

# NORTHERN ELECTRIC

## NORTHERN ELECTRIC COOPERATIVE BATH, SOUTH DAKOTA



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S502	STRUCTURAL DETAILS		
S503	STRUCTURAL DETAILS		
S504	STRUCTURAL DETAILS		

### OWNER:

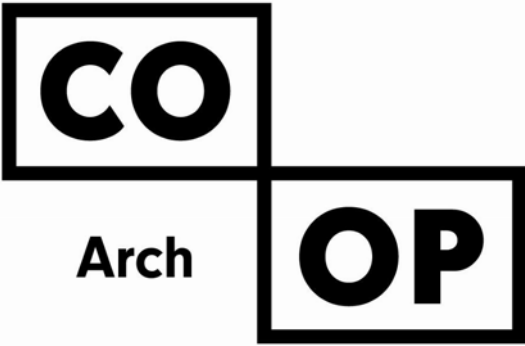


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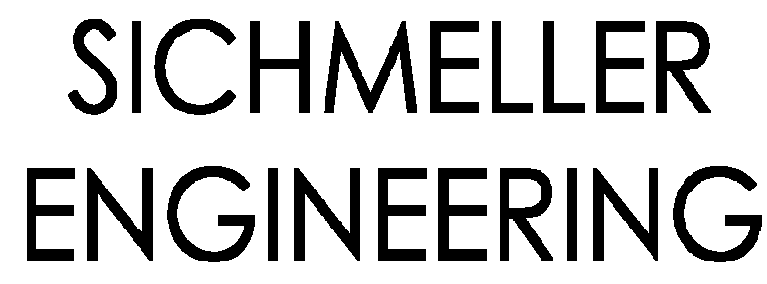


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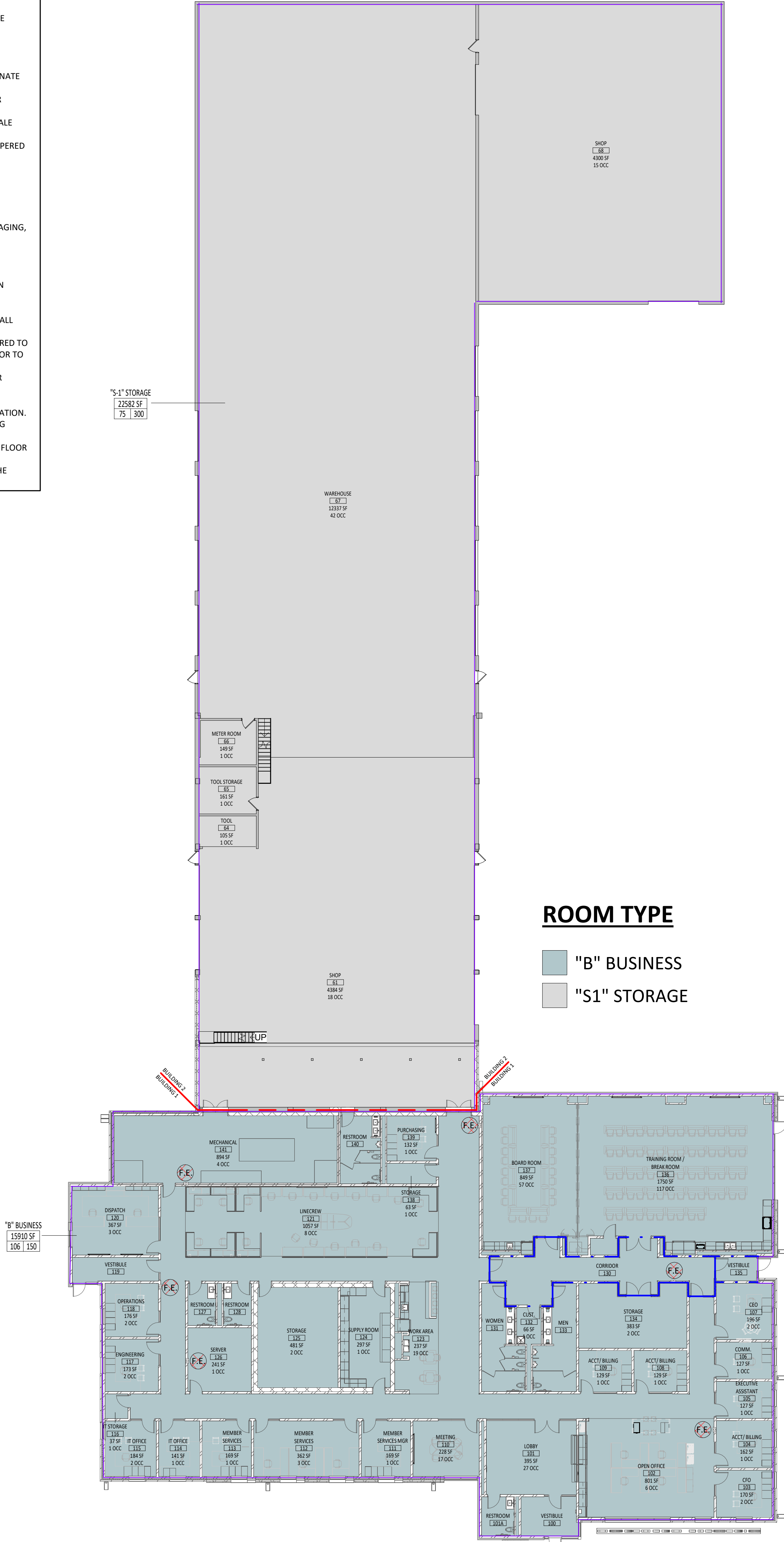
100% CONSTRUCTION  
DOCUMENTS  
5/15/2025



ARCHITECTURAL GENERAL NOTES		
<b>GENERAL NOTES</b> <ul style="list-style-type: none"><li>• FIRE RATED WALLS ARE INDICATED ON THE CODE PLANS.</li><li>• PROVIDE FIRE EXTINGUISHERS AND CABINETS AS SHOWN ON THE CODE PLAN(S).</li><li>• SEE CIVIL, STRUCTURAL, MECHANICAL, AND ELECTRICAL FOR ADDITIONAL INFORMATION AND COORDINATION.</li><li>• REFER TO SHEET <b>AD-1</b> FOR ALL ADA CODE STANDARDS.</li><li>• SQUARE FOOTAGES LISTED ARE FOR CODE REVIEW PURPOSES ONLY AND SHOULD NOT BE USED FOR ANY OTHER PURPOSES.</li><li>• COORDINATE WORK DONE BY OTHERS AS INDICATED ON THE DRAWINGS.</li><li>• CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS, ELEVATIONS AND DIMENSIONS.</li><li>• ALL WORK SHALL BE IN ACCORDANCE WITH OSHA CODES AND STANDARDS. NOTHING INDICATED ON THESE DRAWINGS SHALL RELIEVE THE CONTRACTOR FROM COMPLYING WITH ANY APPROPRIATE SAFETY REGULATIONS.</li><li>• THE CONTRACTOR SHALL CONSTRUCT ALL ITEMS WITHIN THIS CONTRACT IN ACCORDANCE WITH THE STATE AND LOCAL REGULATIONS AND CODES.</li><li>• COMPARE AND MATCH EXISTING CONDITIONS. ALL FLOOR ELEVATIONS, ROOF SLOPES, PRECAST SHAPES AND ELEVATIONS, BANDINGS AND MILLWORK TO MATCH THAT OF THE EXISTING BUILDING.</li><li>• REVIEW ALL INTERIOR ELEVATION SHEETS FOR ACCESSORY AND EQUIPMENT INFORMATION. COORDINATE WITH CODE STANDARD SHEET <b>AD-2</b>.</li><li>• COORDINATE ANY EXTERIOR REQUIRED WORK WITH MECH. &amp; ELECTRICAL.</li><li>• VERIFY HIGHTWAY SHAFT SIZE REQUIREMENTS W/ ELEVATOR MANUFACTURER &amp; COORDINATE.</li><li>• COORDINATE ALL CHASE SIZES AND LOCATIONS W/ MECHANICAL. PROVIDE CHASES AT ALL EXPOSED MECHANICAL &amp; ELECTRICAL WITH ADJACENT WALL MATERIAL AS REQUIRED.</li><li>• COORDINATE ALL SHEAR WALL LOCATIONS W/ STRUCTURAL PLANS.</li></ul>	<b>CEILING NOTES</b> <ul style="list-style-type: none"><li>• ALL ITEMS INSTALLED IN CEILINGS, INCLUDING SPRINKLER HEADS, ARE TO BE CENTERED OR SYMMETRICALLY ARRANGED ON OR ABOUT CENTERLINES OF ROOMS AND CENTERED IN CEILING TILES.</li><li>• WALL MOUNTED EXIT SIGNS AND FIXTURES ARE TO BE CENTERED OVER DOOR OR DOOR OPENING WHERE APPLICABLE.</li><li>• REFER TO SPECIFICATIONS FOR CEILING AND FIXTURE SUSPENSION REQUIREMENTS.</li><li>• PROVIDE ACCESS DOORS AT ALL MECHANICAL UNIT LOCATIONS ABOVE SOFFIT. COORD. NUMBER REQUIRED AND LOCATIONS WITH MECHANICAL SHEETS.</li><li>• CENTER CEILING GRID IN AREAS SUCH THAT THERE WILL BE NO CEILING TILE LESS THAN 6" IN THE SMALLEST DIMENSION, U.N.O.</li><li>• THE REFLECTED CEILING PLANS ARE INTENDED TO AID IN COORDINATION ONLY AND ARE NOT INTENDED TO BE COMPREHENSIVE. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION. WHERE CONFLICTS OCCUR, NOTIFY ARCHITECT.</li><li>• COORDINATE WITH MEP FOR LOCATION OF CEILING ACCESS PANELS.</li><li>• CENTER LIGHT FIXTURES BETWEEN WALLS AND/OR CEILING BULKHEADS UNLESS DIMENSIONED OTHERWISE.</li><li>• ALIGN GYPSUM BOARD CEILINGS AND SOFFITS WITH ADJACENT PARTITIONS, U.N.O.</li><li>• IN ALL EXPOSED TO STRUCTURES, CENTER LIGHT FIXTURE WITHIN ROOM</li></ul> <b>DOORS, HARDWARE &amp; WINDOWS NOTES</b> <ul style="list-style-type: none"><li>• ALL HM FRAMES IN STUD PARTITIONS SHALL BE WRAPPED AROUND BOTH SIDES OF PARTITION (U.O.N.) SEE PLAN FOR WALL THICKNESS.</li><li>• ALL EXTERIOR FRAMES &amp; DOORS ARE TO BE THERMALLY BROKEN.</li><li>• CAULK ENTIRE PERIMETER OF H.M. FRAMES (BOTH SIDES).</li><li>• PAINT FRAMES TO MATCH WALL. SPLIT PAINT COLOR AT DOOR GASKET AS REQUIRED.</li><li>• PROVIDE ROOM SIGNAGE AT ALL DOORS. WHERE MOUNTED TO GLAZING, PROVIDE A BLANK BACK PLATE ON OPPOSITE SIDE OF GLAZING. SEE CODE STANDARDS FOR MOUNTING HEIGHTS AND LOCATIONS. SEE SPECIFICATIONS FOR SPECIAL SIGNAGE REQ.</li><li>• REFER TO WALL TYPES FOR WALL CONSTRUCTION ELEMENTS FOR ALL DOOR AND WINDOW DETAILS. COORDINATE ALL STRUCTURAL REQ. WITH STRUCTURAL DRAWINGS.</li><li>• WALL MOUNTED EXIT SIGNS AND FIXTURES ARE TO BE CENTERED OVER DOOR OR DOOR OPENING WHERE APPLICABLE.</li></ul> <b>FINISHES NOTES</b> <ul style="list-style-type: none"><li>• SEE DRAWING SHEET <b>AD-3</b> FOR ROOM FINISH SCHEDULE.</li><li>• INTERIOR WALL FINISHES ARE FULL HEIGHT, U.N.O.</li><li>• PREP ALL EXISTING WALLS AS REQUIRED FOR PROPER ADHESION OF NEW WALL TILE.</li><li>• PREP ALL EXISTING WALLS AS REQUIRED FOR NEW PAINTING.</li></ul> <b>FIXTURES NOTES</b> <ul style="list-style-type: none"><li>• COORDINATE INSTALLATION OF OWNER PROVIDED EQUIPMENT WITH NEW CONSTRUCTION.</li><li>• CAULK PERIMETER OF ALL TUB/SHOWER UNITS, TOILETS, URINALS, SINKS &amp; COUNTERTOPS AS REQUIRED.</li><li>• REVIEW ALL INTERIOR ELEVATION SHEETS FOR ACCESSORY AND EQUIPMENT INFORMATION.</li><li>• PROVIDE 2x4 BLOCKING AT ALL GRAB BAR AND FUTURE GRAB BAR LOCATIONS. SEE CODE SHEETS FOR ADDITIONAL BLOCKING INFORMATION.</li></ul>	<b>FLOOR NOTES</b> <ul style="list-style-type: none"><li>• SEE MECHANICAL FOR ALL FLOOR DRAIN SIZES AND LOCATIONS U.N.O. SET FLOOR DRAINS MINIMUM 3/4" BELOW FINISHED FLOOR. PROVIDE EVEN SLOPE FROM WALL TO DRAIN W/ A MAXIMUM SLOPE OF 1/4" PER FOOT.</li></ul> <b>ROOF NOTES</b> <ul style="list-style-type: none"><li>• SEE CIVIL, STRUCTURAL, MECHANICAL, AND ELECTRICAL FOR ADDITIONAL INFORMATION AND COORDINATION.</li><li>• ALL ROOF TAPERED ROOF SYSTEM SLOPES ARE 1/4" PER FOOT U.O.N.</li><li>• ALL THRU ROOF PENETRATION BOOTS IN ROOF SYSTEM ARE TO BE PROVIDED.</li><li>• THE AIR &amp; MOISTURE WEATHER BARRIER IS TO BE CONTINUOUS FROM THE BASE OF THE WALLS UP TO &amp; TYING INTO THE ROOF BARRIER SYSTEM.</li><li>• PROVIDE CRICKETS AT ALL ROOF TOP EQUIPMENT TO ALLOW FOR UNIMPEDDED WATER FLOW.</li><li>• ALL ROOF SADDLES SHALL HAVE A MINIMUM OF 1/2" PER FOOT SLOPE.</li><li>• PROVIDE ROOF CURBS FOR ALL EQUIPMENT SCHEDULED TO BE ON THE ROOF. COORDINATE SIZE AND LOCATION WITH APPLICABLE TRADES.</li><li>• PROVIDE CRICKETS AT ALL ROOF TOP EQUIPMENT TO ALLOW FOR UNIMPEDDED WATER FLOW.</li><li>• DIMENSIONS AND LOCATIONS OF EQUIPMENT ON THE ROOF ARE APPROX., DO NOT SCALE THE DRAWINGS. VERIFY WITH APPLICABLE TRADES.</li><li>• TAPERED INSULATION SHALL HAVE A MINIMUM OF 1/4" PER FOOT SLOPE. PROVIDE TAPERED INSULATION AS REQUIRED TO ACHIEVE 1/4" PER FOOT SLOPE.</li><li>• PROVIDE R-30 MINIMUM ROOF INSULATION AT ROOF DRAINS.</li><li>• PROVIDE ROOF WALKING PADS AS SHOWN.</li></ul> <b>SITE NOTES</b> <ul style="list-style-type: none"><li>• SEE SITE PLAN FOR ADDITIONAL INFORMATION REGARDING CONSTRUCTION LIMITS, STAGING, LAWN IRRIGATION, SOD &amp; LANDSCAPING.</li></ul> <b>WALL NOTES</b> <ul style="list-style-type: none"><li>• <b>ALL WALLS TO BE TYPE #1 U.O.N.</b> AND EXTEND TO DECK UNLESS OTHERWISE NOTED ON WALL TYPES.</li><li>• ALL DIMENSIONS ARE FROM FACE GWB TO FACE OF GWB U.N.O.</li><li>• COORDINATE ALL CHASE SIZES AND LOCATIONS W/ MECHANICAL. PROVIDE CHASES AT ALL EXPOSED MECHANICAL &amp; ELECTRICAL WITH ADJACENT WALL MATERIAL AS REQUIRED.</li><li>• INCREASE WALL THICKNESS OF METAL STUD AND CONCRETE BLOCK WALLS AS REQUIRED TO ACCOMMODATE MECHANICAL AND ELECTRICAL DEVICES- VERIFY WITH ARCHITECT PRIOR TO WORK.</li><li>• PROVIDE WATER-RESISTANT GYPSUM BOARD PANELS AT ALL BATHROOM AND SHOWER ROOM WALLS AND CEILINGS WHERE EXPOSED TO MOISTURE.</li><li>• RESTROOM WALLS ARE SOUND INSULATED AND EXTEND TO THE DECK.</li><li>• VERIFY DRYWALL CONTROL JOINT LOCATIONS W/ARCHITECT ON SITE PRIOR TO INSTALLATION. THIS INCLUDES, BUT IS NOT LIMITED TO, CONTROL JOINTS AT 30'-0" O.C. MAX. IN LONG WALL EXPANSES. CONTROL JOINTS AT DOOR JAMBS EXTENDING FROM DOOR HEAD TO CEILING. CONSIDERATION SHALL ALSO BE GIVEN TO LOCATING CONTROL JOINTS FROM FLOOR TO CEILING AT EITHER EDGE OF LARGE WINDOW OPENINGS.</li><li>• THE AIR &amp; MOISTURE WEATHER BARRIER IS TO BE CONTINUOUS FROM THE BASE OF THE WALLS UP TO &amp; TYING INTO THE ROOF BARRIER SYSTEM.</li></ul>

ABBREVIATIONS		
<b>A/C</b> AIR CONDITION	<b>E</b> FINISHED FLOOR ELEVATION	<b>P</b> POUNDS PER SQAURE FOOT
<b>AB</b> ANCHOR BOLT	<b>FF</b> FINISHED FLOOR	<b>PVT</b> PAVES FLOOR
<b>ACPL</b> ACOUSTICAL PLASTER	<b>FLR</b> FLOOR	<b>PTB</b> PAVES TILE BASE
<b>ADJ</b> ADJUSTABLE	<b>FRP</b> FIBERGLASS REINFORCED PANEL	<b>PWD</b> PLYWOOD
<b>AF</b> ABOVE FINISH FLOOR	<b>FT</b> FOOT	
<b>AHU</b> AIR HANDLING UNIT	<b>FTG</b> FOOTING	
<b>ALUM</b> ALUMINUM	<b>FWC</b> FABRIC WALL COVERING	
<b>ALT</b> ALTERNATE		
<b>ANC</b> ANCHOR		
<b>APC</b> ACOUSTICAL PANEL CEILING		
	<b>G</b> GALVANIZED	
	<b>GR</b> GRAB BAR	
	<b>GC</b> GENERAL CONTRACTOR	
	<b>GLAZ</b> GLAZED BLOCK	
	<b>GW</b> GYPSUM WALL BOARD	
	<b>GLWT</b> GLAZED WALL TILE	
	<b>GTB</b> GLAZED WALL TILE BASE	
	<b>H</b> HOSE BIB	
	<b>HC</b> HANDICAPPED	
	<b>HLB</b> HORIZONTAL LOUVER BLINDS	
	<b>HM</b> HOLLOW METAL	
	<b>HPC</b> HIGH PERFORMANCE COATING	
	<b>HT</b> HEIGHT	
	<b>HVAC</b> HEATING, VENTING & AIR CONDITIONING	
	<b>C</b> CORNER GUARD	
	<b>CJ</b> CONTROL JOINT	
	<b>CLG</b> CEILING	
	<b>CMU</b> CONCRETE MASONRY UNIT	
	<b>COL</b> COLUMN	
	<b>COMP</b> COMPARTMENT	
	<b>CONC</b> CONCRETE	
	<b>CONSTR</b> CONSTRUCTION	
	<b>CONT</b> CONTINUOUS OR CONTINUE	
	<b>CONTR</b> CONTRACTOR	
	<b>CPT</b> CARPET	
	<b>CSV</b> COVE SHEET VINYL BASE	
	<b>CT</b> CERAMIC TILE	
	<b>CLM</b> CERAMIC TILE BASE	
	<b>N</b> NOT IN CONTRACT	
	<b>NO</b> NUMBER	
	<b>NOM</b> NOMINAL	
	<b>NTS</b> NOT TO SCALE	
	<b>Q</b> ON CENTER	
	<b>EQ</b> EQUAL	
	<b>EQUIP</b> EQUIPMENT	
	<b>ES</b> EXPOSED STRUCTURE	
	<b>EW</b> EACH WAY	
	<b>EWC</b> ELECTRIC WATER COOLER	
	<b>EXPO</b> EXPOSED	
	<b>EXIST</b> EXISTING	
	<b>EXT</b> EXTERIOR	
	<b>W</b> WITH	
	<b>W/O</b> WITHOUT	
	<b>WB</b> WOOD BASE	
	<b>WC</b> WATER CLOSET	
	<b>WD</b> WOOD	
	<b>WH</b> WATER HEATER	
	<b>WOM</b> WALK OFF MAT	
	<b>WT</b> WEIGHT	
	<b>U</b> UNLESS NOTED OTHERWISE	
	<b>V</b> VINYL COMPOSITION TILE	
	<b>VEND</b> VENDING MACHINE	
	<b>VERT</b> VERTICAL	
	<b>VTR</b> VENT THRU ROOF	
	<b>VWB</b> VINYL WALL BORDER	
	<b>VWC</b> VINYL WALL COVERING	
	<b>P</b> PAINT	
	<b>PL</b> PLATE	
	<b>PLAS</b> PLASTER	
	<b>PLAM</b> PLASTIC LAMINATE	
	<b>F</b> FURNISHED BY OTHERS	
	<b>FD</b> FLOOR DRAIN	
	<b>FDN</b> FOUNDATION	
	<b>FE</b> FIRE EXTINGUISHER	
	<b>FEC</b> FIRE EXTINGUISHER CABINET	

CODE LEGEND		
	LOCATION OF EXISTING FIRE EXTINGUISHER	
	LOCATION OF NEW FIRE EXTINGUISHER OR FIRE EXTINGUISHER CABINET	
	EGRESS TRAVEL PATH	
	# OF OCCUPANTS THAT WILL EGRESS: REQ'D: 00.00' ACTUAL: 00.00'	
	LOCATION OF / DISTANCE FROM FURTHEST EXIT	
	DESIGNATION OF BUILDING SEPARATION	
	3 HR FIRE WALL	
	2 HR FIRE BARRIER	
	1 HR FIRE PARTITION	



FIRST LEVEL CODE PLAN  
1/16" = 1'-0"

# BUILDING CODE SUMMARY

APPLICABLE CODES

1. BUILDING CODE: 2021 INTERNATIONAL BUILDING CODE

2. MECHANICAL CODE: 2018 INTERNATIONAL MECHANICAL CODE

3. PLUMBING CODE: 2015 UNIFORM PLUMBING CODE

4. ELECTRICAL CODE: NATIONAL ELECTRICAL CODE 2014

5. ENERGY CONSERVATION CODE: **NOT REQUIRED, 2012 IECC AS BASIS**

6. FIRE CODE: FIRE CODE 2015 OF SOUTH DAKOTA

7. STORM SHELTER DESIGN: 2014 ICC 500/NSA (SEE IBC CHAPTER 4)

CODE SUMMARY

BUILDING: NORTHERN ELECTRIC COOPERATIVE

LOCATION: 39456 133RD ST, BATH, SD 57427

GENERAL: ONE STORY SLAB ON GRADE, OFFICE AND SHOP, NON-SPRINKLERED

USE AND OCCUPANCY CLASSIFICATION (CHAPTER 3)

1. OCCUPANCY CLASSIFICATION:

• GROUP B OFFICE

• GROUP S-1 SHOP

2. ACCESSORY OCCUPANCIES:

• ACCESSORY STORAGE SPACES CLASSIFIED AS PART OF OCCUPANCY (311.1.1)

3. MIXED OCCUPANCY: NONE

4. OCCUPANCY SEPARATION: 3 HOUR (SECTION 508.4)

• TWO SEPARATE BUILDINGS ARE DIVIDED BY A 3-HR FIRE WALL

5. HAZARDOUS AREAS: NONE

6. INCIDENTAL USE AREAS:

A. MECHANICAL ROOM(S): AUTOMATIC FIRE-EXTINGUISHING SYSTEM

B. ELECTRICAL ROOM(S): AUTOMATIC FIRE-EXTINGUISHING SYSTEM

C. STORAGE ROOMS OVER 100 SF: AUTOMATIC FIRE-EXTINGUISHING SYSTEM

D. OTHER

BUILDING LOCATION

1. REFERENCE SITE & CODE PLAN

• BUILDING 1: **N: EXCEEDS 30' CLEAR**

**E: EXCEEDS 30' CLEAR**

**S: EXCEEDS 30' CLEAR**

**W: EXCEEDS 30' CLEAR**

GENERAL BUILDING HEIGHTS & AREAS (CHAPTER 5)

B OCCUPANCY NON-SPRINKLERED TYPE IIB CONSTRUCTION

S-1 OCCUPANCY NON-SPRINKLERED TYPE IIB CONSTRUCTION

B OCCUPANCY (BUILDING 1)

ALLOWABLE BUILDING HEIGHT

# OF STORES ABOVE GRADE PLAN

ALLOWABLE AREA

INCREASE NOT REQUIRED. THE ACTUAL AREA AND HEIGHT ARE LESS THAN THE ALLOWABLE AREA AND HEIGHT.

MAX PERMITTED

55'-0"

3 STORIES

23,000 SF

PROPOSED

28'-0" (APPROX).

1 STORY

15,750 SF

S-1 OCCUPANCY (BUILDING 2)

ALLOWABLE BUILDING HEIGHT

# OF STORES ABOVE GRADE PLAN

ALLOWABLE AREA

INCREASE NOT REQUIRED. THE ACTUAL AREA AND HEIGHT ARE LESS THAN THE ALLOWABLE AREA AND HEIGHT.

MAX PERMITTED

55'-0"

2 STORIES

17,500 SF

PROPOSED

18'-8" (APPROX).

1 STORY

22,600 SF

ADDRESS IDENTIFICATION (SECTION 502.1)

PROVIDE ADDRESS IDENTIFICATION NUMBERS ON BUILDING VISIBLE FROM STREET.

TYPES OF CONSTRUCTION (CHAPTER 6)

TYPE IIB CONSTRUCTION

FIRE RESISTIVE RATING REQUIREMENTS FOR BUILDING ELEMENTS (TABLE 601):

BUILDING 1 (B) ELEMENT OF CONSTRUCTION

FIRE RESISTANCE RATING (HRS)

0 HRS

PRIMARY STRUCTURAL FRAME

0 HRS

BEARING WALLS (INTERIOR & EXTERIOR)

0 HRS

NONBEARING WALLS AND PARTITIONS

0 HRS

FLOOR CONSTRUCTION & SECONDARY MEMBERS

0 HRS

ROOF CONSTRUCTION & SECONDARY MEMBERS

BUILDING 2 (S-1) ELEMENT OF CONSTRUCTION

FIRE RESISTANCE RATING (HRS)

0 HRS

PRIMARY STRUCTURAL FRAME

0 HRS

BEARING WALLS (INTERIOR & EXTERIOR)

0 HRS

NONBEARING WALLS AND PARTITIONS

0 HRS

FLOOR CONSTRUCTION & SECONDARY MEMBERS

0 HRS

ROOF CONSTRUCTION & SECONDARY MEMBERS

CONSTRUCTION CLASSIFICATION (SECTION 602)

TYPE IIB CONSTRUCTION IS THAT TYPE OF CONSTRUCTION IN WHICH THE BUILDING ELEMENTS, SPECIFIED IN TABLE 601 ARE NONCOMBUSTIBLE MATERIALS, EXCEPT AS PERMITTED IN SECTION 603 AND ELSEWHERE IN THIS CODE (SECTION 602.2).

FIRE AND SMOKE PROTECTION FEATURES (CHAPTER 7)

STRUCTURAL MEMBERS (SECT 704): 0 HR (PER TABLE 601)

EXTERIOR WALLS (SECTION 705):

PROJECTIONS (SECTION 705.2):

PROJECTIONS PERMITTED

NO FIRE RESISTANCE RATING REQ'D. (SECTION 705.5)

FIRE WALLS (SECTION 706):

HORIZONTAL CONTINUITY:

CONTINUOUS FROM EXTERIOR WALL TO EXTERIOR WALL

FIRE BARRIERS (SECTION 707):

FIRE PARTITION (SECTION 708):

AREA OF SEPARATION (SECTION 708.1)

SMOKE BARRIER (SECTION 709):

AREA OF SEPARATION

SMOKE PARTITION (SECTION 710):

AREA OF SEPARATION

VERTICAL OPENINGS (SECTION 712):

TYPES OF OPENINGS

SHAFT ENCLOSURES (SECTION 713):

TYPES OF ENCLOSURES

OPENING PROTECTIVES (SECTION 716) - TO COMPLY WITH TABLES 716.3 & 716.5

MEANS OF EGRESS (CHAPTER 10)

1. MAXIMUM FLOOR AREA ALLOWANCES PER OCCUPANT (TABLE 1004.1.2)

A. ASSEMBLY (UNCONCENTRATED TABLES/CHAIRS): 15 SF/OCCUPANT NET

B. BUSINESS: 150 SF/OCCUPANT GROSS

C. STORAGE/MECHANICAL EQUIPMENT ROOM: 300 SF/OCCUPANT GROSS

2. OCCUPANT LOADS (CALCULATED FOR EXITING)

A. TOTAL BUILDING OCCUPANT LOAD B (OFFICE): 15,750 SF/150 = 105

B. TOTAL BUILDING OCCUPANT LOAD S-1 (SHOP): 22,600 SF/300 = 75

3. EGRESS WIDTH PER OCCUPANT SERVED (SECTION 1005.1)

A. STAIRWELLS: 0.3 INCHES/OCCUPANT

B. OTHER EGRESS COMPONENTS: 0.2 INCHES/OCCUPANT

C. EXIT STAIRWAYS - MINIMUM CLEAR WIDTH: 44" MIN.

D. CORRIDORS - MINIMUM WIDTH (TABLE 1020.1): 44" MIN. (AISLES: 44" MIN.)

E. 1 HR FIRE RESISTANCE RATING REQ'D WHERE OCC LOAD SERVED BY CORRIDOR IS > 30

4. DOOR ENCROACHMENT:

• DOOR SWINGS DOES NOT REDUCT REQUIRED WIDTH BY MORE THAN 1/2"

• FULLY OPEN DOES NOT PROJECT MORE THAN 7"

5. EXIT REQUIREMENTS:

A. COMMON PATH OF EGRESS TRAVEL DISTANCE (TABLE 1006.2):

• OL IS LESS THAN OR EQUAL TO 30 = 100 FT MAX.

• OL IS MORE THAN 30 = 75 FT MAX.

B. EGRESS BASED ON OL AND COMMON PATH OF EGRESS TRAVEL. TWO EXITS OR EXIT ACCESS DOORWAYS FROM ANY SPACE SHALL BE PROVIDED WHERE THE OL OR COMMON PATH OF EGRESS TRAVEL EXCEEDS VALUES LISTED ON 1006.2.1.

C. MAXIMUM TRAVEL DISTANCE (TABLE 1017.2):

• B OCCUPANCY: 200 FT WITHOUT SPRINKLER SYSTEM

• S-1 OCCUPANCY: 200 FT WITHOUT SPRINKLER SYSTEM

D. MAXIMUM DEAD-END CORRIDOR LENGTH (SECTION 1020.5): 20 FT

E. MINIMUM NUMBER OF EXITS PER STORY (TABLE 1006.3.2):

• MINIMUM OF 2 EXITS FOR OCCUPANCY LOAD PER STORY OF 1-500 OCC.

6. ACCESSIBLE MEANS OF EGRESS

A. **EXAMPLE - AN ELEVATOR PROVIDES THE ACCESSIBLE MEANS OF EGRESS TO FLOORS ABOVE THE LEVEL OF DISCHARGE. THE ELEVATOR WILL COMPLY WITH SECTION 1009.4.**

B. **EXAMPLE - AREA OF REFUGE IS NOT REQ'D IN BUILDINGS AND FACILITIES EQUIPPED THROUGHOUT WITH AN AUTOMATIC SPRINKLER SYSTEM INSTALLED IN ACCORDANCE WITH SECTION 903.3.1.1 OR 903.1.2 (SECTION 1009.3.3; EXCEPTION 2)**

ACCESSIBILITY (CHAPTER 11)

1. ACCESSIBLE ELEMENTS HAVE BEEN INCORPORATED INTO THE DOCUMENTS

2. ACCESSIBLE PARKING SPACES (TABLE 1106.2): 1 OF EVERY 6 SHALL BE ACCESSIBLE AND SHALL BE VAN ACCESSIBLE. PROVIDE STRIPING AND SIGNAGE. VAN ACCESSIBLE SIGN SHALL BE MOUNTED MINIMUM 60" ABOVE PARKING SURFACE.

A. VAN ACCESSIBLE PARKING SPACE CAN BE EITHER 8FT WIDE WITH 8FT ACCESS AISLE OR 11FT WIDE WITH 5FT ACCESS AISLE.

PLUMBING CALCULATIONS (CHAPTER 29)

RESTROOMS MUST MEET ACCESSIBILITY REQ'S PER ICC ANSI 117.1 AND IBC 110.1.2

MIN. NUMBER OF REQ'D PLUMBING FIXTURES (TABLE 2902.1):

WATER CLOSETS

LAVATORIES

DE

SERVICE SINK

B

1:25 1ST 50; 1:50

1:40 1ST 80; 1:80

1:100

1

TOTAL OCCUPANTS PER OCCUPANCY (CALCULATED FOR REQ'D PLUMBING FIXTURES):

B OCCUPANCY: 269

B REQ'D:

4

4

3

3

3

1

TOTAL REQ'D:

4

4

3

3

3

1

PROVIDED:

6

6

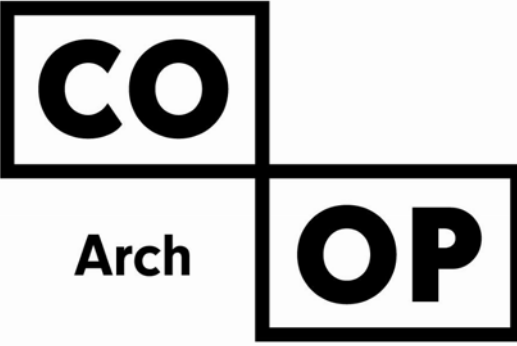
4

5

2\*

1

\*DUAL (2) ACCESS DRINKING FOUNTAIN W/ INTEGRATED BOTTLE FILLER (1) PROVIDED. GENERAL OFFICE DAY USE: 95 OCCUPANTS/100 = 1.2 OF REQ'D



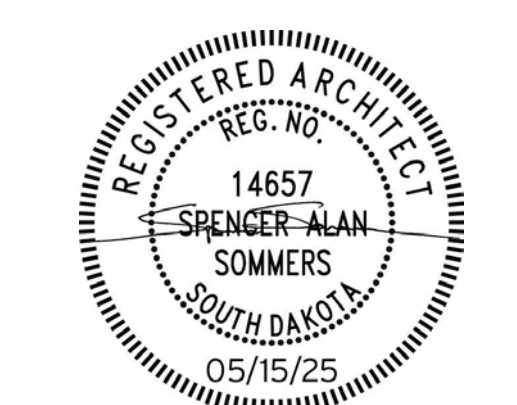
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CO-OP PROJECT NO: 2418



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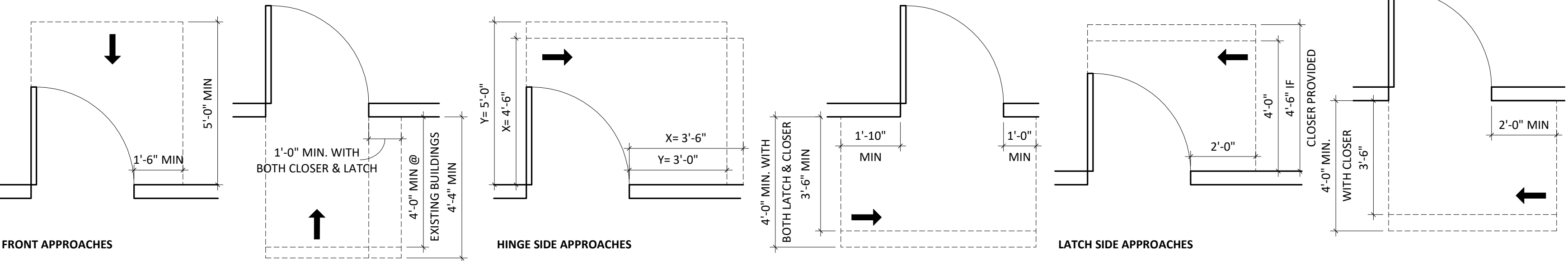
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NORTHERN ELECTRIC  
NORTHERN ELECTRIC COOPERATIVE  
BATH, SOUTH DAKOTA

SHEET TITLE:  
GENERAL NOTES, CODE &  
ORIENTATION PLAN

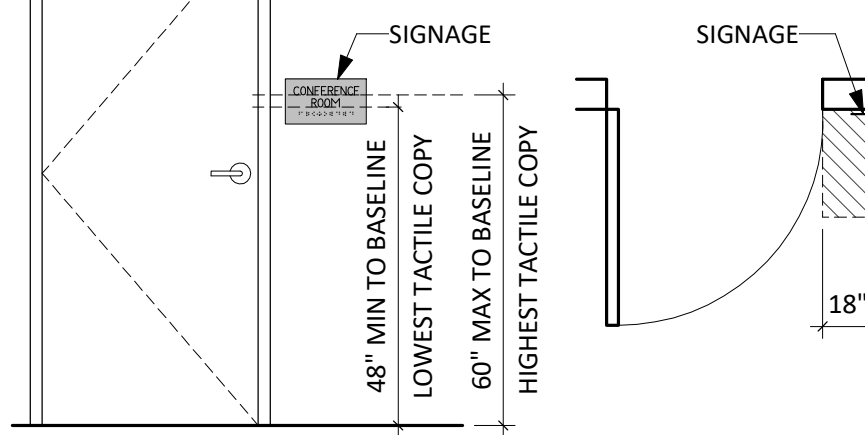
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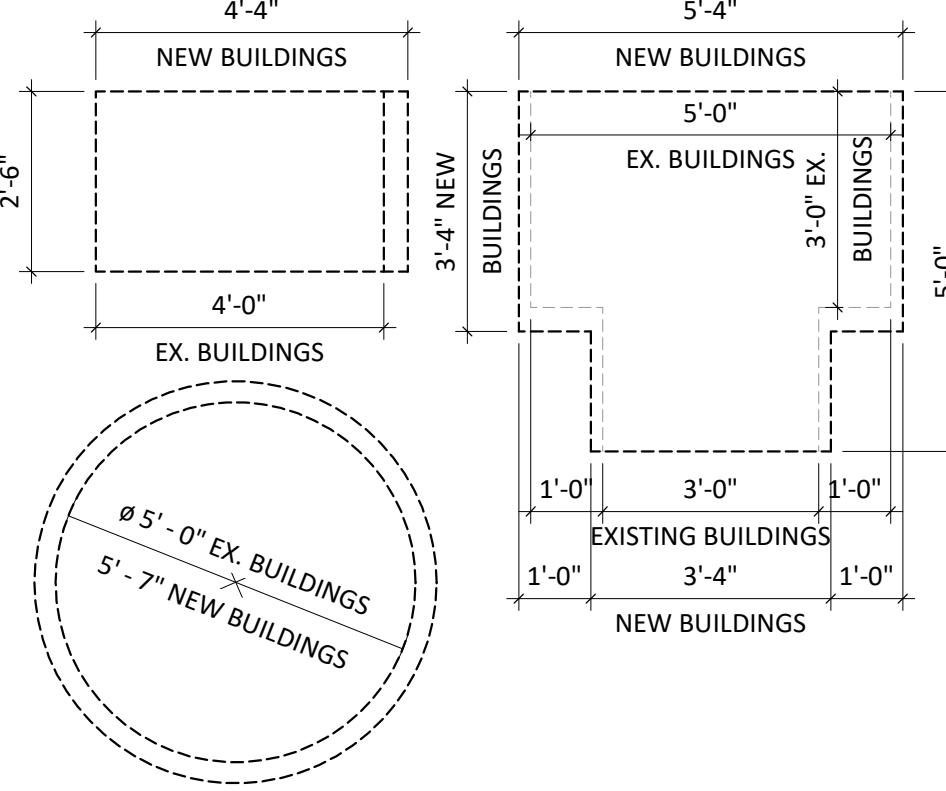
MANEUVERING CLEARANCES AT DOORS PER ADAAG (4.13.6), ANSI (404.2.4), ICC A117.1-2017 (404.2.3)



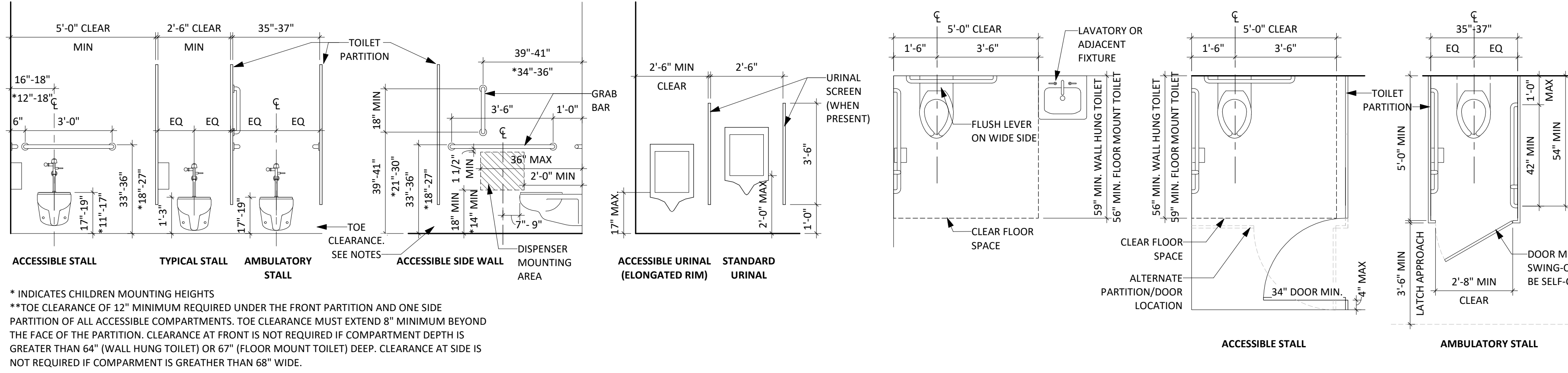
SIGNAGE PER ADAAG (4.30.6), ANSI (703.4.1), ICC A117.1-2017 (703.3.10)



TURNING SPACE PER ANSI (304.1), ICC A117.1-2017 (304.3)

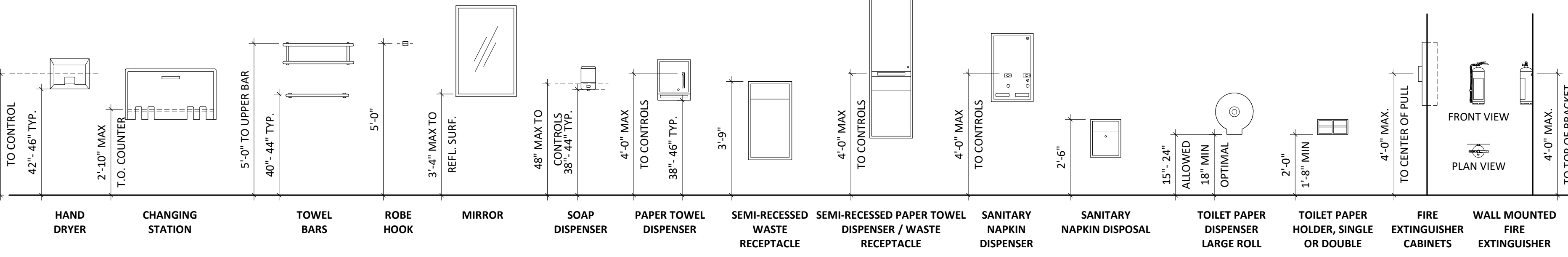


WATER CLOSET & URINALS - CLEARANCES & MOUNTING HEIGHTS PER ADAAG (4.16-4.18), ANSI (603-605), ICC A117.1-2017(604.2-605.2 & 609.4)

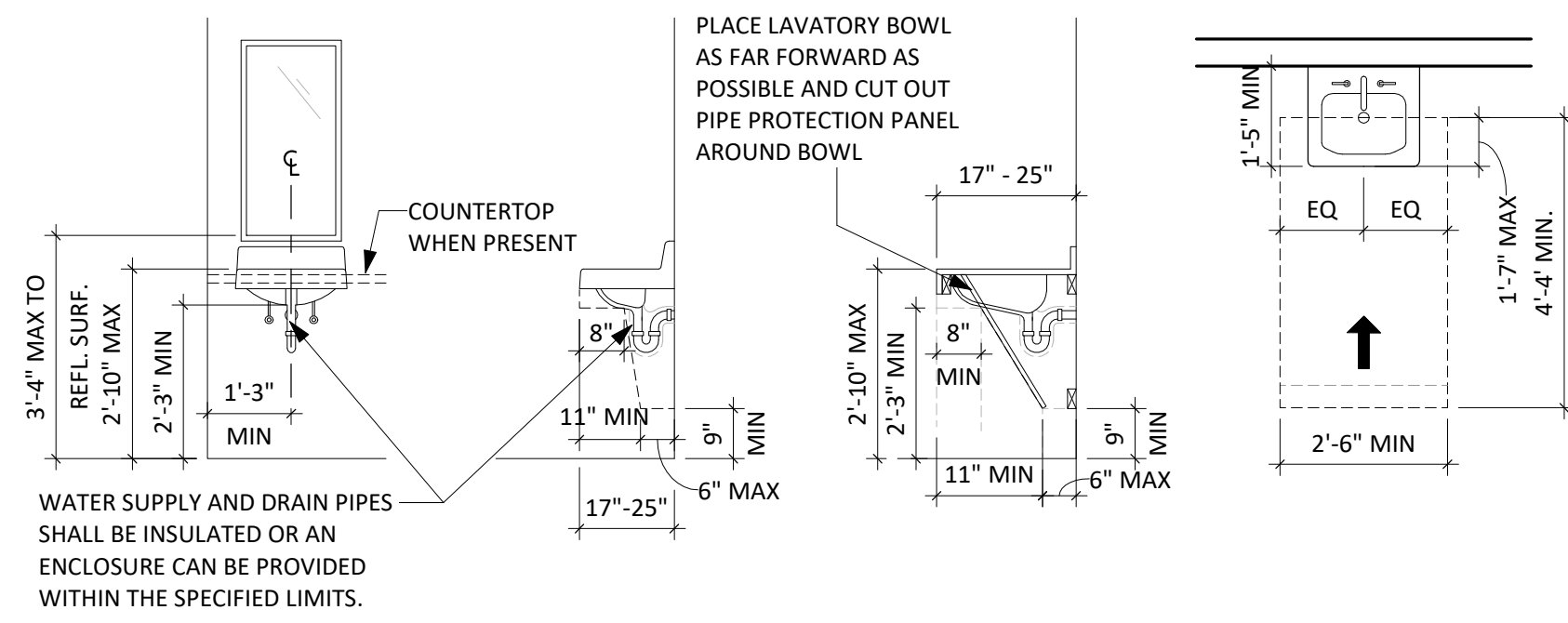


\* INDICATES CHILDREN MOUNTING HEIGHTS  
\*\*TOE CLEARANCE OF 12" MINIMUM REQUIRED UNDER THE FRONT PARTITION AND ONE SIDE PARTITION OF ALL ACCESSIBLE COMPARTMENTS. TOE CLEARANCE MUST EXTEND 8" MINIMUM BEYOND THE FACE OF THE PARTITION. CLEARANCE AT FRONT IS NOT REQUIRED IF COMPARTMENT DEPTH IS GREATER THAN 64" (WALL HUNG TOILET) OR 67" (FLOOR MOUNT TOILET) DEEP. CLEARANCE AT SIDE IS NOT REQUIRED IF COMPARTMENT IS GREATER THAN 68" WIDE.

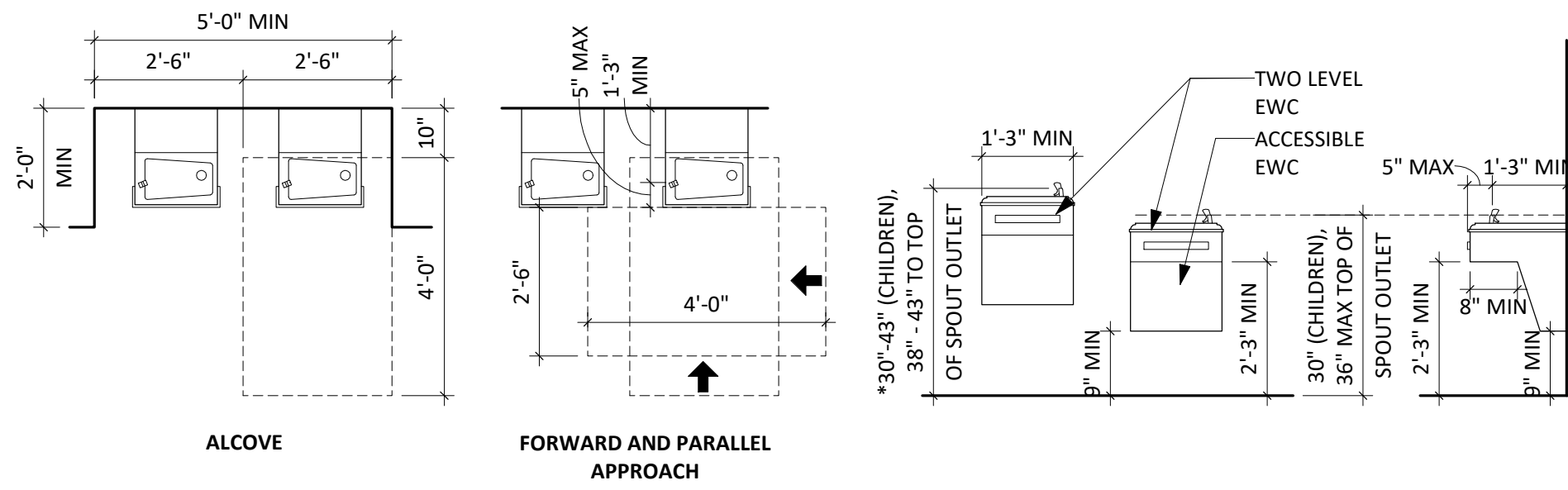
MISCELLANEOUS MOUNTING HEIGHTS



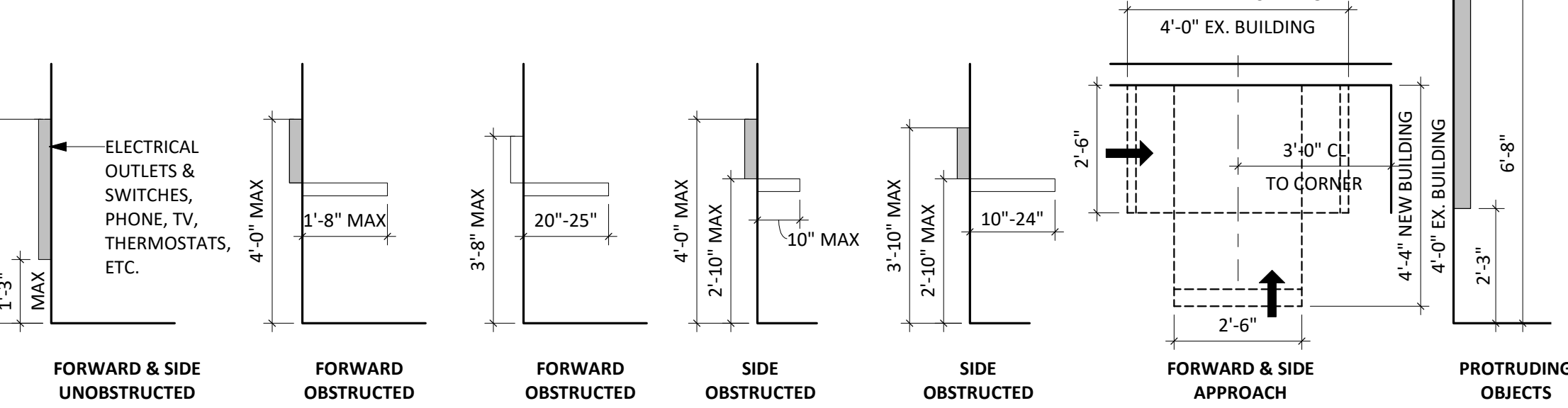
LAVATORIES & SINKS - CLEARANCES & HEIGHTS PER ADAAG (4.19), ANSI (606), ICC A117.1-2009 (606.3)



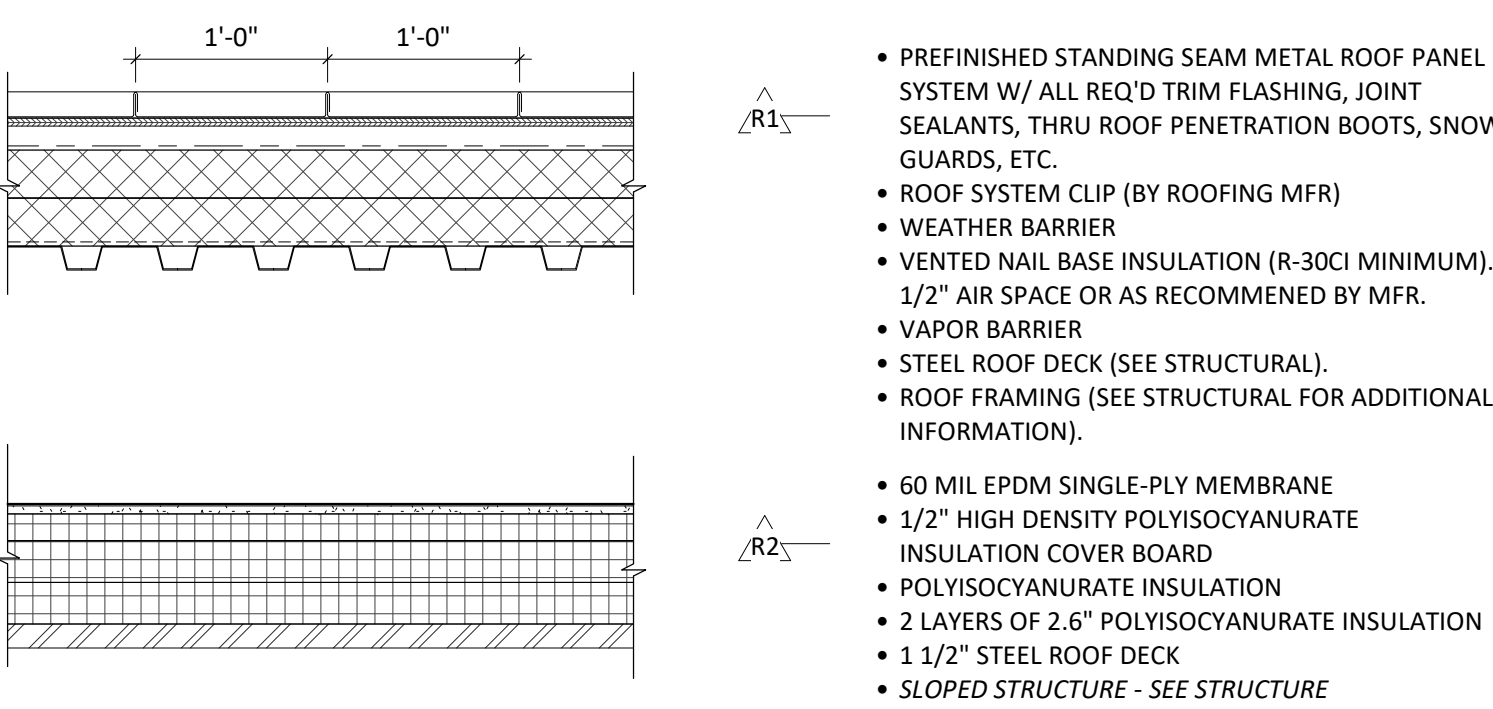
DRINKING FOUNTAIN - CLEARANCES & HEIGHTS PER ADAAG (4.15), ANSI (602), ICC A117.1-2017 (602)



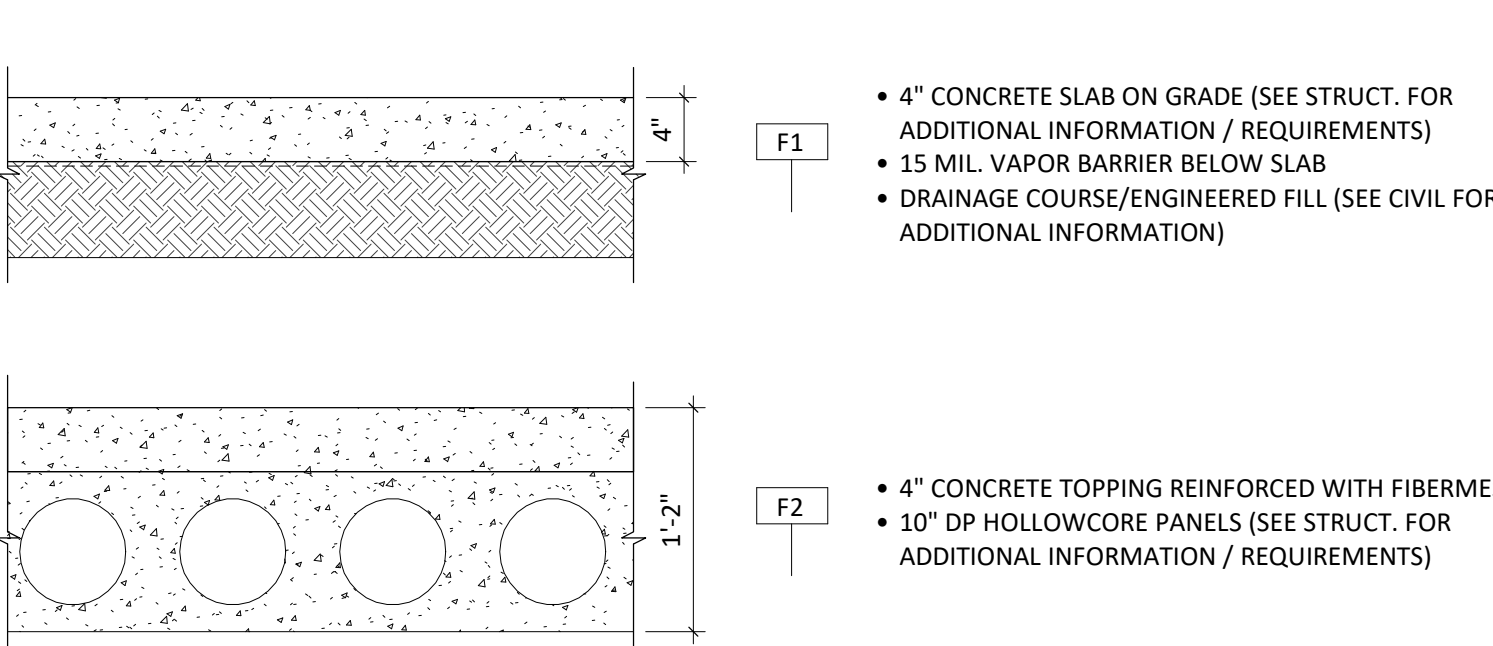
REACH RANGES PER ADAAG (4.2.5/4.2.6), ANSI (308), ICC A117.1-2017 (308.2/308.3)



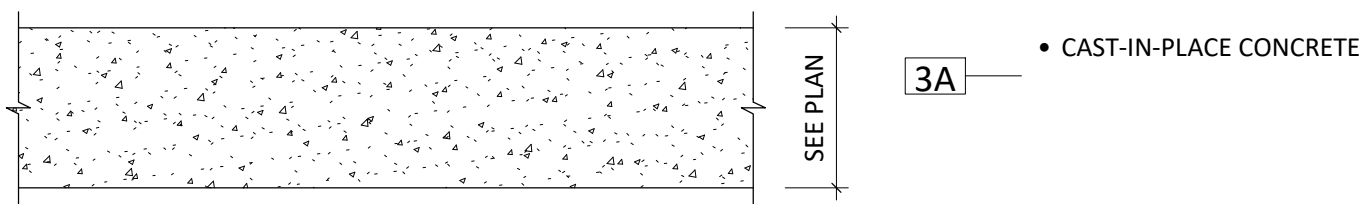
ROOF TYPES



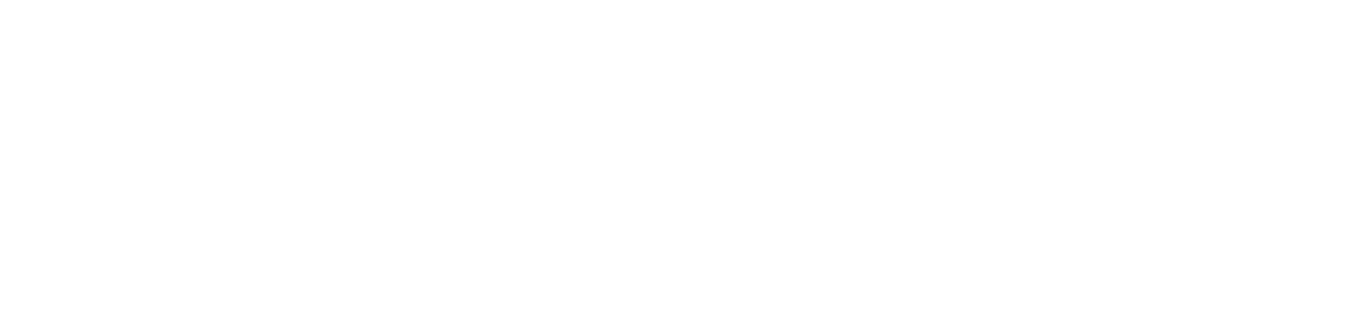
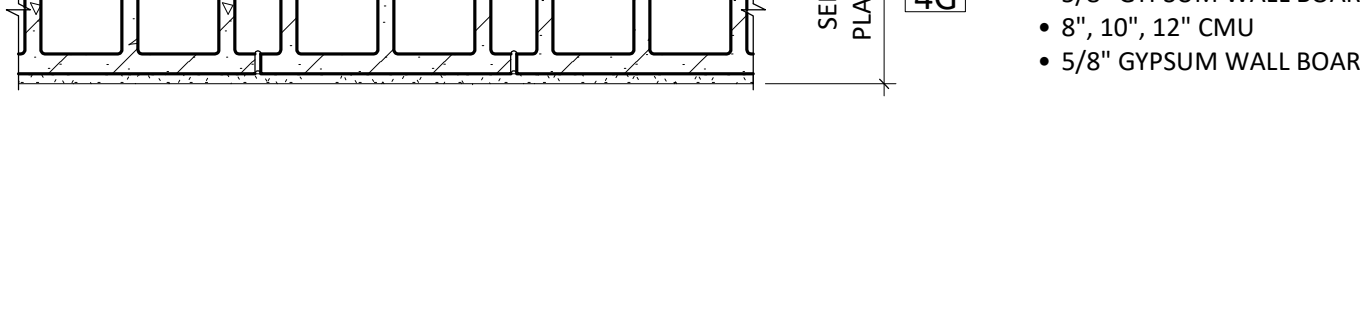
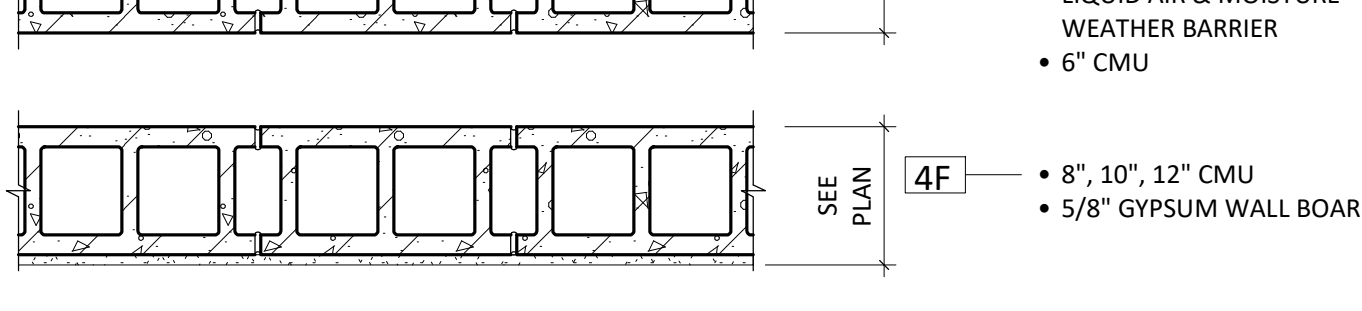
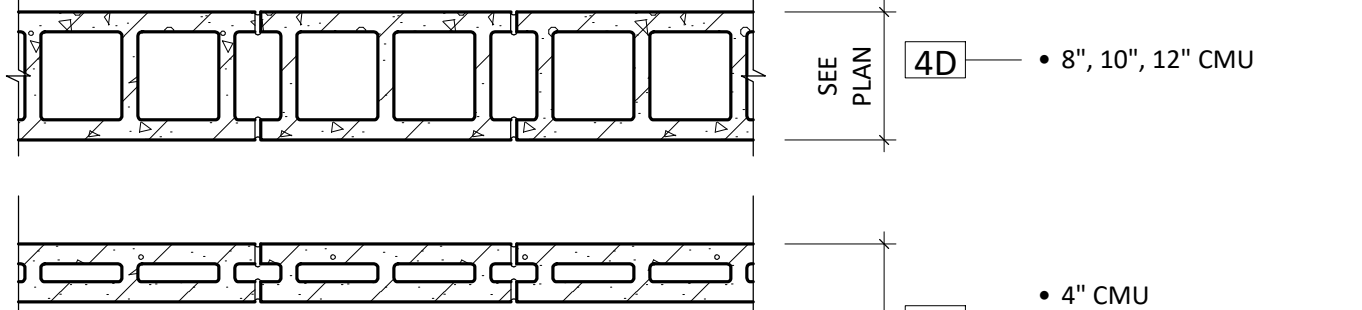
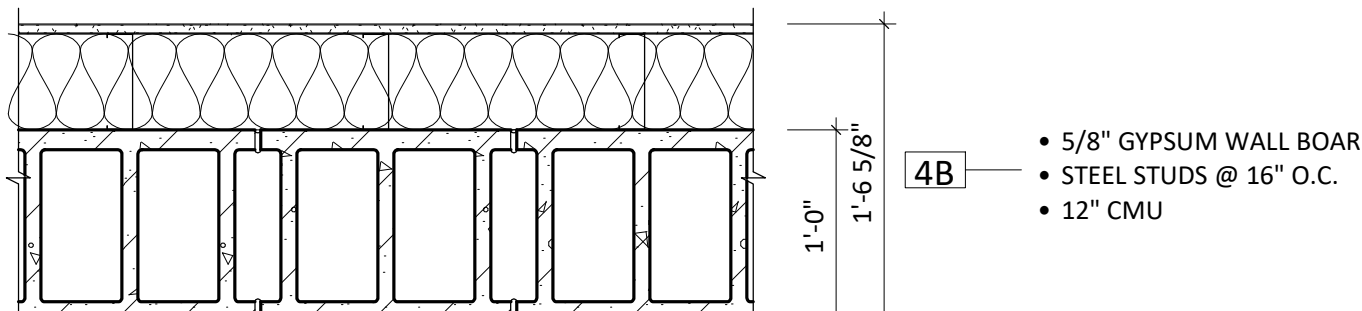
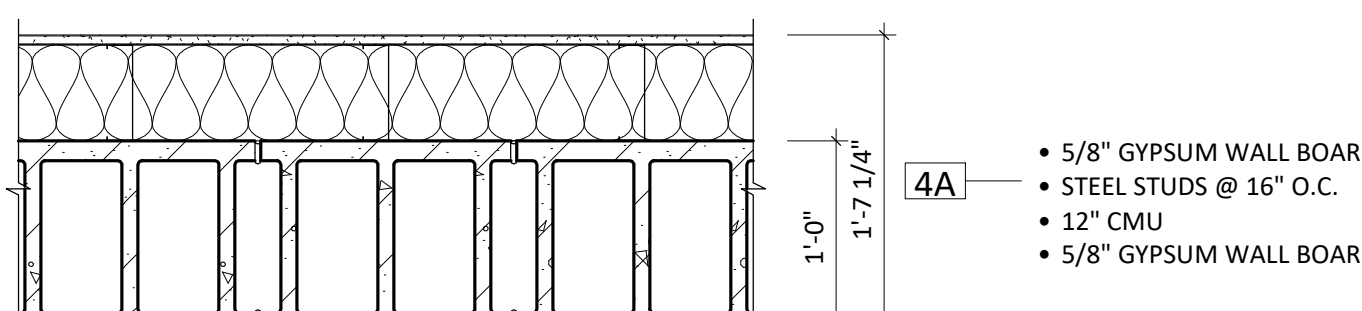
FLOOR TYPES



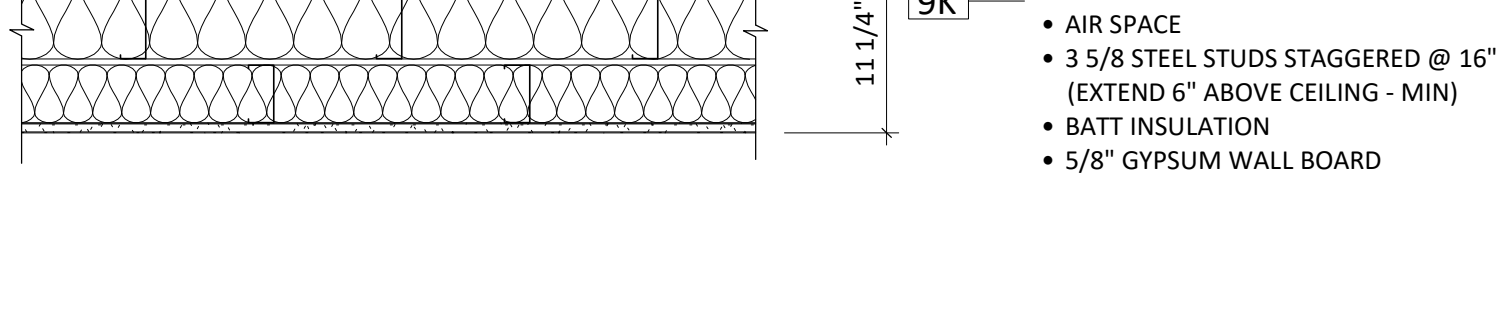
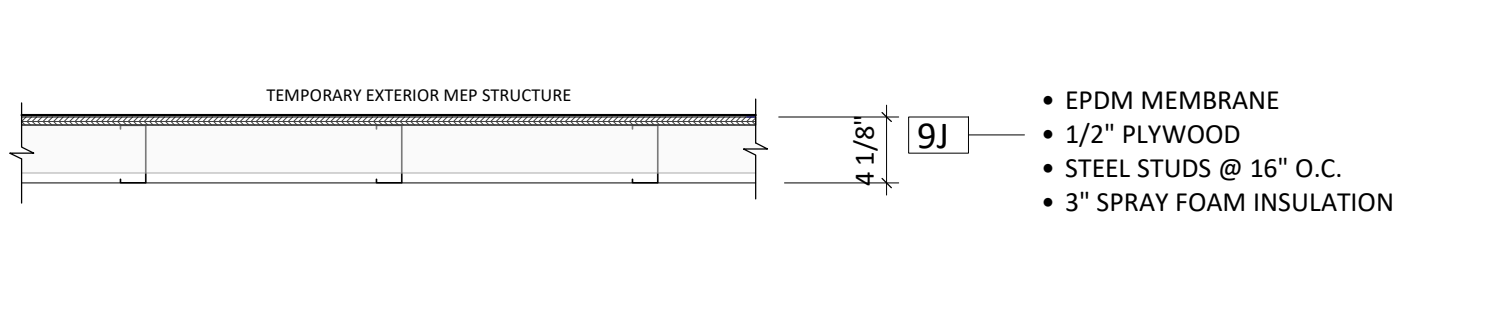
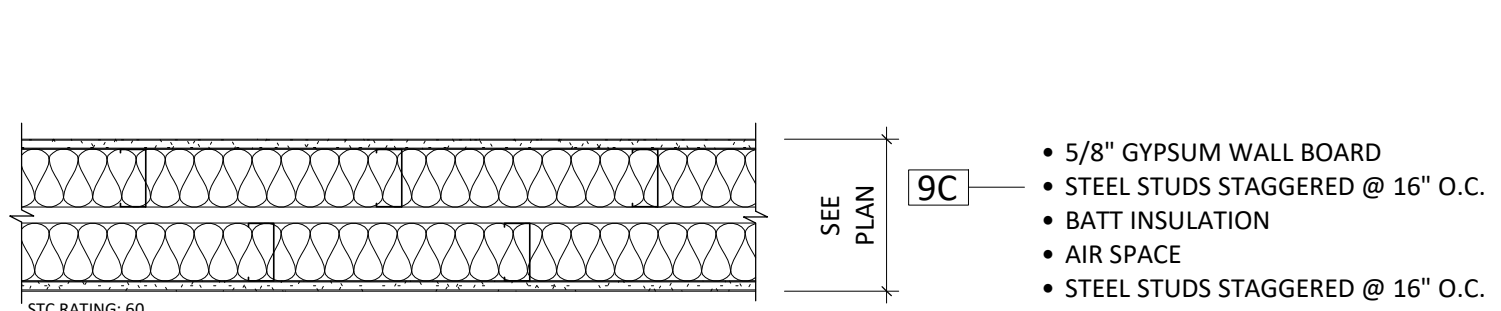
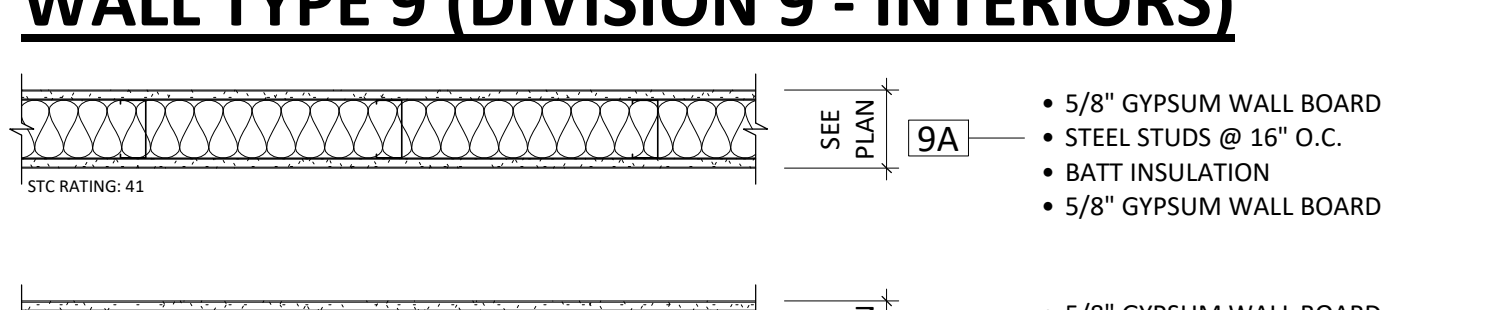
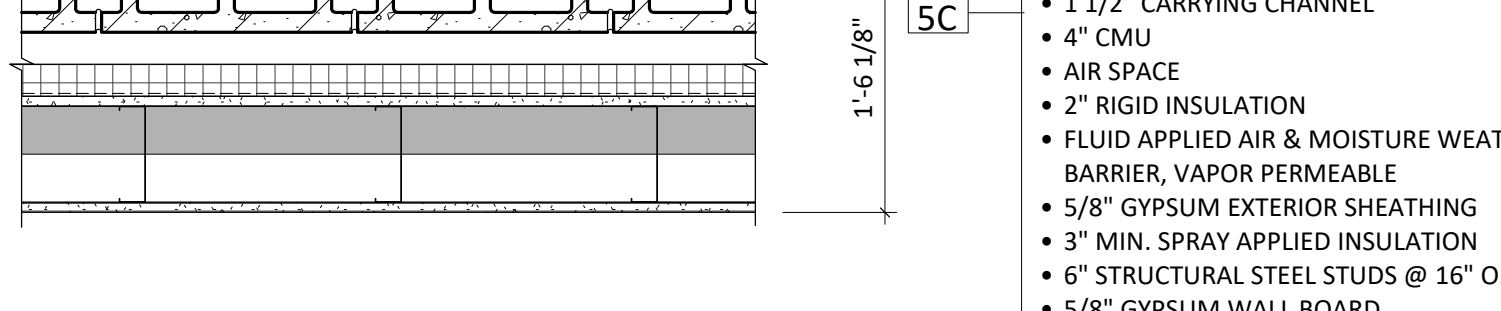
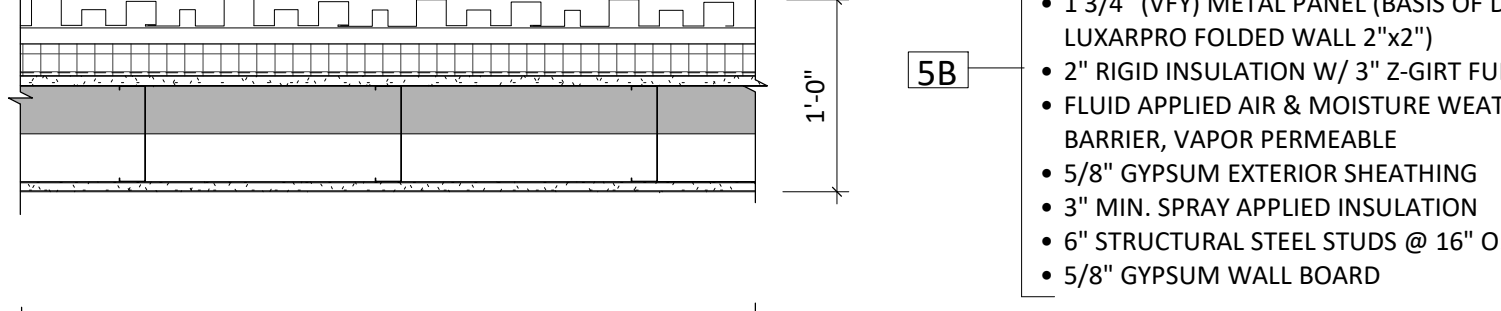
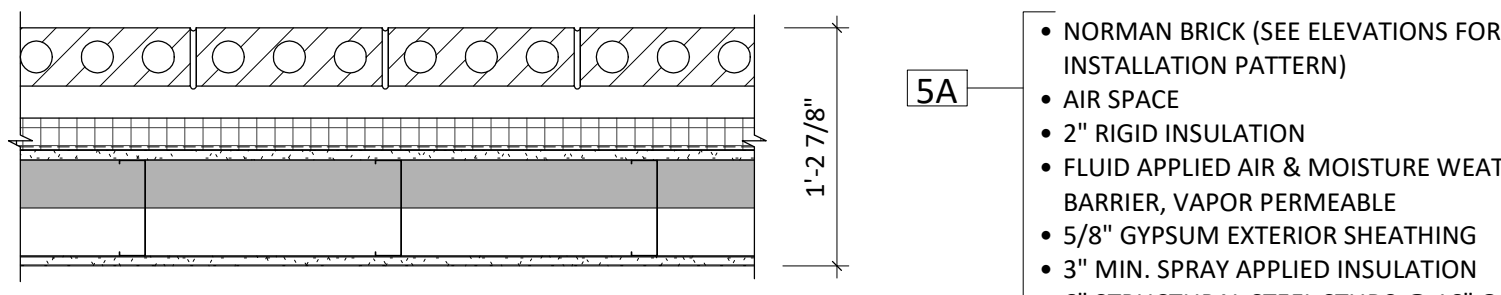
WALL TYPE 3 (DIVISION 3 - CONCRETE)



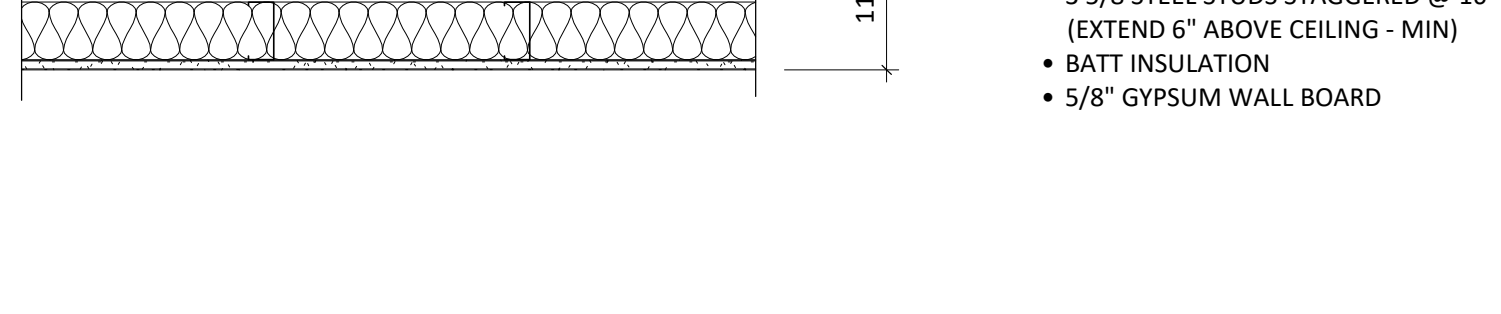
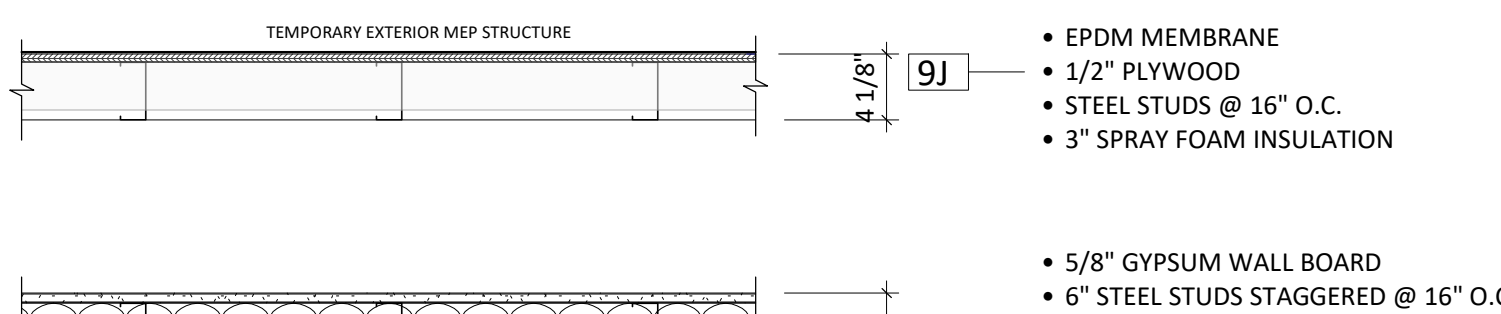
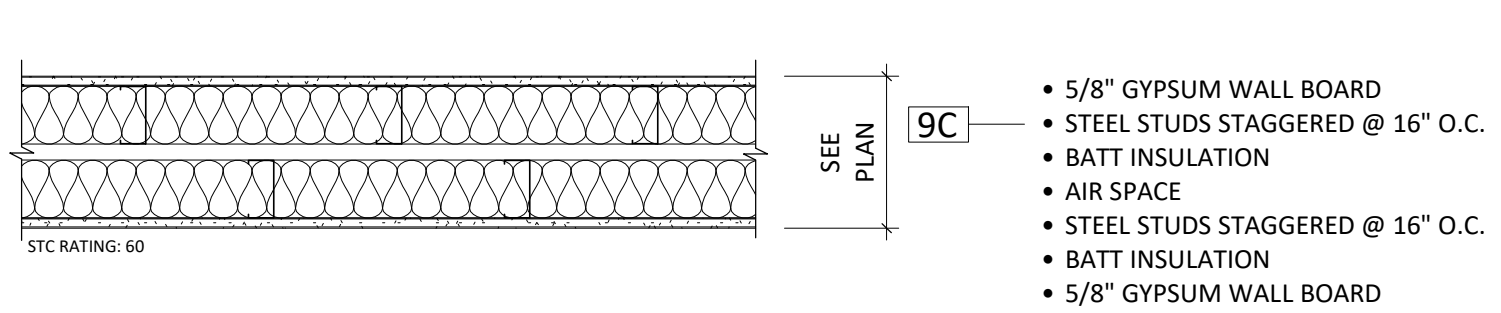
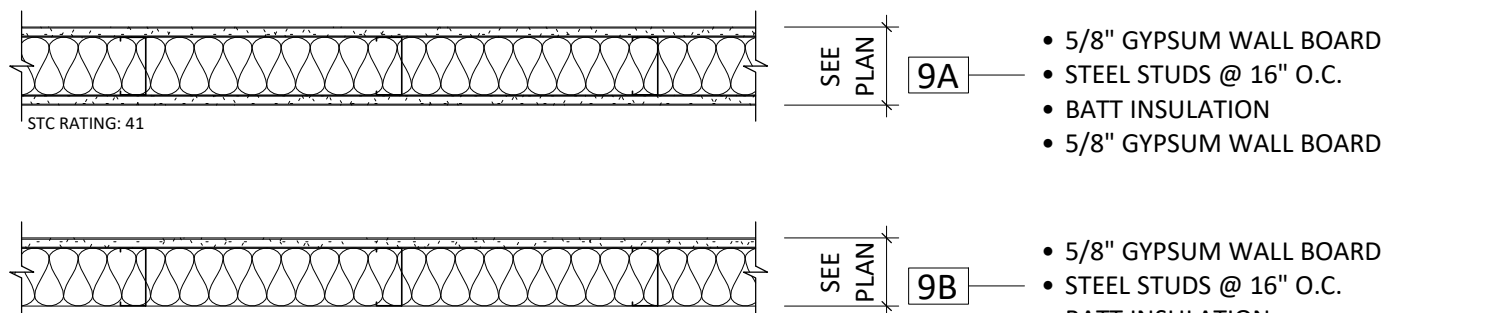
WALL TYPE 4 (DIVISION 4 - MASONRY)



WALL TYPE 5 (DIVISION 5 - STRUCTURAL STEEL)



WALL TYPE 9 (DIVISION 9 - INTERIORS)



ARCHITECTURAL SYMBOLS LEGEND

VIEW NAME

1/8" = 1'-0"

VIEW NAME

1/8" = 1'-0"

FLOOR LEVEL

100'-0"

0

0

ROOM

101

150 SF

ROOM NAME

150 SF

1/A101

Ref

Ref

Ref

1

A101

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A101

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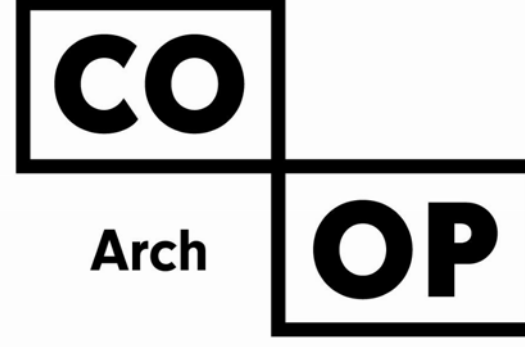
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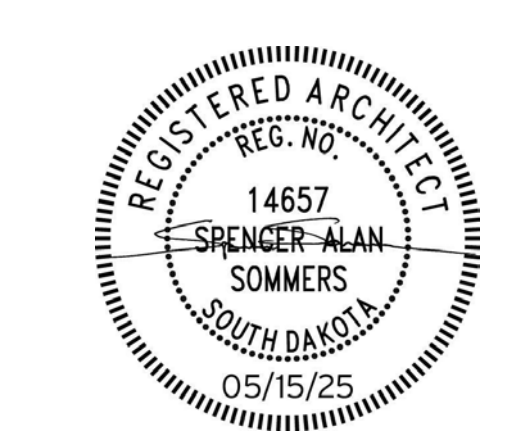
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PROJECT:  
NORTHERN ELECTRIC  
NORTHERN ELECTRIC COOPERATIVE  
BATH, SOUTH DAKOTA

SHEET TITLE:  
ASSEMBLIES, CODE STANDARDS  
& SYMBOLS LEGEND

G001

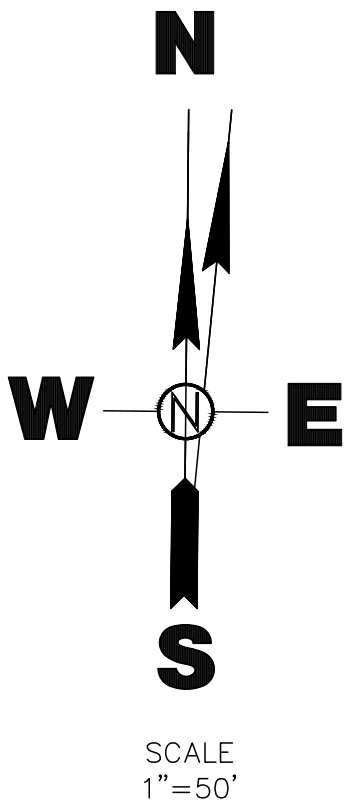


SURVEY CONTROL POINT	NORTHING	EASTING	POINT ELEVATION
DISK	597,220.91	2,394,499.83	1301.69'
CP-10	597,235.39	2,394,626.70	1300.61'
CP-11	597,887.69	2,394,658.05	1301.89'
CP-12	597,982.79	2,395,710.44	1302.07'
CP-13	597,301.47	2,395,710.57	1300.36'

**Note Regarding Existing Utilities**  
The contractor is specifically cautioned that the location and/or elevation of existing utilities as shown on these plans are based on records of the various utility companies and, where possible, measurements taken in the field. The information is not to be relied on as being exact or complete. The contractor shall call the appropriate utility companies at least 48 hours before any excavation to request exact field location of utilities.

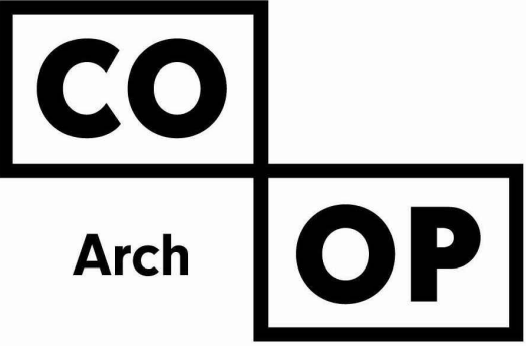
It is the responsibility of the contractor to relocate all utilities requiring relocation. It is the responsibility of the contractor to verify in the field, the locations of existing water mains, water services, sewer mains and sewer services. The contractor shall be responsible for locating and preserving all existing utilities in their present condition. Existing utilities shown on the plans are for general information only and are to be located by the contractor prior to the start of construction.

Existing utilities included but not limited to:  
Underground and overhead electrical  
Underground and overhead cable television  
Underground water system  
Underground sewer system  
Underground and overhead telephone  
Underground natural gas



LEGEND

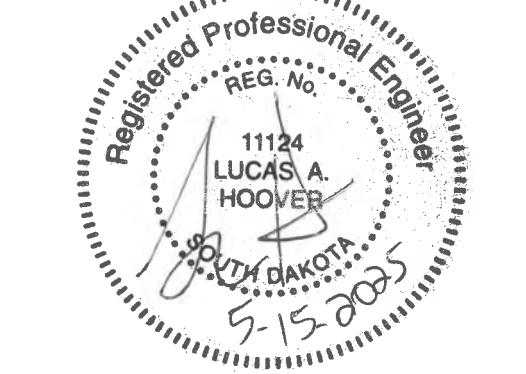
- WOOD/PRIVACY FENCE
- CHAIN LINK FENCE
- BARBED WIRE FENCE
- STORM SEWER PIPE/CULVERT
- STORM SEWER MANHOLE
- STORM SEWER FLARED END
- STORM SEWER INLET
- SANITARY SEWER PIPE
- SANITARY SEWER MANHOLE
- SANITARY SEWER CLEANOUT
- WATERMAIN PIPE
- WATER VALVE
- FIRE HYDRANT
- CURB STOP
- YARD HYDRANT
- FLOOD LIGHT
- LIGHT POLE
- UTILITY POLE
- ELECTRICAL PEDESTAL
- OVERHEAD POWER
- UNDERGROUND ELECTRICAL
- GAS VALVE
- UNDERGROUND GAS LINE
- UNDERGROUND TELEPHONE LINE
- UNDERGROUND FIBER OPTIC LINE
- UNDERGROUND CABLE TV LINE
- TELECOM PEDESTAL
- CABLE TV PEDESTAL
- FOUND PROPERTY CORNER
- SET PROPERTY CORNER
- PROPERTY LINE
- MAILBOX
- SIGN
- DECIDUOUS TREE
- CONIFEROUS TREE
- BUSHES/SHRUBS
- TREE GROVE/SHELTER BELT
- BUILDING
- ASPHALT SURFACING
- CONCRETE SURFACING
- GRAVEL SURFACING
- CONCRETE CURB AND GUTTER



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PROJECT:  
NORTHERN ELECTRIC  
NORTHERN ELECTRIC COOPERATIVE  
BATH, SOUTH DAKOTA

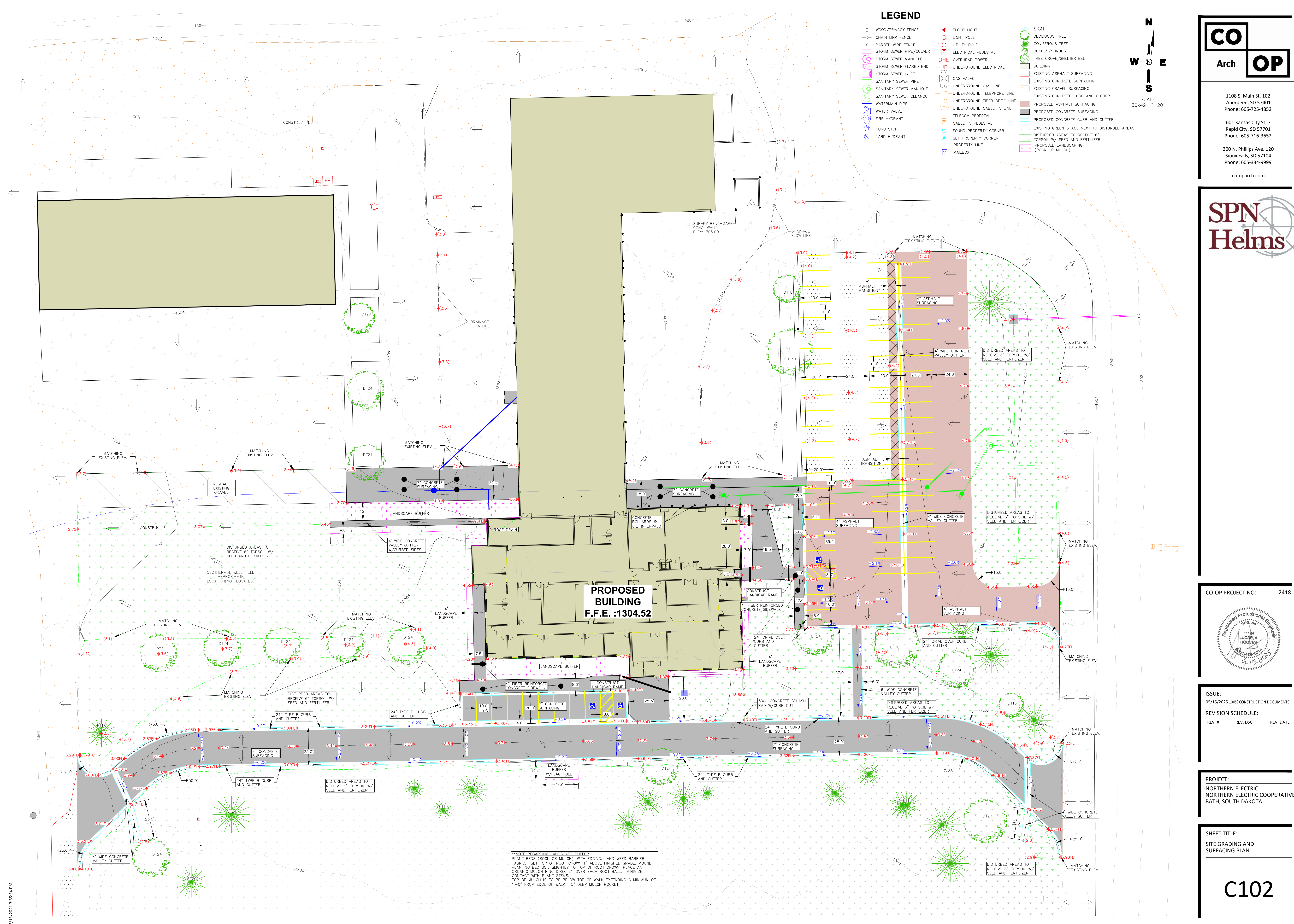
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TOPOGRAPHIC SURVEY

C100



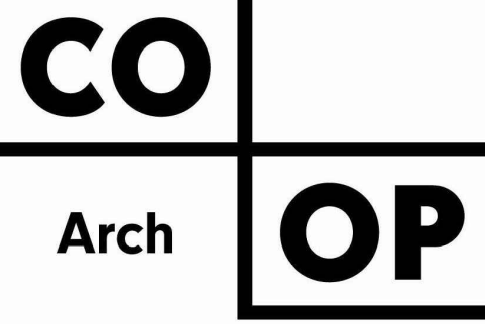
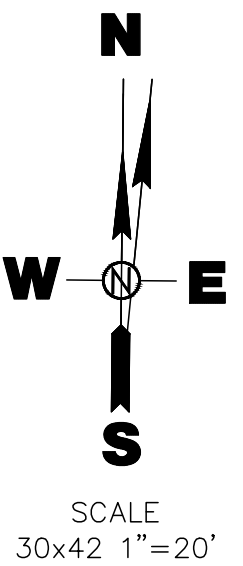






LEGEND

- WOOD/PRIVACY FENCE
- CHAIN LINK FENCE
- BARBED WIRE FENCE
- STORM SEWER PIPE/CULVERT
- STORM SEWER MANHOLE
- STORM SEWER FLARED END
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- DECIDUOUS TREE
- CONIFEROUS TREE
- BUSHES/SHRUBS
- TREE GROVE/SHELTER BELT
- BUILDING
- EXISTING ASPHALT SURFACING
- EXISTING CONCRETE SURFACING
- EXISTING GRAVEL SURFACING
- EXISTING CONCRETE CURB AND GUTTER
- PROPOSED ASPHALT SURFACING
- PROPOSED CONCRETE SURFACING
- PROPOSED CONCRETE CURB AND GUTTER
- EXISTING GREEN SPACE NEXT TO DISTURBED AREAS
- DISTURBED AREAS TO RECEIVE 6" TOPSOIL W/ SEED AND FERTILIZER
- PROPOSED LANDSCAPING (ROCK OR MULCH)



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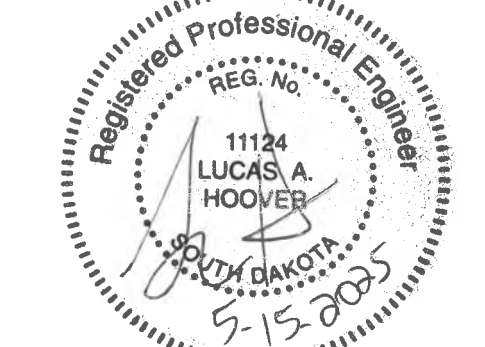
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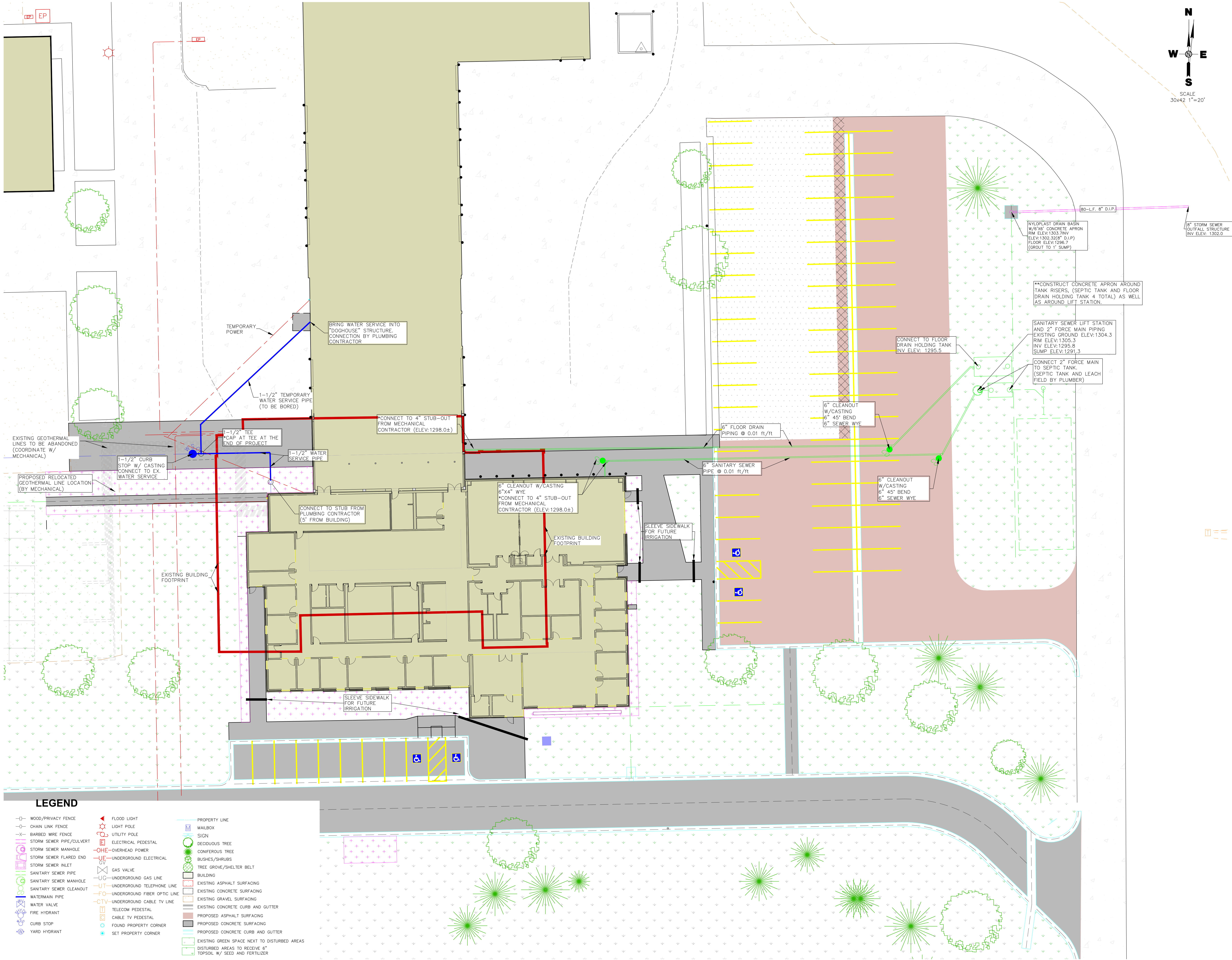
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NORTHERN ELECTRIC  
NORTHERN ELECTRIC COOPERATIVE  
BATH, SOUTH DAKOTA

SHEET TITLE:  
SITE GRADING AND  
SURFACING PLAN

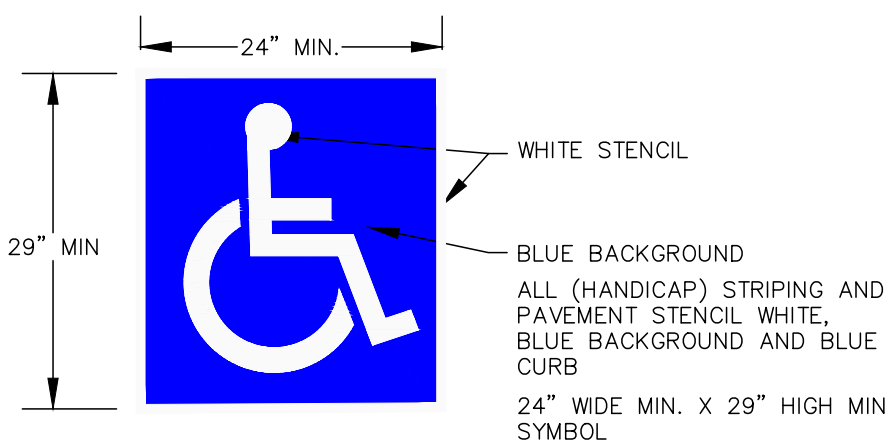
C102

NOTE REGARDING LANDSCAPE BUFFER  
PLANT BEDS (ROCK OR MULCH), WITH EDGING, AND WEED BARRIER  
FABRIC. SET TOP OF ROOT CROWN 1" ABOVE FINISHED GRADE. AROUND  
PLANTING BED SOIL SLIGHTLY TO TOP OF ROOT CROWN. PLACE AN  
ORGANIC MULCH RING DIRECTLY OVER EACH ROOT BALL. MINIMIZE  
CONTACT WITH PLANT STEMS.  
TOP OF MULCH IS TO BE BELOW TOP OF WALK EXTENDING A MINIMUM OF  
1'-0" FROM EDGE OF WALK. 5" DEEP MULCH POCKET









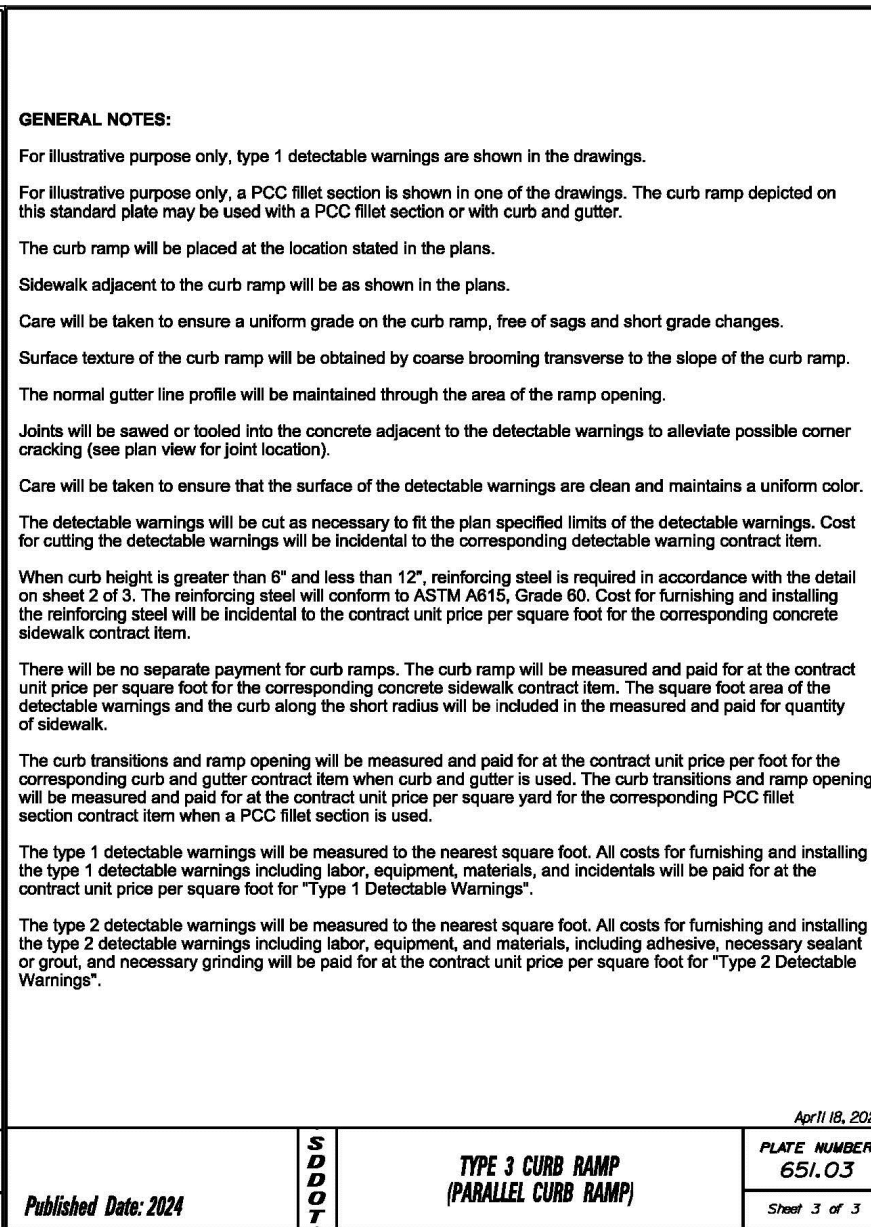
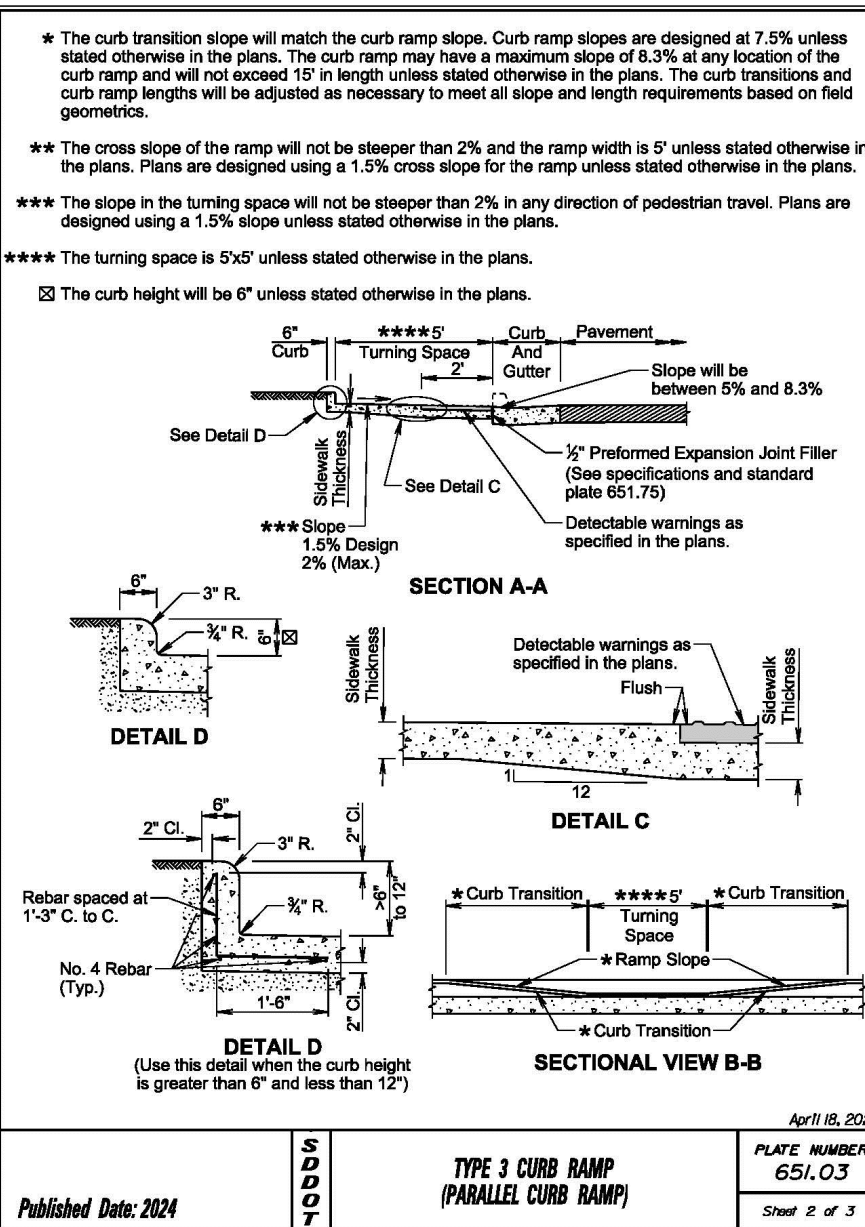
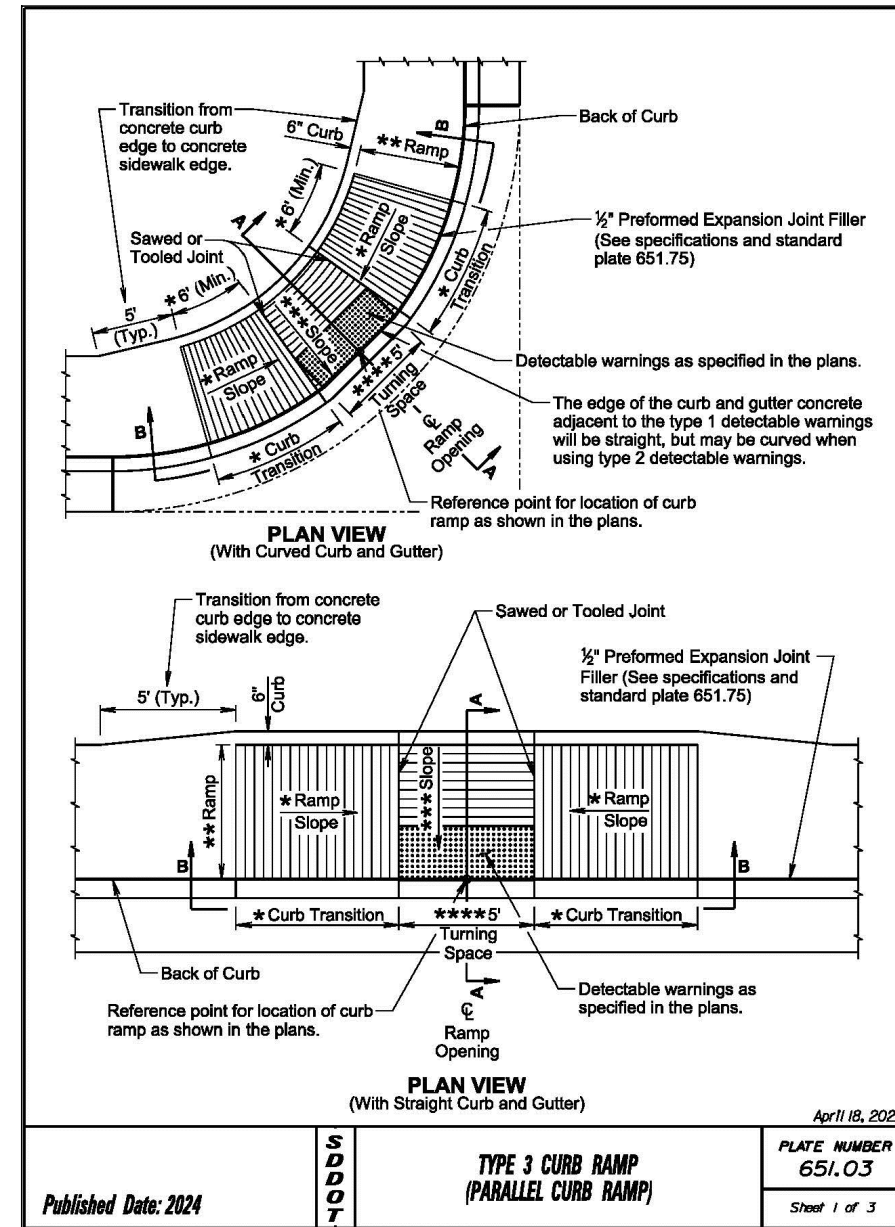
#### NOTE REGARDING HANDICAP SYMBOL MARKINGS



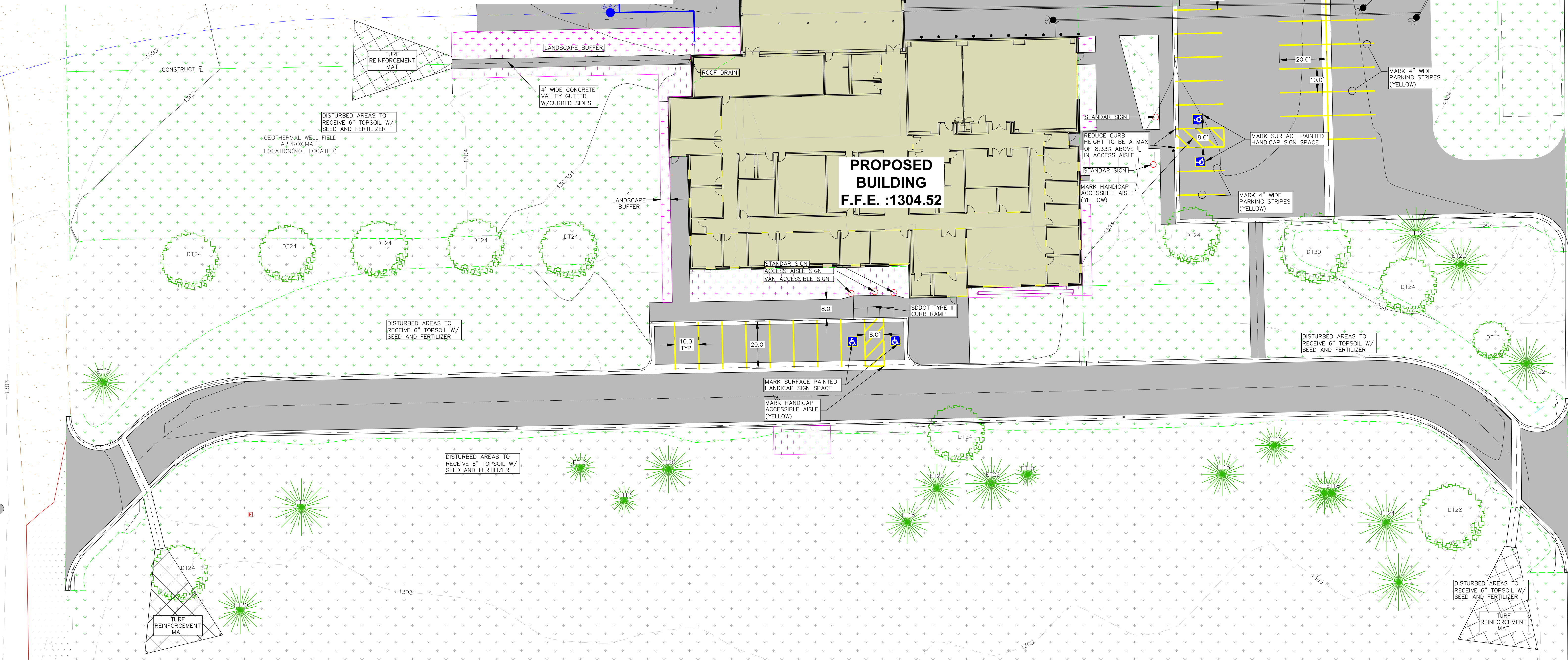
#### HANDICAP SIGN DETAIL

- HANDICAP SIGNS  
NO SCALE
- 1 - EACH VAN ACCESSIBLE PARKING SPACE
  - 3 - EACH STANDARD ACCESSIBLE PARKING SPACE
  - 1 - EACH ACCESS AISLE

**SIGN DETAILS**  
THE BOTTOM OF THE WALL MOUNTED SIGN SHALL BE A MINIMUM OF 60 INCHES FROM THE PAVEMENT/SIDEWALK. SIGNS MAY BE MOUNTED HIGHER FOR BETTER VISIBILITY. STANDARD AND VAN-ACCESSIBLE PARKING SIGNS MUST STATE, "RESERVED PARKING" AND INCLUDE THE UNIVERSAL SYMBOL OF ACCESSIBILITY. SUPPLEMENTAL SIGNAGE MUST STATE "STATE PERMIT OR LICENSE REQUIRED \$100 MINIMUM FINE AND CLASS 2 VIOLATION FOR VIOLATORS". A VAN-ACCESSIBLE PARKING SPACE MUST STATE, "VAN ACCESSIBLE," AN 5-FOOT ACCESS AISLE MUST STATE, WHEELCHAIR ACCESS AISLE, ABSOLUTELY NO PARKING" AND INCLUDE THE UNIVERSAL SYMBOL OF ACCESSIBILITY. THE APPROPRIATE SIGN AND COLORS ARE EXPLAINED IN THE DETAIL SHEET.

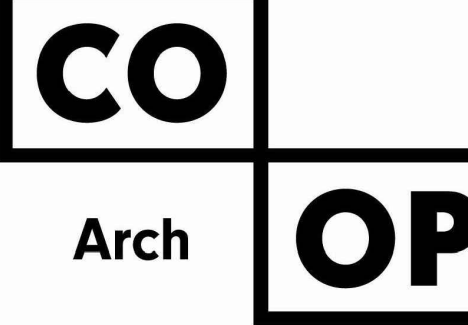
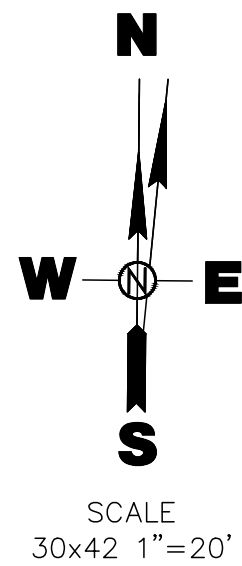


#### DOT TYPE III CURB RAMP



#### LEGEND

- WOOD/PRIVACY FENCE
- CHAIN LINK FENCE
- BARBED WIRE FENCE
- STORM SEWER PIPE/CULVERT
- STORM SEWER MANHOLE
- STORM SEWER FLARED END
- SANITARY SEWER PIPE
- SANITARY SEWER MANHOLE
- SANITARY SEWER CLEANOUT
- WATERMAIN PIPE
- WATER VALVE
- FIRE HYDRANT
- CURB STOP
- YARD HYDRANT
- FLOOD LIGHT
- LIGHT POLE
- UTILITY POLE
- ELECTRICAL PEDESTAL
- OVERHEAD POWER
- UNDERGROUND ELECTRICAL
- GAS VALVE
- UNDERGROUND GAS LINE
- UNDERGROUND TELEPHONE LINE
- UNDERGROUND FIBER OPTIC LINE
- UNDERGROUND CABLE TV LINE
- TELECOM PEDESTAL
- CABLE TV PEDESTAL
- FOUND PROPERTY CORNER
- SET PROPERTY CORNER
- PROPERTY LINE
- MAILBOX
- SIGN
- DECIDUOUS TREE
- CONIFEROUS TREE
- BUSHES/SHRUBS
- TREE GROVE/SHELTER BELT
- BUILDING
- EXISTING ASPHALT SURFACING
- EXISTING CONCRETE SURFACING
- EXISTING GRAVEL SURFACING
- EXISTING CONCRETE CURB AND GUTTER
- PROPOSED ASPHALT SURFACING
- PROPOSED CONCRETE SURFACING
- PROPOSED CONCRETE CURB AND GUTTER
- EXISTING GREEN SPACE NEXT TO DISTURBED AREAS
- DISTURBED AREAS TO RECEIVE 6\"/>



1108 S. Main St. 102  
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Phone: 605-725-4852

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CO-OP PROJECT NO: 2418



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05/15/2025 100% CONSTRUCTION DOCUMENTS

REVISION SCHEDULE:

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PROJECT:  
NORTHERN ELECTRIC  
NORTHERN ELECTRIC COOPERATIVE  
BATH, SOUTH DAKOTA

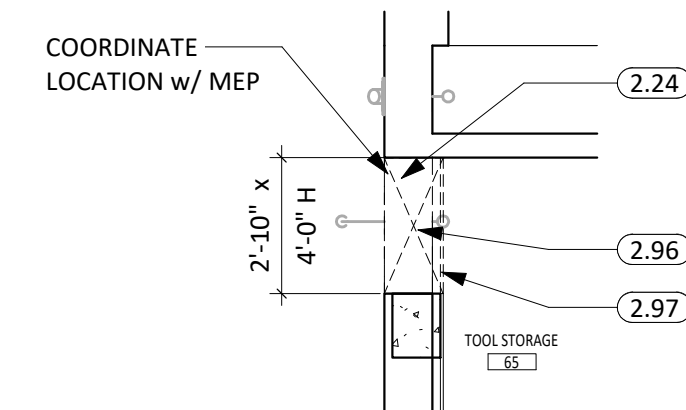
SHEET TITLE:  
PAVEMENT MARKING AND  
SWPPP

C104

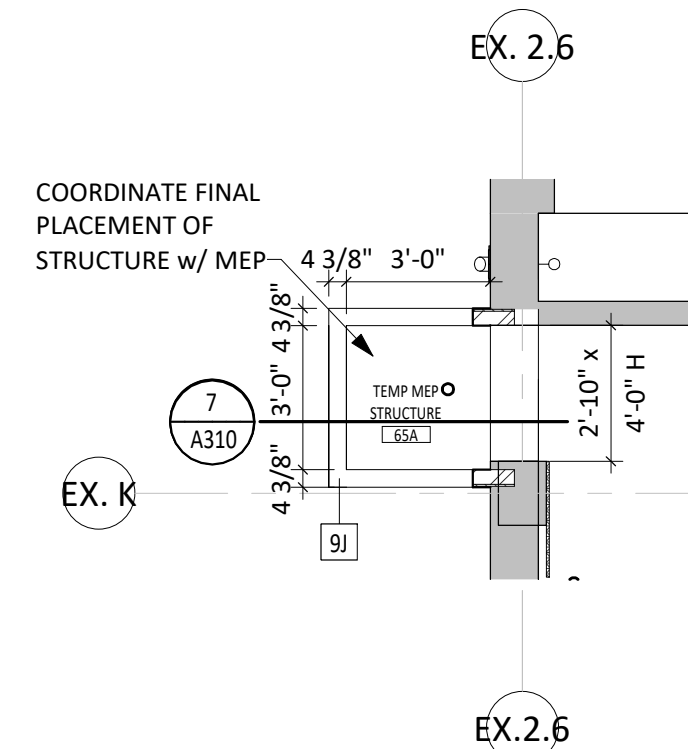




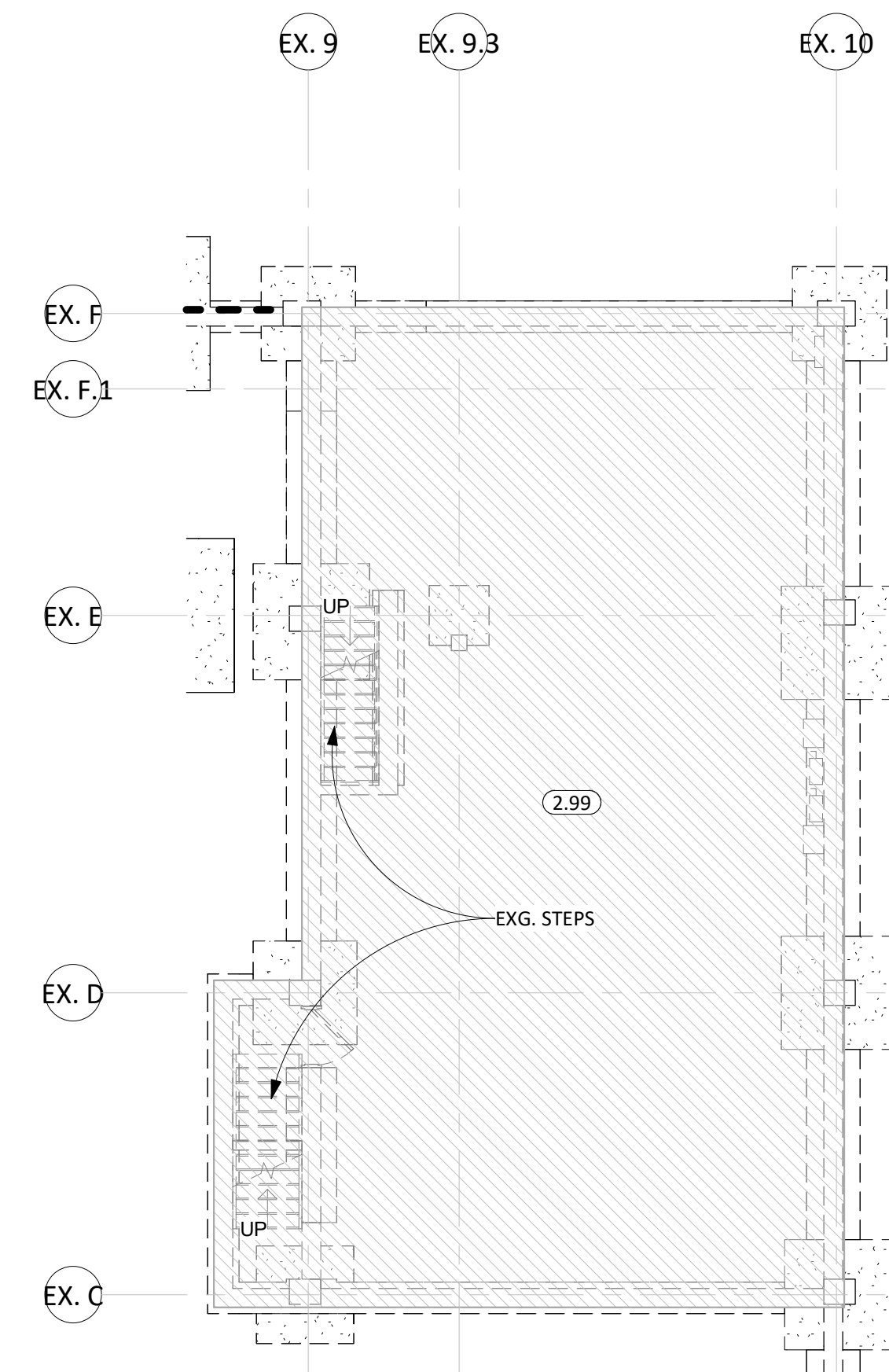




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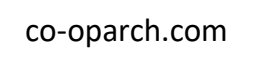

$$1/4'' = 1'-0''$$


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$$1/4'' = 1^{\circ}-0''$$

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

1. CONTRACTOR IS RESPONSIBLE FOR ALL DEMOLITION NECESSARY TO ALLOW FOR COMPLETION OF THE WORK AS DESCRIBED IN THE CONSTRUCTION DOCUMENTS. DEMOLITION SHALL INCLUDE ALL ITEMS KEYNOTED HERE, BUT ARE NOT LIMITED TO THESE ITEMS. COORDINATE DEMOLITION DURING THE HOUR OF THE OWNER'S CHOICE.
2. DASHED LINES INDICATE ITEMS TO BE DEMOLISHED, AND ALL SHADED WALLS REPRESENT EXISTING WALLS TO REMAIN.
3. GENERAL CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS, & COORDINATE SCOPE OF DEMOLITION WITH EACH DISCIPLINE.
4. DEMOLITION OF WALLS INCLUDES ALL ITEMS ATTACHED TO THE WALL, UNLESS NOTED TO BE SALVAGED.
5. ALL ITEMS MOUNTED TO THE WALLS IN EXISTING ARE TO BE REMOVED AND PROTECTED FOR REINSTALLATION.
6. REFERENCE TO HANGING SHEET A401 & MECHANICAL DRAWINGS FOR ADDITIONAL NOTES REGARDING ROOF DEMOLITION ITEMS.
7. CONTRACTOR TO PROTECT EXISTING MATERIALS AND SPACES WHICH ARE TO REMAIN OR BE REUSED. ALL SURFACES DAMAGED DURING DEMOLITION SHALL BE REPAIRED FOR PROTECTION OF NEW FINISHES TO BE APPLIED. MATCH EXISTING.
8. ALL INDEPENDENT TRADES ARE RESPONSIBLE FOR THEIR OWN PATCHING.
9. CONTACT ARCHITECT WITH ANY DISCREPANCIES.
10. SEE CIVIL, MECHANICAL, AND ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION RELEVANT TO DEMOLITION & PATCHING.
11. IN ACCORDANCE WITH OWNERS AND USING ITEMS TO BE SALVAGED FOR THE OWNERS REUSE.
12. IN ACCORDANCE WITH STATE REGULATIONS, ALL PUBLIC AND COMMERCIAL BUILDINGS, REGARDLESS OF AGE OR CONSTRUCTION TYPE, MUST BE INSPECTED FOR ASBESTOS BEFORE ANY RENOVATION OR DEMOLITION BEGINS. THE CONTRACTOR SHALL CONTACT THE SD DNR ASBESTOS UNIT WITH APPLICATION FOR ASBESTOS GUIDELINES IMMEDIATELY, AFTER RECEIPT OF NOTICE TO PROCEED. CONTACT SD DNR AT 605-773-3153 OR REFERENCE SDOAHS ASBESTOS INFORMATION BROCHURE TO REVIEW GUIDELINES AND REQUIREMENTS.

2.24	REMOVE PORTION OF MASONRY WALL - PATCH HEAD, JAMBS, & SILL IF APPLICABLE
2.25	REMOVE MASONRY WALL
2.27	REMOVE STUD FRAMED WALL
2.35	REMOVE DOOR & H.M. FRAME
2.41	REMOVE WINDOW UNIT
2.42	REMOVE BASE CABINET
2.43	REMOVE WALL CABINET
2.46	REMOVE CARPET (INCLUDING ALL ADHESIVES)
2.54	REMOVE SINK
2.56	REMOVE EXISTING APPLIANCES. COORDINATE WITH OWNER FOR SALVAGABLE ITEMS (TYP)
2.57	REMOVE WOOD STAIRS
2.58	REMOVE PRECAST CONCRETE FLOOR & CONCRETE TOPPING
2.59	REMOVE EXISTING ROOF ACCESS LADDER
2.94	REMOVE EXISTING SCUPPER, CONDUCTOR HEAD, AND DOWNSPOUT IN PREPARATION FOR NEW WALL
2.95	REMOVE PORTION OF METAL PANEL
2.96	REMOVE PORTION OF MASONRY WALL & SPRAY FOAM COATING FOR TEMPORARY ENCLOSURE
2.97	REMOVE EXISTING PLYWOOD SHEATHING FROM WALL & REINSTALL AFTER WORK IS COMPLETED.
2.98	REMOVE SINGLE STORY MASONRY BULLING IN ITS ENTIRETY
2.99	REMOVE BASEMENT IN ITS ENTIRETY AND INFILL
2.97	EXISTING PRECAST STRUCTURAL BEAM TO REMAIN (SEE STRUCTURAL PLANS)
8.91	EXISTING ROOF ACCESS HATCH & LADDER



REGISTERED ARCHITECT  
REG. NO.  
14657  
SPENCER ALAN  
SOMMERS  
SOUTH DAKOTA  
05/15/25

PROJECT:  
NORTHERN ELECTRIC  
NORTHERN ELECTRIC COOPERATIVE  
BATH, SOUTH DAKOTA

# D100



GENERAL NOTES

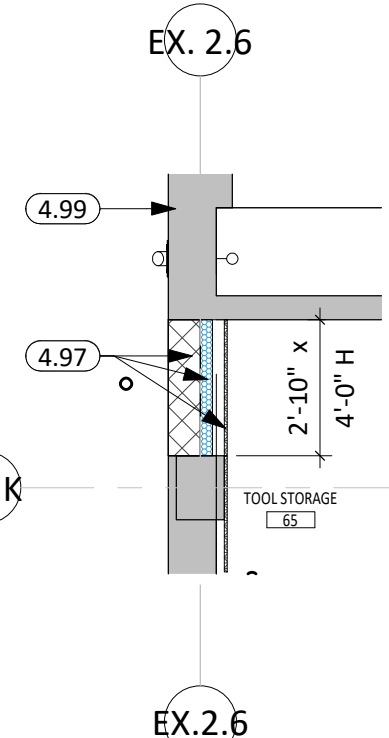
1. FIRE RATED WALL ARE INDICATED ON THE CODE PLANS. SQUARE FOOTAGES LISTED ARE FOR CODE REVIEW PURPOSES ONLY AND SHOULD NOT BE USED FOR ANY OTHER PURPOSES.
2. PROVIDE FIRE EXTINGUISHERS AND CABINETS AS SHOWN ON THE CODE PLAN(S).
3. CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS, ELEVATIONS AND DIMENSIONS.
4. ALL WORK SHALL BE IN ACCORDANCE WITH OSHA CODES AND STANDARDS. NOTHING INDICATED ON THESE DRAWINGS SHALL RELIEVE THE CONTRACTOR FROM COMPLYING WITH ANY APPROPRIATE SAFETY REGULATIONS.
5. THE CONTRACTOR SHALL CONSTRUCT ALL ITEMS WITHIN THIS CONTRACT IN ACCORDANCE WITH THE STATE AND LOCAL REGULATIONS AND CODES.
6. REFER TO SHEET **6001** FOR ADA STANDARDS.
7. REFER TO SHEET **6002** FOR WALL, ROOF, AND FLOOR TYPES.
8. INTERIOR DIMENSIONS ARE FROM FACE OF GWB/CMU TO FACE OF GWB/CMU UNLESS OTHERWISE NOTED.
9. ALL WALLS TO BE TYPE 9A, AND ALL WALL TYPES TO EXTEND TO DECK UNLESS OTHERWISE NOTED ON PLANS.
10. EXTERIOR DIMENSIONS ARE FROM FACE OF BRICK/SHEATHING UNLESS OTHERWISE NOTED.
11. COORDINATE WORK DONE BY OTHERS AS INDICATED ON THE DRAWINGS.
12. INCREASE WALL THICKNESS OF METAL STUD AND CONCRETE BLOCK WALLS AS REQUIRED TO ACCOMMODATE MECHANICAL AND ELECTRICAL DEVICES - VERIFY W/ ARCHITECT PRIOR TO WORK.
13. SEE MECHANICAL FOR ALL FLOOR DRAIN SIZES AND LOCATIONS U.N.O. SET FLOOR DRAINS MINIMUM 1/4" BELOW FINISHED FLOOR. PROVIDE EVEN SLOPE FROM WALL TO DRAIN W/ A MAXIMUM SLOPE OF 1/8" PER FOOT.
14. VERIFY DRYWALL CONTROL JOINT LOCATIONS W/ ARCHITECT ON SITE PRIOR TO INSTALLATION. THIS INCLUDES, BUT IS NOT LIMITED TO, CONTROL JOINTS AT 30'-0" O.C. MAX. IN LONG WALL EXPANSES. CONTROL JOINTS AT DOOR JAMBS EXTENDING FROM DOOR HEAD TO CEILING. CONSIDERATION SHALL ALSO BE GIVEN TO LOCATING CONTROL JOINTS FROM FLOOR TO CEILING AT EITHER EDGE OF LARGE WINDOW OPENINGS.
15. COORDINATE ALL CHASE SIZES AND LOCATIONS W/ MECHANICAL. PROVIDE CHASES AT ALL EXPOSED MECHANICAL & ELECTRICAL WITH ADJACENT WALL MATERIAL AS REQUIRED.
16. COORDINATE ALL SHEAR WALL LOCATIONS W/ STRUCTURAL PLANS.
17. THE AIR & MOISTURE WEATHER BARRIER IS TO BE CONTINUOUS FROM THE BASE OF THE WALLS UP TO & TYING INTO THE ROOF BARRIER SYSTEM.

KEYNOTE SCHEDULE

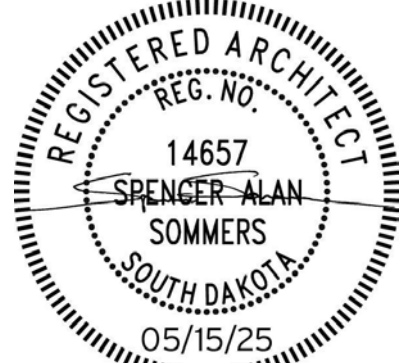
3.02	CONT. CONC. FOOTING (SEE STRUCTURAL PLANS)
3.14	SIGNAGE ANCHORS EMBEDDED IN CONC. (COORD. SIGNAGE ANCHOR REQ. W/ SUPPLIER)
3.16	SLOPE TO DRAIN
3.17	4" CONCRETE HOUSEKEEPING PADS BY GC. GC TO COORDINATE EXACT SIZE AND LOCATIONS W/ APPLICABLE MEP CONTRACTORS. (SEE MECHANICAL PLANS)
4.97	PATCH EXISTING CMU WALL, SPRAY FOAM COATING, & PLYWOOD FINISH AFTER TEMPORARY MEP ENCLOSURE IS REMOVED. PAINT EXTERIOR TO MATCH SURROUNDING AREA
4.98	PATCH EXISTING CMU WALL TO MATCH EXISTING
4.99	EXISTING MASONRY WALL
9.16	CONTROL JOINT
9.71	PATCH EXISTING WALL FINISH TO MATCH SURROUNDING AREA WHERE WALL WAS REMOVED
10.08	INTERNALLY ILLUMINATED PANEL SIGNAGE
10.61	FIRE EXTINGUISHER AND WALL CABINET
10.92	INTERIOR FIRE-RATED FLOOR EXPANSION JOINT COVER ASSEMBLY
22.02	FLOOR DRAIN
27.01	VIDEO DISPLAY UNIT, OFCI (SEE ELECTRICAL)
32.12	SPLASH BLOCK

TEMP MEP STRUCTURE PATCHING

1/4" = 1'-0"



CO-OP PROJECT NO: 2418



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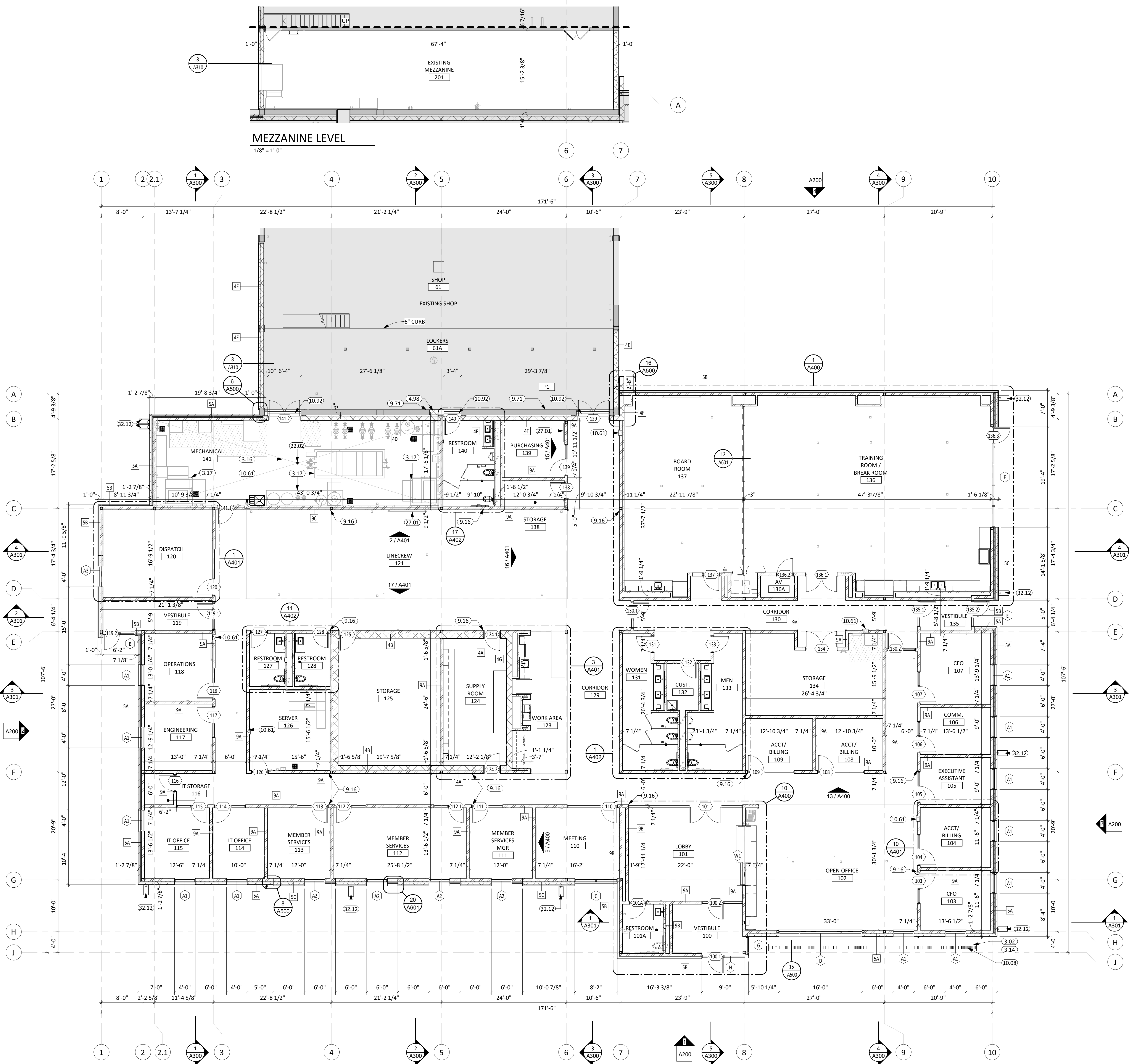
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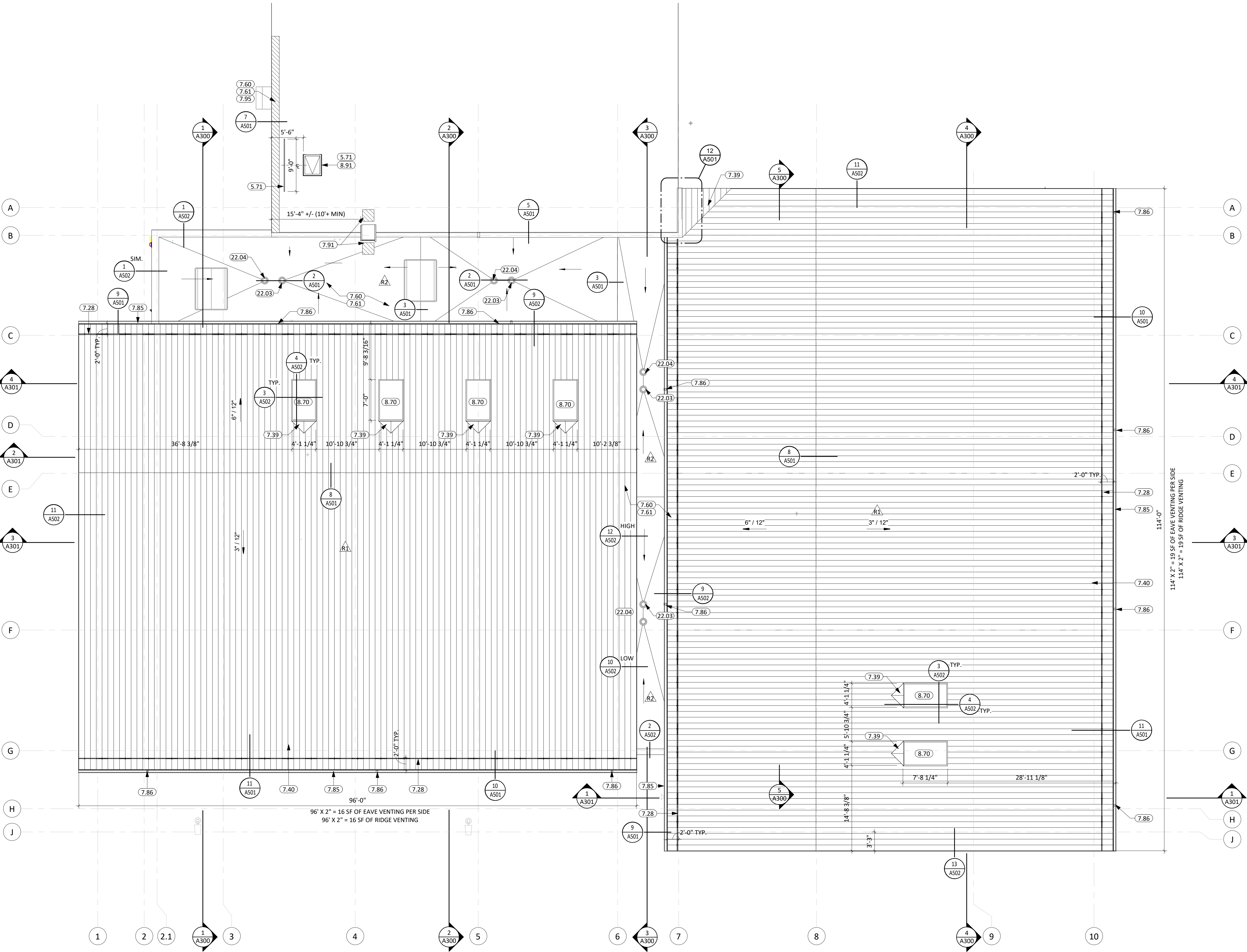
NORTHERN ELECTRIC  
NORTHERN ELECTRIC COOPERATIVE  
BATH, SOUTH DAKOTA

SHEET TITLE:

FIRST FLOOR PLAN







**ROOF PLAN**  
1/8" = 1'-0"

**GENERAL NOTES**

- SEE CIVIL, STRUCTURAL, MECHANICAL, AND ELECTRICAL FOR ADDITIONAL INFORMATION AND COORDINATION.
- ALL TAPERED ROOF SYSTEM SLOPES ARE 1/2" PER FOOT UNLESS OTHERWISE NOTED.
- ALL THRU ROOF PENETRATION BOOTS IN ROOF SYSTEM ARE TO BE PROVIDED.
- THE AIR & MOISTURE WEATHER BARRIER IS TO BE CONTINUOUS FROM THE BASE OF THE WALLS UP TO & TYING INTO THE ROOF BARRIER SYSTEM.
- COORDINATE ROOF PENETRATIONS WITH MECHANICAL, ELECTRICAL, AND PLUMBING CONTRACTORS.
- ALL ROOF SADDLES SHALL HAVE A MINIMUM OF 1/2" PER FOOT SLOPE.
- PROVIDE ROOF CURBS FOR ALL EQUIPMENT SCHEDULED TO BE ON THE ROOF. COORDINATE SIZE AND LOCATION WITH APPLICABLE TRADES.
- PROVIDE CRICKETS AT ALL ROOF TOP EQUIPMENT & SKYLIGHT UNITS TO ALLOW FOR UNIMPEDED WATER FLOW.
- DIMENSIONS AND LOCATIONS OF EQUIPMENT ON THE ROOF ARE APPROX., DO NOT SCALE THE DRAWINGS. VERIFY WITH APPLICABLE TRADES.
- TAPERED INSULATION SHALL HAVE A MINIMUM OF 1/4" PER FOOT SLOPE. PROVIDE TAPERED INSULATION AS REQUIRED TO ACHIEVE 1/4" PER FOOT SLOPE.
- PROVIDE R-30 MINIMUM ROOF INSULATION AT ROOF DRAINS.
- PROVIDE ROOF WALKING PADS AS SHOWN.

**KEYNOTE SCHEDULE**

5.71	ROUND STEEL GUARDRAIL SECTION (SEE ARCH. & STRUCT.)
7.28	STANDING SEAM ICE & SNOW GUARDS (SEE PROJECT MANUAL)
7.39	STANDING SEAM ROOF CRICKET W/ MATCHING VALLEY FLASHING
7.40	STANDING SEAM METAL ROOFING
7.60	FULLY ADHERED EPDM SINGLE MEMBRANE ROOF (WRAP PARAPET WHERE OCCURS)
7.61	POLYISOCYANURATE INSULATION SYSTEM (R-40 MIN.)
7.85	PRE-FINISHED METAL GUTTER & EAVE TRIM (W/ ALL REQ'D FLASHING & SUPPORTS).
7.86	PRE-FINISHED METAL DOWNSPOUTS (W/ ALL REQ'D FLASHING & SUPPORTS). PROVIDE SPLASH PAD AT EACH DOWNSPOUT THAT RETURNS TO GRADE.
7.91	WALK WAY PAD
7.95	WORK TO BE DONE TO MATCH EXISTING CONDITIONS. MAINTAIN EXISTING WARRANTY.
8.70	SKYLIGHT UNIT
8.91	EXISTING ROOF ACCESS HATCH & LADDER
22.03	ROOF DRAIN
22.04	OVERFLOW ROOF DRAIN

**ATTIC VENTILATION REQUIREMENTS**

VENTING CALCULATION PER IRC 1202.2.1			
WEST ROOF		EAST ROOF	
ATTIC AREA =	5,685 SF	ATTIC AREA =	9,205 SF
REQ. VENTING =	5,685 / 300 = 18.95	REQ. VENTING =	9,205 / 300 = 30.68
HIGH VENT =	9.5 SF REQUIRED	HIGH VENT =	15.5 SF REQUIRED
LOW VENT =	9.5 SF REQUIRED	LOW VENT =	15.5 SF REQUIRED
HIGH VENT =	12 SF PROVIDED	HIGH VENT =	19 SF PROVIDED
LOW VENT =	32 SF PROVIDED	LOW VENT =	38 SF PROVIDED

**CO**

Arch

**OP**

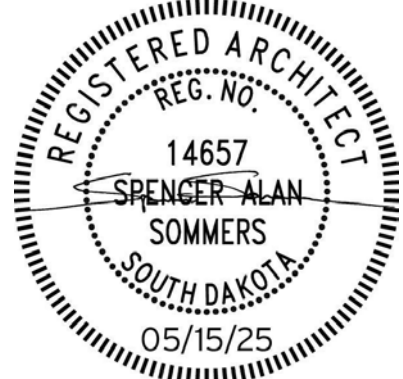
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**PROJECT:**

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NORTHERN ELECTRIC COOPERATIVE  
BATH, SOUTH DAKOTA

**SHEET TITLE:**

ROOF PLAN

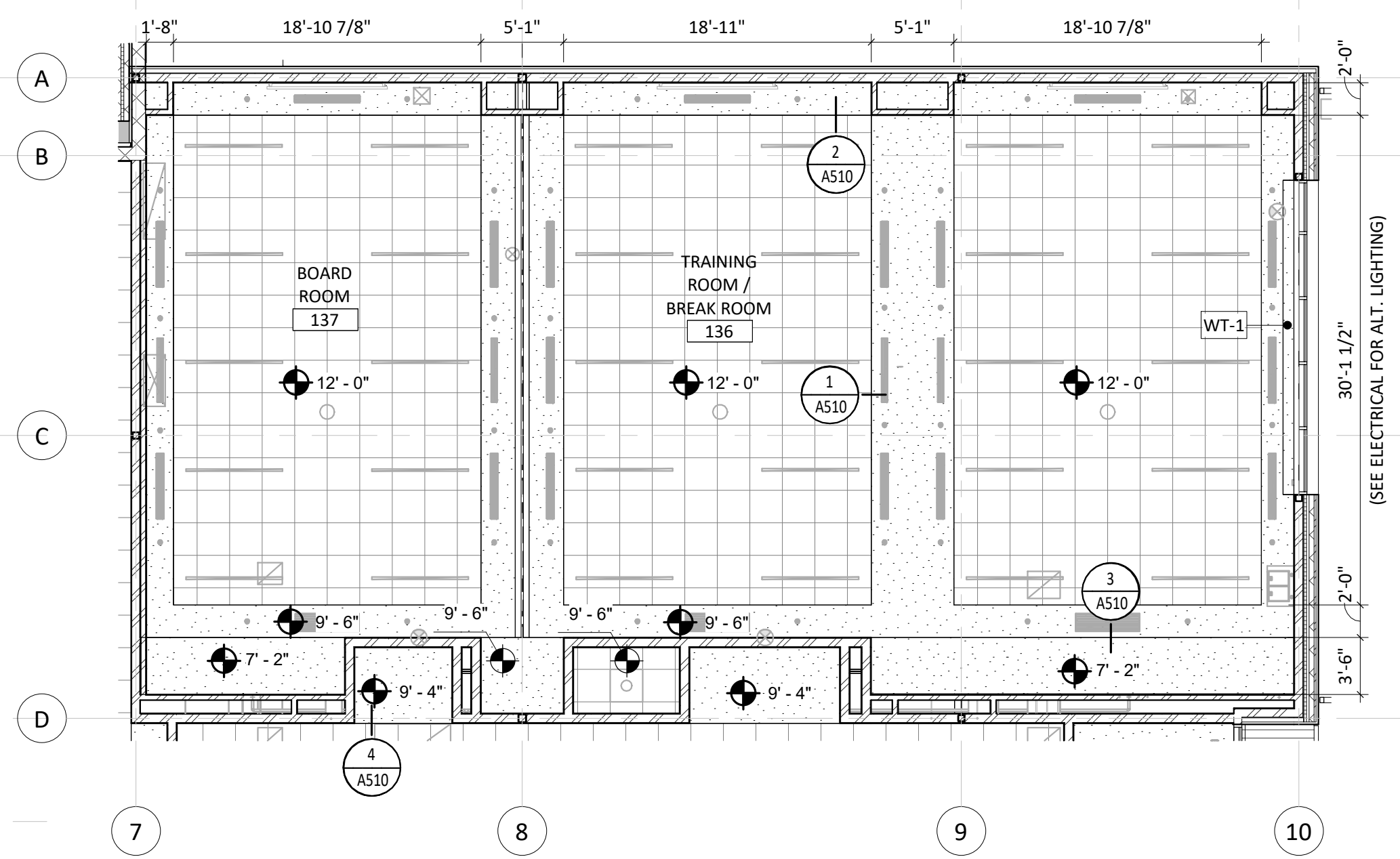
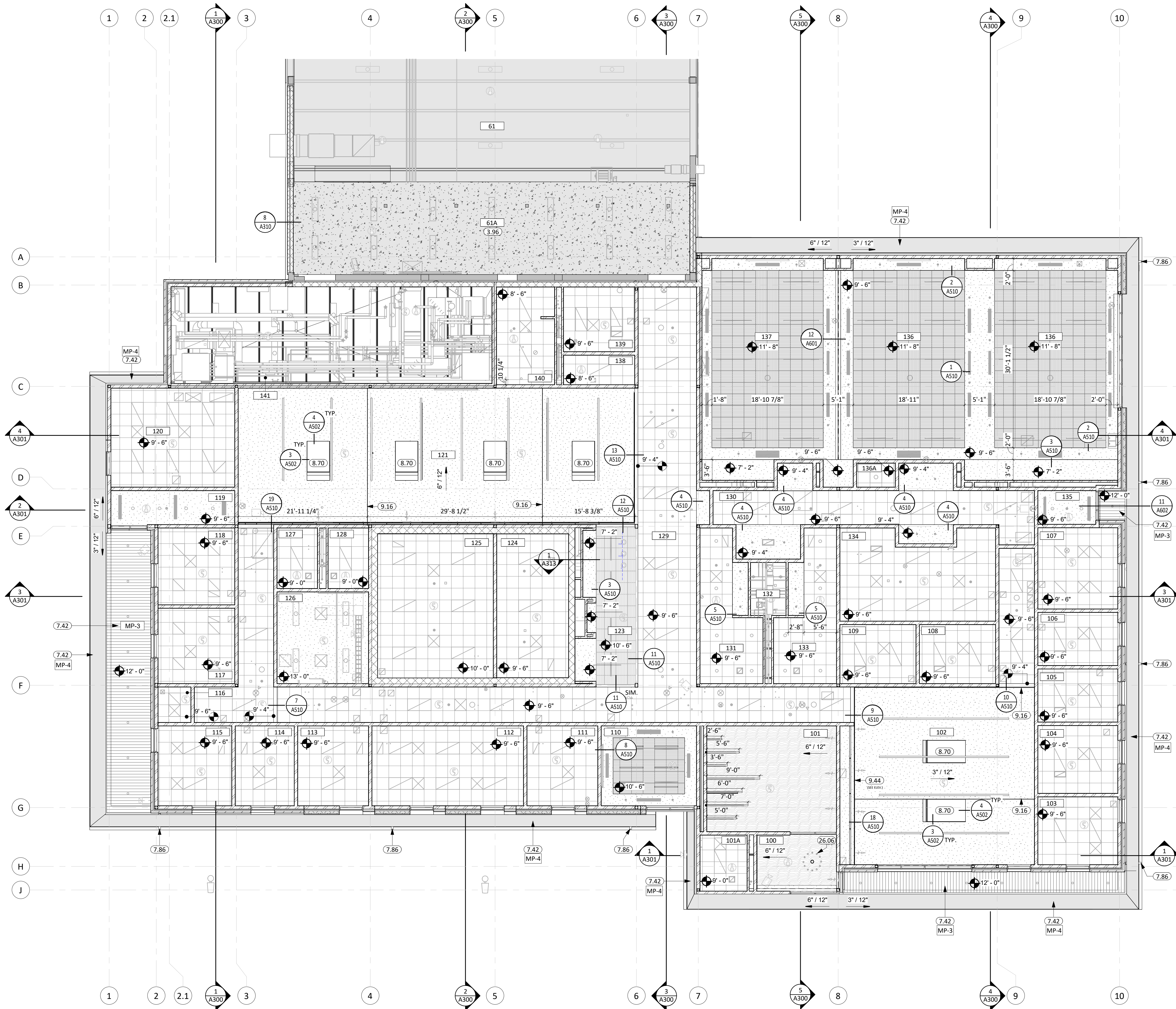
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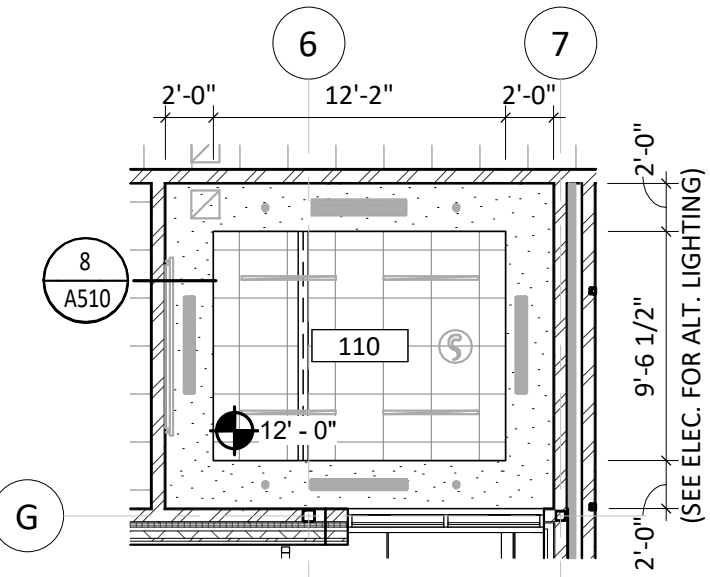
CEILING LEGEND	
	ACT-1 (SEE FINISH LEGEND)
	ACT-2 (SEE FINISH LEGEND)
	MP-3 METAL SOFFIT PANEL (SEE SPECIFICATIONS)
	MP-4 METAL SOFFIT PANEL (SEE SPECIFICATIONS)
	GYP. PAINTED (SEE FINISH LEGEND)
	WC-1 (SEE FINISH LEGEND)
*REFER TO FINISH LEGEND FOR EXPOSED CEILING PAINT	

GENERAL NOTES	
1.	ALL DIMENSIONS ARE FROM FACE OF FINISH MATERIAL UNLESS OTHERWISE NOTED.
2.	REFER TO SPECIFICATIONS FOR CEILING AND FIXTURE SUSPENSION REQUIREMENTS.
3.	PROVIDE ACCESS DOORS AT MECHANICAL UNIT LOCATIONS ABOVE CEILING. COORDINATE NUMBER REQUIRED AND LOCATIONS WITH MECHANICAL SHEETS.
4.	CENTER CEILING GRID IN AREAS SUCH THAT THERE WILL BE NO CEILING TILE LESS THAN 6" IN THE SMALLEST DIMENSION, UNLESS OTHERWISE NOTED.
5.	CENTER LIGHT FIXTURES BETWEEN WALLS AND/OR CEILING BULKHEADS UNLESS OTHERWISE DIMENSIONED.
6.	IN EXPOSED TO STRUCTURE ROOMS, CENTER LIGHTS FIXTURES WITHIN ROOMS UNLESS OTHERWISE NOTED.
7.	THE REFLECTED CEILING PLANS ARE INTENDED TO AID IN COORDINATION ONLY AND ARE NOT INTENDED TO BE COMPREHENSIVE. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION. NOTIFY ARCHITECT WHERE CONFLICTS OCCUR.
8.	PROVIDE WATER-RESISTANT GYPSUM BOARD PANELS AT ALL BATHROOM WALLS AND ANY WALLS EXPOSED TO MOISTURE.
9.	ALL EXPOSED STRUCTURE, PIPE, DUCTWORK, ETC. IS TO BE PAINTED PER THE FINISH SCHEDULE UNLESS OTHERWISE NOTED.

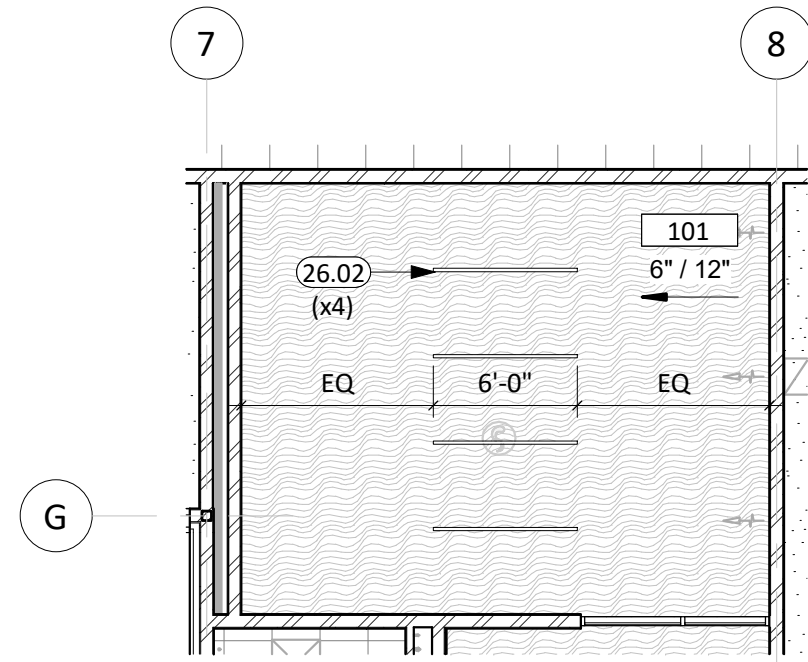
KEYNOTE SCHEDULE	
3.96	EXISTING PRECAST FLOOR STRUCTURE TO REMAIN
7.42	METAL SOFFIT PANELS
7.86	PRE-FINISHED METAL DOWNSPOUTS (W/ ALL REQ'D FLASHING & SUPPORTS). PROVIDE SPLASH PAD AT EACH DOWNSPOUT THAT RETURNS TO GRADE.
8.70	SKYLIGHT UNIT
9.16	CONTROL JOINT
9.44	SOUND ABSORPTION PANEL ON CONTINUOUS HANGER BAR, CUSTOM SIZE (BOD: G&S ACOUSTICS, SEE FINISH LEGEND)
26.02	RECESS LIGHT FIXTURE (SEE ELECTRICAL)
26.06	PENDANT LIGHT FIXTURE (BOD: VELIA DROPLET, CUSTOM CONFIGURATION, QTY: 12) COORDINATE CABLE LENGTHS & FINAL PLACEMENT WITH ARCHITECT. (SEE ELECTRICAL)



ALT. BOARD & TRAINING CEILING PLAN  
1/8" = 1'-0"



ALT. MEETING 110 CEILING PLAN  
1/8" = 1'-0"



ALT. LOBBY 101 CEILING PLAN  
1/8" = 1'-0"



GENERAL NOTES

1. REFER TO SHEET **A125** FOR ROOM FINISH SCHEDULE AND LEGEND.
2. INTERIOR WALLS FINISHES ARE FULL HEIGHT, UNLESS OTHERWISE NOTED.
3. PROVIDE WATER-RESISTANT GYPSUM BOARD PANELS AT ALL BATHROOM WALLS AND ANY WALLS EXPOSED TO MOISTURE.
4. SEE FLOOR PLAN(S) AND INTERIOR ELEVATIONS FOR CASEWORK INFORMATION. FIELD VERIFY DIMENSIONS OF CASEWORK OPENINGS.
5. FINISH FLOORS TO EXTEND UNDER ALL CASEWORK.
6. USE SCHLUTER DITRA UNDERLAYMENT UNDER ALL FLOOR TILE.
7. ALL WALLS TO BE P-1 AND RECIEVE VB-1, U.N.O.
8. ALL EXPOSED STRUCTURE AND BEAMS TO BE PAINTED P-3, U.N.O.

FINISH LEGEND

- INDICATES WALL TILE PT-2
- INDICATES WALL TILE PT-3
- INDICATES WALL TILE PT-4
- INDICATES WALL COVERING
- INDICATES ACCENT PAINT

\*REFER TO ELEVATIONS, FINISH SCHEDULE AND LEGEND FOR TYPES, DIMENSIONS AND ADDITIONAL DETAILS.

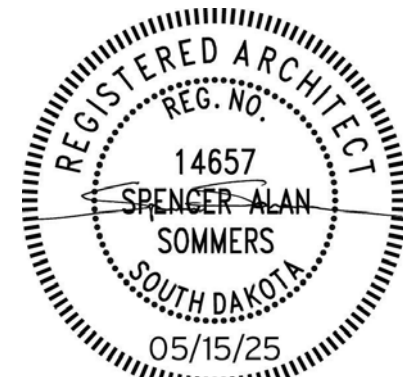
KEYNOTE SCHEDULE

10.30	CORNER GUARDS
12.04	MANUAL ROLLER WINDOW SHADES
12.05	AUTOMATED ROLLER WINDOW SHADES (SEE ELECTRICAL)



FIRST LEVEL - FINISH PLAN  
1/8" = 1'-0"

CO-OP PROJECT NO: 2418



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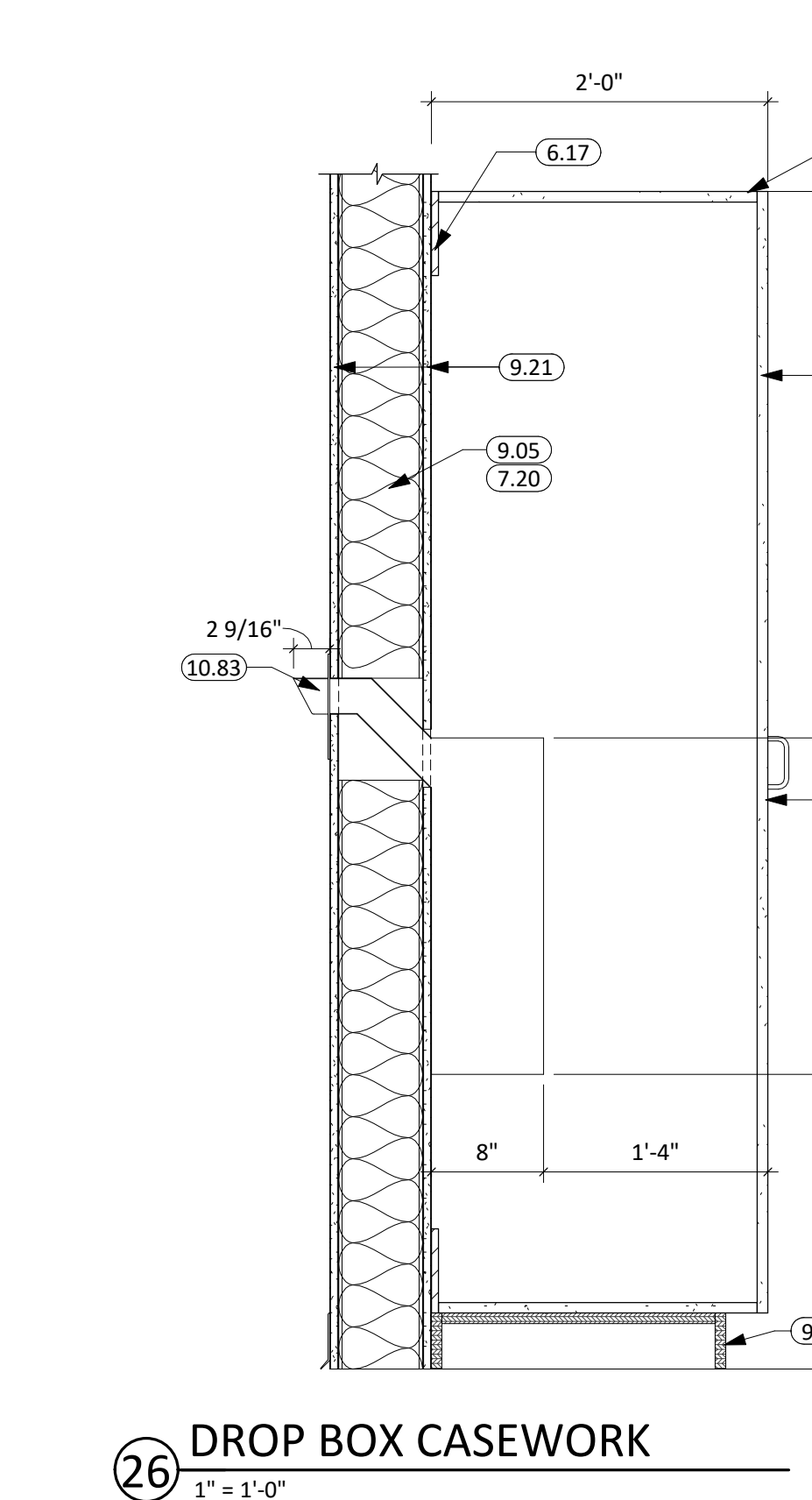
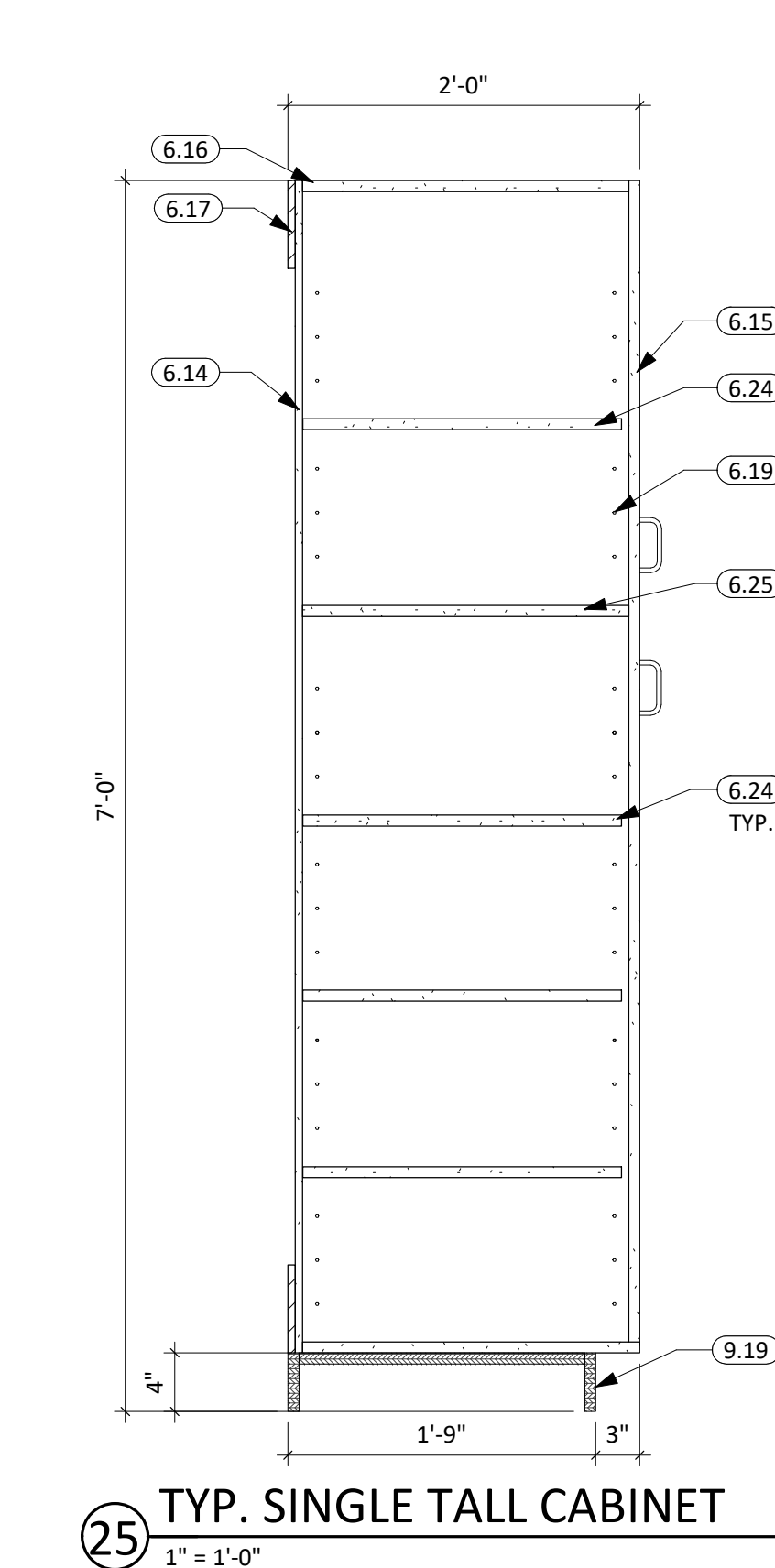
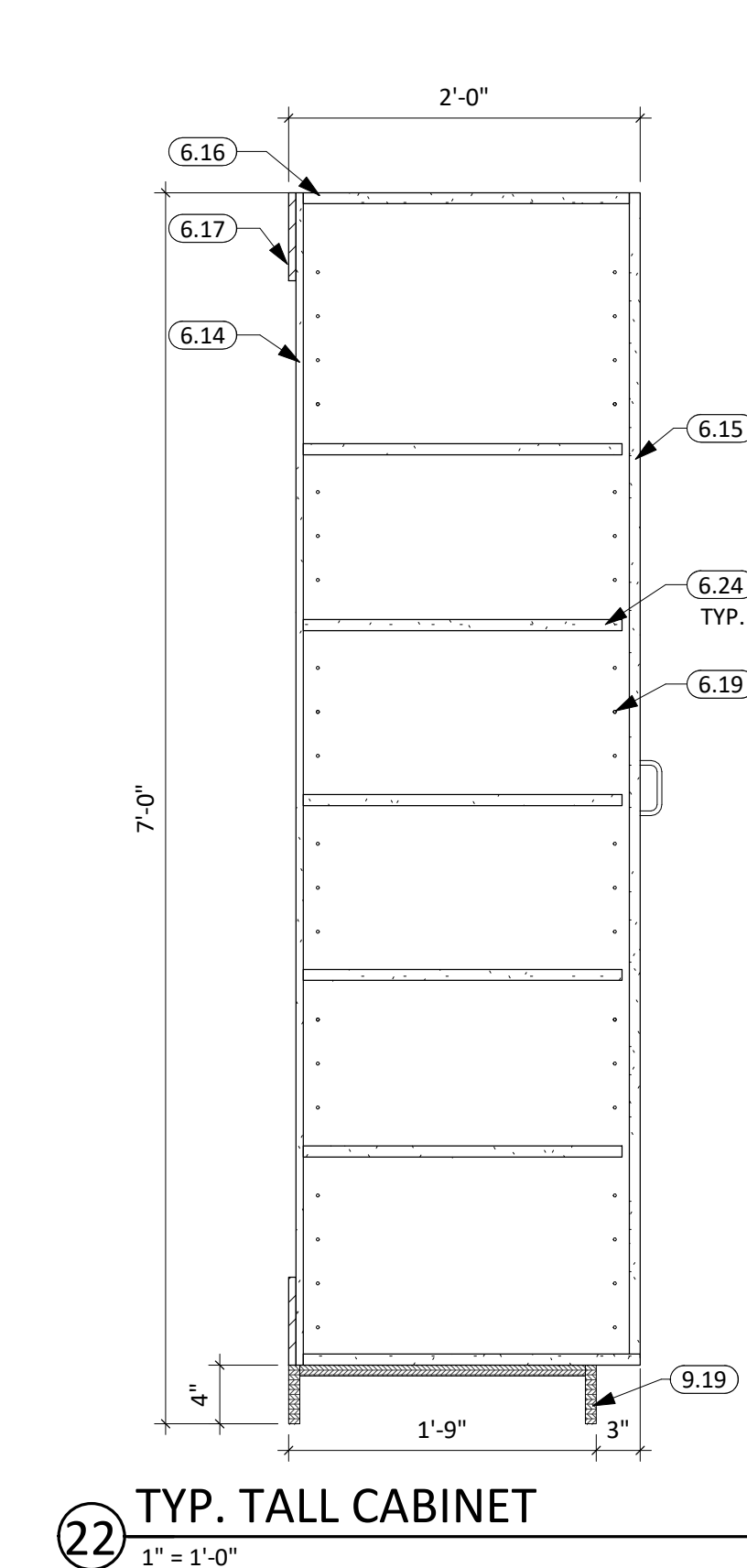
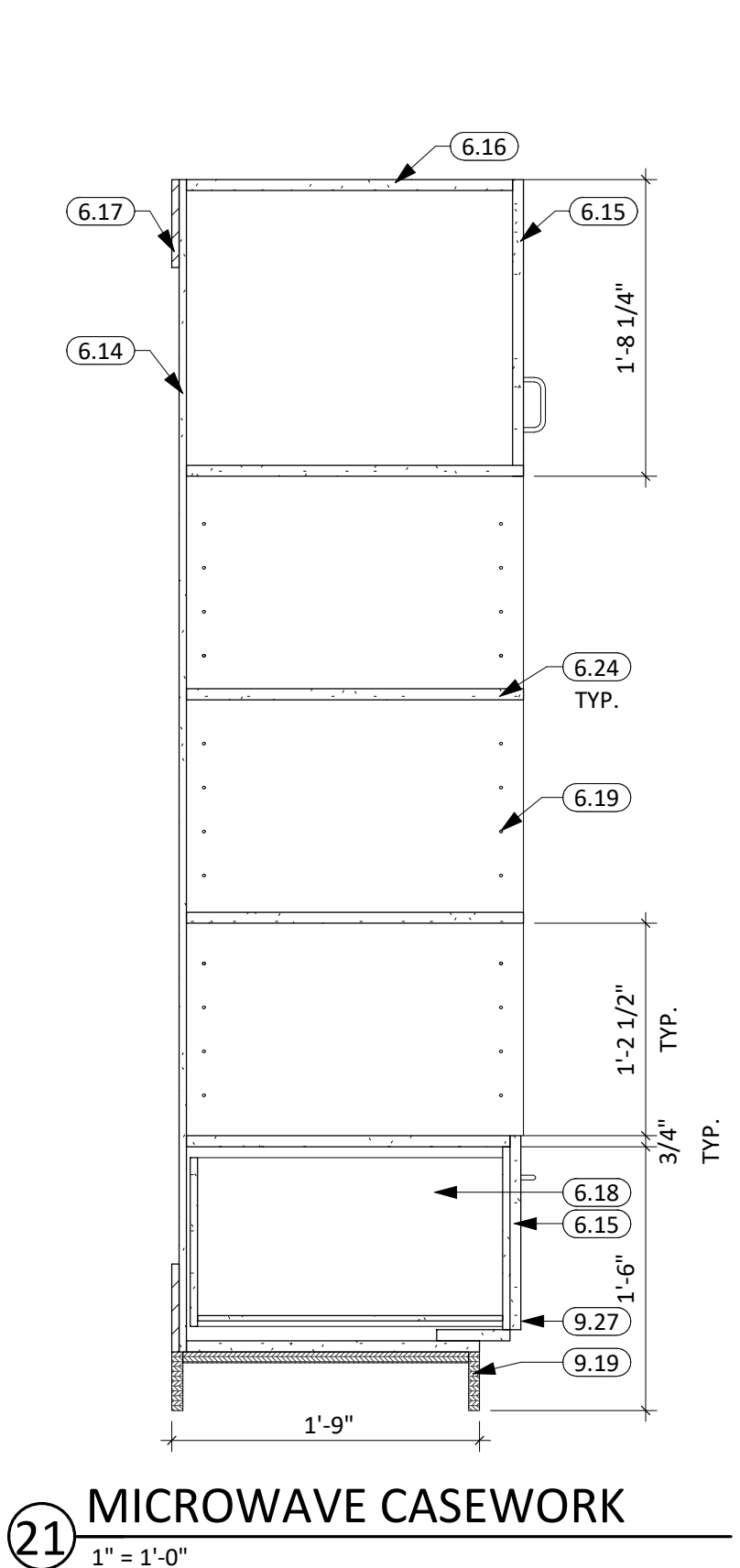
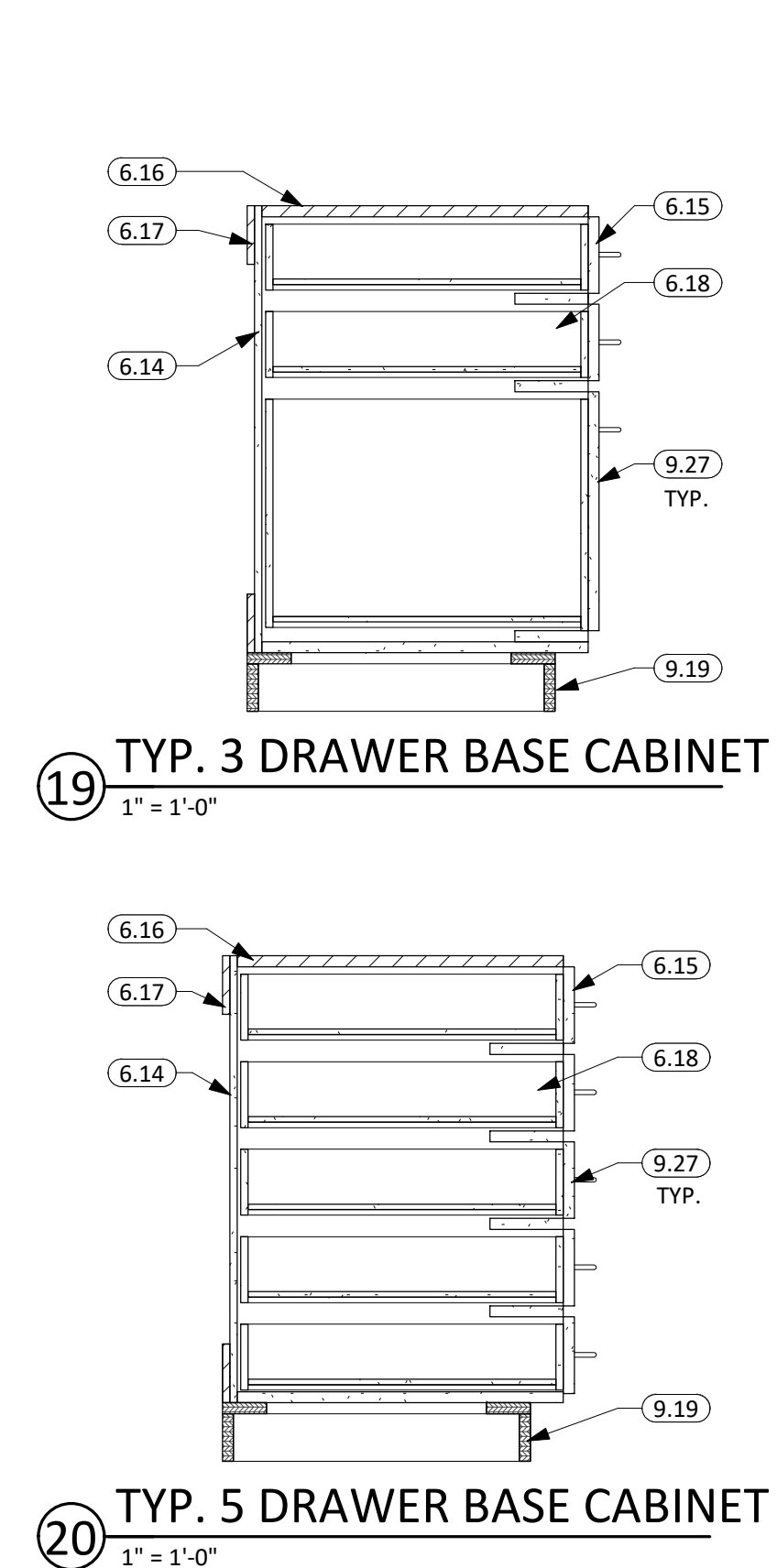
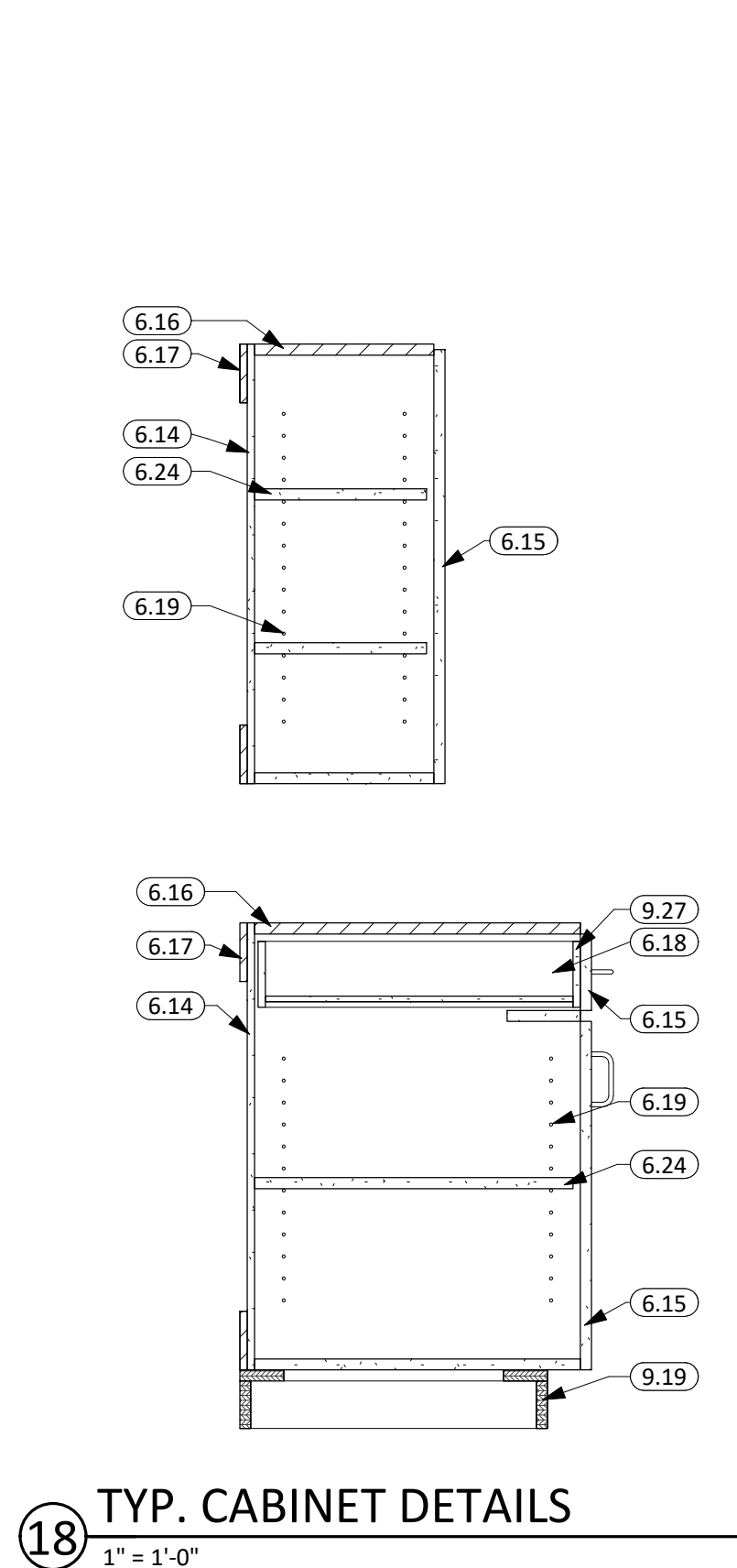
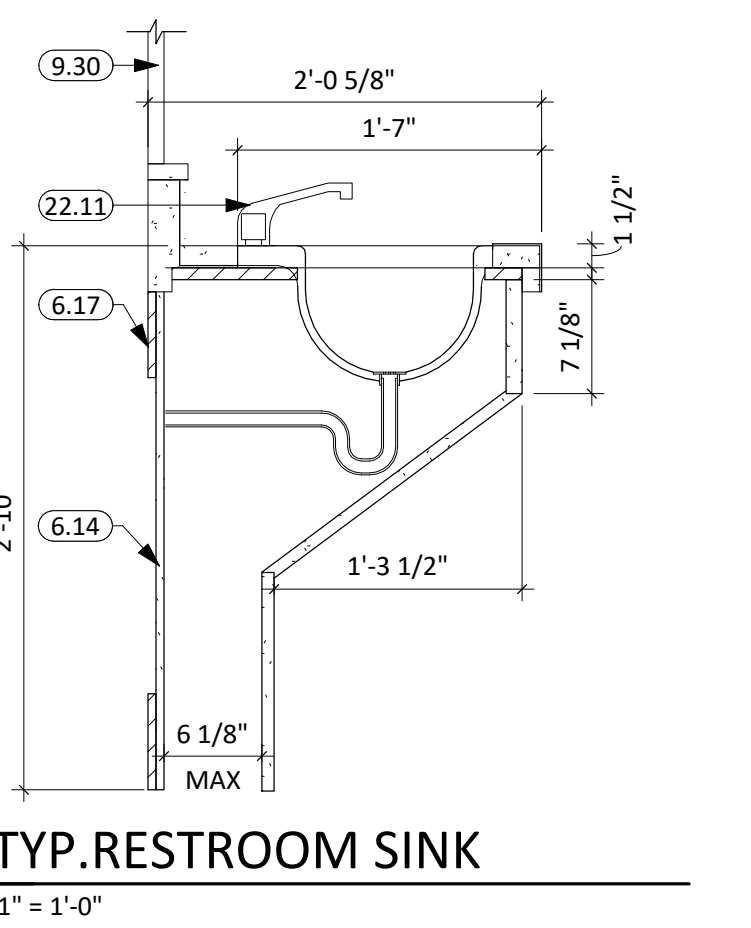
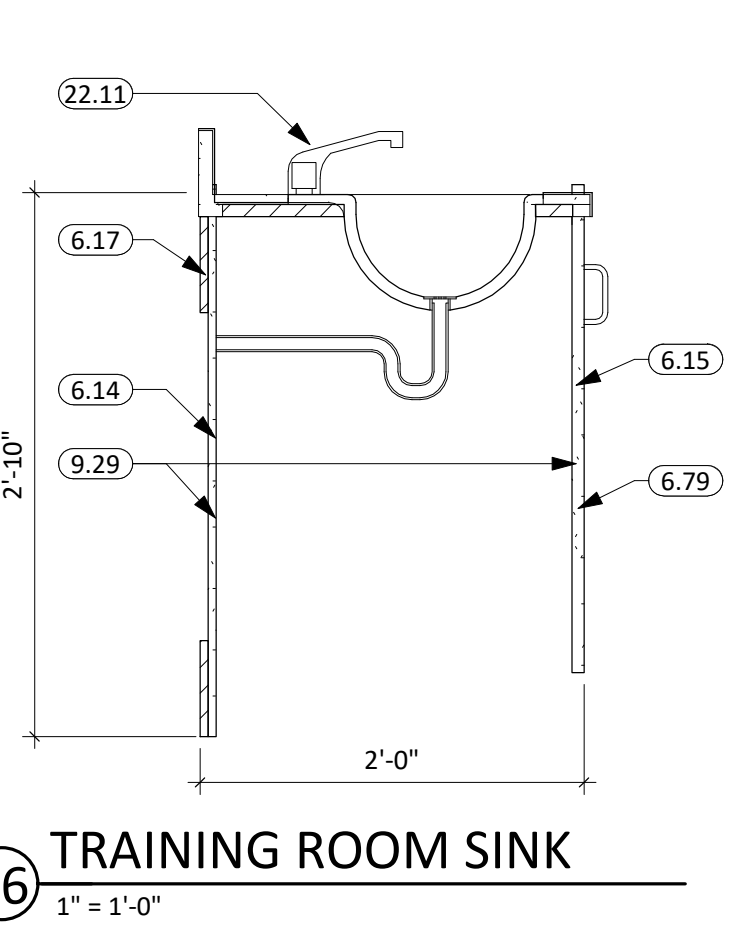
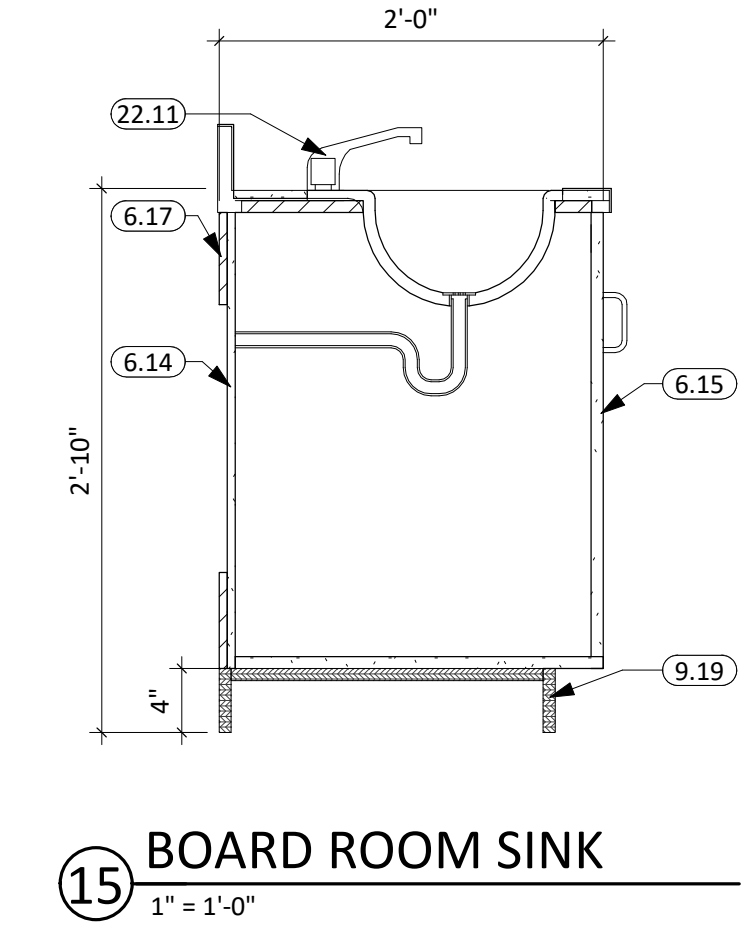
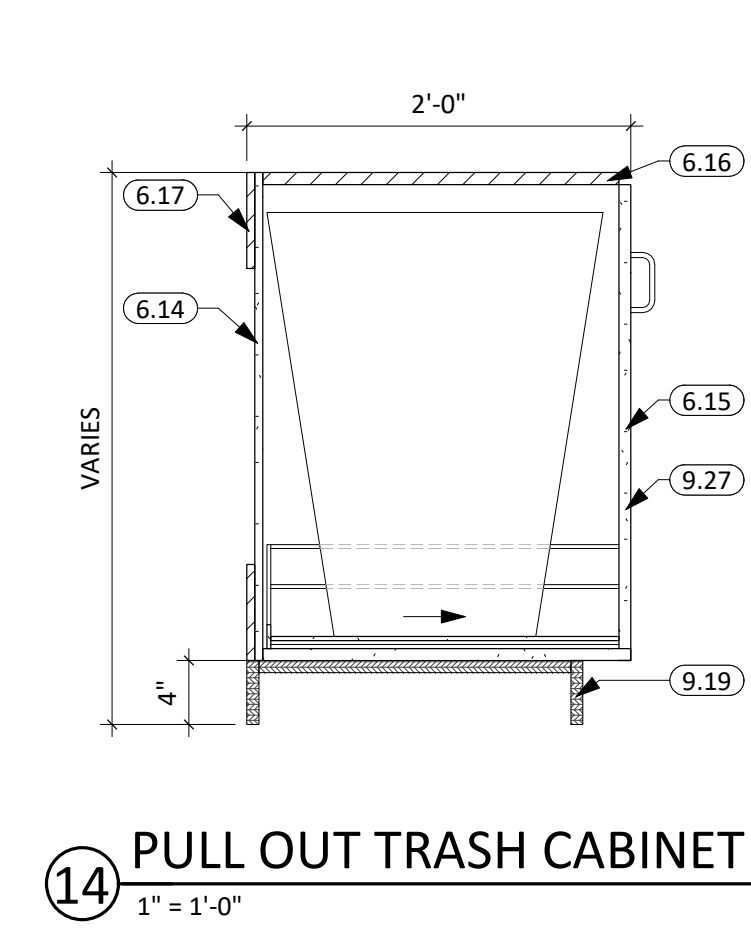
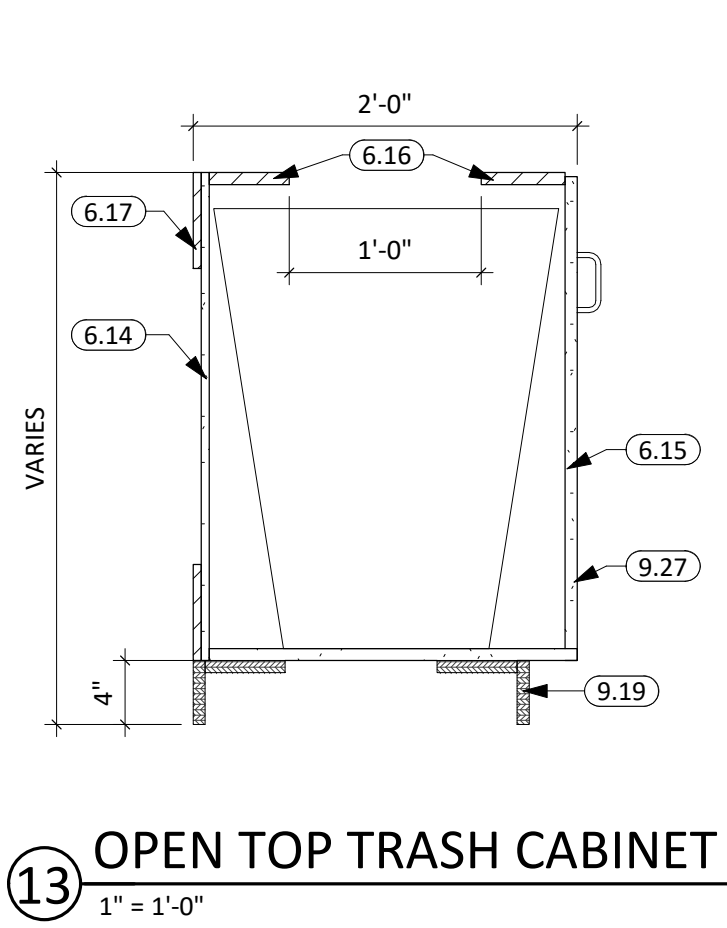
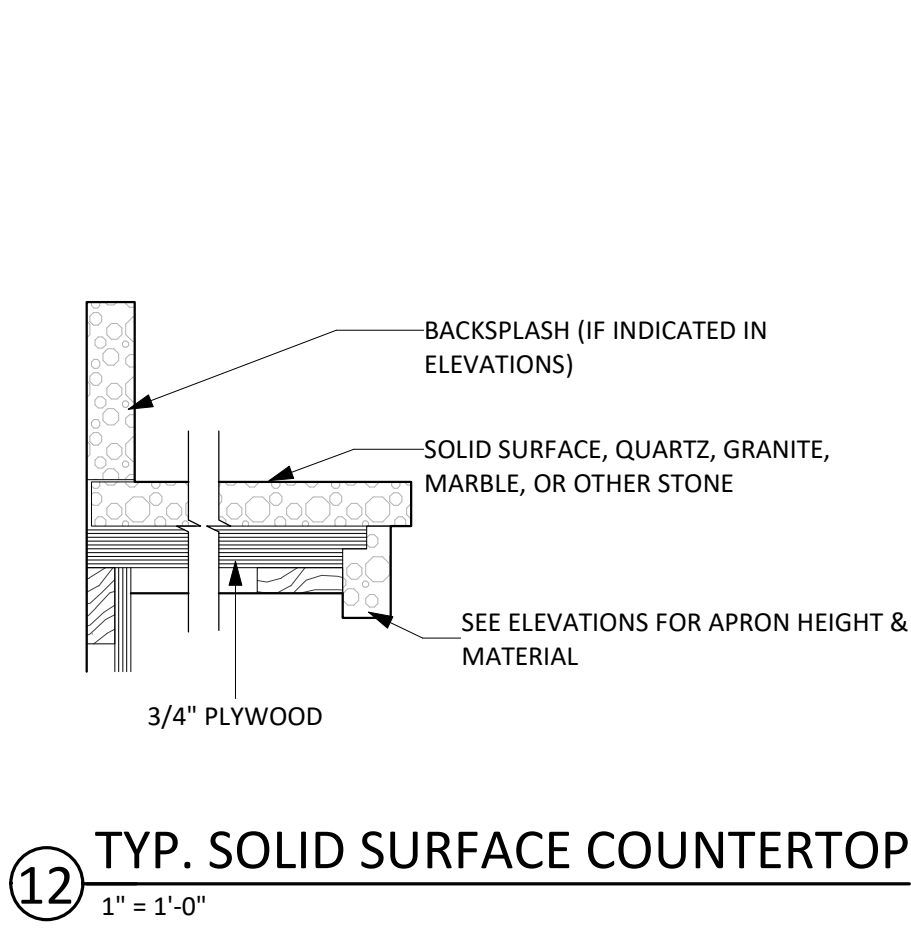
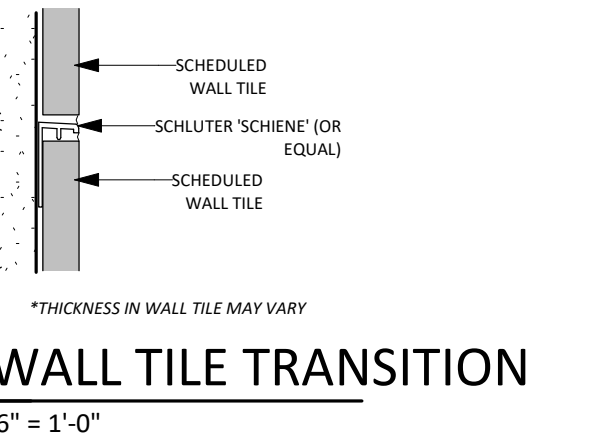
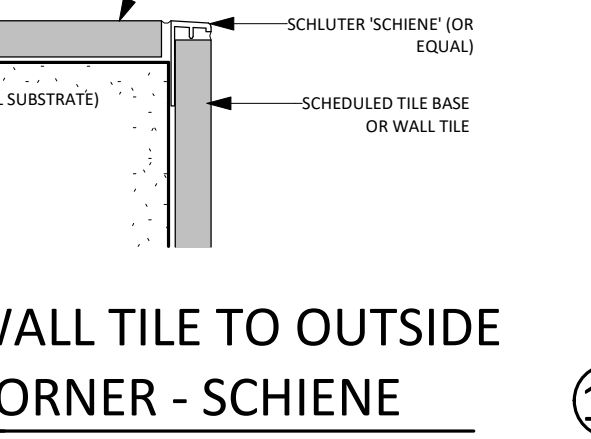
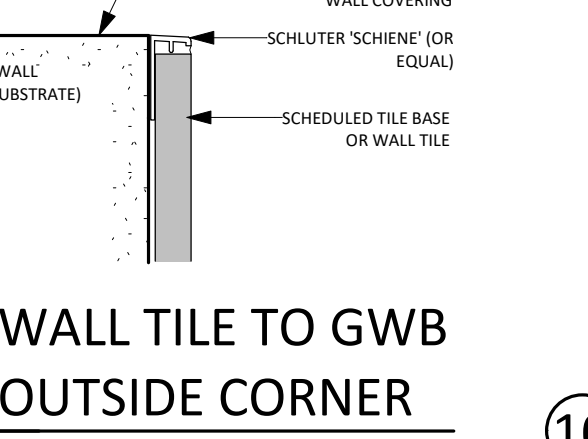
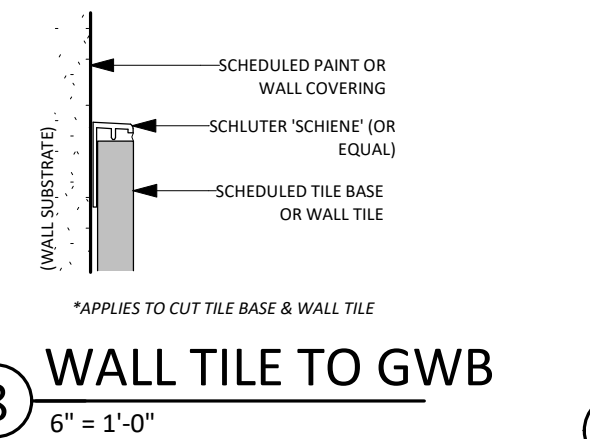
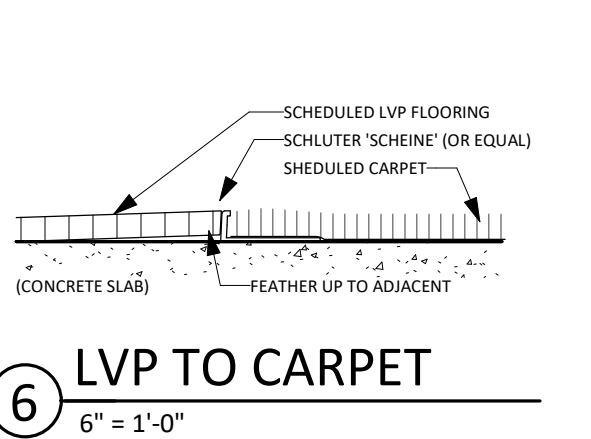
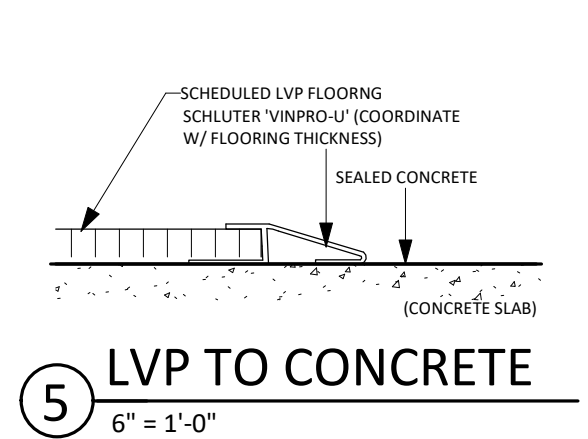
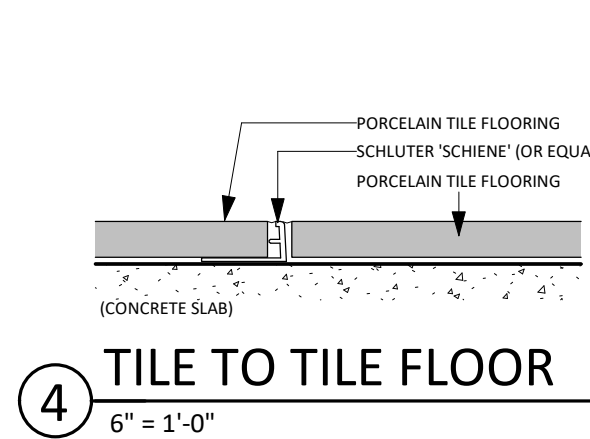
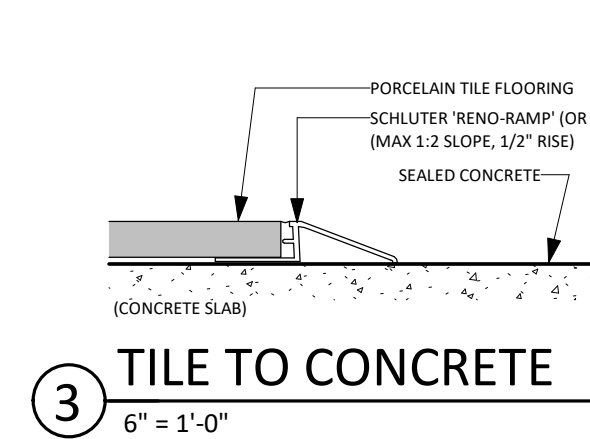
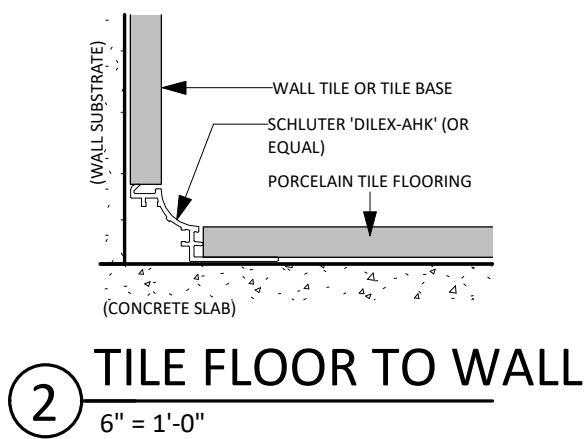
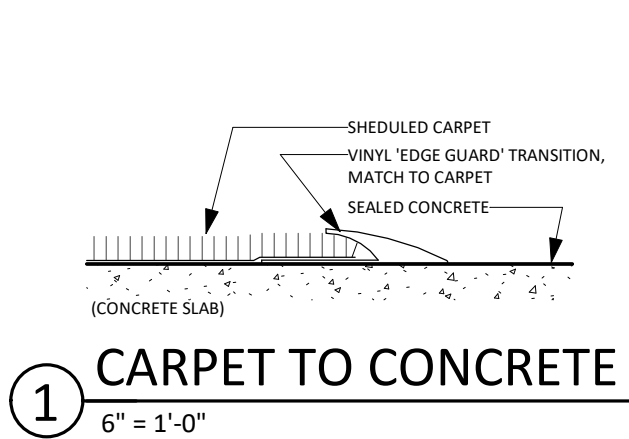
REVISION SCHEDULE:  
REV. # REV. DSC. REV. DATE

PROJECT:  
NORTHERN ELECTRIC  
NORTHERN ELECTRIC COOPERATIVE  
BATH, SOUTH DAKOTA

SHEET TITLE:  
FINISH PLANS



ROOM FINISH SCHEDULE						
RM#	NAME	FLR FIN.	BASE FIN.	WALL FIN.	CLG FIN.	NOTES
100	VESTIBULE	WOC-1	VB-1	P-1	WC-1	
101	LOBBY	SC-1	VB-2	P-1 / WC-1	WC-1	
101A	RESTROOM	PT-1	TB-1	P-1 / PT-2	ACT-1	
102	OPEN OFFICE	CPT-1	VB-2	P-1 / P-2	P-4	
103	CEO	CPT-2	VB-1	P-1	ACT-1	
104	ACCT/ BILLING	CPT-2	VB-1	P-1	ACT-1	
105	EXECUTIVE ASSISTANT	CPT-2	VB-1	P-1	ACT-1	
106	COMM.	CPT-2	VB-1	P-1	ACT-1	
107	CEO	CPT-2	VB-1	P-1	ACT-1	
108	ACCT/ BILLING	CPT-2	VB-1	P-1	ACT-1	
109	ACCT/ BILLING	CPT-2	VB-1	P-1	ACT-1	
110	MEETING	CPT-1	VB-2	P-1 / P-2	ACT-2	
111	MEMBER SERVICES MGR	CPT-2	VB-1	P-1	ACT-1	
112	MEMBER SERVICES	CPT-2	VB-1	P-1	ACT-1	
113	MEMBER SERVICES	CPT-2	VB-1	P-1	ACT-1	
114	IT OFFICE	CPT-2	VB-1	P-1	ACT-1	
115	IT OFFICE	CPT-2	VB-1	P-1	ACT-1	
116	IT STORAGE	SC-1	VB-1	P-1	ACT-1	
117	ENGINEERING	CPT-2	VB-1	P-1	ACT-1	
118	OPERATIONS	CPT-2	VB-1	P-1	ACT-1	
119	VESTIBULE	WOC-1	VB-1	P-1	P-4	
120	DISPATCH	CPT-1	VB-1	P-1	ACT-1	
121	LINECREW	SC-1	VB-1	P-1 / P-2 / P-3	P-4	
123	WORK AREA	LVP-1	VB-1	P-1 / PT-3	ACT-2	
124	SUPPLY ROOM	CPT-1	VB-1	P-1	ACT-1	
125	STORAGE	SC-1	VB-1	P-1	ACT-1	
126	SERVER	SC-2	VB-1	P-1	P-4	
127	RESTROOM	PT-1	TB-1	P-1 / PT-2	ACT-1	
128	RESTROOM	PT-1	TB-1	P-1 / PT-2	ACT-1	
129	CORRIDOR	SC-1	VB-1	P-1 / WC-2	ACT-1	
130	CORRIDOR	SC-1	VB-1	P-1	ACT-1	
131	WOMEN	PT-1	TB-1	P-1 / PT-2 / PT-3	ACT-1	
132	CUST.	SC-1	VB-1	P-1	P-5	
133	MEN	PT-1	TB-1	P-1 / PT-2 / PT-3	ACT-1	
134	STORAGE	SC-1	VB-1	P-1	ACT-1	
135	VESTIBULE	WOC-1	VB-1	P-1	P-4	
136	TRAINING ROOM / BREAK ROOM	CPT-3 / LVP-1	VB-2	P-1 / PT-4	ACT-2 / P-4	
136A	AV	LVP-1	VB-1	P-1	ACT-1	
137	BOARD ROOM	CPT-3 / LVP-1	VB-2	P-1 / PT-4	ACT-2 / P-4	
138	STORAGE	SC-1	VB-1	P-1	ACT-1	
139	PURCHASING	CPT-2	VB-1	P-1	ACT-1	
140	RESTROOM	PT-1	TB-1	P-1 / PT-2	ACT-1	
141	MECHANICAL	SC-1	VB-1	P-1	P-5	



ROOM SIGNAGE SCHEDULE		
RM#	NAME	SIGN TYPE
61	SHOP	A
61A	LOCKERS	A
100	VESTIBULE	A
101	LOBBY	A
101A	RESTROOM	B
102	OPEN OFFICE	A
103	CFO	A
104	ACCT/ BILLING	A
105	EXECUTIVE ASSISTANT	A
106	COMM.	A
107	CEO	A
108	ACCT/ BILLING	A
109	ACCT/ BILLING	A
110	MEETING	A
111	MEMBER SERVICES MGR	A
112	MEMBER SERVICES	A
113	MEMBER SERVICES	A
114	IT OFFICE	A
115	IT OFFICE	A
116	IT STORAGE	A
117	ENGINEERING	A
118	OPERATIONS	A
119	VESTIBULE	A
120	DISPATCH	A
121	LINECREW	A
124	SUPPLY ROOM	A
125	STORAGE	A
126	SERVER	A
127	RESTROOM	B
128	RESTROOM	B
131	WOMEN	B
132	CUST.	A
133	MEN	B
134	STORAGE	A
135	VESTIBULE	A
136	TRAINING ROOM / BREAK ROOM	A
136A	AV	A
137	BOARD ROOM	A
138	STORAGE	A
139	PURCHASING	A
140	RESTROOM	B
141	MECHANICAL	A
201	EXISTING MEZZANINE	A

TYPE A

101  
ROOM NAME  
(MAX 12\"/>

1108 S. Main St. 102  
Aberdeen, SD 57401  
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600 Kansas City St. #1  
Rapid City, SD 57701  
Phone: 605-716-3652

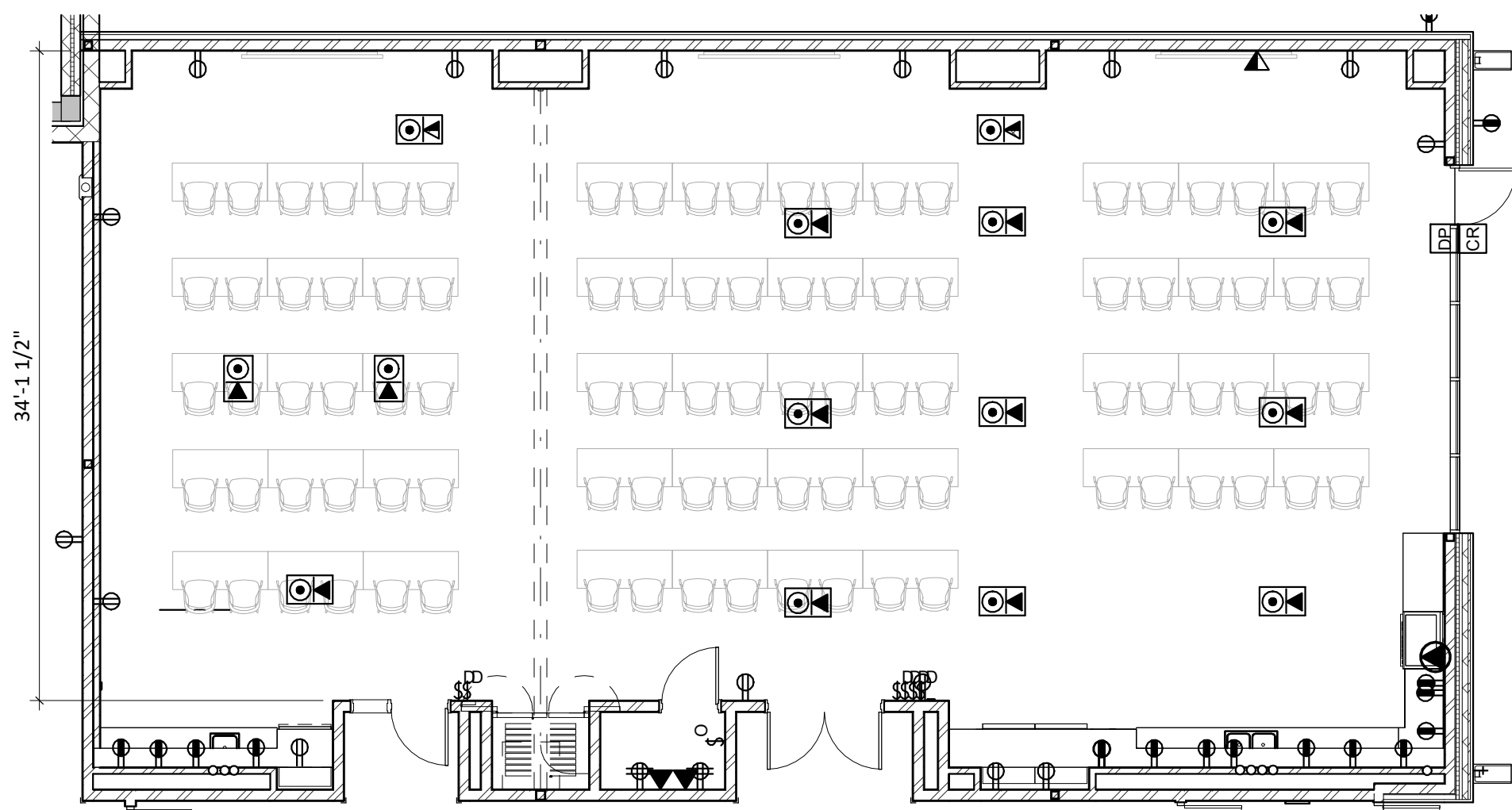
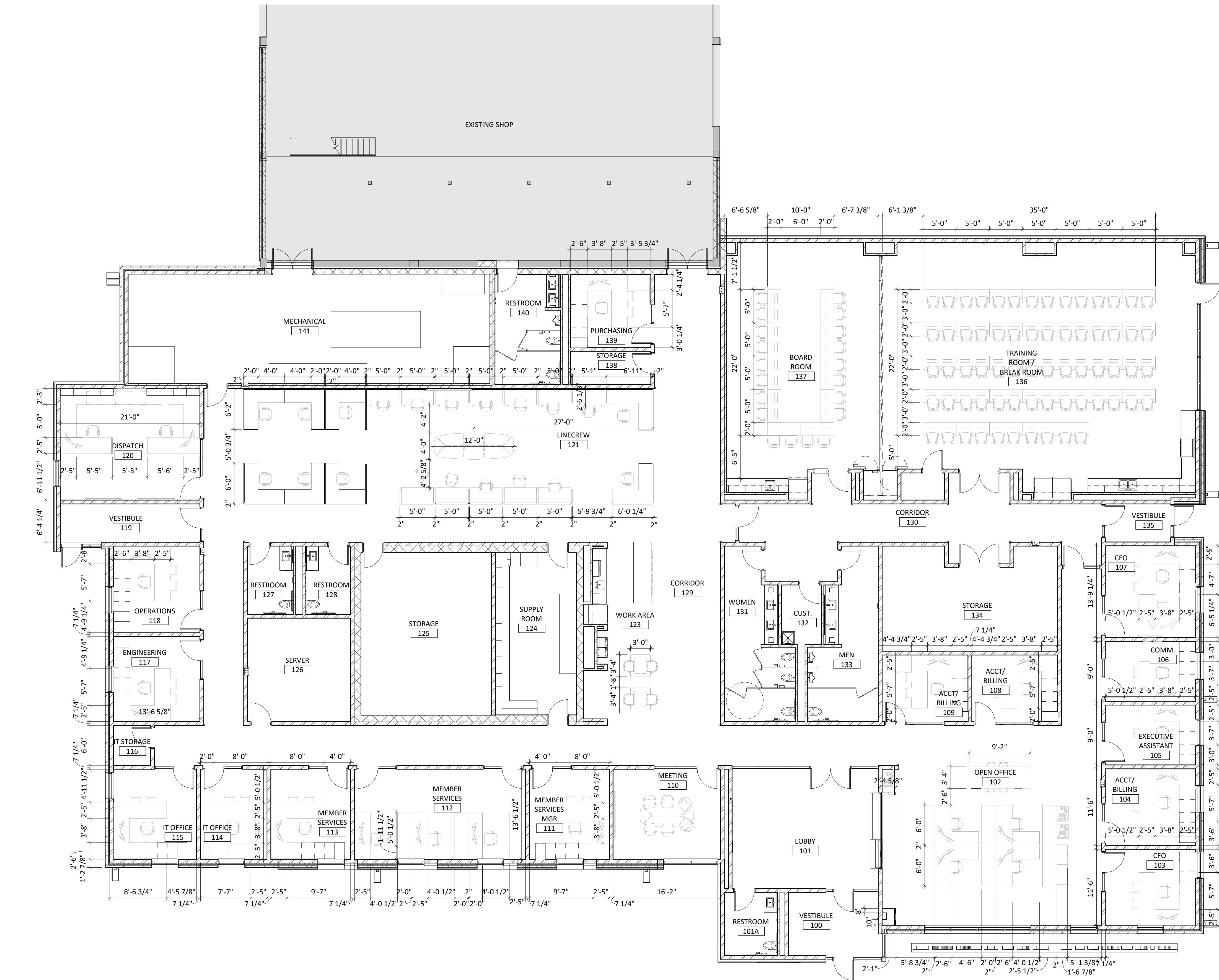
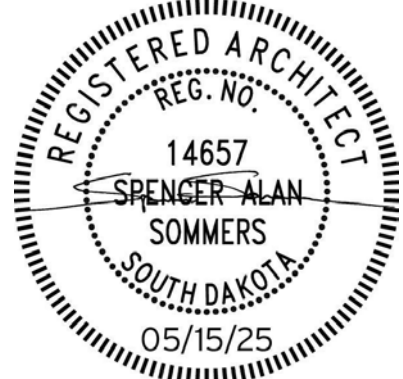
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Sioux Falls, SD 57103  
Phone: 605-334-9999

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SHEET TITLE:  
FINISH SCHEDULE & LEGENDS

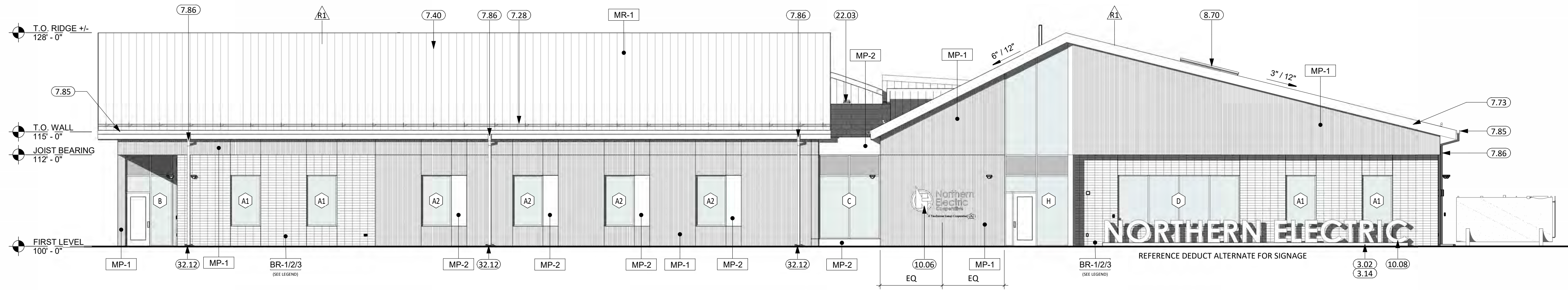
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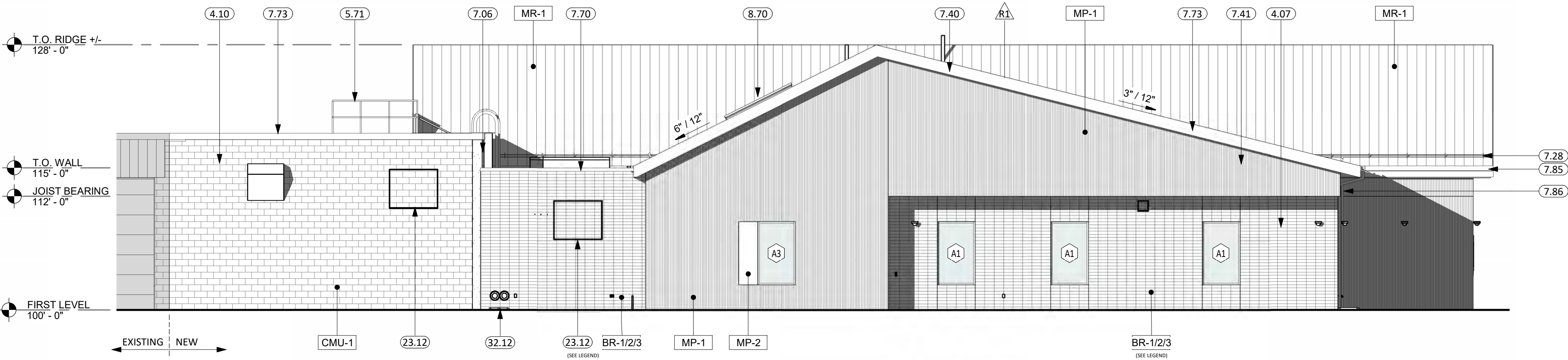


ENLARGED PLAN - BOARD & TRAINING -  
② OPEN  
1/8" = 1'-0"

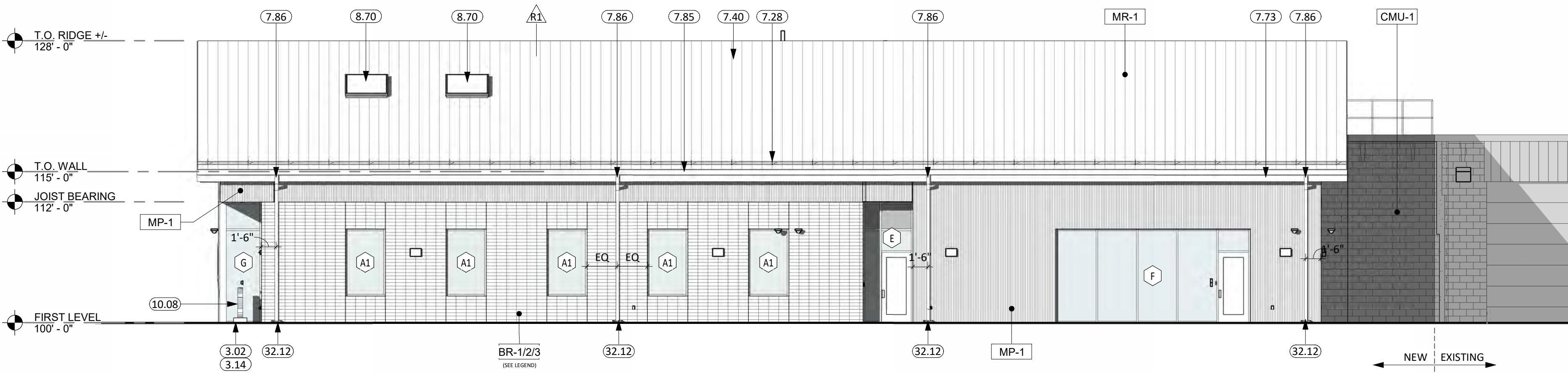




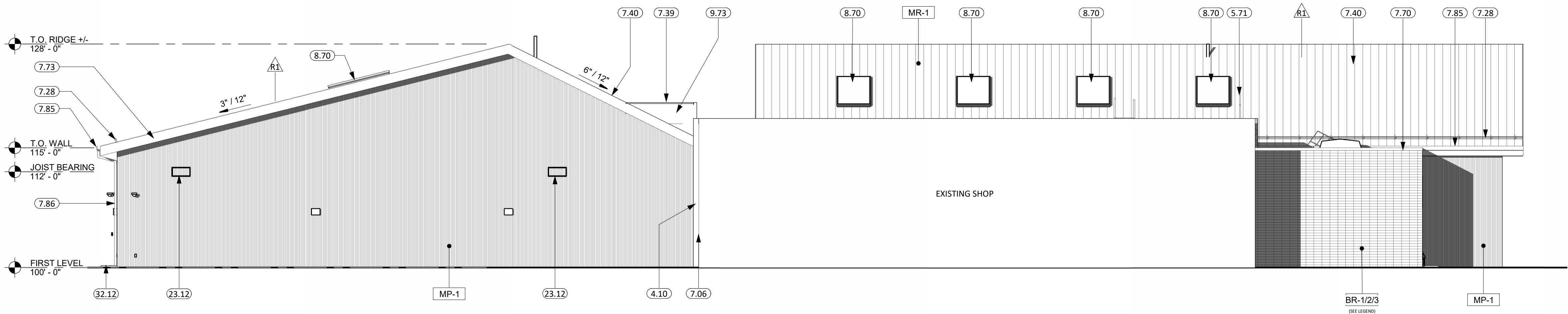
1 SOUTH ELEVATION  
1/8" = 1'-0"



2 WEST ELEVATION  
1/8" = 1'-0"



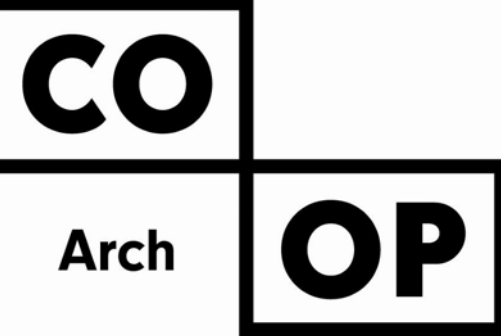
3 EAST ELEVATION  
1/8" = 1'-0"



4 NORTH ELEVATION  
1/8" = 1'-0"

KEYNOTE SCHEDULE	
3.02	CONT. CONC. FOOTING (SEE STRUCTURAL PLANS)
3.14	SIGNAGE ANCHORS EMBEDDED IN CONC. (COORD. SIGNAGE ANCHOR REQ. W/ SUPPLIER)
4.07	BRICK STACK BOND COURSING
4.10	CMU MASONRY UNIT
5.71	ROUND STEEL GUARDRAIL SECTION (SEE ARCH. & STRUCT.)
7.06	PREFINISHED FOAM EXPANSION JOINT MATERIAL
7.28	STANDING SEAM ICE & SNOW GUARDS (SEE PROJECT MANUAL)
7.39	STANDING SEAM ROOF CRICKET W/ MATCHING VALLEY FLASHING
7.40	STANDING SEAM METAL ROOFING
7.41	METAL WALL PANEL (PROVIDE ALL REQ. TRIM & FLASHING)
7.70	PRE-FINISHED SHEET METAL FLASHING
7.73	PRE-FINISHED METAL FASCIA
7.85	PRE-FINISHED METAL GUTTER & EAVE TRIM (W/ ALL REQ'D FLASHING & SUPPORTS).
7.86	PRE-FINISHED METAL DOWNSPOUTS (W/ ALL REQ'D FLASHING & SUPPORTS). PROVIDE SPLASH PAD AT EACH DOWNSPOUT THAT RETURNS TO GRADE.
8.70	SKYLIGHT UNIT
9.73	FINISH MATERIAL TO MATCH FASCIA
10.06	CAST ALUMINUM DIMENSIONAL LOGO & LETTER SIGNAGE, CUSTOM FONT STYLE
10.08	INTERNALLY ILLUMINATED PANEL SIGNAGE
22.03	ROOF DRAIN
23.12	LOUVER (SEE MECHANICAL)
32.12	SPLASH BLOCK

EXTERIOR FINISH LEGEND						
TYPE	MARK	MANUFACTURER	STYLE	COLOR/ FINISH	SIZE	NOTES
CLADDING	MP-1	LUX ARCHITECTURAL PRODUCTS	METAL CRAFT SERIES	TEXTURED COFFEE	VARIABLE PROFILE	METAL PANEL @ 'A2' & 'A3' WINDOWS (SEE EXTERIOR ELEVATIONS)
	MP-2	PAC-CLAD	KYNAR 500 OR HYLAR 5000	ANTIQUE BRONZE		
	BR-1	ENDICOTT	EXTRUDED, STACK BOND	DESERT IRONSPOT LIGHT / SMOOTH	NORMAN	33% (RANDOM INSTALL)
	BR-2	ENDICOTT	EXTRUDED, STACK BOND	GOLDEN BUFF / SMOOTH	NORMAN	33% (RANDOM INSTALL)
INFILL	BR-3	BOWERSTON	EXTRUDED, STACK BOND	8515 / SMOOTH	NORMAN	33% (RANDOM INSTALL)
	CMU-1	SEE SPECIFICATIONS				MATCH EXISTING
SOFFIT	MP-3	LUX ARCHITECTURAL PRODUCTS	LUXLAP V-GROOVE	KNOTTY DESERT OAK	6" V-GROOVE	SOFFIT PANEL (SEE RCP)
	MP-4	PAC-CLAD	KYNAR 500 OR HYLAR 5000	ANTIQUE BRONZE		ROOF SOFFIT PANEL, FASCIA (SEE RCP)
METAL ROOF	MR-1	METAL SALES MANUFACTURING CORP.	MAGNA-LOC ROOF PANEL	DARK BRONZE	24 GA., 18" PANEL COVERAGE	STANDING SEAM



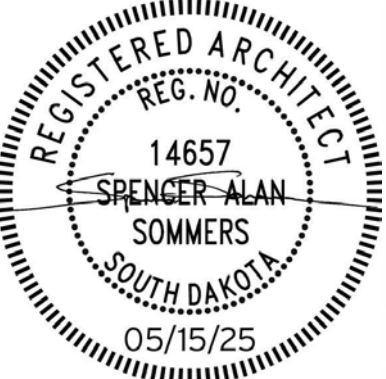
1108 S. Main St. 102  
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CO-OP PROJECT NO: 2418



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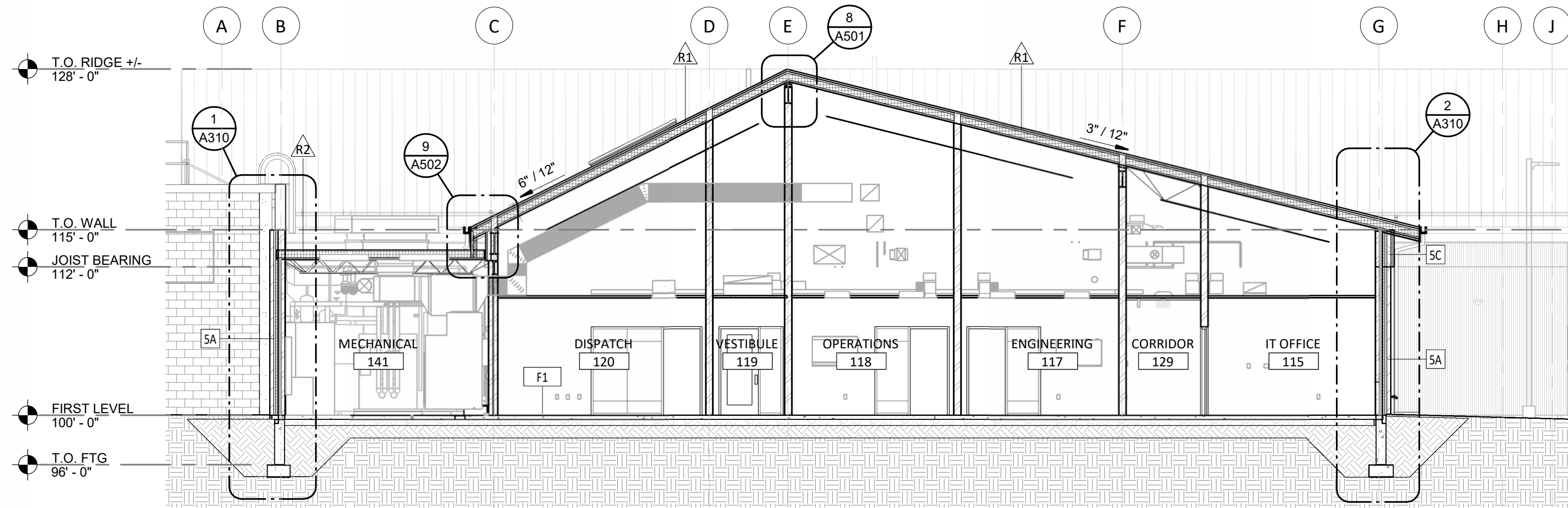
NORTHERN ELECTRIC  
NORTHERN ELECTRIC COOPERATIVE  
BATH, SOUTH DAKOTA

SHEET TITLE:

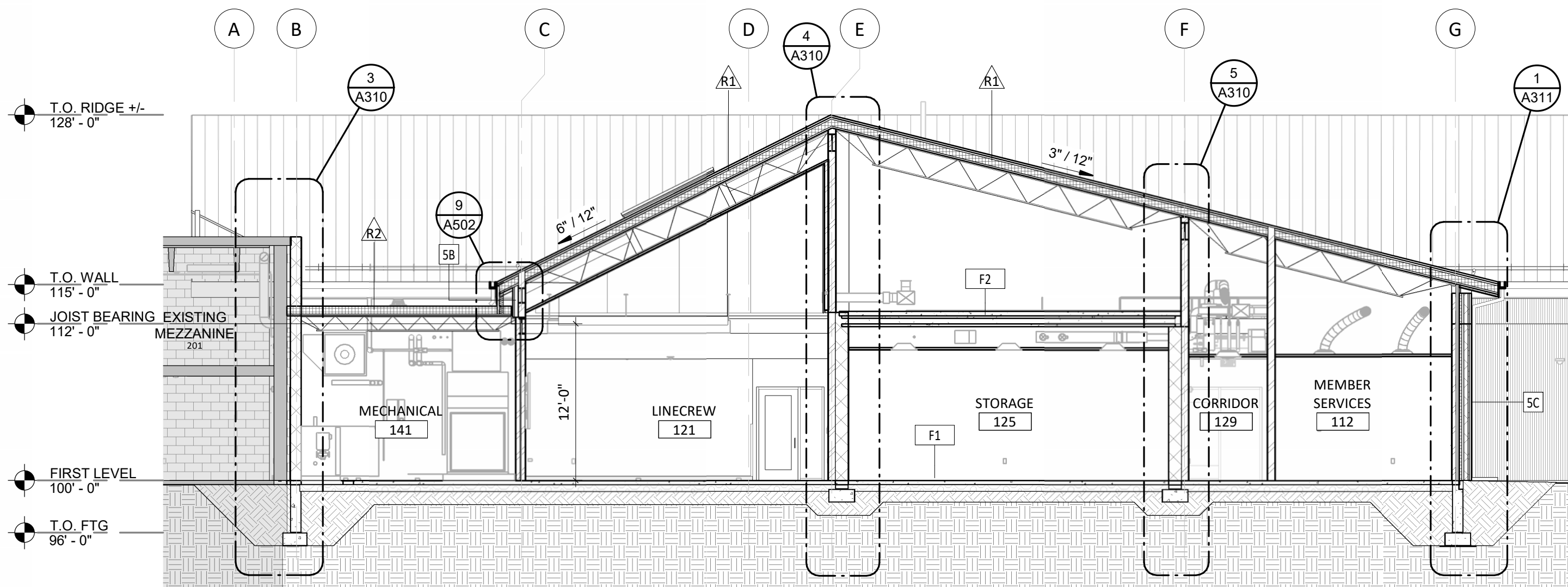
EXTERIOR ELEVATIONS

A200

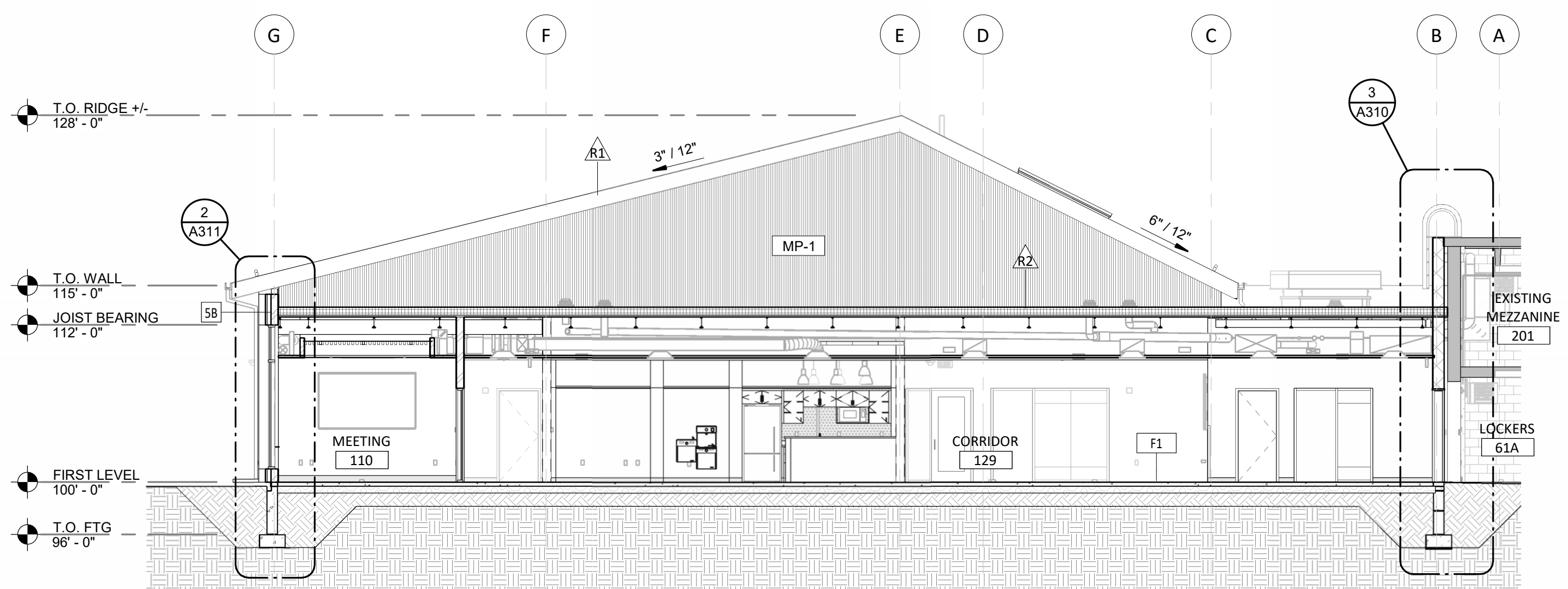




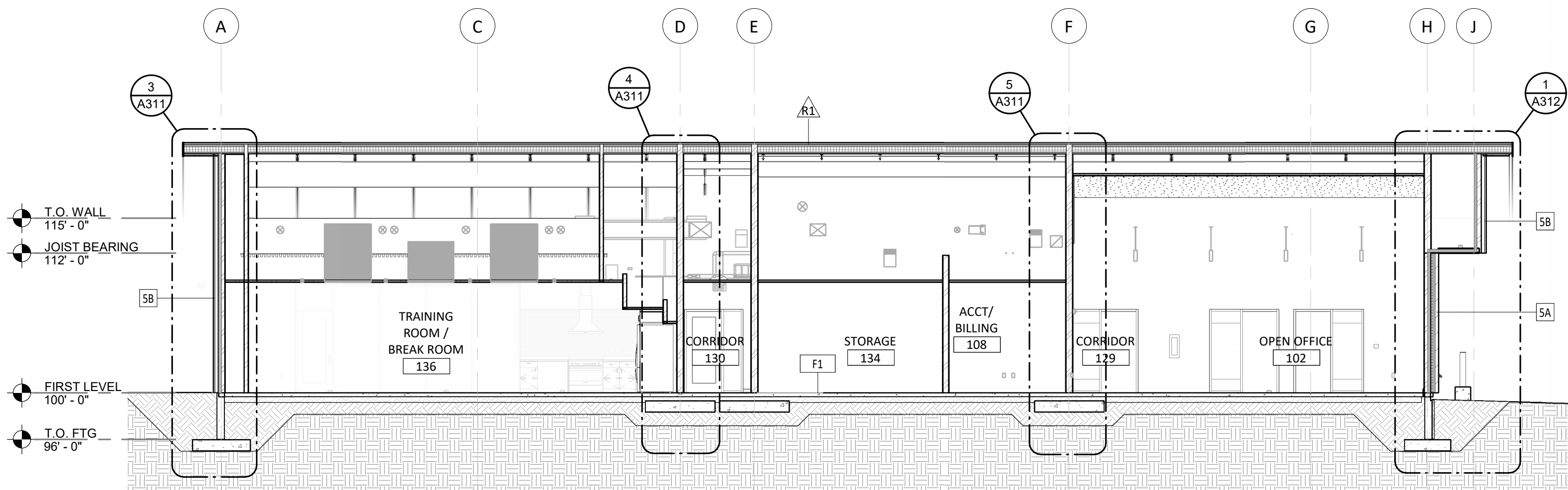
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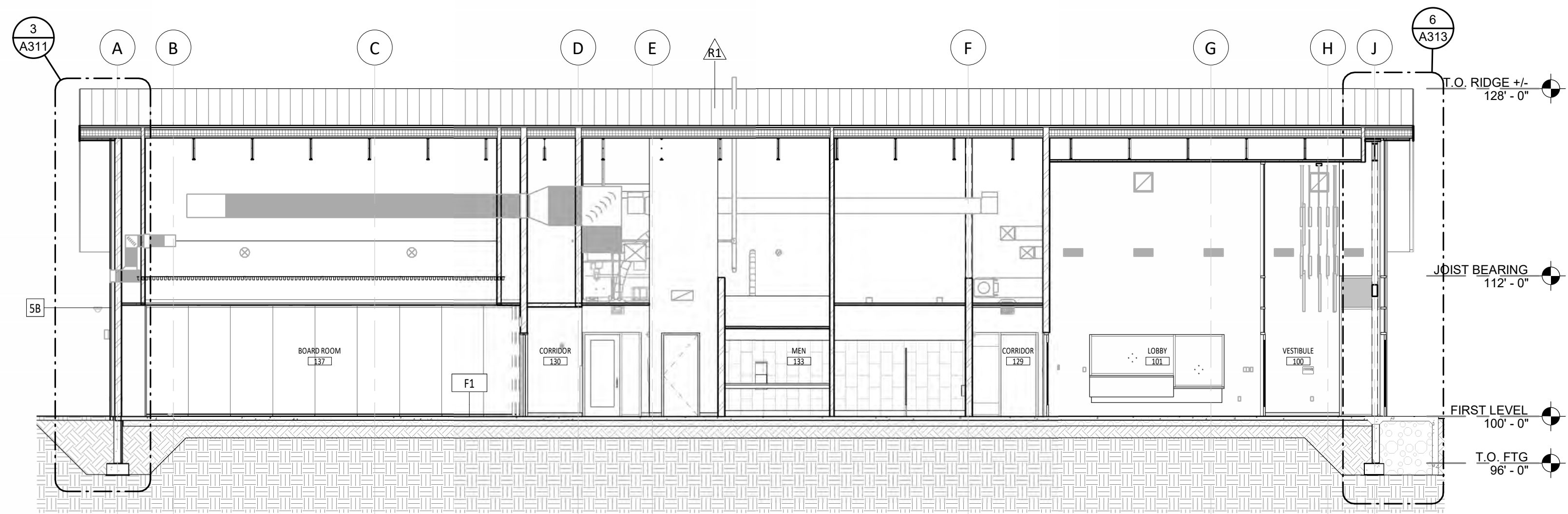
2 BUILDING SECTION  
1/8" = 1'-0"



3 BUILDING SECTION  
1/8" = 1'-0"

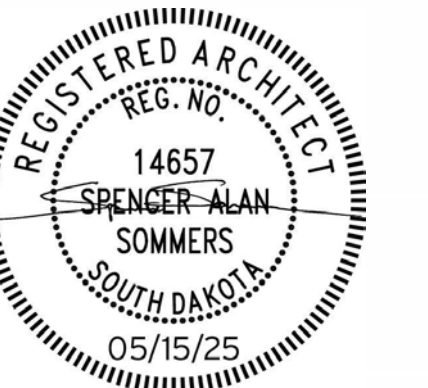


4 BUILDING SECTION  
1/8" = 1'-0"



5 BUILDING SECTION  
1/8" = 1'-0"

CO-OP PROJECT NO: 2418



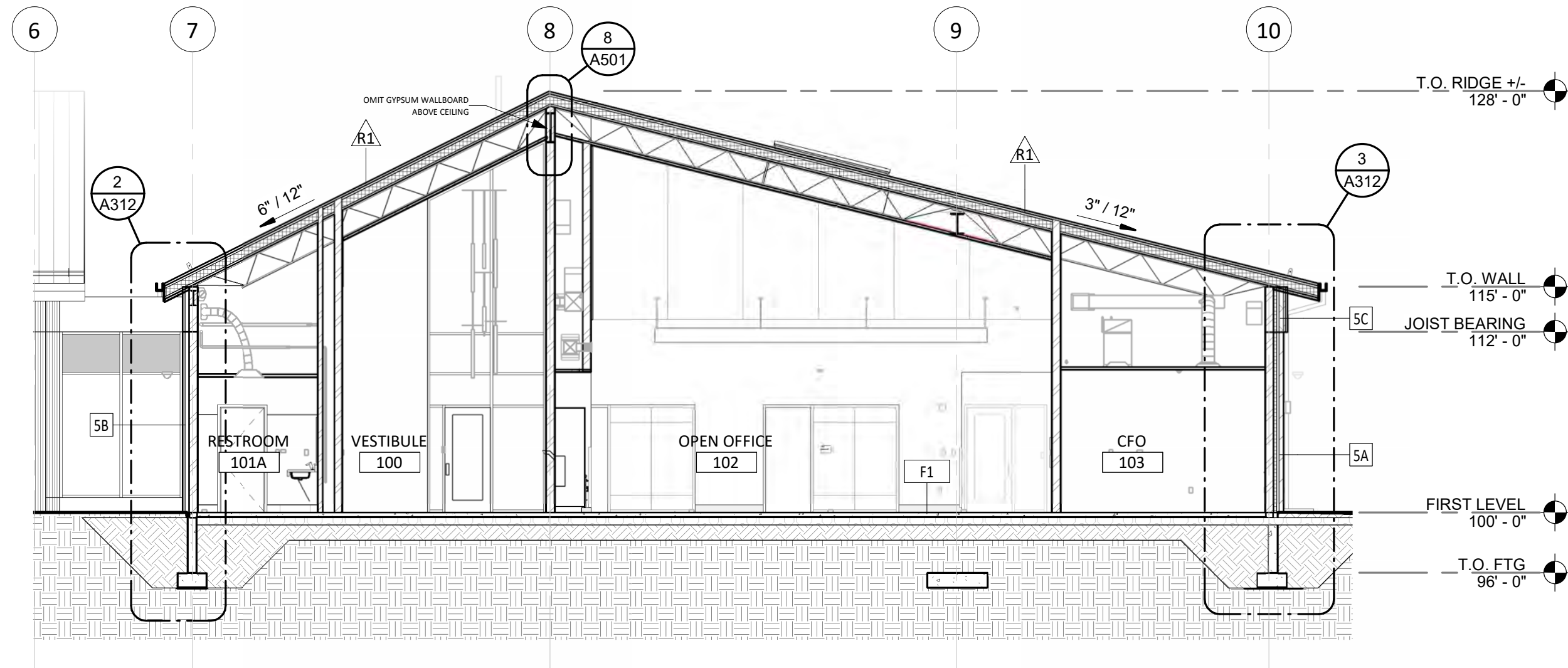
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NORTHERN ELECTRIC  
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BATH, SOUTH DAKOTA

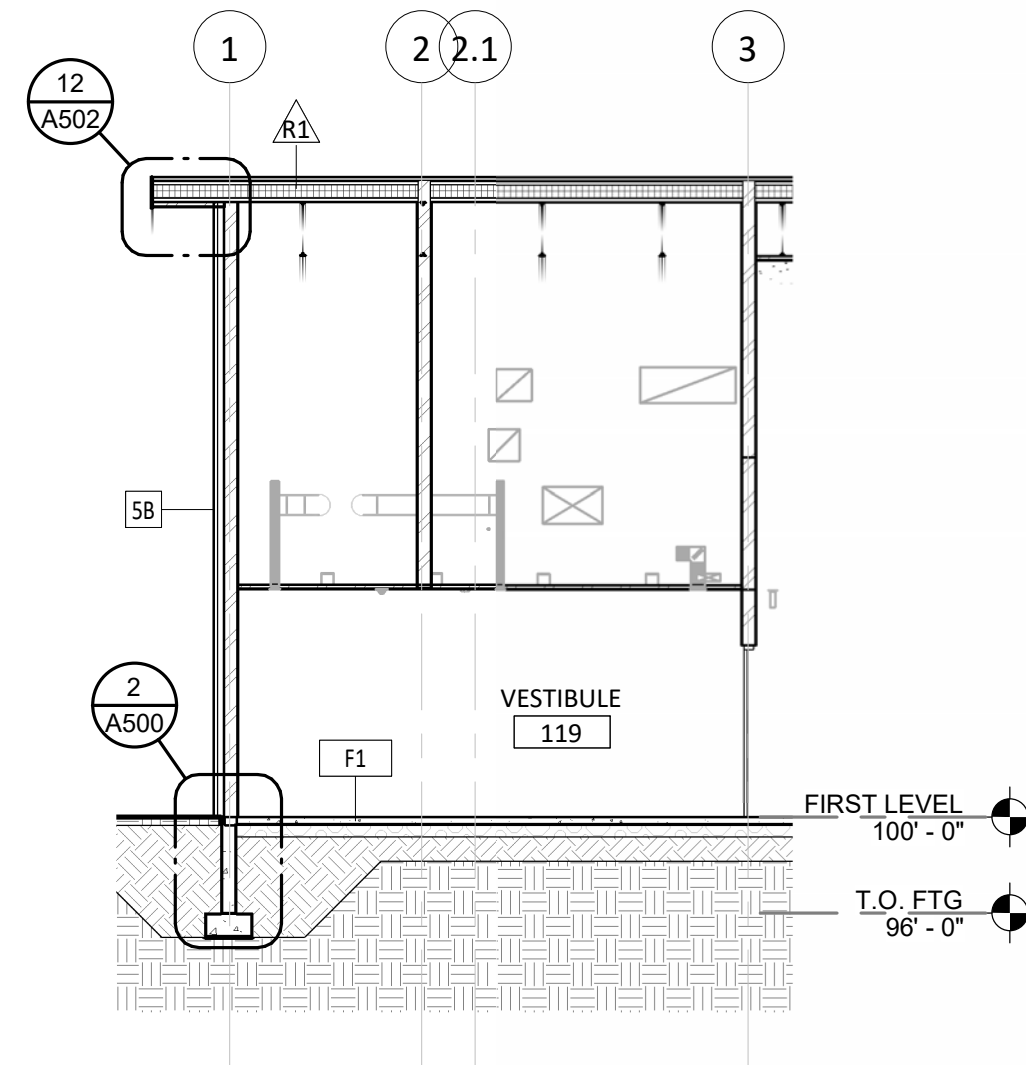
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BUILDING SECTIONS

A300

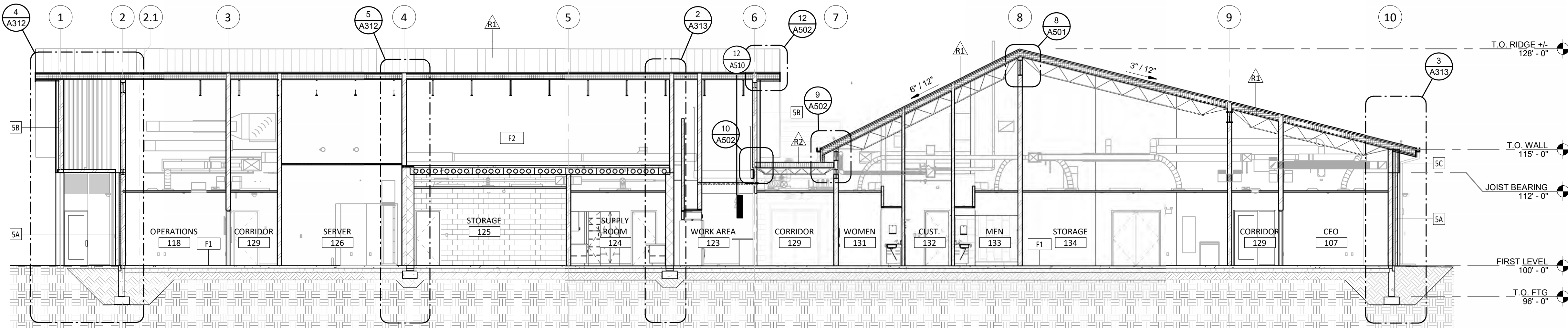




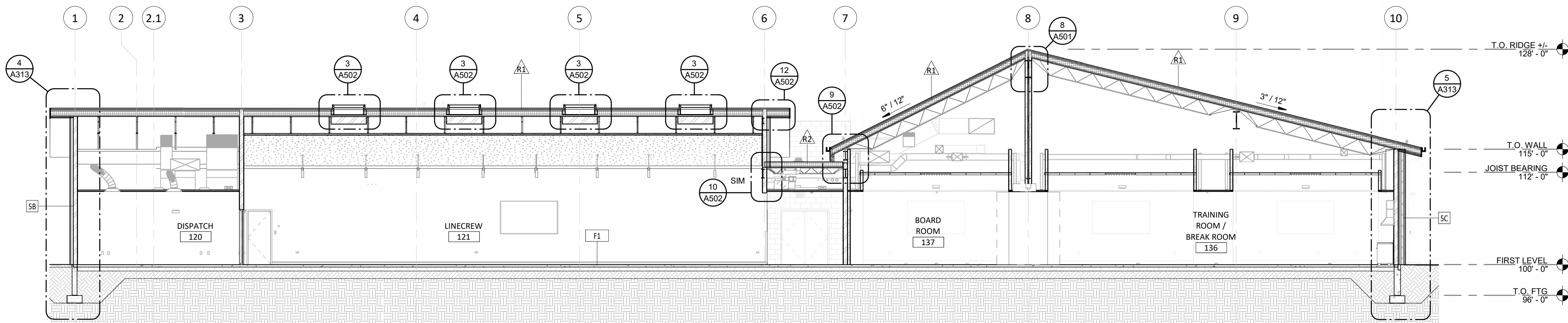
1 BUILDING SECTION  
1/8" = 1'-0"



2 SECTION THRU VESTIBULE 119  
1/8" = 1'-0"

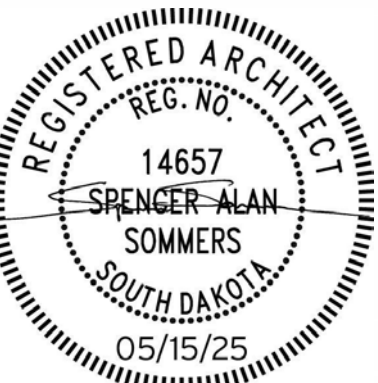


3 BUILDING SECTION  
1/8" = 1'-0"



4 BUILDING SECTION  
1/8" = 1'-0"

CO-OP PROJECT NO: 2418



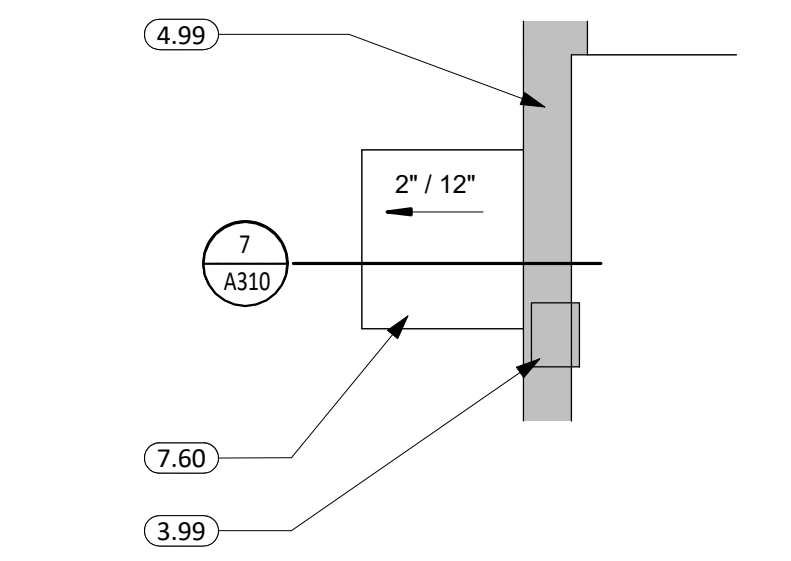
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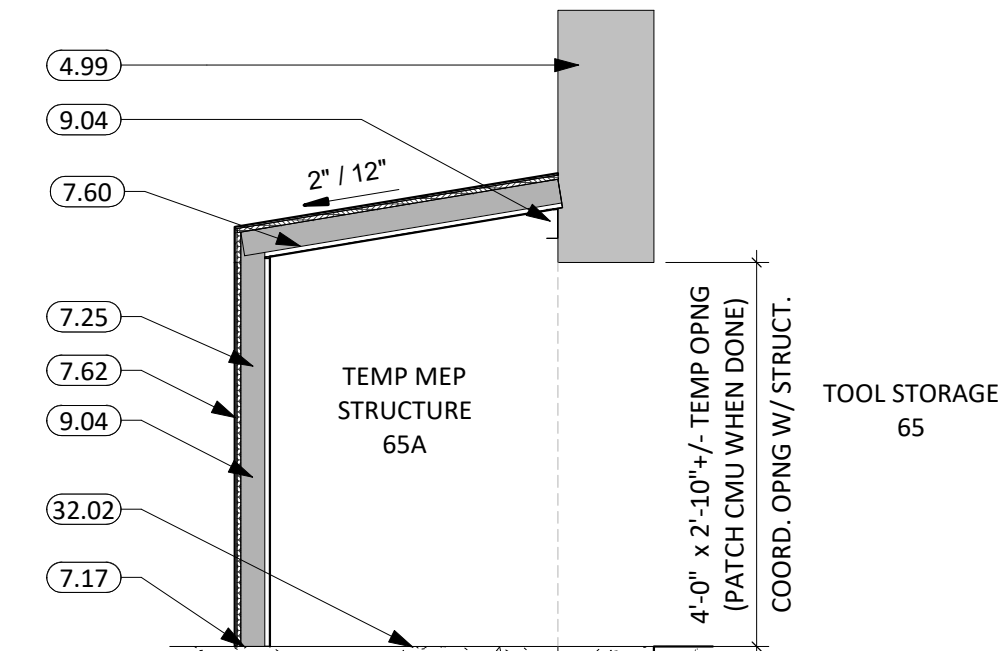
PROJECT:  
NORTHERN ELECTRIC  
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BATH, SOUTH DAKOTA

SHEET TITLE:  
BUILDING SECTIONS

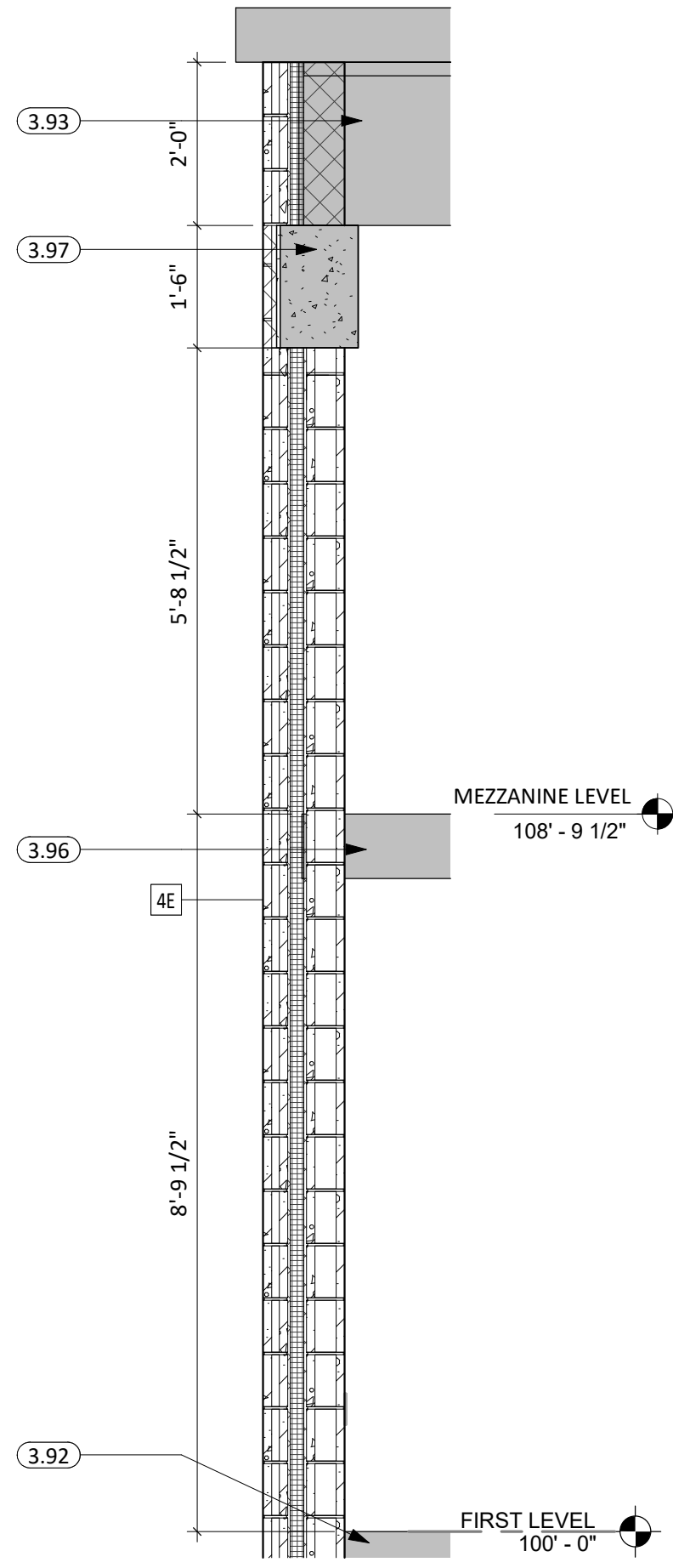




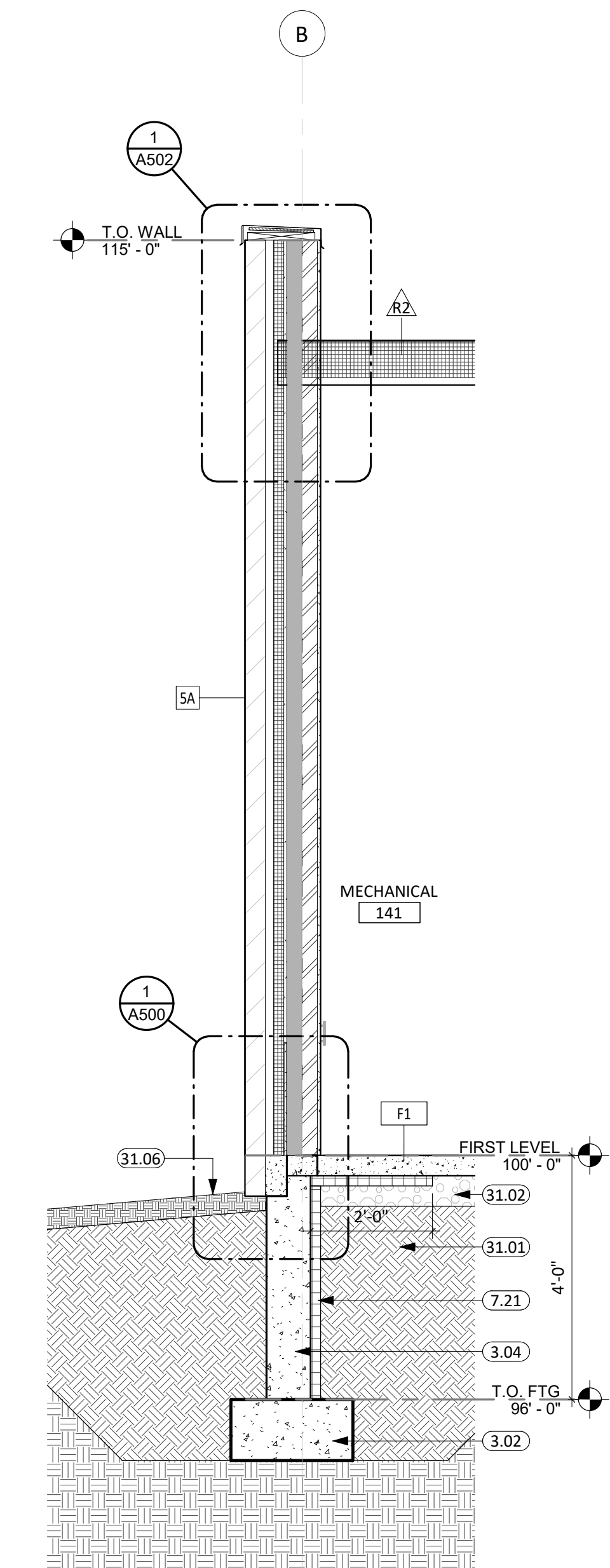
6 TEMP MEP STRUCTURE ROOF  
1/4" = 1'-0"



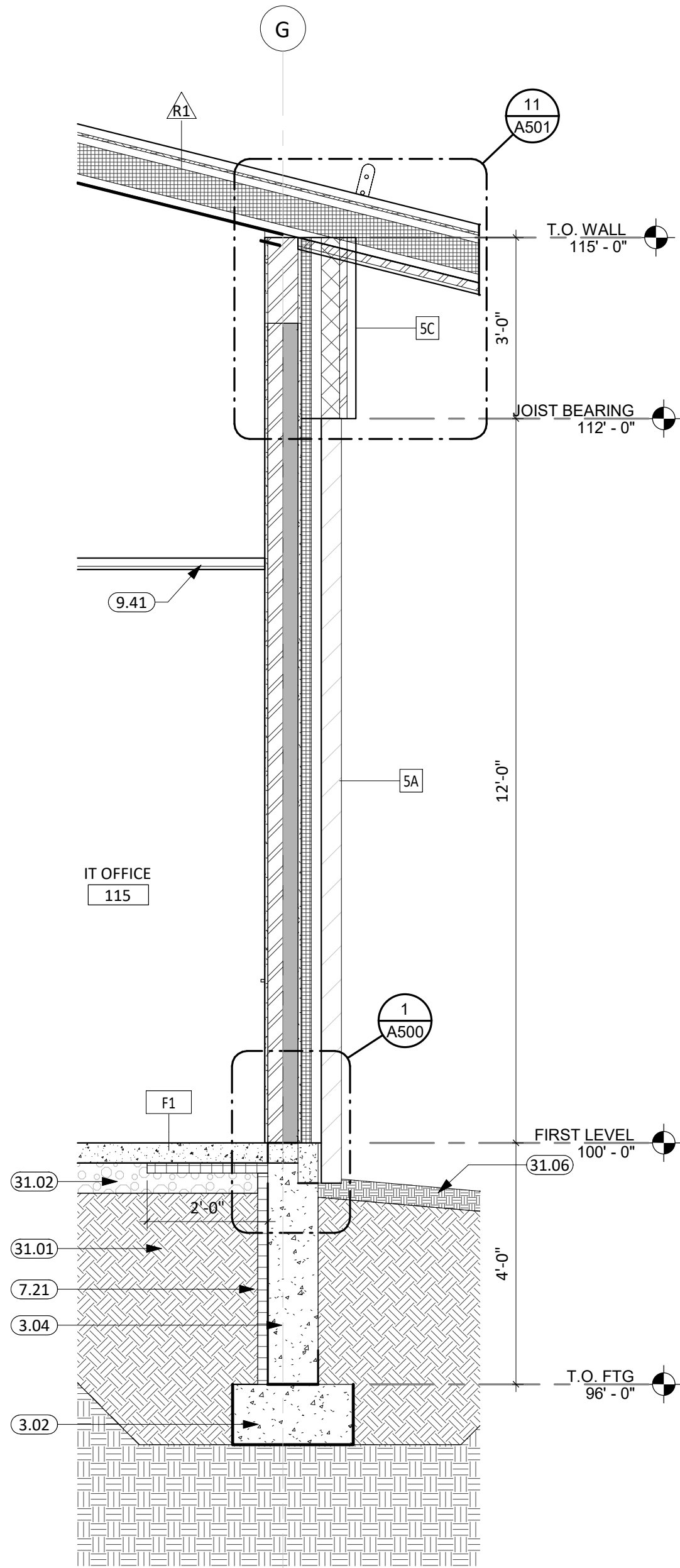
7 SECTION @ TEMP STRUCTURE  
1/2" = 1'-0"



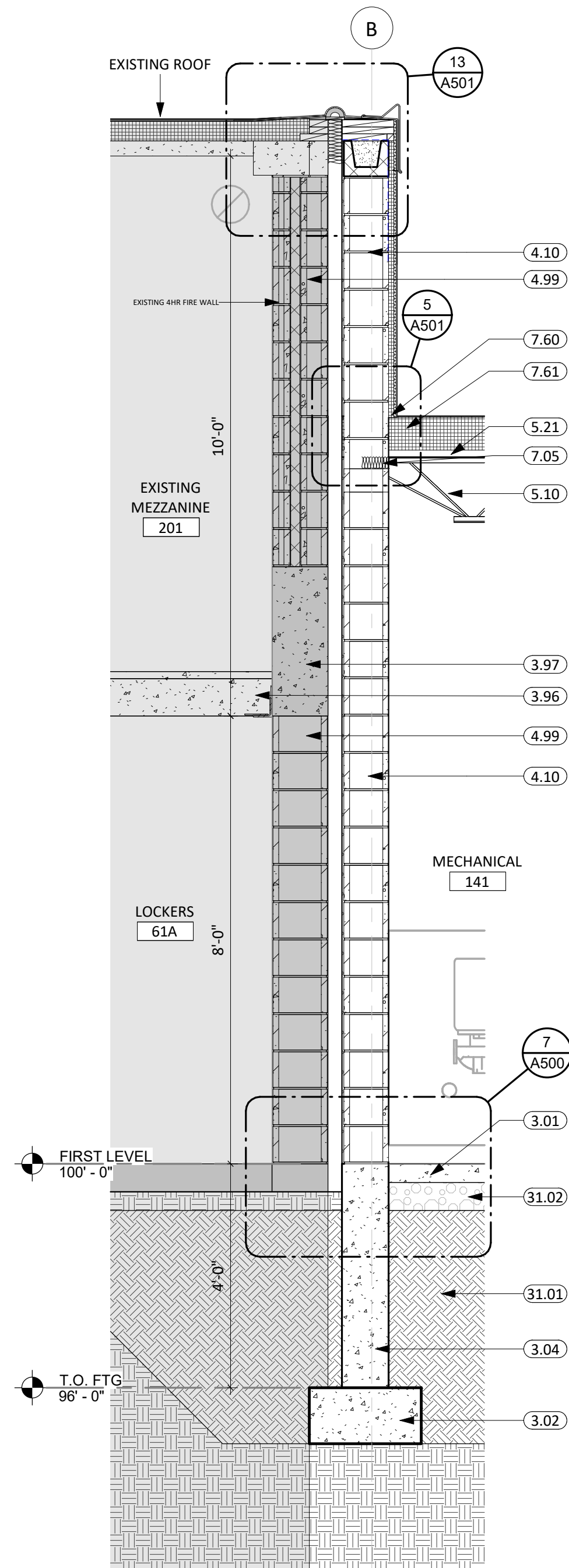
8 WALL SECTION  
1/2" = 1'-0"



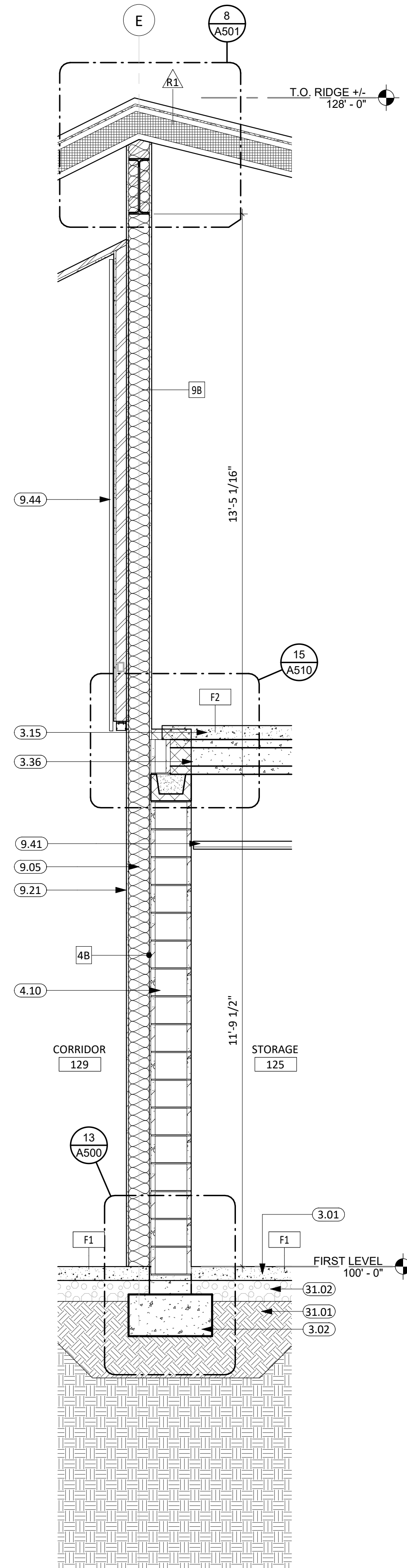
1 WALL SECTION  
1/2" = 1'-0"



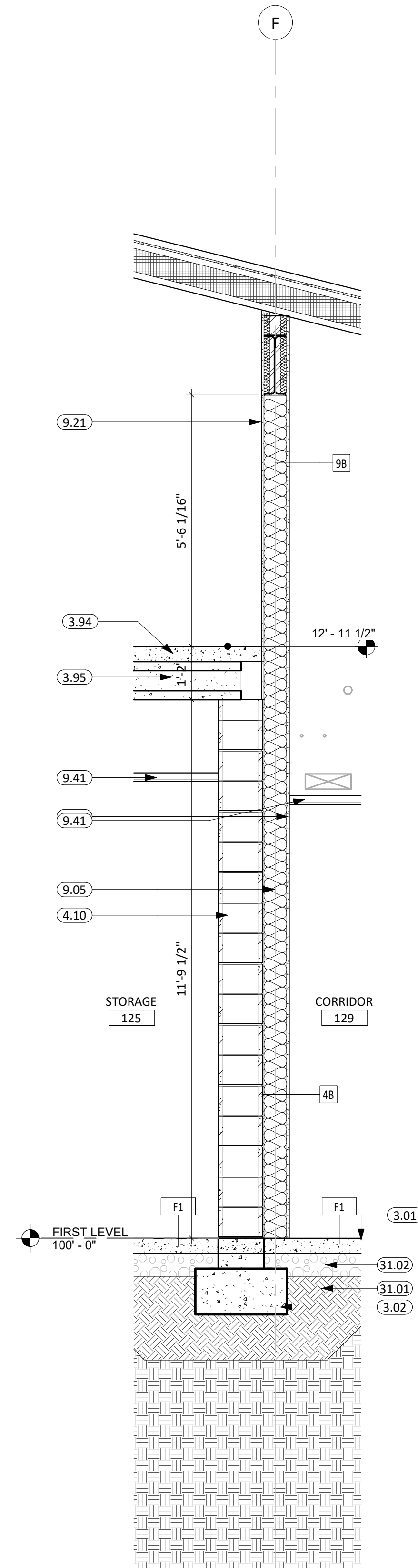
2 WALL SECTION  
1/2" = 1'-0"



3 WALL SECTION  
1/2" = 1'-0"

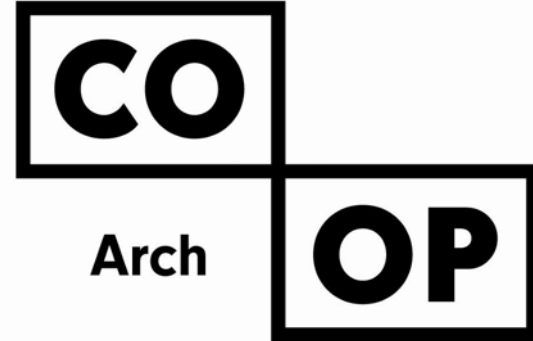


4 WALL SECTION  
1/2" = 1'-0"



5 WALL SECTION  
1/2" = 1'-0"

KEYNOTE SCHEDULE	
3.01	CONC. FLOOR SLAB ON GRADE (SEE STRUCT. FOR THICKNESS AND REINF.) w/ 15 MIL. VAPOR BARRIER BELOW
3.02	CONT. CONC. FOOTING (SEE STRUCTURAL PLANS)
3.04	CONT. CONC. FOUNDATION WALL (SEE STRUCTURAL PLANS)
3.15	4" CONCRETE TOPPING SLAB (SEE STRUCTURAL PLANS)
3.36	10" PRECAST CORE FLOOR (SEE STRUCTURAL PLANS)
3.92	EXISTING CONCRETE FLOOR
3.93	EXISTING PRECAST ROOF DECK
3.94	CONCRETE FLOOR TOPPING (SEE STRUCTURAL PLANS)
3.95	PRECAST CORE FLOOR (SEE STRUCTURAL PLANS)
3.96	EXISTING PRECAST FLOOR STRUCTURE TO REMAIN
3.97	EXISTING PRECAST STRUCTURAL BEAM TO REMAIN (SEE STRUCTURAL PLANS)
3.99	EXISTING CONCRETE COLUMN
4.10	CMU MASONRY UNIT
4.99	EXISTING MASONRY WALL
5.10	STEEL JOIST (SEE ARCH. & STRUCT.)
5.21	STEEL ROOF DECK (SEE ARCH. & STRUCT.)
7.05	MINERAL WOOL BATT INSULATION
7.17	SILL SEALER
7.21	RIGID INSULATION (2" POLYISO - U.O.N.)
7.25	SPRAY APPLIED FOAM INSULATION (3" MIN.)
7.60	FULLY ADHERED EPDM SINGLE MEMBRANE ROOF (WRAP PARAPET WHERE OCCURS)
7.61	POLYISOCYANURATE INSULATION SYSTEM (R-40 MIN.)
7.62	MEMBRANE FLASHING
9.04	3 5/8" STEEL STUD & TRACK FRAMING
9.05	6" STEEL STUD & TRACK FRAMING
9.21	5/8" GYPSUM BOARD
9.41	ACOUSTICAL TILE CEILINGS SYSTEM (COORD. w/ MECH. & ELEC. FOR FIXTURE REQ./LOCATIONS)
9.44	SOUND ABSORPTION PANEL ON CONTINUOUS HANGER BAR, CUSTOM SIZE (BOD: G&S ACOUSTICS, SEE FINISH LEGEND)
31.01	ENGINEERED FILL (COORD. REQ. w/ SOILS REPORT)
31.02	DRAINAGE FILL (COORD. REQ. w/ SOILS REPORT)
31.06	BLACK DIRT
32.02	CONCRETE PAVING



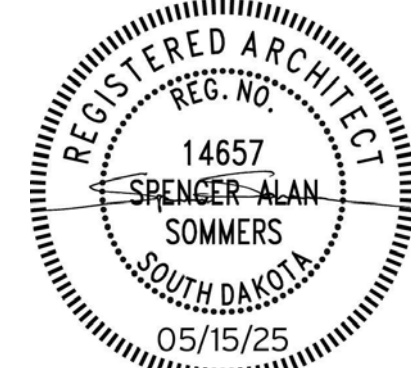
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REVISION SCHEDULE:  
REV. # REV. DSC. REV. DATE

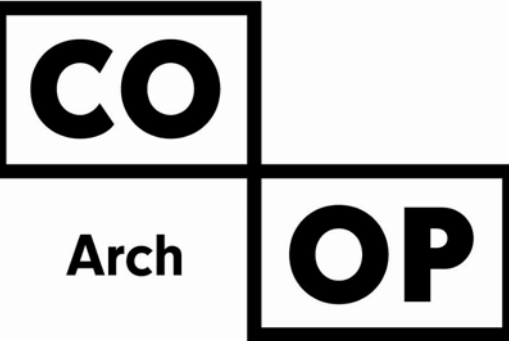
PROJECT:  
NORTHERN ELECTRIC  
NORTHERN ELECTRIC COOPERATIVE  
BATH, SOUTH DAKOTA

SHEET TITLE:  
WALL SECTIONS

A310



KEYNOTE SCHEDULE	
3.01	CONC. FLOOR SLAB ON GRADE (SEE STRUCT. FOR THICKNESS AND REINF.) w/ 15 MIL. VAPOR BARRIER BELOW
3.02	CONT. CONC. FOOTING (SEE STRUCTURAL PLANS)
3.03	CONC. FOOTING PAD (SEE STRUCTURAL PLANS)
3.04	CONT. CONC. FOUNDATION WALL (SEE STRUCTURAL PLANS)
7.21	RIGID INSULATION (2" POLYISO - U.O.N.)
9.41	ACOUSTICAL TILE CEILINGS SYSTEM (COORD. w/ MECH. & ELEC. FOR FIXTURE REQ./LOCATIONS)
31.01	ENGINEERED FILL (COORD. REQ. w/ SOILS REPORT)
31.02	DRAINAGE FILL (COORD. REQ. w/ SOILS REPORT)
31.06	BLACK DIRT

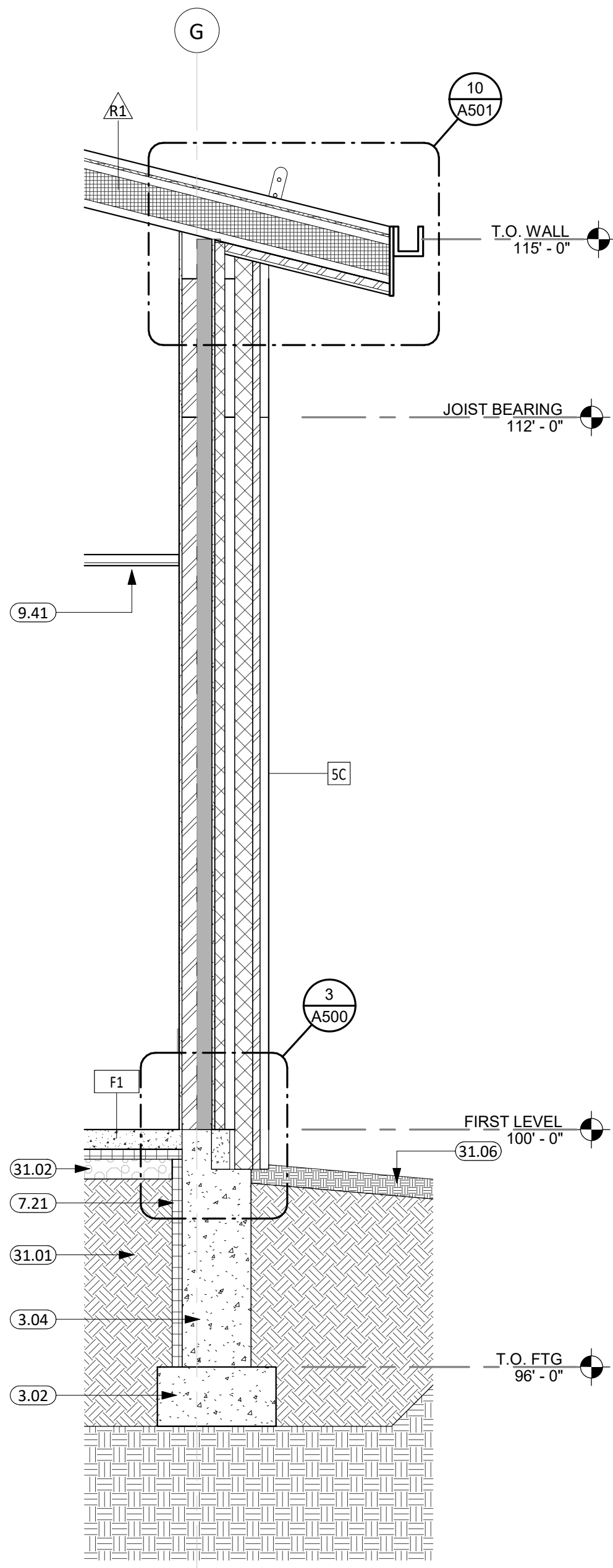


1108 S. Main St. 102  
Aberdeen, SD 57401  
Phone: 605-725-4852

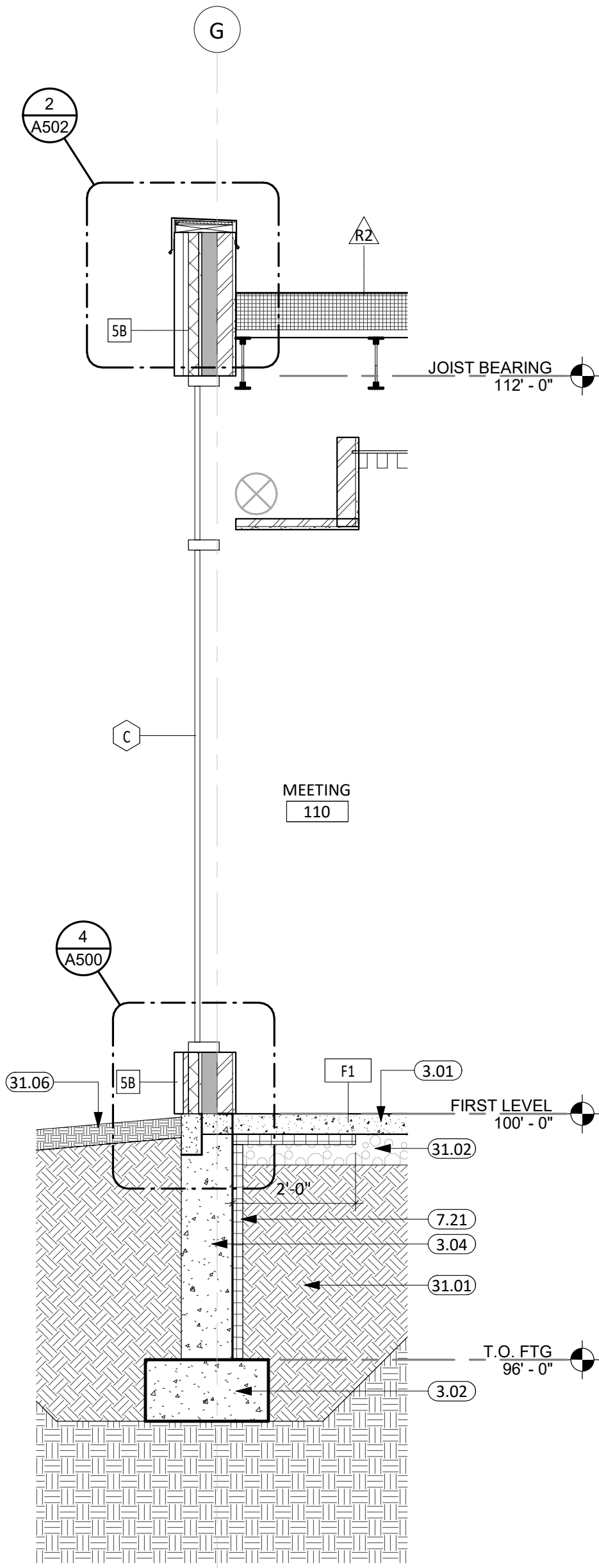
600 Kansas City St. #1  
Rapid City, SD 57701  
Phone: 605-716-3652

440 E. 8th St. 221  
Sioux Falls, SD 57103  
Phone: 605-334-9999

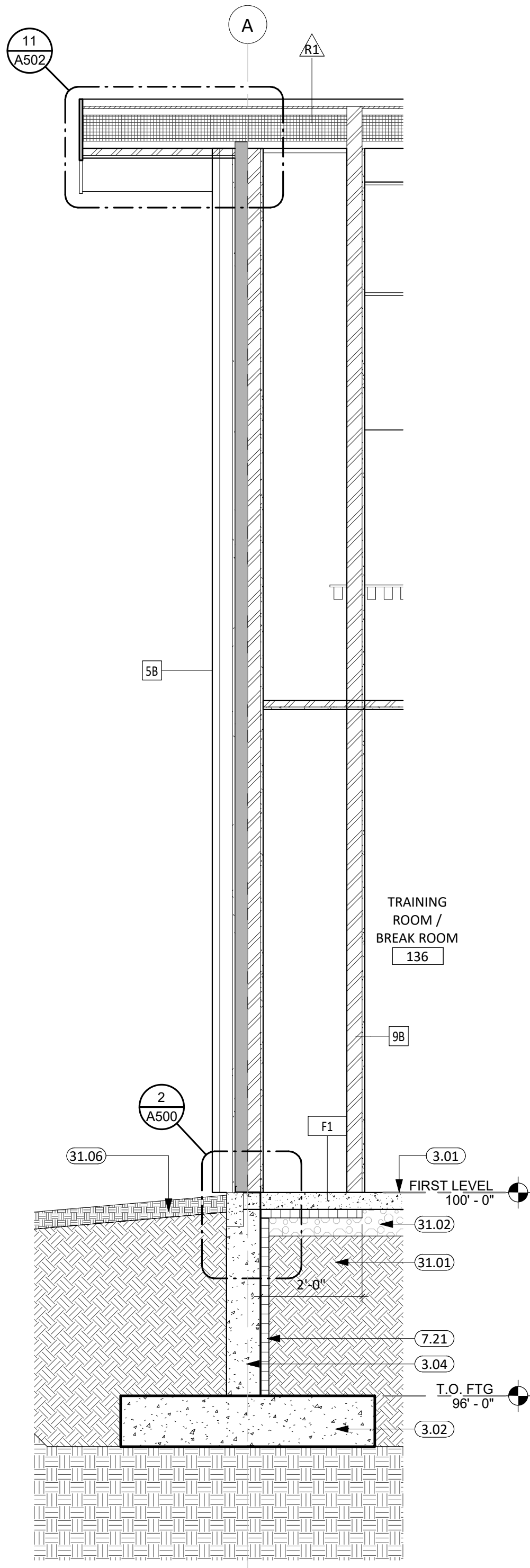
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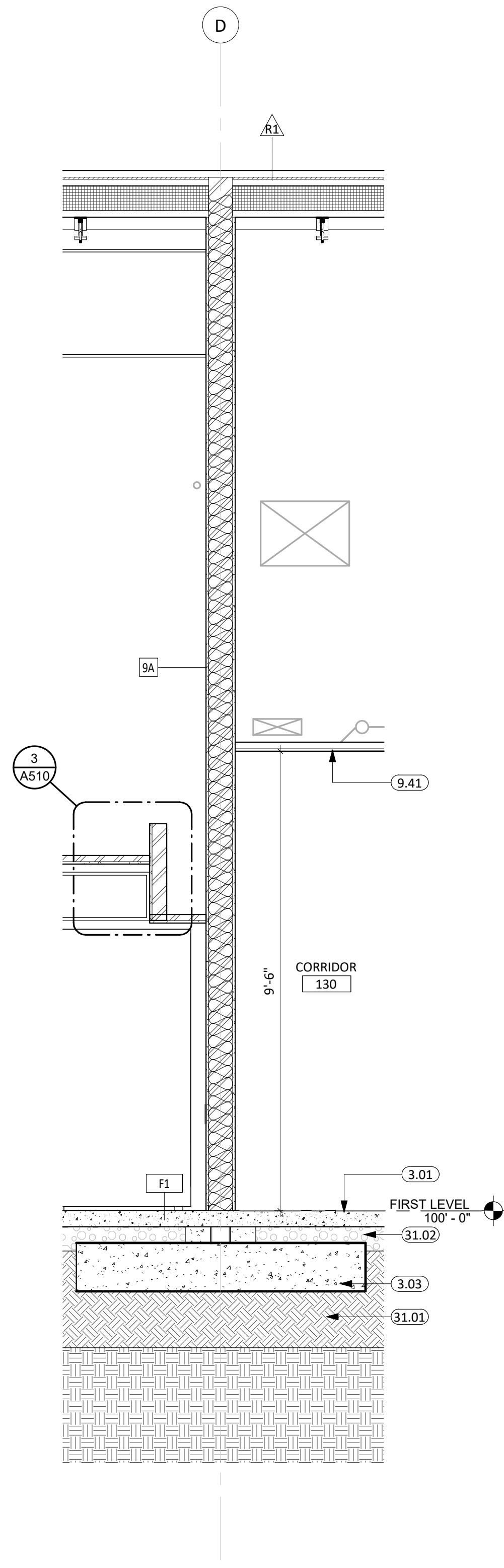
1 WALL SECTION  
1/2" = 1'-0"



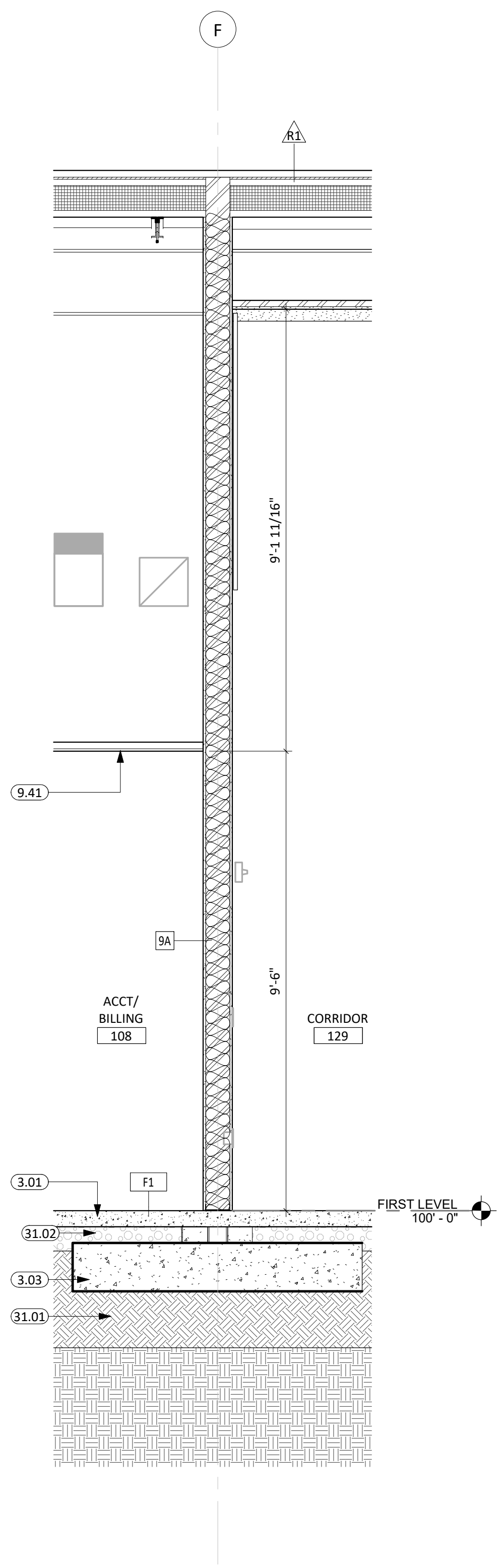
2 WALL SECTION  
1/2" = 1'-0"



3 WALL SECTION  
1/2" = 1'-0"

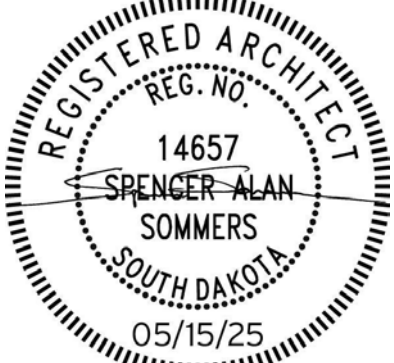


4 WALL SECTION  
1/2" = 1'-0"



5 WALL SECTION  
1/2" = 1'-0"

CO-OP PROJECT NO: 2418



ISSUE: 5/15/2025 100% CONSTRUCTION DOCUMENTS

REVISION SCHEDULE:  
REV. # REV. DSC. REV. DATE

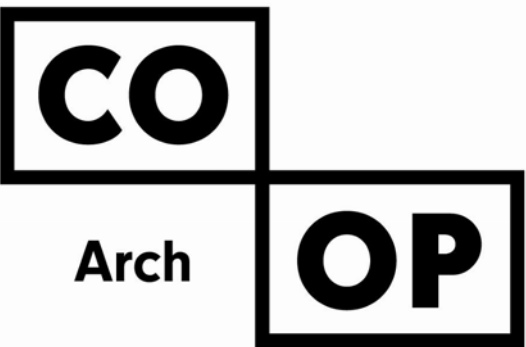
PROJECT:  
NORTHERN ELECTRIC  
NORTHERN ELECTRIC COOPERATIVE  
BATH, SOUTH DAKOTA

SHEET TITLE:  
WALL SECTIONS

A311



KEYNOTE SCHEDULE	
3.01	CONC. FLOOR SLAB ON GRADE (SEE STRUCT. FOR THICKNESS AND REINF.) w/ 15 MIL. VAPOR BARRIER BELOW
3.02	CONT. CONC. FOOTING (SEE STRUCTURAL PLANS)
3.04	CONT. CONC. FOUNDATION WALL (SEE STRUCTURAL PLANS)
3.14	SIGNAGE ANCHORS EMBEDDED IN CONC. (COORD. SIGNAGE ANCHOR REQ. W/ SUPPLIER)
7.21	RIGID INSULATION (2" POLYISO - U.O.N.)
9.41	ACOUSTICAL TILE CEILINGS SYSTEM (COORD. w/ MECH. & ELEC. FOR FIXTURE REQ./LOCATIONS)
9.47	5/8" GYPSUM BOARD ON 1 1/2" METAL FURRING CHANNEL. PROVIDE METAL FURRING CHANNEL AT 16" O.C., PERPENDICULAR TO ROOF FRAMING.
9.48	5/8" GYPSUM BOARD ON METAL SUSPENSION SYSTEM (COORD. w/ MECH. & ELEC. FOR FIXTURE REQ./LOCATIONS)
31.01	ENGINEERED FILL (COORD. REQ. w/ SOILS REPORT)
31.02	DRAINAGE FILL (COORD. REQ. w/ SOILS REPORT)
31.06	BLACK DIRT

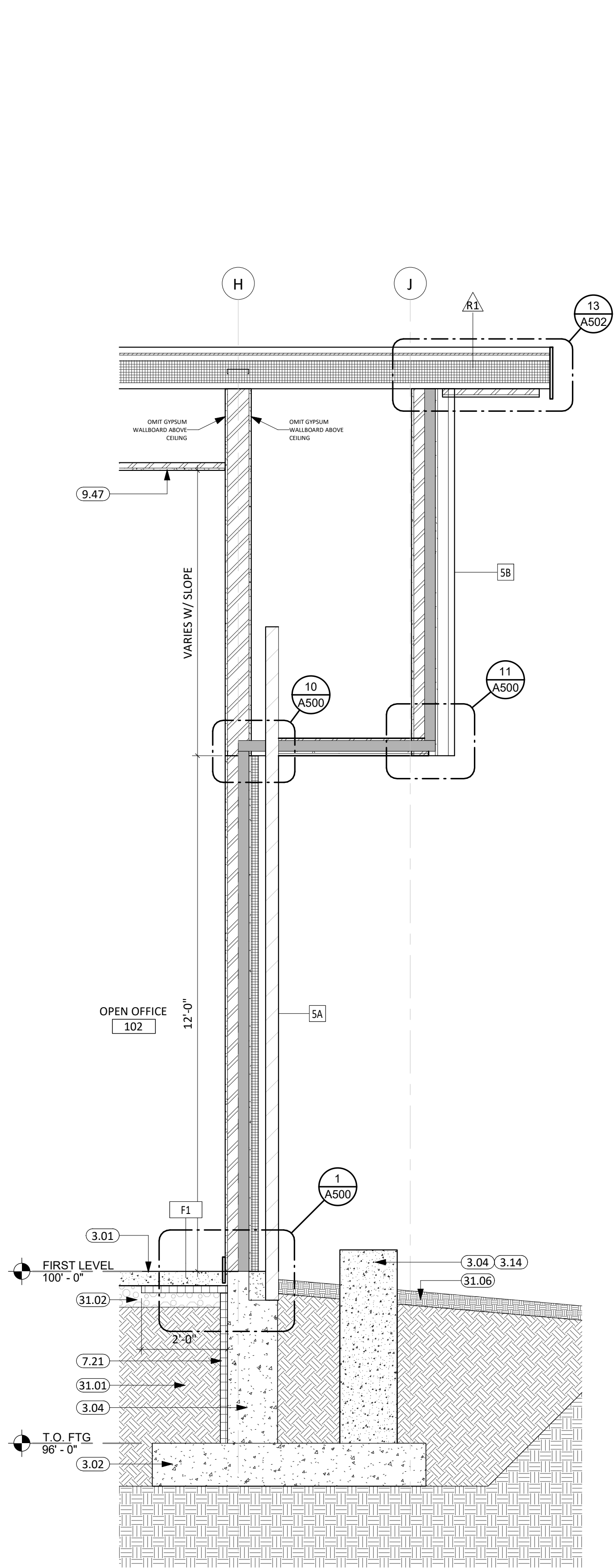


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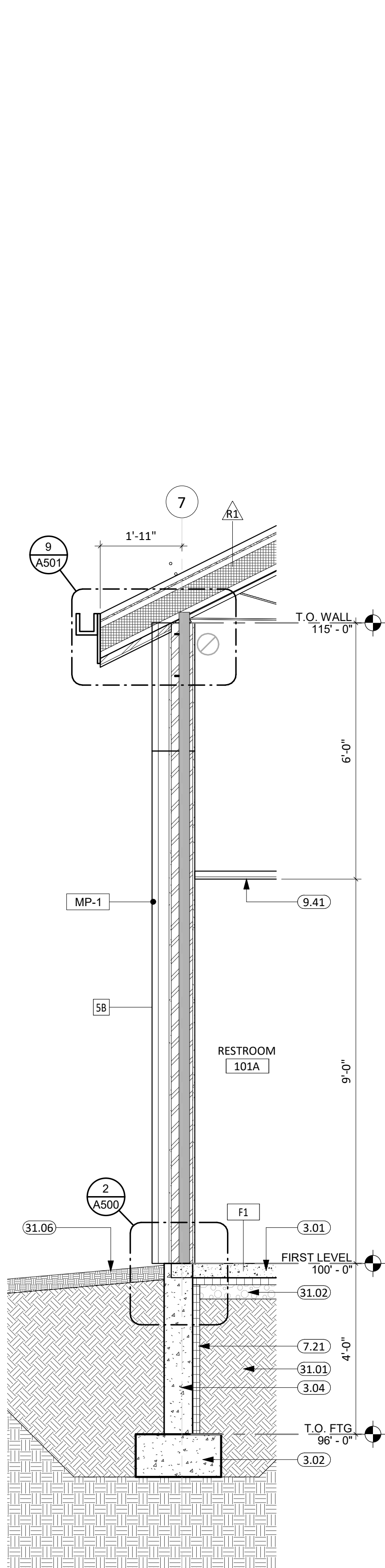
600 Kansas City St. #1  
Rapid City, SD 57701  
Phone: 605-716-3652

440 E. 8th St. 221  
Sioux Falls, SD 57103  
Phone: 605-334-9999

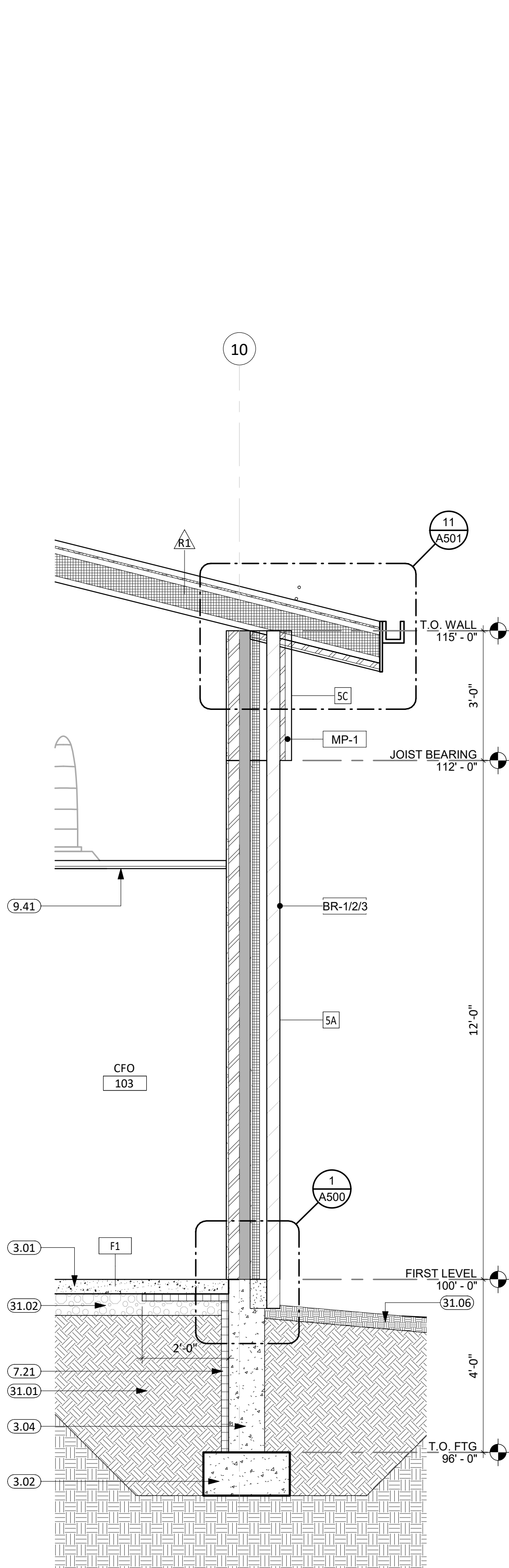
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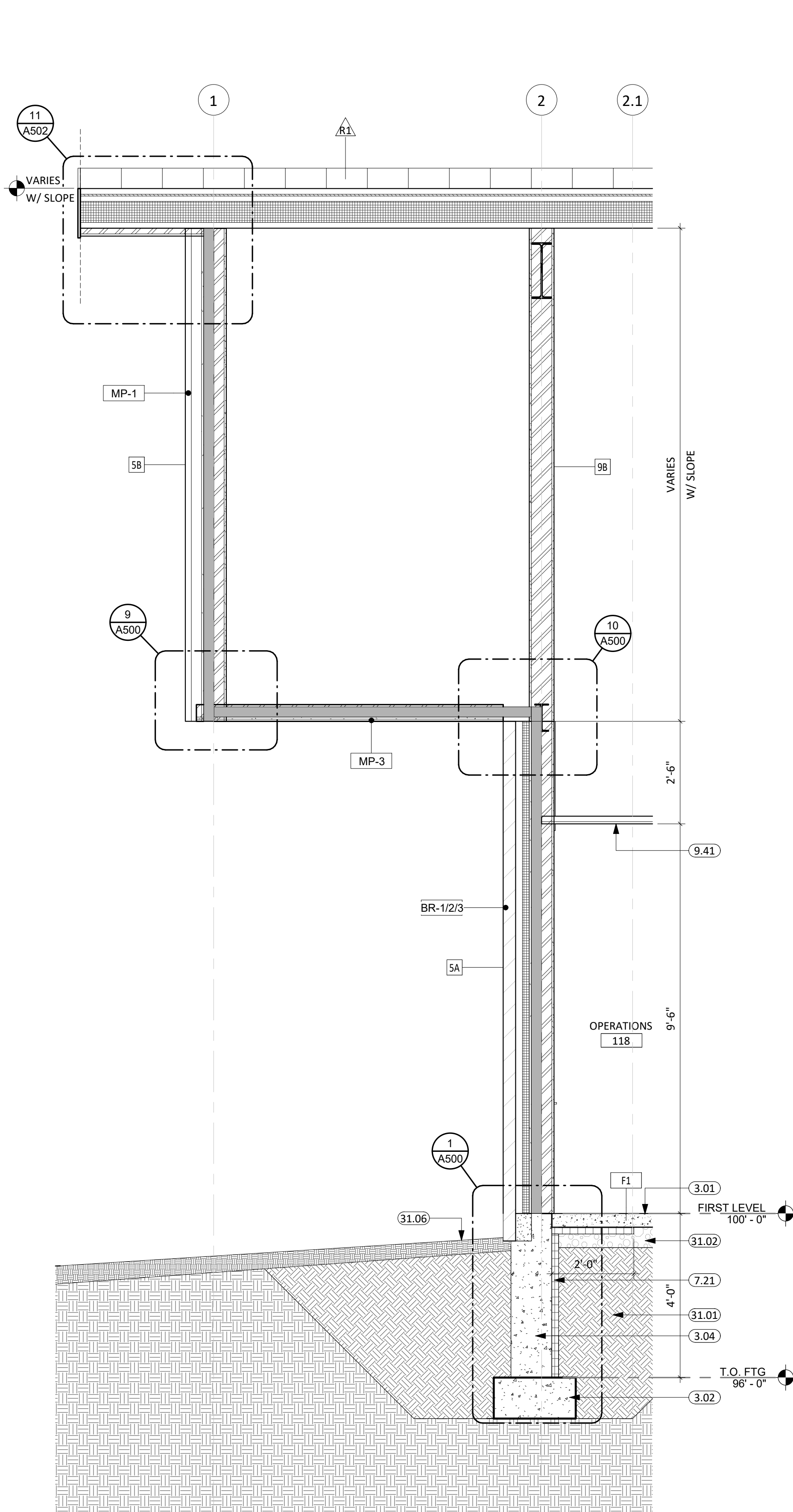
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1/2" = 1'-0"



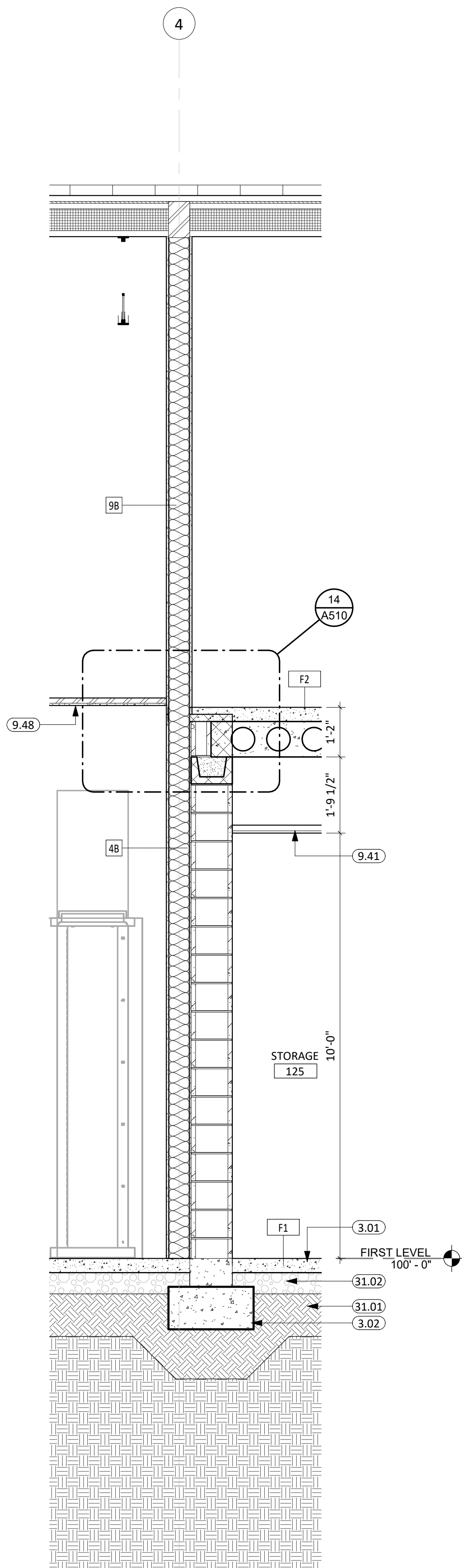
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1/2" = 1'-0"



3 WALL SECTION  
1/2" = 1'-0"

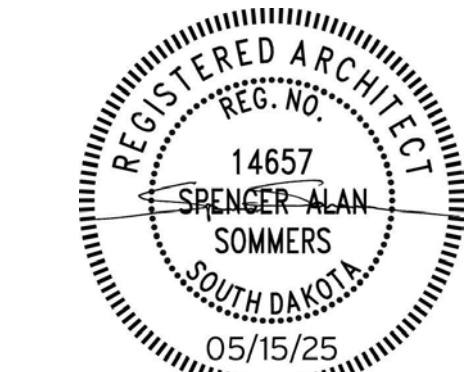


4 WALL SECTION  
1/2" = 1'-0"



5 WALL SECTION  
1/2" = 1'-0"

CO-OP PROJECT NO: 2418



ISSUE:  
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REVISION SCHEDULE:  
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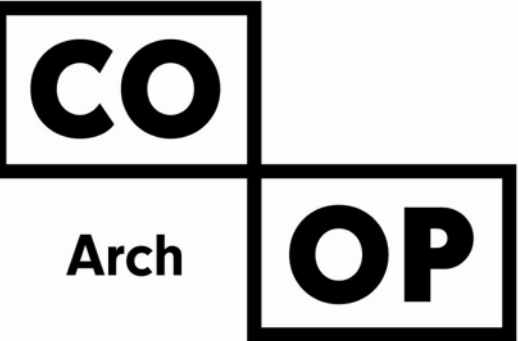
PROJECT:  
NORTHERN ELECTRIC  
NORTHERN ELECTRIC COOPERATIVE  
BATH, SOUTH DAKOTA

SHEET TITLE:  
WALL SECTIONS

A312



KEYNOTE SCHEDULE	
3.01	CONC. FLOOR SLAB ON GRADE (SEE STRUCT. FOR THICKNESS AND REINF.) w/ 15 MIL. VAPOR BARRIER BELOW
3.02	CONT. CONC. FOOTING (SEE STRUCTURAL PLANS)
3.04	CONT. CONC. FOUNDATION WALL (SEE STRUCTURAL PLANS)
3.06	CONCRETE STOOP w/FROST FREE FOOTING (SEE STRUCTURAL PLANS)
7.21	RIGID INSULATION (2" POLYISO - U.O.N.)
9.41	ACOUSTICAL TILE CEILINGS SYSTEM (COORD. w/ MECH. & ELEC. FOR FIXTURE REQ./LOCATIONS)
31.01	ENGINEERED FILL (COORD. REQ. w/ SOILS REPORT)
31.02	DRAINAGE FILL (COORD. REQ. w/ SOILS REPORT)
31.06	BLACK DIRT

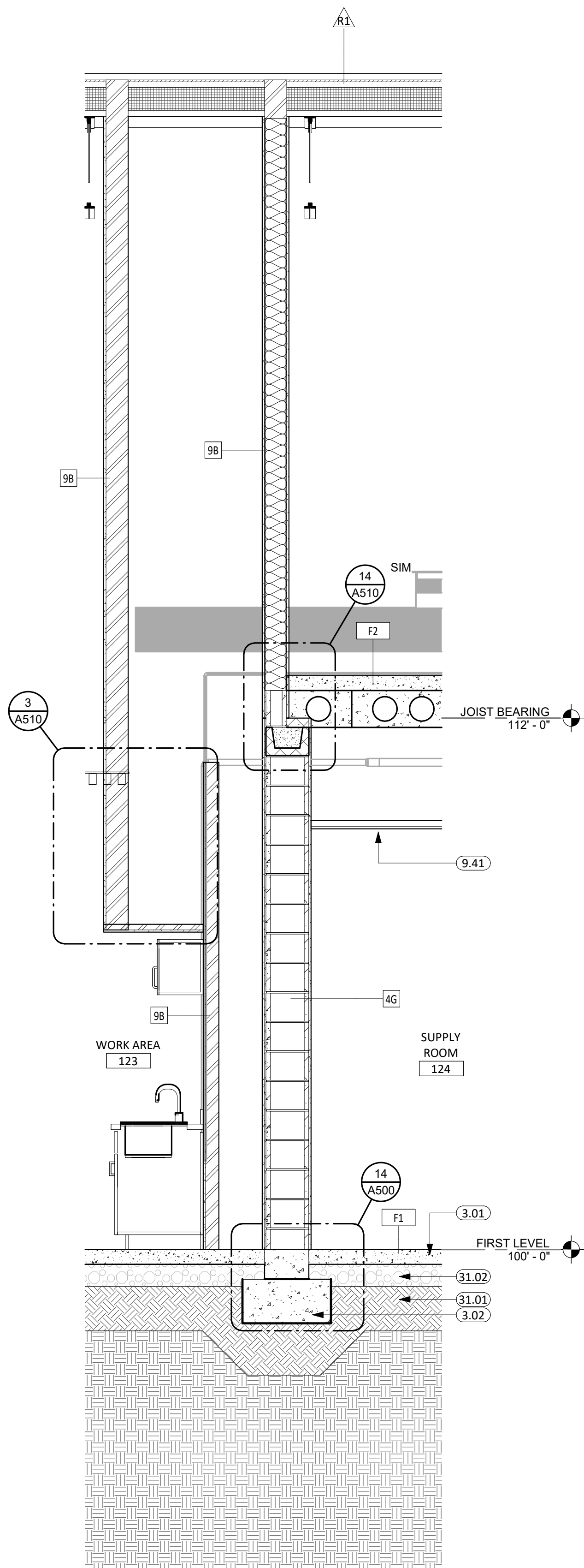


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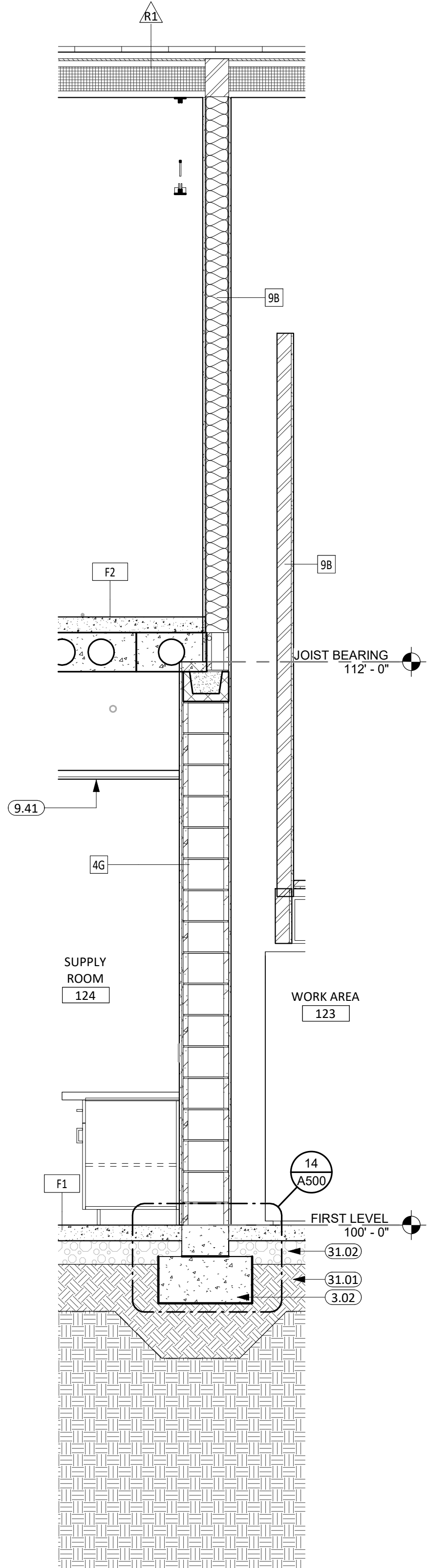
600 Kansas City St. #1  
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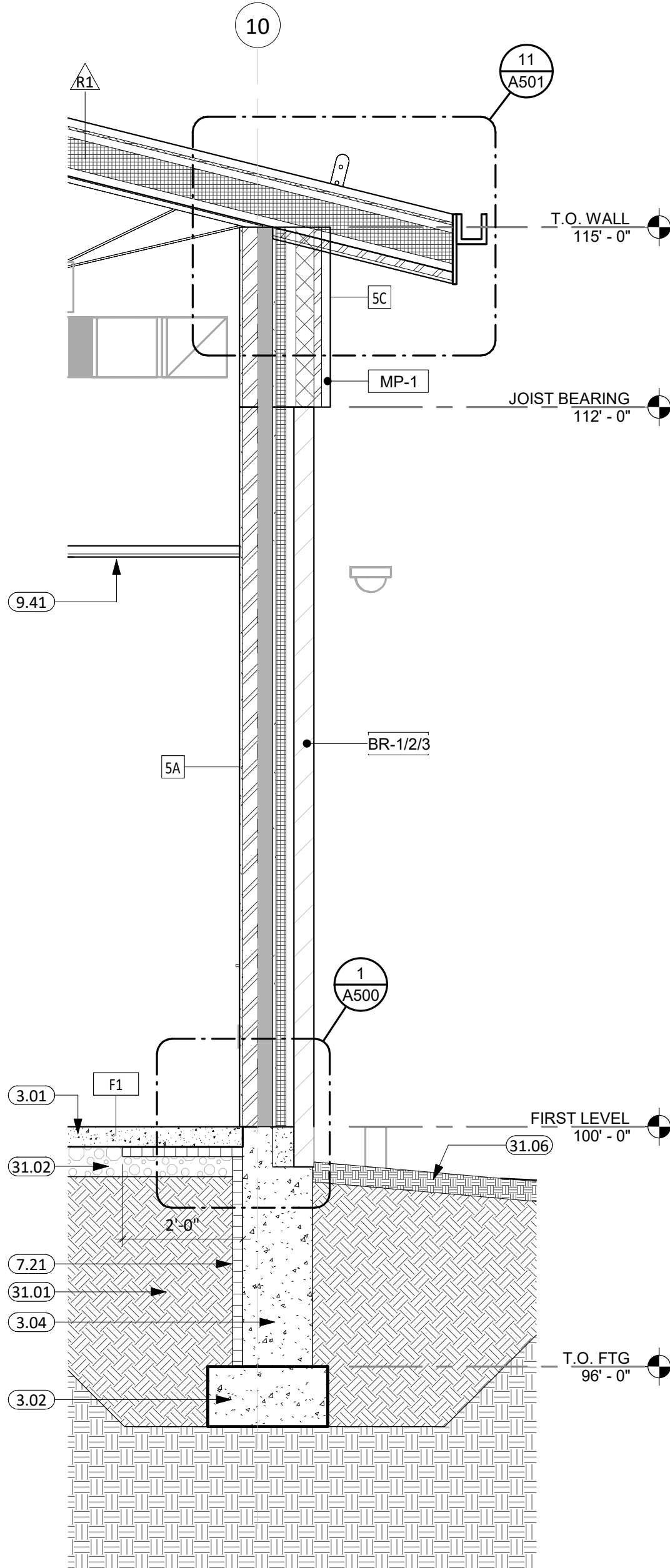
co-oparch.com



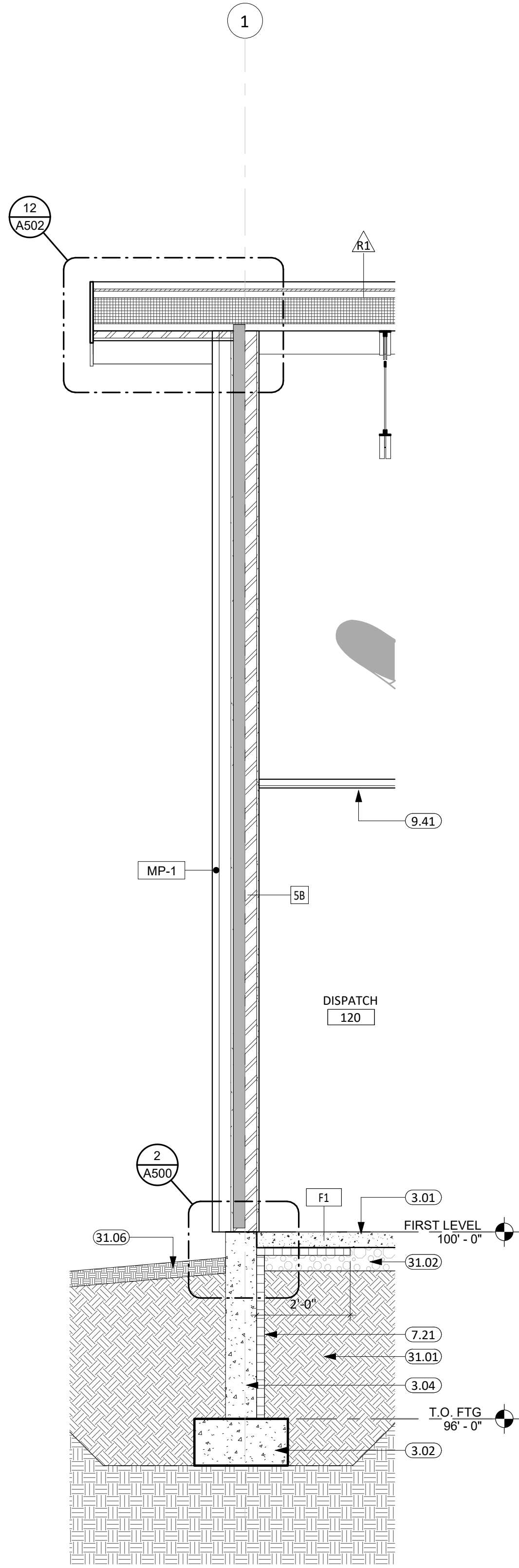
1 WALL SECTION  
1/2" = 1'-0"



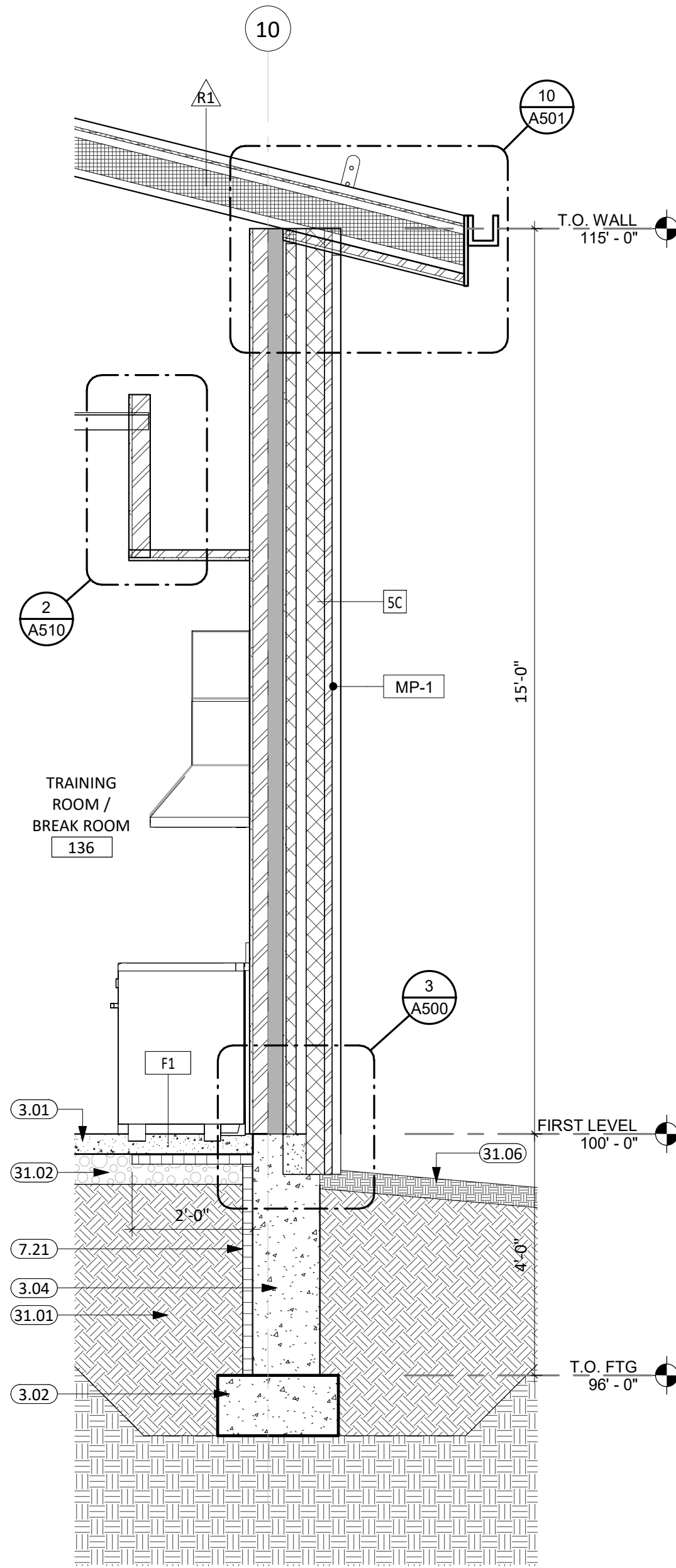
2 WALL SECTION  
1/2" = 1'-0"



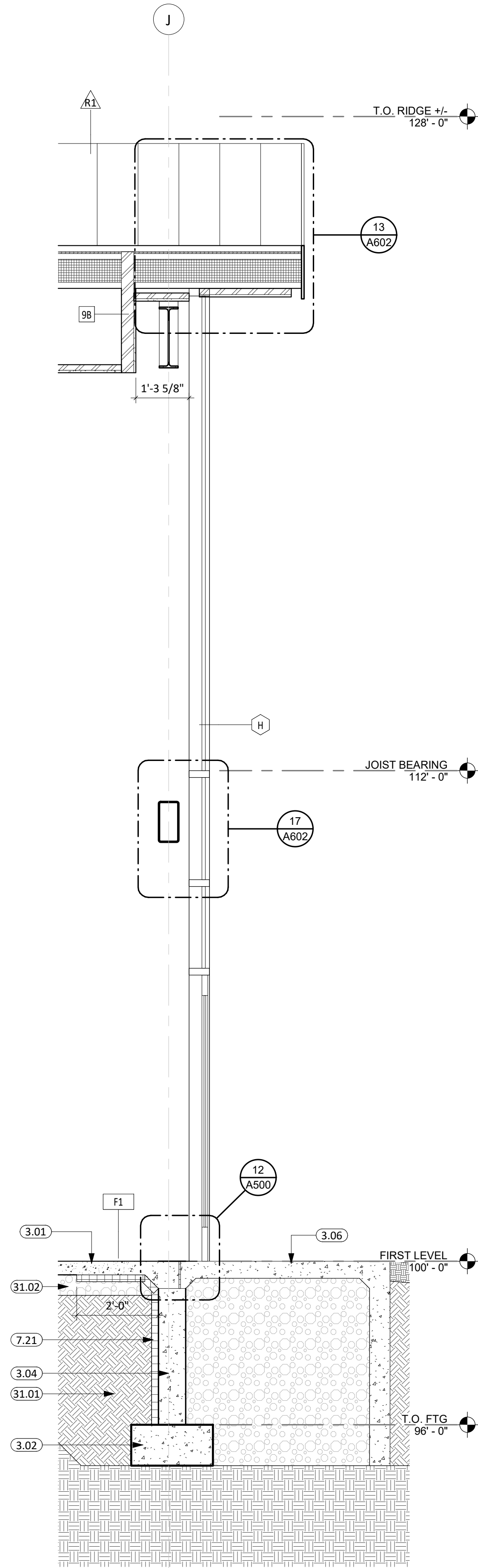
3 WALL SECTION  
1/2" = 1'-0"



4 WALL SECTION  
1/2" = 1'-0"

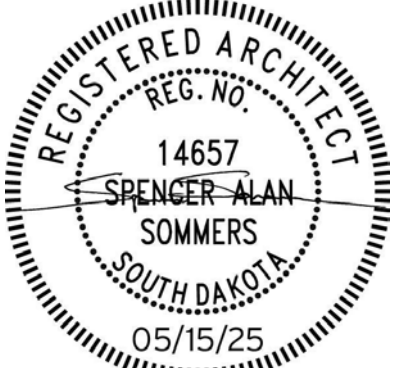


5 WALL SECTION  
1/2" = 1'-0"



6 WALL SECTION  
1/2" = 1'-0"

CO-OP PROJECT NO: 2418



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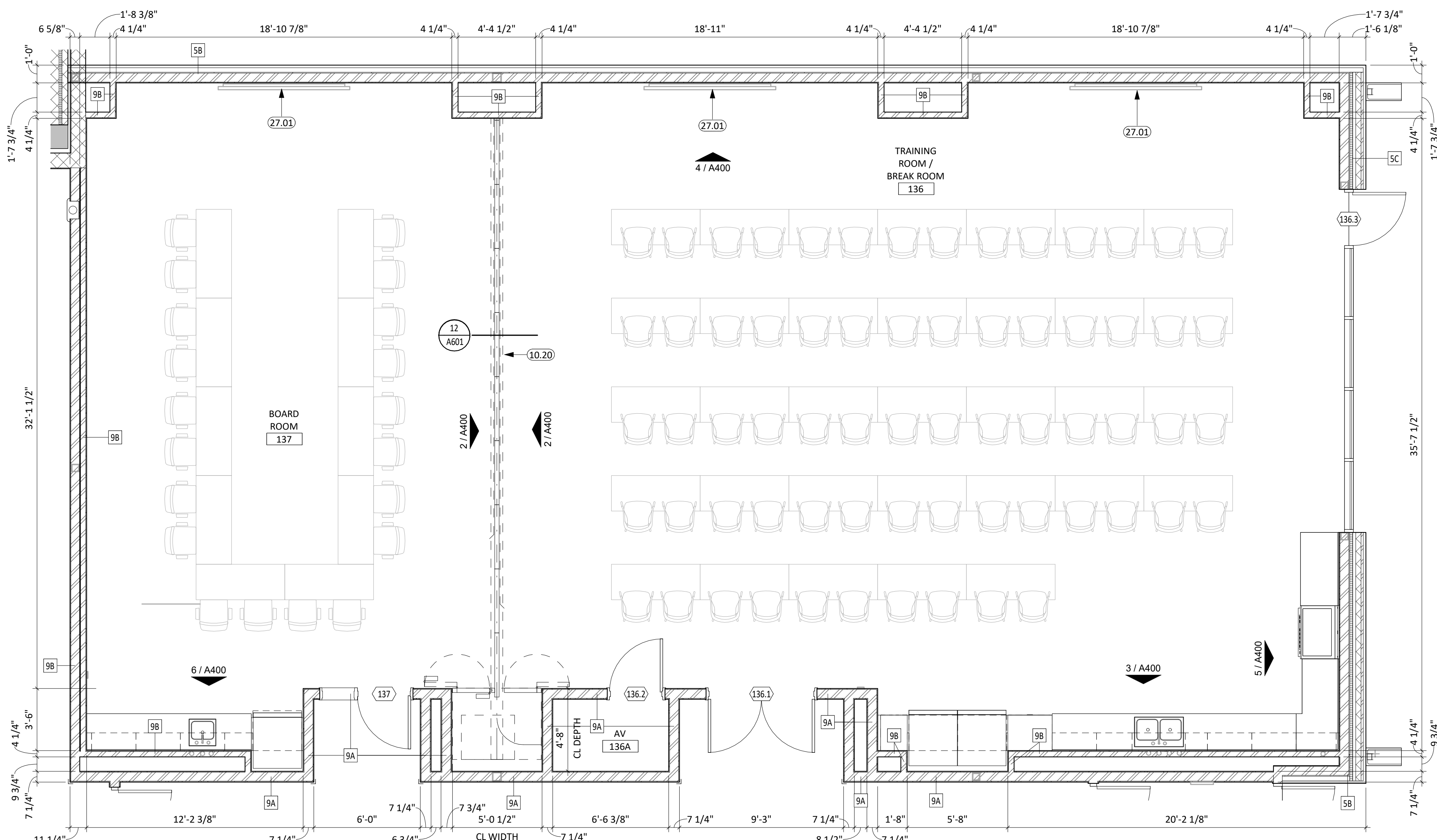
NORTHERN ELECTRIC  
NORTHERN ELECTRIC COOPERATIVE  
BATH, SOUTH DAKOTA

SHEET TITLE:

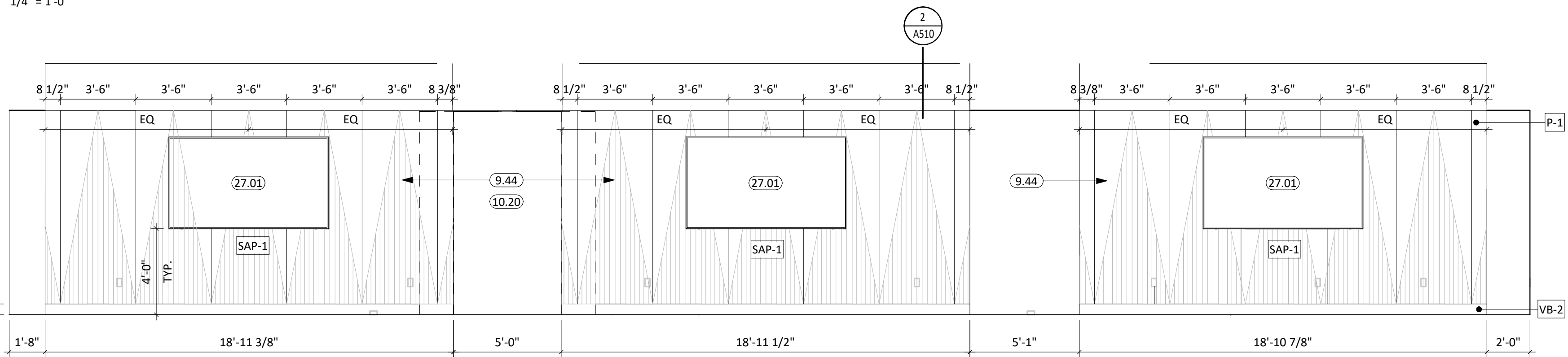
WALL SECTIONS

A313

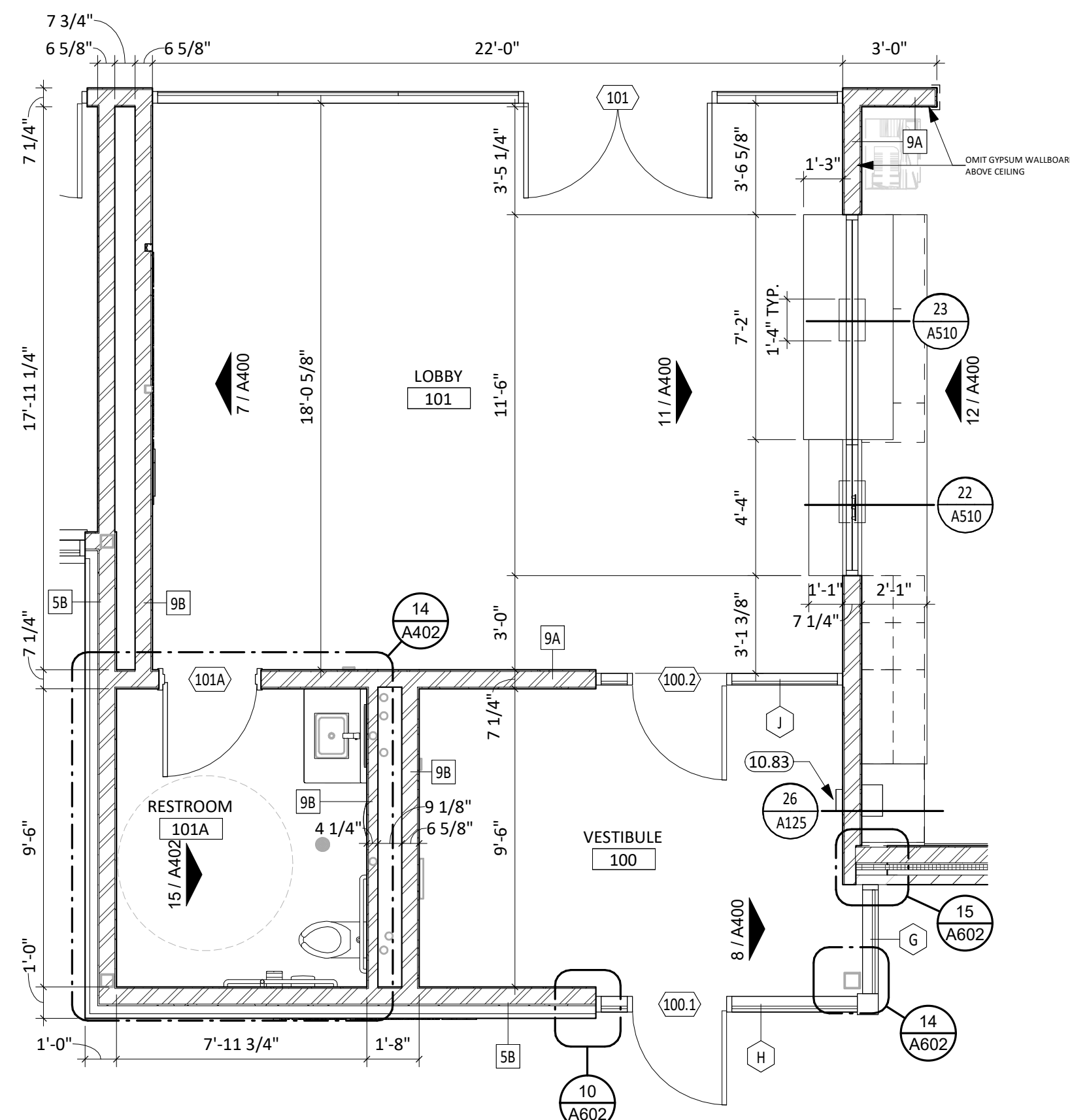




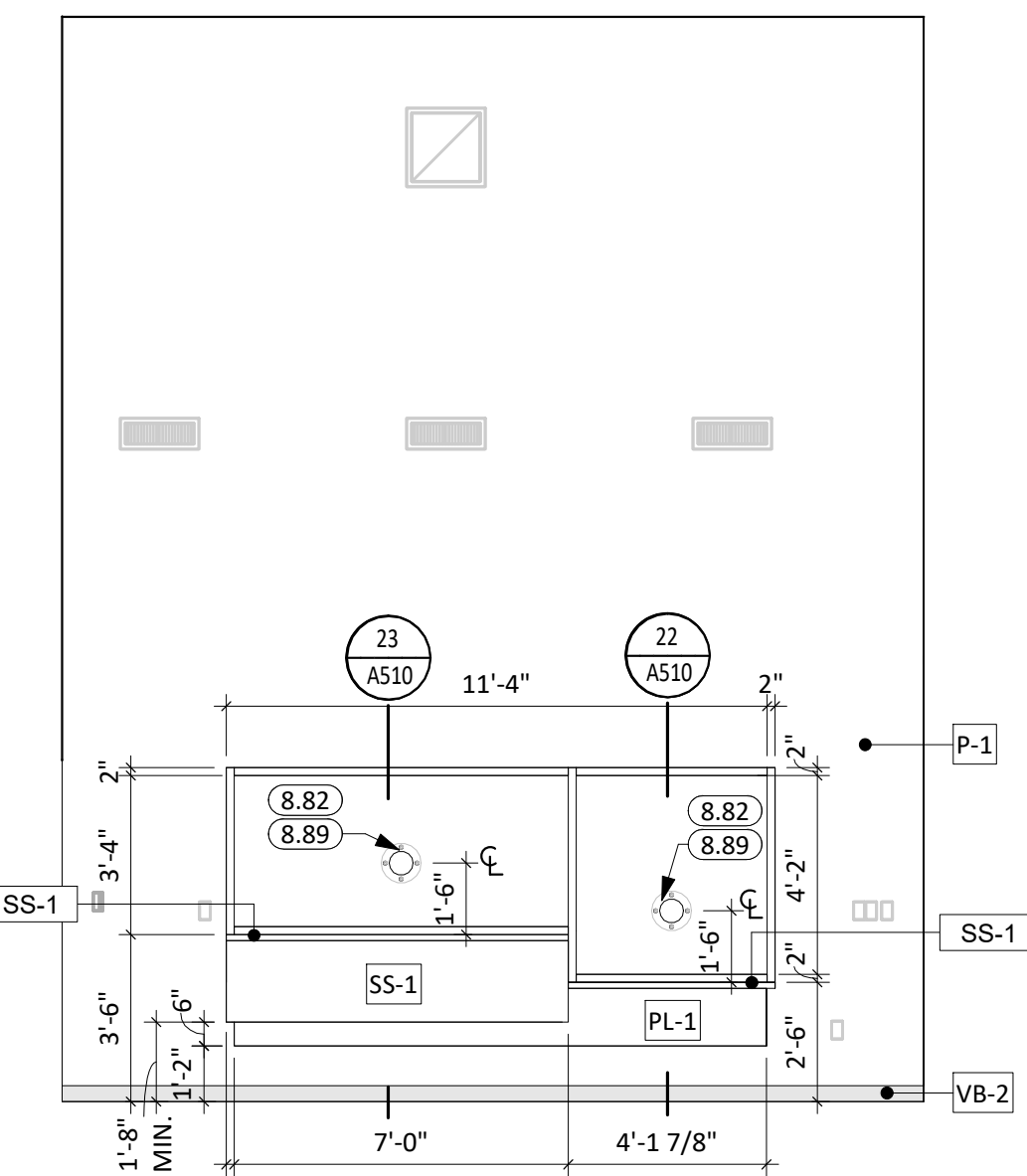
1 ENLARGED PLAN - BOARD & TRAINING  
1/4" = 1'-0"



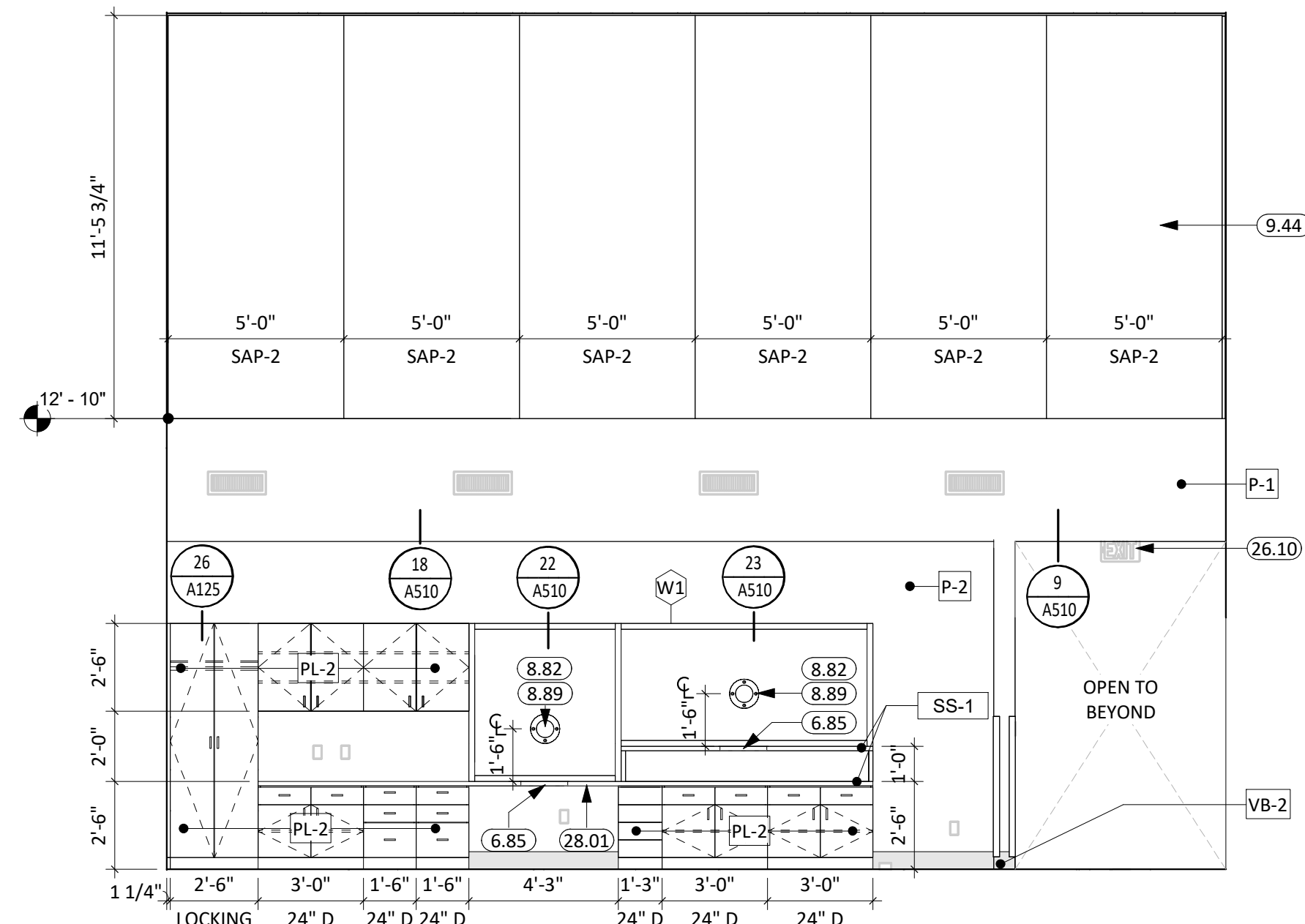
4 BOARD & TRAINING ROOM - NORTH  
1/4" = 1'-0"



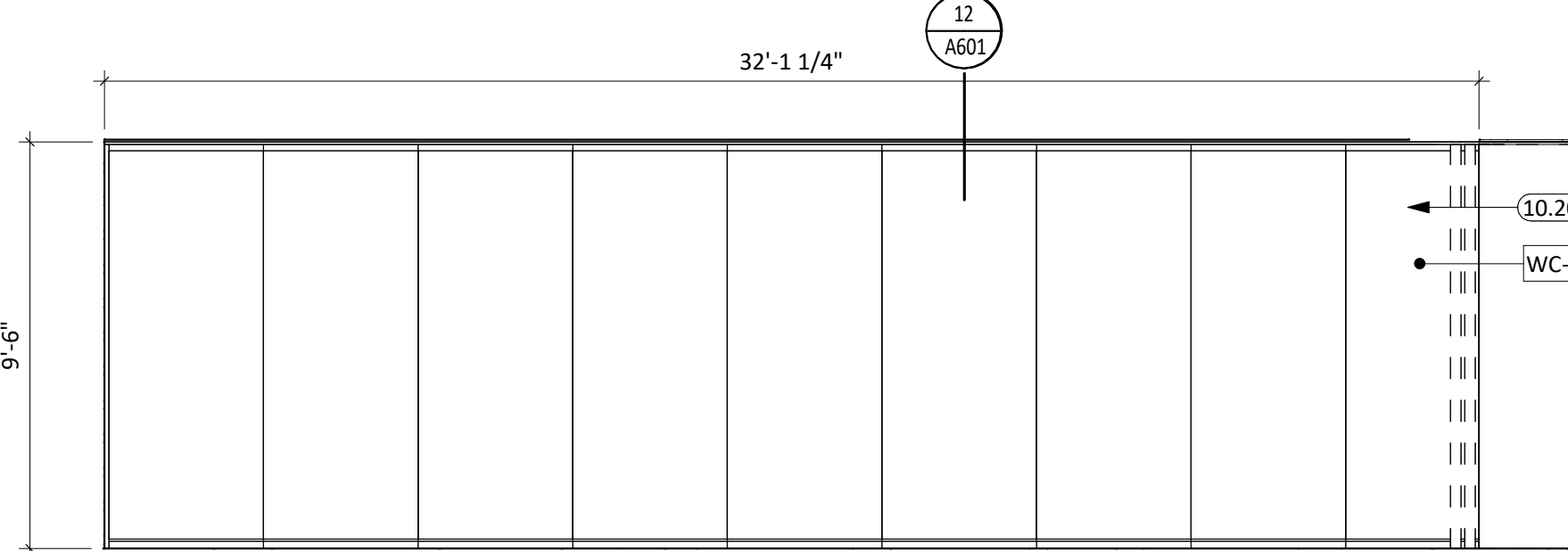
10 ENLARGED PLAN - ENTRANCE & LOBBY  
1/4" = 1'-0"



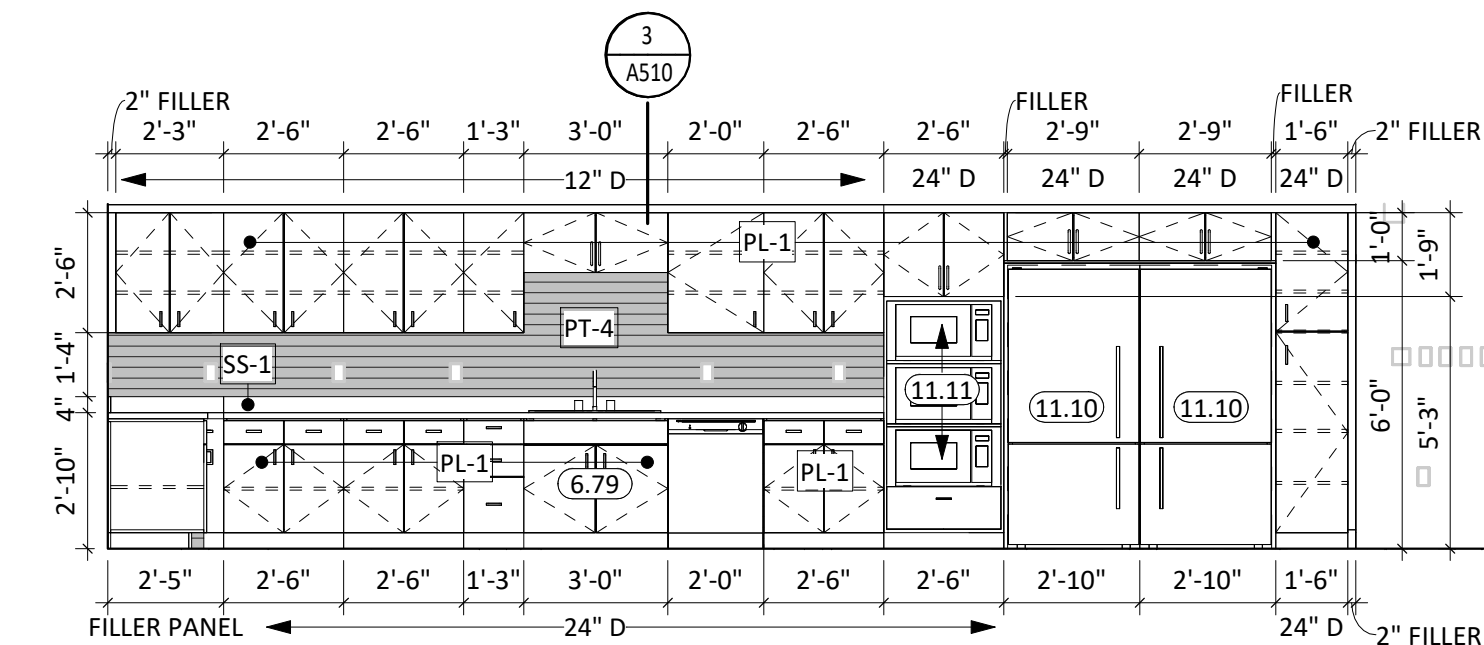
11 LOBBY - EAST  
1/4" = 1'-0"



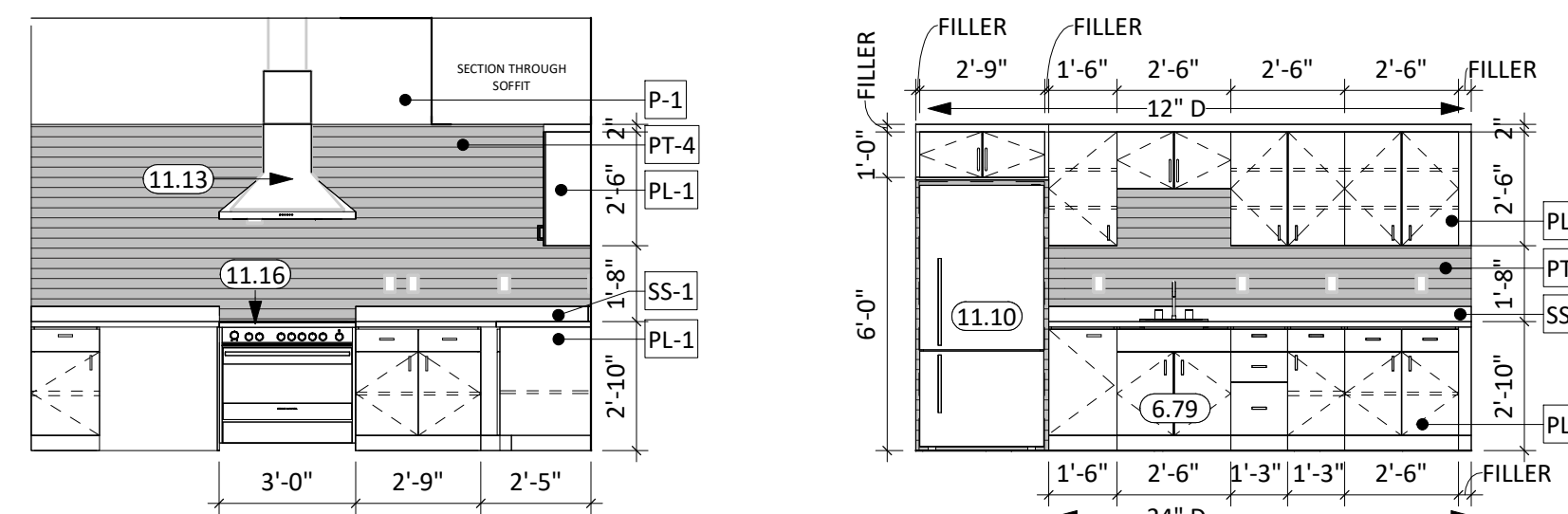
12 OPEN OFFICE - WEST  
1/4" = 1'-0"



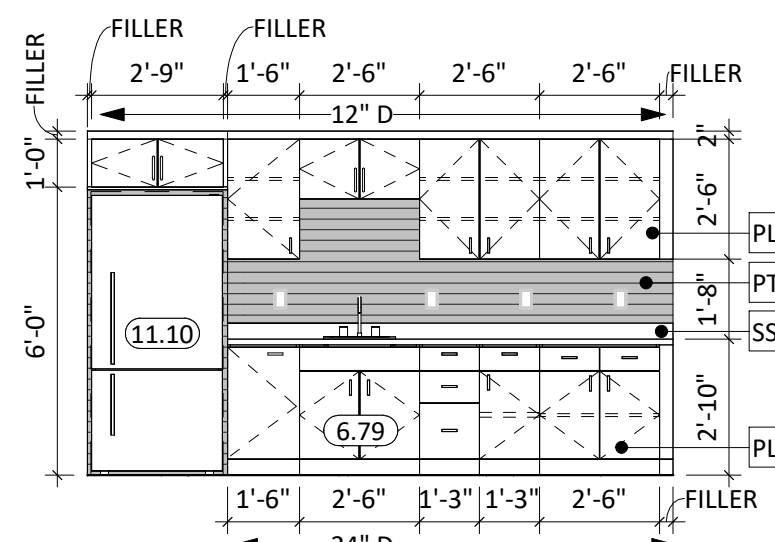
2 OPERABLE WALL  
1/4" = 1'-0"



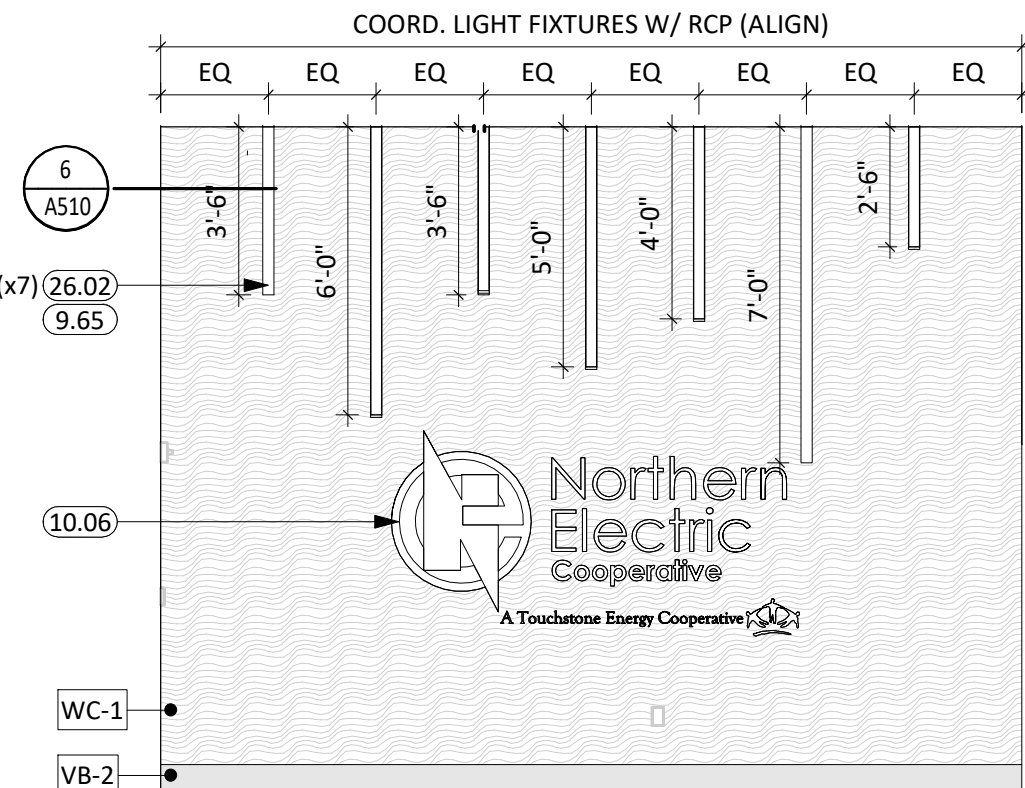
3 TRAINING ROOM - SOUTH  
1/4" = 1'-0"



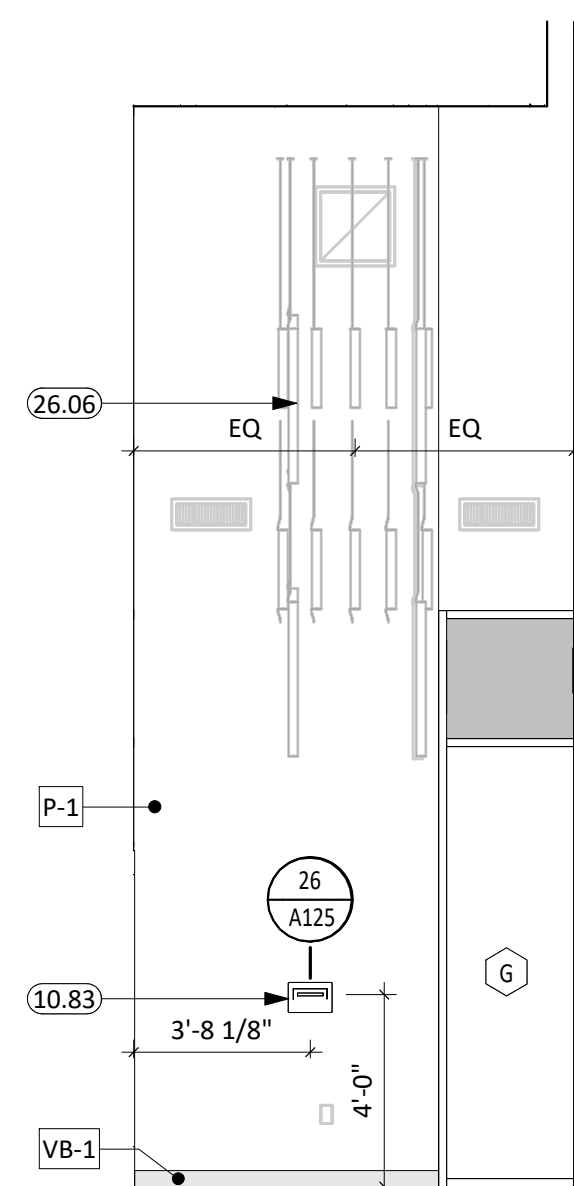
5 TRAINING ROOM - EAST  
1/4" = 1'-0"



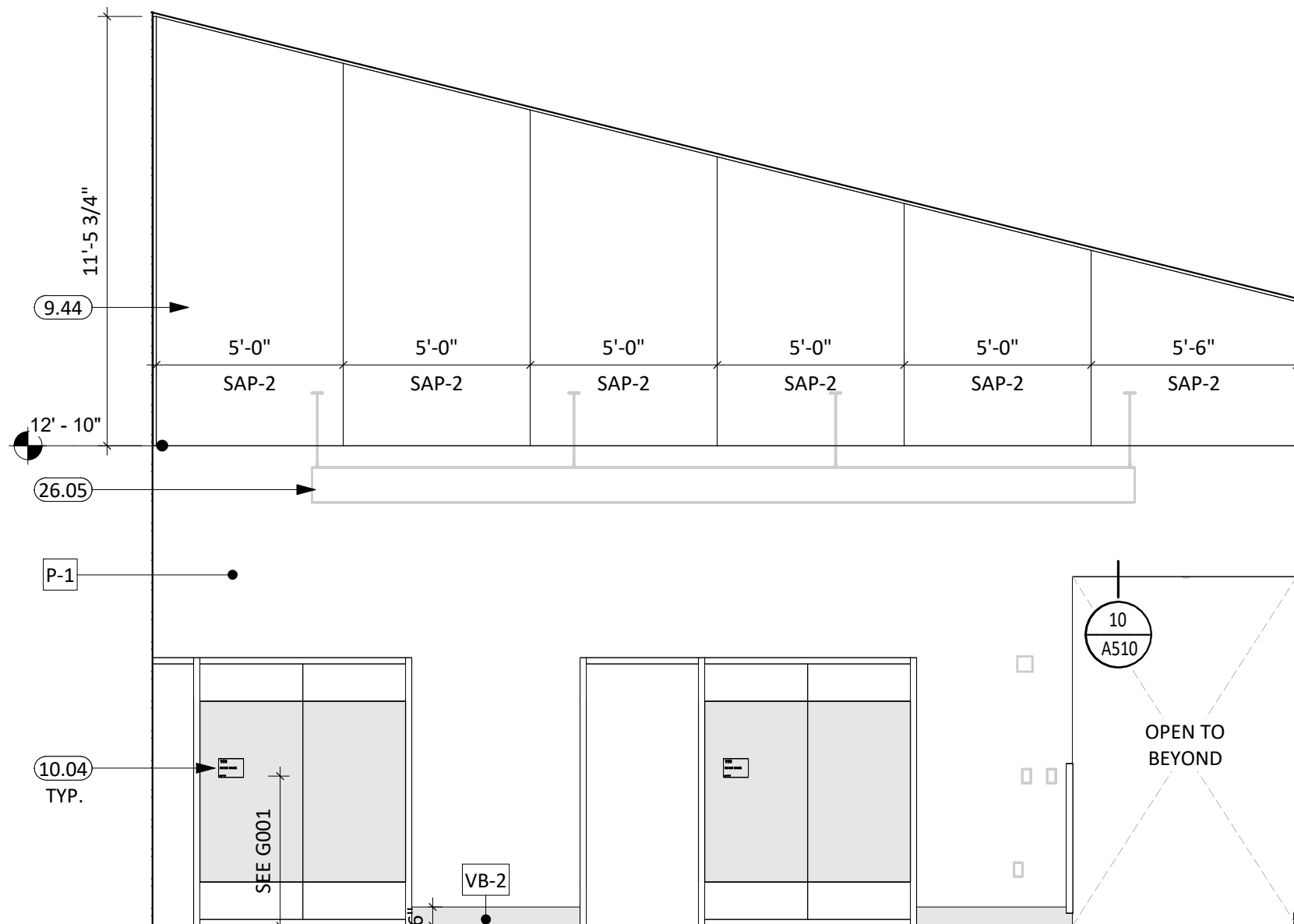
6 BOARD ROOM - SOUTH  
1/4" = 1'-0"



7 LOBBY - WEST  
1/4" = 1'-0" (SEE ALTERNATE)



8 VESTIBULE 100 - WEST  
1/4" = 1'-0"



9 MEETING 110 - WEST  
1/4" = 1'-0"

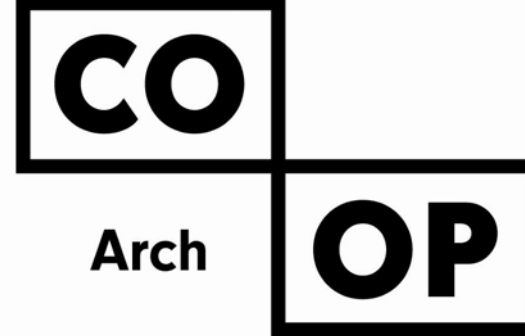
13 OPEN OFFICE - NORTH  
1/4" = 1'-0"

## GENERAL NOTES

- SEE SHEET G001 FOR REQUIRED ADA CLEARANCES & MOUNTING HEIGHTS.
- FIRE RATED WALLS ARE INDICATED ON THE CODE PLANS.
- ALL WALLS TO EXTEND TO DECK UNLESS OTHERWISE NOTED ON WALL TYPES.
- RESTROOM WALLS ARE SOUND INSULATED AND EXTEND TO THE DECK.
- ALL INTERIOR DIMENSIONS ARE FROM FACE OF GWB/CMU TO FACE OF GWB/CMU, UNLESS OTHERWISE NOTED.
- SEE FLOOR PLAN FOR CASEWORK PLAN INFORMATION. FIELD VERIFY ALL CASEWORK OPENINGS. COORDINATE ALL CASEWORK DIMENSIONS WITH OWNER PROVIDED AND CONTRACTOR PROVIDED APPLIANCES/EQUIPMENT.
- PROVIDE COUNTERTOP SUPPORTS AT OPEN SPACES AT MINIMUM OF 32" ON CENTER AND MAXIMUM OF 48" ON CENTER.
- TALL CABINETS OVER 30" WIDE SHALL HAVE VERTICAL DIVIDER FULL HEIGHT.
- COORDINATE DEVICE PENETRATIONS AT COUNTERTOPS W/ MECHANICAL AND ELECTRICAL.
- MILLWORK SUPPLIER SHALL PROVIDE FILLER PANELS AND SCRIBE STRIPS AS NEEDED FOR COMPLETE INSTALLATION.
- PROVIDE FINISHED END PANELS AT EXPOSED MILLWORK SURFACES.
- COORDINATE INSTALLATION OF OWNER PROVIDED EQUIPMENT WITH NEW CONSTRUCTION.
- CAULK PERIMETER OF TOILETS, URINALS, SINKS AND COUNTERTOPS AS REQUIRED.
- PROVIDE 2x BLOCKING AT ALL WALL MOUNTED EQUIPMENT (VISUAL DISPLAY UNITS, ETC.). ACCESSORIES (ACOUSTIC WALL PANELS, GRAB BAR LOCATIONS, ETC.) CABINETS, ETC. SEE CODE SHEETS FOR ADDITIONAL BLOCKING INFORMATION.
- PROVIDE CORNER GUARDS AT ALL EXPOSED GYP CORNERS (SEE FINISH SCHEDULE FOR MORE INFORMATION.)
- PROVIDE CHAIN DOOR STOPS ON ANY CABINET DOOR THAT WILL STRIKE AN OBSTRUCTION WHEN OPENED BETWEEN 90 AND 135 DEGREES.
- ALL LAMINATE CASEWORK TO RECEIVE STUDIO 917 HARDWARE; CITYSCAPE PULL, SKU: DHP205MB-96 DARK BRONZE. U.N.O.
- COORDINATE REGISTERS WITH SOUND ABSORPTION PANELS 'SAP'

## KEYNOTE SCHEDULE

6.79	PLASTIC LAMINATE ADA SINK CABINET - CABINET DOORS TO OPEN 90 DEGREES AND SLIDE INTO CABINET
6.85	DROP-IN STAINLESS STEEL DEAL TRAY
8.82	3" TEMPERED GLASS
8.89	POLISHED EDGE SPEAKER HOLE AND BACKER VOICE PORT
9.44	SOUND ABSORPTION PANEL ON CONTINUOUS HANGER BAR, CUSTOM SIZE (BOD: G&S ACOUSTICS, SEE FINISH LEGEND)
9.65	RECESS MOUNT MUD-IN FLANGE BRACKET
10.04	ROOM SIGNAGE (TYP. AT ALL DOORS), WHERE MOUNTED TO GLAZING, PROVIDE A BLANK BACK PLATE ON OPPOSITE SIDE OF GLAZING.
10.06	CAST ALUMINUM DIMENSIONAL LOGO & LETTER SIGNAGE, CUSTOM FONT STYLE
10.20	OPERABLE PARTITION (B.O.D. MODERNFOLD ACOUSTI-SEAL LEGACY ELECTRIC, CONCEALED HINGES). INSTALL PER MANUFACTURERS DIRECTIONS (SEE STRUCTURAL PLANS)
10.83	ENVELOPE DEPOSITORY UNIT (BASIS OF DESIGN: AMERICAN SECURITY CABINETS, 24" STANDARD SLOT)
11.10	REFRIGERATOR, OFOI
11.11	MICROWAVE, OFCI (COORDINATE OUTLET LOCATIONS W/ ELECTRICAL)
11.13	RANGE HOOD
11.16	COOK TOP OFOI
26.02	RECESS LIGHT FIXTURE (SEE ELECTRICAL)
26.05	PENDANT LINEAR LIGHT FIXTURE W/ ACOUSTIC FINISH (SEE ELECTRICAL)
26.06	PENDANT LIGHT FIXTURE (BOD: VELIA DROPLET, CUSTOM CONFIGURATION, QTY: 12) COORDINATE CABLE LENGTHS & FINAL PLACEMENT WITH ARCHITECT. (SEE ELECTRICAL)
26.10	EXIT SIGN (SEE ELECTRICAL)
27.01	VIDEO DISPLAY UNIT, OFCI (SEE ELECTRICAL)
28.01	PANIC BUTTON (SEE ELECTRICAL)



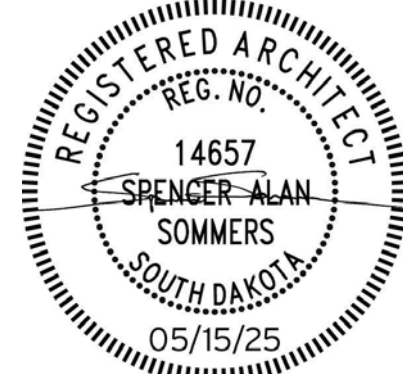
1108 S. Main St. 102  
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CO-OP PROJECT NO: 2418



ISSUE:  
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REVISION SCHEDULE:  
REV. # REV. DSC. REV. DATE

PROJECT:  
NORTHERN ELECTRIC  
NORTHERN ELECTRIC COOPERATIVE  
BATH, SOUTH DAKOTA

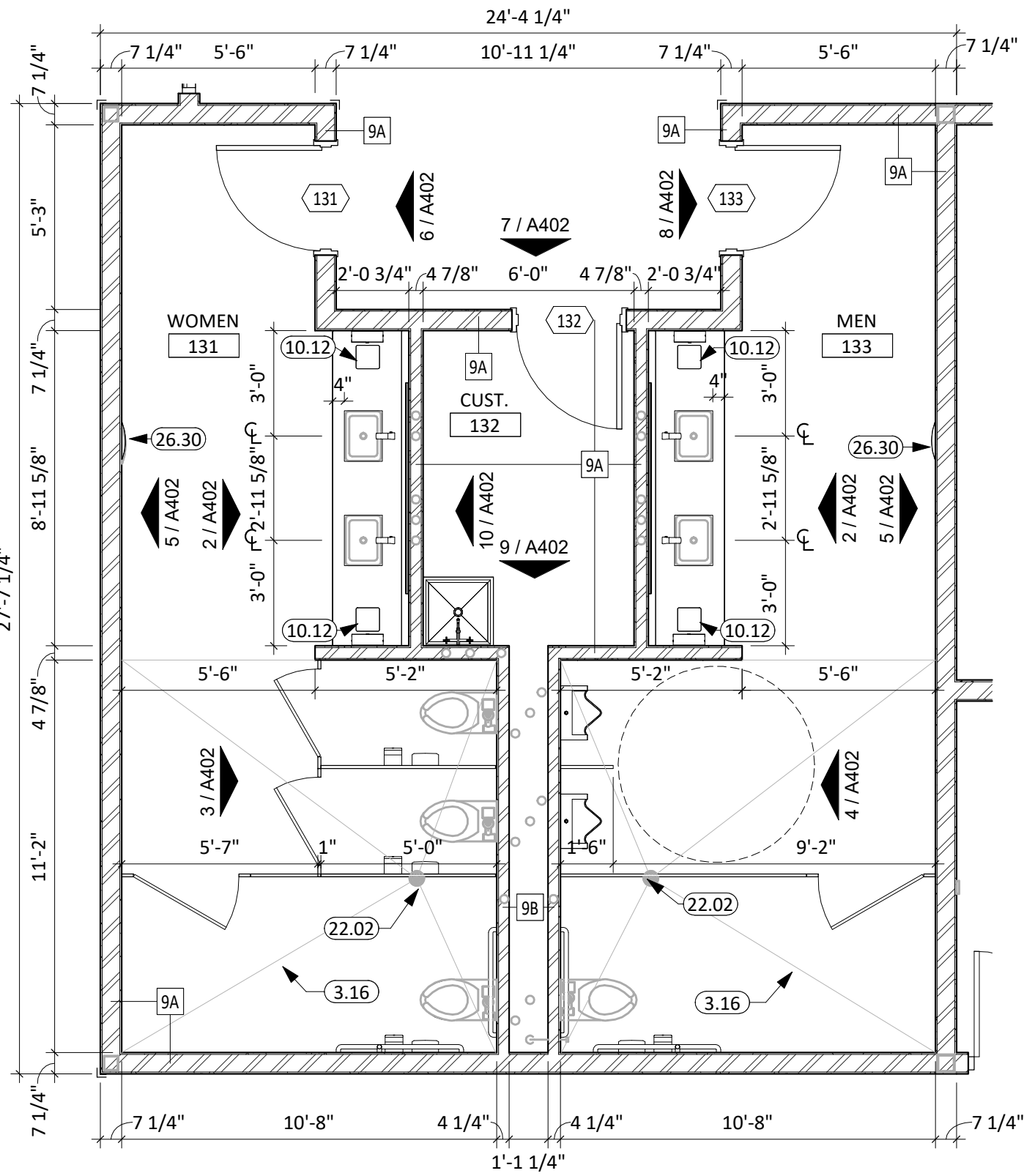
SHEET TITLE:  
ENLARGED PLANS & ELEVATIONS

A400

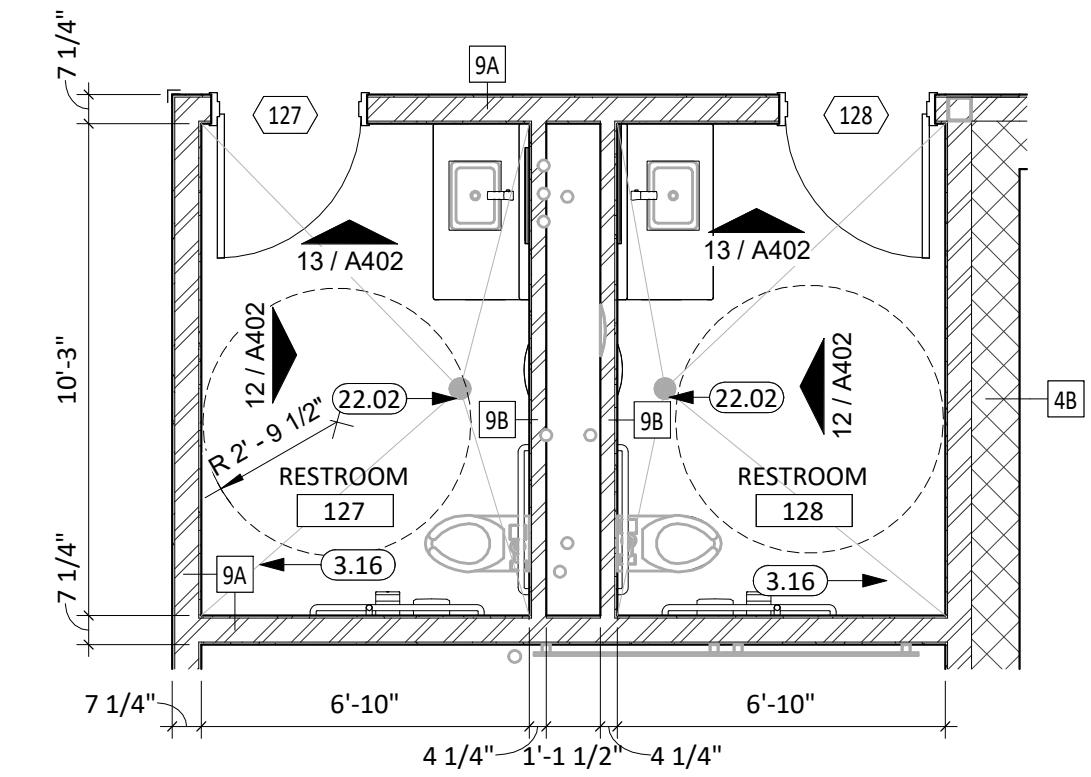




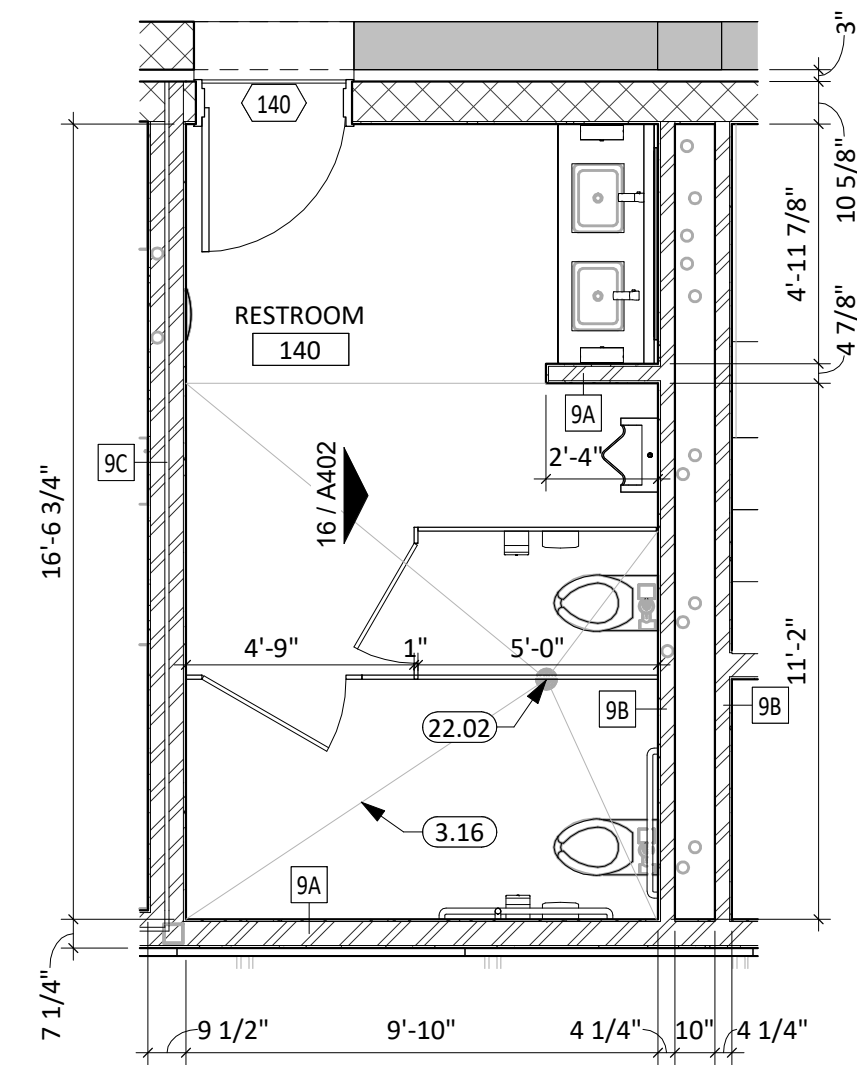




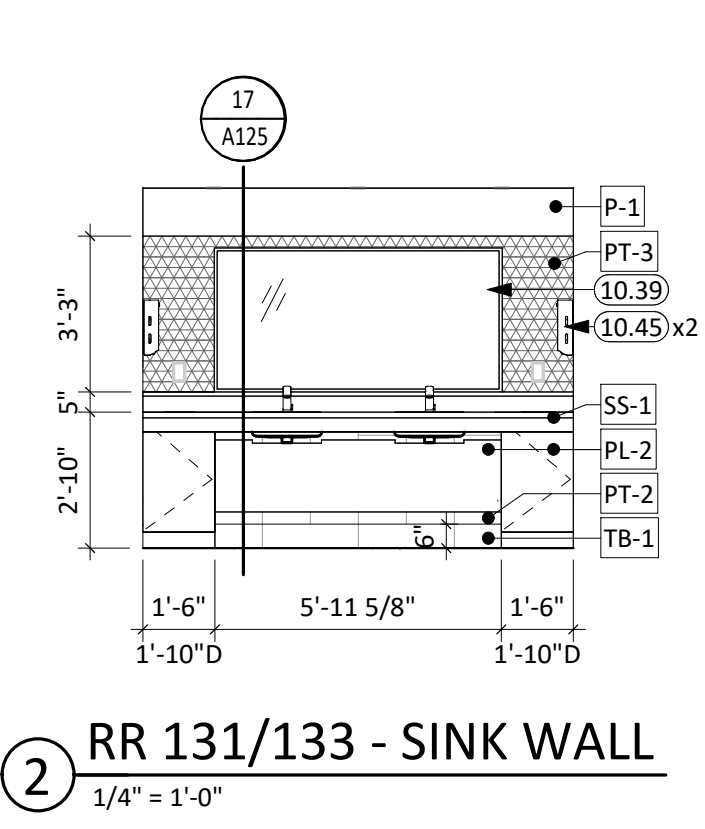
1 RESTROOMS 131 & 133  
1/4" = 1'-0"



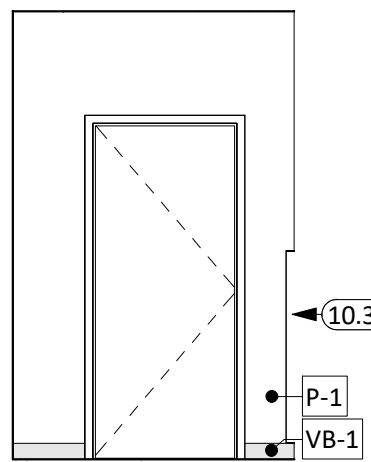
11 RESTROOMS 127 & 128  
1/4" = 1'-0"



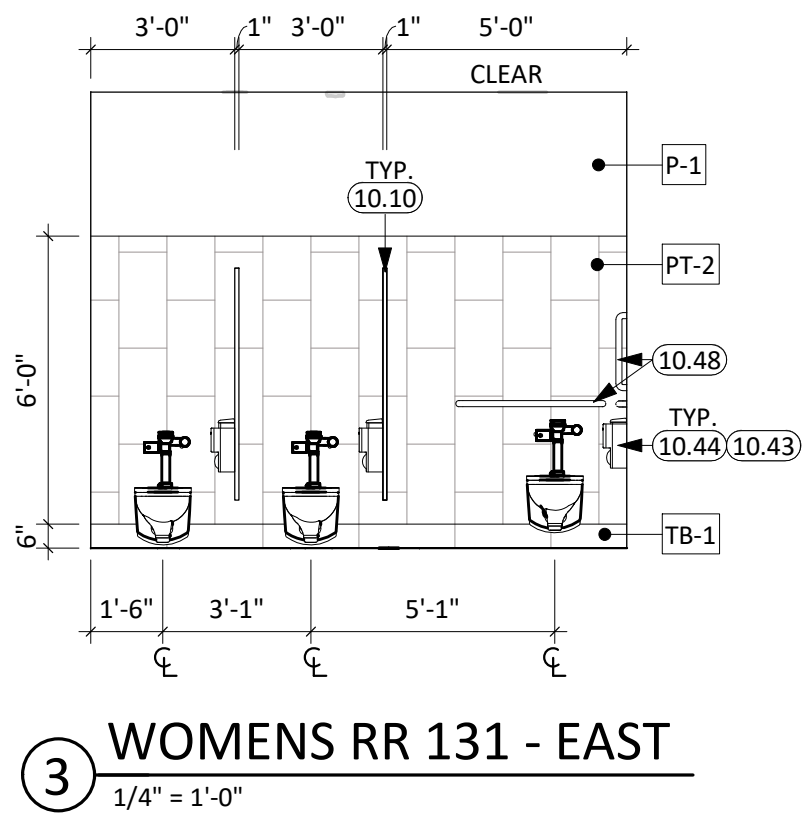
17 RESTROOM 140  
1/4" = 1'-0"



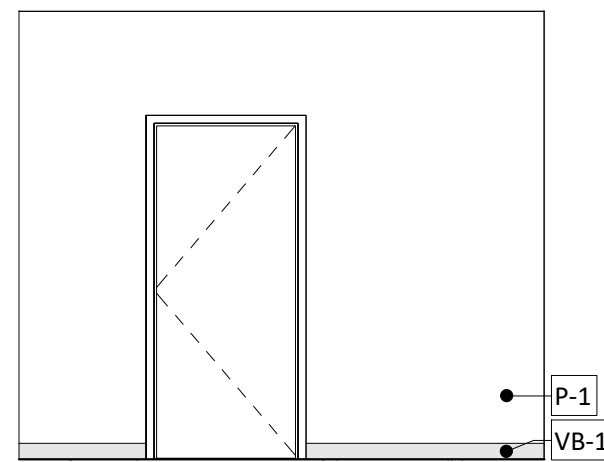
2 RR 131/133 - SINK WALL  
1/4" = 1'-0"



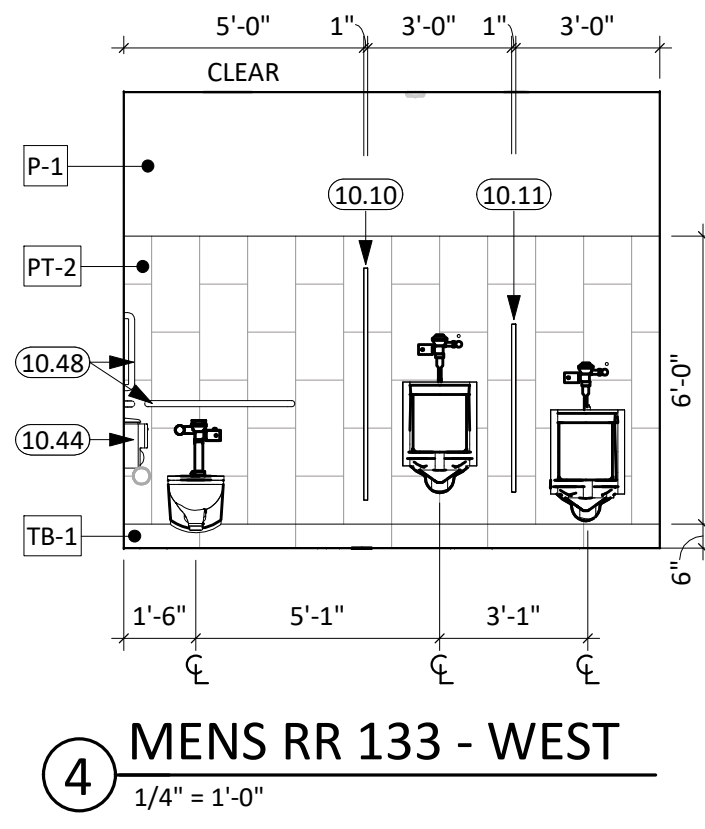
6 RR 131 - ENTRANCE  
1/4" = 1'-0"



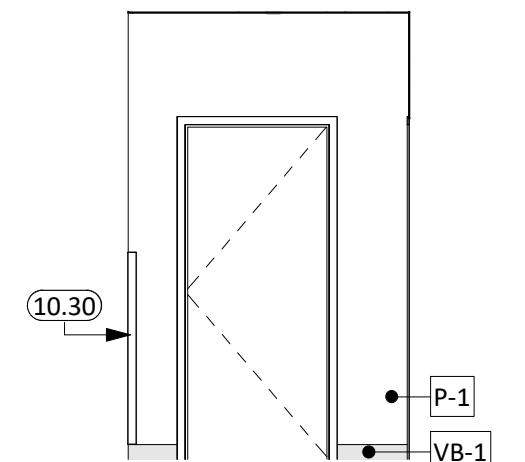
3 WOMENS RR 131 - EAST  
1/4" = 1'-0"



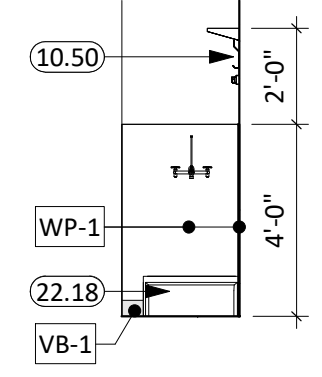
7 CUST 132 - ENTRANCE  
1/4" = 1'-0"



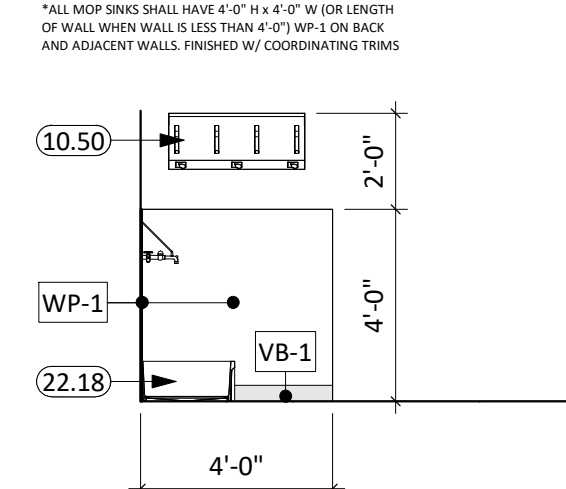
4 MENS RR 133 - WEST  
1/4" = 1'-0"



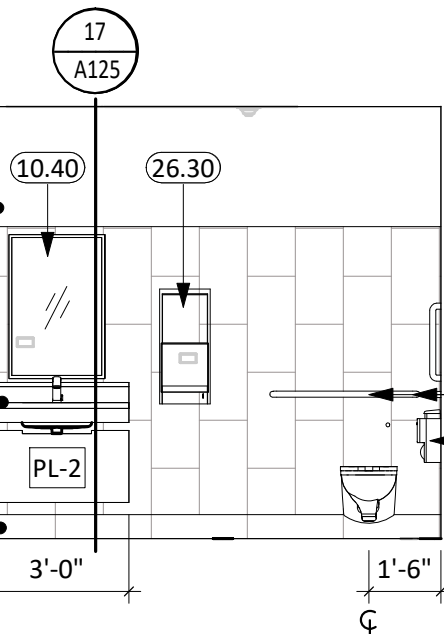
8 RR 133 - ENTRANCE  
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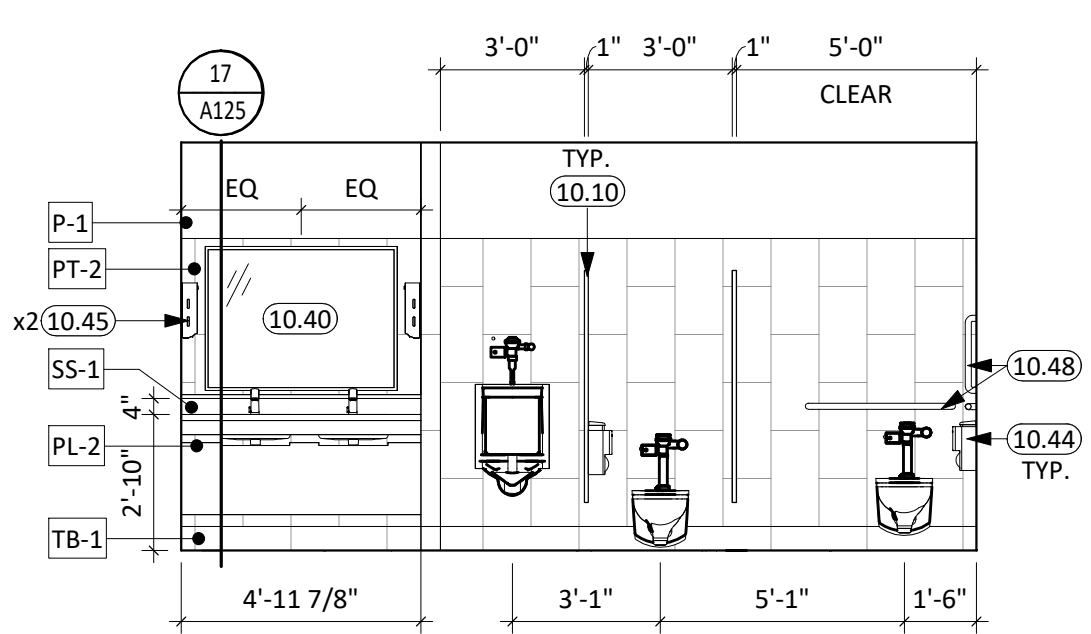
9 CUST. - SOUTH  
1/4" = 1'-0"



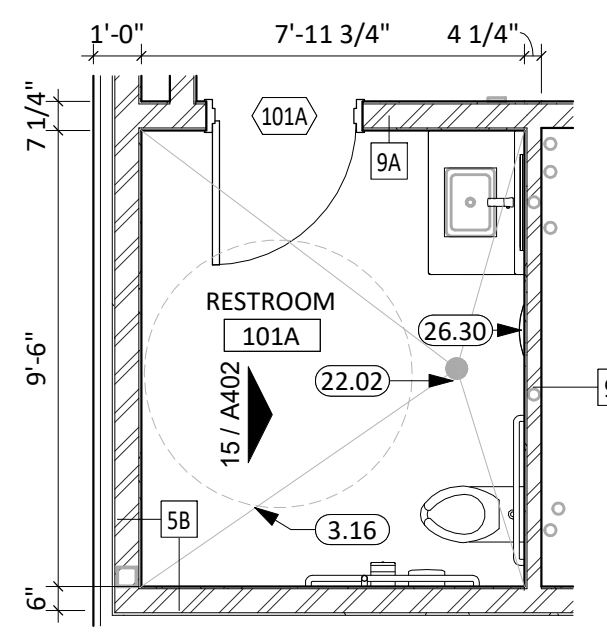
10 CUST - WEST  
1/4" = 1'-0"



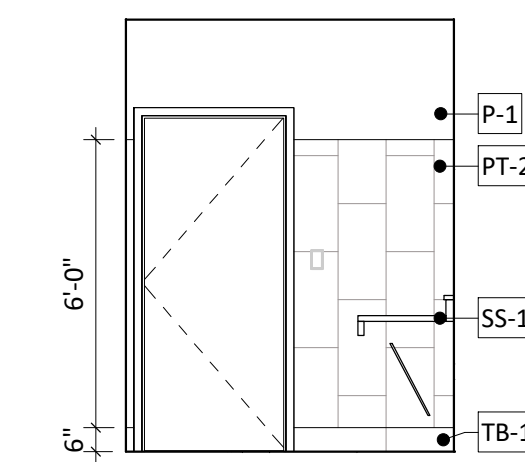
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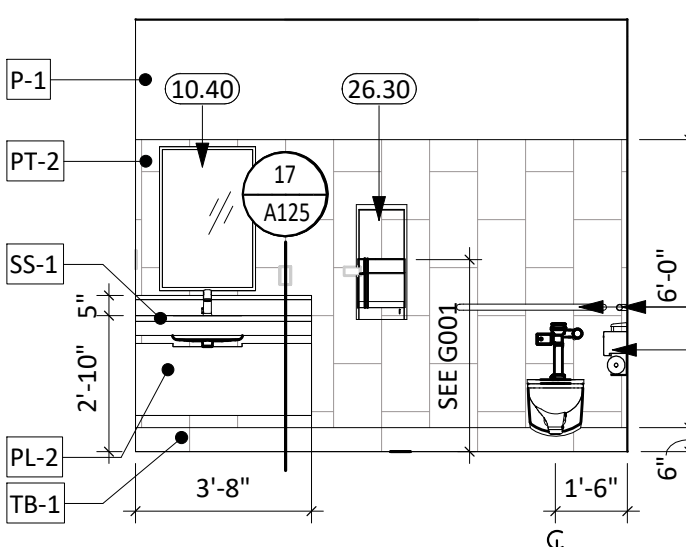
16 RR 140 - EAST  
1/4" = 1'-0"



14 RESTROOM 101A  
1/4" = 1'-0"



13 RR 127 & 128 - NORTH  
1/4" = 1'-0"



12 RR 127 & 128 SINK WALL  
1/4" = 1'-0"

## GENERAL NOTES

- SEE SHEET G001 FOR REQUIRED ADA CLEARANCES & MOUNTING HEIGHTS.
- FIRE RATED WALLS ARE INDICATED ON THE CODE PLANS.
- ALL WALLS TO EXTEND TO DECK UNLESS OTHERWISE NOTED ON WALL TYPES.
- RESTROOM WALLS ARE SOUND INSULATED AND EXTEND TO THE DECK.
- ALL INTERIOR DIMENSIONS ARE FROM FACE OF GWB/CMU TO FACE OF GWB/CMU, UNLESS OTHERWISE NOTED.
- SEE FLOOR PLAN FOR CASEWORK PLAN INFORMATION. FIELD VERIFY ALL CASEWORK OPENINGS. COORDINATE ALL CASEWORK DIMENSIONS WITH OWNER PROVIDED AND CONTRACTOR PROVIDED APPLIANCES/EQUIPMENT.
- PROVIDE COUNTERTOP SUPPORTS AT OPEN SPACES AT MINIMUM OF 32" ON CENTER AND MAXIMUM OF 48" ON CENTER.
- TALL CABINETS OVER 30" WIDE SHALL HAVE VERTICAL DIVIDER FULL HEIGHT.
- COORDINATE DEVICE PENETRATIONS AT COUNTERTOPS w/ MECHANICAL AND ELECTRICAL.
- MILLWORK SUPPLIER SHALL PROVIDE FILLER PANELS AND SCRIBE STRIPS AS NEEDED FOR COMPLETE INSTALLATION.
- PROVIDE FINISHED END PANELS AT EXPOSED MILLWORK SURFACES.
- COORDINATE INSTALLATION OF OWNER PROVIDED EQUIPMENT WITH NEW CONSTRUCTION.
- CAULK PERIMETER OF TOILETS, URINALS, SINKS AND COUNTERTOPS AS REQUIRED.
- PROVIDE 2x BLOCKING AT ALL WALL MOUNTED EQUIPMENT VISUAL DISPLAY UNITS, ETC.). ACCESSORIES (ACOUSTIC WALL PANELS, GRAB BAR LOCATIONS, ETC.) CABINETS, ETC. SEE CODE SHEETS FOR ADDITIONAL BLOCKING INFORMATION.
- PROVIDE CORNER GUARDS AT ALL EXPOSED GYP CORNERS (SEE FINISH SCHEDULE FOR MORE INFORMATION.)
- PROVIDE CHAIN DOOR STOPS ON ANY CABINET DOOR THAT WILL STRIKE AN OBSTRUCTION WHEN OPENED BETWEEN 90 AND 135 DEGREES.
- ALL LAMINATE CASEWORK TO RECEIVE STUDIO 917 HARDWARE; CITYSCAPE PULL, SKU: DHP205MB-96 DARK BRONZE. U.N.O.
- COORDINATE REGISTERS WITH SOUND ABSORPTION PANELS 'SAP'

## KEYNOTE SCHEDULE

3.16	SLOPE TO DRAIN
10.10	TOILET PARTITION, BASIS OF DESIGN SCRANTON HINY HIDERS
10.11	URINAL SCREEN, BASIS OF DESIGN SCRANTON HINY HIDERS
10.12	TRASH OPENING TO BE 8"X8"
10.30	CORNER GUARDS
10.39	MIRROR w/SS TRIM, BASIS OF DESIGN BRADLEY 781
10.40	MIRROR w/SS TRIM, BASIS OF DESIGN BOBRICK B-165
10.43	SANITARY NAPKIN DISPOSAL, BASIS OF DESIGN BOBRICK B-254
10.44	TOILET TISSUE DISPENSER, BASIS OF DESIGN BOBRICK B-265
10.45	PAPER TOWEL DISPENSER, BASIS OF DESIGN BOBRICK B-262
10.48	GRAB BAR
10.50	MOP & BROOM HOLDER
22.02	FLOOR DRAIN
22.18	MOP SINK (SEE MECHANICAL)
26.30	RECESSED ELECTRIC HAND DRYER (SEE ELECTRICAL)

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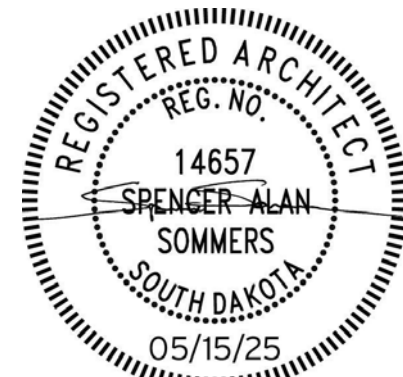
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CO-OP PROJECT NO: 2418



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## REVISION SCHEDULE:

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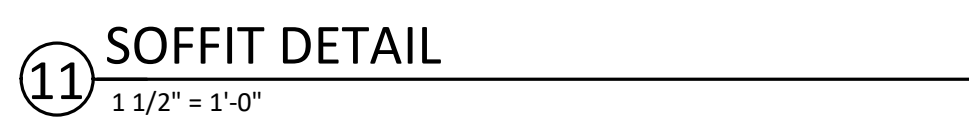
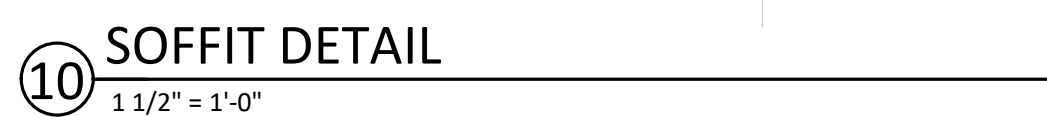
NORTHERN ELECTRIC  
NORTHERN ELECTRIC COOPERATIVE  
BATH, SOUTH DAKOTA

## SHEET TITLE:

ENLARGED PLANS & ELEVATIONS

A402





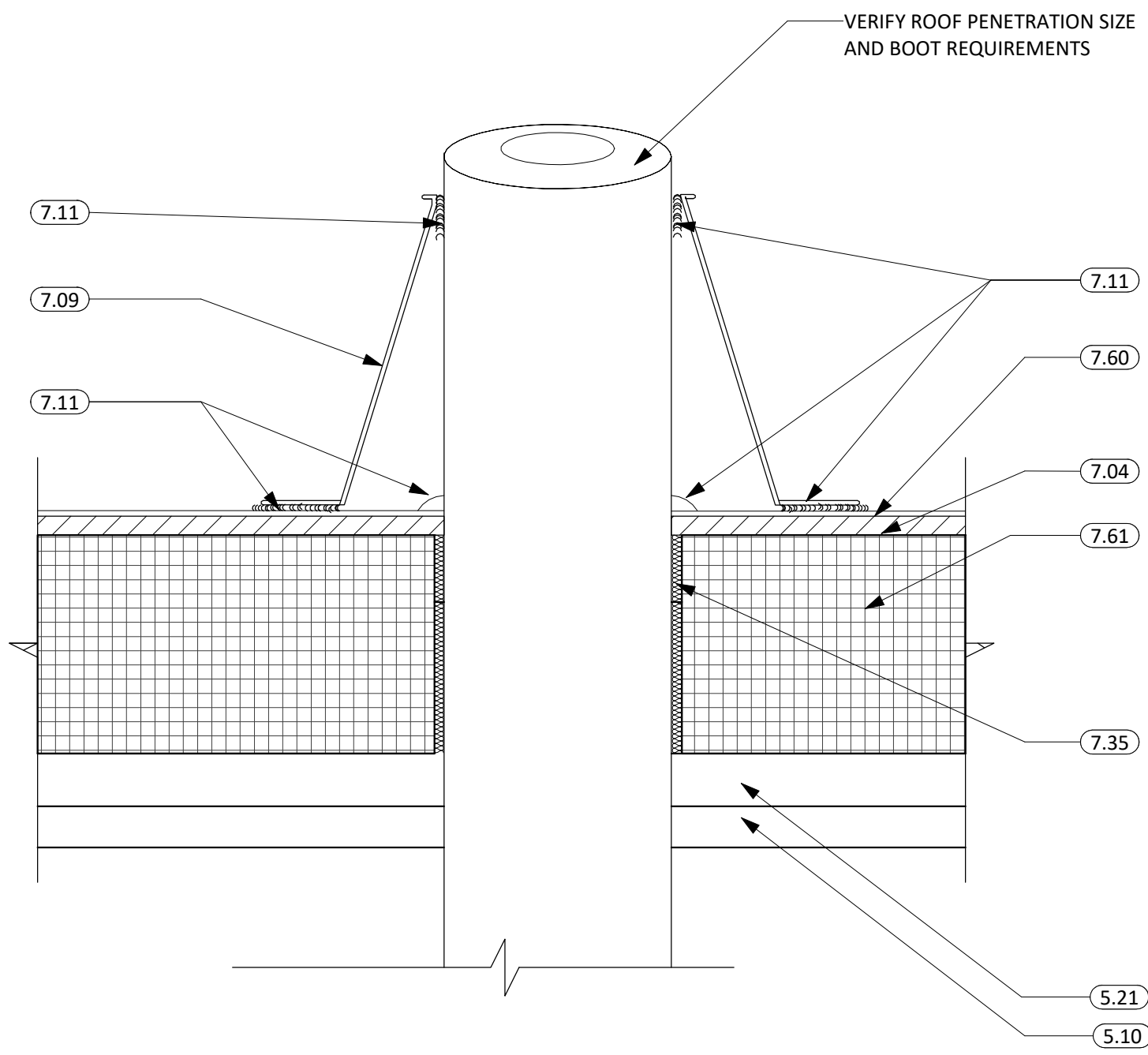
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SHEET TITLE:  
EXTERIOR DETAILS

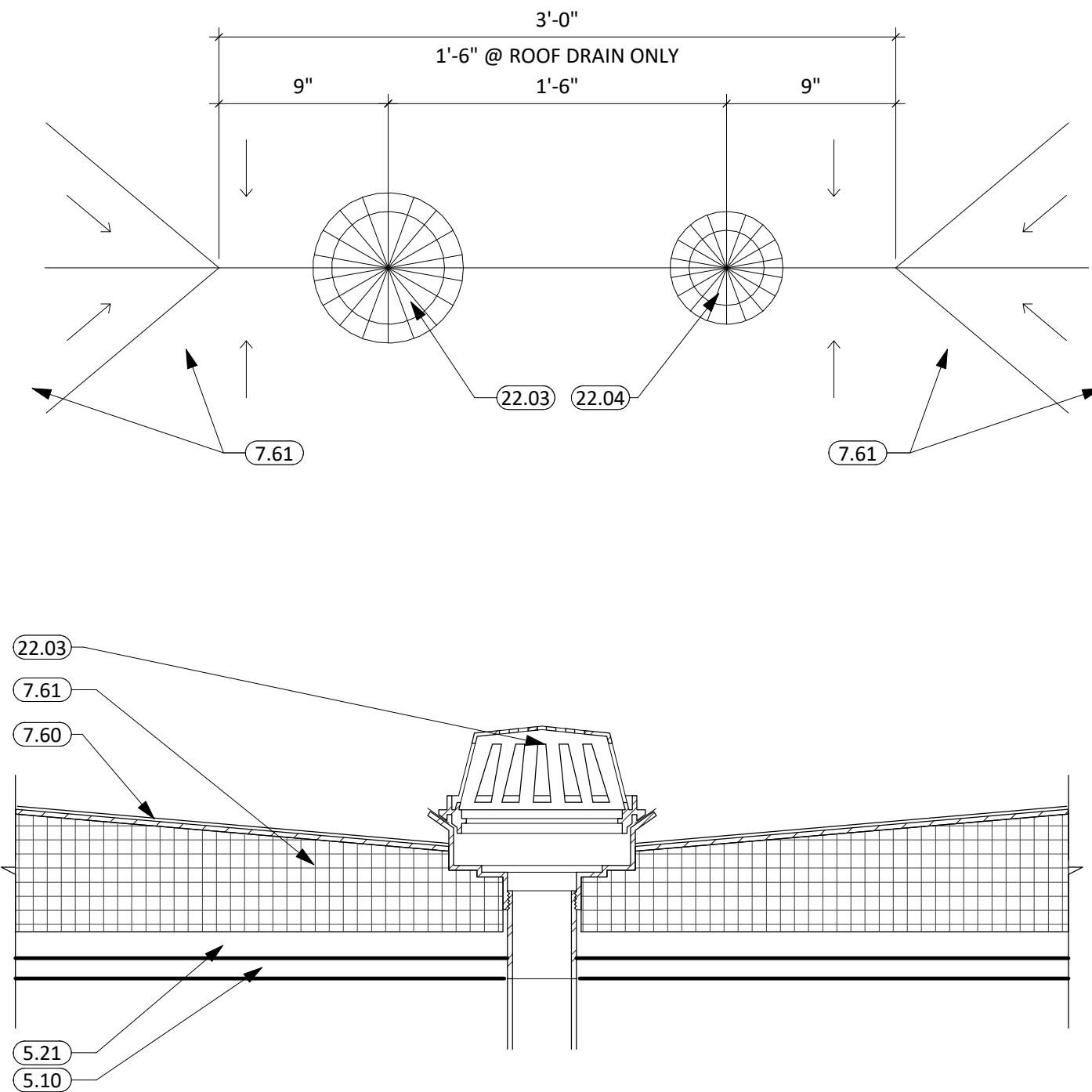
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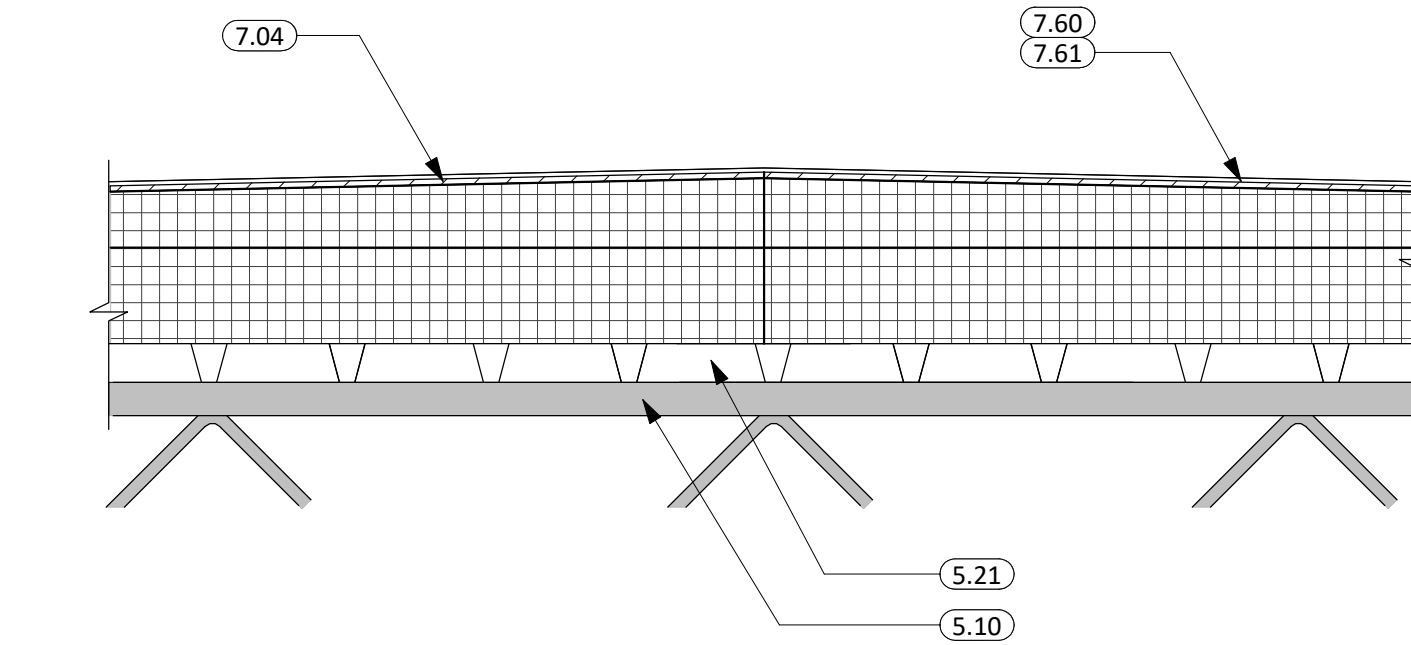
1 ROOF DETAIL

3" = 1'-0"



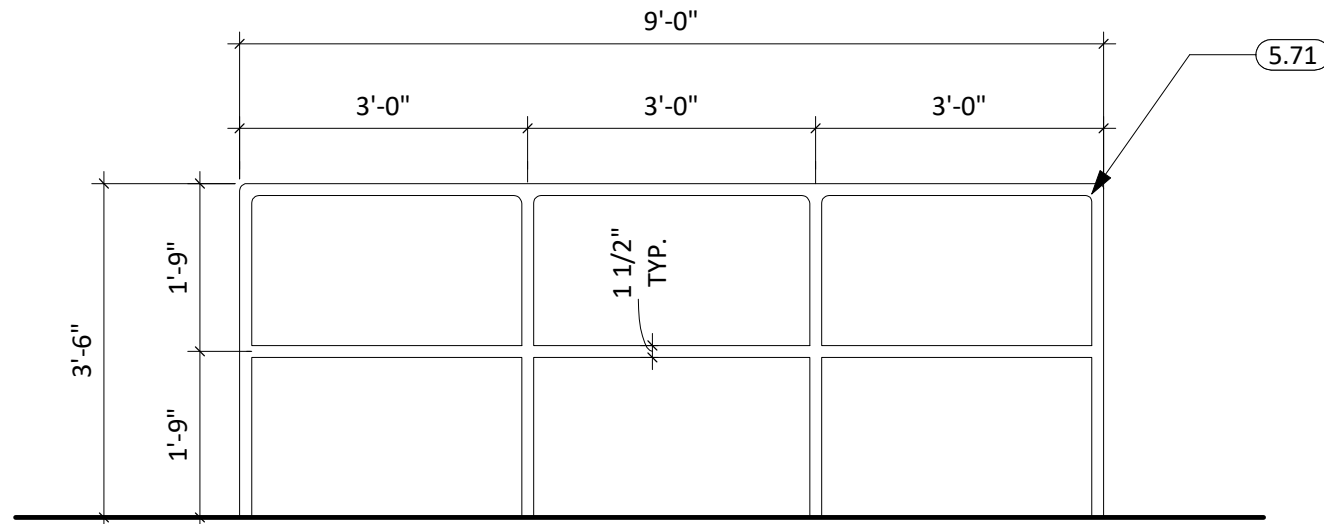
2 ROOF DRAIN

1 1/2" = 1'-0"



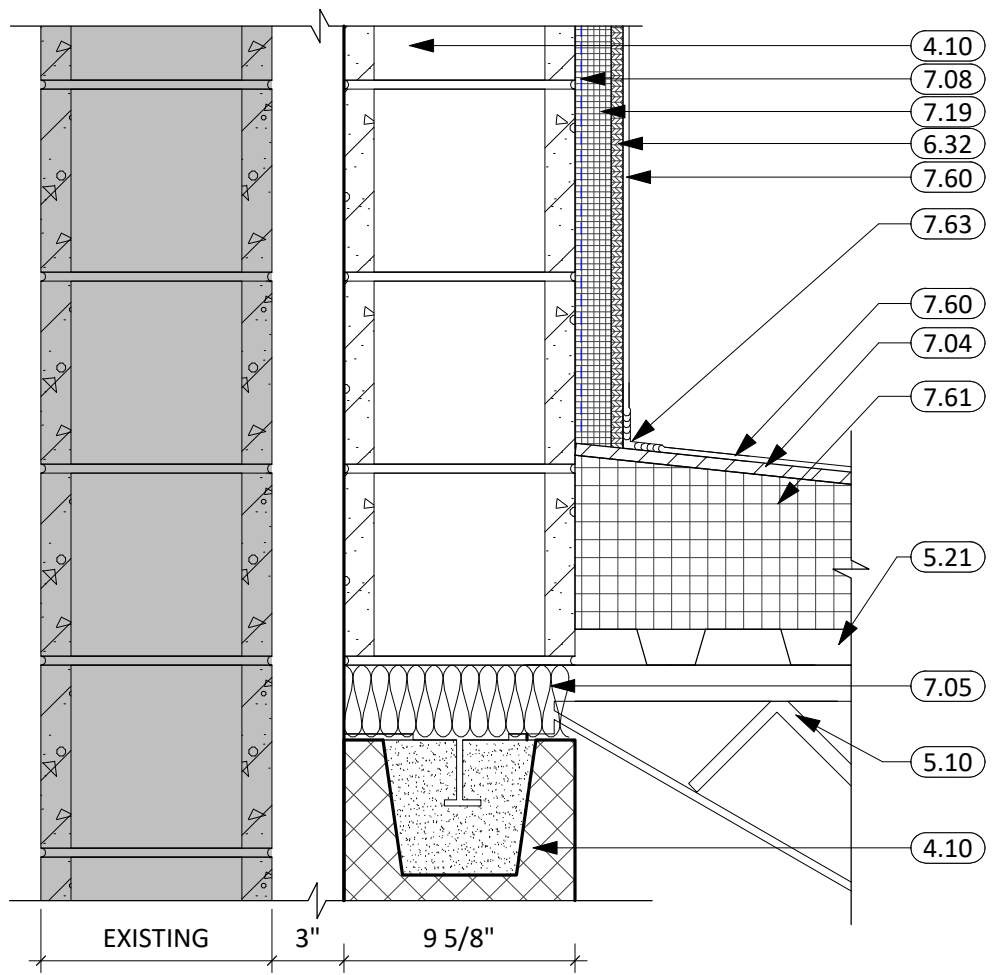
3 HIGH POINT DETAIL (TYP.)

1 1/2" = 1'-0"



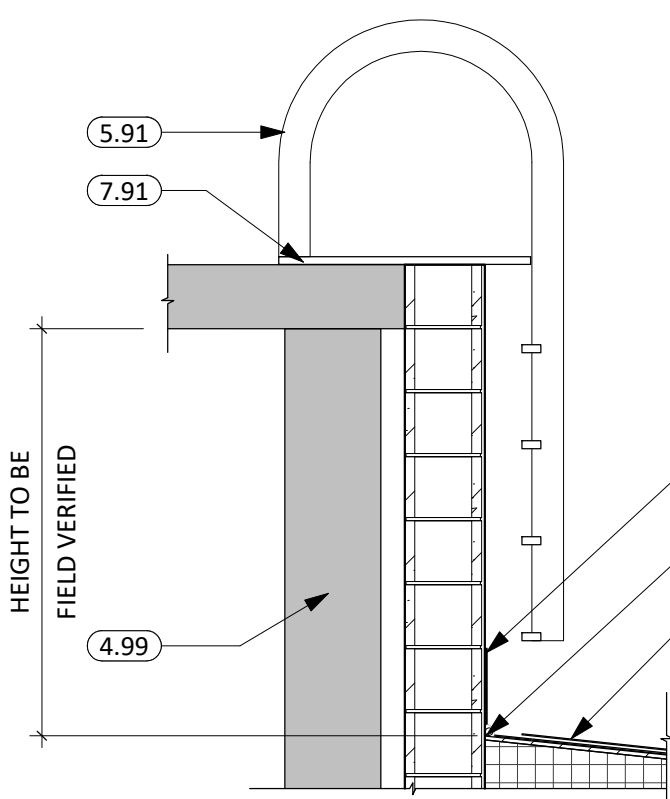
4 ROOF SAFETY RAIL ELEVATION

1/2" = 1'-0"



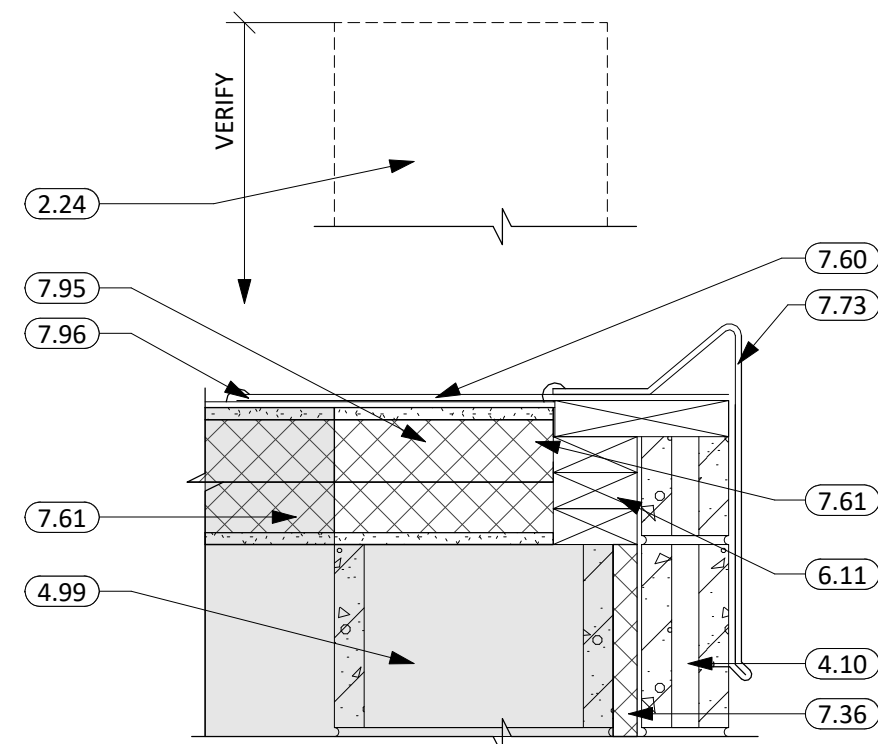
5 ROOF DETAIL - EPDM ROOF EXPANSION

1 1/2" = 1'-0"



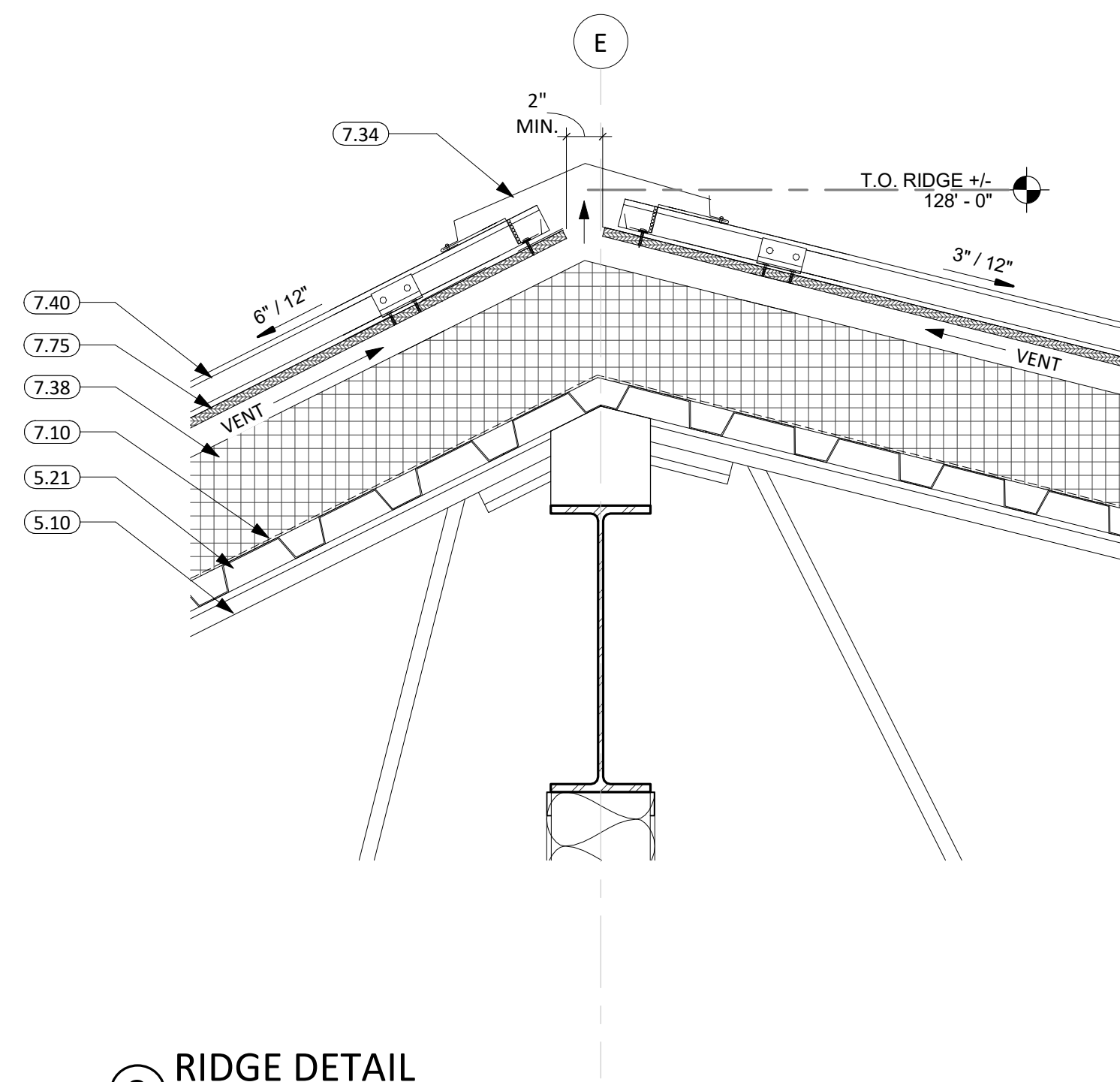
6 ROOF LADDER

1/2" = 1'-0"



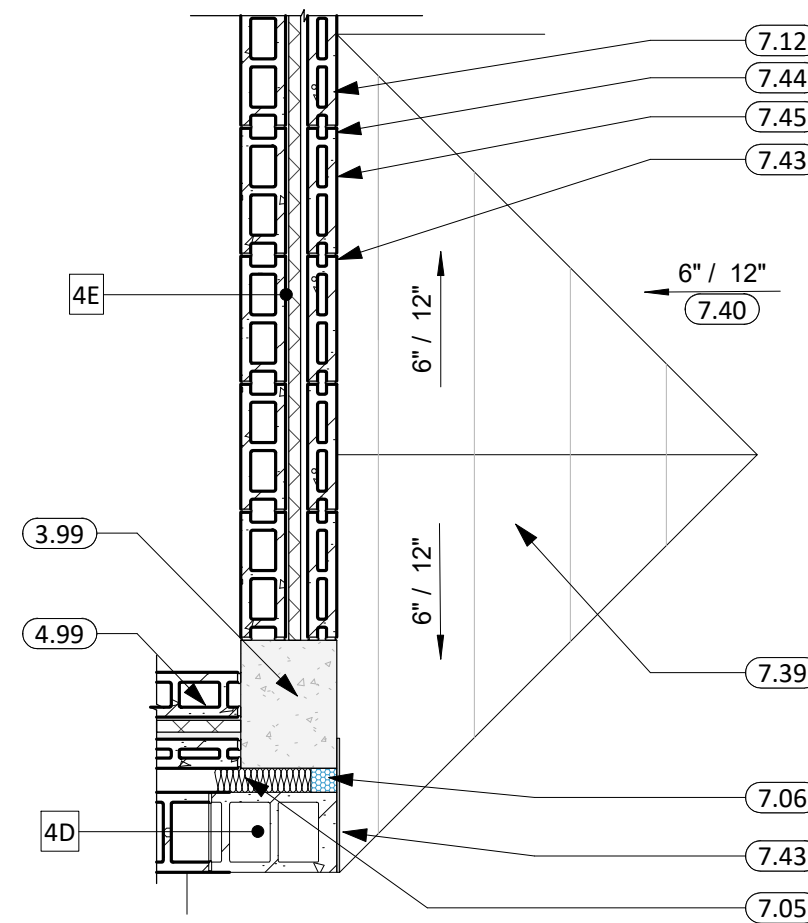
7 ROOF DETAIL

1 1/2" = 1'-0"



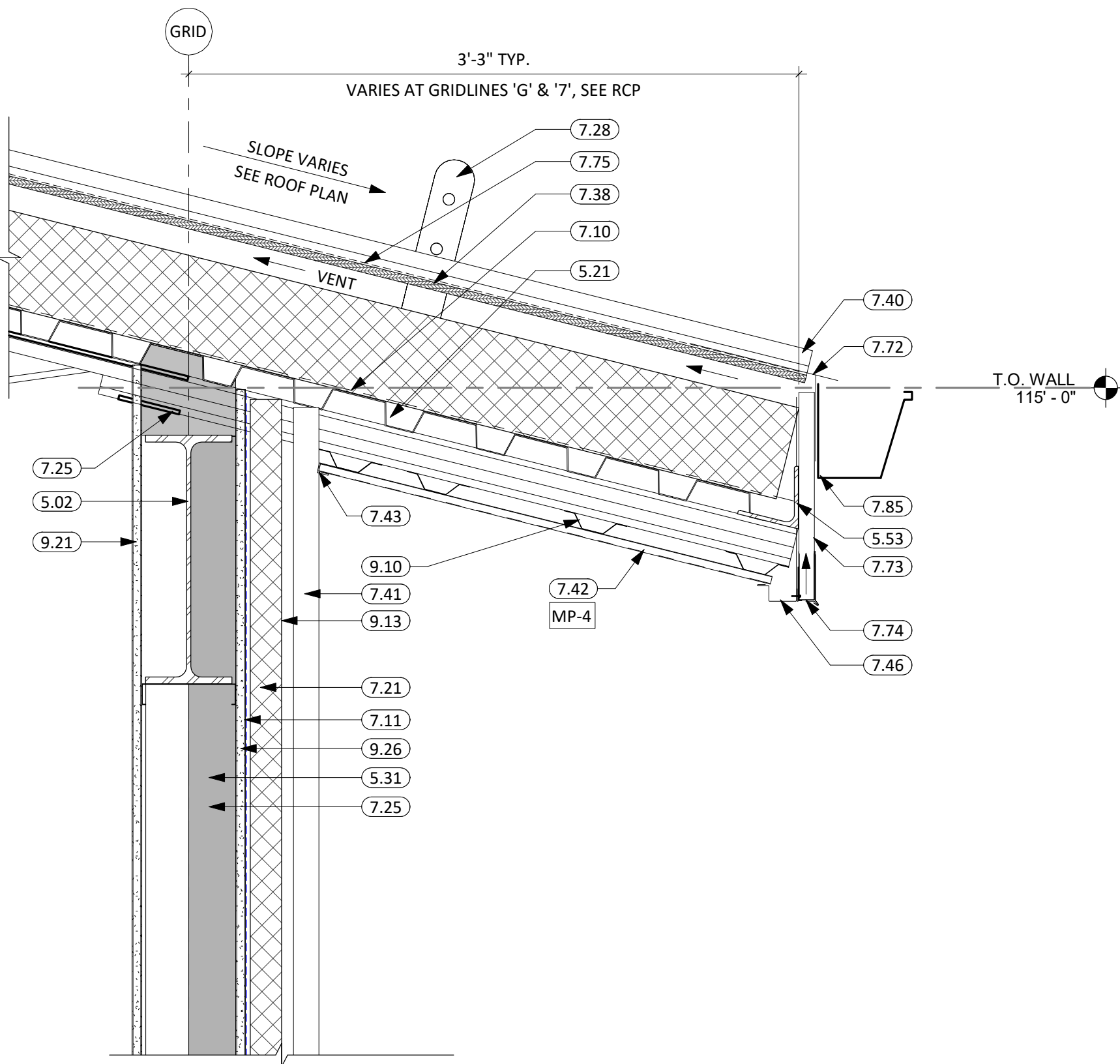
8 RIDGE DETAIL

1 1/2" = 1'-0"



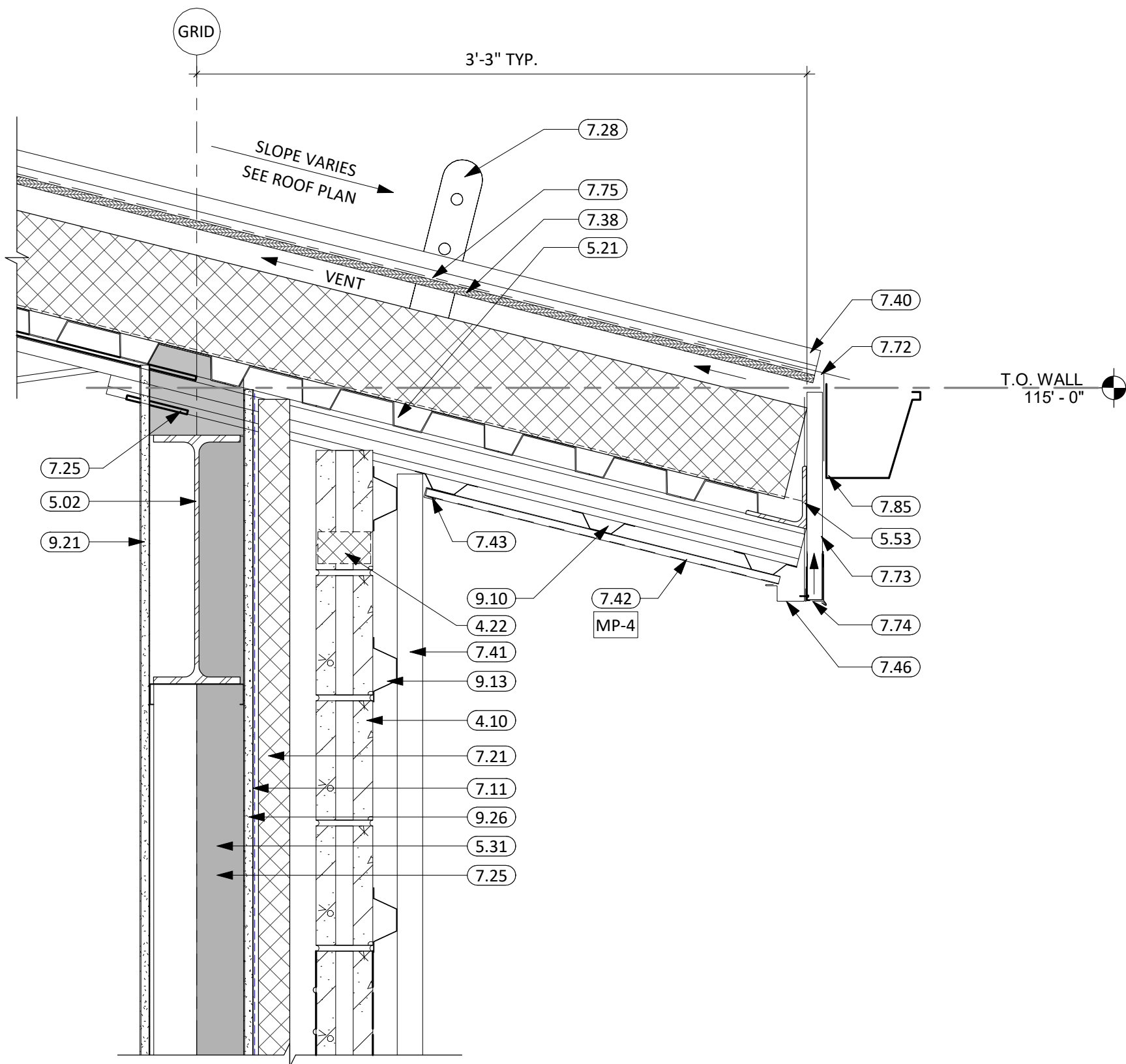
12 ROOF CRICKET DETAIL

1/2" = 1'-0"



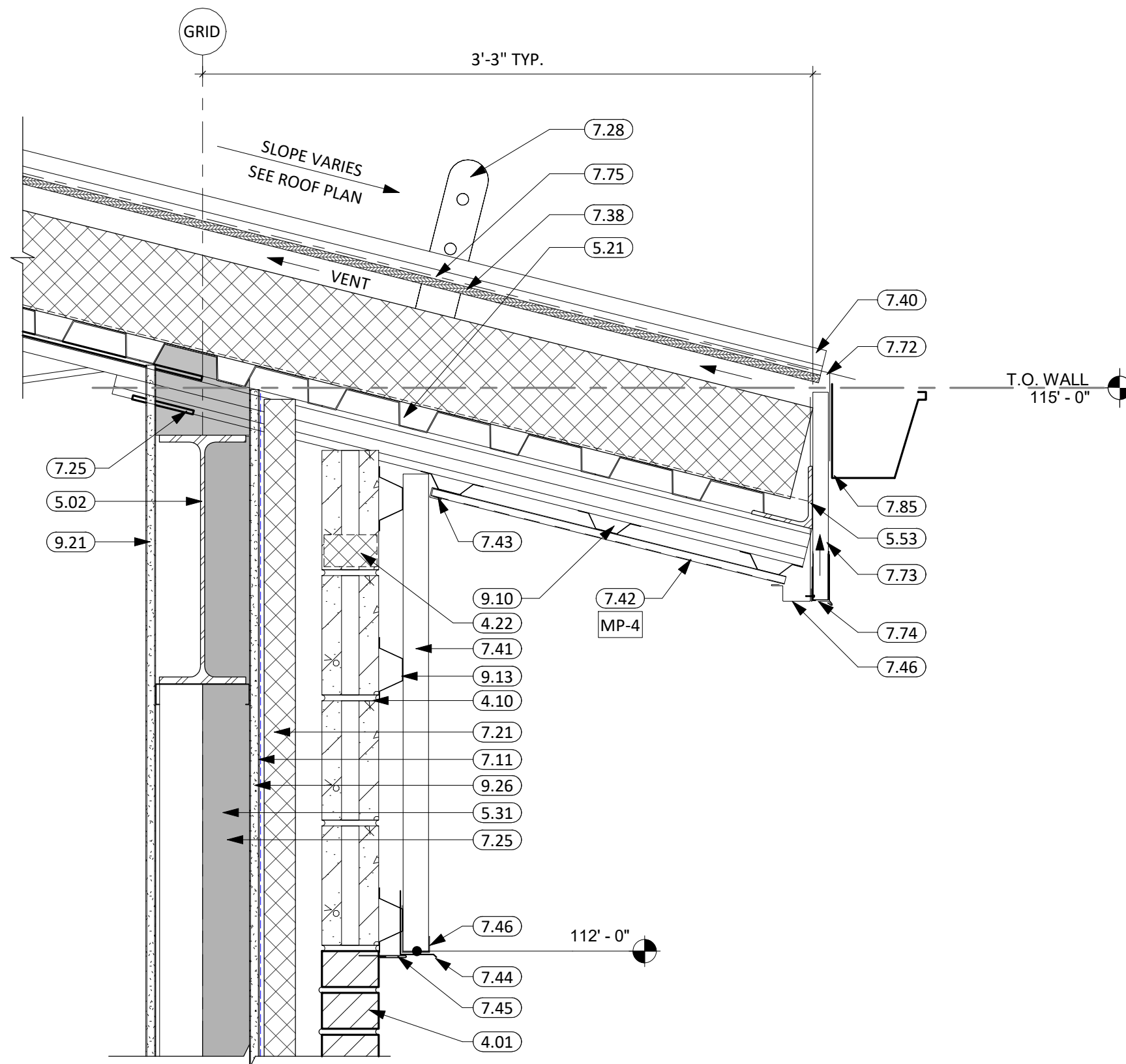
9 ROOF DETAIL

1 1/2" = 1'-0"



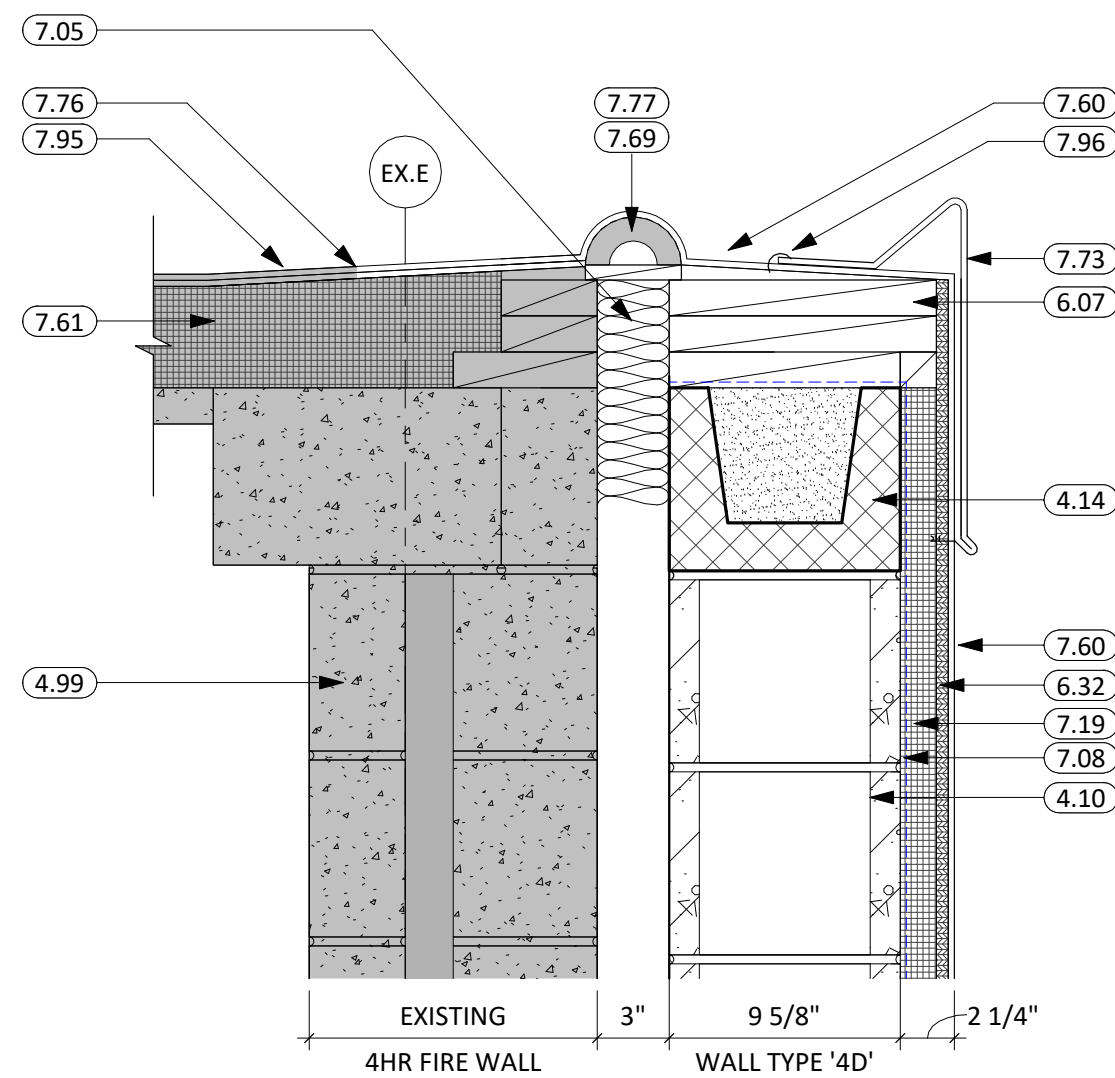
10 ROOF DETAIL

1 1/2" = 1'-0"



11 ROOF DETAIL

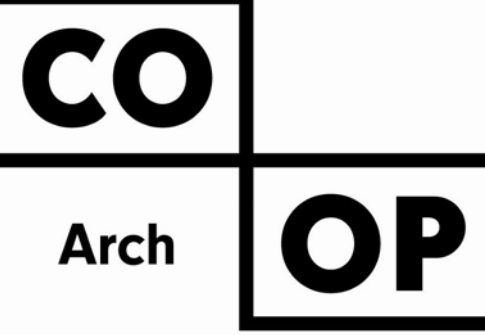
1 1/2" = 1'-0"



13 ROOF DETAIL

1 1/2" = 1'-0"

KEYNOTE SCHEDULE	
2.24	REMOVE PORTION OF MASONRY WALL - PATCH HEAD, JAMBS, & SILL IF APPLICABLE
3.99	EXISTING CONCRETE COLUMN
4.01	BRICK VENEER
4.10	CMU MASONRY UNIT
4.14	BOND BEAM MASONRY UNIT (SEE STRUCTURAL PLANS)
4.22	WEEP VENTS
4.99	EXISTING MASONRY WALL
5.02	STRUCTURAL STEEL BEAM (SEE ARCH. & STRUCT.)
5.10	STEEL JOIST (SEE ARCH. & STRUCT.)
5.21	STEEL ROOF DECK (SEE ARCH. & STRUCT.)
5.31	6" STRUCTURAL STEEL STUD & TRACK FRAMING (SEE ARCH. & STRUCT.)
5.53	FABRICATED STEEL PLATE (SEE ARCH. & STRUCT.)
5.71	ROUND STEEL GUARDRAIL SECTION (SEE ARCH. & STRUCT.)
5.91	STEEL ROOF ACCESS LADDER
6.07	2x WOOD BLOCKING
6.11	GREEN TREATED 2x BLOCKING
6.32	ROOF SHEATHING
7.04	1/2" HIGH DENSITY ROOF COVERBOARD, SEE PROJECT MANUAL
7.05	MINERAL WOOL BATT INSULATION
7.06	PREFINISHED FOAM EXPANSION JOINT MATERIAL
7.08	MEMBRANE FLASHING
7.09	PREFABRICATED RUBBER ROOF BOOTS SET IN MASTIC AROUND ROOF PENETRATIONS (TYP ALL LOCATIONS)
7.10	VAPOR BARRIER
7.11	FLUID APPLIED AIR & MOISTURE WEATHER BARRIER
7.12	SEALANT (PROVIDE BACKER ROD WHERE REQ.)
7.19	RIGID INSULATION (1-1/2")
7.21	RIGID INSULATION (2" POLYISO - U.O.N.)
7.25	SPRAY APPLIED FOAM INSULATION (3" MIN.)
7.28	STANDING SEAM ICE & SNOW GUARDS (SEE PROJECT MANUAL)
7.34	RIDGE VENT
7.35	BATT INSULATION PACKED IN VOIDS
7.36	RIGID INSULATION (1")
7.38	NAIL BASE INSULATION
7.39	STANDING SEAM ROOF CRICKET W/ MATCHING VALLEY FLASHING
7.40	STANDING SEAM METAL ROOFING
7.41	METAL WALL PANEL (PROVIDE ALL REQ. TRIM & FLASHING)
7.42	METAL SOFFIT PANELS
7.43	METAL PANEL CLOSURE
7.44	METAL PANEL FLASHING
7.45	METAL WALL PANEL FINISH TRIM
7.46	METAL WALL PANEL J-TRIM
7.60	FULLY ADHERED EPDM SINGLE MEMBRANE ROOF (WRAP PARAPET WHERE OCCURS)
7.61	POLYISOCYANURATE INSULATION SYSTEM (R-40 MIN.)
7.63	REINFORCED PERIMETER FASTENING STRIP
7.66	TERMINATION BAR w/ SEALANT
7.69	ROOF EXPANSION JOINT ASSEMBLY, 3 HR RATED
7.72	PRE-FINISHED METAL DRIP EDGE
7.73	PRE-FINISHED METAL FASCIA
7.74	METAL-ERA HI-PERF VENTED FASCIA
7.75	SYNTHETIC ROOF UNDERLAYMENT
7.76	WRAP NEW MEMBRANE OVER EX. EPDM & SEAL AS REQ'D
7.77	COMPRESSIBLE INSULATION w/ INSULATION RETAINER
7.85	PRE-FINISHED METAL GUTTER & EAVE TRIM (W/ ALL REQ'D FLASHING & SUPPORTS)
7.91	WALK WAY PAD
7.95	WORK TO BE DONE TO MATCH EXISTING CONDITIONS. MAINTAIN EXISTING WARRANTY.
7.96	LAP SEALANT
9.10	7/8" FURRING CHANNEL
9.13	1 1/2" CARRYING CHANNEL
9.21	5/8" GYPSUM BOARD
9.26	5/8" EXTERIOR GYPSUM SHEATHING
22.03	ROOF DRAIN
22.04	OVERFLOW ROOF DRAIN



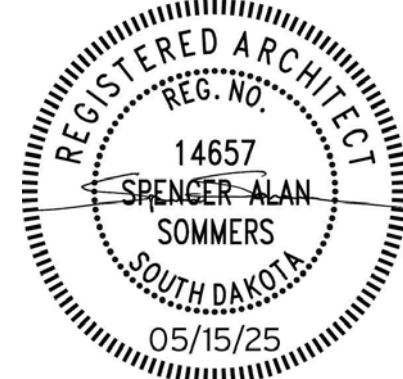
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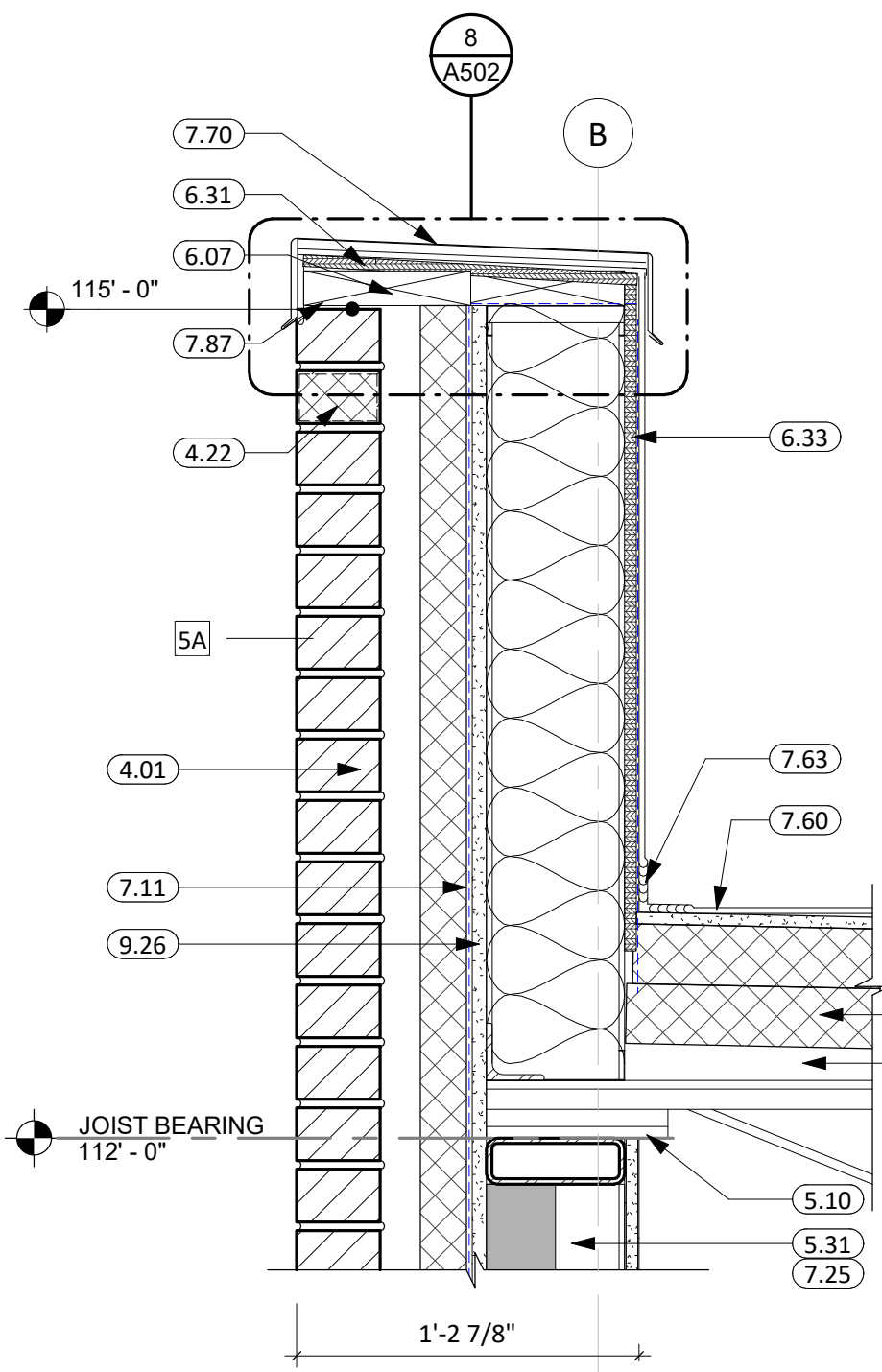
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SHEET TITLE:

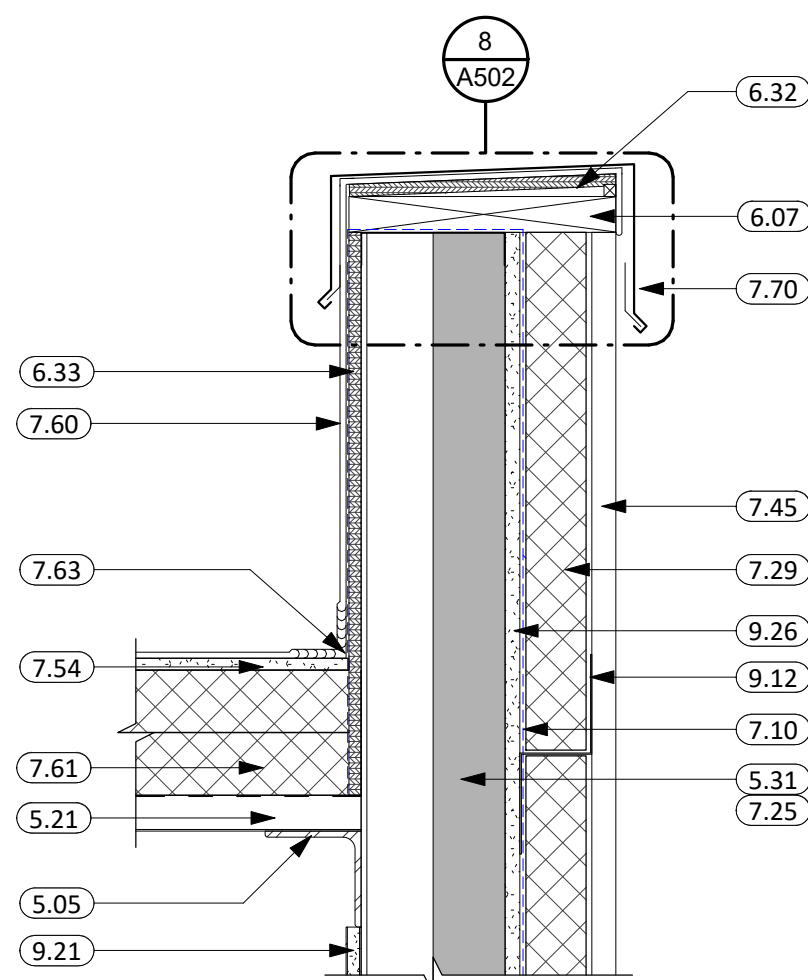
ROOF DETAILS

A501

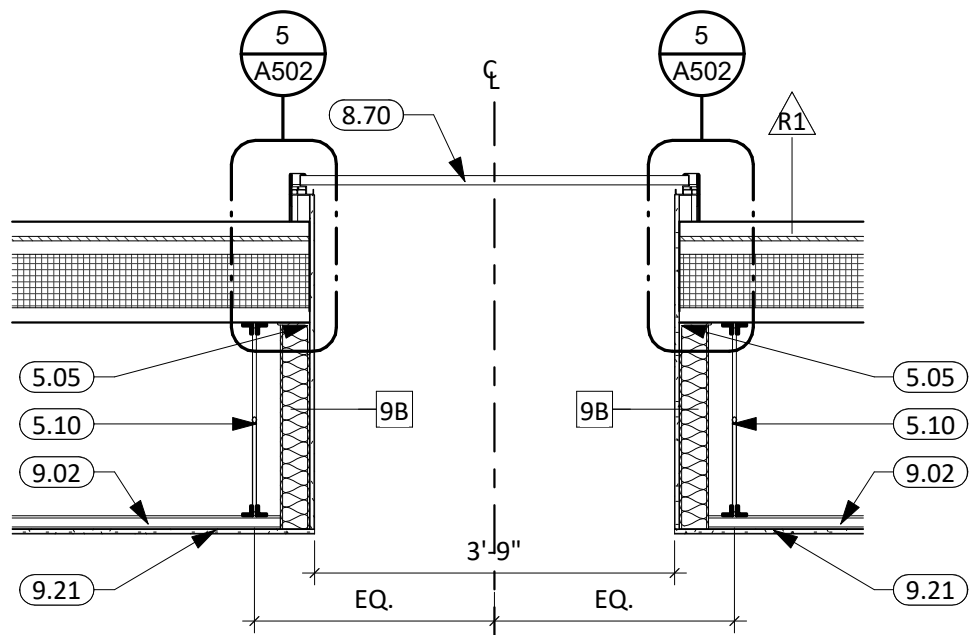




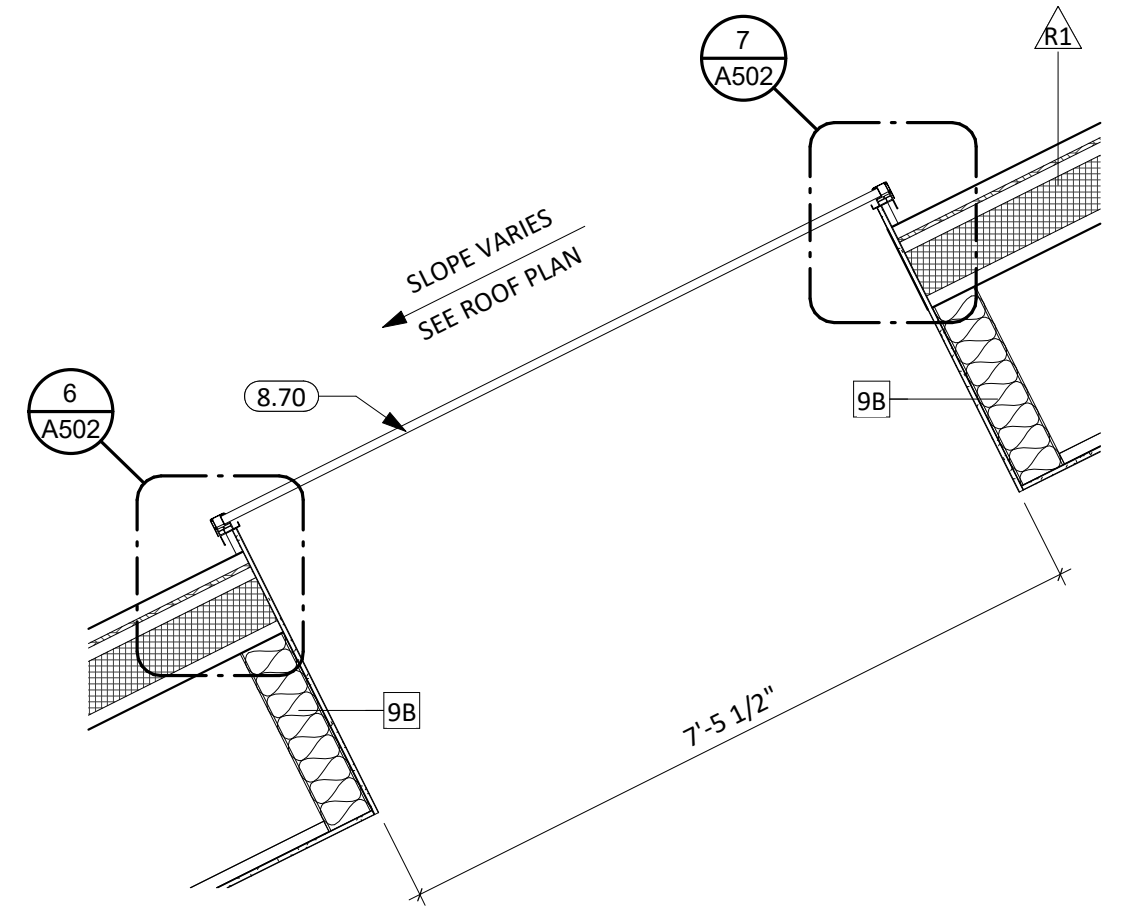
1 PARAPET DETAIL  
1 1/2" = 1'-0"



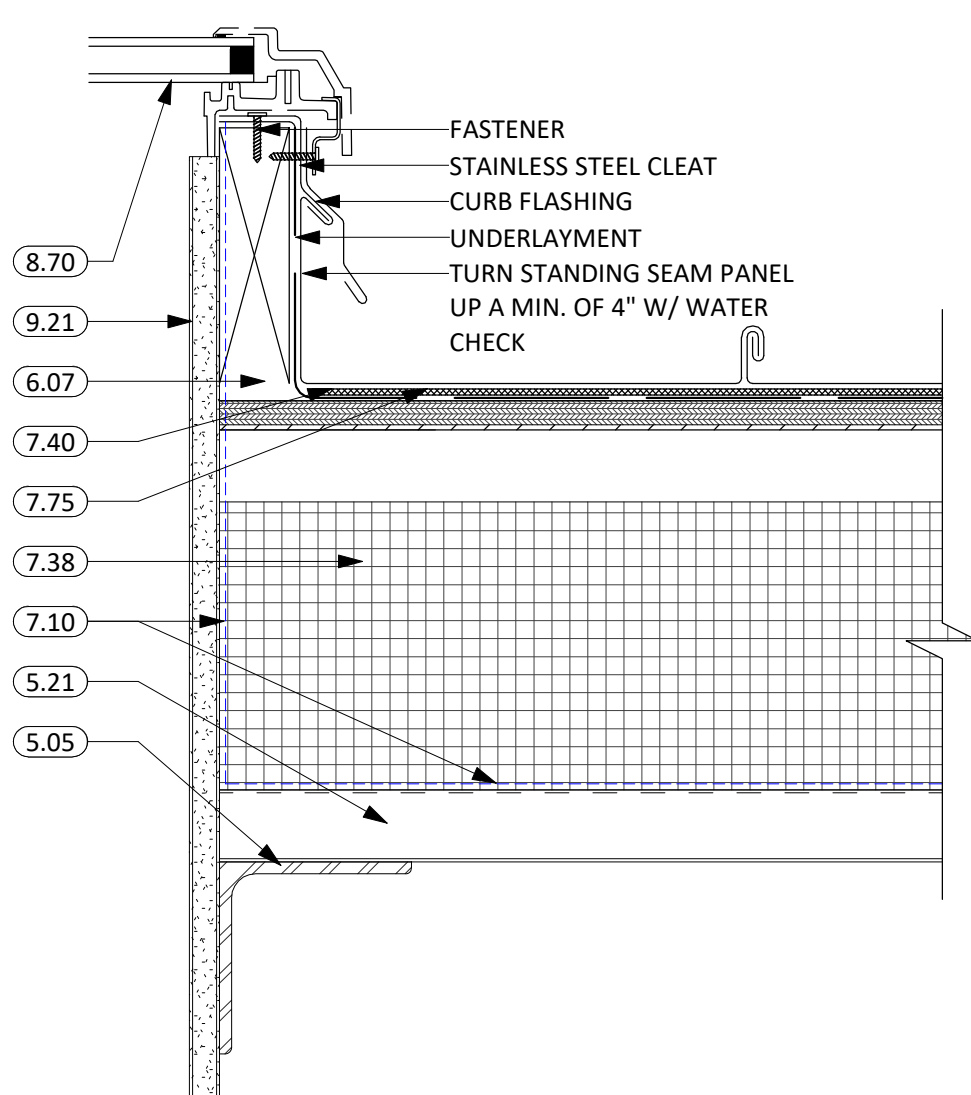
2 PARAPET DETAIL  
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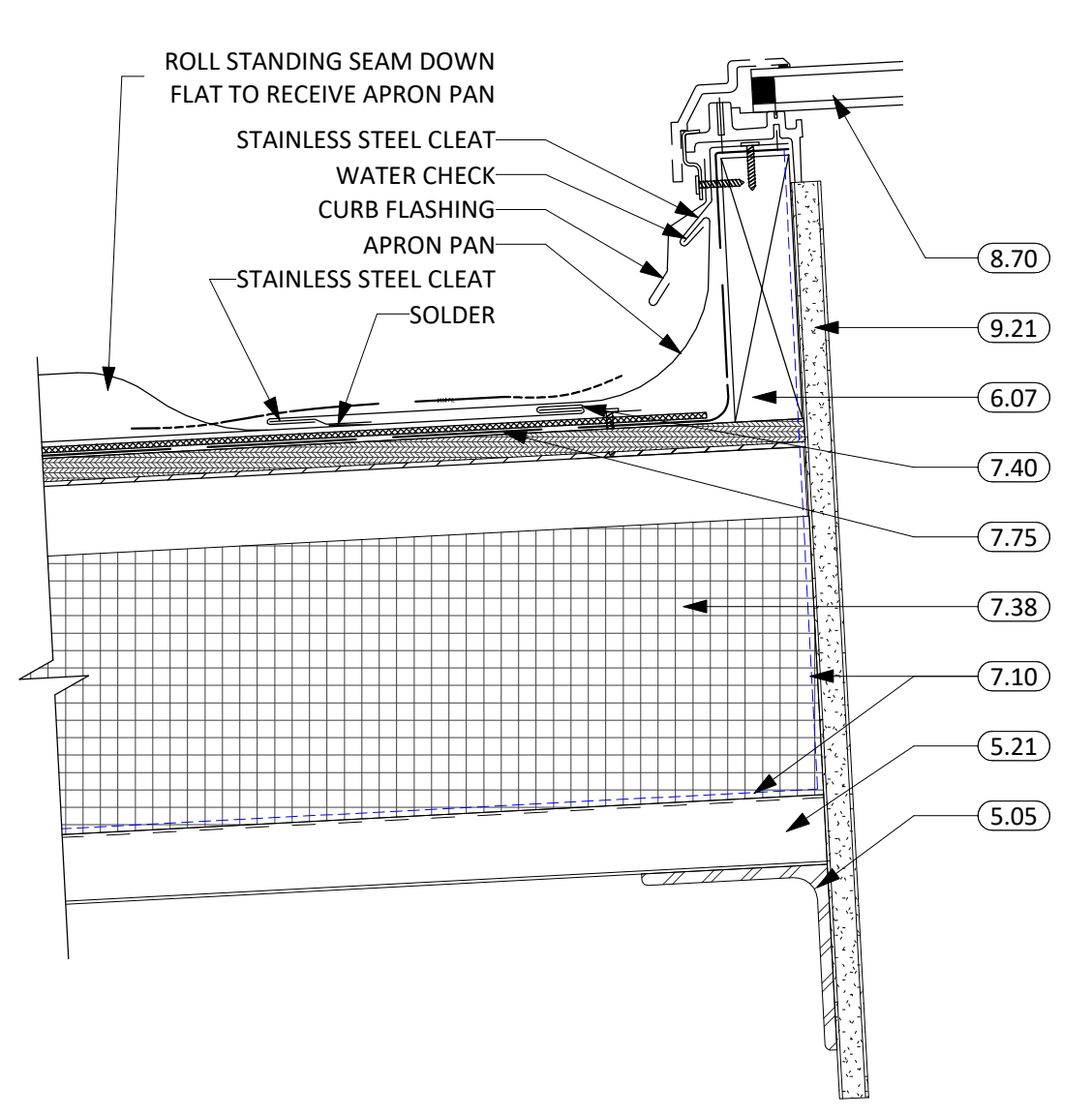
3 SKYLIGHT SECTION  
1/2" = 1'-0"



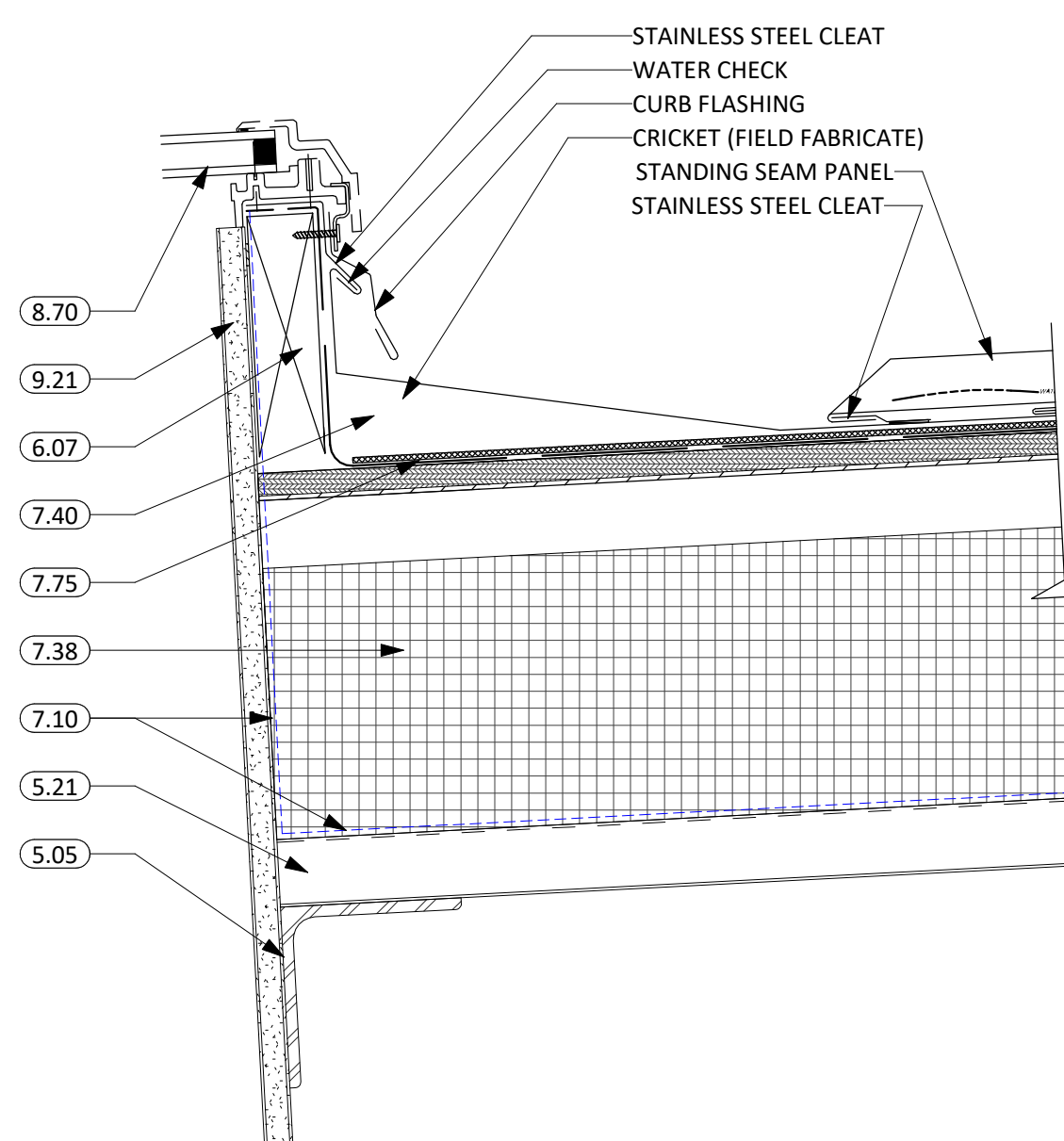
4 SKYLIGHT SECTION  
1/2" = 1'-0"



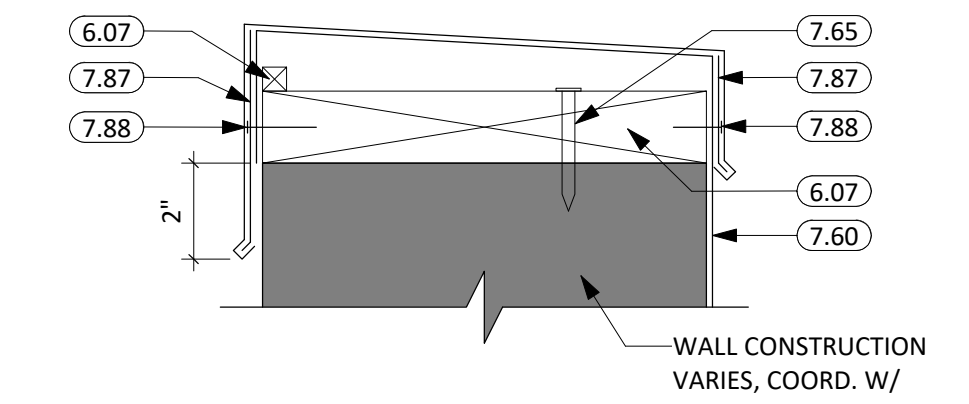
5 SIDE OF SKYLIGHT  
3" = 1'-0"



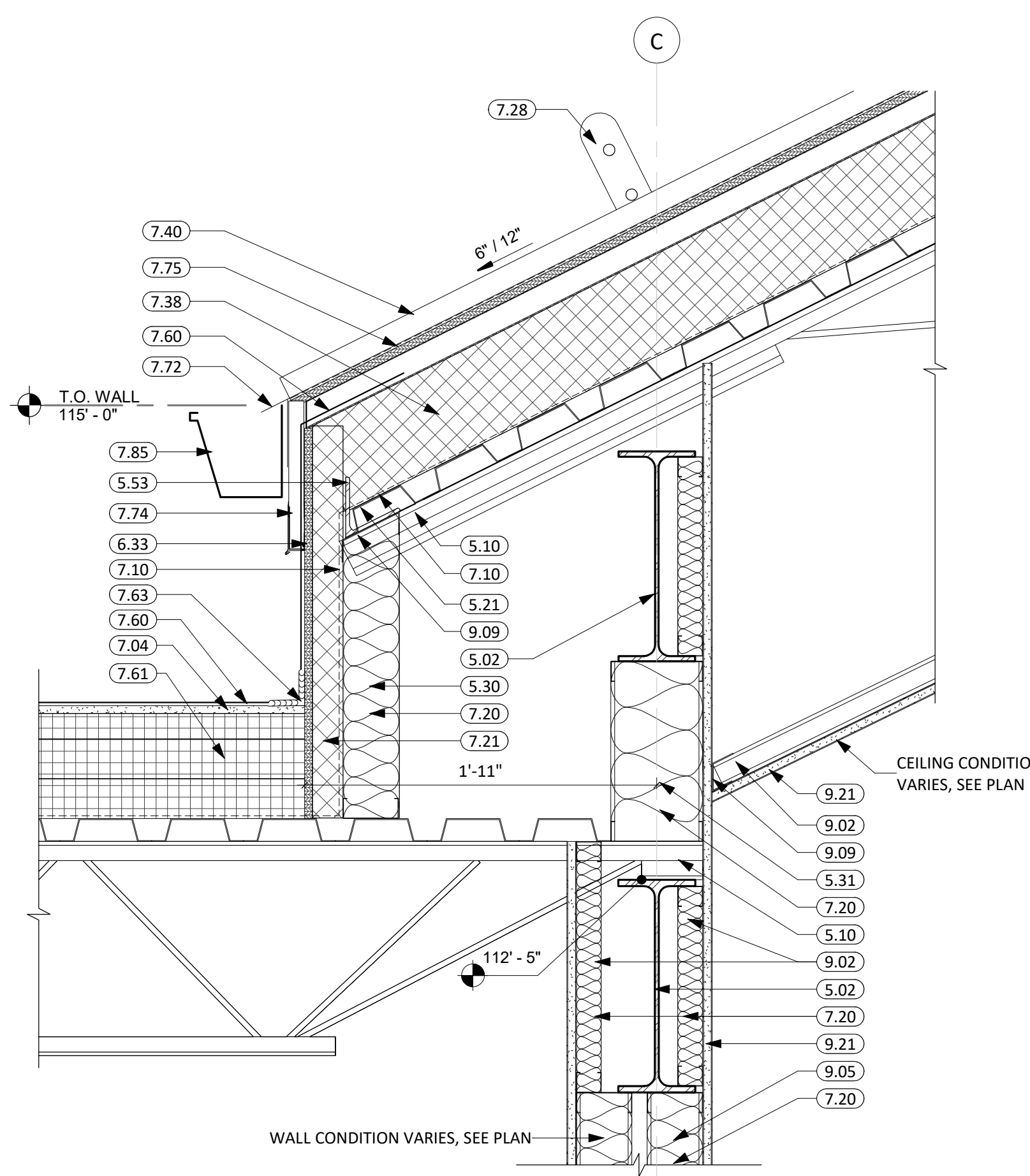
6 BOTTOM OF SKYLIGHT  
3" = 1'-0"



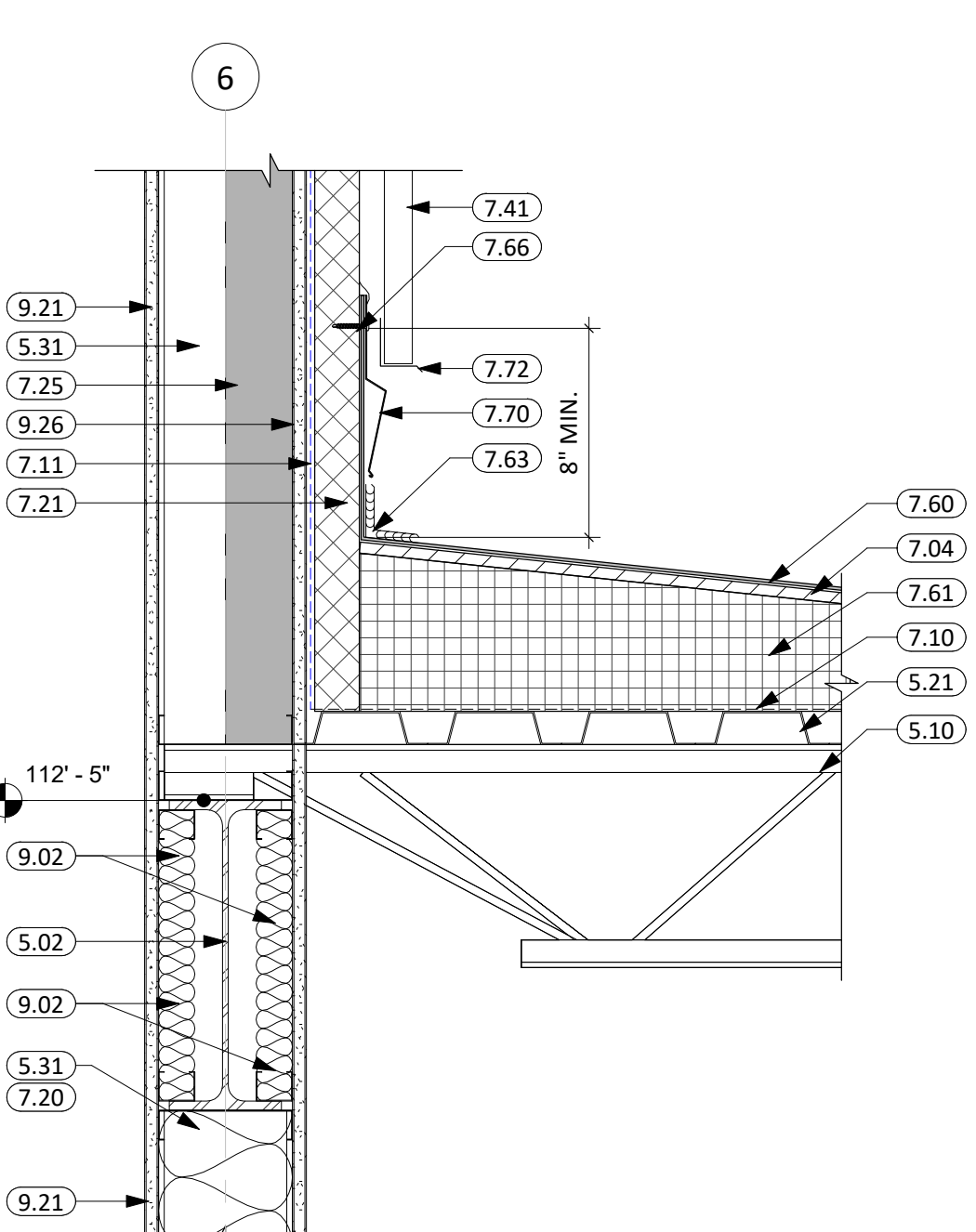
7 TOP OF SKYLIGHT  
3" = 1'-0"



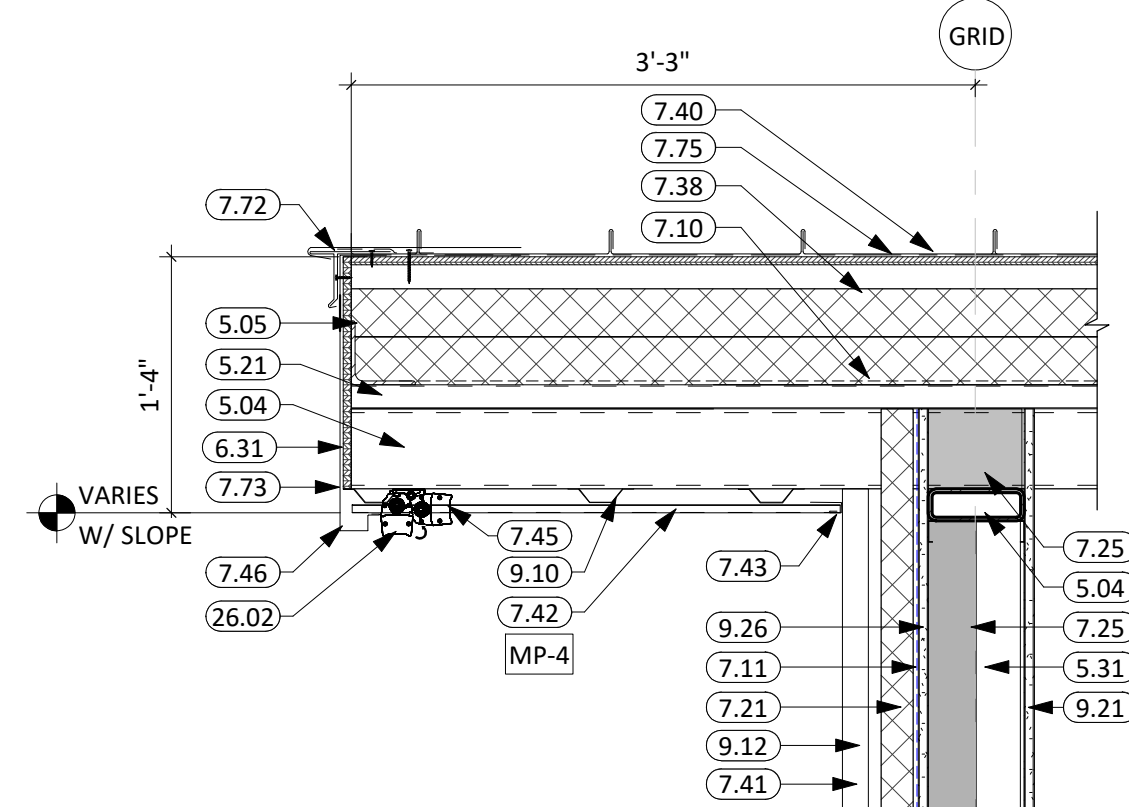
8 ROOF DETAIL  
3" = 1'-0"



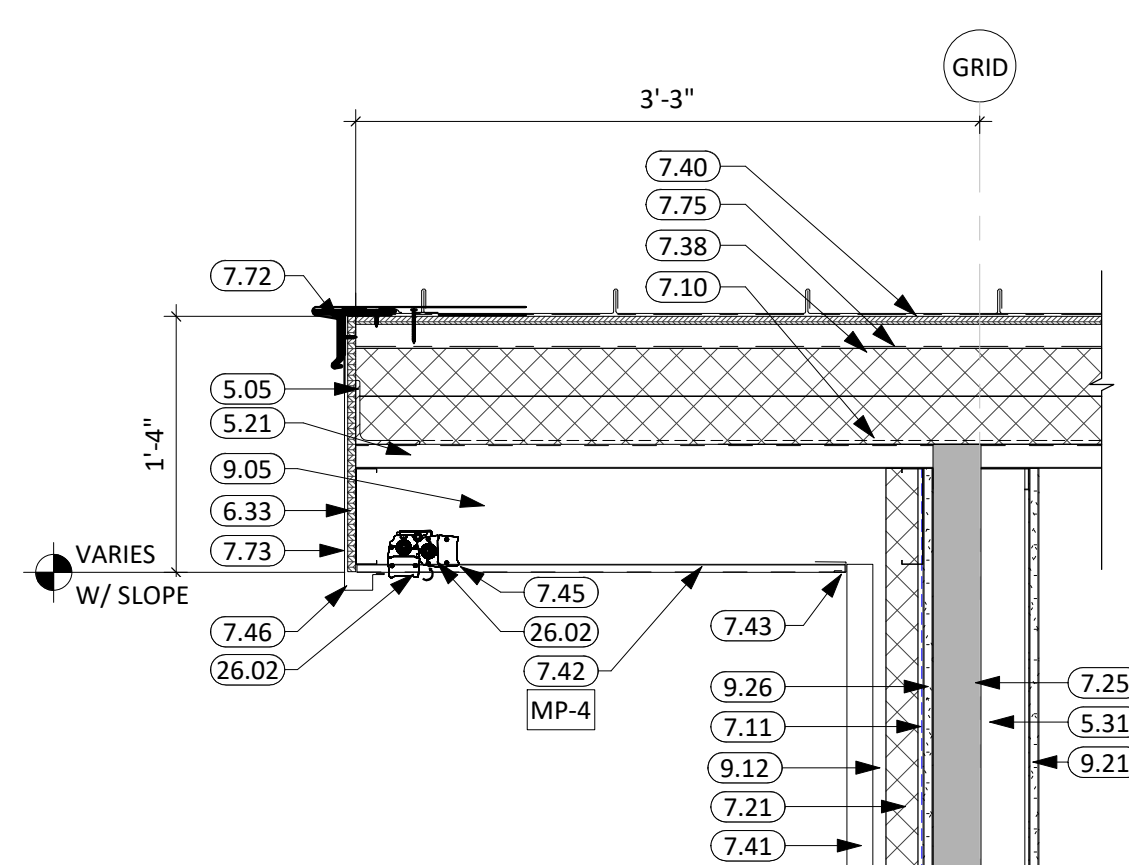
9 ROOF DETAIL  
1 1/2" = 1'-0"



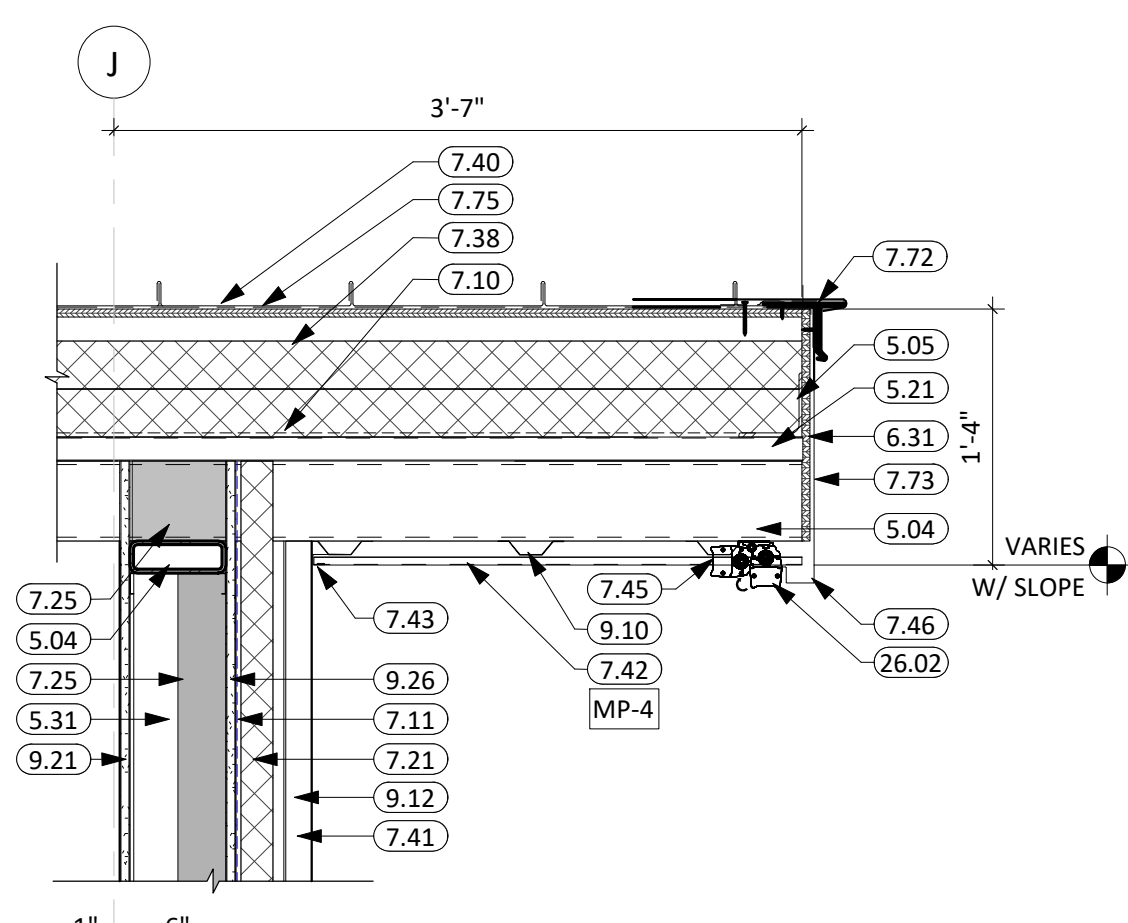
10 ROOF DETAIL  
1 1/2" = 1'-0"



11 ROOF EDGE DETAIL  
1" = 1'-0"

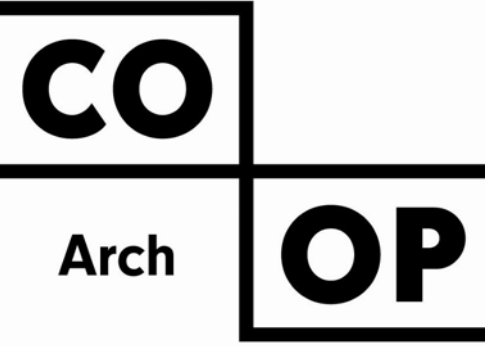


12 ROOF EDGE DETAIL  
1" = 1'-0"



13 ROOF DETAIL  
1" = 1'-0"

KEYNOTE SCHEDULE	
4.01	BRICK VENEER
4.22	WEEP VENTS
5.02	STRUCTURAL STEEL BEAM (SEE ARCH. & STRUCT.)
5.04	STRUCTURAL STEEL TUBE (SEE ARCH. & STRUCT.)
5.05	STRUCTURAL STEEL ANGLE (SEE ARCH. & STRUCT.)
5.10	STEEL JOIST (SEE ARCH. & STRUCT.)
5.21	STEEL ROOF DECK (SEE ARCH. & STRUCT.)
5.30	3 5/8" STRUCTURAL STEEL STUD & TRACK FRAMING (SEE ARCH. & STRUCT.)
5.31	6" STRUCTURAL STEEL STUD & TRACK FRAMING (SEE ARCH. & STRUCT.)
5.53	FABRICATED STEEL PLATE (SEE ARCH. & STRUCT.)
6.07	2x WOOD BLOCKING
6.31	1/2" EXTERIOR SHEATHING
6.32	ROOF SHEATHING
6.33	FIRE TREATED PLYWOOD
7.04	1/2" HIGH DENSITY ROOF COVERBOARD, SEE PROJECT MANUAL
7.10	VAPOR BARRIER
7.11	FLUID APPLIED AIR & MOISTURE WEATHER BARRIER
7.20	BATT INSULATION
7.21	RIGID INSULATION (2" POLYISO - U.O.N.)
7.25	SPRAY APPLIED FOAM INSULATION (3" MIN.)
7.28	STANDING SEAM ICE & SNOW GUARDS (SEE PROJECT MANUAL)
7.29	RIGID INSULATION (2-1/2")
7.38	NAIL BASE INSULATION
7.40	STANDING SEAM METAL ROOFING
7.41	METAL WALL PANEL (PROVIDE ALL REQ. TRIM & FLASHING)
7.42	METAL SOFFIT PANELS
7.43	METAL PANEL CLOSURE
7.45	METAL WALL PANEL FINISH TRIM
7.46	METAL WALL PANEL J-TRIM
7.54	1/2" COVERBOARD
7.60	FULLY ADHERED EPDM SINGLE MEMBRANE ROOF (WRAP PARAPET WHERE OCCURS)
7.61	POLYISOCYANURATE INSULATION SYSTEM (R-40 MIN.)
7.63	REINFORCED PERIMETER FASTENING STRIP
7.65	ANCHOR (3'-0" O.C. MAX)
7.66	TERMINATION BAR W/ SEALANT
7.70	PRE-FINISHED SHEET METAL FLASHING
7.72	PRE-FINISHED METAL DRIP EDGE
7.73	PRE-FINISHED METAL FASCIA
7.74	METAL-ERA HI-PERF VENTED FASCIA
7.75	SYNTHETIC ROOF UNDERLAYMENT
7.85	PRE-FINISHED METAL GUTTER & EAVE TRIM (W/ ALL REQ'D FLASHING & SUPPORTS)
7.87	CONTINUOUS CLEAT
7.88	FASTENER W/ NEOPRENE WASHER
8.70	SKYLIGHT UNIT
9.02	1 5/8" STEEL STUD & TRACK FRAMING
9.05	6" STEEL STUD & TRACK FRAMING
9.09	INCLINED TRACK
9.10	7/8" FURRING CHANNEL
9.12	Z-FURRING CHANNEL
9.21	5/8" GYPSUM BOARD
9.26	5/8" EXTERIOR GYPSUM SHEATHING
26.02	RECESS LIGHT FIXTURE (SEE ELECTRICAL)



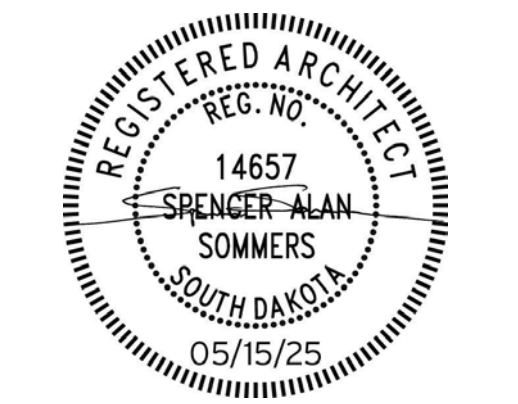
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PROJECT:  
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NORTHERN ELECTRIC COOPERATIVE  
BATH, SOUTH DAKOTA

SHEET TITLE:  
ROOF DETAILS

A502





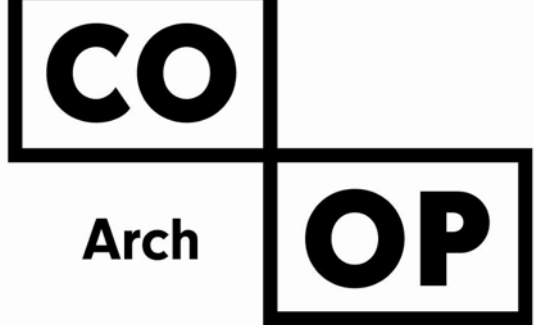






GENERAL NOTES	
1.	ALL H.M. FRAMES IN STUD PARTITIONS SHALL BE WRAPPED AROUND BOTH SIDES OF PARTITION UNLESS OTHERWISE NOTED. SEE FLOOR PLAN(S) FOR WALL THICKNESS.
2.	ALL EXTERIOR FRAMES & DOORS ARE TO BE THERMALLY BROKEN.
3.	CAULK ENTIRE PERIMETER OF H.M. FRAMES (BOTH SIDES).
4.	PAINT H.M. FRAMES TO MATCH WALL. SPLIT PAINT COLOR AT DOOR GASKET AS REQUIRED.
5.	PROVIDE ROOM SIGNAGE AT ALL DOORS. WHERE MOUNTED TO GLAZING, PROVIDE A BLANK BACK PLATE ON OPPOSITE SIDE OF GLAZING. SEE CODE STANDARDS FOR MOUNTING HEIGHTS AND LOCATIONS. SEE SPECIFICATIONS FOR SPECIAL SIGNAGE REQUIREMENTS.
6.	REFER TO WALL TYPES FOR WALL CONSTRUCTION ELEMENTS FOR ALL DOOR AND WINDOW DETAILS. COORDINATE ALL STRUCTURAL REQ. WITH STRUCTURAL DRAWINGS.
7.	WALL MOUNTED EXIT SIGNS AND FIXTURES ARE TO BE CENTERED OVER DOOR OR DOOR OPENING WHERE APPLICABLE.
8.	FRAME TYPES WITH SIDELITES IN A 1-HR RATED WALL ASSEMBLY REQUIRE FIRE-RATED GLAZING TO BE 45-MIN, HOSE STREAM TESTED (IBC 716.1).

KEYNOTE SCHEDULE	
3.01	CONC. FLOOR SLAB ON GRADE (SEE STRUCT. FOR THICKNESS AND REINF.) w/ 15 MIL VAPOR BARRIER BELOW
3.04	CONT. CONC. FOUNDATION WALL (SEE STRUCTURAL PLANS)
3.05	THICKENED SLAB
3.06	CONCRETE STOOP w/FROST FREE FOOTING (SEE STRUCTURAL PLANS)
3.13	PATCH EXISTING CONCRETE FLOOR @ NEW OPENINGS AS DIRECTED
3.95	PRECAST CORE FLOOR (SEE STRUCTURAL PLANS)
4.10	CMU MASONRY UNIT
4.14	BOND BEAM MASONRY UNIT (SEE STRUCTURAL PLANS)
4.99	EXISTING MASONRY WALL
5.06	STRUCTURAL STEEL PLATE (SEE ARCH. & STRUCT.)
5.31	6" STRUCTURAL STEEL STUD & TRACK FRAMING (SEE ARCH. & STRUCT.)
5.39	HEADER CONDITION (SEE ARCH. & STRUCT.)
6.07	2x WOOD BLOCKING
6.10	BLOCKING (SEE STRUCT. FOR ADDITIONAL REQ.)
7.05	MINERAL WOOL BATT INSULATION
7.07	WRAP VAPOR BARRIER INTO WINDOW OPENING
7.08	MEMBRANE FLASHING
7.11	FLUID APPLIED AIR & MOISTURE WEATHER BARRIER
7.12	SEALANT (PROVIDE BACKER ROD WHERE REQ.)
7.13	SEALANT AROUND PEREMETER (TYP. BOTH SIDES)
7.20	BATT INSULATION
7.21	RIGID INSULATION (2" POLYISO - U.O.N.)
7.25	SPRAY APPLIED FOAM INSULATION (3" MIN.)
7.29	RIGID INSULATION (2-1/2")
7.37	RIGID INSULATION (2")
7.41	METAL WALL PANEL (PROVIDE ALL REQ. TRIM & FLASHING)
7.43	METAL PANEL CLOSURE
7.45	METAL WALL PANEL FINISH TRIM
7.46	METAL WALL PANEL I-TRIM
7.72	PRE-FINISHED METAL DRIP EDGE
8.01	DOOR (SEE SCHED.)
8.02	FRAME (SEE SCHED.)
8.08	HOLLOW METAL FRAME - INSET
8.12	THRESHOLD
8.40	ALUMINUM FRAMED ENTRANCE/STOREFRONT
9.04	3 5/8" STEEL STUD & TRACK FRAMING
9.05	6" STEEL STUD & TRACK FRAMING
9.10	7/8" FURRING CHANNEL
9.11	1 1/2" FURRING CHANNEL
9.12	Z-FURRING CHANNEL
9.21	5/8" GYPSUM BOARD
9.23	5/8" HIGH ABUSE GYPSUM BOARD
9.26	5/8" EXTERIOR GYPSUM SHEATHING
10.20	OPERABLE PARTITION (B.O.D. MODERNFOLD ACOUSTI-SEAL LEGACY ELECTRIC, CONCEALED HINGES). INSTALL PER MANUFACTURERS DIRECTIONS (SEE STRUCTURAL PLANS)
10.30	CORNER GUARDS
10.91	INTERIOR FIRE-RATED WALL & CEILING EXPANSION JOINT COVER ASSEMBLY
10.92	INTERIOR FIRE-RATED FLOOR EXPANSION JOINT COVER ASSEMBLY
31.02	DRAINAGE FILL (COORD. REQ. w/ SOILS REPORT)

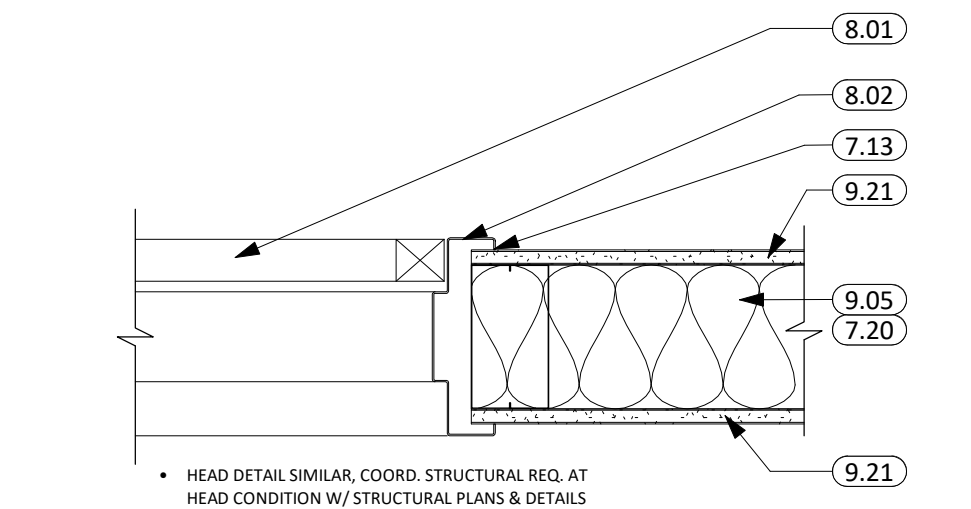


1108 S. Main St. 102  
Aberdeen, SD 57401  
Phone: 605-725-4852

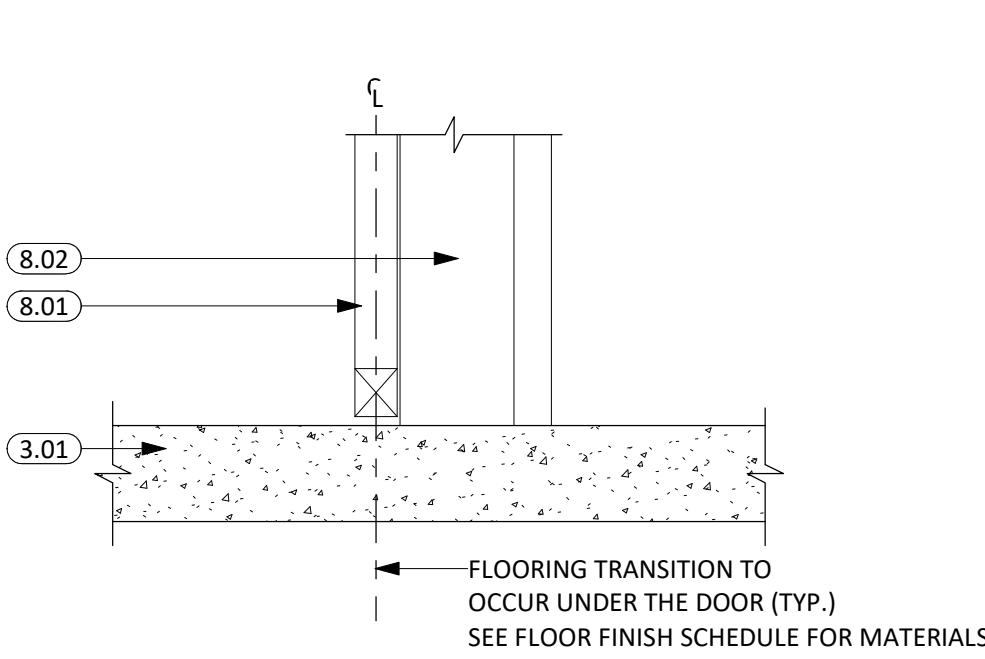
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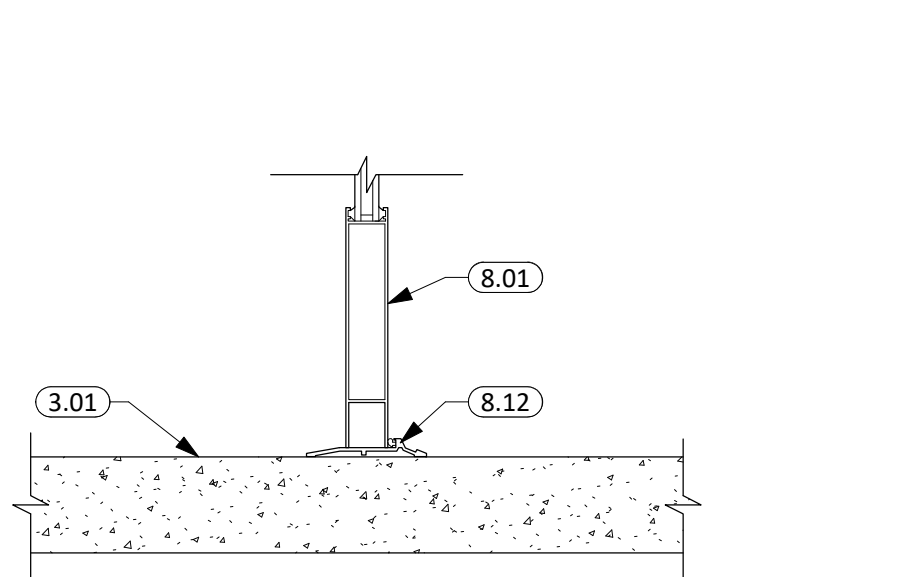
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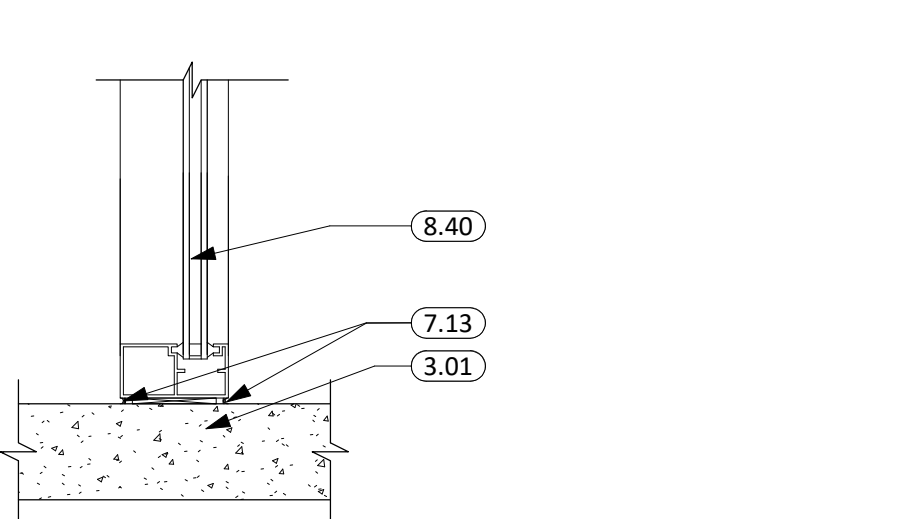
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1 1/2" = 1'-0"



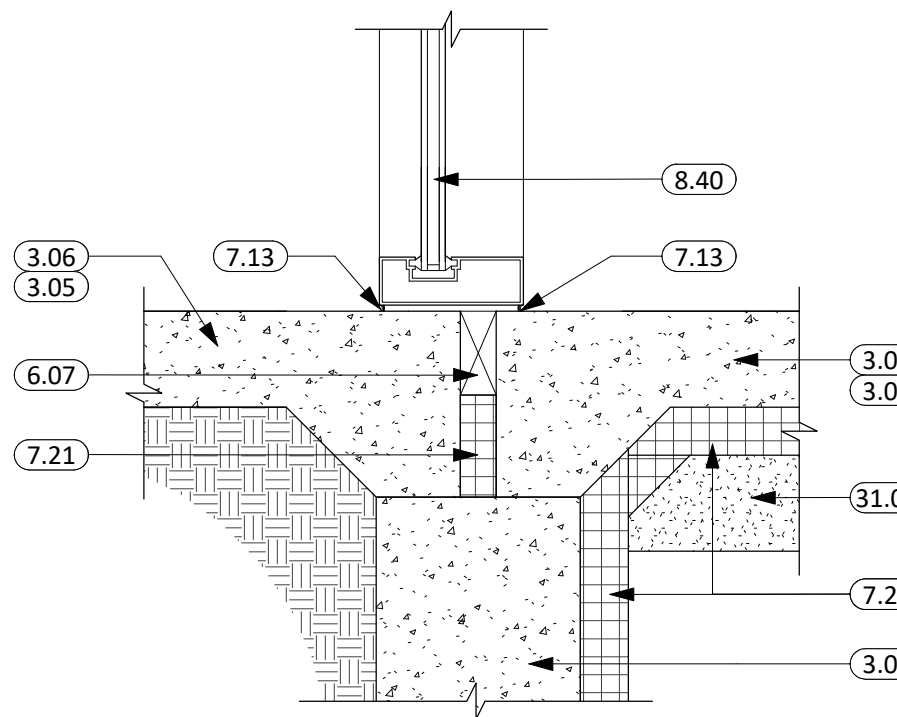
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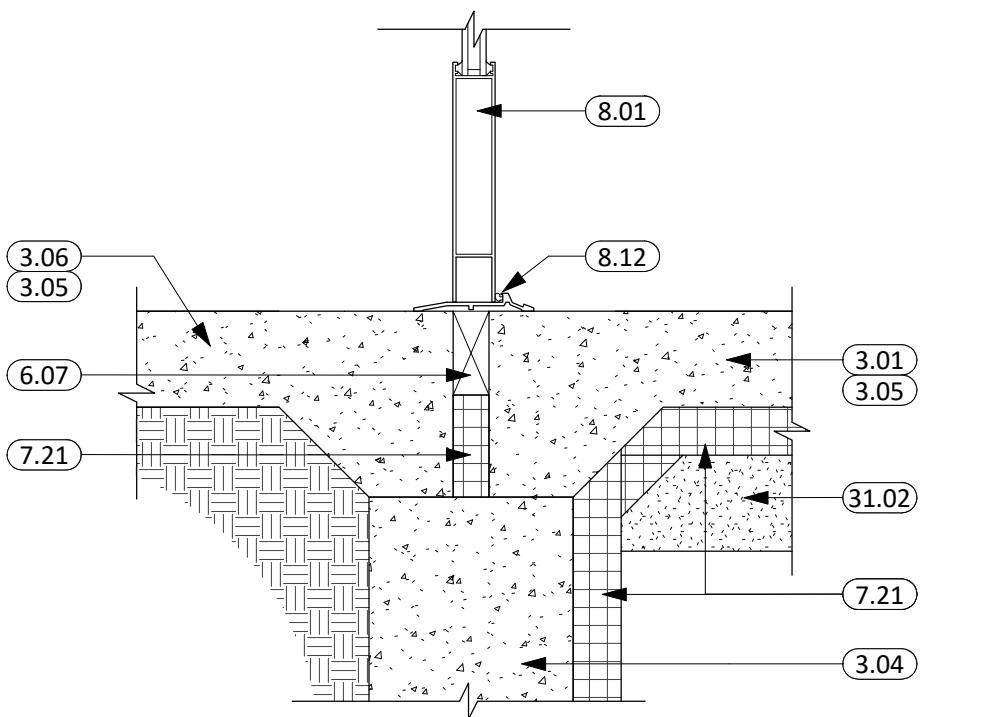
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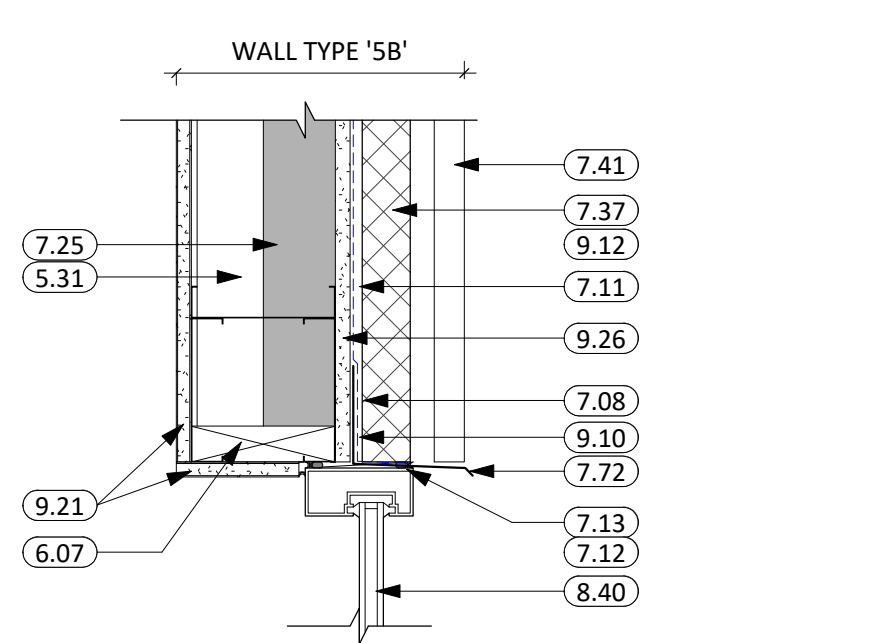
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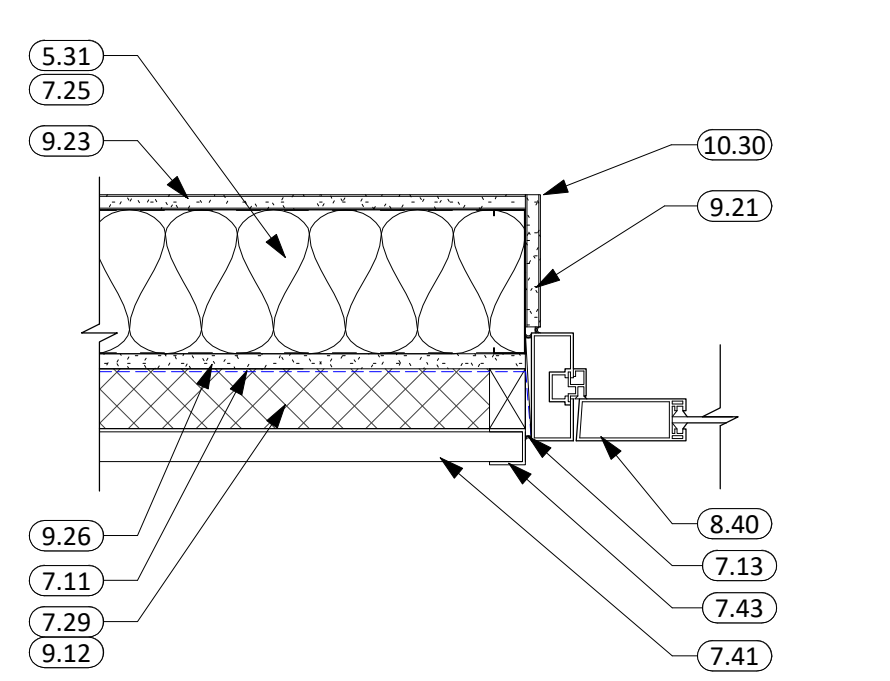
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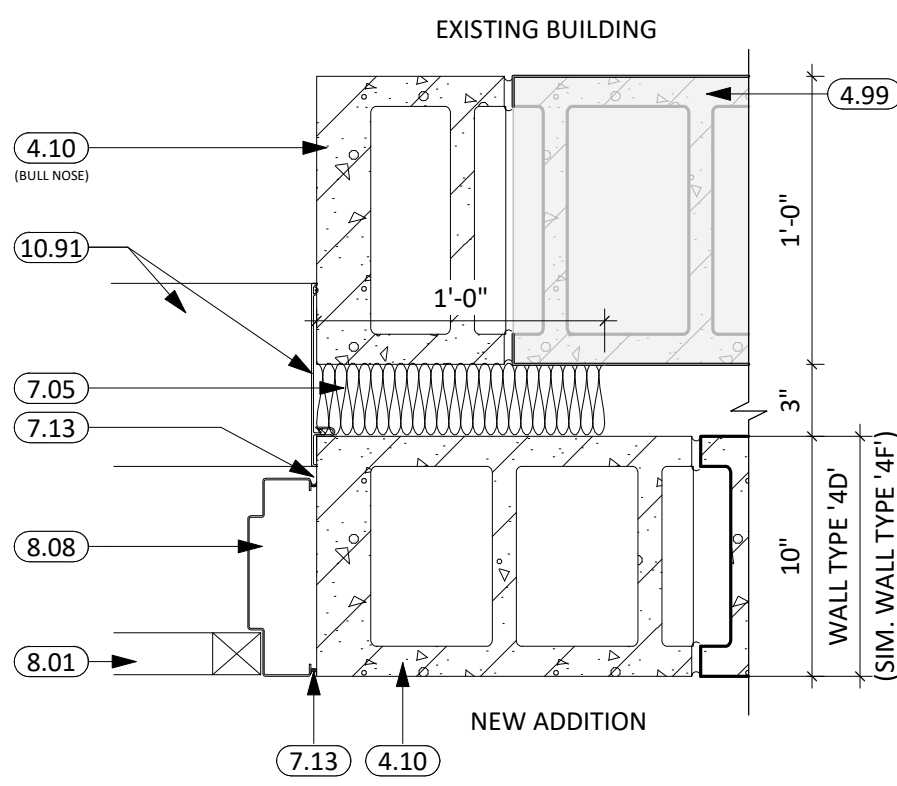
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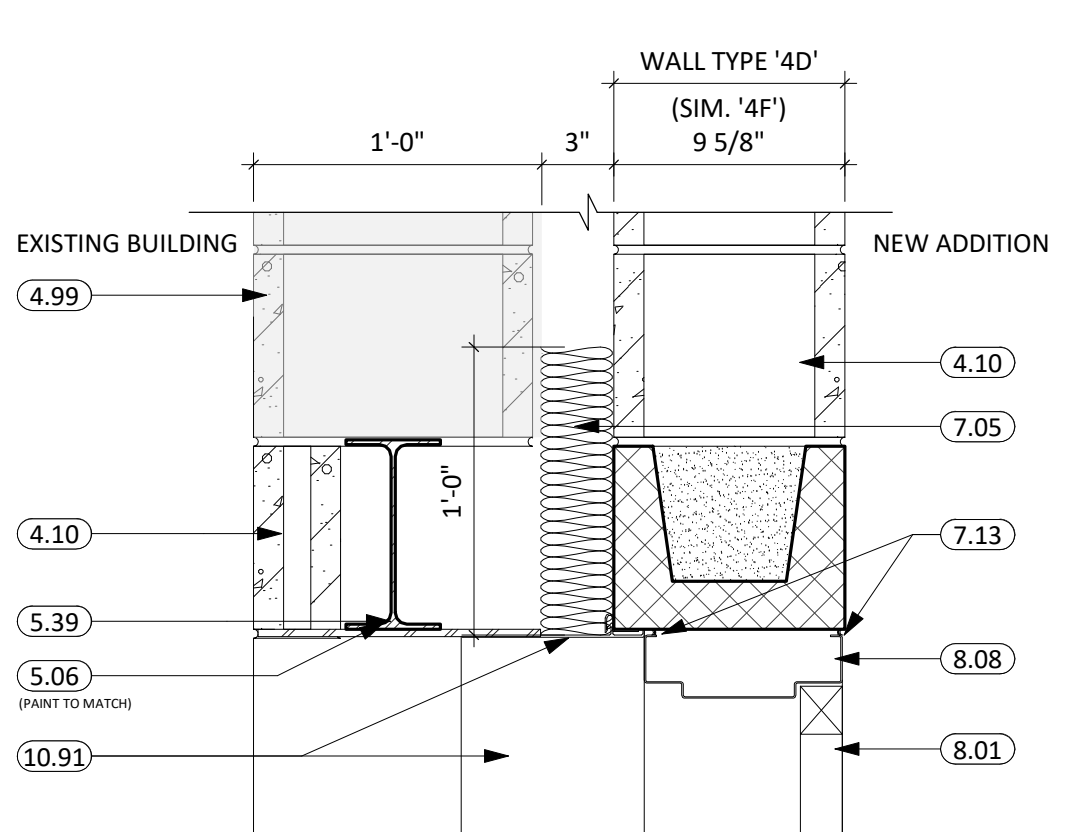
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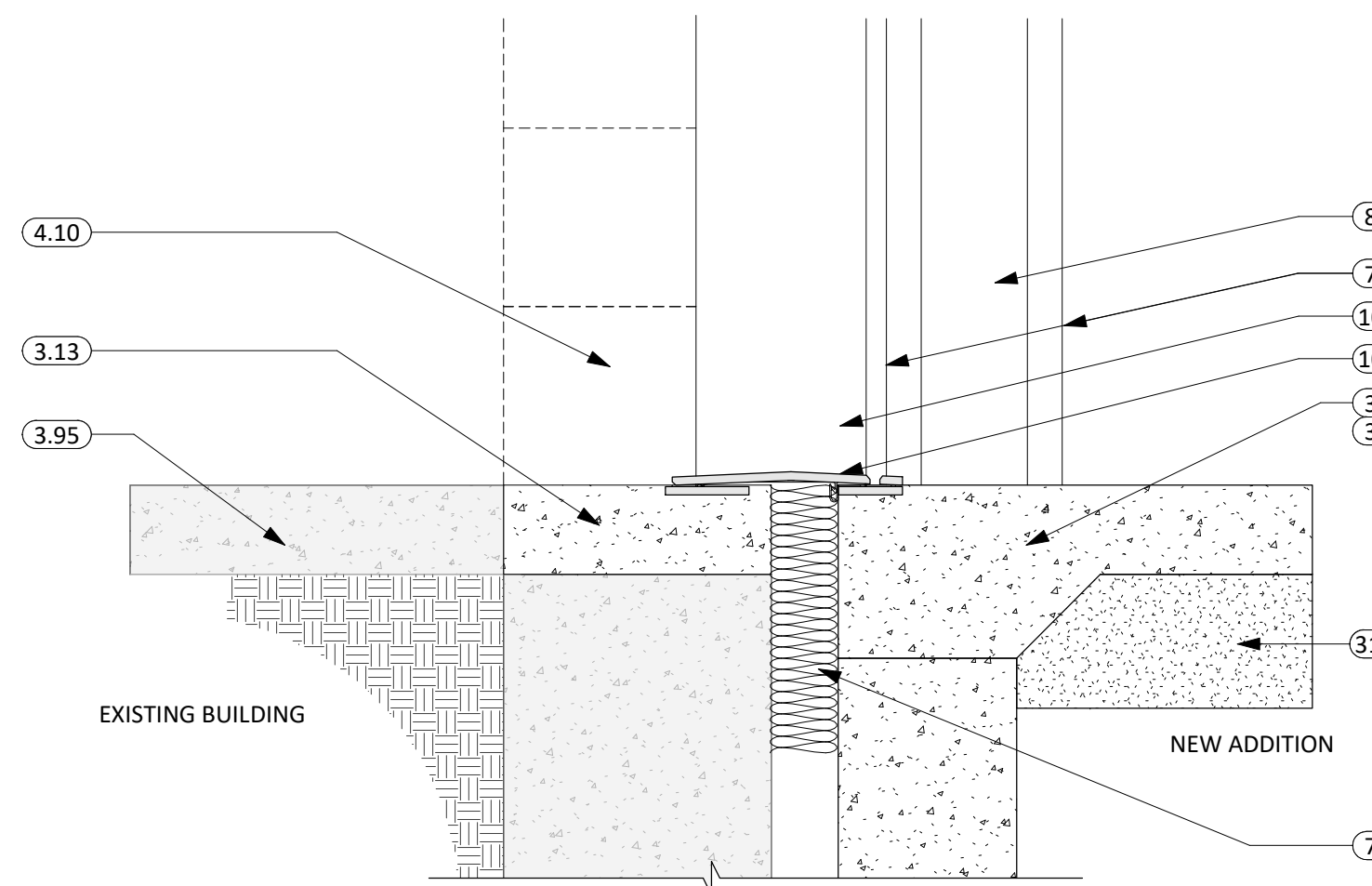
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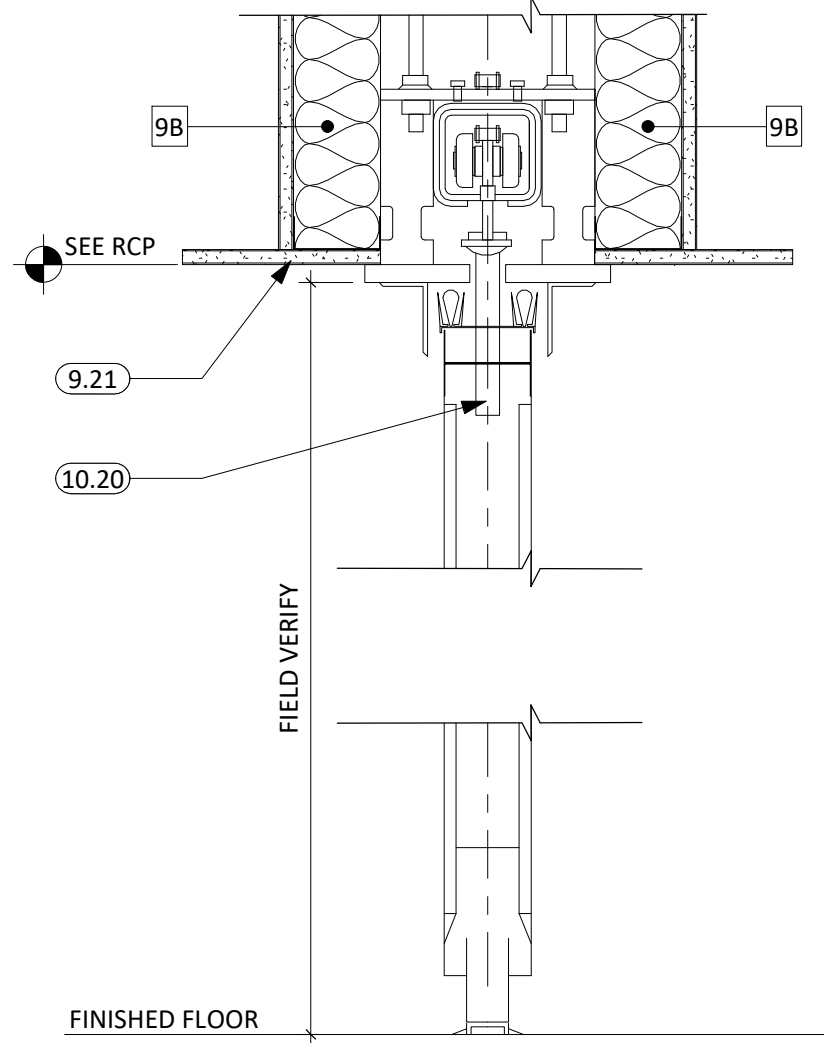
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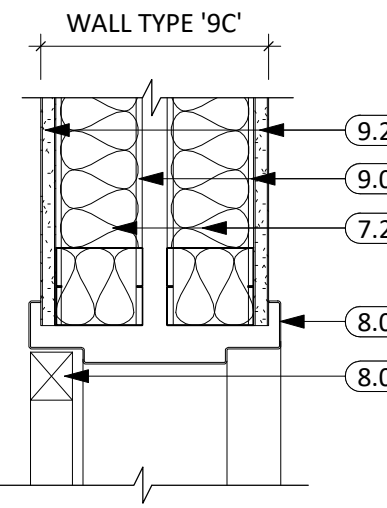
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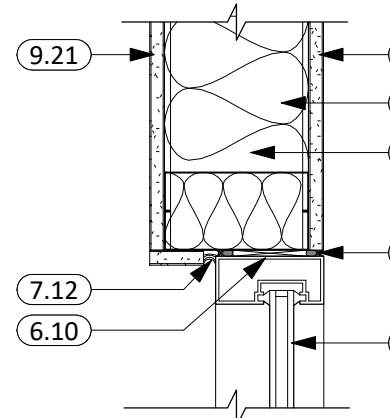
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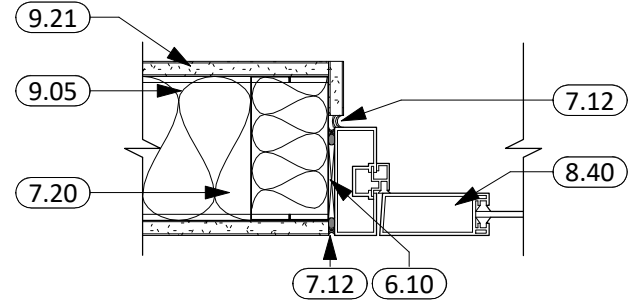
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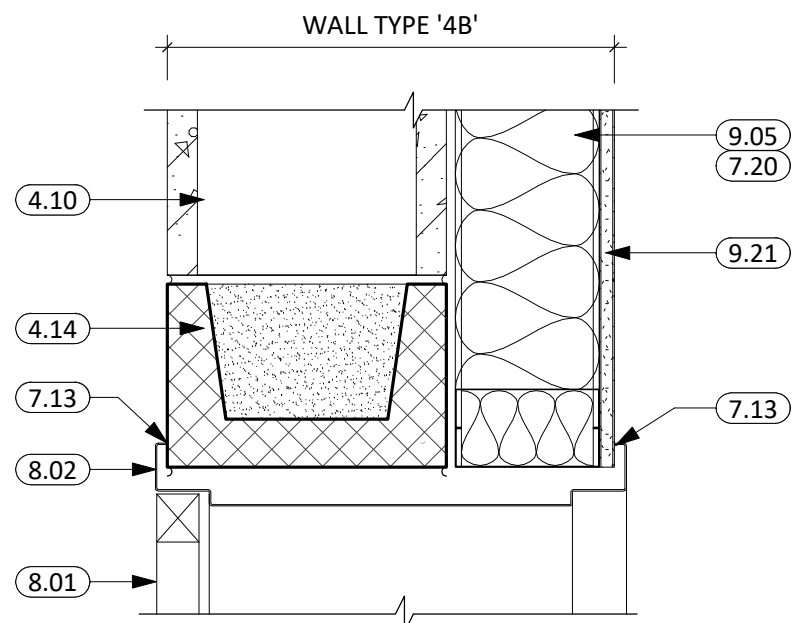
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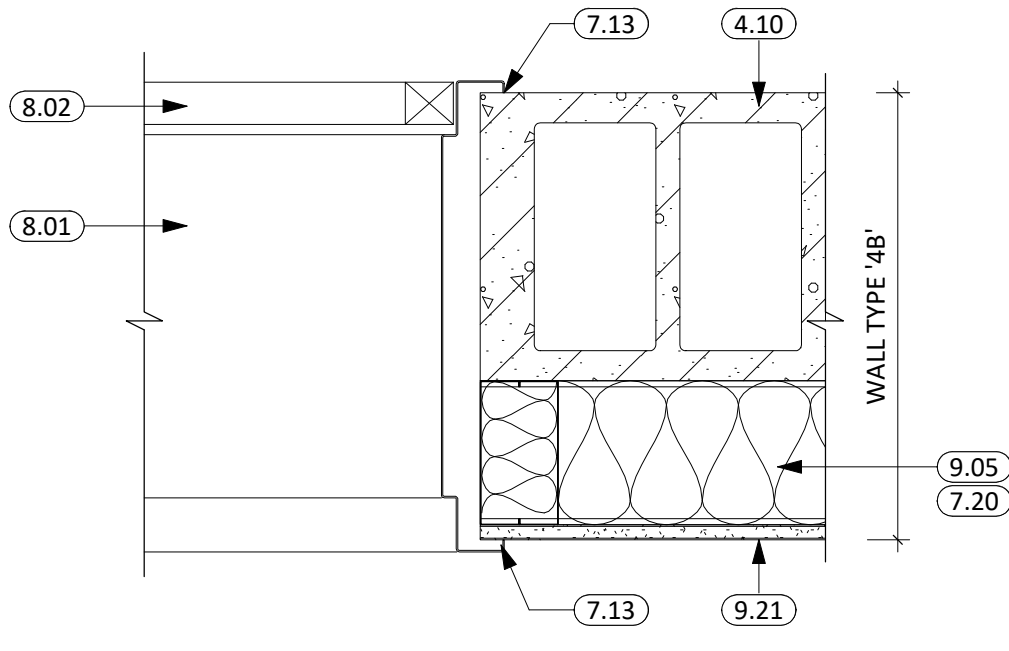
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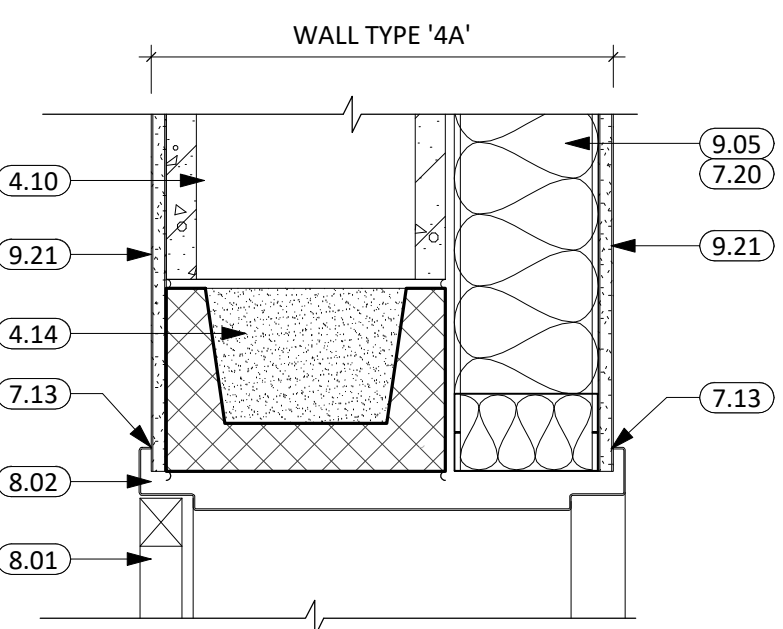
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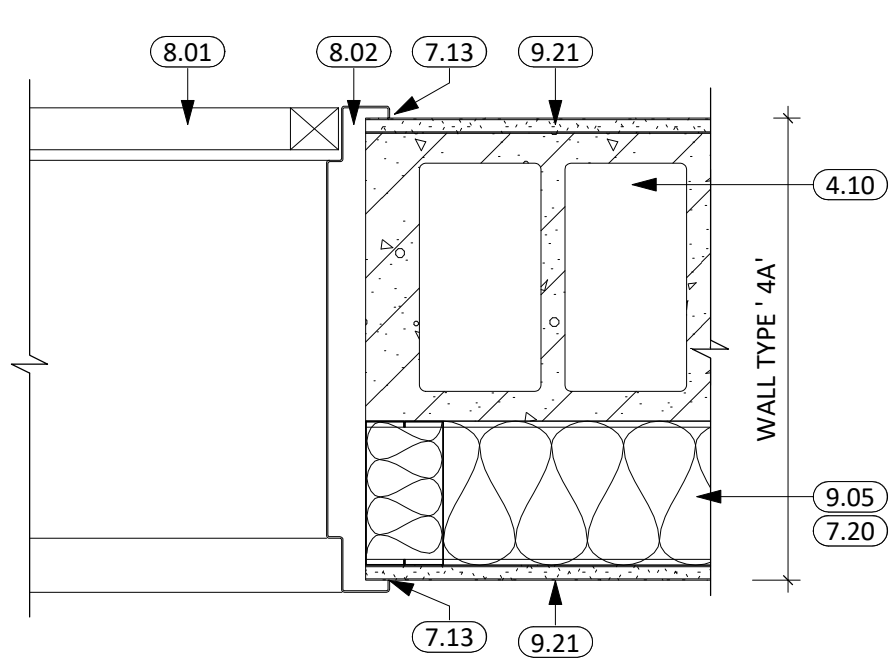
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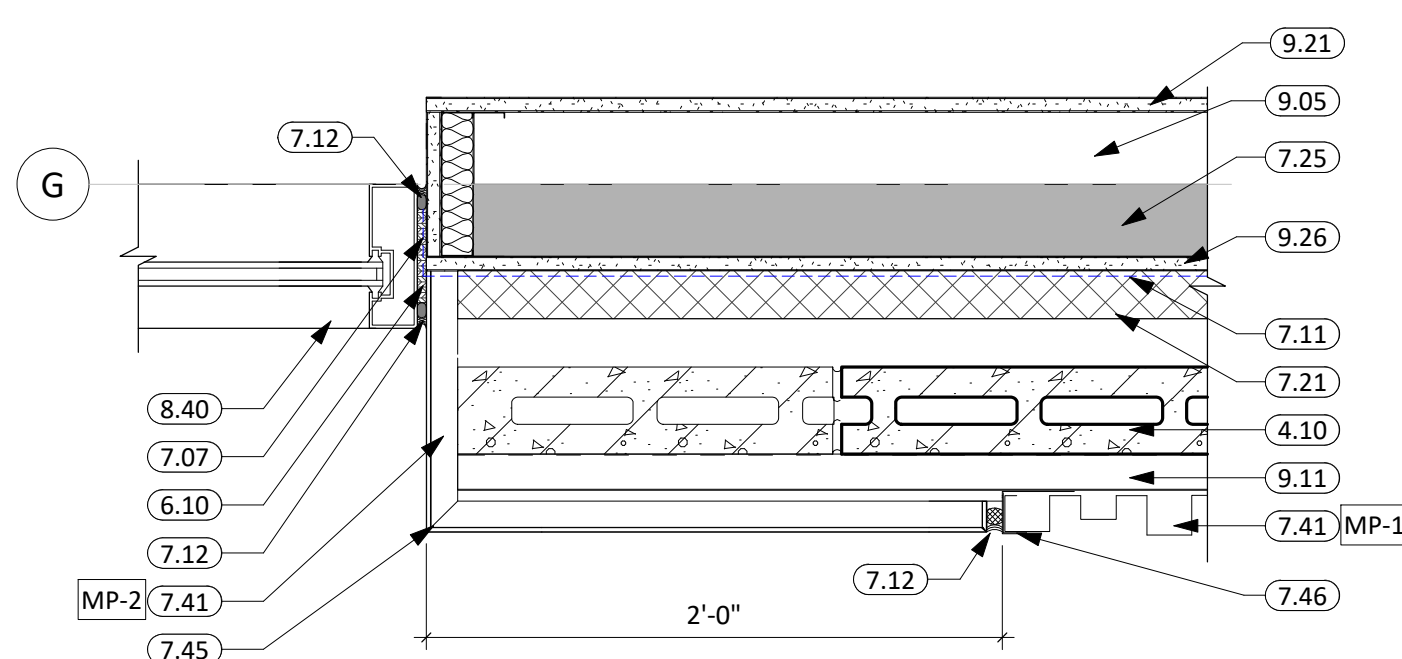
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1 1/2" = 1'-0"



18 HEAD DETAIL  
1 1/2" = 1'-0"

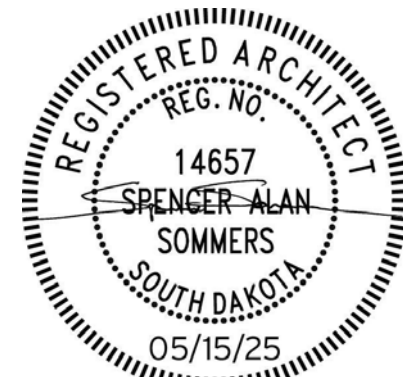


19 JAMB DETAIL  
1 1/2" = 1'-0"



20 METAL PANEL TRANSITION  
1 1/2" = 1'-0"

CO-OP PROJECT NO: 2418



ISSUE:

5/15/2025 100% CONSTRUCTION DOCUMENTS

REVISION SCHEDULE:

REV. # REV. DSC. REV. DATE

PROJECT:

NORTHERN ELECTRIC  
NORTHERN ELECTRIC COOPERATIVE  
BATH, SOUTH DAKOTA

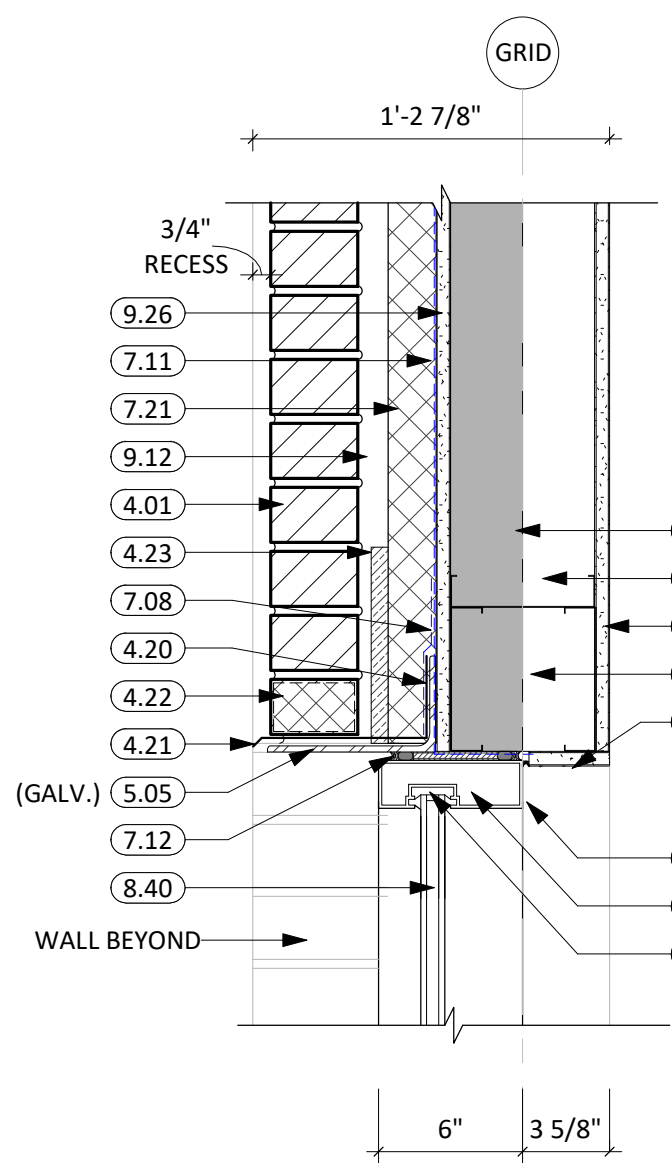
SHEET TITLE:

DOOR & WINDOW DETAILS

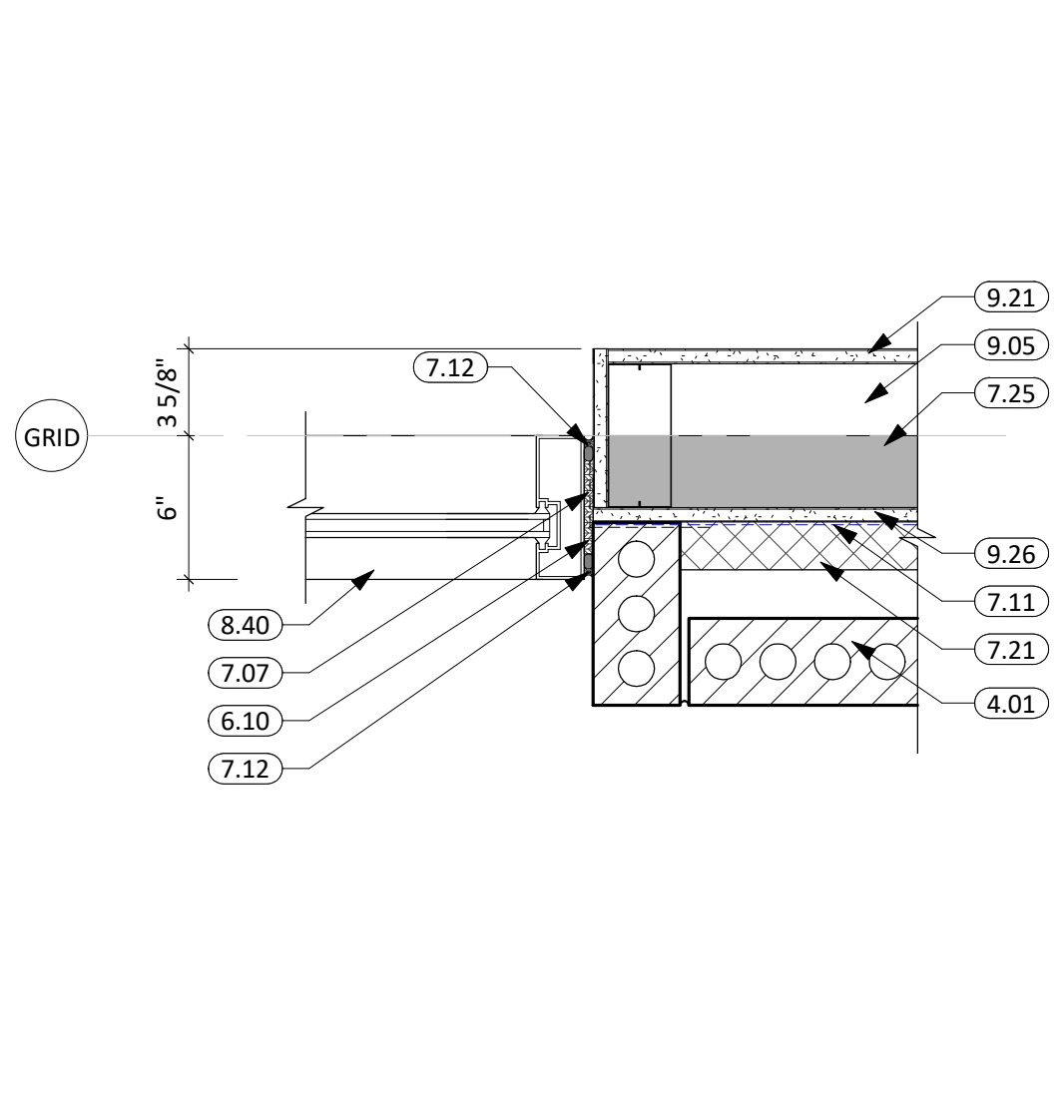
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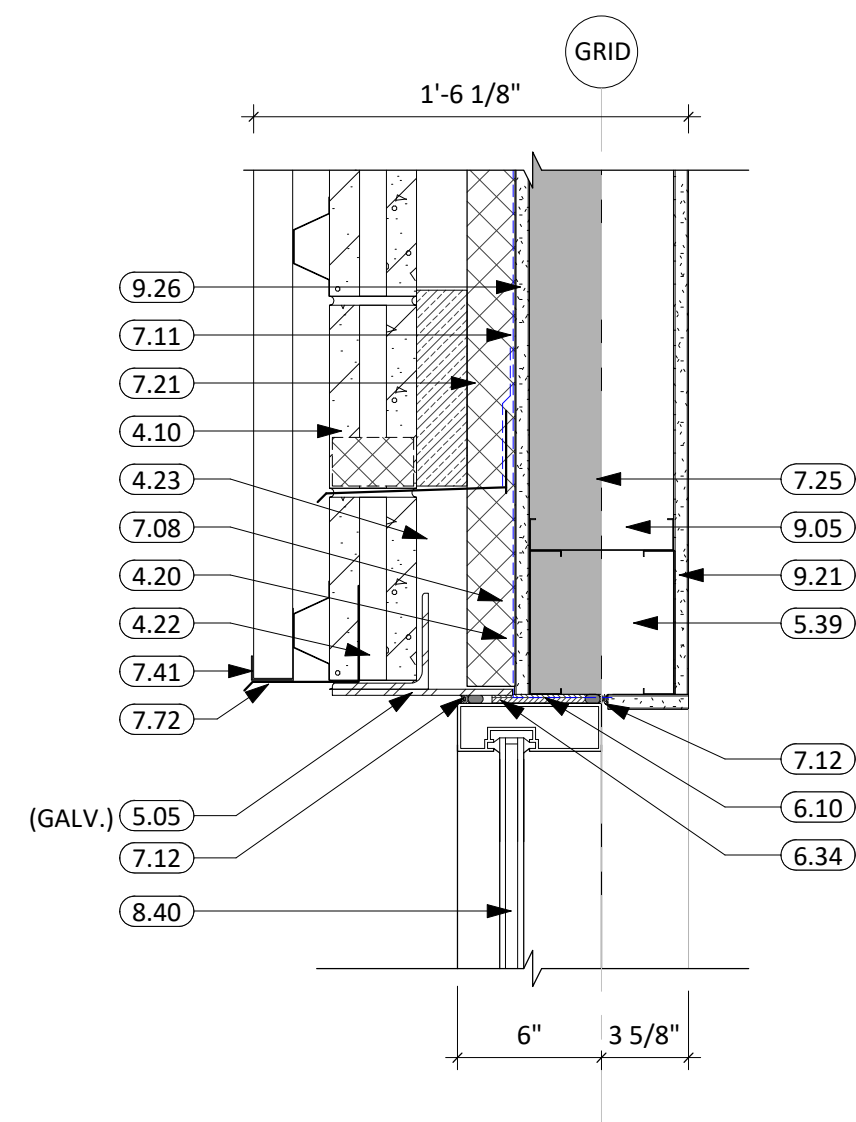
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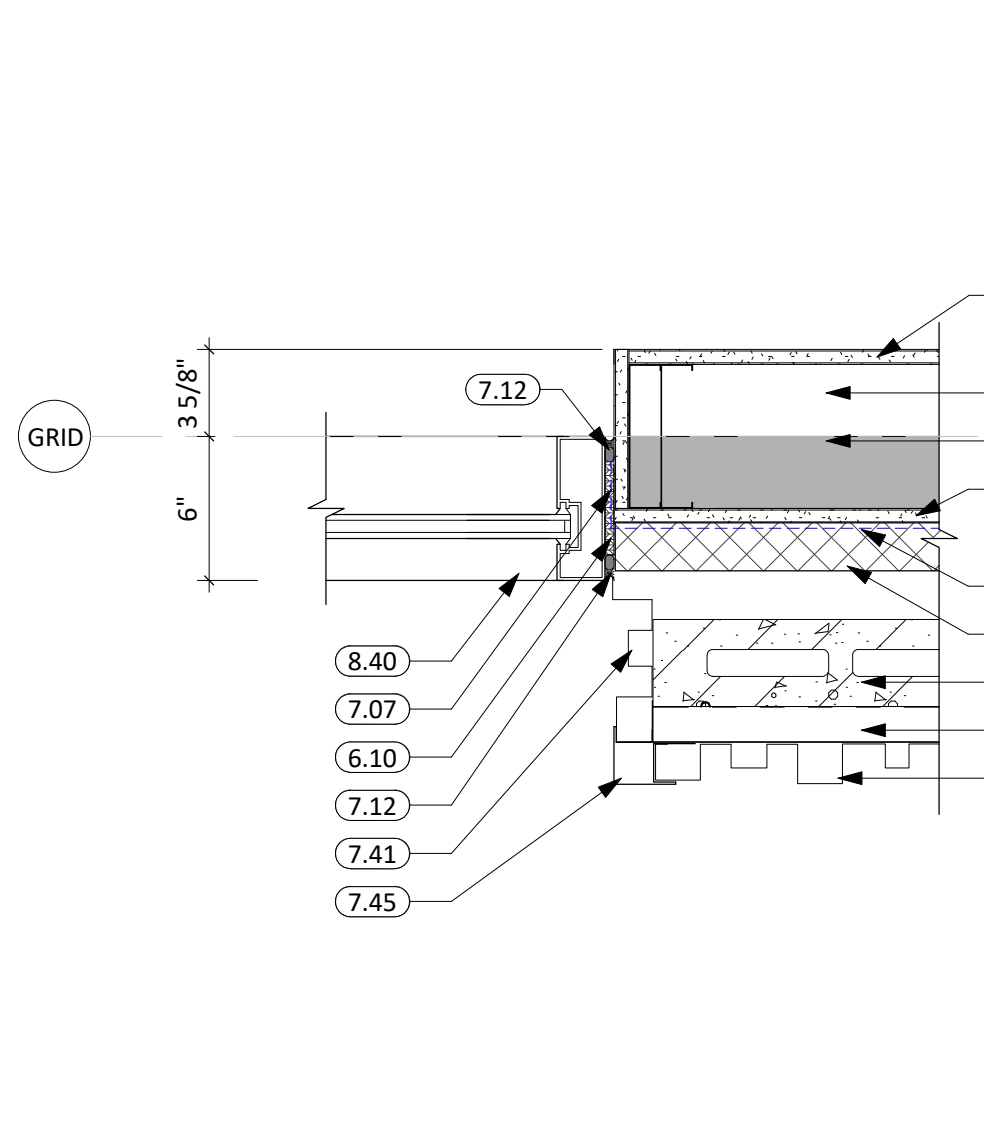
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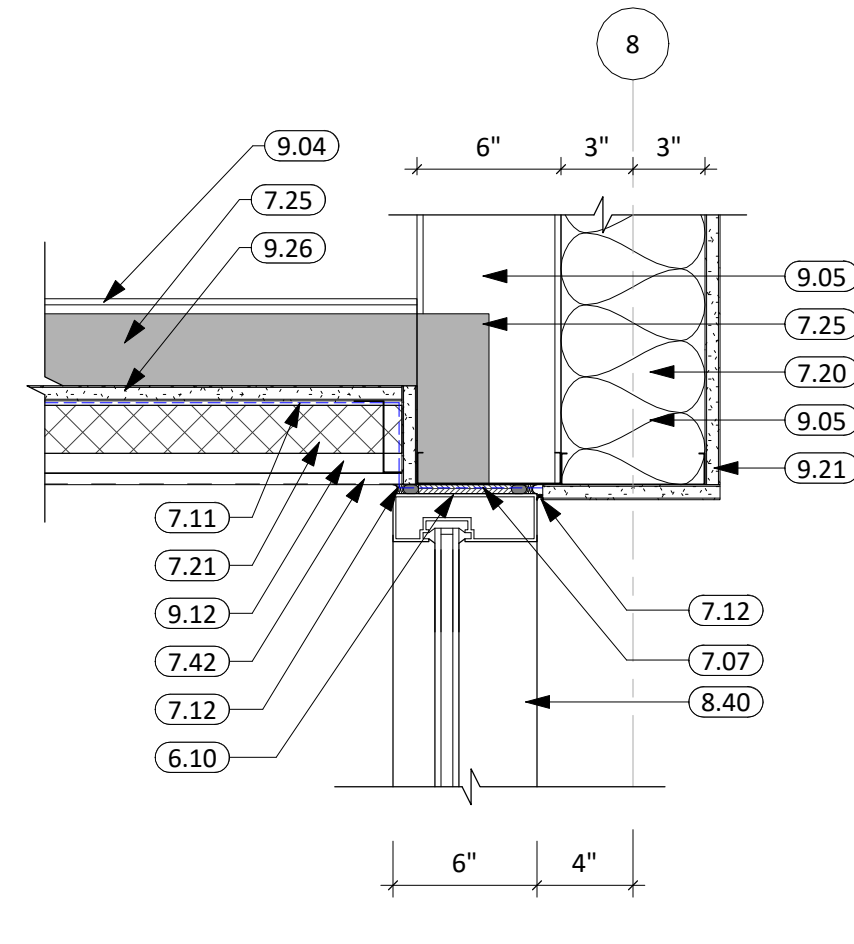
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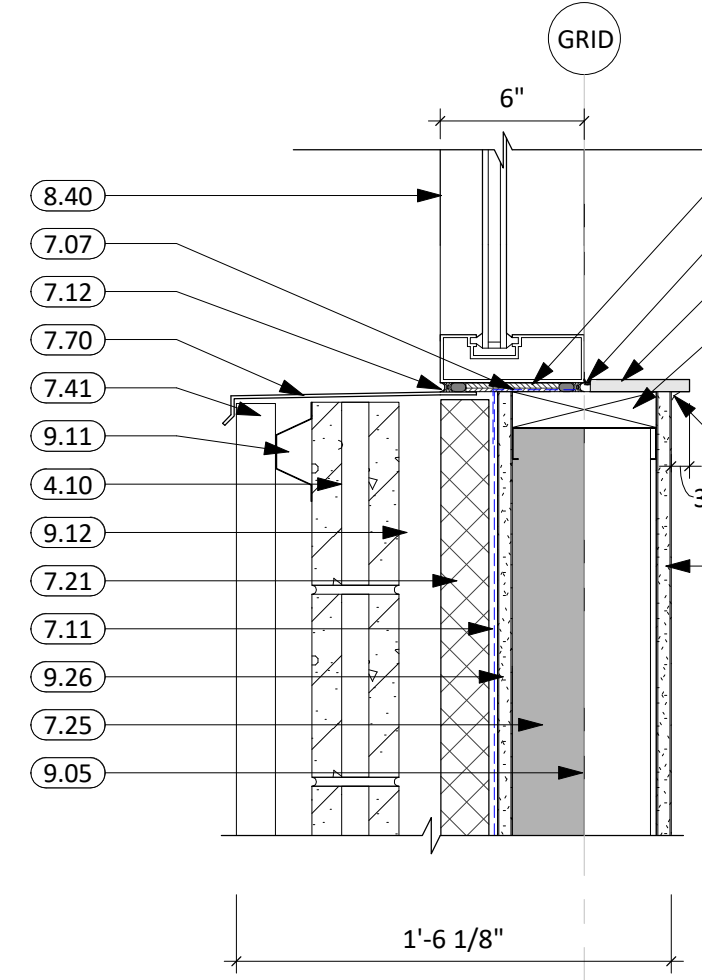
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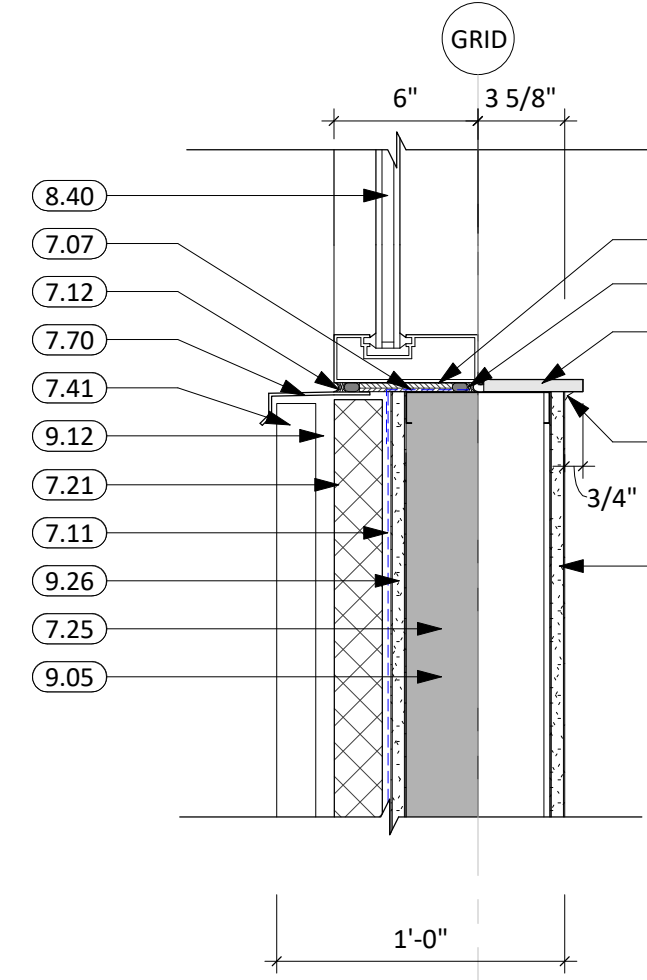
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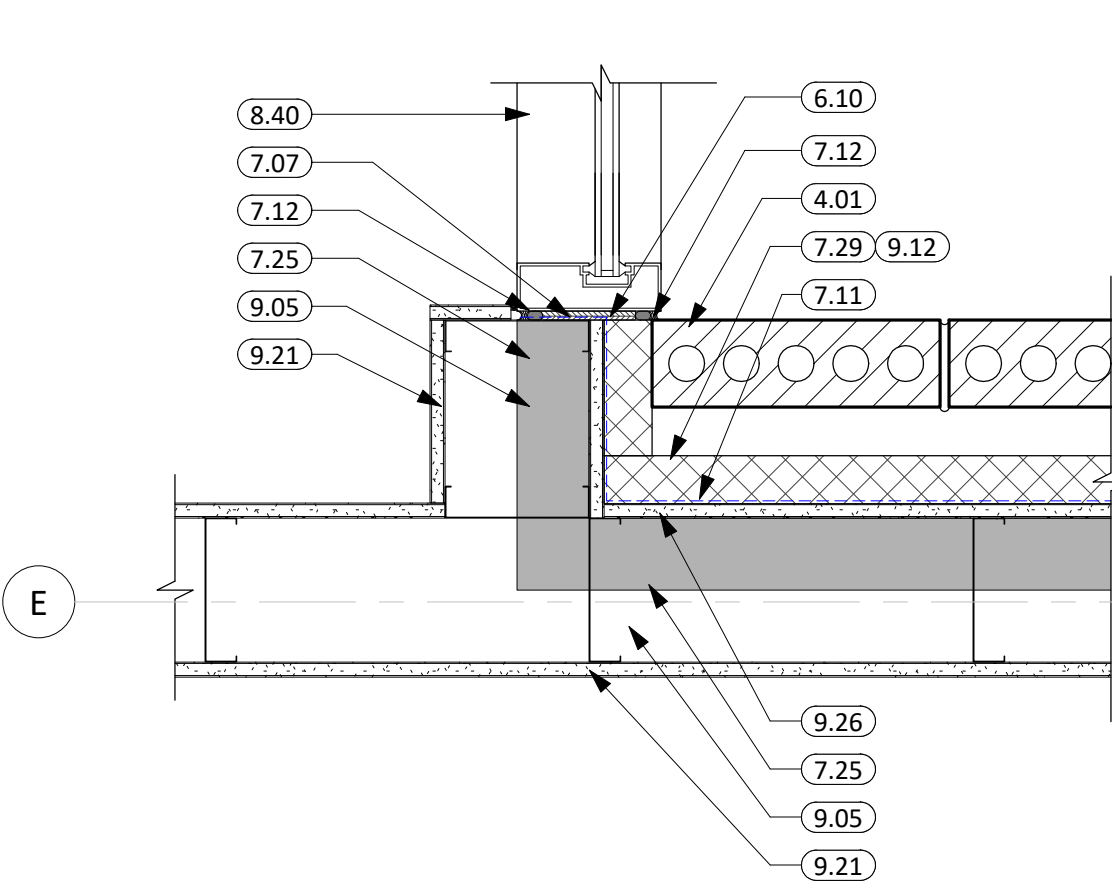
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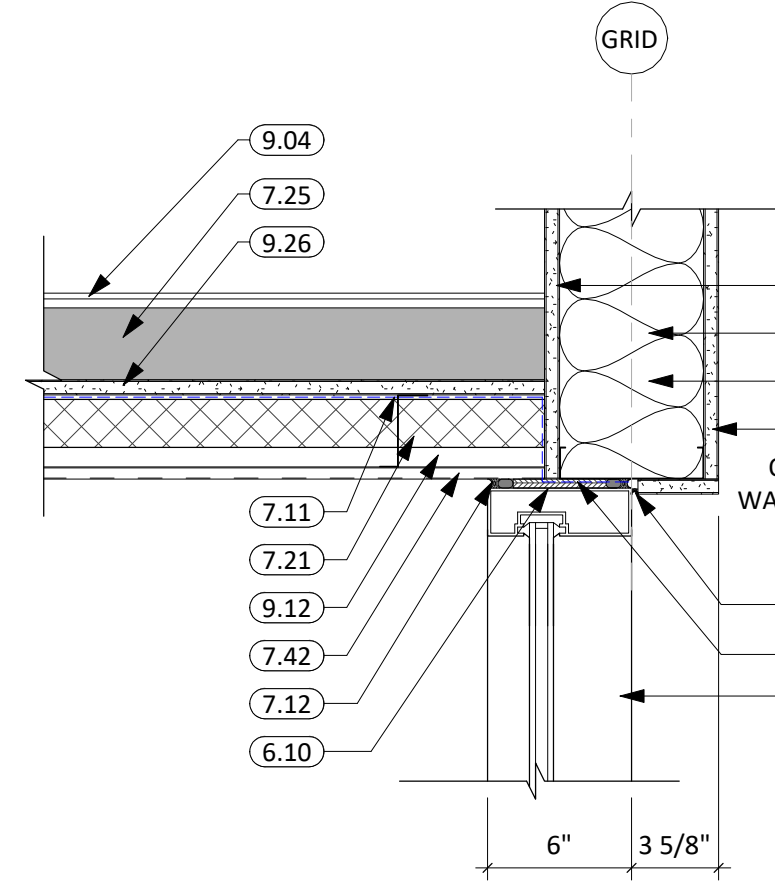
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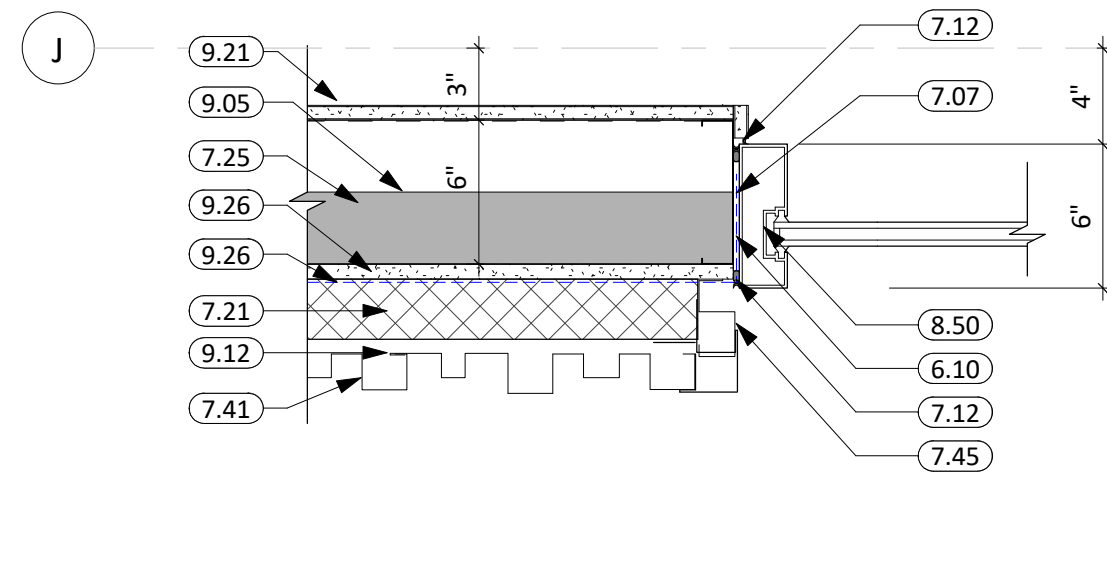
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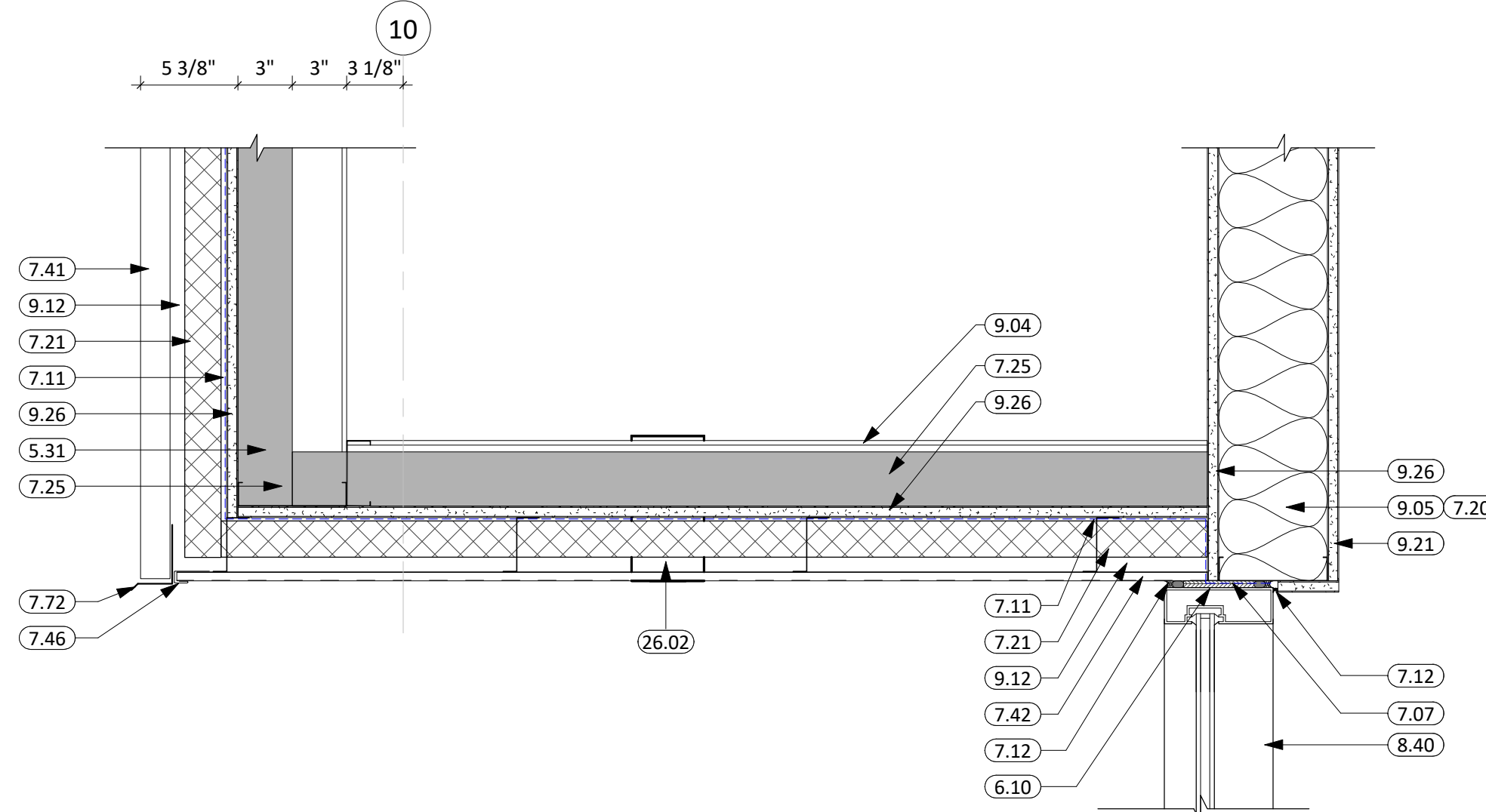
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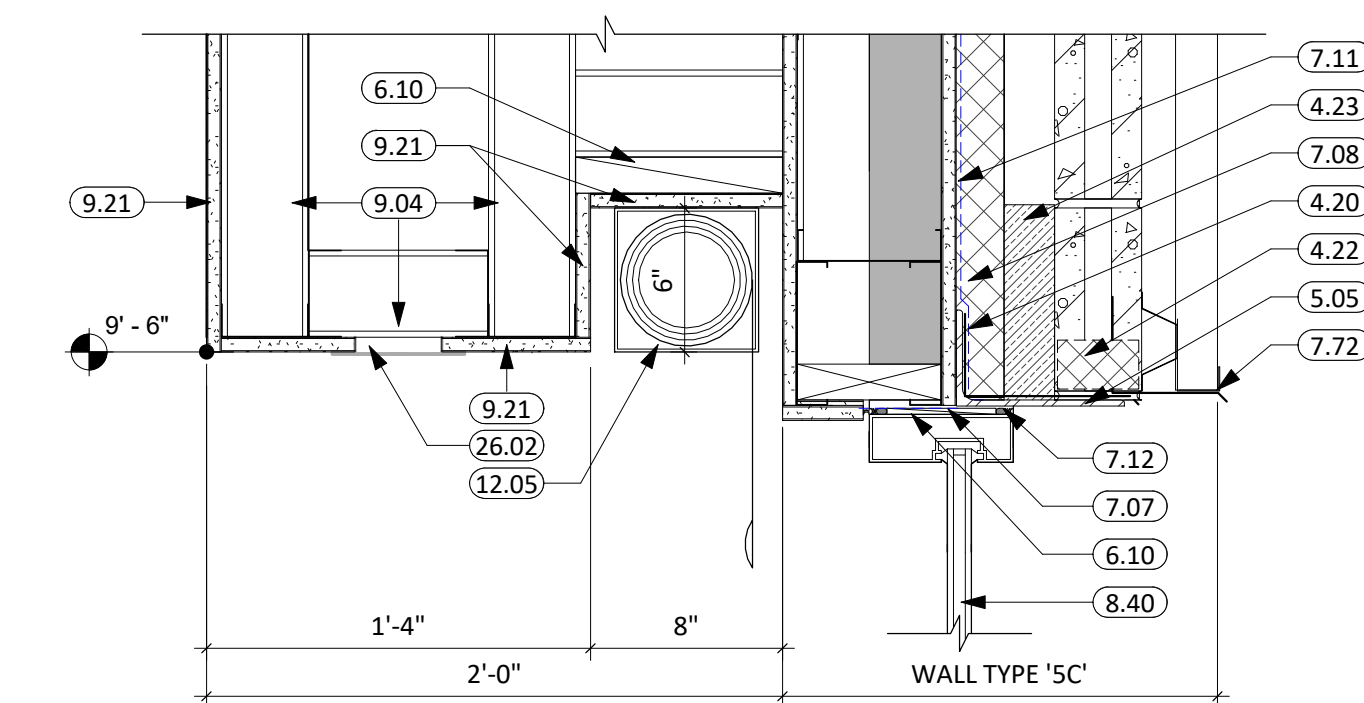
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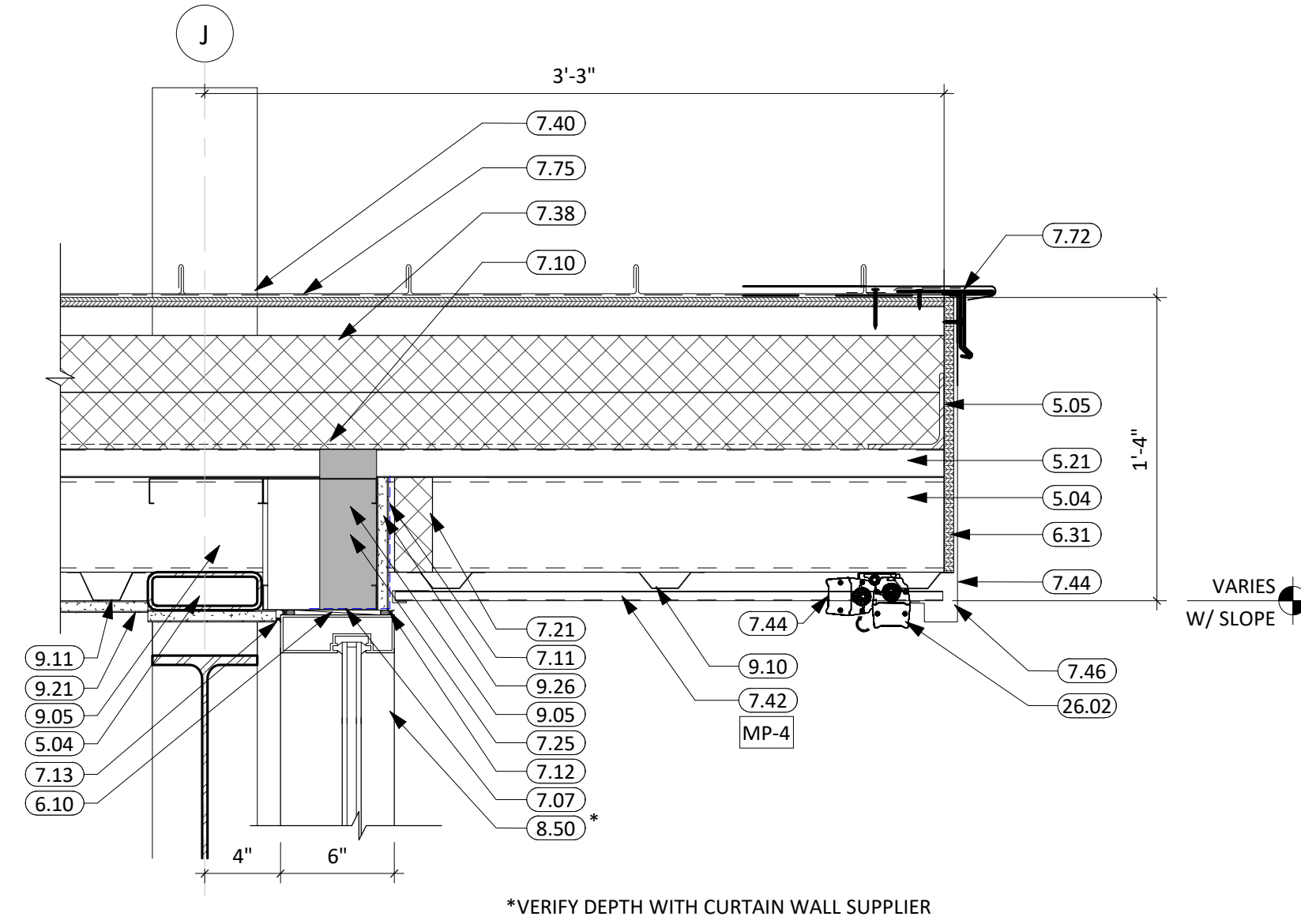
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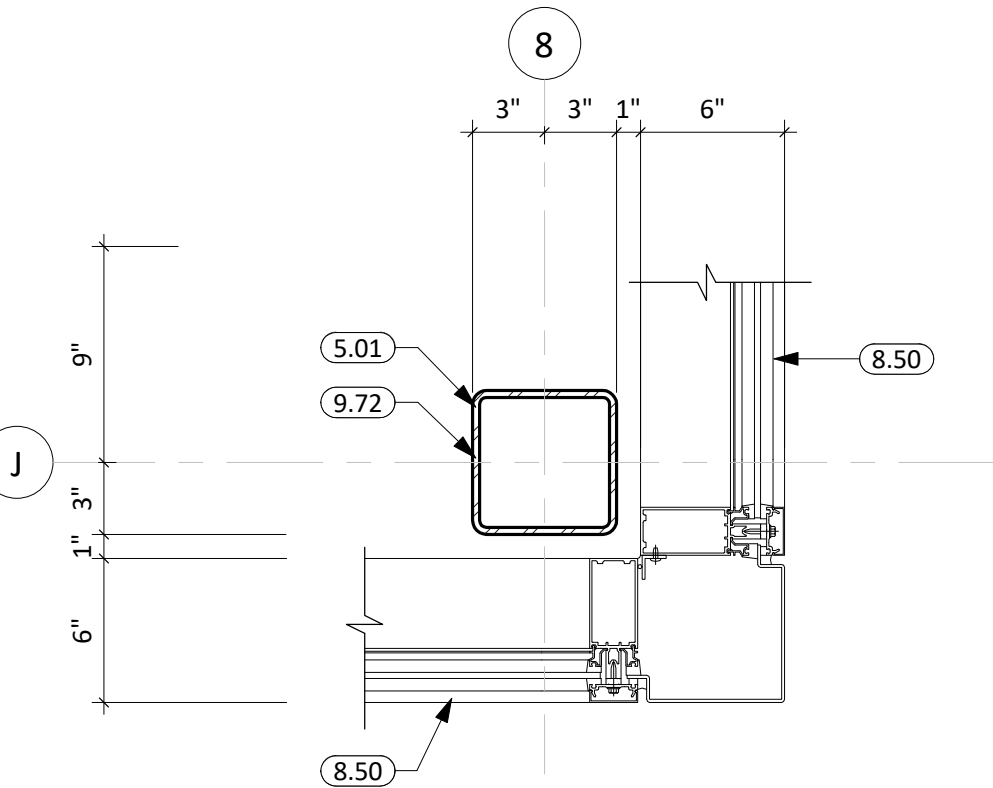
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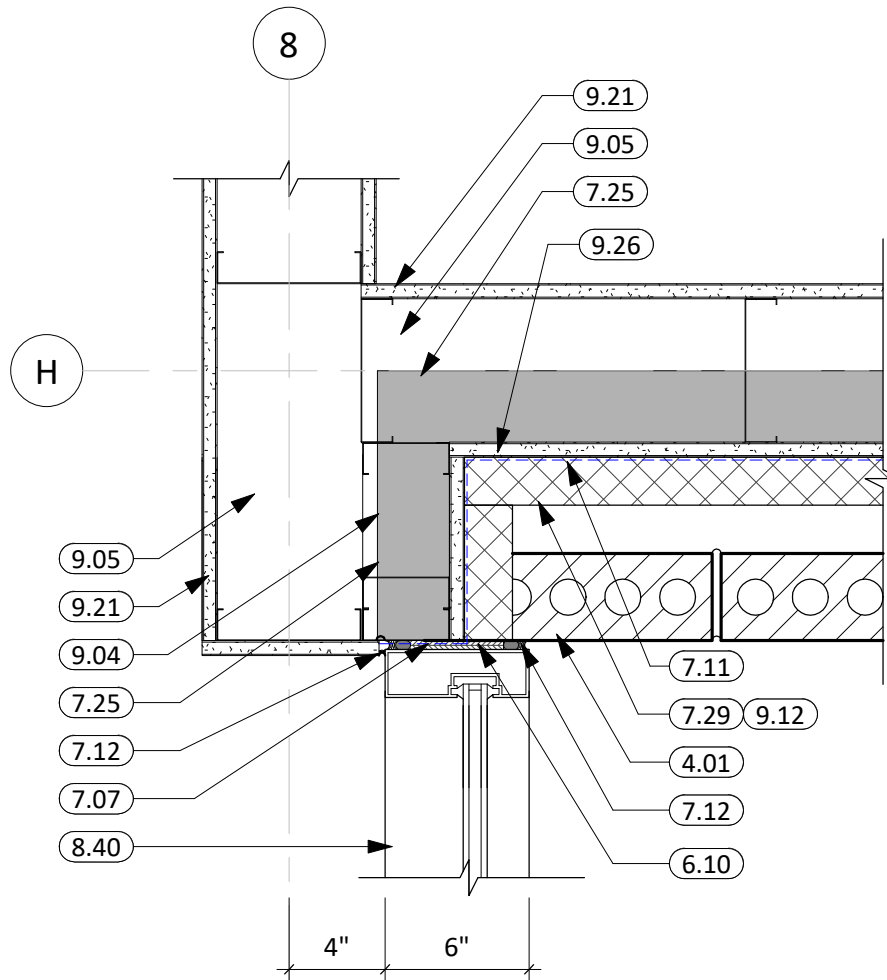
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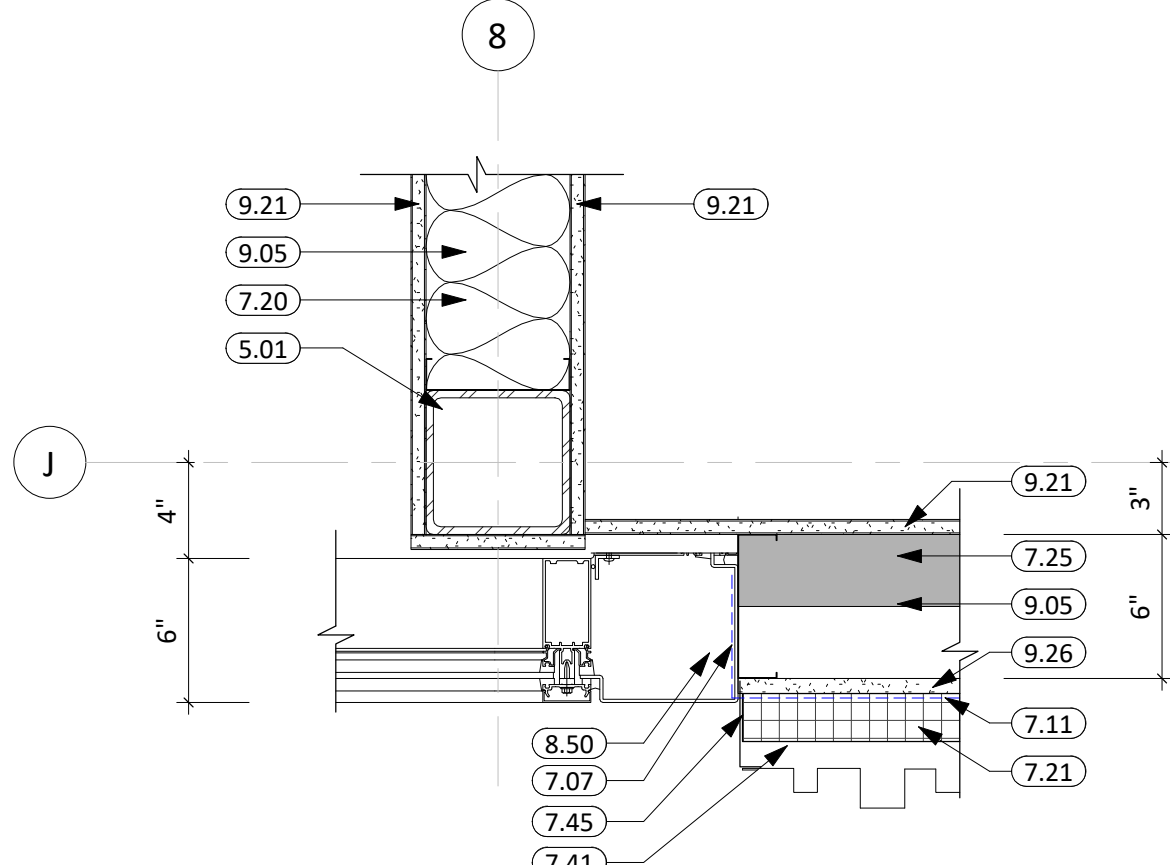
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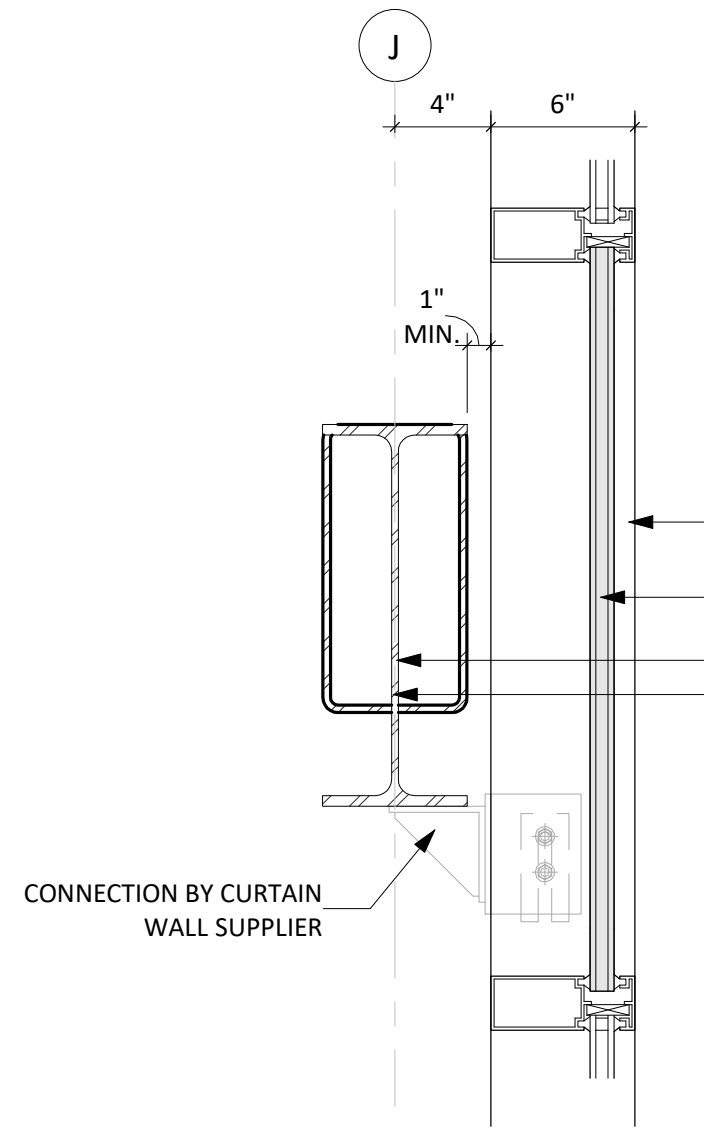
14 JAMB DETAIL  
1 1/2" = 1'-0"



15 JAMB DETAIL  
1 1/2" = 1'-0"



16 JAMB DETAIL  
1 1/2" = 1'-0"



17 CURTAIN WALL CONNECTION  
1 1/2" = 1'-0"

## GENERAL NOTES

1. ALL H.M. FRAMES IN STUD PARTITIONS SHALL BE WRAPPED AROUND BOTH SIDES OF PARTITION UNLESS OTHERWISE NOTED. SEE FLOOR PLANS(S) FOR WALL THICKNESS.
2. ALL EXTERIOR FRAMES & DOORS ARE TO BE THERMALLY BROKEN.
3. CAULK ENTIRE PERIMETER OF H.M. FRAMES (BOTH SIDES).
4. PAINT H.M. FRAMES TO MATCH WALL. SPLIT PAINT COLOR AT DOOR GASKET AS REQUIRED.
5. PROVIDE ROOM SIGNAGE AT ALL DOORS. WHERE MOUNTED TO GLAZING, PROVIDE A BLANK BACK PLATE ON OPPOSITE SIDE OF GLAZING. SEE CODE STANDARDS FOR MOUNTING HEIGHTS AND LOCATIONS. SEE SPECIFICATIONS FOR SPECIAL SIGNAGE REQUIREMENTS.
6. REFER TO WALL TYPES FOR WALL CONSTRUCTION ELEMENTS FOR ALL DOOR AND WINDOW DETAILS. COORDINATE ALL STRUCTURAL REQ. WITH STRUCTURAL DRAWINGS.
7. WALL MOUNTED EXIT SIGNS AND FIXTURES ARE TO BE CENTERED OVER DOOR OR DOOR OPENING WHERE APPLICABLE.
8. FRAME TYPES WITH SIDELITES IN A 1-HR RATED WALL ASSEMBLY REQUIRE FIRE-RATED GLAZING TO BE 45-MIN, HOSE STREAM TESTED (IBC 716.1).

## KEYNOTE SCHEDULE

4.01	BRICK VENEER
4.10	CMU MASONRY UNIT
4.20	THRU-WALL FLASHING
4.21	D RIP PLATE
4.22	WEEP VENTS
4.23	MORTAR NET
5.01	STRUCTURAL STEEL COLUMN (SEE ARCH. & STRUCT.)
5.02	STRUCTURAL STEEL BEAM (SEE ARCH. & STRUCT.)
5.04	STRUCTURAL STEEL TUBE (SEE ARCH. & STRUCT.)
5.05	STRUCTURAL STEEL ANGLE (SEE ARCH. & STRUCT.)
5.21	STEEL ROOF DECK (SEE ARCH. & STRUCT.)
5.31	6" STRUCTURAL STEEL STUD & TRACK FRAMING (SEE ARCH. & STRUCT.)
5.39	HEADER CONDITION (SEE ARCH. & STRUCT.)
6.07	2x WOOD BLOCKING
6.10	BLOCKING (SEE STRUCT. FOR ADDITIONAL REQ.)
6.31	1/2" EXTERIOR SHEATHING
6.34	1/2" PLYWOOD BACKER
6.81	SOLID SURFACE
7.07	WRAP VAPOR BARRIER INTO WINDOW OPENING
7.08	MEMBRANE FLASHING
7.10	VAPOR BARRIER
7.11	FLUID APPLIED AIR & MOISTURE WEATHER BARRIER
7.12	SEALANT (PROVIDE BACKER ROD WHERE REQ.)
7.13	SEALANT AROUND PEREMETER (TYP. BOTH SIDES)
7.20	BATT INSULATION
7.21	RIGID INSULATION (2" POLYISO - U.O.N.)
7.25	SPRAY APPLIED FOAM INSULATION (3" MIN.)
7.29	RIGID INSULATION (2-1/2")
7.38	NAIL BASE INSULATION
7.40	STANDING SEAM METAL ROOFING
7.41	METAL WALL PANEL (PROVIDE ALL REQ. TRIM & FLASHING)
7.42	METAL SOFFIT PANELS
7.44	METAL PANEL FLASHING
7.45	METAL WALL PANEL FINISH TRIM
7.46	METAL WALL PANEL J-TRIM
7.70	PRE-FINISHED SHEET METAL FLASHING
7.72	PRE-FINISHED METAL DRIP EDGE
7.75	SYNTHETIC ROOF UNDERLAYMENT
8.40	ALUMINUM FRAMED ENTRANCE/STOREFRONT
8.50	ALUMINUM CURTAIN WALL
8.85	1" INSULATED SPANDREL GLASS
9.04	3 5/8" STEEL STUD & TRACK FRAMING
9.05	6" STEEL STUD & TRACK FRAMING
9.10	7/8" FURRING CHANNEL
9.11	1 1/2" FURRING CHANNEL
9.12	2" FURRING CHANNEL
9.21	5/8" GYPSUM BOARD
9.26	5/8" EXTERIOR GYPSUM SHEATHING
9.72	PAINT EXPOSED STRUCTURE
12.05	AUTOMATED ROLLER WINDOW SHADES (SEE ELECTRICAL)
26.02	RECESS LIGHT FIXTURE (SEE ELECTRICAL)

CO

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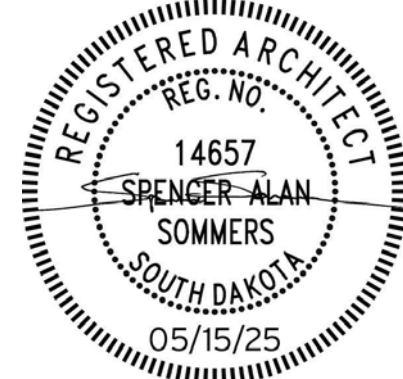
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CO-OP PROJECT NO: 2418



ISSUE:  
5/15/2025 100% CONSTRUCTION DOCUMENTS

REVISION SCHEDULE:  
REV. # REV. DSC. REV. DATE

PROJECT:  
NORTHERN ELECTRIC  
NORTHERN ELECTRIC COOPERATIVE  
BATH, SOUTH DAKOTA

SHEET TITLE:  
DOOR & WINDOW DETAILS

A602



- GENERAL DESIGN CRITERIA:
- CODES:
    - INTERNATIONAL BUILDING CODE, 2021
    - AMERICAN INSTITUTE OF STEEL CONSTRUCTION, LATEST EDITION
    - AMERICAN CONCRETE INSTITUTE, LATEST EDITION
    - AMERICAN WOOD COUNCIL, NATIONAL DESIGN SPECIFICATION, LATEST EDITION
    - COMPLY WITH ALL LOCAL CODES AND LAWS, INCLUDING OSHA REGULATIONS

- LATERAL LOADS:
  - LATERAL SYSTEM-PLYWOOD/GYPSUM/TEMPORARY SHEARWALLS, LG STRAP BRACING, STEEL BRACED FRAMES/MOMENT FRAMES, CMU WALLS, PRECAST WALLS
  - BUILDING OCCUPANCY: I

- SEISMIC:
- SEISMIC DESIGN CATEGORY A
  - IMPORTANCE FACTOR  $I_e=1.00$
  - ACCELERATIONS:  $SS=0.091$   $SD1=0.035$
  - SITE CLASS D
  - SPECTRAL:  $SDS=0.097$   $SD1=0.057$
  - ANALYSIS PROCEDURE:
    - EQUIVALENT LATERAL FORCE

- WIND:
- BASIC WIND SPEED: 112 MPH
  - EXPOSURE C
  - INTERNAL PRESSURE COEFFICIENT: ENCLOSED

COMPONENTS AND CLADDING WIND (UNFACTORED):

WIND ZONES	GROSS WIND PRESSURE	NET UPLIFT ROOF PRESSURE
ROOF (ZONE 1):	+18PSF OR -17PSF	-15PSF
ROOF (ZONE 2a)	+18PSF OR -17PSF	-15 PSF
ROOF (ZONE 2b)	+18PSF OR -28PSF	-25 PSF
ROOF (ZONE 2c)	+18PSF OR -28PSF	-25 PSF
ROOF (ZONE 3a)	+18PSF OR -28PSF	-25 PSF
ROOF (ZONE 3b)	+18PSF OR -48PSF	-45 PSF
WALL (ZONE 4):	+25PSF OR -28PSF	
WALL (ZONE 5):	+25PSF OR -31PSF	

THIS ASSUMES AN INFLUENCE AREA OF 15 SQ FT. FOR WALL ZONES & 72 SQ FT. FOR ROOF ZONES. INCREASE OF PRESSURE FOR OTHER INFLUENCE AREAS SHALL BE BY THE COMPONENT DESIGNER. THE USE OF ALTERNATE LOAD COMBINATIONS IN SECTION 1605.3.2 IS NOT ALLOWED.

- SUPERIMPOSED – DEAD LOADS:
  - ROOF:
    - METAL: 3PSF
    - METAL DECK: 3PSF
    - INSULATION/MEMBRANE: 8PSF
    - CMF: 8PSF
    - JOIST BRDGNG: 9PSF
  - SAFE ROOM:
    - HOLLOWCORE: 58PSF
    - TOPPING SLAB: 50PSF
    - INSULATION/MEMBRANE: 8PSF
    - CMF: 8PSF
    - MISC: 3PSF

- LIVE LOADS:
  - GROUND SNOW LOAD:
    - SLOPED ROOF SNOW LOAD (MINIMUM): 50PSF
    - IMPORTANCE FACTOR  $I_s=1.00$
    - SNOW EXPOSURE FACTOR  $C_e=1.00$
    - THERMAL FACTOR  $C_t=1.00$
    - SNOW DRIFT LOAD, ASCE 7 (2016)
  - LIGHT STORAGE ABOVE HOLLOWCORE: 125PSF

GENERAL:

- THE CONTRACT DRAWINGS REPRESENT THE COMPLETED STRUCTURE, AT TIME OF SUBSTANTIAL COMPLETION, UNLESS NOTED OTHERWISE. THEY DO NOT REPRESENT THE MEANS AND METHODS OF CONSTRUCTION, SEQUENCING AND MEANS-AND-METHODS OF CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR
- THE CONTRACTOR IS RESPONSIBLE FOR THE STRENGTH, SAFETY, AND STABILITY OF THE NEW AND EXISTING STRUCTURE DURING CONSTRUCTION AND SHALL PROVIDE TEMPORARY SHORING, BRACING, AND OTHER ELEMENTS REQUIRED TO MAINTAIN STABILITY UNTIL THE STRUCTURE IS COMPLETE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO BE FAMILIAR WITH THE WORK REQUIRED IN THE CONSTRUCTION DOCUMENTS AND THE REQUIREMENTS FOR EXECUTING IT PROPERLY. THE CONTRACTOR SHALL, AT HIS DISCRETION, EMPLOY A REGISTERED PROFESSIONAL ENGINEER FOR THE DESIGN OF ANY TEMPORARY BRACING AND SHORING.
- FIELD VERIFY ANY EXISTING DIMENSIONS, SIZES, AND THICKNESS SHOWN ON DRAWINGS. IMMEDIATELY NOTIFY ARCHITECT OF ANY DISCREPANCIES.
- DETAILS AND NOTES SHOWN ON THE STRUCTURAL DOCUMENTS ARE TYPICAL FOR SIMILAR SITUATIONS IN THE PROJECT.
- OPTIONS, IF SHOWN, ARE FOR THE CONVENIENCE OF THE CONTRACTOR.
- THE COST OF ADDITIONAL DESIGN WORK NECESSITATED BY SEQUENCING OR CONSTRUCTION ERRORS SHALL BE PAID BY THE CONTRACTOR.
- ANY ENGINEERING PROVIDED BY OTHERS SHALL BE STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE WHERE THE PROJECT IS LOCATED.

SPECIAL INSPECTION:

THE OWNER SHALL EMPLOY SPECIAL INSPECTORS TO PERFORM SPECIAL INSPECTION, BASED ON IBC 2021, SPECIAL INSPECTION WILL BE REQUIRED FOR THE FOLLOWING:

- GEOTECHNICAL INVESTIGATIONS
- CAST-IN-PLACE CONCRETE
- STRUCTURAL MASONRY
- STRUCTURAL STEEL
- POST-INSTALLED ANCHORS
- PRECAST CONCRETE
- DRIVEN PILE FOUNDATIONS
- GUARDRAIL STRINGS
- MASS TIMBER CONSTRUCTION

FOOTING AND FOUNDATIONS:

- NET ALLOWABLE BEARING PRESSURE: (PER GEOTEK REPORT #24-194)
  - COLUMN FOOTINGS: 2000PSF
  - WALL FOOTING: 2000PSF
- CENTER FOOTINGS UNDER WALLS AND COLUMNS, UNLESS NOTED OTHERWISE. OWNER'S SOILS CONSULTANT SHALL REVIEW SUBGRADE PRIOR TO CASTING OF FOOTINGS AND SLABS. PROTECT SOIL FROM FREEZING AFTER CASTING FOOTING.
- UNLESS NOTED OTHERWISE, SLABS ON GRADE SHALL CONTAIN FIBERMESH REINFORCEMENT. SLAB SHALL BE PLACED OVER VAPOR BARRIER AND 4" MINIMUM COMPACTED GRANULAR FILL. OWNER'S SOILS CONSULTANT SHALL VERIFY SUBGRADE PRIOR TO PLACEMENT OF ANY FILL BELOW SLABS.
- PLACE REINFORCING IN ALL FOOTINGS PRIOR TO CASTING. FLOATING OF REINFORCING INTO FOOTING AFTER CASTING IS NOT PERMITTED. HOLD REINFORCING IN PLACE DURING CASTING OPERATIONS. CONSOLIDATE CONCRETE.
- BASEMENT WALLS SHALL NOT BE BACKFILLED UNTIL LOWER LEVEL SLAB AND FIRST FLOOR STRUCTURE IS IN PLACE, UNLESS BRACING IS PROVIDED.
- BACKFILL PLACED AGAINST FOUNDATION WALLS SHALL BE CLEAN, FREE-DRAINING GRANULAR MATERIAL FOR A MINIMUM OF 2"FT AGAINST WALL. COMPACT SOILS ADJACENT TO FOUNDATION WALLS USING HAND EQUIPMENT.
- STEPS IN FOOTING, FOUNDATION WALLS, AND GRADE BEAMS SHALL BE COORDINATED WITH WALL FORMING SYSTEM.
- SEE ARCHITECTURAL DRAWINGS FOR OTHER REVEALS, INSERTS, EMBEDS, AND BOLTS.
- ALL CAST-IN-PLACE ANCHOR BOLTS SHALL BE SET WITH TEMPLATES.
- PIPPING RUNNING BELOW FOOTING SHALL BE PLACED PRIOR TO FOOTING OPERATIONS AND THE HOLE FILLED WITH LEAN CONCRETE.

DRILLED PIERS:

- THE SHALL BE CONTINUOUS SPECIAL INSPECTION DURING THE INSTALLATION OF PIERS.
- SIZE, LENGTH, CASING, BELLING, ETC OF PIERS SHOWN ON THE DRAWINGS ARE MEANT TO BE FOR ESTIMATING PURPOSES ONLY, BASED ON EARLY SOILS INVESTIGATIONS. ACTUAL DIAMETER, LENGTH, ETC. OF PIERS SHALL BE DETERMINED BY THE SPECIAL INSPECTOR IN ORDER TO MEET CAPACITY OF PIERS SHOWN.
- CONTRACTOR SHALL BE PLACED IMMEDIATELY AFTER SHAFT IS CLEANED, INSPECTED, AND REBAR IS INSTALLED. AT NO TIME SHALL ANY PERSONNEL ACCESS SHAFT.

UNDERPINNING:

- UNDERPINNING OPERATIONS SHALL IMPART NO EXCESSIVE STRESS OR MOVEMENTS TO EXISTING OR NEW CONSTRUCTION.
- UNDERPINNING OPERATIONS SHALL BE DEEMED COMPLETED WHEN ALL ASSOCIATED WORK HAS ACHIEVED PROPER STRENGTH, AND ALL FINAL BRACING ITEMS (SLAB, WALL, ETC) ARE IN PLACE AND PROPERLY CURED.
- CONTRACTOR SHALL SUBMIT FULL UNDERPINNING SCHEDULE, INCLUDING BRACING, AND OTHER TEMPORARY ITEMS FOR REVIEW PRIOR TO COMMENCING UNDERPINNING OPERATIONS.
- UNDERPINNING SHALL TAKE PLACE IN SEGMENTS NO MORE THAN 4FT WIDE AT ANY ONE TIME. CONCRETE SHALL BE ALLOWED TO GAIN SUFFICIENT STRENGTH PRIOR TO CONTINUING WITH NEXT UNDERPINNING SEGMENT.
- EXISTING MASONRY WALLS SHALL BE SURVEYED PRIOR, DURING AND AFTER UNDERPINNING OPERATIONS TO ENSURE NO MOVEMENT OCCURS.

CONCRETE:

- CONCRETE STRENGTHS: 140PCF CONCRETE DENSITY. MINIMUM 28-DAY CONCRETE STRENGTHS SHALL BE AS FOLLOWS:
  - TYPICAL UNLESS NOTED OTHERWISE: 4000PSI
  - BEAMS, JOISTS, AND FORMED SLABS: 4000PSI
  - COLUMNS: 4000PSI
  - DRILLED PIERS: 3000PSI
  - FILL ON COMPOSITE MTL DECK: 3500PSI
  - FOOTINGS: 3500PSI
  - FOUNDATION WALLS: 3500PSI
  - GRADE BEAMS: 4000PSI
  - SLABS ON GRADE: 4000PSI
- ALL CONCRETE WORK SHALL CONFORM TO THE LATEST EDITIONS OF ACI 301, 305, 306, 311, 315, 318 AND 347.
- CONCRETE MIX DESIGN SHALL CONFORM TO ACI 301 AND 318. WATER SHALL NOT BE ADDED ON SITE, UNLESS CALLED OUT ON THE APPROVED MIX DESIGN.
- CONCRETE MIX DESIGN PARAMETERS:
  - INTERIOR SLAB ON GRADE:
    - WATER TO CEMENT RATIO (W/C):  $\leq 0.48$
    - AIR CONTENT: NO MORE THAN 3%
  - FOOTINGS & FOUNDATION WALLS:
    - WATER TO CEMENT RATIO (W/C):  $\leq 0.48$
    - AIR CONTENT: 6.5%  $\pm$  1%
- DRYPACK OR GROUT SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 7,000psi. CONCRETE SLABS ON GRADE SHALL HAVE CONSTRUCTION JOINTS OR CUT JOINT AT 12FT O.C. MAXIMUM IN EACH DIRECTION. CUT SLAB BETWEEN 4 AND 12 HOURS AFTER CASTING SLAB. ISOLATE COLUMNS, WALLS, AND PIERS FROM SLABS AS SHOWN ON DRAWINGS. DO NOT CUT SLABS-ON-DECK OR PRECAST TOPPING SLABS.
- SEE ARCHITECTURAL DRAWINGS FOR SLAB DEPRESSIONS. PITCH SLAB TO DRAIN WITHOUT REDUCING THICKNESS OF CONCRETE SECTION.
- PROVIDE CONSTRUCTION JOINTS IN EXPOSED WALLS AT A MAXIMUM SPACING OF 40FT. COORDINATE LOCATION OF JOINT WITH ARCHITECTURAL DRAWINGS. PROVIDE CONSTRUCTION JOINTS IN UNEXPOSED WALLS AT A MAXIMUM SPACING OF 60FT.
- ALL JOINTS IN CONCRETE CONSTRUCTION SHALL BE KEYED WITH A MINIMUM 2X4 KEYWAY.
- PROPERLY CONSOLIDATE CONCRETE WHEN CASTING.
- DO NOT PLACE CONDUIT, PIPES, OR DUCTS WITHIN COLUMNS, BEAMS, WALLS, OR SLAB SYSTEMS WITHOUT APPROVAL FROM STRUCTURAL ENGINEER.

REINFORCING BARS:

- BAR DETAILING SHALL CONFORM TO THE LATEST ACI DETAILING MANUAL. PROVIDE COVER TO REINFORCEMENT AS LISTED IN ACI 318.
- STEEL SHALL BE AS FOLLOWS:
  - REBAR- ASTM A603, GR 60
  - WELDABLE REINFORCING- A706, GR 60
  - WELDED WIRE FABRIC- ASTM A185
- FIELD BENDING OF REINFORCING SHALL BE DONE COLD. DO NOT HEAT REINFORCEMENT.
- BAR LAPS SHALL BE AS FOLLOWS, UNLESS NOTED OTHERWISE. STAGGER SPLICES OF REINFORCING BY 24 INCHES AT ALTERNATE BARS.
  - BEAMS/JOIST TOP AND BOTTOM BARS – 40D
  - COLUMN/WALL VERTICAL BARS – 48D
  - TIES – 3D@8
- HOLD REINFORCING IN PLACE DURING CASTING OPERATIONS.

MASONRY

- HOLLOW CONCRETE MASONRY UNITS: NORMAL WEIGHT, FM-2000, MORTAR TYPE "S" OR "M", GROUT STRENGTH – 2000PSI.
- MASONRY CONSTRUCTION SHALL COMPLY WITH THE LATEST VERSION OF TMS 402/602. SEE IBC 2021/2018/2015 FOR HOT AND COLD WEATHER PROCEDURES.
- CMU SHALL BE LAID IN A RUNNING-BOND PATTERN.
- PROVIDE BOND BEAMS WITH 2 #6 AT ALL FLOOR LINES, ROOF LINES, TOP OF WALL, AND AT 12'-0" O.C. MAXIMUM SPACING IN WALL.
- PROVIDE REINFORCING AT CENTER OF CORES OF CMU CONSTRUCTION, OR AS INDICATED ON STRUCTURAL DRAWINGS. HOLD REINFORCING IN PLACE DURING GROUTING OPERATIONS. FILL ALL REINFORCED CELLS WITH GROUT. FILL ALL CMU CELLS SOLID BELOW GRADE. SEE DRAWINGS FOR OTHER GROUTING. CONSOLIDATED GROUT.
- GROUT CELLS FLOOR-TO-FLOOR AT JAMBS OF OPENINGS.
- LAP BARS 48 BAR DIAMETERS, UNLESS NOTED OTHERWISE.
- PROVIDE HORIZONTAL JOINT REINFORCEMENT AT 16" O.C. MAX SPACING PER SPECIFICATION.
- HIGH LIFT GROUTING WILL NOT BE PERMITTED WITHOUT AN APPROVED WRITTEN PROCEDURE SUBMITTED THROUGH THE ARCHITECT.
- USE GROUTED KEYWAYS OR PREMANUFACTURED JOINTS AT ALL CONTROL JOINTS.
- DO NOT PLACE CONDUIT, CHASES, OR OTHER EMBED ITEMS IN GROUTED CELLS WITHOUT PRIOR APPROVAL FROM THE STRUCTURAL ENGINEER.
- LOCATE CONTROL JOINTS IN CMU AT A MAXIMUM SPACING OF 20FT, UNLESS NOTED OTHERWISE. LOCATE CONTROL JOINTS IN EXTERIOR MASONRY PER ARCHITECTURAL DRAWINGS.
- CONTINUE REINFORCING THROUGH CONTROL JOINTS. WRAP REBAR WITH BOND-BREAKING TAPE 2'-0" EACH SIDE OF JOINT. DO NOT SPlice REINFORCING WITHIN 4FT OF JOINTS.
- ALL NON-LOAD BEARING CMU WALLS TO HAVE #6 REBAR GROUTED SOLID @ 48" O.C. U.N.O.

LINETS:

- LINETS SHALL BE PLACED ABOVE ALL OPENINGS AND RECESSES IN MASONRY CONSTRUCTION.
- LINETS NOT SHOWN ON THE CONSTRUCTION DRAWINGS SHALL BE AS FOLLOWS:

SPAN	NOMINAL THICKNESS	LINTEL
0'-0" - 2'-0"	4"	L3.5X3.5X1/4"
	6"	BOND BEAM w/ (1) #4
	8"	BOND BEAM w/ (2) #5
	10"	BOND BEAM w/ (2) #5
2'-1" - 4'-0"	4"	L3.5X3.5X1/4"
	6"	BOND BEAM w/ (1) #4
	8"	BOND BEAM w/ (2) #5
	10"	BOND BEAM w/ (2) #5
4'-1" - 6'-0"	12"	BOND BEAM w/ (2) #5
	4"	L5X3.5X1/4" LLV
	6"	BOND BEAM w/ (1) #4
	8"	BOND BEAM w/ (2) #5
	10"	BOND BEAM w/ (2) #5
	12"	BOND BEAM w/ (2) #5

BACK-TO-BACK ANGELS SHALL BE WELDED TOGETHER WITH 2" WELD AT 12" O.C.

- STEEL LINETS SHALL HAVE A MINIMUM OF 8" BEARING ON FULLY GROUTED CELL.
- GROUT ALL CMU CORES SOLID UNDER LINTEL, BEARING, BEAMS AND BEARING PLATES.
- GALVANIZE ALL STEEL EXPOSED TO WEATHER.

STRUCTURAL STEEL:

- STEEL SHALL BE DETAILED, FABRICATED AND ERECTED PER AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES.
- HIGH STRENGTH BOLTS SHALL BE INSTALLED PER AISC SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS.
- PROPERTIES:
  - WIDE FLANGE SHAPES: ASTM A992  $F_y = 50$  KSI
  - OTHER ROLLED SHAPES: ASTM A36  $F_y = 36$  KSI
  - Pipe SECTIONS: ASTM A53, GR B  $F_y = 35$  KSI
  - HSS SECTIONS, ROUND: ASTM A500, GR C  $F_y = 46$  KSI
  - HSS SECTION, SQUARE: ASTM A500, GR C  $F_y = 50$  KSI
  - HP SHAPES: ASTM A672  $F_y = 50$  KSI
  - BASE AND CONNECTION PLATES: ASTM A589 A572  $F_y = 36$  50 KSI
  - ANCHOR RODS: ASTM F1554, GR 36 55  $F_y = 36$  55 KSI
  - HIGH STRENGTH BOLTS: ASTM F1525, GR A325  $F_y = 120$  KSI
  - HIGH STRENGTH TWIST-OFF BOLTS: ASTM F3125, GR A325  $F_y = 120$  KSI
  - HEAVY HEX NUTS: ASTM A563
  - WASHERS: ASTM F436
  - HEADED STUD ANCHORS: ASTM A108, TYPE B
  - ELECTRODES FOR ARCH WELDING: AWS 5.1, E70XX
- SIMPLE SHEAR CONNECTIONS NOT FULLY DETAILED ON THE STRUCTURAL DRAWINGS SHALL BE SELECTED BY THE STEEL FABRICATOR FROM APPROPRIATE AISC LOAD TABLES USING END REACTION SHOWN ON PLANS. DOUBLE ANGLE, SINGLE ANGLE, OR WELDED SHEAR PLATE CONNECTIONS SHALL BE USED. BOLTED CONNECTIONS SHALL USE A MINIMUM OF 2 BOLTS.
- ALL WELDING SHALL BE PERFORMED BY CERTIFIED WELDERS WITH EXPERIENCE IN THAT TYPE OF JOINT. WELDING SHALL BE ACCORDING TO AMERICAN WELDING SOCIETY, STRUCTURAL WELDING CODE. IN LIEU OF AWS WELDING CERTIFICATES, WELDERS EMPLOYED ON THE WORK MAY PROVIDE WELDING TESTS THAT HAVE BEEN PERFORMED WITHIN THE LAST 12 MONTHS.
- UNLESS NOTED OTHERWISE, WELDS SHALL BE 3/16" THROAT THICKNESS.
- PAINT STEEL EXPOSED TO VIEW WITH MANUFACTURER'S STANDARD PRIMER. DO NOT PRIME STEEL RECEIVING FIRE-PROOFING, OR AT WELDS, IF STEEL MEMBERS ARE NOT EXPOSED TO VIEW, CONTRACTOR MAY ELECT TO NOT PRIME THIS STEEL. GALVANIZE ALL STEEL EXPOSED TO WEATHER.
- HEADED STEEL STUDS SHALL BE PLACED ON BEAMS IN FIELD, ARC-WELDED THROUGH METAL FLOOR DECK. SEE STUD REPLACEMENT DETAIL.
- DO NOT FIELD TORCH-OUT HOLES OR NOTCHES IN STEEL MEMBERS WITHOUT PRIOR APPROVAL FROM THE STRUCTURAL ENGINEER.
- BOLTS SHOWN ON STRUCTURAL DRAWINGS SHALL BE 1/2" DIAM. A325-N BOLTS UNLESS NOTED OTHERWISE. USE TWIST-OFF TYPE BOLTS FOR CONNECTIONS REQUIRING FULLY TIGHTENED CONDITIONS.
- FURNISH AND INSTALL OTHER MISCELLANEOUS STEEL AS CALLED OUT OR REQUIRED BY ARCHITECTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS.
- PROVIDE 5,000 PSI NON-SHRINK GROUT UNDER BASE PLATES AND BEARING PLATES WHERE INDICATED. ANCHOR BOLTS SHALL BE EMBEDDED 12 X (DIA. OF BOLT) MEASURED TO UNDERSIDE OF HEAD.

## SHEET LIST

S001	STRUCTURAL NOTES
S002	STRUCTURAL NOTES & SCHEDULES
S003	WIND UPLIFT PLAN
S101	FOOTING & FOUNDATION PLAN
S201	FLOOR FRAMING PLAN
S301	ROOF FRAMING PLAN
S401	FRAMING ELEVATIONS
S402	FRAMING ELEVATIONS
S501	STRUCTURAL DETAILS
S502	STRUCTURAL DETAILS
S503	STRUCTURAL DETAILS
S504	STRUCTURAL DETAILS

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CO-OP PROJECT NO: 24285



ISSUE:

5/15/2025 100% CD

REVISION SCHEDULE:

REV. # REV. DSC. REV. DATE

PROJECT:

NORTHERN ELECTRIC RENOVATION  
NORTHERN ELECTRIC COOPERATIVE  
ABERDEEN, SOUTH DAKOTA

SHEET TITLE:

STRUCTURAL NOTES

S001



STEEL DECK:

- DESIGN, FABRICATE, DELIVER, AND ERECT METAL ROOF DECK, NON-COMPOSITE METAL DECK, AND COMPOSITE METAL DECK ACCORDING TO THE SPECIFICATIONS AND RECOMMENDATIONS OF THE STEEL DECK INSTITUTE (SDI).
- STEEL DECK PROPERTIES SHALL BE (AT MINIMUM), THOSE LISTED IN VULCRAFT CATALOGS FOR THE TYPE AND GAGE SHOWN ON THE DRAWINGS.
- STEEL DECK SHALL BE ATTACHED TO SUPPORTING STRUCTURE AS NOTED ON PLANS.
- USE WELD-WASHERS WHEN WELDING THROUGH DECK, POWDER DRIVEN FASTENERS, IF DESIRED FOR DECK ATTACHMENT, SHALL BE SUBMITTED FOR REVIEW.
- ROOF-FLOOR DECKING THAT WILL BE LOCATED ON TOP OF IT OR IS LOCATED IN AN AREA THAT WILL HAVE HIGH HUMIDITY SHALL BE GALVANIZED. FOR ALL OTHER INSTANCES THE DECKING SHALL BE PRIME-PAINTED.
- ROOF DECK AND NON-COMPOSITE DECK ENDS SHALL BE LAPPED 2' OVER SUPPORT. COMPOSITE DECK ENDS SHALL BE BUTTED OVER CENTER OF SUPPORT.
- PROVIDE HIP AND VALLEY PLATES, GRIER FILLERS, END CLOSERS, CANT STRIPS, SUMP PANS, EDGE FORMS AND OTHER ACCESSORIES AS SHOWN ON THE STRUCTURAL AND ARCHITECTURAL DRAWINGS, OR AS NEEDED TO PROVIDE A COMPLETE DECK SYSTEM SHOWN ON THE DRAWINGS.
- SUPPORT DECK AT SUMP PANS AND OTHER ROOF DECK OPENINGS. SEE DETAILS.
- HANG LOADS FROM STEEL BEAMS AND JOISTS WHENEVER POSSIBLE. PROVIDE UNISTRUT, ANGLES, OR TUBES TO ACCOMMODATE THIS. DO NOT HANG ANY LOADS FROM ROOF DECK OR NON-COMPOSITE DECK. LOADS LESS THAN 10LBS SHALL BE HUNG FROM CURED, COMPOSITE DECK. RESPONSIBILITY FOR DESIGN OF MEP SUPPORT SYSTEMS WILL BE WITH THE CONTRACTOR.

STEEL JOISTS:

- DESIGN, FABRICATE, DELIVER, AND ERECT OPEN WEB STEEL JOISTS, JOIST GIRDERS, AND ACCESSORIES ACCORDING TO THE SPECIFICATIONS OF THE STEEL JOIST INSTITUTE (SJI).
- THE BASIS OF DESIGN FOR JOIST SIZES SHOWN ON THE DRAWINGS IS PER VULCRAFT DESIGN CATALOG. SPECIAL JOIST PRELIMINARY SIZES SHOWN ARE BASED ON SNOW DRIFT AND MECHANICAL LOADS SHOWN ON DOCUMENTS.
- ATTACH STEEL JOIST TO SUPPORT AS FOLLOWS:

JOIST TYPE/SERIES	DETAILS WITH WELD INFORMATION		DETAILS WITH BOLT INFORMATION		MINIMUM END BEARING (IN.)
	FILET WELD SIZE	WELD LENGTH (IN.)	BOLT DIAMETER (IN.)	STEEL MATERIAL	
K	1/8	2	1/2	A307	2 1/2 4
LHDLH 02-08	3/16	2	3/4	A307	2 1/2 6
LHDLH 07-17	1/4	2	3/4	A307	4 6
LHDLH 8-25	1/4	4	3/4	A307	6 6
JOIST GIRDER	1/4	2	3/4	A307	4 6

- PROVIDE BRIDGING, EXTENDED ENDS, SLOPED BEARINGS, CEILING EXTENSIONS AND OTHER ACCESSORIES AS SHOWN ON THE STRUCTURAL AND ARCHITECTURAL DRAWINGS.
- BRIDGING SHOWN ON DRAWINGS SHALL BE USED FOR ESTIMATING ONLY. FINAL SIZE, CONFIGURATION, AND QUANTITY OF BRIDGING SHALL BE DETERMINED BY THE JOIST MANUFACTURER. UPLIFT BRIDGING MAY BE REQUIRED- SEE DRAWINGS.
- WHERE BRIDGING INTERFERES WITH MECHANICAL DUCTWORK OR PIPING, BRIDGING MAY BE REMOVED AFTER ROOF DECK ATTACHMENT. NOTIFY STRUCTURAL ENGINEER OF LOCATIONS PRIOR TO REMOVAL.
- PAIN JOISTS WITH MANUFACTURER'S STANDARD RUST-INHIBITING PRIMER. JOISTS TO RECEIVE FIREPROOFING ARE NOT TO BE PAINTED.
- TO AID IN BEARING SEAT DESIGN FOR JOISTS, IF JOIST MANUFACTURER WOULD LIKE TO STAGGER JOISTS ON EITHER SIDE OF A SUPPORT, THIS SHALL BE SUBMITTED FOR APPROVAL ON THE SHOP DRAWINGS.
- JOISTS BEARING ABOVE A COLUMN LINE SHALL HAVE ERECTION BOLTS IN THE BEARING SEAT. BOTTOM CHORDS SHALL BE ALSO EXTENDED TO THE FACE OF THE COLUMN.
- JOISTS SHALL BE WELDED TO SUPPORTS, TYPICAL.
1. LIGHT-WEIGHT MECHANICAL DUCTS, CONDUIT, AND CEILING MAY BE HUNG AT ANY POINT ALONG THE JOIST BOTTOM OR TOP CHORD.
- LOADS GREATER THAN 100LBS SHALL BE HUNG WITHIN 6" OF TOP AND BOTTOM CHORD POINTS. LOADS HUNG OUTSIDE THIS RANGE SHALL HAVE ADDED BRACING TO NEAREST CHORD POINT, AS SHOWN ON THE DETAILS.

LIGHT GAGE STEEL:

- LIGHT GAGE STEEL DESIGN, DETAILING AND ERECTION SHALL FOLLOW STEEL STUD MANUFACTURERS ASSOCIATION (SSMA) GUIDELINES.
- LIGHT GAGE CALLED OUT ON THE DRAWINGS SHALL HAVE A MINIMUM PROPERTIES CALLED OUT IN THE LATEST EDITION OF SSMA PRODUCT TECHNICAL INFORMATION.
- END TRACK GAGE SHALL MATCH WALL STUD GAGE. ALUM STUDS BELOW STRUCTURAL MEMBERS ABOVE. PROVIDE FULL BEARING OF WALL STUDS TO TOP AND BOTTOM TRACK. STUDS SHALL NOT HAVE PUNCH-OUT LOCATED AT ENDS OF STUDS.
- PROVIDE TRACK, BRIDGING, BLOCKING, HEADERS, CLIP-ANGLES, SLIDE CLIPS, FASTENERS, AND OTHER ACCESSORIES AS NEEDED TO SUPPLY A COMPLETED LIGHT-GAGE SYSTEM AS SHOWN ON THE DRAWING.
- PROVIDE BRIDGING AT 4'-0" O.C. MAXIMUM SPACING IN BEARING. SHEAR AND EXTERIOR WALLS. PROVIDE FULL DEPTH BLOCKING AT ALL SHEAR PANEL EDGES.
- SCREW SHEATHING FOR FLOORS & ROOFS WITH #8 SCREWS AT 6" O.C. AT PANEL EDGES AND 12" O.C. IN THE FIELD. STAGGER EDGES OF PANELS.
- PROVIDE 2 FULL HEIGHT STUDS AT JAMBS OF OPENINGS, UNLESS NOTED OTHERWISE.
- ALL WELDED CONNECTIONS SHALL BE DONE BY PERSONNEL CERTIFIED IN LIGHT-GAGE WELDING.

WOOD:

- WOOD CONSTRUCTION SHALL COMPLY WITH IBC 2021/2020/15, AMERICAN INSTITUTE OF TIMBER CONSTRUCTION, AND THE AMERICAN WOOD COUNCIL.
- MEMBERS PROPERTIES SHALL BE AS FOLLOWS, UNLESS NOTED OTHERWISE:
  - ROOF SHEATHING- 1/2" APA RATED SHEATHING (FLAT ROOF).
  - ROOF SHEATHING- 7/16" APA RATED SHEATHING (PITCHED ROOF).
  - FLOOR SHEATHING- 1/2" APA RATED TONGUE & GROOVE SHEATHING.
  - WALL SHEATHING- 7/16" APA RATED SHEATHING/ EXTERIOR GYPSUM SHEATHING.
  - 2X4 THROUGH 2X10: SPRUCE-PINE-FIR #1/#2 (OR EQUAL).
  - 2X12: SPRUCE-PINE-FIR SELECT STRUCTURAL (OR EQUAL).
  - LAMINATED VENEER LUMBER (LVL): E=1,900,000 PSI; F=2,800PSI.
- DO NOT DRILL OR NOTCH STRUCTURAL ELEMENTS WITHOUT PRIOR APPROVAL FROM THE STRUCTURAL ENGINEER.
- CONNECTIONS NOT SHOWN SHALL BE FASTENED PER TABLE 2304.10.1 IN IBC 2021.
- PLYWOOD INDICATED AS RATED SHEATHING, SHALL BEAR THE APPROPRIATE MARK OF THE AMERICAN PLYWOOD ASSOCIATION. ALL WOOD MEMBERS SHALL BEAR THE APPROPRIATE MARK OF THE APPROPRIATE ACCREDITING AGENCY.
- HOLES FOR BOLTS SHALL BE MATCH-DRILLED IN FIELD TO ENSURE PROPER ALIGNMENT. PROVIDE WASHERS AT ALL BOLT LOCATIONS.
- FASTEN SHEATHING FOR FLOORS AND ROOFS TO WOOD FRAMING WITH 16d COMMON NAILS @ 14"x3" AT 6" O.C. AT PANEL EDGES AND SUPPORTING MEMBERS. LONG EDGE OF PANEL SHALL BE APPLIED PERPENDICULAR TO FRAMING MEMBERS. STAGGER PANEL EDGES AND PROVIDE BLOCKING AT PANEL EDGES WHERE SPECIFIED.
- PROVIDE 2 FULL HEIGHT STUDS AT JAMBS OF OPENINGS, UNLESS NOTED OTHERWISE.
- CONNECT FRAMING MEMBERS WITH APPROVED LIGHT-GAGE CONNECTORS FROM SIMPSON STRONG TIE, OR EQUAL, CONSENT PER MANUFACTURER'S INSTRUCTIONS.
- FOR MEMBERS EXPOSED TO WEATHER: NAILS, SCREWS AND BOLTS LESS THAN 1/2" DIAM SHALL BE STAINLESS STEEL. GREATER THAN 1/2" SHALL BE GALVANIZED OR STAINLESS STEEL.
- ALL LUMBER IN CONTACT WITH CONCRETE/MASONRY OR EXPOSED TO WEATHER SHALL BE PRESSURE TREATED SOUTHERN PINE #2, UNLESS NOTED OTHERWISE ON PLANS.
- SPACING OF BRIDGING FOR JOISTS SHALL NOTE EXCEED 8'-0" O.C. BRIDGING SHALL BE METAL OR 1X5 MEMBERS.
- DOUBLE ALL JOISTS UNDER PARALLEL PARTITIONS.
- MINIMUM ANCHORAGE OF STRUCTURAL WALLS SHALL BE WITH 5/8" ANCHOR BOLT AT 4FT O.C. UNO IN SHEARWALL SCHEDULE.
- DESIGN, FABRICATE, AND ERECT PLATE-CONNECTED WOOD TRUSSES TO WITHSTAND LOADS SHOWN IN (DESIGN CRITERIA), ACCORDING TO RULES ESTABLISHED BY TR:
  - SHOP DRAWINGS SHALL INCLUDE STRUCTURAL ANALYSIS STAMPED BY A LICENSED ENGINEER IN THE STATE WHERE THE PROJECT IS LOCATED.
  - ALL TEMPORARY AND FINAL BRACING SHALL BE DESIGNED PER TR1 RECOMMENDATIONS.
  - STORE TRUSSES ON SITE IN A MANNER TO MINIMIZE WARPING.
  - TRUSS DEFLECTION CRITERIA:
    - TOTAL LOAD - L/240
    - LIVE LOAD - L/360

SUBMITTALS:

- THE FOLLOWING SUBMITTALS SHALL BE PROVIDED:
  - CONCRETE & GROUT MIX DESIGNS
  - PRECAST ELEMENTS & CONNECTIONS
  - CONCRETE & CMU REINFORCEMENT
  - CAST-IN-PLACE ANCHOR BOLTS
  - POST-INSTALLED ANCHORS & EPOXY
  - STRUCTURAL STEEL FRAMING & MISCELLANEOUS METALS
  - STEEL BAR JOISTS & JOIST GIRDERS
  - METAL FLOOR & ROOF DECK
  - COLD-FORMED STEEL FRAMING
  - ALUMINUM FRAMING (DECKS, CANOPIES, GUARDRAILS, ETC.)
  - WOOD WALL PANELS
  - WOOD FLOOR & ROOF TRUSSES
  - GLULAM FRAMING & CONNECTIONS
  - MASS-TIMBER FLOOR / WALL PANELS & CONNECTIONS
- SUBMITTALS SHALL BE REVIEWED AND COORDINATED PRIOR TO SUBMITTING TO THE ARCHITECT. EACH SUBMITTAL SHALL BE STAMPED INDICATING REVIEW BY THE CONSTRUCTION MANAGER/GENERAL CONTRACTOR. REVIEW BY THE ARCHITECT SHALL NOT BEGIN UNTIL THIS IS COMPLETE. WORK SHALL NOT BEGIN WITHOUT REVIEW BY THE ARCHITECT AND STRUCTURAL ENGINEER.
- SUBMITTALS SHALL BE REVIEWED BY THE ARCHITECT AND STRUCTURAL ENGINEER FOR GENERAL CONFORMANCE WITH DESIGN CONCEPT ONLY. NOTATIONS MADE BY THE ARCHITECT AND STRUCTURAL ENGINEER ON THE SUBMITTALS DO NOT RELIEVE THE CONTRACTOR FROM COMPLYING WITH THE REQUIREMENTS OF THE CONSTRUCTION DRAWINGS.

DELEGATED DESIGNS:

- THE DESIGN OF THE FOLLOWING BUILDING COMPONENTS SHALL BE DELEGATED TO THE CONTRACTOR/SUPPLIER:
  - EXCAVATION, SHORING, & UNDERPINNING
  - PRECAST CONCRETE ELEMENTS & CONNECTIONS
  - STRUCTURAL STEEL CONNECTIONS
  - STEEL STAIRS, ACCESS LADDERS, HANDRAILS, GUARDRAILS, GRATING & CONNECTIONS
  - ALUMINUM DECKS, AWNINGS/CANOPIES, HANDRAILS, GUARDRAILS & CONNECTIONS
  - LOAD BEARING & NON-LOAD BEARING COLD-FORMED STEEL FRAMING
  - WOOD FLOOR AND ROOF TRUSSES
  - GLULAM COLUMNS, BEAMS & CONNECTIONS
  - MASS-TIMBER FLOOR PANELS, WALL PANELS & CONNECTIONS
- DESIGN ITEMS THAT HAVE BEEN DELEGATED WILL REQUIRE THE CONTRACTOR/SUPPLIER TO PROVIDE SHOP DRAWINGS AND CALCULATIONS TO THE ENGINEER OF RECORD THAT HAVE BEEN SIGNED AND STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE WHERE THE PROJECT IS LOCATED.
- THE DESIGN OF DELEGATED ITEMS MAY BE DEFERRED UNTIL AFTER A BUILDING PERMIT HAS BEEN ISSUED.

SPECIAL INSPECTIONS SCHEDULE		
REQUIRED VERIFICATION & INSPECTION		CONT. PERIODIC
<b>A. CONCRETE CONSTRUCTION</b>		
1. INSPECTION OF REINFORCING STEEL, INCLUDING PRESTRESSING TENDONS, AND PLACING		X
2. INSPECTION OF REINFORCING STEEL WELDING: <ul style="list-style-type: none"><li>a. VERIFICATION OF WELDABILITY OF REINFORCING STEEL OTHER THAN ASTM A706</li></ul>	X	X
b. SHEAR REINFORCEMENT		
c. OTHER REINFORCING STEEL	X	X
d. BARRIER WALL REINFORCING		
3. INSPECTION OF BOLTS TO BE INSTALLED IN CONCRETE PRIOR TO AND DURING PLACEMENT OF CONCRETE WHERE ALLOWABLE LOADS HAVE BEEN INCREASED OR WHERE STRENGTH DESIGN IS USED.	X	
4. INSPECTION OF ANCHORS INSTALLED IN HARDENED CONCRETE	X	X
5. VERIFYING USE OF REQUIRED DESIGN MIX		X
6. PERFORM SAMPLING AND TESTING OF CONCRETE ACCORDING TO SPECIFICATIONS	X	
7. INSPECTION OF CONCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES	X	
8. INSPECTION FOR MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES		X
9. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF CONCRETE MEMBER BEING FORMED		X
10. VERIFY FINISH OF CONCRETE SLABS AND FLOORS (SEE SPECIFICATION SECTION 03300)		X
11. VERIFY LOCATION AND CONSTRUCTION OF POUR STRIPS AND JOINTS IN CONCRETE SLABS AND FLOORS (SEE SPECIFICATION SECTION 03300 AND...)		X
<b>B. STEEL CONSTRUCTION</b>		
1. MATERIAL VERIFICATION OF HIGH-STRENGTH BOLTS, NUTS, AND WASHERS: <ul style="list-style-type: none"><li>A. IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN CONSTRUCTION DOCUMENTS</li></ul>		X
B. MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED		X
2. INSPECTION OF HIGH-STRENGTH BOLTING: <ul style="list-style-type: none"><li>A. BEARING-TYPE CONNECTIONS</li><li>B. SLIP-CRITICAL CONNECTION (SEE IBC 1704.3.3)</li></ul>	X	X
3. MATERIAL VERIFICATION OF STEEL: <ul style="list-style-type: none"><li>A. IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS IN APPROVED CONSTRUCTION DOCUMENTS</li><li>B. MANUFACTURER'S CERTIFIED MIL TEST REPORTS</li></ul>	X	X
4. MATERIAL VERIFICATION OF WELD FILLER MATERIALS: <ul style="list-style-type: none"><li>A. IDENTIFICATION MARKINGS TO CONFORM TO AWS SPECIFICATION IN APPROVED CONSTRUCTION DOCUMENTS</li><li>B. MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED</li></ul>	X	X
5. INSPECTION OF STRUCTURAL STEEL WELDING: <ul style="list-style-type: none"><li>A. COMPLETE AND PARTIAL PENETRATION GROOVE WELDS</li></ul>	X	
B. MULTI-PASS FILET WELDS		X
C. SINGLE-PASS FILET WELDS > 5/16"		X
D. SINGLE PASS FILET WELDS < 5/16"		X
E. FLOOR AND DECK WELDS		X
6. INSPECTION OF STEEL FRAME JOINT DETAILS FOR COMPLIANCE WITH CONSTRUCTION DOCUMENTS: <ul style="list-style-type: none"><li>A. DETAILS SUCH AS BRACING AND STIFFENING</li></ul>		X
B. MEMBER LOCATIONS		X
C. APPLICATION OF JOINT DETAILS AT EACH CONNECTION		X
<b>C. MASONRY CONSTRUCTION (SEE IBC SECTION 1704.5.2)</b>		
1. VERIFICATION OF SLUMP FLOW AND VAS AS DELIVERED TO THE SITE FOR SELF-CONSOLIDATING GROUT	X	
2. VERIFICATION OF MASONRY CONSTRUCTION: <ul style="list-style-type: none"><li>A. PROPORTIONS OF SITE-PREPARED MORTAR</li></ul>		X
B. CONSTRUCTION OF MORTAR JOINTS		X
C. LOCATION OF REINFORCEMENT, CONNECTORS, AND ANCHORAGES.		X
3. DURING CONSTRUCTION THE INSPECTION PROGRAM SHALL VERIFY: <ul style="list-style-type: none"><li>A. SIZE AND LOCATION OF STRUCTURAL ELEMENTS</li></ul>		X
B. TYPE, SIZE, AND LOCATION OF ANCHORS, INCLUDING OTHER DETAILS OF ANCHORAGE OF MASONRY TO STRUCTURAL MEMBERS, FRAMES, OR OTHER...		X
C. SPECIFIED SIZE, GRADE, AND TYPE OF REINFORCEMENT, ANCHOR BOLTS, AND ANCHORAGES.		X
D. PREPARATION, CONSTRUCTION AND PROTECTION OF MASONRY DURING COLD WEATHER (TEMPERATURE BELOW 40°F) OR HOT WEATHER (TEMPERATUR...		X
4. PRIOR TO GROUTING, THE FOLLOWING SHALL BE VERIFIED TO ENSURE COMPLIANCE: <ul style="list-style-type: none"><li>A. GROUT SPACE IS CLEAN</li></ul>		X
B. PLACEMENT OF REINFORCEMENT AND CONNECTORS, AND ANCHORAGES.		X
C. CONSTRUCTION OF MORTAR JOINTS		X
5. PREPARATION OF ANY REQUIRED GROUT SPECIMENS, MORTAR SPECIMENS AND/OR PRISMS SHALL BE OBSERVED		X
<b>D. SOILS</b>		
1. VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY		X
2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL		X
3. PERFORM CLASSIFICATION AND TESTINGS OF CONTROLLED FILL MATERIALS.		X
4. VERIFY USE OF PROPER MATERIALS AND PROCEDURES IN ACCORDANCE WITH APPROVED GEOTECHNICAL REPORT. VERIFY DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF FILL	X	
5. PRIOR TO PLACEMENT OF CONTROLLED FILL, OBSERVE SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.		X
<b>E. MISCELLANEOUS ITEMS</b>		
1. VERIFY INSTALLATION OF EXPANSION JOINTS, TRAFFIC TOPPING MEMBRANES, AND JOINT SEALANTS		X
2. VERIFY ATTACHMENT AND/OR BRACING OF MISCELLANEOUS ITEMS SUCH AS PIPES, EQUIPMENT, SIGNS, BOLLARDS, ETC.		X

COLUMN SCHEDULE					
MARK	TYPE	BASEPLATE		ANCHOR BOLTS	REMARKS
		THICKNESS	DIAGRAM		
C1	HSS 5X5X1/4	3/4"	I	(4)	
C2	HSS 5X5X3/16	3/4"	I	(4)	
C3	HSS 5X5X3/8	3/4"	I	(4)	
C4	HSS 5X5X1/2	3/4"	III	(4)	
C5	HSS 5X5X3/8	3/4"	III	(4)	
C6	HSS 5X5X1/2	3/4"	V	(4)	
C7	HSS 5X5X1/4	3/4"	II	(4)	
C8	HSS 5X5X1/8	3/4"	II	(4)	
C9	HSS 5X5X3/8	3/4"	IV	(4)	
C10	HSS 5X5X1/2	3/4"	IV	(4)	
C11	HSS 5X5X3/8	3/4"	IV	(4)	
C12	HSS 5X5X1/4	3/4"	IV	(4)	
C13	HSS 5X5X1/8	3/4"	IV	(4)	

WALL FOOTING SCHEDULE		
MARK	SIZE	REINFORCEMENT
WF1	8'-10" x 1'-6" 2'-0" x 1'-0"	(2) #5 CONT.

PAD FOOTING SCHEDULE		
MARK	SIZE	REINFORCEMENT
F1	4'-0" x 4'-0" x 1'-0"	(6) #5 @ 12" O.C. EA. WAY
F2	5'-0" x 5'-0" x 1'-0"	(6) #5 @ 12" O.C. EA. WAY
F3	6'-0" x 6'-0" x 1'-0"	(7) #5 @ 12" O.C. EA. WAY

PIER SCHEDULE				
MARK	SIZE	VERT. REINF.	TIES	T/PIER
P1	18" x 18"	(6) #5	#4 @ 12" O.C.	99'-4"

HEADER SCHEDULE				
MARK	HEADER	BRG.	KING	REMARKS
H1	(2) 600S162-43 BOX HEADER w/ 600T125-54 TOP & BOT.	(1) 600S162-54	(1) 600S162-68	
H2	(2) 600S162-68 BOX HEADER w/ 600T125-68 TOP & BOT.	(1) 600S162-54	(1) 600S200-97	
H3	(2) 800S200-68 BOX HEADER w/ 800T200-118 TOP & BOT.	N/A	(2) 600S200-97 BTB	
NOTES: 1. SEE 1 & 2/8504 FOR HEADER ASSEMBLY & CONNECTION TO JAMB STUD 2. SEE 4/8504 FOR SILL CONNECTION TO JAMB STUD 3. SEE 7/8503 FOR MULTIPLE STUD CONNECTION				

LINTEL SCHEDULE				
MARK	OPENING TYPE	LINTEL	DETAIL	REMARKS
L1	12" CMU	BOND BEAM w/ (2) #5		
L2	10" CMU	BOND BEAM w/ (2) #5		
L3	12" CMU	(3) L5x3-1/2x5/16" (LLV)		
L4		L7x4x3/8"		
NOTES: 1. PROVIDE MIN. 8" BEARING ON BLOCK AT ALL LINTELS. 2. STOP PLATE 1/2" SHORT OF JAMB EA. END. 3. FULLY GROUT CMU CORES BELOW LINTEL BEARING. 4. PROVIDE 7" x 5/8" x 8" STL. BEARING PLATE w/ (2) 3/4"x 4" HAS EA. END OF LINTEL. 5. CONT. 5/16" BOT. PL. TO BE WELDED TO BOT. FLANGE OF LINTEL (2@12) 6. PROVIDE 1/4" END PLATES ON EA. END OF EA. LINTEL. 7. @ ALL L4 LOCATIONS, SCREW LINTEL TO CFS HEADER w/ #12-14 SCREWS @ 12" O.C.				

SHEARWALL SCHEDULE				
MARK	1ST FLOOR		# END WALL STUDS	SILL PLATE ANCHORAGE
	SHEATHING	HOLDOWN		
SW-A	7/16" APA RATED OSB SHEATHING - #8 SCREWS @ 6" O.C. MAX @ PANEL EDGES & 12" O.C. REST OF FIELD	SIMPSON HTT4 ATTACH TO ENDWALL STUDS w/ (18) #10 SCREWS, PROVIDE 5/8" DIA X7-12" EMBED THREADED ROD ANCHOR	(2) BTB 16 GA. STUDS MIN.	(2) @ 15" @ PAFs @ 16" O.C. MAX.
NOTES: 1. PROVIDE FULL-DEPTH LG BLOCKING OR CONT. 18 GA. COILED STRAP BLOCKING @ PANEL EDGES. 2. FASTENERS TO BE 12" O.C. MAX. REST OF FIELD. 3. #8 SCREWS TO BE 6" @ 16" @ 1'-11 1/2" LONG. 4. THREADED ROD ADHESIVE TO BE SIMPSON SET-3G (OR BETTER). 5. BLOCK ALL PANEL EDGES SOLID. 6. IF STEEL COLUMN IS LOCATED @ CHORD MEMBER, FASTEN CHORD MEMBER TO COLUMN w/ @ 15" @ PAFs @ 12" O.C. MAX. STAGGERED & IGNORE SPECIFIED HOLDOWN.				



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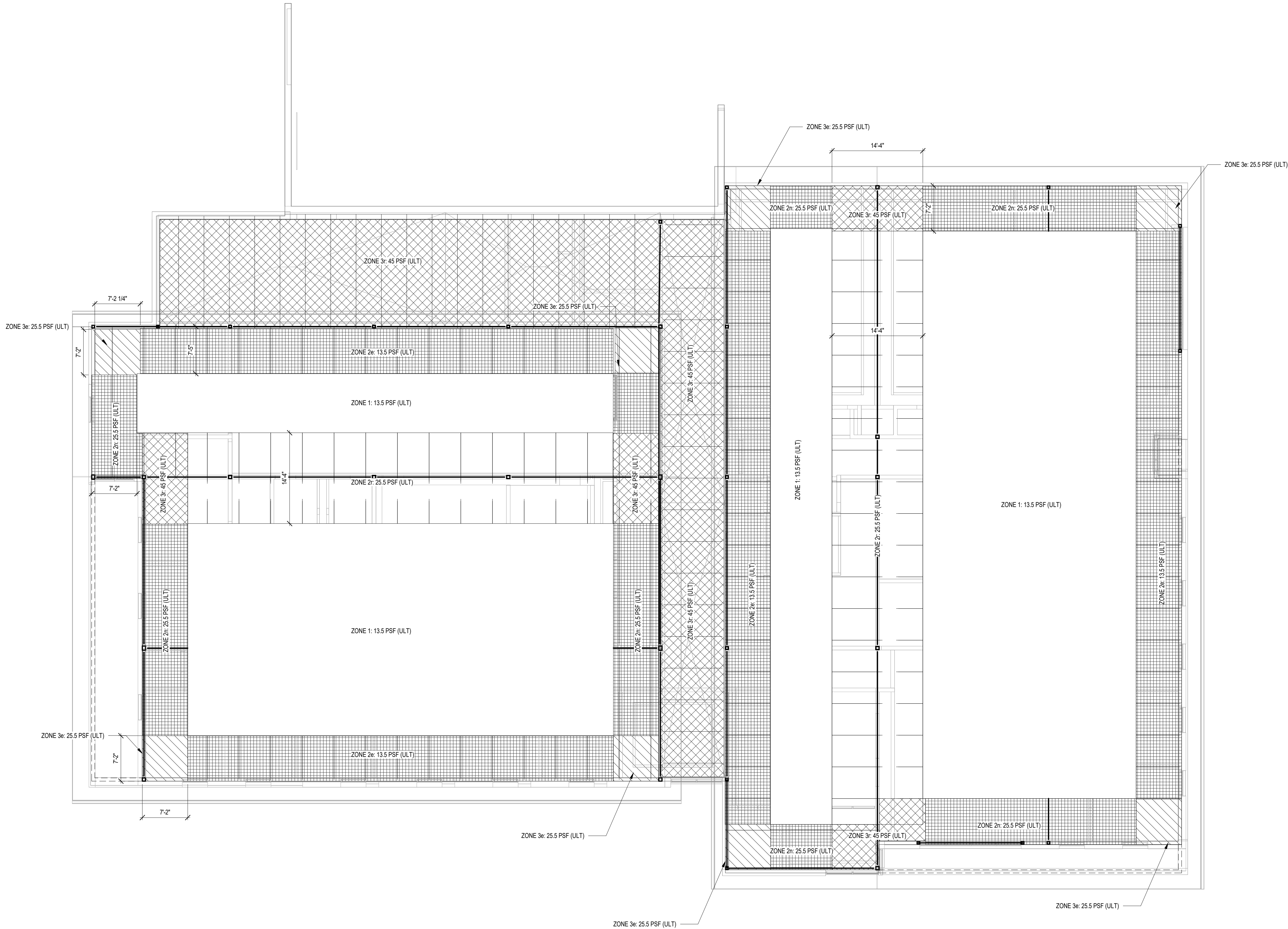
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PROJECT:  
NORTHERN ELECTRIC RENOVATION  
NORTHERN ELECTRIC COOPERATIVE  
ABERDEEN, SOUTH DAKOTA

SHEET TITLE:  
STRUCTURAL NOTES &  
SCHEDULES

S002





 1 WIND UPLIFT PLAN  
1/8" = 1'-0"

CO-OP PROJECT NO: 24285



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ABERDEEN, SOUTH DAKOTA

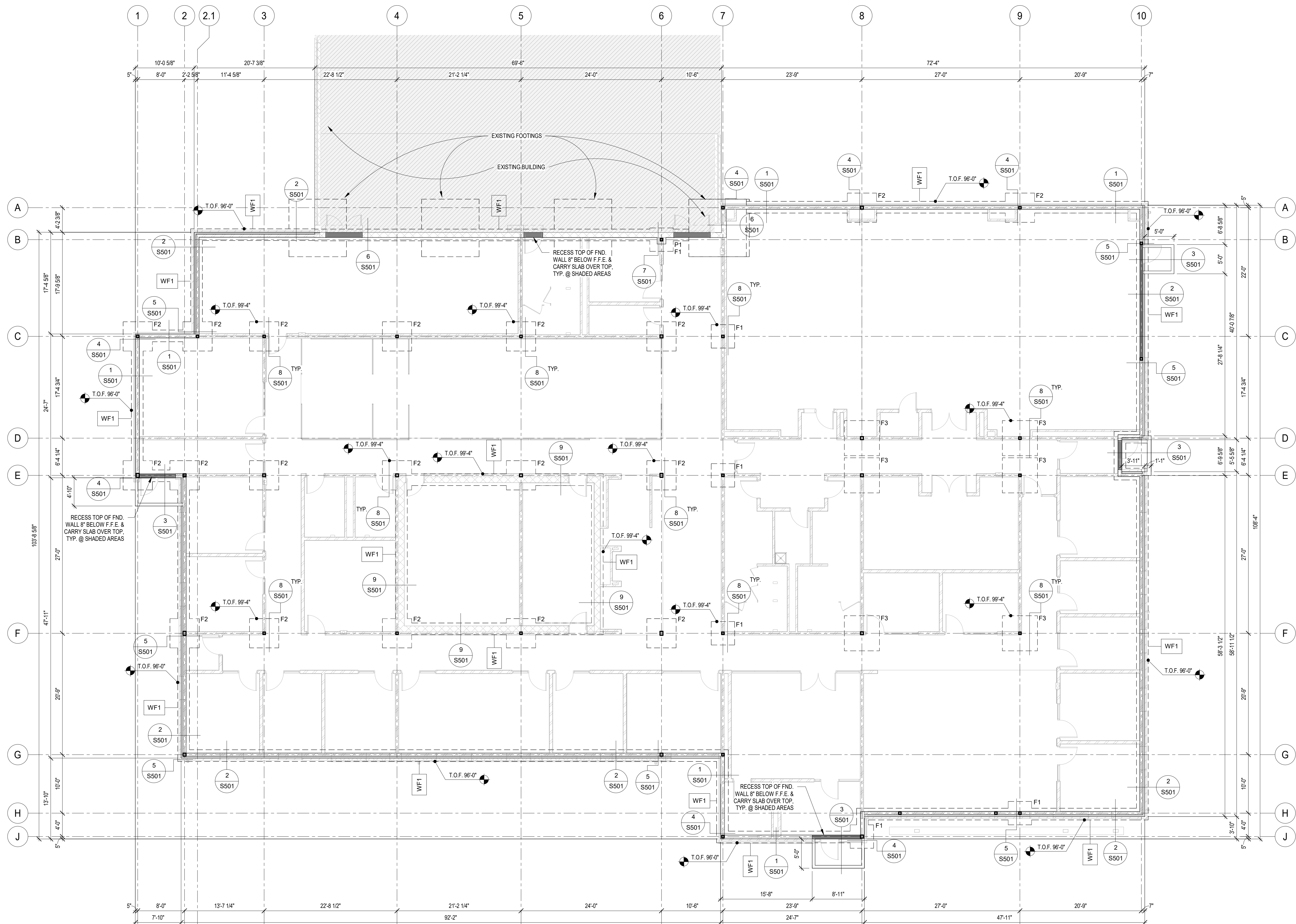
SHEET TITLE:  
WIND UPLIFT PLAN

S003



NOTES:

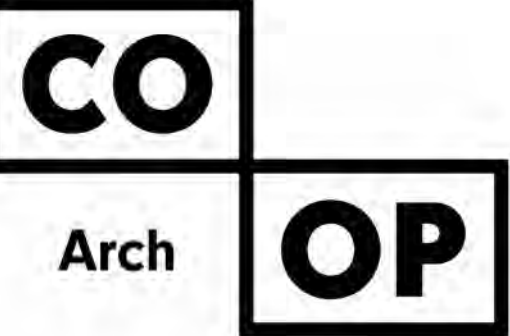
- CONC. SLAB TO BE 4" w/ FIBERMESH REINFORCEMENT ON VAPOR BARRIER (REF. ARCH.)
- ON 6" DRAINAGE FILL ON APPROVED SUBGRADE.
- CONTRACTOR TO SUBMIT CONTROL JOINT LAYOUT FOR ARCH. ENGINEER APPROVAL
- SEE STRUCTURAL NOTES FOR SIZE/SPACING LIMITATIONS.
- SEE 6 & 7 ON SHEET S401 FOR TYPICAL CONTROL JOINT DETAILS
- SEE 8/S401 FOR TYPICAL CORNER WALL REINFORCING.





NOTES:

- ALL INTERIOR AND EXTERIOR CMU LOAD BEARING WALLS TO CONTAIN #5 VERTICAL REBAR GROUTED SOLID @ 24" O.C.
- ALL INTERIOR AND EXTERIOR CMU NON-LOAD BEARING WALLS TO CONTAIN #5 VERTICAL REBAR GROUTED SOLID @ 48" O.C.

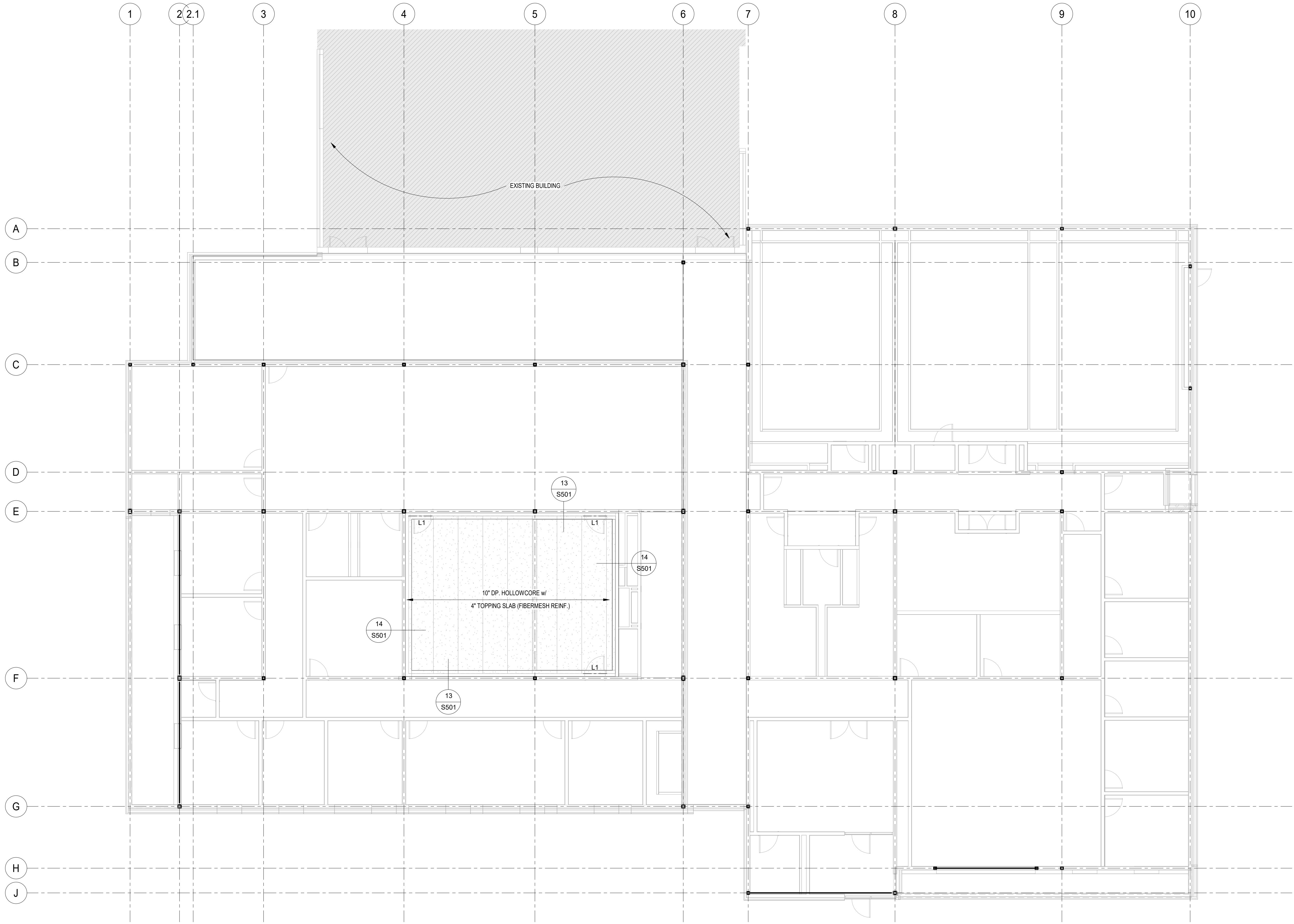


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 **1 HOLLOW CORE FRAMING PLAN**  
1/8" = 1'-0"

CO-OP PROJECT NO: 24285



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NORTHERN ELECTRIC COOPERATIVE  
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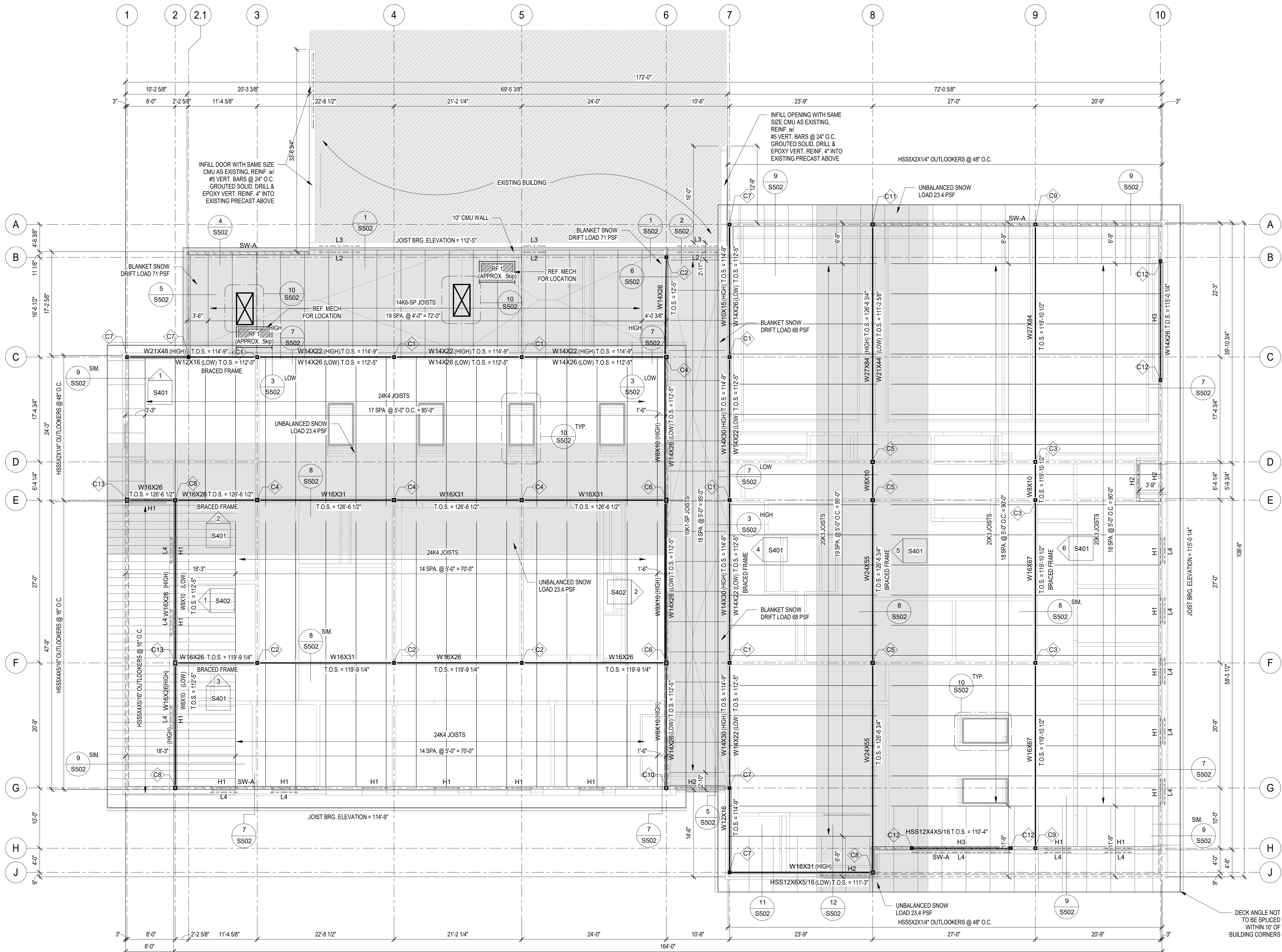
SHEET TITLE:  
FLOOR FRAMING PLAN

S201

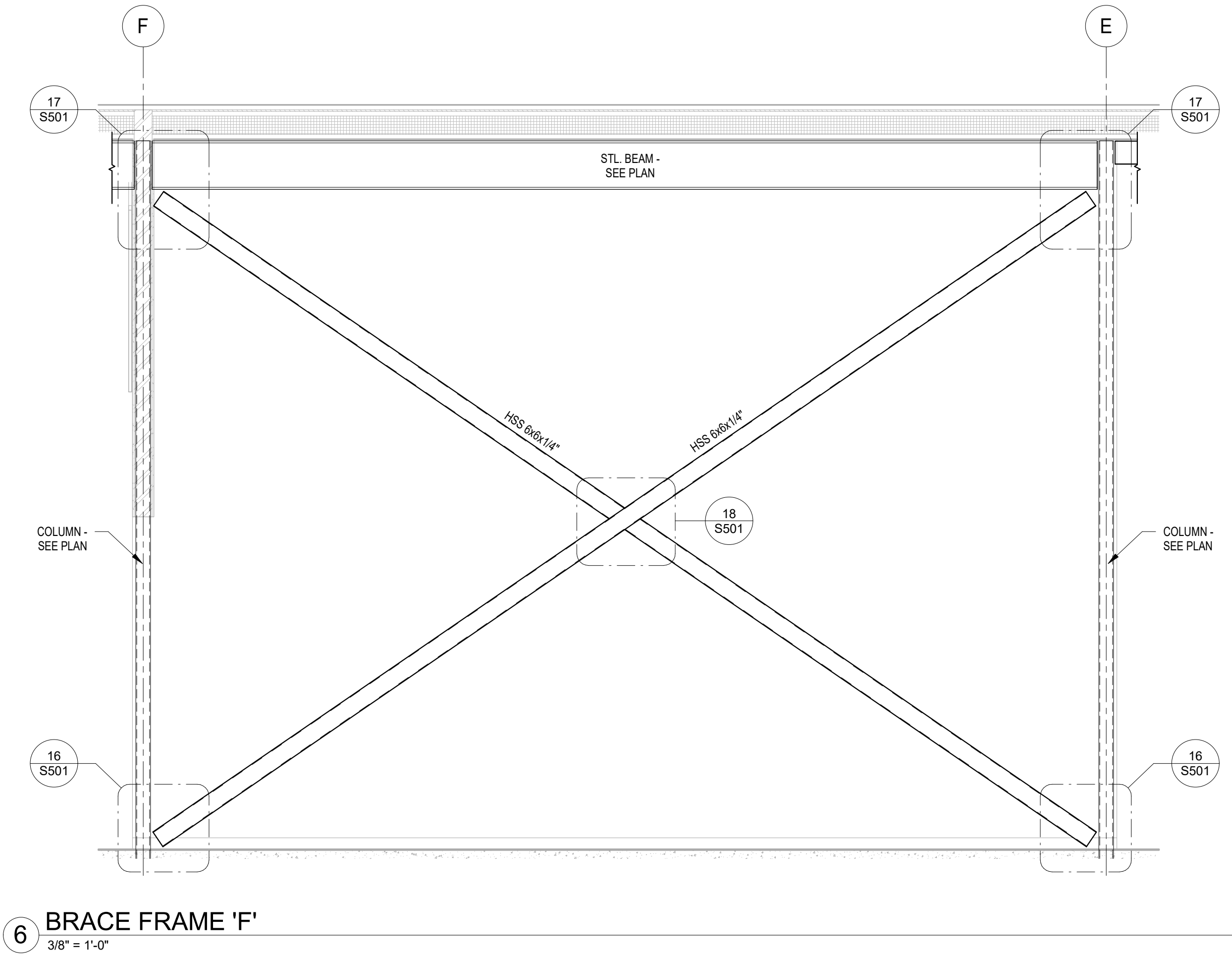
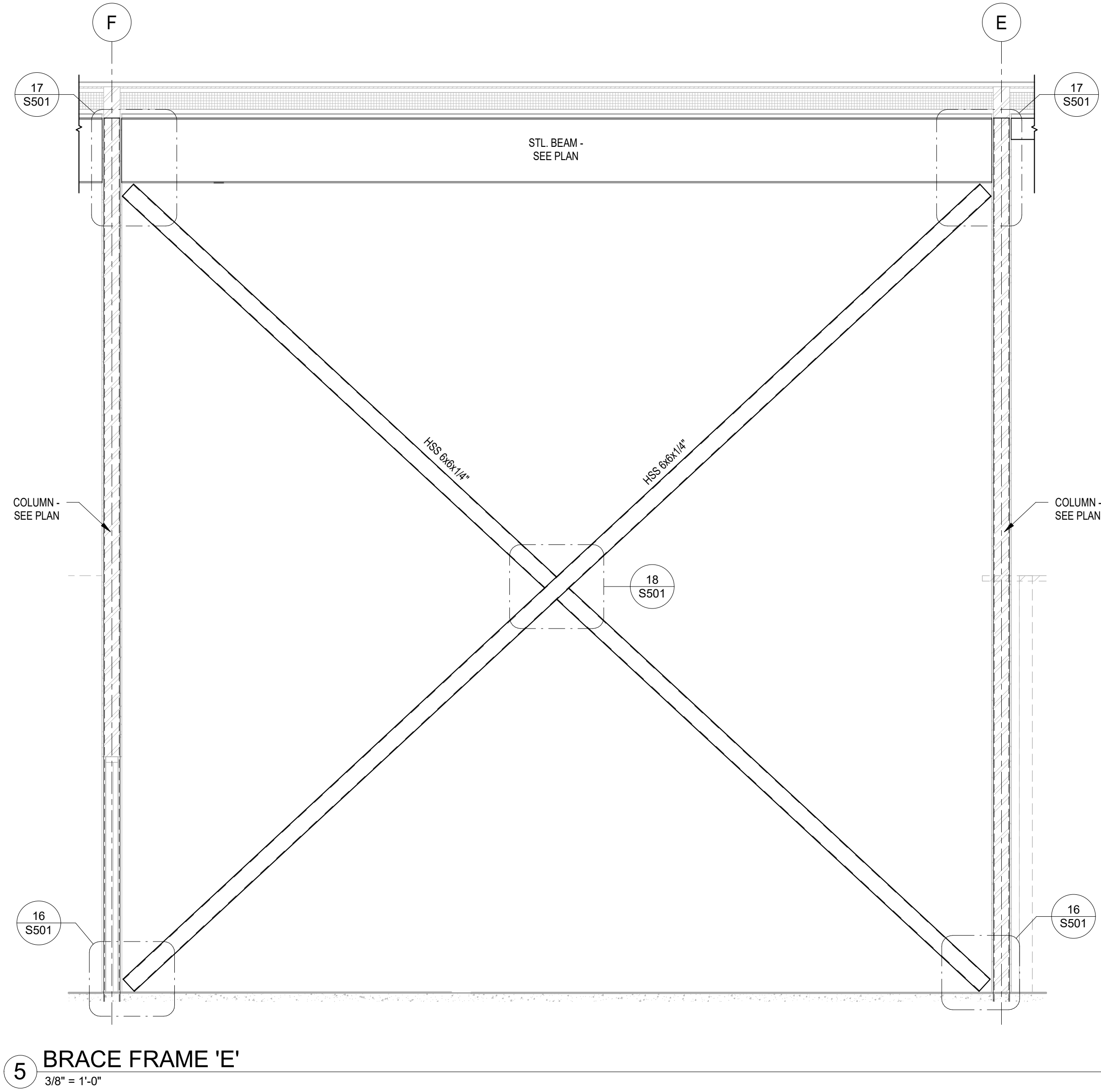
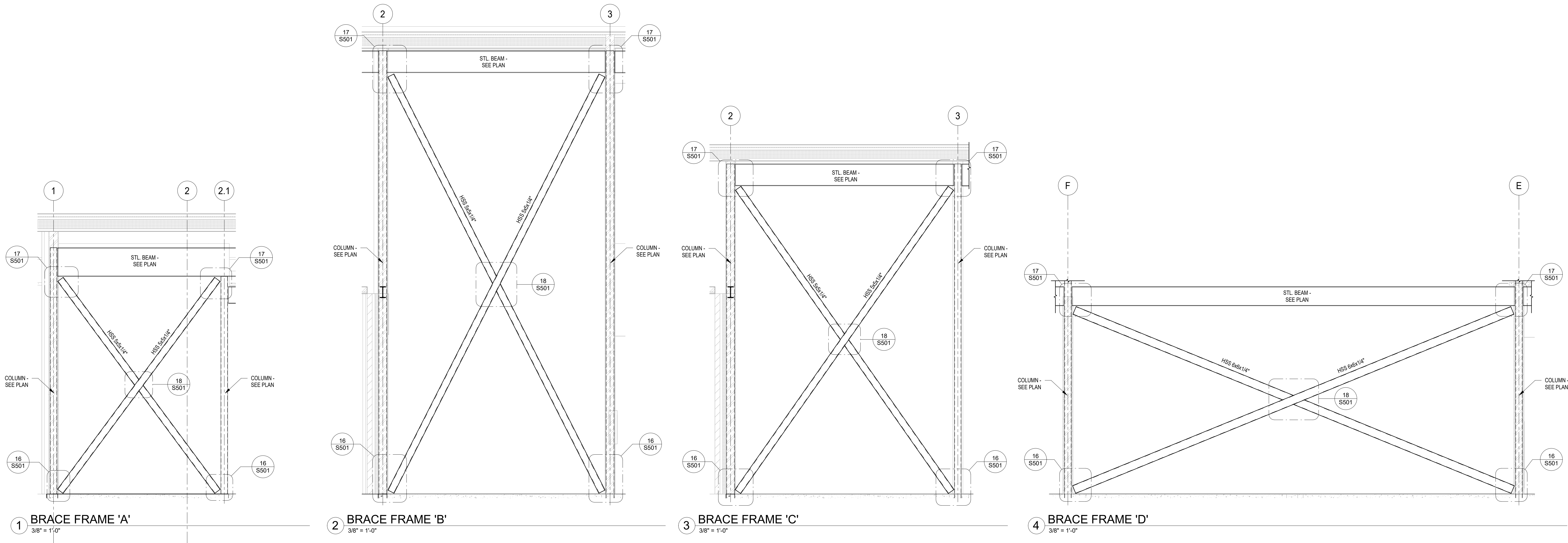


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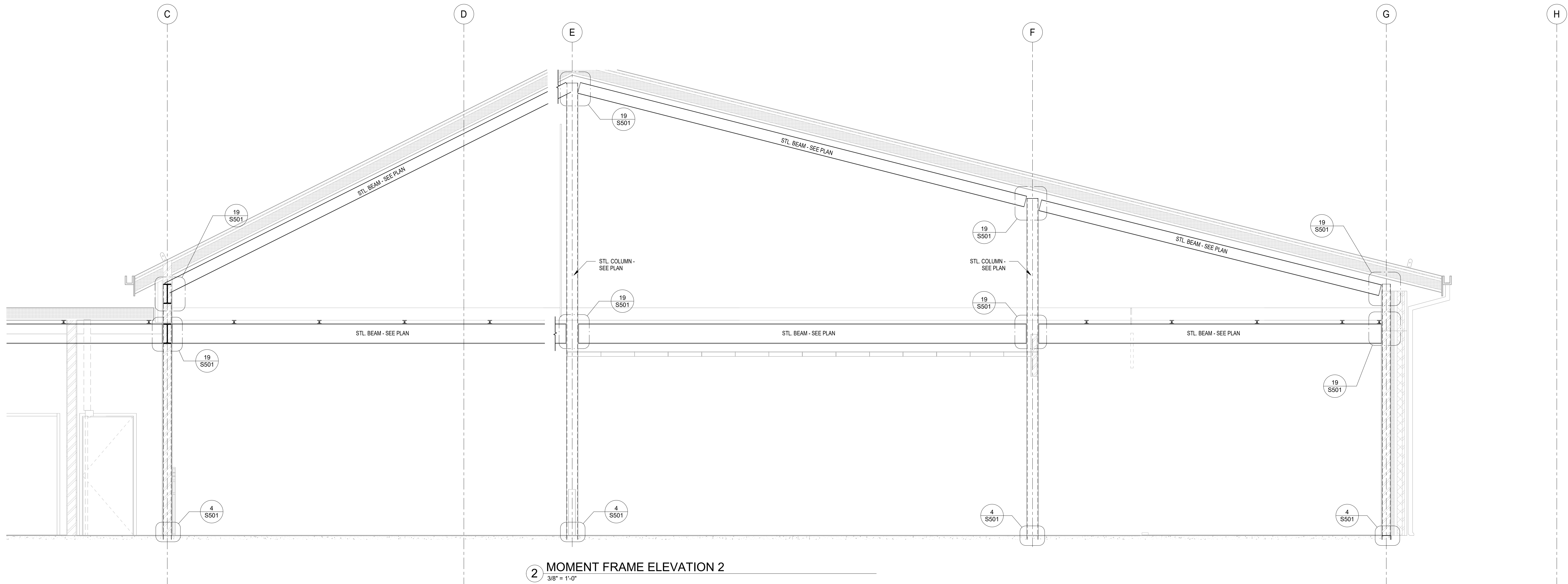
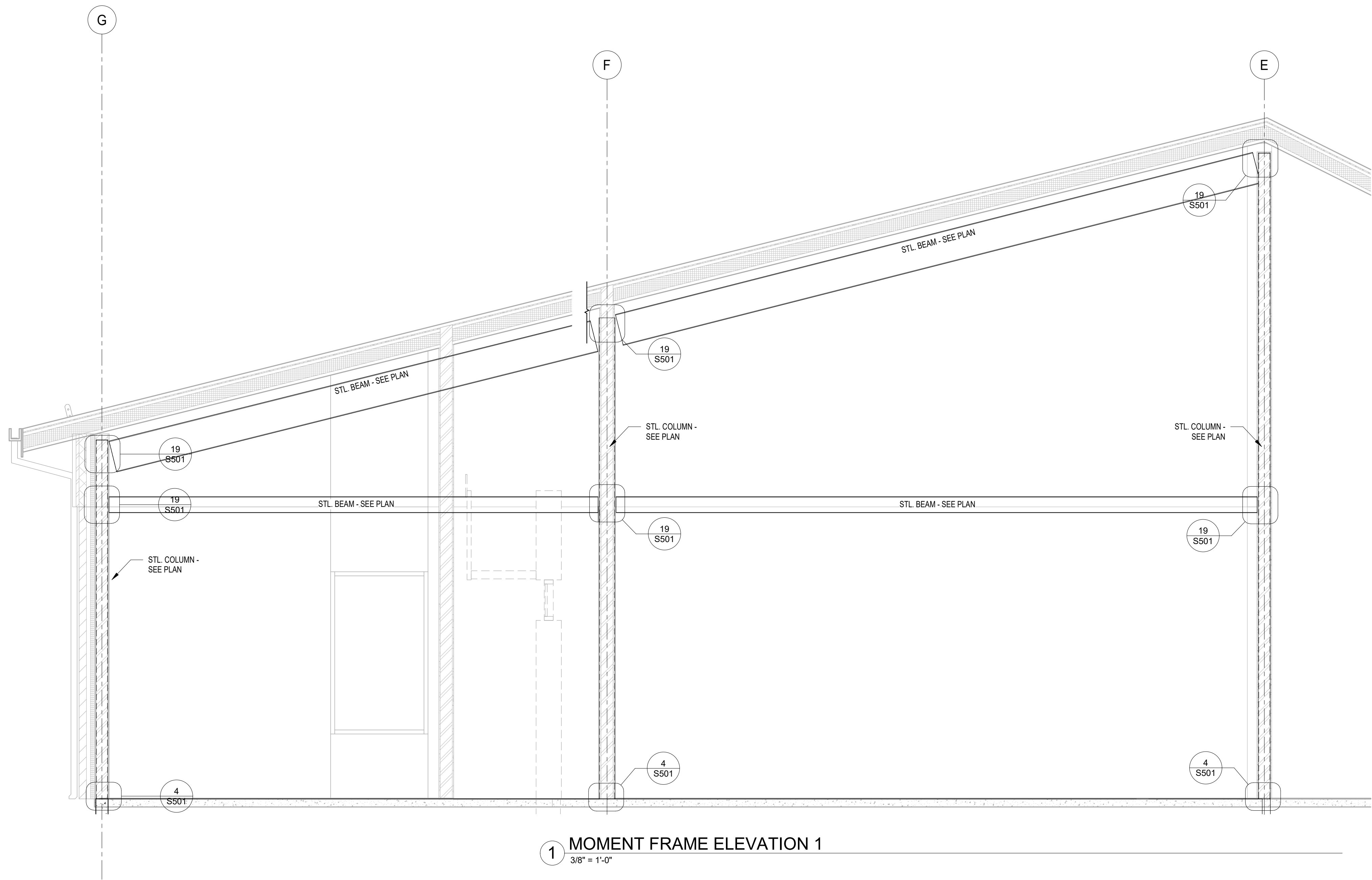
- BEARING WALLS TO BE 600S162-54 @ 16" O.C. w/ (2) STUDS 8TB BENEATH EA. JOIST (IF STUDS ARE TALLER THAN 22", USE 600S200-68 @ 16" O.C.)
- ALL INTERIOR AND EXTERIOR CMU LOAD BEARING WALLS TO CONTAIN #5 VERTICAL REBAR GROUDED SOLID @ 24" O.C.
- ALL INTERIOR AND EXTERIOR CMU NON-LOAD BEARING WALLS TO CONTAIN #5 VERTICAL REBAR GROUDED SOLID @ 48" O.C.
- ROOF DECKING ON STL. JOISTS TO BE 1/8" 2XGA, FASTENED w/ HILTI.X-HSN24 OR EQUIVALENT IN A 36X4 PATTERN & #10 SIDE LAP FASTENERS @ 18" O.C.
- FOR ALL MECHANICAL OPENINGS IN EXISTING SHOP - USE L3 LINTELS, CONSULT EOR IF OPENINGS ARE LARGER THAN 60"











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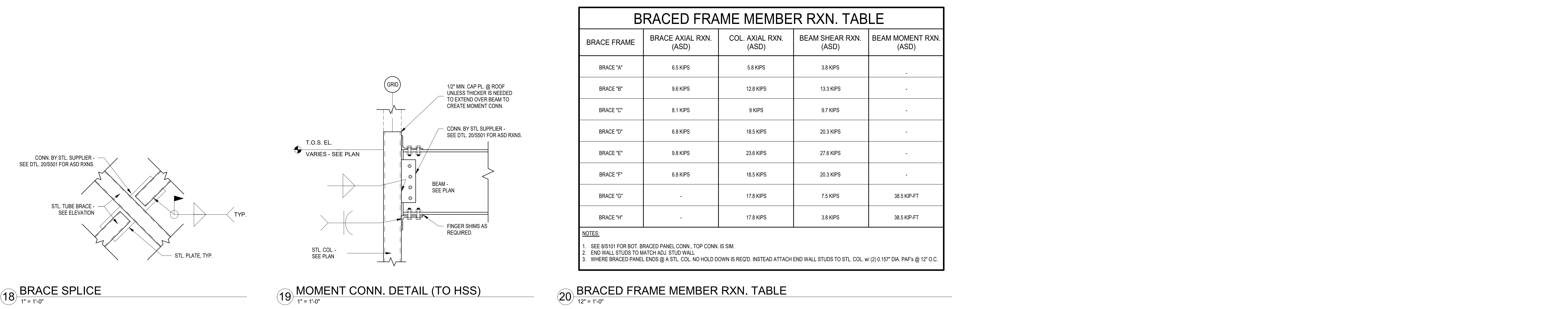
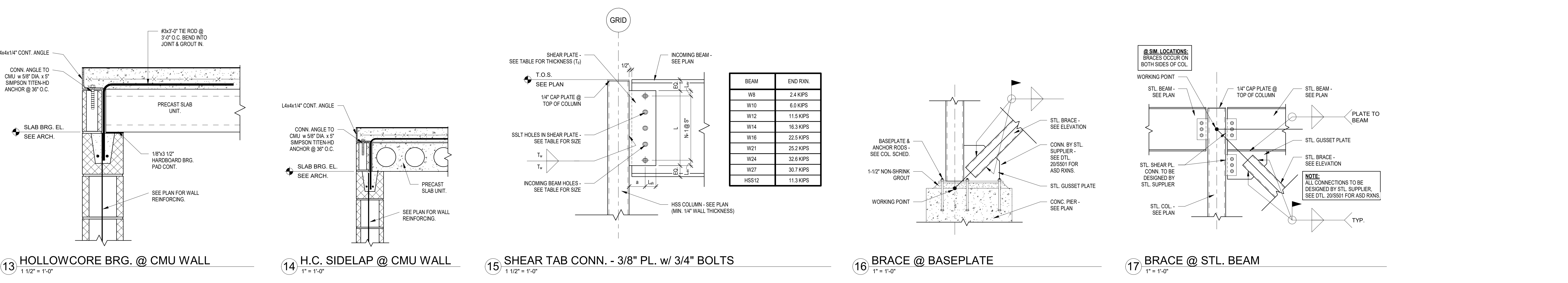
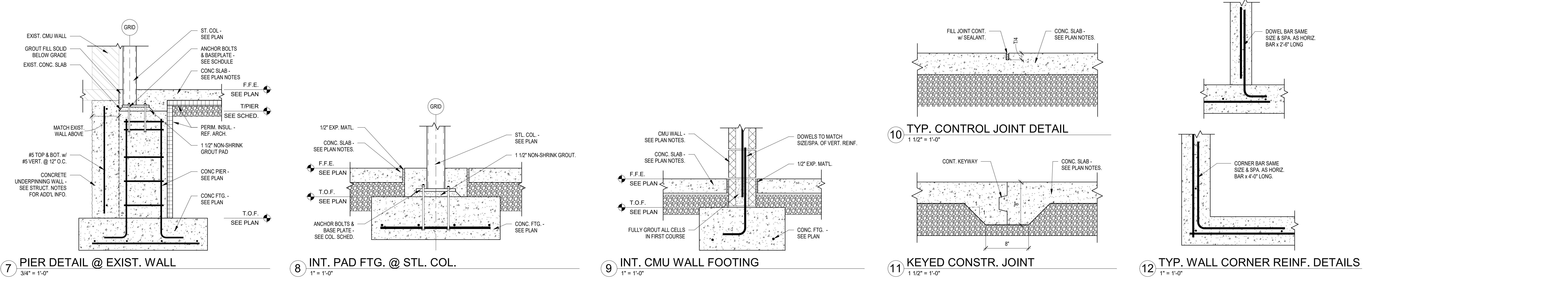
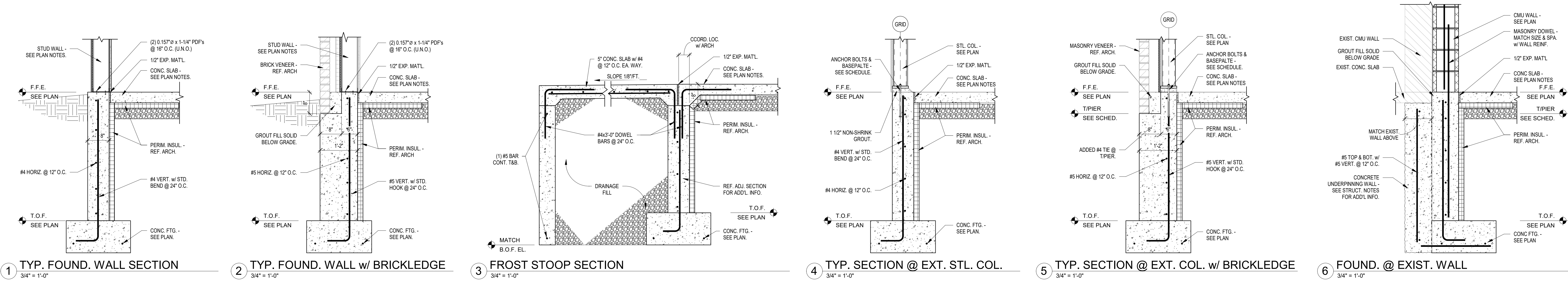


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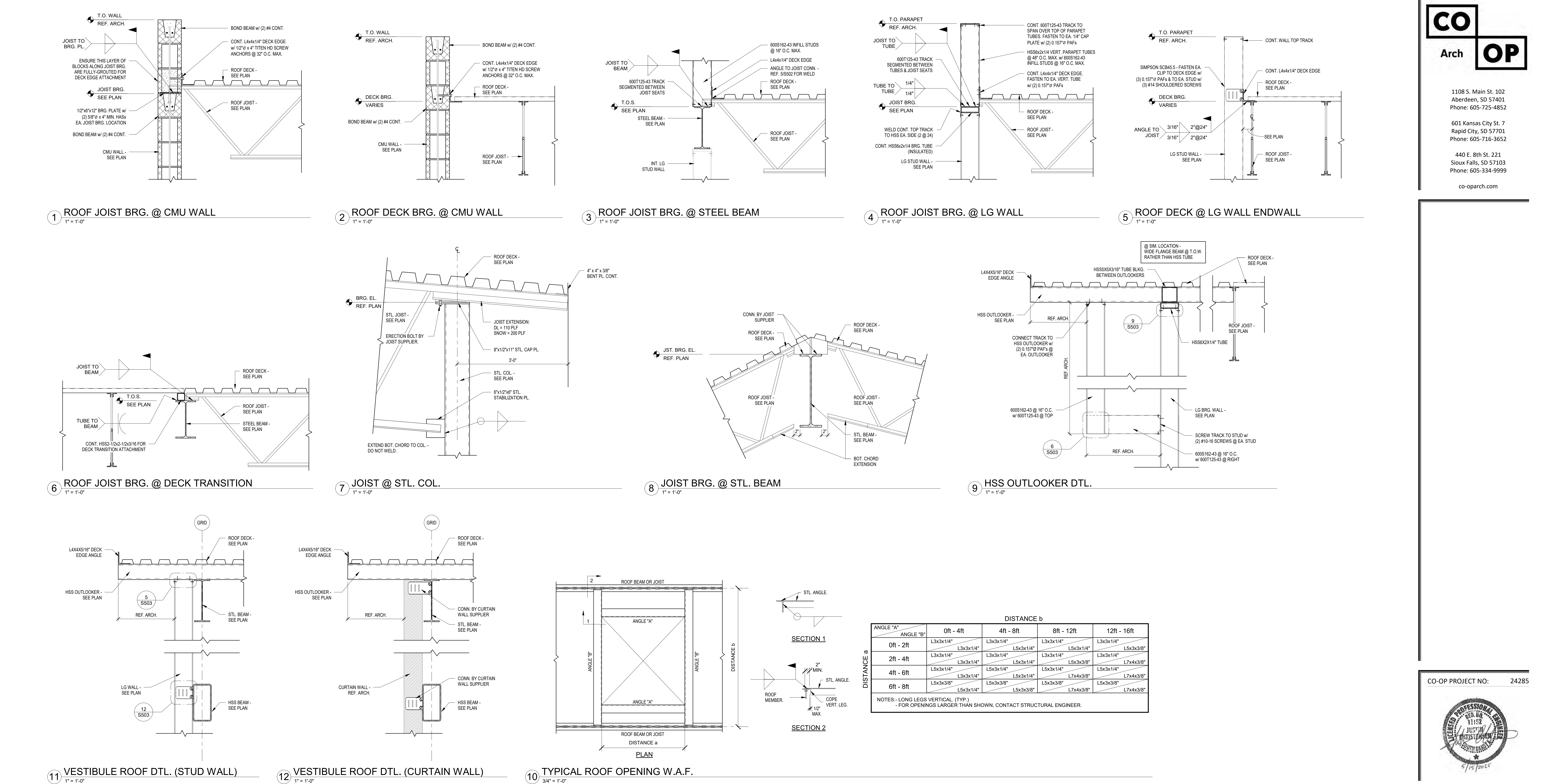
PROJECT:  
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NORTHERN ELECTRIC COOPERATIVE  
ABERDEEN, SOUTH DAKOTA

SHEET TITLE:  
STRUCTURAL DETAILS

S501

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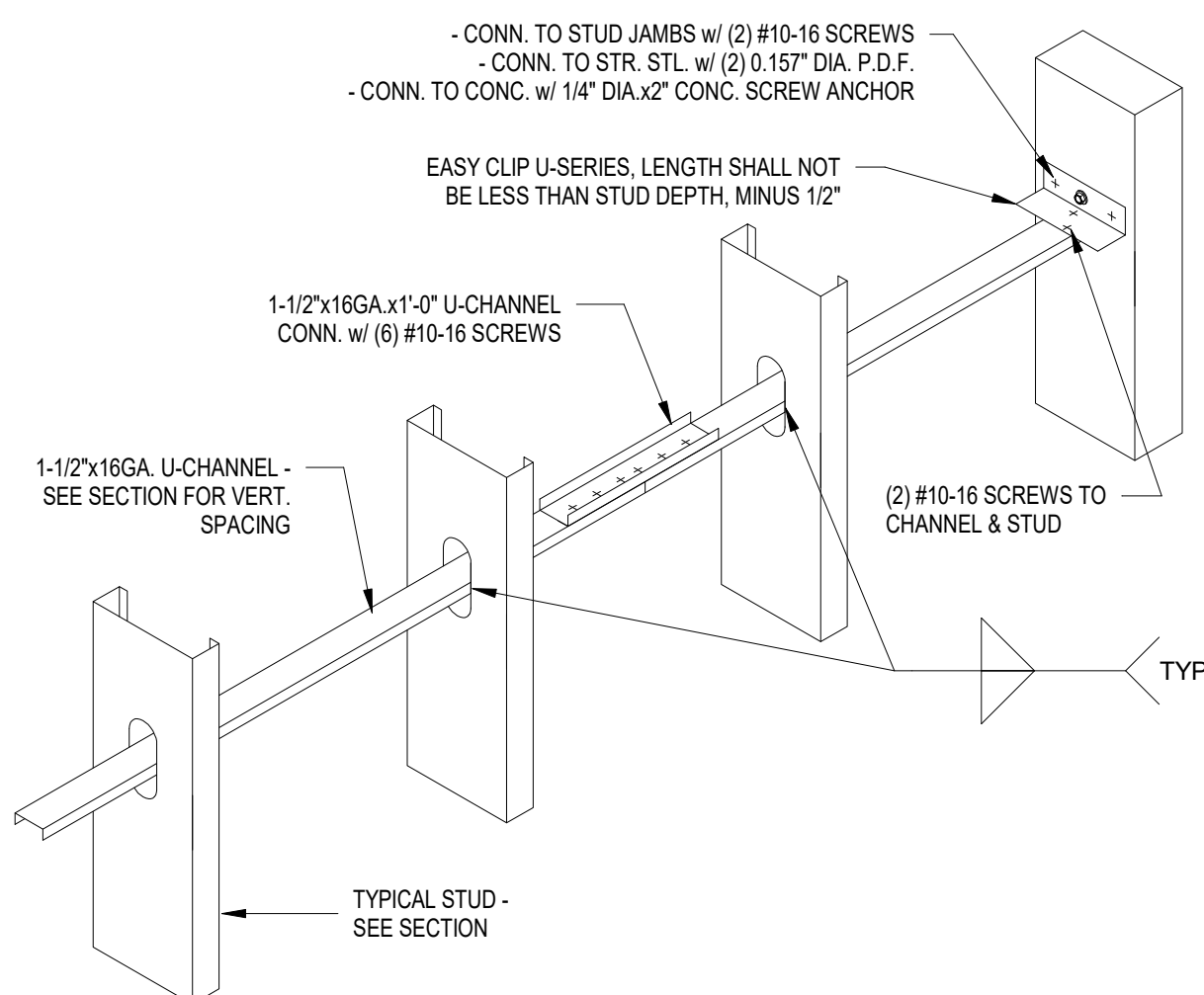
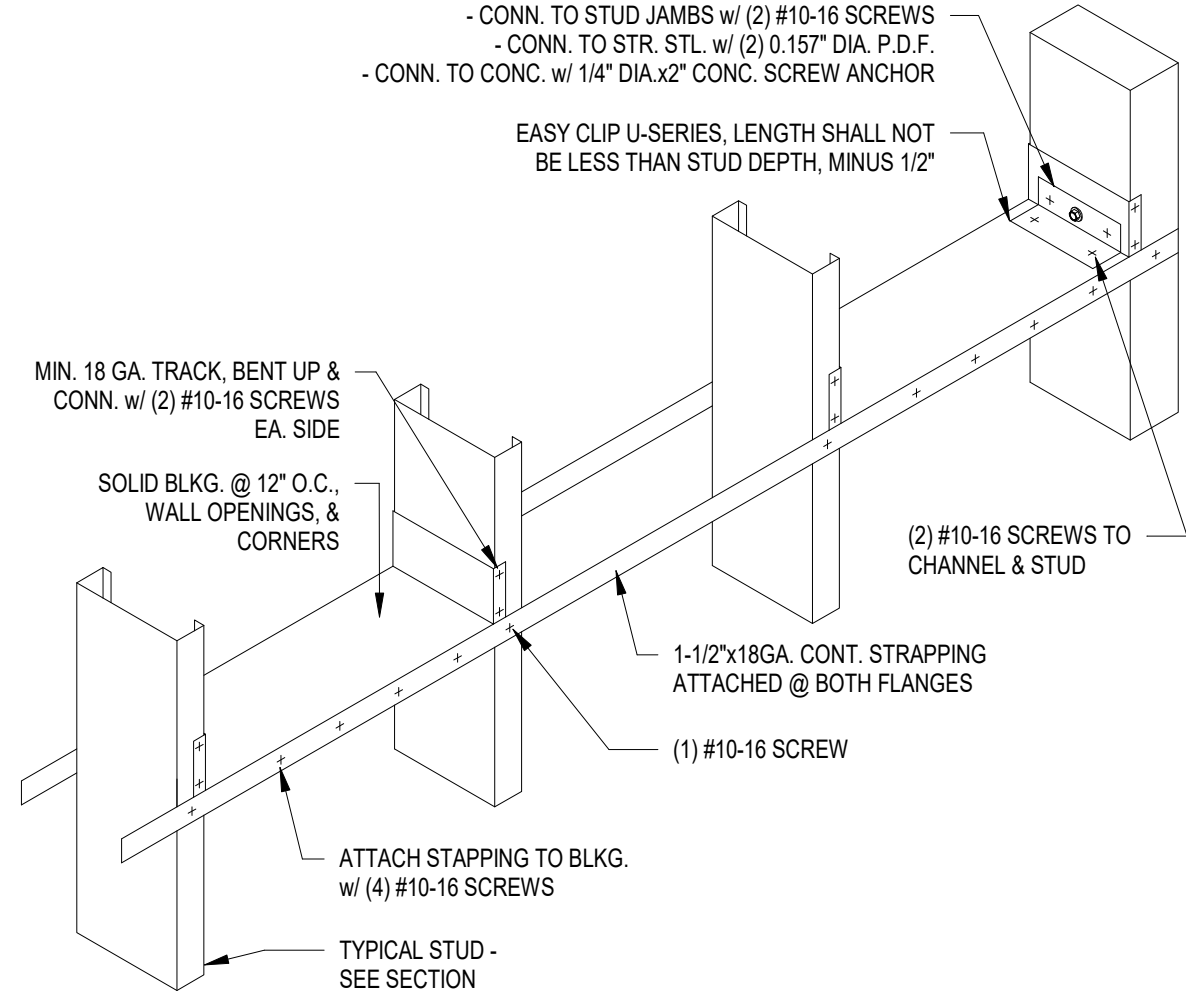
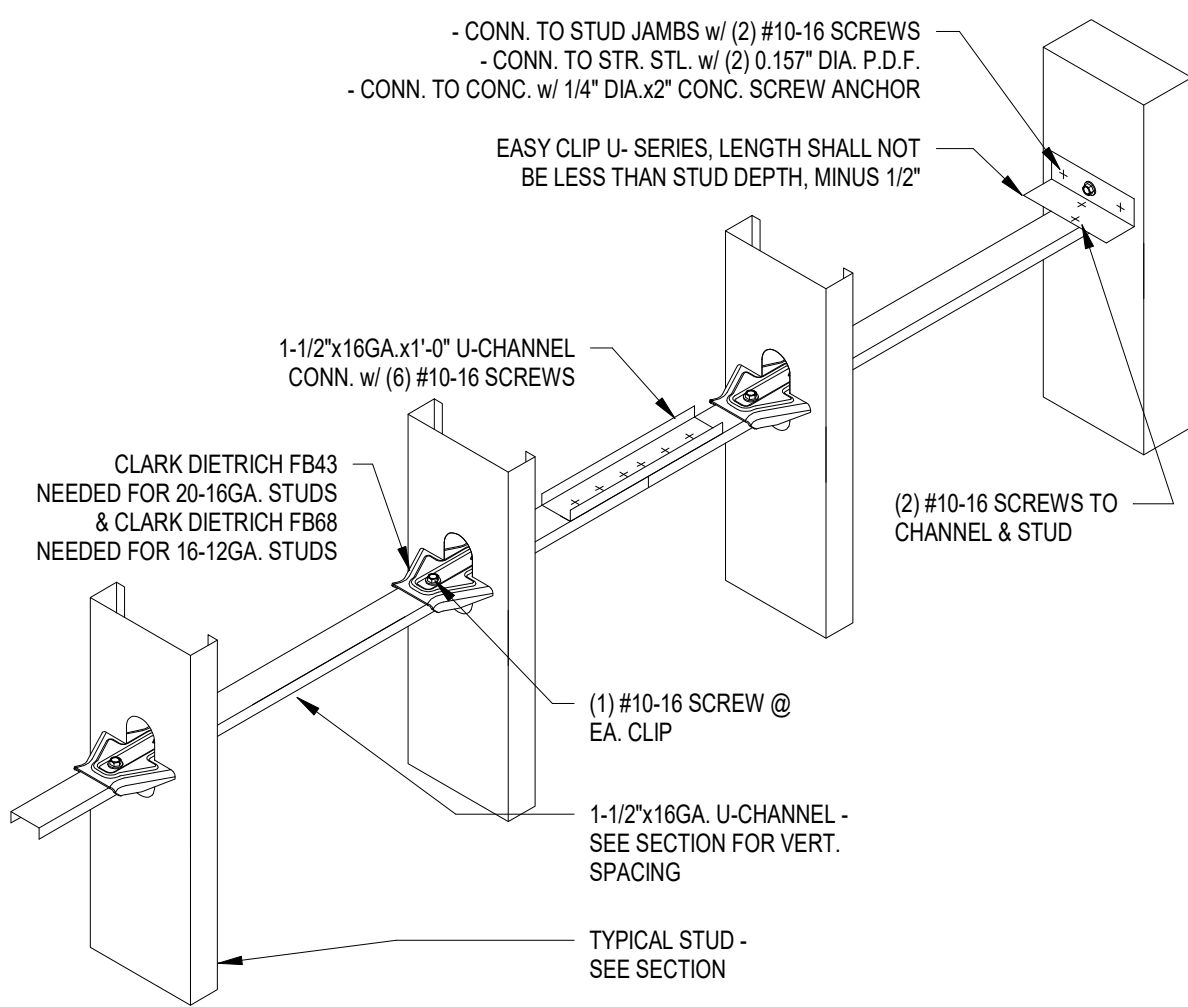
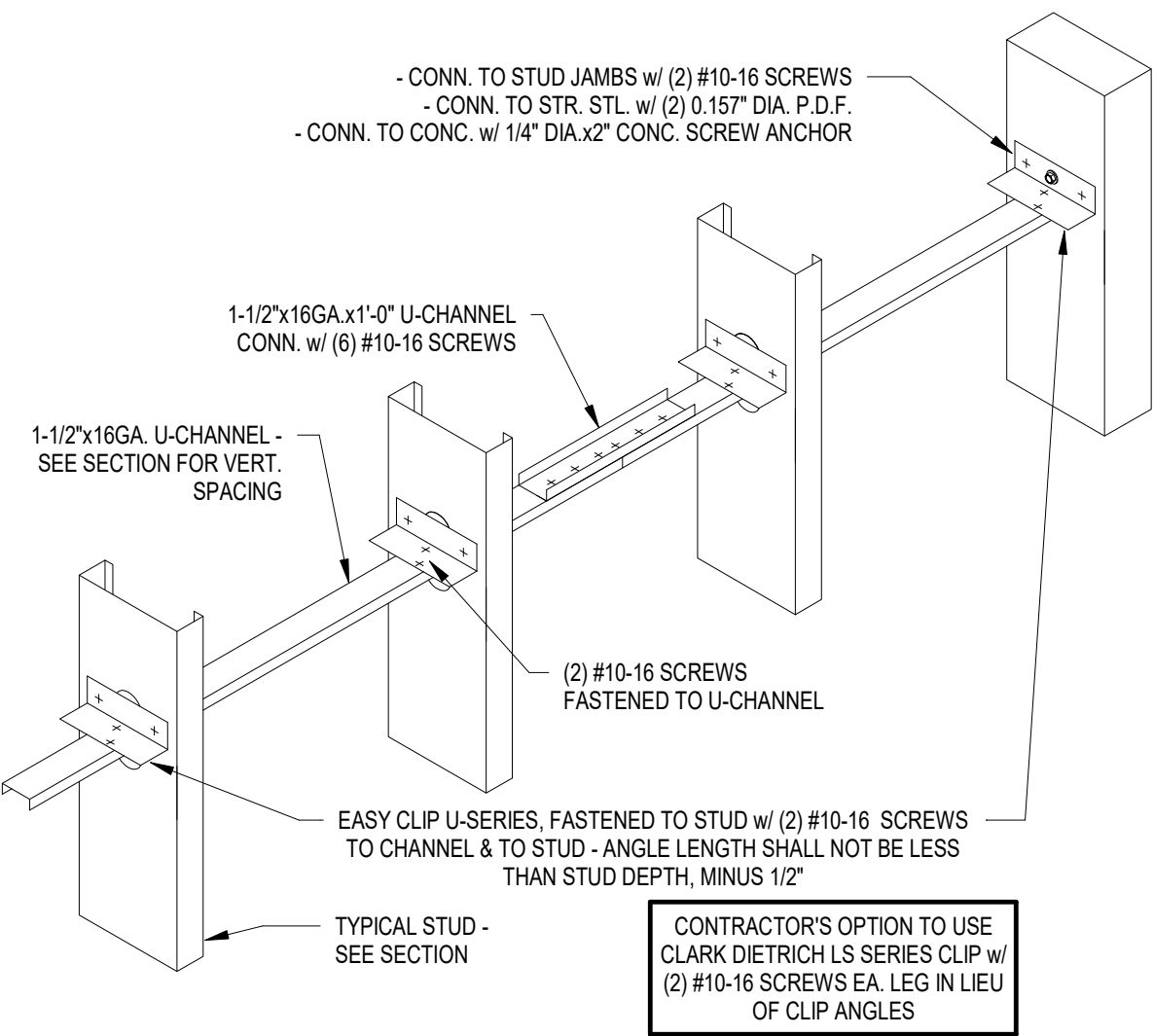
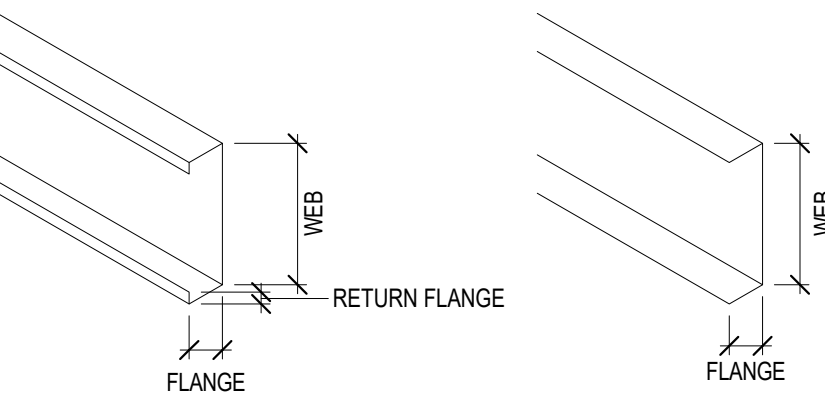


LG DESIGNATION DESCRIPTION

MEMBER SHAPE:  
S = STUD  
T = TRACK  
MEMBER HT.:  
600 = 6"  
362 = 3 5/8"  
250 = 2 1/2"  
MEMBER FLANGE WIDTH:  
300 = 3"  
250 = 2 1/2"  
200 = 2"  
162 = 1 5/8"  
MEMBER THICKNESS (MILS) -  
SEE ADJ. TABLE

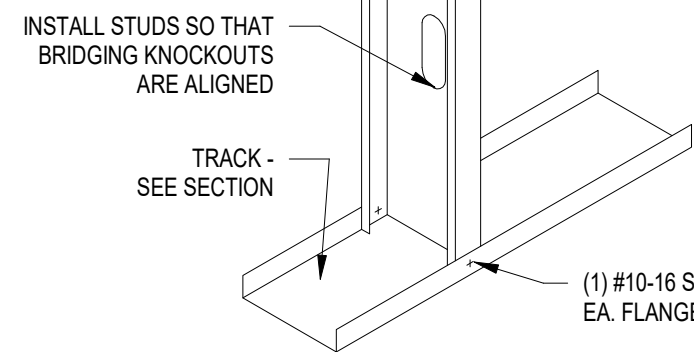
600S162-43

MEMBER THICKNESS DESIGNATION TABLE (MILS TO GAUGE)	
MILS	GAUGE (GA.)
33	20
43	18
54	16
68	14
97	12
118	10



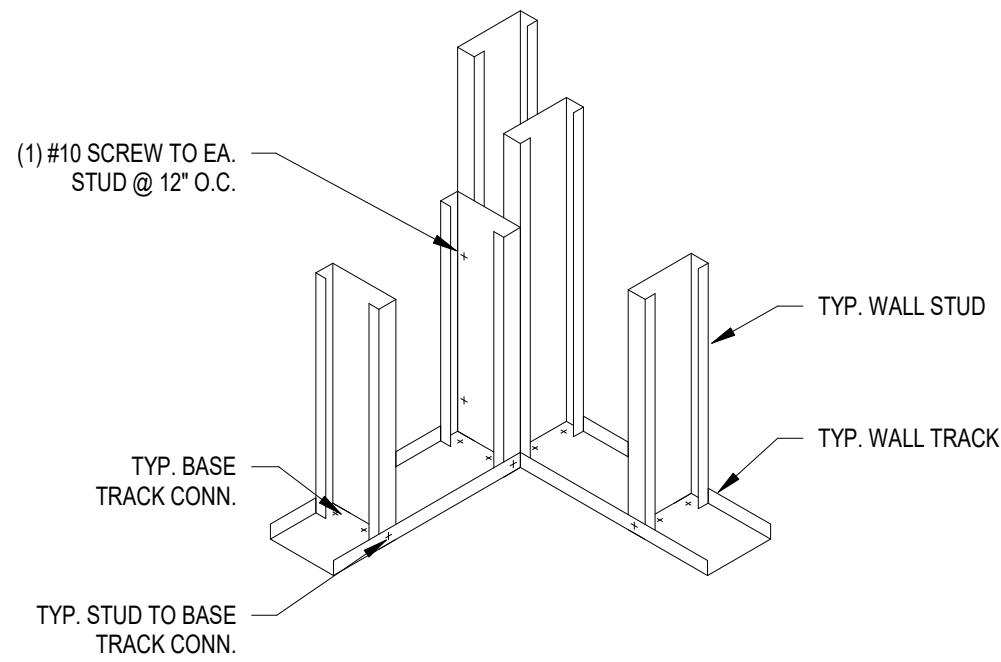
1 BRIDGING DETAILS

1/2" = 1'-0"



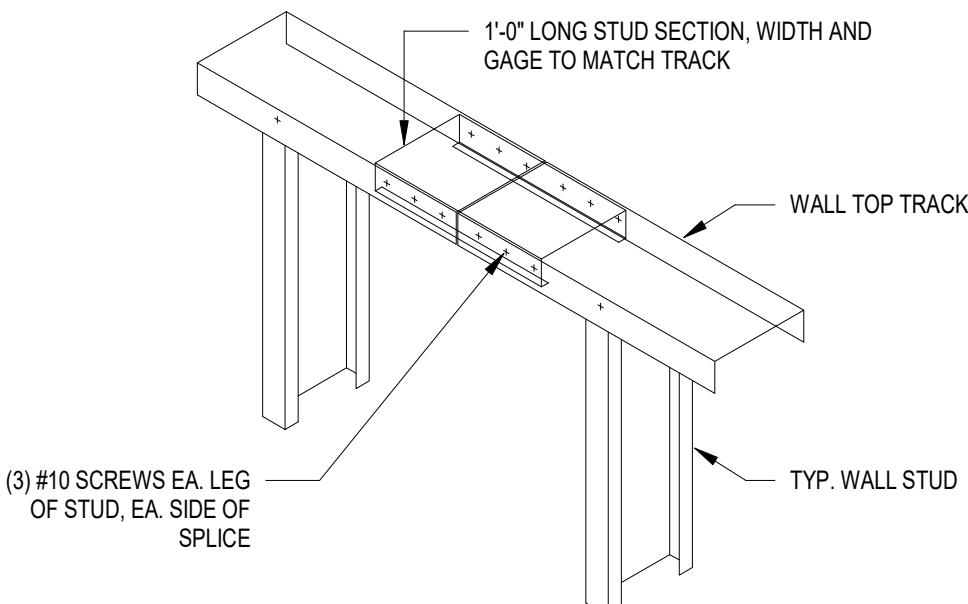
2 STUD TO TRACK DETAIL

3/4" = 1'-0"



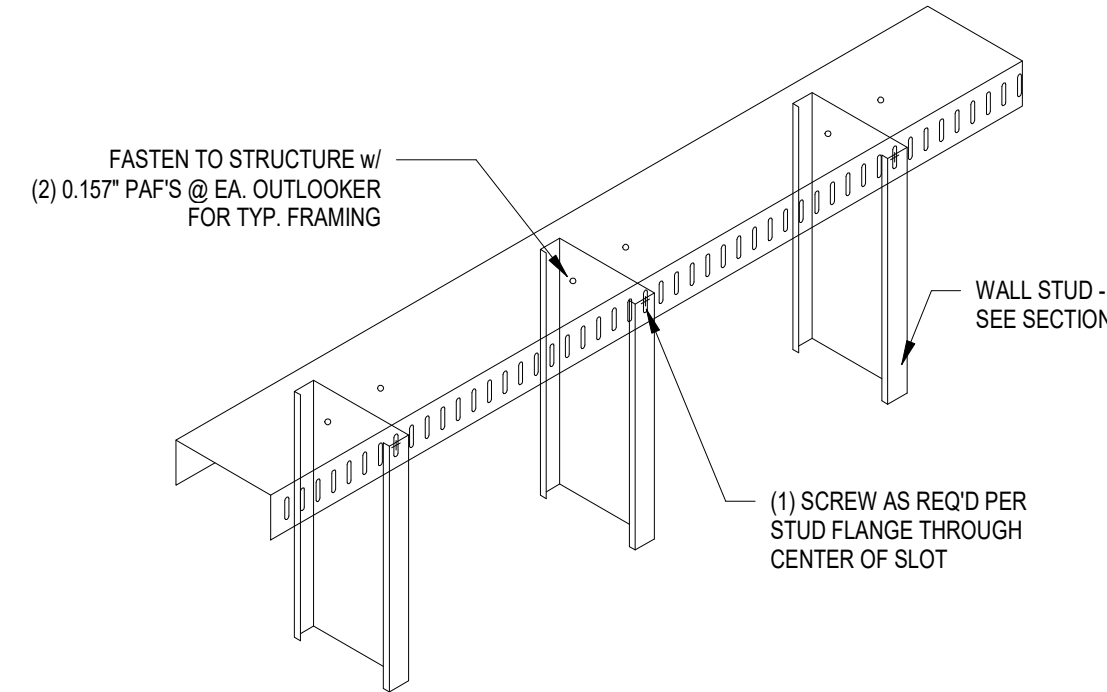
3 TYP. WALL CORNER CONSTRUCTION

3/4" = 1'-0"



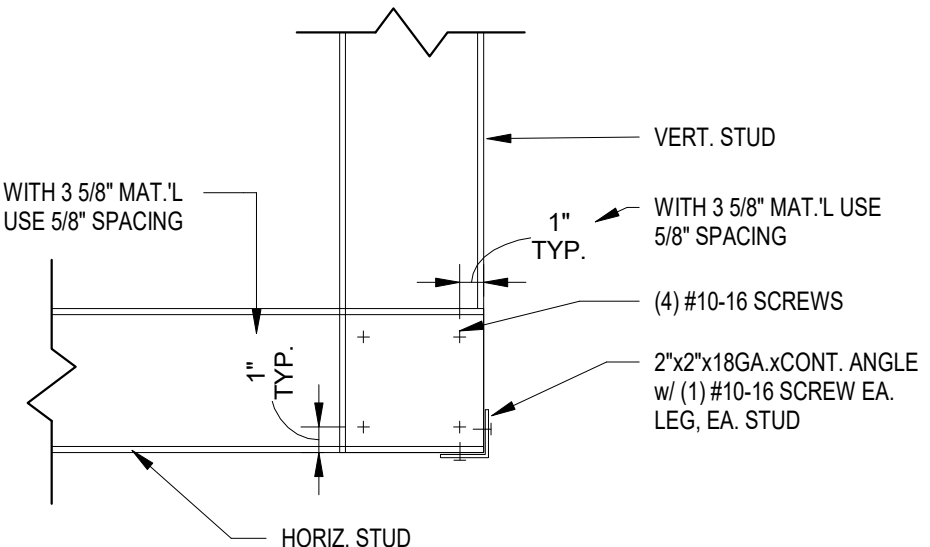
4 TYP. TRACK SPLICE CONN.

1" = 1'-0"



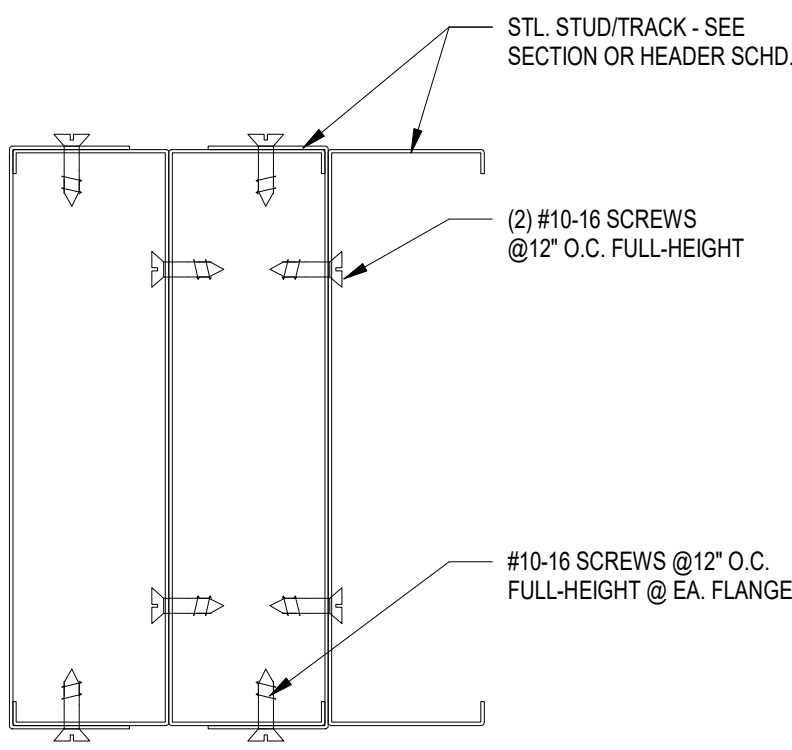
5 DEFLECTION TRACK DTL.

3/4" = 1'-0"



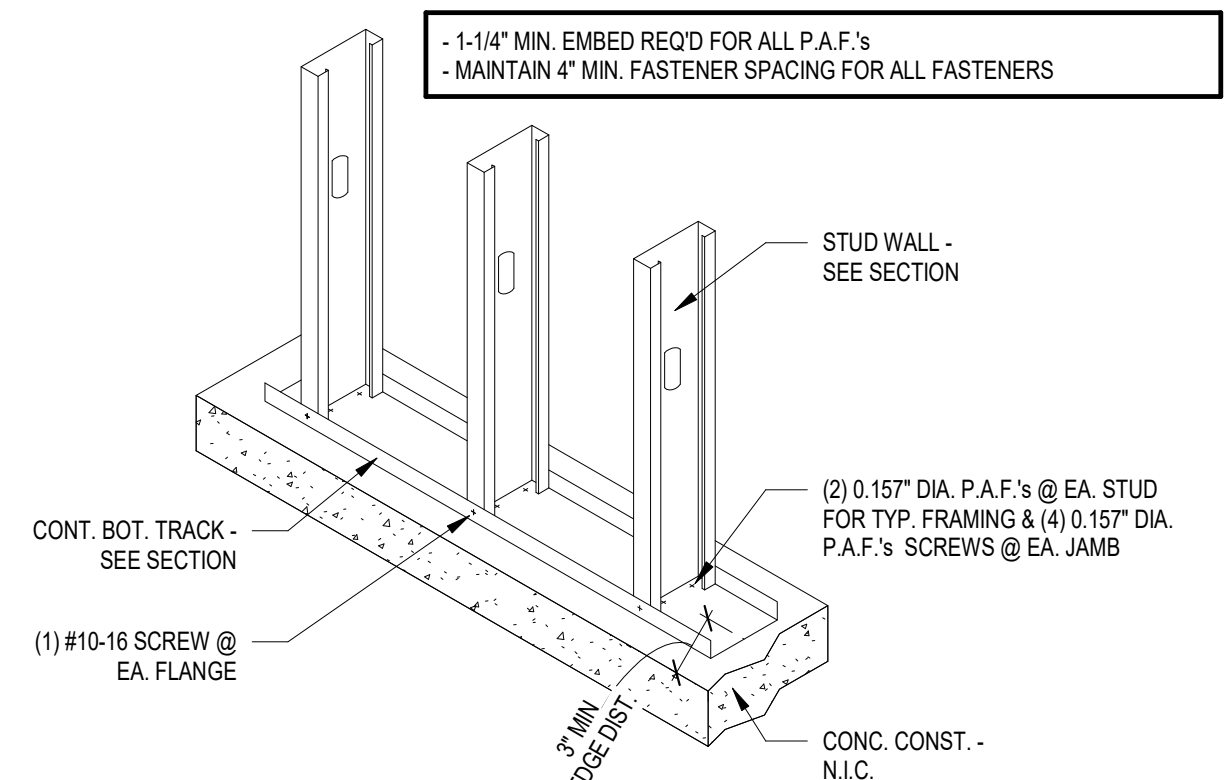
6 TYP. LAP SPLICE @ CORNER

1 1/2" = 1'-0"



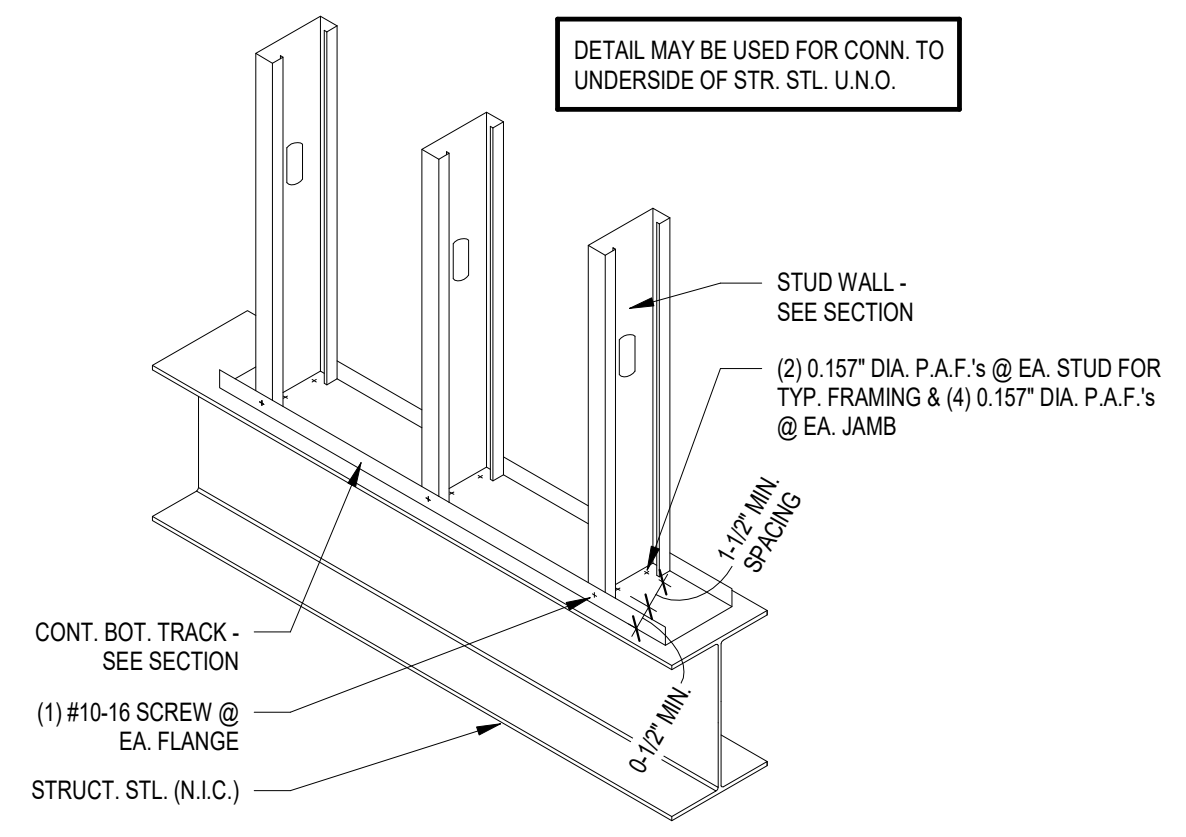
7 MULTIPLE STUD CONNECTION

6" = 1'-0"



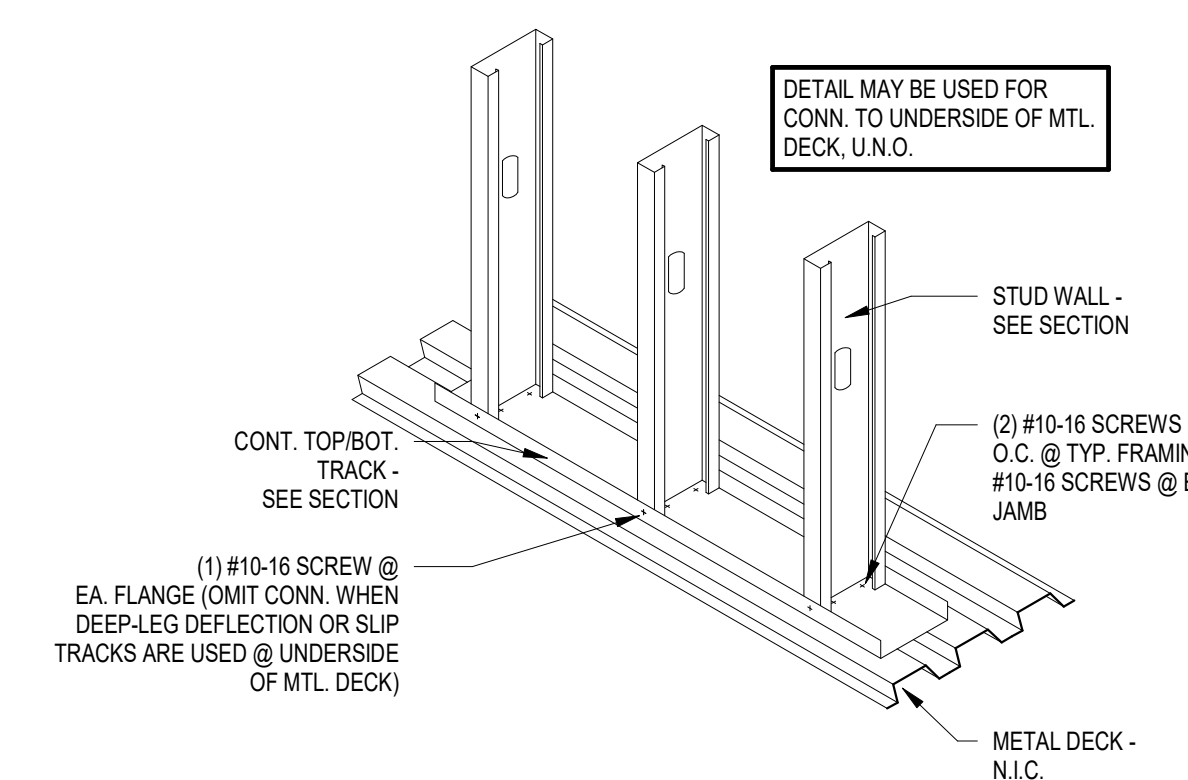
8 BASE CONN. @ CONC.

3/4" = 1'-0"



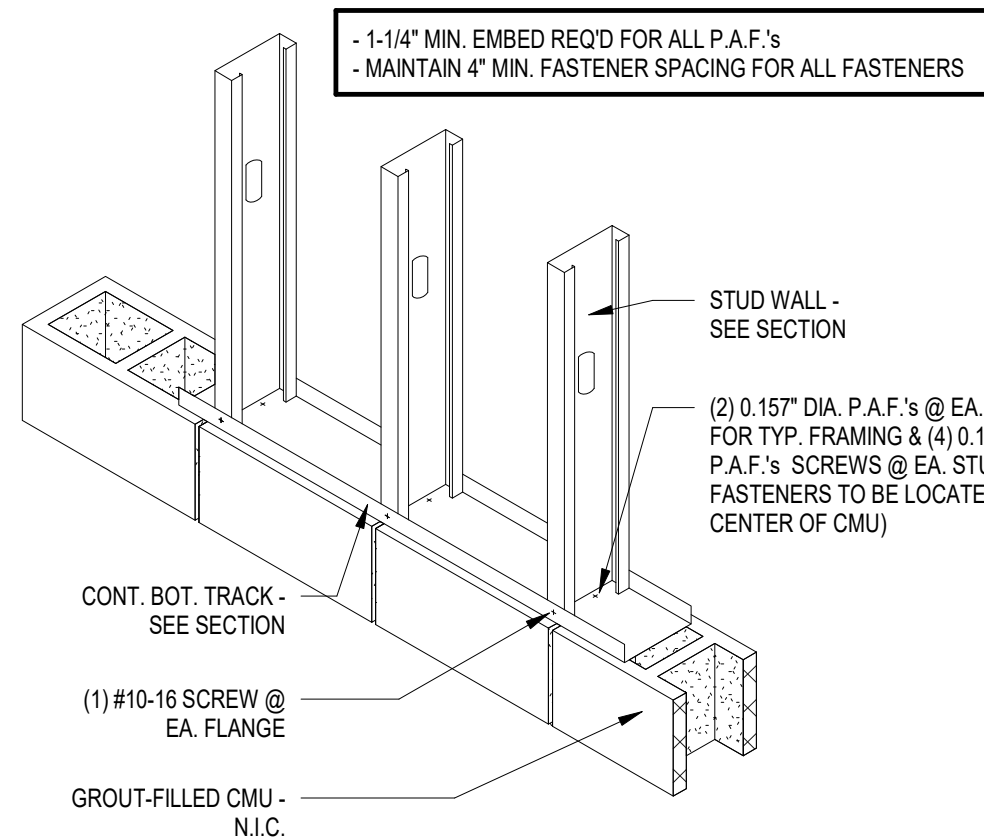
9 BASE CONN. @ STR. STL.

3/4" = 1'-0"



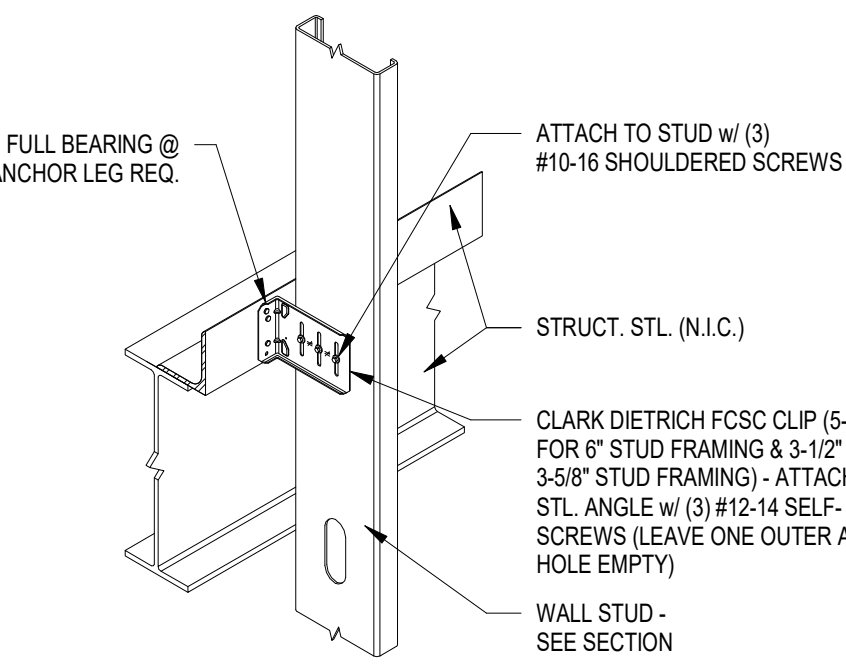
10 BASE CONN. @ METAL DECK

3/4" = 1'-0"



11 BASE CONN. @ CMU

3/4" = 1'-0"



12 SLIP CLIP CONN. DETAIL

1" = 1'-0"

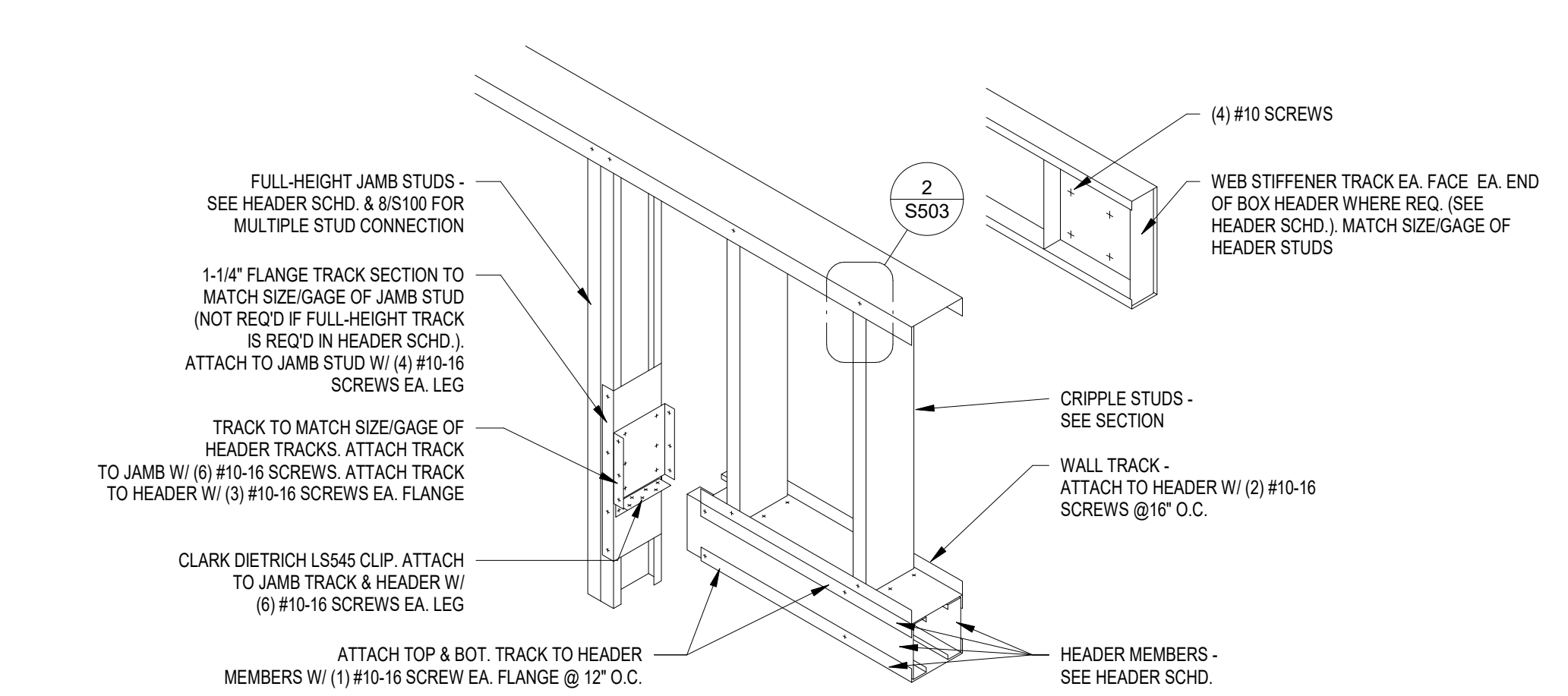


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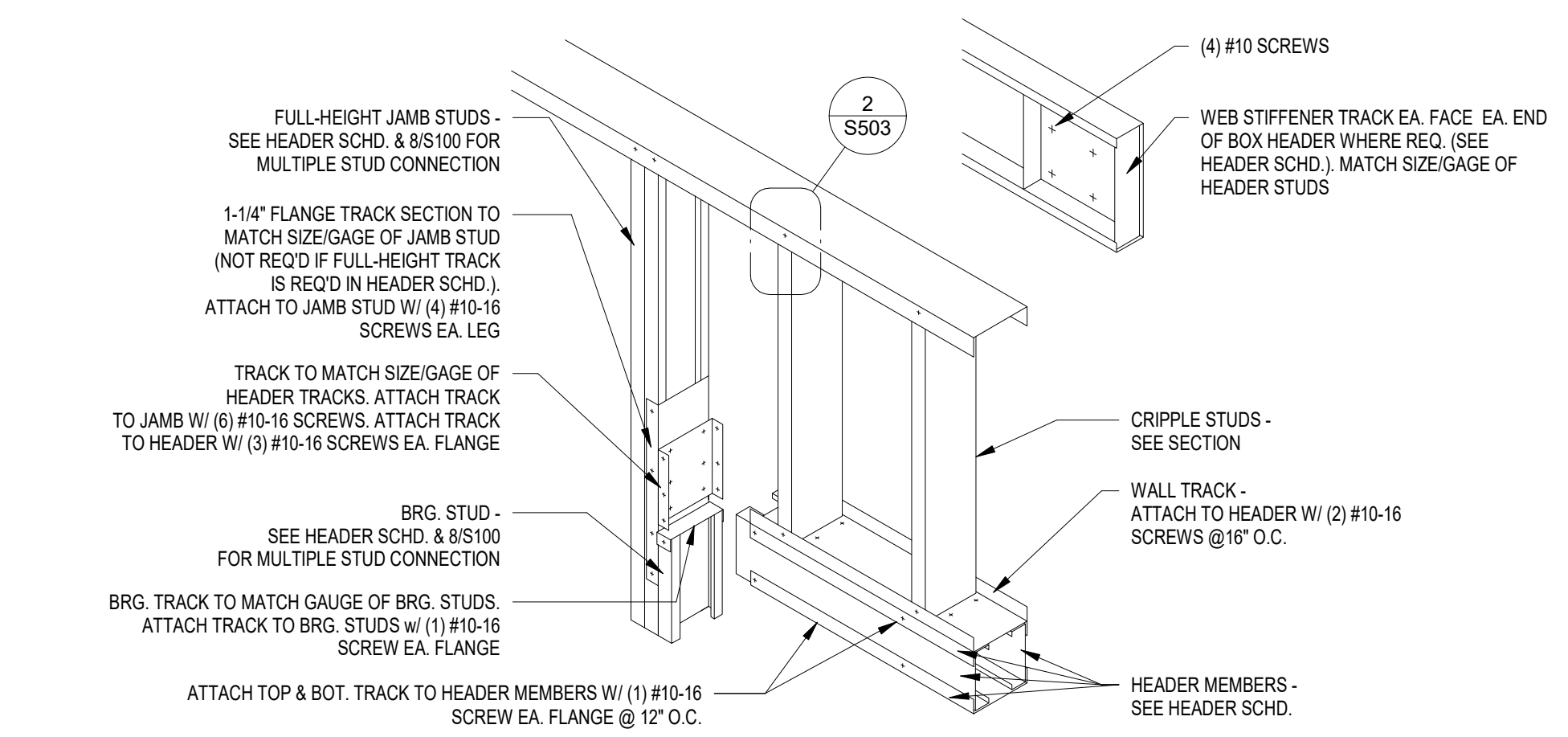
PROJECT:  
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NORTHERN ELECTRIC COOPERATIVE  
ABERDEEN, SOUTH DAKOTA

SHEET TITLE:  
STRUCTURAL DETAILS

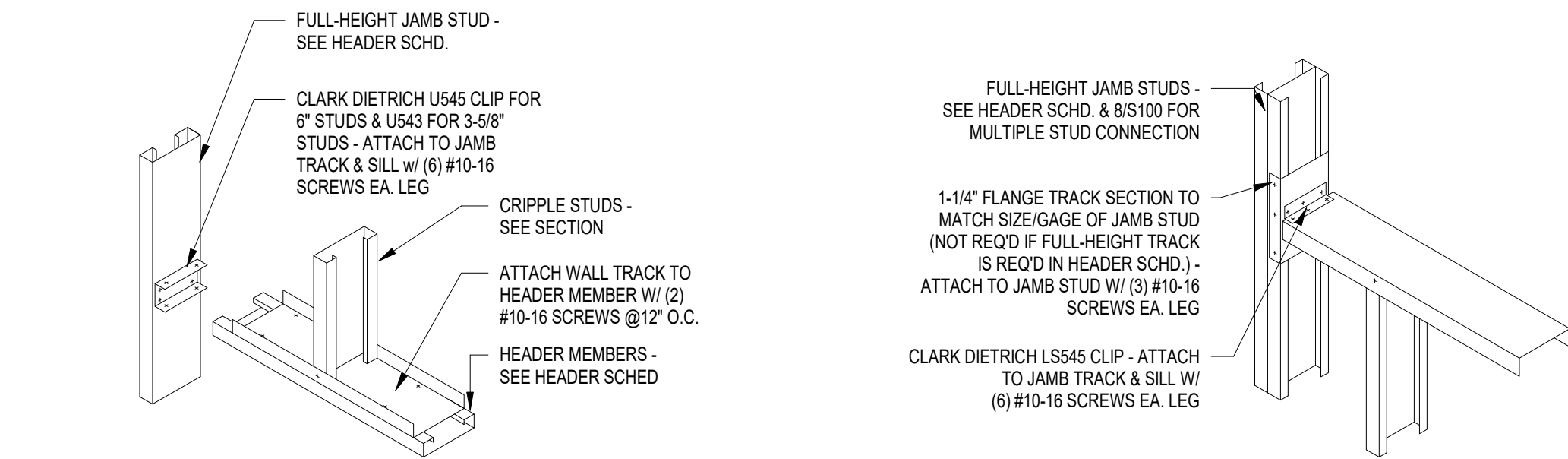




1 BOX HEADER ASSEMBLY  
3/4\" = 1'-0"

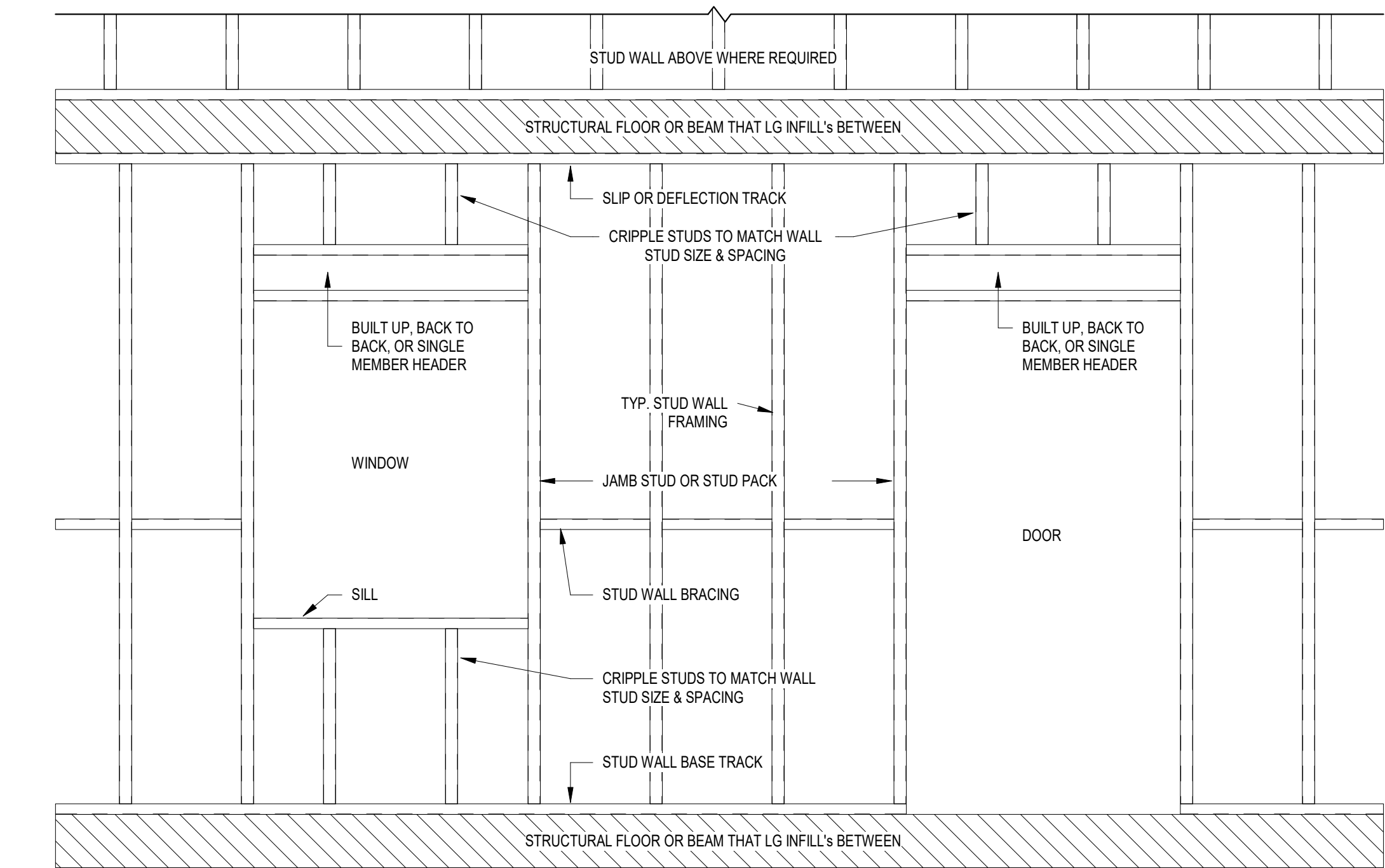


2 BOX HEADER ASSEMBLY W/ BRG. STUD  
3/4\" = 1'-0"

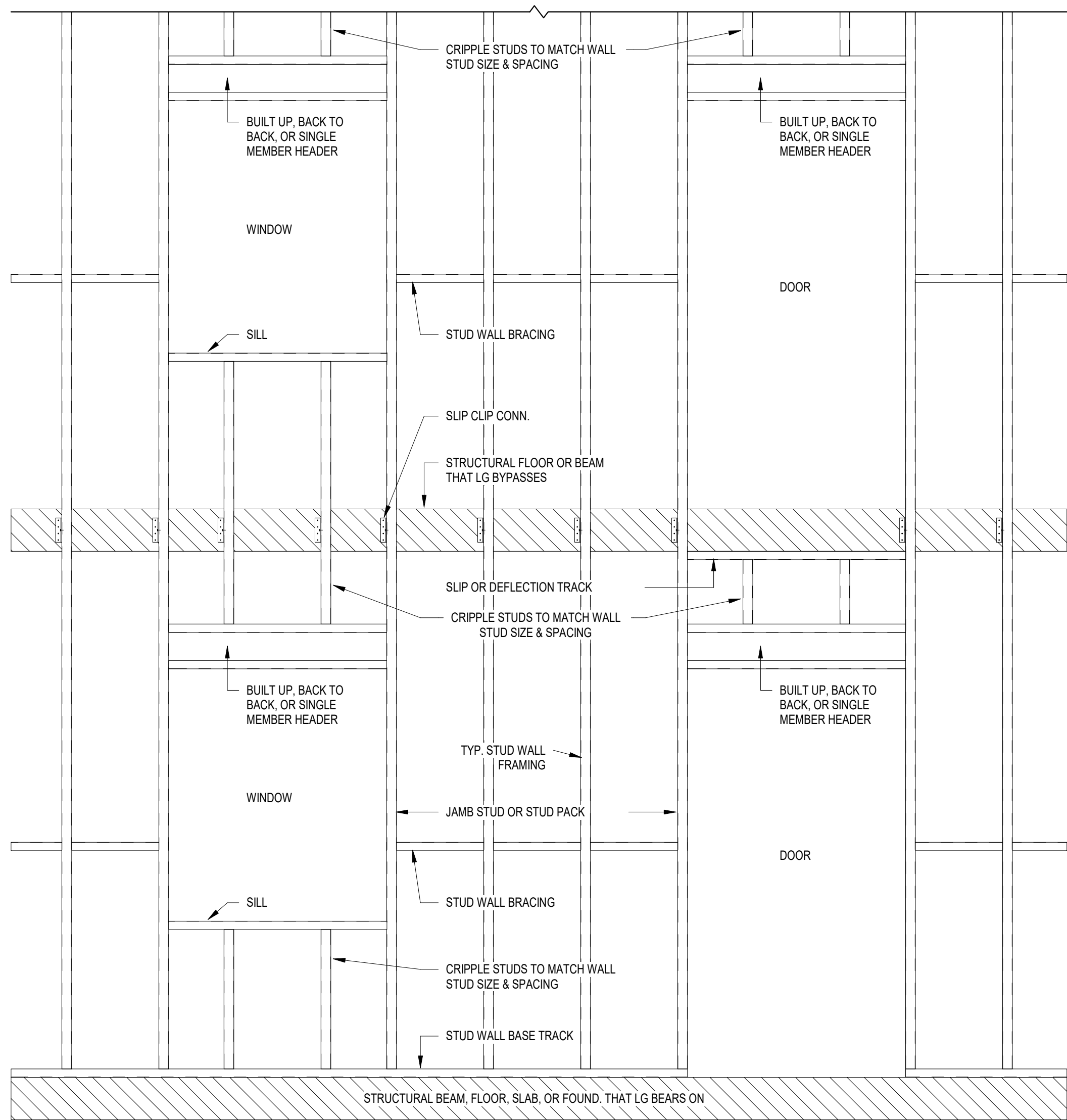


3 SINGLE MEMBER HEADER ASSEMBLY  
3/4\" = 1'-0"

4 SILL TO JAMB CONN.  
3/4\" = 1'-0"



9 TYP. OPENING FRAMING ELEV. @ LG INFILL FRAMING  
3/4\" = 1'-0"



10 TYP. OPENING FRAMING ELEV. @ LG BYPASS FRAMING  
3/4\" = 1'-0"



ISSUE:		
5/15/2025 100% CD		
REVISION SCHEDULE:		
REV. #	REV. DSC.	REV. DATE

PROJECT:  
NORTHERN ELECTRIC RENOVATION  
NORTHERN ELECTRIC COOPERATIVE  
ABERDEEN, SOUTH DAKOTA

SHEET TITLE:  
STRUCTURAL DETAILS



MECHANICAL LEGEND									
	EXHAUST GRILLE		EQUIPMENT TAG EQUIPMENT NO.		# OF DETAIL WHERE DETAIL APPEARS		# OF SECTION WHERE SECTION APPEARS		TEMPERATURE GAUGE
	RETURN AIR GRILLE		TRENCH DRAIN (TD)		FLOOR DRAIN (FD)		CLEAN OUT (CO)		FLOOR SINK (FS)
	SUPPLY AIR REGISTER		ROOF DRAIN (RD)		OVERFLOW ROOF DRAIN (ORD)		BALL VALVE OR ISO VALVE (I.V.)		BALANCING VALVE
	FLEX DUCT		ZONE DAMPER		VOLUME DAMPER		MOTORIZED DAMPER		COMBINATION SMOKE & FIRE DAMPER
	ROOF VENTILATOR EXHAUST		BACKDRAFT DAMPER		SMOKE DAMPER		FIRE DAMPER		DAMPER
	THERMOSTAT		ZONE STAT		SENSOR		HUMIDISTAT		
	ELBOW UP		RECT. DUCT NEG. PRESSURE		RECT. DUCT POS. PRESSURE				
	ELBOW DN								
	ELBOW UP								
	ELBOW DN								

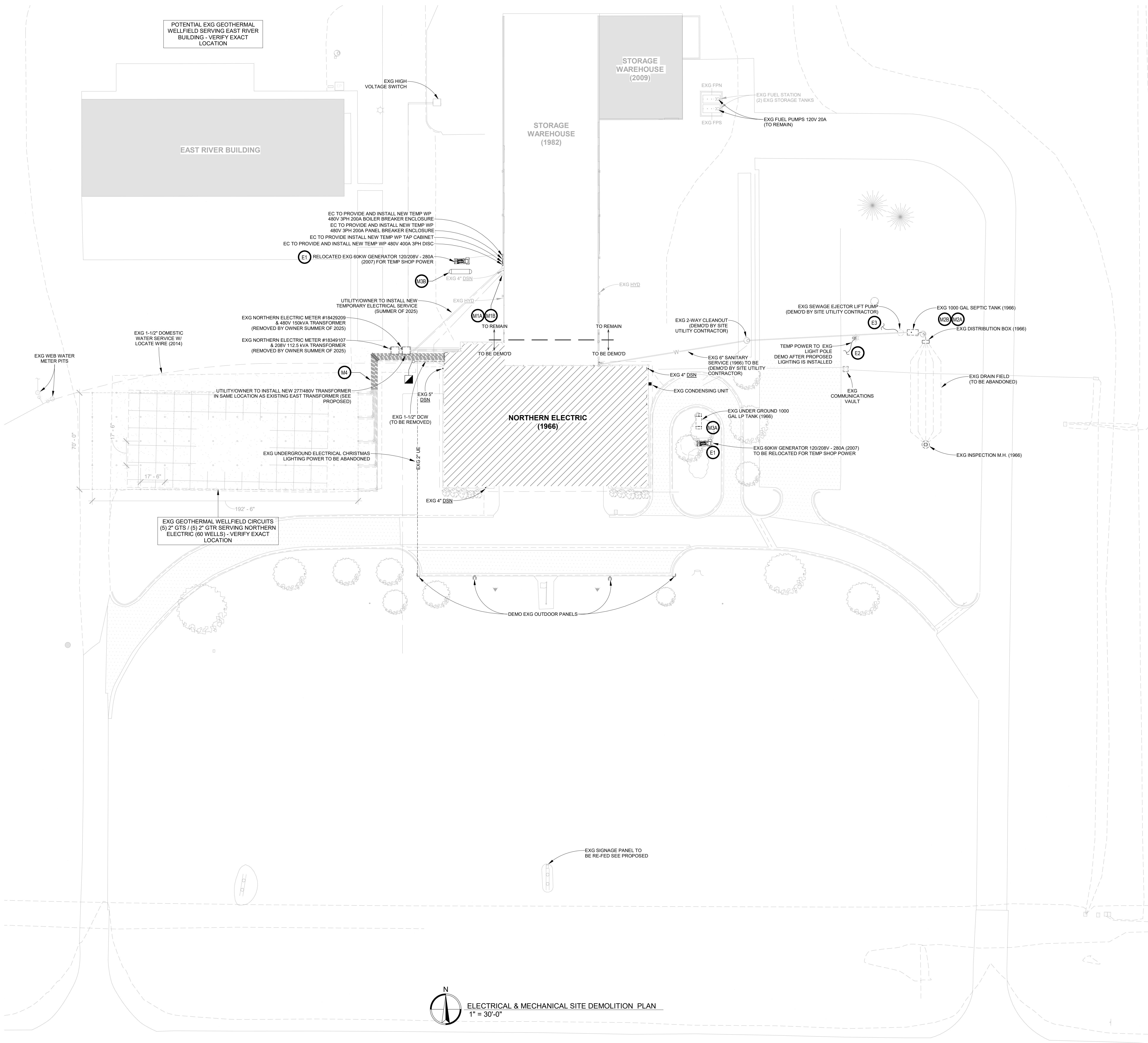
ELECTRICAL LEGEND			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	SINGLE POLE SWITCH		LIGHTING FIXTURE
	THREE WAY SWITCH		E = EMERGENCY BALLAST
	FOUR WAY SWITCH		NL = NIGHT LIGHT
	LOW VOLTAGE PUSH BUTTON SWITCH		# = FIXTURE ID TAG
	DIMMER SWITCH		a,b = CNTRL/RELAY ID TAG
	TIMER SWITCH		UNDER CABINET FIXTURE
	OCCUPANCY SENSOR		WALL MOUNTED FIXTURE
	PILOT LIGHT SWITCH		RECESSED FIXTURE
	KEYED SWITCH		PHOTO CONTROL
	VARIABLE SPEED FAN SWITCH		SECURITY CAMERA
	OCCUPANCY SENSOR - CEILING MOUNTED		WALL SPEAKER
	POWER PACK FOR LOW VOLTAGE OCCUPANCY SENSOR		EXIT FIXTURE
	DUPLEX RECEPTACLE		EMERGENCY WALL PACK
	GROUND FAULT CIRCUIT INTERRUPTER		CLOCK
	DUPLEX RECEPTACLE 250V 4-WIRE RECEPTACLE		NURSE CALL PULL STATION
	DOUBLE DUPLEX RECEPTACLE		NURSE CALL DUTY STATION
	TOP SWITCHED DUPLEX RECEPTACLE		NURSE CALL CORRIDOR LIGHT
	SPECIAL OUTLET		NURSE CALL CONTROL PANEL
	DATA/PHONE OUTLET		THERMOSTAT
	XX INDICATES NO. OF JACKS		INTERCOM SPEAKER
	WALL DATA & HDMI OUTLET		INTERCOM CALL STATION
	WIRELESS ACCESS POINT		JUNCTION BOX
	FLOOR BOX WITH POWER, DATA AND HDMI		TIME CLOCK
	FLOOR BOX WITH POWER ONLY		VOLUME CONTROL
	MANUAL MOTOR STARTER		TRANSFORMER
	MOTOR CONNECTION		CABLE TV - TWO CAT6A PER OPENING
	VARIABLE FREQUENCY DRIVE		DOOR HOLDER
	CENTER LINE		

- SPECIAL NOTES:
- IN AREAS WHERE EXISTING CEILINGS ARE TO REMAIN, EACH TRADE SHALL BE RESPONSIBLE FOR ANY DAMAGE OR REPAIR NEEDED TO EXISTING CEILINGS AS A RESULT OF THEIR WORK.
  - EACH TRADE SHALL BE RESPONSIBLE FOR CUTTING AND PATCHING AS NECESSARY TO ALLOW FOR COMPLETION OF THEIR WORK. REFER TO ARCHITECTURAL PLANS FOR SELECTIVE DEMOLITION BY OTHERS.
  - ALL CONTRACTORS SHALL VISIT THE SITE AND VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS. NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.
  - ALL ROOFING WORK BY ROOFING CONTRACTOR, ALL TRADES TO COORDINATE.
  - THE EXISTING BUILDING WILL BE IN USE DURING THIS CONSTRUCTION. SCHEDULE AND CARRY OUT THE WORK IN SUCH A MANNER AS TO CAUSE THE OWNER A MINIMUM OF INCONVENIENCE DUE TO SERVICE INTERRUPTIONS. TEMPORARY SERVICES SHALL BE INSTALLED IF ONE PHASE OF CONSTRUCTION DISRUPTS SERVICE TO ANOTHER AREA OF THE BUILDING OR IF EQUIPMENT HAS TO BE RELOCATED TO ALLOW CONSTRUCTION TO PROGRESS. SERVICE INTERRUPTIONS SHALL BE CONFINED TO THE SMALLEST AREA POSSIBLE AT ANY ONE TIME AND INTERRUPTIONS SHALL BE SCHEDULE WITH THE OWNER'S SITE REPRESENTATIVE. AFTER SERVICE HAS BEEN RESTORED FOLLOWING AN INTERRUPTION, INSPECT AREAS AFFECTED BY THE INTERRUPTION. THE RESPONSIBILITY FOR RETURNING AUTOMATICALLY CONTROLLED EQUIPMENT TO THE SAME OPERATING CONDITION, WHICH EXISTED PRIOR TO THE INTERRUPTION.
  - BY BASE BID: ALL DDC TEMPERATURE CONTROL WORK TO BE COMPLETED BY G&R CONTROLS (CONTACT PAUL DOOHN 605-336-0333)  
  
BY ALT #7.1: ALL DDC TEMPERATURE CONTROL WORK TO BE COMPLETED BY JOHNSON CONTROLS (CONTACT GREG HINTGEN 605-362-5315).  
  
BY ALT #7.2: ALL DDC TEMPERATURE CONTROL WORK TO BE COMPLETED BY OTHER ENGINEER PRIOR APPROVED CONTROLS COMPANY, SEE SPECS & ADDENDUM(S).
  - GLYCOL SOLUTION:
    - EXISTING HYDRONICS SYSTEM (SHOP):
      - EXISTING SYSTEM TO BE MAINTAINED DURING CONSTRUCTION FOR TEMPORARY HEATING OF THE SHOP. AFTER NEW BUILDING IS CONSTRUCTED, THIS SYSTEM SOLUTION TO BE DRAINED & DISPOSED OF, AND NEW HYDRONICS SYSTEM TO FEED INTO THIS EXISTING HYDRONICS SYSTEM.
      - SOLUTION IN EXISTING WELLFIELD TO BE DRAINED/PURGED BY WELLFIELD CONTRACTOR.
      - THE PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR DRAINING AND STORING THE EXISTING GLYCOL SOLUTION AS REQUIRED FOR COMPLETION OF THEIR WORK AS NECESSARY FOR TEMPORARY HYDRONICS WORK TO SERVICE THE SHOP DURING CONSTRUCTION.
      - THE EXISTING SYSTEM SHALL BE DRAINED AS NECESSARY FOR PROPOSED DEMOLITION, NO CLEANING AND FLUSHING ON EXISTING PIPING.
      - AFTER 2025/2026 HEATING SEASON IS OVER, THIS EXISTING SYSTEM TO BE COMPLETELY DRAINED AND NOT SALVAGED.
    - NEW HEATING, CHILLED, & GEOTHERMAL HYDRONICS SYSTEM (ADDITION & EXISTING SHOP):
      - HYDRONICS SYSTEM SOLUTION SHALL BE 35% DOWFROST HD PROPYLENE GLYCOL.
      - SYSTEM VOLUME:
        - EXISTING SYSTEM VOLUME: 1,730 GALLONS
        - PROPOSED ADDITIONS TO SYSTEM VOLUME: 1,600 GALLONS
        - TOTAL SYSTEM VOLUME: 3,330 GALLONS
      - THE PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING AND FLUSHING THE NEW HYDRONICS SYSTEM PIPING PRIOR TO PUMPING IN NEW SOLUTION AND SYSTEM STARTUP.
      - AFTER PROPOSED WORK IS COMPLETE, THE PLUMBING/HYDRONICS CONTRACTOR IS TO PROVIDE A COMPLETE ANALYSIS OF THE HYDRONICS SOLUTION TO CONFIRM PROPER GLYCOL % AND TREATMENT. SUBMIT ANALYSIS/RECOMMENDATIONS TO SICHELLER ENGINEERING & OWNER. IF SOLUTION ANALYSIS INDICATES EITHER SOLUTION IS NOT SATISFACTORY, THIS CONTRACTOR TO MAKE ADJUSTMENTS AS RECOMMENDED BY GLYCOL SUPPLIER & RETEST UNTIL ANALYSIS RESULTS ARE SATISFACTORY.
  - DURING THE SHOP DRAWING PROCESS, ALL M&E CONTRACTORS TO BE RESPONSIBLE FOR MARKING UP ALL OPENINGS IN THE CONCRETE SLAB, PRECAST WALL, CORE FLOOR, OR STRUCTURAL STEEL FRAMING, AND STRUCTURAL STEEL ROOF JOIST SYSTEMS REQUIRED FOR THE INSTALLATION OF THEIR RESPECTIVE SYSTEMS IN NEW AND EXISTING STRUCTURAL SYSTEMS.
  - WHERE PEX PIPING IS USED, PIPING SHALL BE UPONOR PEX-A POTABLE WATER PIPING WITH UPONOR F1960 EXPANDABLE FITTINGS. NO CRIMP FITTINGS TO BE ACCEPTED, PROVIDED THE CONTRACTOR IS TRAINED AND FOLLOWING ALL MANUFACTURER'S RECOMMENDATIONS TO FULFILL ALL AVAILABLE UPONOR 25 YEAR WARRANTY COVERAGE.
  - ORIGINAL PLANS ARE AVAILABLE. PLEASE CONTACT THE ENGINEER'S OFFICE TO REQUEST. CONTACT ISAAC @ 605-225-4344.
  - REFER TO THE FRONT END BIDDING DOCUMENTS FOR DESCRIPTION OF ALTERNATES.

ELECTRICAL & MECHANICAL SHEET INDEX	
Sheet Number	Sheet Name
EM100	MOTOR SCHEDULE, LEGEND & SHEET INDEX
EM101	ELECTRICAL & MECHANICAL SITE DEMOLITION PLAN
EM102	ELECTRICAL & MECHANICAL SITE PLAN
EM103	ELECTRICAL & MECHANICAL ROOF PLAN
M200.N	PLUMBING & HYDRONICS DEMOLITION PLAN - NORTH
M200.S	PLUMBING & HYDRONICS DEMOLITION PLAN - SOUTH
M300.N	HVAC DEMOLITION PLAN - NORTH
M300.S	HVAC DEMOLITION PLAN - SOUTH
M400.N	BELOW GRADE PLUMBING & HYDRONICS PLAN - NORTH
M400.S	BELOW GRADE PLUMBING & HYDRONICS PLAN - SOUTH
M401.N	ABOVE GRADE PLUMBING & HYDRONICS PLAN - NORTH
M401.S	ABOVE GRADE PLUMBING & HYDRONICS PLAN - SOUTH
M500.N	HVAC PLAN - NORTH
M500.S	HVAC PLAN - SOUTH
M501	HVAC TEMPERATURE CONTROL ZONE PLAN
M600	PLUMBING FIXTURE SCHEDULE
M700	MECHANICAL DETAILS - 1 OF 4
M701	MECHANICAL DETAILS - 2 OF 4
M702	MECHANICAL DETAILS - 3 OF 4
M703	MECHANICAL DETAILS - 4 OF 4
M800	MECHANICAL SECTIONS - 1 OF 3
M801	MECHANICAL SECTIONS - 2 OF 3
M802	MECHANICAL SECTIONS - 3 OF 3
M900	MECHANICAL SCHEDULES
M901	MECHANICAL SCHEDULES - CONTINUED
E200.N	ELECTRICAL DEMOLITION PLAN - NORTH
E200.S	ELECTRICAL DEMOLITION PLAN - SOUTH
E300.N	POWER & DATA PLAN - NORTH
E300.S	POWER & DATA PLAN - SOUTH
E400.N	LIGHTING PLAN - NORTH
E400.S	LIGHTING PLAN - SOUTH
E500.N	SPECIAL SYSTEMS PLAN - NORTH
E500.S	SPECIAL SYSTEMS PLAN - SOUTH
E600	ELECTRICAL DETAILS
E700	ELECTRICAL SCHEDULES

HVAC EQUIPMENT COORDINATION & MOTOR SCHEDULE																					E.C. = ELECTRICAL CONTRACTOR P.E. = PLUMBING CONTRACTOR T.C. = THERMOSTAT CONTRACTOR T.C. = TEMPERATURE CONTROL CONTRACTOR
EQUIPMENT NUMBER	USE	LOCATION	FIRE ALARM INTERLOCK REQUIRED	HP OR WATTAGE (KW) OR FRACTIONAL (F)	MCA	FLA	VOLTAGE	POWER 60 CYC.	STARTER		CONTROL		SWITCH INFORMATION			DISCONNECT					
									TYPE	SIZE	BY	BY	WIRING	TEMPERATURE CONTROL WIRING	THERMOSTAT BY						
AHU-1	WEST HVAC - SUPPLY FAN	MECH 141	Y	2X5	12.0	10.0	480	3	VFD		VC	TC	TC		EC						DUCT SMOKE DETECTOR SHUTDOENS BY EC; CO2/HUMIDITY SENSORS IN RA DUCT; FACTORY INSTALLED VFD'S, DISCONNECT BY EC;
RF-1	WEST HVAC - RETURN FAN	MECH 141	Y	7-1/2		11.0	480	3			TC	TC	TC		EC						DUCT SMOKE DETECTOR SHUTDOENS BY EC; FACTORY EC MOTOR; COMBINATION STARTER BY EC
	MOTORIZED DAMPER - OUTSIDE AIR TO AHU-1	MECH 141									TC	TC	TC								PROVIDED & INSTALLED BY VC; CONTROLLED BY TC
	MOTORIZED DAMPER - RETURN AIR TO AHU-1	MECH 141									TC	TC	TC								PROVIDED & INSTALLED BY VC; CONTROLLED BY TC
	MOTORIZED DAMPER - RELIEF AIR FROM RF-1	MECH 141									TC	TC	TC								PROVIDED & INSTALLED BY VC; CONTROLLED BY TC
AHU-2	EAST HVAC - SUPPLY FAN	MECH 141	Y	2X5	12.0	10.0	480	3	VFD		VC	TC	TC		EC						DUCT SMOKE DETECTOR SHUTDOENS BY EC; CO2/HUMIDITY SENSORS IN RA DUCT; FACTORY INSTALLED VFD'S, DISCONNECT BY EC;
RF-2	EAST HVAC - RETURN FAN	MECH 141	Y	7-1/2		11.0	480	3			TC	TC	TC		EC						DUCT SMOKE DETECTOR SHUTDOENS BY EC; FACTORY EC MOTOR; COMBINATION STARTER BY EC
	MOTORIZED DAMPER - OUTSIDE AIR TO AHU-2	MECH 141									TC	TC	TC								PROVIDED & INSTALLED BY VC; CONTROLLED BY TC
	MOTORIZED DAMPER - RETURN AIR TO AHU-2	MECH 141									TC	TC	TC								PROVIDED & INSTALLED BY VC; CONTROLLED BY TC
	MOTORIZED DAMPER - RELIEF AIR FROM RF-2	MECH 141									TC	TC	TC								PROVIDED & INSTALLED BY VC; CONTROLLED BY TC
HUM-1	HUMIDIFICATION - AHU-1	MECH 141		(11.2)	16.9	13.5	480	3			TC	TC	TC		EC						
HUM-2	HUMIDIFICATION - AHU-2	MECH 141		(18.7)	28.2	22.5	480	3			TC	TC	TC		EC						
HUM-3	HUMIDIFICATION - SERVER 126	SERVER 126		(2.6)	15.8	12.7	208	1			TC	TC	TC		EC						
VAV'S	HVAC - MULTIPLE LOCATIONS	SEE PLANS	-	-	-	-	-	-	-	-	TC	TC	TC								SEE HVAC TEMPERATURE CONTROL PLAN
DSA-1	DUCTLESS SPLIT SYSTEM - BACK-UP COOLING FOR SERVER 126	SERVER 126	(F)				208	1			VC	VC	VC	VC							VC TO PROVIDE & INSTALL HARDWIRED REMOTE T-STAT AND SET-UP FOR BACK-UP COOLING; POWER FED FROM OUTDOOR UNIT
DOC-1	AIR COOLED CONDENSING UNIT FOR DSA-1	SHOP 61			16.4		208	1			VC				EC						
SF-1	N0200 EXHAUST MAKE-UP - SHOP	EXG SHOP		10		14.0	480	3			TC	TC	TC		EC						LINE VOLTAGE N.C. MOTORIZED DAMPER TO MATCH FAN VOLTAGE POWERED BY EC WITH FAN OPERATION
SF-2	GENERAL MAKE-UP - SHOP	EXG SHOP	(F)		1.9	120	1				TC	TC	TC		EC						LINE VOLTAGE N.C. MOTORIZED DAMPER TO MATCH FAN VOLTAGE POWERED BY EC WITH FAN OPERATION
SF-3	N0200 EXHAUST MAKE-UP - SHOP	EXG SHOP		10		14.0	480	3			TC	TC	TC		EC						LINE VOLTAGE N.C. MOTORIZED DAMPER TO MATCH FAN VOLTAGE POWERED BY EC WITH FAN OPERATION
EF-1	N0200 EXHAUST - SHOP	EXG SHOP		10		14.0	480	3			TC	TC	TC		EC						LINE VOLTAGE N.C. MOTORIZED DAMPER TO MATCH FAN VOLTAGE POWERED BY EC WITH FAN OPERATION
EF-2	GENERAL EXHAUST - SHOP	EXG SHOP	(F)		1.9	120	1				TC	TC	TC		EC						LINE VOLTAGE N.C. MOTORIZED DAMPER TO MATCH FAN VOLTAGE POWERED BY EC WITH FAN OPERATION
EF-3	N0200 EXHAUST - SHOP	EXG SHOP		10		14.0	480	3			TC	TC	TC		EC						LINE VOLTAGE N.C. MOTORIZED DAMPER TO MATCH FAN VOLTAGE POWERED BY EC WITH FAN OPERATION
EF-4	GENERAL EXHAUST - OFFICE AREA	CORRIDOR	(F)		1.9	120	1				TC	TC	TC		EC						LINE VOLTAGE N.C. MOTORIZED DAMPER TO MATCH FAN VOLTAGE POWERED BY EC WITH FAN OPERATION
EF-5	GENERAL EXHAUST - OFFICE AREA	CUST 132	(F)		4.4	120	1				TC	TC	TC		EC						LINE VOLTAGE N.C. MOTORIZED DAMPER TO MATCH FAN VOLTAGE POWERED BY EC WITH FAN OPERATION
EF-6	EXHAUST - RESTROOM 140	RESTROOM 140	(F)		1.2	120	1				TC	TC	TC		EC						LINE VOLTAGE N.C. MOTORIZED DAMPER TO MATCH FAN VOLTAGE POWERED BY EC WITH FAN OPERATION
EF-A	RANGEHOOD EXHAUST - TRAINING ROOM 136	TRAINING ROOM 136	(F)		4.0	120	1				EC	TC	TC		EC						
HP-1	CENTRAL GEO WATER TO WATER HEAT PUMP - HEATING & CHILLED WATER	MECH 141			47.0	41.4	480	3			TC	TC	TC		EC						
HP-2	CENTRAL GEO WATER TO WATER HEAT PUMP - HEATING & CHILLED WATER	MECH 141			47.0	41.4	480	3			TC	TC	TC		EC						
HP-3	CENTRAL GEO WATER TO WATER HEAT PUMP - HEATING & CHILLED WATER	MECH 141			47.0	41.4	480	3			TC	TC	TC		EC						
	CENTRAL HEAT PUMP - WIRE CONTROL PANEL	MECH 141			4.0	3.0	120	1			TC	TC	TC								
B-1	ELECTRIC BOILER - SUPPLEMENTAL HEAT TO HWS	TEMP EXG STORAGE 63 / MECH 141	(80) / (100)		120.3		480	3			TC	TC	TC		EC						TEMPORARILY INSTALLED IN EXG STORAGE 63 AT 80 KW (WITH 100 KW INTERNALLY DISCONNECTED) & TEMP CONTROL BY EXG BUFFER TANK CONTROLS; THEN RELOCATED TO MECH 141 AT FULL KW AND CONTROLLED BY BAS
	ELECTRIC BOILER - CONTROL PANEL				96.2		120	1													
OP-1	PRIMARY PUMP HEATING WATER PUMP	MECH 141		7.5	11.0	480	3	VFD			TC	TC	TC		TC						VFD WITH INTEGRAL DISCONNECT FURNISHED BY TC - INSTALLED BY EC
OP-2	BACKUP PUMP HEATING WATER PUMP	MECH 141		7.5	11.0	480	3	VFD			TC	TC	TC		TC						VFD WITH INTEGRAL DISCONNECT FURNISHED BY TC - INSTALLED BY EC
OP-3	PRIMARY PUMP CHILLED WATER PUMP	MECH 141		10	14.0	480	3	VFD			TC	TC	TC		TC						VFD WITH INTEGRAL DISCONNECT FURNISHED BY TC - INSTALLED BY EC
OP-4	BACKUP PUMP CHILLED WATER PUMP	MECH 141		10	14.0	480	3	VFD			TC	TC	TC		TC						VFD WITH INTEGRAL DISCONNECT FURNISHED BY TC - INSTALLED BY EC
OP-5	PRIMARY GEOTHERMAL WELLFIELD PUMP	MECH 141		15	21.0	480	3	VFD			TC	TC	TC		TC						VFD WITH INTEGRAL DISCONNECT FURNISHED BY TC - INSTALLED BY EC
OP-6	BACKUP GEOTHERMAL WELLFIELD PUMP	MECH 141		15	21.0	480	3	VFD			TC	TC	TC		TC						VFD WITH INTEGRAL DISCONNECT FURNISHED BY TC - INSTALLED BY EC
OP-7	SUPPLEMENTAL BOILER B-1 CIRCULATOR	MECH 141	(F)		4.8	120	1				TC	TC	TC		EC						
OP-8	DOMESTIC HOT WATER RECIRC - 120° F	MECH 141	(F)		2.3	120	1				TC	TC	TC		EC						
OP-9	IN-FLOOR HEAT CIRCULATOR	STORAGE 63	(F)		2.1	120	1				TC	TC	TC		EC						
HUM-1	HEATING - LOCKERS 61A	LOCKERS 61A	(F)		1.8	120	1								EC						
HUM-2	HEATING - EXG MEZZANINE 201	EXG MEZZ 201	(F)		1.8	120	1								EC						
WH-1	OWNER PROVIDED AIR SOURCE HEAT PUMP WATER HEATER - 140° F	MECH 141			21.6	208	1								EC						
BP-1	DOMESTIC WATER SERVICE BOOSTER PUMP	MECH 141	2X7-1/2		23.0	480	3			PC	PC				PC						FACTORY CONTROL PANEL WITH INTEGRAL DISCONNECT
ST-1	DOMESTIC COLD WATER STORAGE TANK	MECH 141																			
ST-2	DOMESTIC COLD WATER STORAGE TANK	MECH 141																			
CUH-1	ELECTRIC HEAT - VESTIBULE 119	VESTIBULE 119	(4)		19.2	208	1			EC	EC		EC								INTEGRAL TAMPER PROOF T-STAT HIDDEN BEHIND PANEL BY EC
CUH-2	ELECTRIC HEAT - VESTIBULE 100	VESTIBULE 100	(4)		19.2	208	1			EC	EC		EC								INTEGRAL TAMPER PROOF T-STAT HIDDEN BEHIND PANEL BY EC
CUH-3	ELECTRIC HEAT - VESTIBULE 135	VESTIBULE 135	(4)		19.2	208	1			EC	EC		EC								INTEGRAL TAMPER PROOF T-STAT HIDDEN BEHIND PANEL BY EC
EH-1	ELECTRIC HEAT - RESTROOM 101A	RR 101A	(1.05)		8.8	120	1			EC	EC		EC								LINE VOLTAGE THERMOSTAT FIELD INSTALLED BY EC
D-1	DEHUMIDIFIER - SHOP/WAREHOUSE	EXG SHOP & WAREHOUSE	(F)		12.0	120	1			TC	TC		TC		EC						CORD CONNECTED, SHARES HUMIDISTAT WITH EXG DUCTED DEHUMIDIFIER
D-2	DEHUMIDIFIER - SHOP/WAREHOUSE	EXG SHOP & WAREHOUSE	(F)		12.0	120	1			TC	TC				EC						CORD CONNECTED, SHARES HUMIDISTAT WITH EXG DUCTED DEHUMIDIFIER
LS-1	NEW SANITARY SEWER LIFT STATION	EXTERIOR	2			480	1				EC	EC			EC						EC TO PROVIDE COMBINATION STARTER DISCONNECT, INSTALLED ON UNISTRUT STAND MOUNTED TO CONCRETE PAD AROUND LIFT STATION
	NEW SHOP HOLDING TANK	EXTERIOR								TC	TC										TC TO PROVIDE & INSTALL ULTRASONIC SENSOR TO MONITOR AND ALARM HIGH WATER LEVEL, IN HOLDING TANK FOR SHOP WASTE WATER - PROVIDE A INSTALL CONDUIT LARGE ENOUGH FOR FUTURE MONITORING OF LS-1 LIFT STATION.
EXISTING SHOP EQUIPMENT																					
EXG HP	EXG GEO HEAT PUMP H-TO-W PRIMARY HTG & CLG TO EXG BUFFER TANK	EXG STORAGE 63					480														TO BE DEMO'D SUMMER 2025
EXG B	EXG ELECTRIC BOILER SUPPLEMENTAL HEAT TO EXG BUFFER TANK	EXG STORAGE 63		(36)			480														TO BE DEMO'D SUMMER 2025
EXG BT	EXG BUFFER TANK WITH PUMP MODULE HYDRONIC HTG & CLG WATER (EXG INFLUOR HEAT & EXG FC HTG & CLG)	EXG STORAGE 63					208														TO BE DEMO'D SPRING 2026 NEW B-1 @ 80KW TO BE TEMP'D FOR 2025/2026 HEATING SEASON
	CONTROLS						120														
EXG AC	EXG ATR COMPRESSOR EXG SHOP	EXG STORAGE 63		5/3			230V / 460								EXG						DANGER THIS CONTACTOR IS FED FROM TWO SOURCES CONTACTOR 480V COIL 208V
EXG FC	EXG FAN COIL HTG & CLG EXG SHOP ROOMS STORAGE 63, TOOL STORAGE 65, METER ROOM 66	EXG STORAGE 63		1/3			208				TC	TC	TC		EXG						
EXG DH	EXG DUCTED DEHUMIDIFIER EXG SHOP	EXG STORAGE 63	(F)				120				TC	TC	TC		EXG						SHARES HUMIDISTAT WITH D-1 & D-2
EXG WH	EXG ELECTRIC WATER HEATER EXG SHOP	EXG STORAGE 63	(4.5)				208								EXG						
EXG PW	EXG PRESSURE WASHER EXG SHOP	EXG SHOP					208														
EXG PRV	EXISTING POWER ROOF VENTILATOR EXHAUST EXG SHOP 61	EXG SHOP ROOF		3/4			480														TO BE DEMO'D SUMMER 2025
EXG EH-1	EXISTING ELECTRIC HANGING UNIT HEATER - SUPPLEMENTAL HEAT	EXG SHOP & WAREHOUSE	(15)				480														TO BE DEMO'D SUMMER 2025
EXG EH-1	EXISTING ELECTRIC HANGING UNIT HEATER - SUPPLEMENTAL HEAT	EXG SHOP & WAREHOUSE	(15)				480														TO BE DEMO'D SUMMER 2025
EXG EH-1	EXISTING ELECTRIC HANGING UNIT HEATER - SUPPLEMENTAL HEAT	EXG SHOP & WAREHOUSE	(15)				480														TO BE DEMO'D SUMMER 2025
EXG FPN	EXISTING MOTOR VEHICLE FUEL PUMP (NORTH)	EXTERIOR					120								EXG						
EXG FPS	EXISTING MOTOR VEHICLE FUEL PUMP (SOUTH)	EXTERIOR					120								EXG						
EXG EP	EXISTING SEWAGE EJECTOR LIFT PUMP STATION	EXTERIOR					120														TO BE DEMO'D SUMMER OF 2025





GENERAL NOTES

- A. CONTRACTOR SHALL VISIT THE SITE AND VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS. NOTIFY THE A/E IMMEDIATELY OF ANY DISCREPANCIES.
- B. ALL TRENCH BACKFILL SHALL BE 95% STANDARD COMPACTION. WHERE EXCAVATION TAKES PLACE, PROVIDE COMPACTION AND RESTORE TO PREVIOUS SURFACING OR AS REQUIRED FOR NEW CONSTRUCTION. SEE SPECIFICATIONS FOR TESTING REQUIREMENTS.
- C. COORDINATE NEW SERVICES WITH LOCAL UTILITIES.

SPECIAL NOTES

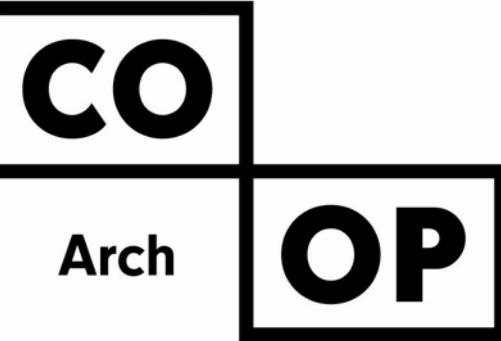
1. CLARIFICATION TO THE BIDDING - ANY ELECTRIC UTILITY COSTS FROM NORTHERN ELECTRIC WILL BE PAID DIRECTLY BY THE OWNER AND SHALL NOT BE INCLUDED AS PART OF THE CONTRACT.
2. CIVIL UTILITIES ARE NOT SHOWN. REFER TO CIVIL ENGINEERS PLANS FOR INFORMATION.

MECHANICAL KEYNOTES

- M1A. SEE PROPOSED.
- M1B. SUMMER OF 2025 - PLUMBING CONTRACTOR TO CONNECT NEW TEMPORARY 1-1/2" DOMESTIC WATER SERVICE TO EXISTING 1-1/2" DOMESTIC WATER SERVICE FOR SERVICE OF SHOP THROUGH CONSTRUCTION AND ROUTE UP AT EXTERIOR FOUNDATION. SEE ABOVE GRADE PLUMBING PLANS FOR CONTINUATION. TEMPORARY INSULATED DOGHOUSE BY GC.
- M2A. SEE PROPOSED.
- M2B. SUMMER OF 2025 - PLUMBING CONTRACTOR TO DEMO EXISTING SEPTIC TANK, DISTRIBUTOR BOX & DRAIN FIELD. INSPECTION MANHOLE AS PER DANR REQUIREMENTS. EXISTING DRAIN FIELD TO BE ABANDONED IN PLACE. EXISTING SANITARY SEWER PIPING & LIFT PUMP TO BE DEMO'D BY SITE UTILITY CONTRACTOR.
- M3A. SUMMER OF 2025 - PLUMBING CONTRACTOR TO DISCONNECT EXG 1000 GAL UNDERGROUND PROPANE TANK SERVING GENERATOR. EXCAVATE & BACKFILL WITHIN 12" OF FINISHED GRADE. FINAL SITE WORK BY OTHERS.
- M3B. SUMMER OF 2025 - OWNER'S PROPANE SUPPLIER TO PROVIDE & INSTALL TEMPORARY 1000 GALLON PROPANE TANK & PIPE TO TEMPORARILY RELOCATED GENERATOR (TEMPORARY PROPANE TANK & PIPE SHOWN FOR REFERENCE ONLY - NO WORK BY GC).
- M4. GEOTHERMAL WELLFIELD CONTRACTOR TO DEMO EXISTING 2" GEOTHERMAL WELLFIELD CIRCUITS FROM EXISTING BUILDING TO THIS APPROXIMATE LOCATION. WELLFIELD CONTRACTOR TO PURGE ALL EXISTING GLYCOL FROM WELLFIELD, AND CAP ALL EXISTING CIRCUITS FOR DEMO PHASE. TEMPORARILY BURY EXISTING CAPPED CIRCUITS BELOW GRADE AT THIS LOCATION, RECORD LOCATION, AND PROTECT DURING CONSTRUCTION.

ELECTRICAL KEYNOTES

- E1. ELECTRICAL CONTRACTOR TO DISCONNECT EXISTING GENERATOR, AND EXG TRANSFER SWITCHES. SALVAGE EQUIPMENT AND RETURN TO OWNER. GENERATOR TO BE TEMPORARILY RELOCATED TO SERVE EXG SHOP DURING CONSTRUCTION. REWORK CONDUIT AND CONDUCTORS AS REQUIRED TO SUPPLY EXG PANEL 120-N-1 WITH TEMPORARY RELOCATED EXG ATS.
- E2. ELECTRICAL CONTRACTOR TO PROVIDE TEMPORARY POWER TO SERVE EXG LIGHT POLES AND EXG SITE LIGHTING.
- E3. ELECTRICAL CONTRACTOR TO PROVIDE AND INSTALL TEMPORARY FEED FOR EXG LIFT STATION ELECTRICAL 30A/1P FEED FROM EXG SHOP MEZZ PANEL 120-N-1 TO EXG LIFT STATION. EC TO LOCATE AND VERIFY EXISTING CIRCUITRY TO PROVIDE AND INSTALL NEW TEMPORARY FEED. COORDINATE WITH PC.



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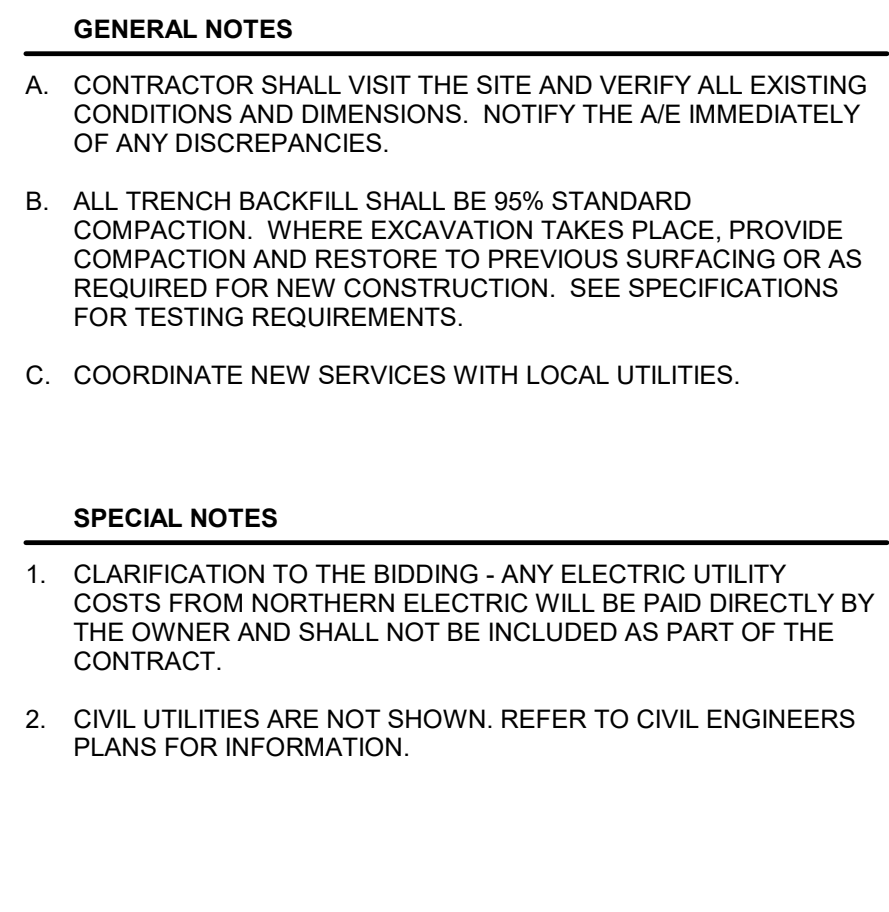
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PROJECT:  
NORTHERN ELECTRIC  
COOPERATIVE  
ABERDEEN, SOUTH DAKOTA

SHEET TITLE:  
ELECTRICAL & MECHANICAL  
SITE DEMOLITION PLAN

EM101





M1A. SUMMER OF 2026 - PLUMBING CONTRACTOR TO CONNECT NEW 1-1/2" DOMESTIC WATER SERVICE TO NEW 1-1/2" DOMESTIC WATER SERVICE MAIN. PLUMBING CONTRACTOR SHALL INSTALL AT THIS LOCATION 5' OUTSIDE OF BUILDING, FURNISH AND INCHLUST THROU BLOCKS AND END-TIERS IN ACCORDANCE WITH THE LOCAL WATER UTILITY CONTRACTOR STANDARDS AND REGULATIONS, PLUMBING CONTRACTOR SHALL VERIFY EXACT LOCATION, AND INVERT.

M1B. TEMPORARY WATER SERVICE TO BE ABANDONED.

M2A. SUMMER OF 2025 - PLUMBING CONTRACTOR TO CONNECT EXISTING 4" SANITARY SEWER TO NEW 6" SANITARY SEWER MAIN. PLUMBING CONTRACTOR SHALL INSTALL AT THIS LOCATION 5' OUTSIDE OF BUILDING, PLUMBING CONTRACTOR TO PROVIDE & INSTALL 4" 2-WAY CLEANOUT AT THIS LOCATION. PC SHALL VERIFY EXACT LOCATION AND INVERT.

M2B. SPRING OF 2026 - PLUMBING CONTRACTOR TO CONNECT NEW 4" SANITARY SEWER TO NEW 6" SANITARY SERVICE INSTALLED BY SITE UTILITY CONTRACTOR AT THIS LOCATION 5' OUTSIDE OF BUILDING. PLUMBING CONTRACTOR SHALL PROVIDE & INSTALL 4" 2-WAY CLEANOUT AT THIS LOCATION. PLUMBING CONTRACTOR SHALL VERIFY EXACT LOCATION, & INVERT.

M2C. SPRING OF 2026 - PLUMBING CONTRACTOR TO PROVIDE & INSTALL NEW SEPTIC SYSTEM INCLUDING SEPTIC TANK, ALL PERMANENT FIELD AND BACTRIAL MATERIALS AS REQUIRED. CONNECT 1" PVC FROM SEPTIC TANK TO 2" PUMPED DISCHARGE OF SEWAGE LIFT STATION INSTALLED BY SITE UTILITY CONTRACTOR. PLUMBING CONTRACTOR SHALL PROVIDE PERCOLATION TEST ON SOIL TO DETERMINE EXACT SIZE OF DISCHARGE. PLUMBING CONTRACTOR SHALL PROVIDE LINES AS REQUIRED BY THE SOUTH DAKOTA DEPARTMENT OF AGRICULTURE & NATURAL RESOURCES. SUBMIT ALL TEST DATA TO THE SOUTH DAKOTA DEPARTMENT OF AGRICULTURE & NATURAL RESOURCES FOR ALLOWANCE FOR DRAIN FIELD.

M2D. SUMMER OF 2025 - PLUMBING CONTRACTOR TO PROVIDE & INSTALL NEW 3000 GAL BELOW GRADE HOLDING TANK FOR SHOP AREA SANITARY WASTE. CONNECT TO NEW 6" SANITARY SEWER SERVICE. SITE UTILITY CONTRACTOR. PLUMBING CONTRACTOR SHALL VERIFY EXACT LOCATION AND INVERT.

M3. PLUMBING CONTRACTOR TO PROVIDE & INSTALL LAWN IRRIGATION VACUUM BREAKER AT THIS LOCATION. SEE CONTRACT SPECIFICATIONS FOR IRRIGATION VACUUM BREAKER. PLUMBING CONTRACTOR SHALL VERIFY EXACT LOCATION. CONTRACTOR TO BE OWNERS FUTURE LAWN IRRIGATION CONTRACTOR. FUTURE CONTROLLER IN MECHANICAL 141 BY OWNER.

M4. GEOTHERMAL WELLFIELD CONTRACTOR TO EXTEND EXISTING GEOTHERMAL WELLFIELD CIRCUIT INTO NEW MECHANICAL ROOM AND INSTALL AT NEW READERS. EARTH-COUPLED HEAT EXCHANGER HEADER DETAIL, AND 1" PIPING & FITTINGS TO BE INSTALLED TO PROVIDE NEAR ELECTRICAL AND DOMESTIC WATER SERVICES AS MUCH AS POSSIBLE.

M5. TEMPERATURE CONTROLS CONTRACTOR TO PROVIDE & INSTALL FLOAT LEVEL SENSOR IN HOLDING TANK FOR SHOP AREA SANITARY WASTE. CONTRACTOR TO PROVIDE ALLOW FOR FUTURE LIFT LENS (LS-1) MONITORING.

E1: EC TO PROVIDE AND INSTALL NEW UNDERGROUND ELECTRICAL POWER AND CONDUIT TO FEED NEW LIFT STATION CU CONDUCTORS TO PUMP ROOMS FOR TRANSFORMER (S) FOR NEW CIRCUIT TO 2HP 480V SINGLE PHASE LIFT STATION. PROVIDE COMBINATION STARTER/INTERCONNECT FOR TRANSFORMER. COORDINATE E-C CHANNELS TO BE CONCRETE PAD FOR MOUNDING OF STARTER DISCONNECT.

E2: EC TO PROVIDE AND INSTALL NEW UNDERGROUND ELECTRICAL POWER AND CONDUIT TO FEED NEW PARKING LOT FIXTURES. PROVIDE AND INSTALL 1" CONDUIT WITH #6 CU. PROVIDE AND ROUTED BACK TO THE TIME CLOCK IN MECH 141. SEE PROPOSED.

E3: EC TO PROVIDE AND INSTALL 2" SPARE CONDUITS AS NOTED ON SITE PLAN. (1) ROUTED TO THE WEST PAST BUILDING CONCRETE. (1) ROUTED TO EAST PAST BUILDING CONCRETE. COORDINATE EXCAVATION WORK WITH OWNER.

E4: EC TO PROVIDE AND INSTALL 2" 12" CONDUIT AND 250 MCM CU CONDUCTORS FOR TRANSFORMER FROM TRANSFORMER 3. COORDINATE LOCATION OF PANEL W WITH OWNER. SEE PROPOSED

E5: EC TO PROVIDE AND INSTALL 1 1/2" CONDUIT AND 10 CONDUCTORS FOR NEW EXTERIOR PANEL E FED FROM TRANSFORMER 3. COORDINATE LOCATION OF PANEL E WITH OWNER. SEE PROPOSED

E6: EC TO PROVIDE AND INSTALL 1 1/4" CONDUIT AND #6 CONDUCTORS TO RE-FEED EX SIGNAGE FEED FROM PANEL H1 WITH (1) 20A 1 POLE BREAKER TO RE-SUPPLY EX SIGNAGE. PROVIDE AND INSTALL (1) 3/4" TRANSFORMER TO STEP DOWN FROM 277/120V TO RE-SUPPLY EX SIGNAGE PEDESTAL PANEL.

E7: EC TO PROVIDE AND INSTALL WP GFCI DUPLEX RECEPTACLE AT THE BASE OF EACH 14 LIGHTING FIXTURE AT LOCATIONS WHERE NOTED. COORDINATE WITH OWNER. SEE PANEL SCHEDULE FOR OWNER.

E8: EC TO PROVIDE AND INSTALL 1-1/4 CONDUITS(S) ROUTED BY ELECTRICAL PANELS IN TO MECH ROOM 141. PROVISIONS FOR FUTURE EV CHARGING STATION FOR SOUTH & EAST PARKING. COORDINATE LOCATION WORK WITH OWNER.

E9: EC TO PROVIDE AND INSTALL 1" CONDUIT AND #10 CONDUCTORS TO PUMP ROOMS FOR TRANSFORMER. INSTALL 6" AWAY FROM FLAG POLE BASE SPACING EVENLY 120 DEGREES APART.

E10: EC TO PROVIDE AND INSTALL (2) 120V CIRCUITS) FOR GENERATOR BLOCK HEATER AND BATTERY CHARGER) SEE PANEL SCHEDULES.

E11: PROVIDE AND INSTALL (1) 2" CONDUIT FROM SERVER 126 STUBBED OUTSIDE WEST SIDE OF BUILDING PAST NEW TRANSFORMER. PROVIDE AND INSTALL 1" CONDUIT. COORDINATE EXCAVATION WORK WITH OWNER.



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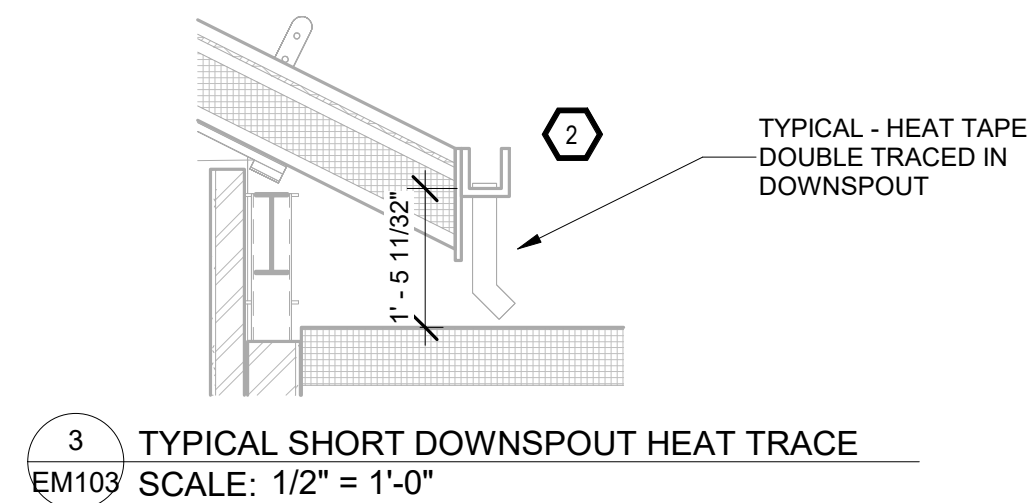
PROJECT:  
NORTHERN ELECTRIC  
COOPERATIVE  
ABERDEEN, SOUTH DAKOTA

**SHEET TITLE:**  
ELECTRICAL & MECHANICAL  
SITE PLAN

# EM102



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A. FRESH AIR INTAKES TO BE MINIMUM 10' FROM ANY EXHAUST TERMINATION.

1. VC TO DISCONNECT & REMOVE EXG PRV. VC TO PROVIDE & INSTALL INSULATED WEATHER-TIGHT CAP ON EXISTING CURB.



1. TYPICAL - PROVIDE SELF-REGULATING HEAT TAPE IN GUTTERS, DOWNSPOUTS AND ROOF DRAINS AS SHOWN ON THE PLANS. HEAT TAPE SHALL BE EQUAL TO MAXIMUM NO. CFS-8-2-CR, 8 WATT PER SQUARE FOOT CAPACITY. PROVIDE A COMPLETE AND FUNCTIONING SYSTEM INCLUDING BUT NOT LIMITED TO THE FOLLOWING PARTS: CONTROL PANEL, CABLE WITH NO. CS-SGS OR CS-SG SENSOR NO. CS-AS WITH BRACKET NO. CS-MB, GUARD SENSOR NO. CS-GS AND POWER CONNECTION KITS AS REQUIRED.
2. GUTTER DOWNSPOUT LOCATION - INSTALL DOUBLE TRACE HEAT TAPE IN DOWN SPOUT FOR CONTINUOUS RUN OF HEAT TAPE. PROVIDE ADDITIONAL HEAT TAPE AT EACH DOWNSPOUT TAKEOUT. (SEE ELEVATOR) FOR APPROXIMATE HEIGHTS.
3. TYPICAL HEAT TAPE ROOF DRAIN - INSTALL 50' OF HEAT TAPE FROM JUNCTION BOX INTO ROOF DRAIN DOWN TO LAMBS TONGUE. FIELD VERIFY.



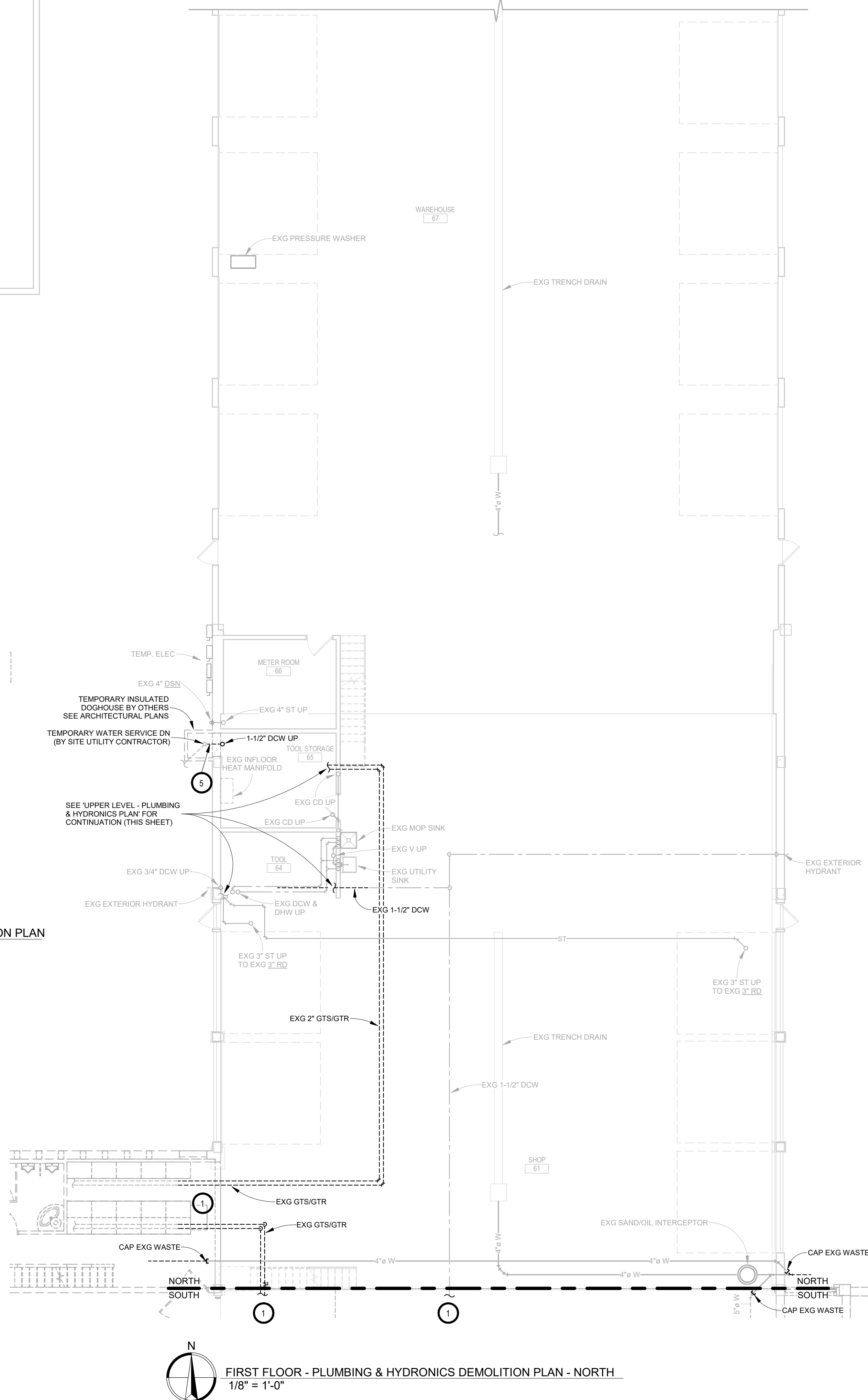
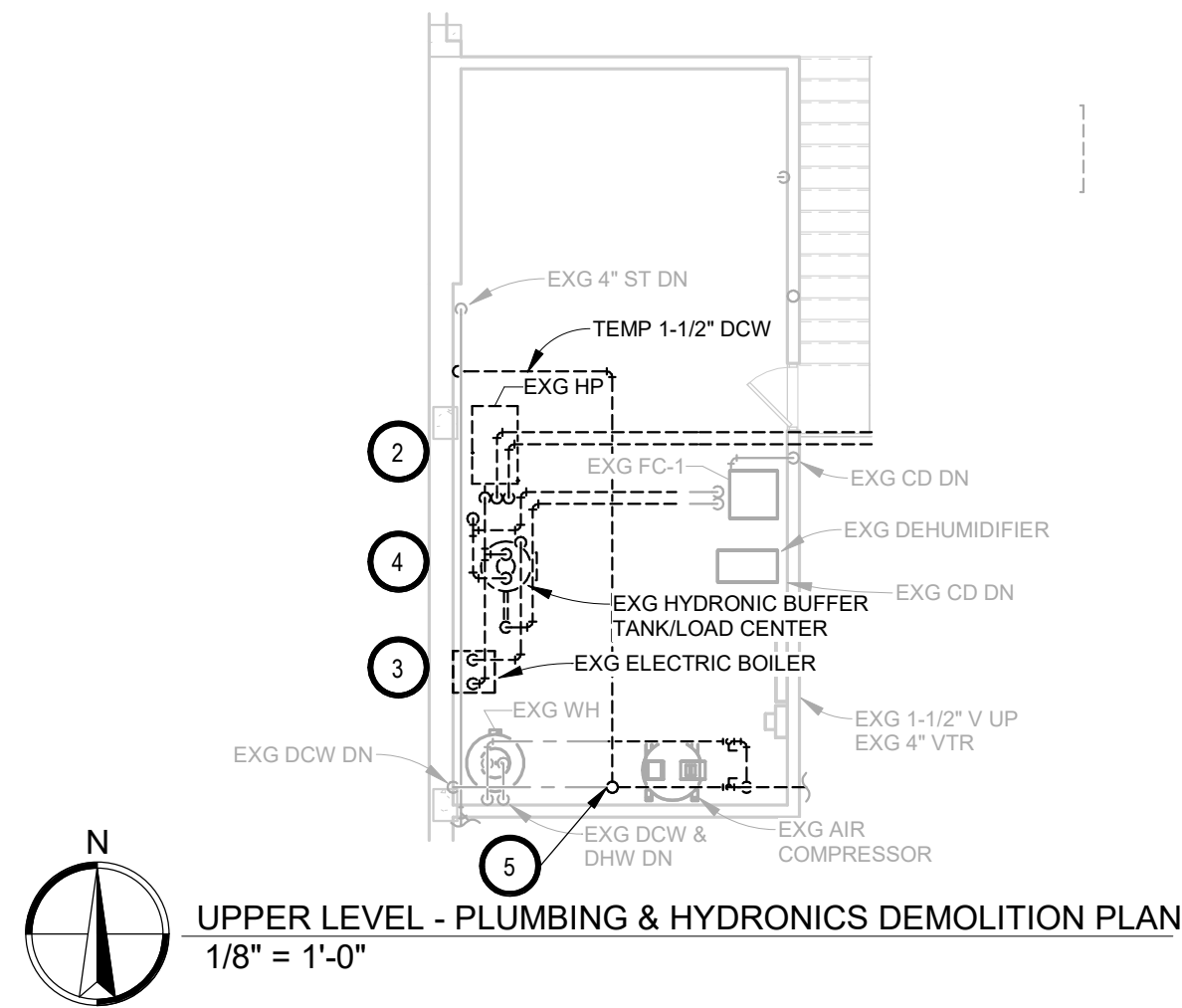
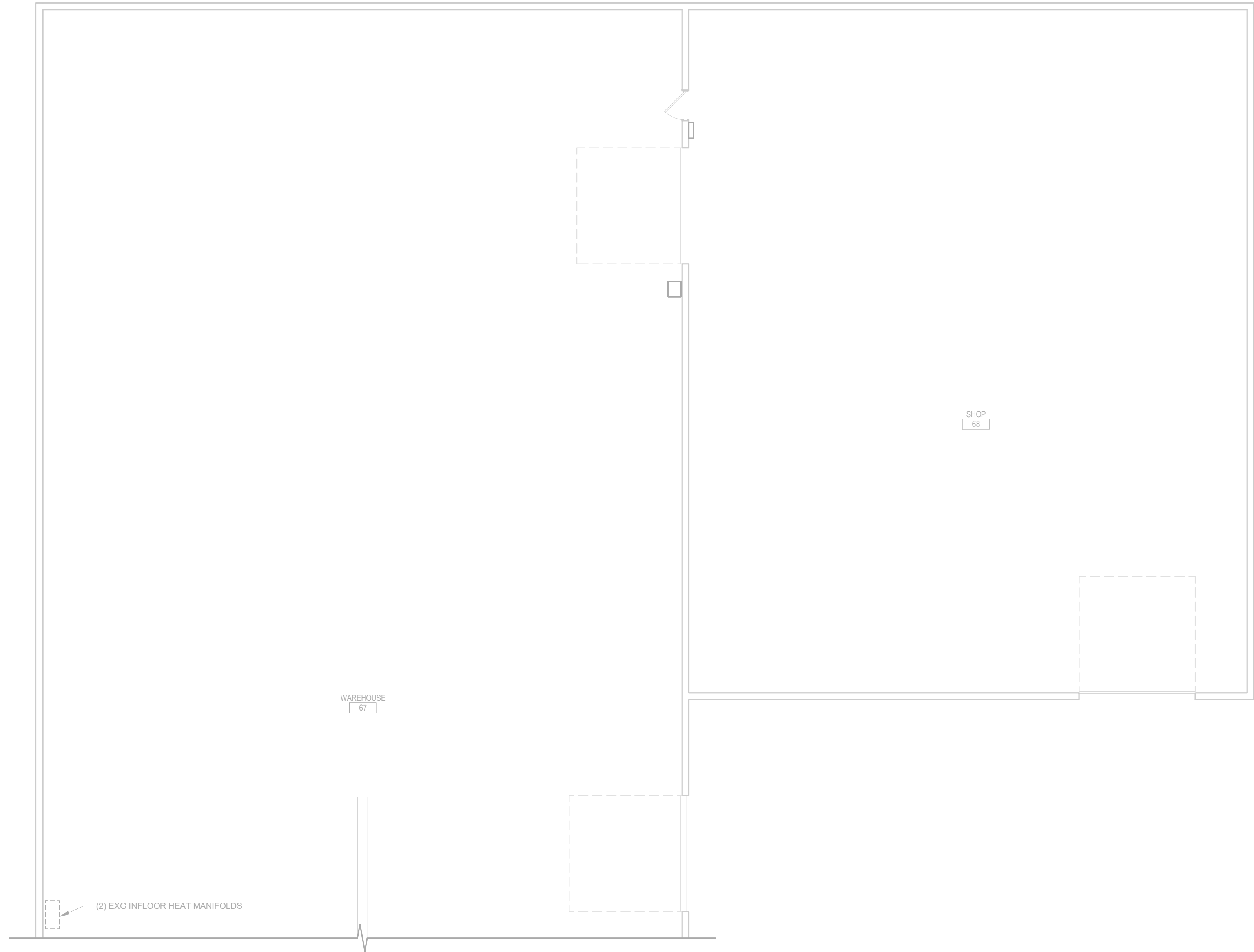
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COOPERATIVE  
ABERDEEN, SOUTH DAKOTA

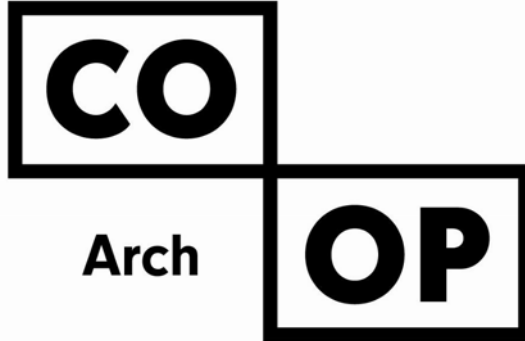
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- MECHANICAL GENERAL NOTES:
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- B. REMOVE MECHANICAL EQUIPMENT IN THE AREAS SHOWN ON THE PLAN. DISCONNECT SERVICES AND REMOVE TO A POINT OUT OF THE WAY OF THE GENERAL DEMOLITION. MARK ON THE PLAN TO CLEARLY SHOW WHERE THESE SERVICES ARE STOPPED. DEMOLITION WORK SHALL BE COORDINATED WITH THE OWNER. SHOULD QUESTIONS ARISE REGARDING THE REMOVAL OF EQUIPMENT, CONFER WITH THE OWNER BEFORE SUCH EQUIPMENT IS DEMOLISHED. MATERIALS REMOVED BY DEMOLITION SHALL REMAIN THE PROPERTY OF THE OWNER UNLESS OTHERWISE SPECIFICALLY NOTED. MATERIAL THE OWNER DOES NOT WISH TO RETAIN SHALL BE REMOVED AND DISPOSED OF PROPERLY BY THE CONTRACTOR.
- C. EQUIPMENT SHOWN ON DRAWINGS AS EXISTING IS BASED ON EXISTING PLANS AND LIMITED FIELD INVESTIGATION. THE FIELD SURVEY WAS CONDUCTED TO VERIFY, AS MUCH AS POSSIBLE, THE ACCURACY OF THE LOCATIONS SHOWN. THE CONTRACTOR SHALL VERIFY THE ACCURACY OF THE "EXISTING CONDITIONS" AS SHOWN ON THE DRAWINGS AS THE DEMOLITION WORK PROGRESSES. PERFORM MODIFICATIONS AND ADDITIONS AS NECESSARY TO CORRECT FOR THESE HIDDEN CONDITIONS AND ALLOW FOR THE COMPLETION OF THE NEW WORK.
- D. THE EXISTING BUILDING WILL BE IN USE DURING THIS CONSTRUCTION. SCHEDULE AND CARRY OUT THE WORK IN SUCH A MANNER AS TO CAUSE THE OWNER A MINIMUM OF INCONVENIENCE DUE TO SERVICE INTERRUPTIONS. TEMPORARY SERVICES SHALL BE INSTALLED IF ONE PHASE OF CONSTRUCTION DISRUPTS SERVICE TO ANOTHER AREA OF THE BUILDING OR IF EQUIPMENT HAS TO BE RELOCATED TO ALLOW CONSTRUCTION TO PROGRESS. SERVICE INTERRUPTIONS SHALL BE CONFINED TO THE SMALLEST AREA POSSIBLE AT ANY ONE TIME AND INTERRUPTIONS SHALL BE SCHEDULED WITH THE OWNER'S SITE REPRESENTATIVE. AFTER SERVICE HAS BEEN RESTORED FOLLOWING AN INTERRUPTION, INSPECT AREAS AFFECTED BY THE INTERRUPTION AND BE RESPONSIBLE FOR RETURNING AUTOMATICALLY CONTROLLED EQUIPMENT TO THE SAME OPERATING CONDITION, WHICH EXISTED PRIOR TO THE INTERRUPTION.
- E. PROVIDE PENETRATIONS TO THE BUILDING STRUCTURE AS REQUIRED FOR INSTALLATION. WHERE EXISTING OR TEMPORARY SYSTEMS ARE BEING DEMOLISHED, WHICH LEAVE OPENINGS IN THE EXISTING BUILDING STRUCTURE, THE BUILDING STRUCTURE SHALL BE PATCHED TO MATCH THE EXISTING CONSTRUCTION AND MAINTAIN THE EXISTING BUILDING FIRE RATINGS. ALL PENETRATIONS THROUGH DRAFT STOPS AND OTHER FIRE-RATED PARTITIONS SHALL BE FIRE STOPPED AS PER SPECIFICATIONS AND LOCAL CODES.

- KEYNOTES
- PC TO DISCONNECT AND REMOVE PORTION OF ANY EXISTING PIPING THRU EXISTING WALL OR FOUNDATION THAT REMAINS TO A POINT TO ALLOW FOR DEMOLITION OF EXISTING BUILDING.
  - PC TO DISCONNECT AND REMOVE EXISTING HP AND ASSOCIATED PIPING SHOWN DARK AND DASHED. SALVAGE HP FOR OWNER.
  - PC TO DISCONNECT AND REMOVE EXISTING BOILER AND ASSOCIATED PIPING SHOWN DARK AND DASHED. SALVAGE BOILER FOR OWNER.
  - SUMMER 2026 - PC TO DISCONNECT AND REMOVE EXISTING HYDRONIC BUFFER TANK AND ASSOCIATED PUMPS AND PIPING SHOWN DARK AND DASHED. SALVAGE BUFFER TANK FOR OWNER.
  - SUMMER 2025 - PC TO PROVIDE & INSTALL 1-1/2" DCW PIPING TO REFEED SHOP DOMESTIC WATER PIPING DURING CONSTRUCTION. CONNECT TO TEMPORARY RISER BY SITE UTILITY CONTRACTOR IN TEMPORARY DOG-HOUSE. ROUTE TO EXISTING DOMESTIC PIPING WHERE SHOWN. AFTER CONSTRUCTION IS COMPLETE, DEMO TEMPORARY PIPING AND CAP AT EXISTING PIPING CONNECTION. SEE PROPOSED.



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PROJECT:  
NORTHERN ELECTRIC COOPERATIVE  
ABERDEEN, SOUTH DAKOTA

SHEET TITLE:  
PLUMBING & HYDRONICS DEMOLITION PLAN - NORTH

# M200.N

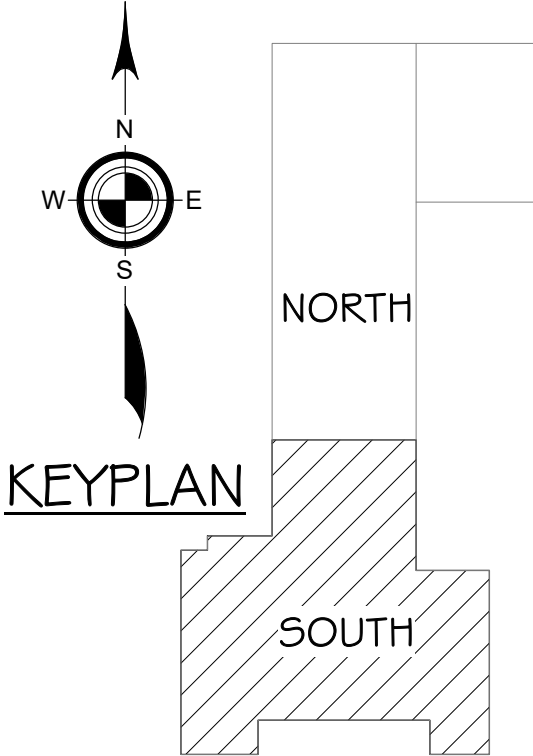
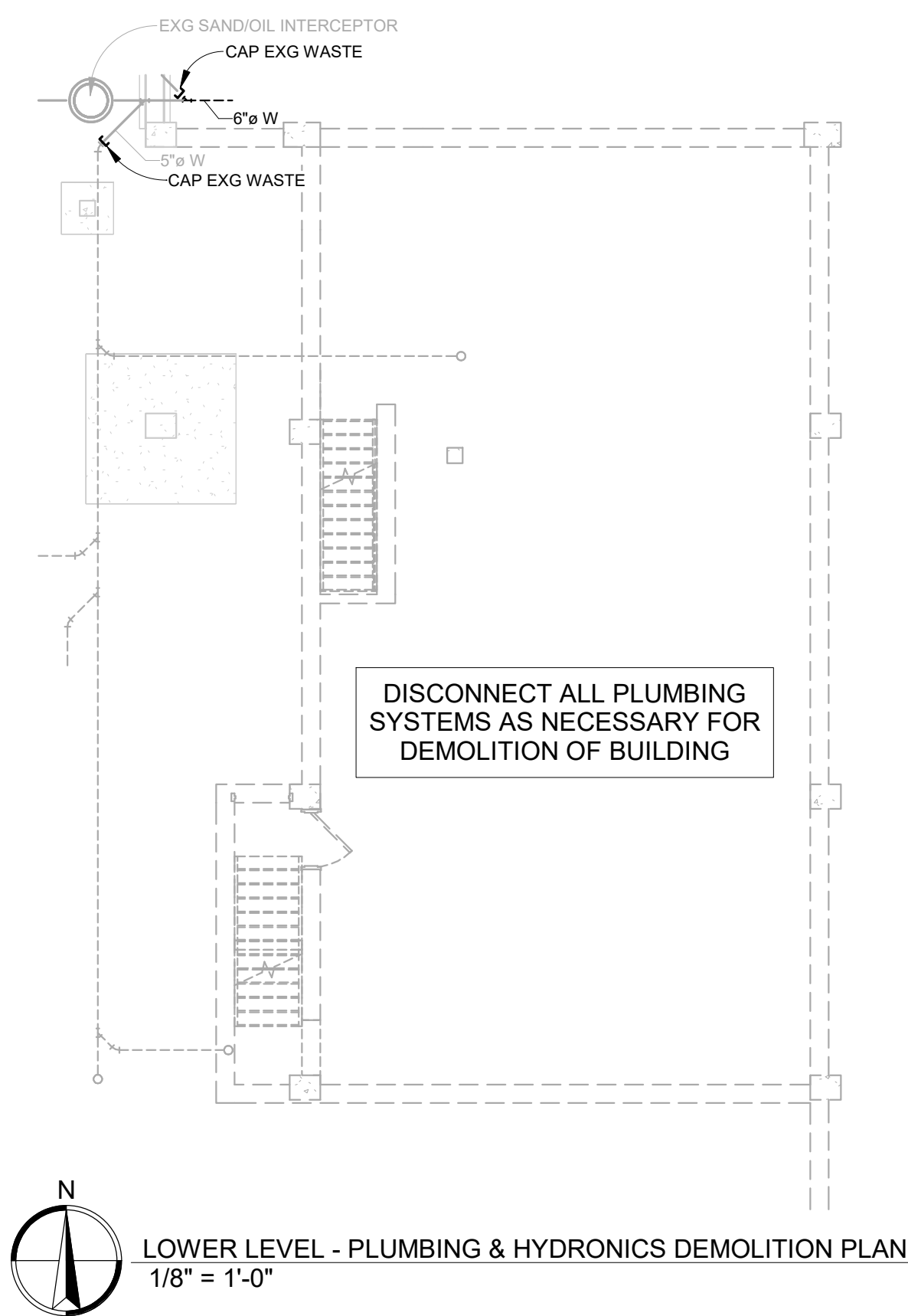
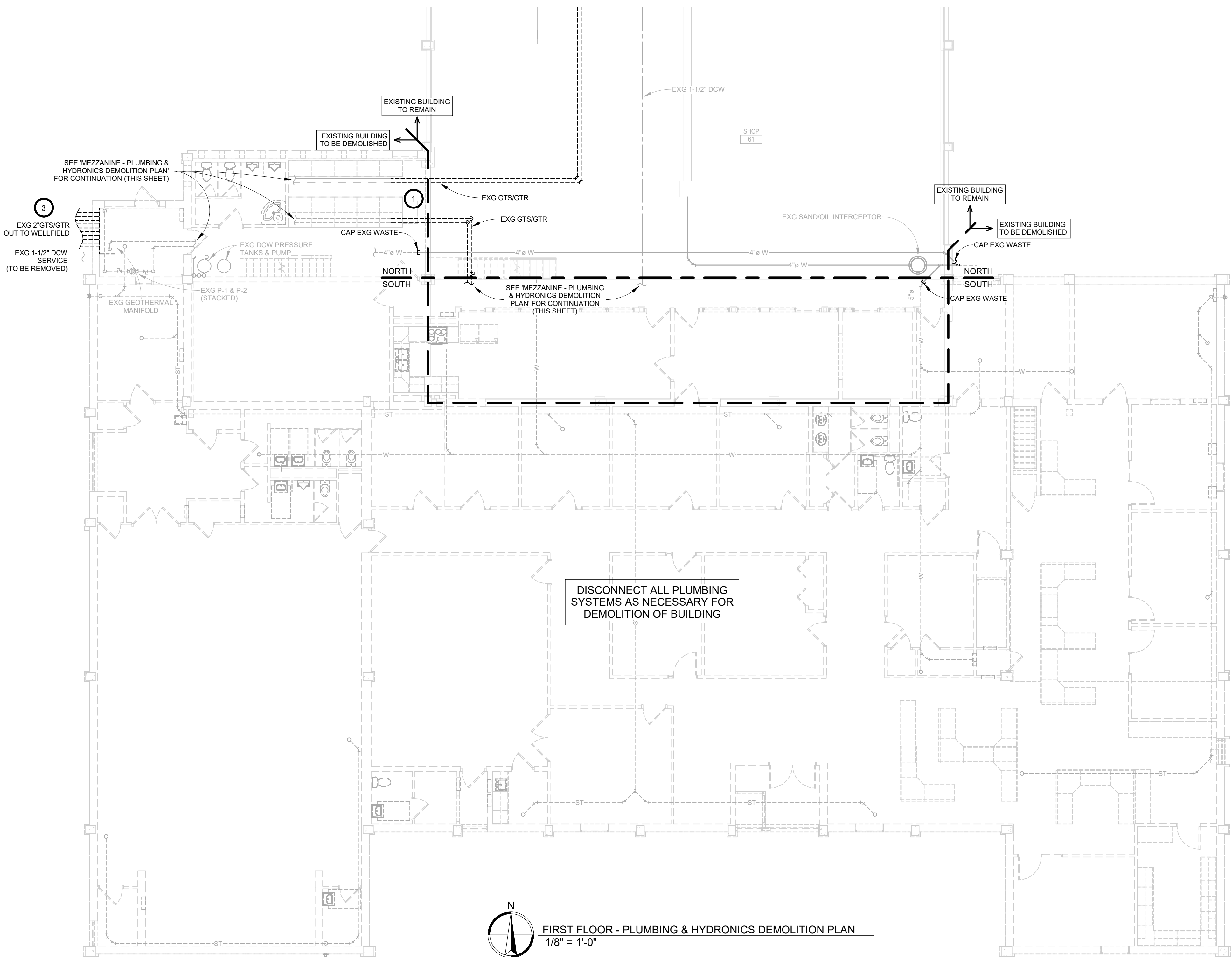
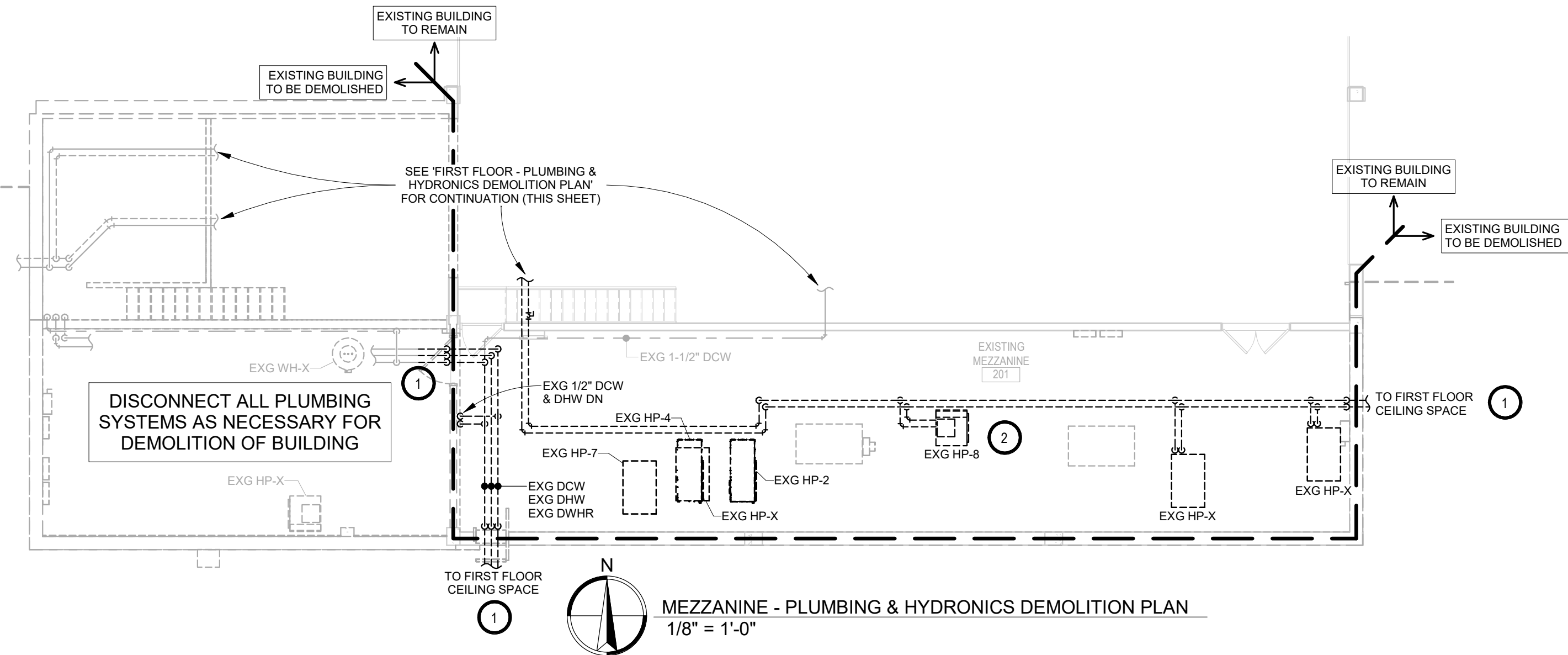


MECHANICAL GENERAL NOTES:

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KEYNOTES

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2. TYPICAL - PC TO DISCONNECT EXISTING HEAT PUMP AND ASSOCIATED PIPING SHOWN DARK AND DASHED & ASSOCIATED CONDENSATE PIPING (CONDENSATE PIPING NOT SHOWN).
3. GEOTHERMAL WELLFIELD CONTRACTOR TO DISCONNECT EXISTING GEOTHERMAL HEADERS FOR BUILDING DEMOLITION. SEE ELECTRICAL & MECHANICAL SITE DEMOLITION PLAN.



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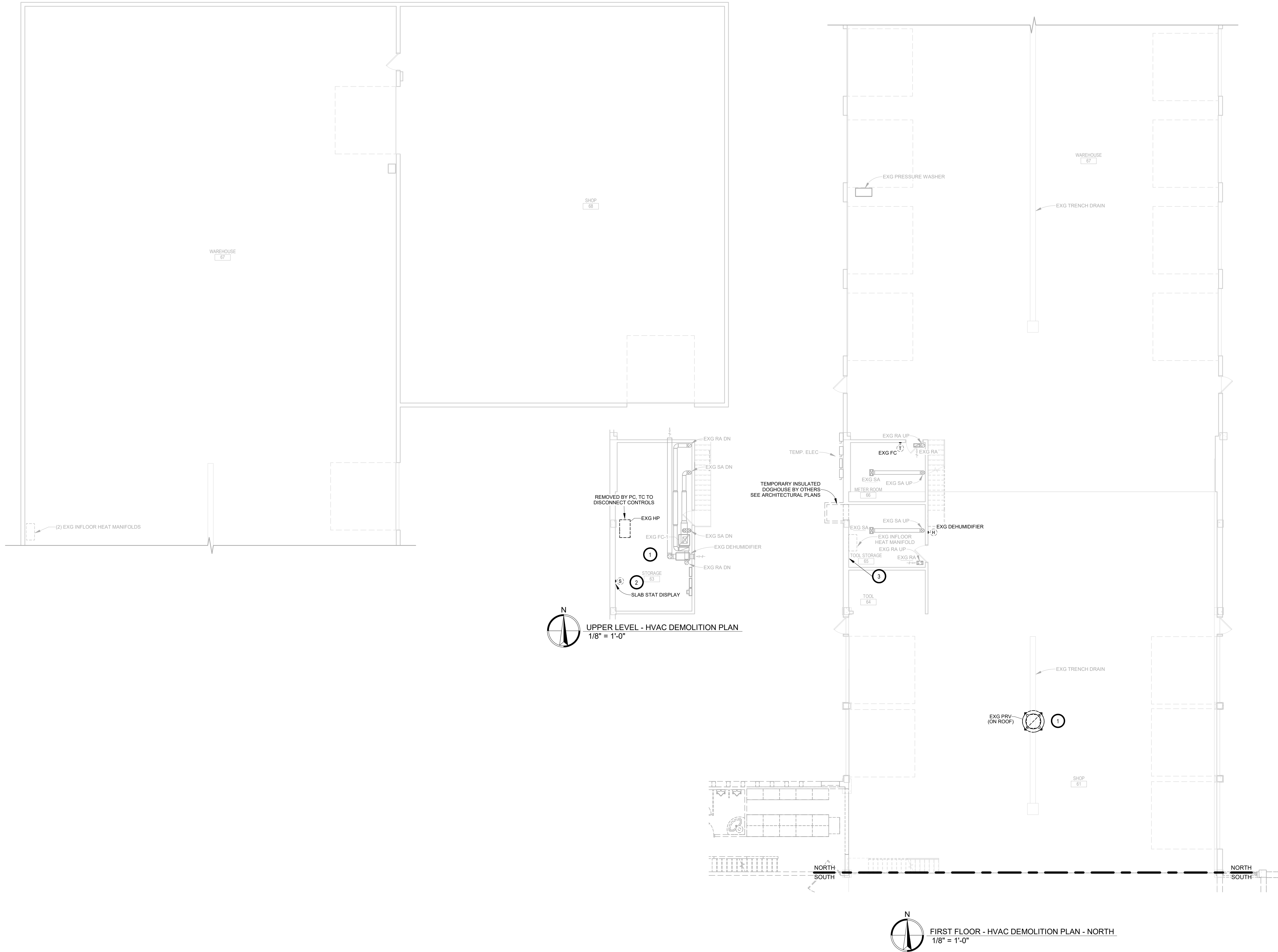
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PROJECT:  
NORTHERN ELECTRIC  
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ABERDEEN, SOUTH DAKOTA

SHEET TITLE:  
PLUMBING & HYDRONICS  
DEMOLITION PLAN - SOUTH

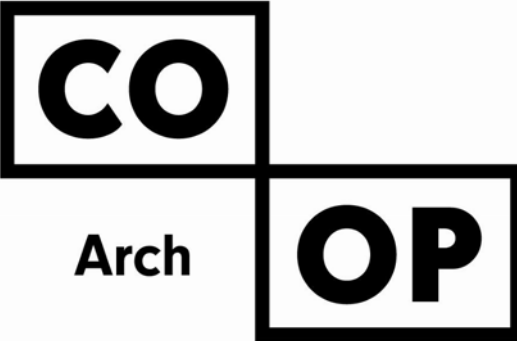
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- KEYNOTES
1. VC TO DISCONNECT & REMOVE EXG PRV. VC TO PROVIDE & INSTALL INSULATED WEATHER-TIGHT CAP ON EXISTING CURB.
2. TYPICAL - SPRING 2026 - VC TO DEMO EXISTING LOW VOLTAGE CONTROLS AFTER NEW BUILDING BAS IS OPERATIONAL FOR TC TO TAKE CONTROL OF EXISTING EQUIPMENT, SEE PROPOSED.
3. APPROXIMATE LOCATION OF EXISTING SLAB STAT. VC TO DEMO FOR TC TO REPLACE WITH NEW WITHIN EXISTING SLEEVE. DEMO EXISTING SLAB STAT SERVING EXISTING LINEMAN/LOCKER AREA THAT WILL BE DEMOD.



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SE PROJECT NO: 240700836



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REVISION SCHEDULE:  
REV. # REV. DSC. REV. DATE

PROJECT:  
NORTHERN ELECTRIC COOPERATIVE  
ABERDEEN, SOUTH DAKOTA

SHEET TITLE:  
HVAC DEMOLITION PLAN - NORTH

M300.N

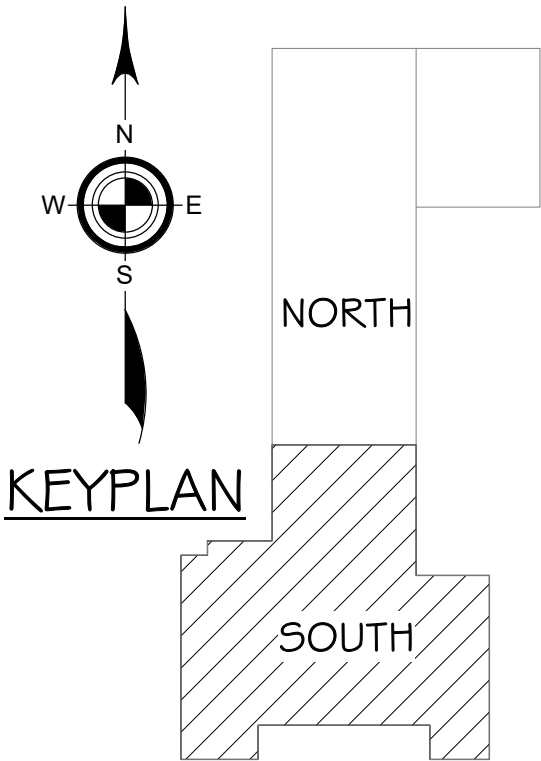
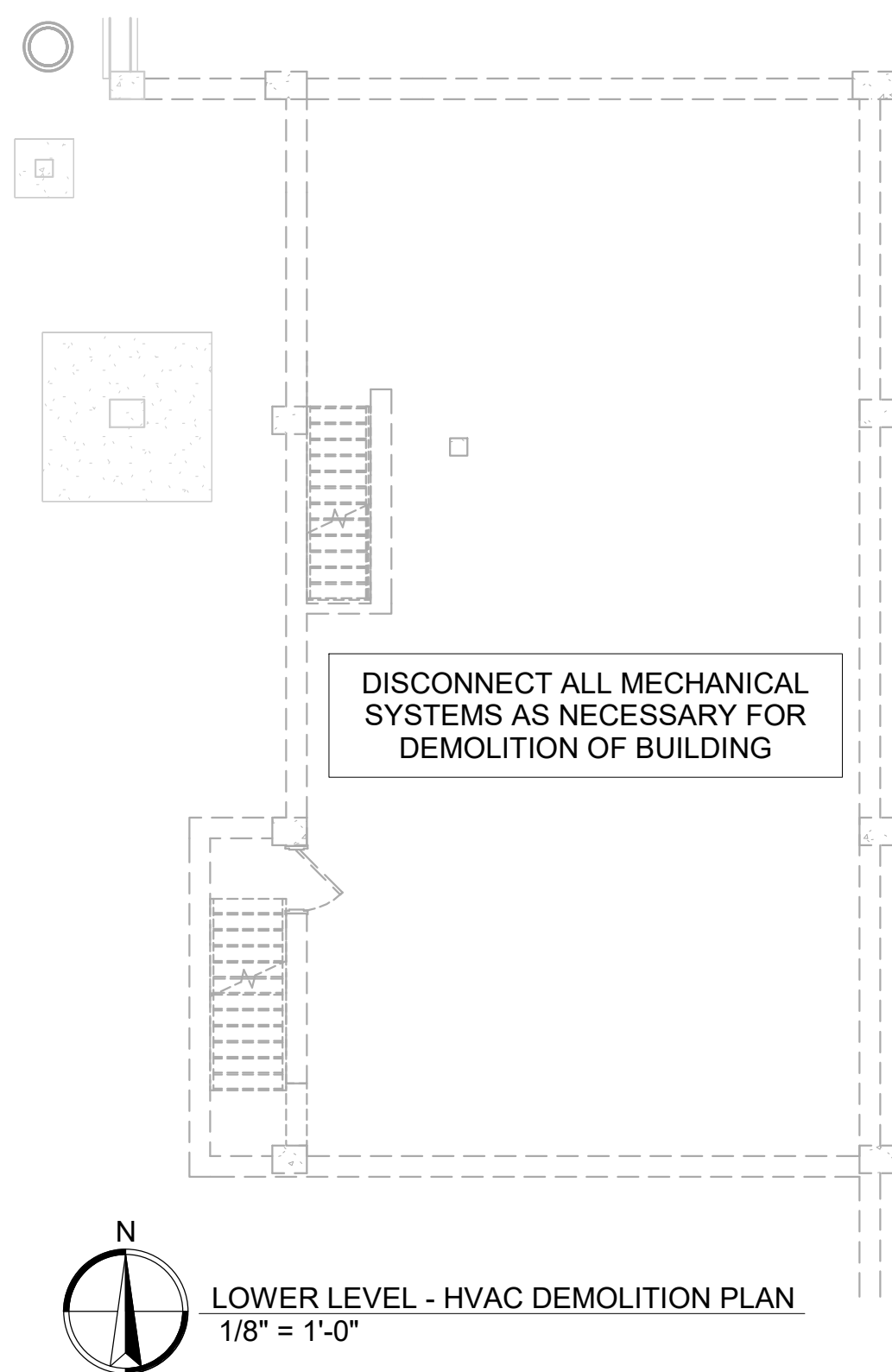
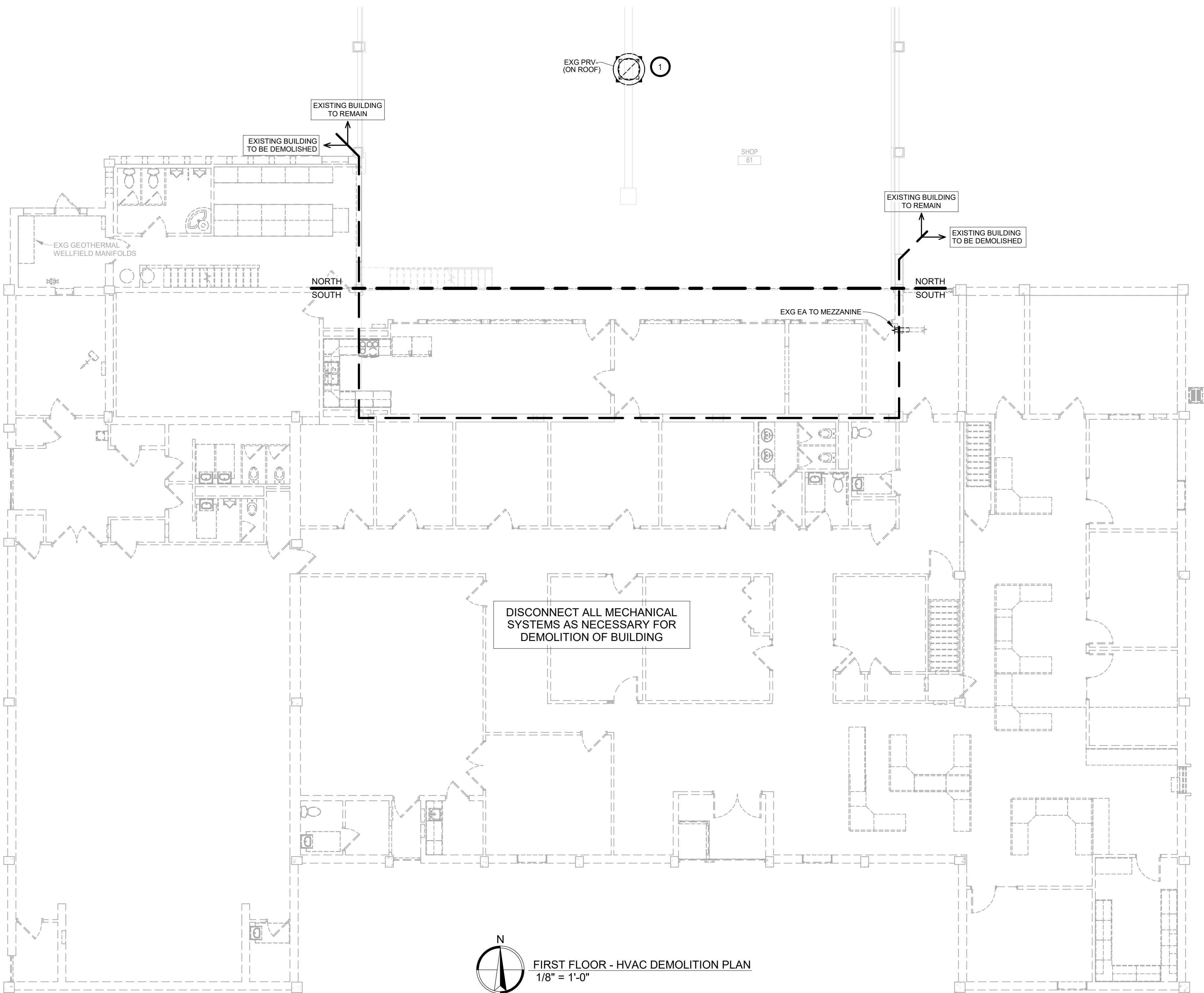
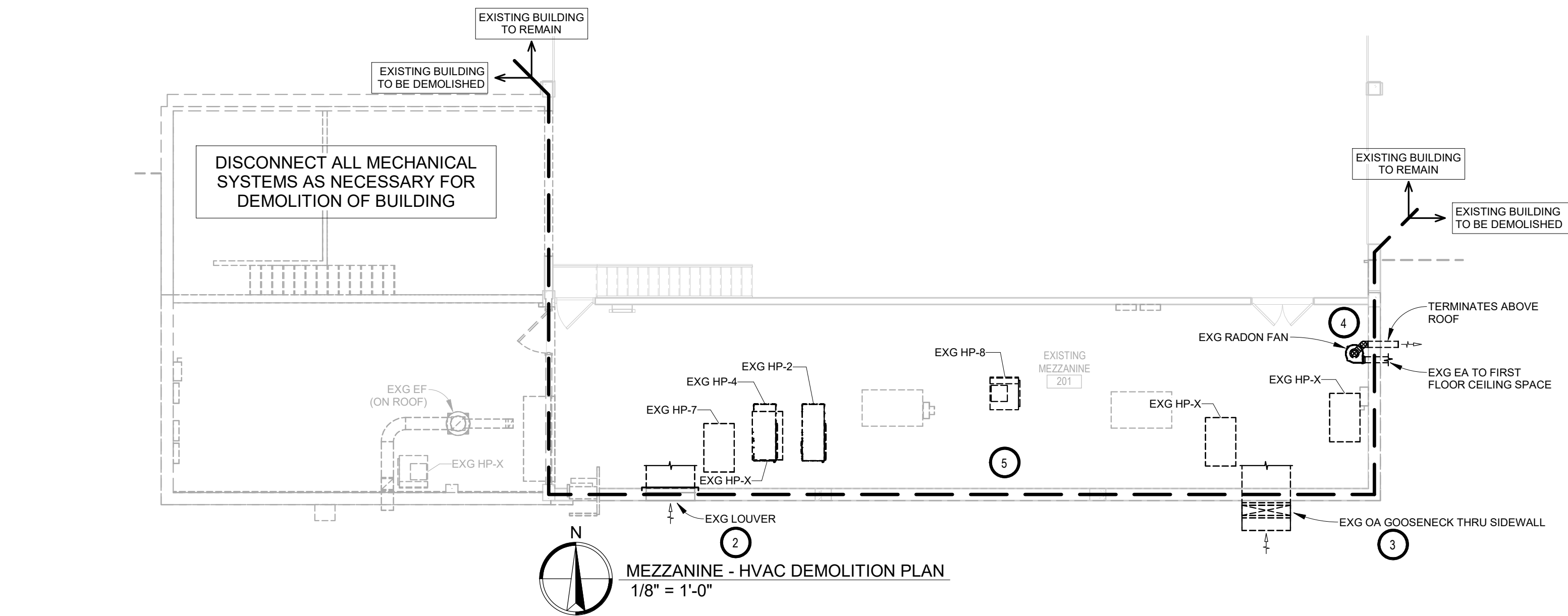


MECHANICAL GENERAL NOTES:

- A. CONTRACTOR SHALL VISIT THE SITE AND VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS. NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES, INCLUDING ANY NECESSARY DEMOLITION.
- B. REMOVE MECHANICAL EQUIPMENT IN THE AREAS SHOWN ON THE PLAN. DISCONNECT SERVICES AND REMOVE TO A POINT OUT OF THE WAY OF THE GENERAL DEMOLITION. MARK ON THE PLAN TO CLEARLY SHOW WHERE THESE SERVICES ARE STOPPED. DEMOLITION WORK SHALL BE COORDINATED WITH THE OWNER. SHOULD QUESTIONS ARISE REGARDING THE REMOVAL OF EQUIPMENT, CONFER WITH THE OWNER BEFORE SUCH EQUIPMENT IS DEMOLISHED. MATERIALS REMOVED BY DEMOLITION SHALL REMAIN THE PROPERTY OF THE OWNER UNLESS OTHERWISE SPECIFICALLY NOTED. MATERIAL THE OWNER DOES NOT WISH TO RETAIN SHALL BE REMOVED AND DISPOSED OF PROPERLY BY THE CONTRACTOR.
- C. EQUIPMENT SHOWN ON DRAWINGS AS EXISTING IS BASED ON EXISTING PLANS AND LIMITED FIELD INVESTIGATION. THE FIELD SURVEY WAS CONDUCTED TO VERIFY, AS MUCH AS POSSIBLE, THE ACCURACY OF THE LOCATIONS SHOWN. THE CONTRACTOR SHALL VERIFY THE ACCURACY OF THE "EXISTING CONDITIONS" AS SHOWN ON THE DRAWINGS AS THE DEMOLITION WORK PROGRESSES. PERFORM MODIFICATIONS AND ADDITIONS AS NECESSARY TO CORRECT FOR THESE HIDDEN CONDITIONS AND ALLOW FOR THE COMPLETION OF THE NEW WORK.
- D. THE EXISTING BUILDING WILL BE IN USE DURING THIS CONSTRUCTION. SCHEDULE AND CARRY OUT THE WORK IN SUCH A MANNER AS TO CAUSE THE OWNER A MINIMUM OF INCONVENIENCE DUE TO SERVICE INTERRUPTIONS. TEMPORARY SERVICES SHALL BE INSTALLED IF ONE PHASE OF CONSTRUCTION DISRUPTS SERVICE TO ANOTHER AREA OF THE BUILDING OR IF EQUIPMENT HAS TO BE RELOCATED TO ALLOW CONSTRUCTION TO PROGRESS. SERVICE INTERRUPTIONS SHALL BE CONFINED TO THE SMALLEST AREA POSSIBLE AT ANY ONE TIME AND INTERRUPTIONS SHALL BE SCHEDULED WITH THE OWNER'S SITE REPRESENTATIVE. AFTER SERVICE HAS BEEN RESTORED FOLLOWING AN INTERRUPTION, INSPECT AREAS AFFECTED BY THE INTERRUPTION AND BE RESPONSIBLE FOR RETURNING AUTOMATICALLY CONTROLLED EQUIPMENT TO THE SAME OPERATING CONDITION, WHICH EXISTED PRIOR TO THE INTERRUPTION.
- E. PROVIDE PENETRATIONS TO THE BUILDING STRUCTURE AS REQUIRED FOR INSTALLATION. WHERE EXISTING OR TEMPORARY SYSTEMS ARE BEING DEMOLISHED, WHICH LEAVE OPENINGS IN THE EXISTING BUILDING STRUCTURE, THE BUILDING STRUCTURE SHALL BE PATCHED TO MATCH THE EXISTING CONSTRUCTION AND MAINTAIN THE EXISTING BUILDING FIRE RATINGS. ALL PENETRATIONS THROUGH DRAFT STOPS AND OTHER FIRE-RATED PARTITIONS SHALL BE FIRE STOPPED AS PER SPECIFICATIONS AND LOCAL CODES.

KEYNOTES

1. VC TO DISCONNECT & REMOVE EXG PRIV. VC TO PROVIDE & INSTALL INSULATED WEATHER-TIGHT CAP ON EXISTING CURB.
2. VC TO DEMO EXISTING DUCTWORK TO LOUVER AND ABANDON LOUVER IN PLACE. PROVIDE & INSTALL WEATHER TIGHT CAP ON INSIDE OF LOUVER AS TIGHT AS POSSIBLE TO EXISTING LOUVER. PROVIDE & INSTALL EXTERIOR INSULATION ON CAP.
3. VC TO DEMO EXISTING GOOSENECK THRU SIDEWALL OF MEZZANINE. PROVIDE & INSTALL WEATHERTIGHT INSULATED CAP THROUGH WALL PENETRATION THAT REMAINS. SEAL WALL PENETRATION WEATHER TIGHT. ENTIRE ASSEMBLY TO BE FULLY INSULATED AND SEALED WEATHER TIGHT. PROVIDE & INSTALL EXTERIOR INSULATION ON CAP.
4. VC TO DEMO EXISTING RADON FAN & ASSOCIATED 4" PVC PIPING ROUTED THRU SIDEWALL. PATCH EXTERIOR WALL OPENING WITH LIKE MATERIALS TO MATCH EXISTING.
5. TYPICAL - VC TO DISCONNECT AND REMOVE EXISTING HEAT PUMPS, CONTROLS, AND ASSOCIATED DUCTWORK. (EXISTING DUCTWORK NOT SHOWN). CONTRACTOR TO VERIFY EXISTING. TYPICAL - ALL MEZZANINE DUCTWORK SIDEWALL & FLOOR PENETRATIONS WHERE DUCTWORK IS DEMO'D. VC TO PROVIDE & INSTALL INSULATED SHEET METAL CAP FLUSH WITH EXG FLOOR & EXG WALLS.



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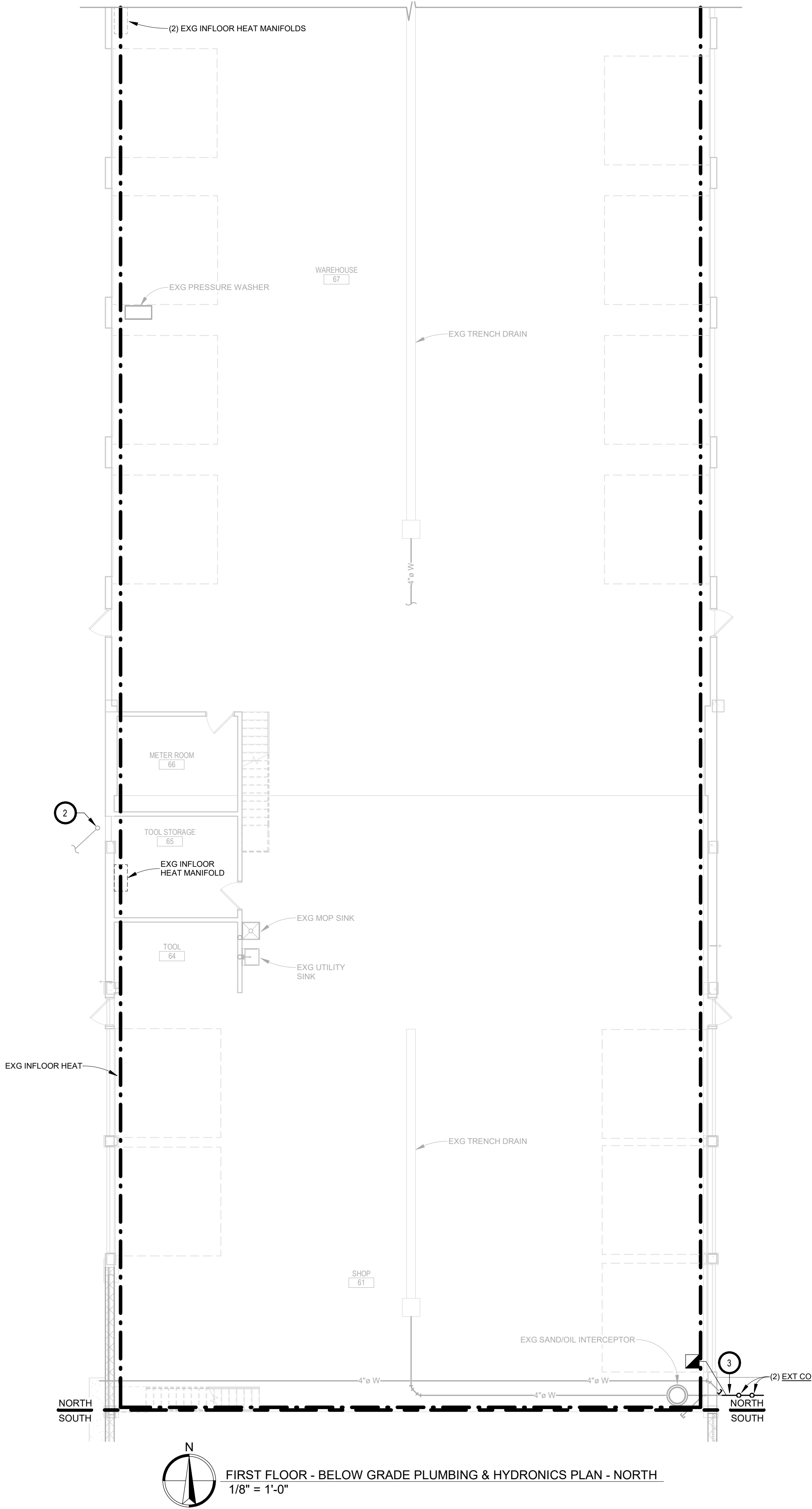
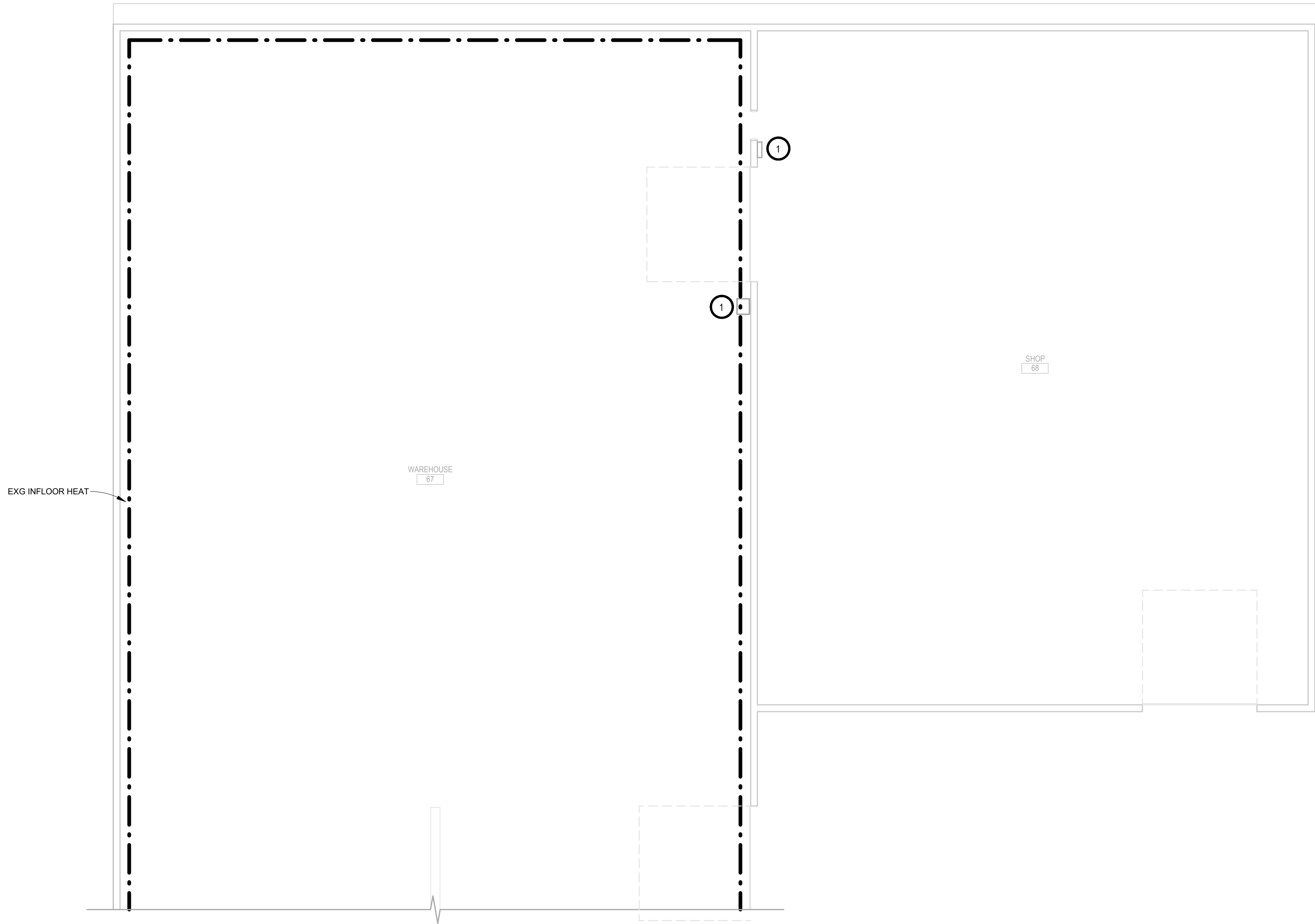
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SOUTH

M300.S

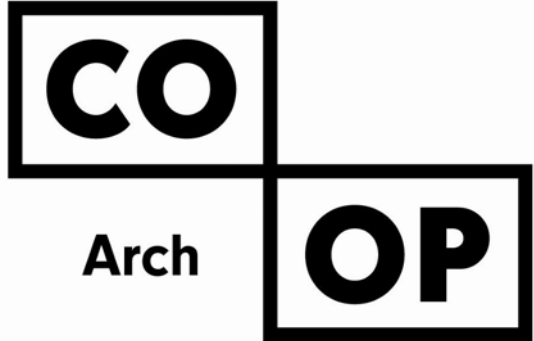
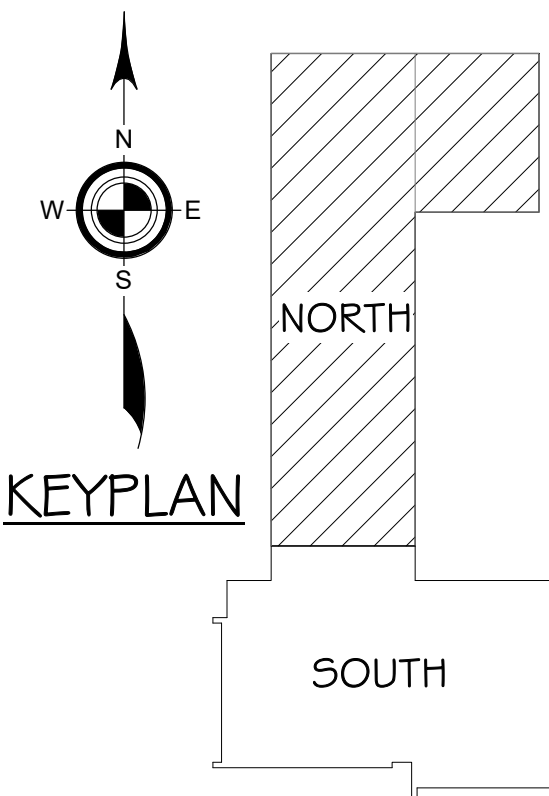




- GENERAL NOTES:
- ALL WORK SHALL BE PERFORMED IN A CLEAN AND WORKMANLIKE MANNER.
  - THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PATCHING ANY OPENINGS LEFT IN FLOORS, WALLS, AND CEILINGS THAT WERE CAUSED BY HIS/HER ACTIONS. PATCHING SHALL MATCH EXISTING SURFACE IN COLOR, TEXTURE AND QUALITY SO THAT PATCH IS INDISTINGUISHABLE FROM ORIGINAL SURFACE.
  - ALL PENETRATIONS THROUGH DRAFT STOPS AND OTHER FIRE-RATED PARTITIONS SHALL BE FIRE STOPPED AS PER SPECIFICATIONS AND LOCAL CODES.
  - ALL MECHANICAL WORK SHALL BE INSTALLED IN STRICT ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, NATIONAL PLUMBING REGULATIONS, AND THE AUTHORITY HAVING JURISDICTION.
  - THE MECHANICAL DRAWINGS SHOW GENERAL ARRANGEMENT ONLY. EXACT LOCATION SHALL AVOID INTERFERENCE WITH ELECTRICAL EQUIPMENT & REQUIRED ELECTRICAL CLEARANCES.
  - CONTRACTOR SHALL COORDINATE ALL PLUMBING WITH LIGHT FIXTURES, HVAC, AND STRUCTURAL TO ACCOMMODATE LIMITED CEILING SPACE.
  - FRESH AIR INTAKES TO BE MINIMUM 10' FROM ANY EXHAUST TERMINATION.
  - CONTRACTOR SHALL VISIT THE SITE AND VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS. NOTIFY THE A/E IMMEDIATELY OF ANY DISCREPANCIES.
  - COORDINATE NEW SERVICES WITH LOCAL UTILITIES.
  - PLUMBING CONTRACTOR TO PROVIDE VENTING FOR ALL FLOOR DRAINS, TRENCH DRAINS, AND FLOOR SINKS AS SHOWN OR AS REQUIRED BY CODE.
  - THE MECHANICAL CONTRACTOR IS RESPONSIBLE FOR THE TESTING & CLEANING OF EACH RESPECTIVE SYSTEM IN ACCORDANCE WITH APPLICABLE STATE & LOCAL CODES. TESTS SHALL BE PERFORMED IN THE PRESENCE OF THE AUTHORITY HAVING JURISDICTION. WRITTEN NOTIFICATION OF TEST, DATE, AND RESULTS SHALL BE FURNISHED TO THE ENGINEER BEFORE CONCEALING OR COVERING THE INSTALLATION. TESTS SHALL BE REPEATED UNTIL EACH SYSTEM IS PROVEN ACCEPTABLE.

- KEYNOTES
- THIS SPACE IS RESERVED FOR ELECTRICAL GEAR. PIPING AND EQUIPMENT SHALL NOT BE LOCATED IN FRONT OF OR ROUTED ABOVE ELECTRICAL PANELS. COORDINATE WITH DIVISION 26.
  - PLUMBING CONTRACTOR TO DISCONNECT & SITE UTILITY CONTRACTOR TO DEMO TEMPORARY WATER SERVICE IN SPRING OF 2026. GC TO REMOVE TEMPORARY DOG HOUSE AND PATCH CONCRETE.
  - SUMMER OF 2025 - PLUMBING CONTRACTOR TO CONNECT EXISTING 4" SANITARY SEWER TO NEW 6" SANITARY SEWER INSTALLED BY SITE UTILITY CONTRACTOR AT THIS LOCATION 5' OUTSIDE OF BUILDING. PC TO PROVIDE & INSTALL 2-WAY CLEANOUT AT THIS LOCATION. PC SHALL VERIFY EXACT LOCATION AND INVERT. SEE SITE PLAN FOR HOLDING TANK BY PC.

- SPECIAL NOTES
- ALL MECHANICAL SYSTEMS, EXCLUDING DROPS, TO BE INSTALLED AS HIGH AS POSSIBLE TO PROVIDE MAXIMUM CLEARANCES FOR OWNER.
  - FLOOR DRAINS & SINK LOCATIONS SHALL BE INSTALLED IN LOCATIONS PROPER TO ACCEPT INDIRECT DRAIN PIPING FROM BOILERS, WATER HEATER, RELIEFS, ETC. (TRIP HAZARDS FROM PIPING WILL NOT BE ACCEPTABLE).
  - ALL FLOOR CLEANOUTS TO BE LOCATED IN INCONSPICUOUS LOCATIONS. CLEANOUTS LOCATED IN DOORWAYS AND MIDDLE OF HALLWAYS WILL NOT BE ACCEPTABLE.



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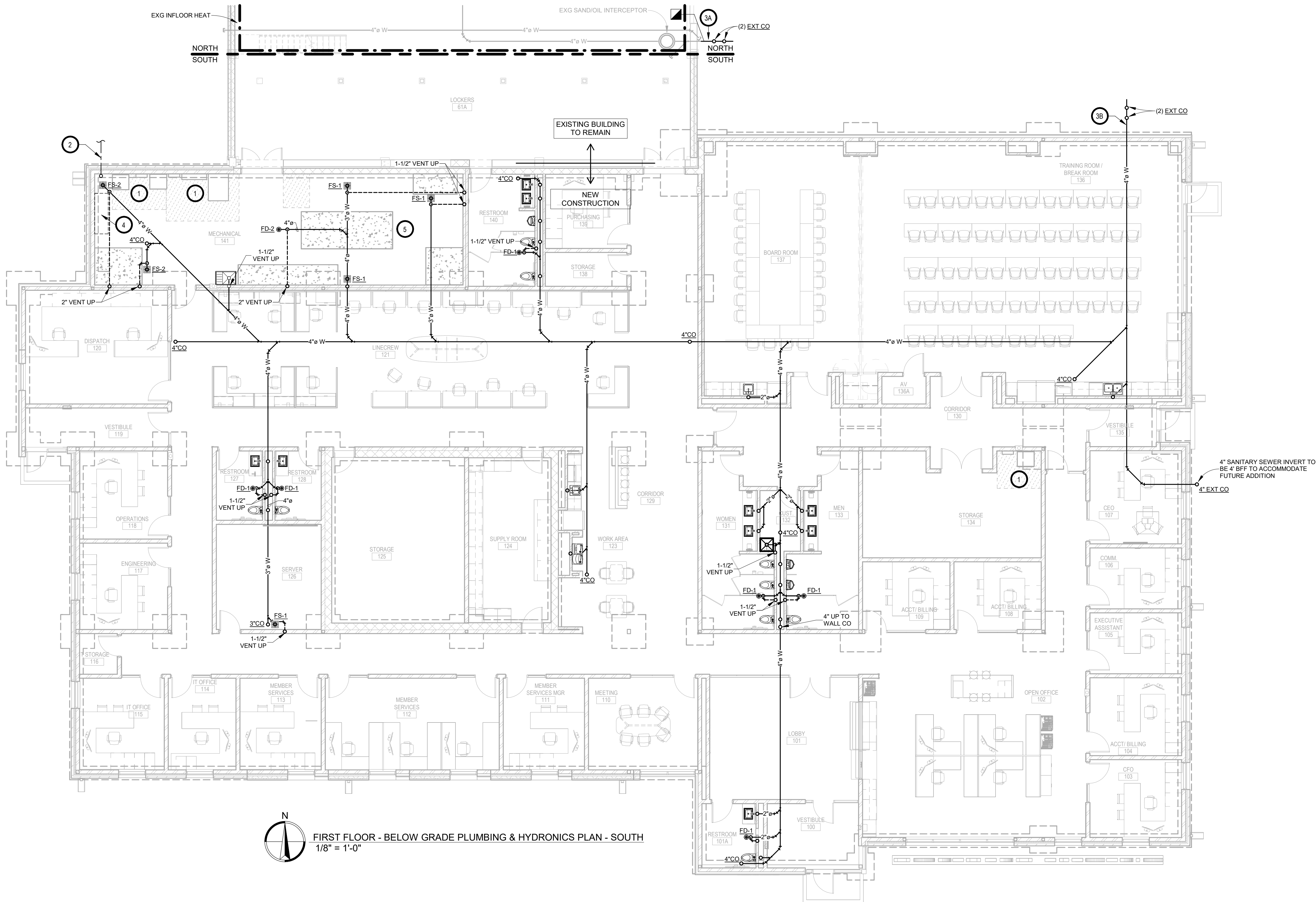
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PROJECT:  
NORTHERN ELECTRIC COOPERATIVE  
ABERDEEN, SOUTH DAKOTA

SHEET TITLE:  
BELOW GRADE PLUMBING & HYDRONICS PLAN - NORTH

# M400.N

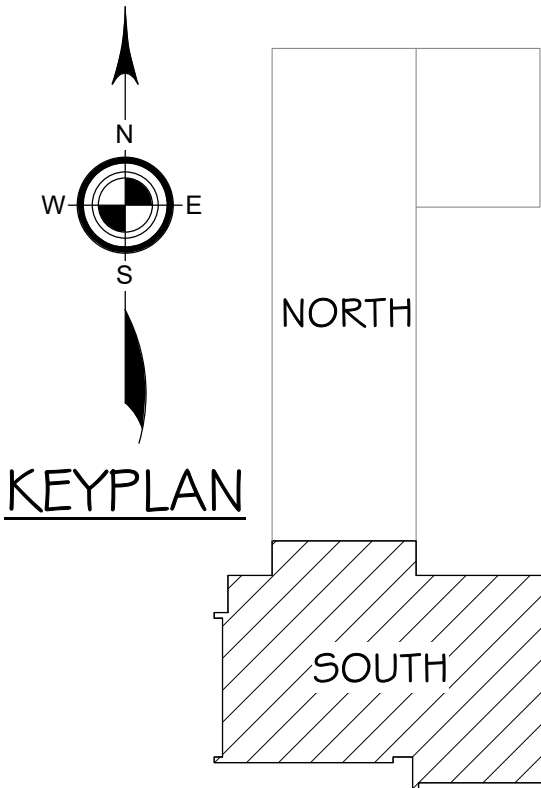




- GENERAL NOTES:
- A. ALL WORK SHALL BE PERFORMED IN A CLEAN AND WORKMANLIKE MANNER.
- B. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PATCHING ANY OPENINGS LEFT IN FLOORS, WALLS, AND CEILINGS THAT WERE CAUSED BY HIS/HER ACTIONS. PATCHING SHALL MATCH EXISTING SURFACE IN COLOR, TEXTURE AND QUALITY SO THAT PATCH IS INDISTINGUISHABLE FROM ORIGINAL SURFACE.
- C. ALL PENETRATIONS THROUGH DRAFT STOPS AND OTHER FIRE-RATED PARTITIONS SHALL BE FIRE STOPPED AS PER SPECIFICATIONS AND LOCAL CODES.
- D. ALL MECHANICAL WORK SHALL BE INSTALLED IN STRICT ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, NATIONAL PLUMBING REGULATIONS, AND THE AUTHORITY HAVING JURISDICTION.
- E. THE MECHANICAL DRAWINGS SHOW GENERAL ARRANGEMENT ONLY. EXACT LOCATION SHALL AVOID INTERFERENCE WITH ELECTRICAL EQUIPMENT & REQUIRED ELECTRICAL CLEARANCES.
- F. CONTRACTOR SHALL COORDINATE ALL PLUMBING WITH LIGHT FIXTURES, HVAC, AND STRUCTURAL TO ACCOMMODATE LIMITED CEILING SPACE.
- G. FRESH AIR INTAKES TO BE MINIMUM 10' FROM ANY EXHAUST TERMINATION.
- H. CONTRACTOR SHALL VISIT THE SITE AND VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS. NOTIFY THE A/E IMMEDIATELY OF ANY DISCREPANCIES.
- I. COORDINATE NEW SERVICES WITH LOCAL UTILITIES.
- J. PLUMBING CONTRACTOR TO PROVIDE VENTING FOR ALL FLOOR DRAINS, TRENCH DRAINS, AND FLOOR SINKS AS SHOWN OR AS REQUIRED BY CODE.
- K. THE MECHANICAL CONTRACTOR IS RESPONSIBLE FOR THE TESTING & CLEANING OF EACH RESPECTIVE SYSTEM IN ACCORDANCE WITH APPLICABLE STATE & LOCAL CODES. TESTS SHALL BE PERFORMED IN THE PRESENCE OF THE AUTHORITY HAVING JURISDICTION. WRITTEN NOTIFICATION OF TEST, DATE, AND RESULTS SHALL BE FURNISHED TO THE ENGINEER BEFORE CONCEALING OR COVERING THE INSTALLATION. TESTS SHALL BE REPEATED UNTIL EACH SYSTEM IS PROVEN ACCEPTABLE.

- KEYNOTES
1. THIS SPACE IS RESERVED FOR ELECTRICAL GEAR. PIPING AND EQUIPMENT SHALL NOT BE LOCATED IN FRONT OF OR ROUTED ABOVE ELECTRICAL PANELS. COORDINATE WITH DIVISION 26.
2. PLUMBING CONTRACTOR TO CONNECT NEW 1-1/2" DOMESTIC WATER SERVICE TO NEW 1-1/2" DOMESTIC WATER SERVICE INSTALLED BY SITE UTILITY CONTRACTOR AT THIS LOCATION 5' OUTSIDE OF BUILDING. FURNISH AND INSTALL THRUST BLOCKS AND/OR TIE-RODS IN ACCORDANCE WITH THE LOCAL WATER DEPARTMENT STANDARDS AND REGULATIONS. PLUMBING CONTRACTOR SHALL VERIFY EXACT LOCATION, AND INVERT.
- 3A. SUMMER OF 2025 - PLUMBING CONTRACTOR TO CONNECT EXISTING 4" SANITARY SEWER TO NEW 6" SANITARY SEWER INSTALLED BY SITE UTILITY CONTRACTOR AT THIS LOCATION 5' OUTSIDE OF BUILDING. PLUMBING CONTRACTOR TO PROVIDE & INSTALL 2-WAY 4" CLEAN OUTS AT THIS LOCATION. PC SHALL VERIFY EXACT LOCATION AND INVERT.
- 3B. SPRING OF 2025 - PLUMBING CONTRACTOR TO CONNECT NEW 4" SANITARY SEWER TO NEW 6" SANITARY SERVICE INSTALLED BY SITE UTILITY CONTRACTOR AT THIS LOCATION 5' OUTSIDE OF BUILDING. PLUMBING CONTRACTOR TO PROVIDE & INSTALL 2-WAY 4" CLEAN OUTS AT THIS LOCATION. PLUMBING CONTRACTOR SHALL VERIFY EXACT LOCATION, & INVERT.
4. GEOTHERMAL WELLFIELD CONTRACTOR TO EXTEND EXISTING 2" GEOTHERMAL WELLFIELD CIRCUITS INTO NEW MECHANICAL ROOM AND INSTALL AT NEW HEADERS. SEE GROUND-COUPLED HEAT EXCHANGER HEADER DETAIL, AND HEADER SUPPORT & STUB OUT DETAIL. AVOID ROUTING NEAR ELECTRICAL AND DOMESTIC WATER SERVICES AS MUCH AS POSSIBLE.
5. TYPICAL - POURED 4" HIGH CONCRETE HOUSEKEEPING PADS BY GC. MECHANICAL CONTRACTORS TO COORDINATE EXACT SIZE AND LOCATION..

- SPECIAL NOTES
- A. ALL MECHANICAL SYSTEMS, EXCLUDING DROPS, TO BE INSTALLED AS HIGH AS POSSIBLE TO PROVIDE MAXIMUM CLEARANCES FOR OWNER.
- B. FLOOR DRAINS & SINK LOCATIONS SHALL BE INSTALLED IN LOCATIONS PROPER TO ACCEPT INDIRECT DRAIN PIPING FROM BOILERS, WATER HEATER, RELIEFS, ETC. (TRIP HAZARDS FROM PIPING WILL NOT BE ACCEPTABLE).
- C. ALL FLOOR CLEANOUTS TO BE LOCATED IN INCONSPICUOUS LOCATIONS. CLEANOUTS LOCATED IN DOORWAYS AND MIDDLE OF HALLWAYS WILL NOT BE ACCEPTABLE.



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PROJECT:  
NORTHERN ELECTRIC COOPERATIVE  
ABERDEEN, SOUTH DAKOTA

SHEET TITLE:  
BELOW GRADE PLUMBING & HYDRONICS PLAN - SOUTH

M400.S

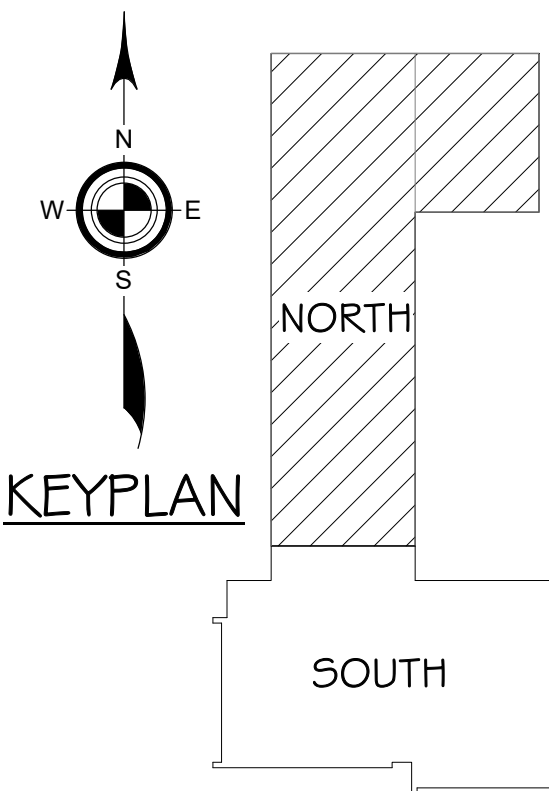
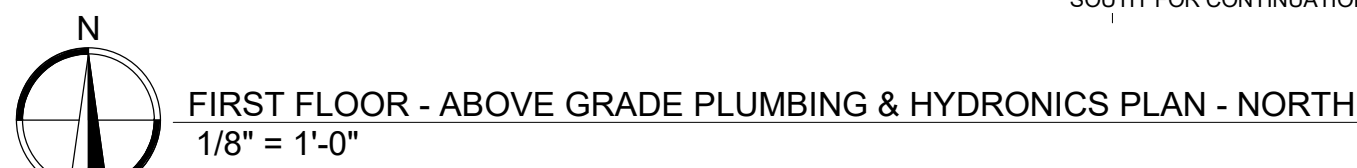


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- GENERAL NOTES:**
- A. ALL WORK SHALL BE PERFORMED IN A CLEAN AND WORKMANLIKE MANNER.**
  - B. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PATCHING ANY OPENINGS LEFT IN FLOORS, WALLS, AND CEILINGS THAT WERE CAUSED BY HIGHER TRADES. THE PATCHING MUST MATCH EXISTING SURFACE IN COLOR, TEXTURE AND QUALITY SO THAT SPACE IS INDISTINGUISHABLE FROM ORIGINAL SURFACE.**
  - C. ALL PENETRATIONS THROUGH DRAFT STOPS AND OTHER RATED PARTITIONS SHALL BE FIRE STOPPED AS PER SPECIFICATIONS AND LOCAL CODES.**
  - D. ALL MECHANICAL WORK SHALL BE INSTALLED IN STRICT ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, NATIONAL, PLUMBING REGULATIONS, AND THE AUTHORITY HAVING JURISDICTION.**
  - E. THE MECHANICAL DRAWINGS SHOW GENERAL EXHAUSTION OF ALL ROOMS. CONTRACTOR SHALL AVOID INTERFERENCE WITH ELECTRICAL EQUIPMENT & REQUIRED ELECTRICAL CLEARANCES.**
  - F. CONTRACTOR SHALL COORDINATE ALL PLUMBING WITH LIGHT FIXTURES, HVAC, AND STRUCTURAL TO ACCOMMODATE UNLIMITED CEILING SPACE.**
  - G. FRESH AIR INTAKES TO BE MINIMUM 10' FROM ANY EXHAUST TERMINATION.**
  - H. CONTRACTOR SHALL VISIT THE SITE AND VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS. NOTIFY THE A/E IMMEDIATELY OF ANY DISCREPANCIES.**
  - I. COORDINATE NEW SERVICES WITH LOCAL UTILITIES.**
  - J. PLUMBING CONTRACTOR TO PROVIDE VENTING FOR ALL FLOOD DRAINS, TRENCH DRAINS, AND FLOOR SINKS AS SHOWN OR AS REQUIRED BY CODE.**
  - K. THE MECHANICAL CONTRACTOR IS RESPONSIBLE FOR THE TESTING & CLEANING OF EACH RESPECTIVE SYSTEM IN ACCORDANCE WITH APPLICABLE STATE & LOCAL CODES. TESTS SHALL BE PERFORMED IN THE PRESENCE OF THE AUTHORITY HAVING JURISDICTION. WRITTEN NOTIFICATION OF TEST, DATE, AND RESULTS SHALL BE FURNISHED TO THE ENGINEER BEFORE CONCEALING OR COVERING THE INSTALLATION. TESTS SHALL BE REPEATED UNTIL EACH SYSTEM IS PROVEN**

## KEYNOTES

1. THIS SPACE IS RESERVED FOR ELECTRICAL GEAR. PIPING AND EQUIPMENT SHALL NOT BE LOCATED IN FRONT OF OR ROUTED ABOVE ELECTRICAL PANELS. COORDINATE WITH DIVISION 26.
2. SEE EXISTING FAN COIL PIPING DETAIL.
3. NOT USED.
4. TYPICAL - PC TO ROUTE 1-1/2" SCH 40 PVC TO EXISTING MS SINK FROM DEHUMIDIFIERS. COORDINATE LOCATION WITH OWNER. (DEHUMIDIFIER D-1 AND D-2 PROVIDED AND INSTALLED BY V.C.)
5. CONNECT NEW HEATING PIPING TO EXISTING RUNNOUTS TO EXISTING IN-FLOOR HEAT MANIFOLDS AT THIS APPROXIMATE LOCATION. SEE MODIFICATIONS TO EXISTING IN-FLOOR HEAT MANIFOLD CONTROL & PIPING DIAGRAM.
6. SPRING 2028 - DEMO TEMPORARY 1-1/2" DCW PIPING AND GCP AT RELOCATED.



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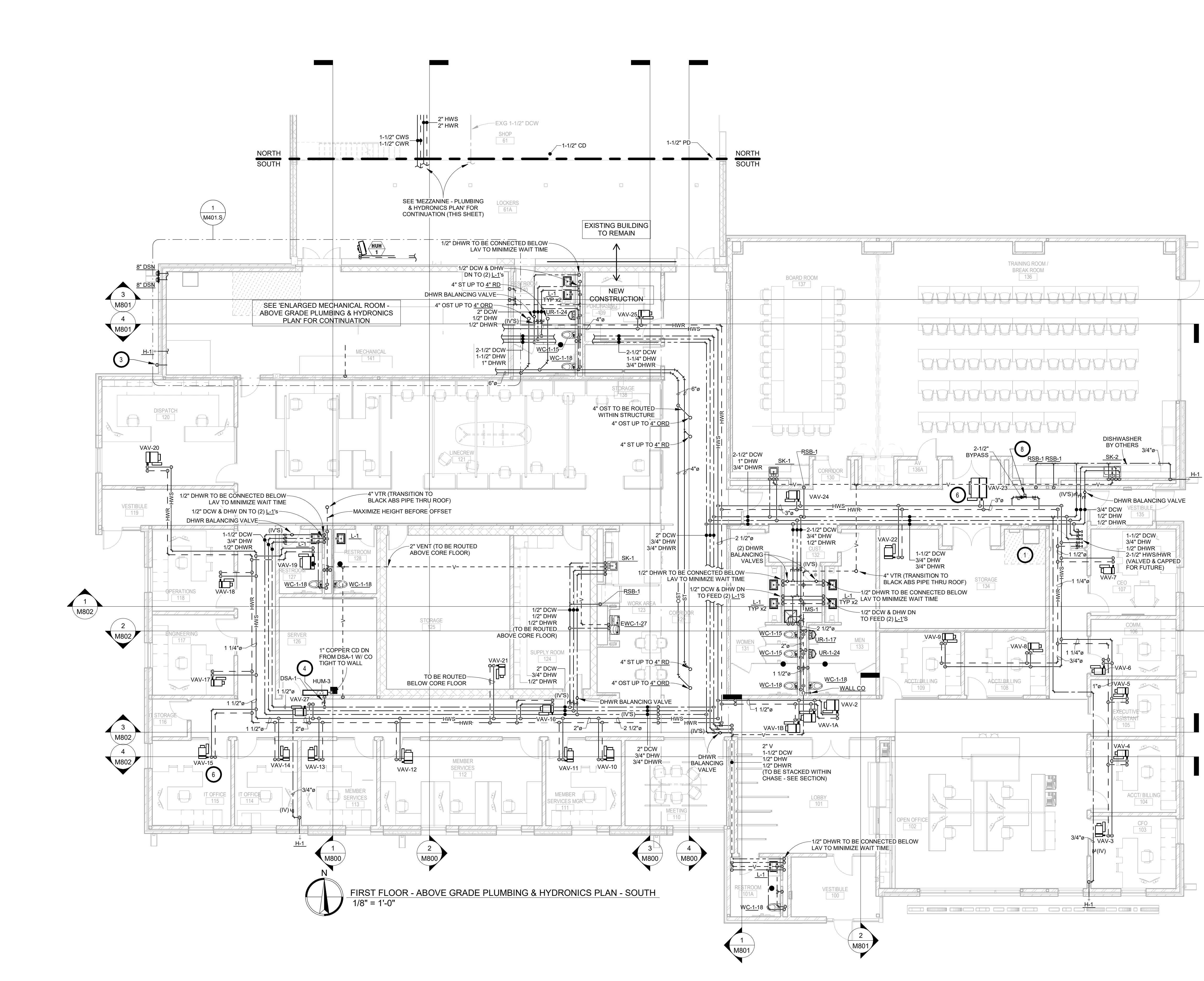
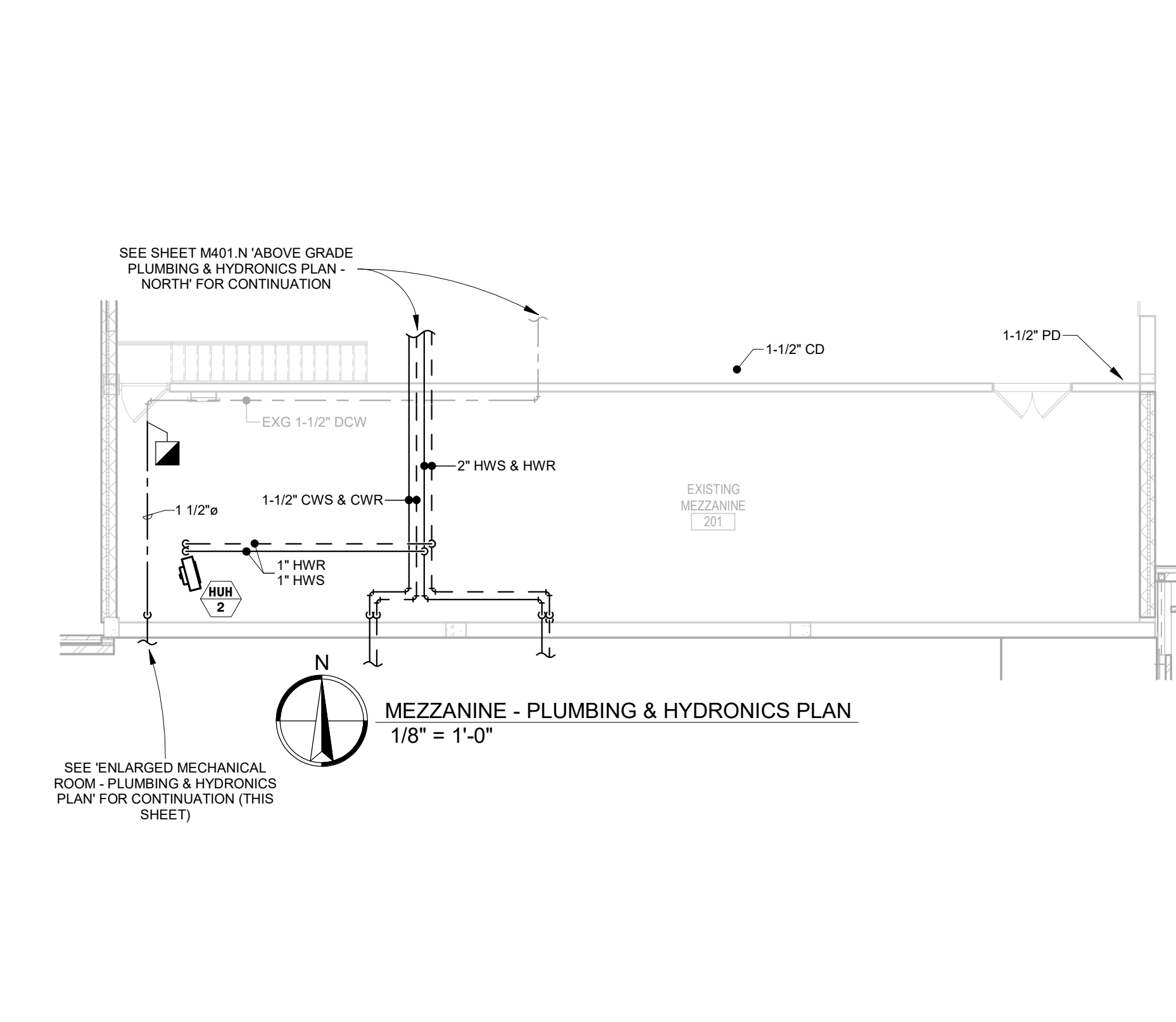
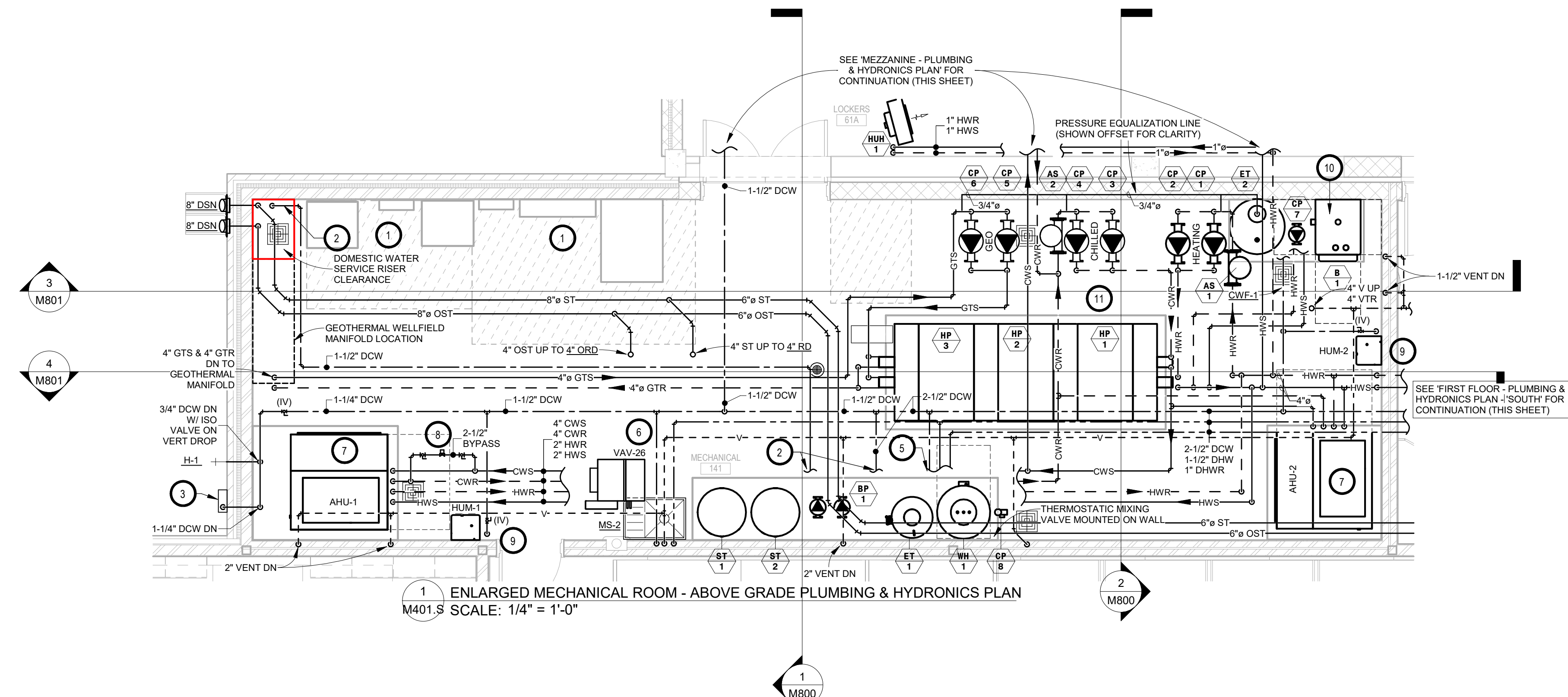
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PROJECT:  
NORTHERN ELECTRIC  
COOPERATIVE  
ABERDEEN, SOUTH DAKOTA

**SHEET TITLE:**  
ABOVE GRADE PLUMBING &  
HYDRONICS PLAN - NORTH

M401.N





GENERAL NOTES:

A. ALL WORK SHALL BE PERFORMED IN A CLEAN AND WORKMANLIKE MANNER.

B. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PATCHING ANY OPENINGS LEFT IN FLOORS, WALLS, AND CEILINGS THAT WERE CAUSED BY HIS/HER ACTIONS. PATCHING SHALL MATCH EXISTING SURFACE IN COLOR, TEXTURE AND QUALITY SO THAT PATCH IS INDISTINGUISHABLE FROM ORIGINAL SURFACE.

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F. CONTRACTOR SHALL COORDINATE ALL PLUMBING WITH LIGHT FIXTURES, HVAC, AND STRUCTURAL TO ACCOMMODATE LIMITED CEILING SPACE.

G. FRESH AIR INTAKES TO BE MINIMUM 10' FROM ANY EXHAUST TERMINATION.

H. CONTRACTOR SHALL VISIT THE SITE AND VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS. NOTIFY THE A/E IMMEDIATELY OF ANY DISCREPANCIES.

I. COORDINATE NEW SERVICES WITH LOCAL UTILITIES.

J. PLUMBING CONTRACTOR TO PROVIDE VENTING FOR ALL FLOOR DRAINS, TRENCH DRAINS, AND FLOOR SINKS AS SHOWN OR AS REQUIRED BY CODE.

K. THE MECHANICAL CONTRACTOR IS RESPONSIBLE FOR THE TESTING & CLEANING OF EACH RESPECTIVE SYSTEM IN ACCORDANCE WITH APPLICABLE STATE & LOCAL CODES. TESTS SHALL BE PERFORMED IN THE PRESENCE OF THE AUTHORITY HAVING JURISDICTION. WRITTEN NOTIFICATION OF TEST, DATE, AND RESULTS SHALL BE FURNISHED TO THE ENGINEER BEFORE CONCEALING OR COVERING THE INSTALLATION. TESTS SHALL BE REPEATED UNTIL EACH SYSTEM IS PROVEN ACCEPTABLE.

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KEYNOTES:

1. THIS SPACE IS RESERVED FOR ELECTRICAL GEAR. PIPING AND EQUIPMENT SHALL NOT BE LOCATED IN FRONT OF OR ROUTED ABOVE ELECTRICAL PANELS. COORDINATE WITH DIVISION 26.

2. SEE DOMESTIC WATER HEADER & BOOSTER PUMP PIPING DIAGRAM.

3. PLUMBING CONTRACTOR TO PROVIDE & INSTALL LAWN IRRIGATION VACUUM BREAKER AT THIS LOCATION. SEE PRESSURE VACUUM BREAKER DETAIL. LAWN IRRIGATION TO BE BY OTHERS. CONTROLLER IN MECHANICAL 141 BY OWNER.

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SPECIAL NOTES:

A. ALL MECHANICAL SYSTEMS, EXCLUDING DROPS, TO BE INSTALLED AS HIGH AS POSSIBLE TO PROVIDE MAXIMUM CLEARANCES FOR OWNER.

B. CONDENSATE PIPING WORK SHALL BE BY VC AND NOT THIS CONTRACTOR. SEE HVAC PLANS SHOWING EXISTING CONDENSATE PIPING.

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SHEET TITLE:

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## SICHMELLER ENGINEERING

Mechanical & Electrical Engineering

801 Railroad Ave. SE  
Aberdeen, SD 57401  
Phone: 605-225-4344

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SE PROJECT NO: 240700836

ISSUE:  
5/15/2025 100% CONSTRUCTION DOCUMENTS

REVISION SCHEDULE:

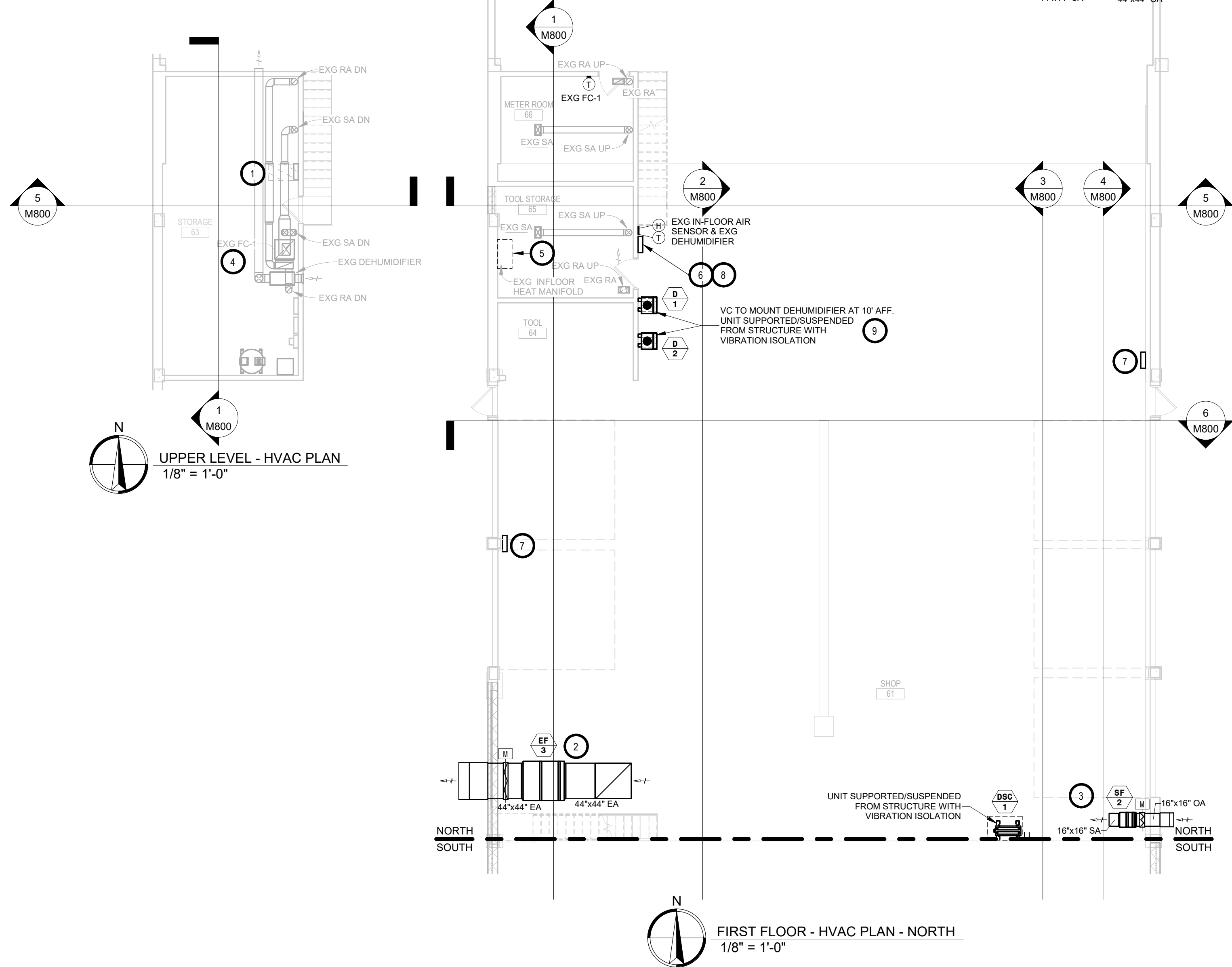
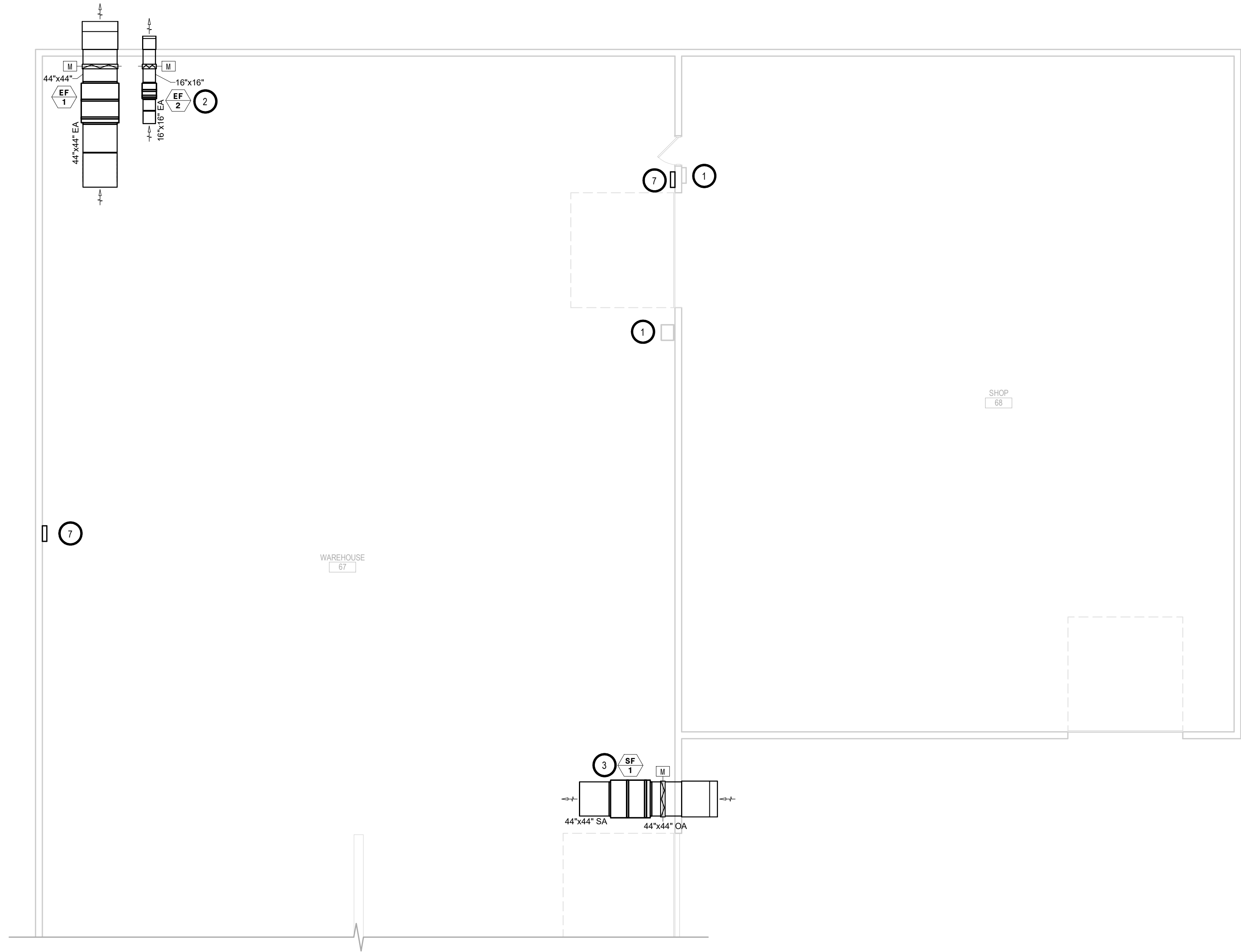
REV. #	REV. DSC.	REV. DATE
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PROJECT:  
NORTHERN ELECTRIC COOPERATIVE  
ABERDEEN, SOUTH DAKOTA

SHEET TITLE:  
ABOVE GRADE PLUMBING & HYDRONICS PLAN - SOUTH

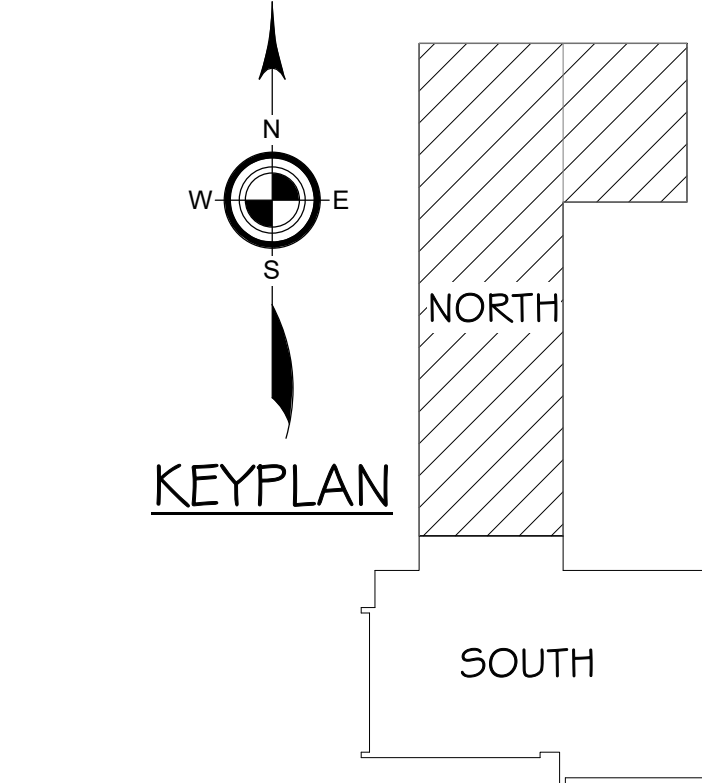
M401.S





- GENERAL NOTES:
- ALL WORK SHALL BE PERFORMED IN A CLEAN AND WORKMANLIKE MANNER.
  - THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PATCHING ANY OPENINGS LEFT IN FLOORS, WALLS, AND CEILINGS THAT WERE CAUSED BY HIS/HER ACTIONS. PATCHING SHALL MATCH EXISTING SURFACE IN COLOR, TEXTURE AND QUALITY, SO THAT PATCH IS INDISTINGUISHABLE FROM ORIGINAL SURFACE.
  - ALL PENETRATIONS THROUGH DRAFT STOPS AND OTHER FIRE-RATED PARTITIONS SHALL BE FIRE STOPPED AS PER SPECIFICATIONS AND LOCAL CODES.
  - ALL MECHANICAL WORK SHALL BE INSTALLED IN STRICT ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, NATIONAL PLUMBING REGULATIONS, AND THE AUTHORITY HAVING JURISDICTION.
  - THE MECHANICAL DRAWINGS SHOW GENERAL ARRANGEMENT ONLY. EXACT LOCATION SHALL AVOID INTERFERENCE WITH ELECTRICAL EQUIPMENT & REQUIRED ELECTRICAL CLEARANCES.
  - COORDINATE INSTALLATION OF ALL HVAC WITH PLUMBING, LIGHT FIXTURES, AND STRUCTURE TO ACCOMMODATE LIMITED CEILING SPACE.
  - FOR SIMPLICITY DUCT INSULATION NOT SHOWN, DUCT SIZES INDICATED ON DRAWING ARE INTERNAL DIMENSIONS. AS NEEDED ADJUST ACTUAL SIZE FOR INSULATION THICKNESS AS SPECIFIED.
  - ALL FLEXIBLE DUCTWORK AND CONNECTORS BETWEEN THE LOW PRESSURE DUCTWORK AND THE DIFFUSERS SHALL BE THE SIZE OF THE DIFFUSER INLET.
  - PROVIDE & INSTALL VIBRATION ISOLATION ON ALL HANGING EQUIPMENT. PROVIDE & INSTALL VIBRATION ABSORPTION MOUNTING PADS ON ALL EQUIPMENT MOUNTED ON FLOOR.
  - PROVIDE AND INSTALL DURODINE FLEX DUCT CONNECTORS AT ALL EQUIPMENT CONNECTIONS.
  - ALL DUCTWORK TO BE SEALED AIRTIGHT.
  - FRESH AIR INTAKES TO BE MINIMUM 10' FROM ANY EXHAUST TERMINATION.

- KEYNOTES:
- THIS SPACE IS RESERVED FOR ELECTRICAL GEAR. PIPING AND EQUIPMENT SHALL NOT BE LOCATED IN FRONT OF OR ROUTED ABOVE ELECTRICAL PANELS. COORDINATE WITH DIVISION 26.
  - TYPICAL - VC TO PROVIDE & INSTALL IN-LINE EXHAUST FAN MOUNTED AS HIGH AS POSSIBLE FROM ROOF STRUCTURE. PROVIDE FULL SIZE DUCT WITH ELBOW UP AND EXPANDED METAL SCREEN FOR AIR INLET. PROVIDE & INSTALL FULL SIZE 45 DEGREE HOOD WITH EXPANDED METAL SCREEN ON BUILDING EXTERIOR FOR AIR DISCHARGE. ARCHITECT TO SELECT HOOD COLOR. SEE EXHAUST/SUPPLY FAN SCHEDULE FOR ADDITIONAL REQUIREMENTS.
  - TYPICAL - VC TO PROVIDE & INSTALL IN-LINE SUPPLY FAN MOUNTED AS HIGH AS POSSIBLE FROM ROOF STRUCTURE. PROVIDE & INSTALL FULL SIZE 90 DEGREE HOOD WITH EXPANDED METAL SCREEN ON BUILDING EXTERIOR FOR AIR INTAKE. ARCHITECT TO SELECT HOOD COLOR. PROVIDE FULL SIZE DUCT WITH EXPANDED METAL SCREEN FOR AIR DISCHARGE. SEE EXHAUST/SUPPLY FAN SCHEDULE FOR ADDITIONAL REQUIREMENTS.
  - SEE EXISTING FAN COIL UNIT COIL PIPING DETAIL.
  - TC CONTRACTOR TO INSTALL NEW SLAB STAT. UTILIZE EXISTING SLEEVE. SEE SLAB STAT DETAIL.
  - TC CONTRACTOR TO PROVIDE & INSTALL BRASCH GDCP-TOUCH N02 & CO GAS DETECTOR CONTROL PANEL. SEE CONTROL SEQUENCES IN SPECIFICATIONS.
  - TC CONTRACTOR TO PROVIDE & INSTALL BRASCH GEN2-NOM-REMOTE EXPANSION PACK REMOTE DETECTOR WITH INTEGRAL N02 & CO SENSORS. INSTALL 5'-7" AFF. WHERE INSTALLED BEHIND PALLET RACKING. PROVIDE & INSTALL METAL WIRE SHIELDING CAGE AROUND THE UNIT FOR PROTECTION.
  - TC CONTRACTOR TO PROVIDE & INSTALL LIGHTED PILOT SWITCH NEAR MAIN DETECTOR TO OVERRIDE FANS ON.
  - VC TO PROVIDE & INSTALL DEHUMIDIFIER D-1 AND D-2. PC TO PIPE CONDENSATE FROM D-1 & D-2 TO EXISTING MOP SINK.



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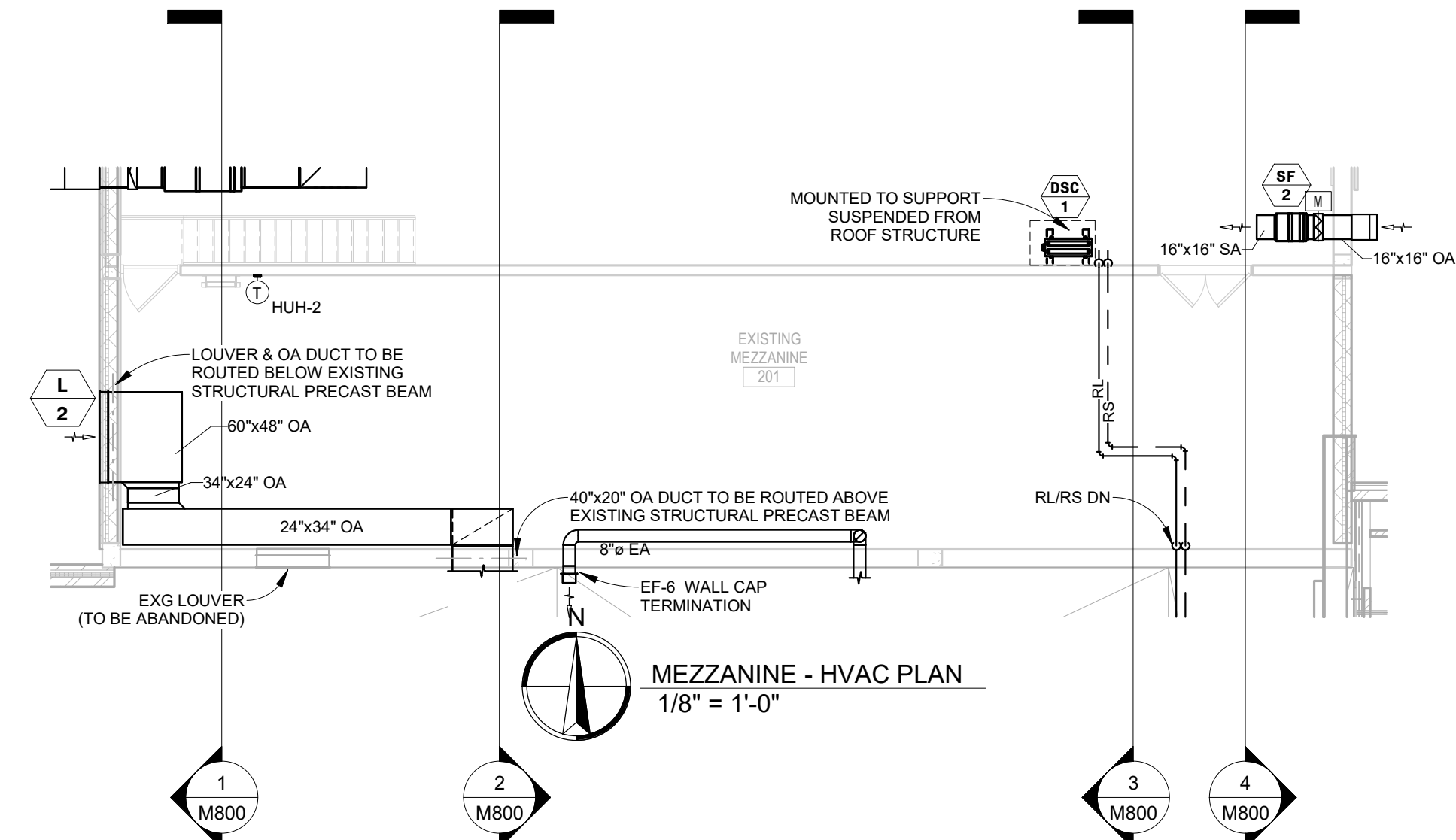
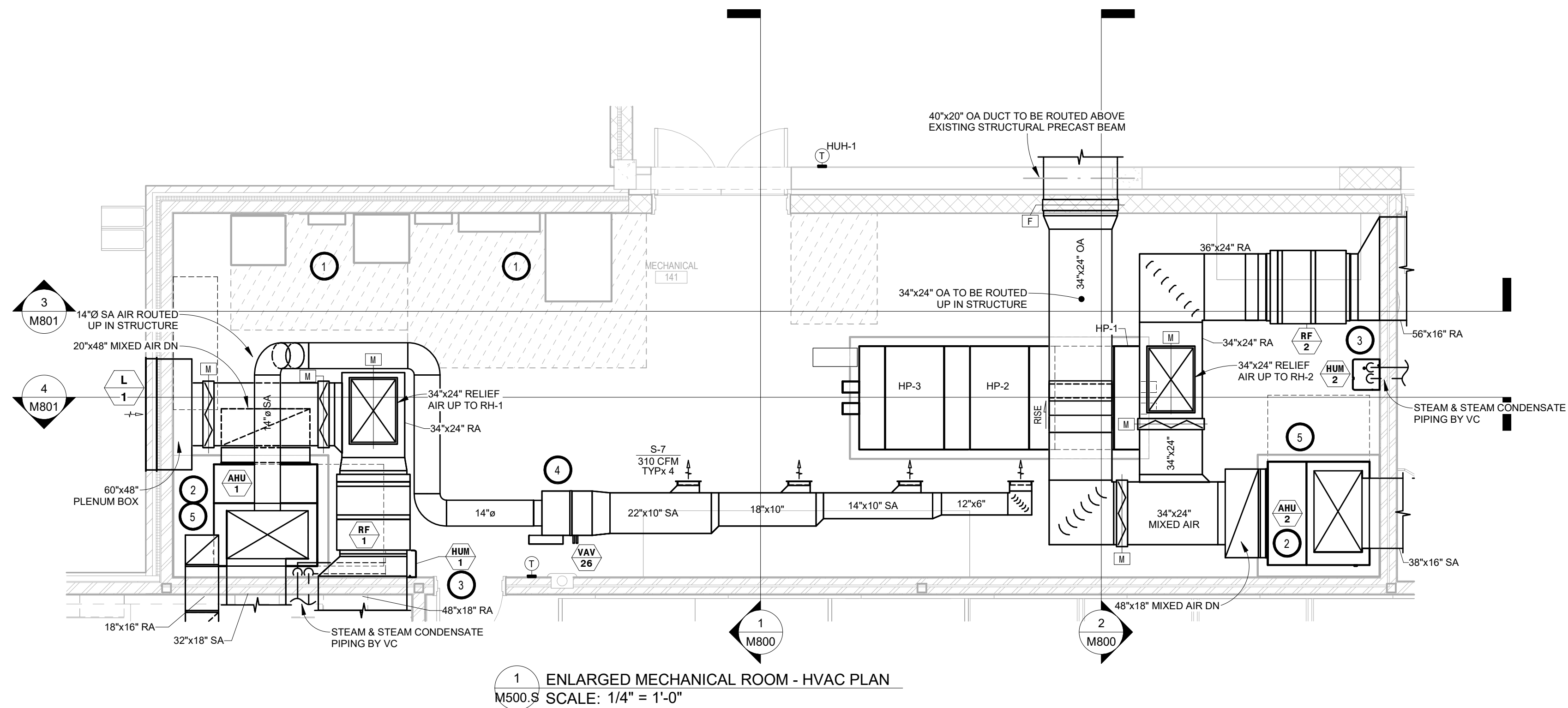
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PROJECT:  
NORTHERN ELECTRIC COOPERATIVE  
ABERDEEN, SOUTH DAKOTA

SHEET TITLE:  
HVAC PLAN - NORTH

M500.N





#### GENERAL NOTES:

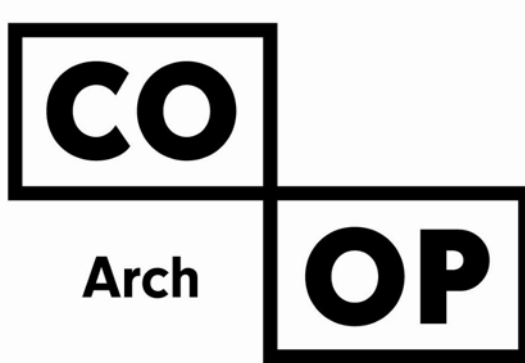
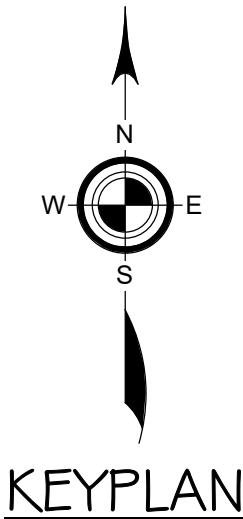
- ALL WORK SHALL BE PERFORMED IN A CLEAN AND WORKMANLIKE MANNER.
- THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PATCHING ANY OPENINGS LEFT IN FLOORS, WALLS, AND CEILINGS THAT WERE CAUSED BY HIS/HER ACTIONS. PATCHING SHALL MATCH EXISTING SURFACE IN COLOR, TEXTURE AND QUALITY, SO THAT PATCH IS INDISTINGUISHABLE FROM ORIGINAL SURFACE.
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- ALL FLEXIBLE DUCTWORK AND CONNECTORS BETWEEN THE LOW PRESSURE DUCTWORK AND THE DIFFUSERS SHALL BE THE SIZE OF THE DIFFUSER INLET.
- PROVIDE & INSTALL VIBRATION ISOLATION ON ALL HANGING EQUIPMENT. PROVIDE & INSTALL VIBRATION ABSORPTION MOUNTING PADS ON ALL EQUIPMENT MOUNTED ON FLOOR.
- PROVIDE AND INSTALL DURODINE FLEX DUCT CONNECTORS AT ALL EQUIPMENT CONNECTIONS.
- ALL DUCTWORK TO BE SEALED AIRTIGHT.
- FRESH AIR INTAKES TO BE MINIMUM 10' FROM ANY EXHAUST TERMINATION.

#### KEYNOTES:

- THIS SPACE IS RESERVED FOR ELECTRICAL GEAR. PIPING AND EQUIPMENT SHALL NOT BE LOCATED IN FRONT OF OR ROUTED ABOVE ELECTRICAL PANELS. COORDINATE WITH DIVISION 26.
- VC TO PROVIDE & INSTALL VERTICAL AIR HANDLING UNIT SET ON CONCRETE EQUIPMENT PAD BY GC.
- VC TO PROVIDE & INSTALL WALL MOUNTED ELECTRIC STEAM HUMIDIFIER SYSTEM. ROUTE/INSTALL ALL STEAM, STEAM CONDENSATE AND DRAINAGE TO FLOOR SINK AS PER THE MANUFACTURERS INSTRUCTIONS. (GENERAL ROUTING SHOWN) FOR A COMPLETE AND OPERATING SYSTEM. VC TO PROVIDE WATER FILTER, PC TO INSTALL.
- TYPICAL - SEE VAV BOX DUCT CONNECTION DETAIL.
- TYPICAL - SEE TYPICAL DIFFUSER CONNECTION DETAIL.
- TYPICAL - SEE INSULATED RETURN ELBOW DETAIL.
- TYPICAL - SEE INSULATED TRANSFER DUCT DETAIL.
- SEE HUMIDIFIER DISTRIBUTOR & CONDENSATE DRAIN DETAIL.
- TYPICAL - POURED 4" HIGH CONCRETE HOUSEKEEPING PADS BY GC. MECHANICAL CONTRACTORS TO COORDINATE EXACT SIZE AND LOCATION.

#### SPECIAL NOTES:

- ALL MECHANICAL SYSTEMS, EXCLUDING DROPS, TO BE INSTALLED AS HIGH AS POSSIBLE TO PROVIDE MAXIMUM CLEARANCES FOR OWNER.
- ALL TRANSFERS TO BE 12"x12", UNLESS OTHERWISE NOTED.



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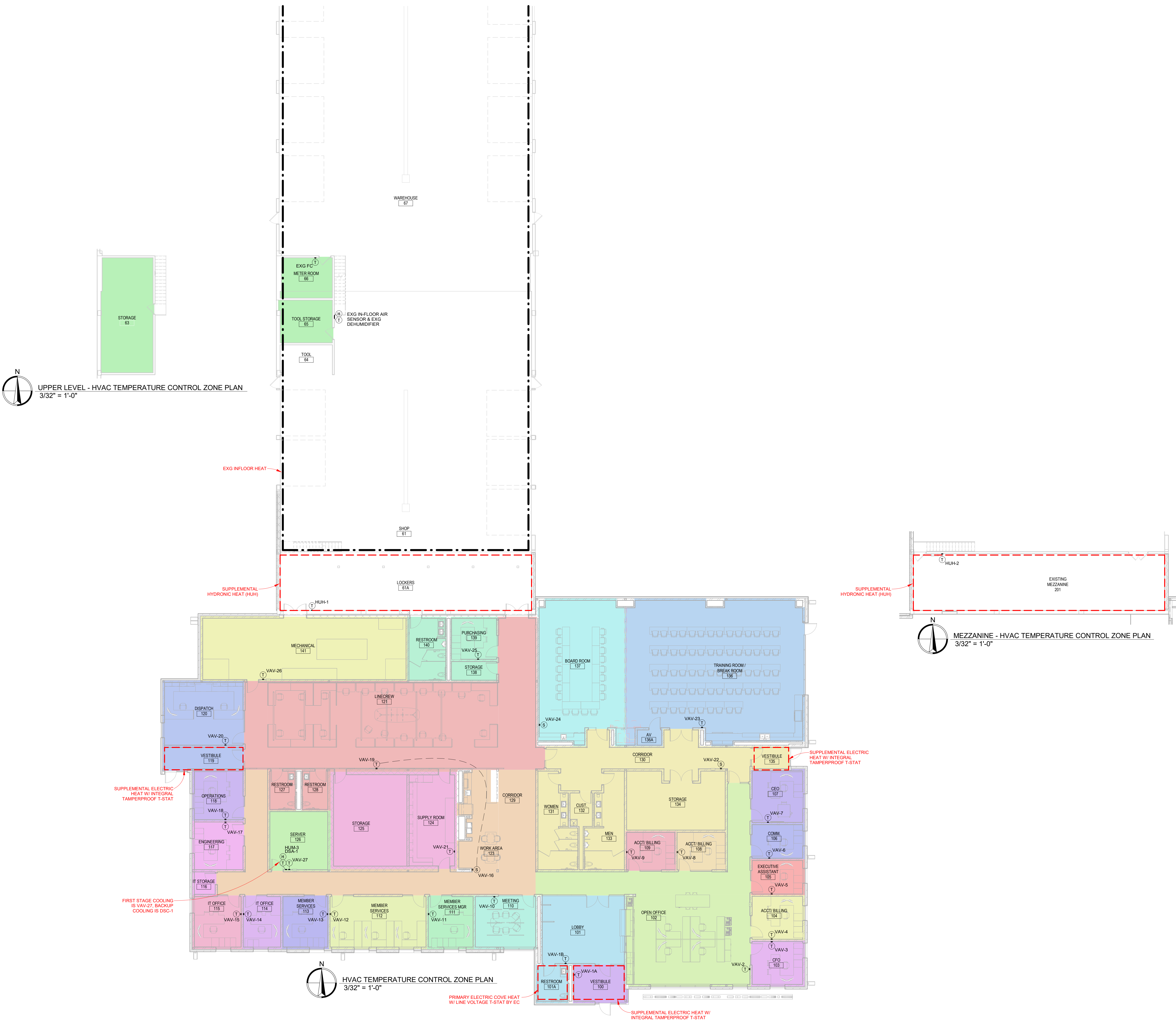
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COOPERATIVE  
ABERDEEN, SOUTH DAKOTA

#### SHEET TITLE:

HVAC PLAN - SOUTH

# M500.S





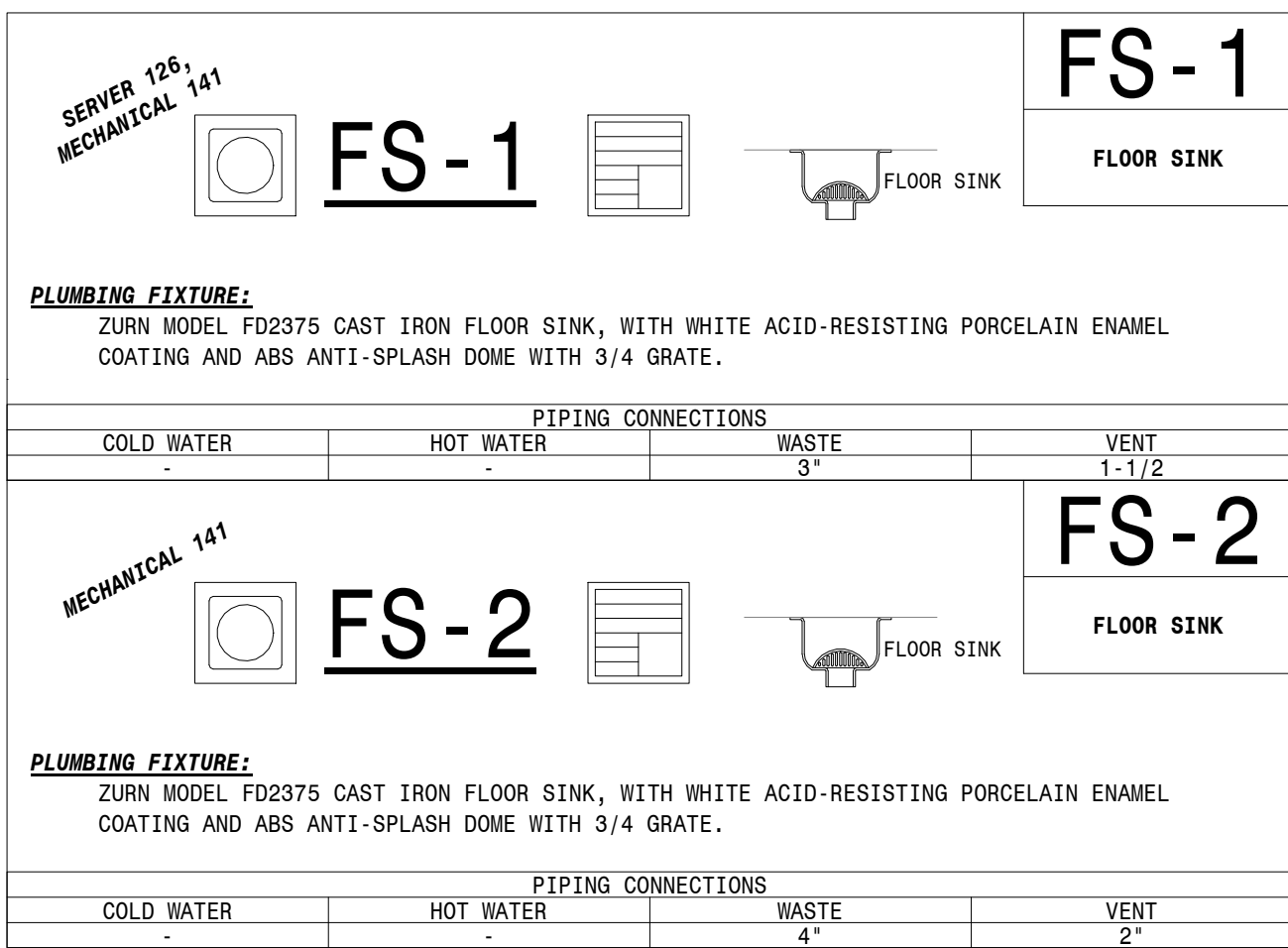
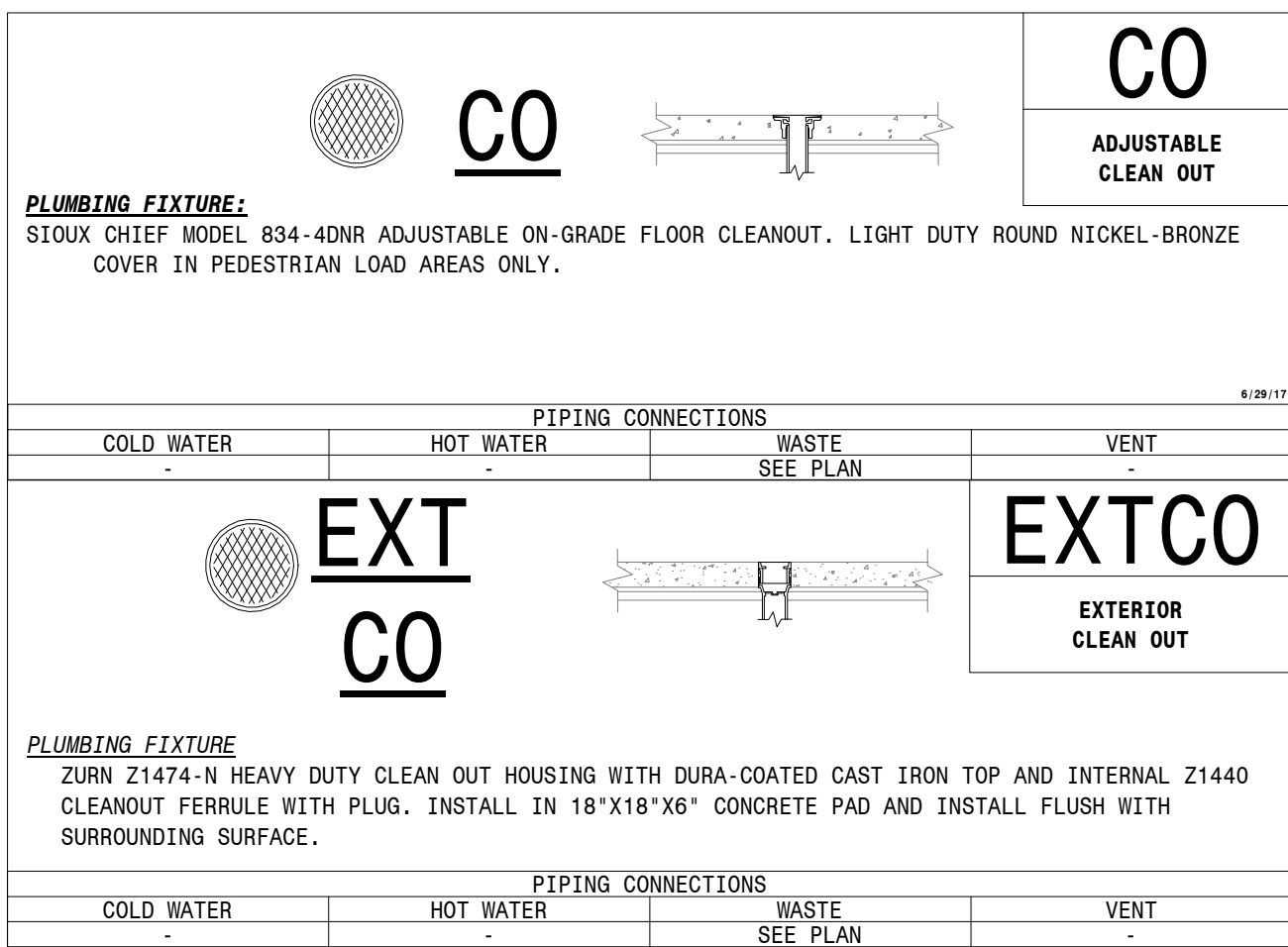
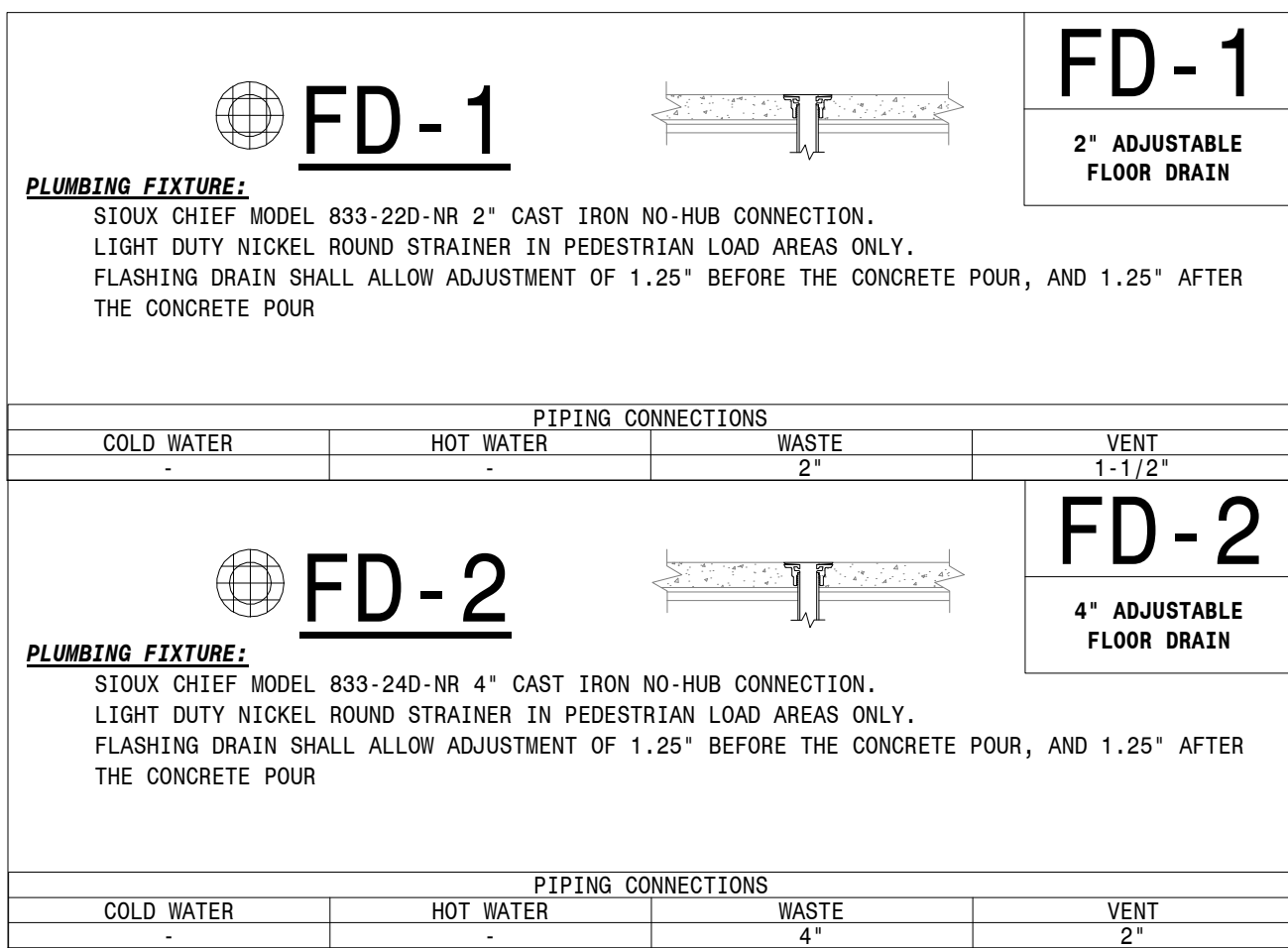
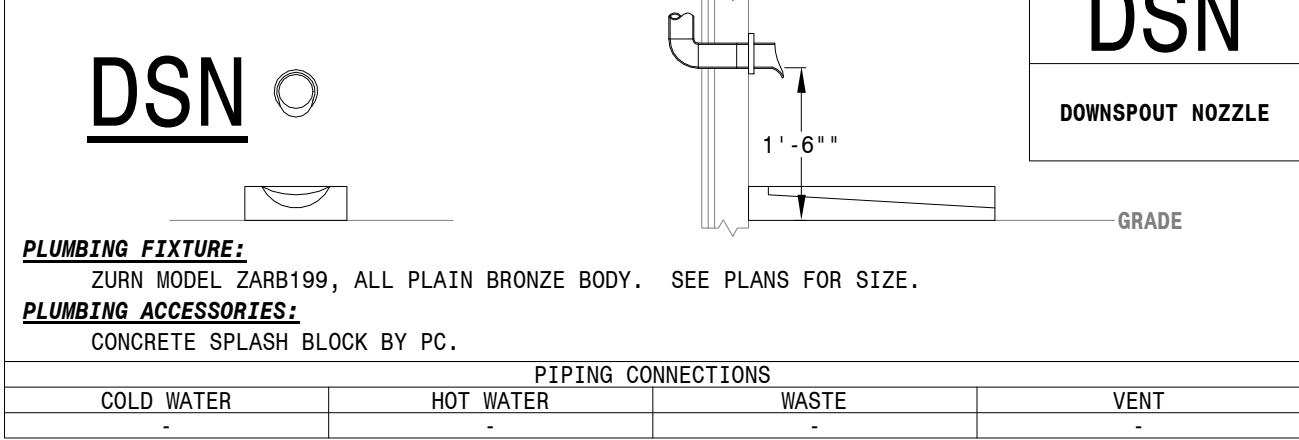
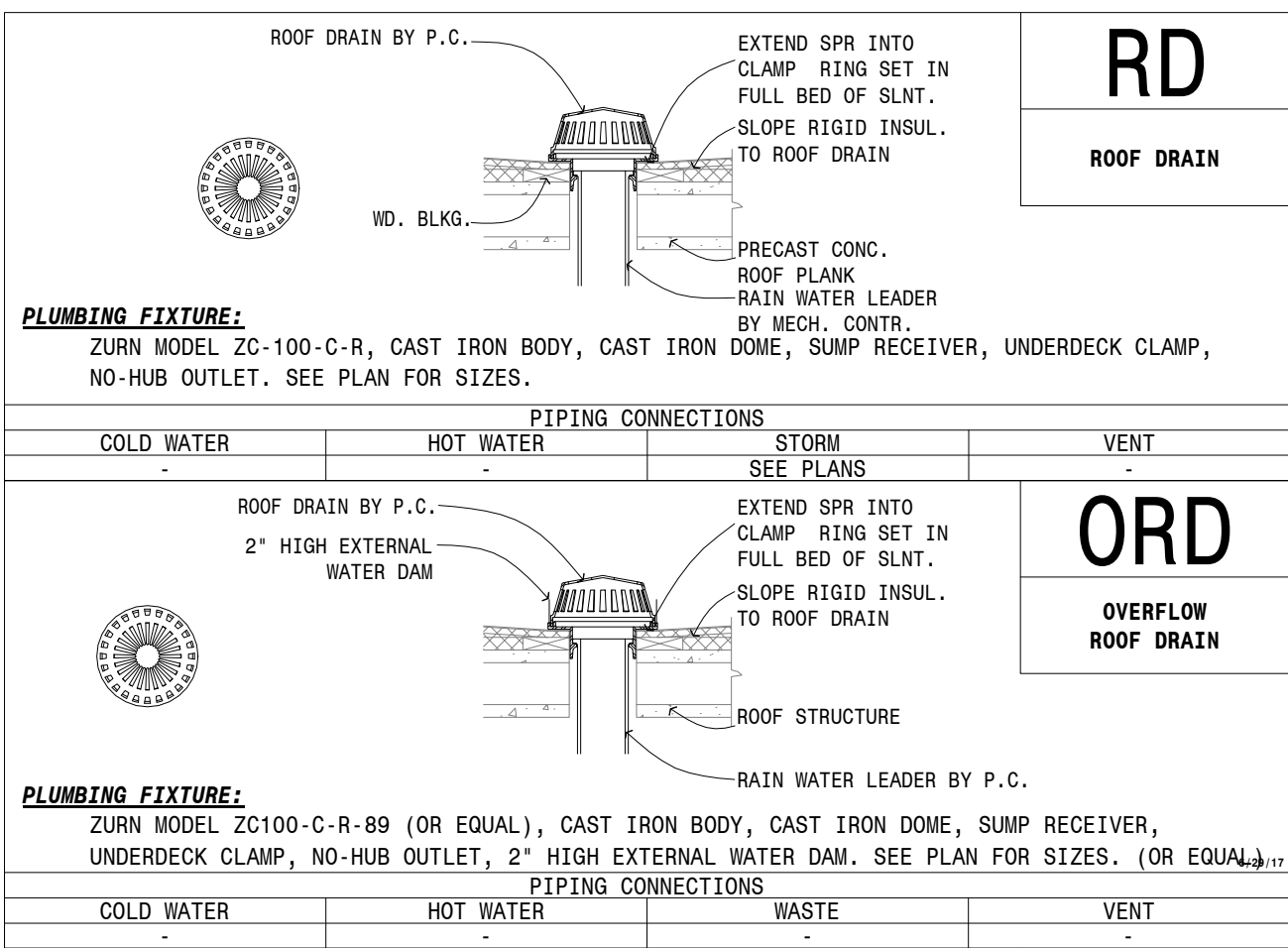
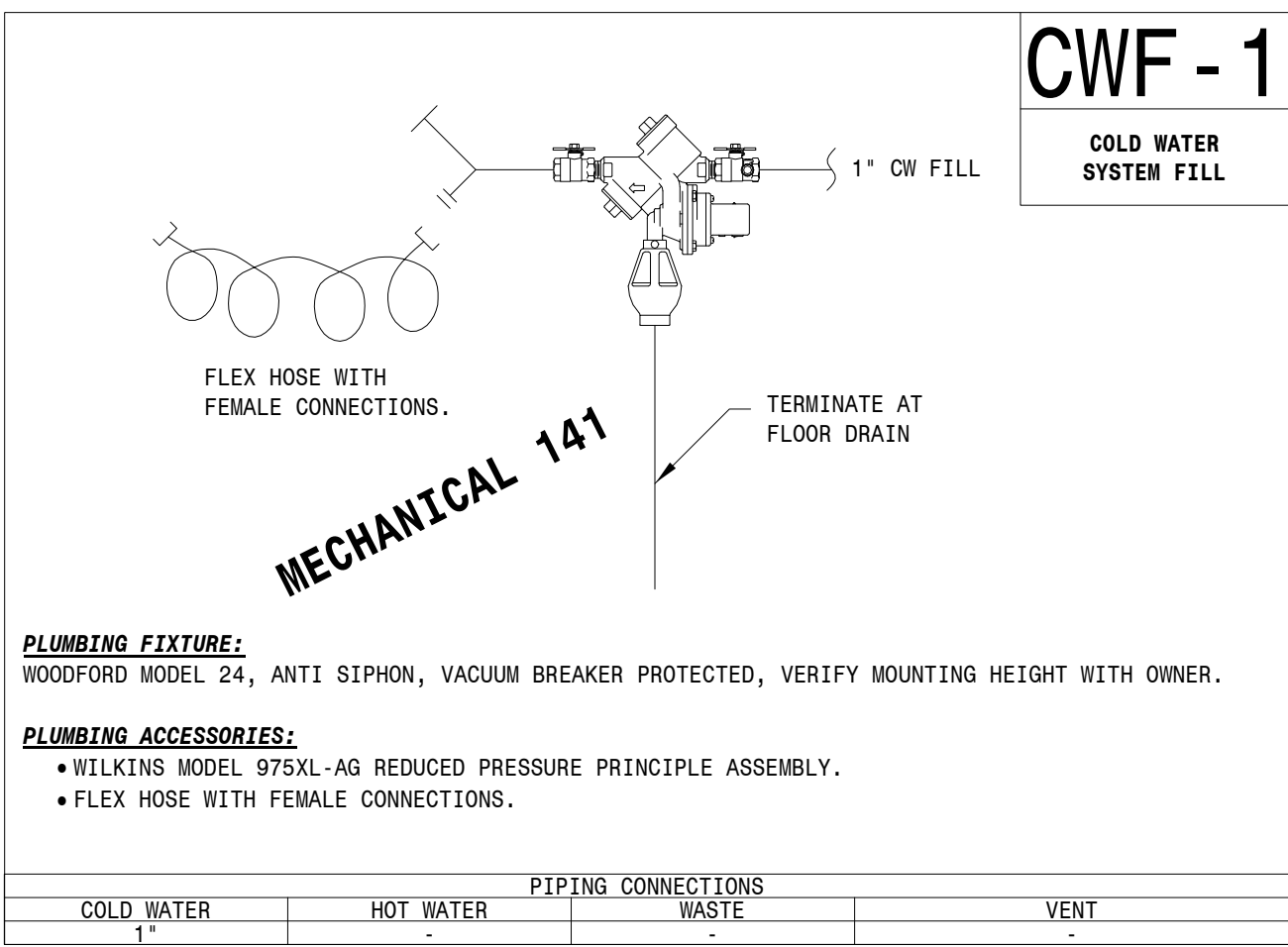
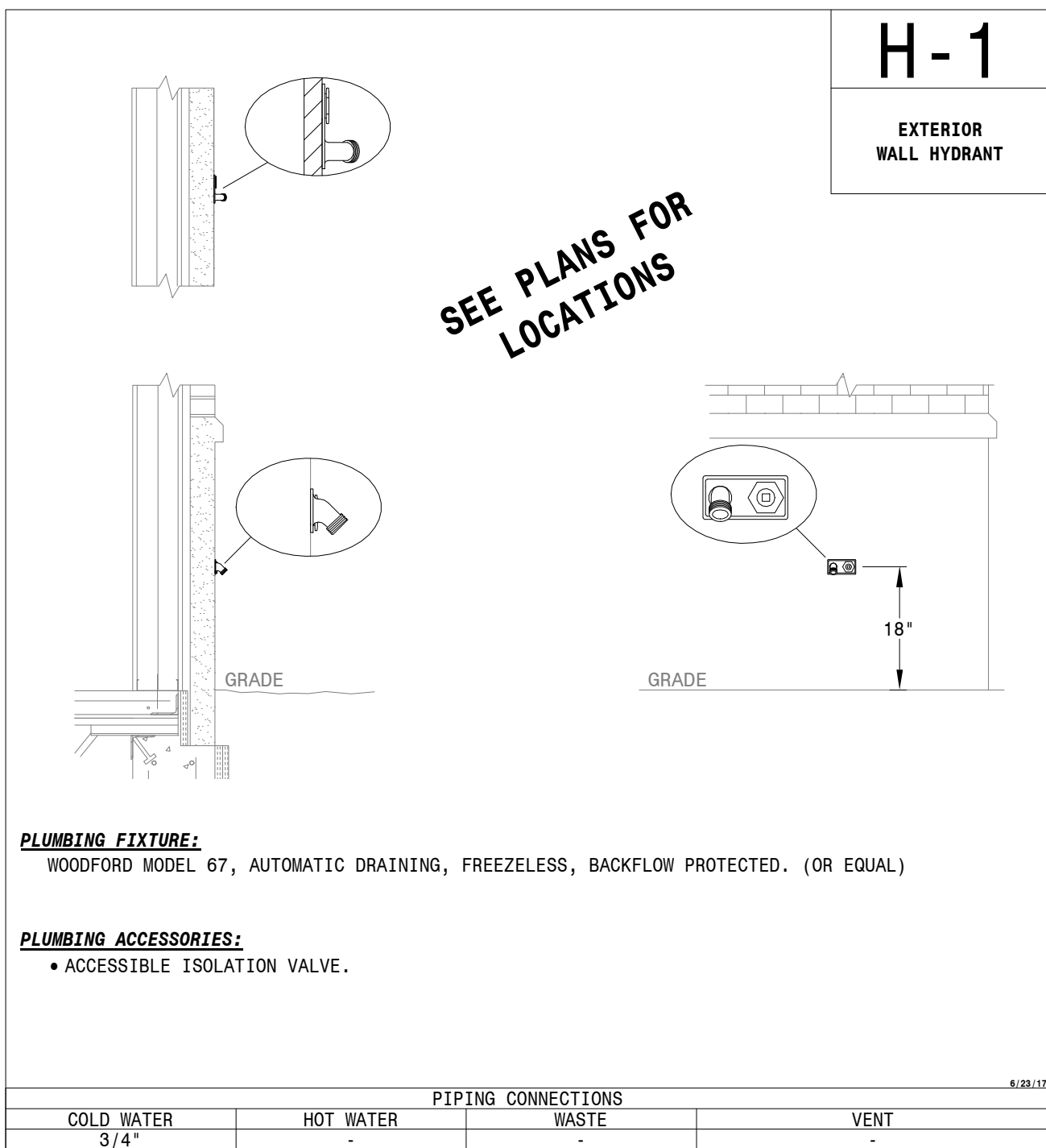
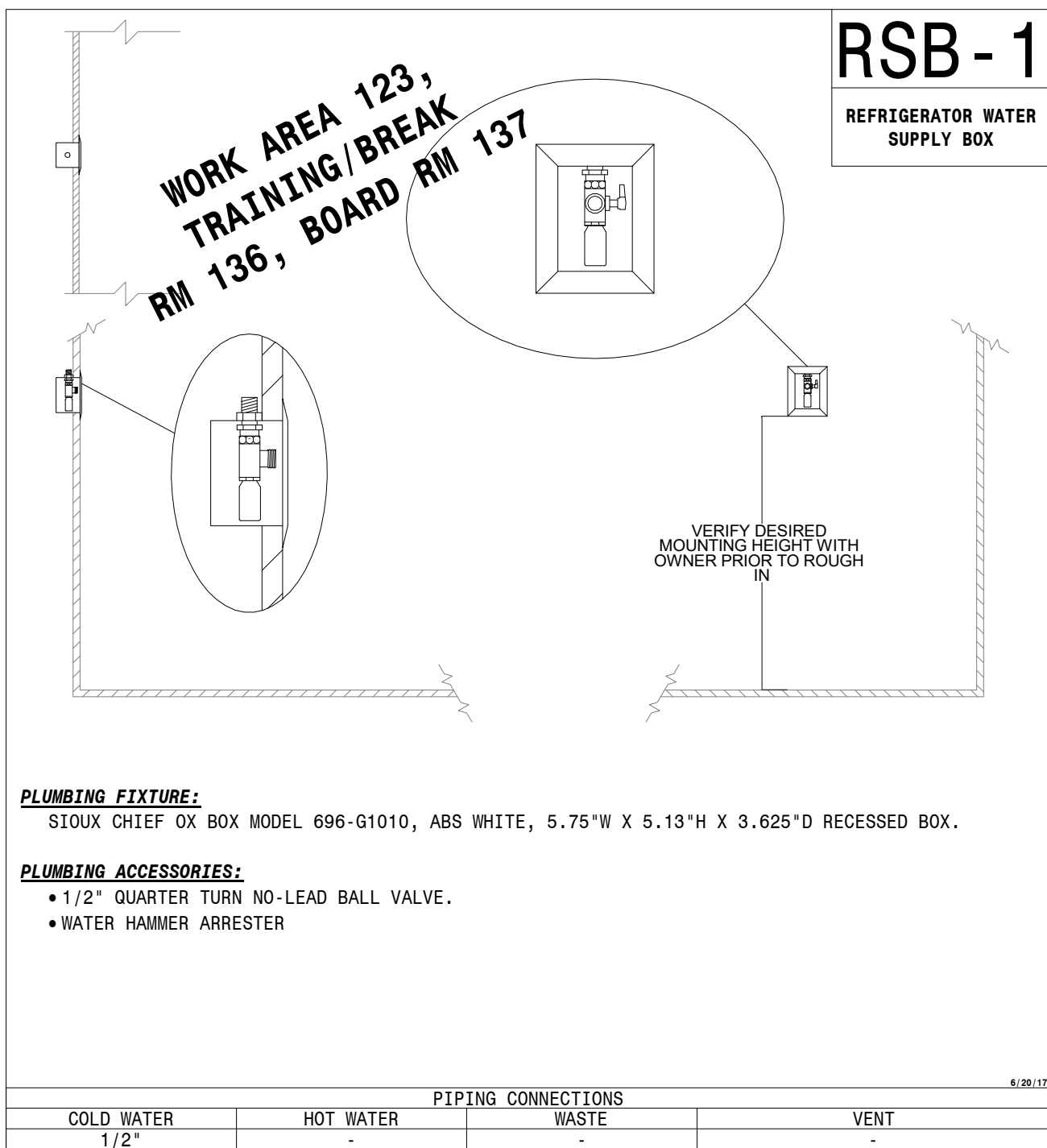
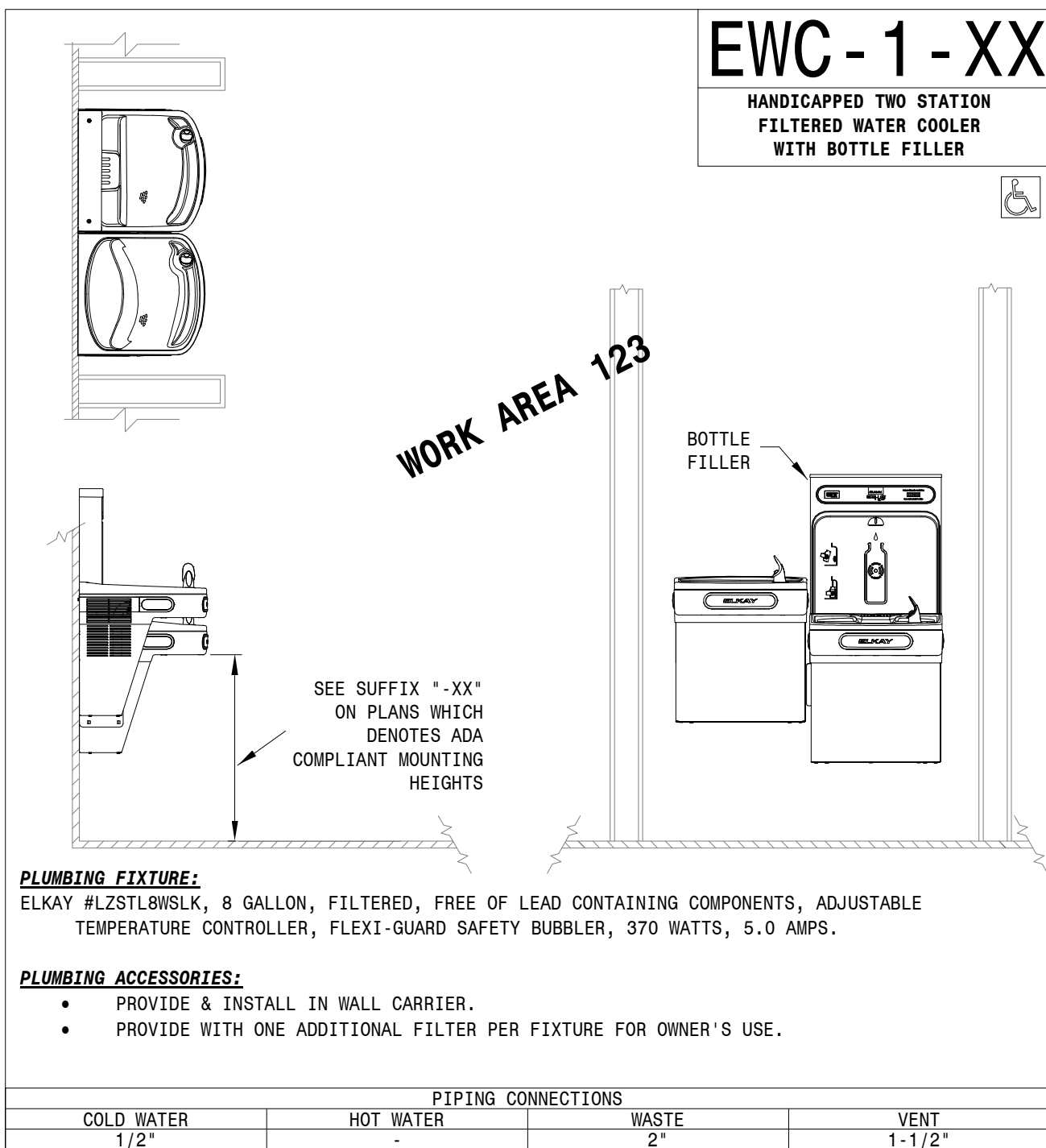
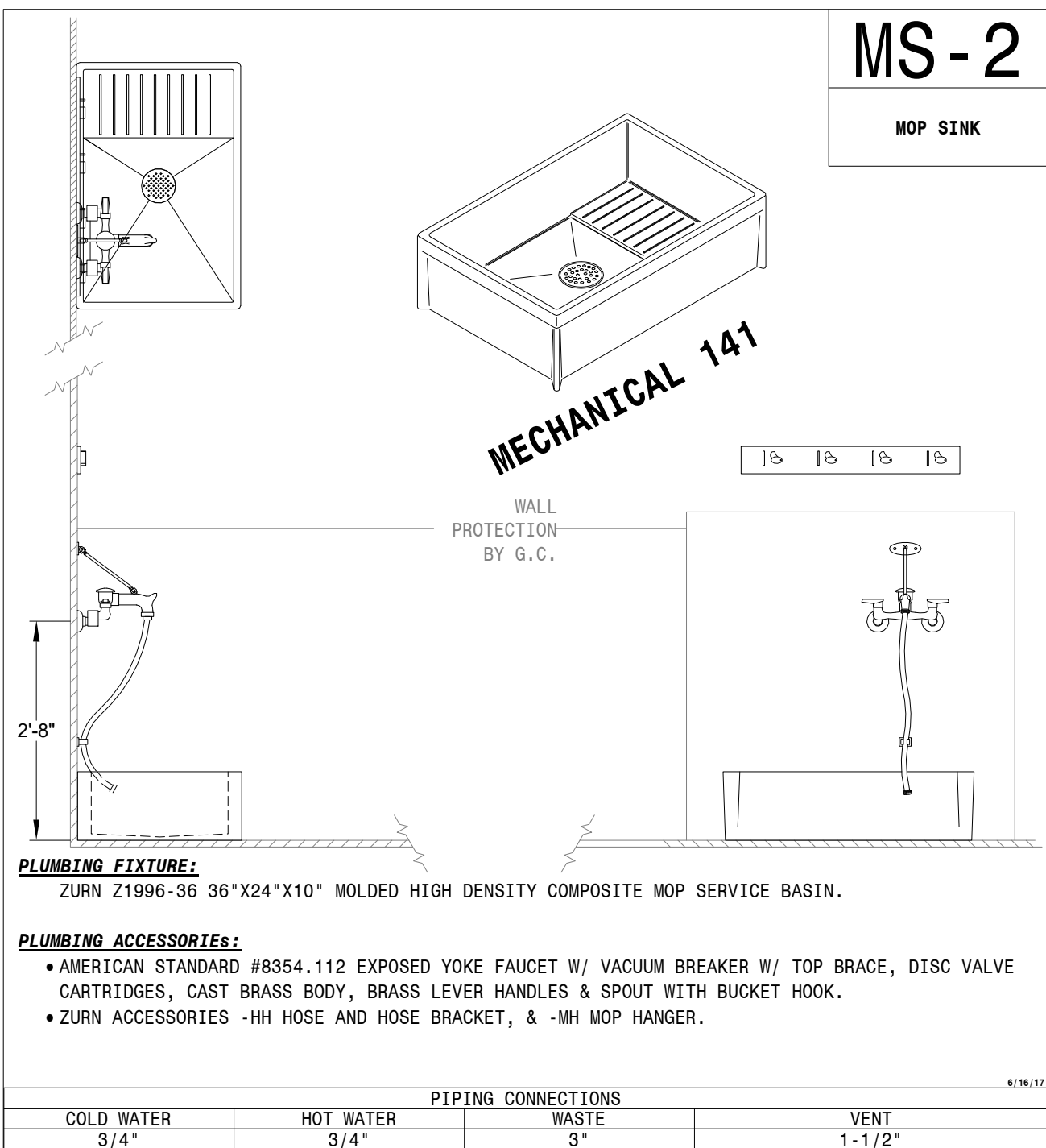
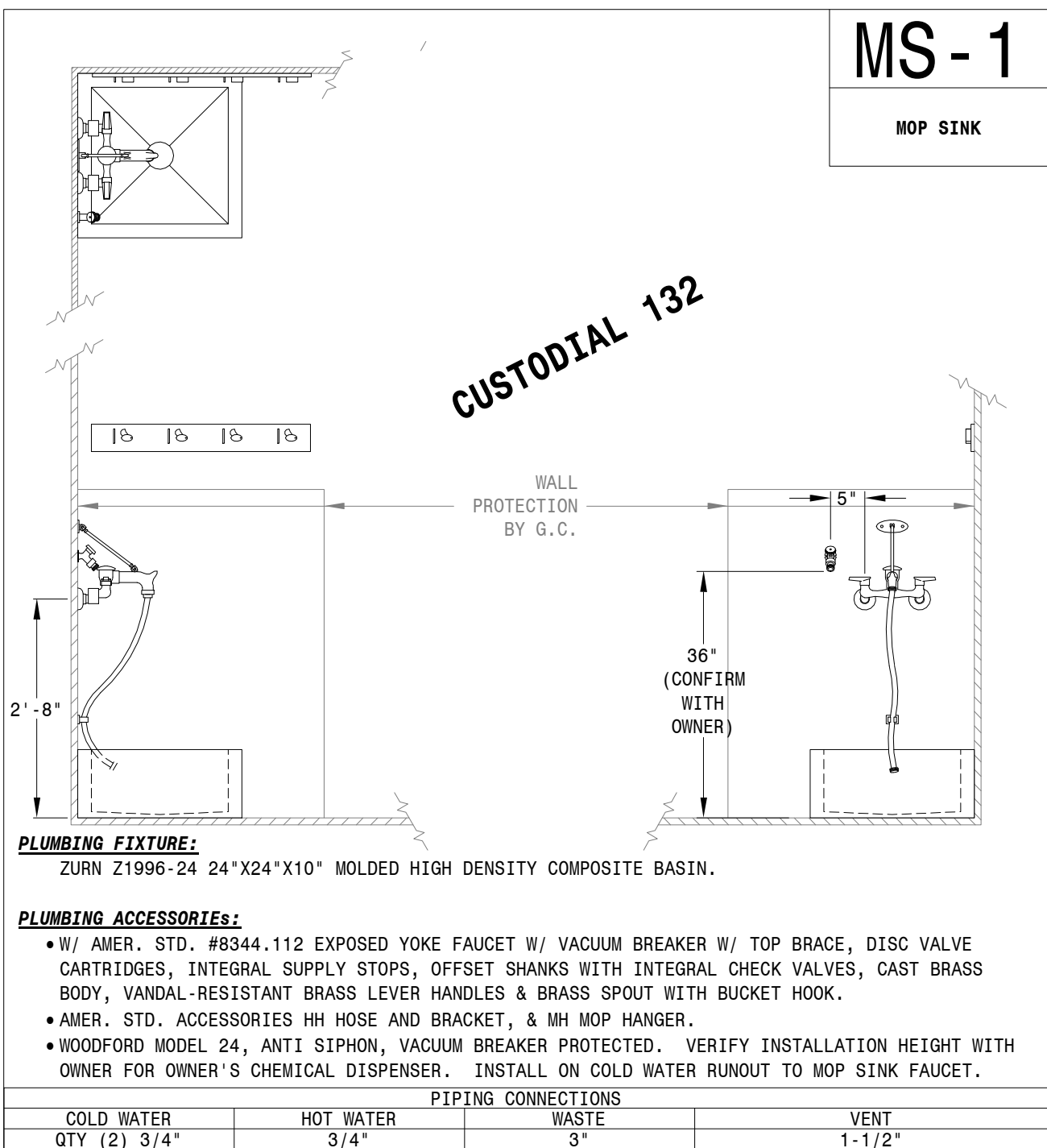
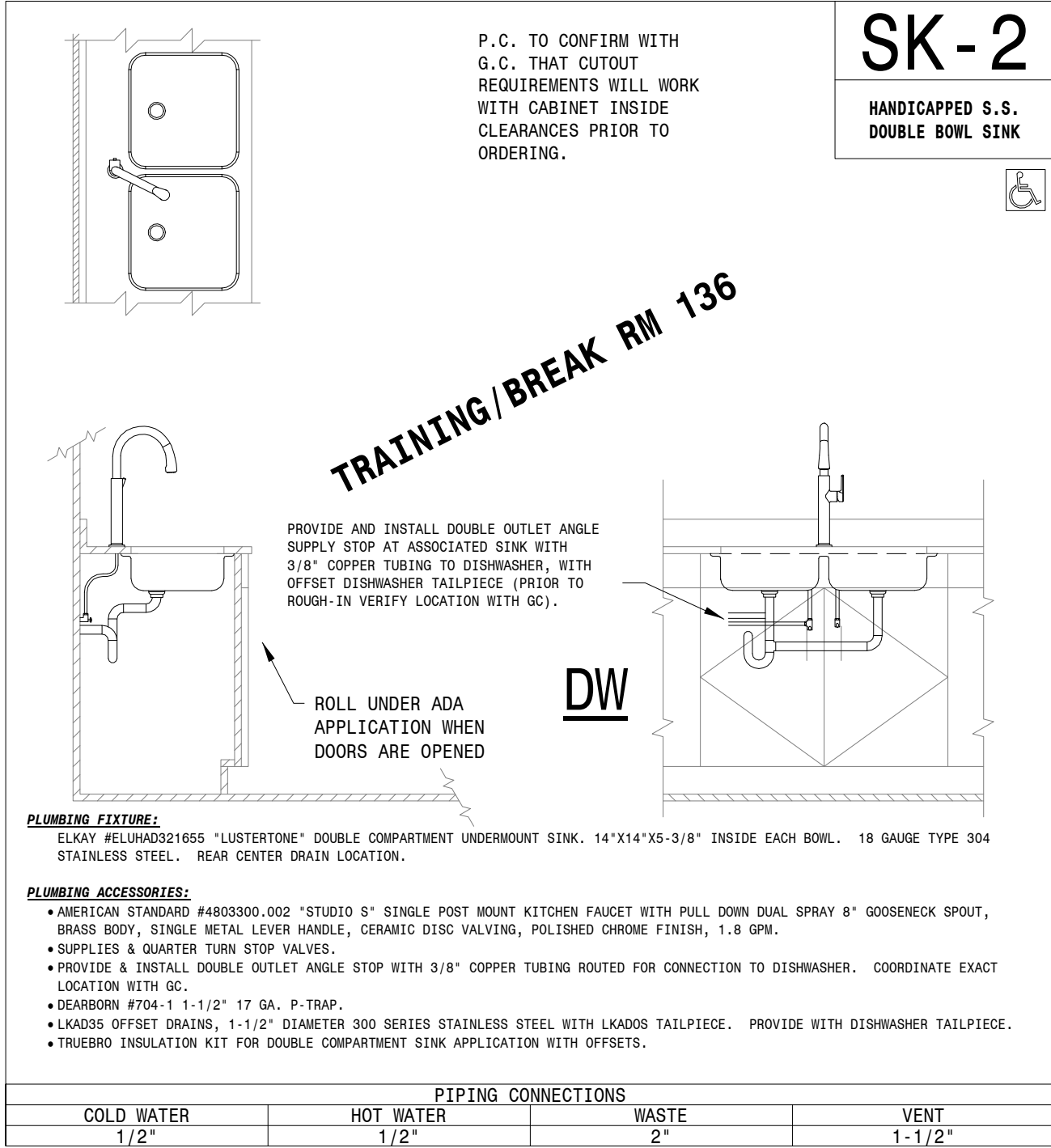
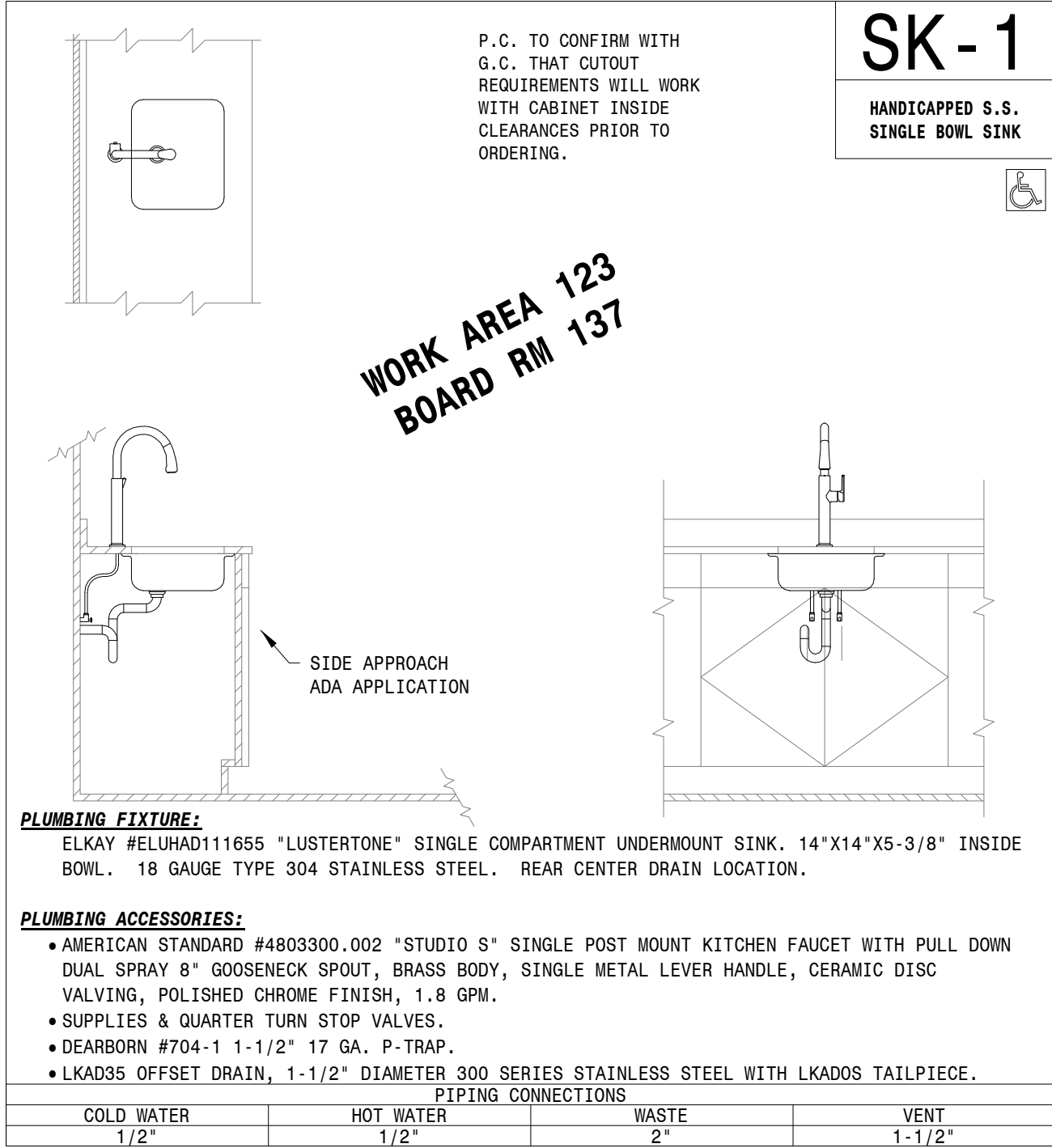
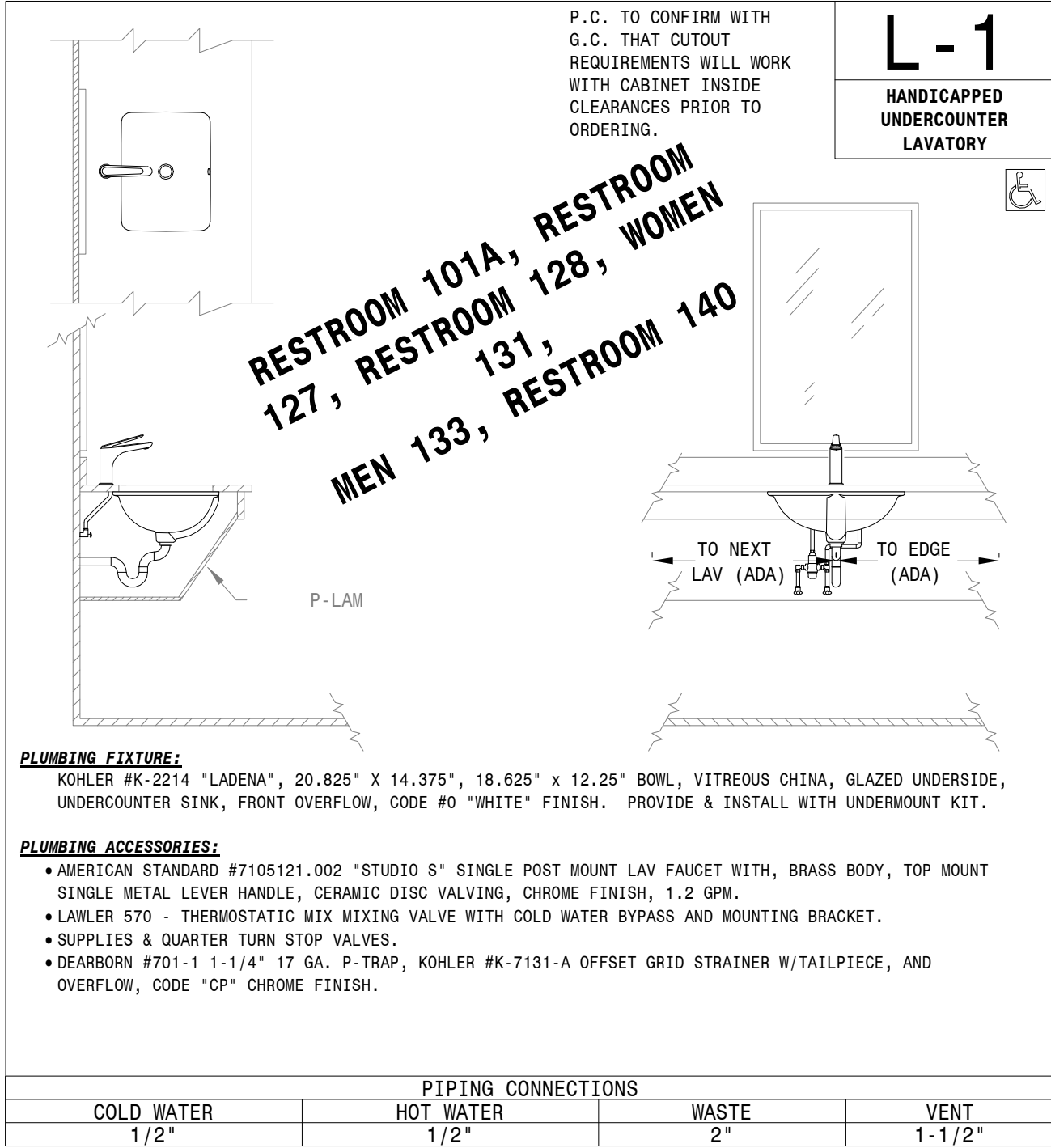
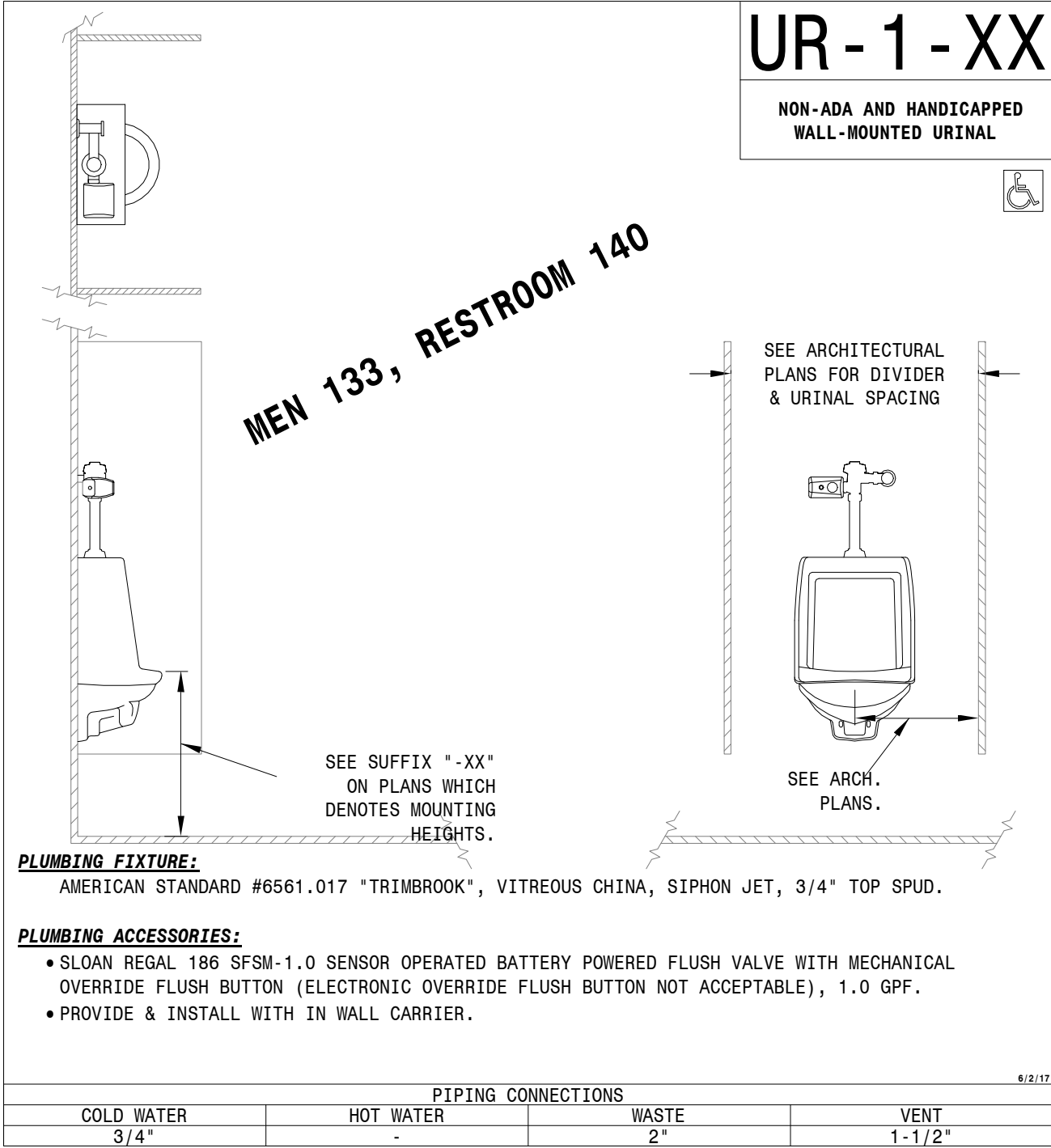
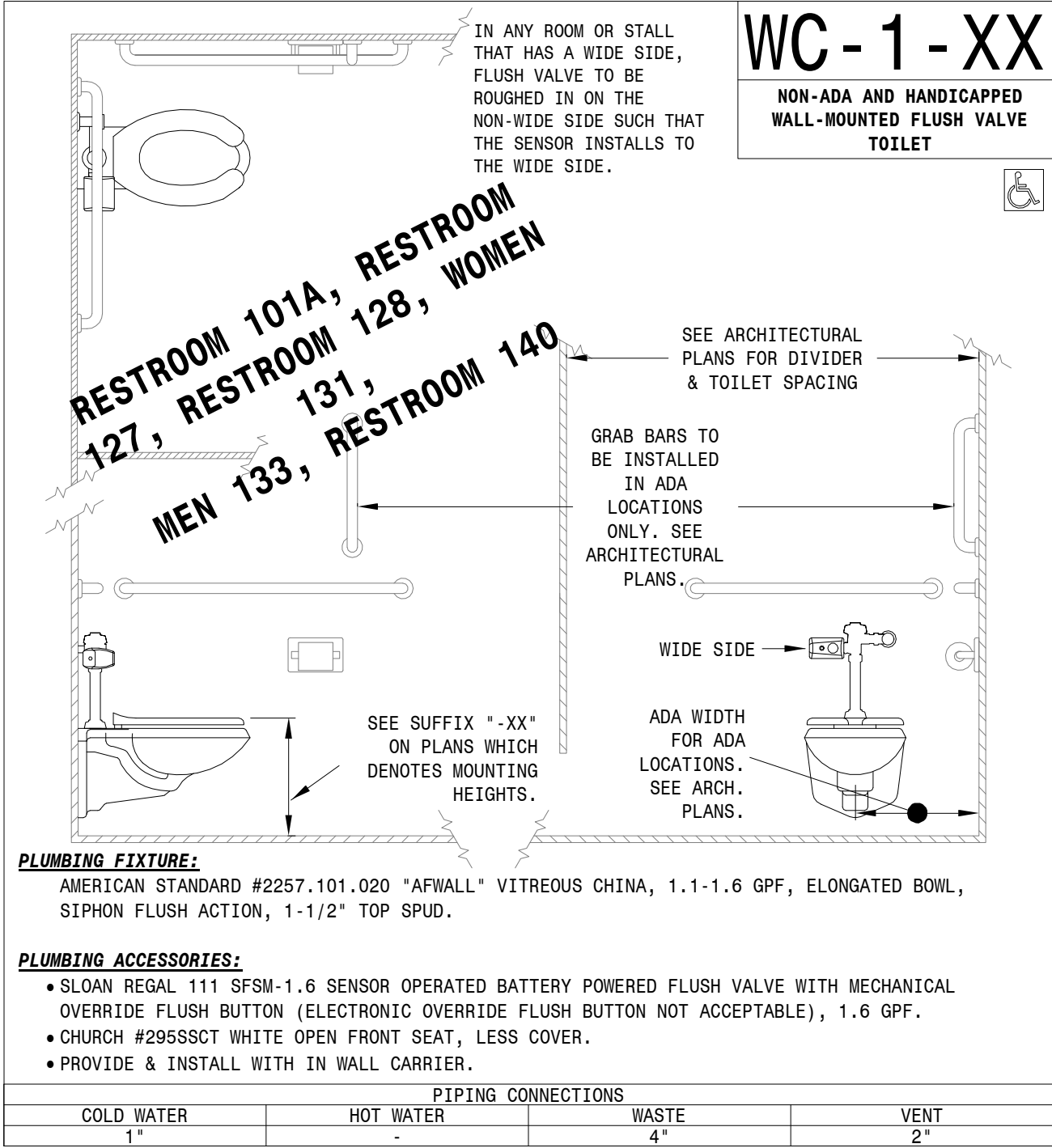


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PRIOR TO ALL PLUMBING ROUGH-INS FOR ALL PLUMBING FIXTURES COORDINATE WITH  
G.C. & REFER TO ARCHITECTURAL ELEVATIONS.

DOMESTIC PIPING SHALL BE INSTALLED WITH PROPER SAFEGUARDS TO PREVENT WATER  
HAMMER. THIS WILL BE DONE BY INSTALLING A SUFFICIENT NUMBER OF  
PREMANUFACTURED SHOCK ABSORBERS. WATER HAMMER ARRESTORS TO BE INSTALLED AT  
ALL FIXTURES. IT SHALL BE ACCEPTABLE TO INSTALL WATER HAMMER ARRESTORS FOR  
VALVED FIXTURE GROUPS WITH ARRESTOR SIZED PER MANUFACTURER'S REQUIREMENTS.  
SHOCK ABSORBERS SHALL BE WATTS OR EQUAL. EXACT MODEL TO BE INSTALLED PER  
MANUFACTURER'S INSTALLATION INSTRUCTIONS.

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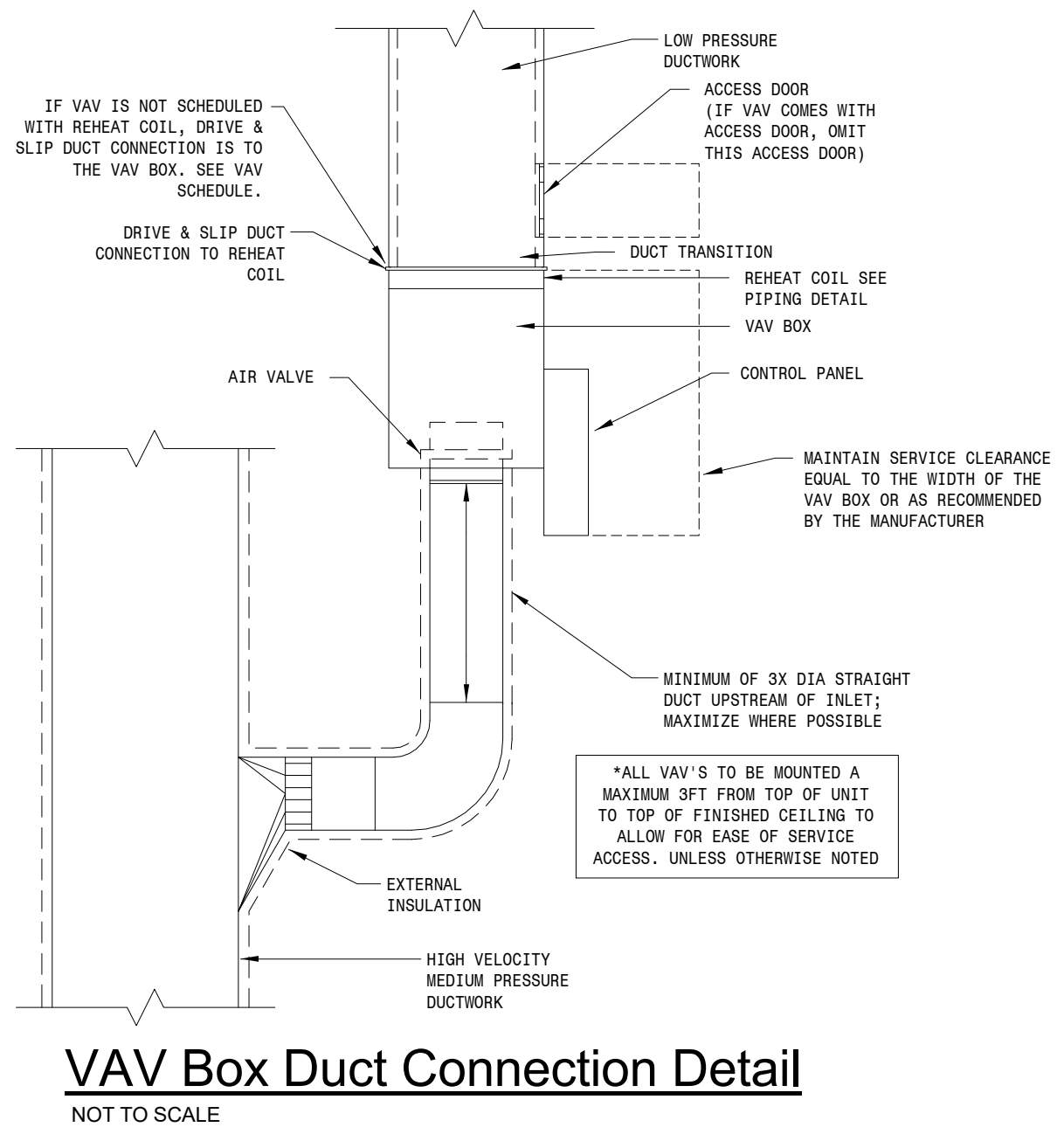
REVISION SCHEDULE:  
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NORTHERN ELECTRIC  
COOPERATIVE  
ABERDEEN, SOUTH DAKOTA

SHEET TITLE:  
PLUMBING FIXTURE SCHEDULE

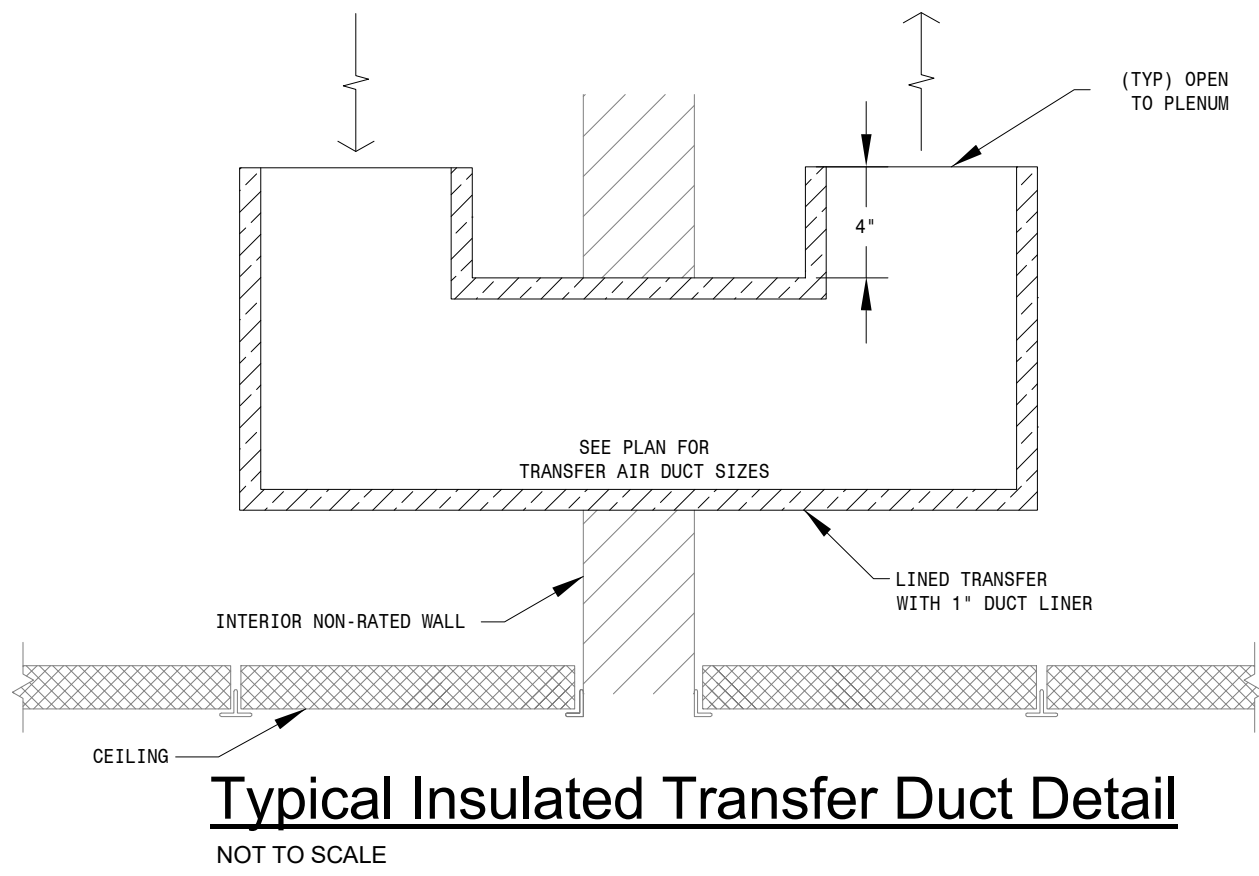
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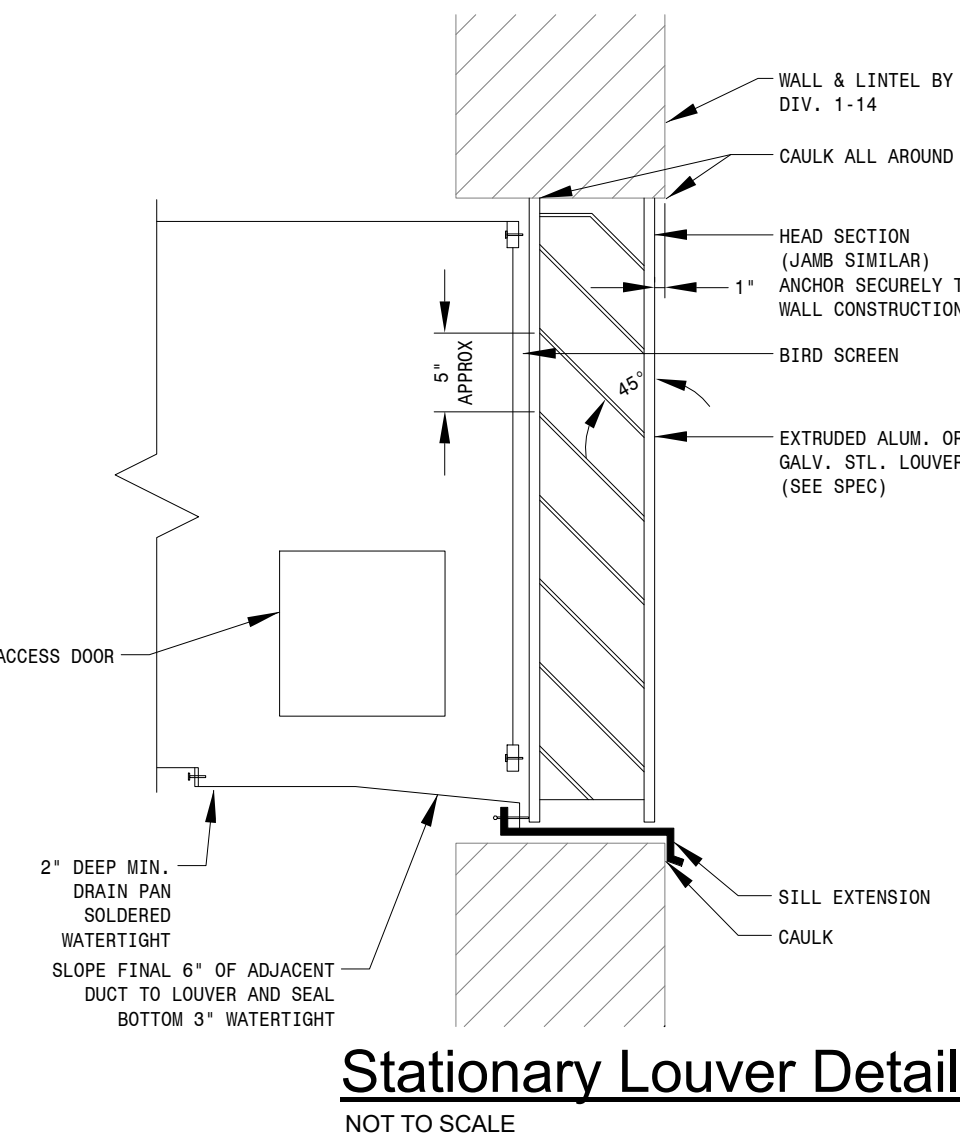
VAV Box Duct Connection Detail

NOT TO SCALE



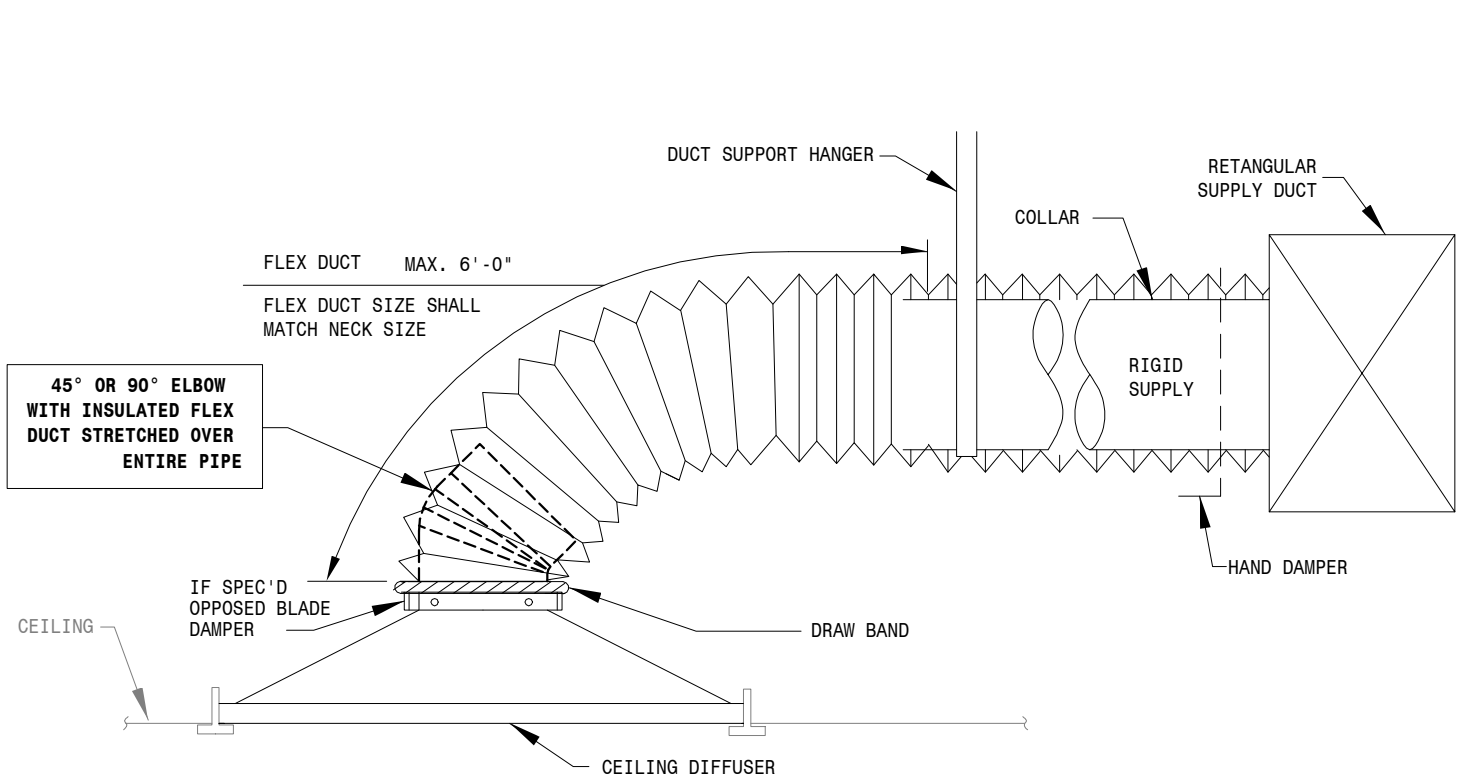
Typical Insulated Transfer Duct Detail

NOT TO SCALE



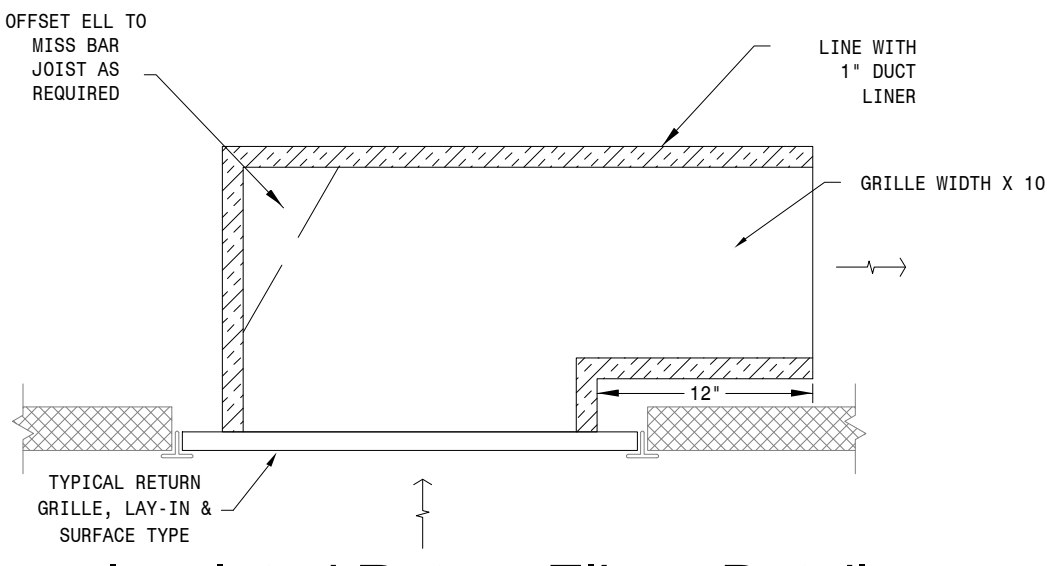
Stationary Louver Detail

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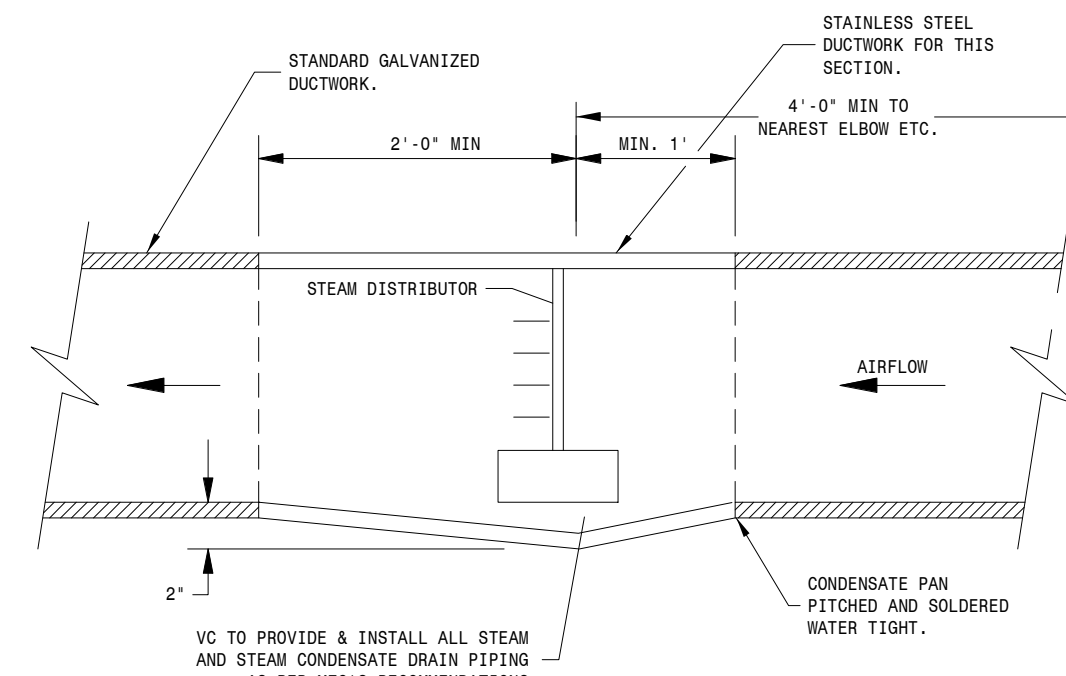
Typical Diffuser Connection Detail

NOT TO SCALE



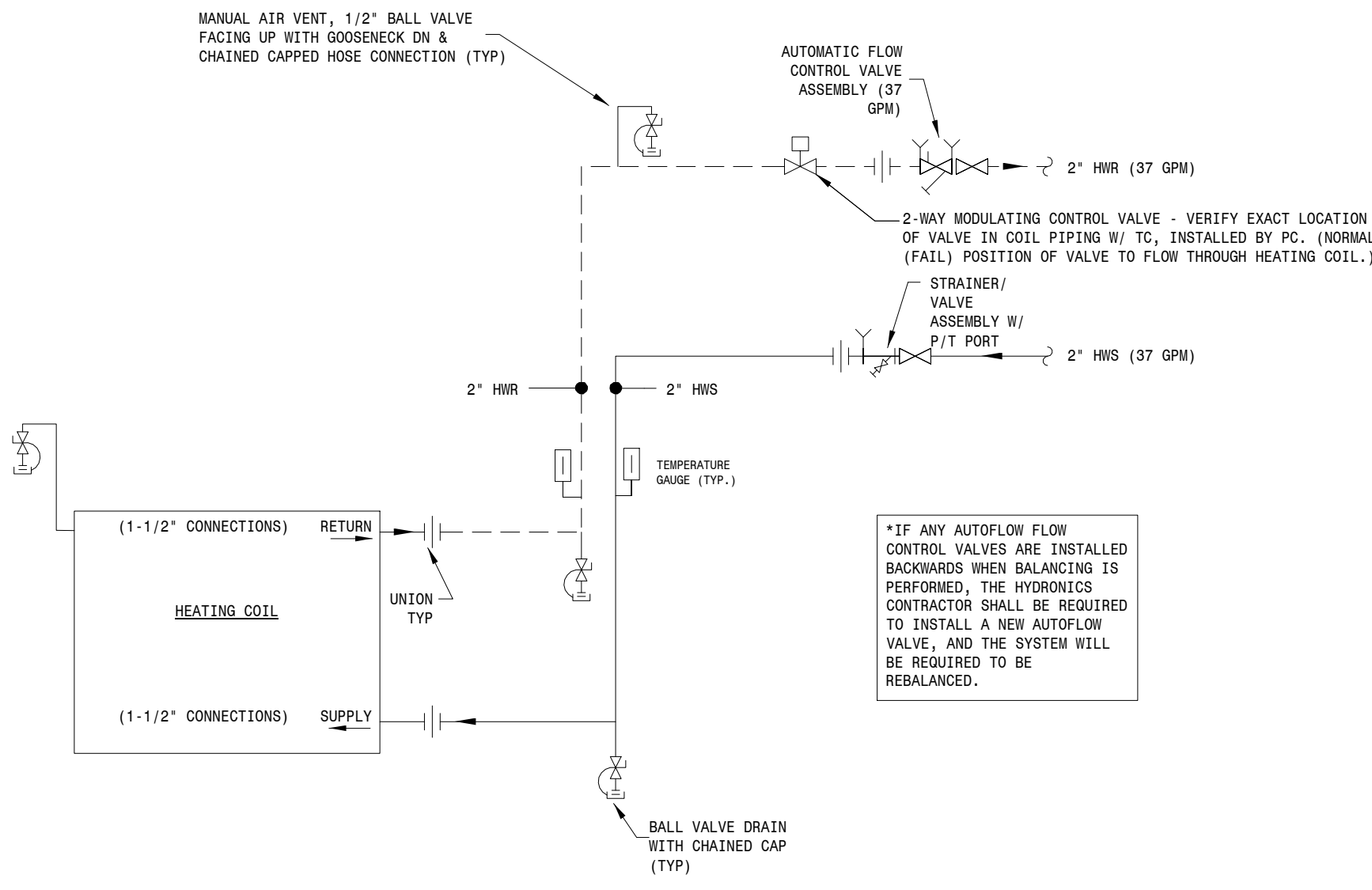
Insulated Return Elbow Detail

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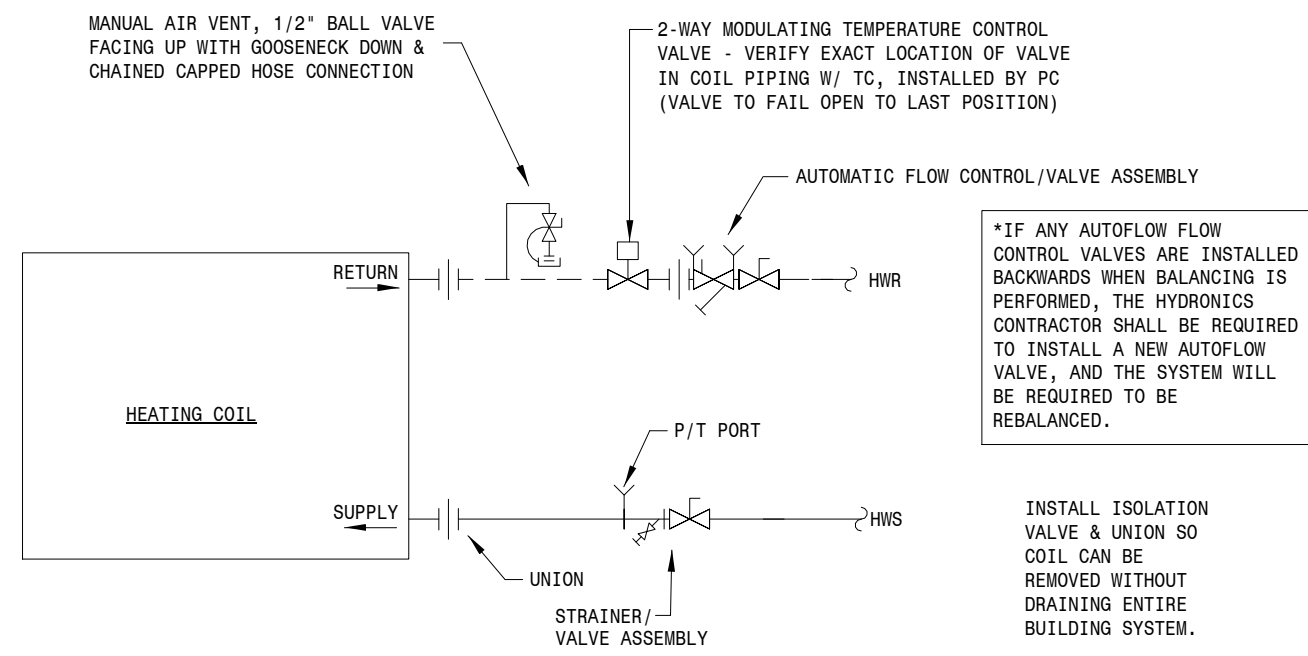
Humidifier Distributor & Condensate Pan Detail

NOT TO SCALE



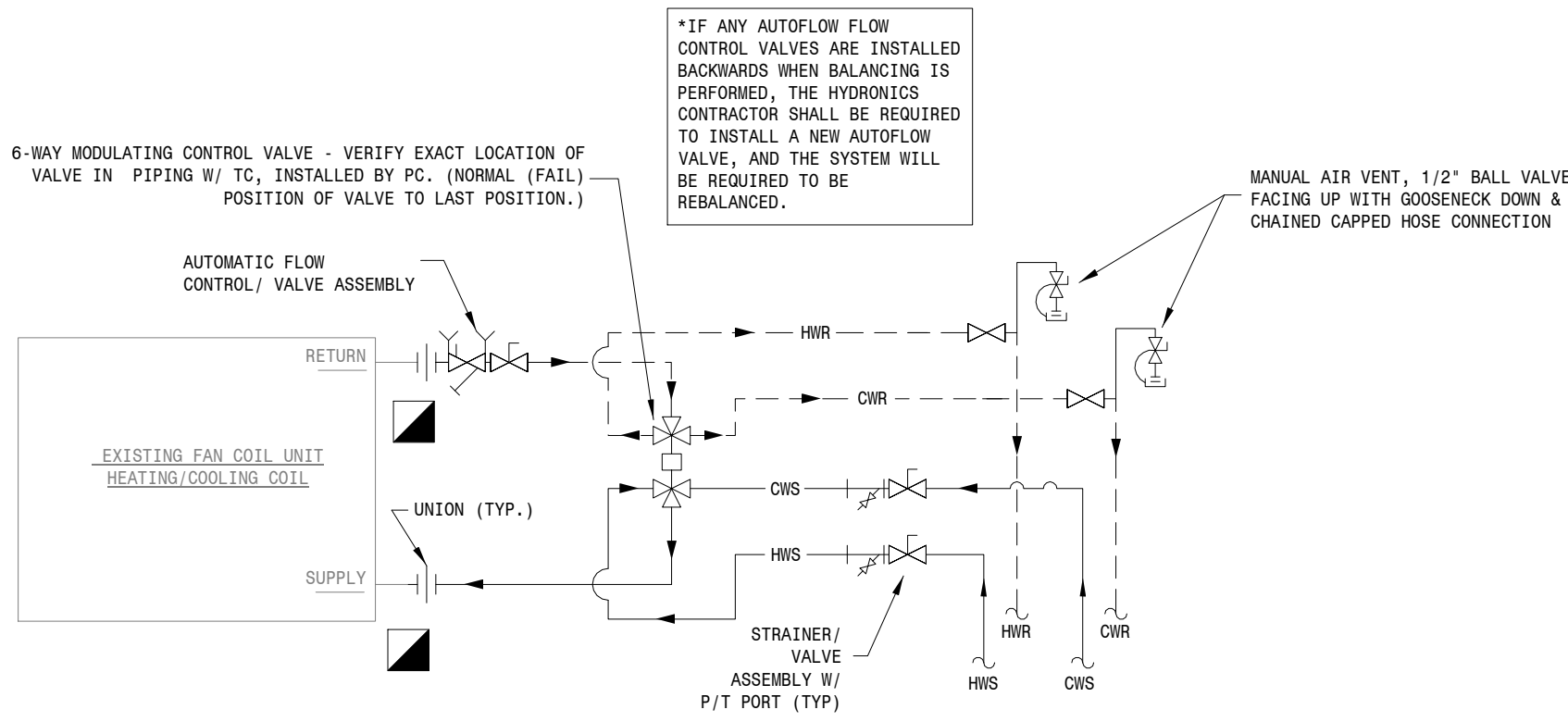
Typical AHU Heating Coil Piping Detail

NOT TO SCALE



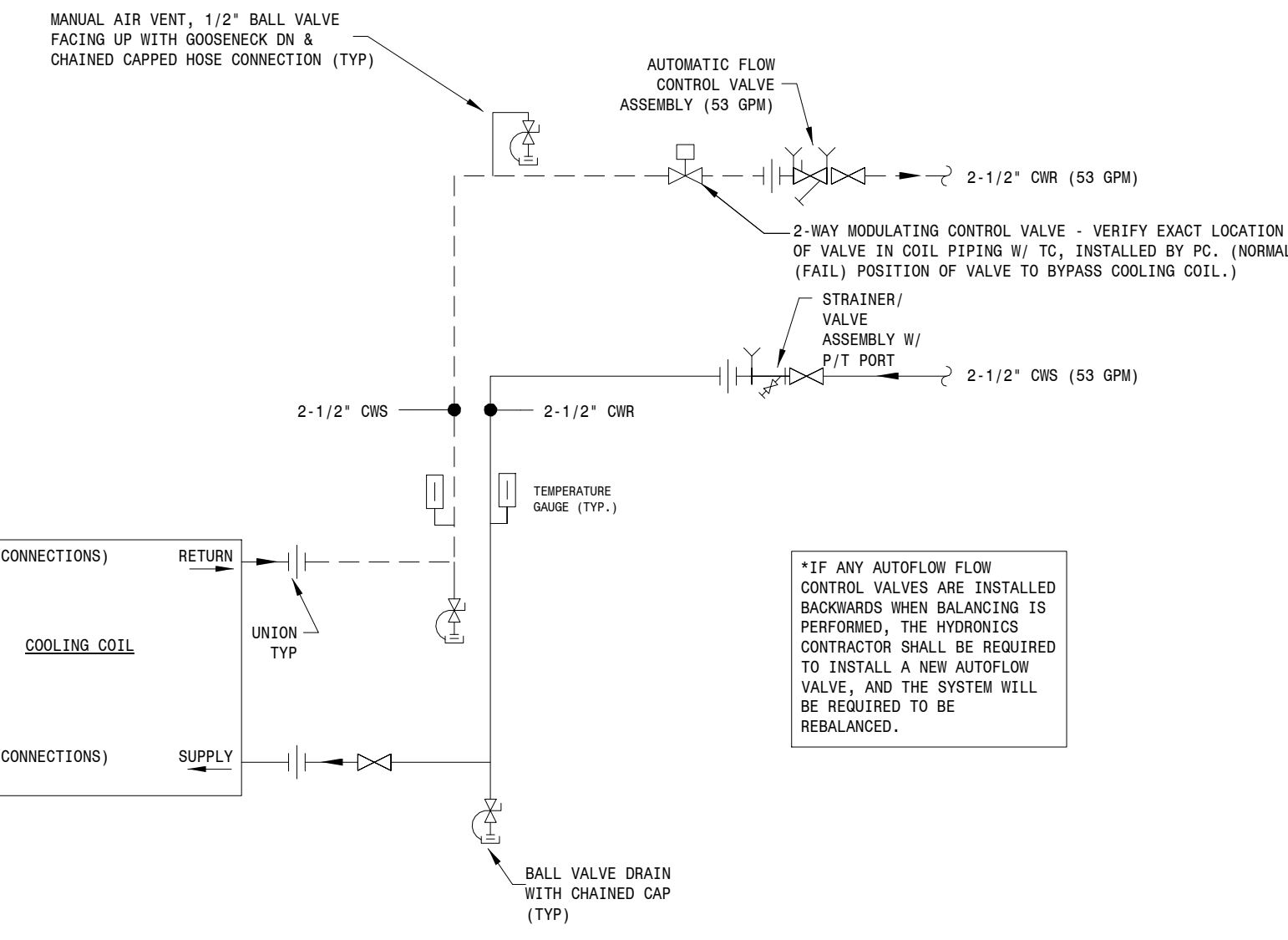
VAV Heating Coil Piping Detail

NOT TO SCALE



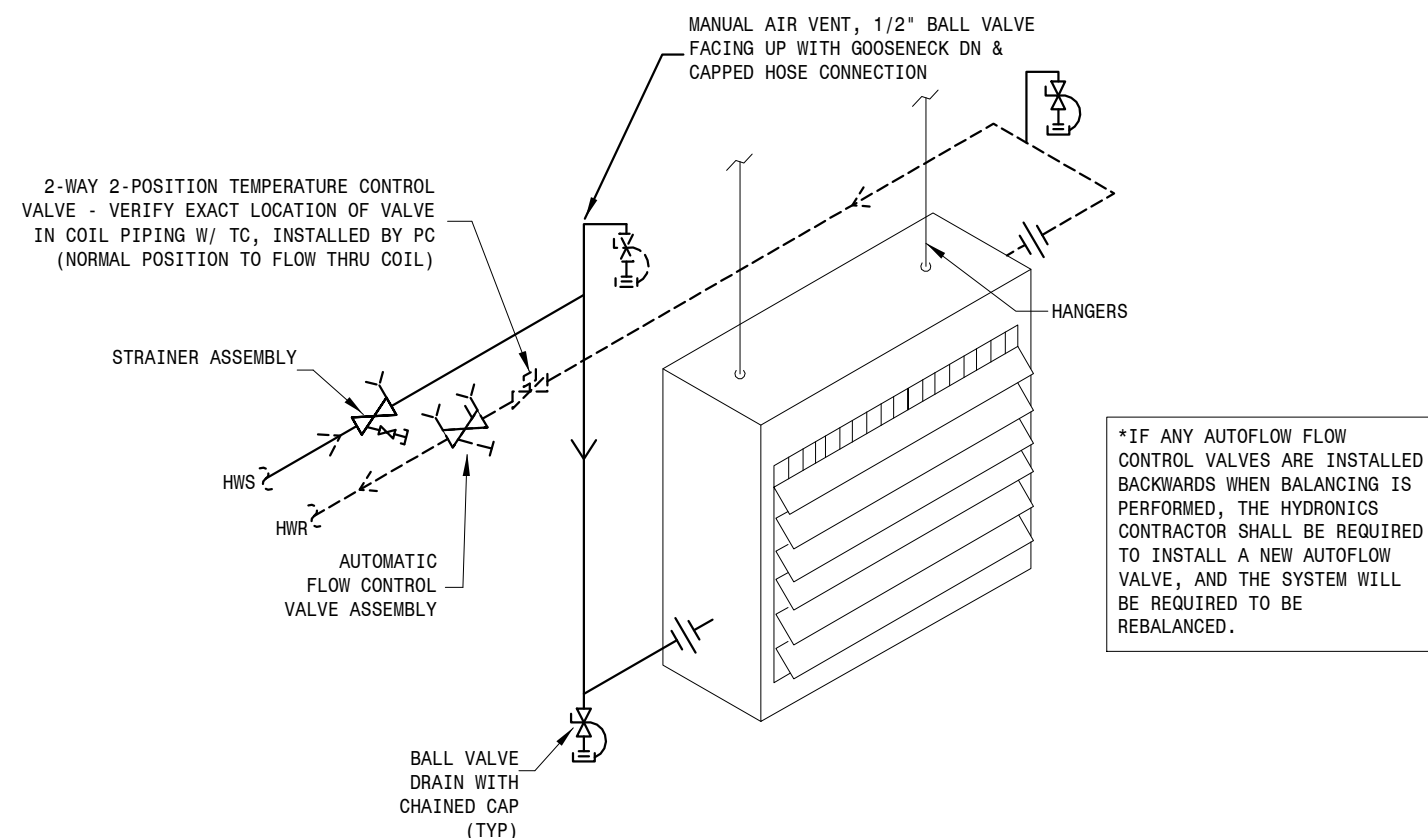
Existing Fan Coil Unit Coil Piping Detail

NOT TO SCALE



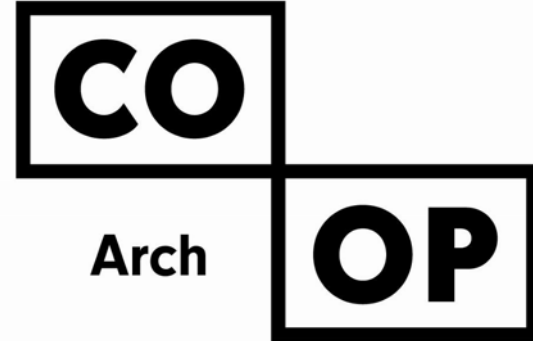
Typical AHU Cooling Coil Piping Detail

NOT TO SCALE



Hanging Unit Heater Piping Detail

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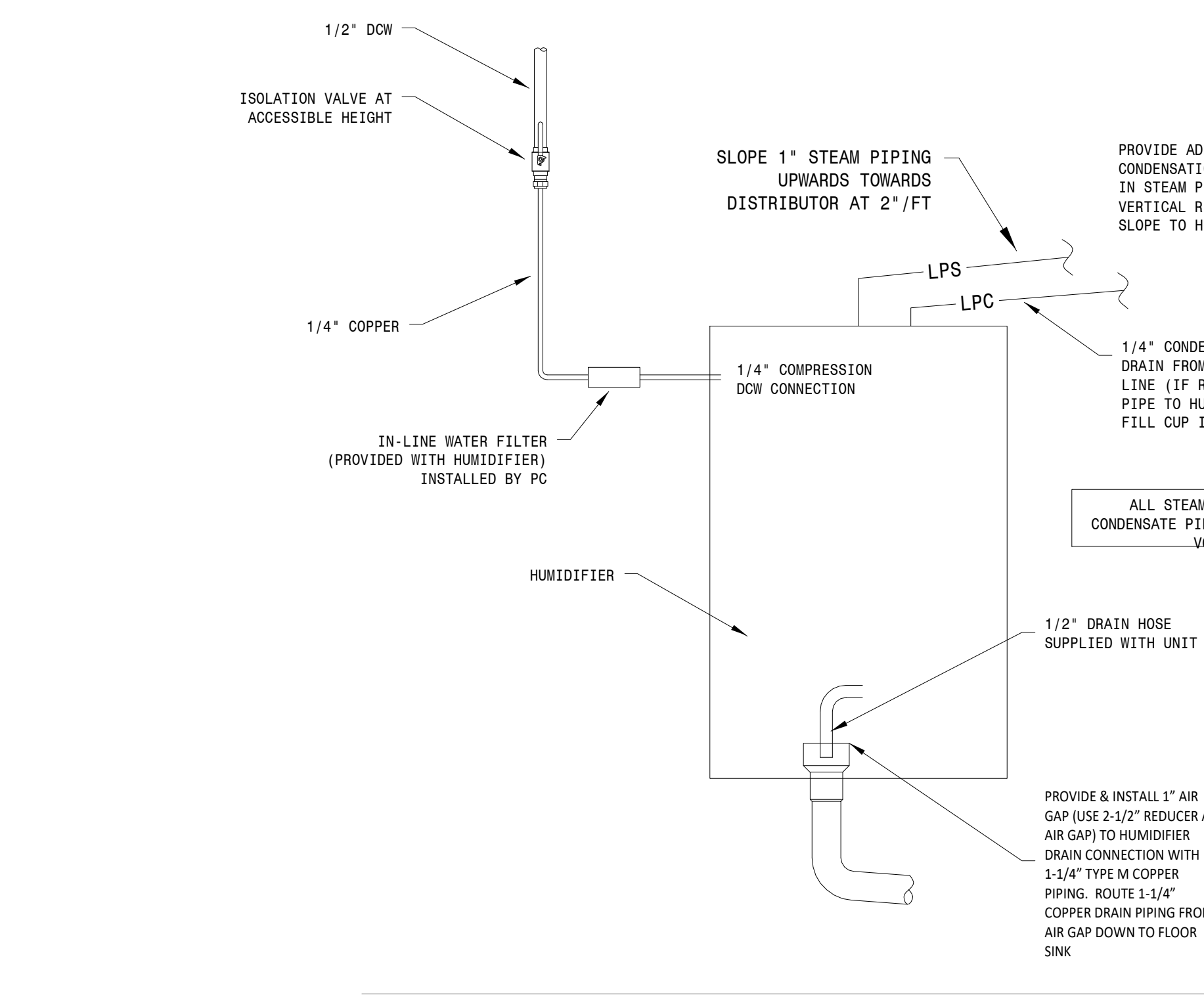
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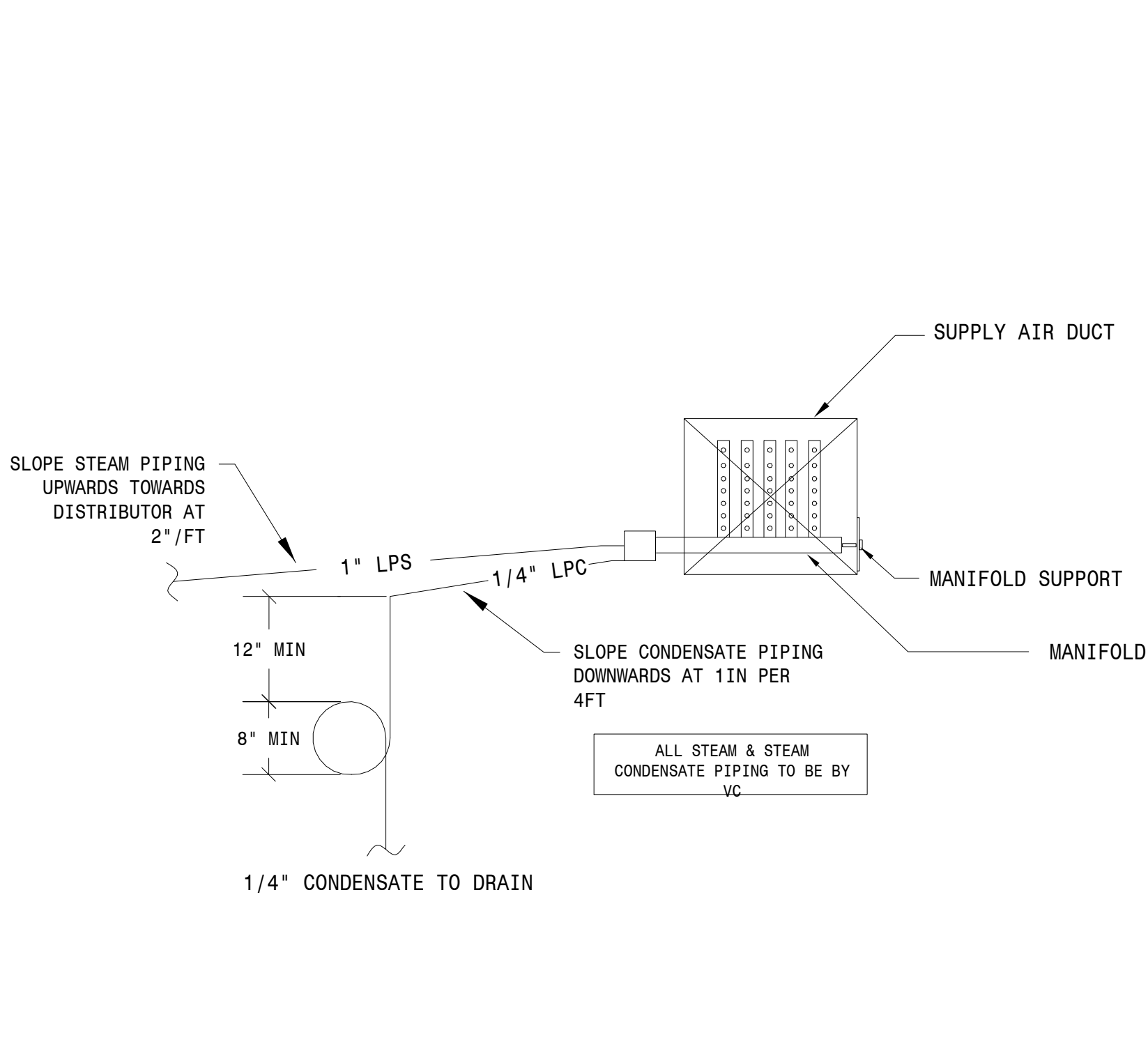
SHEET TITLE:  
MECHANICAL DETAILS - 1 OF 4

M700

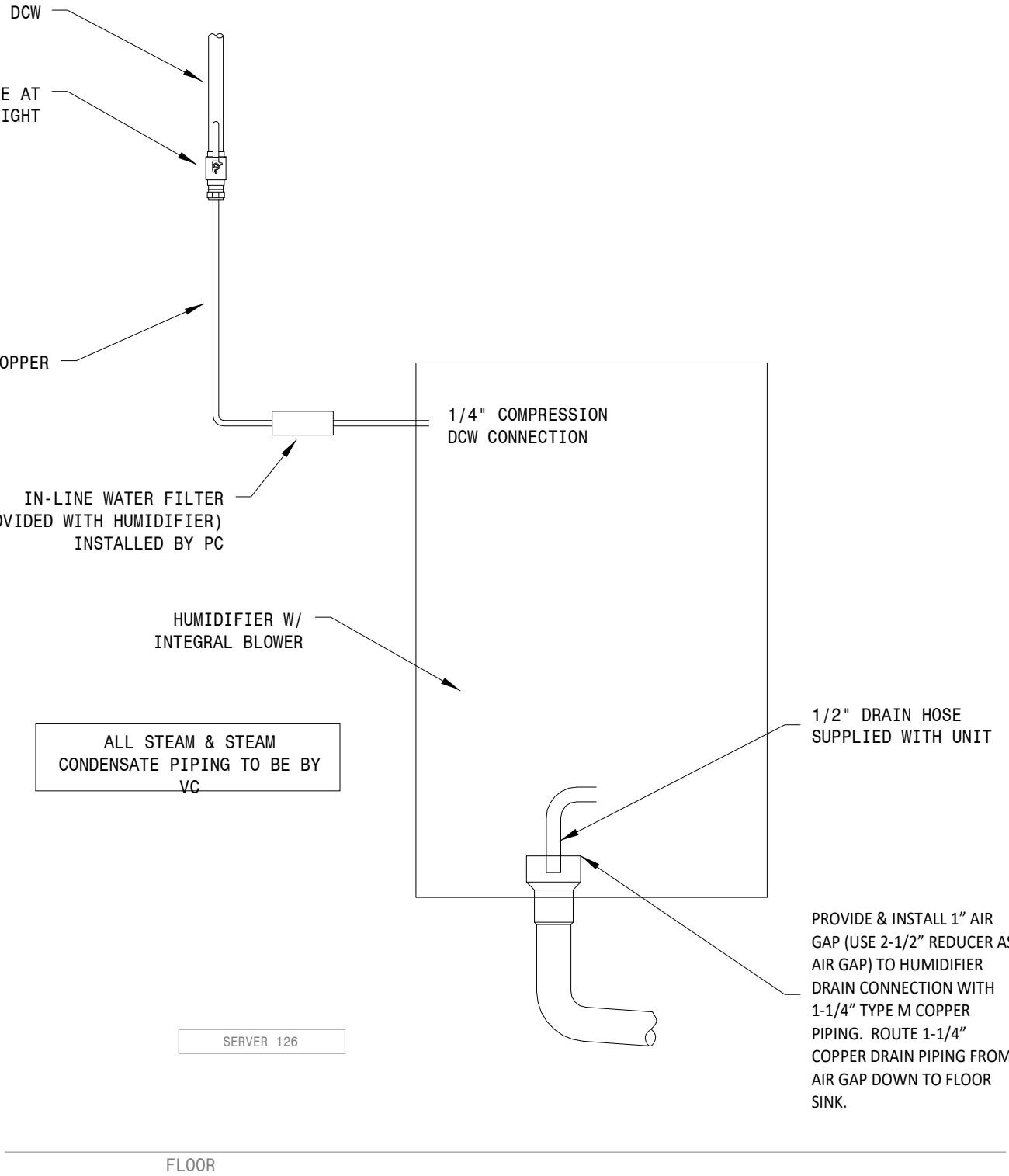




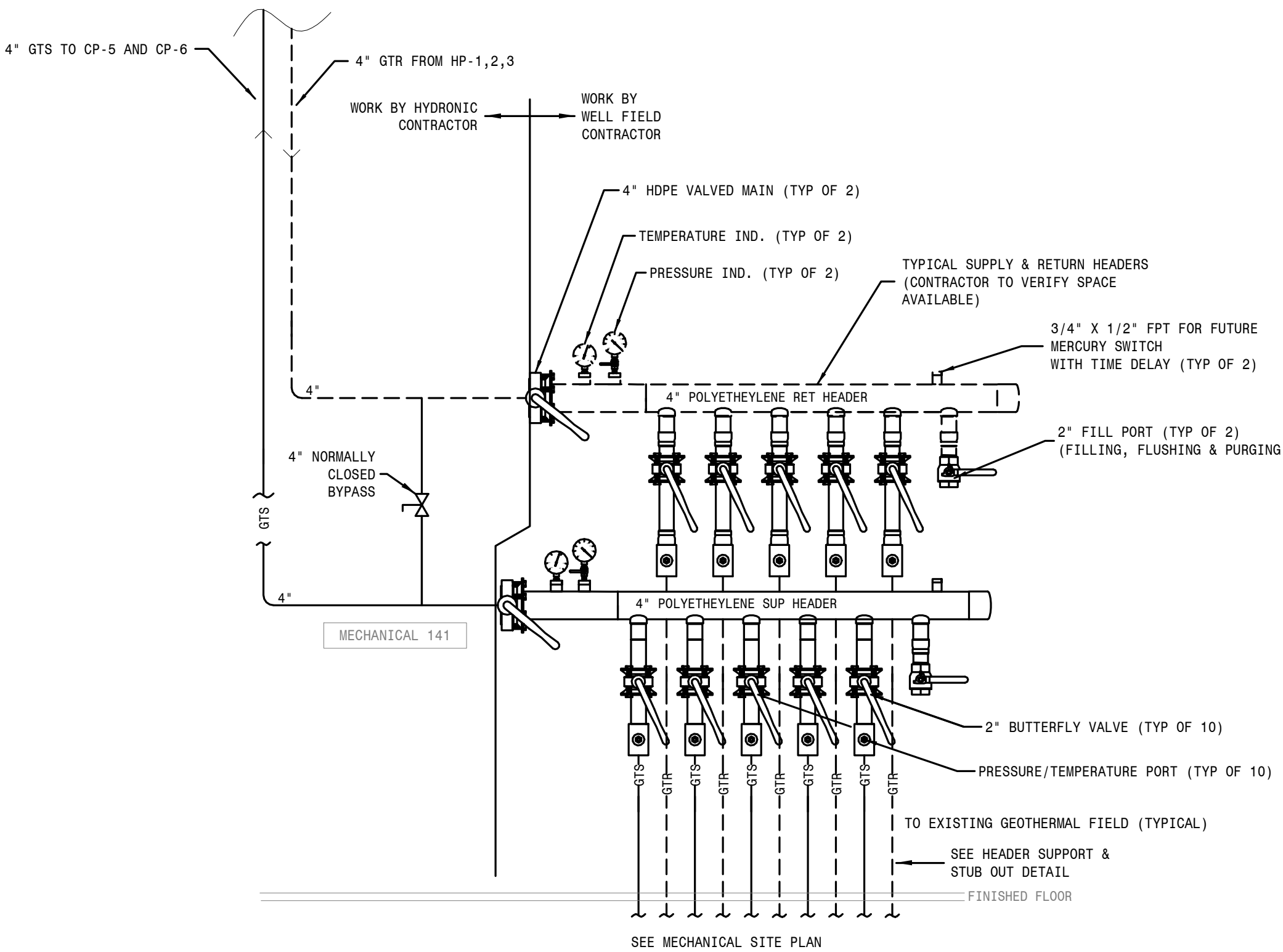
**Humidifier (HUM-1 & 2) Piping Detail**  
NOT TO SCALE



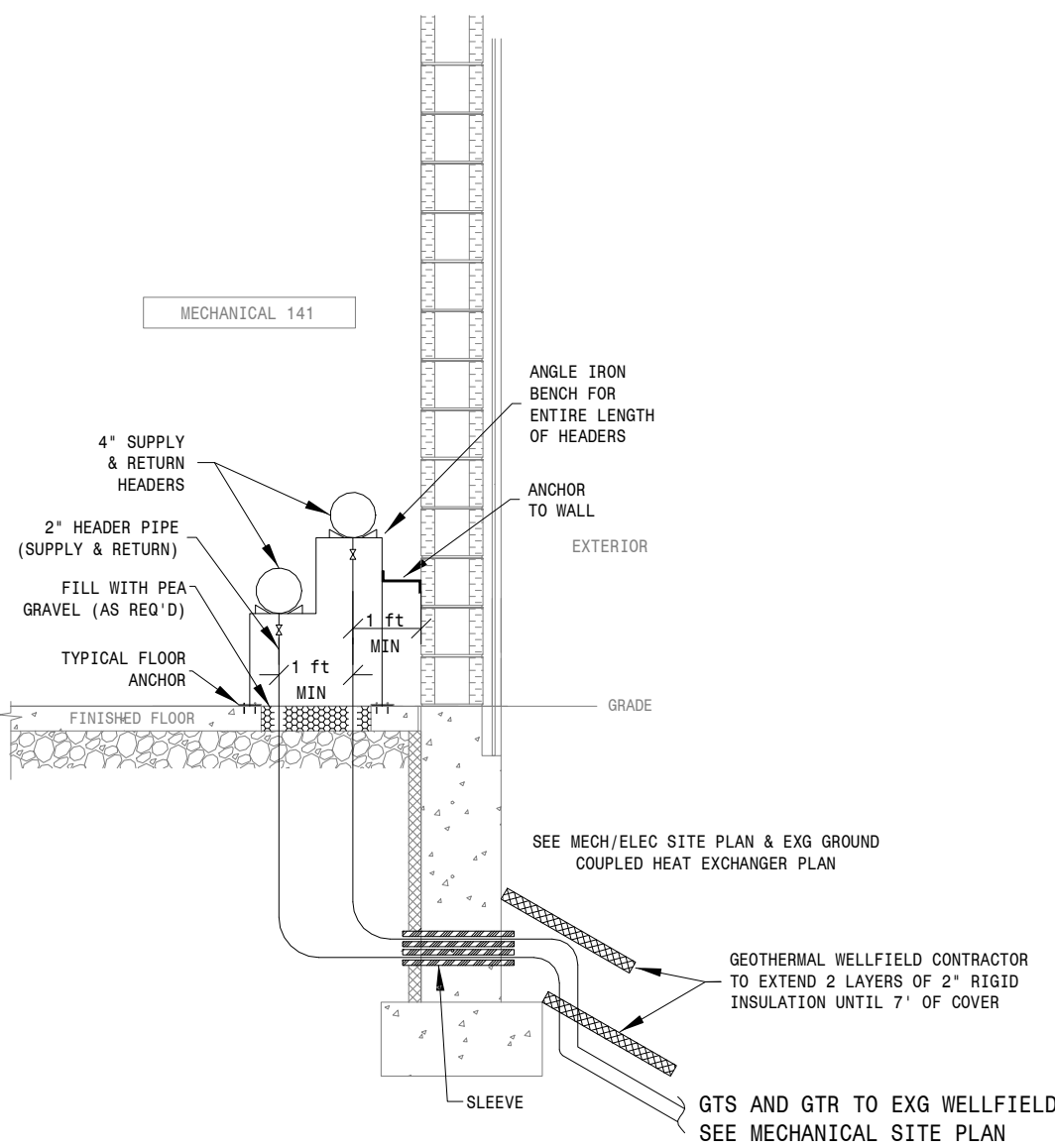
**Steam Humidifier Piping Detail**  
NOT TO SCALE



**Humidifier (HUM-3) Piping Detail**  
NOT TO SCALE



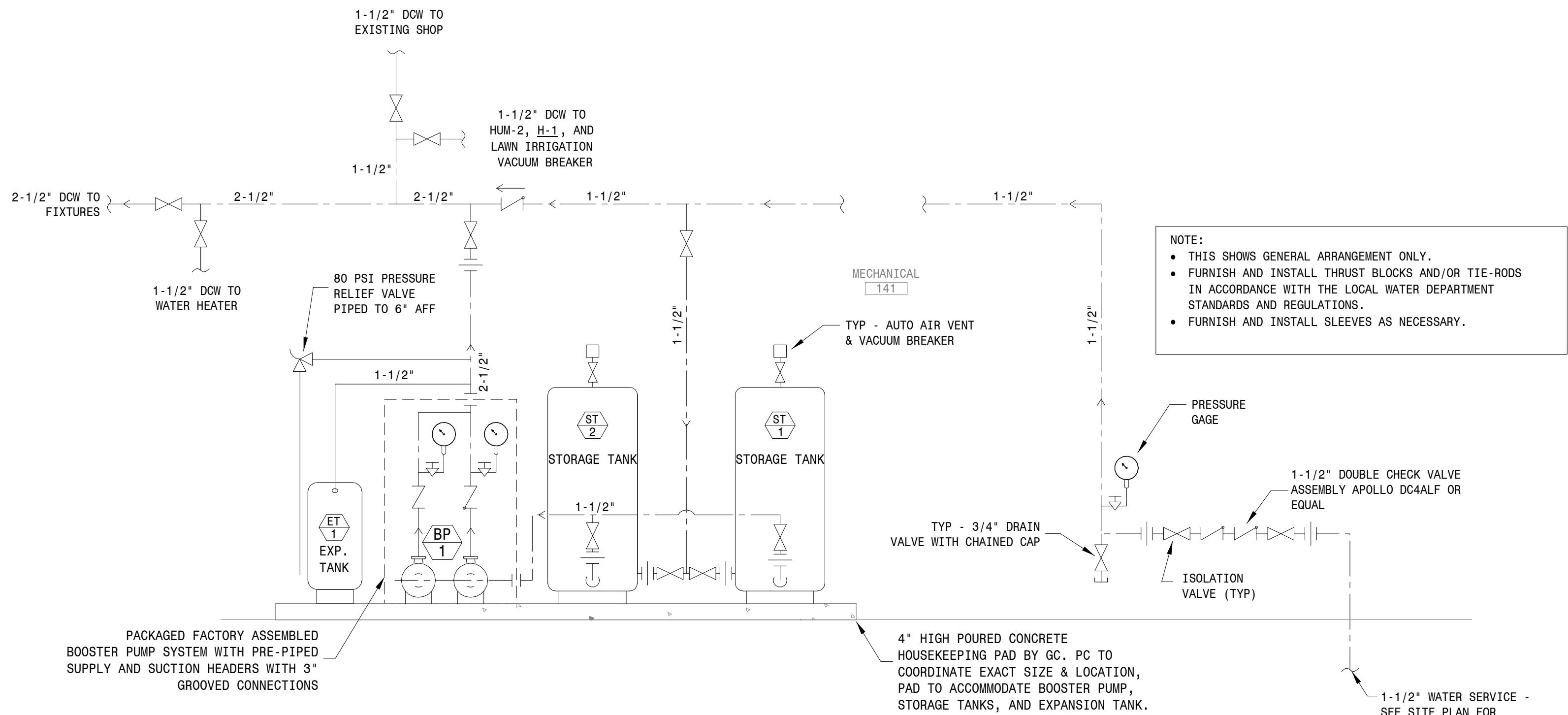
**Ground-Coupled Heat Exchanger Header (Front View) Detail**  
NOT TO SCALE



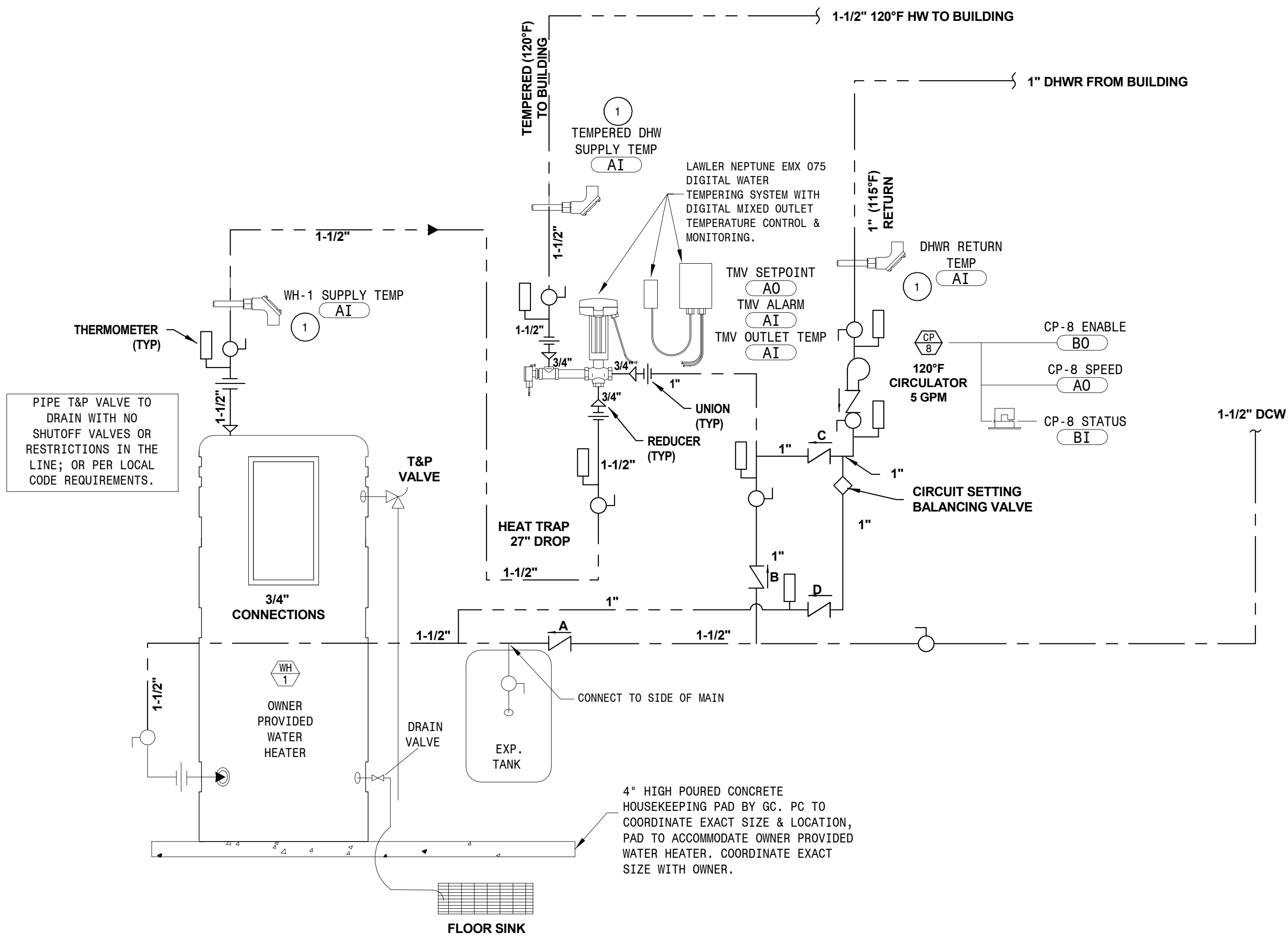
**Header Support & Stub Out Detail**  
NOT TO SCALE



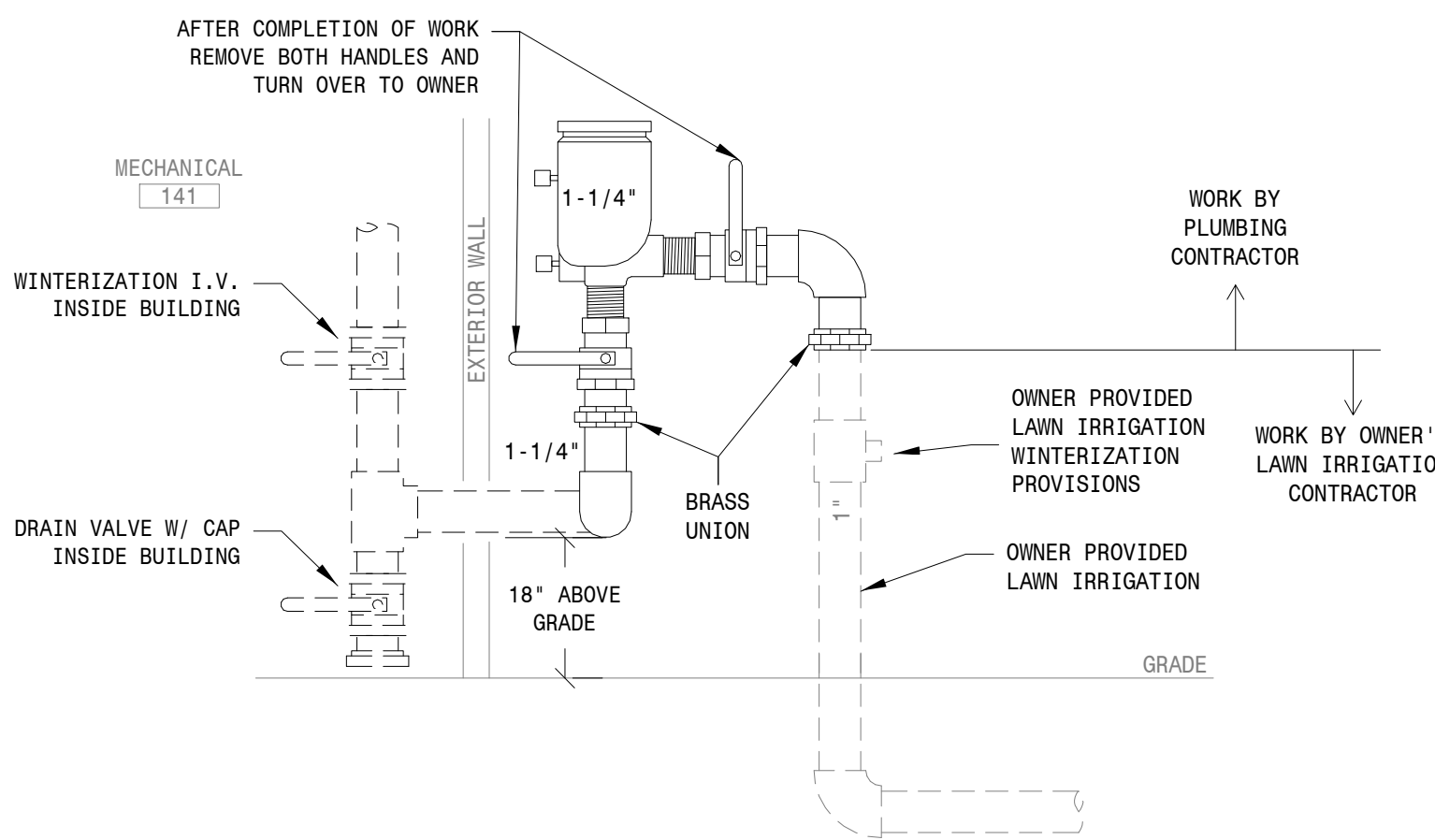




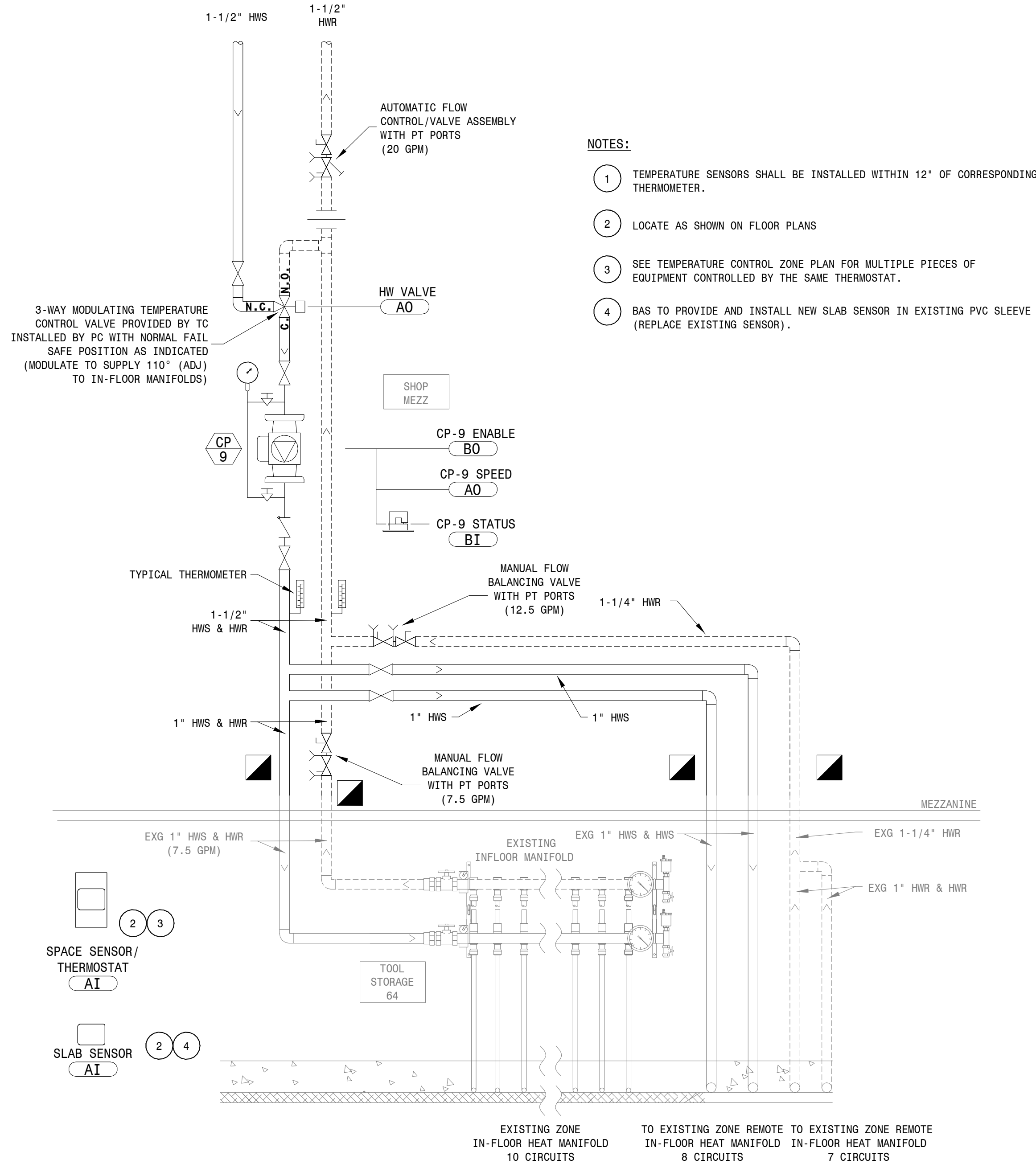
**Domestic Water Header & Booster Pump Piping Diagram**  
NOT TO SCALE



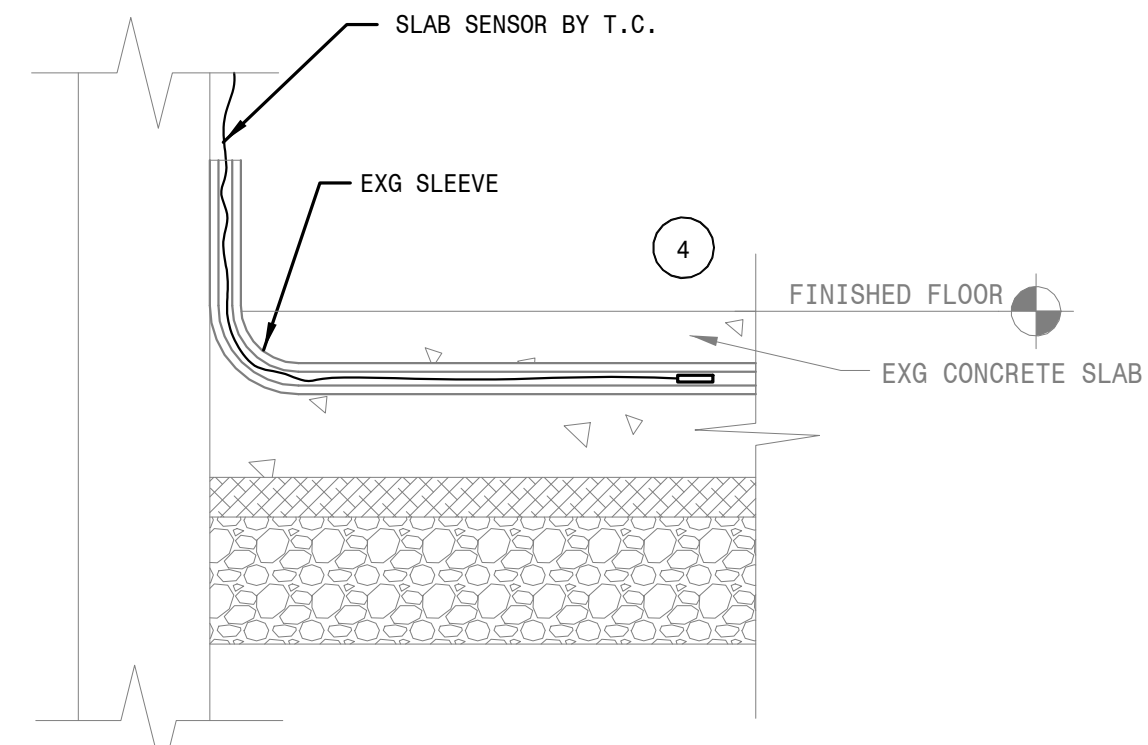
**Electric Water Heater Control & Piping Diagram**  
NOT TO SCALE



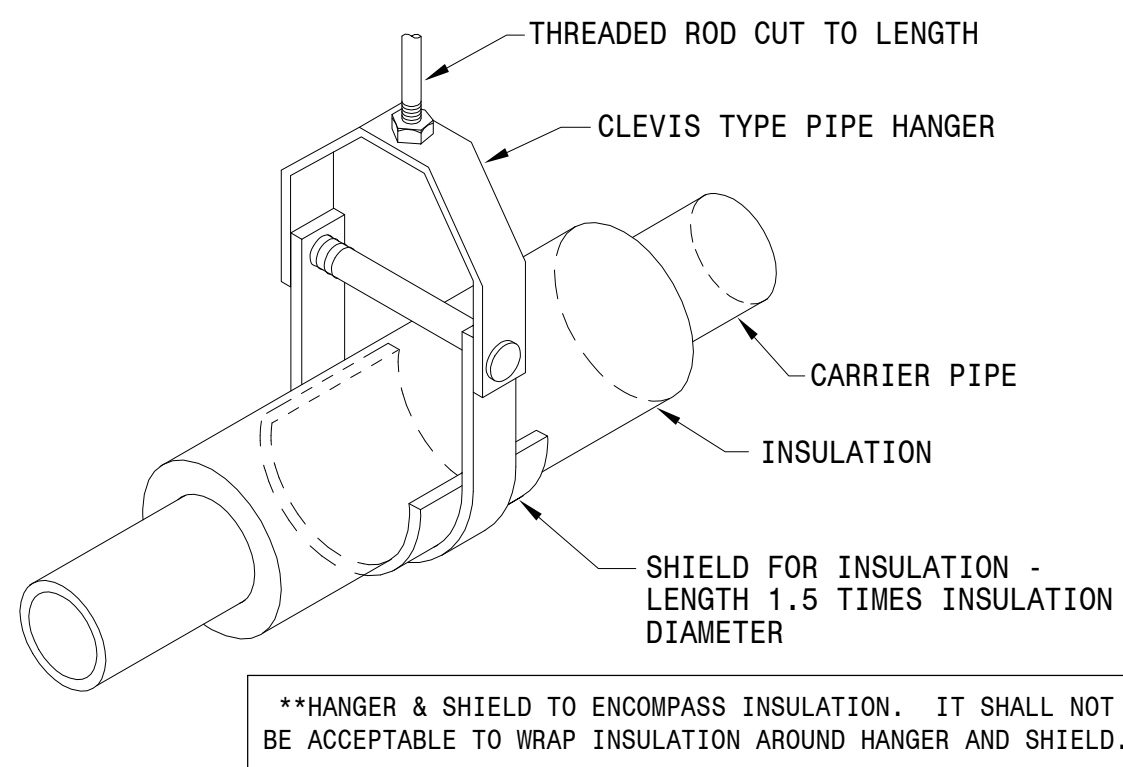
**Pressure Vacuum Breaker Detail  
(For Lawn Irrigation)**  
NOT TO SCALE



**Modifications To Existing In-Floor Heat Manifold  
Control & Piping Diagram**  
NOT TO SCALE



**Slab Stat Detail**  
NOT TO SCALE

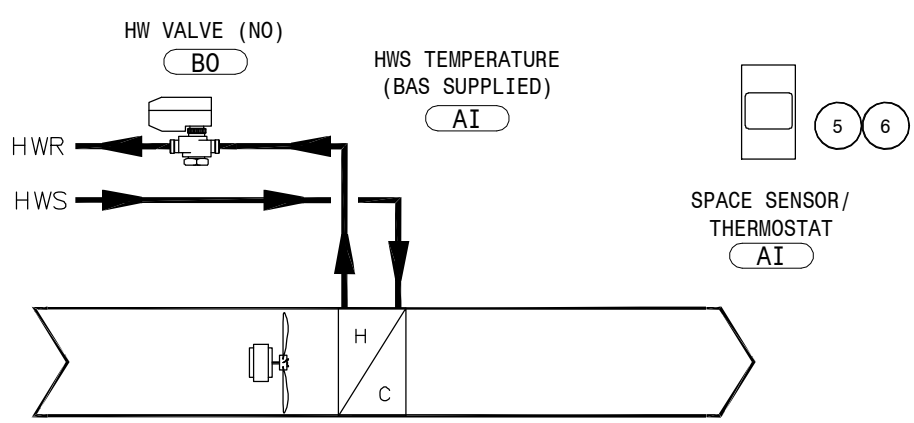


**Clevis Type Pipe Hanger  
For Insulated Pipe Detail**  
NOT TO SCALE



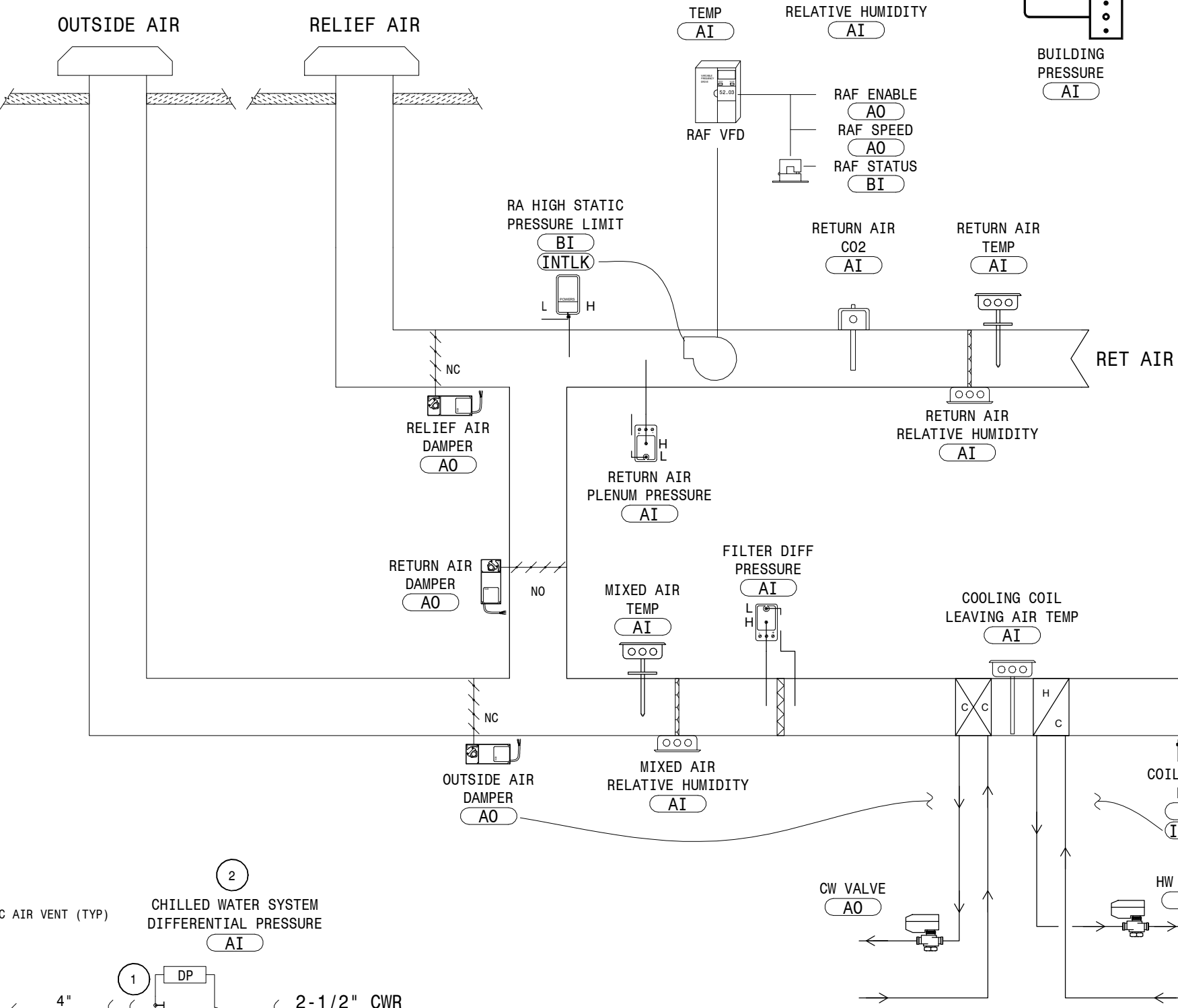
NOTES:

1. INSTALL PRESSURE TRANSMITTER TAPS IN THE SIDE OF THE PIPES, NOT IN THE TOP OR BOTTOM. INSTALL AT LEAST 10 PIPE DIAMETERS FROM ANY ELBOW, TAP, OR REDUCER.
2. LOCATE SYSTEM DIFFERENTIAL PRESSURE SENSORS BEFORE THE SYSTEM BYPASS VALVES. SEE PLANS FOR EXACT LOCATION.
3. TEMPERATURE SENSORS SHALL BE INSTALLED WITHIN 12" OF CORRESPONDING THERMOMETER. SEE PIPING DETAIL.
4. PLACE SUPPLY AIR DUCT PRESSURE SENSOR 2/3 THE LENGTH IN THE LONGEST DUCT RUN FROM AHU. SEE PLANS FOR EXACT LOCATION.
5. LOCATE AS SHOWN ON FLOOR PLANS.
6. SEE TEMPERATURE CONTROL ZONE PLAN FOR EQUIPMENT CONTROLLED BY SPARE INPUTS AND OUTPUTS.



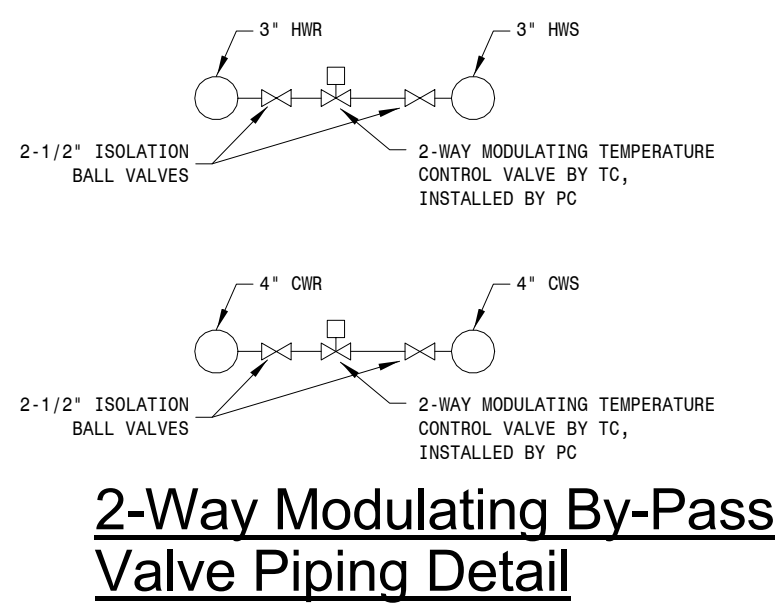
Typical HUH Control Diagram

NOT TO SCALE



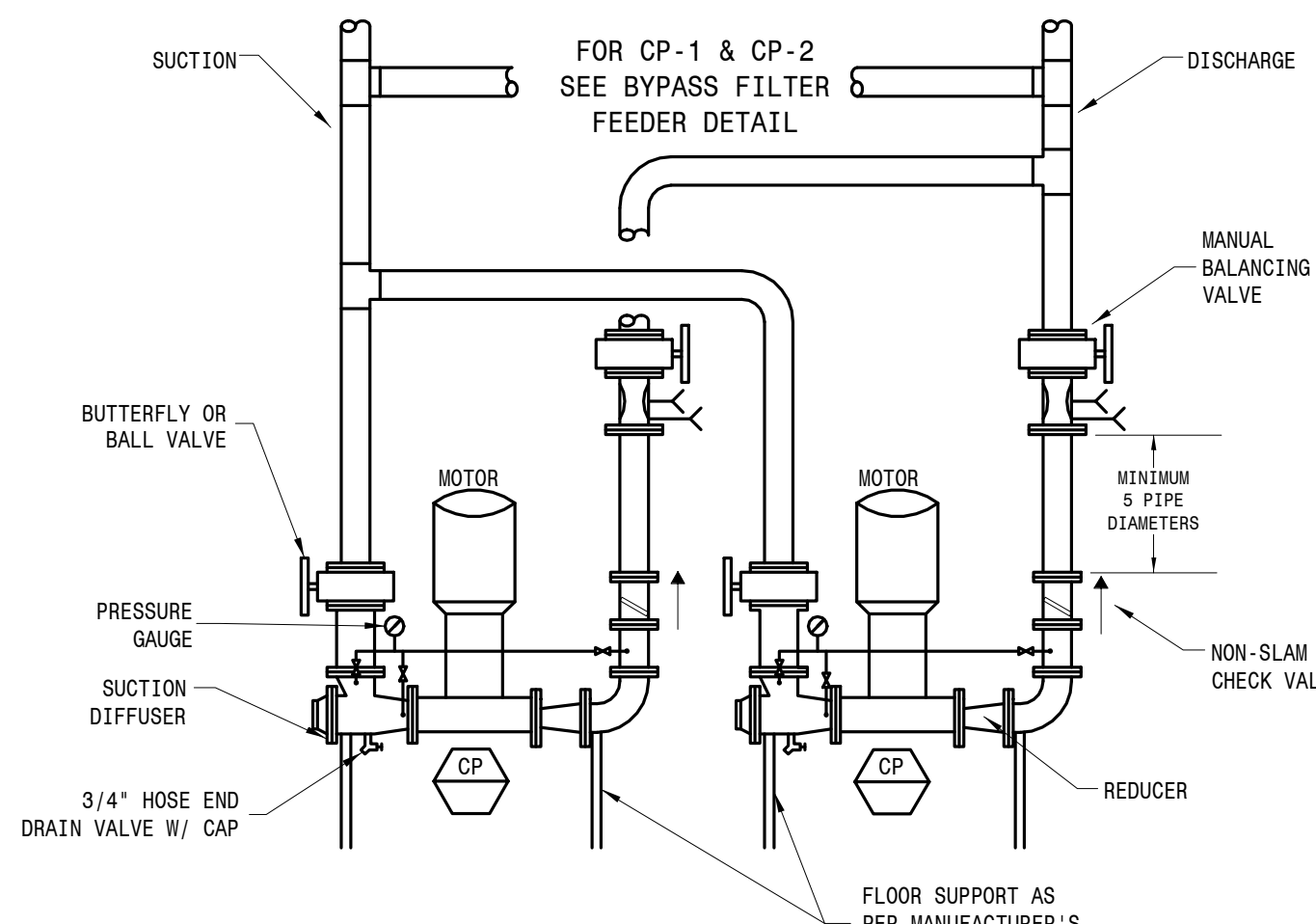
AHU System Control Diagram (AHU-1, HUM-1 & RF-1, AHU-2, HUM-2 & RF-2)

NOT TO SCALE



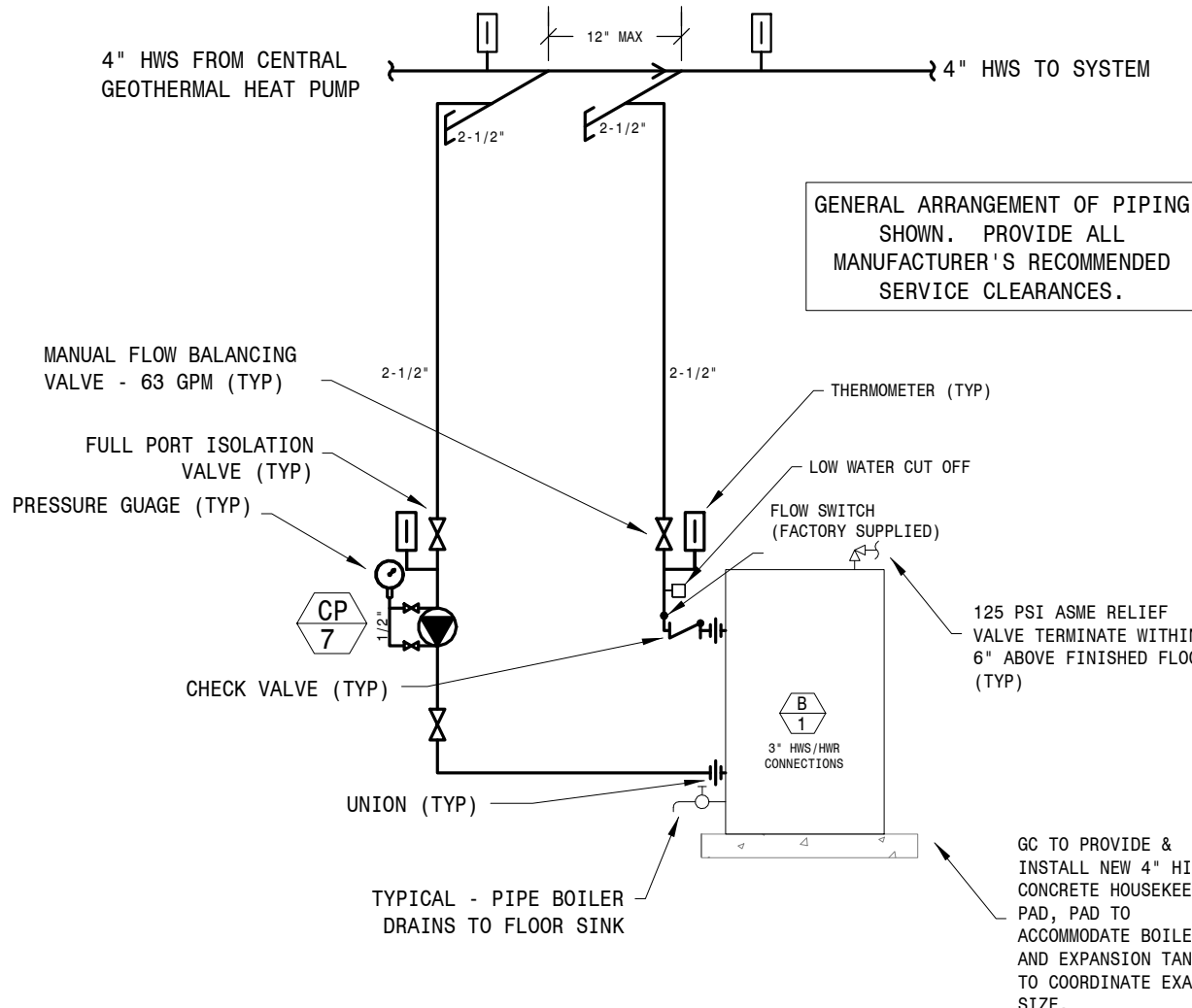
2-Way Modulating By-Pass Valve Piping Detail

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Vertical In-Line Pump Piping Diagram

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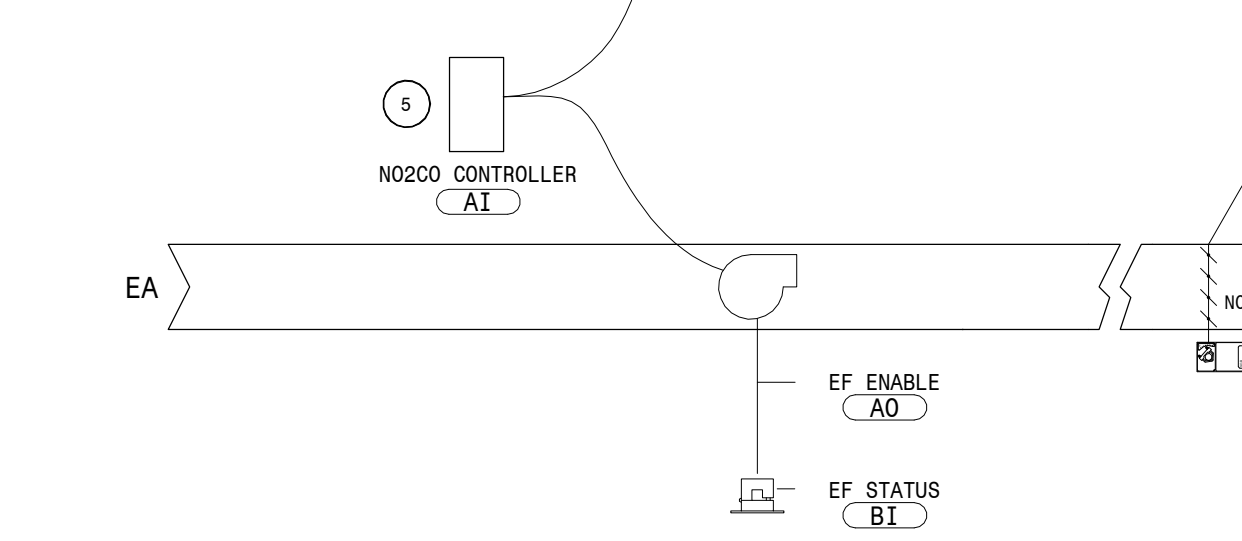


Boiler Piping Diagram

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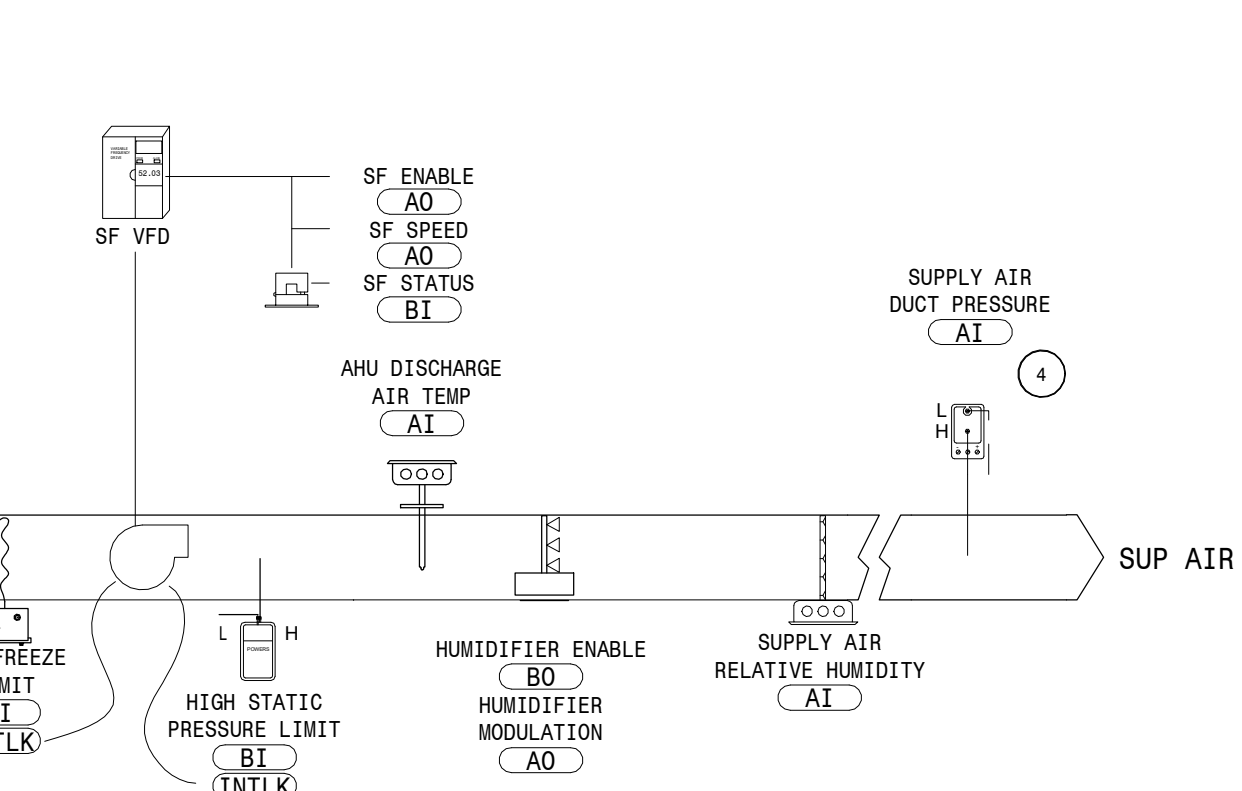
Supply Fan SF-1 & SF-3 Control Diagram

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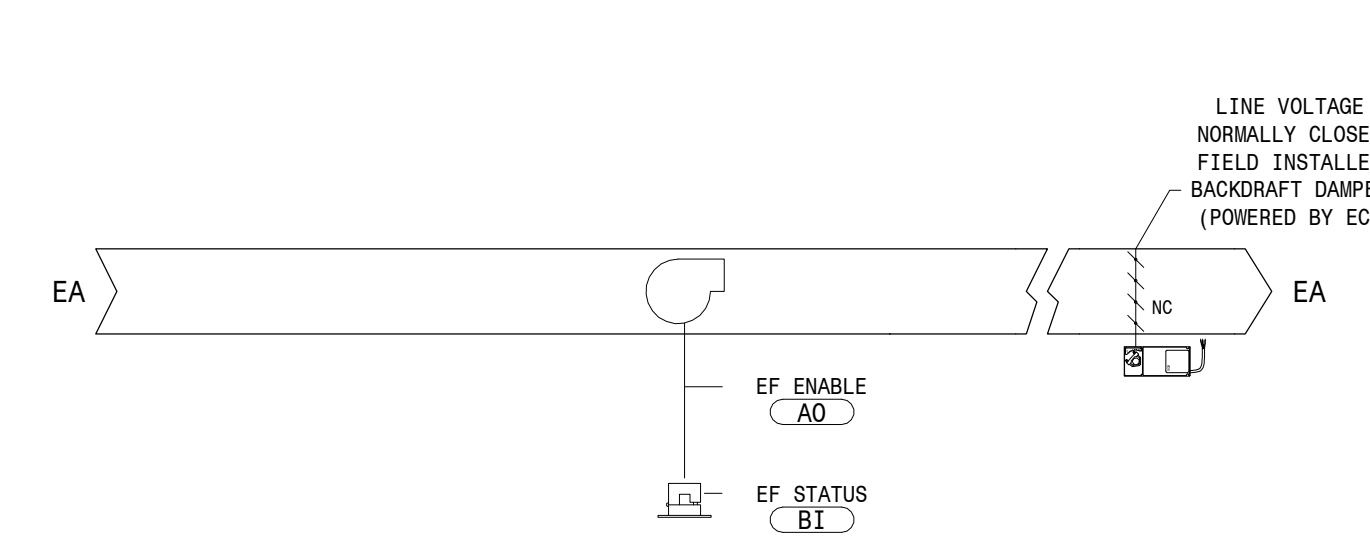
Exhaust Fan EF-1 & EF-3 Control Diagram

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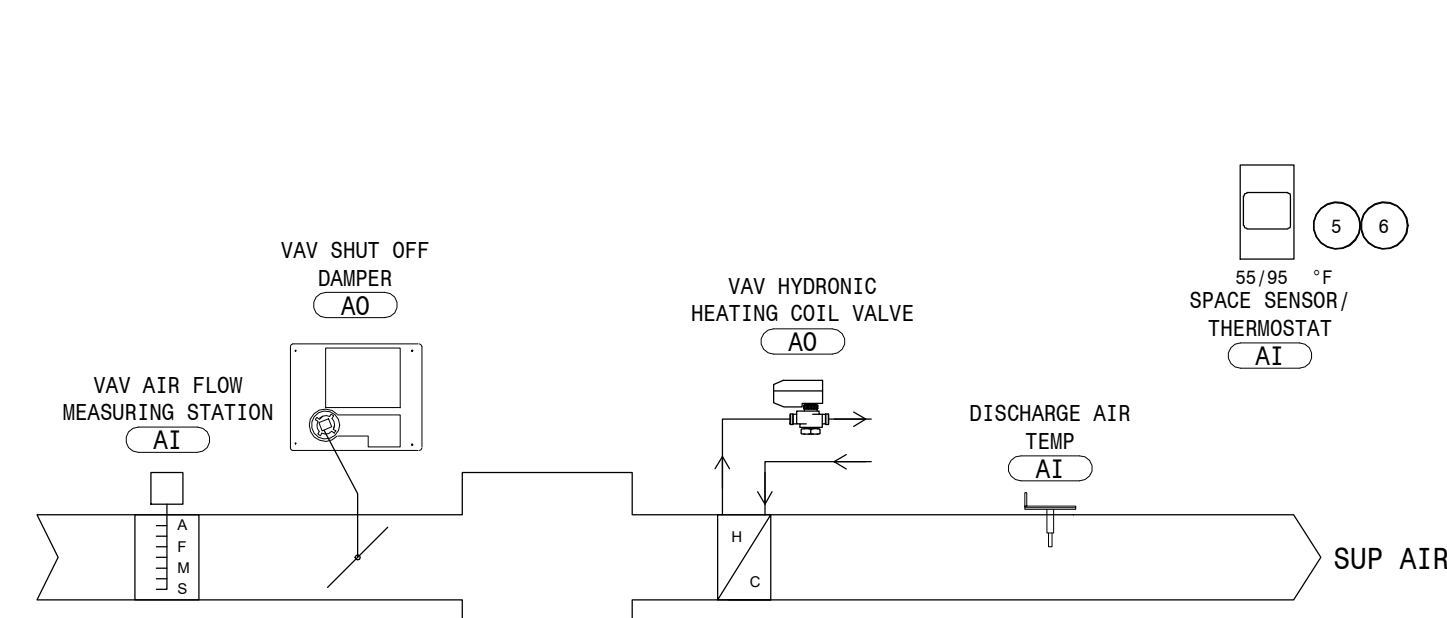
Supply Fan SF-2 Control Diagram

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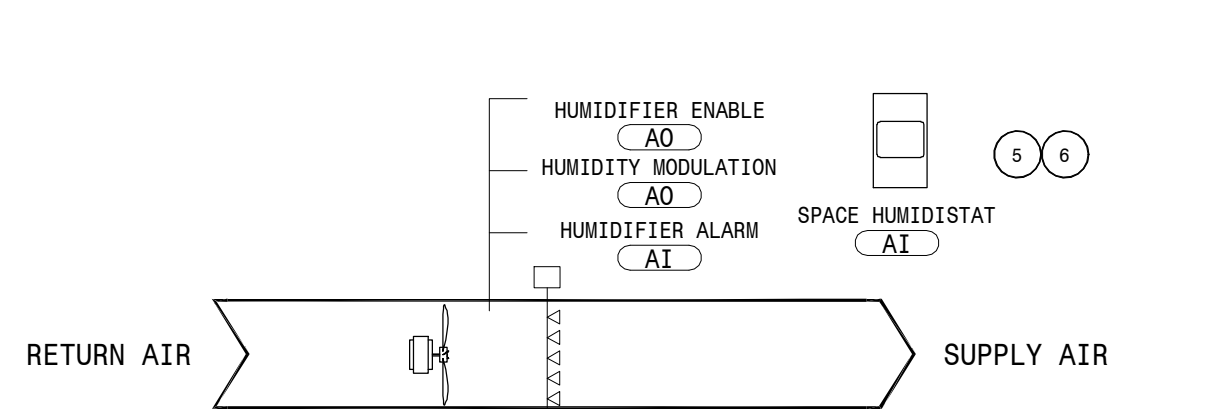
Exhaust Fan EF-2, EF-4 & EF-5 Control Diagram

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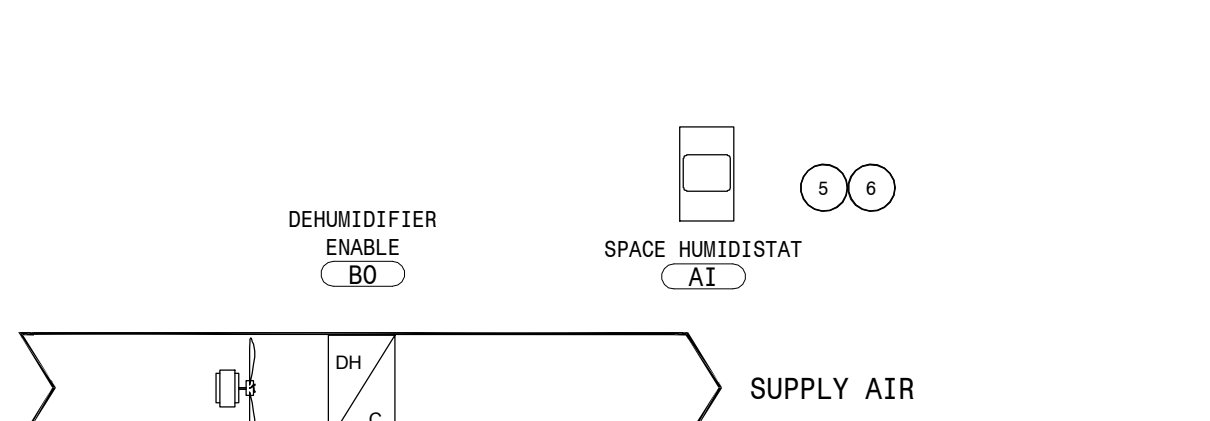
Typical VAV (with Reheat) Control Diagram

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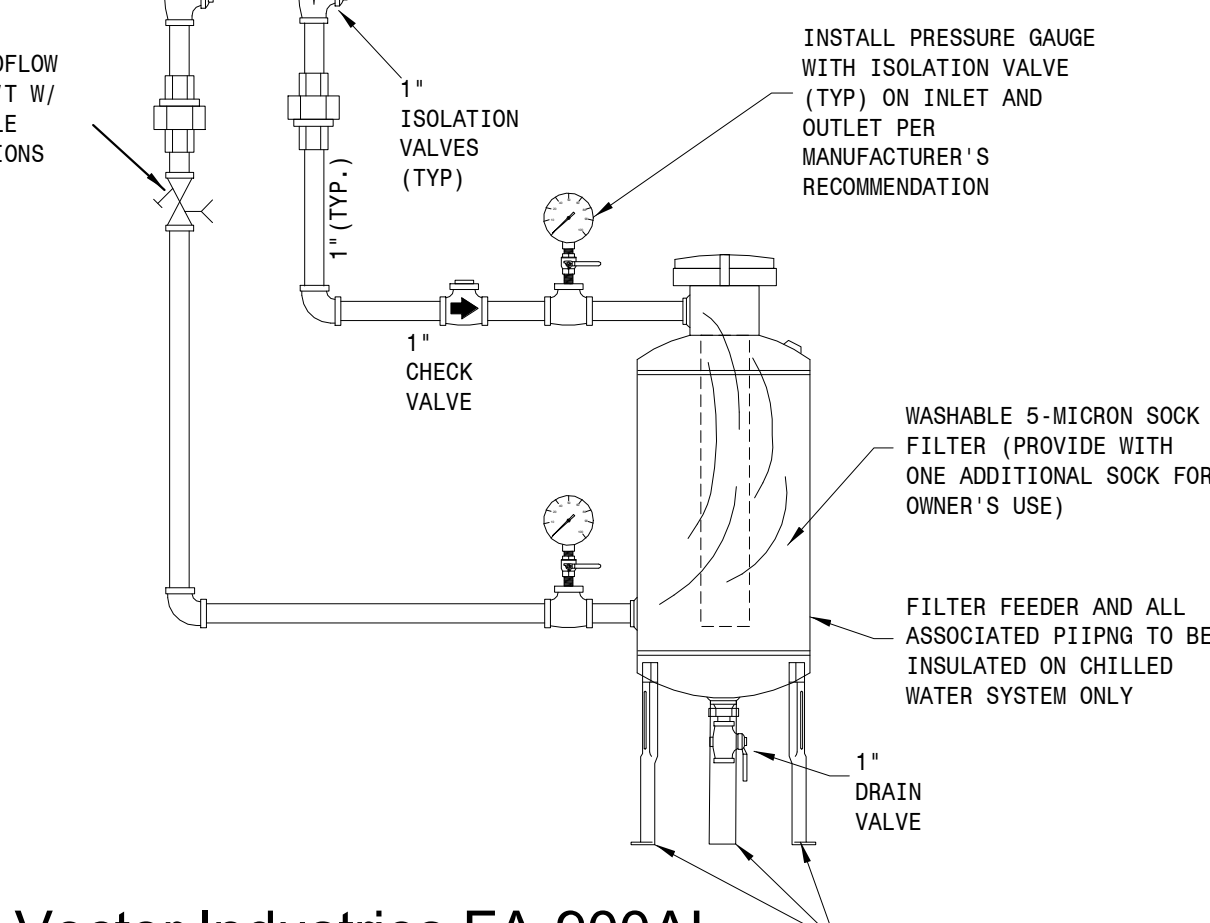
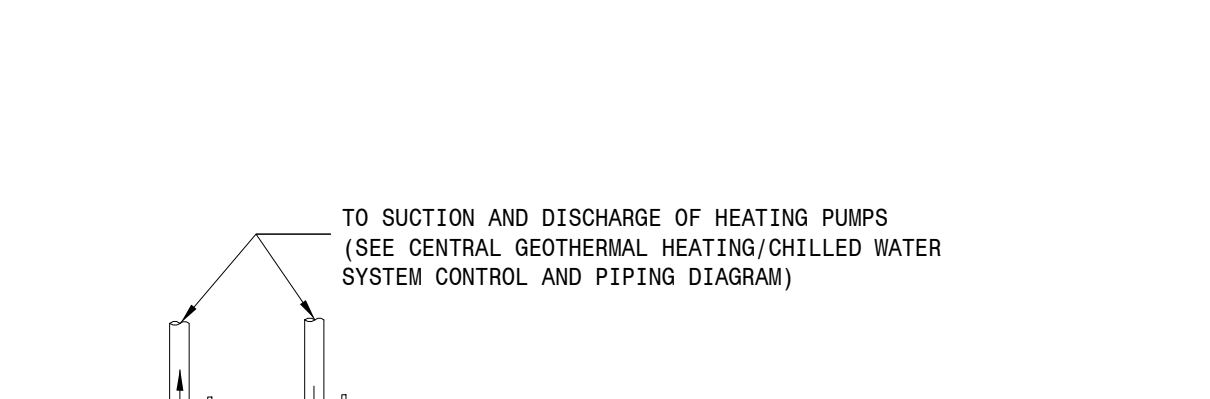
Humidifier Control Diagram (HUM-3)

NOT TO SCALE



Typical Dehumidifier Control Diagram (Exg DH, DH-1.2)

NOT TO SCALE

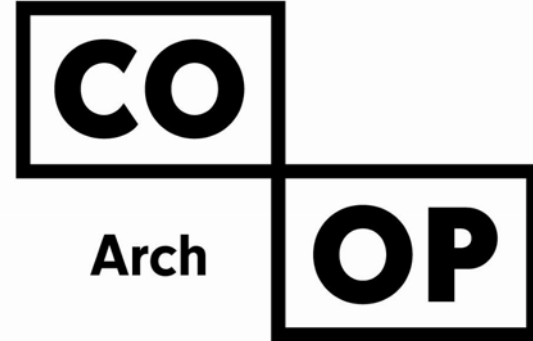


Vector Industries FA-900AL (with adjustable legs) High Flow Bypass Filter Feeder Detail

NOT TO SCALE

Central Geothermal/Heating/Chilled Water System Control & Piping Diagram

NOT TO SCALE



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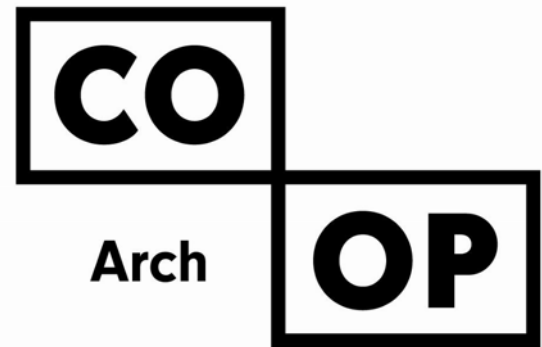
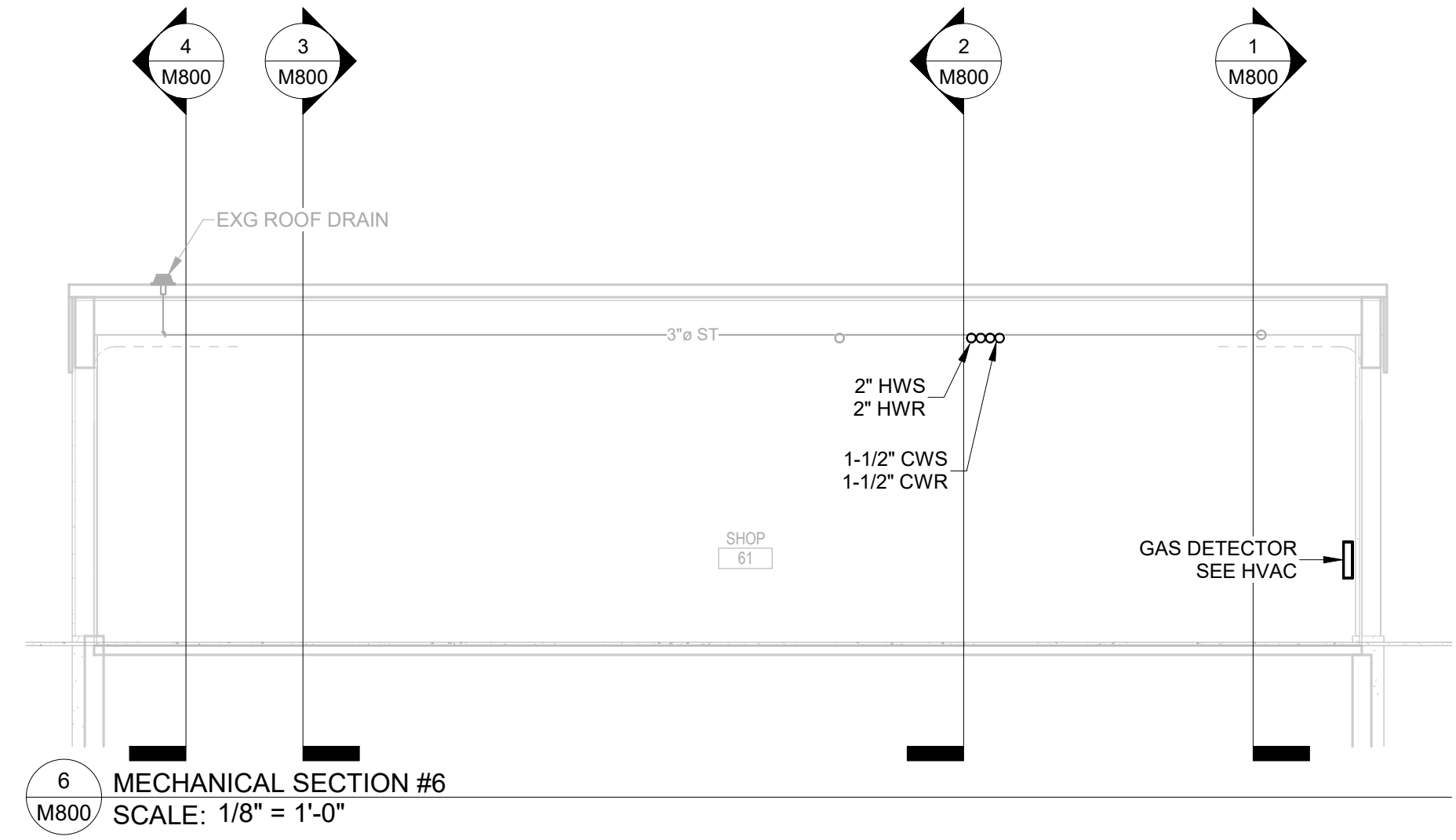
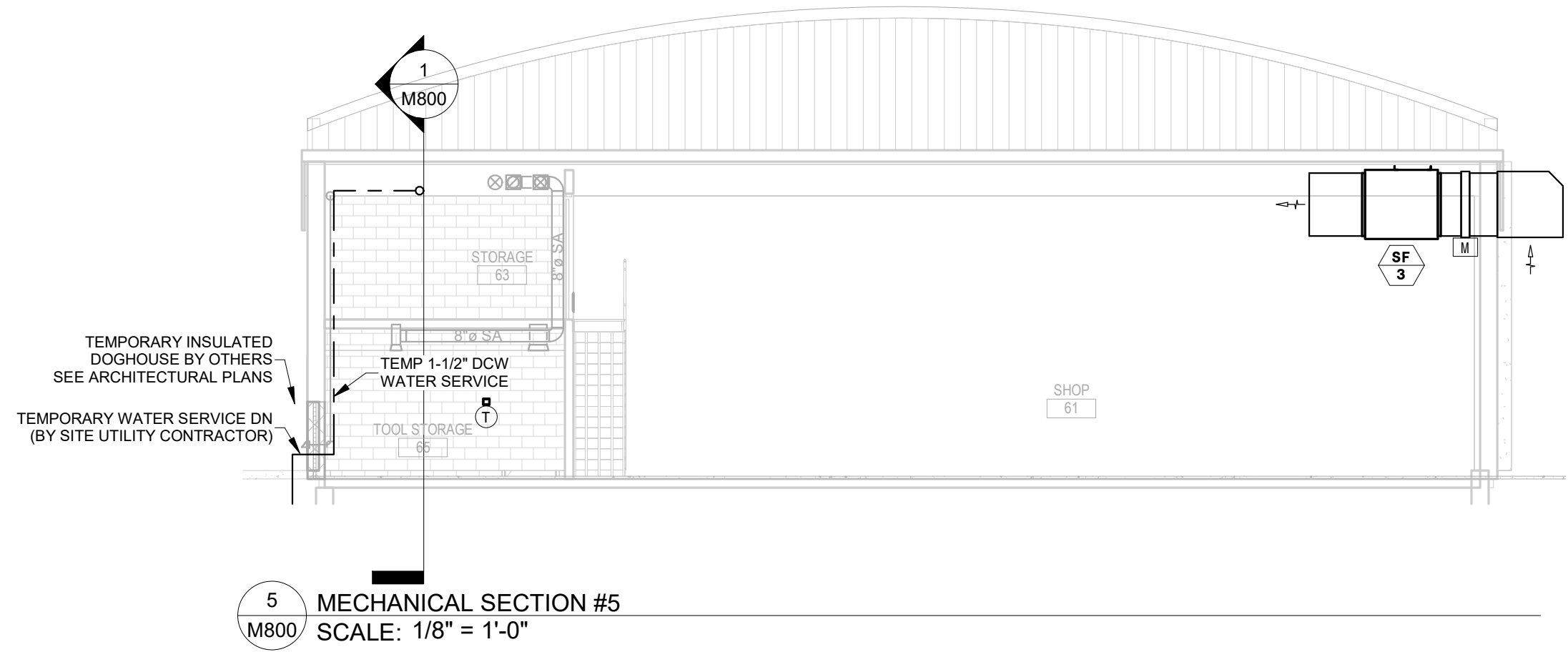
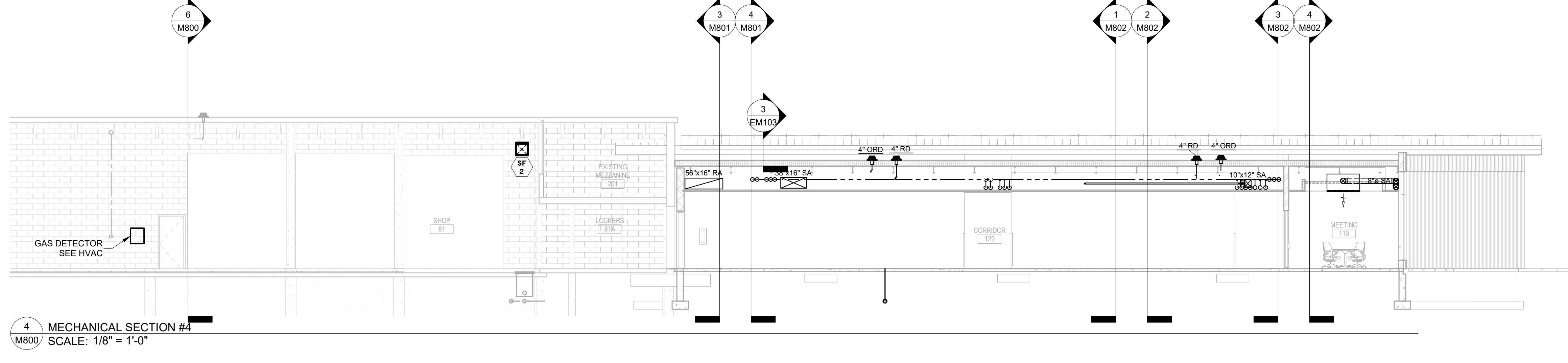
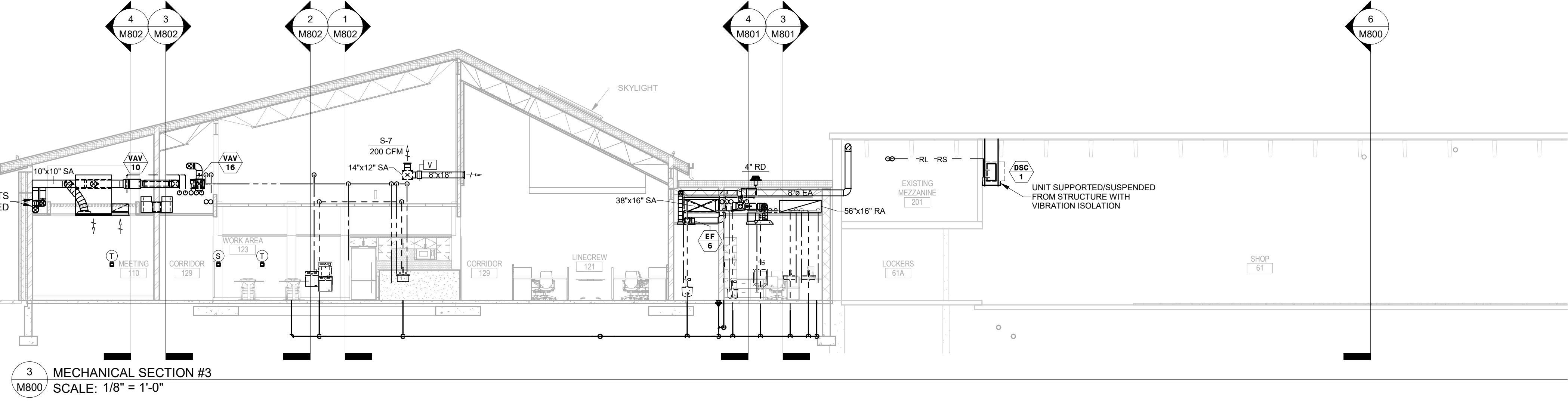
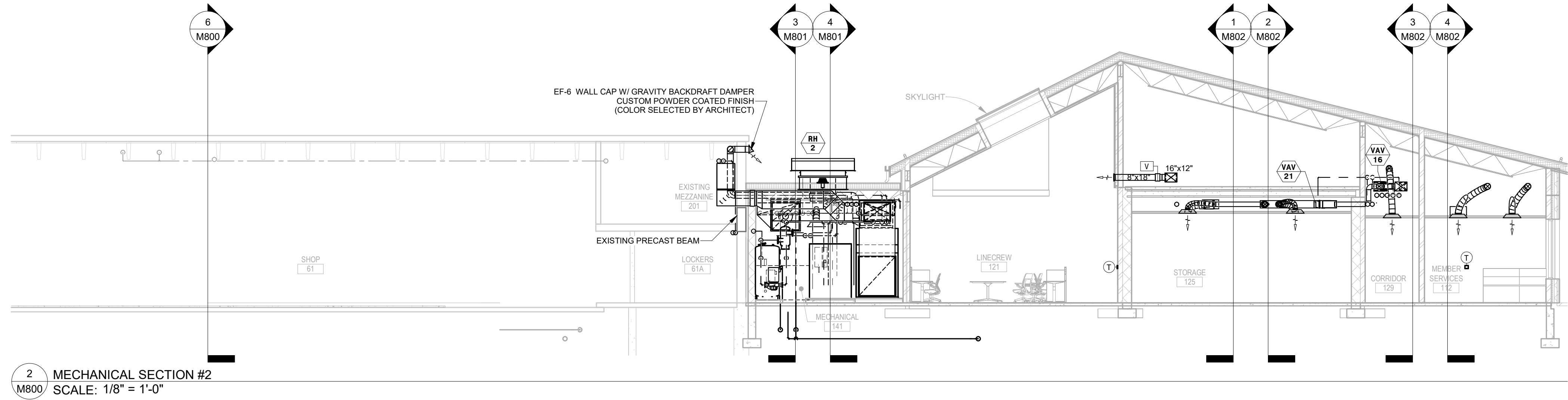
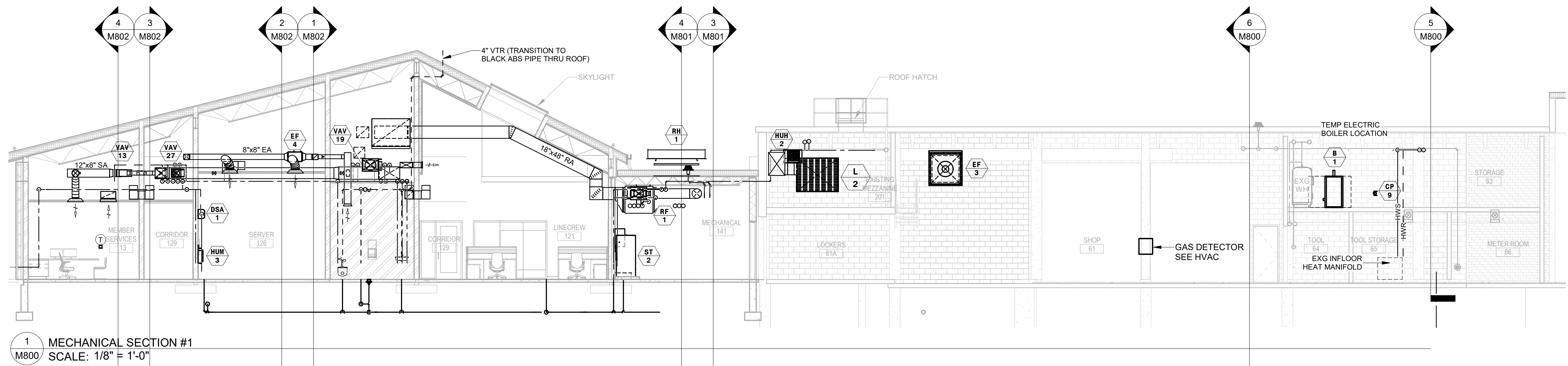
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M703





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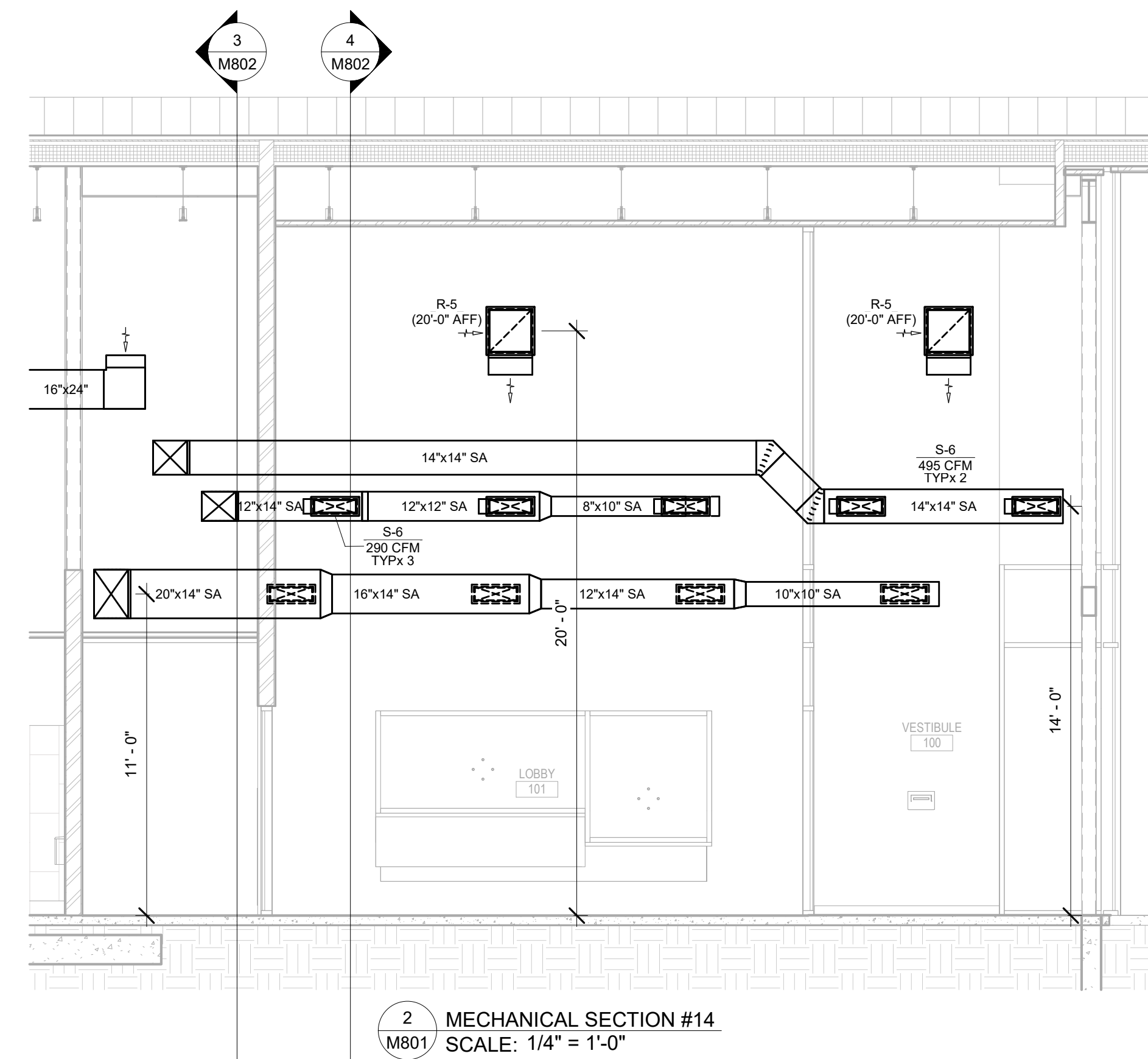
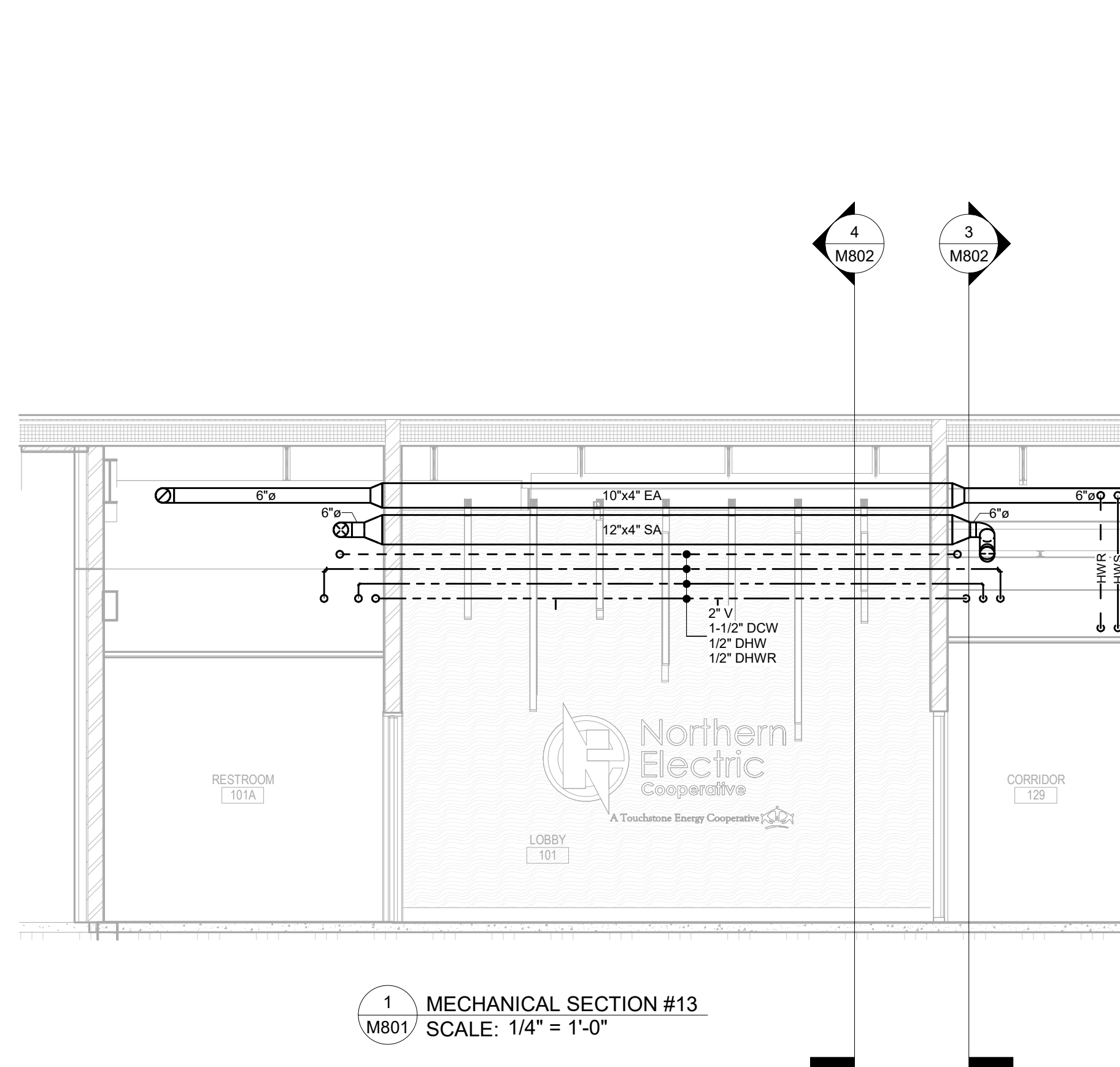
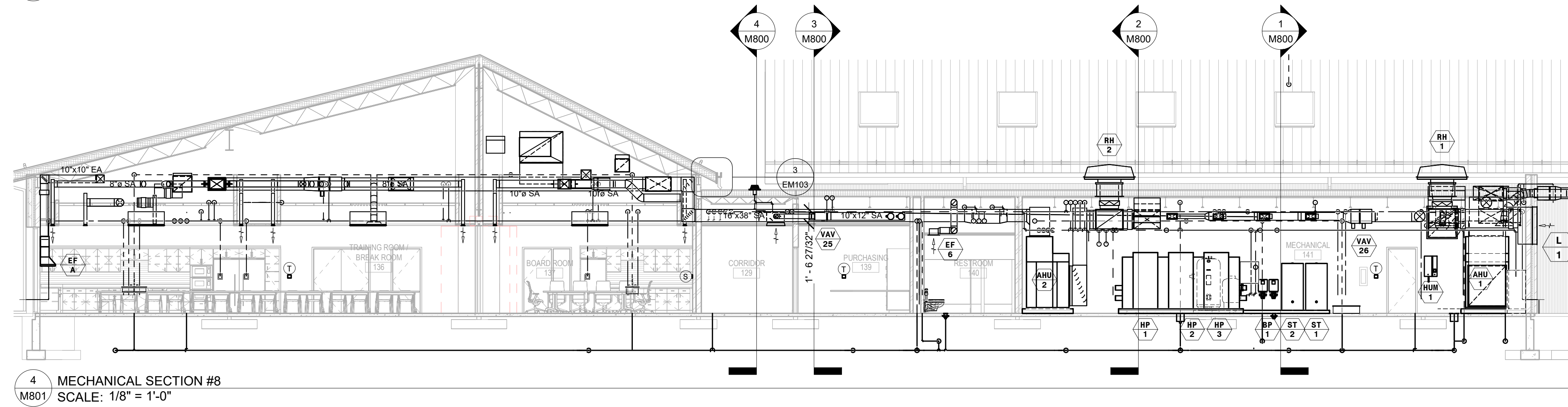
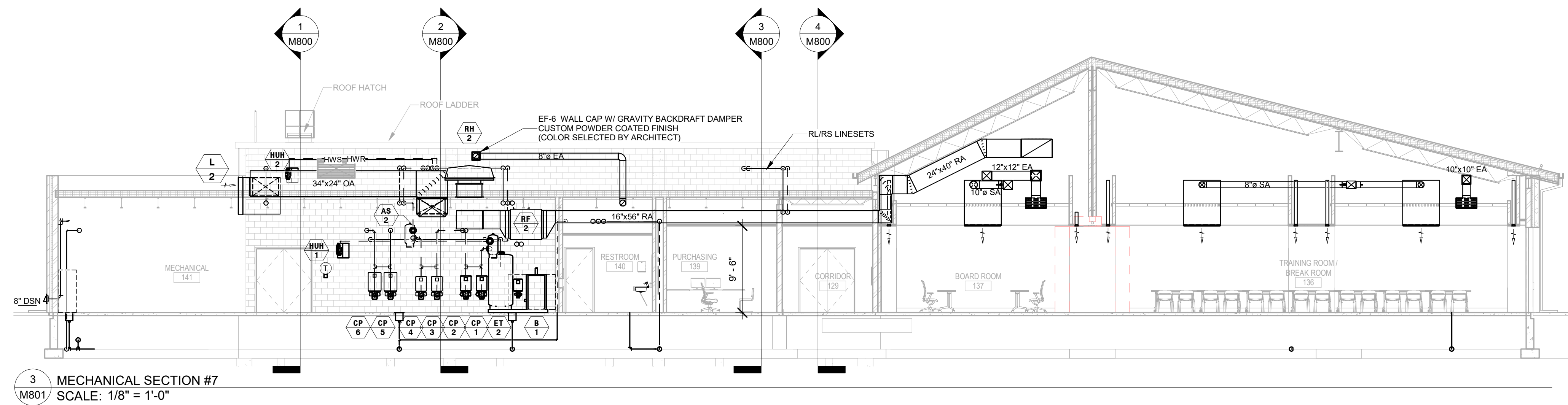
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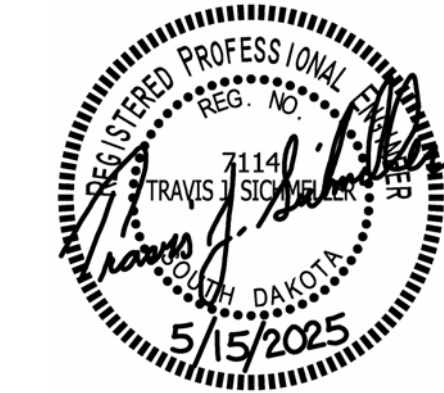


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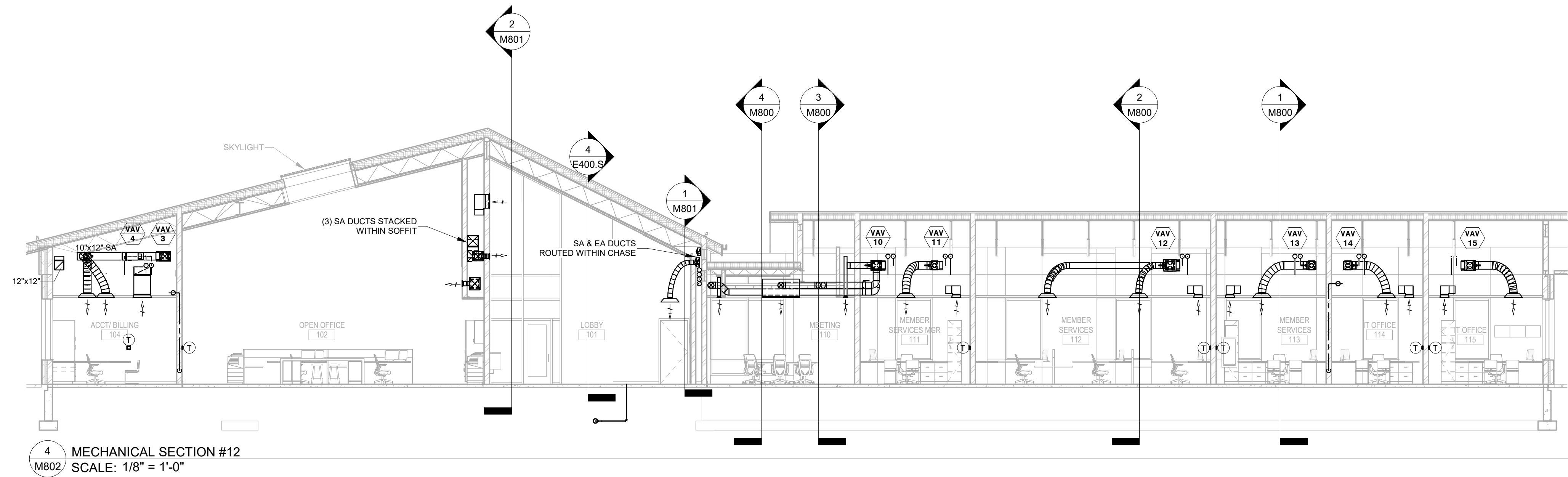
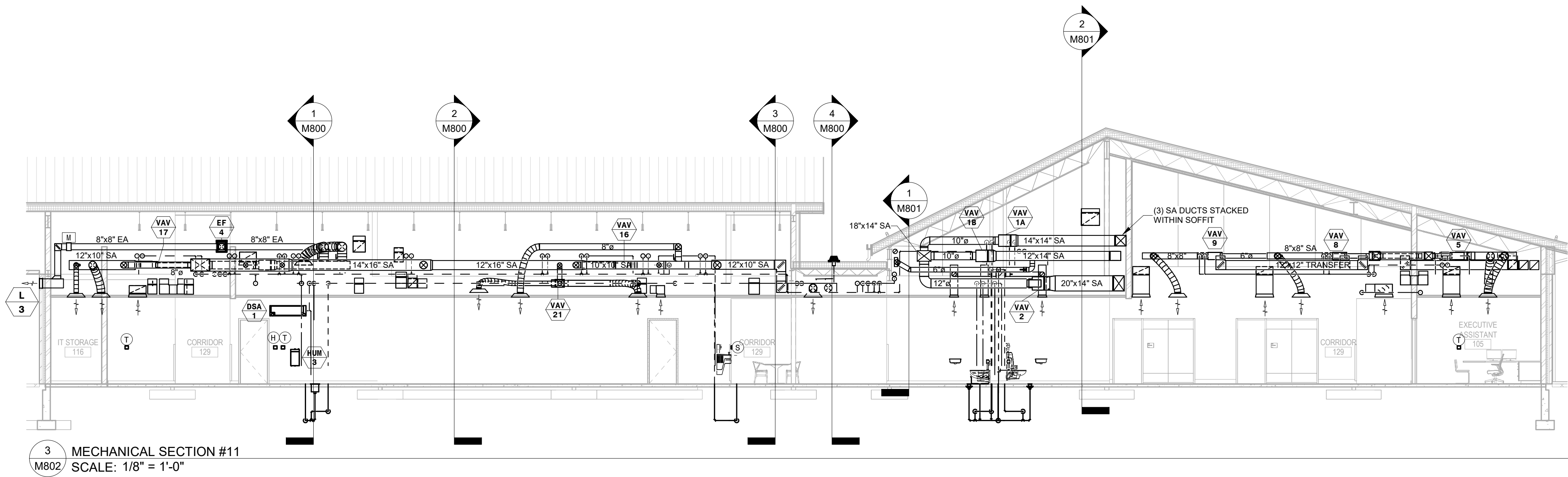
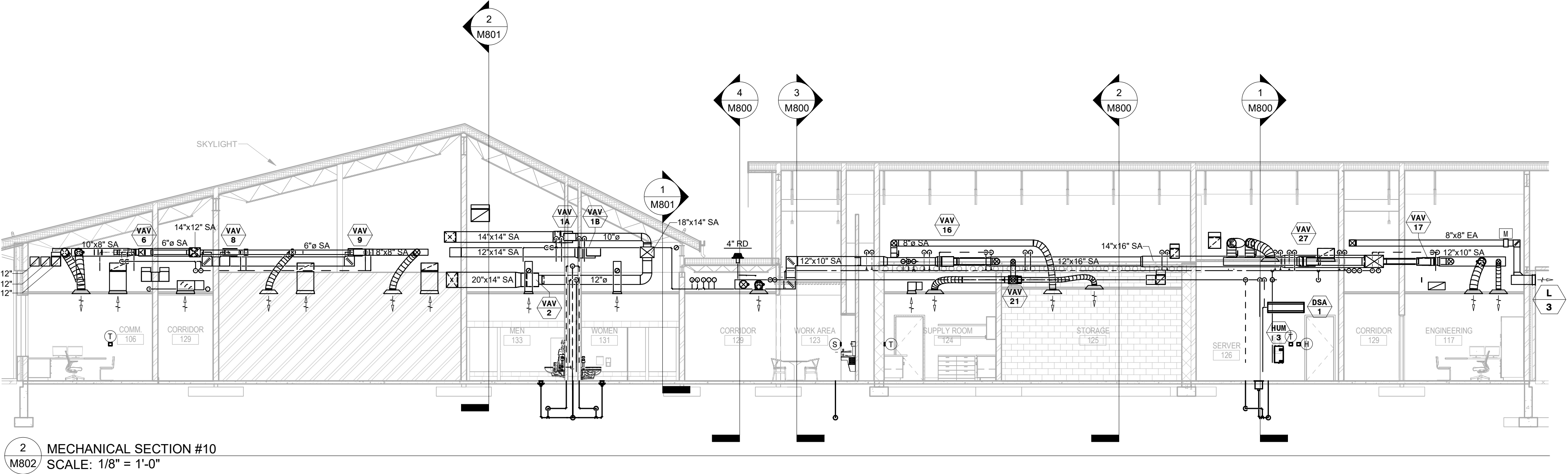
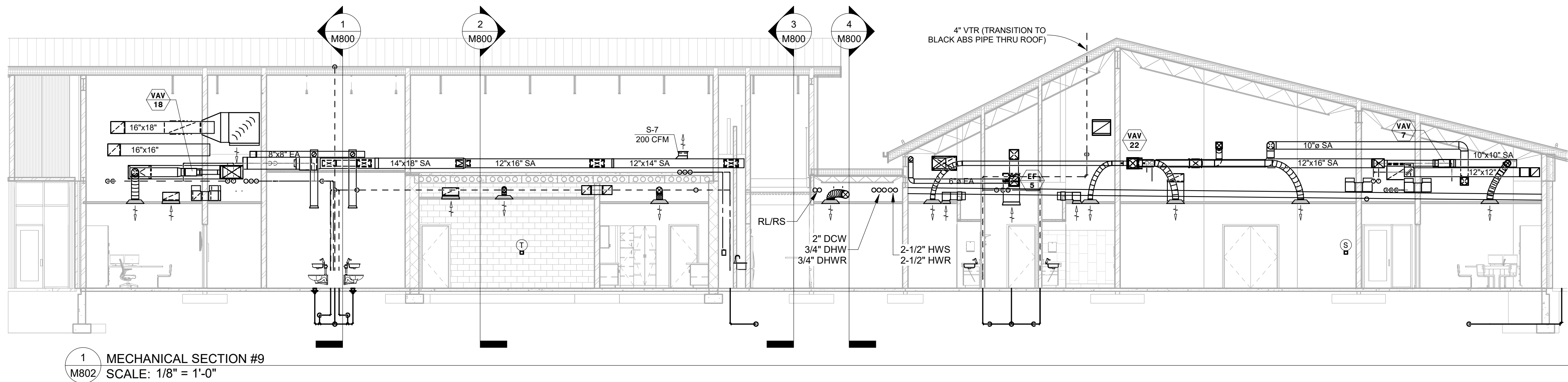
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MECHANICAL SECTIONS - 2 OF 3

M801





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SHEET TITLE:  
MECHANICAL SECTIONS - 3 OF 3

M802




AIR HANDLING UNIT SCHEDULE																														AMT							
EQUIP. NO.	MANUFACTURER & MODEL	LOCATION	SERVING	MAX AIRFLOW (CFM)	RIN AIRFLOW (CFM)	HEATING AIRFLOW (CFM)	REHEATING AIRFLOW (CFM)	SUPPLY FAN MOTOR										COOLING COIL CAP. (ENT=44°F)										OPER. WT. (LBS)	NOTES								
								CFM	ESP (IN W.G.)	HP	BHP	SIZE/TYPE	FAN RPM	V./PH./CY.	FLA	NCA	MOCP	TOTAL COOLING BHP	EAT DB/WB (°F)	LAT DB/WB (°F)	FV (FPM)	LVT (°F)	GPM	WPD	TOTAL CONNECTIONS		TOTAL HEATING BHP			EAT (°F)	LAT (°F)	FV	LVT (°F)	GPM	WPD	TOTAL CONNECTIONS	
																									QTY	SIZE (IN)										QTY	SIZE (IN)
AHU-1	AON V3-EMB 3.0-26HC-620	MECH 141	WEST OFFICE VAV SYSTEM	8,400	4,065	6,100	990	8,400	2.15	(2) 5	(2) 4.08	18.5"/PL	3212	480/3/60	10.0	12.0	15	205.1	75.9/63.2	54.9/54.8	466.7	52.4	53.0	25.4	2	2.0	324.3	60.0	95.0	478.1	111.2	37.0	21.7	2	1.5	850	1,2,3,4,5,6,7
AHU-2	AON V3-EMB 3.0-26HC-620	MECH 141	EAST OFFICE VAV SYSTEM	8,400	5,345	6,660	1,275	8,400	2.25	(2) 5	(2) 4.12	18.5"/PL	3226	480/3/60	10.0	12.0	15	215.0	76.5/63.6	54.9/54.8	466.7	52.5	55.0	26.8	2	2.0	324.3	60.0	95.0	478.1	111.2	37.0	21.7	2	1.5	850	1,2,3,4,5,6,7
NOTES:																																					
1. DISCONNECT BY GC.																																					
2. PROVIDE UNIT CONFIGURED FOR FIELD INSTALLED CONTROLS.																																					
3. UNIT SHALL BE A STANDARD, FLAT-ROOFED, VOLUME UNIT AND SHALL INCLUDE FILTER SECTION, CHILLED WATER COOLING COIL, HOT WATER HEATING COIL, (CONTRIBUTOR OF COOLING COIL) AND SUPPLY AIR FAN WITH DISCHARGE OUT THE TOP OF UNIT.																																					
4. PROVIDE WITH FACTORY INSTALLED VAV FOR EACH SUPPLY FAN BEYOND UNIT (2) AND FACTORY INSTALLED IN-PAK BLOW-THRU PROTECTION.																																					
5. COOLING AND HEATING COIL PERFORMANCE BASED ON 3% HUMIDITY GYDOL. SEE AHU COIL PIPING DETAILS.																																					
6. PROVIDE FLAT FILTER BASK MAT 2" NEW 6" FILTERED FILTERS. GC TO PROVIDE 1 EXTRA SET OF FILTERS FOR THE INNER.																																					
7. GC TO PROVIDE 1 INSTALLED 4" POURED CONCRETE HOURKEEPING PAD. GC TO COORDINATE PAD SIZE & LOCATION REQUIREMENTS WITH GC.																																					

- NOTES: 1. DISCONNECT BY EC.  
2. PROVIDE UNIT CONFIGURED FOR FIELD INSTALLED CONTROLS.  
3. UNIT SHALL BE A VERTICAL, FLOOR MOUNTED, VARIABLE VOLUME UNIT AND SHALL INCLUDE FILTER SECTION, CHILLED WATER COOLING COIL, HOT WATER HEATING COIL (DOWNSTREAM OF COOLING COIL) AND SUPPLY AIR FAN WITH DISCHARGE OUT THE TOP OF UNIT.  
4. PROVIDE WITH FACTORY INSTALLED VFD FOR EACH SUPPLY FAN MOTOR (QTY 2) AND FACTORY INSTALLED INRGE & BROWNOT PROTECTION.  
5. COOLING AND HEATING COIL PERFORMANCE BASED ON 50% PROPYLENE GLYCOL, SEE AHU COIL PIPING DETAILS.  
6. PROVIDE FLAT FILTER BANK WITH 2" MESH & PLATED FILTERS. VC TO PROVIDE 1 EXTRA SET OF FILTERS FOR THE OWNER.  
7. GC TO PROVIDE 1 INSTALL 4" POURED CONCRETE HOUSEKEEPING PAD. VC TO COORDINATE PAD SIZE & LOCATION REQUIREMENTS WITH GC.

RETURN FAN SCHEDULE															
EQUIP. NO.	MANUFACTURER & MODEL (STYLE)	SERVING	LOCATION	TYPE	CFM	LOW SPEED CFM	STATIC PRESS. (IN W.G.)	MAX SONES	MOTOR					UNIT WEIGHT (LBS)	NOTES
									RATIS	HP	FPM	VOLT./PH./CY.	FLA		
RF-1	COOK SBN-D VFD 270SBN7D(VF2)	AHU-1 RETURN AIR	MECH 141	INLINE	8,400	-	1.50	21	-	7-1/2	954	460/3/60	11.0	512	1,2,3
RF-2	COOK SBN-D VFD 270SBN7D(VF2)	AHU-2 RETURN AIR	MECH 141	INLINE	8,400	-	1.50	21	-	7-1/2	954	460/3/60	11.0	512	1,2,3
NOTES:															
1. IC TO PROVIDE & INSTALL COMBINATION MOTOR STARTER DISCONNECT.															
2. PROVIDE WITH IC MOTOR RATED FOR VARIABLE SPEED APPLICATION WITH FIELD INSTALLED AIR BALANCE KIT FOR INTERFERENCE WITH THE BAS.															
3. PROVIDE & INSTALL HANDING VIBRATION ISOLATOR & FLEXIBLE DUCT CONNECTIONS.															

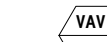
- NOTES: 1. GC TO PROVIDE A INSTALL COORDINATION MOTOR STARTER DISCONNECT.  
2. PROVIDE WITH EC MOTOR RATED FOR VARIABLE SPEED APPLICATION WITH FIELD INSTALLED AIR BALANCE KIT FOR INTERFACE WITH THE BAS.  
3. PROVIDE A INSTALL HANGING VIBRATION ISOLATION & FLEXIBLE DUCT CONNECTIONS.

HEAT PUMP (MODULAR HEAT RECOVERY CHILLER) SCHEDULE																																			
EQUIP. NO.	MANUFACTURER & MODEL	LOCATION	NOMINAL TONS	REFRIG. TYPE	STAGES	COOLING PERFORMANCE										HEATING PERFORMANCE										CONN. SIZE			ELECTRICAL DATA					WEIGHT (LBS)	NOTES
						EVAPORATOR				CONDENSER				COP	EVAPORATOR				CONDENSER				CAPACITY (BHP)	COP	EVA. (IN)	COND. (IN)	V./PH./CY.	FLA	NCA	MOCP					
						ENT (°F)	LVT (°F)	GPM	WPD (PSI)	ENT (°F)	LVT (°F)	GPM	WPD (PSI)		ENT (°F)	LVT (°F)	GPM	WPD (PSI)	ENT (°F)	LVT (°F)	GPM	WPD (PSI)													
HP-1	MULTISTACK MSH02K3MC	MECH 141	20	R-454B	2																												1,2,3,4,5,6,7		
HP-2	MULTISTACK MSH02K3MC	MECH 141	20	R-454B	2																												1,2,3,4,5,6,7		
HP-3	MULTISTACK MSH02K3MC	MECH 141	20	R-454B	2	56	44	134.0	5.54	85	95	192.0	6.35	905.1	4.78	50	41	141.0	6.25	110	130	86.0	2.60	813.4	3.59	6" DIA GROOVE	6" DIA GROOVE	480/3/60	41.4	47.0	70	7,440	* WATER		
	MULTISTACK (4) MSH04B-H04M4	MECH 141																														1,2,3,4,5,6,7			
NOTES:						1. PROVIDE EACH MODULE WITH A SEPARATE ELECTRICAL CONNECTION. DISCONNECT BY EC. 2. PROVIDE WITH FACTORY CONTROLS WITH BACNET INTERFACE FOR BMS INTEGRATION. 3. SYSTEM SHALL BE MADE UP OF 5 CHILLER MODELS, EACH MODULE INCLUDING DUAL COMPRESSORS. 4. UNIT SHALL UTILIZE R-454B REFRIGERANT AND CAPACITIES SHALL BE BASED ON 35% PROPYLENE GLYCOL. 5. GC TO PROVIDE AND INSTALL 4" POLYHD CONCRETE HOUSING/PED AND TO ACCOMMODATE ALL MODULES. VC TO COORDINATE EXACT SIZE AND LOCATION REQUIREMENTS WITH GC. 6. VC TO PROVIDE A SET UNIT. AND PROVIDE FACTORY AUTHORIZED STARTUP. PG TO INITIAL HOUSING PIPING CONNECTIONS. 7. PROVIDE WITH COMPRESSOR SOUND BLANKETS AND ACOUSTICAL PANEL ENCLOSURE.																													

- NOTES: 1. PROVIDE EACH MODULE WITH A SEPARATE ELECTRICAL CONNECTION. DISCONNECT BY EC.  
2. PROVIDE WITH FACTORY CONTROL WITH BACNET INTERFACE FOR BAS INTEGRATION.  
3. SYSTEM SHALL BE MADE UP OF 3 CHILLER MODULES, EACH MODULE HAVING DUAL COMPRESSORS.  
4. UNIT SHALL UTILIZE R-454B REFRIGERANT AND CAPACITORS SHALL BE BASED ON 50% PROPYLENE GLYCOL.  
5. GC TO PROVIDE AND INSTALL 4" POURED CONCRETE HOUSEKEEPING PAD TO ACCOMMODATE ALL MODULES. VC TO COORDINATE EXACT SIZE AND LOCATION REQUIREMENTS WITH GC.  
6. VC TO PROVIDE A SET UNIT-LEVEL FACTORY AUTHORIZED STARTUP. GC TO INSTALL HYDRAULIC PIPING CONNECTIONS.  
7. PROVIDE WITH COMPRESSOR SOUND BLANKETS AND ACOUSTICAL PANEL ENCLOSURE.

EXISTING FAN COIL UNIT SCHEDULE																														EXG FC	
EQUIP. NO.	MANUFACTURER & MODEL	LOCATION	SERVING	AT2FLOW (CFM)	ESP (IN H2O)	COOLING COIL CAP. (ENT=44°F)								HEATING COIL CAP. (ENT=130°F)								MOTOR				ELECTRICAL				OPER. WT. (LBS)	NOTES
						TOTAL COOLING BHP	EAT BHP (°F)	LAT BHP (°F)	FV (FPM)	LVT (°F)	GPM	WPD	TOTAL CONNECTIONS QTY	TOTAL HEATING BHP	EAT (°F)	LAT (°F)	FV (FPM)	LVT (°F)	GPM	WPD	TOTAL CONNECTIONS QTY	QTY	HP	V./PH./CY.	FLA	NCA	MOCP				
EXG FCO	HYDRON MODULE WPD24018M15	STORAGE 63	STORAGE 63, TOL. STORAGE 65 & METER ROOM 66	860	0.25	20.4	75.0/63.0	59.3/59.1	260.7	54.0	6.0	8.74	2	3/4	36.3	70.0	109.1	260.7	115.4	6.0	8.11	--	--	1	1/3	208-240/160	3.0	4.0	15	155	1
NOTES: 1. FOR REFERENCE ONLY																															

- NOTES: 1. FOR REFERENCE ONLY

SHUTOFF VAV TERMINAL SCHEDULE																					
EQUIP. NO.	MANUFACTURER & MODEL	SERVED BY	INLET SIZE	MAX CFM	RIN CFM	MAX TSP	MAX RAD MC	MAX DISCH MC	HEATING COIL (ENT = 130°F)							COIL CORR. SIZE	HANDOUT SIZE	WEIGHT (LBS.)	NOTES		
									CFM	RIN BHP	EAT (°F)	LAT (°F)	GPM	LVT (°F)	WPD (FPM)					BOW	
VAV-1A	PRICE SDV-05	AHU-2	10	990	350	0.34	--	--	490	29.3	55.0	98.8	4.0	117.2	5.00	2	7/8"	1"	36.0	1,2,3,4,5,6	
VAV-1B	PRICE SDV-05	AHU-2	10	920	465	0.30	--	--	630	27.0	55.0	94.5	4.0	115.2	5.02	2	7/8"	1"	36.0	1,2,3,4,5,6	
VAV-2	PRICE SDV-05	AHU-2	12	1700	1200	0.53	--	--	1200	55.2	55.0	97.4	7.0	112.8	4.97	3	7/8"	1"	55.0	1,2,3,4,5,6	
VAV-3	PRICE SDV-05	AHU-2	8	520	185	0.23	--	--	21	355	16.9	55.0	98.6	1.5	105.4	0.38	3	7/8"	3/4"	34.0	1,2,3,4,5,6
VAV-4	PRICE SDV-05	AHU-2	6	285	100	0.17	--	--	25	195	9.3	55.0	98.8	3.0	123.2	1.89	2	7/8"	3/4"	22.0	1,2,3,4,5,6
VAV-5	PRICE SDV	AHU-2	6	235	90	0.15	--	--	22	160	7.4	55.0	97.2	2.5	123.5	1.06	2	7/8"	3/4"	19.0	1,2,3,4,5,6
VAV-6	PRICE SDV	AHU-2	6	235	90	0.15	--	--	22	160	7.7	55.0	98.6	5.0	126.7	3.68	2	7/8"	1"	19.0	1,2,3,4,5
VAV-7	PRICE SDV	AHU-2	8	375	160	0.21	--	--	255	12.4	55.0	99.6	3.0	121.0	1.90	2	7/8"	3/4"	23.0	1,2,3,4,5	
VAV-8	PRICE SDV	AHU-2	6	150	90	0.04	--	--	90	2.6	55.0	90.1	0.5	118.9	0.23	1	7/8"	3/4"	17.0	1,2,3,4,5	
VAV-9	PRICE SDV	AHU-2	6	150	90	0.04	--	--	90	2.6	55.0	90.1	0.5	118.9	0.23	1	7/8"	3/4"	17.0	1,2,3,4,5	
VAV-10	PRICE SDV-05	AHU-1	10	600	265	0.20	--	--	285	13.9	55.0	99.9	5.5	124.5	7.16	2	7/8"	1"	29.0	1,2,3,4,5,6	
VAV-11	PRICE SDV-05	AHU-1	6	300	105	0.19	--	--	22	205	9.3	55.0	96.5	2.0	119.8	0.92	2	7/8"	3/4"	22.0	1,2,3,4,5,6
VAV-12	PRICE SDV-05	AHU-1	10	620	215	0.16	--	--	420	20.3	55.0	99.5	3.0	115.2	2.99	2	7/8"	3/4"	36.0	1,2,3,4,5	
VAV-13	PRICE SDV-05	AHU-1	6	300	105	0.19	--	--	22	205	9.8	55.0	98.5	3.5	123.9	2.50	2	7/8"	3/4"	22.0	1,2,3,4,5
VAV-14	PRICE SDV-05	AHU-1	6	250	90	0.14	--	--	24	175	8.4	55.0	98.8	2.0	120.8	0.92	2	7/8"	3/4"	22.0	1,2,3,4,5,6
VAV-15	PRICE SDV-05	AHU-1	8	350	160	0.21	--	--	21	360	17.1	55.0	99.5	3.0	117.6	2.43	2	7/8"	3/4"	29.0	1,2,3,4,5
VAV-16	PRICE SDV-05	AHU-1	8	380	170	0.24	--	--	25	510	17.3	55.0	99.2	2.0	111.0	1.19	2	7/8"	3/4"	29.0	1,2,3,4,5,6
VAV-17	PRICE SDV-05	AHU-1	6	420	160	0.35	21	38	285	12.5	55.0	95.3	7.0	126.1	8.71	2	7/8"	1"	22.0	1,2,3,4,5	
VAV-18	PRICE SDV-05	AHU-1	6	310	110	0.20	--	--	22	215	10.2	55.0	98.2	4.0	124.4	3.17	2	7/8"	1"	22.0	1,2,3,4,5
VAV-19	PRICE SDV	AHU-1	16	2080	1040	0.52	--	--	1415	68.0	55.0	99.3	10.0	115.1	6.28	3	7/8"	1 1/4"	64.0	1,2,3,4,5,6	
VAV-20	PRICE SDV-05	AHU-1	12	1090	385	0.23	--	--	745	35.7	55.0	99.1	6.0	117.0	4.60	2	7/8"	1"	47.0	1,2,3,4,5	
VAV-21	PRICE SDV-05	AHU-1	6	380	305	0.29	20	26	305	12.9	55.0	93.8	5.0	124.4	4.75	2	7/8"	1"	22.0	1,2,3,4,5	
VAV-22	PRICE SDV	AHU-2	12	790	595	0.24	--	--	595	26.7	55.0	96.2	4.5	117.0	6.18	2	7/8"	1"	36.0	1,2,3,4,5	
VAV-23	PRICE SDV	AHU-2	24X16	1185	0.39	25	23	1585	76.0	55.0	99.2	6.0	102.3	2.35	3	7/8"	1"	107.0	1,2,3,4,5		
VAV-24	PRICE SDV	AHU-2	12	1200	425	0.36	--	--	625	25.9	55.0	90.1	7.0	121.9	13.63	2	7/8"	1"	36.0	1,2,3,4,5,6	
VAV-25	PRICE SDV-05	AHU-2	6	335	120	0.27	--	--	24	230	11.1	55.0	99.2	2.0	117.9	0.92	2	7/8"	3/4"	23.0	1,2,3,4,5,6
VAV-26	PRICE SDV-05	AHU-1	14	1240	435	0.20	--	--	845	40.6	55.0	99.2	6.0	115.2	4.90	2	7/8"	1"	55.0	1,2,3,4,5	
VAV-27	PRICE SDV	AHU-1	10	950	335	0.40	--	--	335	11.7	55.0	96.9	1.0	104.6	0.35	2	7/8"	3/4"	29.0	1,2,3,4,5	

NOTES:

1. SOUND DATA SHALL BE TAKEN FROM AHJ STANDARD B06 (LATEST EDITION), PUBLISHED DATA.

2. INLET STATIC PRESSURE FOR TERMINAL SELECTION IS 10". TERMINAL S.P. INCLUDES COIL ACPD.

3. PERFORMANCE BASED ON 35% PROPYLENE GLYCOL.


4. LH OR RH CONNECTION TO COIL PIPING VARIIES, SEE PLAN.

5. SEE VAV HEATING COIL PIPING DETAIL.

6. PROVIDE WITH OVERSIZED CASING/COIL.



ELECTRIC BOILER SCHEDULE															<div><div></div></div>	
EQUIP. NO.	MANUFACTURER & MODEL	LOCATION	MEDIA	PRESSURE RELIEF (PSI)	KW	STAGES @ (KW)	BTU/HR	MAIN ELECTRICAL				CONTROL CIRCUIT ELEC		SCCR (KALC)	WEIGHT (LBS)	NOTES
								V./PH./CY.	TOTAL FLA	FEED #1 FLA (100KW)	FEED #2 FLA (80KW)	V./PH./CY.	FLA			
B-1	ELECTRO INDUSTRIES EB-NB-180-480	MECH 141	35% PROPYLENE GLYCOL	125	180	9@ (20)	614,185	480/3/60	216.5	120.3	96.2	120/1/60	15.0	100	705 + FLUID	1,2,3,4,5,6,7,8,9,10
NOTES: 1. DISCONNECT PROVIDED & INSTALLED BY EC. 2. INSTALL TO PROVIDE MINIMUM CLEARANCE FOR SERVICING & ELEMENT CHANGE OUT PER MANUFACTURERS RECOMMENDATIONS. 3. UNITS SHALL BE COMPLETE WITH ALL NECESSARY SAFETIES AND CONTROL TO MEET OR EXCEED U.L. AND SOUTH DAKOTA CODE REQUIREMENTS. 4. PROVIDE BOILER WITH FACTORY INSTALLED LOW WATER CUT OFF W/ MANUAL RESET, HIGH TEMP LIMIT SWITCH, SAFETY DOOR INTERLOCK & LOCKABLE DOOR LATCH, BMS REMOTE SETPOINT CONTROL, GROUND FAULT DETECTION AND AUTO AIR VENT. 5. PERFORMANCE BASED ON 35% PROPYLENE GLYCOL. 6. SEE BOILER PIPING DIAGRAM. 7. PROVIDE W/ OPTIONAL 125 PSI VESSEL & 125 PSI RELIEF VALVE & BAS INTERFACE. 8. PROVIDE FIELD INSTALLED EXTERNAL WATER FLOW SWITCH & OTHER ACCESSORIES AS REQUIRED. TO TO WIRE FLOW SWITCH. 9. PC TO INSTALL TEMPORARILY IN EXG STORAGE 63 FTR TEMP HEAT IN SHOP OVER WINTER OF 2025/2026 BY UTILIZING FEED #2 (80KW) ONLY FOR TEMP LOCATION. PC TO REMOVE & REINSTALL INTO FINAL LOCATION IN MECH 141 AFTER HEATING SEASON. COORDINATE WITH OTHER TRADES. SEE TEMPORARY HYDRONIC SYSTEM PIPING DIAGRAM. 10. GC TO PROVIDE & INSTALL 4" POURED CONCRETE HOUSEKEEPING PAD. PC TO COORDINATE PAD SIZE & LOCATION REQUIREMENTS WITH GC.																

OWNER PROVIDED HYBRID ELECTRIC WATER HEATER SCHEDULE															
EQUIP. NO.	MANUFACTURER & MODEL	SERVING	LOCATION	STORAGE CAPACITY	RECOVERY @ 90F RISE	ELECTRICAL			PIPING CONNECTIONS		DIMENSIONS		WEIGHT (LBS.)	NOTES	
						V./PH./CY.	WATTS	AMPS	C.W.	H.W.	HEIGHT	DIAMETER			
WH-1	(OWNER PROVIDED) RHEEM PRESTIGE PROTERRA PROPB60 RH600-30	DOMESTIC HOT WATER	MECH 141	80 GAL.	27 GAL/HR	208/1/60	4500	21	3/4"	3/4"	76-13/16"	24-1/4"	306 + WATER	1,2,3,4,5	
NOTES: 1. WATER HEATER PROVIDED BY OWNER, INSTALLED BY PC. EC TO PROVIDE AND INSTALL DISCONNECT. 2. PROVIDE & INSTALL AUTROL ST-12C-DD EXPANSION TANK. 3. GC TO PROVIDE & INSTALL 4" POURED CONCRETE HOUSEKEEPING PAD. PC TO COORDINATE PAD SIZE & LOCATION REQUIREMENTS WITH GC. 4. SEE ELECTRIC WATER HEATER PIPING & CONTROL DIAGRAM. 5. PROVIDE & INSTALL LAWLER NEPTUNE EMX 075 THERMOSTATIC MIXING VALVE.															

DOMESTIC COLD WATER STORAGE TANK SCHEDULE											<div>ST</div>
EQUIP. NO.	MANUFACTURER & MODEL	SERVING	FUEL SOURCE	LOCATION	STORAGE CAPACITY	PIPING CONNECTIONS			SHIPPING WEIGHT (LBS)	NOTES	
						VENT	CW IN/OUT	RECIRC OUT			
ST-1	PENTAIR 30X60 COMP	DOMESTIC COLD WATER	-	MECH 141	151 GAL.	2.5"	2.5"	-	205	1,2,3	
ST-2	PENTAIR 30X60 COMP	DOMESTIC COLD WATER	-	MECH 141	151 GAL.	2.5"	2.5"	-	205	1,2,3	
NOTES: 1. SEE WATER HEADER DIAGRAM. 2. GC TO PROVIDE & INSTALL 4" POURED CONCRETE HOUSEKEEPING PAD. PC TO COORDINATE PAD SIZE & LOCATION REQUIREMENTS WITH GC. 3. PROVIDE WITH MINIMUM 75 PSI WORKING PRESSURE, VACUUM BREAKER, AND AUTOMATIC AIR VENT.											

PUMP SCHEDULE													<div>CP</div>
EQUIP. NO.	MANUFACTURER & MODEL	SERVING	LOCATION	GPM	HEAD (FT)	FLUID TEMP (°F)	TYPE	ELECTRICAL				WEIGHT (LBS.)	NOTES
								HP/W	RPM	V./PH./CY.	FLA		
CP-1	BELL & GOSSETT 80-SC 3X3X9.5C	PRIMARY HEATING WATER	MECH 141	220	65	110.0	IN LINE	7.5	1750	480/3/60	11.0	345	1,2,3,4,5
CP-2	BELL & GOSSETT 80-SC 3X3X9.5C	BACKUP HEATING WATER	MECH 141	220	65	110.0	IN LINE	7.5	1750	480/3/60	11.0	345	1,2,3,4,5
CP-3	BELL & GOSSETT 80-SC 3X3X11B	PRIMARY CHILLED WATER	MECH 141	140	90	44.0	IN LINE	10	1750	480/3/60	14.0	430	1,2,3,4,5
CP-4	BELL & GOSSETT 80-SC 3X3X11B	BACKUP CHILLED WATER	MECH 141	140	90	44.0	IN LINE	10	1750	480/3/60	14.0	430	1,2,3,4,5
CP-5	BELL & GOSSETT 80-SC 3X3X11B	PRIMARY WELL FIELD	MECH 141	192	90	35.0	IN LINE	15	1750	480/3/60	21.0	485	1,2,3,4,5
CP-6	BELL & GOSSETT 80-SC 3X3X11B	BACKUP WELL FIELD	MECH 141	192	90	35.0	IN LINE	15	1750	480/3/60	21.0	485	1,2,3,4,5
CP-7	BELL & GOSSETT PL-130/2"	CIRCULATOR FOR B-1	MECH 141	60	10	110.0	IN-LINE	2/5	3200	120/1/60	4.8	22.0	1,2,7
CP-8	BELL & GOSSETT NBF-36	DOM HW RECIRC.	MECH 141	4.5	20	120.0	IN LINE	(270)	3300	120/1/60	2.3	13.1	1,6,7
CP-9	BELL & GOSSETT PL-45/1-1/2"	IN-FLOOR HEAT CIRCULATOR	STORAGE 63	20	15	110.0	IN-LINE	1/6	3300	120/1/60	2.1	14.5	1,2,7
NOTES: 1. PUMP SHALL HAVE PRESSURE GAUGE ACROSS PUMP SUCTION & DISCHARGE FOR BALANCING PURPOSES. SEE IN-LINE PUMP DETAIL. 2. PERFORMANCE BASED ON 35% PROPYLENE GLYCOL. 3. PROVIDE & INSTALL NON-SLAM CHECK VALVE, MANUAL BALANCING VALVE & SUCTION DIFFUSER. 4. T.C. TO PROVIDE VFD, E.C. TO INSTALL. 5. PROVIDE & INSTALL 60 MESH STRAINER WITH VALVE BLOWDOWN. 6. PUMP SHALL BE OF LEAD FREE BRONZE CONSTRUCTION PROVIDED WITH SHUT-OFF FLANGES. CONTROL BY TC. SEE ELECTRIC WATER HEATER PIPING & CONTROL DIAGRAM. 7. PROVIDE WITH FACTORY CORD CONNECTION.													

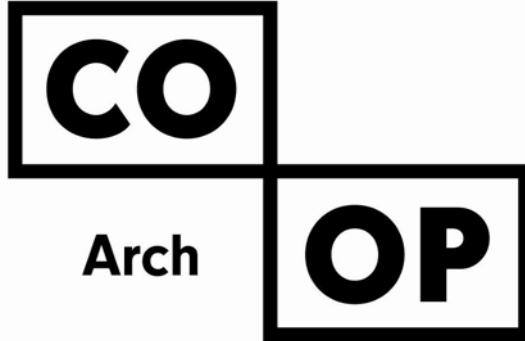
HOT WATER HANGING UNIT HEATER															<div>⬢</div>
EQUIP. NO.	MANUFACTURER & MODEL	LOCATION	CFM	MBH	GPM	LAT	EWT	LWT	WPD	ELECTRICAL			RUNOUT SIZE	UNIT WEIGHT (LBS)	NOTES
										HP	V/PH/CY	RPM	FLA		
HUH-1	SIGMA CORP 084H	LOCKERS 61A	1610	32.6	4.0	79.7	130.0	110.5	0.80	1/6	120/1/60	1625	1.8	1"	76.0 + WATER
HUH-2	SIGMA CORP 084H	EXG MEZZANINE 201	1610	32.6	4.0	79.7	130.0	110.5	0.80	1/6	120/1/60	1625	1.8	1"	76.0 + WATER
NOTES: 1. UNIT SHALL BE HORIZONTAL, PROPELLER UNIT HEATER. 2. PERFORMANCE BASED ON 35% PROPYLENE GLYCOL. 3. PROVIDE WITH UNIT MOUNTED 3 SPEED SWITCH. DISCONNECT BY EC. 4. SEE HOT WATER UNIT HEATER PIPING DETAIL.															

EXPANSION TANK SCHEDULE															<div>ET</div>
EQUIP. NO.	MANUFACTURER & MODEL	LOCATION	SERVING	CALCULATED SYSTEM VOLUME (GAL)	SYSTEM VOLUME WITH SAFETY FACTOR (GAL)	TEMP RANGE (°F)		PRESSURE RANGE (PSIG)		REQ'D TANK VOLUME (GAL)	REQ'D ACCEPTANCE VOLUME (GAL)	ACTUAL TANK VOLUME (GAL)	ACTUAL ACCEPTANCE VOLUME (GAL)	WEIGHT (LBS)	NOTES
						MAX	MIN	MAX	MIN						
ET-1	VESSELS FXA-200	MECH 141	DOMESTIC WATER	-	--	60	40	60	40	41	41	53	53	210 + WATER	1,2,4
ET-2	BELL & GOSSETT B-800	MECH 141	ALL HYDRONIC PIPING SYSTEMS	2220	3330	130	40	70.0	16.9	164.8	103.1	211.0	211.0	475 + WATER	3,4,5,6,7
NOTES: 1. PROVIDE POTABLE WATER ASME RATED FULL ACCEPTANCE REPLACEABLE BLADDER STYLE UNIT, DIAPHRAGM STYLE SHALL NOT BE ACCEPTABLE. 2. SEE DOMESTIC WATER HEADER AND BOOSTER PUMP PIPING DIAGRAM. 3. UNIT TO BE FLOOR MOUNTED, VERTICAL ASME PRE-CHARGED BLADDER STYLE EXPANSION TANK. 4. GC TO PROVIDE & INSTALL 4" POURED CONCRETE HOUSEKEEPING PAD. PC TO COORDINATE PAD SIZE & LOCATION REQUIREMENTS WITH GC. 5. THE EXPANSION TANK HAS BEEN SIZED FOR 3330 GALLONS, WHICH IS 1.5 TIMES THE CALCULATED VOLUME OF 2220 GALLONS. 6. PERFORMANCE BASED ON 35% PROPYLENE GLYCOL. 7. SEE CENTRAL GEOTHERMAL HEATING/CHILLED WATER SYSTEM CONTROL & PIPING DIAGRAM.															

AIR SEPERATOR SCHEDULE							<div>AS</div>
EQUIP. NO.	MANUFACTURER & MODEL	LOCATION	SERVING	SYSTEM FLOW (GPM)	PRESSURE DROP (FT. W.G.)	WEIGHT (LBS)	NOTES
AS-1	BELL & GOSSETT ROLAIRTRLO R-4	MECH 141	HOT WATER HEATING LOOP	220	1.73	278	1,2
AS-2	BELL & GOSSETT ROLAIRTRLO R-4	MECH 141	CHILLED WATER LOOP	140	0.71	278	1,2
NOTES: 1. TANGENTIAL FLOW THROUGH TYPE AIR SEPARATOR WITH STRAINER. 2. PROVIDE WITH MANUAL BLOW DOWN VALVE AND VALVED HIGH CAPACITY AIR VENT.							

PACKAGED DOMESTIC WATER SERVICE BOOSTER PUMP SYSTEM SCHEDULE											<div>BP</div>
EQUIP. NO.	MANUFACTURER & MODEL	LOCATION	GPM	HEAD (PSI)	DESIGN DISCHARGE PRESSURE (PSI)	MOTOR				SHIPPING WEIGHT (LBS)	NOTES
						HP	RPM	V. / PH. / CY.	FLA		
BP-1	GOULDS 22SV3QH4F60	MECH 141	95	50	50	7-1/2	3600	480/3/60	23	1667 + WATER	1,2,3,4,5,6,7,8
	GOULDS 22SV3QH4F60		95			7-1/2	3600				
<div>NOTES: 1. UNIT SHALL BE PROVIDED WITH PRESSURE RELIEF VALVE, STAINLESS STEEL PUMPS, SHUT-OFF VALVES ON SUCTION AND DISCHARGE OF PUMP.</div> <div>2. HEADER AND INTERCONNECTING PIPES SHALL BE STAINLESS STEEL 304.</div> <div>3. PROVIDE CONTROL PANEL: THE CONTROL PANEL SHALL BE NEMA 1 RATED. THE PANEL FEATURES SHALL INCLUDE A CONTROL POWER TRANSFORMER, HAND-OFF-AUTO SWITCH FOR PUMP, A GREEN LIGHT FOR PUMP RUN INDICATION, AND A RED LIGHT TO INDICATE UNIT SHUT-DOWN. PROVIDE SYSTEM WITH SINGLE POINT POWER CONNECTION &amp; FACTORY INSTALLED DISCONNECT. PROVIDE VARIABLE SPEED DRIVES WITH VARIABLE SPEED PUMP CONTROLLER.</div> <div>4. BOOSTER SYSTEM TO CONSIST OF 2 PUMPS. LOW NPSH SUCTION (SUPPLY) PRESSURE FROM GROUND LEVEL STORAGE TANK.</div> <div>5. PROVIDE FACTORY AUTHORIZED STARTUP.</div> <div>6. SEE DOMESTIC WATER HEADER AND BOOSTER PUMP PIPING DIAGRAM.</div> <div>7. GC TO PROVIDE &amp; INSTALL 4" POURED CONCRETE HOUSEKEEPING PAD. PC TO COORDINATE PAD SIZE &amp; LOCATION REQUIREMENTS WITH GC.</div> <div>8. PC TO PROVIDE AND INSTALL FLANGED FLEX CONNECTIONS.</div>											

DOMESTIC & HYDRONIC PIPING MATERIAL & INSULATION SCHEDULE						
PIPING			INSULATION THICKNESS			NOTES
SYSTEM	TYPE/MATERIAL	FITTINGS	PIPE SIZES 1" OR SMALLER	PIPE SIZES 1-1/4" TO 2"	PIPE SIZES 2-1/2" AND LARGER	
DOMESTIC COLD, HOT, AND HOT RECIRC	TYPE L COPPER, UPONOR PEX-A	SOLDER, PRO-PRESS, UPONOR F1960 EXPANDABLE FITTINGS	1/2"	1"	1-1/2"	1,2,4
ABOVE GRADE STORM PIPING	SEE SPECIFICATIONS (SCH 40 PVC WHERE PERMITTED)	SEE SPECIFICATIONS (SCH 40 DMV SOLVENT WELD WHERE PERMITTED)	1"			1,3
BELOW GRADE SANITARY WASTE & VENT PIPING	SEE SPECIFICATIONS (SCH 40 PVC WHERE PERMITTED)	SEE SPECIFICATIONS (SCH 40 DMV SOLVENT WELD WHERE PERMITTED)	NONE			1
ABOVE GRADE SANITARY WASTE & VENT PIPING	SEE SPECIFICATIONS (SCH 40 PVC WHERE PERMITTED)	SEE SPECIFICATIONS (SCH 40 DMV SOLVENT WELD WHERE PERMITTED)	NONE			1,3
CHILLED WATER SUPPLY & RETURN & AIR SEPARATOR	TYPE L COPPER, SCH 40 BLACK STEEL	SOLDER, PRO-PRESS, SEE SPECS FOR STEEL FITTINGS	1/2"	1"	1-1/2"	1,2,4
HEATING WATER SUPPLY & RETURN & AIR SEPARATOR & BYPASS FILTER FEEDER	TYPE L COPPER, SCH 40 BLACK STEEL	SOLDER, PRO-PRESS, SEE SPECS FOR STEEL FITTINGS	1/2"	1"	1-1/2"	1,2,4
BELOW GRADE GEOTHERMAL SUPPLY & RETURN	SEE SPECIFICATION	SEE SPECIFICATIONS	NONE			1,2
ABOVE GRADE GEOTHERMAL SUPPLY & RETURN	SEE SPECIFICATION	SEE SPECIFICATIONS	1"			1,2
CONDENSATE DRAIN PIPING/ VENTING	TYPE M COPPER, (SCH 40 PVC WHERE PERMITTED)	SOLDER, PRO-PRESS, (SCH 40 DMV SOLVENT WELD WHERE PERMITTED)	1/2"			1,3
NOTES: 1. SEE SPECIFICATIONS. 2. IF USING UPONOR PEX-A PIPING, NO CRIMP FITTINGS SHALL BE ACCEPTED. CONTRACTOR MUST BE TRAINED AND FOLLOW ALL MANUFACTURER'S RECOMMENDATIONS AND MUST FULFILL ALL AVAILABLE UPONOR 25 YEAR FITTING AND PIPE SYSTEM WARRANTY COVERAGE. 3. NO UNINSULATED PVC PIPING ALLOWED IN SUPPLY/RETURN AIR PLENUMS. PIPING MUST BE CAST IRON WHERE ROUTED THROUGH RETURN AIR PLENUMS, INSULATED PVC WILL NOT BE ACCEPTABLE. SEE HVAC PLANS FOR PLENUM LOCATIONS, COORDINATE WITH VC. 4. PIPING MUST BE COPPER OR STEEL WHERE ROUTED EXPOSED IN THE BUILDING. PEX PIPING WITH STRAIGHTENERS WILL NOT BE PERMISSIBLE IN THESE AREAS, BUT WILL BE PERMISSIBLE WHERE ROUTED IN MECHANICAL ROOMS AND WHERE CONCEALED ABOVE CEILINGS AND IN WALLS.						



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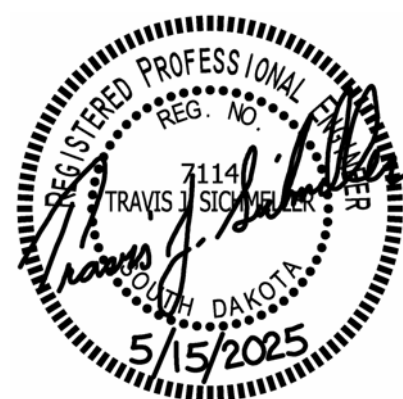
## SICHMELLER ENGINEERING

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SE PROJECT NO: 240700836



ISSUE:  
5/15/2025 100% CONSTRUCTION DOCUMENTS

REVISION SCHEDULE:  
REV. # REV. DSC. REV. DATE

PROJECT:  
NORTHERN ELECTRIC COOPERATIVE  
ABERDEEN, SOUTH DAKOTA



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### GENERAL DEMOLITION NOTES:

- PERFORM ALL DEMOLITION WORK AS REQUIRED AND REMODELING WORK AS SHOWN ON THE DRAWINGS INCLUDING MINOR ITEMS OF MATERIAL OR EQUIPMENT NECESSARY TO MEET THE REQUIREMENTS AND INTENT OF THE PROJECT.
- PRIOR TO SUBMITTING BID, CONTRACTOR SHALL EXAMINE ALL GENERAL CONSTRUCTION DRAWINGS AND SHALL HAVE HAD VISITED THE CONSTRUCTION SITE. THE CONTRACTOR SHALL BE FAMILIAR WITH THE EXISTING CONDITIONS UNDER WHICH HES/HE WILL HAVE TO OPERATE AND WHICH WILL IN ANY WAY AFFECT THE WORK UNDER THIS CONTRACT IN BEHALF OF THE CONTRACTOR FOR ANY ERROR OR NEGLIGENCE ON HIS/HER PART.
- CERTAIN REMODELING OF ELECTRICAL FACILITIES WILL BE REQUIRED IN THE EXISTING BUILDING. EXISTING CONDUIT RUNS ARE GENERALLY NOT SHOWN, ALTHOUGH A FULL ATTEMPT HAS BEEN MADE TO SHOW SOME OF EXISTING CONDITIONS, OF WHICH INFORMATION HAS BEEN TAKEN FROM EXISTING RECORD DRAWINGS OF THIS PROJECT. THE DRAWINGS SHOWING LOCATIONS OF EXISTING EQUIPMENT, OUTLETS, FIXTURES, ETC. IN EXISTING AREA ARE APPROXIMATE ONLY (FIELD VERIFY).
- BRANCH CIRCUITS SHALL BE REUSED WHERE PRACTICAL AND SHALL, IN ADDITION, BE REMODELED AS REQUIRED. THE CONTRACTOR SHALL CONCEAL ALL WORK WHERE POSSIBLE. WHERE EXPOSED WORK IS REQUIRED IN FINISHED AREAS, THE CONTRACTOR SHALL USE SURFACE MOUNTED, MULTI-OUTLET RACEWAY, PANDUIT T70 SERIES. EXISTING RUNS SHALL BE VERIFIED.
- EXISTING ELECTRICAL WIRING WHICH WILL NOT BE MADE OBSOLETE AND WHICH WILL BE DISTURBED DUE TO CONSTRUCTION CHANGES REQUIRED BY THIS CONTRACT SHALL BE RESTORED TO OPERATION CONDITION, AS REQUIRED AND/OR DIRECTED. WHERE REQUIRED, SHOW AND/OR DIRECTED. OUTLETS AND CONDUIT RUNS SHALL BE RELOCATED. IN SOME CASE, IT MAY BE NECESSARY TO EXTEND CONDUITS AND PULL IN NEW WIRING OR INSTALL JUNCTION BOXES AND SPLICE IN NEW WIRING OR REPLACE OLD WIRING WITH NEW.
- OUTLETS FROM WHICH FIXTURES, SWITCHES, RECEPTACLES, AND/OR OTHER ELECTRICAL DEVICES ARE MOVED AND WHICH ARE NO REPLACED OR REUSED SHALL BE REMOVED. WHERE OUTLETS, BOXES, ETC. ARE COMPLETELY REMOVED, THE CONTRACTOR SHALL CUT OFF CONDUITS AND REMOVE WIRING. CONTRACTORS RESPONSIBILITY FOR LEGAL DISPOSAL.
- WHERE EXISTING LIGHT FIXTURES ARE TO BE RE-USED, THE CONTRACTOR SHALL CLEAN THE FIXTURE, REPLACE LAMPS, AND REPAIR OR REPLACE DEFECTIVE PARTS, INCLUDING LENSES, BALLASTS, ETC. AS REQUIRED.
- WHERE CONDUCTORS EXTENDING THOUGHT THE FLOORS ARE TO BE ABANDONED, THE CONTRACTOR SHALL CUT AN CAP OR PLUG CONDUIT, SO THAT IT WILL NOT PROTRUDE ABOVE THE FLOOR.
- WHERE EXISTING CONDUIT IS ABANDONED, THE CONDUIT SHALL BE REMOVED IF IT IS EXPOSED, INTO A CRAWL SPACE OR ACCESSIBLE CEILING. WHERE IT IS IMPOSSIBLE TO REMOVE THE CONDUIT, IT SHALL BE CUT OFF AND CAPPED OR PLUGGED.
- THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR THE PROPER RESTORATION OF ALL EXISTING SURFACES REQUIRING PATCHING, PLASTERING, PAINTING AND/OR OTHER REPAIR DUE TO THE INSTALLATION OF ELECTRICAL WORK UNDER THE TERMS OF THIS CONTRACT. CLOSE ALL OPENINGS, REPAIR ALL SURFACES, ETC. AS REQUIRED.
- THE CONTRACTOR SHALL EMPLOY QUALIFIED AND EXPERIENCED WORKMEN FOR THIS WORK. ALL RESTORATION WORK SHALL BE SUBJECT TO THE APPROVAL OF THE ARCHITECT AND/OR THE OWNER.
- ALL TEMPORARY AND REMODELING WORK SHALL BE CONSIDERED A PART OF THIS CONTRACT AND NO EXTRA CHARGES WILL BE ALLOWED. THIS SHALL INCLUDE MINOR ITEMS OF MATERIAL OR EQUIPMENT NECESSARY TO MEET THE REQUIREMENTS AND INTENT OF THE PROJECT.
- EXAMINE ARCHITECTURAL, STRUCTURAL AND MECHANICAL DRAWINGS AND SPECIFICATIONS TO DETERMINE THE SEQUENCE OF CONSTRUCTION THROUGHOUT THE PROJECT, INCLUDING EXISTING, TEMPORARY, REMODELED AND NEW AREAS.
- THE OWNER RESERVES THE RIGHT TO RETAIN ANY SELECTED SALVAGED ITEMS. ALL OTHER ITEMS SHALL BE THE CONTRACTORS RESPONSIBILITY FOR LEGAL DISPOSAL.

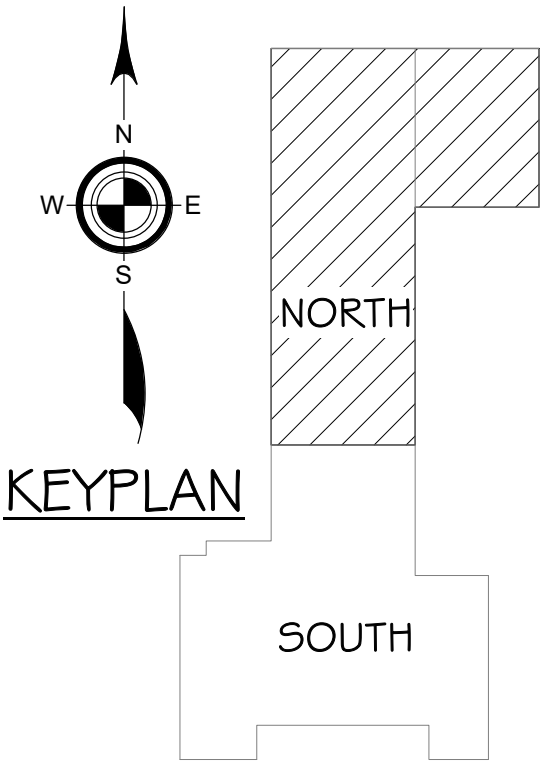
### KEYNOTES:

- BY ADD ALTERNATE - TYPICAL FOR ALL NEW LIGHT FIXTURES SHOWN ON PROPOSED, EC TO DISCONNECT & REMOVE EXG LIGHT FIXTURE TO ALLOW FOR NEW LED LIGHTS.
- DEMO EXG CONDUCTORS AND CONDUITS SERVING EXG PANEL 120-N-1 FROM EXG SOUTH BUILDING MCC. PANEL TO BE RE-SUPPLIED FROM NEW TEMPORARY CIRCUIT BREAKER DISCONNECT AND NEW 75KVA TRANSFORMER MOUNTED TO EXTERIOR OF EXG SHOP.
- DEMO EXG CONDUCTORS AND CONDUITS SERVING EXG PANEL 277-N-1 FOR EXG SOUTH BUILDING MCC. PANEL TO BE RE-SUPPLIED FROM NEW TEMPORARY CIRCUIT BREAKER DISCONNECT ENCLOSURE MOUNTED TO EXTERIOR OF EXG SHOP.
- ELECTRICAL CONTRACTOR TO TEMPORARILY RELOCATE EXG GENERATOR TO SERVE EXG SHOP DURING CONSTRUCTION. REWORK CONDUIT AND CONDUCTORS AS REQUIRED TO SUPPLY EXG PANEL 120-N-1 WITH TEMPORARY RELOCATED EXG ATS.

- EC TO PROVIDE AND INSTALL NEW TEMP WP 480V 3PH 200A SOLER BREAKER ENCLOSURE
- EC TO PROVIDE AND INSTALL NEW TEMP WP 480V 3PH 200A PANEL BREAKER ENCLOSURE
- EC TO PROVIDE INSTALL NEW TEMP WP TAP CABINET
- EC TO PROVIDE AND INSTALL NEW TEMP WP 480V 400A 3PH DISC
- EXG HP
- EXG FC-1
- EXG 208V 1PH HYDRONIC FAN COIL (TO REMAIN)
- EXG DH
- EXG 120V 1PH DE-HUMIDIFIER (TO REMAIN)
- EXG 208V PANEL FED FROM EXG 600A 208V MDP 125A BREAKER IN EXG BUILDING
- EXG 208V PANEL FED FROM EXG 800A 480V MDP IN EXG BUILDING
- EXG 480V 3PH (MOTOR IS MULTIVOLT) AIR COMPRESSOR - TO REMAIN
- EXG BT
- EXG B
- EXG WH
- EXG AC-1
- EXG GEO HEAT PUMP (TO BE REMOVED PRIOR TO PROPOSED DEMO)
- EXG 120V&208V 1PH CHILLED HEATING BUFFER TANK
- EC TO DISCONNECT (DEMO AFTER SPRING 2026)
- EXG 480V 3PH 36kW ELECTRIC BOILER (DEMO SUMMER 2025)
- EXG NETWORK SWITCH
- STORAGE 53
- METER ROOM 65
- TOOL STORAGE 65
- EXISTING BUILDING TO REMAIN
- 1
- 2
- 3
- 4

UPPER LEVEL - ELECTRICAL DEMOLITION PLAN  
1/8" = 1'-0"

FIRST FLOOR - ELECTRICAL DEMOLITION PLAN - NORTH  
1/8" = 1'-0"



SE PROJECT NO: 240700836



ISSUE:  
5/15/2025 100% CONSTRUCTION DOCUMENTS

REVISION SCHEDULE:

REV. #	REV. DSC.	REV. DATE
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PROJECT:  
NORTHERN ELECTRIC COOPERATIVE  
ABERDEEN, SOUTH DAKOTA

SHEET TITLE:  
ELECTRICAL DEMOLITION PLAN - NORTH

E200.N



## Mechanical &Electrical Engineering

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- A. PERFORM ALL DEMOLITION WORK AS REQUIRED AND REMODELING WORK AS SHOWN ON THE DRAWINGS INCLUDING MINOR ITEMS OF MATERIAL OR EQUIPMENT NECESSARY TO MEET THE REQUIREMENTS AND INTENT OF THE PROJECT.
- B. PRIOR TO SUBMITTING BID, CONTRACTOR SHALL EXAMINE ALL GENERAL CONSTRUCTION DRAWINGS AND SHALL HAVE VISITED THE CONSTRUCTION SITE. THE CONTRACTOR SHALL BE FAMILIAR WITH THE EXISTING CONDITIONS AND ALL CONDITIONS THAT MAY AFFECT THE WORK AND WHICH IN ANY WAY AFFECT THE WORK UNDER THIS CONTRACT IN BEHALF OF THE CONTRACTOR FOR ANY ERROR OR NEGLIGENCE ON HIS/HER PART.
- C. CERTAIN REMODELING OF ELECTRICAL FACILITIES WILL BE REQUIRED IN THE EXISTING BUILDING. EXISTING CONDUIT RUNS ARE GENERALLY NOT SHOWN. ALL EXISTING ELECTRICAL FACILITIES SHALL BE SHOWN ON SOME OF THE EXISTING CONDITIONS, OF WHICH INFORMATION HAS BEEN TAKEN FROM EXISTING RECORD DRAWINGS OF THIS PROJECT. THE DRAWINGS SHOWING LOCATIONS OF EXISTING ELECTRICAL FACILITIES, FIXTURES, ETC. IN EXISTING AREA ARE APPROXIMATE ONLY (FIELD VERIFY).
- D. BRANCH CIRCUITS SHALL BE REUSED WHERE PRACTICAL AND SHALL, IN ADDITION BE REMODELED AS REQUIRED. THE CONTRACTOR SHALL CONCEAL ALL WORK WHERE POSSIBLE. WHERE IT HAS BEEN MADE TO SHOW SOME FINISH AREAS, THE CONTRACTOR SHALL USE SURFACE MOUNTED, MULTI-OUTLET RACEWAY. PANDUIT TRO. SERIES. EXISTING SURFACE SHALL BE VERIFIED.
- E. EXISTING ELECTRICAL WIRING WHICH WILL NOT BE MADE OBSOLETE AND WHICH WILL BE DISTURBED DUE TO CONSTRUCTION CHANGES REQUIRED BY THIS PROJECT SHALL BE RELOCATED TO OPERATION CONVENIENCE, AS REQUIRED AND/OR DIRECTED. WHERE REQUIRED, SHOW AND/OR DIRECTED, OUTLETS AND CONDUIT RUNS SHALL BE RELOCATED. IN SOME CASE, IT MAY BE NECESSARY TO CUT AND RELOCATE CONDUITS AND/OR WIRING. THE CONTRACTOR SHALL REMOVE AND SPlice IN NEW WIRING OR REPLACE OLD WIRING WITH NEW.
- F. OUTLETS FROM WHICH FIXTURES, SWITCHES, RECEPTACLES, AND/OR OTHER ELECTRICAL DEVICES ARE MOVED AND WHICH ARE NOT REPLACED OR REUSED SHALL BE REMOVED. WHERE OUTLETS, BOXES, ETC. ARE COMPLETELY REMOVED OR RELOCATED, CONTRACTORS SHALL BE RESPONSIBLE TO REMOVE WIRING. CONTRACTORS RESPONSIBILITY FOR LEGAL DISPOSAL.
- G. WHERE EXISTING LIGHT FIXTURES ARE TO BE RE-USED, THE CONTRACTOR SHALL CLEAN THE FIXTURE, REPLACE LAMPS, AND REPAIR OR REPLACE DEFECTIVE PARTS, INCLUDING LENSES, BALLASTS, ETC. AS REQUIRED.
- H. WHERE CONDUCTORS EXTENDING THROUGH THE FLOORS ARE TO BE ABANDONED, THE CONTRACTOR SHALL CUT AN CAP OR PLUG CONDUIT, SO THAT IT WILL NOT CAUSE A HAZARD.
- I. WHERE EXISTING CONDUIT IS ABANDONED, THE CONDUIT SHALL BE REMOVED IF IT IS EXPOSED, INTO A CRAWL SPACE OR ACCESSIBLE CEILING. WHERE IT IS POSSIBLE TO REMOVE THE CONDUIT, IT SHALL BE CUT OFF AND CAPPED OR PLUGGED.
- J. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR THE PROPER REMOVAL OF ALL EXISTING SURFACING INCLUDING FINISH, PLASTERING, PAINTING AND/OR OTHER REPAIR DUE TO THE INSTALLATION OF ELECTRICAL WORK UNDER THE TERMS OF THIS CONTRACT. CLOSE ALL OPENINGS, REPAIR ALL SURFACES, ETC. AS REQUIRED.
- K. THE CONTRACTOR SHALL EMPLOY QUALIFIED AND EXPERIENCED WORKMEN FOR ALL ELECTRICAL REPAIRS. THE CONTRACTOR SHALL BE SUBJECT TO THE APPROVAL OF THE ARCHITECT AND/OR THE OWNER.
- L. ALL TEMPORARY AND REMODELING WORK SHALL BE CONSIDERED A PART OF THIS CONTRACT AND NO EXTRA CHARGES WILL BE ALLOWED. THIS SHALL INCLUDE MINOR ITEMS OF MATERIAL OR EQUIPMENT NECESSARY TO MEET THE REQUIREMENTS AND INTENT OF THE PROJECT.
- M. EXAMINE ARCHITECTURAL, STRUCTURAL AND MECHANICAL DRAWINGS AND SPECIFICATIONS TO DETERMINE THE SEQUENCE OF CONSTRUCTION THROUGHOUT THE PROJECT, INCLUDING EXISTING, TEMPORARY, REMODELED AND NEW AREAS.
- N. THE OWNER RESERVES THE RIGHT TO RETAIN ANY SELECTED SALVAGED ITEMS, AND ALL OTHER ITEMS SHALL BE THE CONTRACTORS RESPONSIBILITY FOR LEGAL DISPOSAL.

KEYNOTES

1. ELECTRICAL CONTRACTOR TO TEMPORARILY RELOCATE EXG GENERATOR TO SERVE EXG SHOP DURING CONSTRUCTION. REWORK CONDUIT AND CONDUIT AS REQUIRED TO SUPPLY EXG PANEL 120-N-1 WITH TEMPORARY RELOCATED EXG ATS.
2. DISCONNECT EXG CONDUCTORS SERVING 120-N-1 AND CONNECT TO NEW 120/208V XFMR FOR POWER PROVISIONS DURING CONSTRUCTION.
3. DISCONNECT EXG CONDUCTORS SERVING 277-N-1 AND CONNECT TO TEMPORARY 277/480V XFMR FOR POWER PROVISIONS DURING CONSTRUCTION.
4. DISCONNECT ALL CONDUCTORS FEEDING EXTERIOR PANELS AND CHRISTMAS LIGHTING PANELS.
5. DISCONNECT CONDUITS AND SERVING SHOP EQUIPMENT. RE-FEED SHOP EQUIPMENT AS REQUIRED FORM EXG PANELS 277-N-1 AND 120-N-1.
6. DISCONNECT AND REMOVE ALL ELECTRICAL EQUIPMENT IN MEZZANINE AREA (OTHER THAN EXG SHOP MEZZ) FOR BUILDING DEMOLITION. SEE PROPOSED AS NOTED.
7. DISCONNECT AND REMOVE MEZZANINE LIGHTING BY MATCH LINE FOR INSTALLATION OF NEW LIGHTING. SEE PROPOSED.
8. COORDINATE WITH VC FOR DISCONNECTION OF ANY HVAC EQUIPMENT IN EXG MEZZANINE.

SE PROJECT NO: 240700836



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PROJECT:  
NORTHERN ELECTRIC  
COOPERATIVE  
ABERDEEN, SOUTH DAKOTA

SHEET TITLE:  
ELECTRICAL DEMOLITION PLAN  
- SOUTH

# E200.S

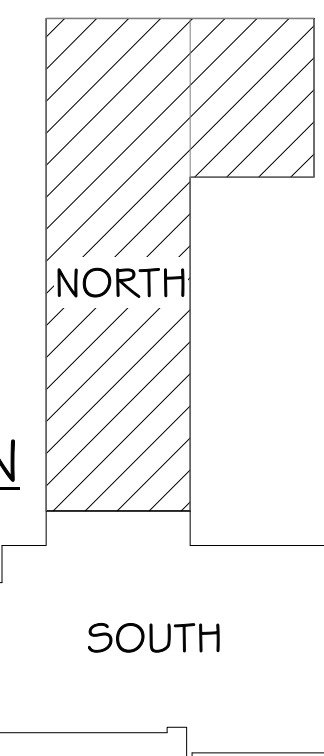


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E. THE ELECTRICAL DRAWINGS SHOW GENERAL ARRANGEMENT ONLY. EXACT LOCATION SHALL AVOID INTERFERENCE WITH ELECTRICAL EQUIPMENT & REQUIRED ELECTRICAL CLEARANCES.

4. PROVIDE POWER PROVISIONS FROM EXHAUST AND SUPPLY FAN CIRCUIT TO VC PROVIDED LINE VOLTAGE MOTORIZED DAMPER. COORDINATE WITH VC ON LOCATIONS.

1. EXG OVERHEAD DOOR OPENERS - NO WORK



# E300.N



ELECTRIC HEATER SCHEDULE <span>EH</span>							
EQUIP. NO.	MANUFACTURERS & MODEL	LOCATION	VOLTS/PHASE	AMPS	WATTS	BTU/HR	NOTES
CUH-1	BERKO FRC4020F	VESTIBULE 100	208	19.2	4000	10,236	CABINET UNIT HEATER WITH TAMPER PROOF THERMOSTAT AND DOUBLE POLE SINGLE THROW SWITCH
CUH-2	BERKO FRC4020F	VESTIBULE 119	208	19.2	4000	10,236	CABINET UNIT HEATER WITH TAMPER PROOF THERMOSTAT AND DOUBLE POLE SINGLE THROW SWITCH
CUH-3	BERKO FRC4020F	VESTIBULE 135	208	19.2	4000	10,236	CABINET UNIT HEATER WITH TAMPER PROOF THERMOSTAT AND DOUBLE POLE SINGLE THROW SWITCH
EH-1	BERKO RCC 10512C	RESTROOM 101A	120	8.8	1050W	3583	COVE HEAT WITH M602W LTNE VOLTAGE THERMOSTAT

#### DATA KEYNOTES

- TYPICAL - PROVIDE AND INSTALL (1) 25' HDMI CABLE & (1) CAT6A CABLE ROUTED TO WORKSTATION.
- TYPICAL - PROVIDE AND INSTALL (1) 50' HDMI CABLE & (1) CAT6A CABLE ROUTED TO WORKSTATION.
- BOARD ROOM & TRAINING ROOM TV LOCATION, PROVIDE AND INSTALL (1) 1-1/4" CONDUIT ROUTED IN 4 11/16" JUNCTION BOX BACK TO AV 136.2. PROVIDE (1) HDMI, (2) CAT 6A AND (1) USB CABLE ROUTED IN CONDUIT. COORDINATE WITH AV INSTALLER.
- MEETING ROOM WALL 4-11/16" JUNCTION BOX COORDINATE EXACT LOCATION WITH AV INSTALLER.

#### DATA KEYNOTES

- PROVIDE AND INSTALL 1-1/4" CONDUIT TO FLOOR T&B 665 BOX WITH (2) CAT6A, HDMI CABLE, (1) USB - MICROPHONE AND AUDIO INPUT CABLE ROUTED TO AV136A IN BOARD ROOM & TRAINING ROOM IN 4-11/16" JUNCTION BOX. COORDINATE WITH AV INSTALLER.
- PROVIDE AND INSTALL 1-1/4" CONDUIT TO T&B 665 FLOOR BOX WITH (2) CAT6A AND (1) HDMI CABLE ROUTED IN 1" CONDUIT BACK BEHIND TV. COORDINATE WITH AV INSTALLER.

#### SPECIAL NOTES:

- EC TO PROVIDE AND INSTALL ALL ROUGH-INS AND TERMINATIONS OF ALL CAT6A CABLING. ALL CAT6A CABLING SHALL BE CLEARLY LABELED AT BOTH ENDS OF CABLE IN A PRINTED LABEL TYPE.

#### GENERAL NOTES:

- ALL WORK SHALL BE PERFORMED IN A CLEAN AND WORKMANLIKE MANNER.
- THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PATCHING ANY OPENINGS LEFT IN FLOORS, WALLS, AND CEILINGS THAT WERE CAUSED BY HIS/HER ACTIONS. PATCHING SHALL MATCH EXISTING SURFACE IN COLOR, TEXTURE AND QUALITY SO THAT PATCH IS INDISTINGUISHABLE FROM ORIGINAL SURFACE.
- ALL PENETRATIONS THROUGH DRAFT STOPS AND OTHER FIRE-RATED PARTITIONS SHALL BE FIRE STOPPED AS PER SPECIFICATIONS AND LOCAL CODES.
- ALL ELECTRICAL WORK SHALL BE INSTALLED IN STRICT ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, NATIONAL ELECTRIC CODE, AND THE AUTHORITY HAVING JURISDICTION.
- THE ELECTRICAL DRAWINGS SHOW GENERAL ARRANGEMENT ONLY. EXACT LOCATION SHALL AVOID INTERFERENCE WITH ELECTRICAL EQUIPMENT & REQUIRED ELECTRICAL CLEARANCES.

#### KEYNOTES

- TYPICAL WAP LOCATION - INSTALL (1) CAT6A CABLE CENTRALLY TO OWNER PROVIDED WIRELESS ACCESS POINT. PULL CABLES TO SERVER 120 RM. LEAVE 15' SERVICE LOOP.
- TYPICAL TV DATA - INSTALL TWO GANG BOX OPENING AND PROVIDE (2) CAT 6 CABLES IN 1" CONDUIT ROUTED TO CABLE TRAY IN CORRIDOR. PULL CABLES TO SERVER ROOM 120 AS NOTED ON PLAN. LEAVE 15' SERVICE LOOP. VERIFY EXACT HEIGHTS AND LOCATIONS WITH OWNER.
- PROVIDE AND INSTALL STANDARD MUSHROOM BOILER SHUTDOWN SWITCH. SWITCH MUST BE MOUNTED AND LABELED AT 60" AFF.
- PROVIDE AND INSTALL PROVISIONS FOR 120V HAND DRYER(S) PROVIDED BY GC. REFER TO A402 FOR ELEVATIONS AND ROUGH-IN HEIGHT. COORDINATE WITH GC.
- PROVIDE AND INSTALL 250V, 50A 4 WIRE FOR RANGE - NEMA 1450R
- POWER, LIGHTING & SPECIAL SYSTEMS PROVISIONS TO BE ROUTED ABOVE 8' AFF IN CHASE WALL. EC TO COORDINATE WITH VC & PC FOR LOCATIONS.
- PROVIDE AND INSTALL MICROWAVE RECEPTABLES AND CIRCUITS SEE ARCHITECTURAL A400 FOR ELEVATIONS.
- PROVIDE AND INSTALL (1) 2" CONDUIT FROM SERVER 126 STUBBED OUTSIDE WEST SIDE OF BUILDING PAST NEW SIDEWALK PLUGGED & CAPPED FOR FUTURE. COORDINATE EXACT PLACEMENT WITH OWNER.
- PROVIDE AND INSTALL (2) 2" SPARE CONDUITS AS NOTED ON SITE PLAN, (1) ROUTED TO THE WEST PAST BUILDING CONCRETE, (1) ROUTED TO EAST PAST BUILDING CONCRETE. COORDINATE EXACT LOCATION WITH OWNER.
- TYPICAL - FIRE WALL INSTALL 3M FIRE BARRIER INSERT "EBI-4" FOR 4X4 JUNCTION BOX AND "EBI-5" FOR 4 11/16 JUNCTION BOX OR APPROVED EQUAL.
- PROVIDE AND INSTALL DISCONNECT FOR OPERABLE WALL WITHIN 5'. INSTALL IN CLOSET AV 136A. BY DEDUCT ALTERNATE - OMIT ELECTRICAL CONNECTION, CONDUIT, AND CONDUCTORS TO ELECTRIC OPERABLE WALL SYSTEM.
- PROVIDE AND INSTALL DURESS BUTTON EQUAL TO UBIOQUITI # "UA-BUTTON". COORDINATE LOCATION WITH OWNER. PROVIDE CABLING TO SERVER 126.
- PROVIDE AND INSTALL NEW TRANSFORMER CONTROLLED BY 100A COMBINATION MOTOR STARTER WITH HAND/OFF/AUTO TO OPERATE NEW PANEL E AND PANEL W. SEE E600 - ELECTRICAL DETAILS.
- TYPICAL - PROVIDE AND INSTALL T&B 664 WITH BLACK ALUMINUM COVER. COLOR CONFIRMED WITH ARCHITECT. 1" C. MINIMUM FOR DATA UNLESS NOTED OTHERWISE. 3/4" C. MINIMUM FOR POWER UNLESS NOTED OTHERWISE. COORDINATE LOCATION(S) WITH OWNER.
- TYPICAL - PROVIDE AND INSTALL T&B 664 WITH BLACK ALUMINUM COVER. COLOR CONFIRMED WITH ARCHITECT. 1" C. MINIMUM FOR DATA UNLESS NOTED OTHERWISE. 3/4" C. MINIMUM FOR POWER UNLESS NOTED OTHERWISE. COORDINATE LOCATION(S) WITH OWNER.
- BY DEDUCT ALTERNATE - OMIT ELECTRICAL CONNECTION, CONDUIT, AND CONDUCTORS TO GROUND MOUNTED SIGNAGE.
- PROVIDE ONE DATA DROP, 6A CABLE, AT EACH COMMUNICATIONS OUTLET SHOWN IN THE POWERED OFFICE FURNITURE LOCATED IN LINECREW ROOM 121 FOR A TOTAL OF TWENTY CAT 6A CABLES. COORDINATE ADDITIONAL INFORMATION WITH OWNERS OFFICE FURNITURE SUPPLIER.
- COORDINATE ADDITIONAL REQUIREMENTS WITH TC.
- COORDINATE WITH ARCHITECT AND GC FOR JUNCTION BOX POWER SUPPLY MOUNTING/PLACEMENT FOR POWERED SHUTTERS. COORDINATE CONTROLS WITH SUPPLIER.
- PROVIDE POWER PROVISIONS FROM EXHAUST FAN CIRCUIT TO VC PROVIDED MOTORIZED DAMPER. COORDINATE WITH VC ON LOCATIONS.

SE PROJECT NO: 240700836



#### ISSUE:

5/15/2025 100% CONSTRUCTION DOCUMENTS

#### REVISION SCHEDULE:

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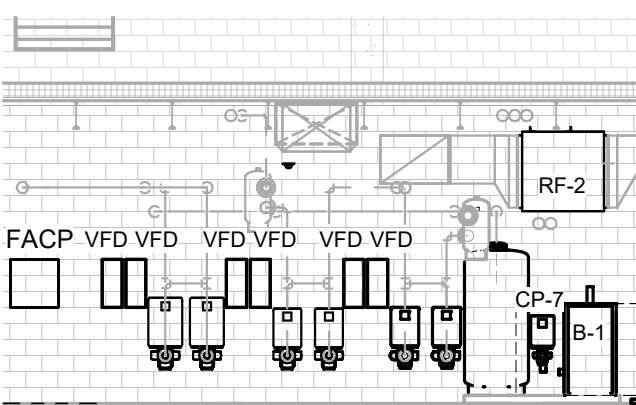
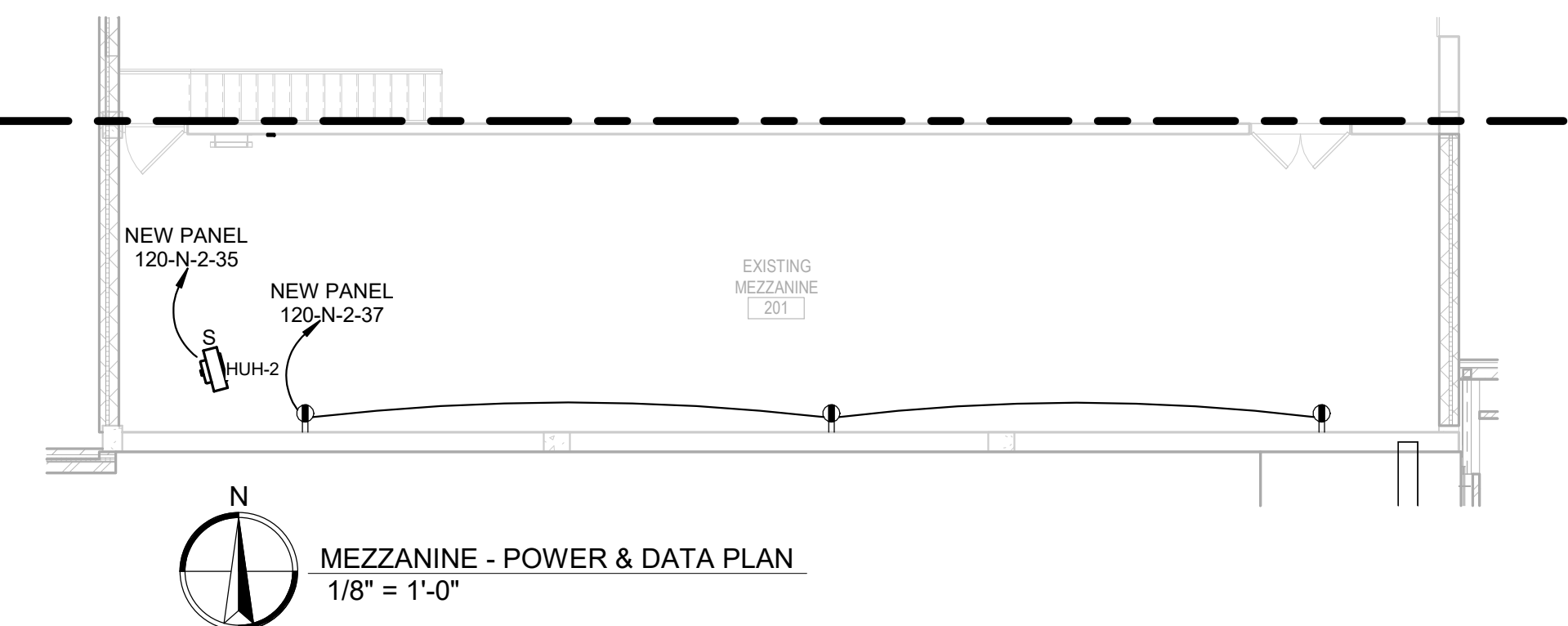
#### PROJECT:

NORTHERN ELECTRIC  
COOPERATIVE  
ABERDEEN, SOUTH DAKOTA

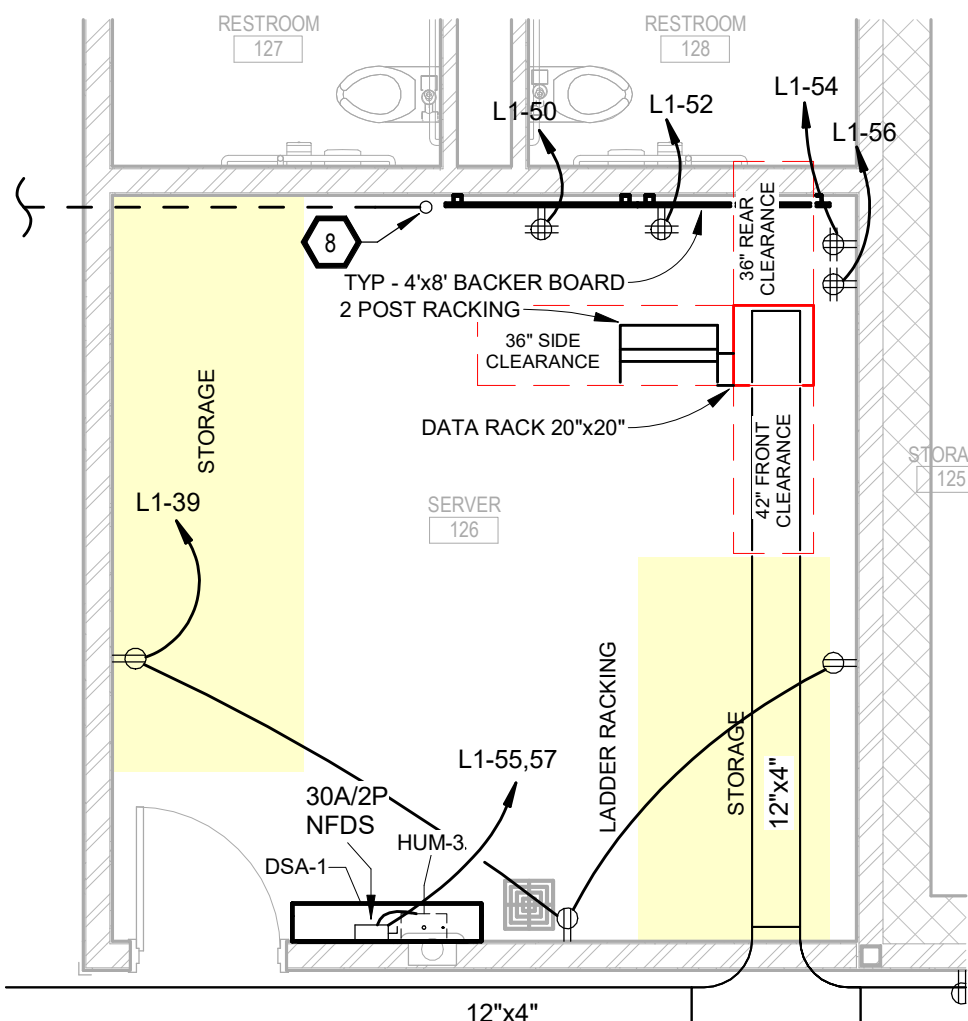
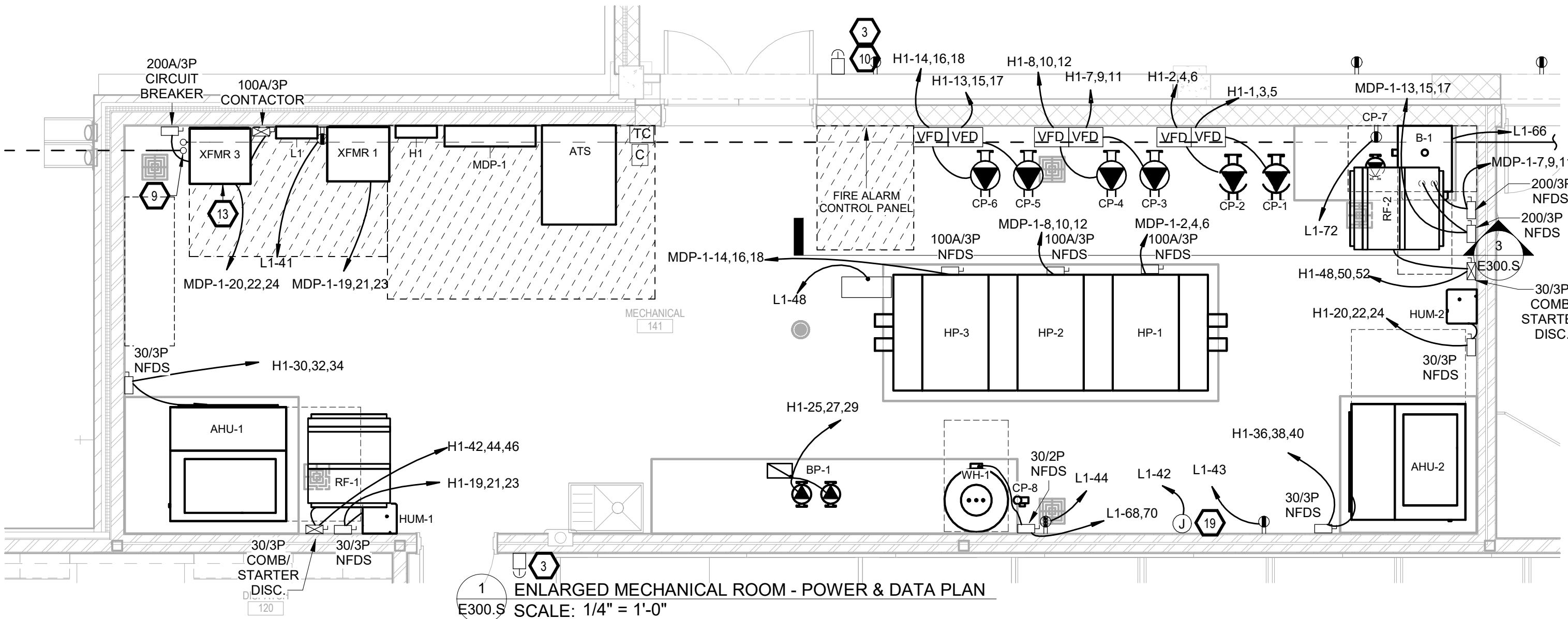
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POWER & DATA PLAN - SOUTH

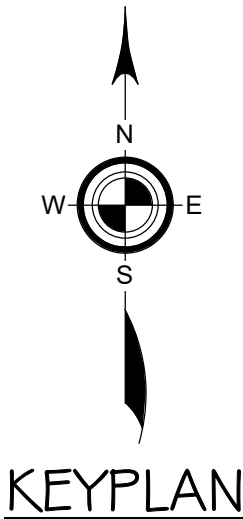
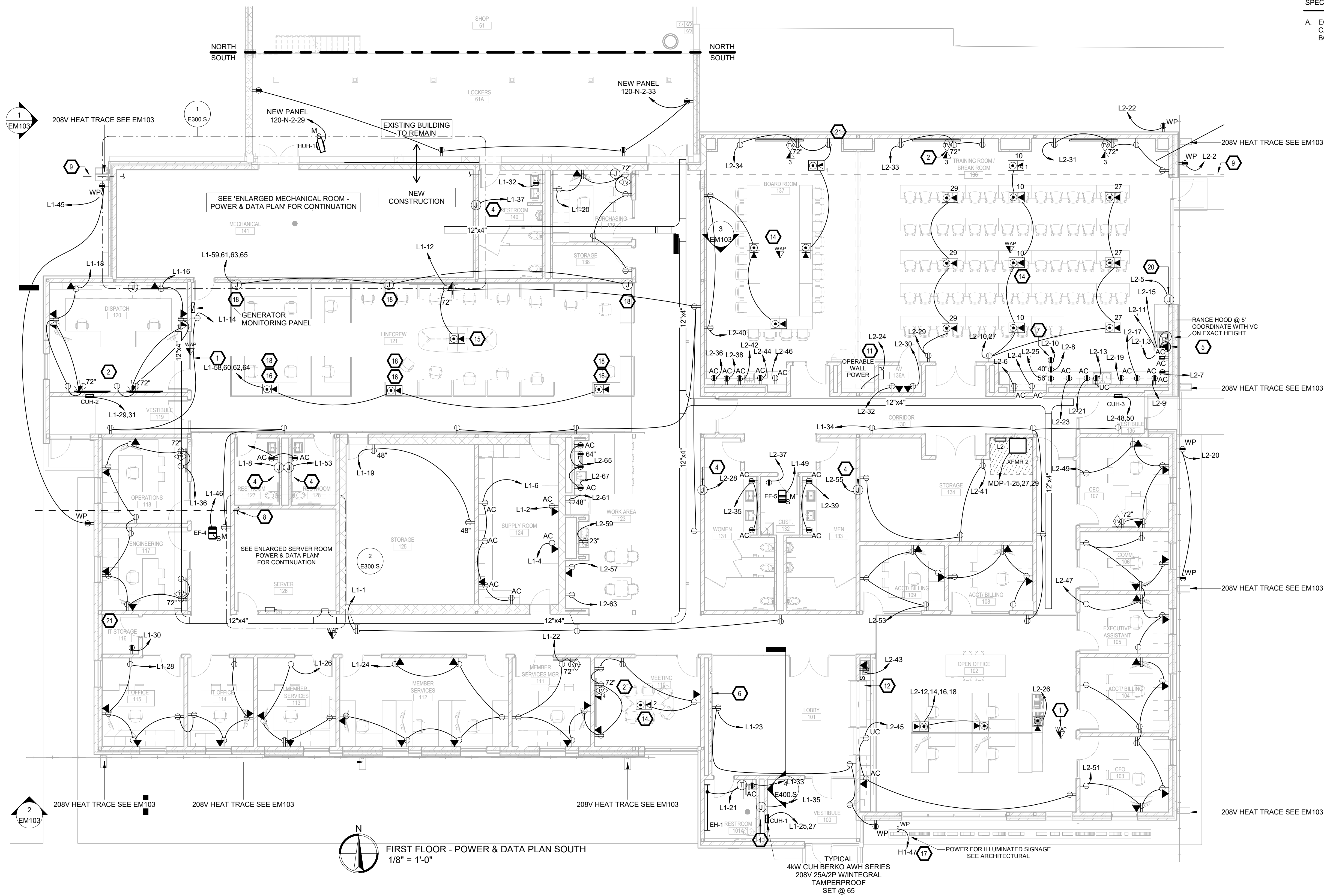
E300.S



BOILER-1 AND RETURN FAN-1  
SCALE: 1/8" = 1'-0"



ENLARGED SERVER 126 - POWER & DATA PLAN  
SCALE: 1/4" = 1'-0"

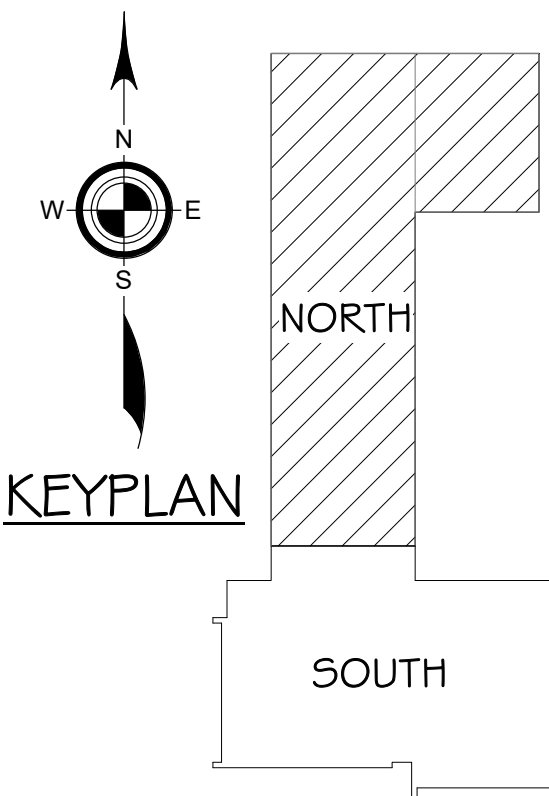
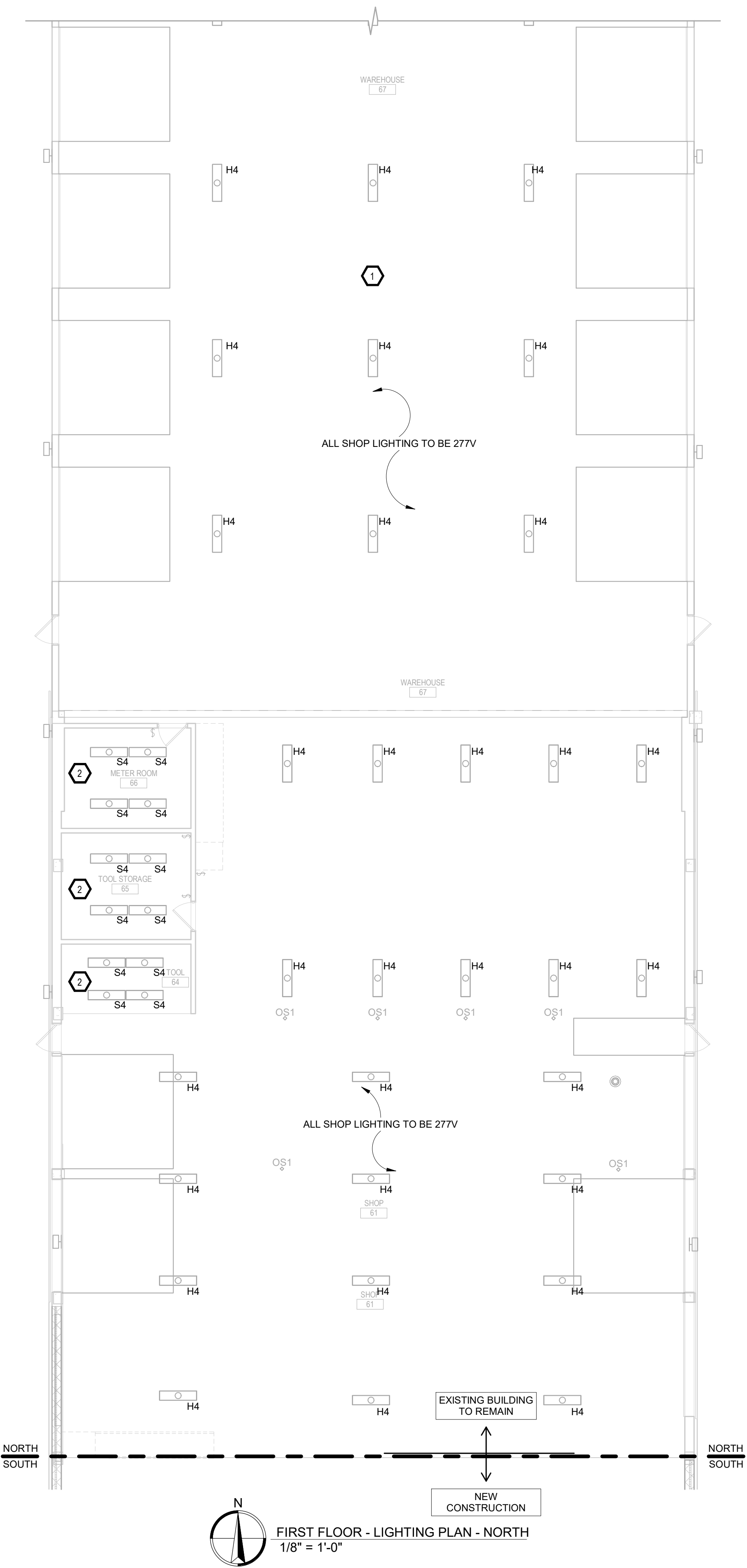
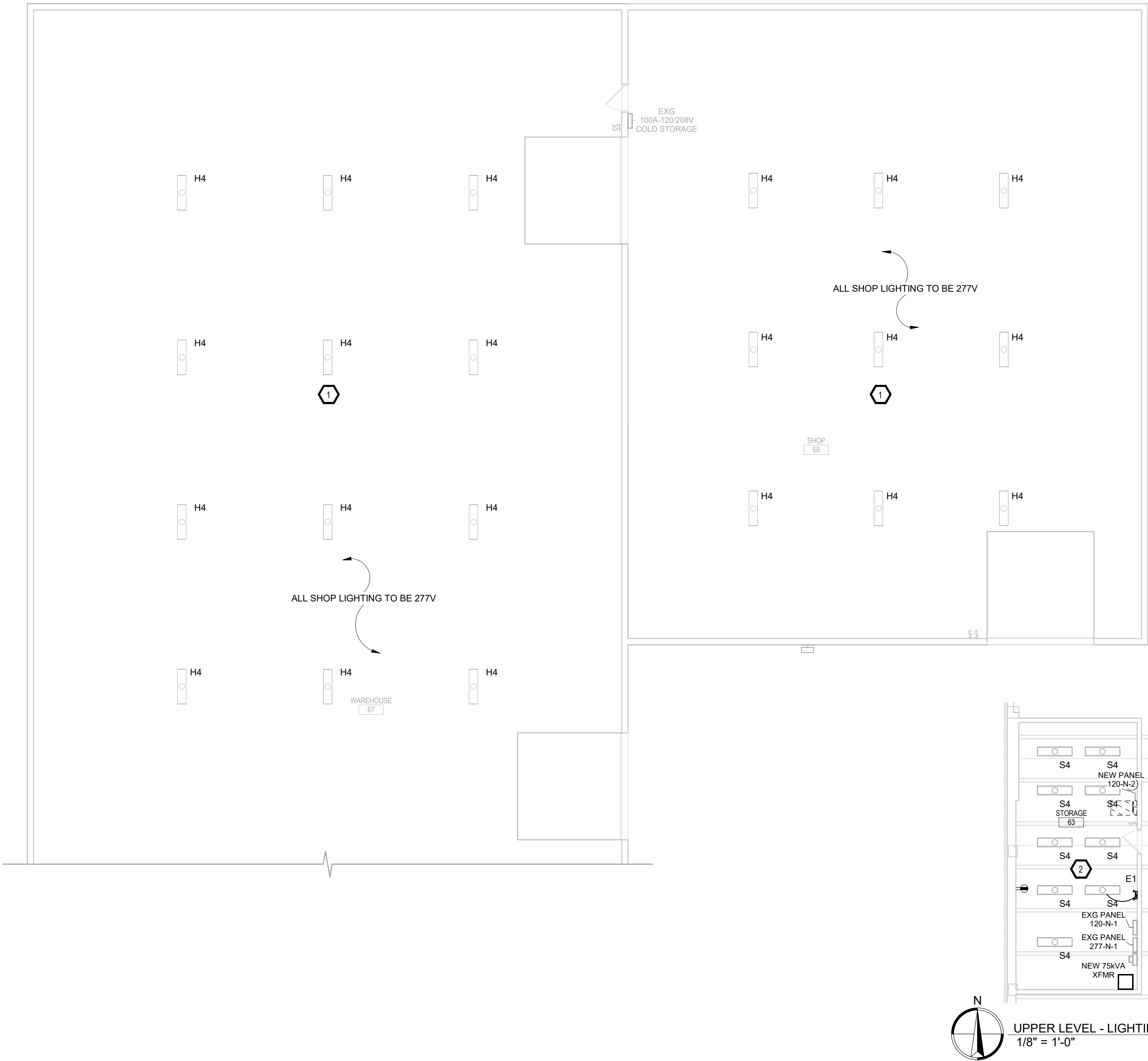






- GENERAL NOTES:
- A. ALL WORK SHALL BE PERFORMED IN A CLEAN AND WORKMANLIKE MANNER.
- B. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PATCHING ANY OPENINGS LEFT IN FLOORS, WALLS, AND CEILINGS THAT WERE CAUSED BY HIS/HER ACTIONS. PATCHING SHALL MATCH EXISTING SURFACE IN COLOR, TEXTURE AND QUALITY SO THAT PATCH IS INDISTINGUISHABLE FROM ORIGINAL SURFACE.
- C. ALL PENETRATIONS THROUGH DRAFT STOPS AND OTHER FIRE-RATED PARTITIONS SHALL BE FIRE STOPPED AS PER SPECIFICATIONS AND LOCAL CODES.
- D. ALL ELECTRICAL WORK SHALL BE INSTALLED IN STRICT ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, NATIONAL ELECTRIC CODE, AND THE AUTHORITY HAVING JURISDICTION.
- E. THE ELECTRICAL DRAWINGS SHOW GENERAL ARRANGEMENT ONLY. EXACT LOCATION SHALL AVOID INTERFERENCE WITH ELECTRICAL EQUIPMENT & REQUIRED ELECTRICAL CLEARANCES.

- KEYNOTES
1. BY ADD ALTERNATE: EC TO PROVIDE & INSTALL NEW SHOP LED FIXTURES TYPE "H4". RE-WORK EXG SHOP LIGHTING CIRCUITRY WIRING TO 277V.
2. BY ADD ALTERNATE: EC TO PROVIDE & INSTALL NEW LED FIXTURES TYPE "S4" IN ROOMS AS NOTED. RE-WORK EXG SHOP LIGHTING CIRCUITRY WIRING TO 277V.





GENERAL NOTES:

A. ALL WORK SHALL BE PERFORMED IN A CLEAN AND WORKMANLIKE MANNER.

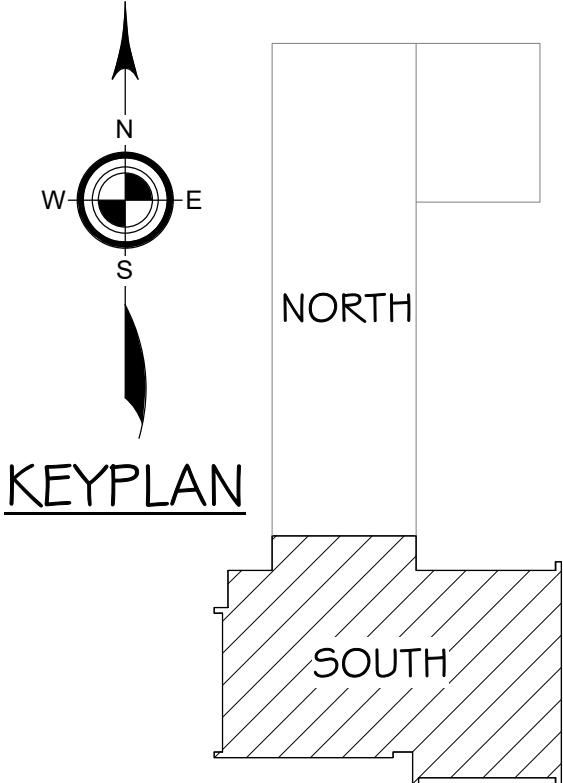
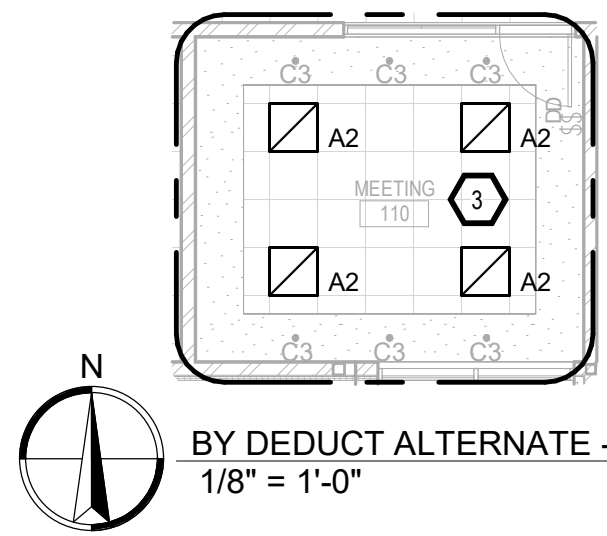
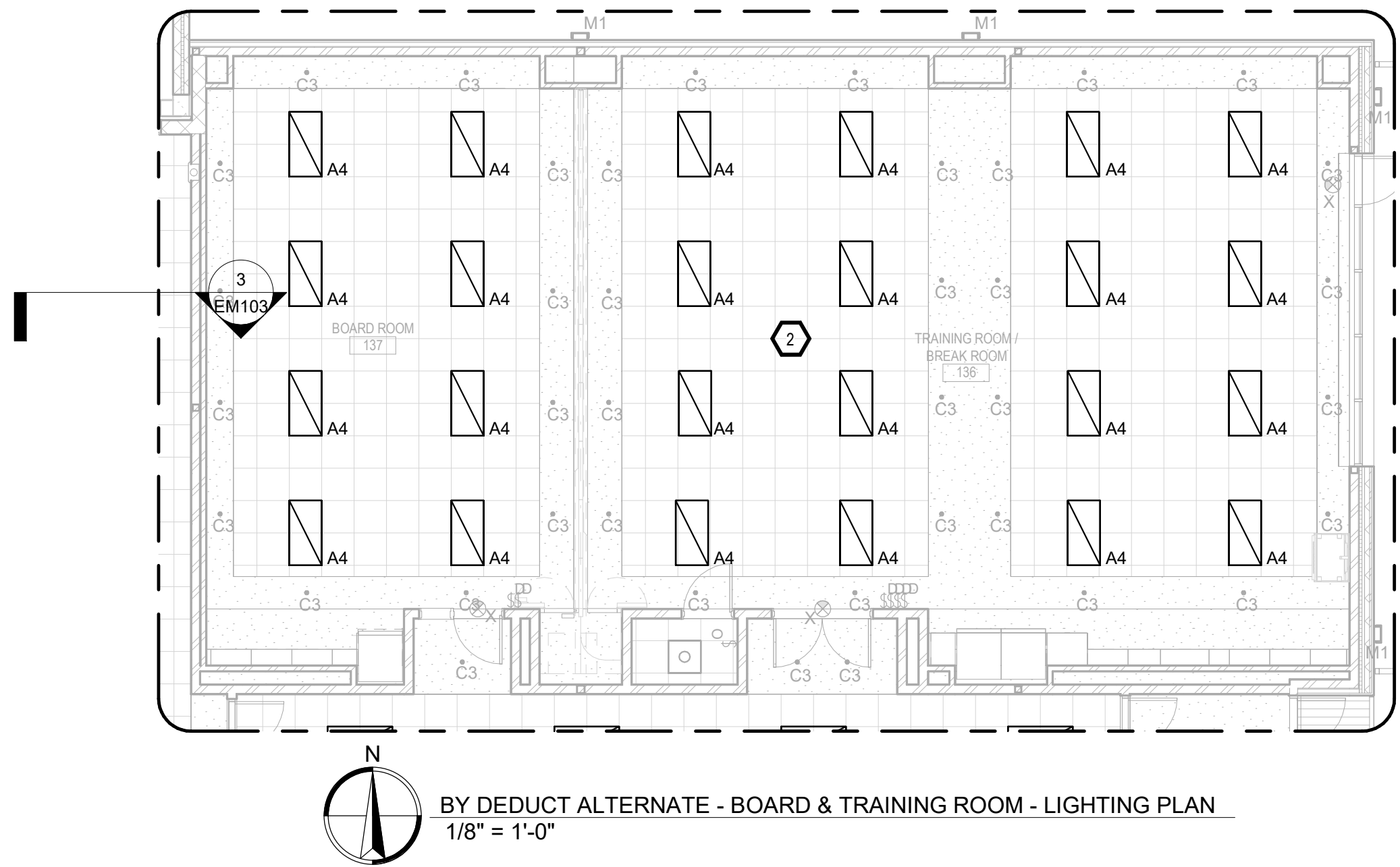
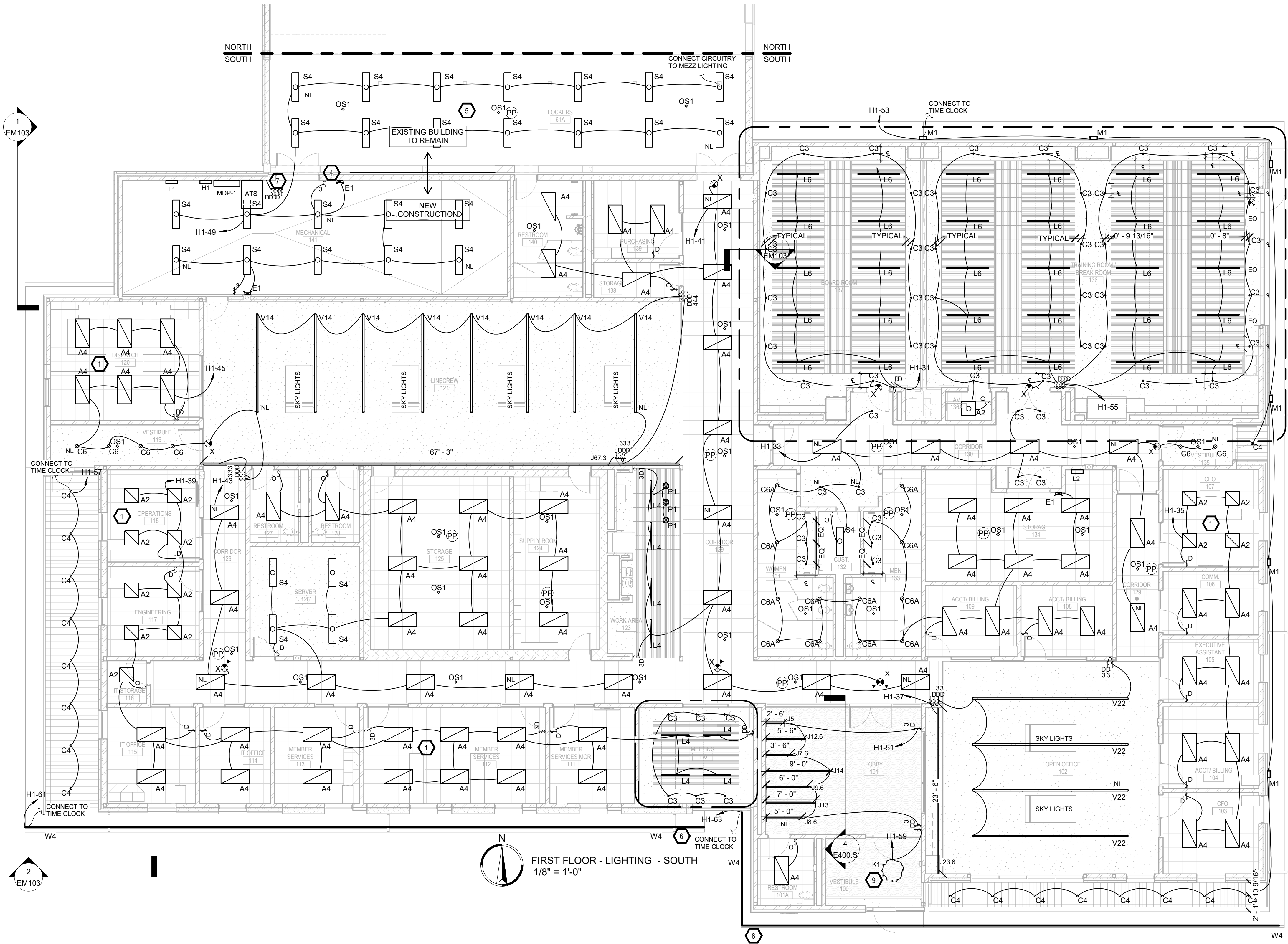
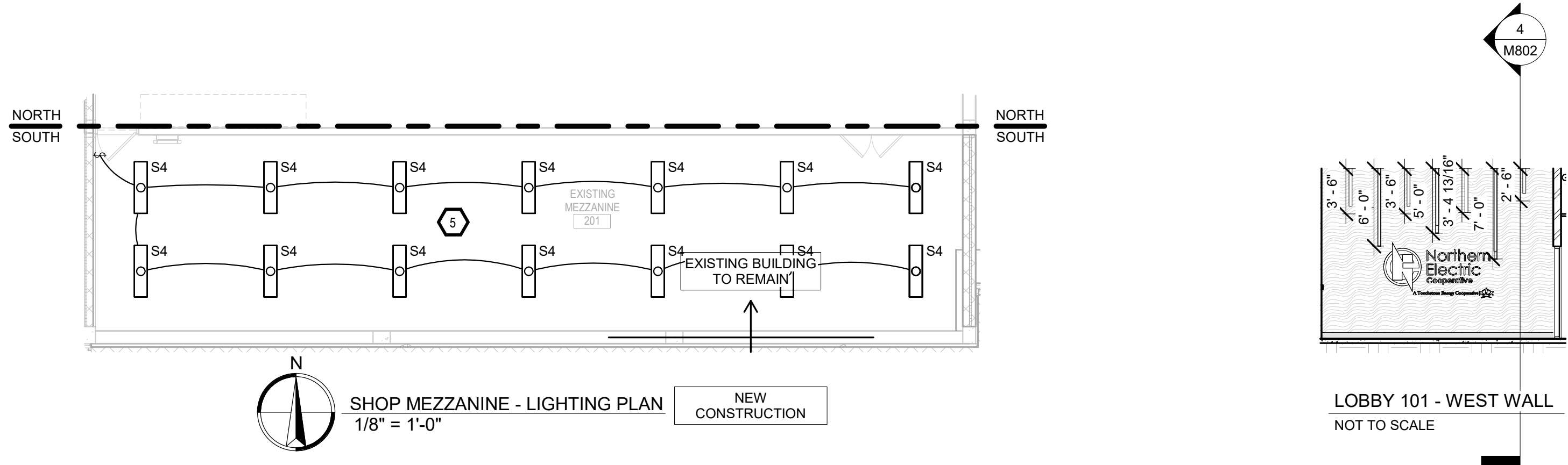
B. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PATCHING ANY OPENINGS LEFT IN FLOORS, WALLS, AND CEILINGS THAT WERE CAUSED BY HIS/HER ACTIONS. PATCHING SHALL MATCH EXISTING SURFACE IN COLOR, TEXTURE AND QUALITY SO THAT PATCH IS INDISTINGUISHABLE FROM ORIGINAL SURFACE.

C. ALL PENETRATIONS THROUGH DRAFT STOPS AND OTHER FIRE-RATED PARTITIONS SHALL BE FIRE STOPPED AS PER SPECIFICATIONS AND LOCAL CODES.

D. ALL ELECTRICAL WORK SHALL BE INSTALLED IN STRICT ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, NATIONAL ELECTRIC CODE, AND THE AUTHORITY HAVING JURISDICTION.

E. THE ELECTRICAL DRAWINGS SHOW GENERAL ARRANGEMENT ONLY. EXACT LOCATION SHALL AVOID INTERFERENCE WITH ELECTRICAL EQUIPMENT & REQUIRED ELECTRICAL CLEARANCES.

- KEYNOTES
- TYPICAL - INSTALL OFFICES WITH 0-10V DIMMING PROVISIONS. PROVIDE AND INSTALL 0-10V WIRING FROM SWITCH CONNECTED TO LED DRIVER & TO LIGHT FIXTURES.
  - BY DEDUCT ALTERNATE - INSTALL TYPE "A4" FIXTURES IN PLACE OF "L6" FIXTURES.
  - BY DEDUCT ALTERNATE - INSTALL TYPE "A2" FIXTURES IN PLACE OF "L4" FIXTURES.
  - TYPICAL - FIRE WALL INSTALL 3M FIRE BARRIER INSERT "EBI-4" FOR 4X4 JUNCTION BOX AND "EBI-5" FOR 4 11/16 JUNCTION BOX OR APPROVED EQUAL.
  - TYPICAL - PROVIDE AND INSTALL SURFACE MOUNTED CONDUIT FOR LIGHTING AND SWITCHING DEVICES.
  - PROVIDE AND INSTALL HIGH EFFICIENCY OUTDOOR LINEAR WALL WASH FIXTURE "W4" ALONG THE SOUTHERN PERIMETER.
  - PROVIDE AND INSTALL DIMMING SWITCHES FOR EXTERIOR LIGHTING IN MECH 141 DOWNSTREAM OF TIME CLOCK.
  - NOT USED.
  - SEE ARCHITECTURAL ELEVATION FOR CONFIGURATION OF PENDANT FIXTURES. COORDINATE CABLE LENGTHS, DIFFUSER FINISH & FINAL PLACEMENT WITH ARCHITECT.



SE PROJECT NO: 240700836



ISSUE:  
5/15/2025 100% CONSTRUCTION DOCUMENTS

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PROJECT:  
NORTHERN ELECTRIC  
COOPERATIVE  
ABERDEEN, SOUTH DAKOTA

SHEET TITLE:  
LIGHTING PLAN - SOUTH

E400.S



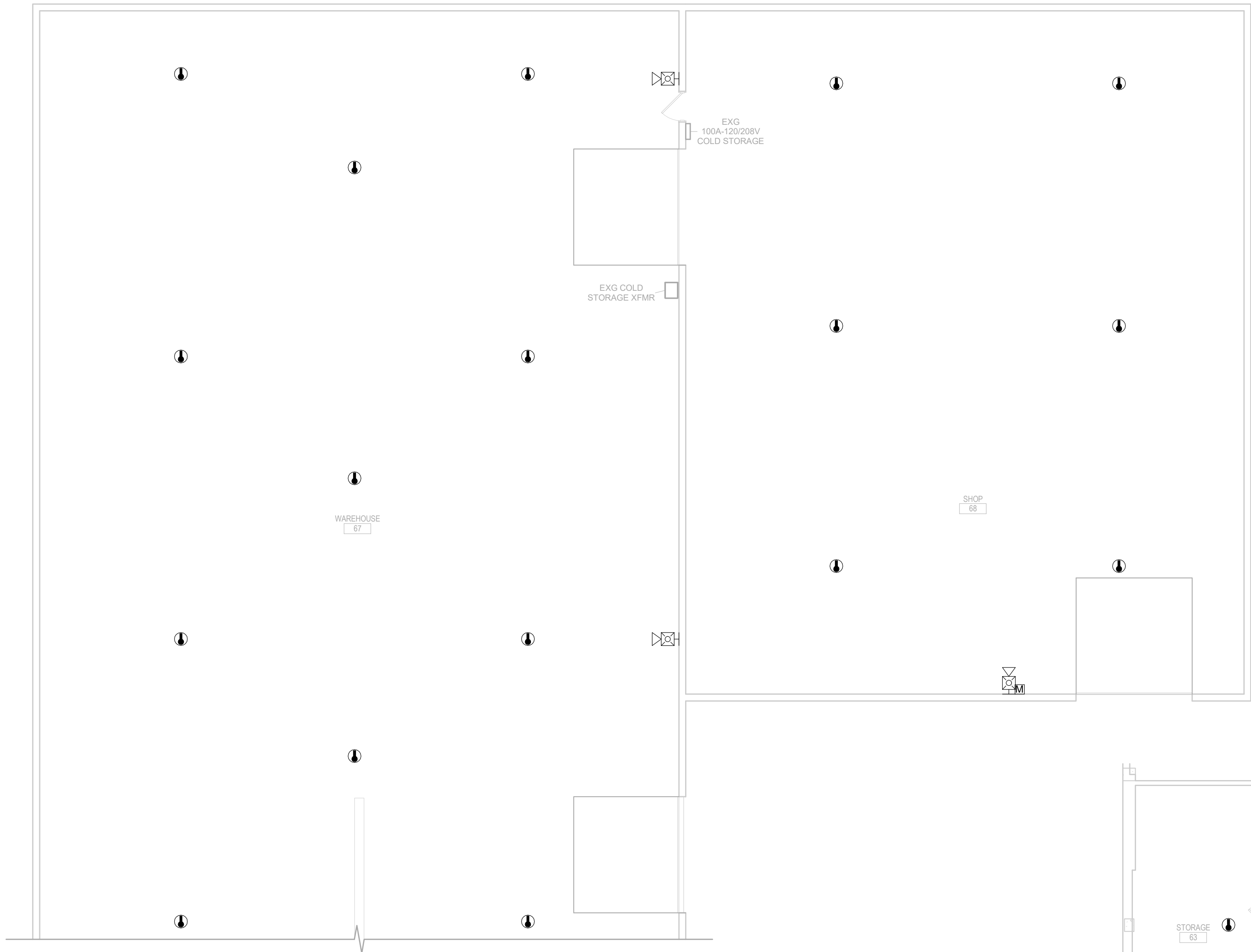


GENERAL NOTES:

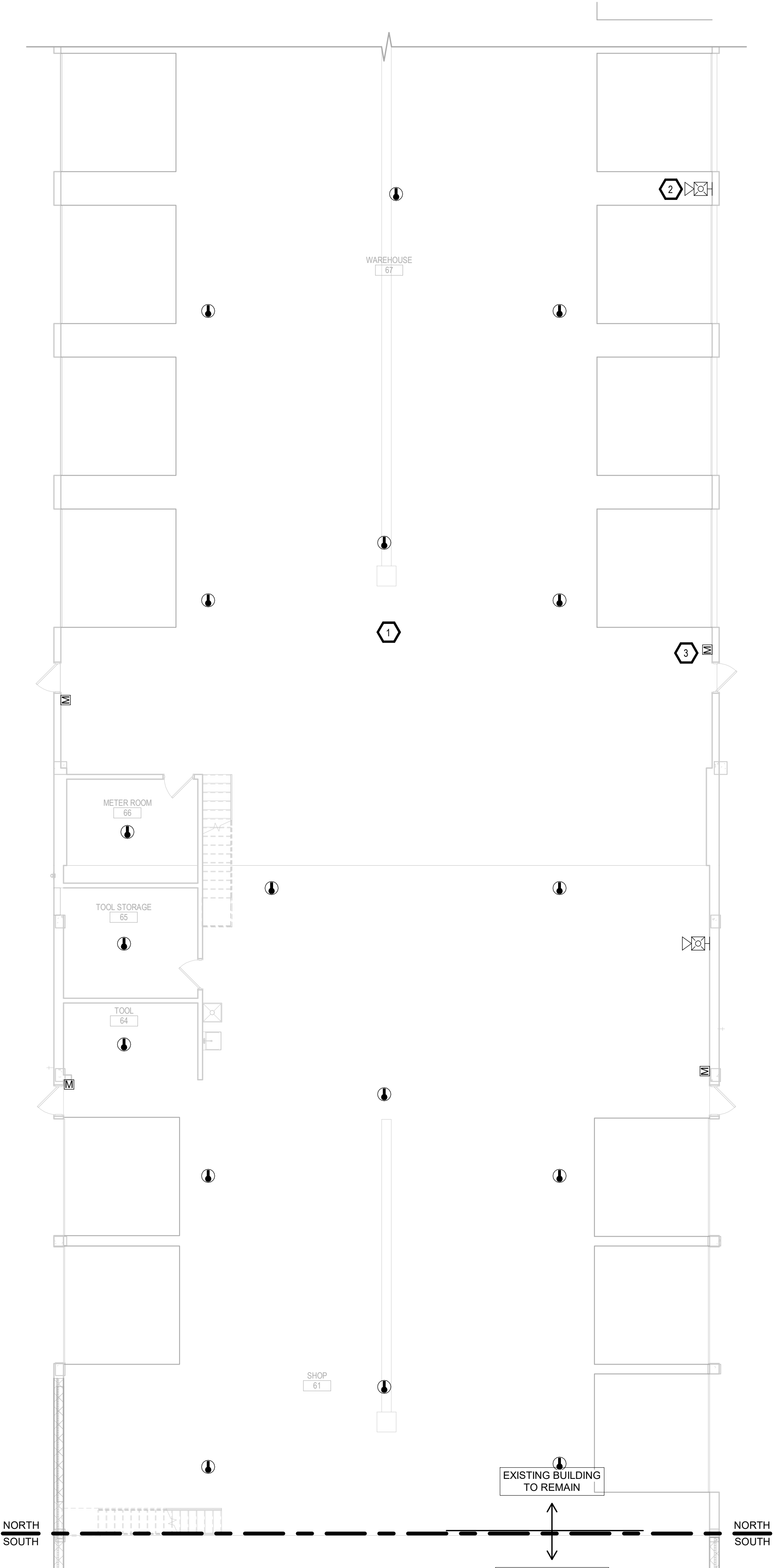
- A. ALL WORK SHALL BE PERFORMED IN A CLEAN AND WORKMANLIKE MANNER.
- B. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PATCHING ANY OPENINGS LEFT IN FLOORS, WALLS, AND CEILINGS THAT WERE CAUSED BY HIS/HER ACTIONS. PATCHING SHALL MATCH EXISTING SURFACE IN COLOR, TEXTURE AND QUALITY SO THAT PATCH IS INDISTINGUISHABLE FROM ORIGINAL SURFACE.
- C. ALL PENETRATIONS THROUGH DRAFT STOPS AND OTHER FIRE-RATED PARTITIONS SHALL BE FIRE STOPPED AS PER SPECIFICATIONS AND LOCAL CODES.
- D. ALL ELECTRICAL WORK SHALL BE INSTALLED IN STRICT ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, NATIONAL ELECTRIC CODE, AND THE AUTHORITY HAVING JURISDICTION.
- E. THE ELECTRICAL DRAWINGS SHOW GENERAL ARRANGEMENT ONLY. EXACT LOCATION SHALL AVOID INTERFERENCE WITH ELECTRICAL EQUIPMENT & REQUIRED ELECTRICAL CLEARANCES.

KEYNOTES

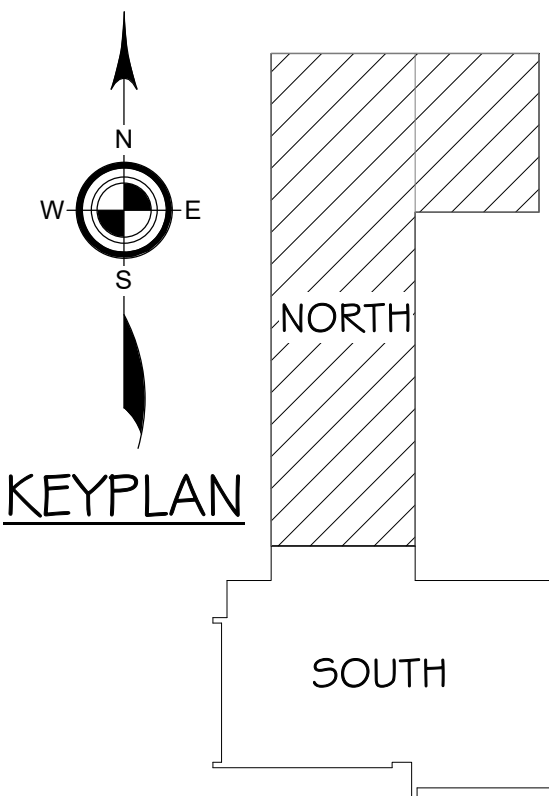
1. TYPICAL - PROVIDE AND INSTALL HEAT DETECTORS THOUGHT EXG SHOP.
2. TYPICAL - PROVIDE AND INSTALL HORN/STROBE THOUGHT EXG SHOP AS REQUIRE.
3. TYPICAL - PROVIDE AND INSTALL MANUAL PULL STATIONS AT EXIT DOORS AS REQUIRED.



UPPER LEVEL - SPECIAL SYSTEMS PLAN  
1/8" = 1'-0"



FIRST FLOOR - SPECIAL SYSTEMS PLAN NORTH  
1/8" = 1'-0"





SPECIAL NOTES:

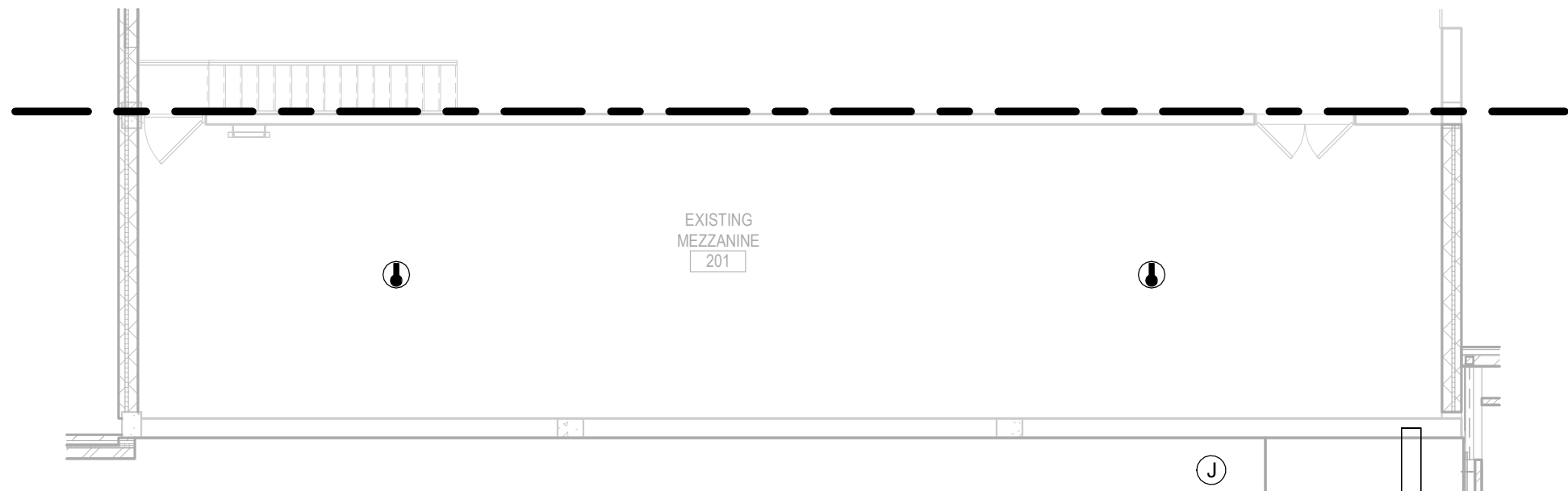
- A. ALL SECURITY SYSTEMS TO BE ROUGH-IN ONLY WITH 3/4" CONDUIT UNLESS OTHERWISE APPROVED TO AN ACCESSIBLE CEILING LOCATION. CAMERAS CARD READERS, MOTION DETECTORS, SECURITY DEVICES, WIRING & TERMINATIONS BY OTHERS.
- B. SOUND REINFORCEMENT - PROVIDE SOUND REINFORCEMENT SYSTEMS IN BOARDROOM 137 AND TRAINING/BREAKROOM 136. SYSTEMS OPERATION SHALL CONSIST OF BOARDROOM ONLY, TRAINING/BREAKROOM ONLY AND BOTH COMBINED. SELECTION SHALL BE VIA WALL MOUNTED LCD SCREEN AT FRONT OF EACH ROOM. PROVIDE RACK MOUNTED UNFI POWERAMPS UPL-AMP-B AS REQUIRED AND TWO ALLEN & HEATH 16X16 AUDIO MATRIX MIXERS AH-AH6-16. PROVIDE THREE SPEAKERS, DESNO DX-S8 LOCATED AT THE FRONT(NORTH) OF ROOMS AND THREE SPEAKERS, DESNO DX-S5 LOCATED AT THE MID POINT OF ROOMS. PROVIDE AUDIO INPUTS LOCATED IN THE PODIUM FLOOR BOX AND AT FRONT DISPLAY IN EACH ROOM. PROVIDE ONE VOLUME CONTROL LOCATED AT THE FRONT OF EACH ROOM. PROVIDE THREE HANDHELD WIRELESS MICROPHONES, SHURE MXW2/SM58P-Z10 AND THREE DESK MOUNTED MICROPHONES, SHURE MZW8X-Z10 WITH GOOSENECK BASES, THREE SHURE X415RLPDFN 15" GOOSE NECK AND ONE 4 CHANNEL CHARGING STATION. PROVIDE ALL NECESSARY ITEMS FOR A COMPLETE AND FUNCTIONING SYSTEM NOT LIMITED TO MOUNTING RACK, CABLING, CONNECTORS, FACEPLATES, ETC. CONTACT ALEX BARTLET WITH PAUER SOUND AT 605-228-8342 FOR ADDITIONAL REQUIREMENTS.

GENERAL NOTES:

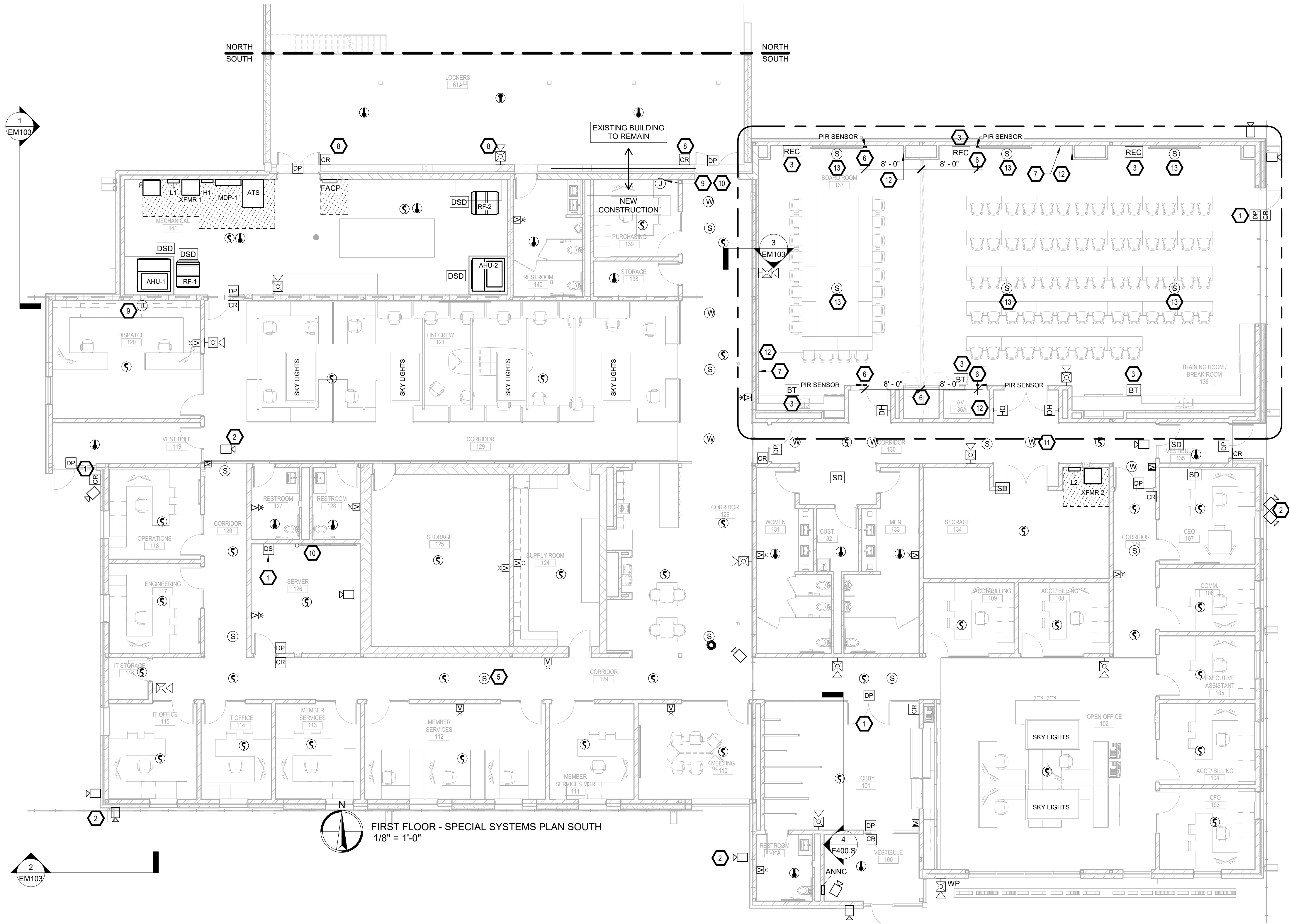
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KEYNOTES

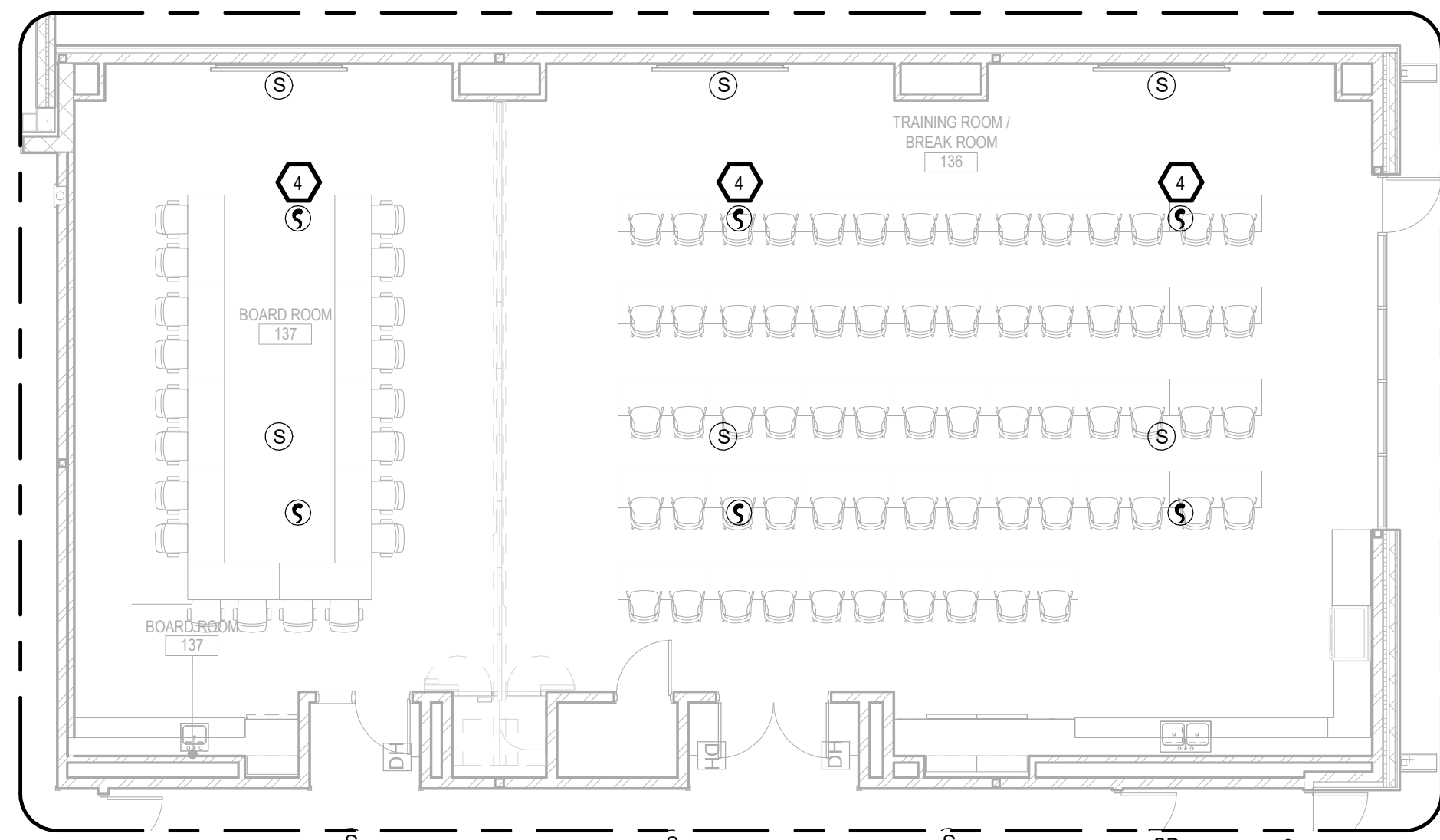
1. TYPICAL - PROVIDE AND INSTALL ROUGH-INS FOR NEW OWNER PROVIDED DOOR ACCESS CONTROLS. PROVIDE AND INSTALL (1) CAT8A & (1) 18-4 AWG CONDUCTOR TO EACH FOR OWNER PROVIDED DOOR ACCESS CONTROL. ROUTE ALL DOOR ACCESS CONTROL(S) CABLING BACK TO SERVER 126. CONNECT FACP TO OWNER PROVIDED DOOR ACCESS CONTROL PANEL(S). COORDINATE WITH OWNER ON CARD READER PLACEMENT.
2. TYPICAL SECURITY CAMERA - PROVIDE AND INSTALL (1) CAT6A ROUTED TO SERVER 126 FOR OWNER PROVIDED SECURITY CAMERAS.
3. INSTALL BEAM TYPE SMOKE SENSOR TRANSMITTER & RECEIVER CENTERED IN UPPER SOFFIT.
4. BY DEDUCT ALTERNATE - INSTALL SMOKE DETECTORS AS ILLUSTRATED IN ACT CEILING. DEDUCT (6) SMOKE DETECTORS.
5. TYPICAL CEILING SPEAKER - PROVIDE AND INSTALL CABLING FOR INTERCOM SYSTEM ROUTED TO SERVER 126 FOR OWNER PROVIDED SPEAKERS AND INTERCOM SYSTEM.
6. PROVIDE AND INSTALL WIRING AND ELECTRICAL CONNECTIONS TO PIR SENSORS FOR OPERABLE WALL. COORDINATE WITH GC FOR EXACT PIR SENSOR LOCATIONS AND HEIGHTS TO NOT CONFLICT WITH PROPOSED TV. TYPICAL PLACEMENT OF PIR SENSOR(S) IS MOUNTED 8' FROM CENTER LINE OF OPERABLE WALL MOUNTED FROM 7'-6" AFF TO 10' AFF.
7. PROVIDE AND INSTALL WIRING AND ELECTRICAL CONNECTIONS TO KEY SWITCH/DISPLAY FOR OPERABLE WALL UNIT. KEY SWITCH/DISPLAY UNIT TO BE INSTALLED 8' MIN. FROM CLOSEST PIR SENSOR. COORDINATE WITH OWNER AND GC FOR EXACT LOCATIONS AND PLACEMENT.
8. TYPICAL - FIRE WALL. INSTALL 3M FIRE BARRIER INSERT "EBI-4" FOR 4X4 JUNCTION BOX AND "EBI-5" FOR 4 11/16 JUNCTION BOX OR APPROVED EQUAL.
9. PROVIDE AND INSTALL RACEWAY FOR OWNER PROVIDED ANTENNA CABLING 3 RUNS OF LMR -400 50 OHM COAX CABLE. PROVIDE 2" CONDUIT ROUTED FROM 8X8X4 RECESSED JUNCTION BOX IN PURCHASING 129 TO CABLE TRAY. PROVIDE 2" CONDUIT FROM CABLE TRAY TO STORAGE 63 IN SHOP. MAINTAIN FIRE WALL RATING WITH SLEEVE. COORDINATE WITH OWNER ON ROUTING AND PLACEMENT.
10. PROVIDE AND INSTALL RACEWAY FOR OWNER PROVIDED 4 - PAIR FIBER CABLING. PROVIDE 1 1/4" CONDUIT ROUTED FROM 8X8X4 RECESSED JUNCTION BOX IN SERVER 126 TO CABLE TRAY. PROVIDE 1 1/4" CONDUIT FROM CABLE TRAY TO STORAGE 63 IN SHOP. MAINTAIN FIRE WALL RATING WITH SLEEVE. COORDINATE WITH OWNER ON ROUTING AND PLACEMENT.
11. PROVIDE AND INSTALL, WHITE NOISE PLENUM MOUNT SPEAKER.
12. PROVIDE AND INSTALL RACEWAY FOR HEADEND CONTROLLER(S) IN AV 136A WITH VOLUME CONTROL INSTALLED IN FOR BOARD ROOM 137 & BREAK ROOM 136. COORDINATE WITH OWNER ON AUDIO CONTROL PLACEMENT.
13. TYPICAL SPEAKER - PROVIDE AND INSTALL RACEWAY FROM SPEAKER BACK TO AV 136A FOR SPEAKER CABLING.



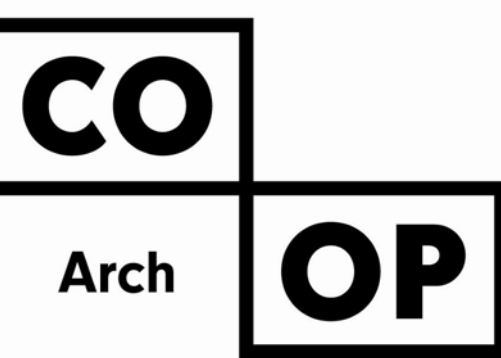
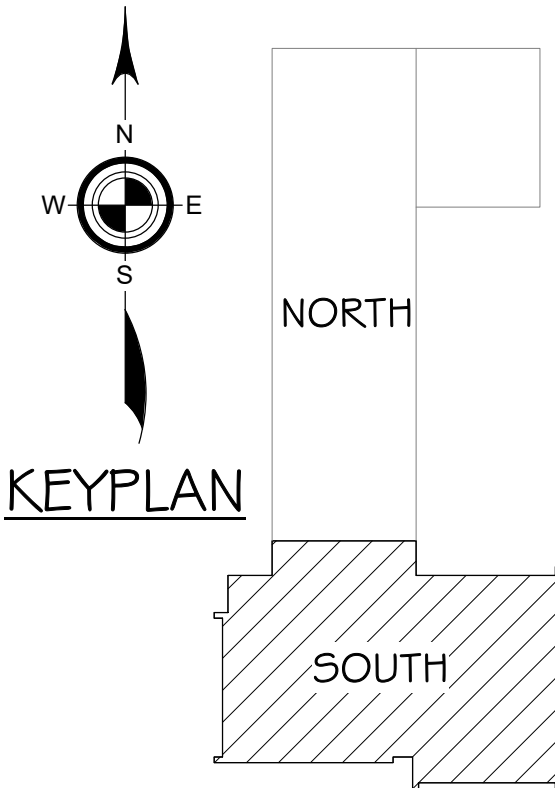
MEZZANINE - SPECIAL SYSTEMS PLAN  
1/8" = 1'-0"



FIRST FLOOR - SPECIAL SYSTEMS PLAN SOUTH  
1/8" = 1'-0"



BY DEDUCT ALTERNATE - BOARD & TRAINING ROOM - SPECIAL SYSTEMS  
PLAN  
1/8" = 1'-0"



1108 S. Main St. 102  
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SE PROJECT NO: 240700836



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5/15/2025 100% CONSTRUCTION DOCUMENTS

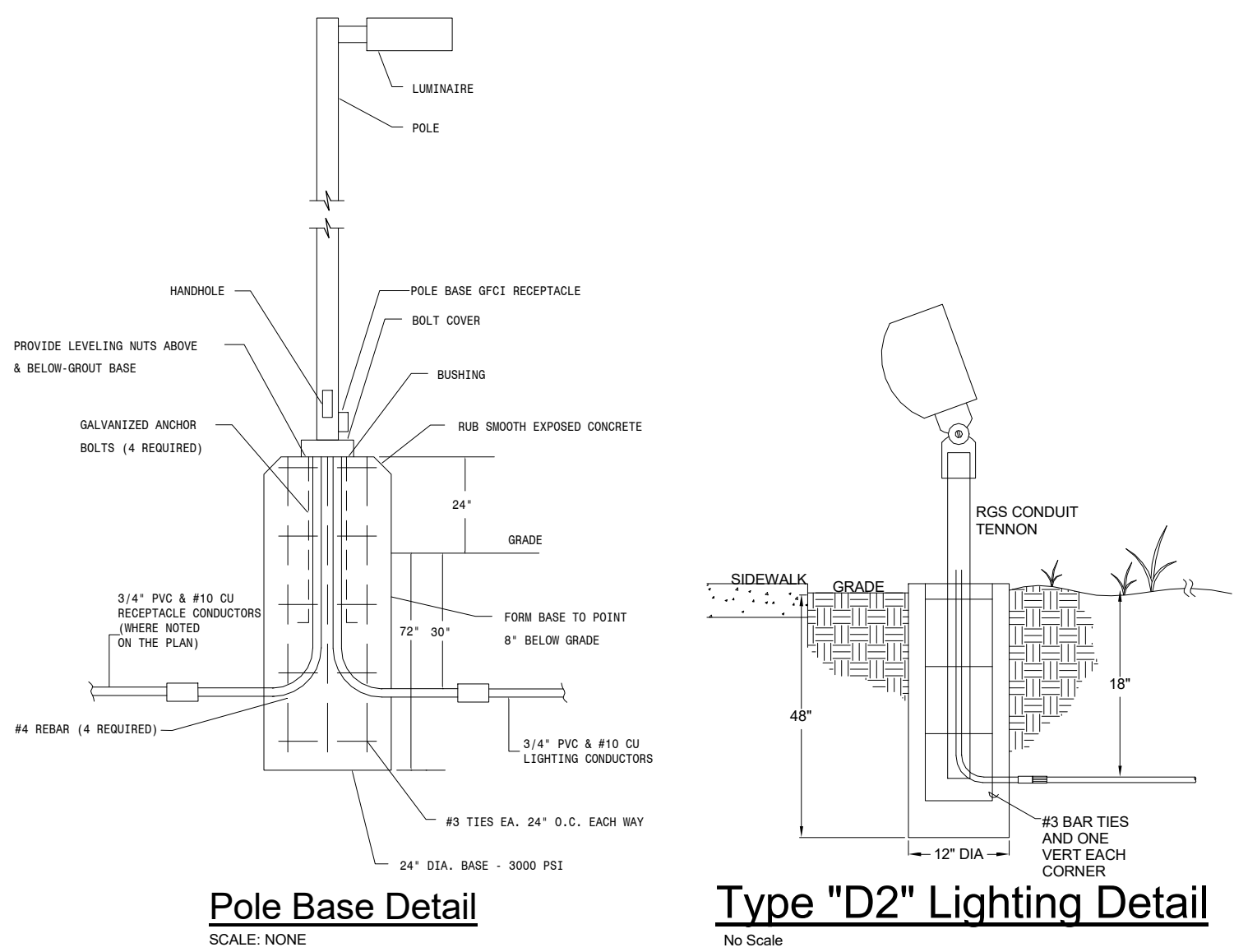
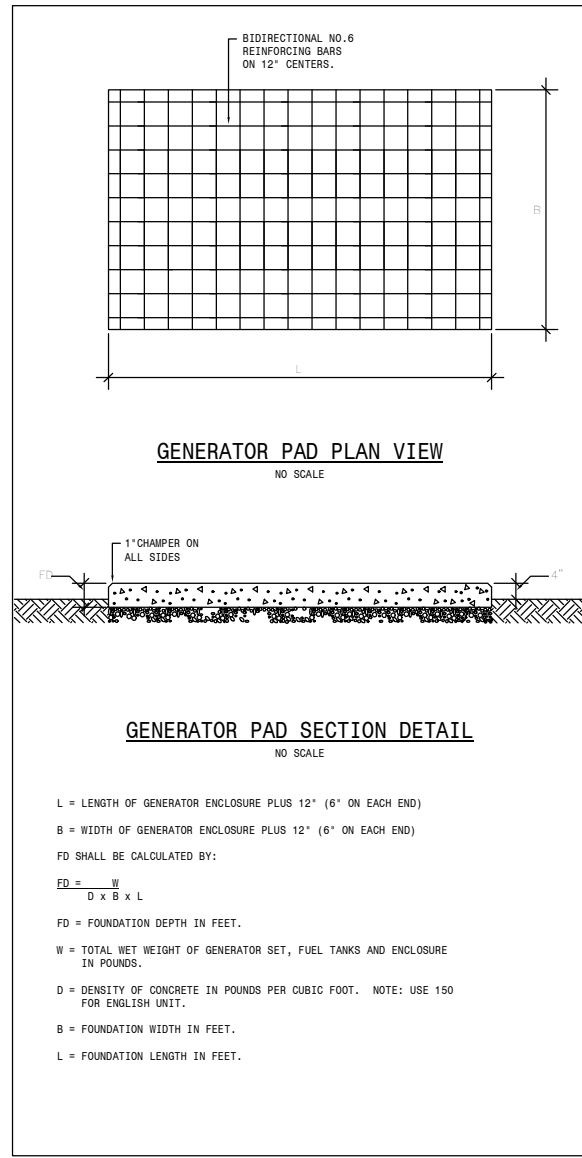
REVISION SCHEDULE:  
REV. # REV. DSC. REV. DATE

PROJECT:  
NORTHERN ELECTRIC  
COOPERATIVE  
ABERDEEN, SOUTH DAKOTA

SHEET TITLE:  
SPECIAL SYSTEMS PLAN -  
SOUTH

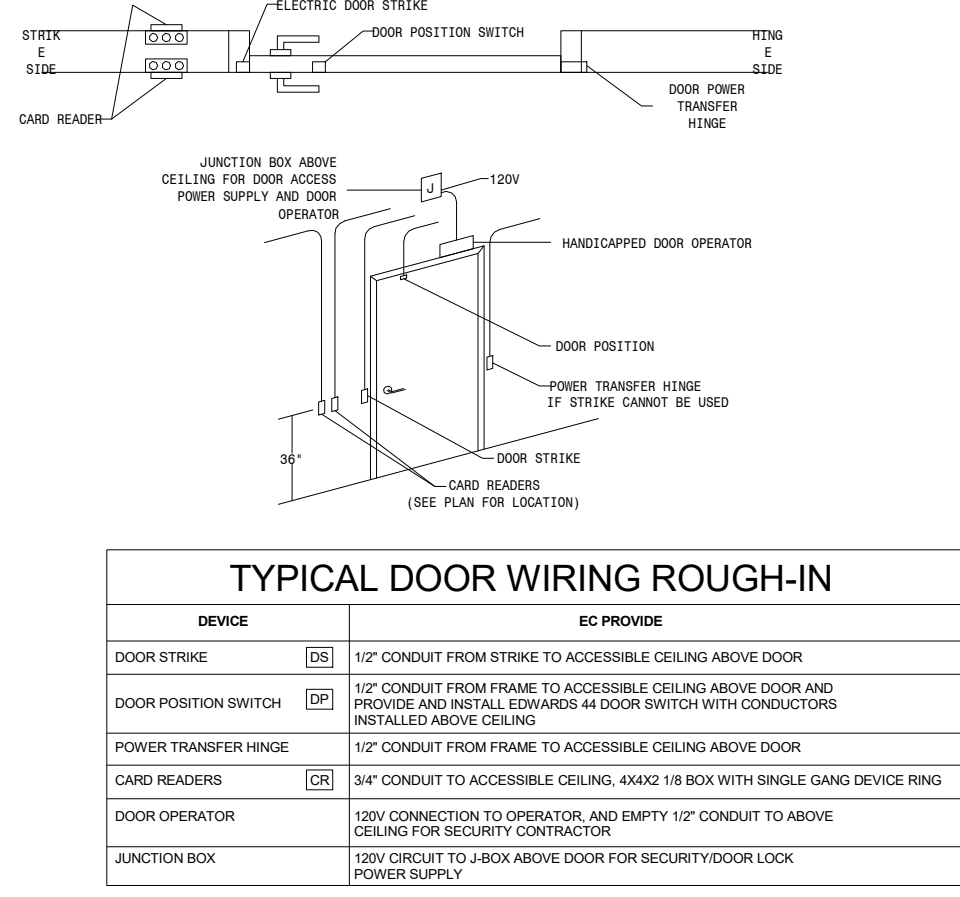
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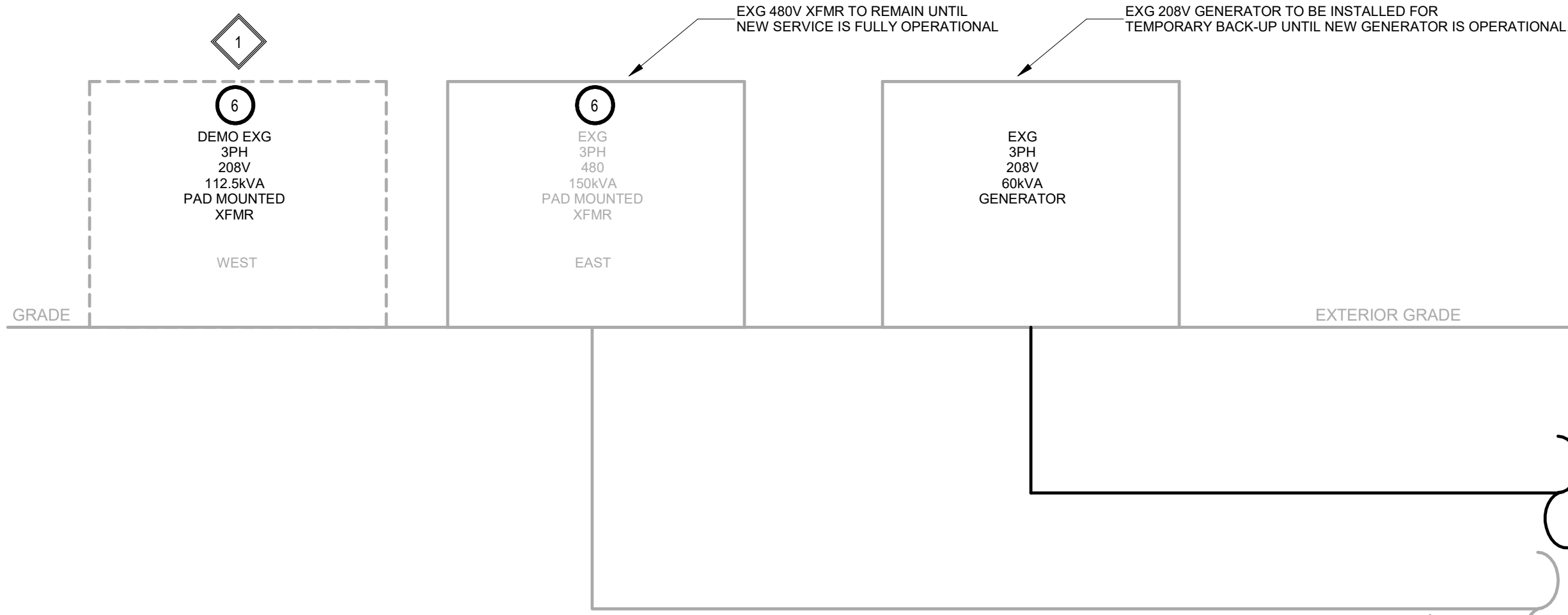


Type "D2" Lighting Detail  
No Scale

Typical Data Location Detail  
No Scale

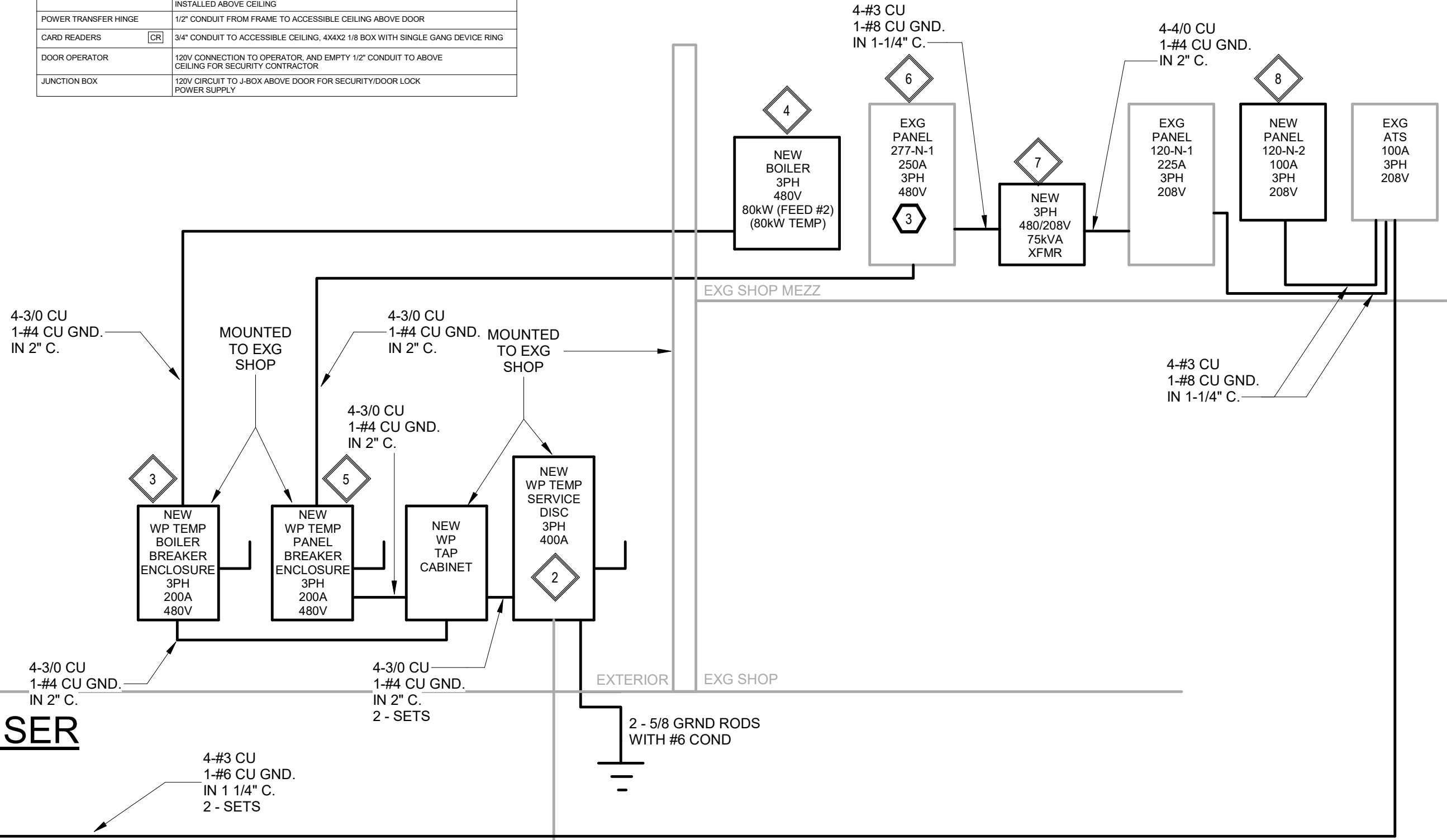


DEVICE	EC PROVIDE
DOOR STRIKE	1/2\"
DOOR POSITION SWITCH	1/2\"
POWER TRANSFER RANGE	1/2\"
CARD READER	1/2\"
DOOR OPERATOR	1/2\"
JUNCTION BOX	1/2\"



TEMPORARY POWER RISER  
NOT TO SCALE

NEW TEMPORARY SERVICE 480V 3PH UNDERGROUND CONDUIT AND CONDUCTOR(S) PROVIDED BY UTILITY (NORTHERN ELECTRIC). BORING AND EXCAVATION BY OWNER/UTILITY (NORTHERN ELECTRIC).

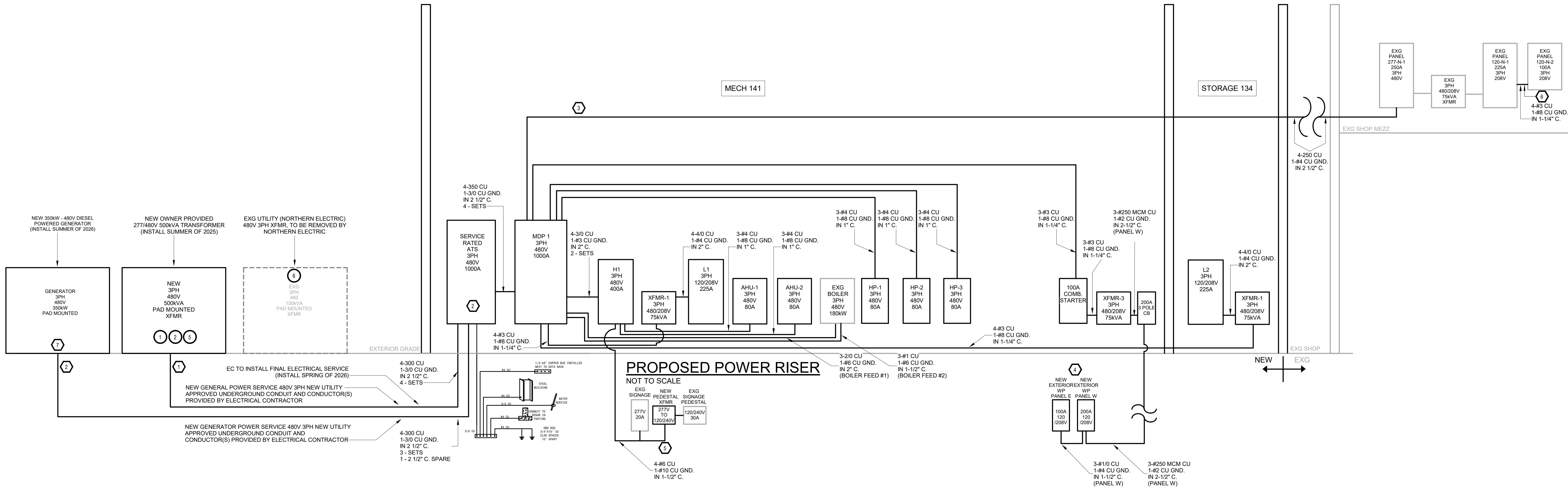


PROPOSED KEYNOTES

1. NEW OWNER/UTILITY PROVIDED XFMR, EC TO PROVIDE AND INSTALL NEW UTILITY APPROVED CONDUIT(S) AND CONDUCTOR(S). COORDINATE WITH UTILITY ON LOCATION AND PLACEMENT.
2. PROVIDE NEW 350kW 480V 3PH GENERATOR AND AUTOMATIC TRANSFER SWITCH (ATS). EC TO PROVIDE AND INSTALL NEW UTILITY APPROVED CONDUIT(S) AND CONDUCTOR(S). COORDINATE WITH OWNER/UTILITY ON LOCATION AND PLACEMENT.
3. PROVIDE AND INSTALL NEW CONDUIT AND CONDUCTOR(S) TO RE-SUPPLY EXG PANEL 277-N-1.
4. PROVIDE AND INSTALL CONDUIT AND CONDUCTOR(S) FOR NEW EXTERIOR WP 200A PANEL W & 100A PANEL E. COORDINATE WITH OWNER ON EXACT LOCATION. SEE SITE PLAN FOR PROPOSED LOCATIONS.
5. PROVIDE AND INSTALL 277V 30A 1P CIRCUIT TO 277 TO 240/120V BUCK BOOST SKVA TRANSFORMER TO RE-SUPPLY EXG PEDESTAL POWER.
6. REWORK CONDUCTORS TO RE-USE EXG 208V 100A 3PH BREAKER PANEL IN EXG PANEL 120-N-1 TO SUPPLY EXG 120-N-2 AFTER REMOVAL OF TEMP-ATS.
7. PROVIDE CONCRETE PAD FOR GENERATOR SEE DETAIL ON THIS SHEET.

UTILITY KEYNOTES: SCOPE OF WORK DETAILING EXCAVATION(S), CONDUIT(S), CONDUCTOR(S), & TERMINATIONS BY NORTHERN ELECTRIC. (ALL OTHER WORK TO BE BY ELECTRICAL CONTRACTOR.)

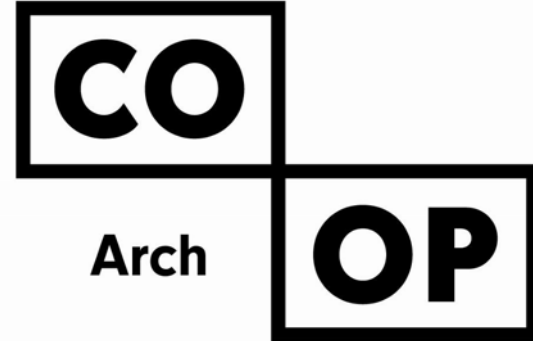
1. NORTHERN ELECTRIC POINT OF SERVICE
2. TRANSFORMER PAD PROVIDED BY UTILITY.
3. SEE ADDED CONDUIT(S) SIZES AS NOTED. PROVIDED AND INSTALLED BY EC. NO WORK BY UTILITY.
4. CONDUCTOR(S) FURNISHED BY UTILITY. INSTALLED BY ELECTRICAL CONTRACTOR
5. TERMINATION(S) BY UTILITY.
6. UTILITY TO DEMO/REMOVE.



PROPOSED POWER RISER  
NOT TO SCALE

SPECIAL NOTES:

PRIOR TO BIDDING AND CONSTRUCTION ELECTRICAL CONTRACTOR IS TO COORDINATE REQUIREMENTS WITH UTILITY COMPANY (NORTHERN ELECTRIC)  
NORTHERN ELECTRIC CONTACT: - RUSS ULMER  
(605) 225-0310 (OFFICE)  
rulmer@northernelectric.coop



1108 S. Main St. 102  
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REV. # REV. DSC. REV. DATE

PROJECT:  
NORTHERN ELECTRIC  
COOPERATIVE  
ABERDEEN, SOUTH DAKOTA

SHEET TITLE:  
ELECTRICAL DETAILS

E600



LIGHTING FIXTURE SCHEDULE													
TYPE	MANUFACTURERS	CAT. NO.	TYPE	WATTS (W)	LUMENS	COLOR TEMP. (K)	COLOR SELECT.	LUMEN SELECT.	DIMMING	RGB CAPABLE	HIN. CRT	REMARKS	
A2	COOPER, LITHONIA LIGHTING, RAB OR EQUAL	LITHONIA STAKS 2X4 AL03 SWW7 UVOLT	LED	33	4563	4000	YES	YES	0-10V	N0	90	2X2 TROFFER DROP IN PANEL	
A4	COOPER, LITHONIA LIGHTING, RAB OR EQUAL	LITHONIA STAKS 2X4 AL06 SWW7 UVOLT	LED	38	5517	4000	YES	YES	0-10V	N0	90	2X4 TROFFER DROP IN PANEL	
C3	COOPER, LITHONIA LIGHTING, RAB, MOLTO LUCE OR EQUAL	COOPER ML3LSFS9E010RMW	LED	12	800	4000	YES	YES	0-10V	N0	90	3" ROUND CANLESS LED DOWNLIGHTING	
C4	COOPER, LITHONIA LIGHTING, RAB, MOLTO LUCE OR EQUAL	LITHONIA LM4 AL03 L04 WR LSS MVOLT 90CRI	LED	19	2000	4000	YES	YES	0-10V	N0	90	3" ROUND CANLESS LED DOWNLIGHTING	
C6	COOPER, LITHONIA LIGHTING, RAB OR EQUAL	LITHONIA LM6 AL02 SWM1 L06 WR LSS MVOLT	LED	12	1000	4000	YES	YES	0-10V	N0	90	6" ROUND CAN DOWNLIGHT	
06A	COOPER, LITHONIA LIGHTING, RAB OR EQUAL	LITHONIA LM6 AL02 SWM1 L06 WR LSS MVOLT	LED	19	1500	4000	YES	YES	0-10V	N0	90	6" ROUND CAN DOWNLIGHT	
D2	COOPER, LITHONIA LIGHTING, OR APPROVED EQUAL	LITHONIA DSXF2 LED P1 70CRI MSP MVOLT IS PE UVB DBLXD	LED	64	8138	4000	N0	N0	0-10V	N0	90	OUTDOOR LED FLOODLIGHT WITH TOP MOUNTED UVB VISOR	
E	DUAL-LITE, SURE-LITES, MULE LIGHTING, LIGHOTALARMS, OR EQUAL	LITHONIA ELM4L LTP SDRT	LED	-	-	-	-	-	-	N0	-	WHITE EMERGENCY LIGHT WITH SELF DIAGNOSTICS	
F1	LITHONIA OR APPROVED EQUAL	LITHONIA RSX2 LED P4 40K R4 MVOLT RPA DBLXD	LED	187	24000	4000	N0	N0	N0	N0	70	LED AREA LIGHT, 25" ROUND TAPER ALUMINUM POLE	
H4	COOPER, LITHONIA LIGHTING, RAB OR EQUAL	LITHONIA CPHB 24000LM SEF WD MVOLT 40K 80CRI	LED	174	24000	4000	YES	YES	N0	N0	90	LED HIGH BAY	
J5	AYO FURO 3	FURO 3 F3 MI CR 5' 840 L SB 1D CR (116.5" CORNER)	LED	28	3600	4000	N0	N0	0-10V	N0	90	MUD IN SEAMLESS LIGHTING, FIELD VERIFY DIMENSIONS	
J7.6	AYO FURO 3	FURO 3 F3 MI CR 7' 6" 840 L SB 1D CR (116.5" CORNER)	LED	42	5500	4000	N0	N0	0-10V	N0	90	MUD IN SEAMLESS LIGHTING, FIELD VERIFY DIMENSIONS	
J8.6	AYO FURO 3	FURO 3 F3 MI CR 8' 6" 840 L SB 1D CR (116.5" CORNER)	LED	47	6300	4000	N0	N0	0-10V	N0	90	MUD IN SEAMLESS LIGHTING, FIELD VERIFY DIMENSIONS	
J9.6	AYO FURO 3	FURO 3 F3 MI CR 9' 6" 840 L SB 1D CR (116.5" CORNER)	LED	53	7000	4000	N0	N0	0-10V	N0	90	MUD IN SEAMLESS LIGHTING, FIELD VERIFY DIMENSIONS	
J12.6	AYO FURO 3	FURO 3 F3 MI CR 12' 6" 840 L SB 1D CR (116.5" CORNER)	LED	70	9200	4000	N0	N0	0-10V	N0	90	MUD IN SEAMLESS LIGHTING, FIELD VERIFY DIMENSIONS	
J13	AYO FURO 3	FURO 3 F3 MI CR 13' 840 L SB 1D CR (116.5" CORNER)	LED	72	9500	4000	N0	N0	0-10V	N0	90	MUD IN SEAMLESS LIGHTING, FIELD VERIFY DIMENSIONS	
J14	AYO FURO 3	FURO 3 F3 MI CR 14' 840 L SB 1D CR (116.5" CORNER)	LED	77	10200	4000	N0	N0	0-10V	N0	90	MUD IN SEAMLESS LIGHTING, FIELD VERIFY DIMENSIONS	
J23.6	AYO FURO 3 OR APPROVED EQUAL	FURO 3 F3 MI CR 23' 6" 840 L L 1D	LED	130	16900	4000	N0	N0	0-10V	N0	90	MUD IN SEAMLESS LIGHTING	
J67.3	AYO FURO 3	FURO 3 F3 MI CR 67' 6" 840 L W 1D	LED	371	250000	4000	N0	N0	0-10V	N0	90	MUD IN SEAMLESS LIGHTING	
K1	EUREKA OR APPROVED EQUAL	102U2 QTY 7, 102U4 QTY 5 LED** 35 90 777 DV FLC BLKE ** *	LED	15	1800	3500	N0	N0	0-10V	N0	90	VELIA DROPLET, EXTERIOR & INTERIOR SELECTED BY ARCHITECT	
L4	JESCO OR APPROVED EQUAL	JESCO LINSL-D-48-30W-DSW1-OP-BK	LED	30	3900	4000	YES	N0	0-10V	N0	90	4' LINEAR LIGHT FIXTURE	
L6	JESCO OR APPROVED EQUAL	JESCO LINSL-D-72-48W-DSW1-OP-BK	LED	4	5850	4000	YES	N0	0-10V	N0	90	6' LINEAR LIGHT FIXTURE	
M1	COOPER, LITHONIA LIGHTING, RAB OR EQUAL	LITHONIA WPX3 LED 40L MVOLT DBLXD	LED	69	9200	4000	N0	N0	0-10V	N0	90	WALL PACK	
P1	IMPACT LTG, OCL OR APPROVE EAQUAL	IMPACT LTG P3508 40 LO ANB BKPC 3FT	LED	20	2165	4000	N0	N0	0-10V	N0	90	8" PENDANT FIXTURE	
S4	COOPER, LITHONIA LIGHTING, RAB OR EQUAL	LITHONIA CSS LS8 AL03 MVOLT SWM3 80CRI	LED	35	5076	4000	YES	YES	0-10V	N0	80	CHAIN HUNG LED STRIP FIXTURE	
V14	FOCAL POINT, LUMENWERX OR APPROVED EQUAL	LUMENWERX VI2ACOP DI HLO SH W102 SW 90 750 750 40 14 H UNV DI 2	LED	12W PER FT	7500 5001 PER FT	4000	N0	N0	0-10V	N0	90	ACOUSTICAL LINEAR FIXTURE, DIRECT/INDIRECT, 2 CIRCUIT	
V22	FOCAL POINT, LUMENWERX OR APPROVED EQUAL	LUMENWERX VI2ACOP DI HLO SH W102 SW 90 750 750 40 22 B UNV DI 2	LED	12W PER FT	7500 5001 PER FT	4000	N0	N0	0-10V	N0	90	ACOUSTICAL LINEAR FIXTURE, DIRECT/INDIRECT, 2 CIRCUIT	
W4	SOLID STATE LUMINAIRES OR APPROVED EQUAL	LZWET 48 UNV 840 44L ** L D	LED	44	4400	4000	N0	N0	4000	4000	4000	HIGH EFFICIENCY LINEAR OUTDOOR FIXTURE, OPTICS SELECTED BY MANUFACTURE	
X	DUAL-LITE, SURE-LITES, MULE LIGHTING, LITHONIA, LIGHOTALARMS	MULE SQCR LED U R WW SD	LED	5	-	-	-	-	-	-	-	WALL MOUNT EXIT SIGN WITH SELF DIAGNOSTICS	

OCCUPANCY SENSOR SWITCH SCHEDULE			
TYPE	MANUFACTURERS	CAT. NO.	REMARKS
S <sup>O</sup>	WATT STOPPER OR EQUAL	DSW-302	DUAL TECHNOLOGY PIR/ULTRASONIC WALL SWITCH SENSOR OCCUPANCY SENSOR. SET FOR AUTOMATIC 'ON' OPERATION.
OS1	WATT STOPPER OR EQUAL	DT-355	LINE VOLTAGE, DUAL TECHNOLOGY CEILING SENSOR, 18' RADIUS

Panel: EXG PANEL 277-N-1

Location: STORAGE 63  
Mounting: Surface

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

A.I.C. Rating:  
Mains Type: MLO  
Rating: 250 A

CKT	LOAD	CKT BRK	POLES	A	B	C	POLES	CKT BRK	LOAD	CKT
1	EXG TRANSFORMER ROOM	50 A	2	...	0...		3	150 A	NEW 75kVA XFMR (PANEL 120-N-1)	2
3	--	--	--	...	...		--	--	--	4
5	EXG SPARE	20 A	1		0...		--	--	--	6
7	EXG LOCKER RM LIGHTS	20 A	1	...	0...		3	20 A	NEW SF-1	8
9	EXG SPARE	20 A	1		...		--	--	--	10
11	EXG BATHROOM LIGHTS	20 A	1		0...		--	--	--	12
13	EXG SPARE	20 A	1	...	0...		3	20 A	EXG METER	14
15	EXG BREAKROOM LIGHTS	20 A	1		...		--	--	--	16
17	EXG SPARE	20 A	1		0...		--	--	--	18
19	EXG SHOP LIGHTS	20 A	1	...	0...		3	20 A	NEW EF-1	20
21	NEW SF-3	20 A	3		...		--	--	--	22
23	--	--	--	...	0...		3	20 A	NEW EF-3	24
25	--	--	--	...	0...		3	20 A	NEW EF-3	26
27	--	--	--	...	0...		--	--	--	28
29	--	--	--	...	0...		--	--	--	30

Notes:  
USE SEPARATE NEUTRAL FOR ALL CIRCUITS  
PROVIDE AND INSTALL NEW 3 POLE BREAKERS AS REQUIRED

## SPECIAL NOTES

1. REFER TO THE FRONT END BIDDING DOCUMENTS FOR DESCRIPTION OF ALTERNATES.

Panel: EXG PANEL 120-N-1

Location: STORAGE 63

Mounting: Surface

Volts: 120/208 Wye

Phases: 3

Wires: 4

A.I.C. Rating:

Mainns Type: MCB

Rating: 200 A

CKT	LOAD	CKT BRK	POLES	A	B	C	POLES	CKT BRK	LOAD	CKT
1	EXG SHOP LIGHTS	20 A	1	...	0...	...	1	20 A	EXG PANEL OUTLET	2
3	EXG SHOP LIGHTS	20 A	1	...	0...	...	1	20 A	EXG PANEL OUTLET	4
5	EXG METER SOCKETS	20 A	3	...	...	0...	1	20 A	EXG TOOL, MAINT RM OUTLETS	6
7	--	--	--	...	0...	...	1	20 A	EXG MECHANICAL RM OUTLETS	8
9	--	--	--	...	...	...	1	20 A	EXG MAINT RM OUTLETS	10
11	EXG SHOP OUTLETS	20 A	1	...	0...	0...	1	20 A	SPARE	12
13	EXG SHOP OUTLETS	20 A	1	...	0...	...	2	50 A	EXG PRESSURE WASHER (GFCI)	14
15	EXG SHOP OUTLETS	20 A	1	...	...	...	--	--	--	16
17	EXG SHOP OUTLETS	20 A	1	...	0...	0...	2	30 A	EXG WATER HEATER	18
19	EXG SHOP OUTLETS	20 A	1	...	0...	...	--	--	--	20
21	EXG SHOP OUTLETS	20 A	1	...	...	...	3	20 A	EXG LIFT CHARGER	22
23	EXG MECH RM LIGHTS	20 A	1	...	...	0...	--	--	--	24
25	EXG METER RM OUTLETS	20 A	1	...	0...	...	--	--	--	26
27	EXG CHECK OUT DESK OUTLETS	20 A	1	...	...	...	1	20 A	EXG EAST WALL SHOP OUTLETS	28
29	EXG TOOL RM OUTLETS	20 A	1	...	...	0...	1	20 A	SPARE	30
31	EXG GEO CONTROLS	20 A	1	...	0...	...	1	20 A	EXG EAST WALL SHOP OUTLETS	32
33	EXG GEO PUMPS	--	2	...	...	...	2	20 A	EXG LOAD CONTROL	34
35	--	--	--	...	...	0...	--	--	--	36
37	EXG METER SOCKETS	20 A	2	...	3...	...	3	100 A	PANEL 120-N-2	38
39	--	--	--	...	...	...	--	--	--	40
41	SPARE	20 A	1	...	...	0...	--	--	--	42

Notes:

USE SEPARATE NEUTRAL FOR ALL CIRCUITS

\* INDICATES GFCI BREAKER

Panel: L1

Location: MECHANICAL 141

Mounting: Surface

Volts: 120/208 Wye

Phases: 3

Wires: 4

A.I.C. Rating: 10,000

Mains Type: MCB

Rating: 200 A

CKT	LOAD	CKT BRK	POLES	A	B	C	POLES	CKT BRK	LOAD	CKT	
1	Receptacle Room 142, 129	20 A	1	...	1...		1	20 A	Receptacle SUPPLY ROOM 124	2	
3	"HEAT TRACE	30 A	2				1	20 A	Receptacle SUPPLY ROOM 124	4	
5	--	--	--			0...	1	20 A	Receptacle SUPPLY ROOM 124	6	
7	"HEAT TRACE	30 A	2	...	0...		1	20 A	RESTROOM 127 HAND DRYER	8	
9	--	--	--			0...	1	20 A	Power TRAINING ROOM / BREAK ROOM...	10	
11	"HEAT TRACE	30 A	2			0...	1	20 A	Receptacle Space 139	12	
13	--	--	--	...	7...		1	20 A	Receptacle Space 139	14	
15	"HEAT TRACE	30 A	2				1	20 A	Receptacles DISPATCH EAST	16	
17	--	--	--			0...	1	20 A	Receptacles DISPATCH WEST	18	
19	Receptacle STORAGE 125	20 A	1	...	9...		1	20 A	Receptacle RESTROOM 138	20	
21	RESTROOM 101A (EH-1)	20 A	1		...	...	1	20 A	Receptacle Room 110, 111	22	
23	Receptacle VESTIBULE 100	20 A	1			1...	1	20 A	Receptacle MEMBER SERVICES 112	24	
25	CUH-1	20 A	2	...	1...		1	20 A	Receptacle MEMBER SERVICES 113	26	
27	--	--	--				1	20 A	Receptacle Room 114, 115	28	
29	CUH-2	20 A	2	...		3...	1	20 A	Receptacle STOR 116	30	
31	--	--	--	...	1...		1	20 A	Receptacle DISPATCH STORAGE 122	32	
33	Receptacle LOBBY 101	20 A	1		...	...	1	20 A	Receptacle CORRIDOR 130	34	
35	RESTROOM 101A HAND DRYER	20 A	1			0...	1	20 A	Receptacle Room 414, 594	36	
37	RESTROOM 140 HAND DRYER	20 A	1	...	0...		2	30 A	DSC-1	38	
39	Receptacle SERVER 126	20 A	1				--	--		40	
41	Receptacle MECHANICAL 141	20 A	1			1...	1	20 A	Power MECHANICAL 141	42	
43	Receptacle MECHANICAL 141	20 A	1	...	1...		1	20 A	CP-8	44	
45	Receptacle WEST EXTERIOR	20 A	1		...	...	1	20 A	EF-4	46	
47	SF-2	20 A	1			0...	1	20 A	HEAT PUMP CONTROLS	48	
49	Other	20 A	1	...	1...		1	20 A	Receptacle SERVER 126	50	
51	Receptacle Room 128, 15	20 A	1		...	...	1	20 A	Receptacle SERVER 126	52	
53	RESTROOM 128 HAND DRYER	20 A	1			0...	1	20 A	Receptacle SERVER 126	54	
55	HUM-3	20 A	2	...	1...		1	20 A	Receptacle SERVER 126	56	
57	--	--	--				1	20 A	LINECREW 121 SOUTH FLOOR BOXES	58	
59	LINECREW 121 NORTH FLOOR BOXES	20 A	1			0...	1	20 A	LINECREW 121 SOUTH FLOOR BOXES	60	
61	LINECREW 121 NORTH FLOOR BOXES	20 A	1	...	0...		1	20 A	LINECREW 121 SOUTH FLOOR BOXES	62	
63	LINECREW 121 NORTH FLOOR BOXES	20 A	1		...	...	1	20 A	LINECREW 121 SOUTH FLOOR BOXES	64	
65	LINECREW 121 NORTH FLOOR BOXES	20 A	1			0...	1	20 A	Other MECHANICAL 141	66	
67	SPARE	25 A	2	...	0...		2	30 A	WH-1	68	
69	--	--	--				--	--		70	
71	GENERATOR BATTERY CHARGER	20 A	1			0...	1	20 A	CP-7	72	
73	GENERATOR BLOCK HEATER	20 A	1	...	0...		1	20 A	SPARE	74	
75	SPARE	20 A	1			0...	1	20 A	SPARE	76	
77	SPARE	20 A	1				0...	1	20 A	SPARE	78
79	SPARE	20 A	1			0...	1	20 A	SPARE	80	
81	SPARE	20 A	1		...	...	1	20 A	SPARE	82	
83	SPARE	20 A	1			0...	1	20 A	SPARE	84	

Notes:

USE SEPARATE NEUTRAL FOR ALL CIRCUITS

\*INDICATES GFCI BREAKER

Panel: L2

Location: STORAGE 134

Mounting: Surface

Volts: 120/208 Wye

Phases: 3

Wires: 4

A.I.C. Rating: 10,000

Main Type: MCB

Rating: 200 A

CKT	LOAD	CKT BRK	POLES	A	B	C	POLES	CKT BRK	LOAD	CKT
1	RANGE TRAINING ROOM / BREAK ROOM...	20 A	2	...	1...	...	1	20 A	*Fridge TRAINING ROOM / BREAK ROOM...	4
3	...	--	--	...	...	...	1	20 A	*Fridge TRAINING ROOM / BREAK ROOM...	4
5	Power TRAINING ROOM / BREAK ROOM...	20 A	1	...	0...	...	1	20 A	Receptacle TRAINING ROOM / BREAK...	6
7	Receptacle TRAINING ROOM / BREAK...	20 A	1	...	1...	...	1	20 A	Receptacle TRAINING ROOM / BREAK...	8
9	Receptacle TRAINING ROOM / BREAK...	20 A	1	...	...	...	1	20 A	Receptacle TRAINING ROOM / BREAK...	10
11	Receptacle TRAINING ROOM / BREAK...	20 A	1	...	...	1...	...	20 A	OPEN OFFICE 102 FLOOR BOX	12
13	Receptacle TRAINING ROOM / BREAK...	20 A	1	...	0...	...	1	20 A	OPEN OFFICE 102 FLOOR BOX	14
15	Receptacle TRAINING ROOM / BREAK...	20 A	1	...	...	...	1	20 A	OPEN OFFICE 102 FLOOR BOX	16
17	Receptacle TRAINING ROOM / BREAK...	20 A	1	...	1...	...	1	20 A	OPEN OFFICE 102 FLOOR BOX	18
19	Receptacle TRAINING ROOM / BREAK...	20 A	1	...	1...	...	1	20 A	Receptacle	20
21	Receptacle TRAINING ROOM / BREAK...	20 A	1	...	...	...	1	20 A	Receptacle	22
23	* Fridge TRAINING ROOM / BREAK ROOM...	20 A	1	...	...	1...	...	20 A	Power Space 143	24
25	* Fridge TRAINING ROOM / BREAK ROOM...	20 A	1	...	0...	...	1	20 A	OPEN OFFICE 102 FLOOR BOX	26
27	Receptacle TRAINING ROOM / BREAK...	20 A	1	...	...	...	1	20 A	WOMENS 131 HAND DRYER	28
29	Receptacle TRAINING ROOM / BREAK...	20 A	1	...	1...	...	1	20 A	Receptacle Space 143	30
31	Receptacle TRAINING ROOM / BREAK...	20 A	1	...	1...	...	1	20 A	Receptacle Space 143	32
33	Receptacle TRAINING ROOM / BREAK...	20 A	1	...	...	...	1	20 A	Receptacle BOARD ROOM 137	34
35	Receptacle WOMEN 131	20 A	1	...	...	3...	...	20 A	Receptacle BOARD ROOM 137	36
37	Receptacle CUST. 132	20 A	1	...	1...	...	1	20 A	Receptacle BOARD ROOM 137	38
39	Receptacle MEN 133	20 A	1	...	...	...	1	20 A	Receptacle BOARD ROOM 137	40
41	Receptacle STORAGE 134	20 A	1	...	...	1...	...	20 A	Receptacle BOARD ROOM 137	42
43	Receptacle OPEN OFFICE 102	20 A	1	...	1...	...	1	20 A	Receptacle BOARD ROOM 137	44
45	Receptacle OPEN OFFICE 102	20 A	1	...	...	...	1	20 A	* Receptacle BOARD ROOM 137	46
47	Receptacle Room 104, 105	20 A	1	...	1...	...	2	25 A	UH-3	48
49	Receptacle Room 106, 107	20 A	1	...	0...	...	--	--	--	50
51	Receptacle CFO 103	20 A	1	...	...	...	1	20 A	LIGHT POLE RECEPTACLE NORTH WEST	52
53	Receptacle ACOT/ BILLING 109	20 A	1	...	...	1...	...	20 A	LIGHT POLE RECEPTACLE WEST	54
55	MENS 131 HAND DRYER	20 A	1	...	0...	...	1	20 A	LIGHT POLE RECEPTACLE SOUTH WEST	56
57	* Receptacle WORK AREA 123 (VENDING)	20 A	1	...	...	...	1	20 A	LIGHT POLE RECEPTACLE SOUTH	58
59	* Receptacle WORK AREA 123	20 A	1	...	...	1...	...	20 A	SPARE	60
61	* Refrigerator Receptacle WORK AREA 123	20 A	1	...	0...	...	1	20 A	SPARE	62
63	* Receptacle WORK AREA 123(VENDING)	20 A	1	...	...	...	1	20 A	SPARE	64
65	Receptacle WORK AREA 123	20 A	1	...	...	1...	...	20 A	SPARE	66
67	Receptacle WORK AREA 123	20 A	1	...	0...	...	1	20 A	SPARE	68
69	SPARE	20 A	1	...	...	...	1	20 A	SPARE	70
71	SPARE	20 A	1	...	...	0...	...	20 A	SPARE	72
73	SPARE	20 A	1	...	0...	...	1	20 A	SPARE	74
75	SPARE	20 A	1	...	...	...	1	20 A	SPARE	76
77	SPARE	20 A	1	...	...	0...	...	20 A	SPARE	78
79	SPARE	20 A	1	...	0...	...	1	20 A	SPARE	80
81	SPARE	20 A	1	...	...	...	1	20 A	SPARE	82
83	SPARE	20 A	1	...	0...	...	1	20 A	SPARE	84

<b>Panel: MDP-1</b>													
<b>Location:</b> MECHANICAL 141				<b>Volts:</b> 480/277 Vye				<b>A.L.C. Rating:</b> 35,000					
<b>Mounting:</b> Surface				<b>Phases:</b> 3				<b>Main Type:</b> MLO					
				<b>Wires:</b> 4				<b>Rating:</b> 1000 A					
CKT	LOAD			CKT BRK	POLES	A	B	C	POLES	CKT BRK	LOAD		
1	PANEL H1			400 A	3	...	0...		3	80 A	HP-1		2
3	--			--	--				--	--	--		4
5	--			--	--				--	--	--		6
7	BOILER-1 (FEED #1)			150 A	3	...	0...		3	80 A	HP-2		8
9	--			--	--				--	--	--		10
11	--			--	--			0...	--	--	--		12
13	BOILER FEED #2			125 A	3	...	0...		3	80 A	HP-3		14
15	--			--	--				--	--	--		16
17	--			--	--			0...	--	--	--		18
19	XFMR 1			100 A	3	...	7...		3	100 A	XFMR 3		20
21	--			--	--				--	--	--		22
23	--			--	--			7...	--	--	--		24
25	XFMR 2			100 A	3	...	0...		3	200 A	EXG PANEL 277-N-1		26
27	--			--	--				--	--	--		28
29	--			--	--			7...	--	--	--		30
31	SPARE			225 A	3	...	0...		3	100 A	SPARE		32
33	--			--	--				--	--	--		34
35	--			--	--			0...	--	--	--		36
37	SPACE FOR FUTURE 225A			--	3	--	0...		3	100 A	SPARE		38
39	--			--	--				--	--	--		40
41	--			--	--				--	--	--		42
43	SPARE			225 A	3	...	--		3	--	SPACE 100A		44
45	--			--	--				--	--	--		46
47	--			--	--			0...	--	--	--		48
49	--			--	--				--	--	--		50
51	--			--	--				--	--	--		52
53	--			--	--				--	--	--		54
55	--			--	--				--	--	--		56
57	--			--	--				--	--	--		58
59	--			--	--				--	--	--		60

**Notes:**  
USE SEPARATE NEUTRAL FOR ALL CIRCUITS

Panel: H1

Location: MECHANICAL 141

Mounting: Surface

Volts: 480/277 Vye

Phases: 3

Wires: 4

A.I.C. Rating: 25,000

Mains Type: MLO

Rating: 400 A

CKT	LOAD	CKT BRK	POLES	A	B	C	POLES	CKT BRK	LOAD	CKT
1	CP-1	20 A	3	...	0...		3	20 A	CP-2	2
3	--	--	--	--	--	--	--	--	--	4
5	--	--	--	--	0...	--	--	--	--	6
7	CP-3	20 A	3	...	0...		3	20 A	CP-4	8
9	--	--	--	--	--	0...	--	--	--	10
11	--	--	--	--	--	0...	--	--	--	12
13	CP-5	25 A	3	...	0...		3	25 A	CP-6	14
15	--	--	--	--	--	0...	--	--	--	16
17	--	--	--	--	--	0...	--	--	--	18
19	HUM-1	20 A	3	...	3...		3	30 A	HUM-2	20
21	--	--	--	--	--	--	--	--	--	22
23	--	--	--	--	--	3...	--	--	--	24
25	BP-1	30 A	3	...	0...		2	20 A	LS-1	26
27	--	--	--	--	--	--	--	--	--	28
29	--	--	--	--	--	0...	--	--	--	30
31	Lighting - BOARD ROOM 137	20 A	1	...	0...		3	20 A	AHU-1	32
33	Lighting - CORRIDOR 130	20 A	1	...	--	--	--	--	--	34
35	Lighting - CEO, COMM.ASSIST. ACT BILL	20 A	1	...	--	6...	3	20 A	AHU-2	36
37	Lighting - OPEN OFFICE 102	20 A	1	...	0...		--	--	--	38
39	Lighting - OPERATIONS 118...	20 A	1	...	--	--	--	--	--	40
41	Lighting - CORRIDOR 121 & WORK AREA...	20 A	1	...	--	9...	3	20 A	RF-1	42
43	Lighting - Dwellling Unit CORRIDOR-1 129-1	20 A	1	...	0...	--	--	--	--	44
45	Lighting - DISPATCH 120, LINEMAN 121	20 A	1	...	--	--	--	--	--	46
47	NEC SIGNAGE POWER	20 A	1	...	--	0...	3	20 A	RF=2	48
49	Lighting - MECH 141 MEZZ LIGHTING	20 A	1	...	0...		--	--	--	50
51	Lighting - LOBBY 101	20 A	1	...	--	--	--	--	--	52
53	Lighting - EAST EXTERIOR LIGHTING	20 A	1	...	--	4...	1	20 A	SPARE	54
57	Lighting - TRAINING ROOM / BREAK ROO...	20 A	1	...	0...	--	1	20 A	SPARE	56
59	Lighting - WEST EXTERIOR LIGHTING	20 A	1	...	--	--	1	20 A	SPARE	58
59	Lighting - VESTIBULE 100	20 A	1	...	--	0...	1	20 A	SPARE	60
61	SOUTH WEST EXTERIOR LINEAR...	20 A	1	...	0...		1	20 A	SPARE	62
63	SOUTH EAST EXTERIOR LINEAR...	20 A	1	...	--	--	1	20 A	SPARE	64
65	FLAG POLE LIGHTING	20 A	1	...	--	0...	1	20 A	SPARE	66
67	SPARE	20 A	1	...	--	--	1	20 A	SPARE	68
69	SPARE	20 A	1	...	0...		1	20 A	SPARE	70
71	SPARE	20 A	1	...	--	0...	1	20 A	SPARE	72
73										74
75										76
77										78
79										80
81										82
83										84

Notes:

USE SEPARATE NEUTRAL FOR ALL CIRCUITS

Panel: NEW PANEL 120-N-2

Location: STORAGE 63  
Mounting: Surface

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

A.L.C. Rating: 10,000  
Main's Type: MLO  
Rating: 100 A

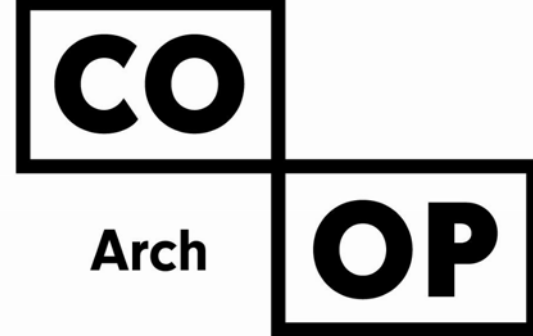
CKT	LOAD	CKT BRK	POLES	A	B	C	POLES	CKT BRK	LOAD	CKT
1	Power	20 A	1	...	0...		1	20 A	SPARE	2
3	SPARE	20 A	1		...		1	20 A	SPARE	4
5	SPARE	20 A	1		...	0... ..	1	20 A	SPARE	6
7	SPARE	20 A	1	...	0...		1	20 A	SPARE	8
9	SPARE	20 A	1		...		1	20 A	SPARE	10
11	SPARE	20 A	1		...	0... ..	1	20 A	SPARE	12
13	SPARE	20 A	1	...	0...		1	20 A	SPARE	14
15	SPARE	20 A	1		...		1	20 A	SPARE	16
17	SPARE	20 A	1	...	...	0... ..	1	20 A	SPARE	18
19	SPARE	20 A	1	...	0...		1	20 A	SPARE	20
21	SPARE	20 A	1		...		1	20 A	SPARE	22
23	Receptacle	20 A	1			1...				24
25	Receptacle	20 A	1	...						26
27	Receptacle	20 A	1		...					28
29	HVAC	20 A	1			1...				30
31	Power	20 A	1	...						32
33	Receptacle	20 A	1		...					34
35	HVAC	20 A	1			1...				36
37	Receptacle	20 A	1	...						38
39										40
41										42

Notes:

USE SEPARATE NEUTRAL FOR ALL CIRCUITS

\* INDICATES GFCI BREAKER.

CONNECT EXG WAREHOUSE CIRCUITS SERVED FROM EXG OFFICE PANELS PRIOR TO DEMOLITION OF EXG OFFICE SPACE. EXTEND/REWORK EXG CIRCUITING AS REQUIRED.



1108 S. Main St. 102  
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**ISSUE:**

5/15/2025 100% CONSTRUCTION DOCUMENTS

REVISION SCHEDULE:

REV. #	REV. DSC.	REV. DATE
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PROJECT:  
NORTHERN ELECTRIC  
COOPERATIVE  
ABERDEEN, SOUTH DAKOTA

**SHEET TITLE:**  
**ELECTRICAL SCHEDULES**

# E700