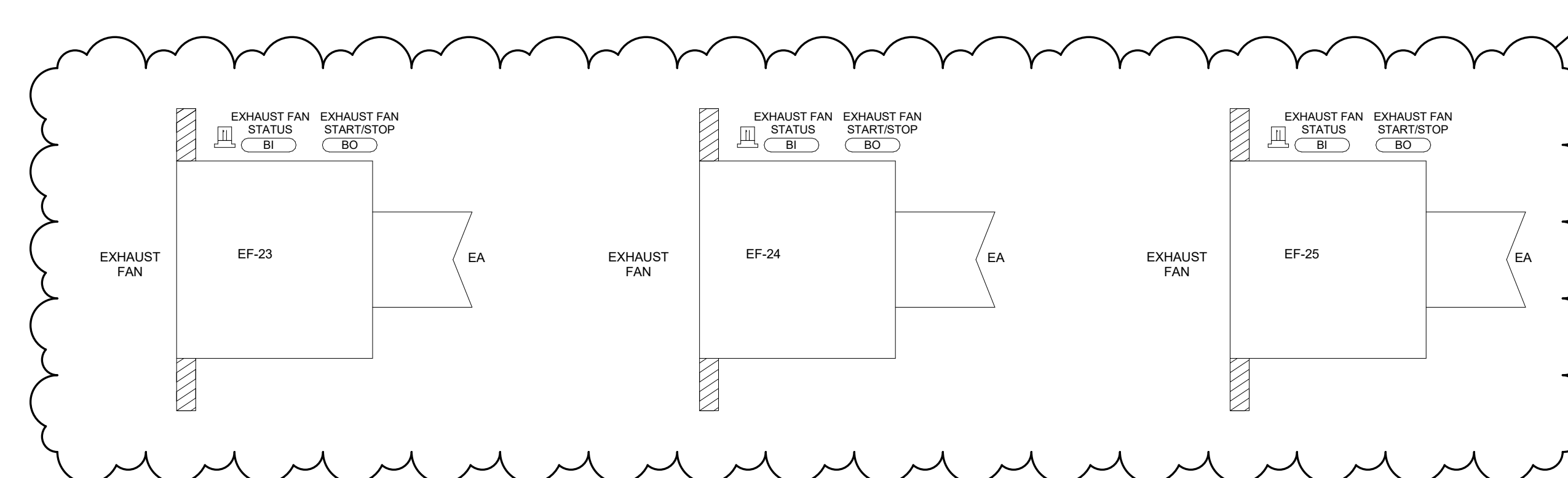
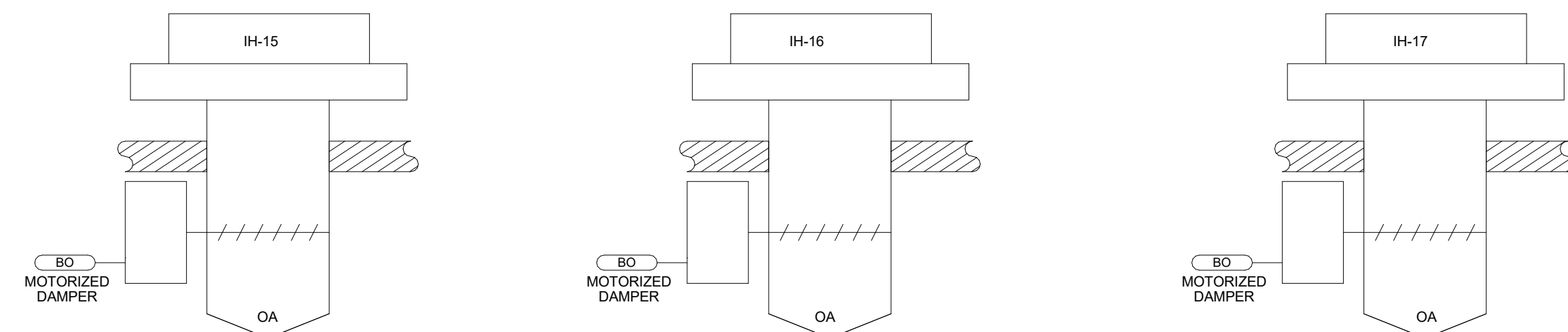
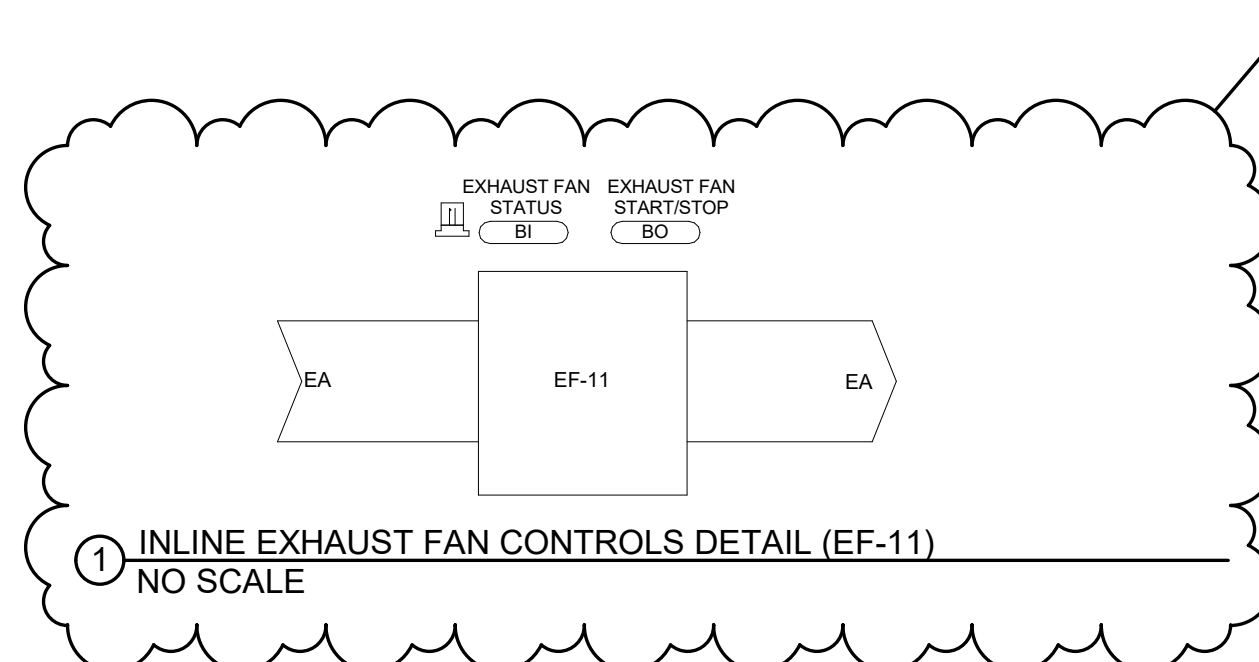
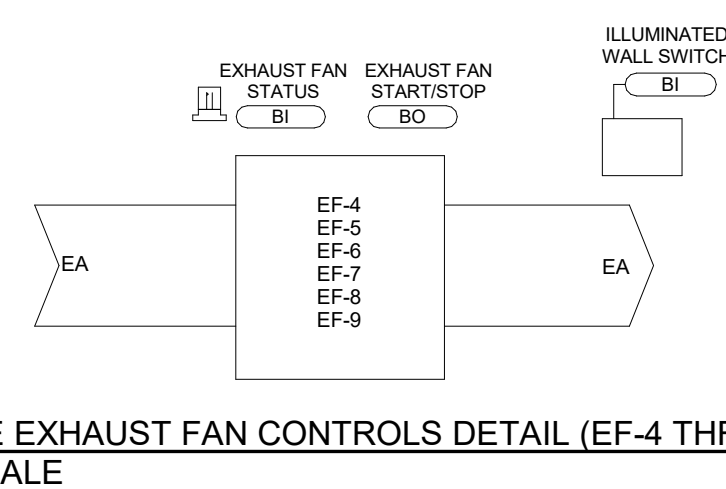
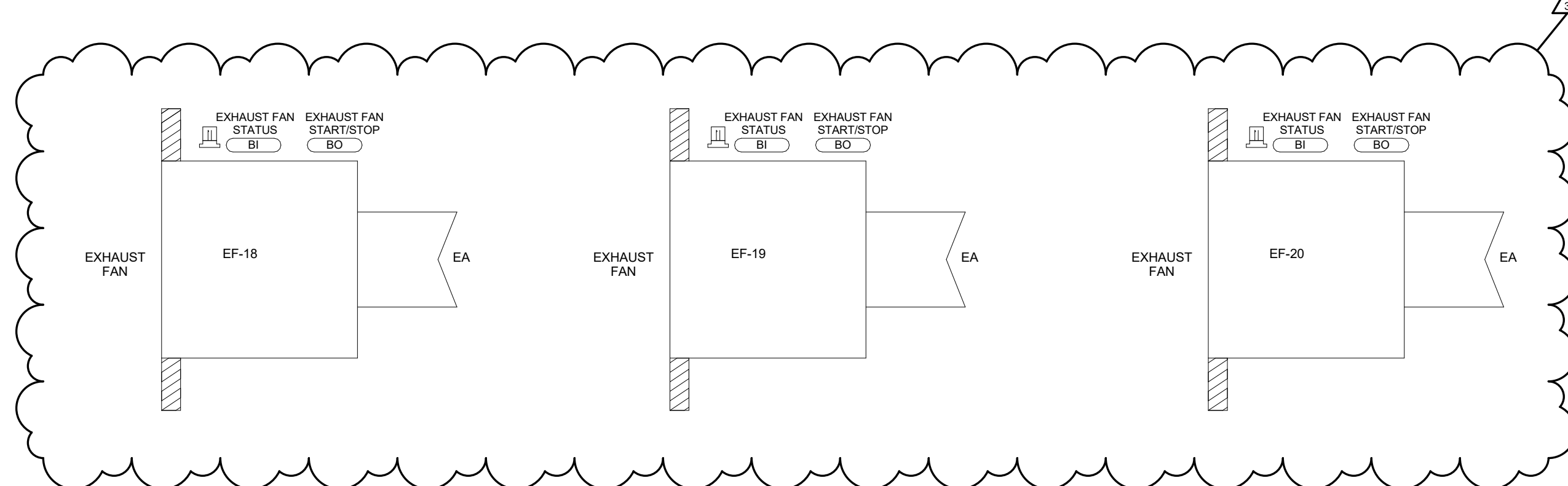
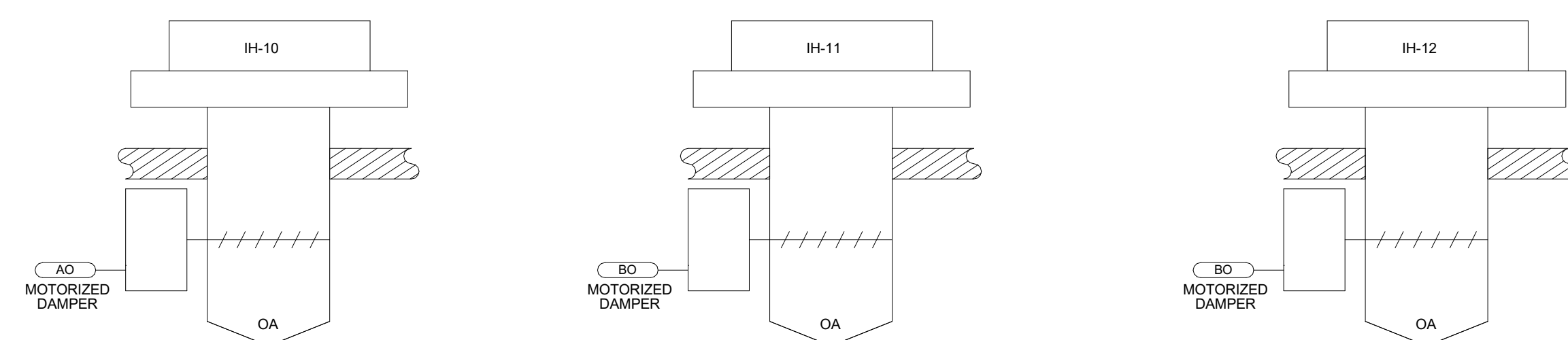
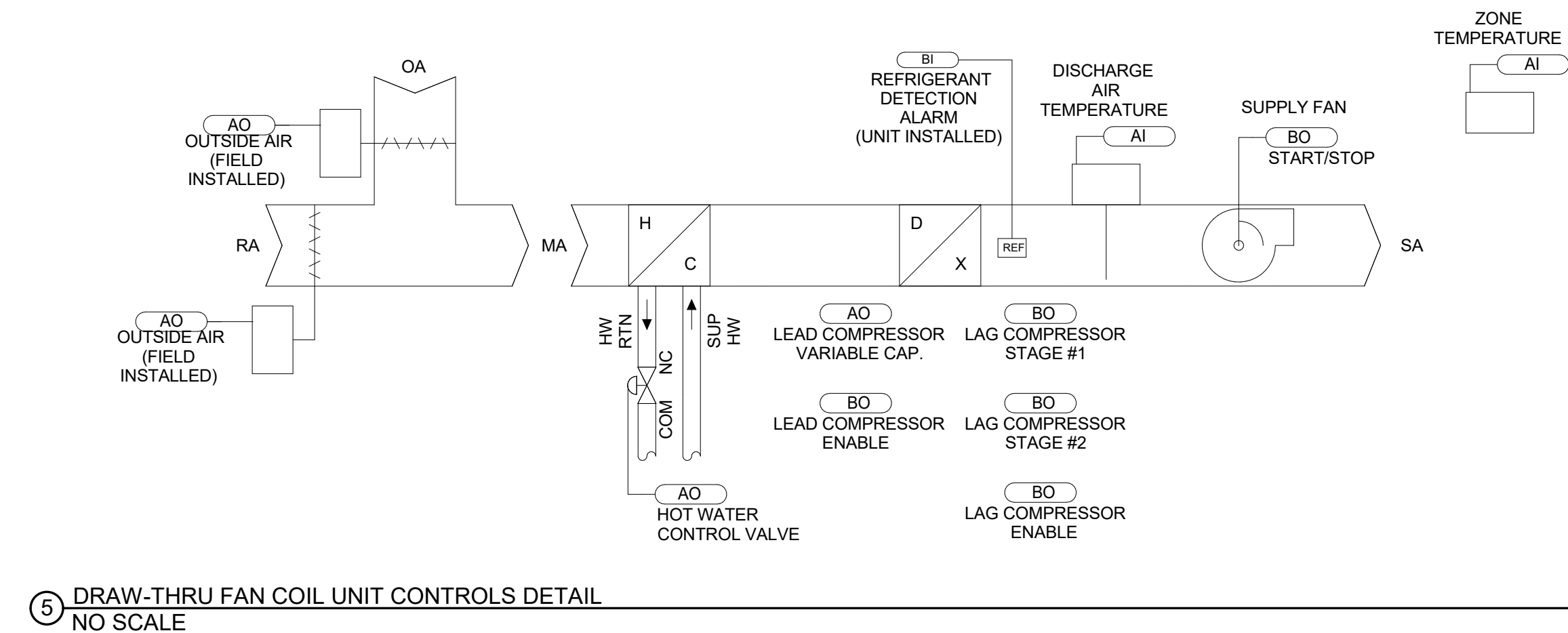
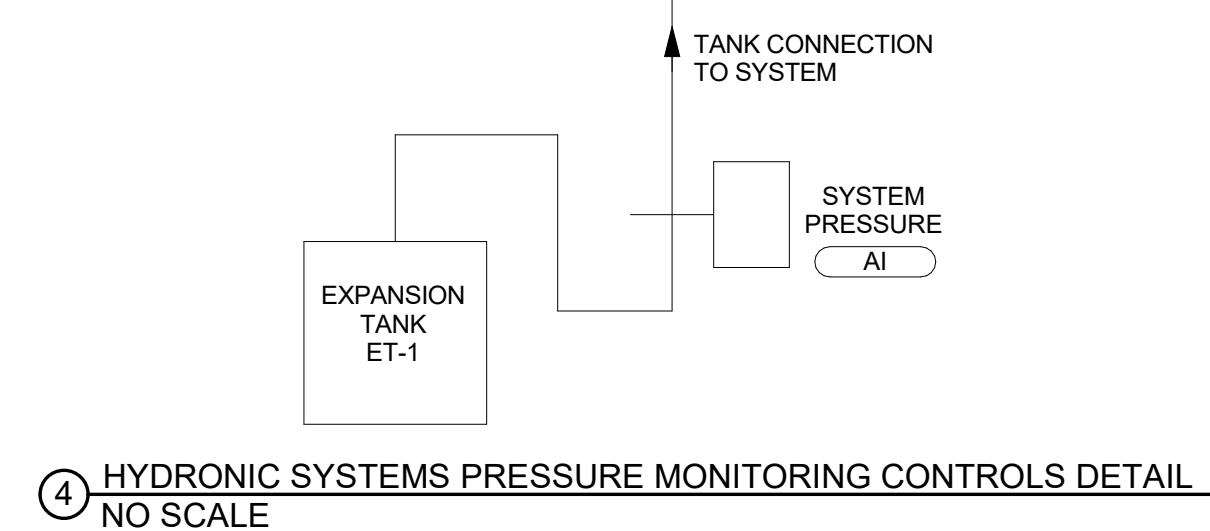
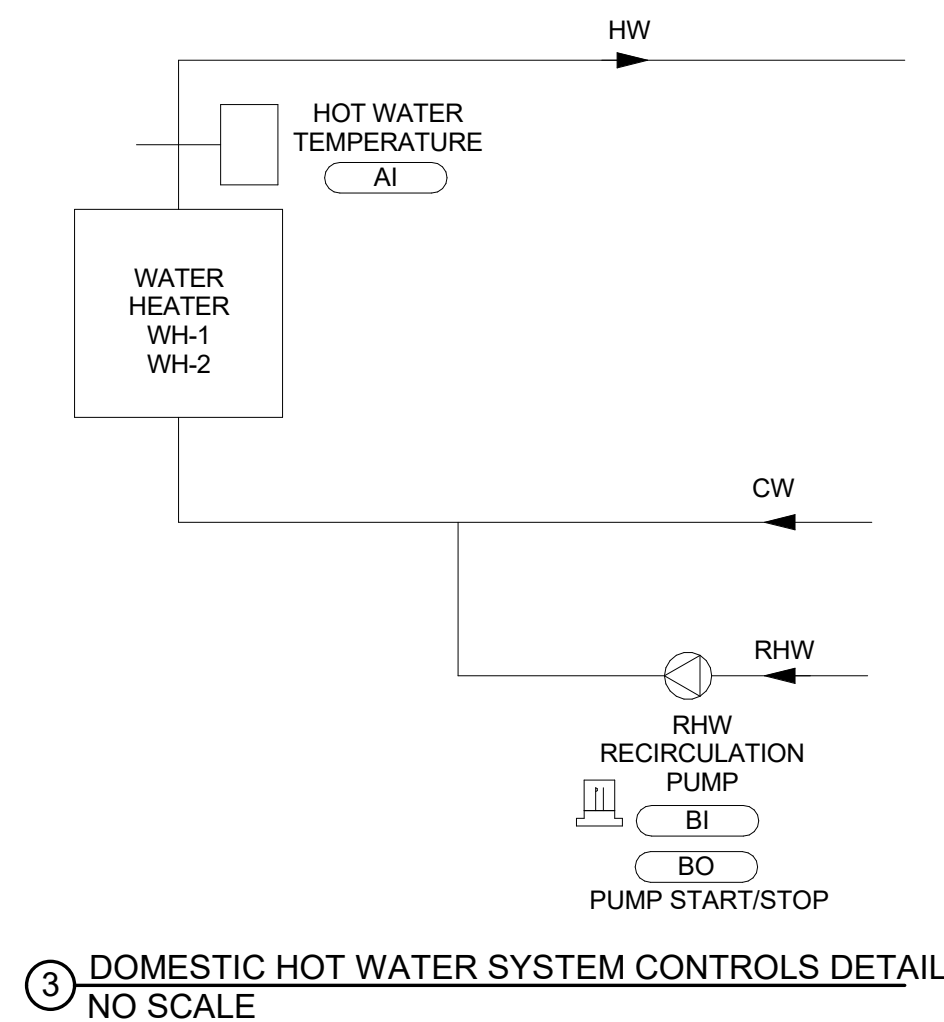
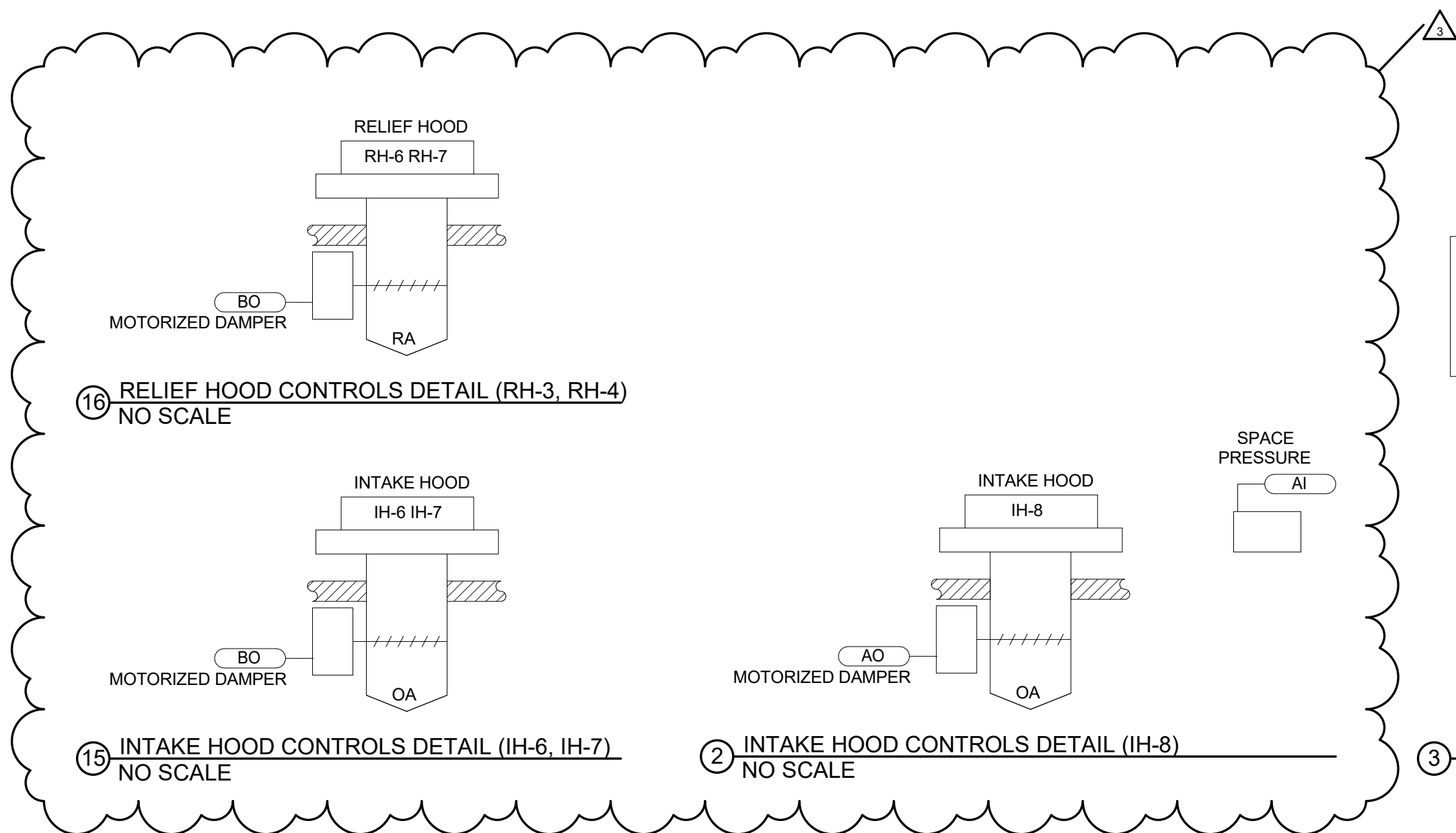




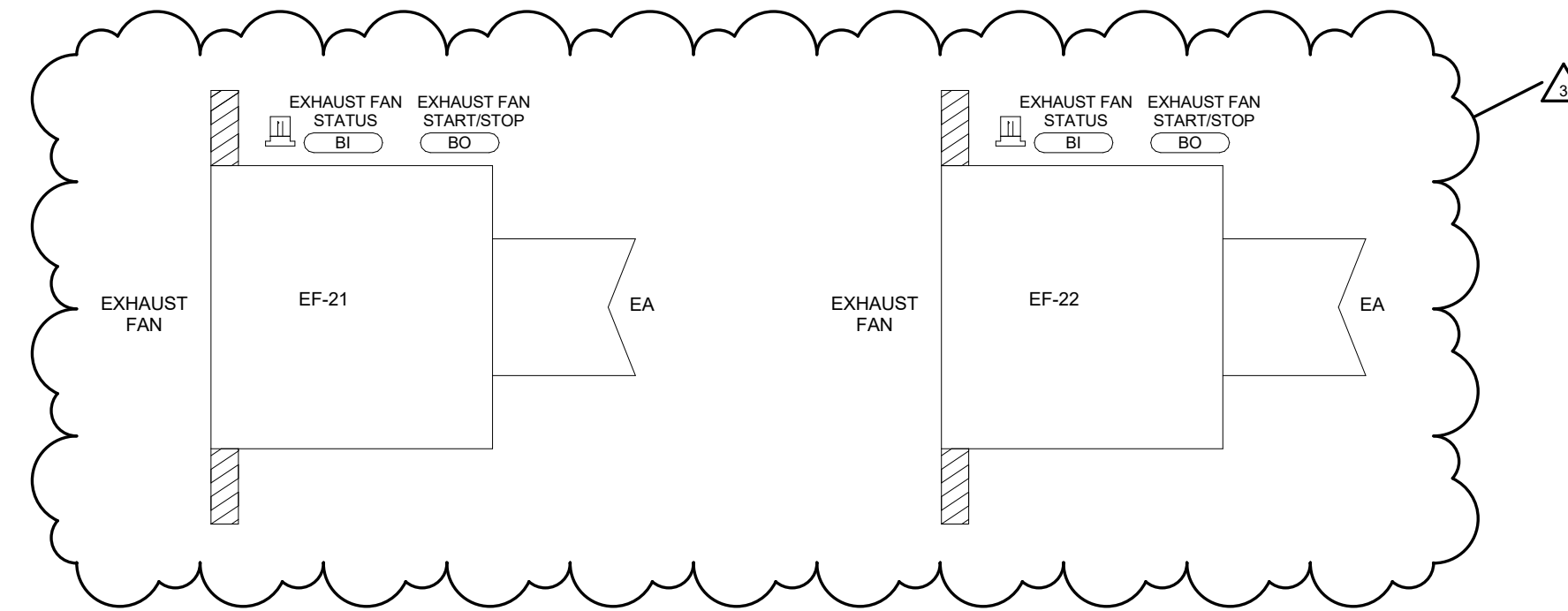
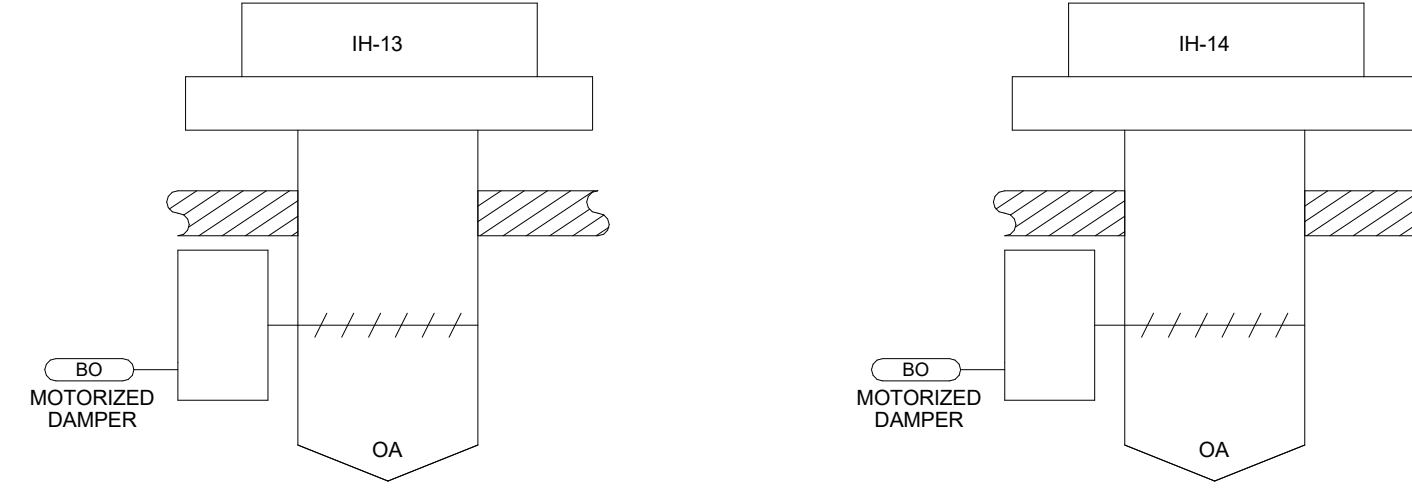
3/20/26 ADDENDUM 3 CHANGES
3/27/26 ADDENDUM 6 CHANGES



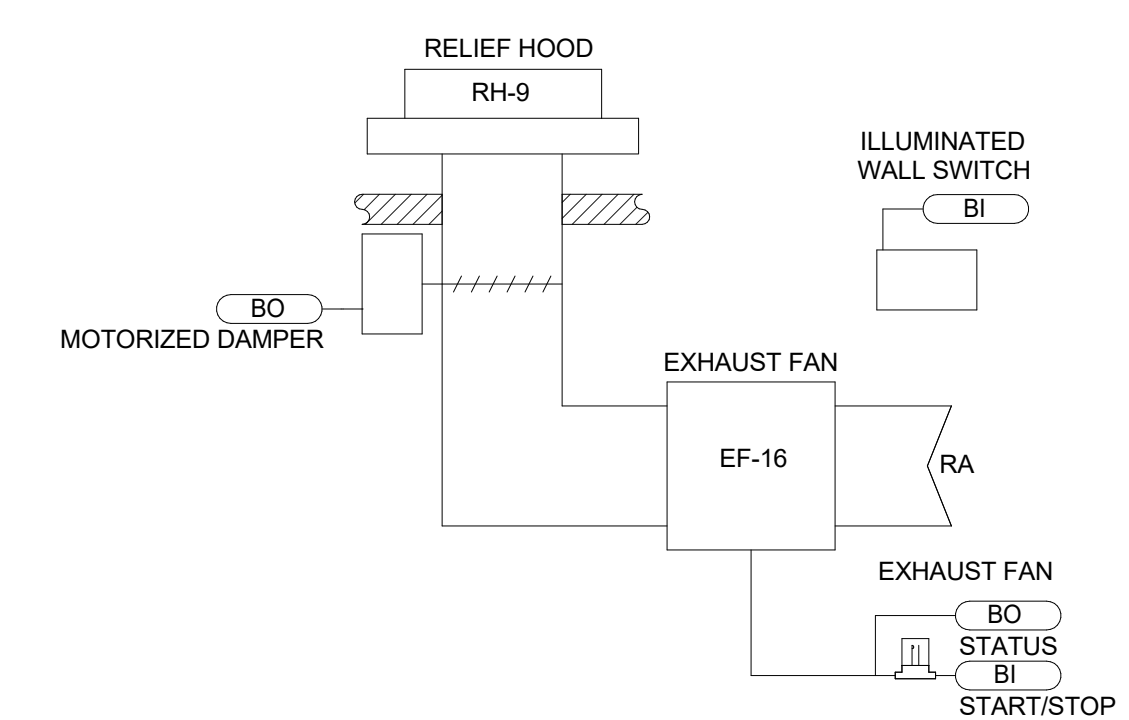
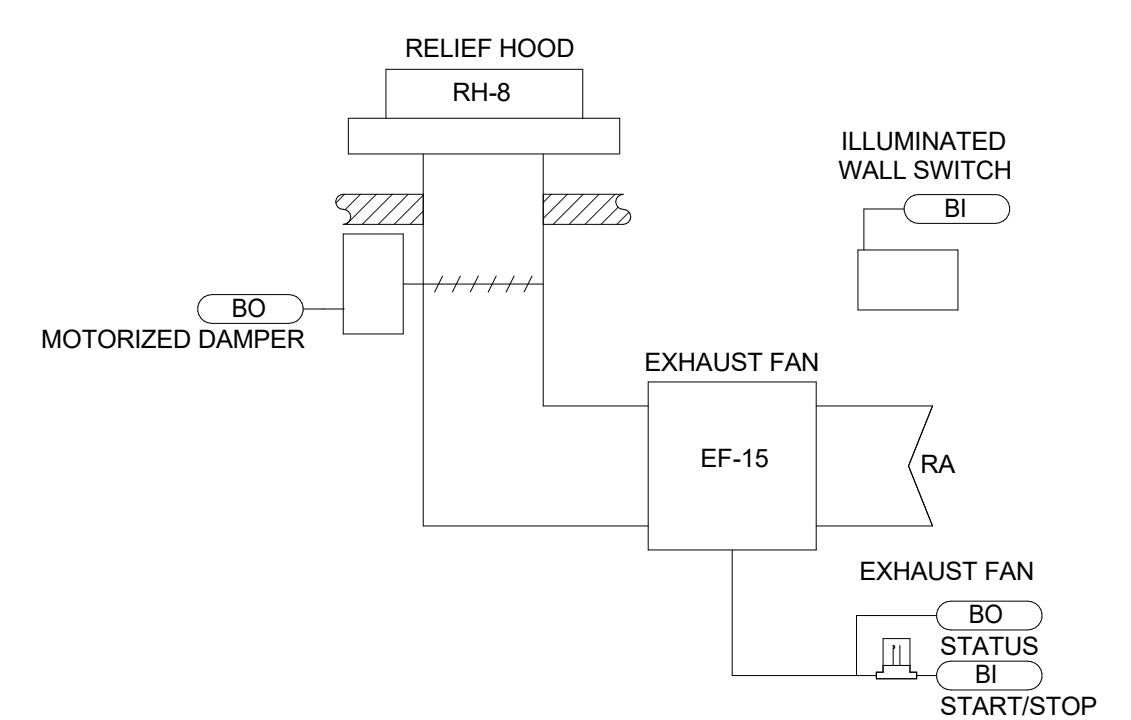
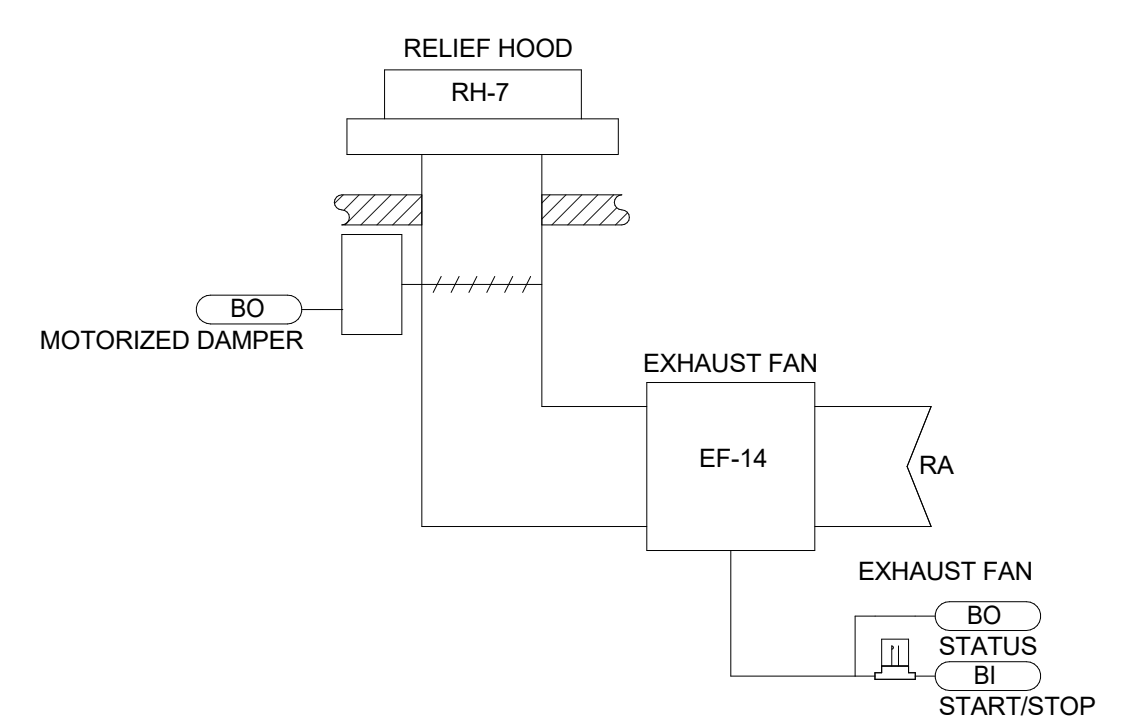
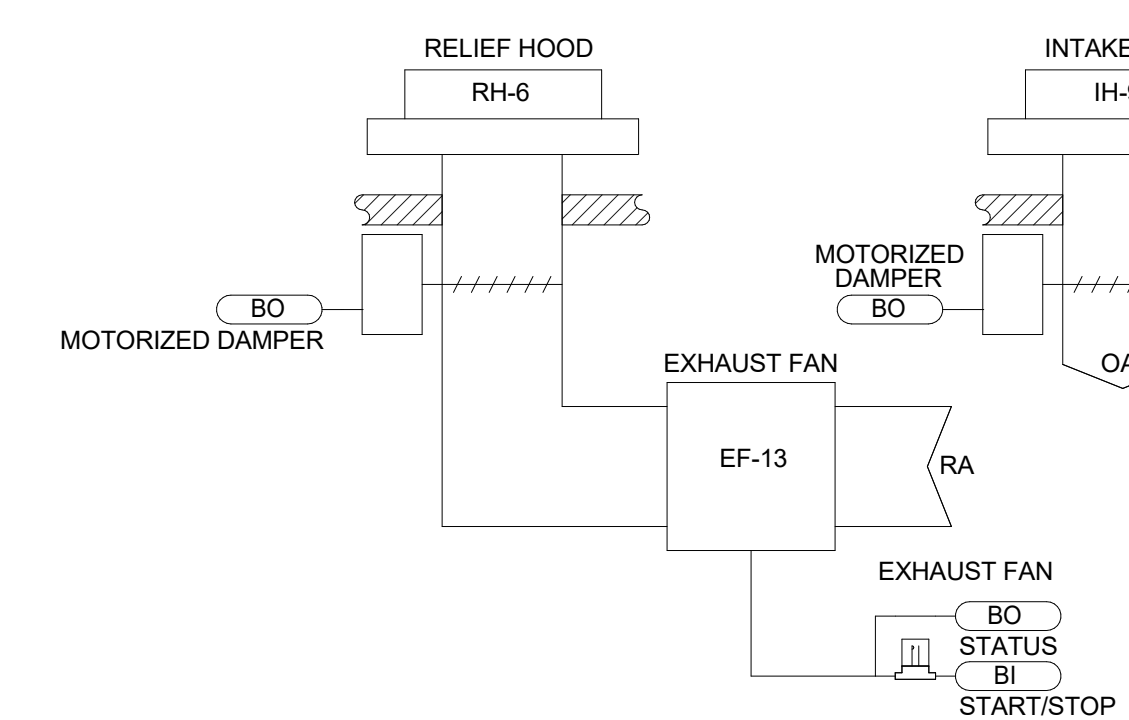
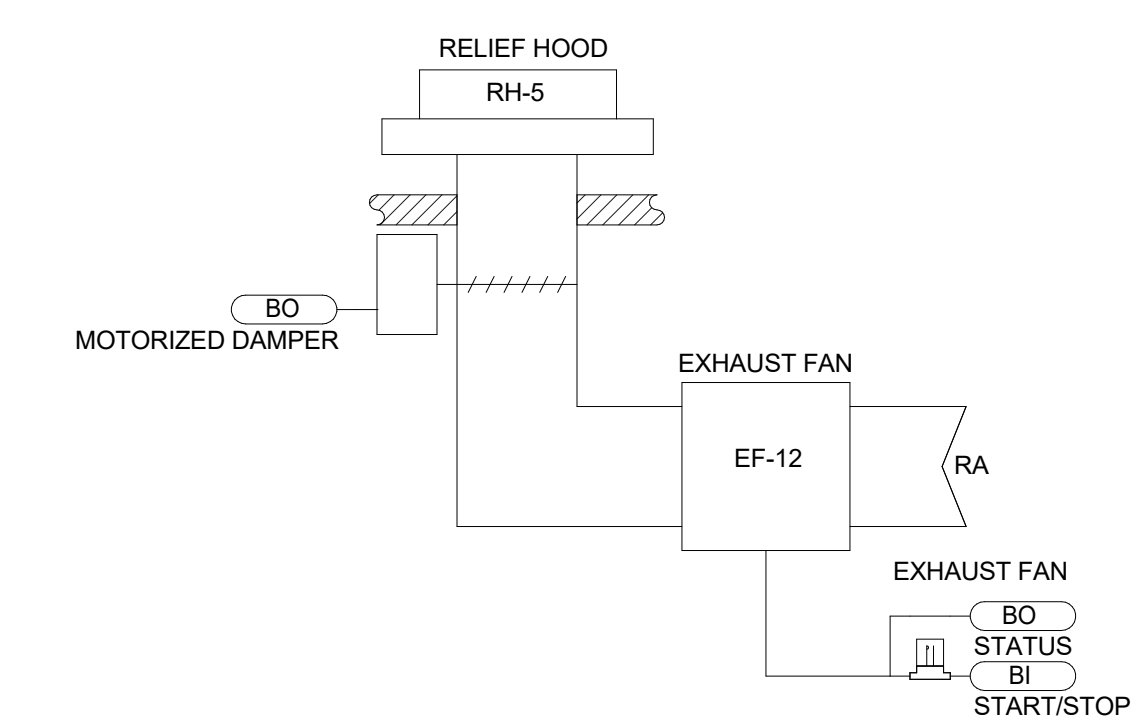
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- 2 3/20/26 ADDENDUM 3 CHANGES
- 3 3/27/26 ADDENDUM 6 CHANGES



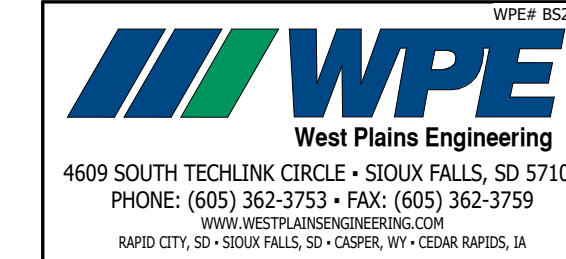
ALL CONTROLS WORK PROVIDED ONLY IF ADD ALTERNATE #2 IS ACCEPTED.



ALL CONTROLS WORK PROVIDED ONLY IF ADD ALTERNATE #1 IS ACCEPTED.



3/20/26 ADDENDUM 3 CHANGES
3/27/26 ADDENDUM 6 CHANGES



Plans for ABERDEEN PUBLIC WORKS Maintenance Building Aberdeen	MECHANICAL CONTROL DETAILS	M608
Hkg Architects, Inc. Aberdeen, S.D.	02/20/26	8823045

DX COOLING										
										PAGE 1

COMMENTS: HEATING COIL PERFORMANCE BASED ON 35% PROPYLENE GLYCOL

18
19

	ELECTRIC			COOLING		

COMMENTS:

3
4

C	DX COOLING
---	------------

1
2

CAPACITY LBS/HR	ELECTRICAL CONSUMPTION				DISTRIBUTION LOCAL
	VOLTAGE	PHASES	MOA	MOSE	

COMMENTS:

1
2

	SERVICE	VIBRATION IS
--	---------	--------------

CF	2
CF	3

1
2

MODEL	SERIES	CAPACITY BTU/H	AMBIENT TEMP	REF TYPE	SUCTION TEMPERATURE	CONDENSER
-------	--------	-------------------	-----------------	-------------	------------------------	-----------

CU	2	
CU	3	

1	1
2	1

MODEL	NOMINAL SIZE			THROAT SIZE			MAX. GEM	THROW	O.D.	N
	WIDTH	LENGTH	DIA.	WIDTH	LENGTH	DIA.				

E	
E	

2

[illegible]

II	
II	

1
2

GAS FIRED UNIT HEATER SCHEDULE														
UNIT TYPE	UNIT NUMBER	MANUFACTURER	MODEL	LOCATION	CFM	HEATING		HP	MOTOR					COMMENTS
						BTU/H INPUT	BTU/H OUTPUT		RPM	MCA	VOLTAGE	PHASES		
UH	1	REZNOR	UDXC 250	VEHICLE STORAGE 218	3202	250000	207500		1050	8 A	120	1	1.2	
UH	2	REZNOR	UDXC 250	VEHICLE STORAGE 218	3202	250000	207500		1050	8 A	120	1	1.2	
UH	3	REZNOR	UDXC 250	VEHICLE STORAGE 218	3202	250000	207500		1050	8 A	120	1	1.2	
UH	4	REZNOR	UDXC 250	VEHICLE STORAGE 218	3202	250000	207500		1050	8 A	120	1	1.2	
UH	5	REZNOR	UDXC 250	VEHICLE STORAGE 218	3202	250000	207500		1050	8 A	120	1	1.2	
UH	6	REZNOR	UDXC 250	VEHICLE STORAGE 218	3202	250000	207500		1050	8 A	120	1	1.2	
UH	7	REZNOR	UDXC 250	VEHICLE STORAGE 218	3202	250000	207500		1050	8 A	120	1	1.2	
UH	8	REZNOR	UDXC 250	VEHICLE STORAGE 218	3202	250000	207500		1050	8 A	120	1	1.2	
UH	9	REZNOR	UDXC 250	VEHICLE STORAGE 218	3202	250000	207500		1050	8 A	120	1	1.2	
UH	10	REZNOR	UDXC 250	VEHICLE STORAGE 218	3202	250000	207500		1050	8 A	120	1	1.2	
UH	11	REZNOR	UDXC 250	VEHICLE STORAGE 218	3202	250000	207500		1050	8 A	120	1	1.2	
UH	12	REZNOR	UDXC 250	VEHICLE STORAGE 218	3202	250000	207500		1050	8 A	120	1	1.2	
UH	13	REZNOR	UDXC 250	VEHICLE STORAGE 218	3202	250000	207500		1050	8 A	120	1	1.2	
UH	14	REZNOR	UDXC 250	VEHICLE STORAGE 218	3202	250000	207500		1050	8 A	120	1	1.2	
UH	15	REZNOR	UDXC 250	VEHICLE STORAGE 218	3202	250000	207500		1050	8 A	120	1	1.2	
UH	16	REZNOR	UDXC 250	VEHICLE STORAGE 218	3202	250000	207500		1050	8 A	120	1	1.2	
UH	17	REZNOR	UDXC 30	PRESSURE WASHER 215	456	30000	24600		1550	2 A	120	1	1.2	
UH	18	REZNOR	UDXC 45	WELDING 212	629	45000	37350		1550	3 A	120	1	1.2	
UH	19	REZNOR	UDXC 200	SERVICE 210	2562	200000	166000		1050	8 A	120	1	1.2	
UH	20	REZNOR	UDXC 200	SERVICE 210	2562	200000	166000		1050	8 A	120	1	1.2	
UH	21	REZNOR	UDXC 250	GARBAGE TRUCK STOR. 219	3202	250000	207500		1050	8 A	120	1	1.2,3	
UH	22	REZNOR	UDXC 250	GARBAGE TRUCK STOR. 219	3202	250000	207500		1050	8 A	120	1	1.2,3	
UH	23	REZNOR	UDXC 250	GARBAGE TRUCK STOR. 219	3202	250000	207500		1050	8 A	120	1	1.2,3	
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UH	29	REZNOR	UDXC 250	VEHICLE STORAGE 220	3202	250000	207500		1050	8 A	120	1	1.2,4	
UH	30	REZNOR	UDXC 250	VEHICLE STORAGE 220	3202	250000	207500		1050	8 A	120	1	1.2,4	
UH	31	REZNOR	UDXC 250	VEHICLE STORAGE 220	3202	250000	207500		1050	8 A	120	1	1.2,4	
UH	32	REZNOR	UDXC 250	VEHICLE STORAGE 220	3202	250000	207500		1050	8 A	120	1	1.2,4	

- COMMENTS:
- PROVIDE DIGITAL HEATING ONLY THERMOSTAT.
 - PROVIDE MANUFACTURER'S RECOMMENDED COMPLETE VENT AND INTAKE SYSTEM.
 - PROVIDE IN ALTERNATE #1 SCOPE.
 - PROVIDE IN ALTERNATE #2 SCOPE.

ELECTRIC HEAT SCHEDULE									
UNIT TYPE	UNIT NUMBER	MANUFACTURER	MODEL	MOUNT TYPE	ELECTRICAL DATA			THERMOSTAT TYPE	COMMENTS
					KW	VOLT	PHASE		
EUH	1	REZNOR	EWHB	WALL	10	480	3	INTEGRAL	1,2,3,4,5

- COMMENTS:
- STAINLESS STEEL, MOISTURE RESISTANT HOUSING WITH NEMA 4X NONMETALLIC ELECTRICAL ENCLOSURE ON BOTTOM OF UNIT.
 - SEALED TUBULAR HEATING ELEMENTS WITH SS FINS AND SS ADJUSTABLE OUTLET LOUVERS.
 - PROVIDE WITH STAINLESS STEEL SWIVEL MOUNTING BRACKET FOR WALL MOUNTING.
 - PROVIDE WITH WATERTIGHT DISCONNECT SWITCH.
 - PROVIDE WITH REMOTE FIELD INSTALLED NEMA 4X THERMOSTAT.

HYDRONIC UNIT HEATER SCHEDULE														
UNIT TYPE	UNIT NUMBER	MANUFACTURER	MODEL	LOCATION	CFM	HEATING					MOTOR			
						BTU/H	GPM	EWT	LWT	WPD	% GLYCOL	HP	RPM	MCA
HUH	1	SIGMA	039V	113A FIRE PUMP	570	20000	2	160 °F	130 °F	0.10 RH2O	35	0.05	850	120
HUH	2	SIGMA	067V	113 MECHANICAL	1180	36700	3.75	160 °F	130 °F	0.10 RH2O	35	0.13	1350	120
HUH	3	SIGMA	039V	207 GARAGE	570	20000	2	160 °F	130 °F	0.10 RH2O	35	0.05	850	120

- COMMENTS:
- VERTICAL MOUNT UNIT HEATER.
 - SUSPEND UNIT FROM STRUCTURE ABOVE WITH THREADED RODS AND VIBRATION ISOLATORS.
 - PROVIDE WITH FACTORY INSTALLED MOTOR STARTER WITH THERMAL OVERLOAD PROTECTION.
 - CAPACITY BASED ON 35% PROPYLENE GLYCOL.

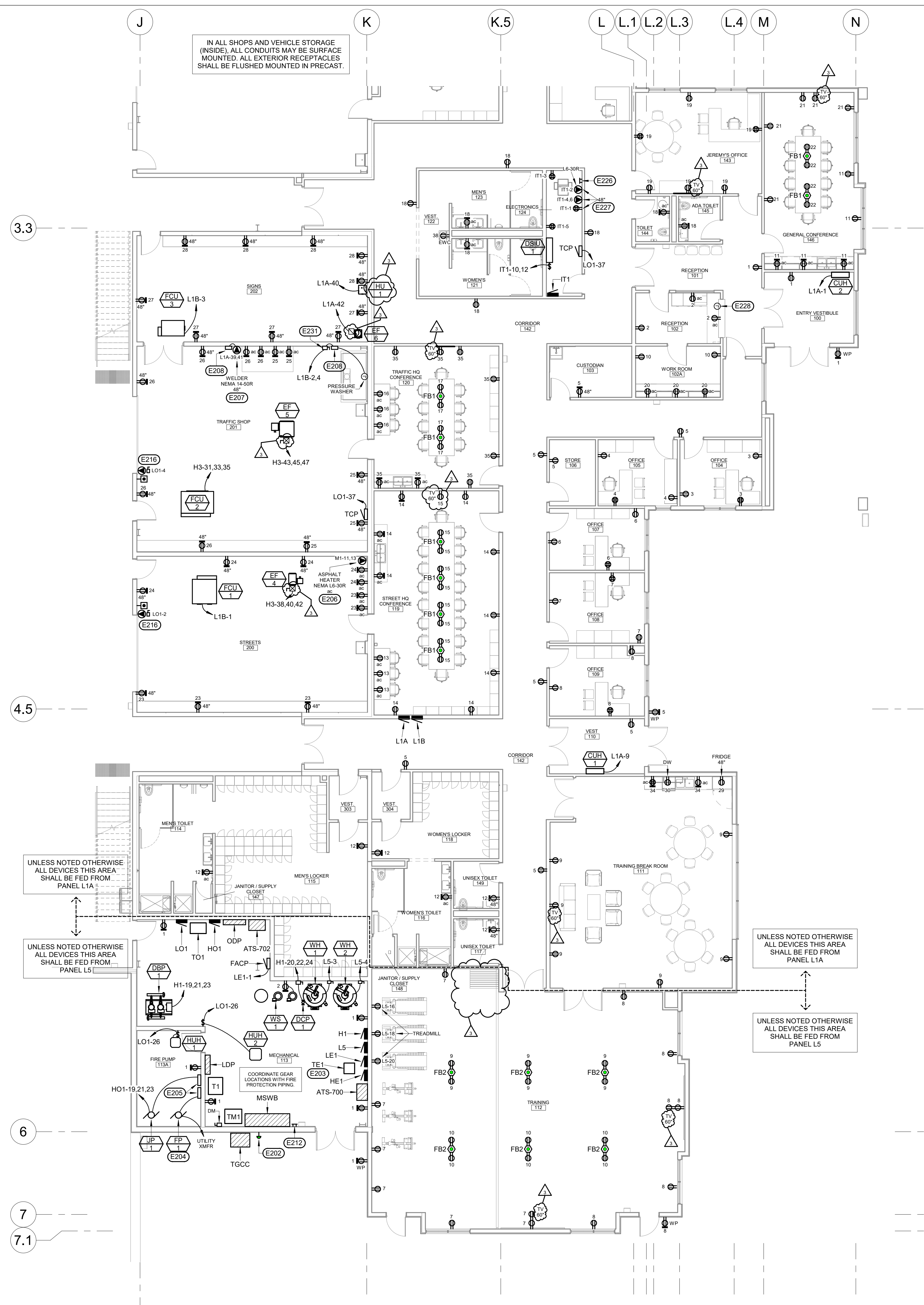
CABINET UNIT HEATER SCHEDULE														
UNIT TYPE	UNIT NUMBER	MANUFACTURER	MODEL	LOCATION	CFM	HEATING					MOTOR			
						BTU/H	GPM	EWT	LWT	WPD	% GLYCOL	HP	RPM	MCA
CUH	1	SIGMA	SFF-03	110 VEST	300	15880	1.5	160 °F	130 °F	0.30 RH2O	35	0.2	1075	120
CUH	2	SIGMA	SFF-03	100 ENTRY VEST	300	15880	1.5	160 °F	130 °F	0.30 RH2O	35	0.2	1075	120
CUH	3	SIGMA	SFF-03	133 VEST	300	15880	1.5	160 °F	130 °F	0.30 RH2O	35	0.2	1075	120

- COMMENTS:
- WITH 1 ROW COIL.
 - PROVIDE WITH FACTORY INSTALLED MOTOR STARTER WITH THERMAL OVERLOAD PROTECTION.
 - PROVIDE WITH FACTORY INSTALLED MOTOR SPEED CONTROLLER FOR FINAL AIR BALANCING.
 - PROVIDE WITH FACTORY INSTALLED POWER DISCONNECT SWITCH.
 - ARCHITECT SHALL SELECT CABINET COLOR FROM STANDARD COLOR CHART.
 - FULLY EXPOSED INVERTED WALL MOUNTED, FRONT TOP IN, FRONT BOTTOM OUT.
 - PROVIDE WITH FACTORY INSTALLED RELAY FOR ON/OFF CONTROL. TEMPERATURE CONTROLS CONTRACTOR SHALL PROVIDE INPUT TO RELAY FROM BAS.
 - CAPACITY BASED ON 35% PROPYLENE GLYCOL.

MAKE-UP AIR SCHEDULE														
UNIT TYPE	UNIT NUMBER	MANUFACTURER	MODEL	LOCATION	CFM	HEATING					MOTOR			
						BTU/H	GPM	EWT	LWT	WPD	% GLYCOL	HP	RPM	MCA
MAU	1	DAKIN	CAH018GHGM	302 MEZZANINE B	7900	2183	1.00 in-wg	5	480	3	SPRING ISOLATORS	PLEATED	MERV 8	2
MAU	2	DAKIN	CAH015GHGM	302 MEZZANINE B	6950	2183	1.00 in-wg	5	480	3	SPRING ISOLATORS	PLEATED	MERV 8	2
MAU	3	DAKIN	BCH0E001	302 MEZZANINE B	2600	2201	1.00 in-wg	4.42	480	3	SPRING ISOLATORS	PLEATED	MERV 8	2

- COMMENTS:
- UNIT TO BE DOUBLE WALL CONSTRUCTION WITH 2 INCHES OF R-13 INSULATION WITH THERMAL BARRIER.
 - PROVIDE WITH 6" FORMED CHANNEL BASE FOR MOUNTING ON CONCRETE HOUSEKEEPING PAD.
 - PROVIDE WITH TOP SUPPLY AND TOP OUTSIDE AIR CONNECTION.
 - PROVIDE ACCESS SECTIONS WITH MARINE LIGHT KIT.
 - MEAN PRESSURE DROP OF 0.54" ACROSS FILTER BANK INCLUDED IN SUPPLY FAN SIZING.
 - HEATING COIL PERFORMANCE BASED ON 35% PROPYLENE GLYCOL.
 - PROVIDE HEATING COILS WITH 0.020" COPPER TUBE WALL THICKNESS.
 - PROVIDE WITH NEMA PREMIUM SUPPLY FAN MOTOR WITH FACTORY INSTALLED SHAFT GROUNDING KITS. FAN SHALL BE MOUNTED ON SPRING ISOLATORS.
 - SUPPLY FAN MOTOR SHALL BE FACTORY WIRED TO EXTERNAL JUNCTION BOX.
 - UNIT TO BE DOUBLE WALL CONSTRUCTION WITH 1 INCH OF R-8 INSULATION.
 - PROVIDE WITH 6" EQUIPMENT RAILS FOR MOUNTING ON CONCRETE HOUSEKEEPING PAD.
 - FIELD INSTALLED CONTROLS.
 - MEAN PRESSURE DROP OF 0.4" ACROSS FILTER BANK INCLUDED IN SUPPLY FAN SIZING.

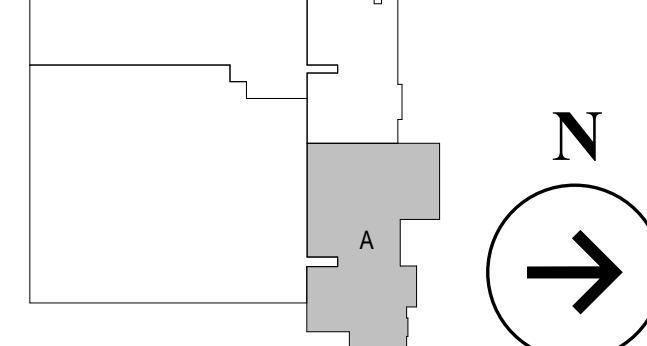
VARIABLE AIR VOLUME BOX SCHEDULE																									
UNIT TYPE	UNIT NUMBER	MANUFACTURER	MODEL	INLET STATIC	INLET CONNECTION	COOLING				HEATING				REHEAT SECTION						NC					
						OCCUPIED CFM		UNOCCUPIED CFM		OCCUPIED CFM		UNOCCUPIED CFM		GPM	BTUH	EWT	LWT	ROWS	WPD	APD	% GLYCOL	LAT	RAD	DIS	COMMENTS
						MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN												
VAV	1-1A	KRUEGER	LMHS-10	1.00 in-wg	10"	800	240	400	0	800	240	400	0	2.5	26200	160	137.8	2	0.74	0.23 in-wg	35	85.2 F	11	13	12.3,4,5
VAV	1-1B	KRUEGER	LMHS-12	1.00 in-wg	12"	1200	360	600	0	1200	360	1200	0	3	38800	160	132.6	2	1.08	0.27 in-wg	35	84.8 F	16	14	12.3,4,5
VAV	1-2	KRUEGER	LMHS-14	1.00 in-wg	14"	1835	1835	550	0	1835	1835	550	0	3	44900	160	128.3	2	0.67	0.25 in-wg	36	77.6 F	13	10	12.3,4,5
VAV	1-3	KRUEGER	LMHS-12	1.00 in-wg	12"	1000	300	500	0	1000	300	1000	0	2.5	33300	160	131.8	2	0.82	0.20 in-wg	35	85.7 F	15	12	12.3,4,5
VAV	1-4	KRUEGER	LMHS-06	1.00 in-wg	6"	320	100	160	0	320	100	320	0	1.25	10900	160	141.5	2	0.35	0.16 in-wg	35	86.4 F	15	18	12.3,4,5
VAV	1-5	KRUEGER	LMHS-06	1.00 in-wg	6"	320	100	160	0	320	100	320	0	1.25	10900	160	141.5	2	0.35	0.16 in-wg	35	86.4 F	15	18	12.3,4,5
VAV	1-6	KRUEGER	LMHS-06	1.00 in-wg	6"	300	90	150	0	300	90	300	0	1.25	10700	160	141.9	2	0.35	0.14 in-wg	35	87.8 F	15	16	12.3,4,5
VAV	1-7	KRUEGER	LMHS-10	1.00 in-wg	10"	870	260	435	0	435	260	435	0	0.75	12800	160	123.9	2	0.09	0.07 in-wg	35	82.0 F	16	18	12.3,4,5
VAV	1-8	KRUEGER	LMHS-08	1.00 in-wg	8"	600	180	300	0	300	180	300	0	0.75	9500	160	133.1	2	0.19	0.27 in-wg	35	84.2 F	17	20	12.3,4,5
VAV	1-9	KRUEGER	LMHS-08	1.00 in-wg	8"	570	170	285	0	285	170	285	0	0.75	9400	160	133.6	2	0.19	0.25 in-wg	35	85.3 F	16	18	12.3,4,5
VAV	1-10	KRUEGER	LMHS-08	1.00 in-wg	8"	500	500	250	0	500	500	500	0	1.25	13800	160	136.7	2	0.47	0.17 in-wg	35	80.4 F	16	18	12.3,4,5
VAV	2-1	KRUEGER	LMHS-06	1.00 in-wg	6"	350	105	175	0	350	105	350	0	1.5	12500	160	142.4	2	0.47	0.18 in-wg	36	87.8 F	16	19	12.3,4,5
VAV	2-2	KRUEGER	LMHS-06	1.00 in-wg	6"	350	105	175	0	350	105	350	0	1.5	12500	160	142.4	2	0.47	0.18 in-wg	35	87.8 F	16	19	12.3,4,5
VAV	2-3	KRUEGER	LMHS-06	1.00 in-wg	6"	220	65	110	0	220	65	220	0	0.75	7300	160	139.5	2	0.14	0.09 in-wg	35	85.4 F	11	14	12.3,4,5
VAV	2-4	KRUEGER	LMHS-10	1.00 in-wg	10"	860	260	430	0	430	260	430	0	1	13800	160	130.7	2	0.15	0.26 in-wg	35	84.6 F	12	14	12.3,4,5
VAV	2-5	KRUEGER	LMHS-06	1.00 in-wg	6"	350	105	175	0	350	105	350	0	1.5	12500	160	142.4	2	0.47	0.18 in-wg	35	87.8 F	16	19	12.3,4,5
VAV	2-6	KRUEGER	LMHS-06	1.00 in-wg	6"	280	80	130	0	280	80	280	0	0.75	6800	160	138.2	2	0.32	0.07 in-wg	35	86.2 F	11	14	12.3,4,5
VAV	2-7	KRUEGER	LMHS-06	1.00 in-wg	6"	350	105	175	0	350	105	350	0	1.5	12500	160	142.4	2	0.47	0.18 in-wg	35	87.8 F	16	19	12.3,4,5
VAV	2-8	KRUEGER	LMHS-10	1.00 in-wg	10"	780	235	390	0	390	235	390	0	1.25	12900	160	138.2	2	0.23	0.19 in-wg	35	85.4 F	11	14	12.3,4,5
VAV	2-9	KRUEGER	LMHS-08	1.00 in-wg	8"	420	130	210	0	420	130	420	0	1.5	14400	160	139.8	2	0.62	0.13 in-wg	35	86.5 F	14	17	12.3,4,5
VAV	2-10	KRUEGER	LMHS-08	1.00 in-wg	8"	440	135	220	0	420	135	420	0	0.75	6500	160	141.6	1	0.62	0.08 in-wg	35	82.3 F	15	18	12.3,4,5
VAV	2-11	KRUEGER	LMHS-06	1.00 in-wg	6"	340	110	170	0	340	110	340	0	1.5	11400	160	143.9	2	0.47	0.15 in-wg	35	85.9 F	17	19	12.3,4,5
VAV	2-12	KRUEGER	LMHS-06	1.00 in-wg	6"	320	100	160	0	230	100	230	0	1.25	10900	160	141.5	2	0.35	0.16 in-wg	35	86.4 F	15	18	12.3,4,5
VAV	2-13	KRUEGER	LMHS-08	1.00 in-wg	8"	500	150	250	0	500	150	500	0	1.75	17800	160	138.5	2	0.79	0.20 in-wg	35	87.8 F	14	18	12.3,4,5

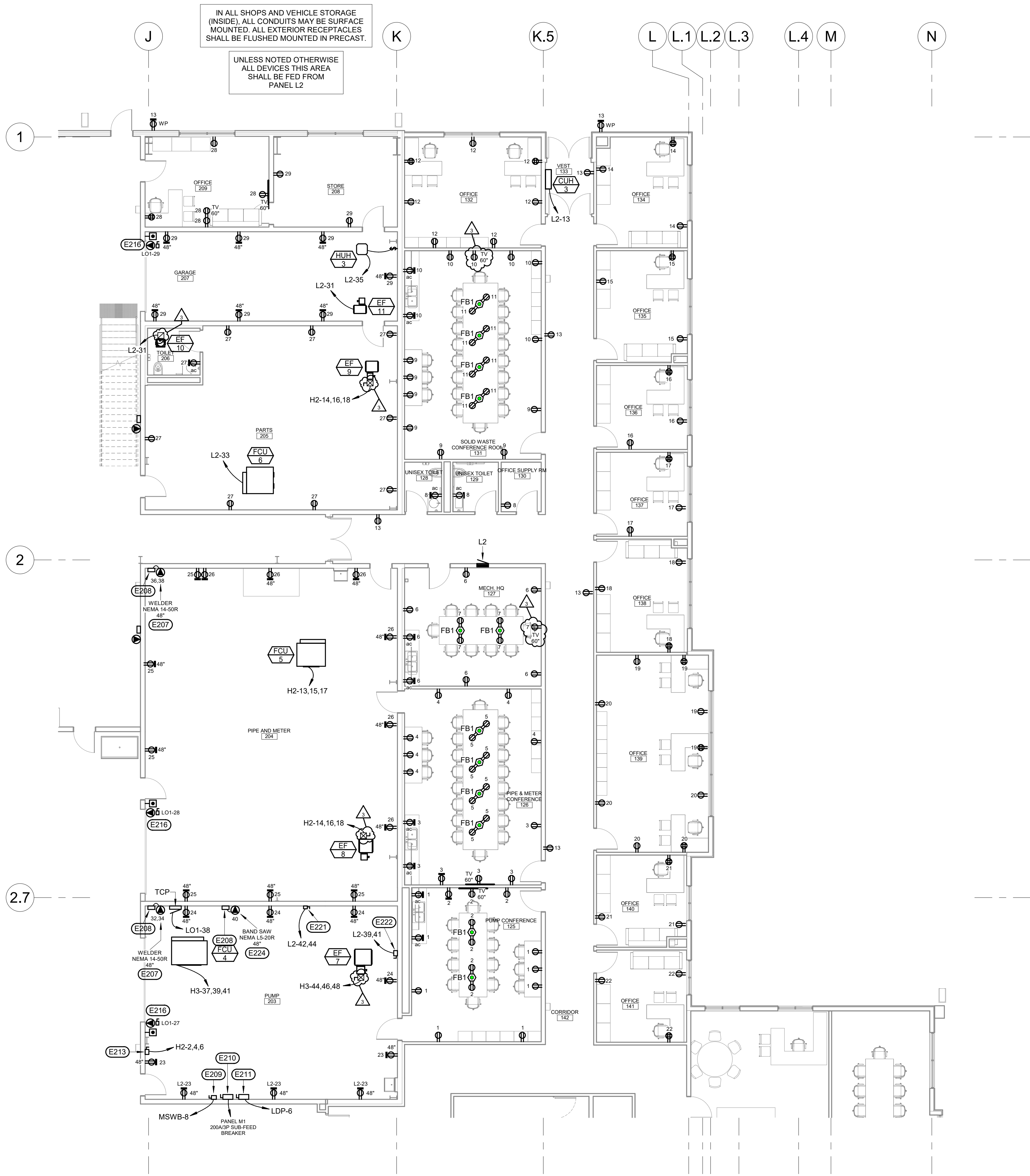


1 FIRST FLOOR POWER PLAN - AREA A
1/8" = 1'-0"

- ELECTRICAL SPECIFIC NOTES**
- E202 GENERATOR EMERGENCY SHUTDOWN PUSHBUTTON WITH CLEAR FLIP-UP COVER. INTERLOCK PUSHBUTTON WITH GENERATOR. COORDINATE EXACT LOCATION WITH AHI PRIOR TO INSTALLATION.
 - E203 PROVIDE UNISTRUT BRACKETS TO MOUNT TRANSFORMER TET ABOVE PANELS HE1 AND LE1 AS SHOWN.
 - E204 FIRE PUMP TO BE SERVED DIRECTLY FROM THE UTILITY TRANSFORMER. REFER TO ONE-LINE DIAGRAM FOR WIRE SIZING.
 - E205 PROVIDE POWER TO FIRE PUMP AND JOCKEY PUMP CONTROLLERS. REFER TO FIRE PROTECTION DRAWINGS FOR CONTROLLER LOCATIONS.
 - E206 PROVIDE A NEMA L6-30R LOCKING-TYPE RECEPTACLE FOR ASPHALT HEATER. COORDINATE EXACT LOCATION WITH OWNER PRIOR TO ROUGH-IN.
 - E207 PROVIDE A NEMA 14-50R RECEPTACLE FOR WELDER. VERIFY WELDER LOCATION WITH OWNER PRIOR TO ROUGH-IN.
 - E208 PROVIDE AN EXTERNAL GFCI PROTECTION DEVICE SIZED FOR THE CIRCUIT SHOWN. INSTALL NEAR RECEPTACLE/EQUIPMENT IN A READILY ACCESSIBLE LOCATION. (NORTH SHORE SAFETY LINECARD PGFS OR EQUAL.)
 - E212 PROVIDE AN INTERSYSTEMS BONDING BUS BAR.
 - E216 AUTOMATIC OVERHEAD DOOR PUSHBUTTON STATIONS AND OPERATORS. EQUIPMENT PROVIDED AND INSTALLED BY GC. CONNECTED/POWERED BY EC. INSTALL PER MANUFACTURER'S RECOMMENDATIONS AND COORDINATE EXACT REQUIREMENTS WITH ARCHITECTURAL SPECIFICATIONS/SHOP DRAWINGS. PROVIDE NECESSARY CONTROL WIRING FOR SAFETY FEATURES. COORDINATE EXACT LOCATIONS WITH OWNER AND OTHER TRADES TO MAKE ALL SERVICES FIT IN THIS AREA. TYPICAL.
 - E226 PROVIDE A TELECOMMUNICATIONS GROUNDING BUS BAR.
 - E227 MOUNT ON PLYWOOD BACKING SHOWN ON THE COMMUNICATIONS DRAWING.
 - E228 PROVIDE A BATTERY OPERATED WINDOW INTERCOM SYSTEM (B&G AUDIO LTG-04-LB OR EQUAL). COORDINATE EXACT LOCATION WITH OWNER PRIOR TO INSTALLATION.
 - E231 PROVIDE A 30A FRAME NON-FUSED DISCONNECT SWITCH IN A NEMA 1 ENCLOSURE.

- 2 3/20/26 ADDENDUM 3 CHANGES
- 3 3/27/26 ADDENDUM 6 CHANGES

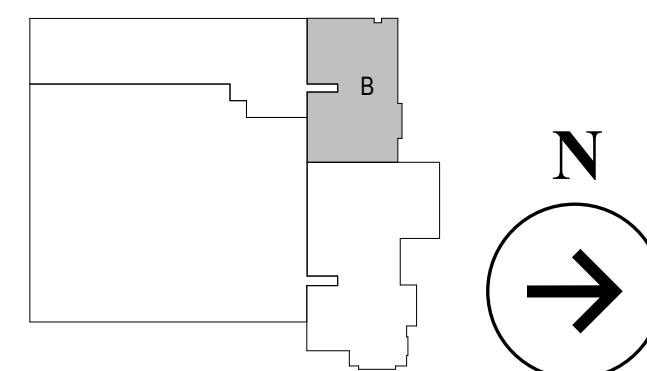
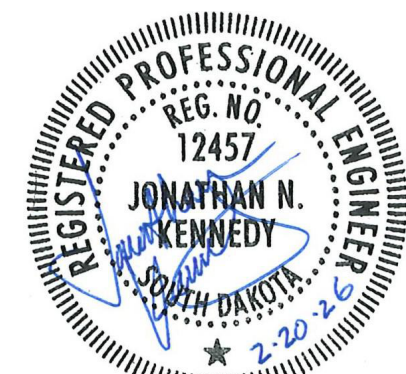


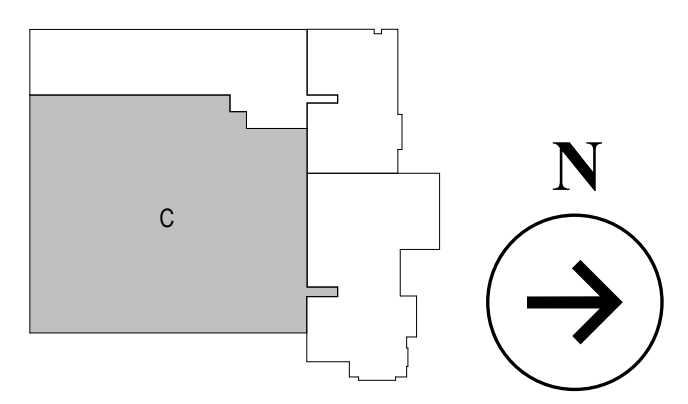


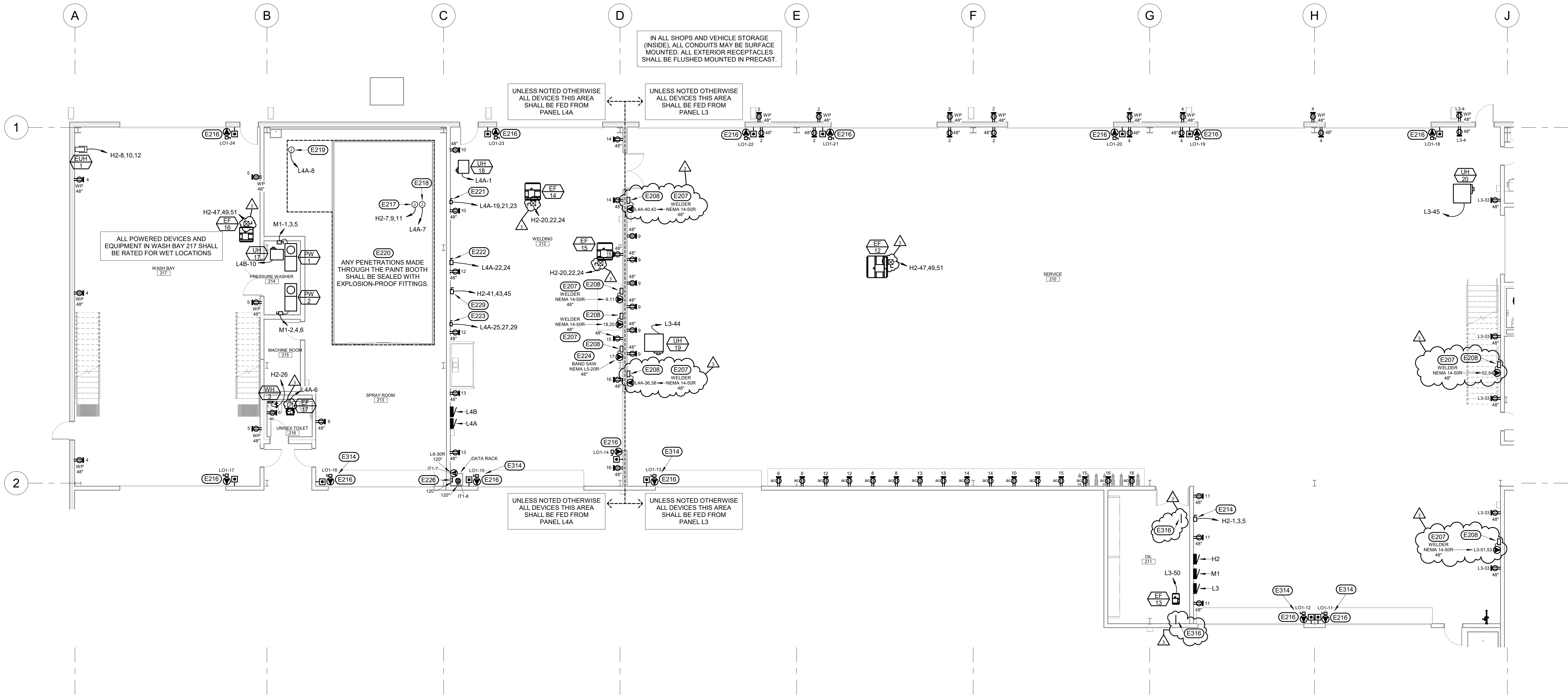
1 FIRST FLOOR POWER PLAN - AREA B
1/8" = 1'-0"

- ELECTRICAL SPECIFIC NOTES**
- E207 PROVIDE A NEMA 14-50R RECEPTACLE FOR WELDER. VERIFY WELDER LOCATION WITH OWNER PRIOR TO ROUGH-IN.
- E208 PROVIDE AN EXTERNAL GFCI PROTECTION DEVICE SIZED FOR THE CIRCUIT SHOWN. INSTALL NEAR RECEPTACLE/EQUIPMENT IN A READILY ACCESSIBLE LOCATION. (NORTH SHORE SAFETY LINECARD PGFS OR EQUAL.)
- E209 PROVIDE A 100A FRAME NON-FUSED DISCONNECT FOR VOLTAGE TESTING. PROVIDE ENGRAVED LABEL "VOLTAGE TESTING FOR 480V/3PH, 100A".
- E210 PROVIDE A 200A FRAME NON-FUSED DISCONNECT FOR VOLTAGE TESTING. PROVIDE ENGRAVED LABEL "VOLTAGE TESTING FOR 240V/3PH, 200A".
- E211 PROVIDE A 200A FRAME NON-FUSED DISCONNECT FOR VOLTAGE TESTING. PROVIDE ENGRAVED LABEL "VOLTAGE TESTING FOR 208V/3PH, 200A".
- E213 PROVIDE A 30A FRAME NON-FUSED DISCONNECT FOR FREE-STANDING BRIDGE CRANE.
- E216 AUTOMATIC OVERHEAD DOOR PUSHBUTTON STATIONS AND OPERATORS. EQUIPMENT PROVIDED AND INSTALLED BY GC. CONNECTED/POWERED BY EC. INSTALL PER MANUFACTURER'S RECOMMENDATIONS AND COORDINATE EXACT REQUIREMENTS WITH ARCHITECTURAL SPECIFICATIONS/SHOP DRAWINGS. PROVIDE NECESSARY CONTROL WIRING FOR SAFETY FEATURES. COORDINATE EXACT LOCATIONS WITH OWNER AND OTHER TRADES TO MAKE ALL SERVICES FIT IN THIS AREA. TYPICAL.
- E221 PROVIDE A 30A FRAME NON-FUSED DISCONNECT FOR DRILL PRESS. COORDINATE EXACT LOCATION WITH OWNER PRIOR TO ROUGH-IN.
- E222 PROVIDE A 60A FRAME NON-FUSED DISCONNECT FOR PLASMA CUTTER. COORDINATE EXACT LOCATION WITH OWNER PRIOR TO ROUGH-IN.
- E224 PROVIDE A NEMA L5-20R LOCKING-TYPE RECEPTACLE FOR BAND SAW. COORDINATE EXACT LOCATION WITH OWNER PRIOR TO ROUGH-IN.

1. 3/11/26 ADDENDUM 2 CHANGES
2. 3/20/26 ADDENDUM 3 CHANGES
3. 3/27/26 ADDENDUM 6 CHANGES



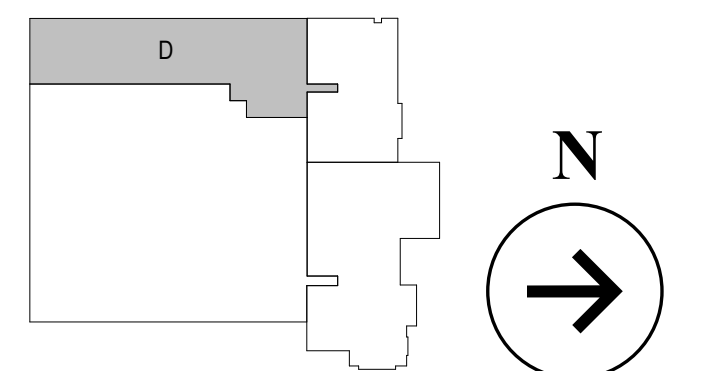




- ELECTRICAL SPECIFIC NOTES**
- E207 PROVIDE A NEMA 14-50R RECEPTACLE FOR WELDER. VERIFY WELDER LOCATION WITH OWNER PRIOR TO ROUGH-IN.
- E208 PROVIDE AN EXTERNAL GFCI PROTECTION DEVICE SIZED FOR THE CIRCUIT SHOWN. INSTALL NEAR RECEPTACLE/EQUIPMENT IN A READILY ACCESSIBLE LOCATION. (NORTH SHORE SAFETY LINECARD PGFS OR EQUAL.)
- E214 PROVIDE A 30A FRAME DISCONNECT WITH 25-AMP FUSES FOR SINGLE GIRDER CRANE. PROVIDE CONNECTION FROM DISCONNECT TO THE CRANE'S 4-CONDUCTOR ELECTRIFICATION BAR.
- E216 AUTOMATIC OVERHEAD DOOR PUSHBUTTON STATIONS AND OPERATORS. EQUIPMENT PROVIDED AND INSTALLED BY GC. CONNECTED/POWERED BY EC. INSTALL PER MANUFACTURER'S RECOMMENDATIONS AND COORDINATE EXACT REQUIREMENTS WITH ARCHITECTURAL SPECIFICATIONS/SHOP DRAWINGS. PROVIDE NECESSARY CONTROL WIRING FOR SAFETY FEATURES. COORDINATE EXACT LOCATIONS WITH OWNER AND OTHER TRADES TO MAKE ALL SERVICES FIT IN THIS AREA. TYPICAL.
- E217 PROVIDE CIRCUIT TO CONNECTION POINT "E" FOR MOTORS SERVING PAINT BOOTH. ELECTRICAL INSTALLATION OF PAINT BOOTH SHALL COMPLY WITH NEC ARTICLE 516. ANY PENETRATIONS MADE THROUGH THE PAINT BOOTH SHALL BE SEALED WITH EXPLOSION-PROOF FITTINGS.
- E218 PROVIDE CIRCUIT TO CONNECTION POINT "L" LIGHTING FIXTURES INSIDE PAINT BOOTH. ELECTRICAL INSTALLATION OF PAINT BOOTH SHALL COMPLY WITH NEC ARTICLE 516. ANY PENETRATIONS MADE THROUGH THE PAINT BOOTH SHALL BE SEALED WITH EXPLOSION-PROOF FITTINGS.
- E219 PROVIDE CIRCUIT TO CONNECTION POINT "E" FOR EXHAUST FAN AND LIGHTING FIXTURES INSIDE MIXING ROOM. COORDINATE EXACT LOCATION WITH MANUFACTURER SHOP DRAWINGS. INSTALL PER MANUFACTURER'S SPECIFICATIONS. ELECTRICAL INSTALLATION OF MIXING ROOM SHALL COMPLY WITH NEC ARTICLE 516. ANY PENETRATIONS MADE THROUGH THE MIXING ROOM SHALL BE SEALED WITH EXPLOSION-PROOF FITTINGS.
- E220 ELECTRICAL CONTRACTOR SHALL PROVIDE ALL NECESSARY ELECTRIC CONNECTIONS TO PROVIDE THE POWER COMMENSURATE WITH THE OPERATION OF THE SPRAY BOOTH. THIS INCLUDES BRINGING POWER TO THE CONTROL PANELS ALONG WITH WIRING DOOR SENSORS, DAMPER MOTORS, LIGHTS TO CONTROL PANEL, ECONOMY SWITCH, GUN SOLENOID, ROLL UP CURTAIN DOOR AND ANY OTHER ELECTRICAL DEVICE CONNECTIONS NEEDED.
- E221 PROVIDE A 30A FRAME NON-FUSED DISCONNECT FOR DRILL PRESS. COORDINATE EXACT LOCATION WITH OWNER PRIOR TO ROUGH-IN.
- E222 PROVIDE A 60A FRAME NON-FUSED DISCONNECT FOR PLASMA CUTTER. COORDINATE EXACT LOCATION WITH OWNER PRIOR TO ROUGH-IN.
- E223 PROVIDE A 30A FRAME NON-FUSED DISCONNECT FOR LATHE. COORDINATE EXACT LOCATION WITH OWNER PRIOR TO ROUGH-IN.
- E224 PROVIDE A NEMA L5-20R LOCKING-TYPE RECEPTACLE FOR BAND SAW. COORDINATE EXACT LOCATION WITH OWNER PRIOR TO ROUGH-IN.
- E226 PROVIDE A TELECOMMUNICATIONS GROUNDING BUS BAR.
- E229 PROVIDE A 30A FRAME DISCONNECT WITH 17.5-AMP FUSES FOR SINGLE GIRDER CRANE. PROVIDE CONNECTION FROM DISCONNECT TO THE CRANE'S 4-CONDUCTOR ELECTRIFICATION BAR.
- E314 OVERHEAD DOOR IS INSTALLED IN A WALL WITH A 1-HOUR FIRE BARRIER RATING. INTERLOCK THE OVERHEAD DOOR WITH THE FIRE ALARM SYSTEM TO CLOSE UPON ACTIVATION OF THE SYSTEM.
- E316 COMBINATION FIRE/SMOKE DAMPER. REFER TO DETAIL ON SHEET E500 FOR MORE INFORMATION.

1 FIRST FLOOR POWER PLAN - AREA D
1/8" = 1'-0"

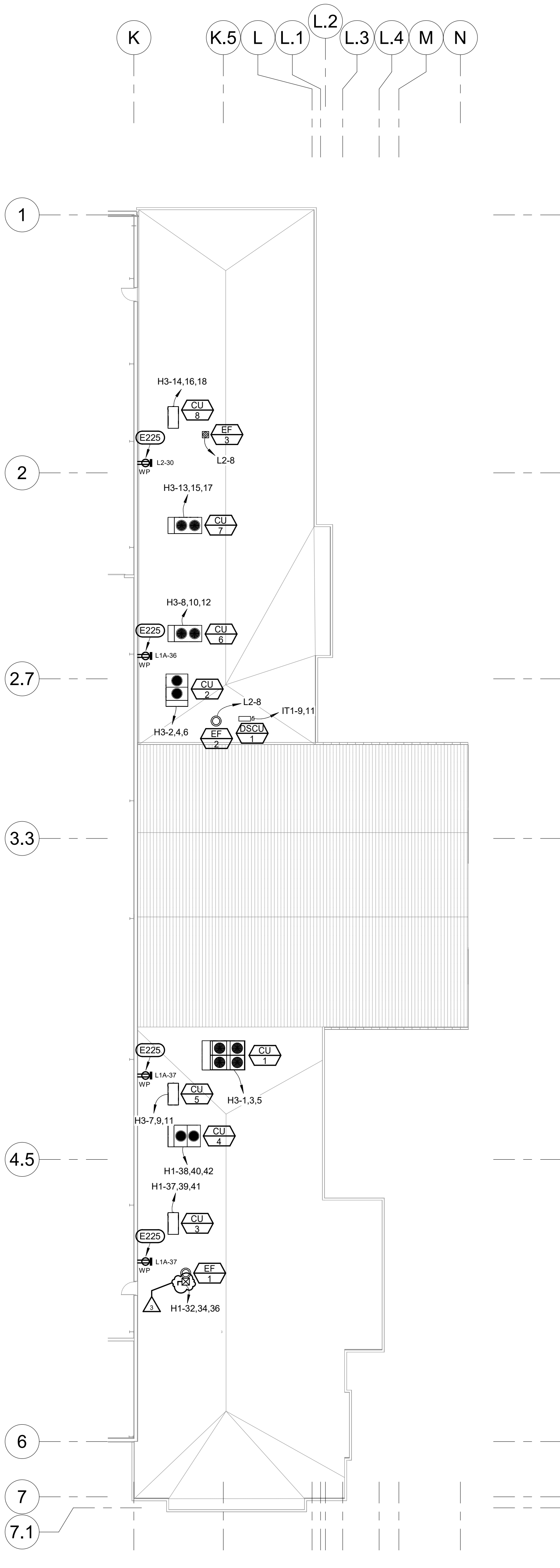
- 1 3/11/26 ADDENDUM 2 CHANGES
2 3/20/26 ADDENDUM 3 CHANGES
3 3/27/26 ADDENDUM 6 CHANGES



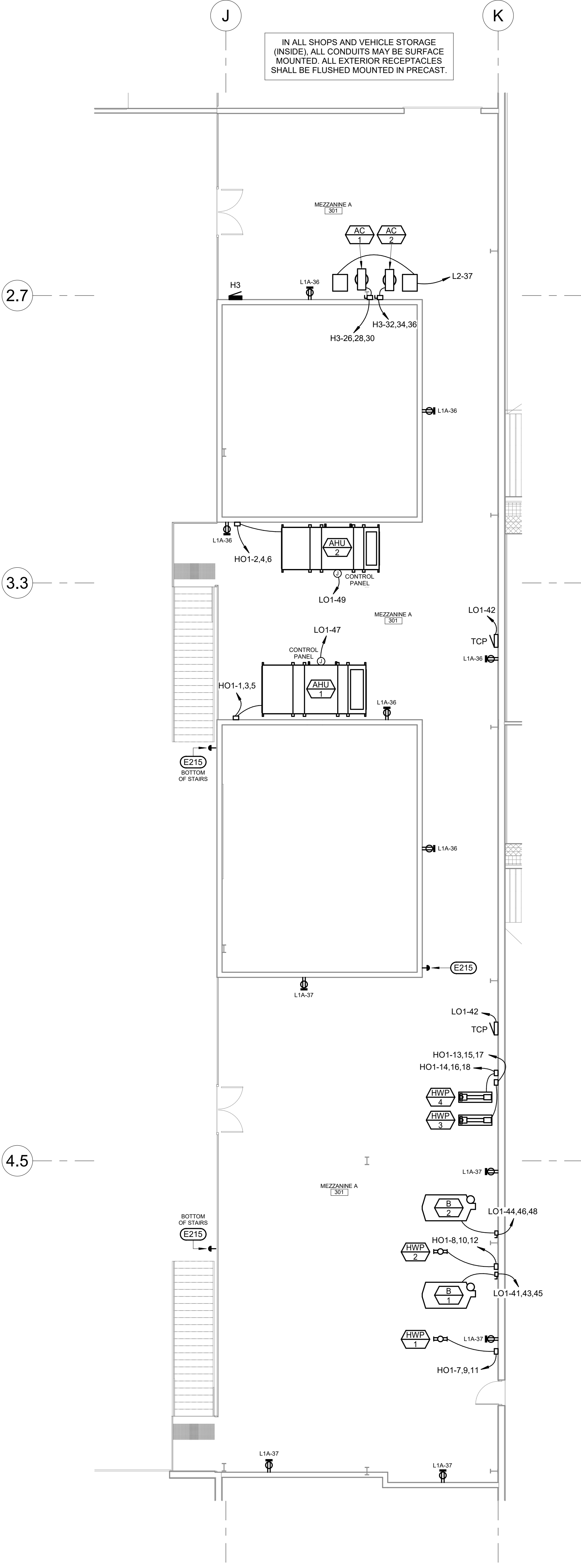
WPE
West Plains Engineering
4609 SOUTH TECHLINK CIRCLE - SIOUX FALLS, SD 57106
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hkg
architects

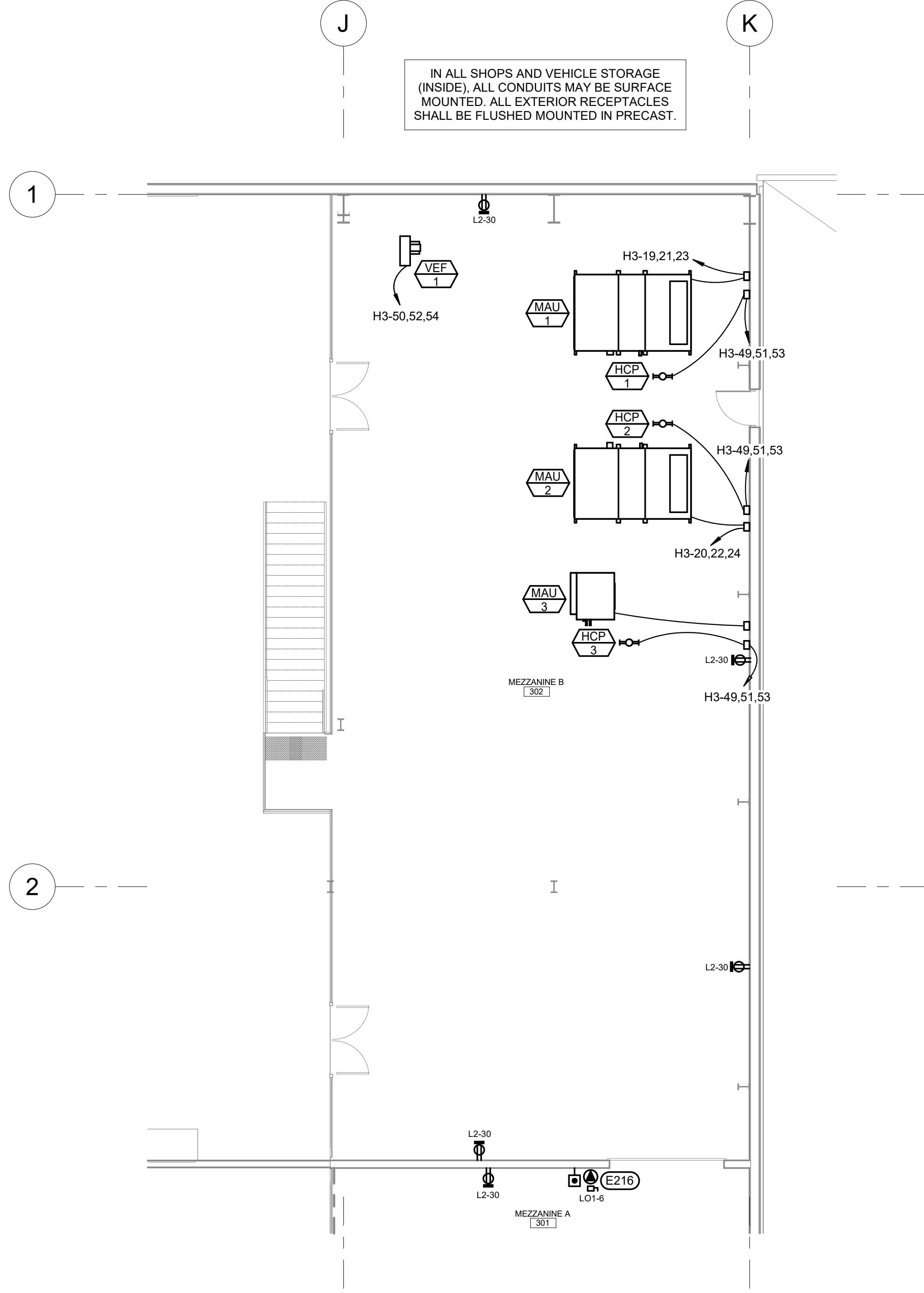
PROJECT	Plans for ABERDEEN PUBLIC WORKS Maintenance Building Aberdeen	DATE	02/20/26
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1 ELECTRICAL ROOF PLAN - AREAS A & B
1/16" = 1'-0"



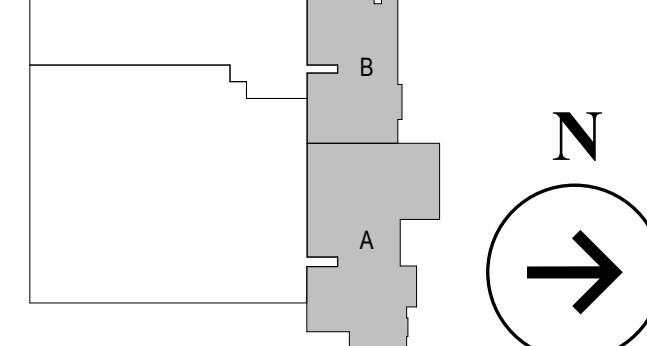
2 MEZZANINE FLOOR POWER PLAN - AREA A
1/8" = 1'-0"

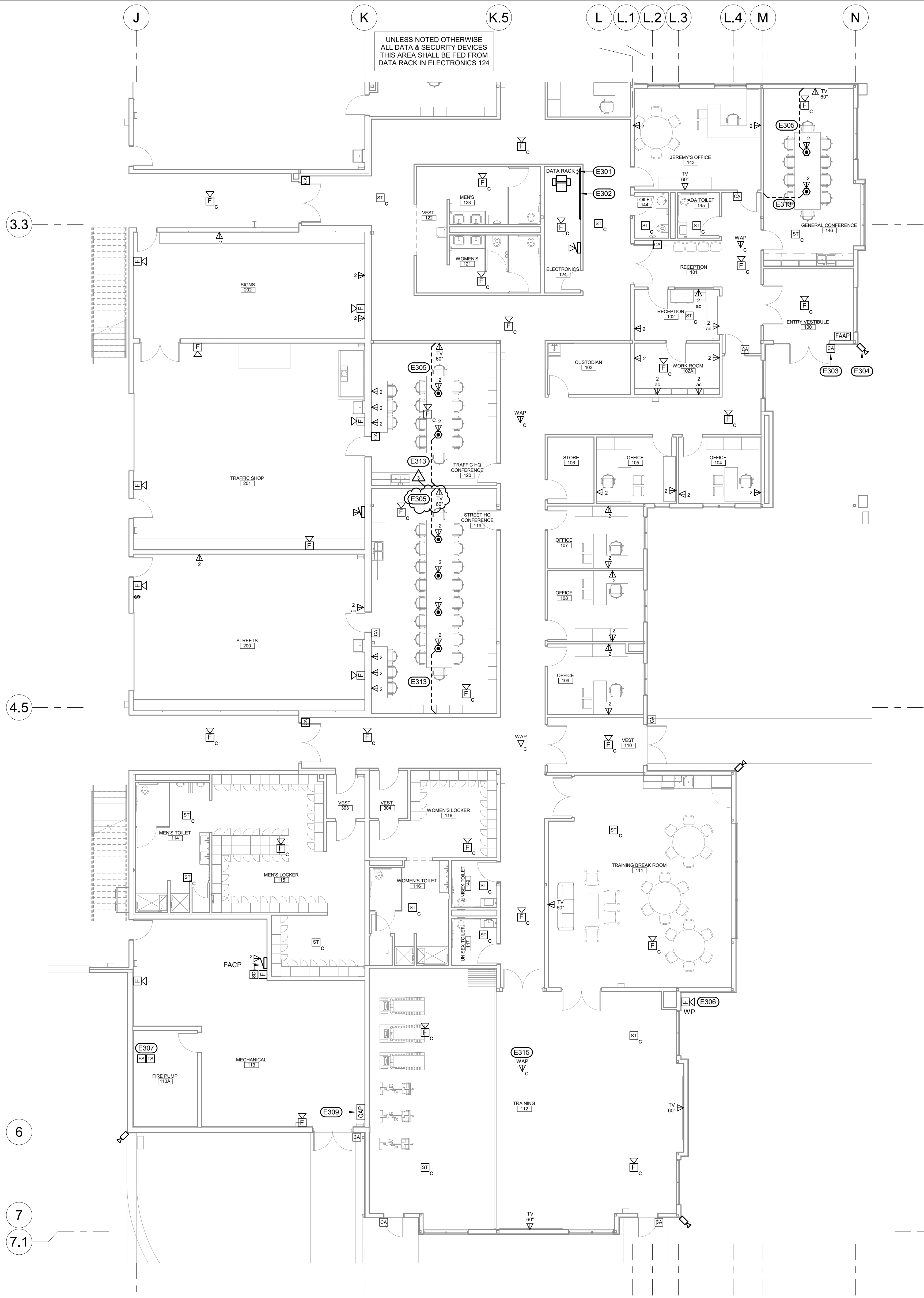


3 MEZZANINE FLOOR POWER PLAN - AREA B
1/8" = 1'-0"

- ELECTRICAL SPECIFIC NOTES**
- E215 PROVIDE AN EMERGENCY SHUTDOWN PUSHBUTTON SWITCH WITH CLEAR FLIP-UP COVER AND INTERLOCK WITH BOILERS.
 - E216 AUTOMATIC OVERHEAD DOOR PUSHBUTTON STATIONS AND OPERATORS, EQUIPMENT PROVIDED AND INSTALLED BY GC, CONNECTED/POWERED BY EC. INSTALL PER MANUFACTURER'S RECOMMENDATIONS AND COORDINATE EXACT REQUIREMENTS WITH ARCHITECTURAL SPECIFICATIONS/SHOP DRAWINGS. PROVIDE NECESSARY CONTROL WIRING FOR SAFETY FEATURES. COORDINATE EXACT LOCATIONS WITH OWNER AND OTHER TRADES TO MAKE ALL SERVICES FIT IN THIS AREA. TYPICAL.
 - E225 PROVIDE GFCI-TYPE RECEPTACLE WITHIN 25FT OF MECHANICAL EQUIPMENT ON ROOF.

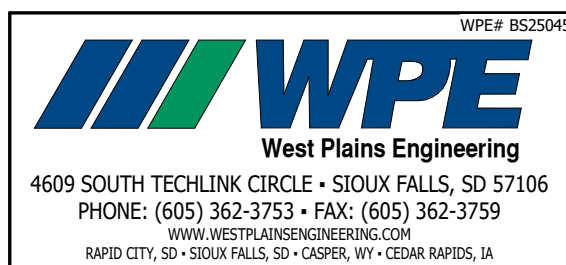
- 3. 3/27/26 ADDENDUM 6 CHANGES
- 2. 3/20/26 ADDENDUM 3 CHANGES



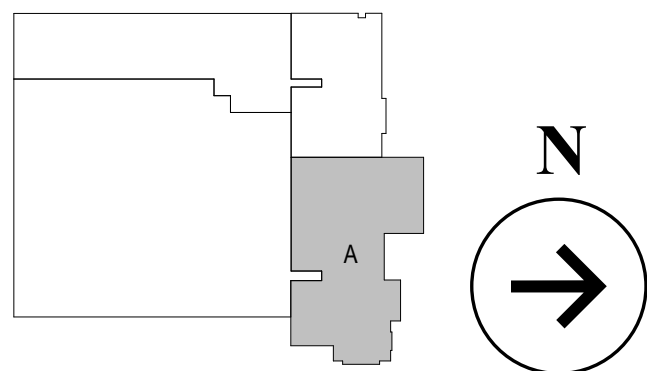


- ELECTRICAL SPECIFIC NOTES**
- E301 PROVIDE (2) 2" CONDUITS WITH PULL CORDS FROM TERMINAL BOARD TO 5' OUTSIDE THE BUILDING AND CAP FOR FUTURE INTERNET SERVICE.
- E302 PROVIDE 4" X 8" X 3/4" PLYWOOD TERMINAL BOARD.
- E303 PROVIDE ROUGH-IN FOR CARD ACCESS SYSTEM ACCORDING TO CARD ACCESS DETAIL ON SHEET E500. CABLING AND DEVICES SHALL BE PROVIDED AND INSTALLED BY SECURITY VENDOR. TYPICAL ALL CARD ACCESS DEVICES.
- E304 PROVIDE ROUGH-IN FOR SECURITY CAMERA - AT THE HEIGHT INDICATED, INSTALL A JUNCTION BOX ON BOTH EXTERIOR WALLS APPROXIMATELY 2FT FROM THE CORNER. PROVIDE EACH WITH A BLANK COVER PLATE. CABLING, CAMERA, AND CAMERA MOUNTING SHALL BE PROVIDED AND INSTALLED BY SECURITY VENDOR. TYPICAL ALL SECURITY CAMERAS.
- E305 PROVIDE A 2" CONDUIT FOR HDMI CABLE FROM FLOOR BOX, UNDER THE FLOOR, UP THROUGH THE WEST WALL, AND LAND AT A JUNCTION BOX BEHIND THE TV.
- E306 COORDINATE EXACT LOCATION FOR EXTERIOR WEATHERPROOF FIRE ALARM HORN/STROBE WITH FIRE SPRINKLER INSTALLER SUCH THAT HORN/STROBE IS LOCATED ABOVE FIRE DEPARTMENT CONNECTION. HORN/STROBE SHALL INITIATE WHEN WATER FLOW IS DETECTED IN THE SPRINKLER SYSTEM.
- E307 COORDINATE EXACT LOCATIONS AND QUANTITIES OF FLOW SWITCHES AND TAMPER SWITCHES WITH FIRE PROTECTION CONTRACTOR. PROVIDE NECESSARY DEVICES TO CONNECT TO FIRE ALARM SYSTEM.
- E309 GENERATOR REMOTE ANNUNCIATOR PANEL. PROVIDE COMMUNICATIONS CABLING TO SYSTEM CONTROLLER PER MANUFACTURER'S RECOMMENDATIONS. COORDINATE WITH EQUIPMENT AND SUPPLIER.
- E313 PROVIDE A 2" CONDUIT FOR RAY ALONG THE ROUTE SHOWN FROM FLOOR BOX, UNDER THE FLOOR, UP THROUGH THE WALL, AND POKING OUT ABOVE THE DROP CEILING.
- E315 PROVIDE CAT6A CABLING TO WIRELESS ACCESS POINT. COORDINATE EXACT LOCATION OF WAP WITH OWNER PRIOR TO ROUGH-IN. TYPICAL ALL WAP DEVICES.

1 FIRST FLOOR COMMUNICATIONS PLAN - AREA A
1/8" = 1'-0"



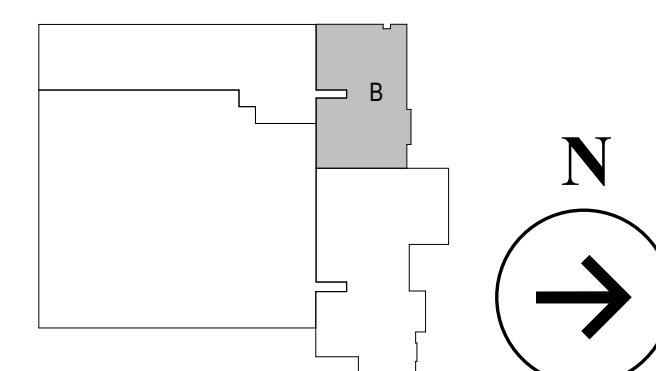
Plans for ABERDEEN PUBLIC WORKS Maintenance Building Aberdeen	FIRST FLOOR COMMUNICATIONS PLAN - AREA A	Author: NR Reviewer: NR Designer: JK	E200A
HKG Architects, Inc.	Aberdeen, S.D.	02/20/26	8523045

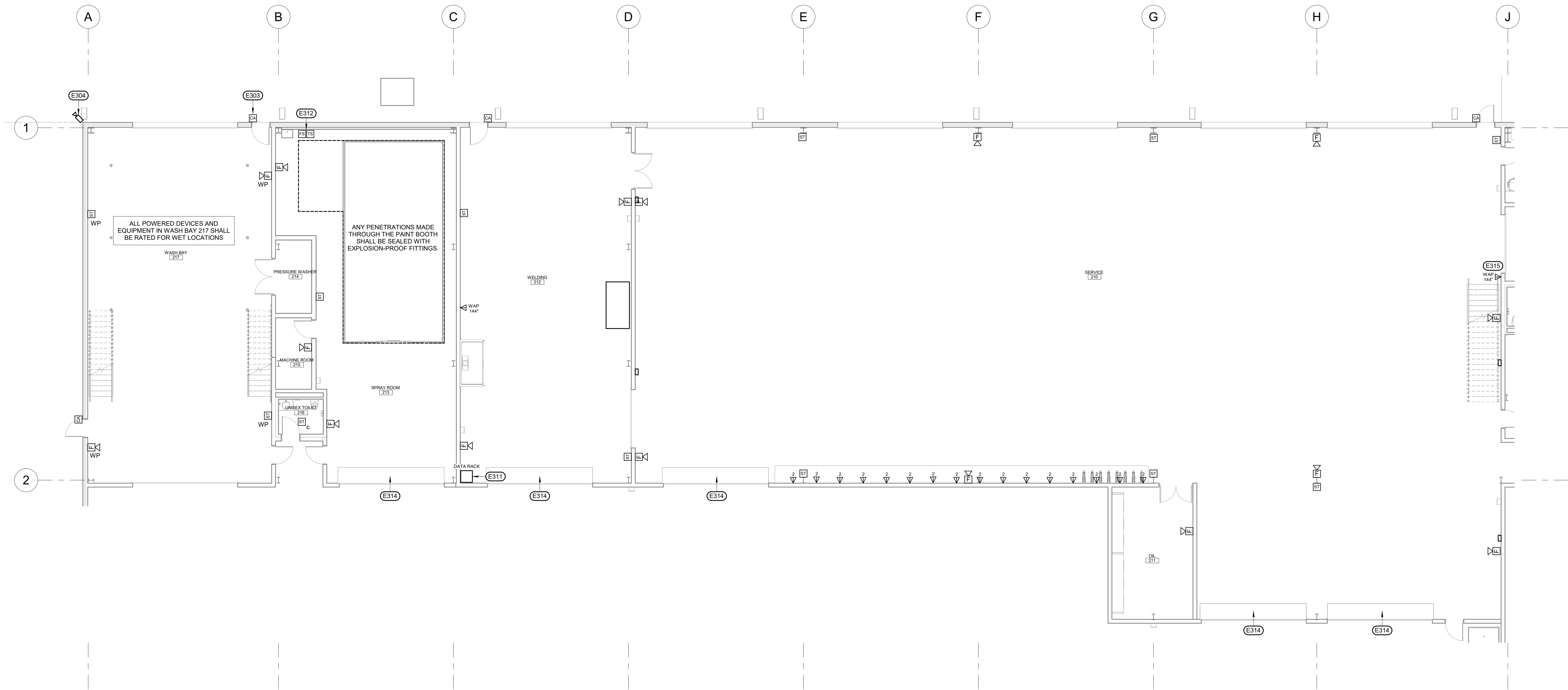


3/27/26 ADDENDUM 6 CHANGES



- 3 3/27/26 ADDENDUM 6 CHANGES**

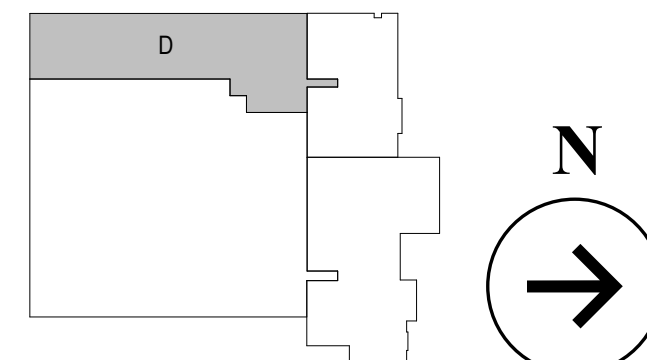




- ELECTRICAL SPECIFIC NOTES**
- E303 PROVIDE ROUGH-IN FOR CARD ACCESS SYSTEM ACCORDING TO CARD ACCESS DETAIL ON SHEET E300. CABLING AND DEVICES SHALL BE PROVIDED AND INSTALLED BY SECURITY VENDOR. TYPICAL ALL CARD ACCESS DEVICES.
- E304 PROVIDE ROUGH-IN FOR SECURITY CAMERA - AT THE HEIGHT INDICATED, INSTALL A JUNCTION BOX ON BOTH EXTERIOR WALLS APPROXIMATELY 2FT FROM THE CORNER. PROVIDE EACH WITH A BLANK COVER PLATE, CABLING, CAMERA, AND CAMERA MOUNTING SHALL BE PROVIDED AND INSTALLED BY SECURITY VENDOR. TYPICAL ALL SECURITY CAMERAS.
- E311 PROVIDE A WALL-MOUNTED 15U DATA CABINET MOUNTED WITH THE BOTTOM AT 12' AFF. PROVIDE WITH LOCKING DOOR, INTEGRAL FAN, AND FILTER PROVISIONS.
- E312 COORDINATE EXACT LOCATIONS AND QUANTITIES OF FLOW SWITCHES AND TAMPER SWITCHES FOR PAINT BOOTH SYSTEM WITH FIRE PROTECTION CONTRACTOR. PROVIDE NECESSARY DEVICES TO CONNECT TO PAINT BOOTH CONTROL PANEL.
- E314 OVERHEAD DOOR IS INSTALLED IN A WALL WITH A 1-HOUR FIRE BARRIER RATING. INTERLOCK THE OVERHEAD DOOR WITH THE FIRE ALARM SYSTEM TO CLOSE UPON ACTIVATION OF THE SYSTEM.
- E315 PROVIDE CAT6A CABLING TO WIRELESS ACCESS POINT. COORDINATE EXACT LOCATION OF WAP WITH OWNER PRIOR TO ROUGH-IN. TYPICAL ALL WAP DEVICES.

1 FIRST FLOOR COMMUNICATIONS PLAN - AREA D
1/8" = 1'-0"

3/27/26 ADDENDUM 6 CHANGES

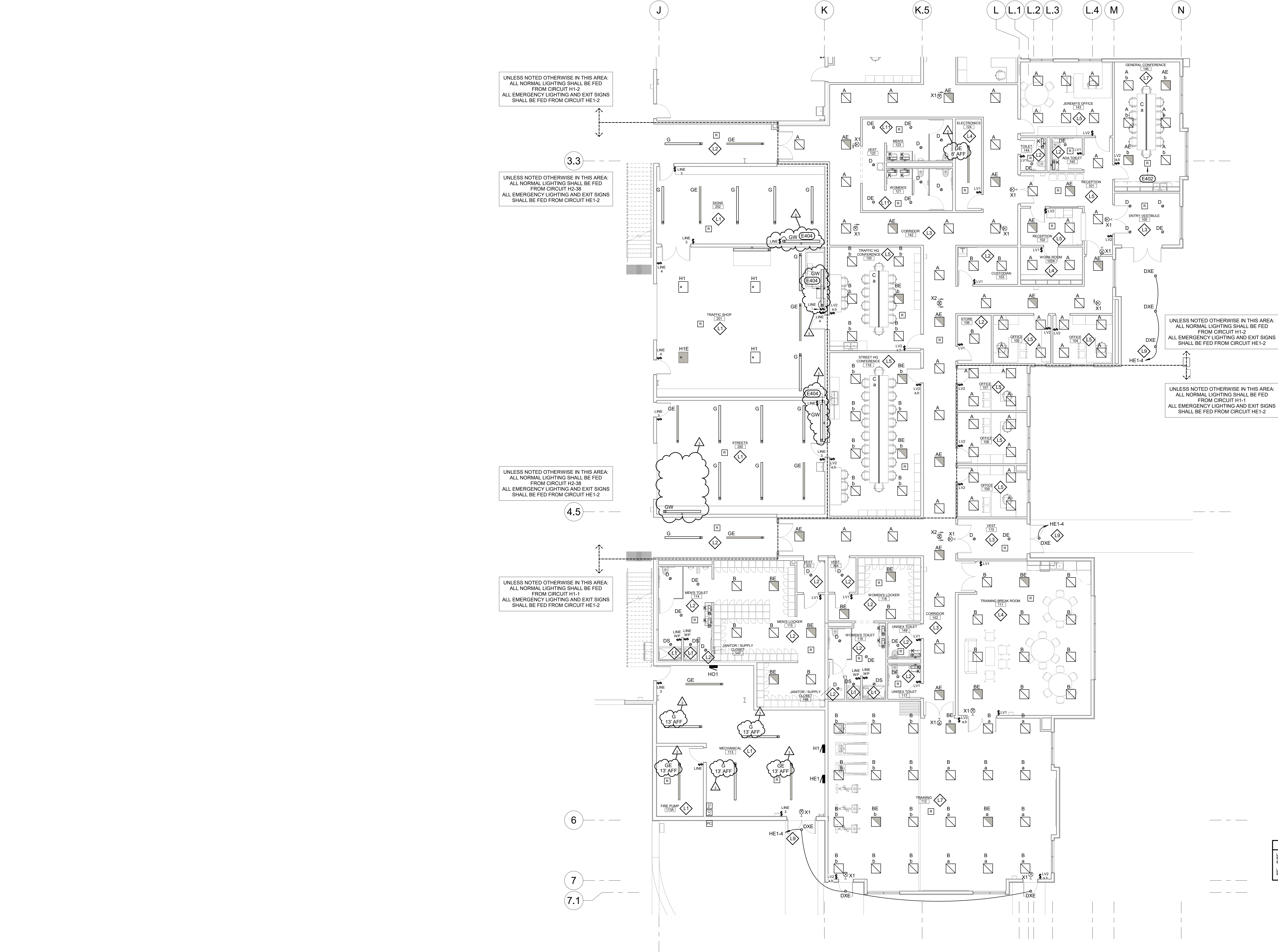


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PROJECT: Plans for Aberdeen Public Works Maintenance Building Aberdeen	DATE: 02/20/26	REVISION: NR	PROJECT: NR	DATE: 02/20/26	REVISION: NR
PROJECT: FIRST FLOOR COMMUNICATIONS PLAN - AREA D	DATE: 02/20/26	REVISION: NR	PROJECT: FIRST FLOOR COMMUNICATIONS PLAN - AREA D	DATE: 02/20/26	REVISION: NR
PROJECT: HKG Architects, Inc.	DATE: 02/20/26	REVISION: NR	PROJECT: HKG Architects, Inc.	DATE: 02/20/26	REVISION: NR

E200D



UNLESS NOTED OTHERWISE IN THIS AREA:
ALL NORMAL LIGHTING SHALL BE FED
FROM CIRCUIT H1-2
ALL EMERGENCY LIGHTING AND EXIT SIGNS
SHALL BE FED FROM CIRCUIT HE1-2

UNLESS NOTED OTHERWISE IN THIS AREA:
ALL NORMAL LIGHTING SHALL BE FED
FROM CIRCUIT H1-2
ALL EMERGENCY LIGHTING AND EXIT SIGNS
SHALL BE FED FROM CIRCUIT HE1-2

UNLESS NOTED OTHERWISE IN THIS AREA:
ALL NORMAL LIGHTING SHALL BE FED
FROM CIRCUIT H2-38
ALL EMERGENCY LIGHTING AND EXIT SIGNS
SHALL BE FED FROM CIRCUIT HE1-2

UNLESS NOTED OTHERWISE IN THIS AREA:
ALL NORMAL LIGHTING SHALL BE FED
FROM CIRCUIT H1-1
ALL EMERGENCY LIGHTING AND EXIT SIGNS
SHALL BE FED FROM CIRCUIT HE1-2

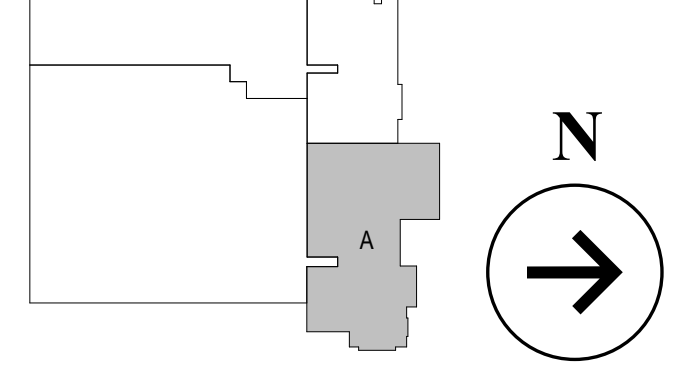
UNLESS NOTED OTHERWISE IN THIS AREA:
ALL NORMAL LIGHTING SHALL BE FED
FROM CIRCUIT H1-2
ALL EMERGENCY LIGHTING AND EXIT SIGNS
SHALL BE FED FROM CIRCUIT HE1-2

UNLESS NOTED OTHERWISE IN THIS AREA:
ALL NORMAL LIGHTING SHALL BE FED
FROM CIRCUIT H1-1
ALL EMERGENCY LIGHTING AND EXIT SIGNS
SHALL BE FED FROM CIRCUIT HE1-2

- ELECTRICAL SPECIFIC NOTES**
- E402 EMERGENCY LIGHT FIXTURES IN THIS ROOM SHALL REQUIRE A UL924 SWITCH BYPASS RELAY FOR CONTROLLING WITH NORMAL POWER LIGHTING CONTROLS. SEE UL924 RELAY DETAIL. TYPICAL.
- THIS FIXTURE IS INTENDED TO BE A TASK LIGHT ABOVE A WORK AREA. COORDINATE EXACT LOCATION WITH TABLE BENCH/WASH BASIN PRIOR TO ROUGH-IN. PROVIDE TWO 24IN STRUT CANTILEVER ARMS TO EXTEND FIXTURE FROM WALL. MOUNT FIXTURE AT 8FT AFF. FIXTURE SHALL BE ORIENTED DOWN TOWARDS THE TABLE BENCH/WASH BASIN AND SHALL BE CONTROLLED DIRECTLY FROM ITS OWN SWITCH AS SHOWN.
- LIGHTING CONTROL SEQUENCE OF OPERATIONS**
- L1 SEQUENCE 1 - LIGHTING WITHIN A DEFINED ROOM OR SPACE SHALL BE CONTROLLABLE BY MEANS OF LINE VOLTAGE SWITCHES. LIGHTS SHALL BE PERMITTED TO BE ALL ON OR ALL OFF. SWITCH LOCATIONS ARE SHOWN ON THE DRAWINGS. LIGHTING SHALL BE MANUALLY CONTROLLED.
- L2 SEQUENCE 2 - LIGHTING WITHIN A DEFINED ROOM OR SPACE SHALL BE CONTROLLABLE BY MEANS OF LOCAL OCCUPANCY SENSORS AND LOW VOLTAGE SWITCHES. LIGHTS SHALL BE PERMITTED TO BE ALL ON OR ALL OFF. SWITCH LOCATIONS ARE SHOWN ON THE DRAWINGS. OCCUPANCY SENSORS SHALL BE PROVIDED FOR 100% COMPLETE MINOR MOTION COVERAGE IN THE ROOM OR SPACE. OCCUPANCY SENSORS SHALL BE CEILING MOUNTED IF CEILINGS ARE PRESENT. THE CONTRACTOR SHALL CONFIRM THE PRESENCE OF A CEILING WITH THE DOCUMENTS. OCCUPANCY SENSORS SHALL TURN LIGHTS ON AND OFF (I.E. AUTO ON, AUTO OFF).
- L3 SEQUENCE 3 - LIGHTING WITHIN A DEFINED ROOM OR SPACE SHALL BE CONTROLLABLE BY MEANS OF LOCAL OCCUPANCY SENSORS AND LOW VOLTAGE SWITCHES. LIGHTS SHALL BE PERMITTED TO BE ALL ON OR ALL OFF. SWITCH LOCATIONS ARE SHOWN ON THE DRAWINGS. OCCUPANCY SENSORS SHALL BE PROVIDED FOR 100% COMPLETE MINOR MOTION COVERAGE IN THE ROOM OR SPACE. OCCUPANCY SENSORS SHALL BE CEILING MOUNTED IF CEILINGS ARE PRESENT. THE CONTRACTOR SHALL CONFIRM THE PRESENCE OF A CEILING WITH THE DOCUMENTS. OCCUPANCY SENSORS SHALL TURN LIGHTS ON AND TO DIM STATE (I.E. AUTO-ON, AUTO-DIM, AUTO-OFF).
- L4 SEQUENCE 4 - LIGHTING WITHIN A DEFINED ROOM OR SPACE SHALL BE CONTROLLABLE BY MEANS OF LOCAL OCCUPANCY SENSORS AND LOW VOLTAGE SWITCHES. LIGHTS SHALL BE PERMITTED TO BE ALL ON OR ALL OFF. SWITCH LOCATIONS ARE SHOWN ON THE DRAWINGS. OCCUPANCY SENSORS SHALL BE PROVIDED FOR 100% COMPLETE MINOR MOTION COVERAGE IN THE ROOM OR SPACE. OCCUPANCY SENSORS SHALL BE CEILING MOUNTED IF CEILINGS ARE PRESENT. THE CONTRACTOR SHALL CONFIRM THE PRESENCE OF A CEILING WITH THE DOCUMENTS. OCCUPANCY SENSORS SHALL TURN LIGHTS OFF ONLY (I.E. MANUAL ON, AUTO OFF).
- L5 SEQUENCE 5 - LIGHTING WITHIN A DEFINED ROOM OR SPACE SHALL BE CONTROLLABLE BY MEANS OF LOCAL OCCUPANCY SENSORS AND LOW VOLTAGE SWITCHES. LIGHTS SHALL BE PERMITTED TO BE ALL ON, ALL OFF, OR DIMMABLE TO USER-DESIRED LEVELS. SWITCH LOCATIONS ARE SHOWN ON THE DRAWINGS. OCCUPANCY SENSORS SHALL BE PROVIDED FOR 100% COMPLETE MINOR MOTION COVERAGE IN THE ROOM OR SPACE. OCCUPANCY SENSORS SHALL BE CEILING MOUNTED IF CEILINGS ARE PRESENT. THE CONTRACTOR SHALL CONFIRM THE PRESENCE OF A CEILING WITH THE DOCUMENTS. OCCUPANCY SENSORS SHALL TURN LIGHTS OFF ONLY (I.E. MANUAL ON, AUTO OFF).
- L7 SEQUENCE 7 - LIGHTING WITHIN A DEFINED ROOM OR SPACE SHALL BE CONTROLLABLE BY MEANS OF LOCAL OCCUPANCY SENSORS, LOW VOLTAGE SWITCHES, AND DAYLIGHT SENSORS. LIGHTS SHALL BE PERMITTED TO BE ALL ON, ALL OFF, OR DIMMABLE TO USER-DESIRED LEVELS. LIGHTING SWITCH ZONES ARE DEPICTED ON THE DRAWINGS. WHERE NO SWITCH ZONES ARE INDICATED THE ROOM OR SPACE SHALL BE CONTROLLED AS ONE ZONE. SWITCH LOCATIONS ARE SHOWN ON THE DRAWINGS. OCCUPANCY SENSORS SHALL BE PROVIDED FOR 100% COMPLETE MINOR MOTION COVERAGE IN THE ROOM OR SPACE. OCCUPANCY SENSORS SHALL BE CEILING MOUNTED IF CEILINGS ARE PRESENT. A DAYLIGHT SENSING DEVICE SHALL BE PROVIDED FOR EACH DAYLIGHT ZONE (DEPTH EQUAL TO 15 FEET INTO THE SPACE OR CEILING HEIGHT OPAQUE PARTITION AND WIDTH EQUAL TO WINDOW WIDTH PLUS 2 FEET ON EACH SIDE). DAYLIGHT RESPONSIVE CONTROLS SHALL OPERATE IN A CLOSED-LOOP FORMAT. LIGHT FIXTURE SHALL DIM IN RESPONSE TO DAYLIGHT LEVELS, AND SHALL DIM NO LOWER THAN 10% IN ANY INSTANCE. LIGHT FIXTURES SHALL NOT TURN OFF IN RESPONSE TO DAYLIGHT SENSORS. THE CONTRACTOR SHALL CONFIRM THE PRESENCE OF A CEILING WITH THE DOCUMENTS. OCCUPANCY SENSORS SHALL TURN LIGHTS OFF ONLY (I.E. MANUAL ON, AUTO OFF).
- L9 SEQUENCE 9 - EXTERIOR LIGHTING SHALL BE CONTROLLABLE BY MEANS OF A PHOTOCELL AND A TIME CLOCK. EXTERIOR LIGHTING SHALL TURN ON AT DUSK AND TURN OFF AT DAWN. LIGHTS SHALL BE PERMITTED TO BE ALL ON OR ALL OFF. SEE EXTERIOR LIGHTING CONTROL DIAGRAM.
- L11 SEQUENCE 11 - LIGHTING WITHIN A DEFINED ROOM OR SPACE SHALL BE CONTROLLABLE BY MEANS OF LOCAL OCCUPANCY SENSORS. LIGHTS SHALL BE PERMITTED TO BE ALL ON OR ALL OFF. OCCUPANCY SENSORS SHALL BE PROVIDED FOR 100% COMPLETE MINOR MOTION COVERAGE IN THE ROOM OR SPACE. OCCUPANCY SENSORS SHALL BE CEILING MOUNTED IF CEILINGS ARE PRESENT. THE CONTRACTOR SHALL CONFIRM THE PRESENCE OF A CEILING WITH THE DOCUMENTS. OCCUPANCY SENSORS SHALL TURN LIGHTS ON AND OFF (I.E. AUTO ON, AUTO OFF).

LIGHTING/SWITCHING KEY

LOW VOLTAGE SWITCHES
1" = ON / OFF
2" = ON / OFF / DIMMING
LINE VOLTAGE SWITCHES
1" = ON / OFF



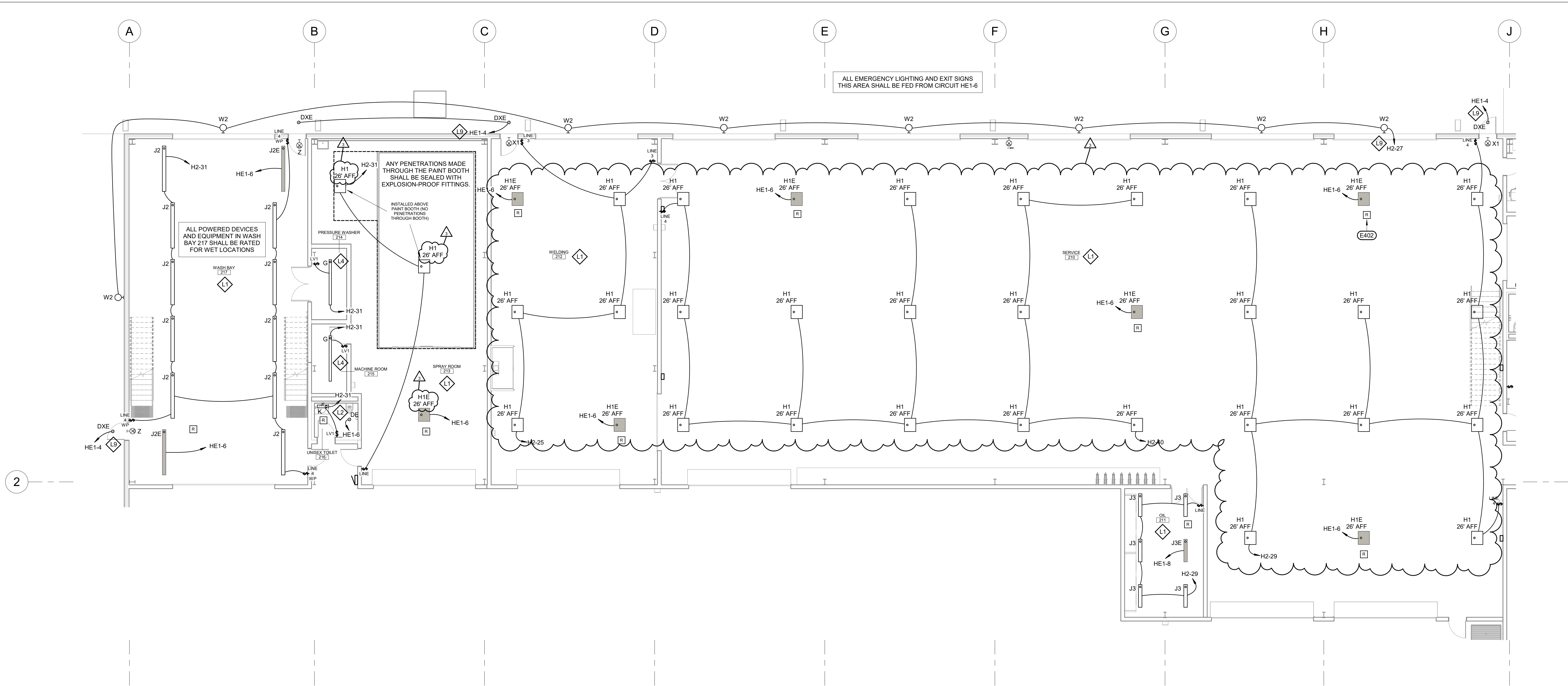
1 FIRST FLOOR LIGHTING PLAN - AREA A
1/8" = 1'-0"



① FIRST FLOOR
1/8" = 1'-0"

3 3/27/26 ADDENDUM 6 CHANGES





1 FIRST FLOOR LIGHTING PLAN - AREA D
1/8" = 1'-0"

ELECTRICAL SPECIFIC NOTES

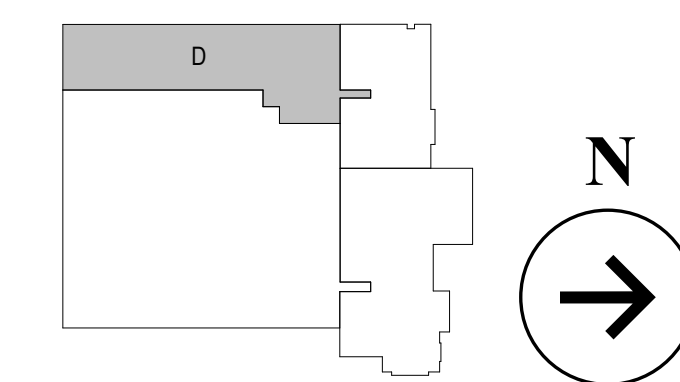
E402 EMERGENCY LIGHT FIXTURES IN THIS ROOM SHALL REQUIRE A UL924 SWITCH BYPASS RELAY FOR CONTROLLING WITH NORMAL POWER LIGHTING CONTROLS. SEE UL924 RELAY DETAIL, TYPICAL.

LIGHTING CONTROL SEQUENCE OF OPERATIONS

- L1 SEQUENCE 1 - LIGHTING WITHIN A DEFINED ROOM OR SPACE SHALL BE CONTROLLABLE BY MEANS OF LINE VOLTAGE SWITCHES. LIGHTS SHALL BE PERMITTED TO BE ALL ON OR ALL OFF. SWITCH LOCATIONS ARE SHOWN ON THE DRAWINGS. LIGHTING SHALL BE MANUALLY CONTROLLED.
- L2 SEQUENCE 2 - LIGHTING WITHIN A DEFINED ROOM OR SPACE SHALL BE CONTROLLABLE BY MEANS OF LOCAL OCCUPANCY SENSORS AND LOW VOLTAGE SWITCHES. LIGHTS SHALL BE PERMITTED TO BE ALL ON OR ALL OFF. SWITCH LOCATIONS ARE SHOWN ON THE DRAWINGS. OCCUPANCY SENSORS SHALL BE PROVIDED FOR 100% COMPLETE MINOR MOTION COVERAGE IN THE ROOM OR SPACE. OCCUPANCY SENSORS SHALL BE CEILING MOUNTED IF CEILINGS ARE PRESENT. THE CONTRACTOR SHALL CONFIRM THE PRESENCE OF A CEILING WITH THE DOCUMENTS. OCCUPANCY SENSORS SHALL TURN LIGHTS ON AND OFF (I.E. AUTO ON, AUTO OFF).
- L4 SEQUENCE 4 - LIGHTING WITHIN A DEFINED ROOM OR SPACE SHALL BE CONTROLLABLE BY MEANS OF LOCAL OCCUPANCY SENSORS AND LOW VOLTAGE SWITCHES. LIGHTS SHALL BE PERMITTED TO BE ALL ON OR ALL OFF. SWITCH LOCATIONS ARE SHOWN ON THE DRAWINGS. OCCUPANCY SENSORS SHALL BE PROVIDED FOR 100% COMPLETE MINOR MOTION COVERAGE IN THE ROOM OR SPACE. OCCUPANCY SENSORS SHALL BE CEILING MOUNTED IF CEILINGS ARE PRESENT. THE CONTRACTOR SHALL CONFIRM THE PRESENCE OF A CEILING WITH THE DOCUMENTS. OCCUPANCY SENSORS SHALL TURN LIGHTS OFF ONLY (I.E. MANUAL ON, AUTO OFF).
- L9 SEQUENCE 9 - EXTERIOR LIGHTING SHALL BE CONTROLLABLE BY MEANS OF A PHOTOCELL AND A TIME CLOCK. EXTERIOR LIGHTING SHALL TURN ON AT DUSK AND TURN OFF AT DAWN. LIGHTS SHALL BE PERMITTED TO BE ALL ON OR ALL OFF. SEE EXTERIOR LIGHTING CONTROL DIAGRAM.

2 3/20/26 ADDENDUM 3 CHANGES
3 3/27/26 ADDENDUM 6 CHANGES

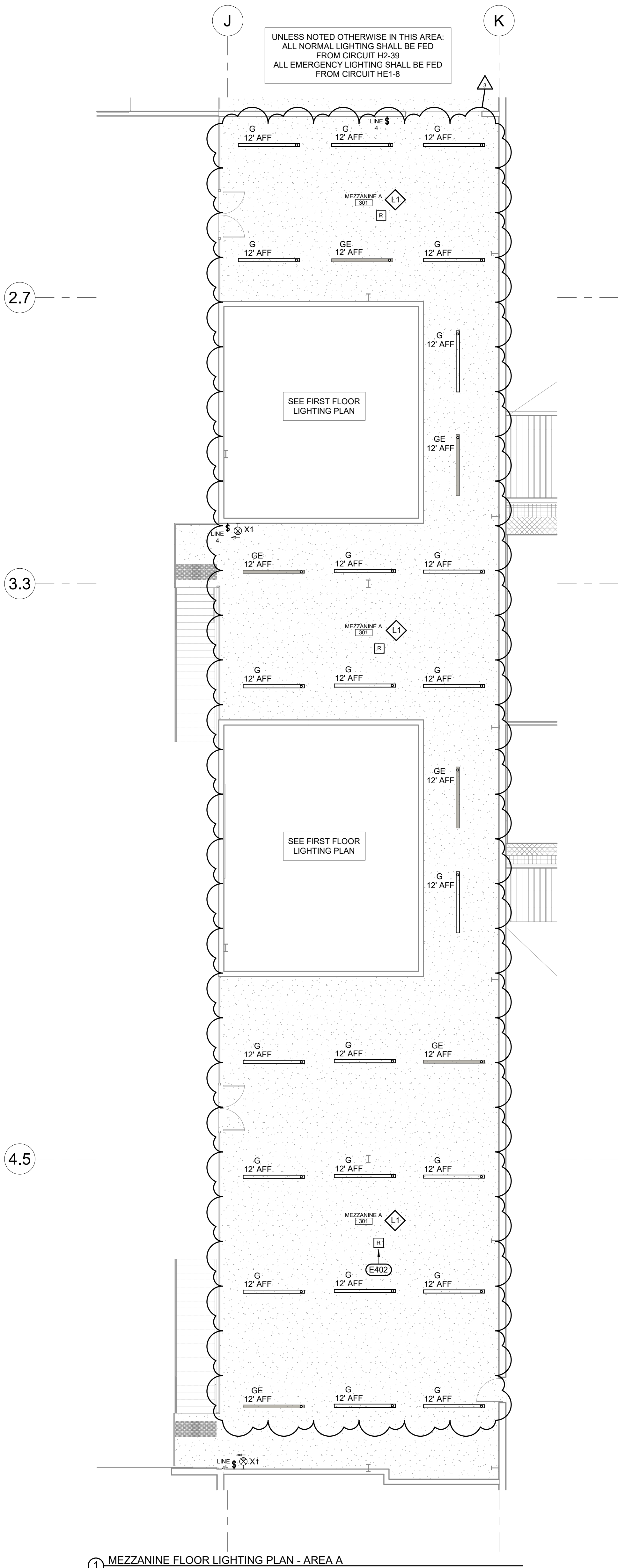
LIGHTING/SWITCHING KEY	
LOW VOLTAGE SWITCHES	
S1 - ON / OFF	
S11 - ON / OFF / DIMMING	
LINE VOLTAGE SWITCHES	
S11 - ON / OFF	



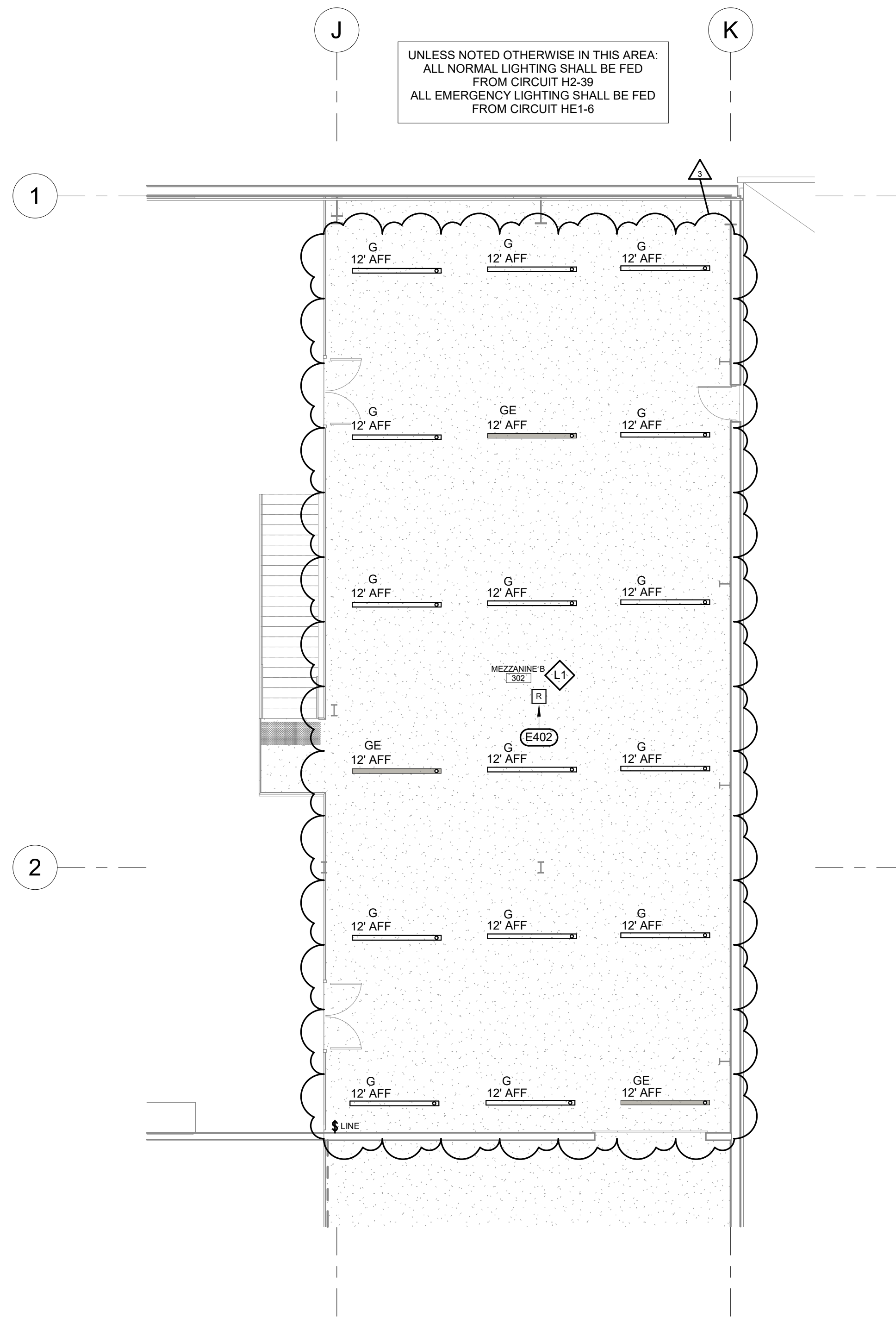
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PROJECT	Plans for Aberdeen Public Works Maintenance Building Aberdeen	DATE	12/20/26
DESIGNED BY	NR	PROJECT NO.	E300D
DRAWN BY	NR	DATE	12/20/26
CHECKED BY	JK	PROJECT NO.	8523045
DATE	12/20/26	PROJECT NO.	8523045



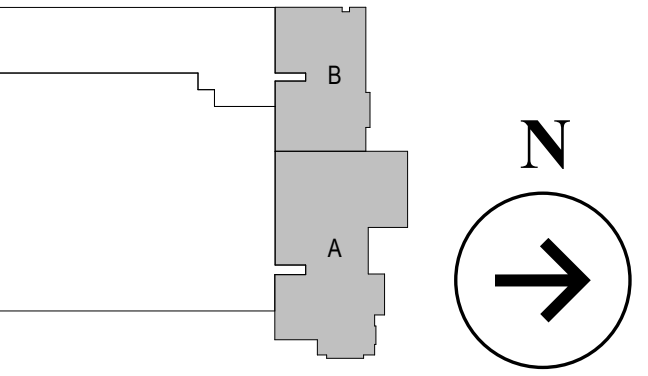
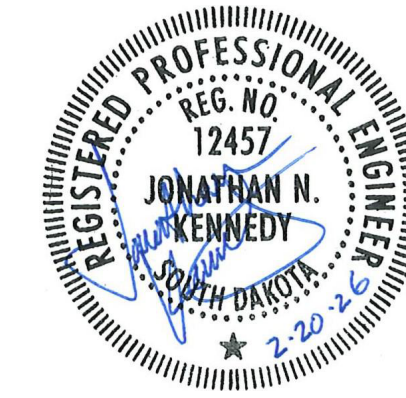
1 MEZZANINE FLOOR LIGHTING PLAN - AREA A
1/8" = 1'-0"



2 MEZZANINE FLOOR LIGHTING PLAN - AREA B
1/8" = 1'-0"

- ELECTRICAL SPECIFIC NOTES**
- E402 EMERGENCY LIGHT FIXTURES IN THIS ROOM SHALL REQUIRE A UL924 SWITCH BYPASS RELAY FOR CONTROLLING WITH NORMAL POWER LIGHTING CONTROLS. SEE UL924 RELAY DETAIL, TYPICAL.
- LIGHTING CONTROL SEQUENCE OF OPERATIONS**
- L1 SEQUENCE 1 - LIGHTING WITHIN A DEFINED ROOM OR SPACE SHALL BE CONTROLLABLE BY MEANS OF LINE VOLTAGE SWITCHES. LIGHTS SHALL BE PERMITTED TO BE ALL ON OR ALL OFF. SWITCH LOCATIONS ARE SHOWN ON THE DRAWINGS. LIGHTING SHALL BE MANUALLY CONTROLLED.

LIGHTING/SWITCHING KEY	
LOW VOLTAGE SWITCHES	
\$111 - ON / OFF	
\$112 - ON / OFF / DIMMING	
LINE VOLTAGE SWITCHES	
\$113 - ON / OFF	

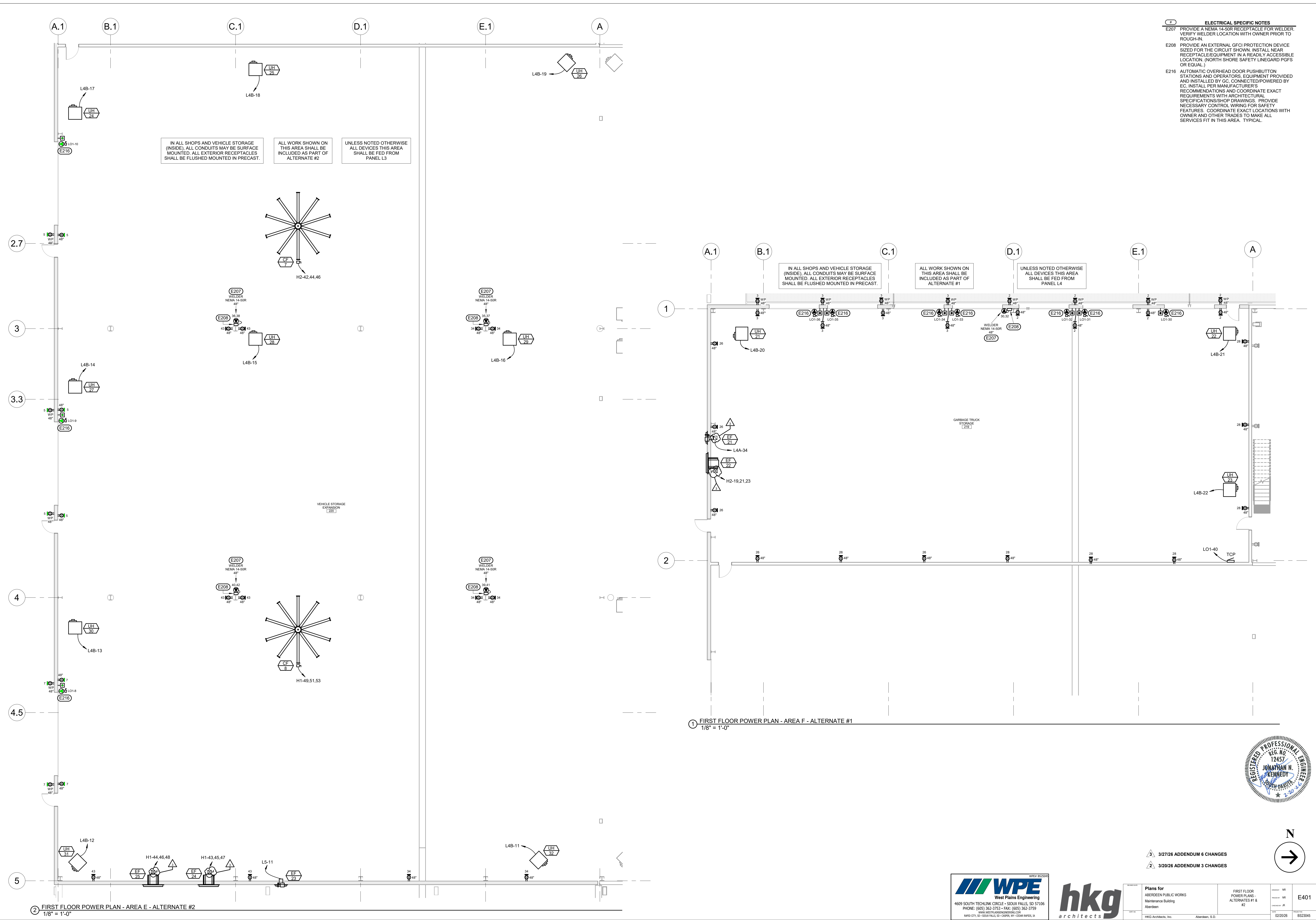


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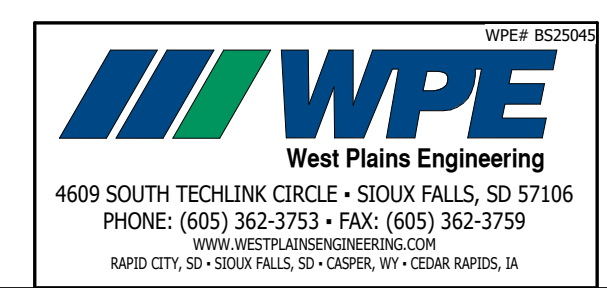
PROJECT Plans for Aberdeen Public Works Maintenance Building Aberdeen	MEZZANINE LIGHTING PLANS	DESIGNED BY MR. CHECKED BY MR. DATE 12/20/26	PROJECT NO. E301 DRAWING NO. 8523045
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- ELECTRICAL SPECIFIC NOTES**
- E207 PROVIDE A NEMA 14-50R RECEPTACLE FOR WELDER. VERIFY WELDER LOCATION WITH OWNER PRIOR TO ROUGH-IN.
- E208 PROVIDE AN EXTERNAL GFCI PROTECTION DEVICE SIZED FOR THE CIRCUIT SHOWN. INSTALL NEAR RECEPTACLE/EQUIPMENT IN A READILY ACCESSIBLE LOCATION. (NORTH SHORE SAFETY LINECARD PGFS OR EQUAL.)
- E216 AUTOMATIC OVERHEAD DOOR PUSHBUTTON STATIONS AND OPERATORS. EQUIPMENT PROVIDED AND INSTALLED BY GC. CONNECTED/POWERED BY EC. INSTALL PER MANUFACTURER'S RECOMMENDATIONS AND COORDINATE EXACT REQUIREMENTS WITH ARCHITECTURAL SPECIFICATIONS/SHOP DRAWINGS. PROVIDE NECESSARY CONTROL WIRING FOR SAFETY FEATURES. COORDINATE EXACT LOCATIONS WITH OWNER AND OTHER TRADES TO MAKE ALL SERVICES FIT IN THIS AREA. TYPICAL.

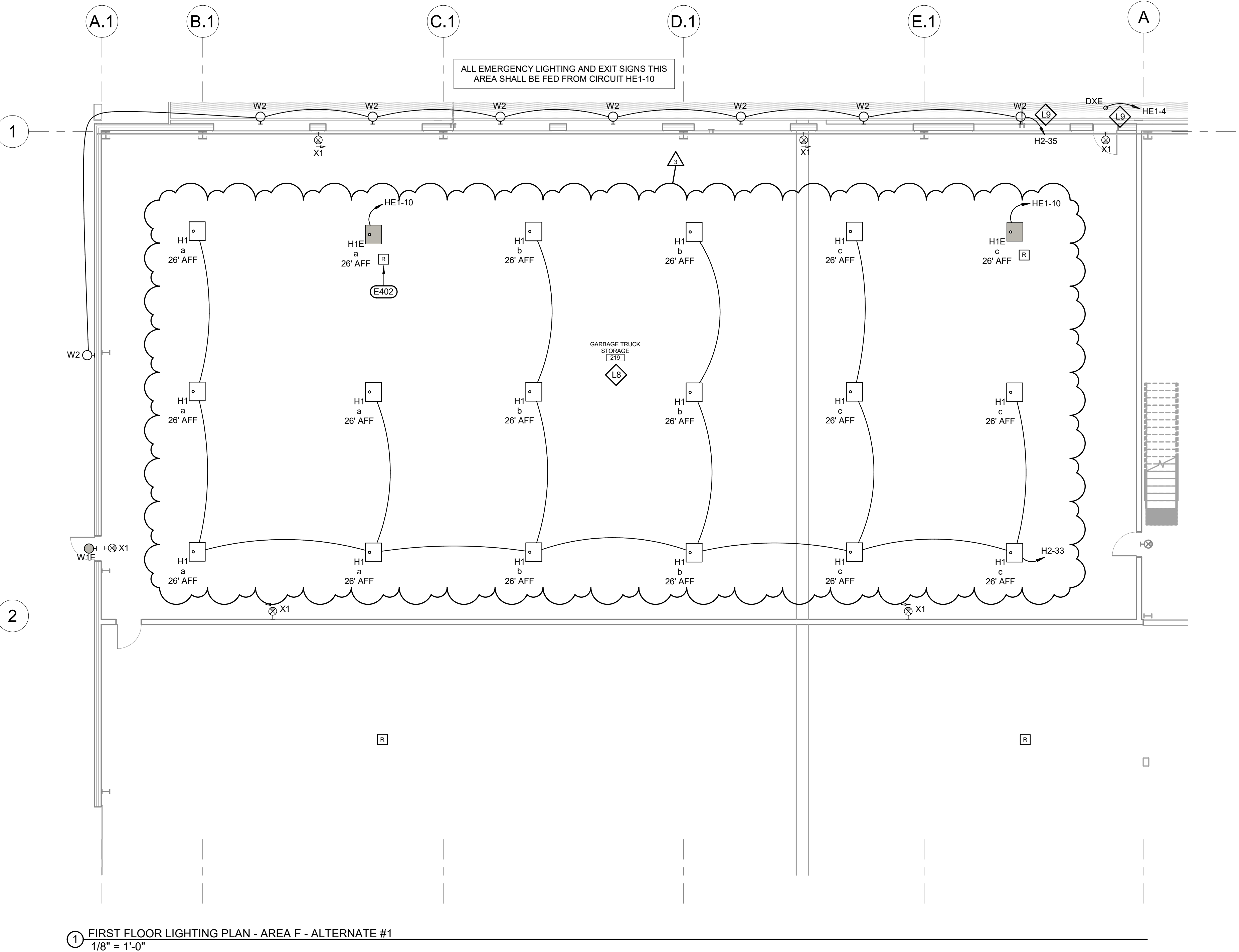
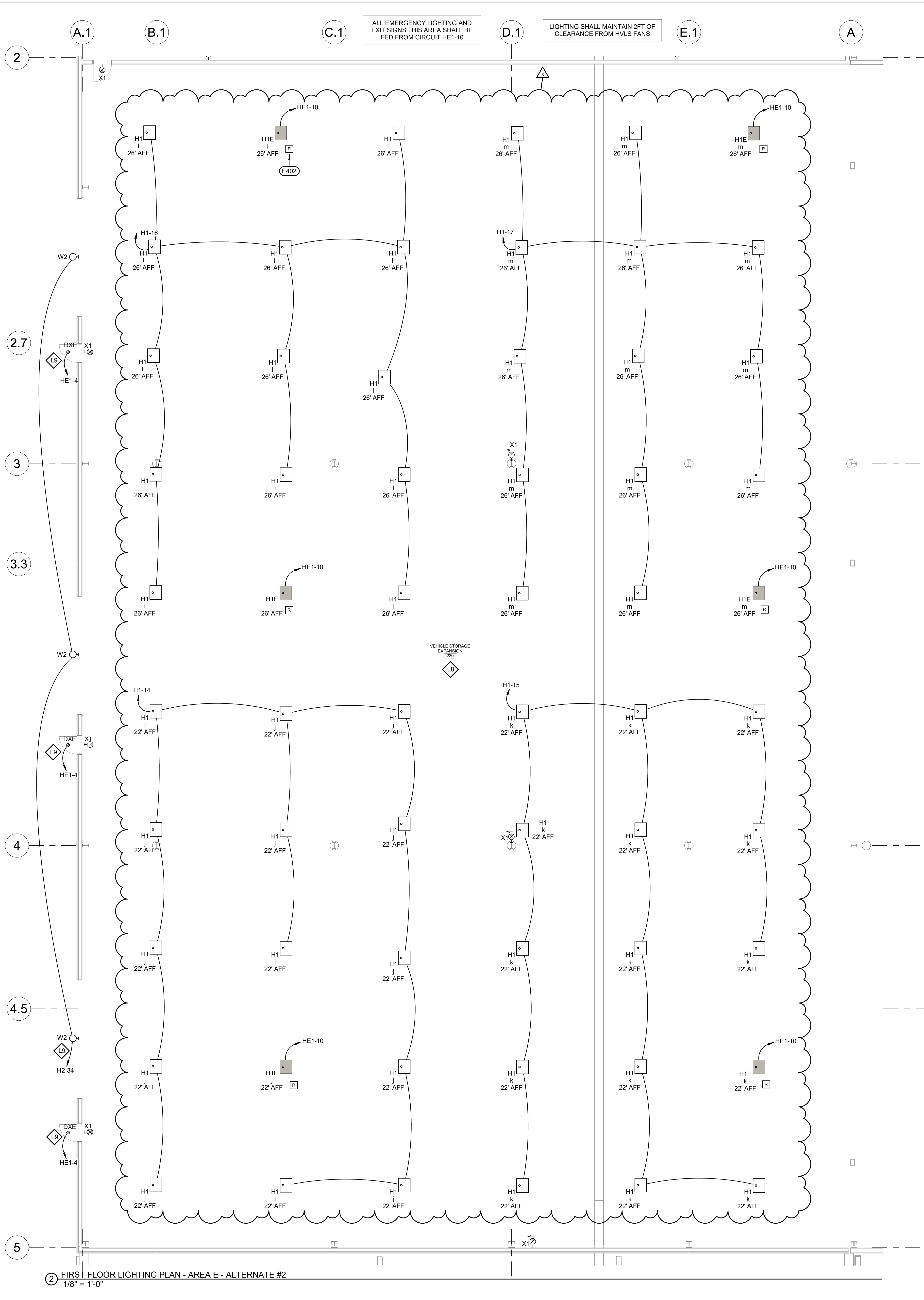


1 FIRST FLOOR POWER PLAN - AREA E - ALTERNATE #2
1/8" = 1'-0"

1 FIRST FLOOR POWER PLAN - AREA F - ALTERNATE #1
1/8" = 1'-0"



Plans for ABERDEEN PUBLIC WORKS Maintenance Building Aberdeen		FIRST FLOOR POWER PLANS - ALTERNATES #1 & #2	Revision NR NR JK	E401
HKG Architects, Inc.		Aberdeen, S.D.	02/20/26	8523045

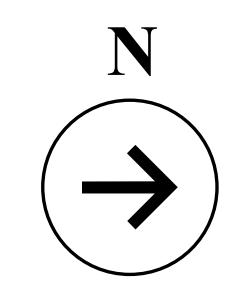


- ELECTRICAL SPECIFIC NOTES**
- E402 EMERGENCY LIGHT FIXTURES IN THIS ROOM SHALL REQUIRE A UL924 SWITCH BYPASS RELAY FOR CONTROLLING WITH NORMAL POWER LIGHTING CONTROLS. SEE UL924 RELAY DETAIL, TYPICAL.
- LIGHTING CONTROL SEQUENCE OF OPERATIONS**
- L8 SEQUENCE 8 - LIGHTING WITHIN A DEFINED ROOM OR SPACE SHALL BE CONTROLLABLE BY MEANS OF LOCAL OCCUPANCY SENSORS. WHEN OCCUPANCY IS DETECTED, LIGHTS SHALL OPERATE AT 100% OUTPUT. WHEN NO OCCUPANCY IS DETECTED, THE LIGHTS IN THE SPACE SHALL OPERATE AT 30% OUTPUT. OCCUPANCY SENSORS SHALL BE PROVIDED FOR 100% COMPLETE MINOR MOTION COVERAGE IN THE ROOM OR SPACE. OCCUPANCY SENSORS SHALL BE CEILING MOUNTED IF CEILINGS ARE PRESENT. THE CONTRACTOR SHALL CONFIRM THE PRESENCE OF A CEILING WITH THE DOCUMENTS. OCCUPANCY SENSOR SHALL TURN LIGHTS ON AND TO DIM STATE (I.E. AUTO ON, AUTO DIM).
- L9 SEQUENCE 9 - EXTERIOR LIGHTING SHALL BE CONTROLLABLE BY MEANS OF A PHOTOCELL AND A TIME CLOCK. EXTERIOR LIGHTING SHALL TURN ON AT DUSK AND TURN OFF AT DAWN. LIGHTS SHALL BE PERMITTED TO BE ALL ON OR ALL OFF. SEE EXTERIOR LIGHTING CONTROL DIAGRAM.

LIGHTING/SWITCHING KEY	
LOW VOLTAGE SWITCHES	SW1 - ON / OFF
SW2 - ON / OFF / DIMMING	
LINE VOLTAGE SWITCHES	SW3 - ON / OFF



2. 3/20/26 ADDENDUM 3 CHANGES
3. 3/27/26 ADDENDUM 6 CHANGES



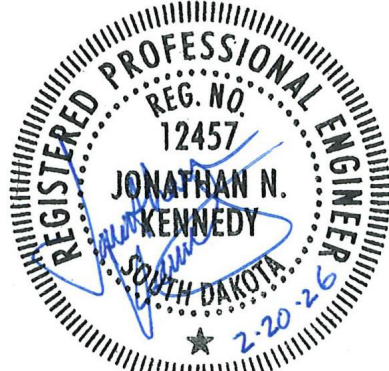
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Plans for ABERDEEN PUBLIC WORKS Maintenance Building Aberdeen	FIRST FLOOR LIGHTING PLANS - ALTERNATES #1 & #2	Author: NR Reviewer: NR Checker: JK Date: 02/20/26 Sheet: 6823045
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L2		VOLTS:		120/208 Wye		PHASES:		3		WIRE:		4		MAIN CAPACITY:		200 A			
		AIC RATING:		22,000		LOCATION:				CORRIDOR 142				M.L.O.					
		MOUNTING:		RECESSED		FEEDER SIZE:		SEE ONE-LINE DIAGRAM						MAIN TYPE:		TYPE I			
CKT	LOAD TYPE	ITEM FED	WIRE SIZE	AMPS	POLES	BREAKER TYPE	A	B	C	BREAKER TYPE	POLES	AMPS	WIRE SIZE	ITEM FED	LOAD TYPE	CKT			
1	R	RECEP 126	12	20 A	1		1440	1260				1	20 A	12	RECEP 126 TABLE	R	2		
3	R	RECEP 127	12	20 A	1				1080	1080		1	20 A	12	RECEP 127	R	4		
5	R	RECEP 127 TABLE	12	20 A	1						1440	1260	1	20 A	12	RECEP 128	R	6	
7	R	RECEP 128 TABLE	12	20 A	1		900	1604					1	20 A	12	RECEP 128, 130, 131, EF-2, EF-3	M, R	8	
9	R	RECEP 132	12	20 A	1			1260	1260				1	20 A	12	RECEP 132	R	10	
11	R	RECEP 132 TABLE	12	20 A	1					1440	1620		1	20 A	12	RECEP 133	R	12	
13	M, R	RECEP 134, 143, EXT, CUH-3	10	20 A	1		1443	720					1	20 A	12	RECEP 135	R	14	
15	R	RECEP 136	12	20 A	1				720	720			1	20 A	12	RECEP 137	R	16	
17	R	RECEP 138	12	20 A	1					720	720		1	20 A	12	RECEP 139	R	18	
19	R	RECEP 140	12	20 A	1		1080	1080					1	20 A	12	RECEP 140	R	20	
21	R	RECEP 141	12	20 A	1				720	720			1	20 A	12	RECEP 142	R	22	
23	R	RECEP 203	12	20 A	1						900	720		1	20 A	12	RECEP 203	R	24
25	R	RECEP 204	12	20 A	1		1080	1080					1	20 A	12	RECEP 204	R	26	
27	R	RECEP 206	12	20 A	1				1620	1080			1	20 A	12	RECEP 207	R	28	
29	R	RECEP 209	12	20 A	1					1620	1080		1	20 A	12	RECEP 302	R	30	
31	M,	EF-10, EF-11	12	20 A	1		264	4160					2	50 A	6	RECEP 203 (WELDER)	W	32	
33	M	FCU-6	12	20 A	1				1383	4160								34	
35	O,	HUH-3	12	20 A	1						200	4160						36	
37	M	AIR DRYERS FOR AC-1 & AC-2	12	20 A	1		0	4160					1	20 A	12	RECEP 203 (BAND SAW)	M,	38	
39	O	PLASMA CUTTER 203	4	60 A	2				5000	1200								40	
41										5000	1800							42	
43	--	SPARE		20 A	1	--	0	1800					2	20 A	12	DRILL PRESS 203	M	44	
45	--	SPARE		20 A	1	--			0	--			--	1	--	SPACE	--	46	
47	--	SPARE		20 A	1	--				0	--		--	1	--	SPACE	--	48	
49	--	SPARE		20 A	1	--	0	--					--	1	--	SPACE	--	50	
51	--	SPARE		20 A	1	--			0	--			--	1	--	SPACE	--	52	
53	--	SPARE		20 A	1	--				0	--		--	1	--	SPACE	--	54	
TOTAL CONNECTED LOAD:							22071 W	22003 W	22680 W	AMPS:		185 A	LOAD:		66754 W				
LOAD CLASSIFICATION			CONNECTED LOAD			DEMAND FACTOR			ESTIMATED DEMAND			AMPS:			PANEL TOTALS				
Motor			7694 VA			111.70%			8594 VA						TOTAL CONN. LOAD: 66754 VA				
Other			10200 VA			100.00%			10200 VA						TOTAL EST. DEMAND LOAD: 56544 VA				
Power			0 VA			0.00%			0 VA						TOTAL CONN. CURRENT: 185 A				
Receptacle			32220 VA			65.52%			21110 VA						TOTAL EST. DEMAND CURRENT: 157 A				
Welder			16640 VA			100.00%			16640 VA										

1	3/11/26 ADDENDUM 2 CHANGES
2	3/20/26 ADDENDUM 3 CHANGES
3	3/27/26 ADDENDUM 6 CHANGES



FOR ALL PANEL SCHEDULES:
 (#1) AND (#2) DENOTE BREAKERS USED AS PART OF A SPECIFIC ALTERNATE. IF THE ALTERNATE IS NOT ACCEPTED, MARK THE BREAKER AS A SPARE.

L3		VOLTS:		120/208 Wye		PHASES:		3		WIRE:		4		MAIN CAPACITY:		400 A	
		AIC RATING:		22,000		LOCATION:		SERVICE 210		MAIN CONNECTION:		MLO		TYPE 1			
		MOUNTING:		SURFACE		FEEDER SIZE:		SEE ONE-LINE DIAGRAM		MAIN TYPE:							
		WIRE SIZE	AMPS	POLES	BREAKER TYPE	A	B	C	BREAKER TYPE	POLES	AMPS	WIRE SIZE	ITEM FED	LOAD TYPE	CKT		
1	R	RECEP 217	12	20 A	1	1620	1440				1	20 A	12	RECEP 210	R	2	
3	R	RECEP 217	12	20 A	1		1800	1440			1	20 A	12	RECEP 210	R	4	
5	R	RECEP 217, EXT	12	20 A	1			1080	360		1	20 A	12	RECEP 210	R	6	
7	R	RECEP 217, EXT	12	20 A	1	720	360			1	20 A	12	RECEP 210	R	8		
9	R	RECEP 210	12	20 A	1		1080	360			1	20 A	12	RECEP 210	R	10	
11	R	RECEP 210	12	20 A	1			540	360		1	20 A	12	RECEP 210	R	12	
13	R	RECEP 210	12	20 A	1	360	360				1	20 A	12	RECEP 210	R	14	
15	R	RECEP 210	12	20 A	1		360	360			1	20 A	12	RECEP 210	R	16	
17	W	RECEP 218 (WELDER)	6	50 A	2			4160	4160		2	50 A	6	RECEP 218 (WELDER)	W	18	
19						4160	4160								20		
21	W	RECEP 218 (WELDER)	6	50 A	2			4160	4160		2	50 A	6	RECEP 218 (WELDER)	W	22	
23								4160	4160						24		
25	W	RECEP 218 (WELDER)	6	50 A	2	4160	4160				2	50 A	6	RECEP 218 (WELDER)	W	26	
27							4160	4160							28		
29	W	RECEP 218 (WELDER)	6	50 A	2			4160	4160		2	50 A	6	RECEP 218 (WELDER)	W	30	
31						4160	4160								32		
33	R	RECEP 210	12	20 A	1		900	1080			1	20 A	8	(#2) RECEP 220	R	34	
35	W	(#2) RECEP 220 (WELDER)	6	50 A	2			4160	4160		2	50 A	6	(#2) RECEP 220 (WELDER)	W	36	
37						4160	4160								38		
39	W	(#2) RECEP 220 (WELDER)	6	50 A	2			4160	4160		2	50 A	6	(#2) RECEP 220 (WELDER)	W	40	
41								4160	4160						42		
43	R	(#2) RECEP 220	12	20 A	1	1080	480				1	15 A	12	UH-19	M	44	
45	M	UH-20	12	15 A	1		480	768			1	15 A	12	UH-12	M	46	
47	M	UH-13	12	15 A	1			768	768		1	15 A	12	UH-14	M	48	
49	M	UH-11	12	15 A	1	768	264				1	20 A	12	EF-13	M	50	
51								4160	4160						52		
53	W	RECEP 210 (WELDER)	6	50 A	2			4160	4160		2	50 A	6	RECEP 210 (WELDER)	W	54	
TOTAL CONNECTED LOAD:						40732 W		41908 W		53796 W		AMPS:		379 A		LOAD: 136436 W	
LOAD CLASSIFICATION			CONNECTED LOAD			DEMAND FACTOR			ESTIMATED DEMAND			PANEL TOTALS					
Motor			4296 VA			104.47%			4488 VA								
Power			0 VA			0.00%			0 VA			TOTAL CONNN. LOAD: 136436 VA					
Receptacle			15680 VA			81.93%			12830 VA			TOTAL EST. DEMAND LOAD: 96774 VA					
Welder			116480 VA			68.21%			79456 VA			TOTAL CONNN. CURRENT: 379 A					
												TOTAL EST. DEMAND CURRENT: 269 A					

L5		VOLTS:		120/208 Wye		PHASES:		3		WIRE:		4		MAIN CAPACITY:		100 A	
		AIC RATING:		22,000		LOCATION:		MECHANICAL 113		MAIN CONNECTION:		MLO		TYPE 1			
		MOUNTING:		SURFACE		FEEDER SIZE:		SEE ONE-LINE DIAGRAM		MAIN TYPE:							
		WIRE SIZE	AMPS	POLES	BREAKER TYPE	A (WATTS)	B (WATTS)	C (WATTS)	BREAKER TYPE	POLES	AMPS	WIRE SIZE	ITEM FED	LOAD TYPE	CKT		
1	R	RECEP 113, 113A, EXT	12	20 A	1	1080	180				1	20 A	12	RECEP (WS-1)	R	2	
3	M	WH-1	12	15 A	1		1440	1440			1	15 A	12	WH-2	M	4	
5	R	RECEP 218 (WASHER)	12	20 A	1	GFCI			500	0	--	1	20 A	SPARE	--	6	
7	R	RECEP 112	12	20 A	1	1260	1260				1	20 A	12	RECEP 112, EXT	R	8	
9	R	RECEP 112 (FB2)	12	20 A	1		1080	1080			1	20 A	12	RECEP 112 (FB2)	R	10	
11	M	(#2) EF-22	12	20 A	1			1330	768		1	15 A	12	UH-3	M	12	
13	M	UH-2	12	15 A	1	768	768				1	15 A	12	UH-5	M	14	
15							1000	1800			1	20 A	12	RECEP 112 (TREADMILL)	R	16	
17	R	RECEP (DRYER, 14-30R)	10	30 A	2	GFCI			1000	1800		1	20 A	12	RECEP 112 (TREADMILL)	R	18
19	--	SPARE		20 A	1	--	0	1800			1	20 A	12	RECEP 112 (TREADMILL)	R	20	
21	--	SPARE		20 A	1	--	0	--		--	--	1	--	SPACE	--	22	
23	--	SPARE		20 A	1	--			0	--	--	1	--	SPACE	--	24	
25	--	SPARE		20 A	1	--	0	--		--	--	1	--	SPACE	--	26	
27	--	SPARE		20 A	1	--		0	--		--	1	--	SPACE	--	28	
29	--	SPARE		20 A	1	--			0	--	--	1	--	SPACE	--	30	
31	--	SPACE	--	1	--	--	--	--	--	--	--	1	--	SPACE	--	32	
33	--	SPACE	--	1	--	--	--	--	--	--	--	1	--	SPACE	--	34	
35	--	SPACE	--	1	--	--	--	--	--	--	--	1	--	SPACE	--	36	
37	--	SPACE	--	1	--	--	--	--	--	--	--	1	--	SPACE	--	38	
39	--	SPACE	--	1	--	--	--	--	--	--	--	1	--	SPACE	--	40	
41	--	SPACE	--	1	--	--	--	--	--	--	--	1	--	SPACE	--	42	
TOTAL CONNECTED LOAD:			7116 W				7840 W		5398 W		AMPS:		56 A		LOAD: 20354 W		
LOAD CLASSIFICATION			CONNECTED LOAD		DEMAND FACTOR		ESTIMATED DEMAND				PANEL TOTALS						
Motor			6514 VA		105.53%		6874 VA										
Receptacle			13840 VA		86.13%		11920 VA				TOTAL CONN. LOAD: 20354 VA						
											TOTAL EST. DEMAND LOAD: 18794 VA						
											TOTAL CONN. CURRENT: 56 A						
											TOTAL EST. DEMAND CURRENT: 52 A						

L4A			VOLTS:		120/208 Wye		PHASES:		3		WIRE:		4		MAIN CAPACITY:		400 A	
			AIC RATING:		22,000		LOCATION:		WELDING 212		MAIN CONNECTION:		MLO		TYPE 1			
			MOUNTING:		SURFACE		FEEDER SIZE:		SEE ONE-LINE DIAGRAM		MAIN TYPE:							
			WIRE SIZE	AMPS	POLES	BREAKER TYPE	A (WATTS)	B (WATTS)	C (WATTS)	BREAKER TYPE	POLES	AMPS	WIRE SIZE	ITEM FED	LOAD TYPE	CKT		
1	M	UH-18	12	15 A	1	288	1440			1	20 A	8	(#1) RECEP 219	R	2			
3	R	(#1) RECEP 219	12	20 A	1		1440	540		1	20 A	12	RECEP 217	R	4			
5	R	RECEP 217	12	20 A	1			540	360	1	20 A	12	RECEP 213, 216, EF-18	M, R	6			
7	M	PAINT BOOTH - LIGHTING	10	30 A	1	400	1296			1	20 A	12	MIXING BOOTH - MOTOR & LIGHTS	M	8			
9							4160	360		1	20 A	12	RECEP 212	R	10			
11	W	RECEP 212 (WELDER)	6	50 A	2			4160	360	1	20 A	12	RECEP 212	R	12			
13	R	RECEP 212	12	20 A	1	360	360			1	20 A	12	RECEP 212	R	14			
15	R	RECEP 212	12	20 A	1		360	360		1	20 A	12	RECEP 212	R	16			
17	M	RECEP 212 (BAND SAW)	12	20 A	1			1200	4160	2	50 A	6	RECEP 212 (WELDER)	W	18			
19						1200	4160											
21	M	DRILL PRESS 212	12	20 A	3		1200	5000		2	60 A	4	PLASMA CUTTER 212	O	22			
23								1200	5000									
25						1200	1080			1	20 A	12	(#1) RECEP 219	R	26			
27	M	LATHE	12	20 A	3		1200	1080		1	20 A	12	(#1) RECEP 219	R	28			
29								1200	4160	2	50 A	6	(#1) RECEP 219 (WELDER)	W	30			
31	O	HVLS CEILING FAN CTRL PANEL	12	20 A	1	0	4160			1	20 A	12	(#1) EF-21	M	34			
33	--	SPARE		20 A	1	--		0	264									
35	--	SPARE		20 A	1	--			0	4160								
37	--	SPARE		20 A	1	--	0	4160										
39	--	SPARE		20 A	1	--		0	4160									
41	--	SPARE		20 A	1	--			0	4160								
			TOTAL CONNECTED LOAD:				26248 W		25692 W		35268 W		AMPS: 242 A		LOAD: 87208 W			
LOAD CLASSIFICATION			CONNECTED LOAD			DEMAND FACTOR			ESTIMATED DEMAND			PANEL TOTALS						
Motor			26968 VA			103.34%			27868 VA			TOTAL CONN. LOAD: 87208 VA						
Other			10000 VA			100.00%			10000 VA			TOTAL EST. DEMAND LOAD: 81036 VA						
Power			0 VA			0.00%			0 VA			TOTAL CONN. CURRENT: 242 A						
Receptacle			8640 VA			100.00%			8640 VA			TOTAL EST. DEMAND CURRENT: 225 A						
Welder			41600 VA			83.00%			34528 VA									
PROVIDE WITH FEED-THRU LUGS FOR CONNECTION TO PANEL L4B																		

STARTER DISCONNECT SCHEDULE

UNIT TYPE	UNIT NUMBER	EQUIPMENT DESCRIPTION	KW	MOTOR HP	MCA	VOLTAGE	PHASES	MOCF	STARTER TYPE	CONTROL	DISCONNECT SWITCH SIZE	COMMENTS
AC	1	AIR COMPRESSOR		10 hp		480 V	3	-	INTEGRAL	DIV 22/23	30A NFD	
AC	2	AIR COMPRESSOR		10 hp		480 V	3	-	INTEGRAL	DIV 22/23	30A NFD	
AHU	1	AIR HANDLING UNIT		15 hp		480 V	3	-	VFD	DIV 22/23	INTEGRAL TO VFD	BACKUP POWER
AHU	2	AIR HANDLING UNIT		10 hp		480 V	3	-	VFD	DIV 22/23	INTEGRAL TO VFD	BACKUP POWER
B	1	BOILER			8.1 A	208 V	3	-	INTEGRAL	DIV 22/23	LOCKABLE 30A NFD	
B	2	BOILER			8.1 A	208 V	3	-	INTEGRAL	DIV 22/23	LOCKABLE 30A NFD	BACKUP POWER
CF	1	HVLS CEILING FAN		1.5 hp		480 V	3	-	INTEGRAL	DIV 22/23	30A NFD	
CF	2	HVLS CEILING FAN		1.5 hp		480 V	3	-	INTEGRAL	DIV 22/23	30A NFD	
CF	3	HVLS CEILING FAN		1.5 hp		480 V	3	-	INTEGRAL	DIV 22/23	30A NFD	
CF	4	HVLS CEILING FAN		1.5 hp		480 V	3	-	INTEGRAL	DIV 22/23	30A NFD	
CF	5	HVLS CEILING FAN		1.5 hp		480 V	3	-	INTEGRAL	DIV 22/23	30A NFD	
CF	6	HVLS CEILING FAN		1.5 hp		480 V	3	-	INTEGRAL	DIV 22/23	30A NFD	
CF	7	HVLS CEILING FAN		1.5 hp		480 V	3	-	INTEGRAL	DIV 22/23	30A NFD	
CF	8	HVLS CEILING FAN		1.5 hp		480 V	3	-	INTEGRAL	DIV 22/23	30A NFD	
CU	1	CONDENSING UNIT			61 A	480 V	3	80A	INTEGRAL	DIV 22/23	INTEGRAL	
CU	2	CONDENSING UNIT			37 A	480 V	3	50A	INTEGRAL	DIV 22/23	INTEGRAL	
CU	3	CONDENSING UNIT			15 A	480 V	3	25A	INTEGRAL	DIV 22/23	INTEGRAL	
CU	4	CONDENSING UNIT			37 A	480 V	3	50A	INTEGRAL	DIV 22/23	INTEGRAL	
CU	5	CONDENSING UNIT			9 A	480 V	3	15A	INTEGRAL	DIV 22/23	INTEGRAL	
CU	6	CONDENSING UNIT			30 A	480 V	3	40A	INTEGRAL	DIV 22/23	INTEGRAL	
CU	7	CONDENSING UNIT			30 A	480 V	3	40A	INTEGRAL	DIV 22/23	INTEGRAL	
CU	8	CONDENSING UNIT			15 A	480 V	3	25A	INTEGRAL	DIV 22/23	INTEGRAL	
CUH	1	CABINET UNIT HEATER		0.2 hp	1.9 A	120 V	1	-	INTEGRAL	DIV 22/23	INTEGRAL	
CUH	2	CABINET UNIT HEATER		0.2 hp	1.9 A	120 V	1	-	INTEGRAL	DIV 22/23	INTEGRAL	
CUH	3	CABINET UNIT HEATER		0.2 hp	1.9 A	120 V	1	-	INTEGRAL	DIV 22/23	INTEGRAL	
DBP	1	DOMESTIC BOOSTER PUMP		10 hp		480 V	3	-	VFD	DIV 22/23	INTEGRAL TO VFD	
DGP	1	DOMESTIC HW RECIRC PUMP		0.17 hp		480 V	3	-	INTEGRAL	DIV 22/23	30A NFD	
DSU	1	DUCTLESS SPLIT CONDENSING UNIT			37 A	208 V	1	40A	INTEGRAL	DIV 22/23	30A NFD	
DSU	1	DUCTLESS SPLIT INDOOR UNIT			3 A	208 V	1	15A	INTEGRAL	DIV 22/23	MOTOR-RATED SWITCH	
EF	1	EXHAUST FAN		0.75 hp		480 V	3	-	NOTE 2	DIV 22/23	COMBO STARTER W/30A NFD	
EF	2	EXHAUST FAN		0.33 hp		120 V	1	-	ECM	DIV 22/23	INTEGRAL TO ECM	
EF	3	EXHAUST FAN		0.05 hp		120 V	1	-	ECM	DIV 22/23	INTEGRAL TO ECM	
EF	4	EXHAUST FAN		0.75 hp		480 V	3	-	NOTE 2	DIV 22/23	COMBO STARTER W/30A NFD	
EF	5	EXHAUST FAN		0.75 hp		480 V	3	-	NOTE 2	DIV 22/23	COMBO STARTER W/30A NFD	
EF	6	EXHAUST FAN		0.01 hp		120 V	1	-	MMS	DIV 22/23	INTEGRAL TO MMS	
EF	7	EXHAUST FAN		0.75 hp		480 V	3	-	NOTE 2	DIV 22/23	COMBO STARTER W/30A NFD	
EF	8	EXHAUST FAN		0.5 hp		480 V	3	-	NOTE 2	DIV 22/23	COMBO STARTER W/30A NFD	
EF	9	EXHAUST FAN		0.33 hp		480 V	3	-	NOTE 2	DIV 22/23	COMBO STARTER W/30A NFD	
EF	10	EXHAUST FAN		0.01 hp		120 V	1	-	MMS	NOTE 1	MMS	
EF	11	EXHAUST FAN		0.13 hp		120 V	1	-	ECM	DIV 22/23	INTEGRAL TO ECM	
EF	12	EXHAUST FAN		1.5 hp		480 V	3	-	NOTE 2	DIV 22/23	COMBO STARTER W/30A NFD	
EF	13	EXHAUST FAN		0.13 hp		120 V	1	-	ECM	DIV 22/23	INTEGRAL TO ECM	
EF	14	EXHAUST FAN		0.75 hp		480 V	3	-	NOTE 2	DIV 22/23	COMBO STARTER W/30A NFD	
EF	15	EXHAUST FAN		0.75 hp		480 V	3	-	NOTE 2	DIV 22/23	COMBO STARTER W/30A NFD	
EF	16	EXHAUST FAN		0.5 hp		480 V	3	-	NOTE 2	DIV 22/23	COMBO STARTER W/30A NFD	
EF	17	EXHAUST FAN		0.01 hp		120 V	1	-	MMS	NOTE 1	MMS	
EF	18	EXHAUST FAN		0.75 hp		480 V	3	-	NOTE 2	DIV 22/23	COMBO STARTER W/30A NFD	
EF	19	EXHAUST FAN		2 hp		480 V	3	-	NOTE 2	DIV 22/23	COMBO STARTER W/30A NFD	
EF	20	EXHAUST FAN		2 hp		480 V	3	-	NOTE 2	DIV 22/23	COMBO STARTER W/30A NFD	
EF	21	EXHAUST FAN		0.13 hp		120 V	1	-	MMS	DIV 22/23	INTEGRAL TO MMS	
EF	22	EXHAUST FAN		0.75 hp		480 V	3	-	NOTE 2	DIV 22/23	COMBO STARTER W/30A NFD	
EF	23	EXHAUST FAN		0.5 hp		120 V	1	-	ECM	DIV 22/23	INTEGRAL TO ECM	
EF	24	EXHAUST FAN		1.5 hp		480 V	3	-	NOTE 2	DIV 22/23	COMBO STARTER W/30A NFD	
EF	25	EXHAUST FAN		1.5 hp		480 V	3	-	NOTE 2	DIV 22/23	COMBO STARTER W/30A NFD	
EH	1	ELECTRIC UNIT HEATER	10 kW			480 V	3	-	INTEGRAL	DIV 22/23	INTEGRAL	
FCU	1	FAN COIL UNIT			14.4 A	120 V	1	20A	INTEGRAL	DIV 22/23	INTEGRAL	
FCU	2	FAN COIL UNIT			12.6 A	480 V	3	15A	INTEGRAL	DIV 22/23	INTEGRAL	
FCU	3	FAN COIL UNIT			8 A	120 V	1	15A	INTEGRAL	DIV 22/23	INTEGRAL	
FCU	4	FAN COIL UNIT			12.6 A	480 V	3	15A	INTEGRAL	DIV 22/23	INTEGRAL	
FCU	5	FAN COIL UNIT			7 A	480 V	3	15A	INTEGRAL	DIV 22/23	INTEGRAL	
FCU	6	FAN COIL UNIT			14.4 A	120 V	1	20A	INTEGRAL	DIV 22/23	INTEGRAL	
HCP	1	COIL PUMP		1 hp		480 V	3	-	VFD	DIV 22/23	INTEGRAL TO VFD	
HCP	2	COIL PUMP		1 hp		480 V	3	-	VFD	DIV 22/23	INTEGRAL TO VFD	
HCP	3	COIL PUMP		1 hp		480 V	3	-	VFD	DIV 22/23	INTEGRAL TO VFD	
HCU	1	HUMIDIFIER			15.6 A	120 V	1	20A	INTEGRAL	DIV 22/23	INTEGRAL	
HUH	1	HYDRONIC UNIT HEATER		0.05 hp		120 V	1	-	INTEGRAL	DIV 22/23	MOTOR-RATED SWITCH	BACKUP POWER
HUH	2	HYDRONIC UNIT HEATER		0.13 hp		120 V	1	-	INTEGRAL	DIV 22/23	MOTOR-RATED SWITCH	BACKUP POWER
HUH	3	HYDRONIC UNIT HEATER		0.05 hp		120 V	1	-	INTEGRAL	DIV 22/23	MOTOR-RATED SWITCH	
HWP	1	HEATING WATER PUMP		5 hp		480 V	3	-	VFD	DIV 22/23	INTEGRAL TO VFD	BACKUP POWER
HWP	2	HEATING WATER PUMP		5 hp		480 V	3	-	VFD	DIV 22/23	INTEGRAL TO VFD	BACKUP POWER
HWP	3	HEATING WATER PUMP		5 hp		480 V	3	-	VFD	DIV 22/23	INTEGRAL TO VFD	BACKUP POWER
HWP	4	HEATING WATER PUMP		15 hp		480 V	3	-	VFD	DIV 22/23	INTEGRAL TO VFD	BACKUP POWER
MAU	1	INDOOR MAKEUP AIR UNIT		5 hp		480 V	3	-	VFD	DIV 22/23	INTEGRAL TO VFD	
MAU	2	INDOOR MAKEUP AIR UNIT		5 hp		480 V	3	-	VFD	DIV 22/23	INTEGRAL TO VFD	
MAU	3	INDOOR MAKEUP AIR UNIT		4.42 hp		480 V	3	-	VFD	DIV 22/23	INTEGRAL TO VFD	
PW	1	HOT WATER PRESSURE WASHER		10 hp	30 A	240 V	3	30A	INTEGRAL	DIV 22/23	30A NFD	
PW	2	HOT WATER PRESSURE WASHER		10 hp	30 A	240 V	3	30A	INTEGRAL	DIV 22/23	30A NFD	
UH	1	GAS-FIRED UNIT HEATER			8 A	120 V	1	15A	INTEGRAL	DIV 22/23	INTEGRAL	
UH	2	GAS-FIRED UNIT HEATER			8 A	120 V	1	15A	INTEGRAL	DIV 22/23	INTEGRAL	
UH	3	GAS-FIRED UNIT HEATER			8 A	120 V	1	15A	INTEGRAL	DIV 22/23	INTEGRAL	
UH	4	GAS-FIRED UNIT HEATER			8 A	120 V	1	15A	INTEGRAL	DIV 22/23	INTEGRAL	
UH	5	GAS-FIRED UNIT HEATER			8 A	120 V	1	15A	INTEGRAL	DIV 22/23	INTEGRAL	
UH	6	GAS-FIRED UNIT HEATER			8 A	120 V	1	15A	INTEGRAL	DIV 22/23	INTEGRAL	
UH	7	GAS-FIRED UNIT HEATER			8 A	120 V	1	15A	INTEGRAL	DIV 22/23	INTEGRAL	
UH	8	GAS-FIRED UNIT HEATER			8 A	120 V	1	15A	INTEGRAL	DIV 22/23	INTEGRAL	
UH	9	GAS-FIRED UNIT HEATER			8 A	120 V	1	15A	INTEGRAL	DIV 22/23	INTEGRAL	
UH	10	GAS-FIRED UNIT HEATER			8 A	120 V	1	15A	INTEGRAL	DIV 22/23	INTEGRAL	
UH	11	GAS-FIRED UNIT HEATER			8 A	120 V	1	15A	INTEGRAL	DIV 22/23	INTEGRAL	
UH	12	GAS-FIRED UNIT HEATER			8 A	120 V	1	15A	INTEGRAL	DIV 22/23	INTEGRAL	
UH	13	GAS-FIRED UNIT HEATER			8 A	120 V	1	15A	INTEGRAL	DIV 22/23	INTEGRAL	
UH	14	GAS-FIRED UNIT HEATER			8 A	120 V	1	15A	INTEGRAL	DIV 22/23	INTEGRAL	
UH	15	GAS-FIRED UNIT HEATER			8 A	120 V	1	15A	INTEGRAL	DIV 22/23	INTEGRAL	
UH	16	GAS-FIRED UNIT HEATER			8 A	120 V	1	15A	INTEGRAL	DIV 22/23	INTEGRAL	
UH	17	GAS-FIRED UNIT HEATER			2 A	120 V	1	15A	INTEGRAL	DIV 22/23	INTEGRAL	
UH	18	GAS-FIRED UNIT HEATER			3 A	120 V	1	15A	INTEGRAL	DIV 22/23	INTEGRAL	
UH	19	GAS-FIRED UNIT HEATER			8 A	120 V	1	15A	INTEGRAL	DIV 22/23	INTEGRAL	
UH	20	GAS-FIRED UNIT HEATER			8 A	120 V	1	15A	INTEGRAL	DIV 22/23	INTEGRAL	
UH	21	GAS-FIRED UNIT HEATER			8 A	120 V	1	15A	INTEGRAL	DIV 22/23	INTEGRAL	
UH	22	GAS-FIRED UNIT HEATER			8 A	120 V	1	15A	INTEGRAL	DIV 22/23	INTEGRAL	
UH	23	GAS-FIRED UNIT HEATER			8 A	120 V	1	15A	INTEGRAL	DIV 22/23	INTEGRAL	
UH	24	GAS-FIRED UNIT HEATER			8 A	120 V	1	15A	INTEGRAL	DIV 22/23	INTEGRAL	
UH	25	GAS-FIRED UNIT HEATER			8 A	120 V	1	15A	INTEGRAL	DIV 22/23	INTEGRAL	
UH	26	GAS-FIRED UNIT HEATER			8 A	120 V	1	15A	INTEGRAL	DIV 22/23	INTEGRAL	
UH	27	GAS-FIRED UNIT HEATER			8 A	120 V	1	15A	INTEGRAL	DIV 22/23	INTEGRAL	
UH	28	GAS-FIRED UNIT HEATER			8 A	120 V	1	15A	INTEGRAL	DIV 22/23	INTEGRAL	
UH	29	GAS-FIRED UNIT HEATER			8 A	120 V	1	15A	INTEGRAL	DIV 22/23	INTEGRAL	
UH	30	GAS-FIRED UNIT HEATER			8 A	120 V	1	15A	INTEGRAL	DIV 22/23	INTEGRAL	
UH	31	GAS-FIRED UNIT HEATER			8 A	120 V	1	15A	INTEGRAL	DIV 22/23	INTEGRAL	
UH	32	GAS-FIRED UNIT HEATER			8 A	120 V	1	15A	INTEGRAL	DIV 22/23	INTEGRAL	
VEF	1	VEHICLE EXHAUST FAN		5 hp		480 V	3	-	INTEGRAL	DIV 22/23	INTEGRAL	
WH	1	WATER HEATER			15 A	120 V	1	15A	INTEGRAL	DIV 22/23	30A NFD	
WH	2	WATER HEATER			15 A	120 V	1	15A	INTEGRAL	DIV 22/23	30A NFD	
WH	3	WATER HEATER	3.3 kW			277 V	1	-	INTEGRAL	DIV 22/23	MOTOR-RATED SWITCH	
WS	1	WATER SOFTENER			1 A	120 V	1	15A	INTEGRAL	DIV 22/23	CORD & PLUG	

NOTES:

INTERLOCK EXHAUST FAN WITH ASSOCIATED RESTROOM LIGHTING. FAN SHALL TURN ON WHEN LIGHTS TURN ON AND OFF WHEN LIGHTS TURN OFF. PROVIDE COMBINATION STARTER/DISCONNECT: FVNR TYPE, NEMA SIZE 0, WITH THE FOLLOWING FEATURES: B, G, R, FT.

GENERAL:

A. PROVIDE ALL DISCONNECTS WITH NEUTRAL KITS

B. COORDINATE EXACT REQUIREMENTS WITH MECHANICAL SHOP DRAWINGS PRIOR TO ORDERING EQUIPMENT OR RUNNING FEEDERS

KEY:

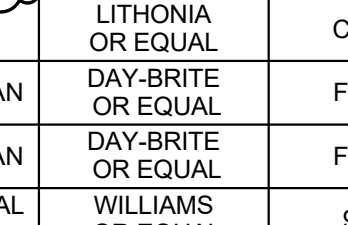
B = HAND-OFF-AUTO SELECTOR SWITCH, G = GREEN "OFF" PILOT LIGHT, R = RED "ON" PILOT LIGHT, FT = CONTROL XFMR 120V FUSED

FVNR = FULL VOLTAGE NON-REVERSING, FVR = FULL VOLTAGE REVERSING, VFD = VARIABLE FREQUENCY DRIVE, RVRS = REDUCED VOLTAGE STARTER

SPC = SINGLE POINT CONNECTION, FC = RUNS CONTINUOUS, MMS = MANUAL MOTOR STARTER WITH OVERLOAD PROTECTION & LOCK-OFF GUARD

SSP = START-STOP PUSHBUTTON STATION, JS = JOG PUSHBUTTON STATION, WP = WEATHERPROOF

LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	LENS / REFLECTOR	VOLTAGE	DRIVER		LIGHTING PACKAGE			CCT	MOUNTING		MANUFACTURER	MODEL	COMMENTS
				CONTROL	DIMMING	LUMENS	WATTS	OPTICS		HEIGHT				
A	2x2' ARCHITECTURAL PANEL	CURVED OPAL LENS	277	0-10V	1%	4000	33.3	-	4000K	RECESSED	CEILING	LITHONIA OR EQUAL	STACK	
AE	2x2' ARCHITECTURAL PANEL	CURVED OPAL LENS	277	0-10V	1%	4000	33.3	-	4000K	RECESSED	CEILING	LITHONIA OR EQUAL	STACK	100% WATTAGE EMERGENCY
B	2x2' FLAT PANEL	SATIN WHITE	277	0-10V	1%	4000	36.3	-	4000K	RECESSED	CEILING	LITHONIA OR EQUAL	CPX	
BE	2x2' FLAT PANEL	SATIN WHITE	277	0-10V	1%	4000	36.3	-	4000K	RECESSED	CEILING	LITHONIA OR EQUAL	CPX	100% WATTAGE EMERGENCY
C	CONTINUOUS DIRECT / INDIRECT LINEAR	FLUSH LENS	277	0-10V	1%	D- 600FT I: 300FT	D- 4.7/FT I: 2.2/FT	D- LAMB. I: BATHING	4000K	SUSPENDED	24" BELOW CEILING	MARK ARCH OR EQUAL	S2P1D	SEE FLOOR PLANS FOR FIXTURE LENGTHS
D	6" OPEN DOWNLIGHT	SEMI-SPECULAR	277	0-10V	1%	1500	13.8	WIDE, 65°	4000K	RECESSED	CEILING	WILLIAMS OR EQUAL	6DR	WHITE
DE	6" OPEN DOWNLIGHT	SEMI-SPECULAR	277	0-10V	1%	1500	13.8	WIDE, 65°	4000K	RECESSED	CEILING	WILLIAMS OR EQUAL	6DR	WHITE, 100% WATTAGE EMERGENCY
DS	6" OPEN SHOWER DOWNLIGHT	NON-CONDUCTIVE FLUSH LENS	277	0-10V	1%	1500	13.8	WIDE, 65°	4000K	RECESSED	CEILING	WILLIAMS OR EQUAL	6DR	WHITE, WET LOCATION
DXE	EXT. 6" OPEN DOWNLIGHT	SEMI-SPECULAR	277	0-10V	1%	1500	13.8	WIDE, 65°	4000K	RECESSED	CEILING	WILLIAMS OR EQUAL	6DR	WHITE, WET LOCATION, 100% WATTAGE EMERGENCY
G	8" STRIP	ROUND DIFFUSE	277	0-10V	1%	10000	63.7	-	4000K	SUSPENDED		LITHONIA OR EQUAL	CLX	100% WATTAGE EMERGENCY
GE	8" STRIP	ROUND DIFFUSE	277	0-10V	1%	10000	63.7	-	4000K	SUSPENDED		NOTE 1	CLX	100% WATTAGE EMERGENCY
GW	8" STRIP WALL	ROUND DIFFUSE	277	0-10V	1%	10000	63.7	-	4000K	WALL		NOTE 1	CLX	PROVIDE WITH CLXANGBRT ANGLED WALL BRACKET
H1	HIGH BAY	FROSTED ACRYLIC	277	0-10V	10%	36000	225.0	GENERAL	4000K	SUSPENDED	VARIABLES, SEE FLOOR PLAN	DAY-BRITE OR EQUAL	FB2	AIRCRAFT CABLING
H1E	HIGH BAY	FROSTED ACRYLIC	277	0-10V	10%	36000	225.0	GENERAL	4000K	SUSPENDED	VARIABLES, SEE FLOOR PLAN	DAY-BRITE OR EQUAL	FB2	AIRCRAFT CABLING, 100% WATTAGE EMERGENCY
J	8" FULLY ENCLOSED STRIP	CLEAR POLYCARBONATE	277	0-10V	-	8000	61.0	-	4000K	SUSPENDED	BOTTOM OF STRUCTURAL DOUBLE TEE	WILLIAMS OR EQUAL	96	
J2	8" FULLY ENCLOSED STRIP	CLEAR SMOOTH ACRYLIC	277	-	-	13000	95.0	-	4000K	SUSPENDED	25' AFF	WILLIAMS OR EQUAL	96	WET LOCATION
J2E	8" FULLY ENCLOSED STRIP	CLEAR SMOOTH ACRYLIC	277	-	-	13000	95.0	-	4000K	SUSPENDED	25' AFF	WILLIAMS OR EQUAL	96	WET LOCATION, 100% WATTAGE EMERGENCY
J3	4" FULLY ENCLOSED STRIP	FROSTED SMOOTH ACRYLIC	277	-	-	4000	30.0	-	4000K	SURFACE	CEILING	WILLIAMS OR EQUAL	96	
J3E	4" FULLY ENCLOSED STRIP	FROSTED SMOOTH ACRYLIC	277	-	-	4000	30.0	-	4000K	SURFACE	CEILING	WILLIAMS OR EQUAL	96	100% WATTAGE EMERGENCY
K	2" WALL BRACKET	FROSTED ACRYLIC	277	0-10V	-	1976	17.1	-	4000K	WALL	ABOVE MIRROR	METALUX OR EQUAL	BCLED	
S1	EXT. SINGLE HEAD POLE LIGHT	-	277	0-10V	-	56200	431.0	R4	4000K	25' POLE	3' CONCRETE BASE	LITHONIA OR EQUAL	RSX4	
W1E	EXT. PERIMETER LIGHT	-	277	-	-	3021	25.0	R3	4000K	WALL	7.5' ABOVE GROUND	LITHONIA OR EQUAL	ARC1	100% WATTAGE EMERGENCY
W2	EXT. PERIMETER LIGHT	-	277	-	-	28994	210.0	R4	4000K	WALL	17' ABOVE GROUND	LITHONIA OR EQUAL	RSX2	
X1	EXIT SIGN SINGLE FACE	RED LETTERS	277	-	-	-	5.0	-	-	UNIV.	SEE FLOOR PLANS	WILLIAMS OR EQUAL	EXIT	POLYCARBONATE WHITE HOUSING, BATTERY & CHARGER, SELF DIAGNOSTICS
X2	EXIT SIGN DOUBLE FACE	RED LETTERS	277	-	-	-	5.0	-	-	UNIV.	SEE FLOOR PLANS	WILLIAMS OR EQUAL	EXIT	POLYCARBONATE WHITE HOUSING, BATTERY & CHARGER, SELF DIAGNOSTICS
Z	EXIT SIGN SINGLE FACE	RED LETTERS	277	-	-	-	5.0	-	-	UNIV.	SEE FLOOR PLANS	WILLIAMS OR EQUAL	EXIT/WET/CP	WET LOCATION, POLYCARBONATE WHITE HOUSING, BATTERY & CHARGER, SELF DIAGNOSTICS