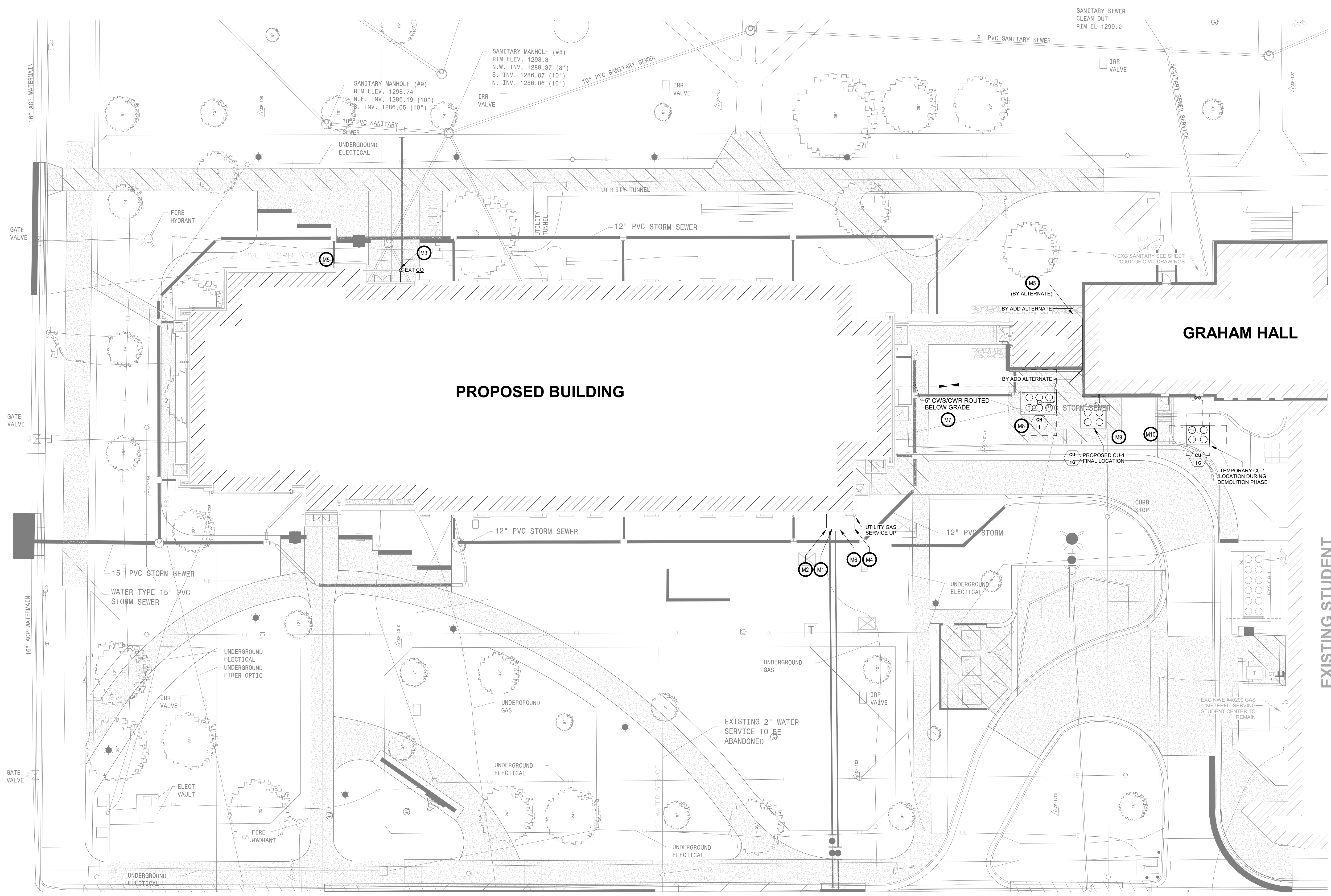


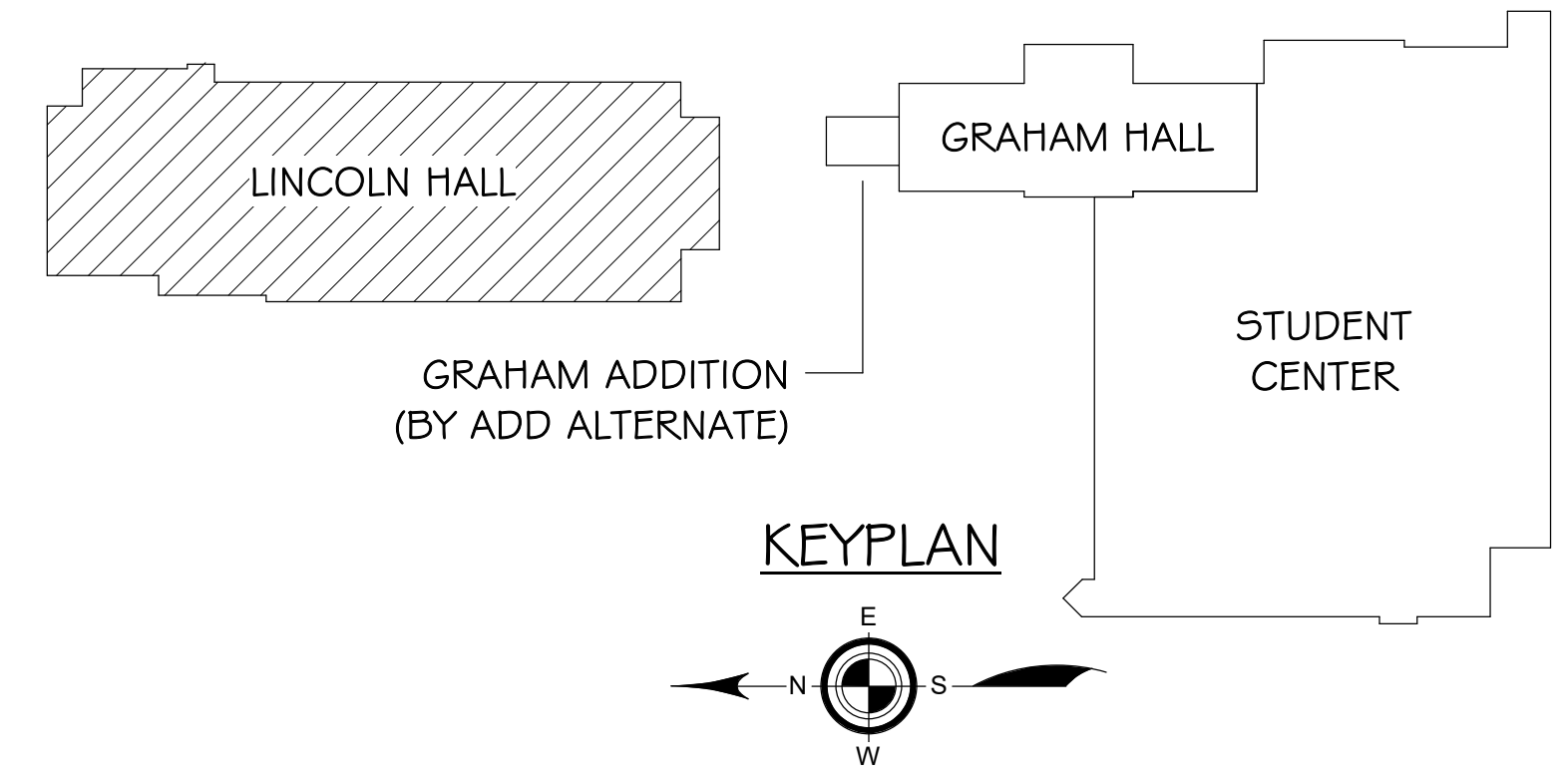
- SPECIAL NOTES**
1. CLARIFICATION TO THE BIDDING - ANY NATURAL GAS UTILITY COSTS FROM NORTHWESTERN ENERGY WILL BE PAID DIRECTLY BY THE OWNER AND SHALL NOT BE INCLUDED AS PART OF THE CONTRACT.
 2. CIVIL UTILITIES ARE NOT SHOWN. REFER TO CIVIL ENGINEERS PLANS FOR INFORMATION.

- 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.

- MECHANICAL KEYNOTES**
- M1. PLUMBING CONTRACTOR TO CONNECT NEW 4" DOMESTIC WATER SERVICE TO NEW 4" DOMESTIC WATER SERVICE INSTALLED BY SITE UTILITY CONTRACTOR AT THIS LOCATION 5' OUTSIDE THE 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.
 - M2. PLUMBING CONTRACTOR TO CONNECT NEW 6" FIRE PROTECTION WATER SERVICE TO NEW 6" FIRE PROTECTION WATER SERVICE INSTALLED BY SITE UTILITY AT THIS LOCATION 5' OUTSIDE OF BUILDING. PLUMBING CONTRACTOR TO EXTEND INTO BUILDING. FURNISH AND INSTALL THRUST BLOCKS AND/OR TIE-RODS IN ACCORDANCE WITH THE LOCAL WATER DEPARTMENT STANDARDS AND REGULATIONS. AND PROVIDE 6" FLANGED CONNECTION FOR SPRINKLER CONTRACTOR'S USE. AS-BUILTS AND REQUIRED UNDERGROUND FIRE PROTECTION PIPING TESTING TEST CERTIFICATE SHALL BE SUBMITTED TO ENGINEER AND FIRE PROTECTION CONTRACTOR FROM THE PLUMBING CONTRACTOR.
 - M3. PLUMBING CONTRACTOR TO CONNECT NEW 6" SANITARY SEWER TO NEW 6" SANITARY SEWER SERVICE INSTALLED BY SITE UTILITY CONTRACTOR AT THIS LOCATION 5' OUTSIDE OF BUILDING. PLUMBING CONTRACTOR SHALL VERIFY EXACT LOCATION, & INVERT.
 - M4. PLUMBING CONTRACTOR TO COORDINATE WITH ALEXANDER MASLOSKI OF NWE AT 605-228-0571 TO PROVIDE & INSTALL UTILITIES UNDERGROUND GAS SERVICE & METER FIT TO THIS LOCATION. GAS PRESSURE TO BE 2 PSI AFTER NWE METER FIT. PLUMBING CONTRACTOR TO PROVIDE & INSTALL COMPLETE GAS DISTRIBUTION SYSTEM FROM THE METERFIT AS SHOWN. PC TO PREPARE, PRIME, AND PAINT EXPOSED EXTERIOR GAS PIPING TO MATCH UTILITY METER FIT.
 - M5. PLUMBING CONTRACTOR TO PROVIDE & INSTALL 2" SUMP PUMP (SUMMER) DISCHARGE @ 18" ABOVE GRADE AND BEHIND DOWNSPOUT TERMINATE AT STORM CONNECTION BY SITE UTILITY CONTRACTOR.
 - M6. PLUMBING CONTRACTOR TO PROVIDE 2" COPPER STUB OUT WITH PVC SLEEVE FOR LAWN IRRIGATION CONTRACTOR AT THIS LOCATION 5' OUTSIDE OF BUILDING AT 18" DEEP. SEE WATER HEADER DIAGRAM.
 - M7. PLUMBING CONTRACTOR TO PROVIDE AND INSTALL 6" PREINSULATED BELOW GRADE CHILLED WATER SUPPLY AND RETURN.
 - M8. VENTILATION CONTRACTOR TO PROVIDE AND INSTALL AIR COOLED CHILLER CH-1. CONCRETE HOUSEKEEPING PAD WITH REBAR REINFORCEMENT BY OTHERS.
 - M9. VENTILATION CONTRACTOR TO INSTALL OWNER PROVIDED AIR COOLED CONDENSING UNIT CU-1 SERVING GRAHAM HALL. CONCRETE HOUSEKEEPING PAD WITH REBAR REINFORCEMENT BY OTHERS. SEE GRAHAM / STUDENT CENTER DRAWINGS.
 - M10. TEMPORARY LANDSCAPING MODIFICATIONS BY OTHERS FOR TEMPORARY OWNER PROVIDED CONDENSING UNIT (CU-1G) LOCATION.



MECHANICAL SITE PLAN
1/16" = 1'-0"



CO OP

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Seal

Issue
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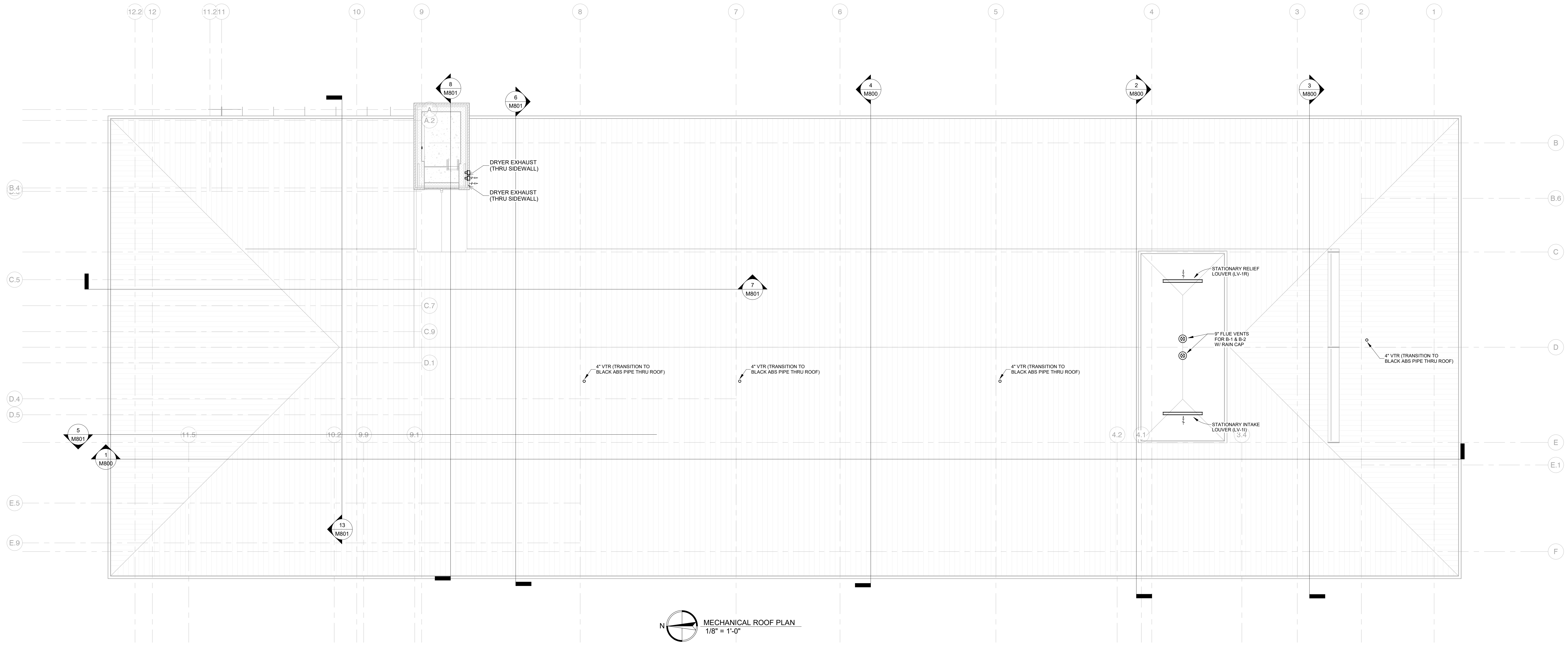
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Drawn By: SICHMELLER ENGINEERING
Reviewed By: TS
Approved By: TS

MECHANICAL SITE PLAN
M200

4/8/2024 1:30:44 PM



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

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

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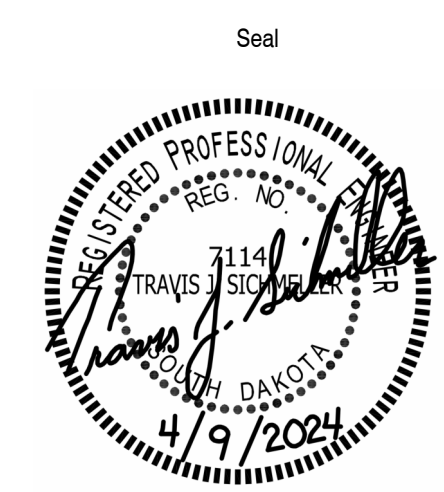
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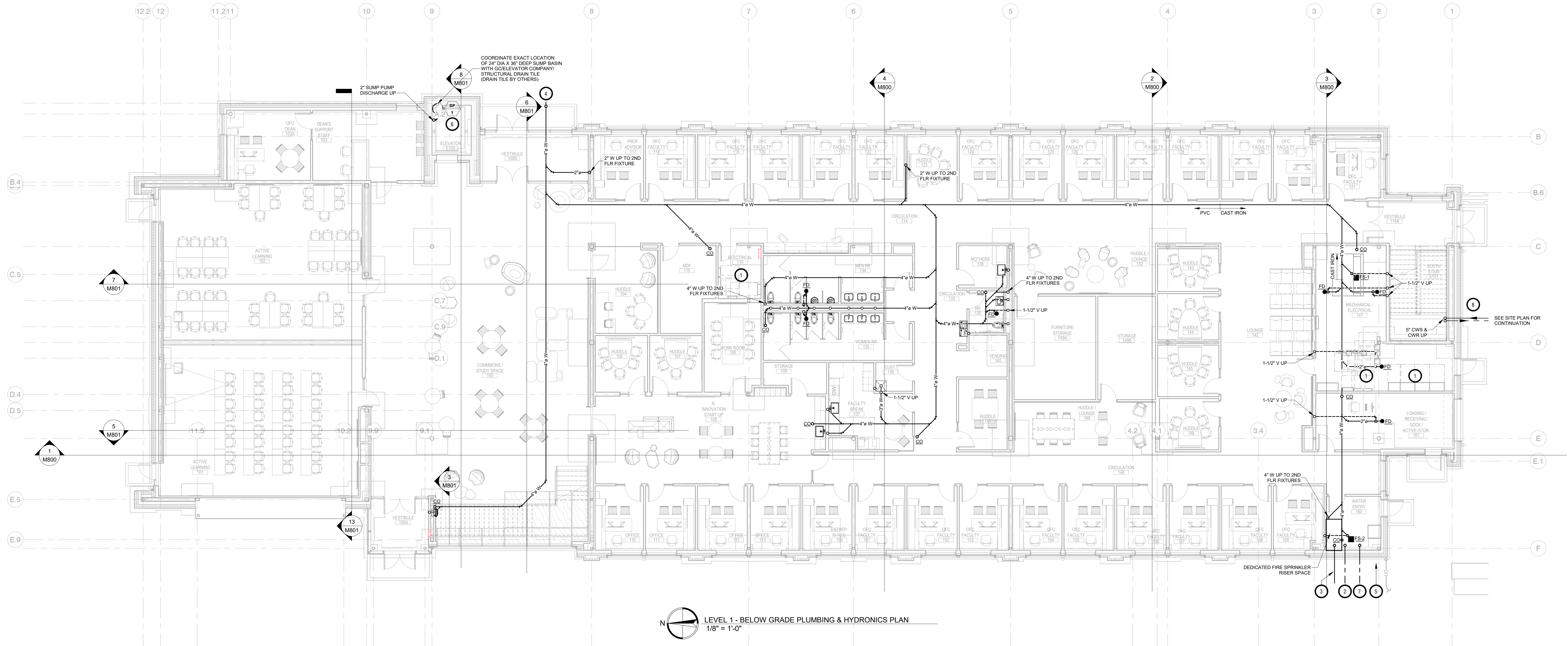
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Approved By: TS

MECHANICAL ROOF PLAN

M201



LEVEL 1 - BELOW GRADE PLUMBING & HYDRONICS PLAN
1/8" = 1'-0"

GENERAL NOTES:

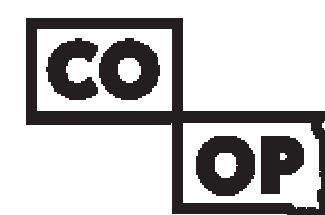
- A. ALL WORK SHALL BE PERFORMED IN A CLEAN AND WORKMANLIKE MANNER.
- B. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PATCHING ANY OPENINGS LEFT IN FLOORS, WALLS, AND CEILINGS THAT WERE CAUSED BY HIS/HER ACTIONS. PATCHING SHALL MATCH EXISTING SURFACE IN COLOR, TEXTURE AND QUALITY SO THAT PATCH 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, FIRE SPRINKLER, AND STRUCTURAL TO ACCOMMODATE LIMITED CEILING SPACE.
- G. FRESH AIR INTAKES TO BE MINIMUM 10' FROM ANY EXHAUST TERMINATION.
- H. ALL FLOOR EQUIPMENT SHALL BE SET ON 4" HIGH CONCRETE BASES FURNISHED BY THIS CONTRACTOR.
- I. CONTRACTOR SHALL VISIT THE SITE AND VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS. NOTIFY THE A/E IMMEDIATELY OF ANY DISCREPANCIES.
- J. COORDINATE NEW SERVICES WITH LOCAL UTILITIES.
- K. PLUMBING CONTRACTOR TO PROVIDE VENTING FOR ALL FLOOR DRAINS, TRENCH DRAINS, AND FLOOR SINKS AS SHOWN OR AS REQUIRED BY CODE.

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 4" DOMESTIC WATER SERVICE TO NEW 4" DOMESTIC WATER SERVICE INSTALLED BY SITE UTILITY CONTRACTOR AT THIS LOCATION 5' OUTSIDE THE 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.
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- 6. SEE SUMP BASIN AND PUMP PIPING DETAIL.
- 7. PLUMBING CONTRACTOR TO PROVIDE 2" COPPER STUB OUT WITH PVC SLEEVE FOR LAWN IRRIGATION CONTRACTOR AT THIS LOCATION 5' OUTSIDE OF BUILDING AT 18" DEEP. SEE WATER HEADER DIAGRAM.
- 8. PLUMBING CONTRACTOR TO PROVIDE AND INSTALL 5" PREINSULATED BELOW GRADE CHILLED WATER SUPPLY AND RETURN. INSTALL MINIMUM 3/8" BELOW FINISHED GRADE. WITH LOCATE WIRE AND TAPE. TERMINATE PRE-FABRICATED PIPE AT 12" ABOVE FINISHED GRADE NEAR CHILLER AND 12" ABOVE FINISHED FLOOR. UNDER STAIRS IN SOUTH STAIR S101.

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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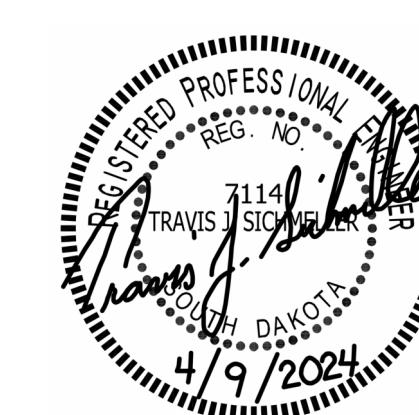
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LINCOLN HALL

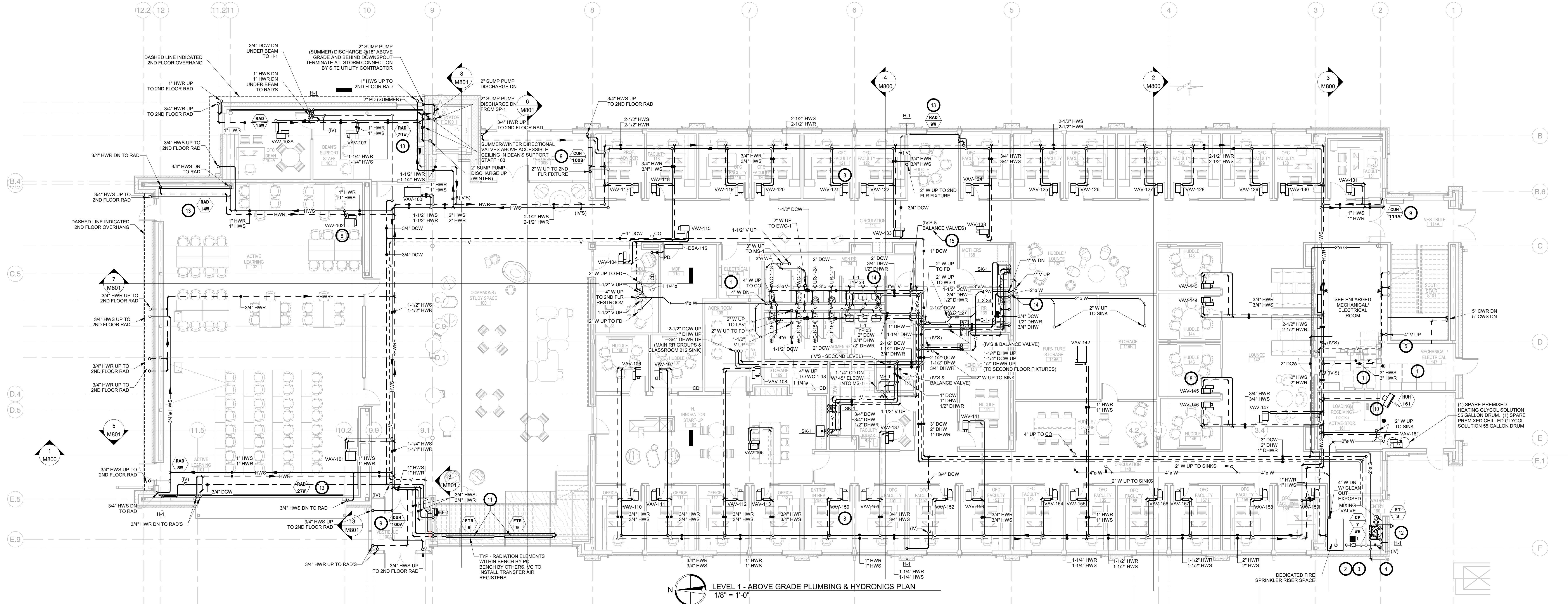
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LEVEL 1 - BELOW GRADE PLUMBING & HYDRONICS PLAN

M300



LEVEL 1 - ABOVE GRADE PLUMBING & HYDRONICS PLAN
1/8" = 1'-0"

GENERAL NOTES:

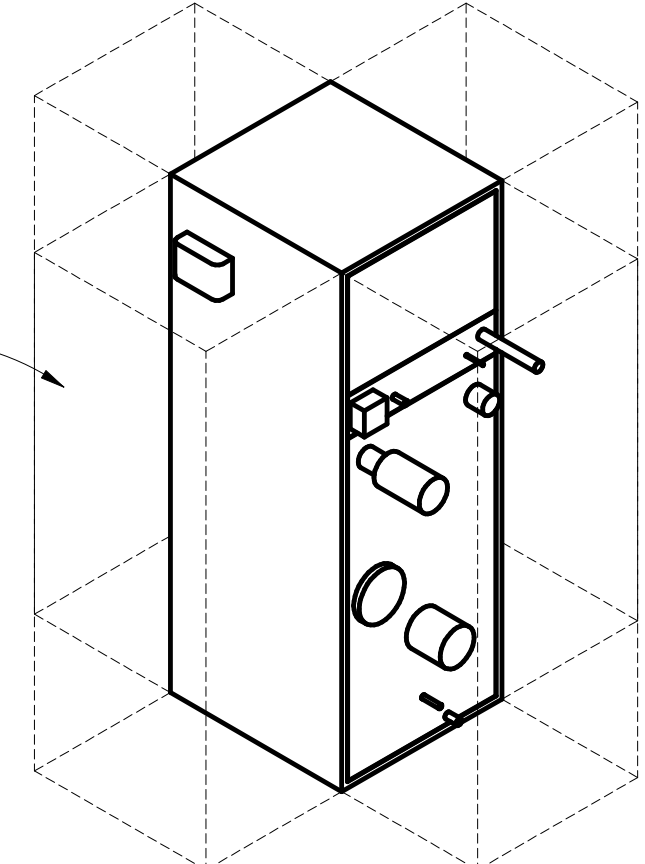
- A. ALL WORK SHALL BE PERFORMED IN A CLEAN AND WORKMANLIKE MANNER.
- B. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PATCHING ANY OPENINGS LEFT IN FLOORS, WALLS, AND CEILINGS THAT WERE CAUSED BY HIS/HER ACTIONS. PATCHING SHALL MATCH EXISTING SURFACE IN COLOR, TEXTURE AND QUALITY SO THAT PATCH 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, FIRE SPRINKLER, AND STRUCTURAL TO ACCOMMODATE LIMITED CEILING SPACE.
- G. FRESH AIR INTAKES TO BE MINIMUM 10' FROM ANY EXHAUST TERMINATION.
- H. ALL FLOOR EQUIPMENT SHALL BE SET ON 4" HIGH CONCRETE BASES FURNISHED BY THIS CONTRACTOR.
- I. CONTRACTOR SHALL VISIT THE SITE AND VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS. NOTIFY THE A/E IMMEDIATELY OF ANY DISCREPANCIES.
- J. COORDINATE NEW SERVICES WITH LOCAL UTILITIES.
- K. PLUMBING CONTRACTOR TO PROVIDE VENTING FOR ALL FLOOR DRAINS, TRENCH DRAINS, AND FLOOR SINKS AS SHOWN OR AS REQUIRED BY CODE.

SPECIAL NOTES

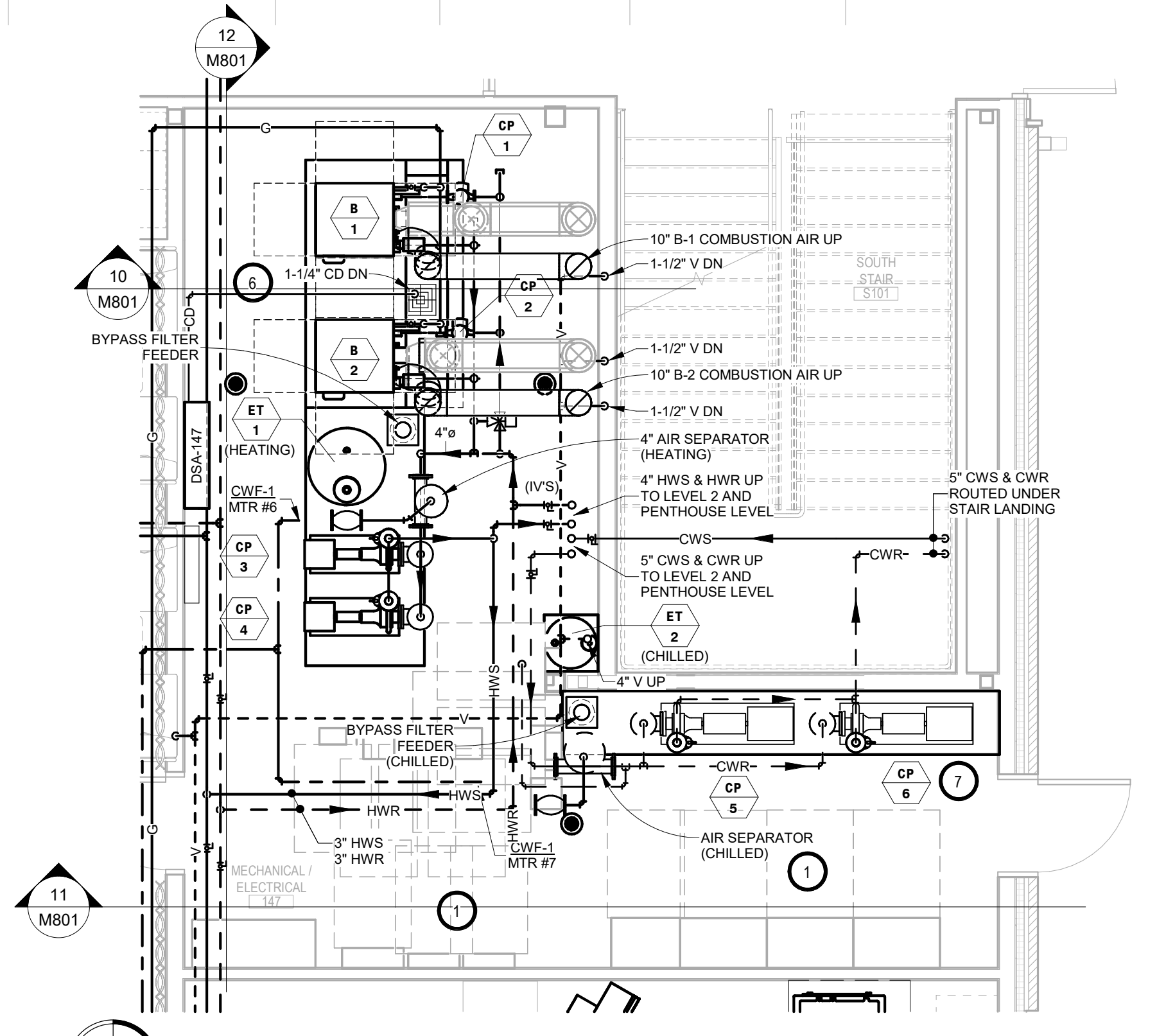
- A. TO MEET GREEN GLOBE REQUIREMENTS FOR ALL SINKS - FOLLOW PLANS AS SHOWN FOR DHW & DHWR ROUTING TO MEET A TOTAL LENGTH OF NON-REGULATED DOMESTIC HOT WATER (HORIZONTAL + VERTICAL) THAT IS LESS THAN 13'. NO EXCEPTIONS. IF PLANS ARE FOUND TO HAVE MORE THAN 13' CONTACT THE ENGINEERS OFFICE PRIOR TO INSTALL.
- B. ALL MECHANICAL SYSTEMS, EXCLUDING DROPS, TO BE INSTALLED AS HIGH AS POSSIBLE TO PROVIDE MAXIMUM CLEARANCES FOR OWNER.
- C. THE MECHANICAL CONTRACTOR SHALL BEAR FULL RESPONSIBILITY FOR COORDINATING HIS WORK WITH OTHER TRADES TO AVOID CONFLICTS IN SPACE REQUIREMENTS, CLEARANCES, ETC. PROBLEMS ARISING DUE TO LACK OF COORDINATION WILL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR TO RESOLVE. EXTRA WORK AND/OR EQUIPMENT AS A RESULT OF NOT COORDINATING SHALL BE THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR AND AT NO COST TO THE OWNER.
- D. ALL CONDENSATE & DRAIN PIPING TO BE BY PC.
- E. FLOOR DRAINS & SINK LOCATIONS SHALL BE INSTALLED IN LOCATIONS PROPER TO ACCEPT INDIRECT DRAIN PIPING FROM BOILERS, WATER HEATERS, RELIEFS, ETC. (TRIP HAZARDS FROM PIPING WILL NOT BE ACCEPTABLE)
- F. ALL FLOOR CLEANOUTS TO BE LOCATED IN INCONSPICUOUS LOCATIONS. CLEANOUTS LOCATED IN DOORWAYS AND MIDDLE OF HALLWAYS WILL NOT BE ACCEPTABLE.
- G. HYDRONICS CONTRACTOR TO PIPE ALL RUNOUTS FROM THE TOP OR SIDE OF THE HYDRONIC MAINS TO AVOID SEDIMENT. INSTALL HIGH CAPACITY AIR VENTS.

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 WATER HEADER DIAGRAM.
- 3. PLUMBING CONTRACTOR TO PROVIDE 2" STUB OUT FOR LAWN IRRIGATION CONTRACTOR. SEE WATER HEADER DIAGRAM.
- 4. SEE NATURAL GAS PIPING DIAGRAM FOR PIPE SIZING, VALVES, REGULATORS AND EXACT CONNECTIONS.
- 5. 4" VENT UP 4" VENT THRU ROOF.
- 6. SEE HEATING SYSTEM PIPING DIAGRAM.
- 7. SEE CHILLED WATER SYSTEM PIPING DIAGRAM.
- 8. TYPICAL - SEE VAV HEATING COIL PIPING DETAIL.
- 9. SEE CABINET UNIT HEATER PIPING DETAIL.
- 10. SEE HANGING UNIT HEATER PIPING DETAIL.
- 11. SEE UNDER-BENCH RADIATION PIPING DETAIL.
- 12. SEE NATURAL GAS WATER HEATER PIPING DIAGRAM.
- 13. TYPICAL - SEE PEDESTAL WALL-PANEL RADIATION PIPING DETAIL.
- 14. TO MEET GREEN GLOBE REQUIREMENTS FOR ALL INDIVIDUAL AND GROUPED LAVS L-1'S AND L-2'S - 1/2" DHWR TO BE CONNECTED BELOW LAV TO MINIMIZE WAIT TIME (BALANCING VALVES AS SHOWN). FOR ALL OTHER SINKS, SEE SPECIAL NOTES REGARDING DOWN HW AND DOWN HW REQIRC FOR GREEN GLOBE REQUIREMENTS.
- 15. TYPICAL - SEE DHWR BALANCING VALVE PIPING DETAIL.



1 TYPICAL BOILER CLEARANCES SCALE:



ENLARGED MECHANICAL/ELECTRICAL ROOM - ABOVE GRADE PLUMBING & HYDRONICS PLAN
1/4" = 1'-0"

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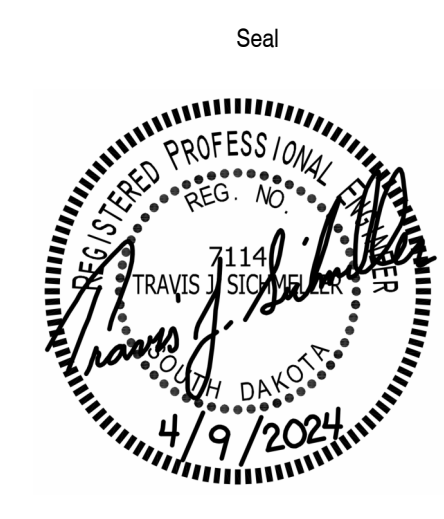
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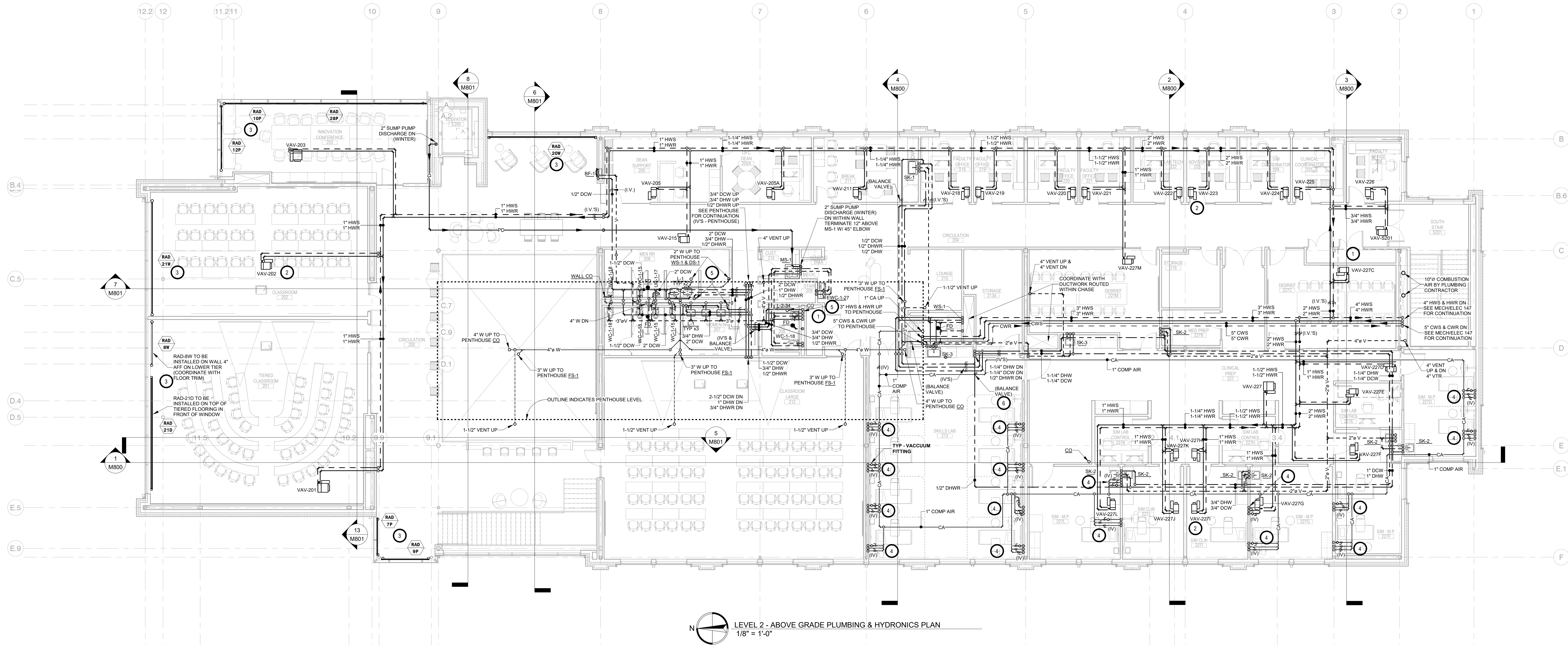
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Reviewed By: TS
Approved By:

LEVEL 1 - ABOVE GRADE PLUMBING & HYDRONICS PLAN

M301



GENERAL NOTES:

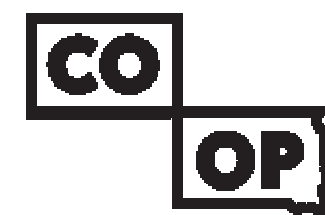
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- I. CONTRACTOR SHALL VISIT THE SITE AND VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS. NOTIFY THE A/E IMMEDIATELY OF ANY DISCREPANCIES.
- J. COORDINATE NEW SERVICES WITH LOCAL UTILITIES.
- K. PLUMBING CONTRACTOR TO PROVIDE VENTING FOR ALL FLOOR DRAINS, TRENCH DRAINS, AND FLOOR SINKS AS SHOWN OR AS REQUIRED BY CODE.

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. TYPICAL - SEE VAV HEATING COIL PIPING DETAIL.
- 3. TYPICAL - SEE PEDESTAL WALL-PANEL RADIATION PIPING DETAIL.
- 4. PROVIDE & INSTALL 1/2" COMPRESSED AIR AT THIS LOCATION AND DROP FOR "AIR" OF HEAD WALL, 1/2" COMPRESSED AIR AND COMPRESSED AIR VACUUM GENERATING FITTING IN ACCESSIBLE CEILING WITH DROP FOR "VAC" OF HEAD WALL, AND 1/2" COMPRESSED AIR AT THIS LOCATION FOR "SIMULATED OXYGEN" AT HEAD WALL HEAD WALL AND OUTLETS NOT PROVIDED OR INSTALLED BY THIS CONTRACTOR (REFER TO A430 & A501).
- 5. TO MEET GREEN GLOBE REQUIREMENTS FOR ALL INDIVIDUAL AND GROUPED LAVS L-1'S AND L-2'S - 1/2" DHWR TO BE CONNECTED BELOW LAV TO MINIMIZE WAIT TIME (BALANCING VALVES AS SHOWN). FOR ALL OTHER SINKS, SEE SPECIAL NOTES REGARDING DOM HW AND DOM HW RECIRC FOR GREEN GLOBE REQUIREMENTS.
- 6. TYPICAL - SEE DHWR BALANCING VALVE PIPING DETAIL.

SPECIAL NOTES

- A. TO MEET GREEN GLOBE REQUIREMENTS FOR ALL SINKS - FOLLOW PLANS AS SHOWN FOR DHW & DHWR ROUTING TO MEET A TOTAL LENGTH OF NON-RECIRCULATED DOMESTIC HOT WATER (HORIZONTAL + VERTICAL) THAT IS LESS THAN 13'. NO EXCEPTIONS. IF PLANS ARE FOUND TO HAVE MORE THAN 13' CONTACT THE ENGINEERS OFFICE PRIOR TO INSTALL.
- B. ALL MECHANICAL SYSTEMS, EXCLUDING DROPS, TO BE INSTALLED AS HIGH AS POSSIBLE TO PROVIDE MAXIMUM CLEARANCES FOR OWNER.
- C. THE MECHANICAL CONTRACTOR SHALL BEAR FULL RESPONSIBILITY FOR COORDINATING HIS WORK WITH OTHER TRADES TO AVOID CONFLICTS IN SPACE REQUIREMENTS, CLEARANCES, ETC. PROBLEMS ARISING DUE TO LACK OF COORDINATION WILL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR TO RESOLVE. EXTRA WORK AND/OR EQUIPMENT AS A RESULT OF NOT COORDINATING SHALL BE THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR AND AT NO COST TO THE OWNER.
- D. ALL CONDENSATE & DRAIN PIPING TO BE BY PC.
- E. FLOOR DRAINS & SINK LOCATIONS SHALL BE INSTALLED IN LOCATIONS PROPER TO ACCEPT INDIRECT DRAIN PIPING FROM BOILERS, WATER HEATERS, RELIEFS, ETC. (TRIP HAZARDS FROM PIPING WILL NOT BE ACCEPTABLE)
- F. ALL FLOOR CLEANOUTS TO BE LOCATED IN INCONSPICUOUS LOCATIONS. CLEANOUTS LOCATED IN DOORWAYS AND MIDDLE OF HALLWAYS WILL NOT BE ACCEPTABLE.
- G. HYDRONICS CONTRACTOR TO PIPE ALL RUNOUTS FROM THE TOP OR SIDE OF THE HYDRONIC MAINS TO AVOID SEDIMENT. INSTALL HIGH CAPACITY AIR VENTS.



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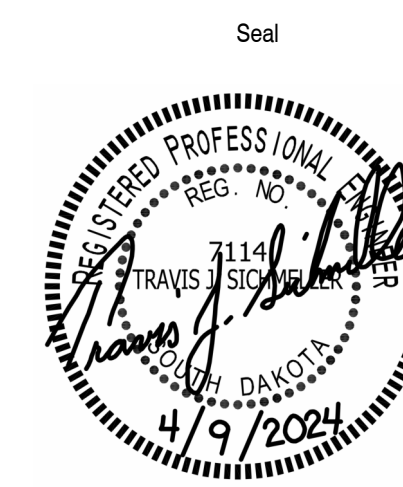
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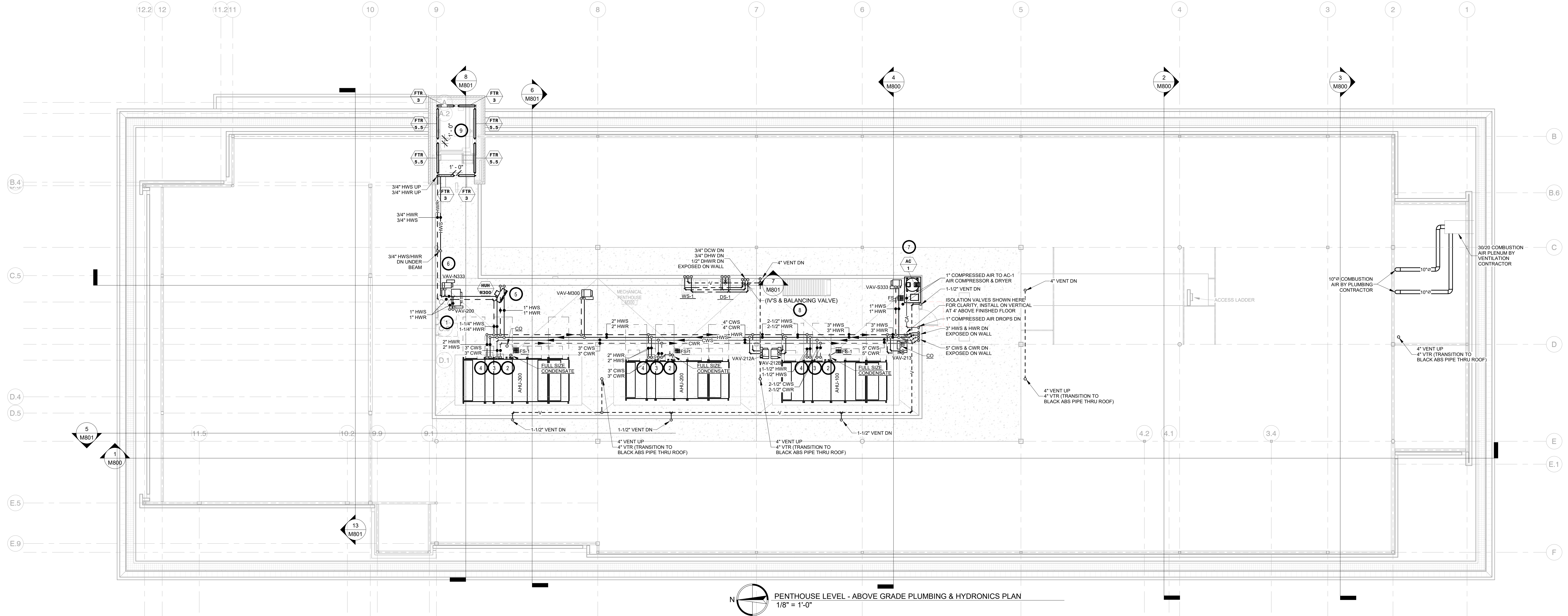
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LEVEL 2 - ABOVE GRADE PLUMBING & HYDRONICS PLAN

M302



PENTHOUSE LEVEL - ABOVE GRADE PLUMBING & HYDRONICS PLAN
1/8" = 1'-0"

GENERAL NOTES:

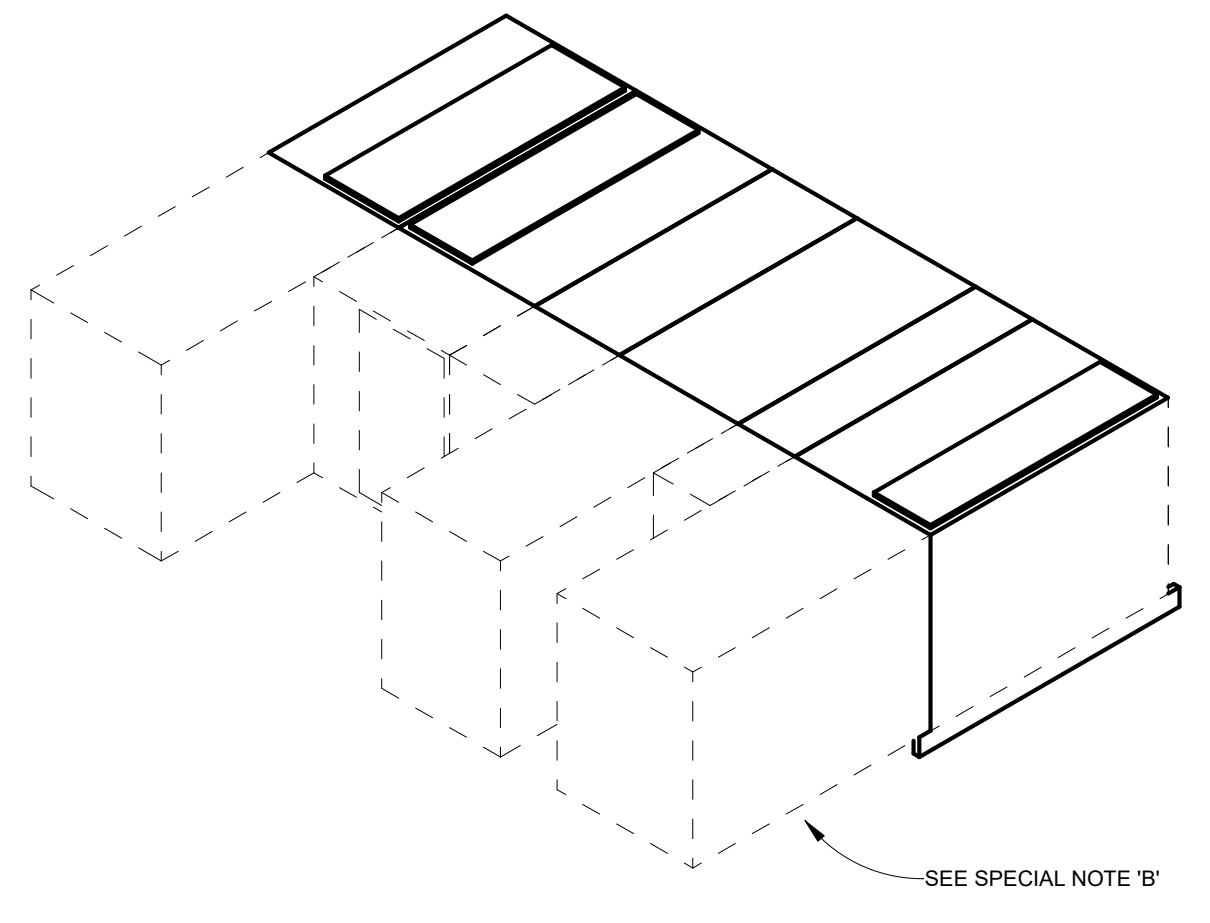
- A. ALL WORK SHALL BE PERFORMED IN A CLEAN AND WORKMANLIKE MANNER.
- B. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PATCHING ANY OPENINGS LEFT IN FLOORS, WALLS, AND CEILINGS THAT WERE CAUSED BY HIS/HER ACTIONS. PATCHING SHALL MATCH EXISTING SURFACE IN COLOR, TEXTURE AND QUALITY SO THAT PATCH 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, FIRE SPRINKLER, AND STRUCTURAL TO ACCOMMODATE LIMITED CEILING SPACE.
- G. FRESH AIR INTAKES TO BE MINIMUM 10' FROM ANY EXHAUST TERMINATION.
- H. ALL FLOOR EQUIPMENT SHALL BE SET ON 4" HIGH CONCRETE BASES FURNISHED BY THIS CONTRACTOR.
- I. CONTRACTOR SHALL VISIT THE SITE AND VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS. NOTIFY THE A/E IMMEDIATELY OF ANY DISCREPANCIES.
- J. COORDINATE NEW SERVICES WITH LOCAL UTILITIES.
- K. PLUMBING CONTRACTOR TO PROVIDE VENTING FOR ALL FLOOR DRAINS, TRENCH DRAINS, AND FLOOR SINKS AS SHOWN OR AS REQUIRED BY CODE.

KEYNOTES:

- 1. THIS SPACE IS RESERVED FOR ELECTRICAL GEAR. PIPING AND EQUIPMENT SHALL NOT BE LOCATED IN FRONT OF OR ROUTED ABOVE ELECTRICAL PANELS.
- 2. PROVIDE & INSTALL FULL SIZE CONDENSATE P-TRAPS INSTALLED PER AHU MANUFACTURER'S INSTALLATION REQUIREMENTS, & TERMINATE AT FLOOR DRAIN WITH NO TRIP HAZARDS ALLOWED. FOR THE FOLLOWING: AHU-100 TO BE 1-1/4" AHU-200 TO BE 1-1/4" AHU-300 TO BE 1-1/4" & TERMINATE AT SINK TAILPIECE EXACT FLOOR DRAIN LOCATIONS TO AVOID TRIP HAZARDS & EXACT SIZES TO BE COORDINATED WITH THE V.C.
- 3. SEE STACKED HEATING COIL PIPING DETAIL (AHU-100,200,300).
- 4. SEE STACKED COOLING COIL PIPING DETAIL (AHU-100,200,300).
- 5. SEE HANGING UNIT HEATER PIPING DETAIL.
- 6. TYPICAL - SEE VAV HEATING COIL PIPING DETAIL.
- 7. SEE AIR DROP TO COMPRESSOR DETAIL.
- 8. TYPICAL - SEE DHWR BALANCING VALVE PIPING DETAIL.
- 9. PC TO COORDINATE INSTALLATION OF FTR AT TOP OF SHAFT WITH LIGHTS INSTALLED BY EC. MINIMUM 1" OF SPACING IN BETWEEN EACH FTR FOR UP-LIGHTS. COORDINATE WITH EC IF MORE SPACING IS NEEDED. SHIFT FTR AS REQUIRED. ROUTE ALL PIPING CONNECTIONS BETWEEN RADIATORS DOWN BELOW LIGHTS. INSTALL DRAINS AS REQUIRED TO NOT TRAP FLUID.

SPECIAL NOTES:

- A. TO MEET GREEN GLOBE REQUIREMENTS FOR ALL SINKS - FOLLOW PLANS AS SHOWN FOR DHW & DHWR ROUTING TO MEET A TOTAL LENGTH OF NON-RECYCLED DOMESTIC HOT WATER (HORIZONTAL + VERTICAL) THAT IS LESS THAN 13'. NO EXCEPTIONS. IF PLANS ARE FOUND TO HAVE MORE THAN 13' CONTACT THE ENGINEERS OFFICE PRIOR TO INSTALL.
- B. ALL MECHANICAL SYSTEMS, EXCLUDING DROPS, TO BE INSTALLED AS HIGH AS POSSIBLE TO PROVIDE MAXIMUM CLEARANCES FOR OWNER.
- C. THE MECHANICAL CONTRACTOR SHALL BEAR FULL RESPONSIBILITY FOR COORDINATING HIS WORK WITH OTHER TRADES TO AVOID CONFLICTS IN SPACE REQUIREMENTS, CLEARANCES, ETC. PROBLEMS ARISING DUE TO LACK OF COORDINATION WILL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR TO RESOLVE. EXTRA WORK AND/OR EQUIPMENT AS A RESULT OF NOT COORDINATING SHALL BE THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR AND AT NO COST TO THE OWNER.
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1 TYPICAL AHU CLEARANCES
SCALE:

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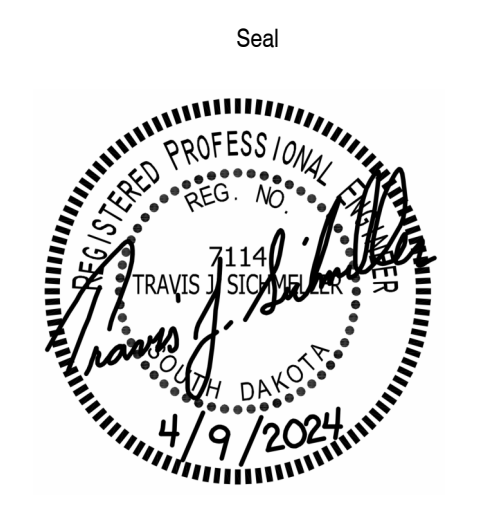
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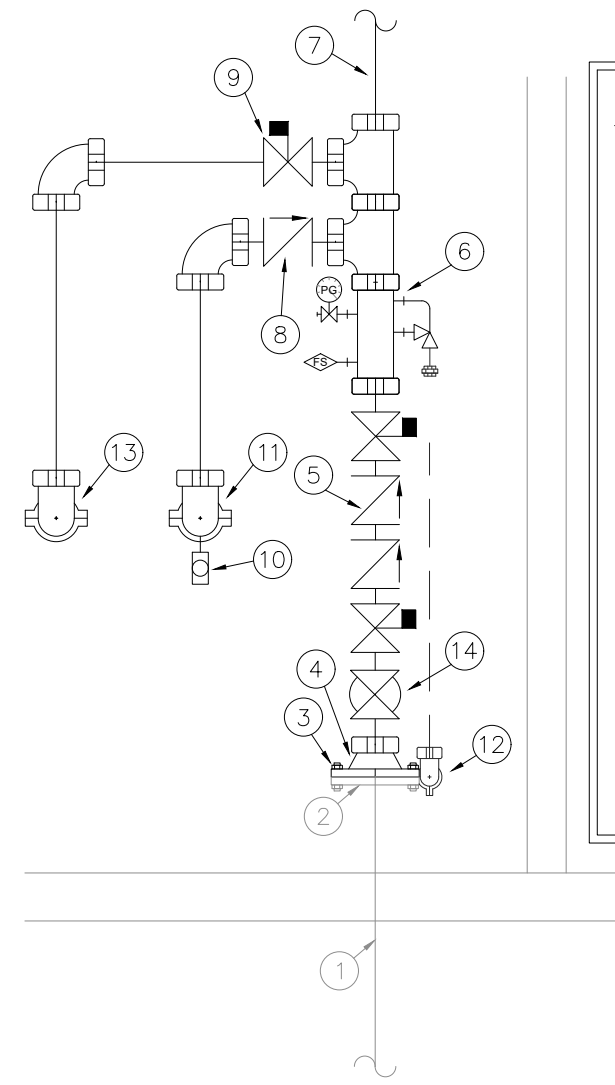
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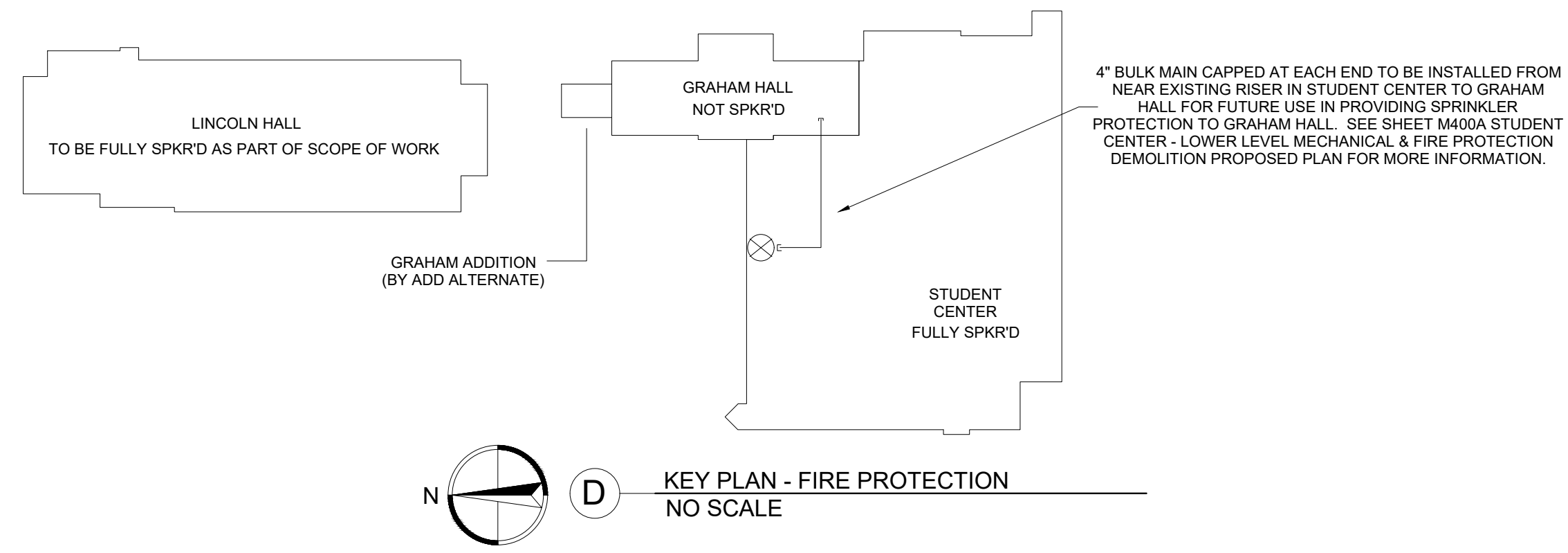
PENTHOUSE LEVEL - ABOVE GRADE PLUMBING & HYDRONICS PLAN

M303



- RISER DETAIL LEGEND - SERVICE ENTRY**
- 6" UNDERGROUND WATER SERVICE - (BY PLUMBING CONTRACTOR)
 - 6" SERVICE FLANGE - (BY PLUMBING CONTRACTOR)
 - FRSP CONTRACTOR START POINT
 - REDUCER IF PROVEN HYDRAULICALLY
 - DOUBLE CHECK VALVE BACKFLOW PREVENTER W/ SUPERVISED BUTTERFLY VALVES
 - RISER MANIFOLD W/ FLOW SWITCH, PRESSURE GAUGE, & TEST & MAIN DRAIN W/ PRESSURE RELIEF VALVE
 - OUT TO WET ZONE
 - CHECK VALVE
 - BUTTERFLY CONTROL VALVE FOR BACKFLOW PREVENTER TEST HEADER (NORMALLY CLOSED)
 - AUTOMATIC WALL DRAIN VALVE
 - OUT TO FIRE DEPARTMENT CONNECTION
 - MAIN DRAIN DISCHARGE TO BUILDING'S EXTERIOR
 - OUT TO BACKFLOW PREVENTER TEST HEADER
 - SUPERVISED BUTTERFLY WALL POST INDICATOR VALVE (NORMALLY OPEN)
- NOTES:**
- PIPE AFTER FDC CHECK VALVE & EXTERNAL DOUBLE CHECK BACKFLOW TEST BUTTERFLY VALVE TO BE SCH. 40
 - ALL DRAIN PIPE TO BE SCH. 40
 - ALL PIPE & FITTINGS THAT PENETRATE EXTERIOR WALLS SHALL BE GALVANIZED

A RISER DETAIL - FIRE PROTECTION
NO SCALE



D KEY PLAN - FIRE PROTECTION
NO SCALE

SYM	POSITION	FINISH	TEMP	K	NPT	SIN	MFG.	MODEL#	ESCU/CH/CON	NOTES
●	PENDENT	WHITE	155°	5.6	1/2"	RA3415	RELIABLE	G5-56	CONCEALED	1, 2
●	PENDENT	WHITE	160°	11.2	3/4"	R7146	RELIABLE	G4XLO	CONCEALED	1, 2
●	DRY PENDENT	WHITE	200°	5.6	1"	RA5114	RELIABLE	G5-56	CONCEALED	2
●	PENDENT	BLACK	155°	5.6	1/2"	TY3231	TYCO	TY-FRB	SHIELD	
⊗	UPRIGHT	BRASS	200°	5.6	1/2"	RA1425	RELIABLE	F1FR56	NONE	
⊙	UPRIGHT	BRASS	155°	5.6	1/2"	RA1425	RELIABLE	F1FR56	NONE	
◁	SIDEWALL	BRASS	200°	5.6	1/2"	RA1435	RELIABLE	F1FR56	NONE	

- NOTES:**
- STANDARD COVERAGE OR EXTENDED COVERAGE SPRINKLERS AT THE CONTRACTOR'S OPTION
 - VERIFY FLAT CONCEALER COVER PLATE FINISHES WITH ARCHITECT

- GENERAL NOTES (APPLIES TO ALL SPRINKLERS):**
- SPRINKLERS MAY BE SUBSTITUTED FOR EQUAL MAKE AND MODEL
 - INTERMEDIATE TEMPERATURE RATED SPRINKLERS SHALL BE USED IN ALL MECHANICAL, IT AND ELECTRICAL ROOMS
 - ALL SPRINKLERS NEAR HEAT PRODUCING DEVICES SHALL BE PROVIDED WITH THE APPROPRIATE TEMPERATURE RATING PER THE REQUIREMENTS OF NFPA 13
 - VERIFY SPRINKLER AND ESCUTCHEON FINISHES WITH ARCHITECT
 - STANDARD RESPONSE SPRINKLERS MAY BE USED IN ORDINARY HAZARD AREAS
 - SPRINKLER GUARDS ARE TO BE INSTALLED ON ALL EXPOSED SPRINKLERS ELEVATED BELOW 7'-0" AND THROUGHOUT AREAS WHERE HEADS ARE EXPOSED TO INTERFERENCE DAMAGE

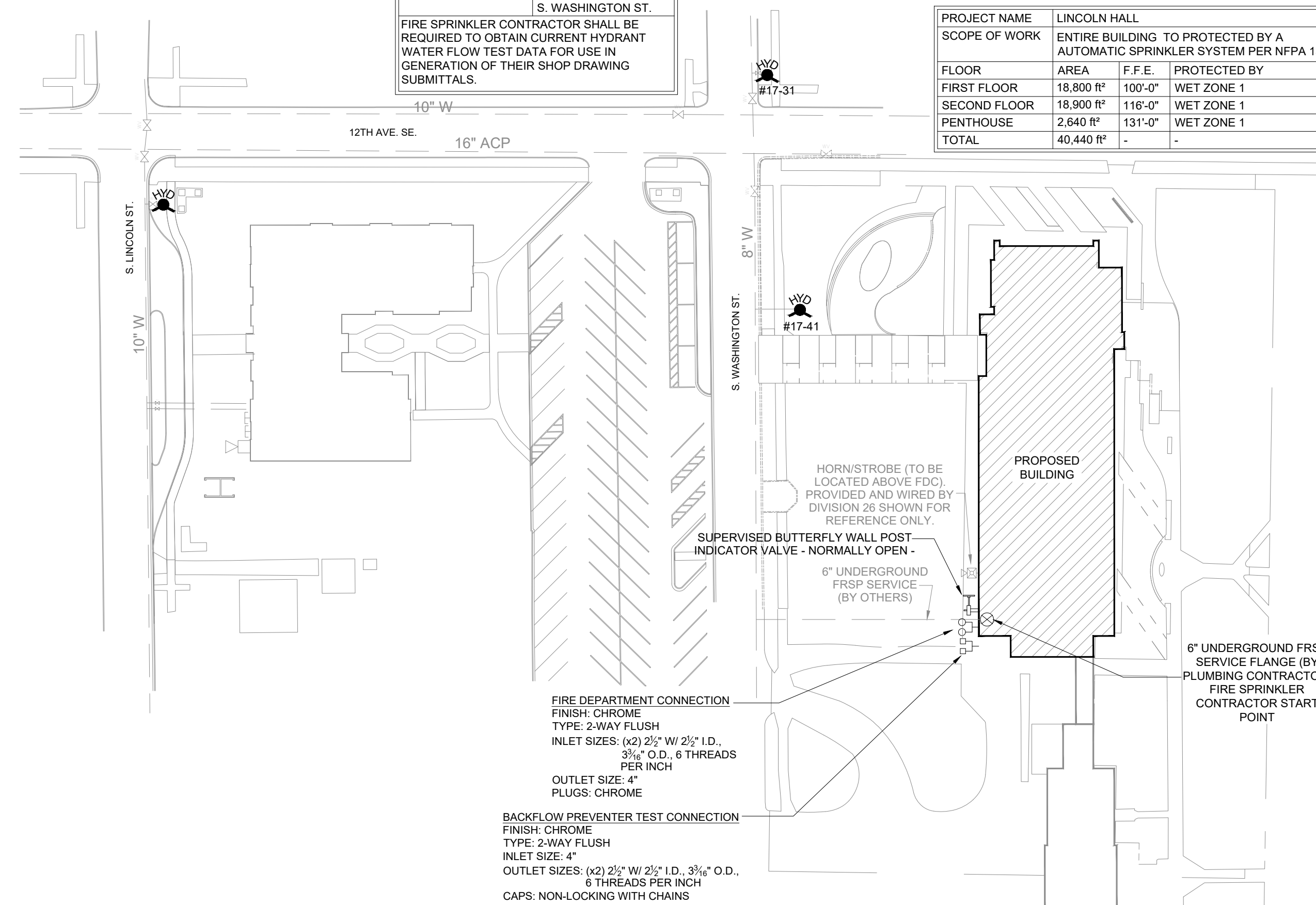
B SPRINKLER LEGEND - FIRE PROTECTION
NO SCALE

WATER FLOW TEST DATA

STATIC PRESSURE	60 psi
RESIDUAL PRESSURE	52 psi
FLOW RATE	1,183 gpm
ELEVATION	+ 100'-0"
PERFORMED BY	ABERDEEN FIRE
DATE	7/6/2014
LOCATION	12TH AVE. SE & S. WASHINGTON ST.

FIRE SPRINKLER CONTRACTOR SHALL BE REQUIRED TO OBTAIN CURRENT HYDRANT WATER FLOW TEST DATA FOR USE IN GENERATION OF THEIR SHOP DRAWING SUBMITTALS

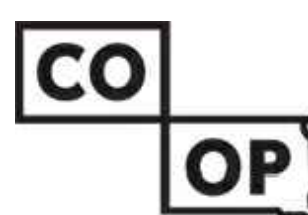
FLOOR	AREA	F.F.E.	PROTECTED BY
FIRST FLOOR	18,800 SF	100'-0"	WET ZONE 1
SECOND FLOOR	18,900 SF	116'-0"	WET ZONE 1
PENTHOUSE	2,640 SF	131'-0"	WET ZONE 1
TOTAL	40,440 SF	-	-



C SITE PLAN - FIRE PROTECTION
1" = 60'-0"

GENERAL NOTES

- THIS PROJECT INCLUDES THE DESIGN AND INSTALLATION OF A SINGLE ZONE WET ZONE FIRE SPRINKLER SYSTEMS FOR PROTECTION OF THE ENTIRE LINCOLN HALL BUILDING PER NFPA 13 (2016 ed.). ALSO, A 4" BULK MAIN WILL BE REQUIRED TO BE INSTALLED THRU THE STUDENT CENTER INTO GRAHAM HALL FOR FUTURE USE IN PROVIDING SPRINKLER PROTECTION TO GRAHAM HALL.
- FINAL PIPE SIZING AND LOCATION IS TO BE DETERMINED BY THE FIRE SPRINKLER CONTRACTOR AND IS SUBJECT TO APPROVAL BY THE ENGINEER. NOT ALL REQUIRED PIPING IS SHOWN.
- REFER TO SPECIFICATION DIVISIONS 211000 FOR ADDITIONAL FIRE SPRINKLER SYSTEM INFORMATION.
- ALL SPRINKLERS IN LIGHT HAZARD OCCUPANCIES INCLUDING PUBLIC AREAS ARE TO BE OF THE QUICK RESPONSE TYPE.
- SPRINKLERS ARE REQUIRED TO BE PROTECTED DURING PAINTING. SPRINKLERS SHALL BE LOCATED IN THE CENTER POINT OF SQUARE CEILING TILES AND ALLOWED TO BE IN THE QUARTER AND/OR CENTER POINTS OF RECTANGULAR CEILING PANELS.
- SPRINKLER GUARDS ARE TO BE INSTALLED ON ALL EXPOSED SPRINKLERS ELEVATED BELOW 7'-0" AND THROUGHOUT AREAS WHERE HEADS ARE EXPOSED TO INTERFERENCE DAMAGE.
- ALL SYSTEMS PIPING AND FITTINGS TO MEET THE REQUIREMENTS OF NFPA 13.
- REQUIRED SYSTEM TESTING IS THE RESPONSIBILITY OF THE FIRE SPRINKLER CONTRACTOR PER NFPA 25.
- NOT ALL REQUIRED SPRINKLERS AND PIPING ARE SHOWN. CONSIDERATION OF ADDITIONAL SPRINKLERS, PIPING, AND FITTINGS DUE TO INTERFERENCE WITH OTHER TRADES, OBSTRUCTIONS, IMPROVED AESTHETICS, OR OWNER/AJH REQUESTS SHALL BE MADE PRIOR TO BID BY THE FIRE SPRINKLER CONTRACTOR.
- FIRE SPRINKLER CONTRACTOR TO PROVIDE ALL NECESSARY MATERIAL, INCLUDING BUT NOT LIMITED TO, SPRINKLERS, PIPING, VALVES, AND LABOR TO PROVIDE COMPLETE SYSTEM(S) TO COMPLY WITH NFPA 13, AND LOCAL BUILDING CODES. ALL HYDRAULIC CALCULATIONS AND PIPE SIZING ARE THE RESPONSIBILITY OF THE FIRE PROTECTION CONTRACTOR. ANY AND ALL CLARIFICATIONS TO BID DOCUMENTS SHALL BE MADE PRIOR TO BID.
- UPRIGHT SPRINKLERS TO HAVE A BRASS FINISH THROUGHOUT.
- ALL GROOVED STEEL PIPING SHALL BE BLACK SCHEDULE 10 MINIMUM.
- ALL THREADED STEEL PIPING SHALL BE BLACK SCHEDULE 40.
- ALL DRY PIPING SHALL BE SCHEDULE 40.
- ALL PIPING PENETRATING EXTERIOR WALLS SHALL BE GALVANIZED SCHEDULE 40.
- ALL THREADED FITTINGS SHALL BE DUCTILE IRON.
- LISTED FLEX PIPING TO PENDENT HEADS IN CEILINGS IS ALLOWED FOR THIS PROJECT IF PROVEN HYDRAULICALLY.
- CPVC PIPING IS NOT ALLOWED FOR THIS PROJECT.
- FURNISH AND INSTALL AN AUTOMATIC AIR VENT FOR EACH WET ZONE. AUTOMATIC AIR VENT SHALL BE LOCATED NEAR A HIGH POINT IN THE WET SYSTEM THAT ALLOWS FOR THE MAXIMUM AMOUNT OF AIR REMOVAL FROM THAT SYSTEM.
- ALL MATERIAL BEING INSTALLED MUST BE NEW AND LISTED FOR USE.
- THE FIRE SPRINKLER CONTRACTOR SHALL VERIFY LOCATIONS AND ROUTING OF PIPE PRIOR TO BID. NO ALLOWANCES FOR EXTRA FITTINGS, PIPING, SPRINKLERS, ETC. WILL BE ALLOWED AFTER AWARD OF CONTRACT.
- PIPING SHOWN ON THESE PLANS IS CONCEPTUAL BUT SHALL BE CLOSELY FOLLOWED BY THE FIRE SPRINKLER CONTRACTOR. ANY MAJOR CHANGES TO WHAT IS BEING INDICATED ON THESE PLANS SHALL FIRST BE APPROVED BY THE ARCHITECT AND ENGINEER.
- ALL ARCHITECTURAL, MECHANICAL, STRUCTURAL, CIVIL, & ELECTRICAL FEATURES INDICATED ON THE FP SHEETS SHALL BE VERIFIED BY CONSULTING THE AIMS.C.BE SHEETS.
- ALL SPRINKLERS LOCATED NEAR HEAT PRODUCING DEVICES SHALL BE PROVIDED WITH THE APPROPRIATE TEMPERATURE RATING PER THE REQUIREMENTS OF NFPA 13.
- THESE PLANS SHALL BE USED AS A GENERAL GUIDE IN THE GENERATION OF THE FIRE SPRINKLER CONTRACTOR'S BID AND MAY NOT INDICATE THE ENTIRE EXTENT OF SPRINKLER PROTECTION REQUIRED. ANY AREAS REQUIRED TO BE PROTECTED PER NFPA 13 THAT MAY OR MAY NOT BE INDICATED AS REQUIRING PROTECTION ON THESE PLANS SHALL BE INCLUDED IN THE FIRE SPRINKLER CONTRACTOR'S BID. NO ALLOWANCES FOR EXTRAS WILL BE ALLOWED AFTER AWARD OF CONTRACT.
- SPARE SPRINKLERS SHALL BE PROVIDED PER THE REQUIREMENTS OF NFPA-13.
- CONTRACTOR TO PROVIDE OWNER WITH COPY OF NFPA-25 OCCUPANCY HAZARD CLASSIFICATIONS.
 - SEE PLAN FOR HAZARD NOTATIONS. ALL AREAS TO BE DESIGNATED AS LIGHT HAZARD UNLESS NOTED OTHERWISE
 - LIGHT HAZARD OCCUPANCIES
 - 0.10 GPM/SQ.FT PER MOST DEMANDING 1500 SQ.FT.
 - ORDINARY HAZARD GROUP 1 OCCUPANCIES
 - 0.15 GPM/SQ.FT PER MOST DEMANDING 1500 SQ.FT.
 - ORDINARY HAZARD GROUP 2 OCCUPANCIES
 - 0.20 GPM/SQ.FT PER MOST DEMANDING 1500 SQ.FT.
 - REMOTE AREA REDUCTIONS WILL BE ALLOWED PER NFPA 13
 - REMOTE AREA INCREASES ARE REQUIRED PER NFPA 13
 - REQUIRED SYSTEM PRESSURE SHALL BE A MINIMUM OF 5 PSI LESS THAN THAT WHICH IS AVAILABLE AT SPRINKLER SYSTEM DEMAND PLUS HOSE ALLOWANCE



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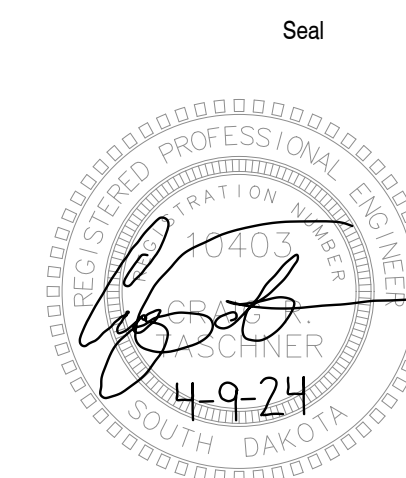
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LINCOLN HALL

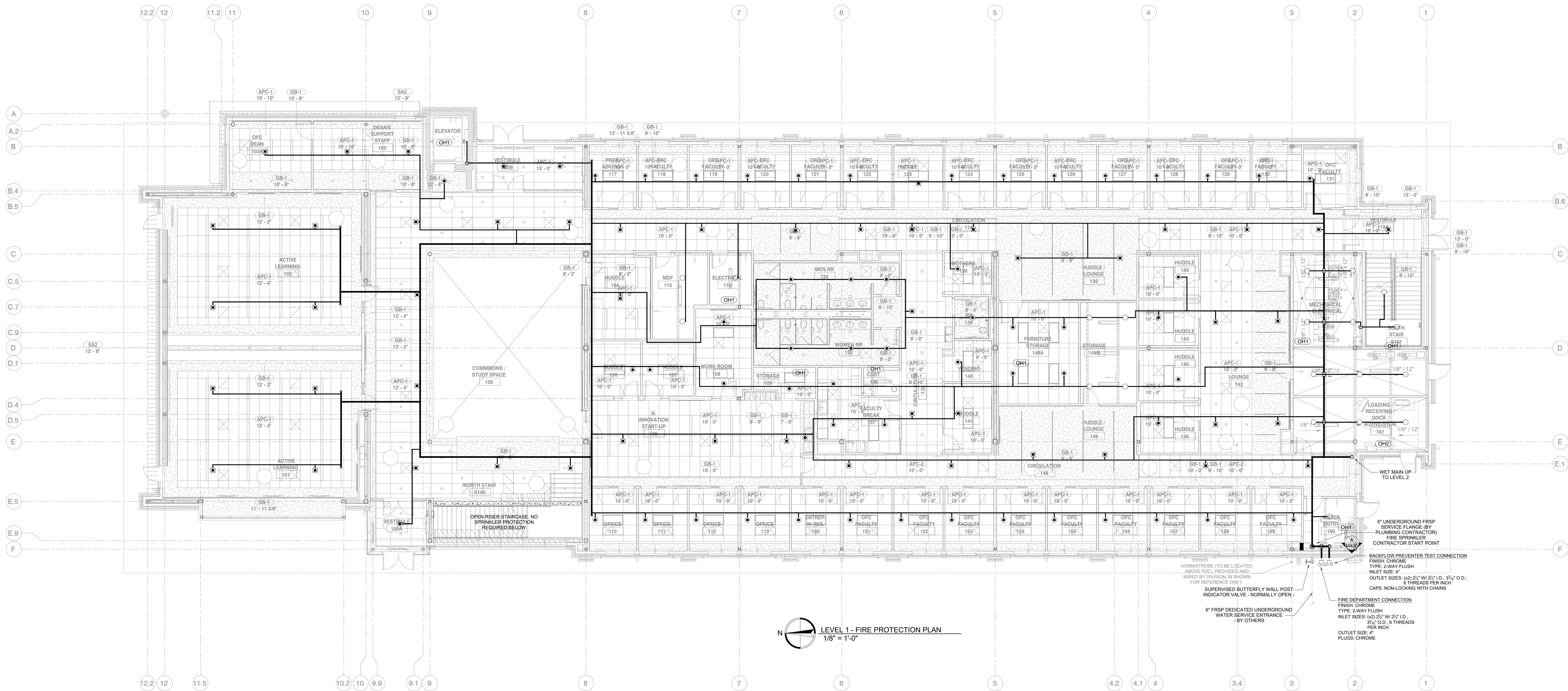
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FIRE PROTECTION - LEGENDS & DETAILS

M400



LEVEL 1 - FIRE PROTECTION PLAN
1/8" = 1'-0"

HORNSTROBE TO BE LOCATED ABOVE FLOOR PROVIDED AND WIRED BY DIVISION 28 SHOWN FOR REFERENCE ONLY

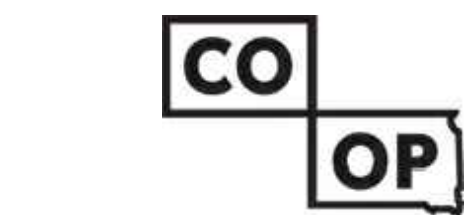
SUPERVISED BUTTERFLY WALL POST INDICATOR VALVE - NORMALLY OPEN

6" FRSP DEDICATED UNDERGROUND WATER SERVICE ENTRANCE - BY OTHERS

6" UNDERGROUND FRSP SERVICE FLANGE (BY PLUMBING CONTRACTOR) FIRE SPRINKLER CONTRACTOR START POINT

BACKFLOW PREVENTER TEST CONNECTION FINISH CHROME
TYPE: 2-WAY FLUSH
INLET SIZE: 4"
OUTLET SIZES: (x2) 2 1/2" W/ 2 1/2" I.D., 3 1/2" O.D., 6 THREADS PER INCH
CAPS: NON-LOCKING WITH CHAINS

FIRE DEPARTMENT CONNECTION FINISH CHROME
TYPE: 2-WAY FLUSH
INLET SIZES: (x2) 2 1/2" W/ 2 1/2" I.D., 3 1/2" O.D., 6 THREADS PER INCH
OUTLET SIZE: 4"
PLUGS: CHROME



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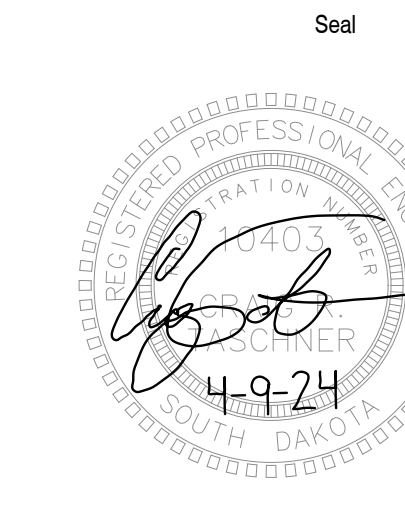
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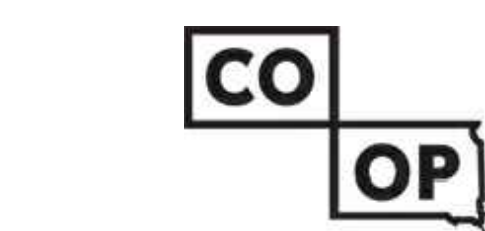
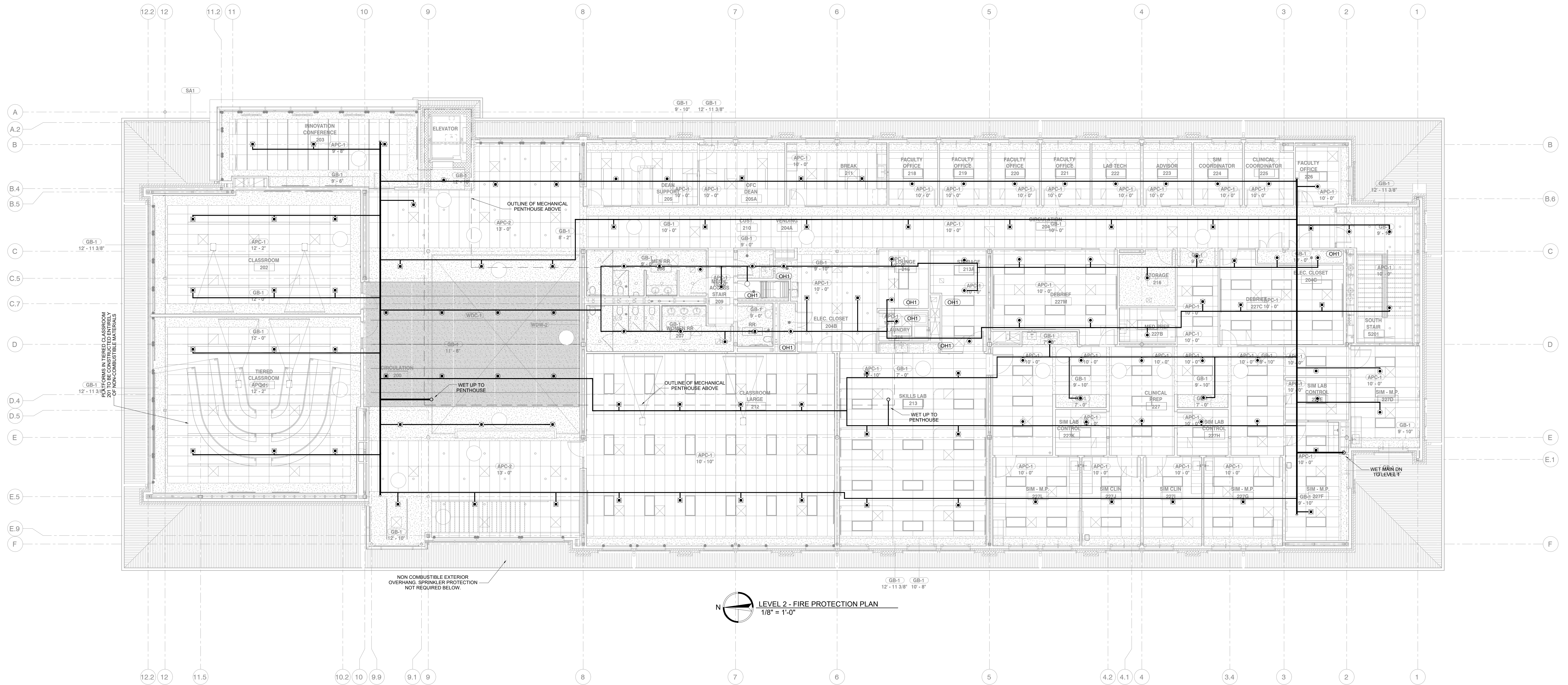
Issue
100% CONSTRUCTION DOCUMENTS
9 APRIL 2024

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Northern State University
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Drawn By: SDG
Reviewed By: CRT
Approved By: CRT

LEVEL 1 - FIRE PROTECTION PLAN

M401



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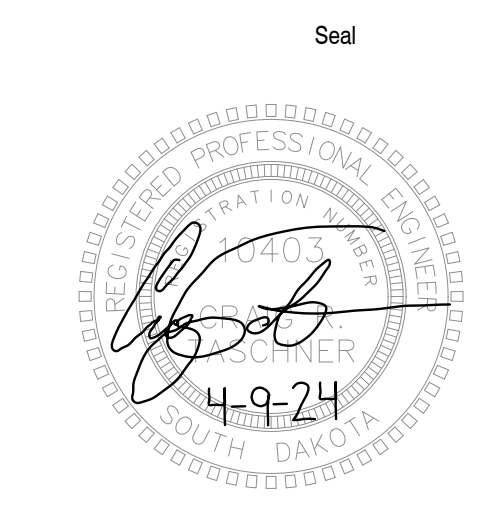
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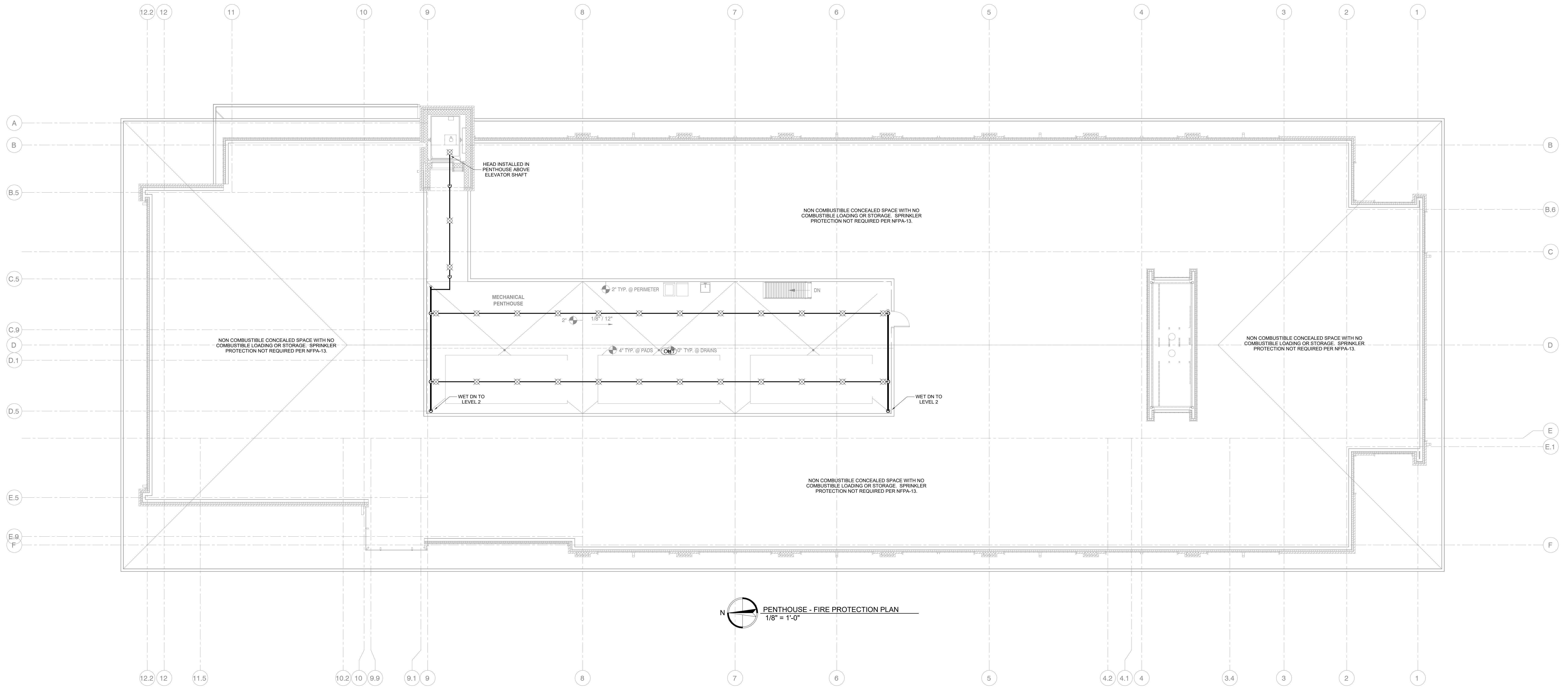
Project Number: 211100748
Drawn By: SDG
Reviewed By: CRT
Approved By: CRT

LEVEL 2 - FIRE PROTECTION
PLAN

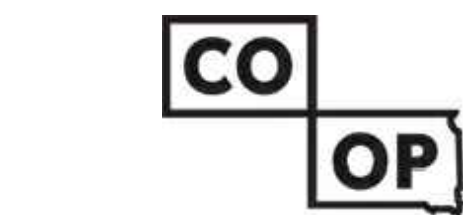
M402

**AndersonMasonDale
Architects**





N
 PENTHOUSE - FIRE PROTECTION PLAN
 1/8" = 1'-0"



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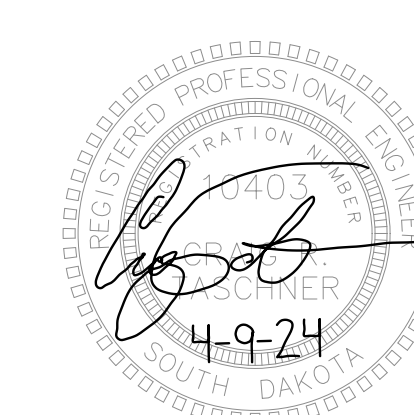
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Seal



Issue

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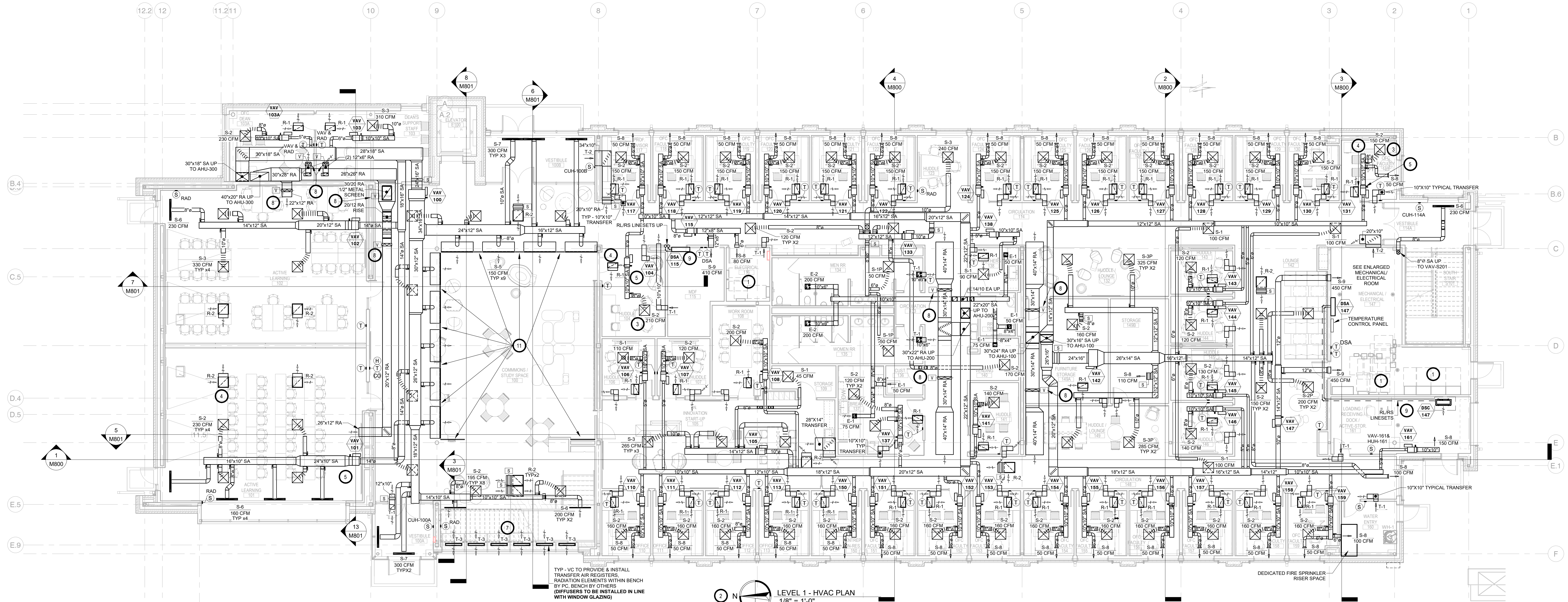
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**PENTHOUSE LEVEL - FIRE
 PROTECTION PLAN**

M403

**AndersonMasonDale
 Architects**





GENERAL NOTES:

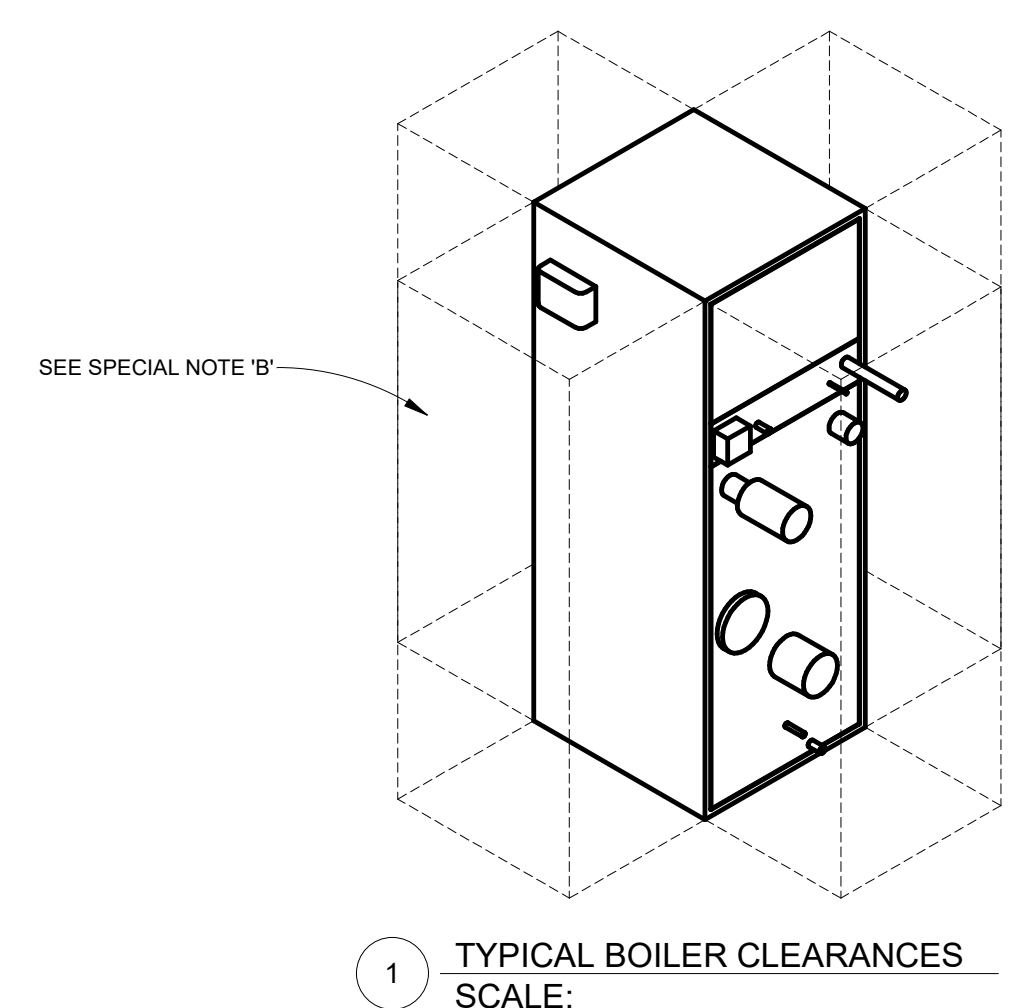
- A. ALL WORK SHALL BE PERFORMED IN A CLEAN AND WORKMANLIKE MANNER.
- B. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PATCHING ANY OPENINGS LEFT IN FLOORS, WALLS, AND CEILINGS THAT WERE CAUSED BY HIS/HER ACTIONS. PATCHING SHALL MATCH EXISTING SURFACE IN COLOR, TEXTURE AND QUALITY SO THAT PATCH 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. COORDINATE INSTALLATION OF ALL HVAC WITH PLUMBING, FIRE SPRINKLER, LIGHT FIXTURES, AND STRUCTURE TO ACCOMMODATE LIMITED CEILING SPACE.
- G. FOR SIMPLICITY DUCT INSULATION NOT SHOWN. DUCT SIZES INDICATED ON DRAWING ARE INTERNAL DIMENSIONS. AS NEEDED ADJUST ACTUAL SIZE FOR INSULATION THICKNESS AS SPECIFIED.
- H. ALL FLEXIBLE DUCTWORK AND CONNECTORS BETWEEN THE LOW PRESSURE DUCTWORK AND THE DIFFUSERS SHALL BE THE SIZE OF THE DIFFUSER INLET.
- I. PROVIDE & INSTALL VIBRATION ISOLATION ON ALL HANGING EQUIPMENT. PROVIDE & INSTALL VIBRATION ABSORPTION MOUNTING PADS ON ALL EQUIPMENT MOUNTED ON FLOOR.
- J. PROVIDE AND INSTALL DURODINE FLEX DUCT CONNECTORS AT ALL EQUIPMENT CONNECTIONS.
- K. ALL DUCTWORK TO BE SEALED AIRTIGHT.
- H. FRESH AIR INTAKES TO BE MINIMUM 10' FROM ANY EXHAUST TERMINATION.
- I. ALL FLOOR EQUIPMENT SHALL BE SET ON 4" HIGH CONCRETE BASES FURNISHED BY THIS CONTRACTOR.

KEYNOTES

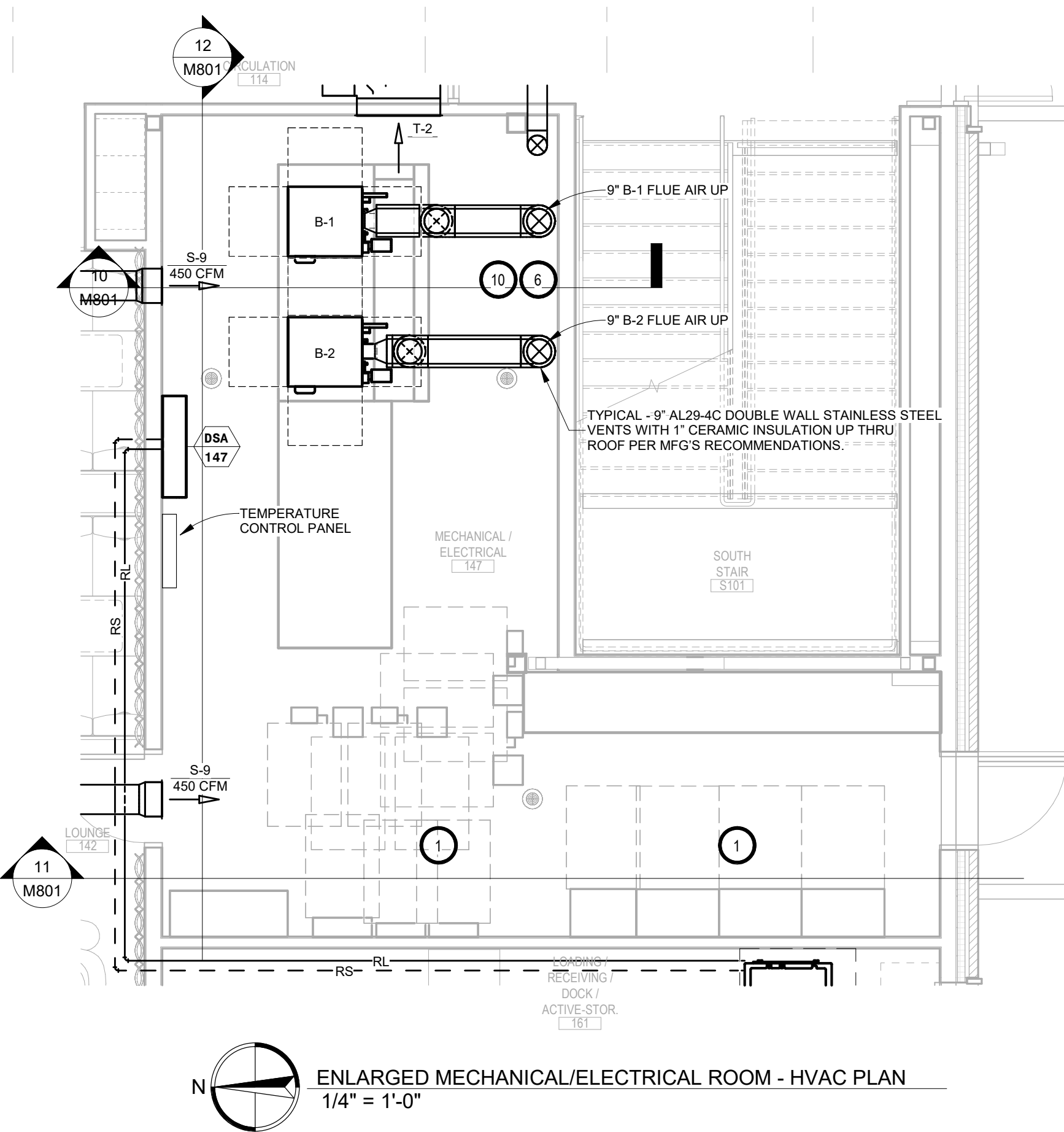
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- 2. SEE HVAC SHEET METAL DUCTWORK CONSTRUCTION AND INSULATION SCHEDULE AND SPECIFICATIONS.
- 3. SEE TYPICAL DIFFUSER CONNECTION DETAIL.
- 4. TYPICAL - SEE INSULATED RETURN ELBOW DETAIL.
- 5. TYPICAL - SEE VAV BOX DUCT CONNECTION DETAIL.
- 6. BOILER FLUE SHALL SLOPE 1/4" PER FOOT BACK TO BOILER.
- 7. SEE UNDER-BENCH RADIATION PIPING DETAIL.
- 8. TYPICAL - VOLUME DAMPERS ON RETURN TO BE SET 100% OPEN AND ARE TO BE USED FOR AIR NOISE ISSUES IF NECESSARY.
- 9. REFRIGERANT LIQUID & SUCTION LINE SETS BY VENTILATION CONTRACTOR SHALL BE SECURED UNIFORMLY ON UNISTRUT & SHALL BE NEAT IN APPEARANCE. (GENERAL ARRANGEMENT OF LINE SETS ROUTING SHOWN). INSTALL BOTTOM OF DSA-138 @ 9'-8" AFF (ABOVE CABLE TRAY ROUTED @ 8'-8").
- 10. VC TO PROVIDE & INSTALL FLUE DRAIN PIPING & BOILER HEAT EXCHANGER CONDENSATE DRAIN PIPING. INSTALL CLEAR TUBING WITH LOOP TRAP PER MANUFACTURER'S RECOMMENDATIONS.
- 11. VC TO PROVIDE & INSTALL INACTIVE S-S DIFFUSERS AT LOCATIONS INDICATED TO PROVIDE CONTINUOUS LENGTH OF DIFFUSERS AROUND BULKHEAD. CONTRACTOR TO COORDINATE WITH ALL OTHER TRADES FOR EXACT INACTIVE DIFFUSER DIMENSIONS. REFER TO ARCHITECTURAL PLANS. VC TO PROVIDE & INSTALL SHEET METAL BLANK OFFS BEHIND EACH INACTIVE DIFFUSER TO SEAL FROM RETURN AIR PLENUM.

SPECIAL NOTES

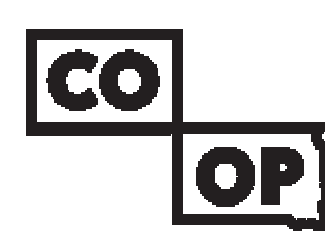
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- C. ALL CONDENSATE & DRAIN PIPING TO BE BY PC.
- D. ALL TRANSFER AIR SLEEVES TO BE 10" X 10" UNLESS OTHERWISE SPECIFIED.



1 TYPICAL BOILER CLEARANCES SCALE:



ENLARGED MECHANICAL/ELECTRICAL ROOM - HVAC PLAN 1/4" = 1'-0"



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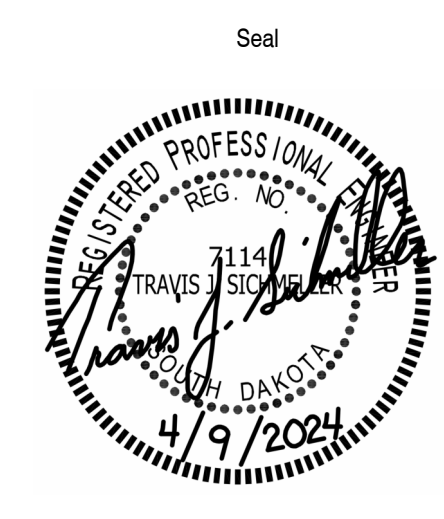
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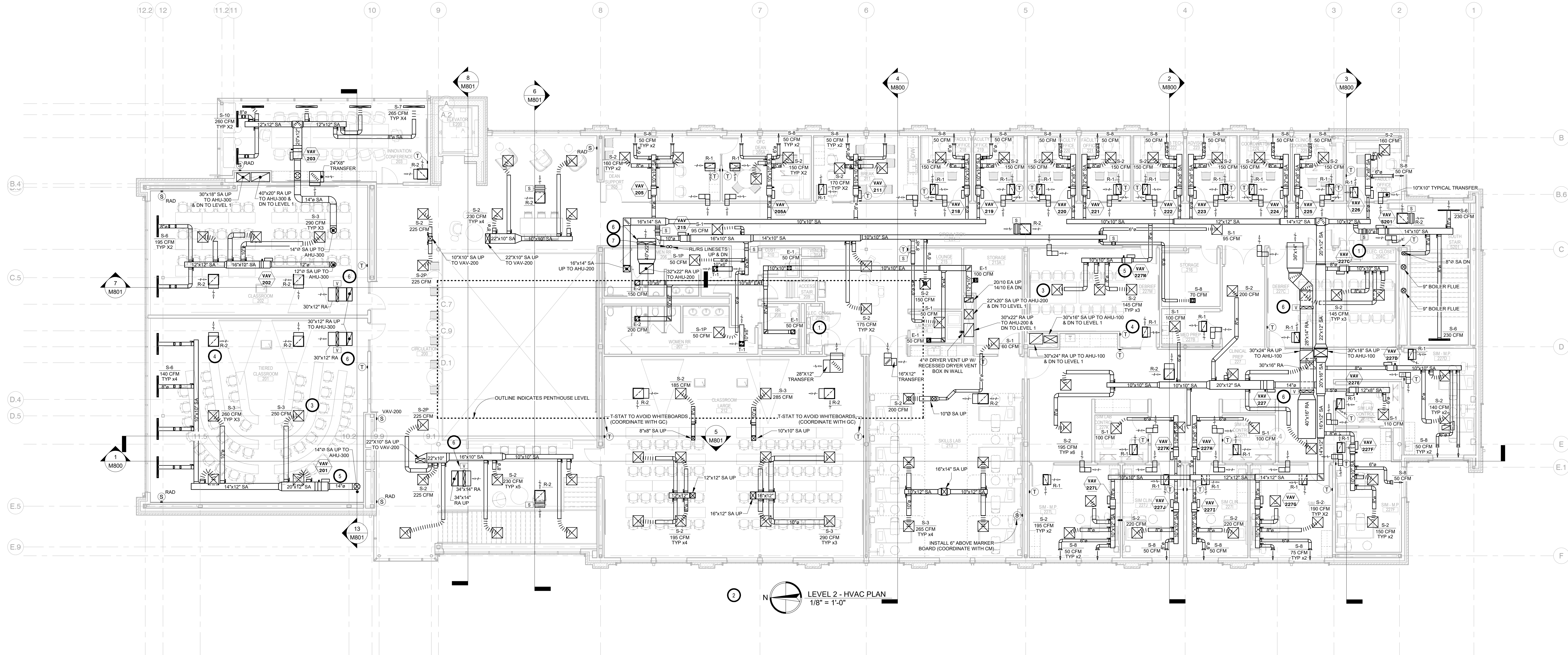
Issue
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Reviewed By: TS
Approved By: TS

LEVEL 1 - HVAC PLAN

M500



GENERAL NOTES:

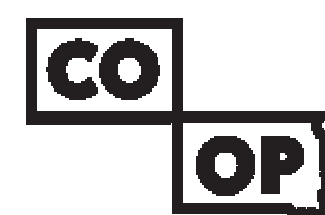
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- H. ALL FLEXIBLE DUCTWORK AND CONNECTORS BETWEEN THE LOW PRESSURE DUCTWORK AND THE DIFFUSERS SHALL BE THE SIZE OF THE DIFFUSER INLET.
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- J. PROVIDE AND INSTALL DURODINE FLEX DUCT CONNECTORS AT ALL EQUIPMENT CONNECTIONS.
- K. ALL DUCTWORK TO BE SEALED AIRTIGHT.
- L. FRESH AIR INTAKES TO BE MINIMUM 10' FROM ANY EXHAUST TERMINATION.
- M. ALL FLOOR EQUIPMENT SHALL BE SET ON 4" HIGH CONCRETE BASES FURNISHED BY THIS CONTRACTOR.

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 HVAC SHEET METAL DUCTWORK CONSTRUCTION AND INSULATION SCHEDULE AND SPECIFICATIONS.
- 3. SEE TYPICAL DIFFUSER CONNECTION DETAIL.
- 4. TYPICAL - SEE INSULATED RETURN ELBOW DETAIL.
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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.
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- C. ALL CONDENSATE & DRAIN PIPING TO BE BY PC.
- D. ALL TRANSFER AIR SLEEVES TO BE 10" X 10" UNLESS OTHERWISE SPECIFIED.



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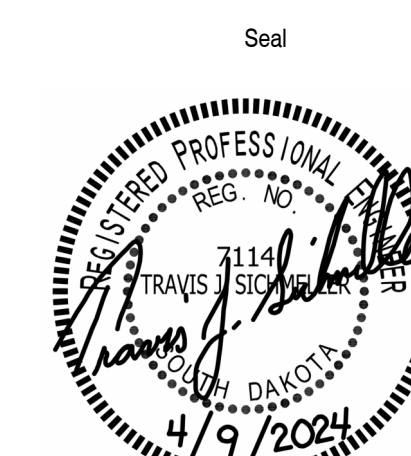
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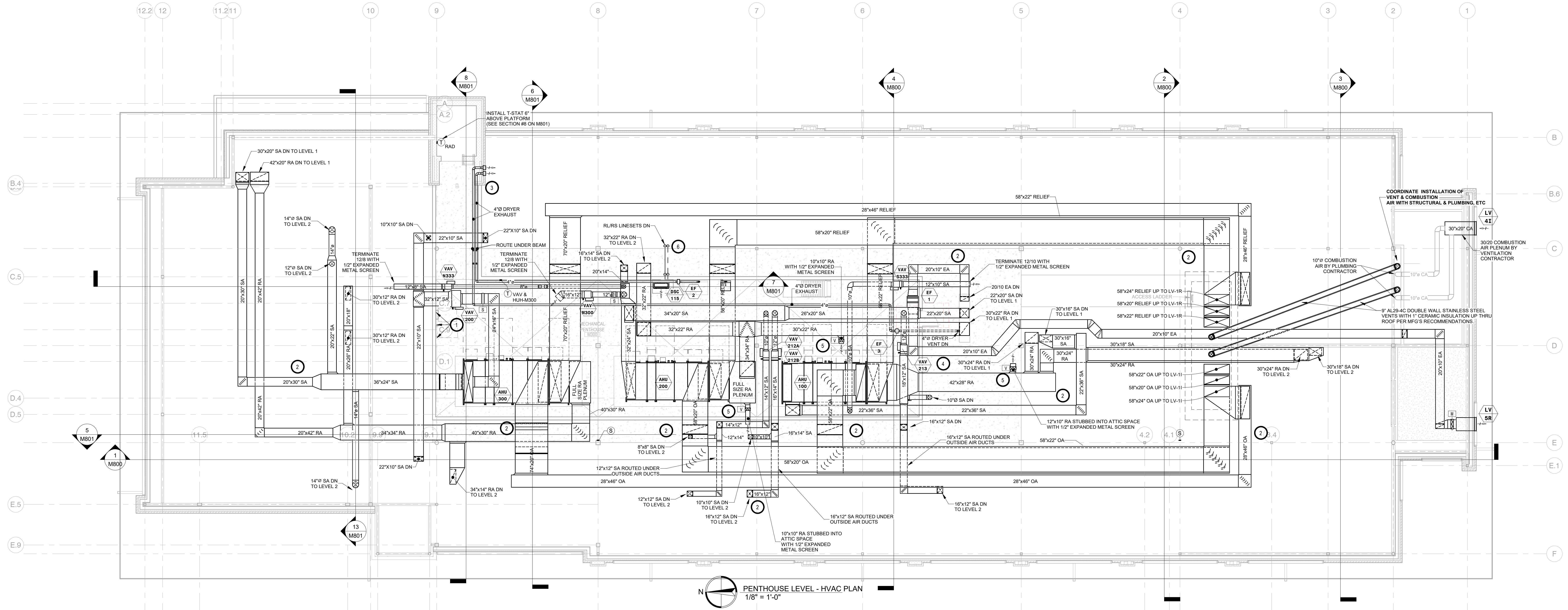
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Approved By: TS

LEVEL 2 - HVAC PLAN

M501

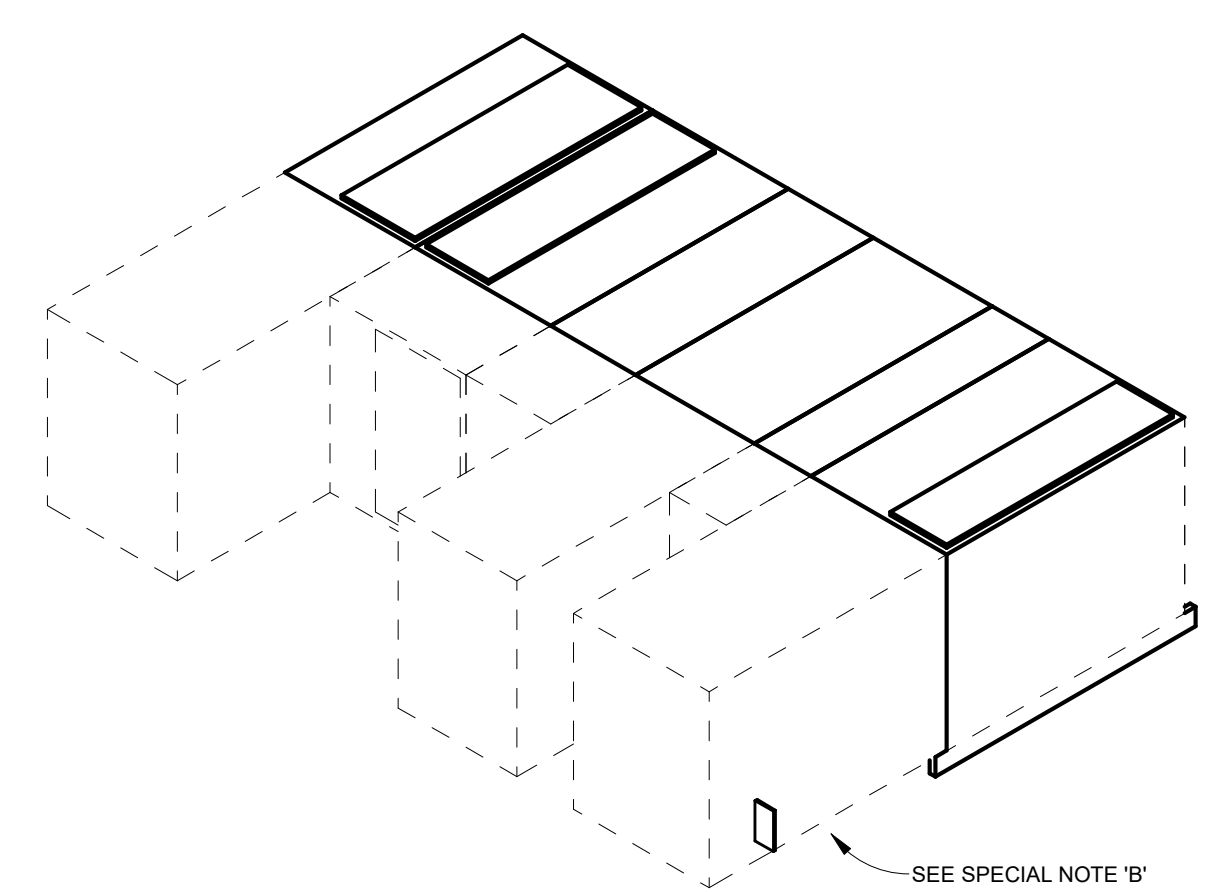


PENTHOUSE LEVEL - HVAC PLAN
1/8" = 1'-0"

- 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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 - H. ALL FLEXIBLE DUCTWORK AND CONNECTORS BETWEEN THE LOW PRESSURE DUCTWORK AND THE DIFFUSERS SHALL BE THE SIZE OF THE DIFFUSER INLET.
 - I. PROVIDE & INSTALL VIBRATION ISOLATION ON ALL HANGING EQUIPMENT. PROVIDE & INSTALL VIBRATION ABSORPTION MOUNTING PADS ON ALL EQUIPMENT MOUNTED ON FLOOR.
 - J. PROVIDE AND INSTALL DURODINE FLEX DUCT CONNECTORS AT ALL EQUIPMENT CONNECTIONS.
 - K. ALL DUCTWORK TO BE SEALED AIRTIGHT.
 - L. FRESH AIR INTAKES TO BE MINIMUM 10' FROM ANY EXHAUST TERMINATION.
 - M. ALL FLOOR EQUIPMENT SHALL BE SET ON 4" HIGH CONCRETE BASES FURNISHED BY THIS CONTRACTOR.

- 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 HVAC SHEET METAL DUCTWORK CONSTRUCTION AND INSULATION SCHEDULE AND SPECIFICATIONS.
 - 3. VC TO PROVIDE AND INSTALL DRYER VENT. ALL PIPING TO BE 4" DIAMETER RIGID WITH SEALED JOINTS WITHOUT ANY FASTENERS PROTRUDING TO THE INTERIOR OF THE PIPE AND SHALL TERMINATE AT POWDER COATED WALL CAP WITH DAMPER. VERIFY WITH OWNER DRYER LOCATION.
 - 4. TYPICAL - SEE VAV BOX DUCT CONNECTION DETAIL.
 - 5. TYPICAL - VOLUME DAMPERS ON RETURN TO BE SET 100% OPEN AND ARE TO BE USED FOR AIR NOISE ISSUES IF NECESSARY.
 - 6. REFRIGERANT LIQUID & SUCTION LINE SETS BY VENTILATION CONTRACTOR SHALL BE SECURED UNIFORMLY ON UNISTRUT & SHALL BE NEAT IN APPEARANCE. (GENERAL ARRANGEMENT OF LINE SETS ROUTING SHOWN).

- SPECIAL NOTES:**
- A. ALL MECHANICAL SYSTEMS, EXCLUDING DROPS, TO BE INSTALLED AS HIGH AS POSSIBLE TO PROVIDE MAXIMUM CLEARANCES FOR OWNER.
 - B. THE MECHANICAL CONTRACTOR SHALL BEAR FULL RESPONSIBILITY FOR COORDINATING HIS WORK WITH OTHER TRADES TO AVOID CONFLICTS IN SPACE REQUIREMENTS, CLEARANCES, ETC. PROBLEMS ARISING DUE TO LACK OF COORDINATION WILL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR TO RESOLVE. EXTRA WORK AND/OR EQUIPMENT AS A RESULT OF NOT COORDINATING SHALL BE THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR AND AT NO COST TO THE OWNER.
 - C. ALL CONDENSATE & DRAIN PIPING TO BE BY PC.



1 TYPICAL AHU CLEARANCES SCALE:

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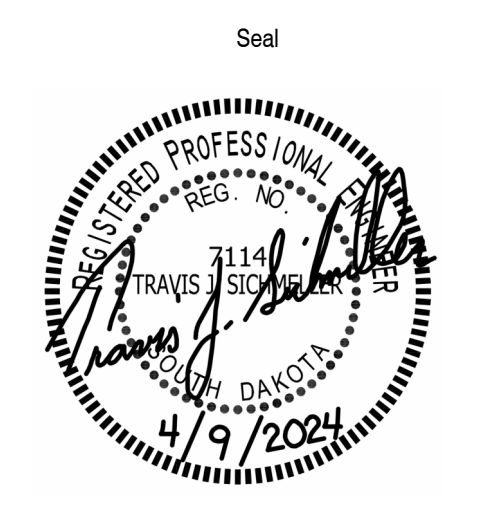
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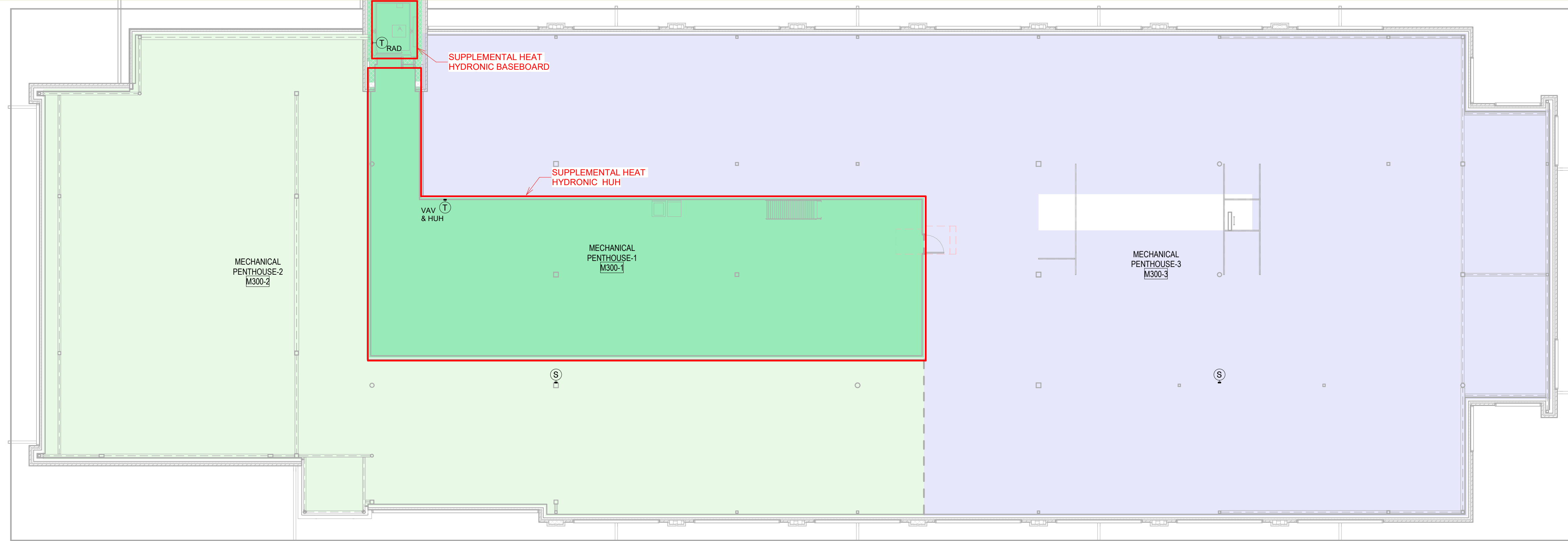
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Approved By: TS

PENTHOUSE LEVEL - HVAC PLAN

M502



PENTHOUSE LEVEL - HVAC TEMPERATURE CONTROL ZONE PLAN
3/32" = 1'-0"



LEVEL 2 - HVAC TEMPERATURE CONTROL ZONE PLAN
3/32" = 1'-0"

LEVEL 1 - HVAC TEMPERATURE CONTROL ZONE PLAN
3/32" = 1'-0"



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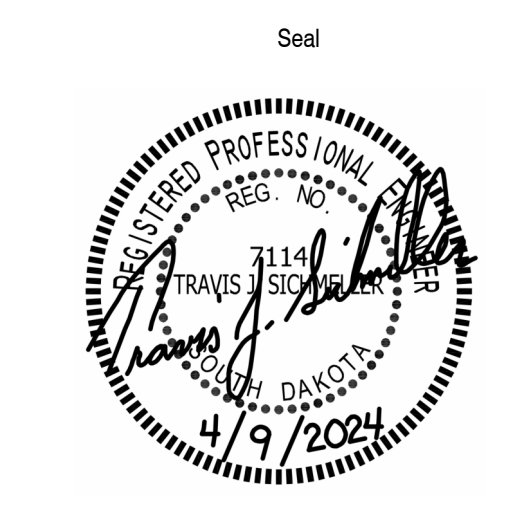
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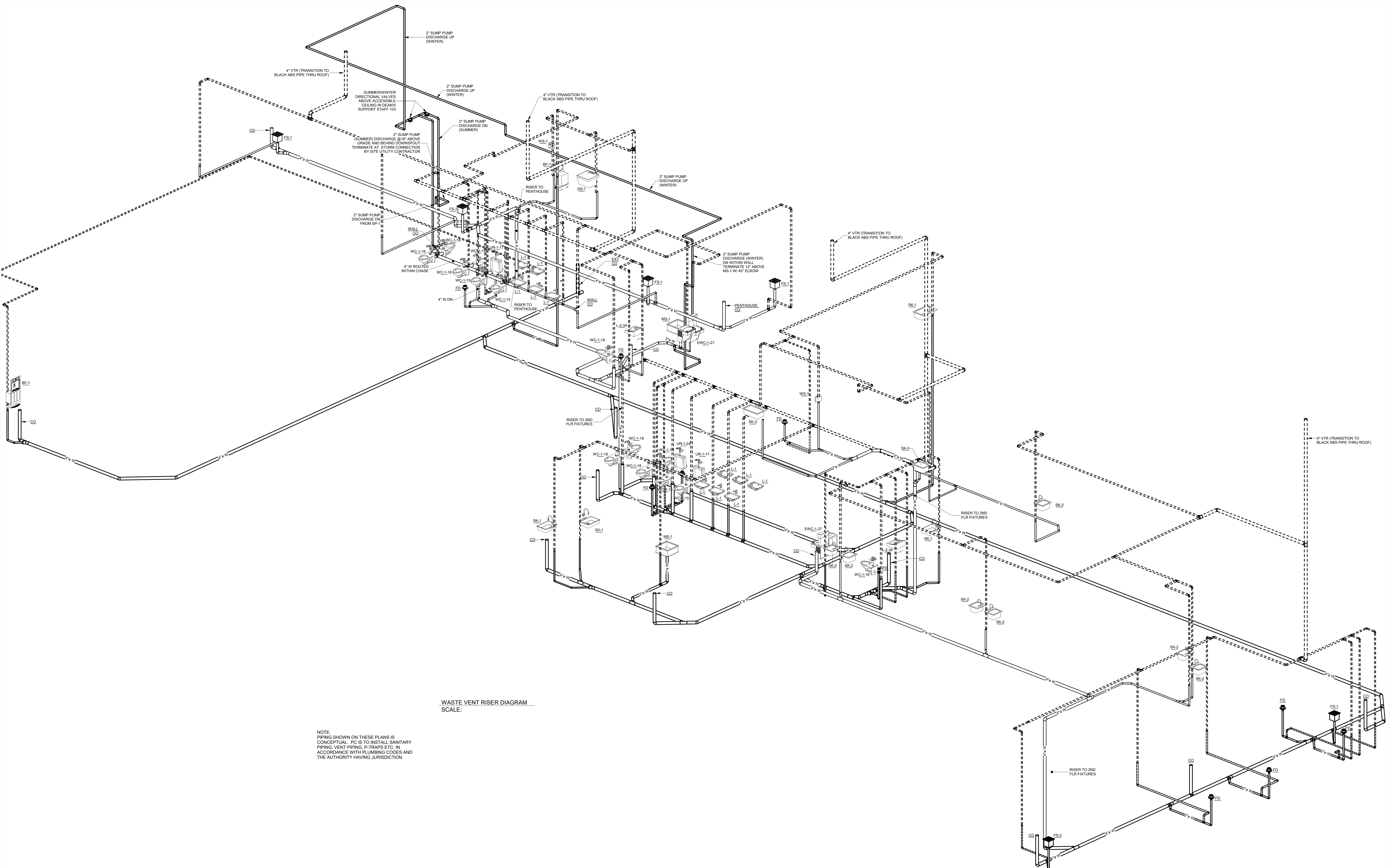
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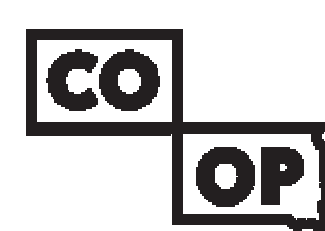
HVAC TEMPERATURE CONTROL ZONE PLAN

M503



WASTE VENT RISER DIAGRAM
SCALE:

NOTE:
PIPING SHOWN ON THESE PLANS IS
CONCEPTUAL. PC IS TO INSTALL SANITARY
PIPING, VENT PIPING, P-TRAPS ETC. IN
ACCORDANCE WITH PLUMBING CODES AND
THE AUTHORITY HAVING JURISDICTION.



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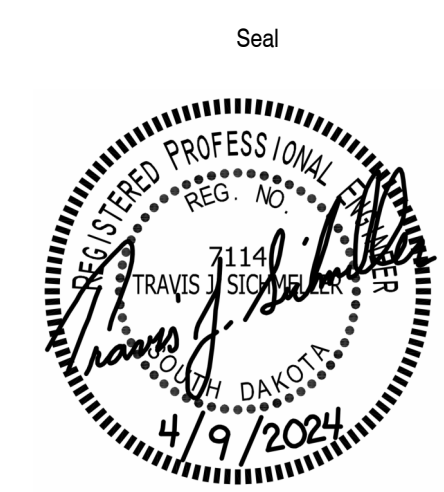
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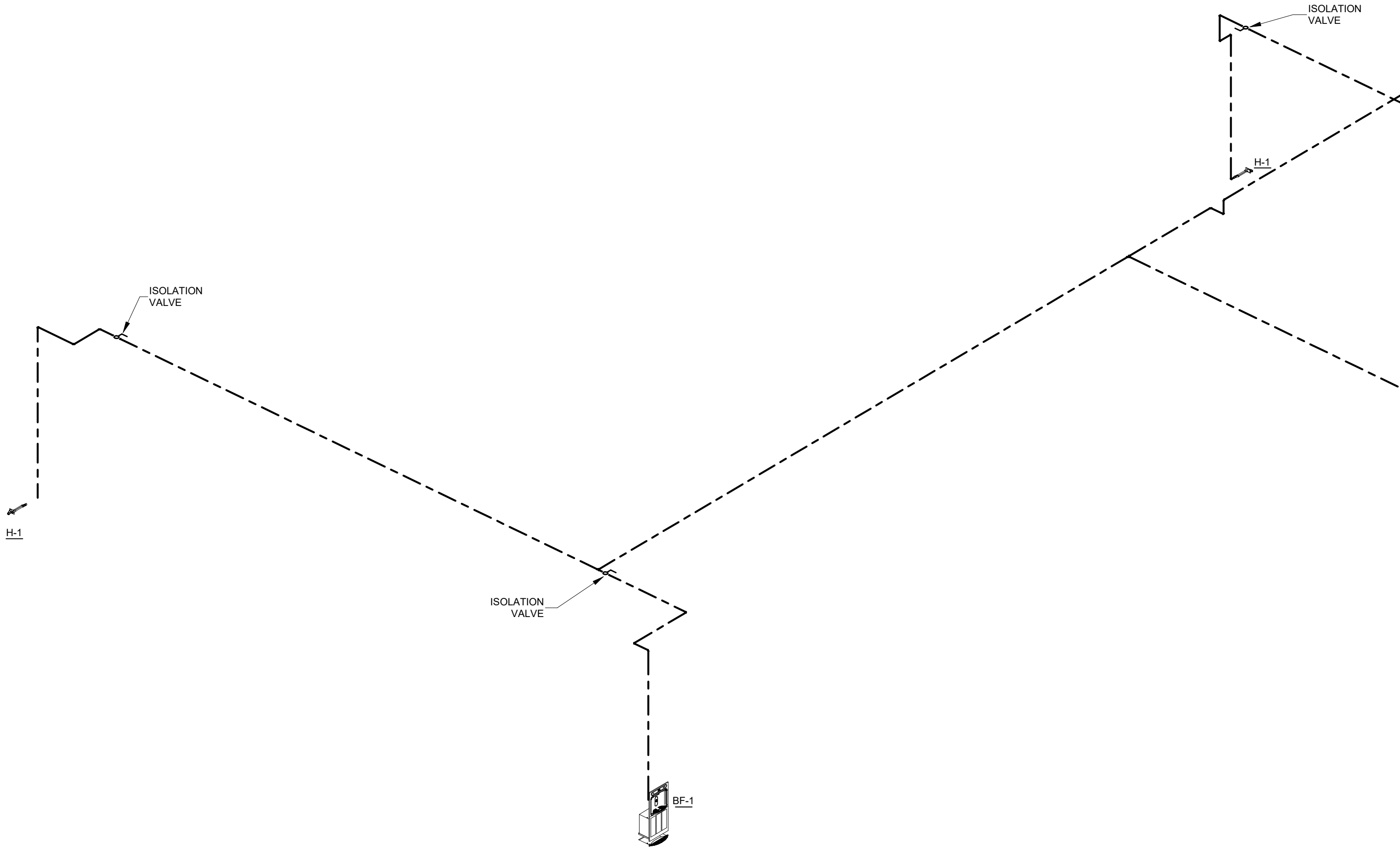
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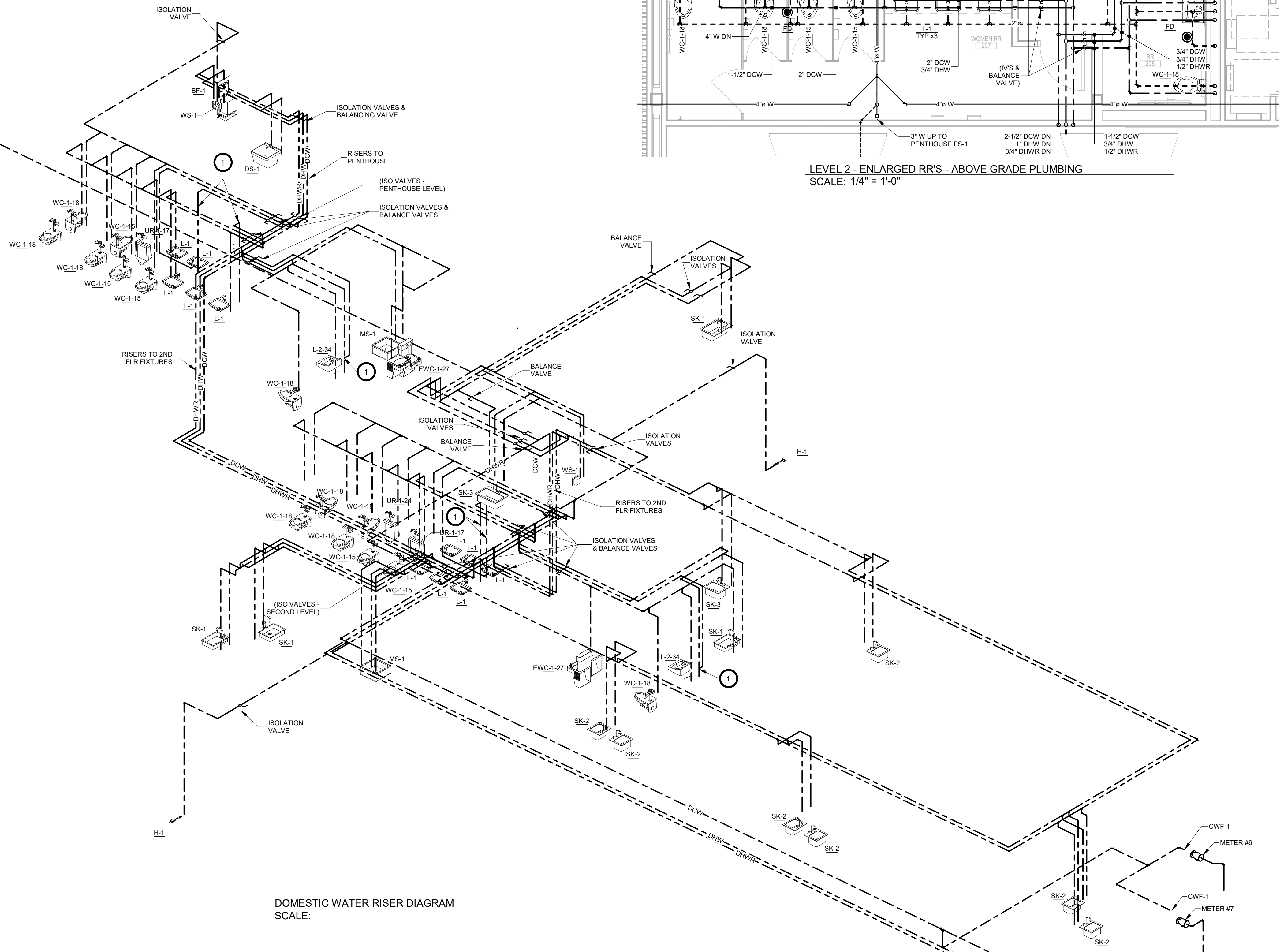
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WASTE VENT RISER DIAGRAM

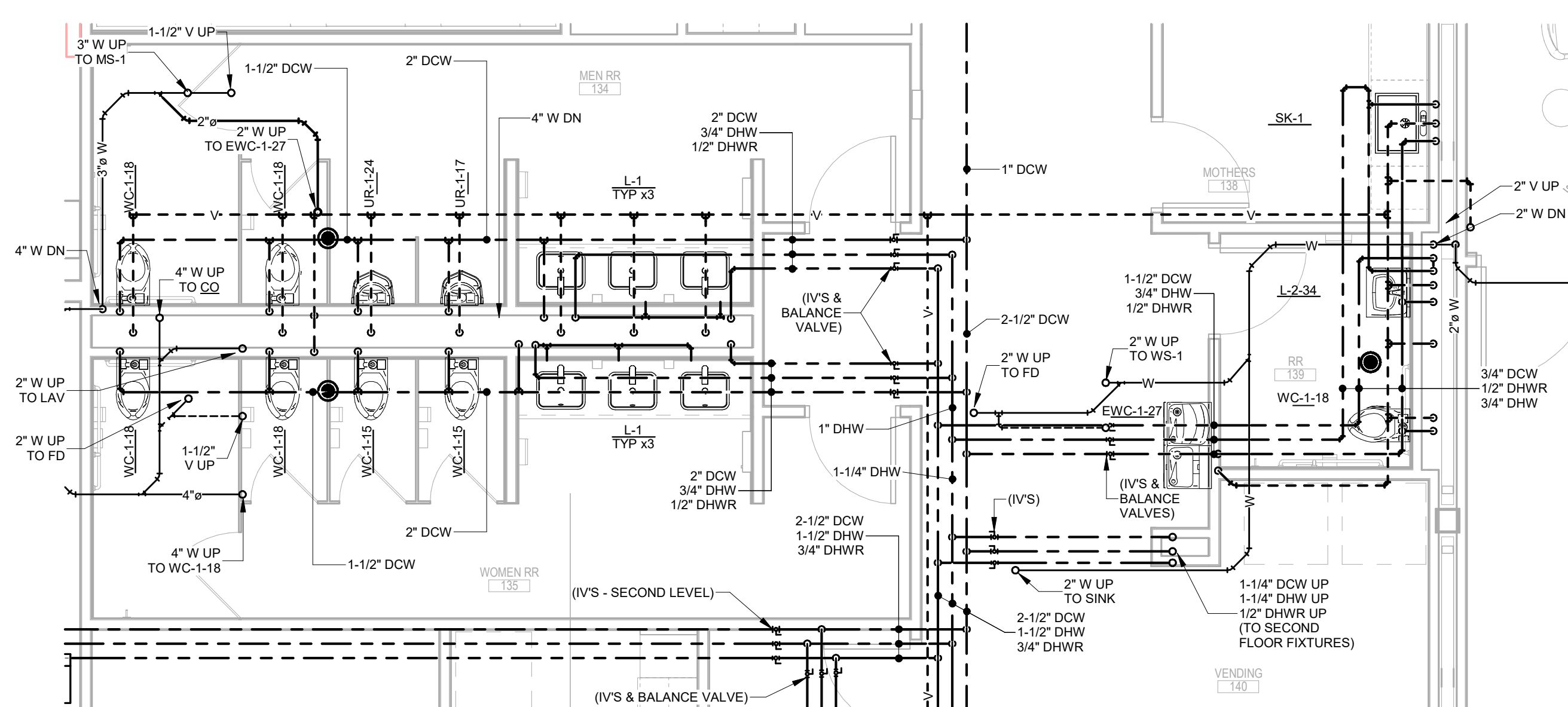
M600



LEVEL 1 - ENLARGED RR - ABOVE GRADE PLUMBING
SCALE: 1/4" = 1'-0"



LEVEL 2 - ENLARGED RR'S - ABOVE GRADE PLUMBING
SCALE: 1/4" = 1'-0"

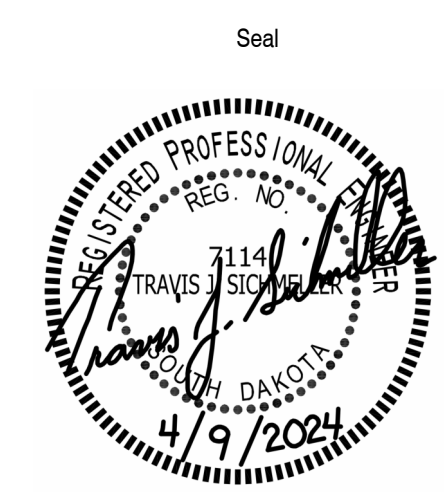
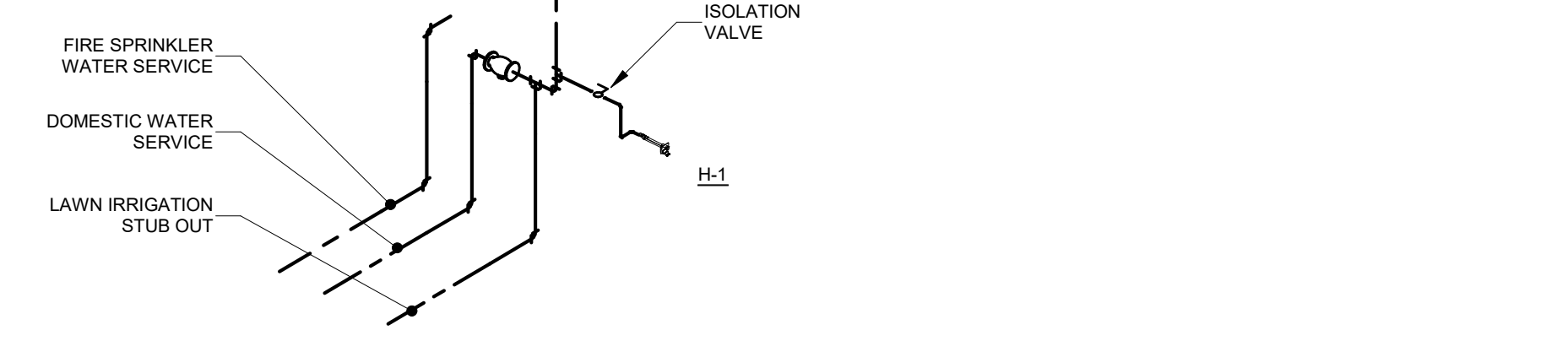


LEVEL 1 - ENLARGED RR - ABOVE GRADE PLUMBING
SCALE: 1/4" = 1'-0"

DOMESTIC WATER RISER DIAGRAM
SCALE:

- KEYNOTES**
1. TO MEET GREEN GLOBE REQUIREMENTS FOR ALL INDIVIDUAL AND GROUPED LAVS L-1'S AND L-2'S - 1/2" DHWR TO BE CONNECTED BELOW LAV TO MINIMIZE WAIT TIME (BALANCING VALVES AS SHOWN). FOR ALL OTHER SINKS, SEE SPECIAL NOTES REGARDING DOM HW AND DOM HW RECIRC FOR GREEN GLOBE REQUIREMENTS.

- SPECIAL NOTES**
1. TO MEET GREEN GLOBE REQUIREMENTS FOR ALL SINKS - FOLLOW PLANS AS SHOWN FOR DHW & DHWR ROUTING TO MEET A TOTAL LENGTH OF NON-RECIRCULATED DOMESTIC HOT WATER (HORIZONTAL + VERTICAL) THAT IS LESS THAN 13'. NO EXCEPTIONS. IF PLANS ARE FOUND TO HAVE MORE THAN 13' CONTACT THE ENGINEERS OFFICE PRIOR TO INSTALL.



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WATER RISER DIAGRAM

M601

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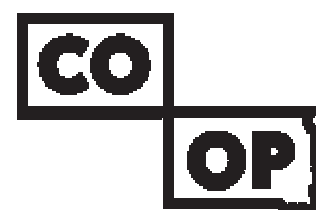
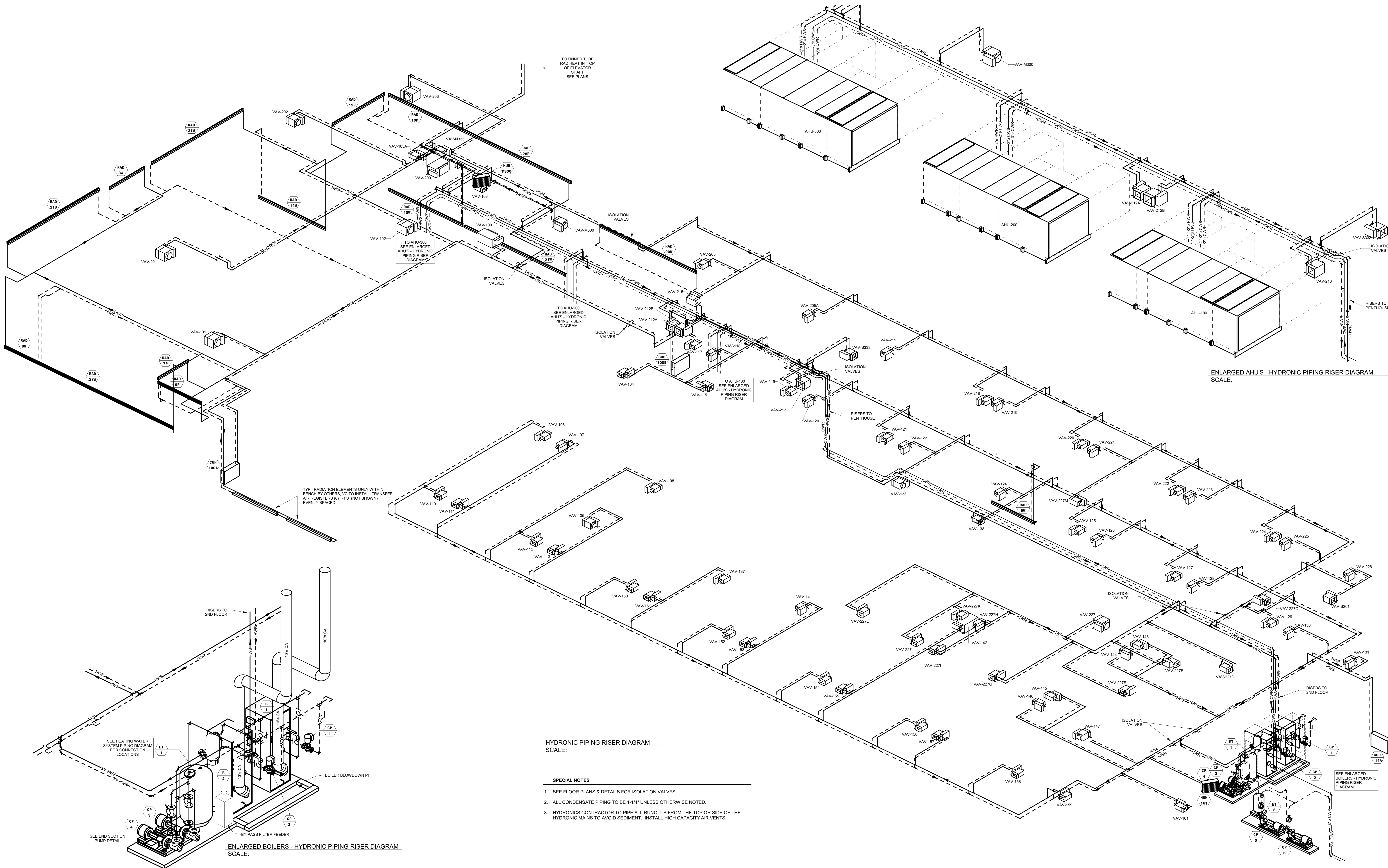
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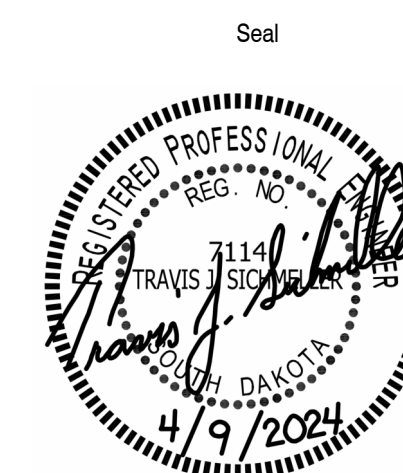
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HYDRONIC PIPING RISER DIAGRAM

M602

WC - 1 - XX
NON-ADA AND HANDICAPPED WALL-MOUNTED FLUSH VALVE TOILET

IN ANY ROOM OR STALL THAT HAS A WIDE SIDE, FLUSH VALVE TO BE ROUNDED IN ON THE NON-WIDE SIDE SUCH THAT THE SENSOR INSTALLS TO THE WIDE SIDE.

MEN RR 134, MEN RR 206, WOMEN RR 135, WOMEN RR 207

SEE ARCHITECTURAL PLANS FOR DIVIDER & TOILET SPACING

GRAB BARS TO BE INSTALLED IN ADA LOCATIONS ONLY. SEE ARCHITECTURAL PLANS.

WIDE SIDE

ADA WIDTH FOR ADA LOCATIONS. SEE ARCH. PLANS.

PLUMBING FIXTURE:
AMERICAN STANDARD #257.101.020 "AFRICAL" VITREOUS CHINA, 1-1/16 GPF, ELONGATED BOWL, SIFHON FLUSH ACTION, 1-1/2" TOP SPUD.

PLUMBING ACCESSORIES:
• SLOAN REGAL 111 SIFHON 1-28 SENSOR OPERATED BATTERY POWERED FLUSH VALVE WITH MECHANICAL OVERRIDE FLUSH BUTTON (ELECTRONIC OVERRIDE FLUSH BUTTON NOT ACCEPTABLE), 1.28 GPF.
• CHURCH #2958SCT WHITE OPEN FRONT SEAT, LESS COVER.
• PROVIDE NECESSARY CARRIER.

PIPING CONNECTIONS
COLD WATER HOT WATER WASTE VENT
1" 2" 4" 2"

L - 1
HANDICAPPED UNDERCOUNTER LAVATORY

1/2" DHWR TO BE CONNECTED BELOW LAV TO MINIMIZE WAIT TIME. (1.V. BELOW LAV)

ABOVE DECK TEMP ADJUSTMENT VALVE

TO NEXT LAV (ADA) TO EDGE (ADA)

P-LAM

PLUMBING FIXTURE:
AMERICAN STANDARD #0356.421 "LUCERNE" WALL-MOUNTED SINK, VITREOUS CHINA, FRONT OVERFLOW, SELF-DRAINING DECK AREA WITH CONTOURED BACK AND SIDE SPLASH SHIELDS, SINGLE FAUCET HOLE.

ACCESSORIES:
• KOHLER #13468 "GEOMETRIC" TOUCHLESS FAUCET WITH ABOVE DECK TEMPERATURE MIXER, SCALD GUARD, CERAMIC DISC VALVING, COPPER/BRASS SUPPLY & WATERWAYS, CHROME PLATED BRASS BODY, 0.5 GPM, SINGLE HOLE MOUNTING, K-13480-A AC SINGLE POWER SUPPLY.
• LAMLER 570 - THERMOSTATIC MIX VALVE WITH COLD WATER BYPASS AND MOUNTING BRACKET.
• SUPPLIES & QUARTER TURN STOP VALVES.
• DEARBORN #701-1 1-1/4" 17 GA. P-TRAP, DEARBORN #760W-1 OFFSET GRID STRAINER W/TAILPIECE.
• ZURN Z1231 CONCEALED ARMS SUPPORT.

PIPING CONNECTIONS
COLD WATER HOT WATER WASTE VENT
1/2" 1/2" 2" 1-1/2"

L-2-34
HANDICAPPED WALL-MOUNTED LAVATORY

1/2" DHWR TO BE CONNECTED BELOW LAV TO MINIMIZE WAIT TIME. (1.V. BELOW LAV)

ABOVE DECK TEMP ADJUSTMENT VALVE

SEE ARCHITECTURAL PLANS FOR SPACING

ADA

PLUMBING FIXTURE:
AMERICAN STANDARD #0356.421 "LUCERNE" WALL-MOUNTED SINK, VITREOUS CHINA, FRONT OVERFLOW, SELF-DRAINING DECK AREA WITH CONTOURED BACK AND SIDE SPLASH SHIELDS, SINGLE FAUCET HOLE.

ACCESSORIES:
• KOHLER #13468 "GEOMETRIC" TOUCHLESS FAUCET WITH ABOVE DECK TEMPERATURE MIXER, SCALD GUARD, CERAMIC DISC VALVING, COPPER/BRASS SUPPLY & WATERWAYS, CHROME PLATED BRASS BODY, 0.5 GPM, SINGLE HOLE MOUNTING, K-13480-A AC SINGLE POWER SUPPLY.
• LAMLER 570 - THERMOSTATIC MIX VALVE WITH COLD WATER BYPASS AND MOUNTING BRACKET.
• SUPPLIES & QUARTER TURN STOP VALVES.
• DEARBORN #701-1 1-1/4" 17 GA. P-TRAP, DEARBORN #760W-1 OFFSET GRID STRAINER W/TAILPIECE.
• TREBORG PREMOLDED INSULATION KIT (WHITE).
• ZURN Z1231 CONCEALED ARMS SUPPORT.

PIPING CONNECTIONS
COLD WATER HOT WATER WASTE VENT
1/2" 1/2" 2" 1-1/2"

SK - 1
HANDICAPPED S.S. SINK SINGLE COMPARTMENT UNDERMOUNT

P.C. TO CONFIRM WITH O.C. THAT CUTOUP REQUIREMENTS WILL WORK WITH CABINET INSIDE CLEARANCES PRIOR TO ORDERING.

INNOVATION START-UP 105, FAC BREAK 137, MOTHERS 138, BREAK ROOM 211

PLUMBING FIXTURE:
ELKAY LRAD21965 "LUSTERTONE" SINGLE COMPARTMENT UNDERMOUNT SINK, 23-1/2"X18-1/4"X5-3/8" INSIDE BOWL, 18 GAUGE TYPE 304 STAINLESS STEEL, REAR CENTER DRAIN LOCATION.

PLUMBING ACCESSORIES:
• KOHLER #K-22972 "ORIE" KITCHEN SINK FAUCET, 8" HIGH-ARCH SWING SPOUT WITH THREE FUNCTION PULL-DOWN SPRAY HEAD, CERAMIC DISC VALVING, SINGLE-HOLE MOUNTING, POLISHED CHROME. ADA COMPLIANT. 1.5 GPM, SINGLE HOLE INSTALLATION (NO ESCUTOCHON PLATE).
• SUPPLIES & QUARTER TURN STOP VALVES. IN FAC BREAK 137 & BREAK 211 ONLY - PROVIDE & INSTALL DOUBLE OUTLET ANGLE STOP AT SINK WITH 3/8" COPPER TUBING ROUTER FOR CONNECTION TO DN NEXT TO SINK.
• DEARBORN #704-1 1-1/2" 17 GA. P-TRAP.
• DEARBORN #704-1 1-1/2" 17 GA. P-TRAP, DEARBORN #760W-1 OFFSET GRID STRAINER W/TAILPIECE.
• LKAD8 1-1/2" DIAMETER 300 SERIES STAINLESS STEEL WITH LKAD85 TAILPIECE.
• PROVIDE WITH DISHWASHER TAILPIECE FOR CONNECTION TO DN IN FAC BREAK 137 & BREAK 211 ONLY

PIPING CONNECTIONS
COLD WATER HOT WATER WASTE VENT
1/2" 1/2" 2" 1-1/2"

SK - 2
HANDICAPPED S.S. SINK SINGLE BOWL SINK

P.C. TO CONFIRM WITH C.M. THAT CUTOUP REQUIREMENTS WILL WORK WITH CABINET INSIDE CLEARANCES PRIOR TO ORDERING.

MED PREP 227B, SIM-M. P.'S 227D, 227F, 227G, 227L, 227O, 227I, 227J

PLUMBING FIXTURE:
ELKAY LRAD191865 "LUSTERTONE" 19"X18" SINGLE COMPARTMENT 16"X11.5"X6.5" INSIDE BOWL, 18 GAUGE TYPE 304 STAINLESS STEEL, CENTER DRAIN, 2 FAUCET HOLES 4" CENTERS, ADA COMPLIANT.

PLUMBING ACCESSORIES:
• AMERICAN STANDARD MONTERREY #7500.180 TWO-HANDLE, CENTERSET LAVATORY FAUCET, CERAMIC DISC VALVING, COPPER/BRASS SUPPLY & WATERWAYS, VANDAL RESISTANT WRIST BLADE HANDLES, CHROME PLATED BRASS BODY, CHROME SUPPLIES, 1.5 GPM LAMINAR FLOW DEVICE.
• SUPPLIES & QUARTER TURN STOP VALVES.
• DEARBORN #704-1 1-1/2" 17 GA. P-TRAP.
• LKAD18 1-1/2" DIAMETER OFFSET DRAIN WITH GRID STRAINER, TYPE 304 STAINLESS STEEL BODY, WITH LKAD85 TAILPIECE.

PIPING CONNECTIONS
COLD WATER HOT WATER WASTE VENT
1/2" 1/2" 2" 1-1/2"

SK - 3
HANDICAPPED S.S. SINGLE BOWL SINK

P.C. TO CONFIRM WITH O.C. THAT CUTOUP REQUIREMENTS WILL WORK WITH CABINET INSIDE CLEARANCES PRIOR TO ORDERING.

SKILLS LAB 213, CLINICAL PREP 227

PLUMBING FIXTURE:
ELKAY LRAD21965 "LUSTERTONE" 22"X19.5" SINGLE COMPARTMENT 18"X14"X6.5" INSIDE BOWL, 18 GAUGE TYPE 304 STAINLESS STEEL, REAR CENTER DRAIN, 3 FAUCET HOLES 4" CENTERS, ADA COMPLIANT.

PLUMBING ACCESSORIES:
• AMERICAN STANDARD #6403.170 LV15 TWO HANDLE BOTTOM MOUNT FAUCET WITH QUARTER TURN 4" WRIST ACTION HANDLES WITH COLOR CODED INDICES, CHROME PLATED BRASS BODY WITH 9-1/2" SWIVEL/RIGID GOOSENECK, 1.5 GPM LAMINAR FLOW SPRAY DEVICE, CERAMIC DISC VALVE CARTRIDGES, AND COPPER/BRASS SUPPLY & WATERWAYS.
• SUPPLIES & QUARTER TURN STOP VALVES.
• DEARBORN #704-1 1-1/2" 17 GA. P-TRAP.
• LKAD18 1-1/2" DIAMETER OFFSET DRAIN WITH GRID STRAINER, TYPE 304 STAINLESS STEEL BODY, WITH LKAD85 TAILPIECE.

PIPING CONNECTIONS
COLD WATER HOT WATER WASTE VENT
1/2" 1/2" 2" 1-1/2"

DS - 1
DEEP WELL SINK

MECHANICAL PENTHOUSE M300

PLUMBING FIXTURE:
SWAN WF-F "VERTIK" 23-3/8" X 21-5/8" X 14-3/8" SINGLE UTILITY TUB, 16-GALLON CAPACITY, WALL MOUNTED.

PLUMBING ACCESSORIES:
• CHICAGO FAUCETS 631-L8VB2-2CP BACKSPASH MOUNTED FAUCET WITH ADJUSTABLE ARM FOR 7.25" TO 8.75" CENTERS, CHROME PLATED, 8" L-TYPE SWING SPOUT WITH ATMOSPHERIC VACUUM BREAKER AND 3/4" HOSE THREAD MALE OUTLET WITH ADAPTER, AND 4" VANDAL PROOF METAL WRISTBLADE HANDLES WITH BLUE AND RED INDEX BUTTONS.
• STOPPER, STRAINER BODY AND P-TRAP.

PIPING CONNECTIONS
COLD WATER HOT WATER WASTE VENT
3/4" 3/4" 2" 1-1/2"

MS - 1
MOP SINK

CUSTODIAL 136, CUSTODIAL 210

WALL GUARD

5"

36" (CONFIRM WITH OWNER)

2'-8"

PLUMBING FIXTURE:
ZURN Z1996-24 24"X24"X10" MOLDED HIGH DENSITY COMPOSITE BASIN.

PLUMBING ACCESSORIES:
• W/ AMER. STD. #6344.112 EXPOSED YOKE FAUCET W/ VACUUM BREAKER W/ TOP BRACE, DISC VALVE CARTRIDGES, INTEGRAL SUPPLY STOPS, OFFSET SHANKS WITH INTEGRAL CHECK VALVES, CAST BRASS BODY, VANDAL-RESISTANT BRASS LEVER HANDLES & BRASS SPOUT WITH BUCKET HOOK.
• AMER. STD. ACCESSORIES HM HOSE AND BRACKET, & MM MOP HANGER.
• WOODFORD MODEL 24, ANTI SIPHON, VACUUM BREAKER PROTECTED. VERIFY INSTALLATION HEIGHT WITH OWNER FOR OWNER'S CHEMICAL DISPENSER. INSTALL ON COLD WATER RUNOUT TO MOP SINK FAUCET.

PIPING CONNECTIONS
COLD WATER HOT WATER WASTE VENT
DITY (2) 3/4" 3/4" 2" 1-1/2"

WS - 1
WASHER SUPPLY BOX

LAUNDRY 214, MECHANICAL PENTHOUSE M300

VERIFY W/ ARCHITECT

PLUMBING FIXTURE:
SIOUX CHIEF OX BOX MODEL 696-2313, ABS WHITE, 11.5"W X 7.25"H X 3.5"D RECESSED BOX W/ 2" DRAIN FITTING.

PLUMBING ACCESSORIES:
• (2) 1/2" QUARTER TURN BALL VALVES.
• (2) WATER HAMMER ARRESTERS.
• 2" WASTE AND P-TRAP.

PIPING CONNECTIONS
COLD WATER HOT WATER WASTE VENT
1/2" 1/2" 2" 1-1/2"

EWC - 1 - XX
HANDICAPPED TWO STATION FILTERED WATER COOLER WITH BOTTLE FILLER

CIRCULATION 133, CIRCULATION 204

BOTTLE FILLER

APRON (ADA)

ACCESSORY (ADA)

SEE SUFFIX "-XX" ON PLANS WHICH DENOTES ADA COMPLIANT MOUNTING HEIGHTS

PLUMBING FIXTURE:
ELKAY #L2STLW4LXK, 8 GALLON, FILTERED, FREE OF LEAD CONTAINING COMPONENTS, ADJUSTABLE TEMPERATURE CONTROLLER, FLEXI-GUARD SAFETY BUBBLER, 370 WATTS, 5.0 AMPS.

PLUMBING ACCESSORIES:
• PROVIDE NECESSARY CARRIER.
• ELKAY #LKAPREZL APRON.
• PROVIDE WITH ONE ADDITIONAL FILTER PER FIXTURE FOR OWNER'S USE.

PIPING CONNECTIONS
COLD WATER HOT WATER WASTE VENT
1/2" 1/2" 2" 1-1/2"

BF - 1
HANDICAPPED FILTERED BOTTLE FILLER, REFRIGERATED

COMMONS STUDY SPACE 100

INCLUDE 'BOTTLES SAVED' COUNTER

(ADA)

PLUMBING FIXTURE:
ELKAY #LZSRNKK E2H2O BOTTLE FILLER, FILTERED, 8 GPH CHILLING CAPACITY, 1.1 GPM FILL RATE, FREE OF LEAD CONTAINING COMPONENTS, ADJUSTABLE TEMPERATURE CONTROL, 370 WATTS, 5.0 AMPS, STAINLESS STEEL WITH ABS PLASTIC ALCOVE.

PLUMBING ACCESSORIES:
• MOUNTING FRAME MPWS100 INCLUDED WITH PRODUCT.
• PROVIDE WITH ONE ADDITIONAL FILTER FOR OWNER'S USE.

PIPING CONNECTIONS
COLD WATER HOT WATER WASTE VENT
1/2" 1/2" 2" 1-1/2"

H - 1
EXTERIOR WALL HYDRANT

MULTIPLE LOCATIONS

GRADE

18"

PLUMBING FIXTURE:
WOODFORD MODEL 67, AUTOMATIC DRAINING, FREEZELESS, BACKFLOW PROTECTED. (OR EQUAL)

PLUMBING ACCESSORIES:
• ACCESSIBLE ISOLATION VALVE.

PIPING CONNECTIONS
COLD WATER HOT WATER WASTE VENT
3/4" 3/4" 2" 1-1/2"

CWF - 1
COLD WATER SYSTEM FILL

1" CW FILL

TERMINATE AT FLOOR DRAIN

FLEX HOSE WITH FEMALE CONNECTIONS.

MECHANICAL/ELECTRICAL 147

PLUMBING FIXTURE:
WOODFORD MODEL 24, ANTI SIPHON, VACUUM BREAKER PROTECTED, VERIFY MOUNTING HEIGHT WITH OWNER.

PLUMBING ACCESSORIES:
• WILKINS MODEL 97XAL-AG REDUCED PRESSURE PRINCIPLE ASSEMBLY.
• FLEX HOSE WITH FEMALE CONNECTIONS.

PIPING CONNECTIONS
COLD WATER HOT WATER WASTE VENT
1" 3/4" 2" 1-1/2"

FD **FD**
2" ADJUSTABLE FLOOR DRAIN

PLUMBING FIXTURE:
SIOUX CHIEF MODEL 822-2PNR ADJUSTABLE ON-GRADE FLOOR DRAIN. LIGHT DUTY ROUND NICKEL-BRONZE STRAINER IN PEDESTRIAN LOAD AREAS ONLY.

PIPING CONNECTIONS
COLD WATER HOT WATER WASTE VENT
2" SEE PLAN

FD **FD**
2" ADJUSTABLE FLOOR DRAIN

PLUMBING FIXTURE:
SIOUX CHIEF MODEL 822-MFSPNR ADJUSTABLE CORE FLOOR DRAIN WITH DECK FLANGE. 18 GAUGE STAINLESS STEEL DECK/MOUNTING FLANGE AND PVC BODY WITH SCH. 40 HUB CONNECTION. LIGHT DUTY ROUND NICKEL-BRONZE STRAINER IN PEDESTRIAN LOAD AREAS ONLY.

PIPING CONNECTIONS
COLD WATER HOT WATER WASTE VENT
2" SEE PLAN

FS - 1 **FS - 1**
FLOOR SINK

PLUMBING FIXTURE:
ZURN MODEL FD2375 CAST IRON FLOOR SINK, WITH WHITE ACID-RESISTING PORCELAIN ENAMEL COATING AND ABS ANTI-SPLASH DOME WITH 3/4" GRATE.

PIPING CONNECTIONS
COLD WATER HOT WATER WASTE VENT
2" SEE PLAN

FS - 2 **FS - 2**
WATER SERVICE FLOOR SINK

PLUMBING FIXTURE:
ZURN MODEL FD2375 CAST IRON FLOOR SINK, WITH WHITE ACID-RESISTING PORCELAIN ENAMEL COATING AND ABS ANTI-SPLASH DOME WITH 3/4" GRATE.

PIPING CONNECTIONS
COLD WATER HOT WATER WASTE VENT
2" SEE PLAN

CO **CO**
ADJUSTABLE CLEAN OUT

PLUMBING FIXTURE:
SIOUX CHIEF MODEL 834-4D-NR, 4" NO-HUB CONNECTION. LIGHT DUTY NICKEL IN PEDESTRIAN LOAD AREAS ONLY. CLEANOUT SHALL ALLOW ADJUSTMENT OF 1.25" BEFORE THE CONCRETE POUR, AND 1.25" AFTER THE CONCRETE POUR

PIPING CONNECTIONS
COLD WATER HOT WATER WASTE VENT
2" SEE PLAN

EXT CO **EXT CO**
EXTERIOR CLEAN OUT

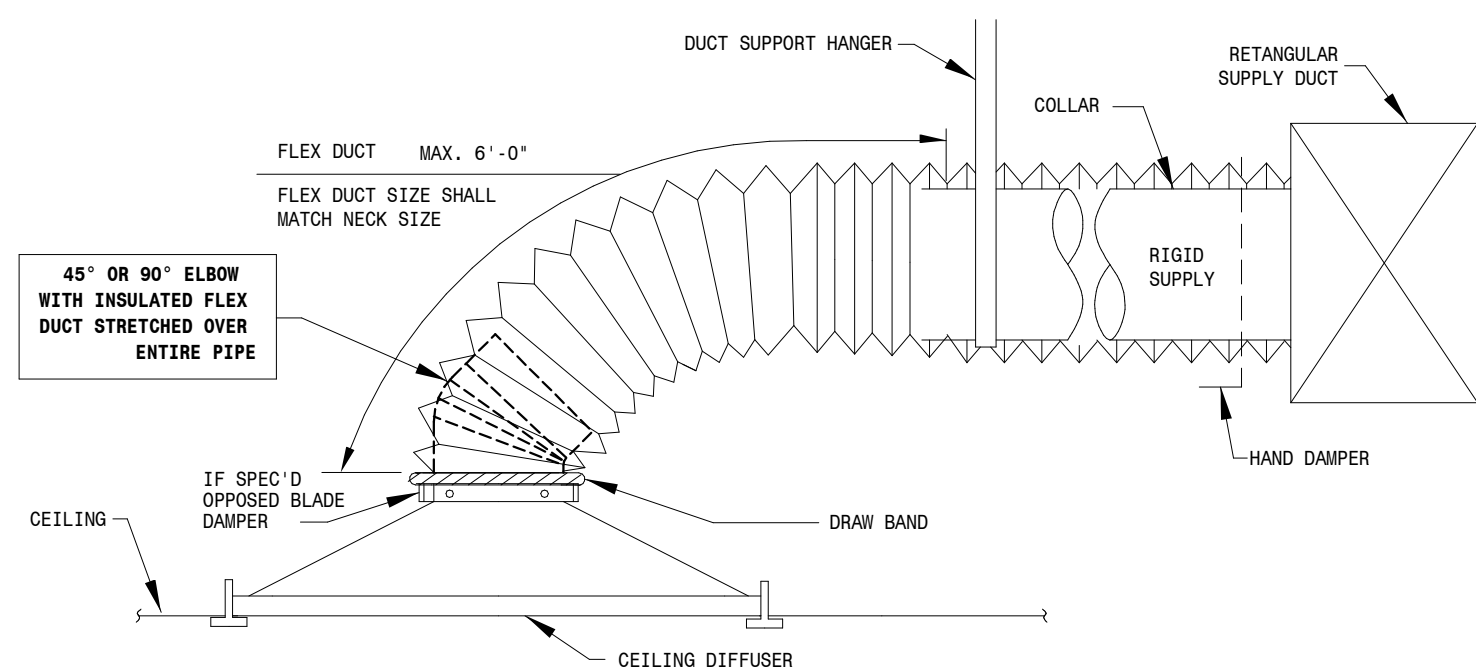
PLUMBING FIXTURE:
ZURN Z1474-N HEAVY DUTY CLEAN OUT HOUSING WITH DURA-COATED CAST IRON TOP AND INTERNAL Z1440 CLEANOUT FERRULE WITH PLUG. INSTALL IN 18"X18"X6" CONCRETE PAD AND INSTALL FLUSH WITH SURROUNDING SURFACE.

PIPING CONNECTIONS
COLD WATER HOT WATER WASTE VENT
2" SEE PLAN

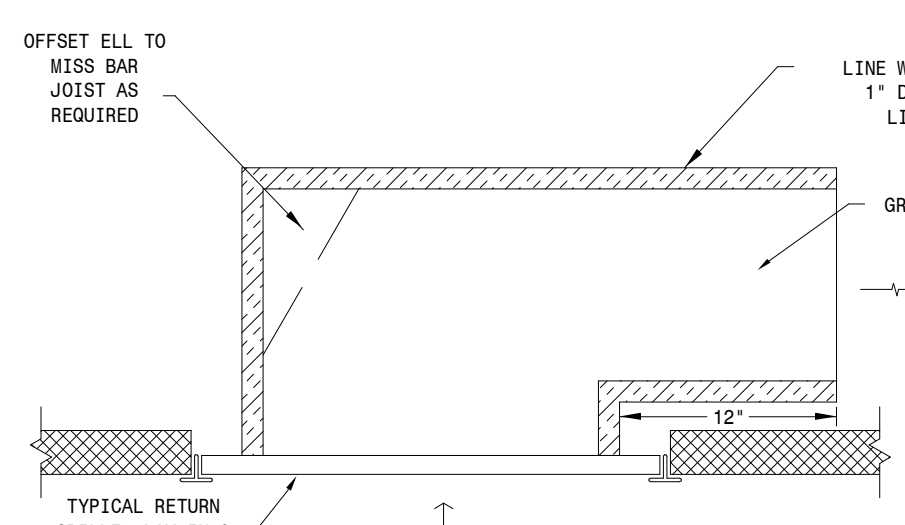
PRIOR TO ALL PLUMBING ROUGH-INS FOR ALL PLUMBING FIXTURES COORDINATE WITH GC & REFER TO ARCHITECTURAL ELEVATIONS.

DOMESTIC PIPING SHALL BE INSTALLED WITH PROPER SAFEGUARDS TO PREVENT WATER HAMMER. THIS WILL BE DONE BY INSTALLING A SUFFICIENT NUMBER OF PREMANUFACTURED SMOCK ABSORBERS. SMOCK ABSORBERS SHALL BE RATED OR EQUAL, EXACT MODELS TO BE INSTALLED PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.

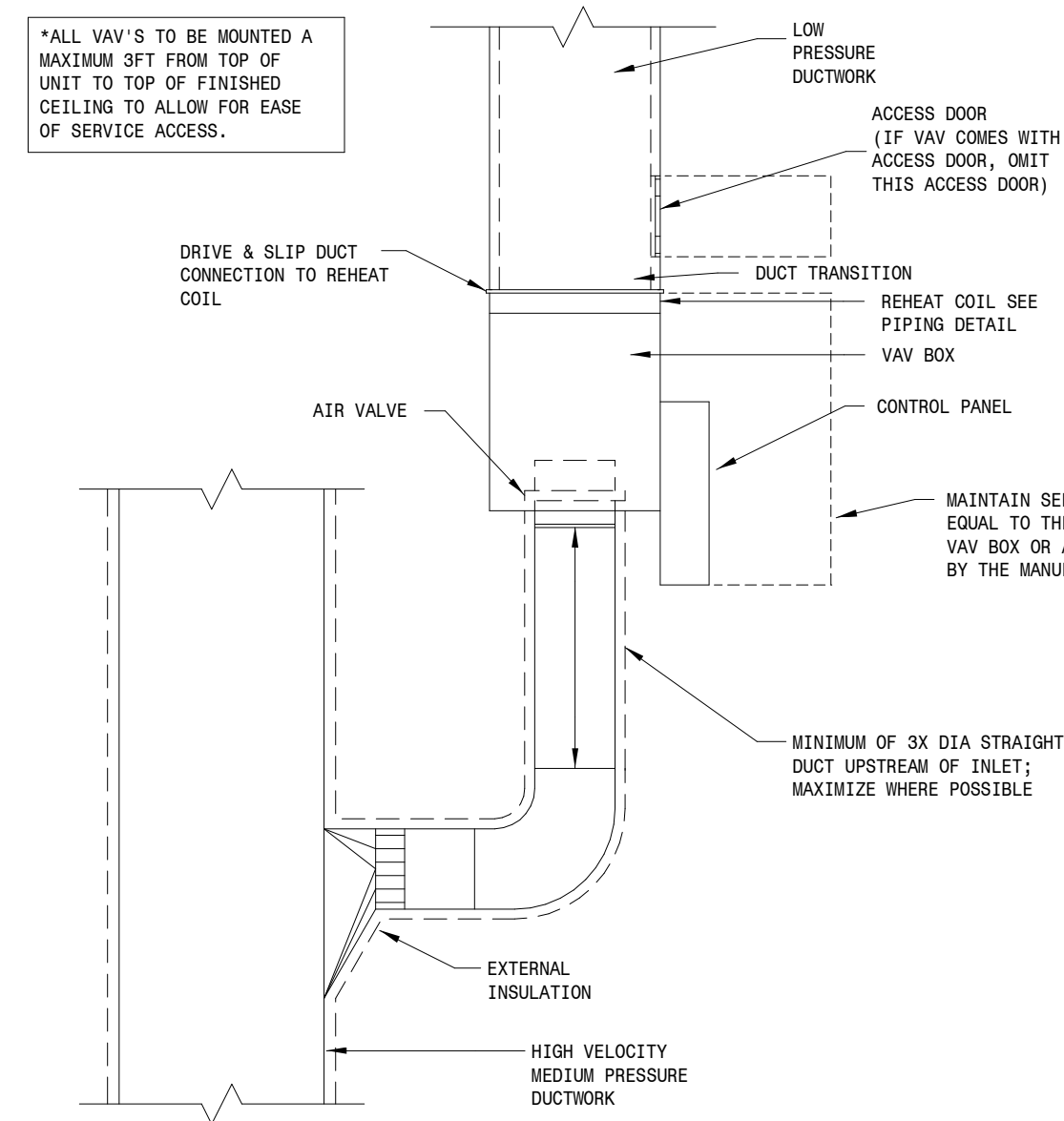
FIXTURE FLOW RATES TO BE WITHIN +/- 30% OF SPECIFIED FLOW.



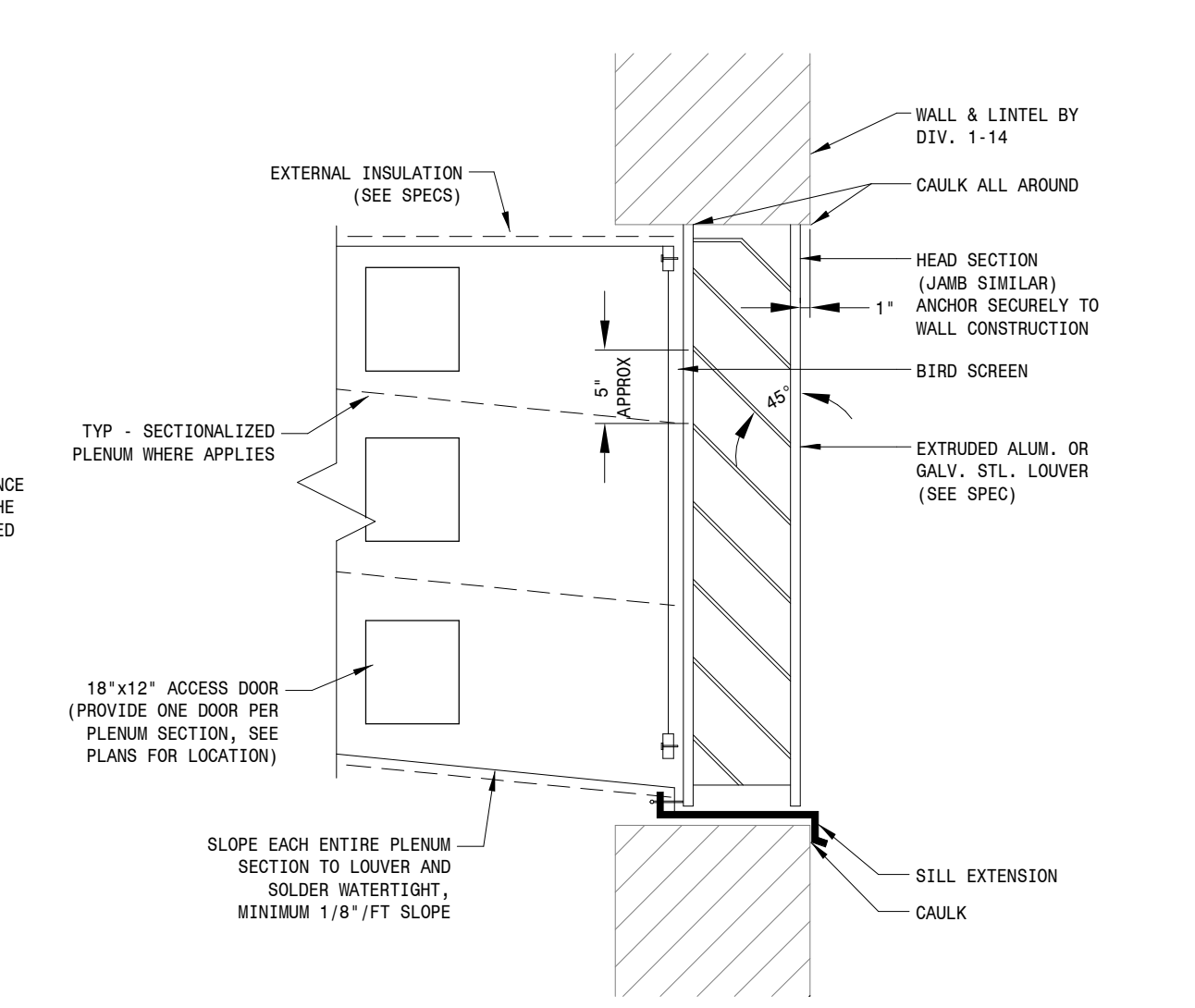
Typical Diffuser Connection Detail
NOT TO SCALE



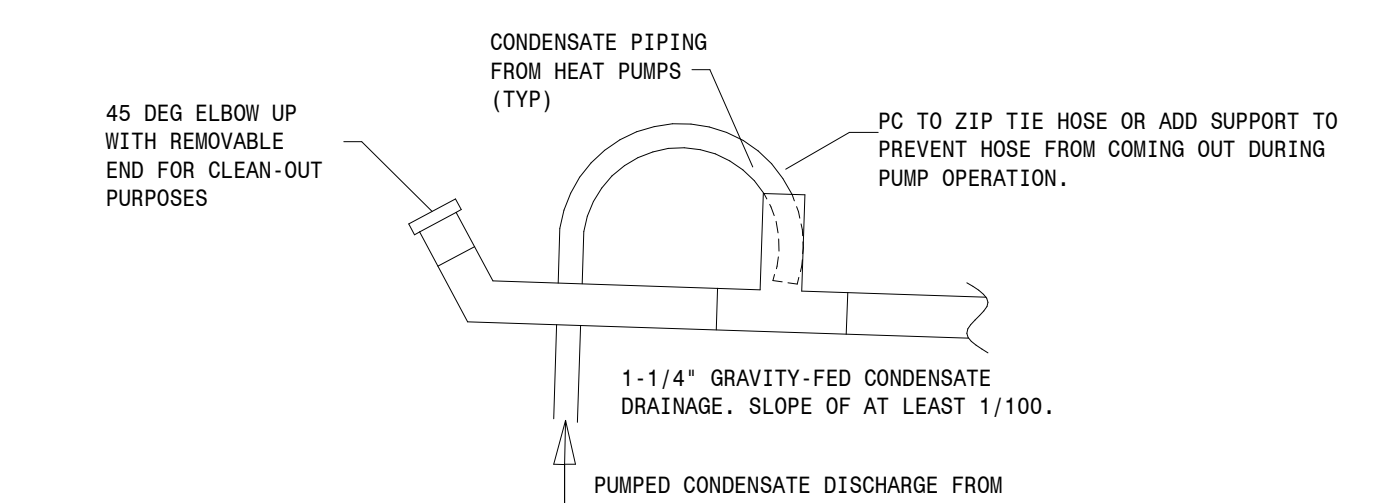
Insulated Return Elbow Detail
NOT TO SCALE



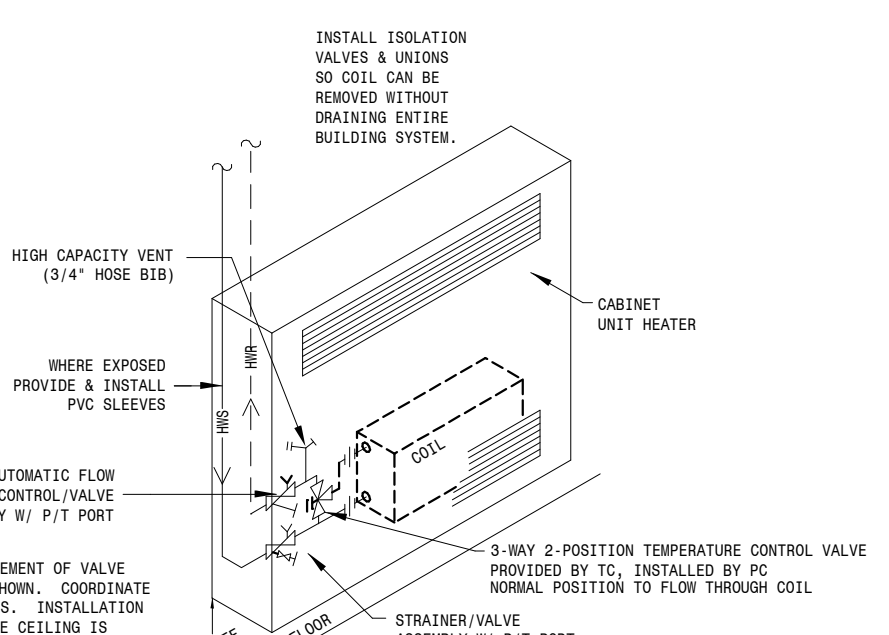
VAV Box Duct Connection Detail
NOT TO SCALE



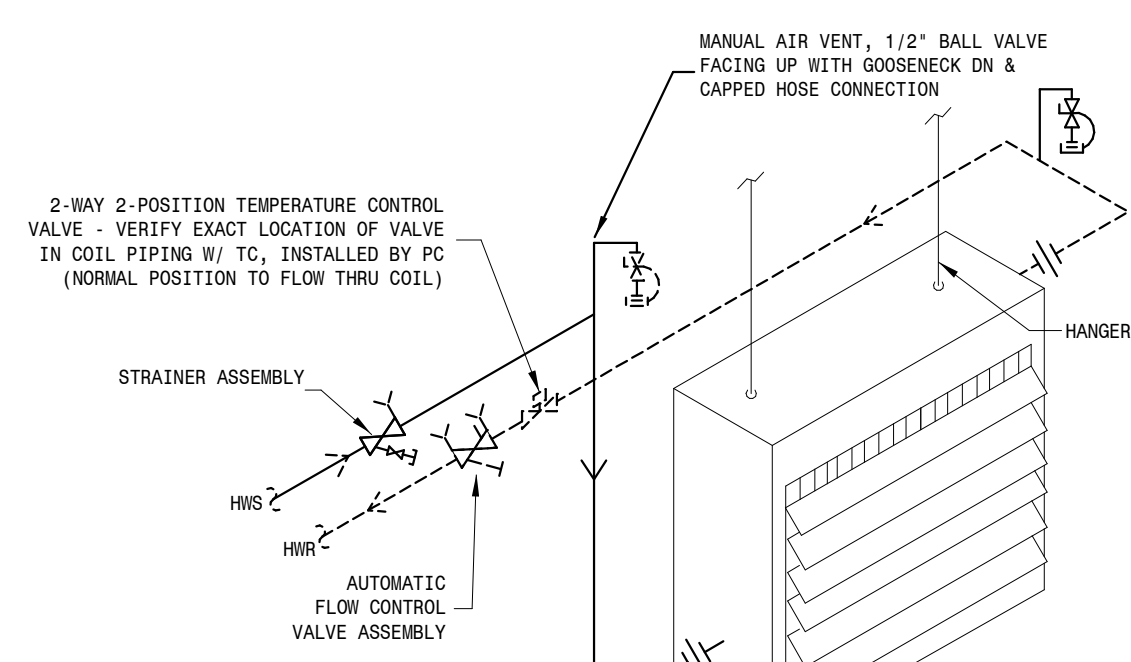
Stationary Louver Detail
NOT TO SCALE



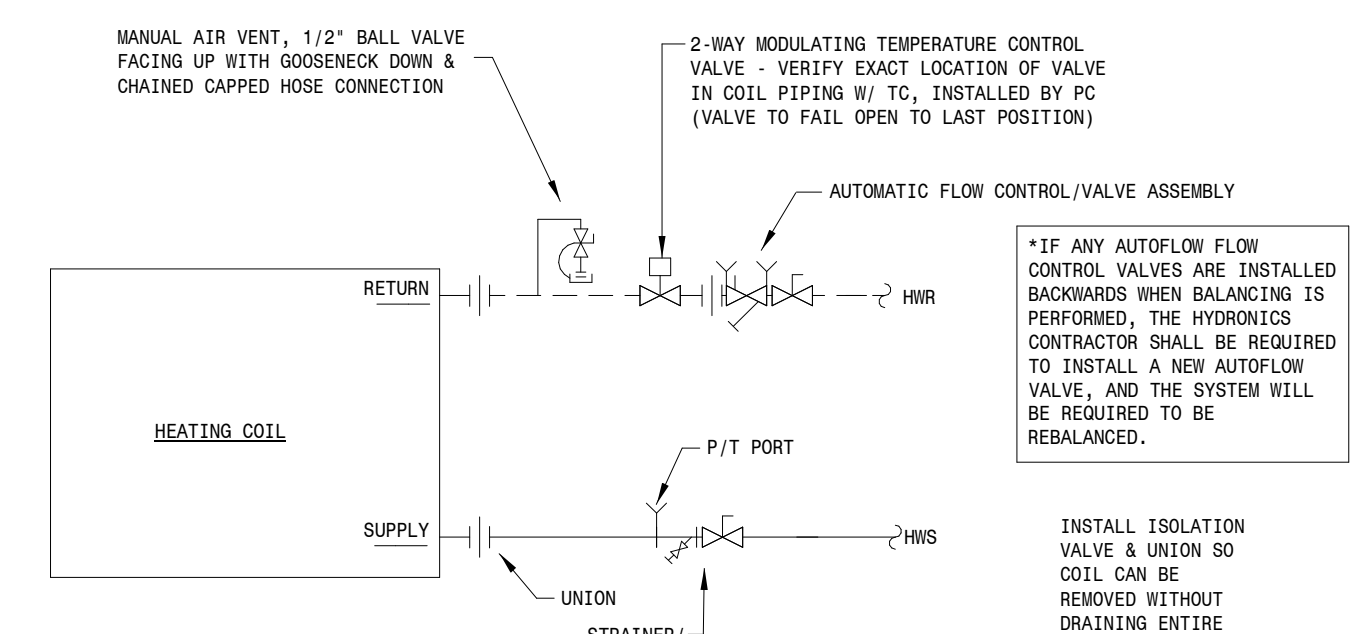
Typical Connection from Unit to Condensate Drainage Detail
NOT TO SCALE



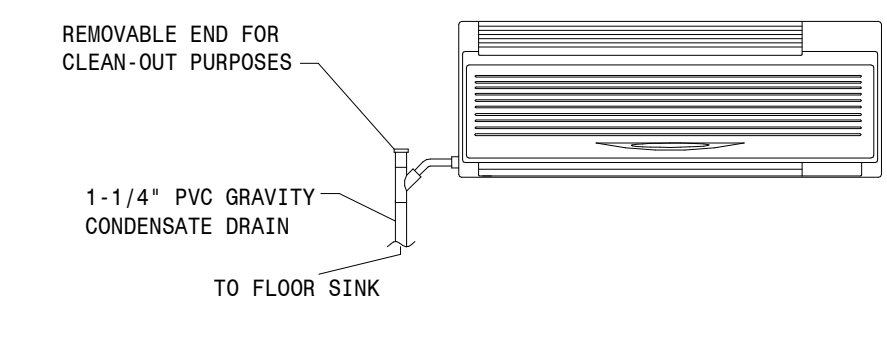
Cabinet Unit Heater Piping Detail
NOT TO SCALE



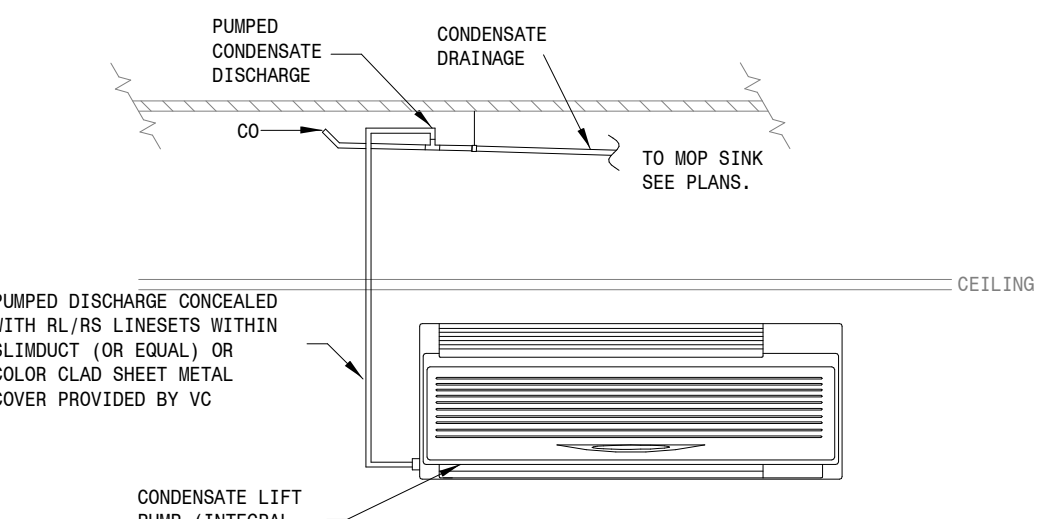
Hanging Unit Heater Piping Detail
NOT TO SCALE



VAV Heating Coil Piping Detail
NOT TO SCALE



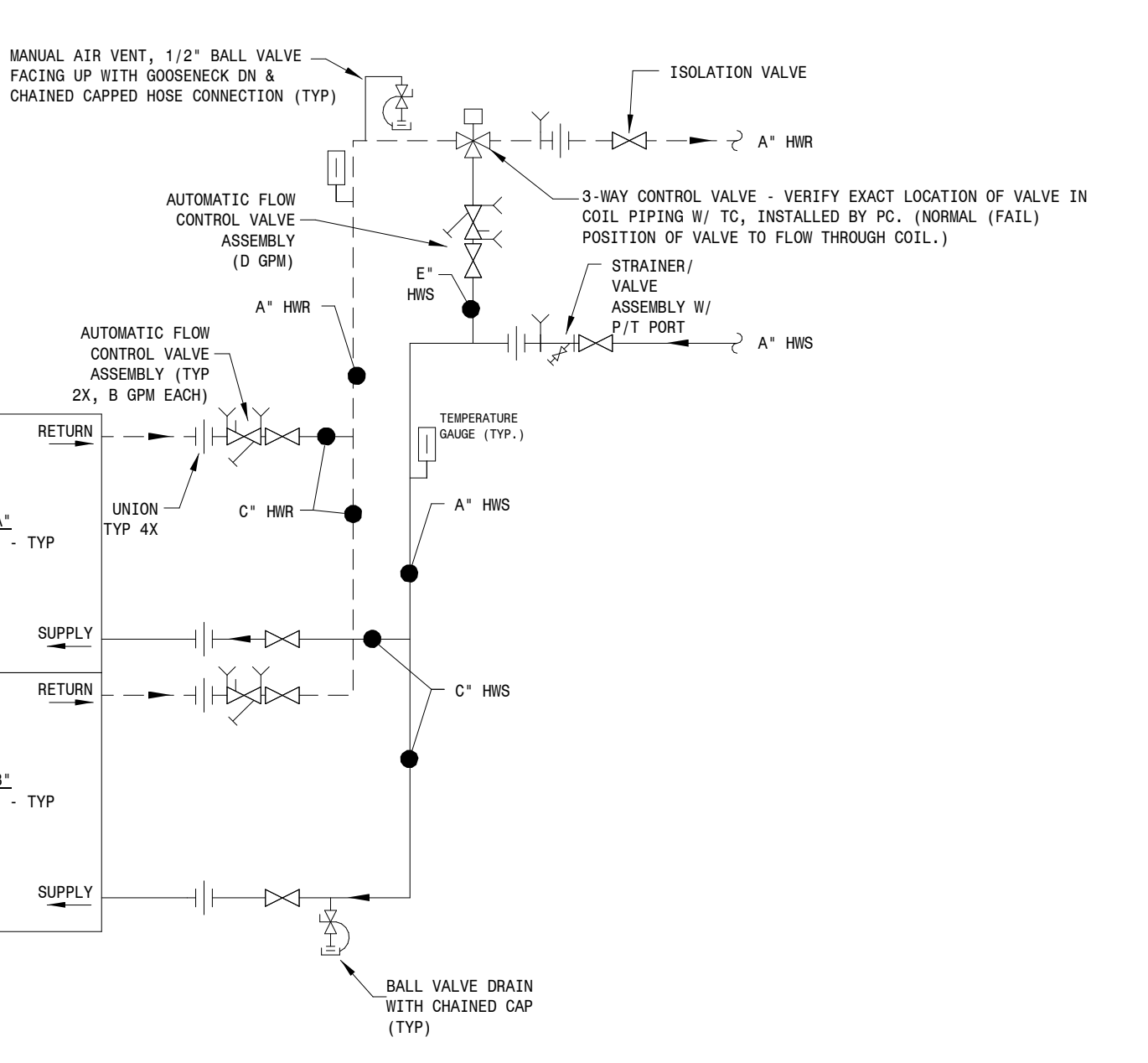
Condensate Gravity Discharge Detail
NOT TO SCALE



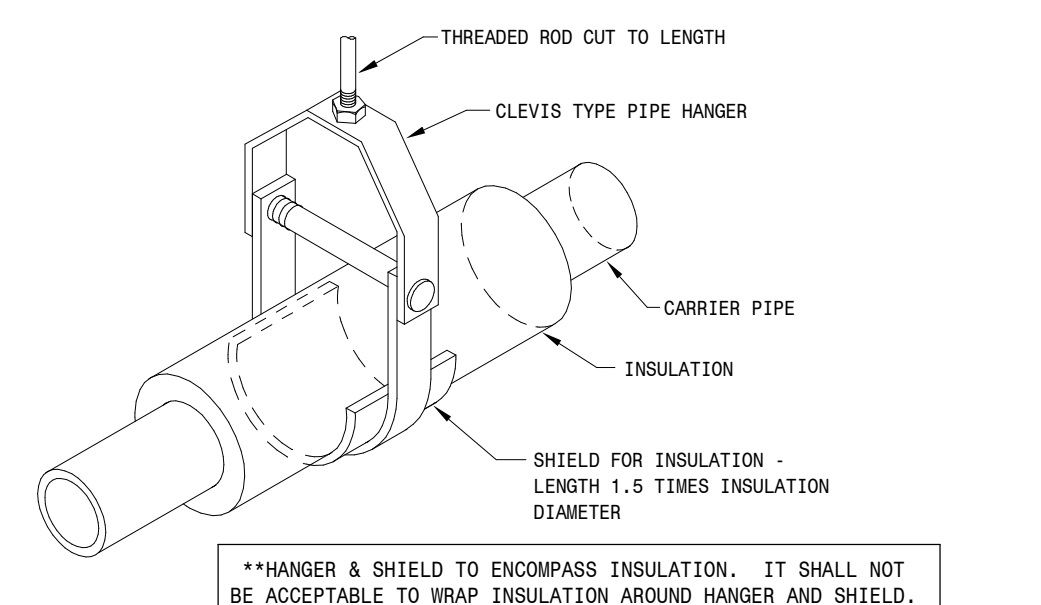
Condensate Pumped Discharge Detail
NOT TO SCALE

AHU COOLING COIL FLOWS & SIZES

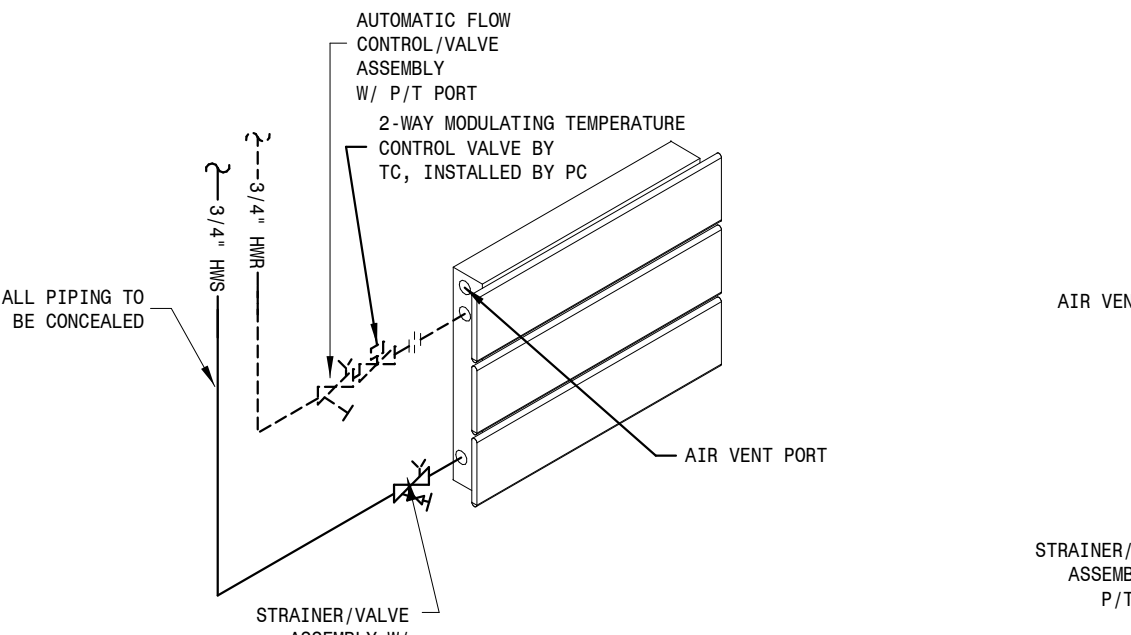
AHU	AHU RUNOUT SIZE - "A" (IN)	COIL FLOW "B" (GPM)	COIL RUNOUT SIZE "C" (IN)	BYPASS FLOW "D" (GPM)	BYPASS SIZE "E" (IN)
100	3"	41.7	2-1/2"	44.0	2-1/2"
200	3"	41.3	2-1/2"	43.5	2-1/2"
300	3"	50.1	2-1/2"	52.7	2-1/2"



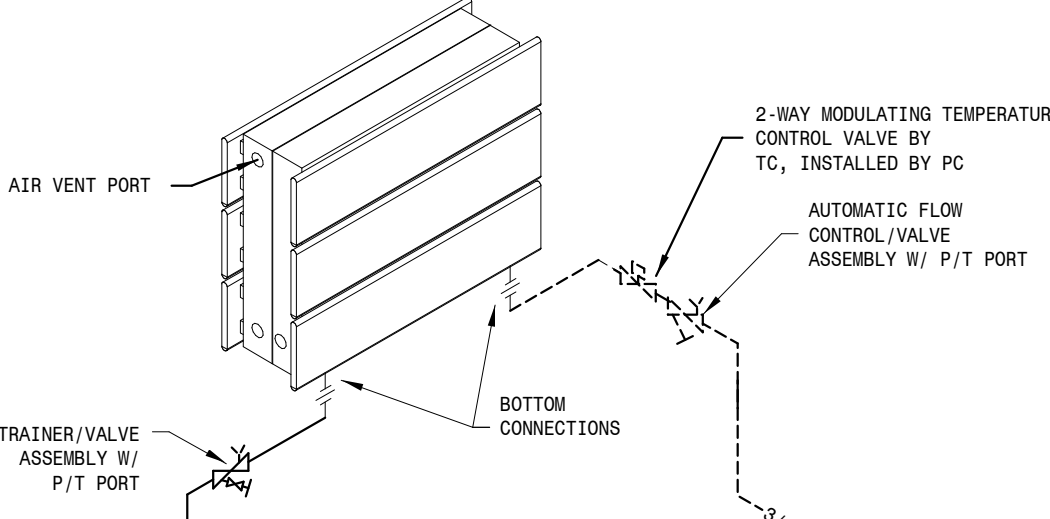
Stacked Cooling Coil Piping Detail (AHU-100,200,&300)
NOT TO SCALE



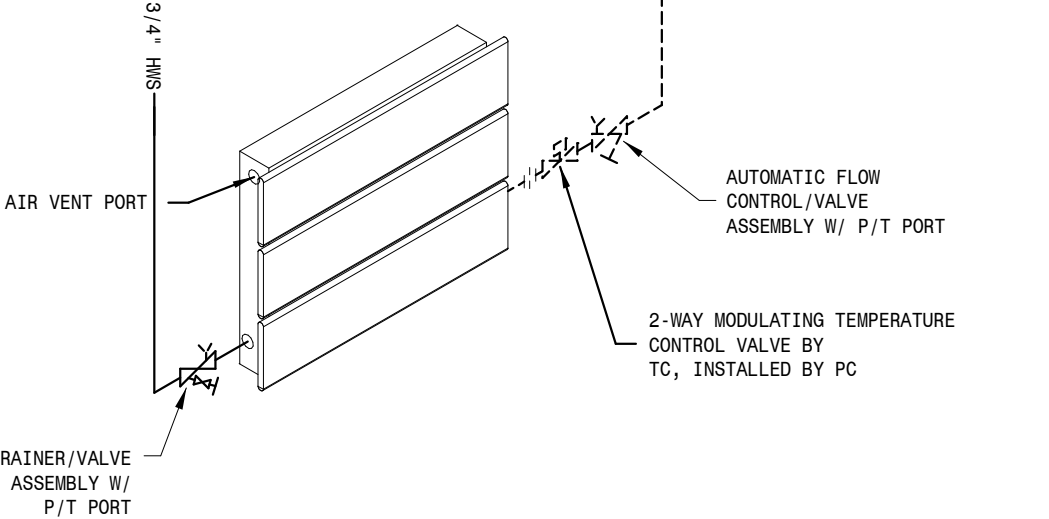
Clevis Type Pipe Hanger For Insulated Pipe Detail
NOT TO SCALE



Return Same Side (Down-fed)



Up-fed

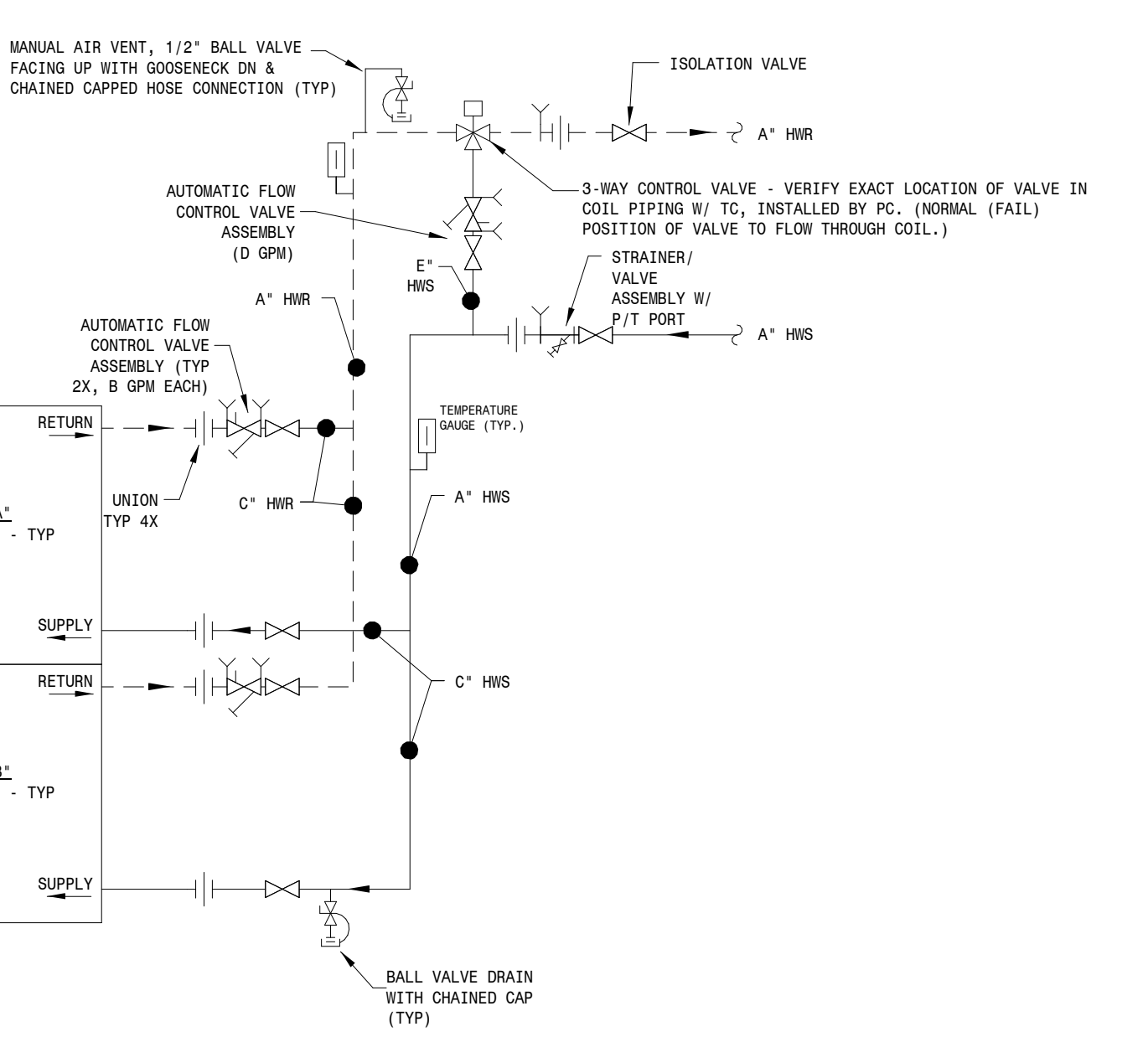


Return Opposite Side-fed

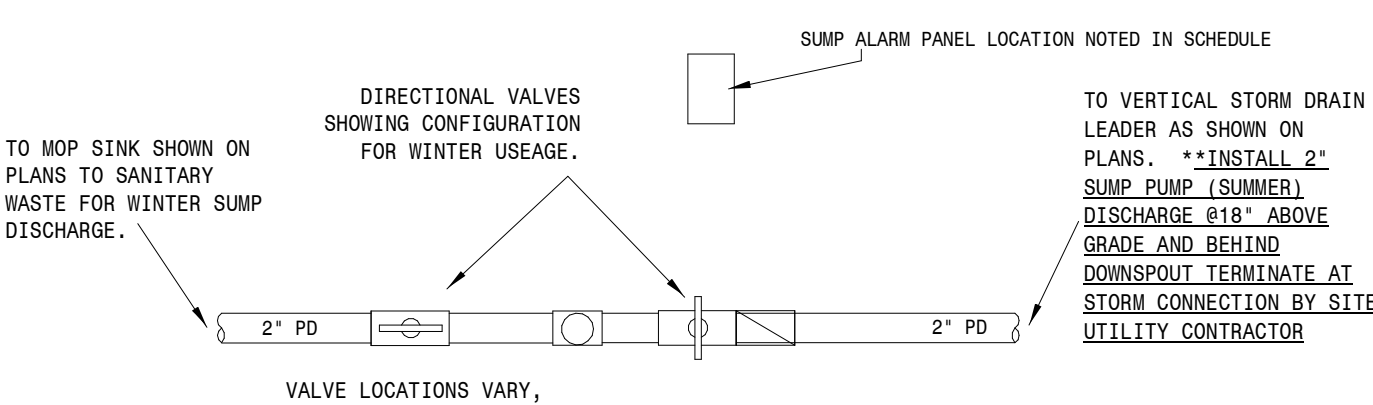
Pedestal Wall-Panel Radiation Piping Detail
NOT TO SCALE

AHU HEATING COIL FLOWS & SIZES

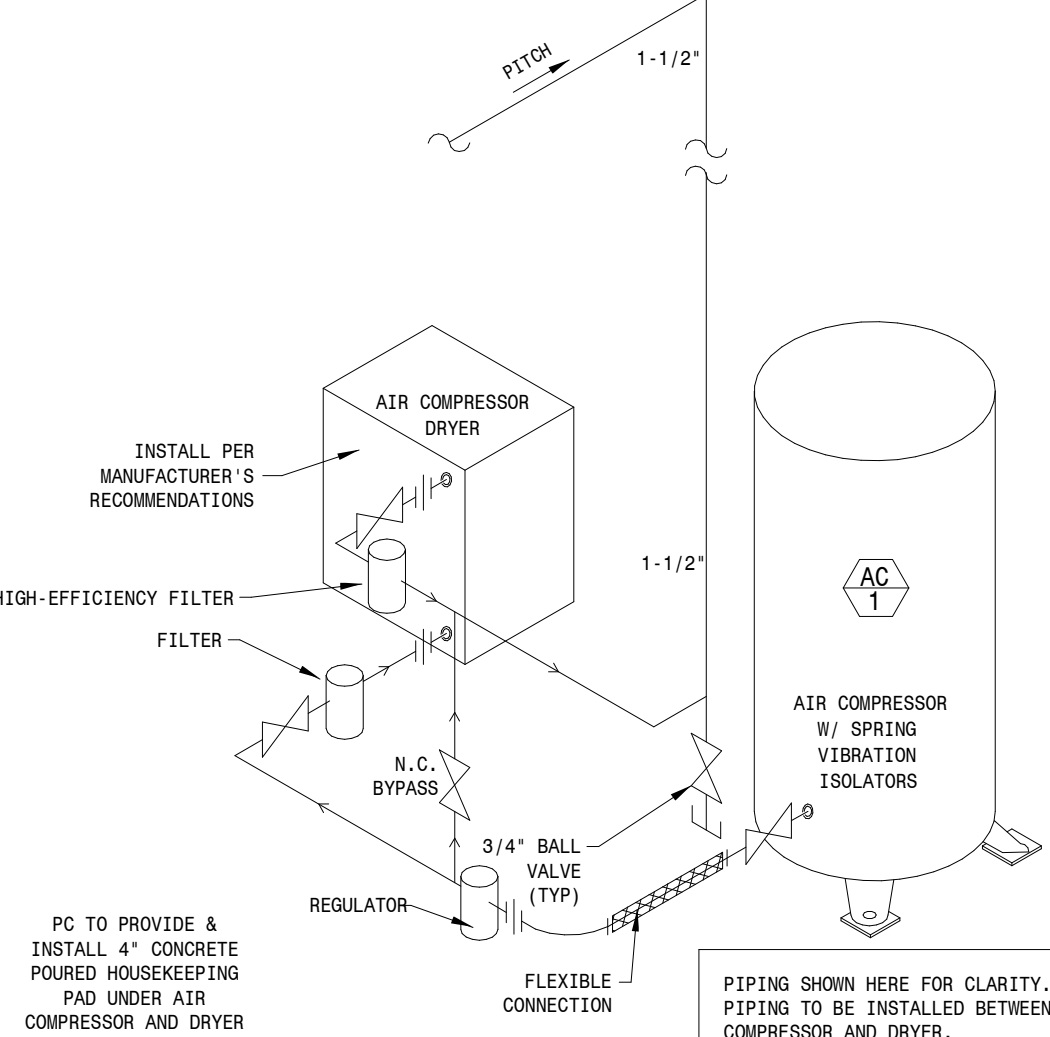
AHU	AHU RUNOUT SIZE - "A" (IN)	COIL FLOW "B" (GPM)	COIL RUNOUT SIZE "C" (IN)	BYPASS FLOW "D" (GPM)	BYPASS SIZE "E" (IN)
100	1-1/2"	7.9	1-1/2"	8.8	1-1/4"
200	2"	11.8	1-1/2"	13.0	1-1/2"
300	2"	15.2	1-1/2"	16.5	1-1/2"



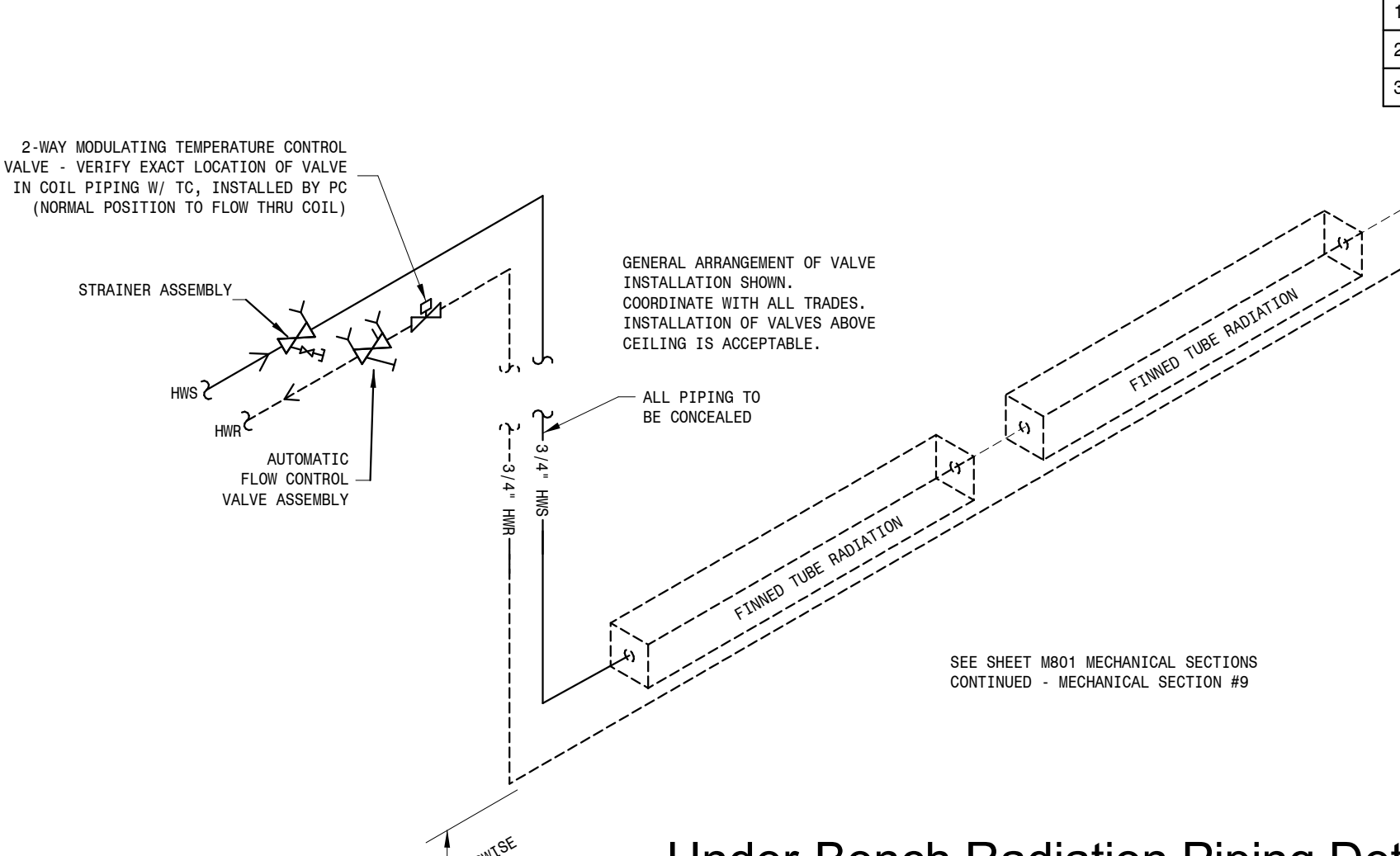
Stacked Heating Coil Piping Detail (AHU-100,200,&300)
NOT TO SCALE



Sump Basin & Pump Piping Detail
NOT TO SCALE



Air Drop to Compressor Detail
NOT TO SCALE



Under-Bench Radiation Piping Detail
NOT TO SCALE



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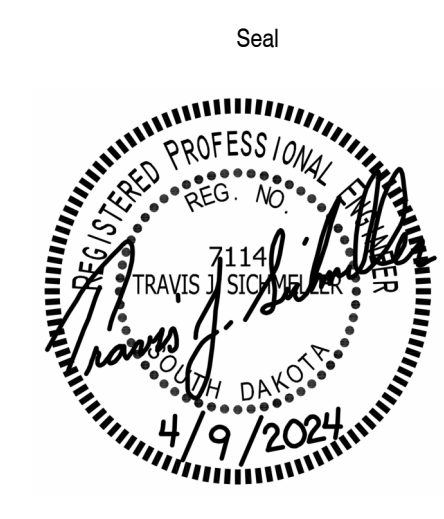
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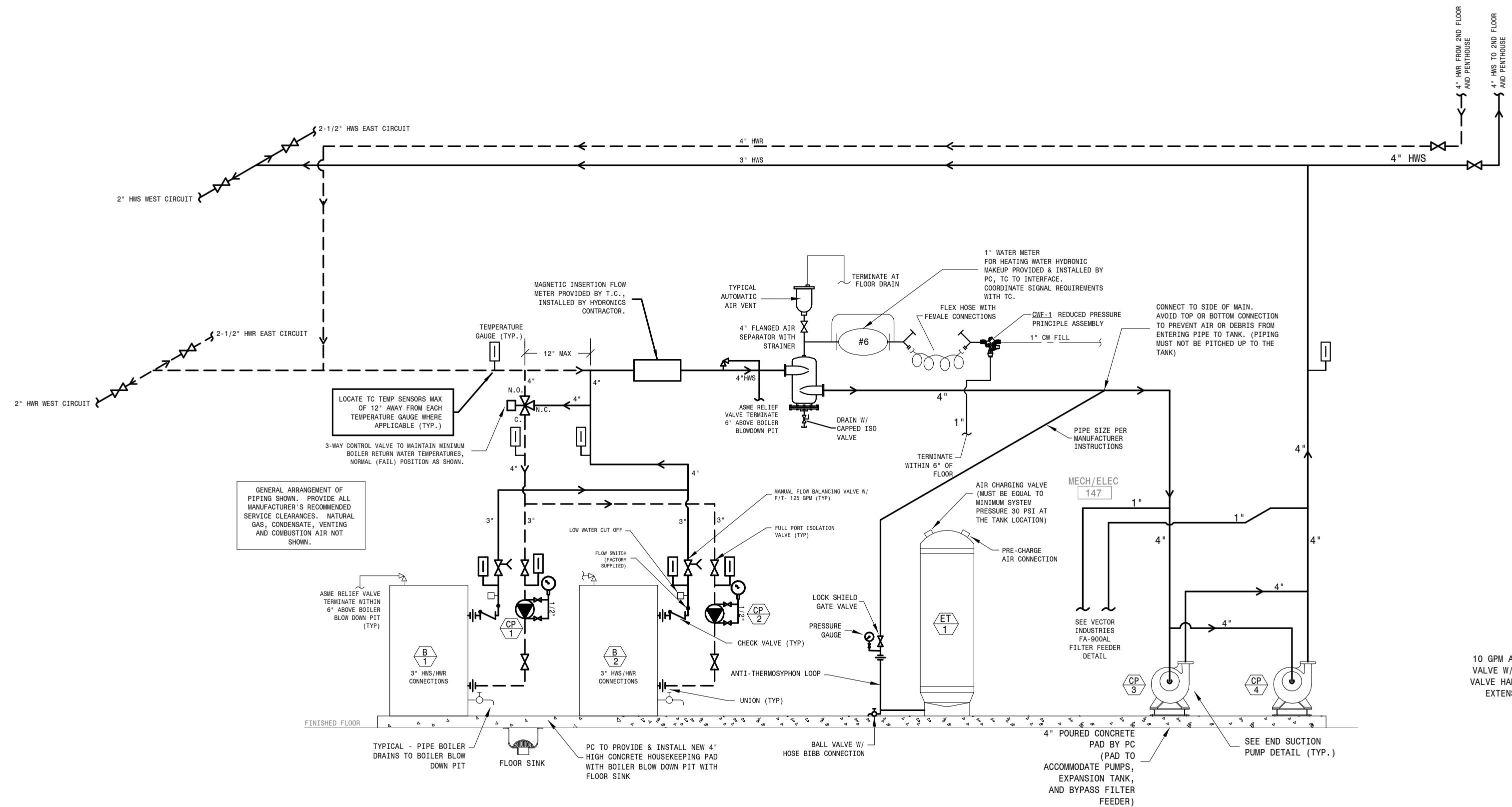
Seal Issue Date
100% CONSTRUCTION DOCUMENTS 9 APRIL 2024

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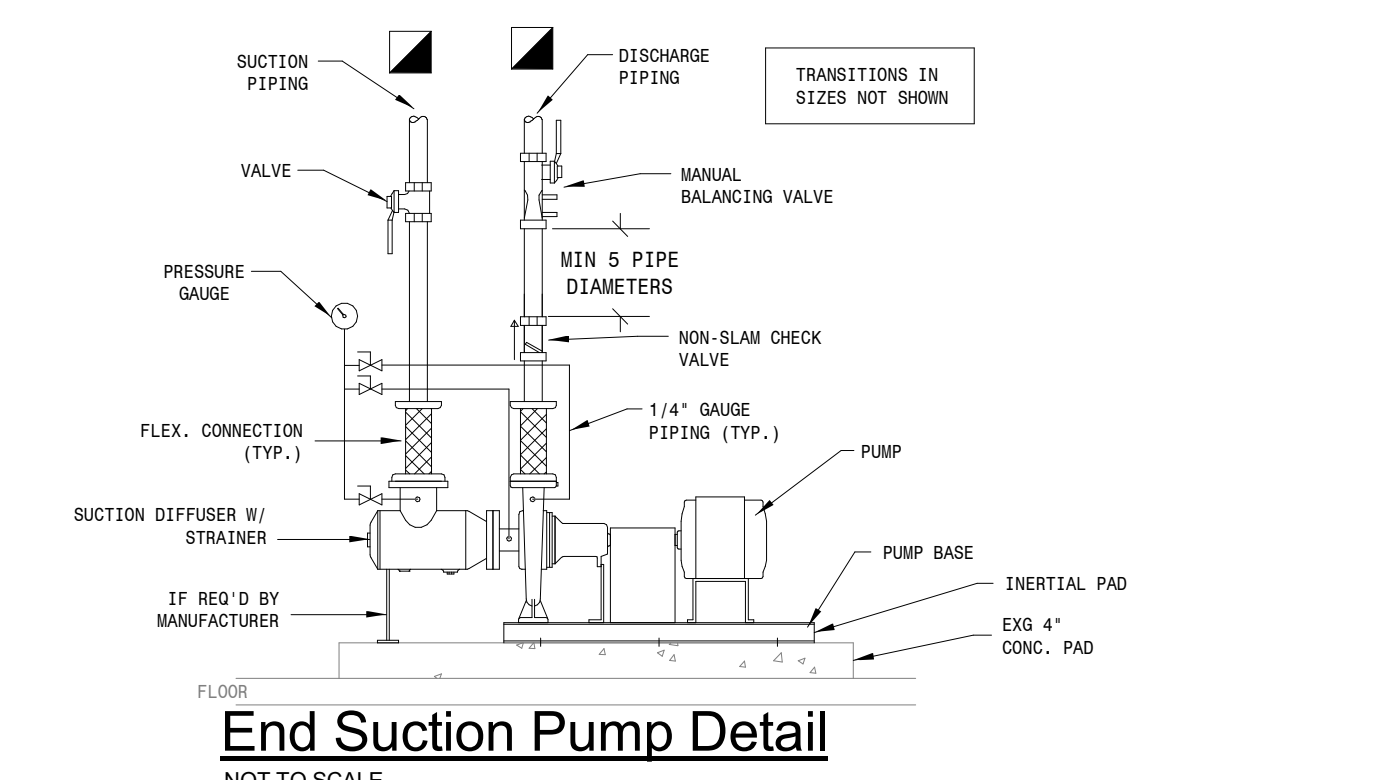
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Drawn By: SICHMELLER ENGINEERING
Reviewed By: TS
Approved By: TS

MECHANICAL DETAILS (1 OF 4)

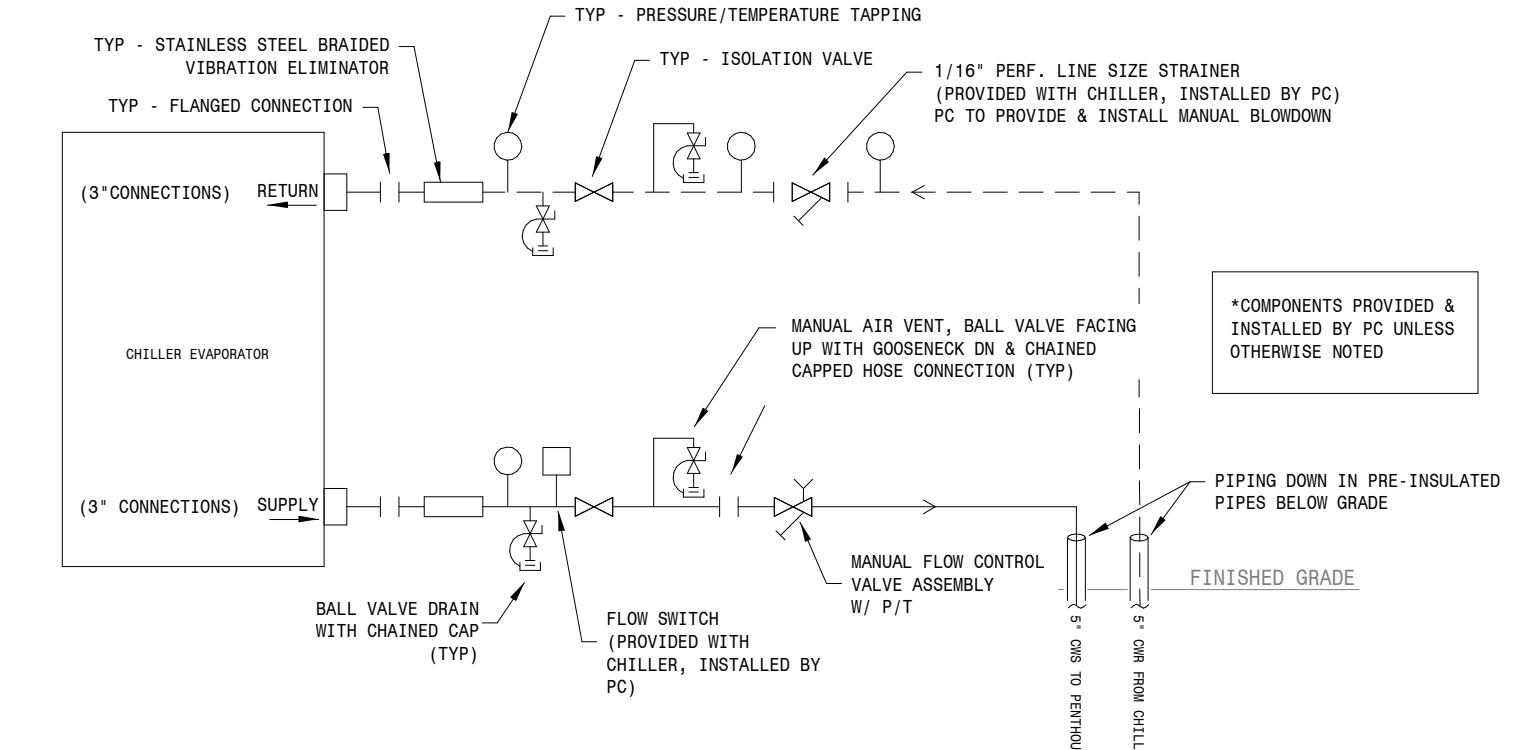
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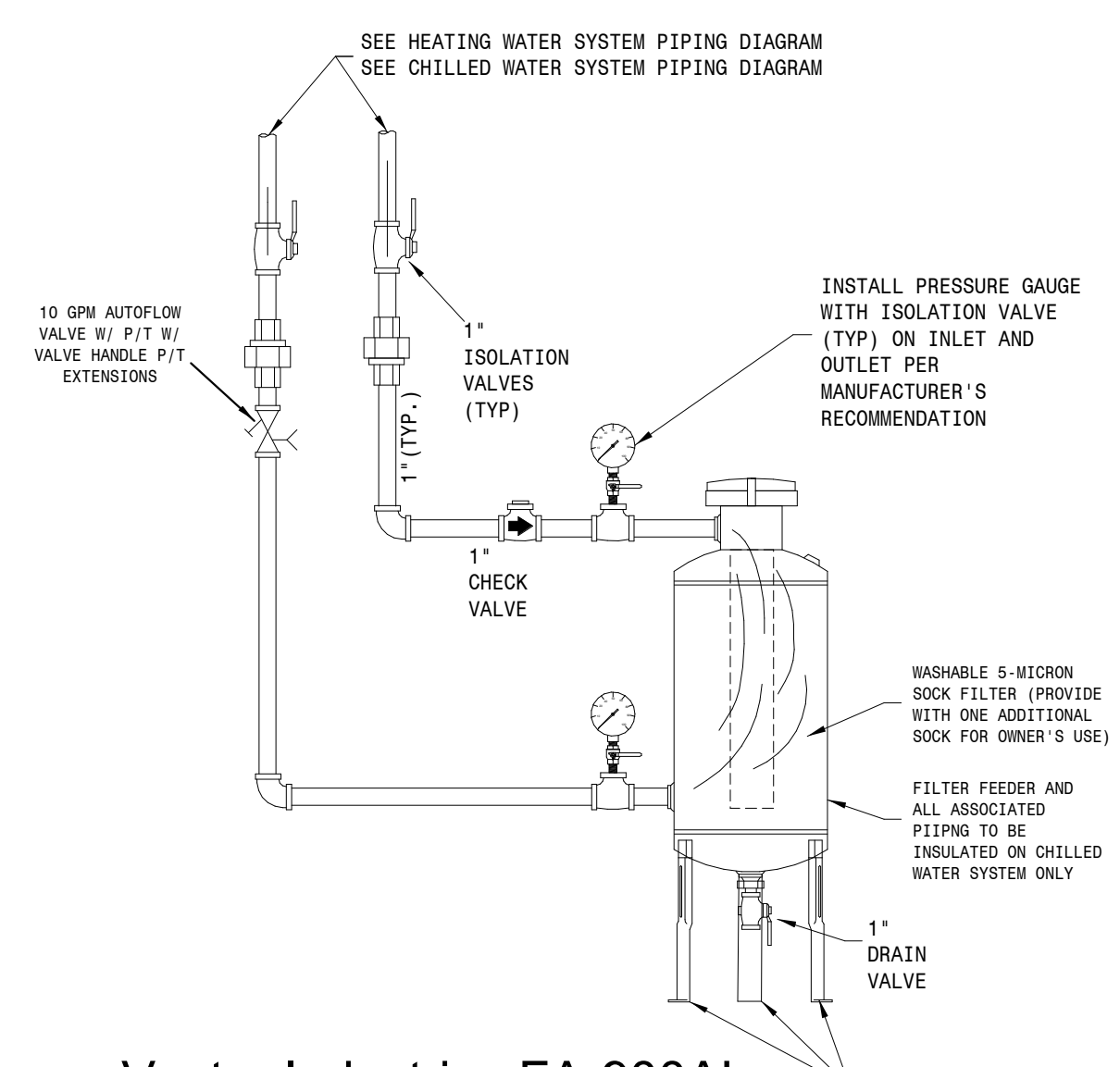
Heating Water System Piping Diagram
NOT TO SCALE



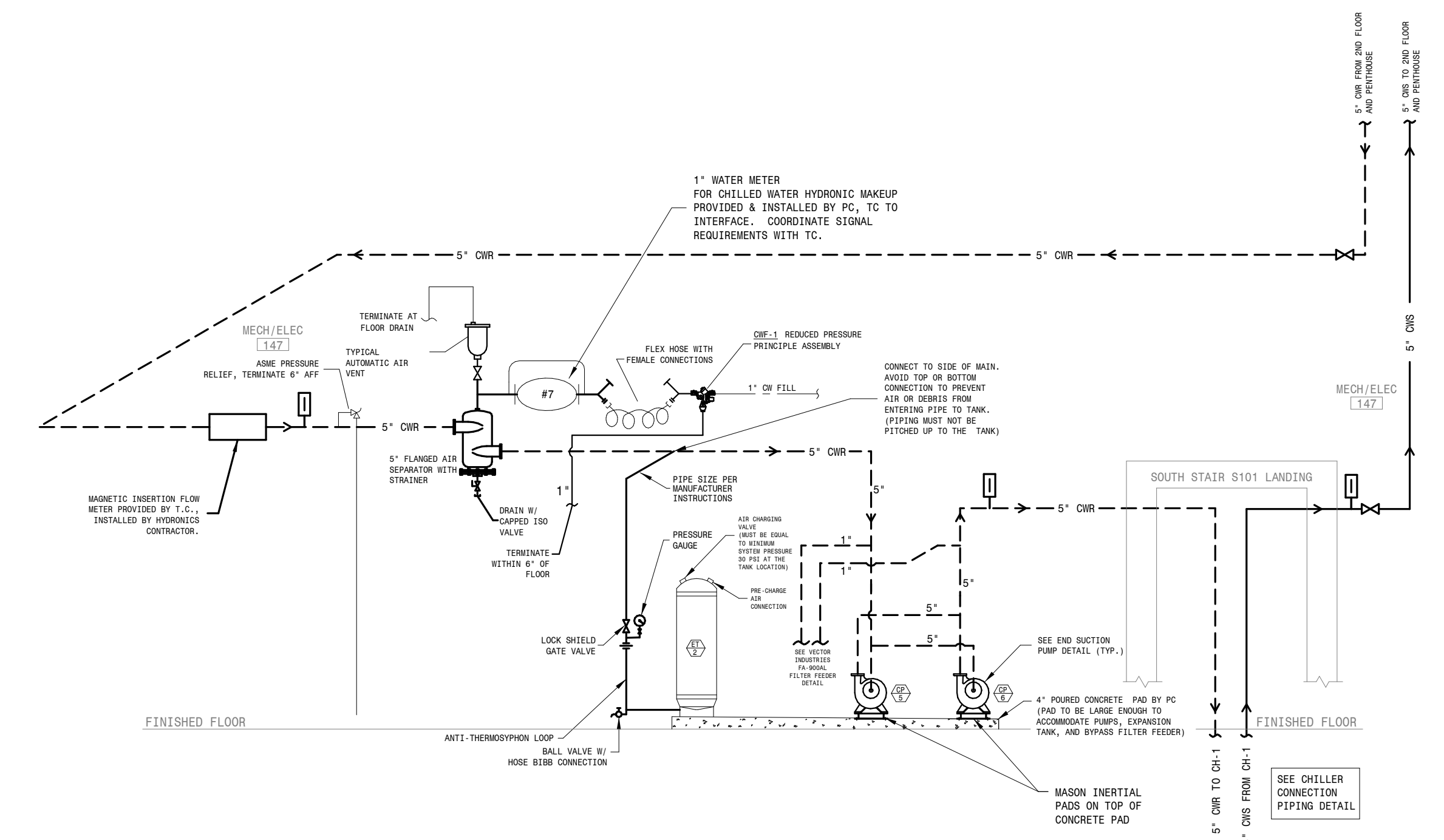
End Suction Pump Detail
NOT TO SCALE



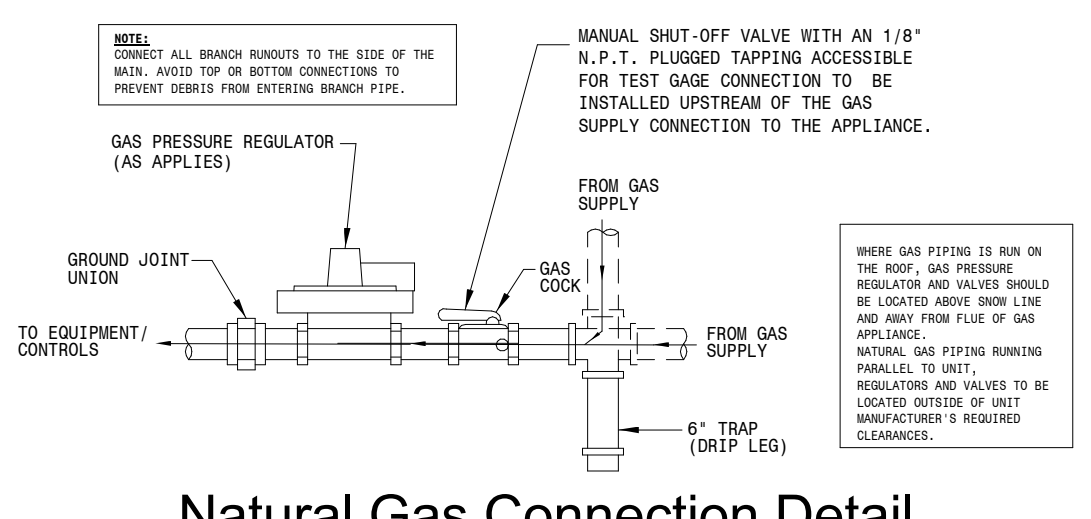
Chiller Connection Piping Detail
NOT TO SCALE



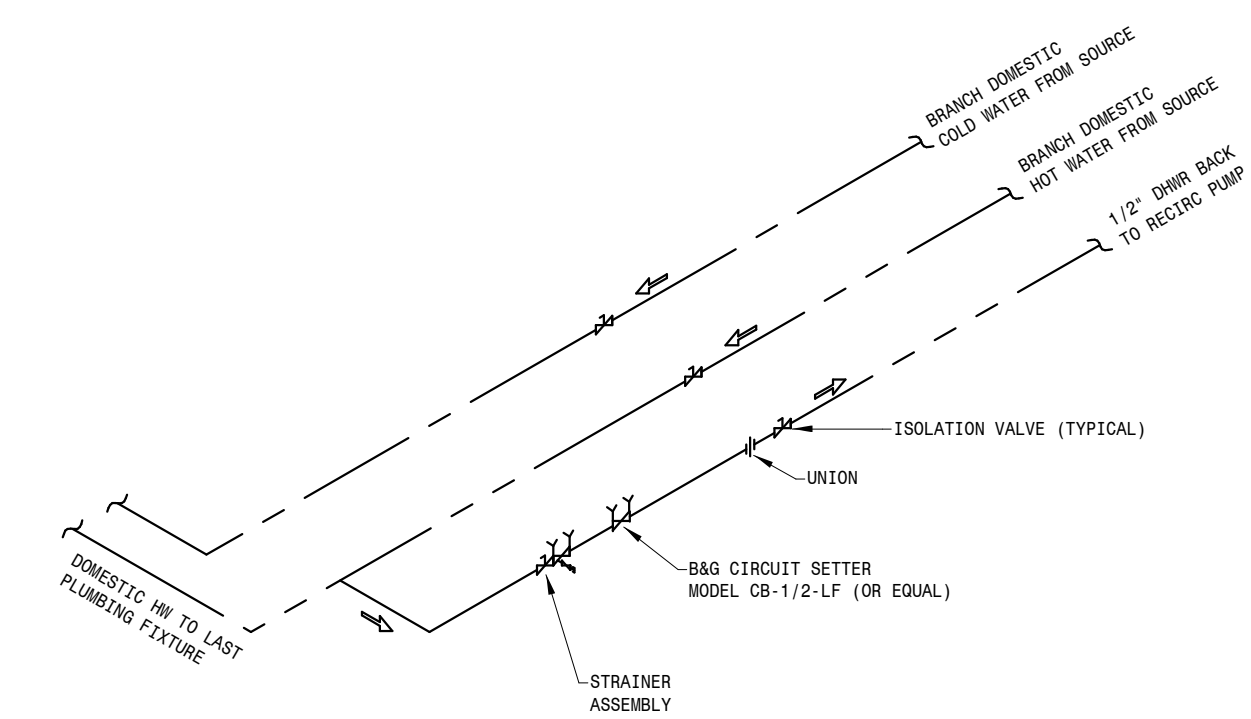
Vector Industries FA-900AL (with adjustable legs) High Flow Bypass Filter Feeder Detail
NOT TO SCALE



Chilled Water System Piping Diagram
NOT TO SCALE



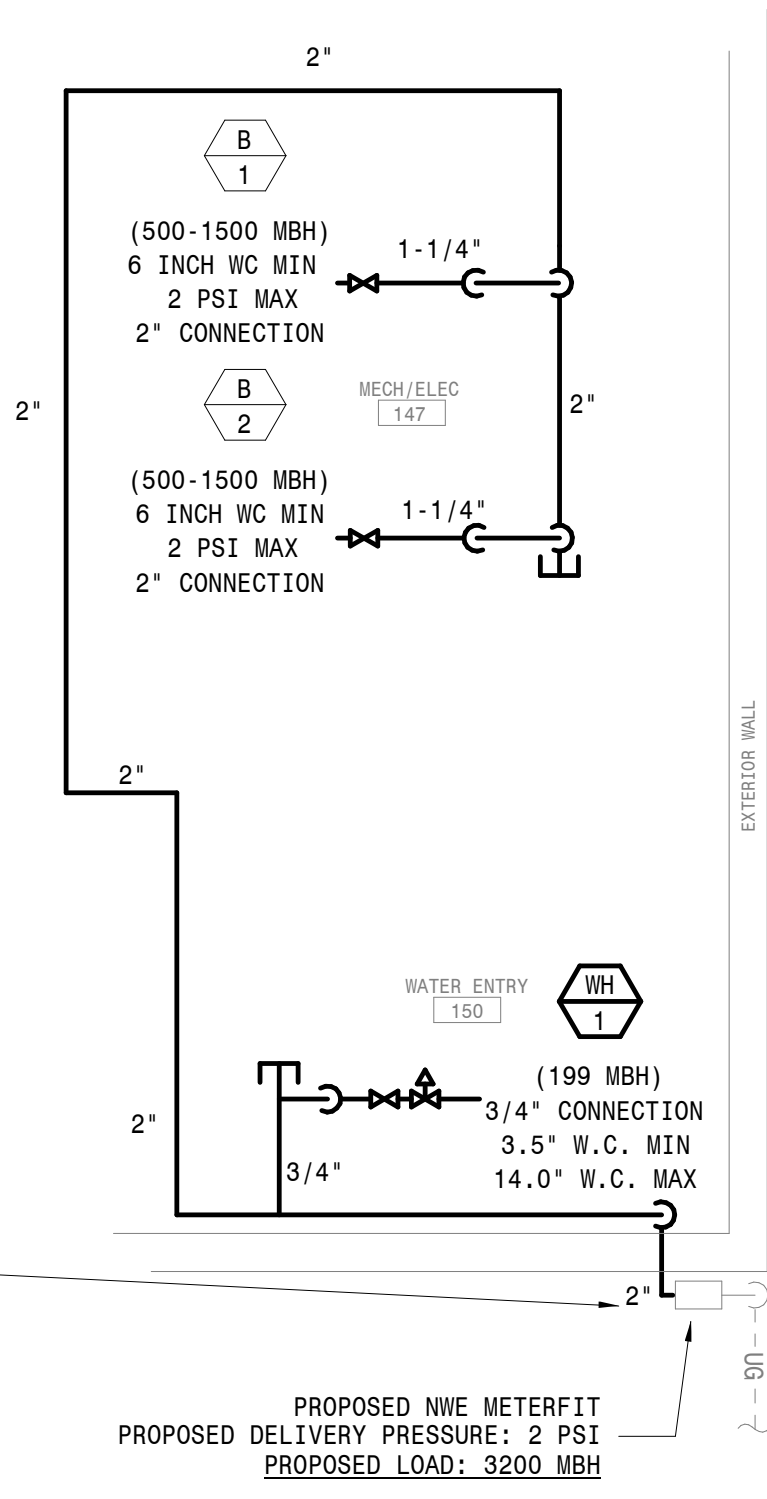
Natural Gas Connection Detail
NOT TO SCALE



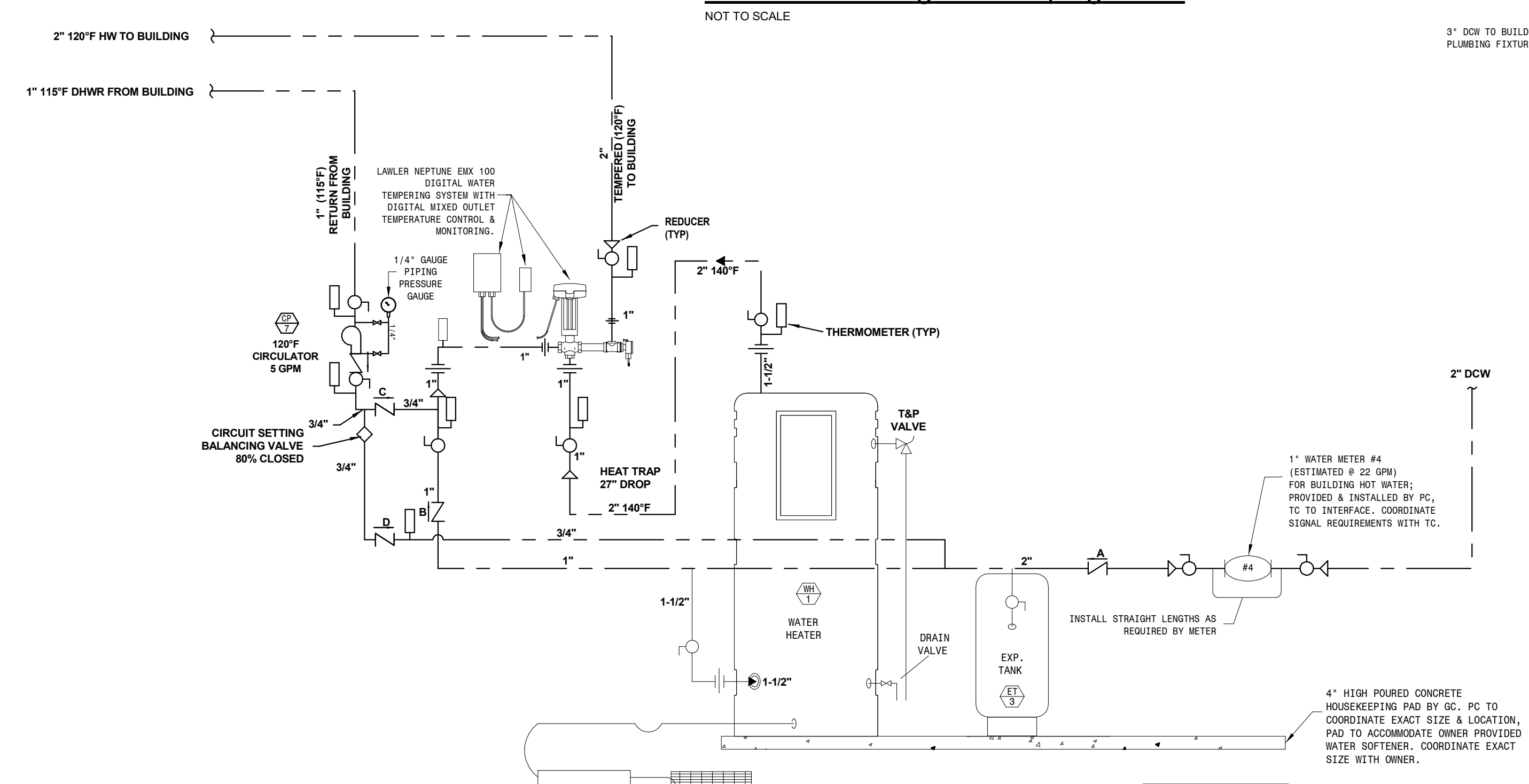
DHWR Balancing Valve Piping Detail
NOT TO SCALE

NOTES:
CONNECT ALL BRANCH RUNOUTS TO THE SIDE OF THE MAIN. AVOID TOP OR BOTTOM CONNECTIONS TO PREVENT DEBRIS FROM ENTERING BRANCH PIPE. WHERE GAS PIPING IS RUN ON THE ROOF, GAS PRESSURE REGULATOR AND VALVES SHOULD BE LOCATED ABOVE SNOW LINE AND AWAY FROM FLUE OF GAS APPLIANCE.
NATURAL GAS PIPING RUNNING PARALLEL TO UNIT, REGULATORS AND VALVES TO BE LOCATED OUTSIDE OF UNIT MANUFACTURER'S REQUIRED CLEARANCES.

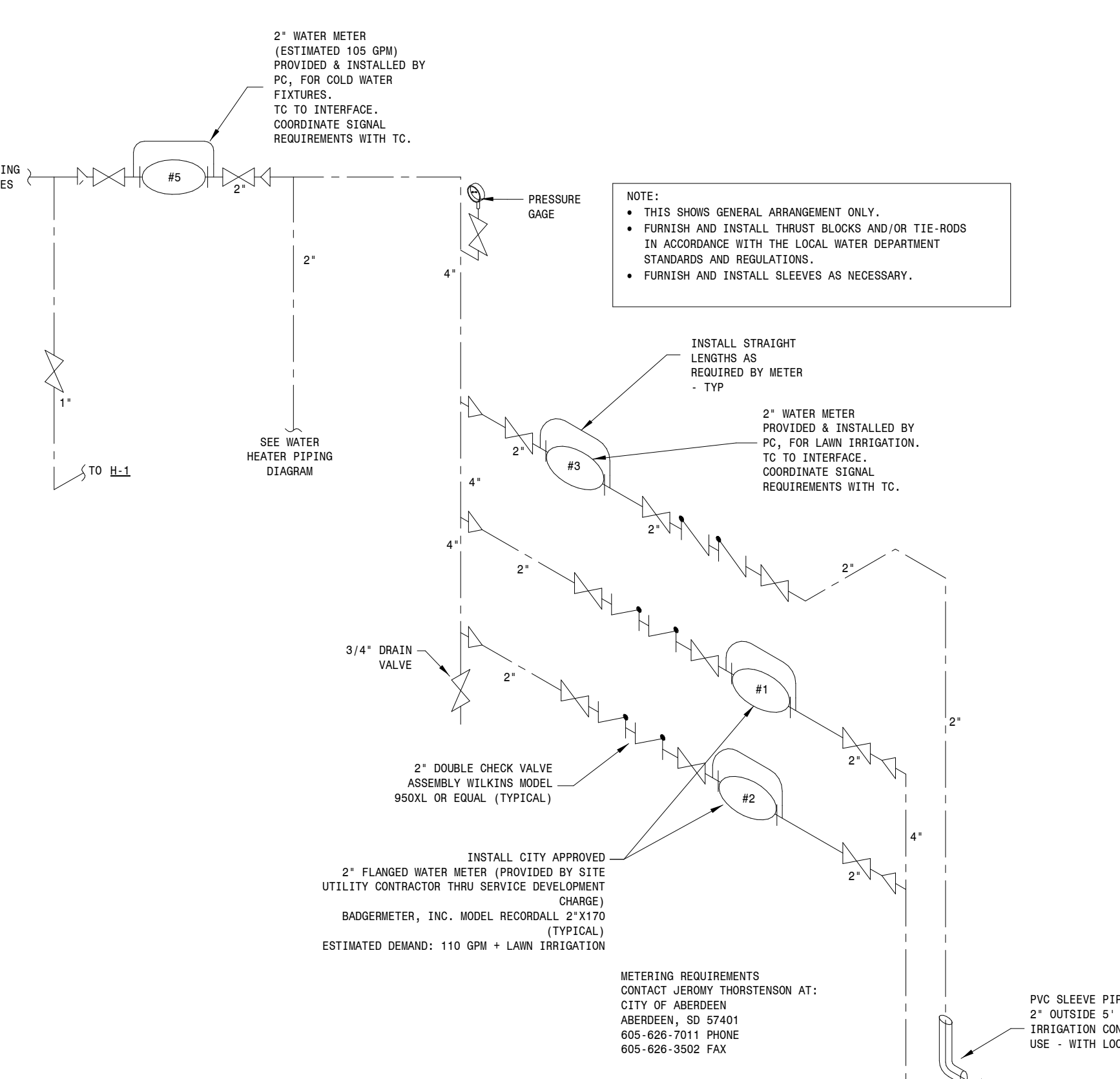
P.C. TO COORDINATE WITH ALEX MASLOSKI OF NIE @ 605-228-0571 TO PROVIDE & INSTALL UTILITY'S UNDERGROUND GAS SERVICE & METERFIT TO THIS LOCATION (ANY NIE COSTS ASSOCIATED WITH THE NATURAL GAS METERFIT WILL BE BILLED DIRECTLY TO THE OWNER.) P.C. TO PREPARE, PRIME AND PAINT EXPOSED GAS PIPING ON EXTERIOR WALL TO MATCH UTILITY METER FIT.
1) NIE TO PROVIDE METER WITH PULSE SIGNAL OUTPUT FOR OWNERS BUILDING AUTOMATION CONTRACTOR TO TIE ONTO.
2) METER TO BE RIGHT TO LEFT ARRANGEMENT.



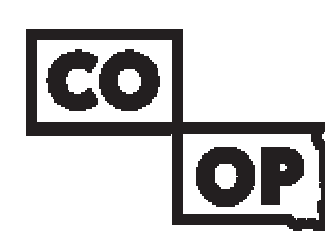
Natural Gas Piping Diagram
NOT TO SCALE



Natural Gas Water Heater Piping Diagram
NOT TO SCALE



Water Header Piping Diagram
NOT TO SCALE



SICHMELLER ENGINEERING

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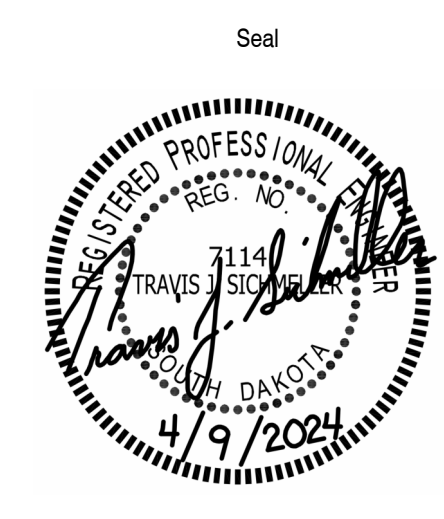
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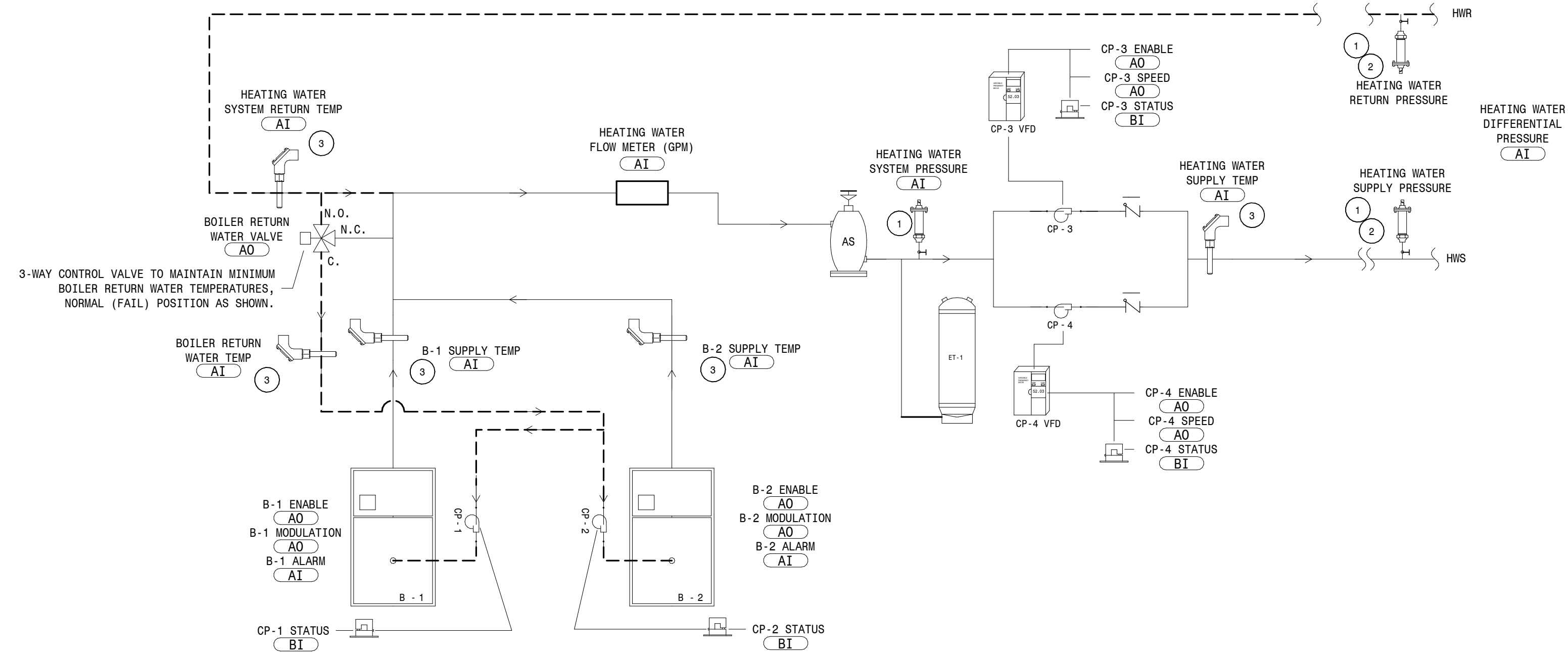
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Approved By: TS

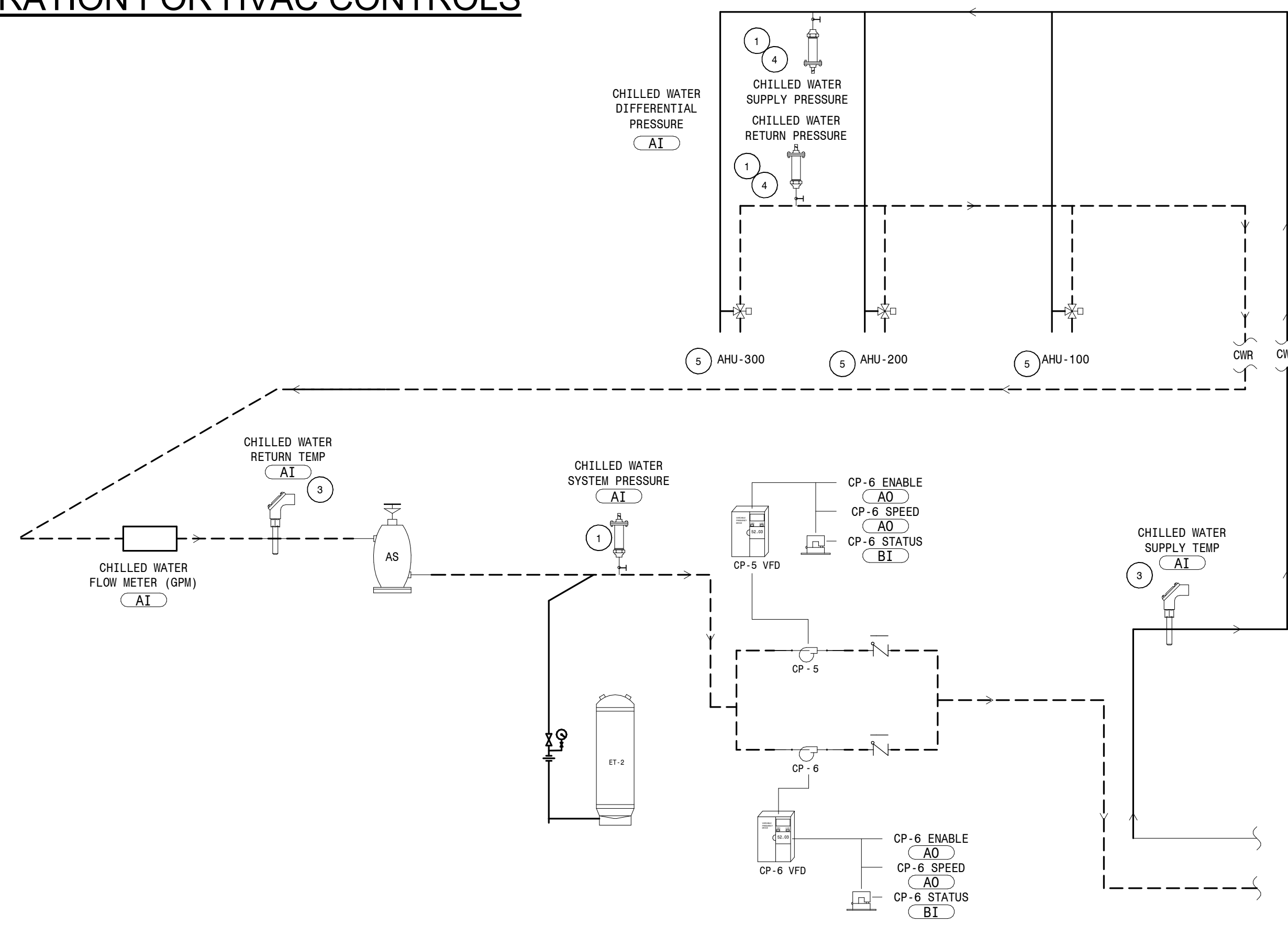
MECHANICAL DETAILS (2 OF 4)

M701

SEQUENCE OF OPERATION FOR HVAC CONTROLS

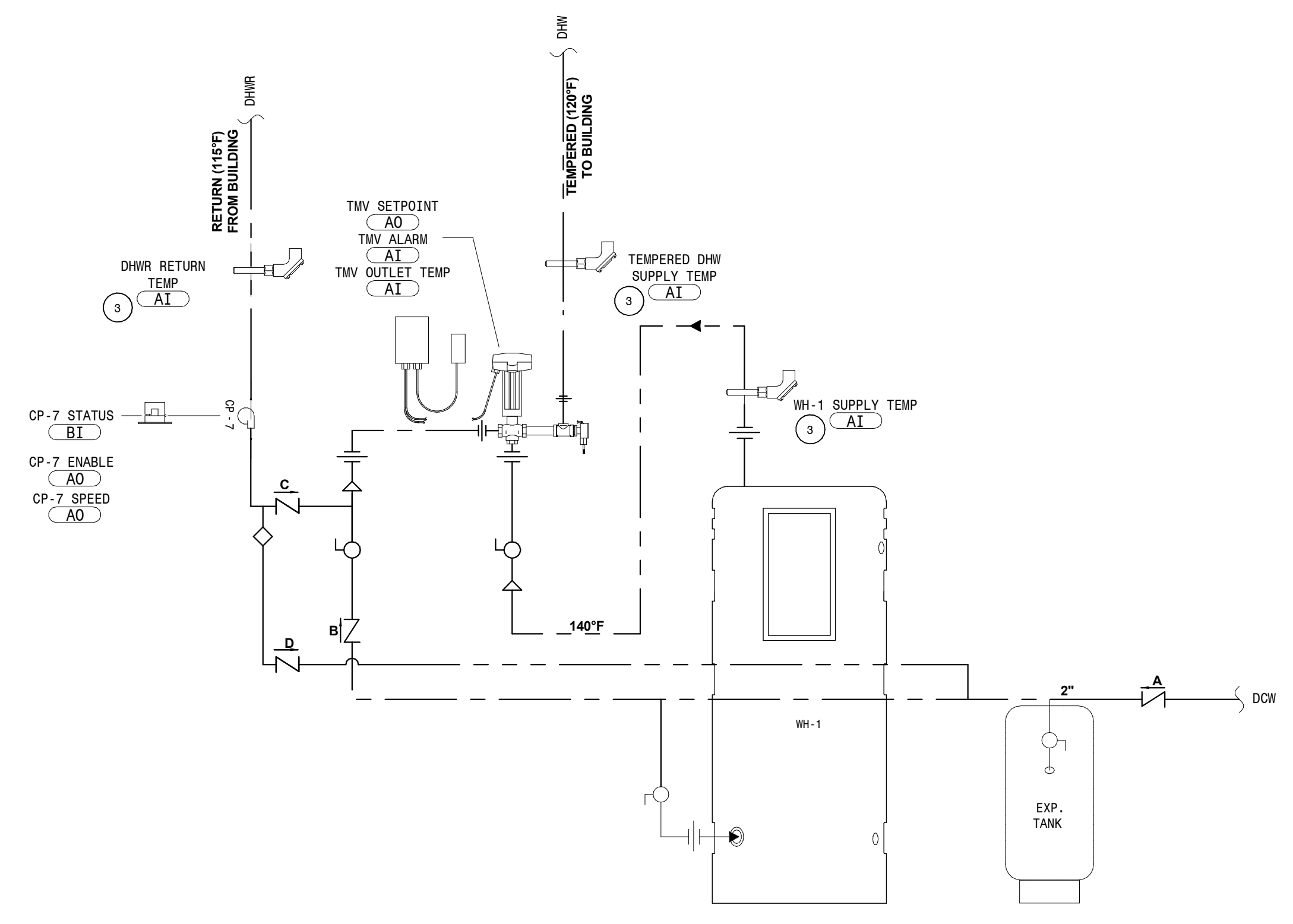


Heating Water System Control Diagram
NOT TO SCALE

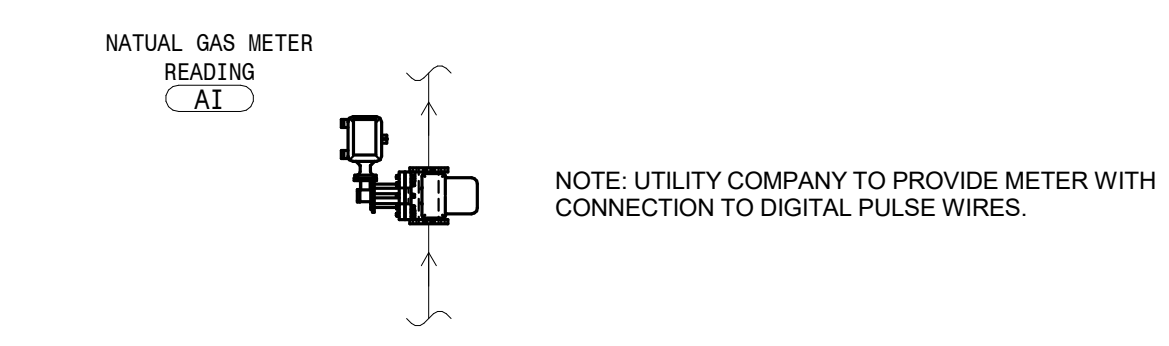


Chilled Water System Control Diagram
NOT TO SCALE

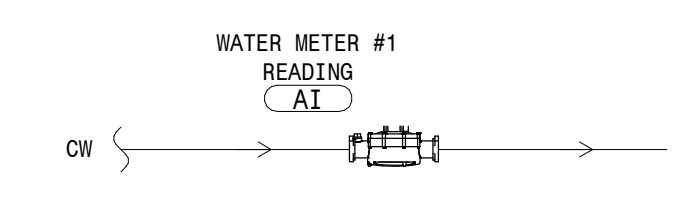
- NOTES:**
1. INSTALL PRESSURE TRANSDUCER TAPS IN THE SIDE OF THE PIPES, NOT IN THE TOP OR BOTTOM. INSTALL AT LEAST 10 PIPE DIAMETERS FROM ANY ELBOW, TAP, OR REDUCER.
 2. LOCATE DIFFERENTIAL PRESSURE SENSORS IN THE 2" MAINS BETWEEN AHU-200 AND AHU-300 IN MECH PENTHOUSE M300. SEE PLANS FOR EXACT LOCATION.
 3. TEMPERATURE SENSORS SHALL BE INSTALLED WITHIN 12" OF CORRESPONDING THERMOMETER. SEE PIPING DETAIL.
 4. LOCATE DIFFERENTIAL PRESSURE SENSORS IN THE CHILLED WATER MAINS BETWEEN THE TAKE OFFS FOR AHU-200 AND AHU-300 IN THE MECH PENTHOUSE M300. SEE PLANS FOR EXACT LOCATION.
 5. SEE AIR HANDLER CONTROLS DIAGRAM FOR VALVE CONTROLS



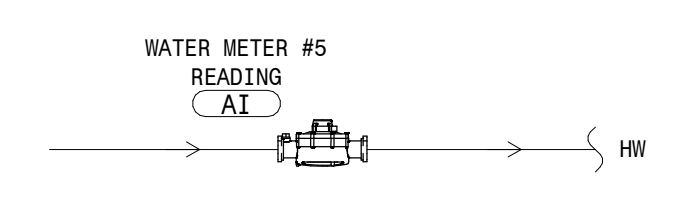
Domestic Hot Water Control Diagram
NOT TO SCALE



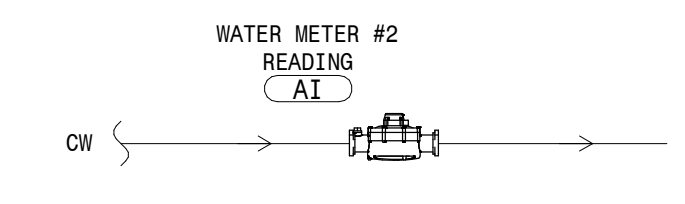
Natural Gas Utility Meter Control Diagram
NOT TO SCALE



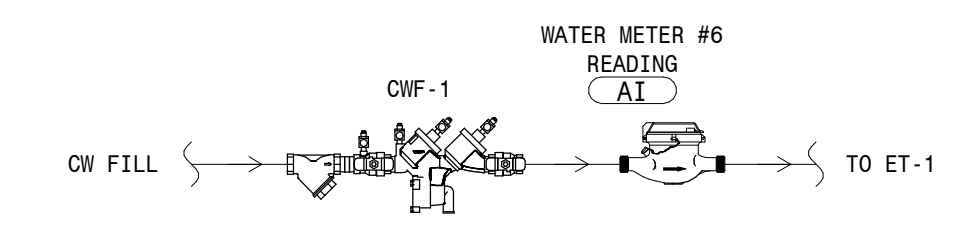
Utility Water Meter #1 Control Diagram
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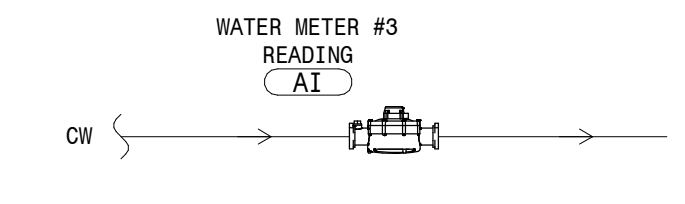
Water Meter #5 (Cold Water) Control Diagram
NOT TO SCALE



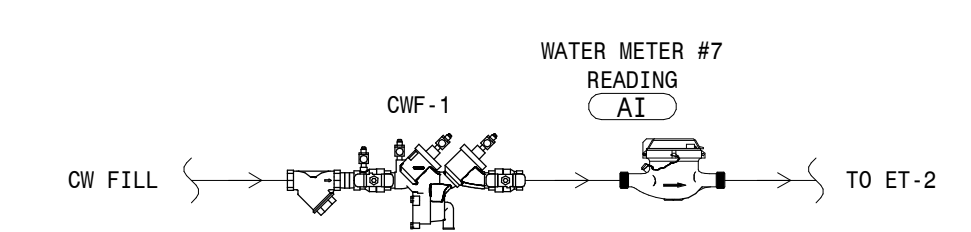
Utility Water Meter #2 Control Diagram
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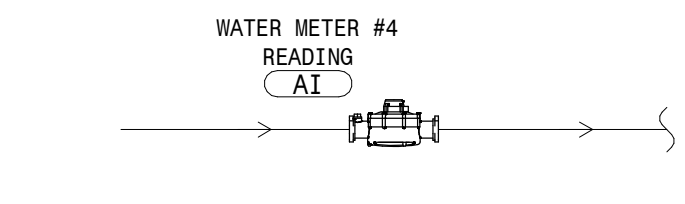
Water Meter #6 (Heating Water Makeup) Control Diagram
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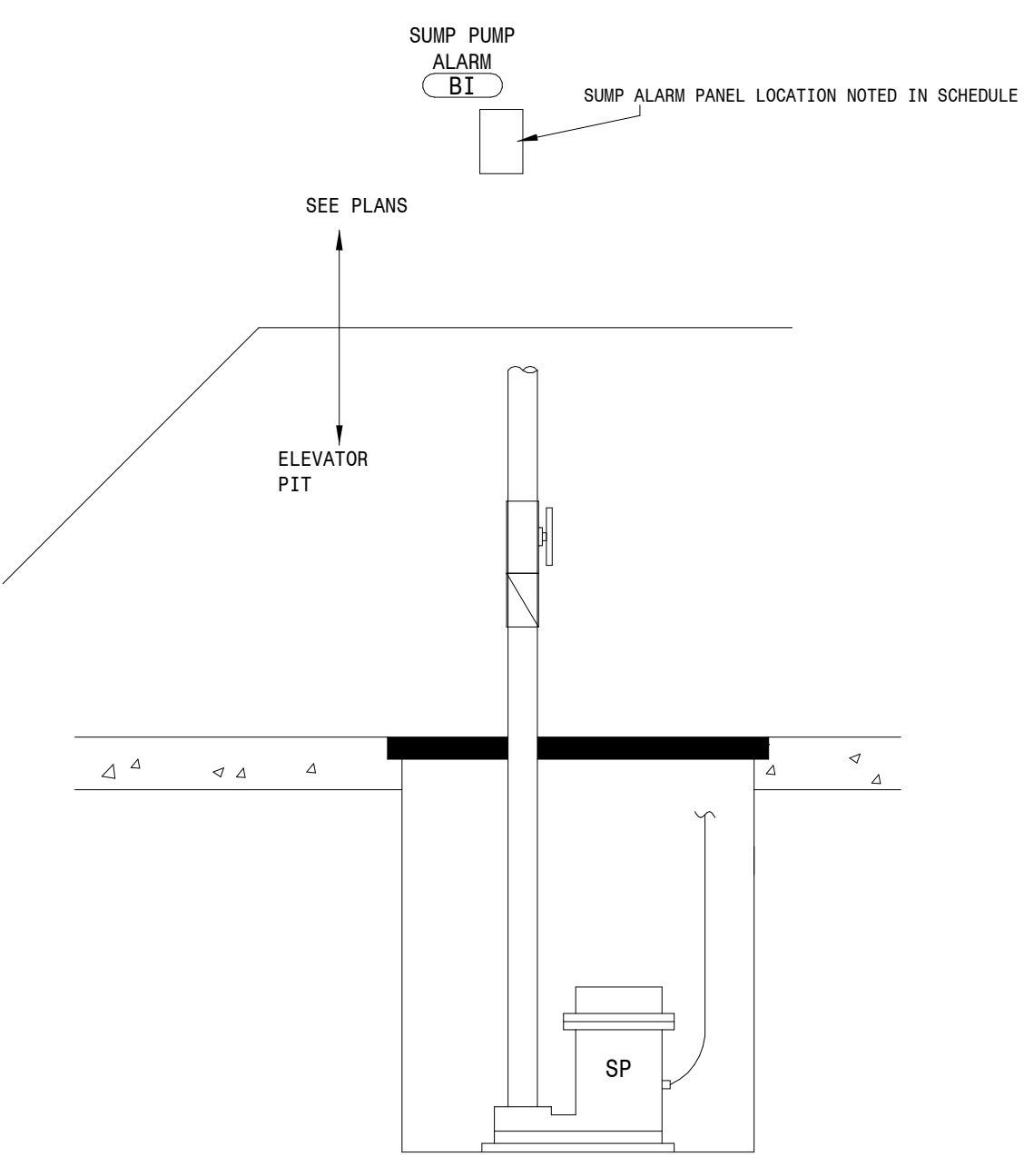
Water Meter #3 (Lawn Irrigation) Control Diagram
NOT TO SCALE



Water Meter #7 (Chilled Water Makeup) Control Diagram
NOT TO SCALE



Water Meter #4 (Hot Water) Control Diagram
NOT TO SCALE



Sump Pump (SP-1) Controls Diagram
NOT TO SCALE

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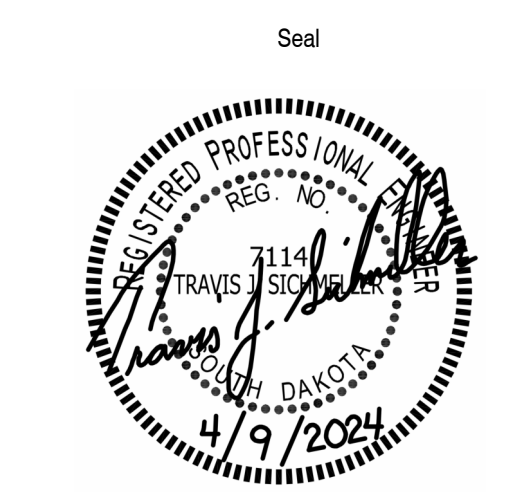
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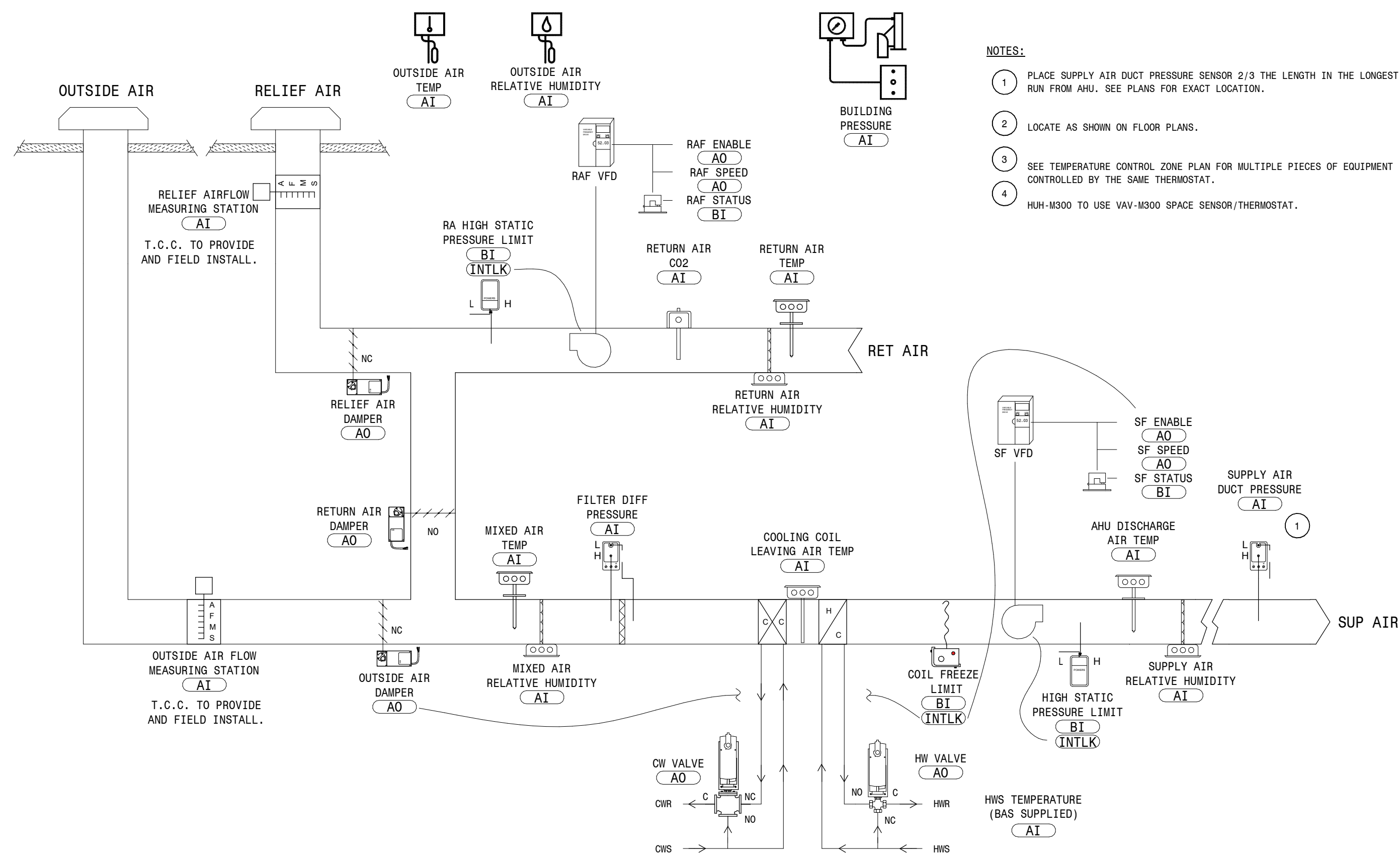
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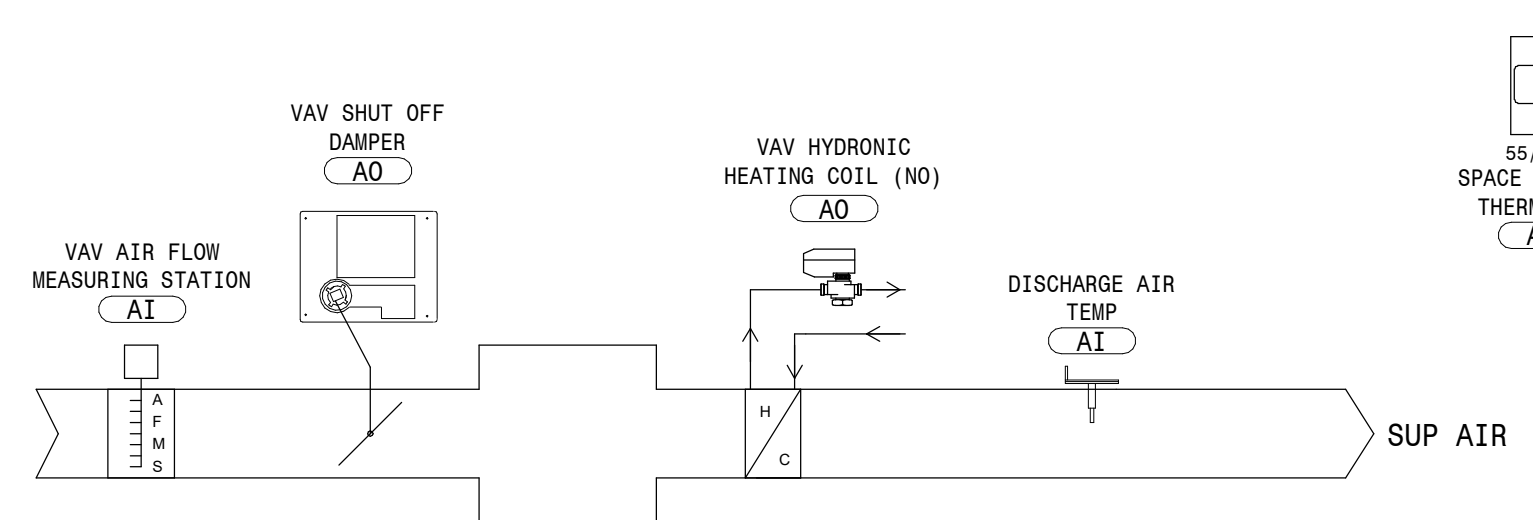
MECHANICAL DETAILS (3 OF 4)

M702

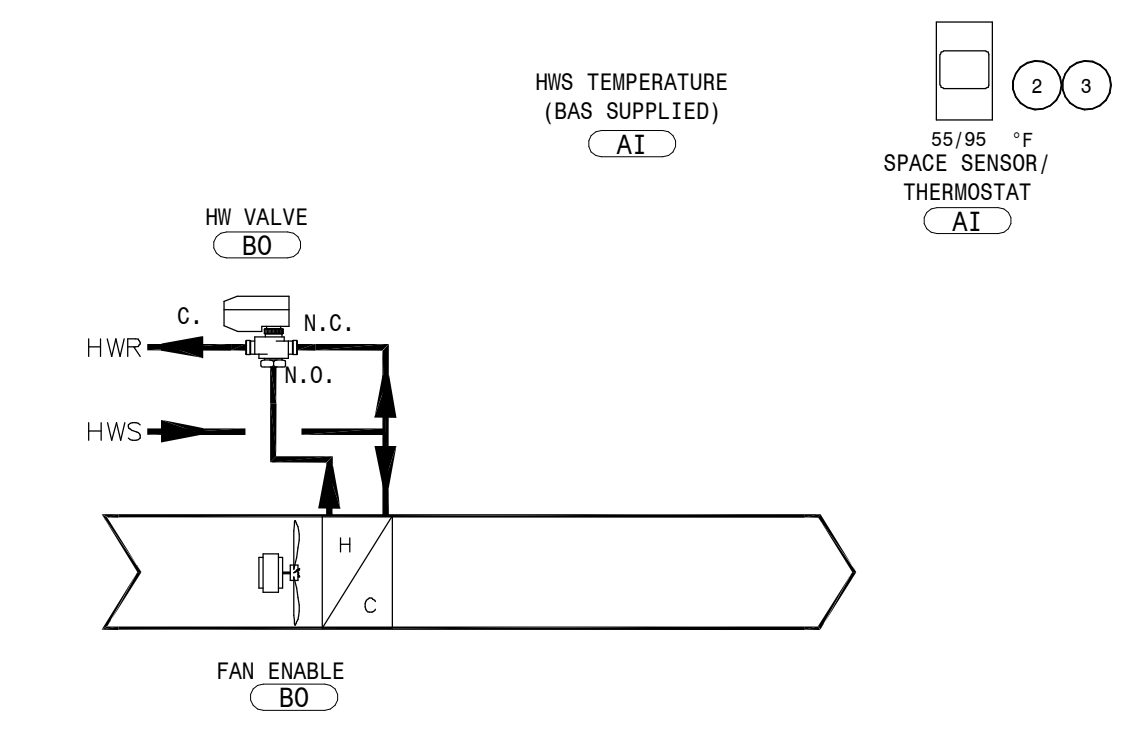
SEQUENCE OF OPERATION FOR HVAC CONTROLS - CONTINUED



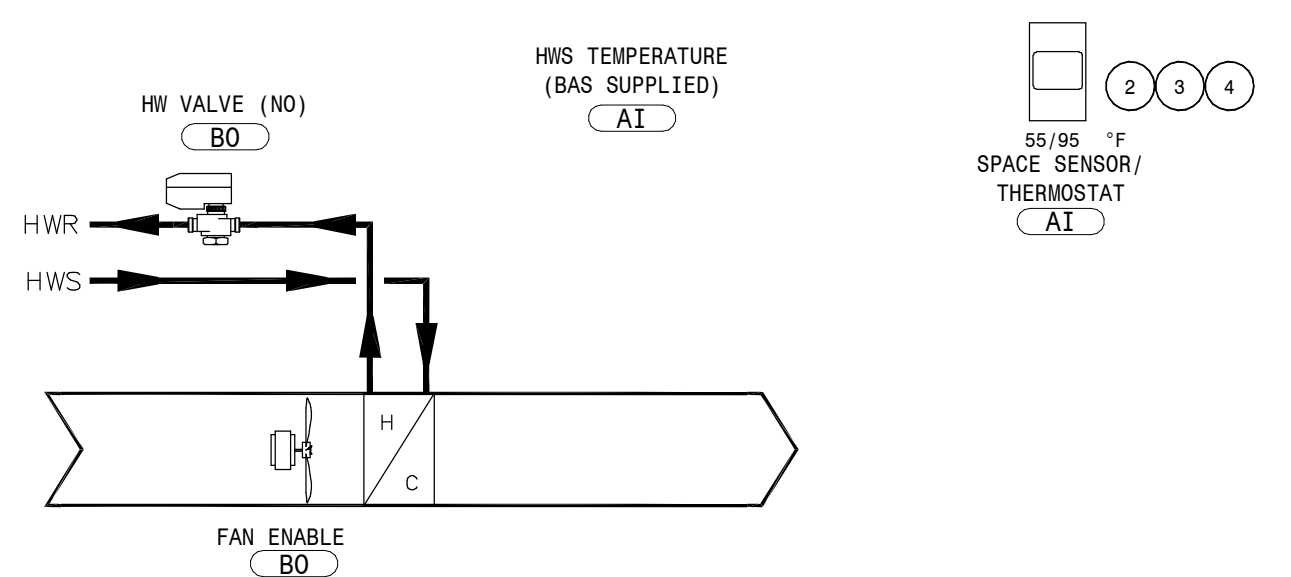
Typical AHU System Control Diagram (AHU-100,200,300)
NOT TO SCALE



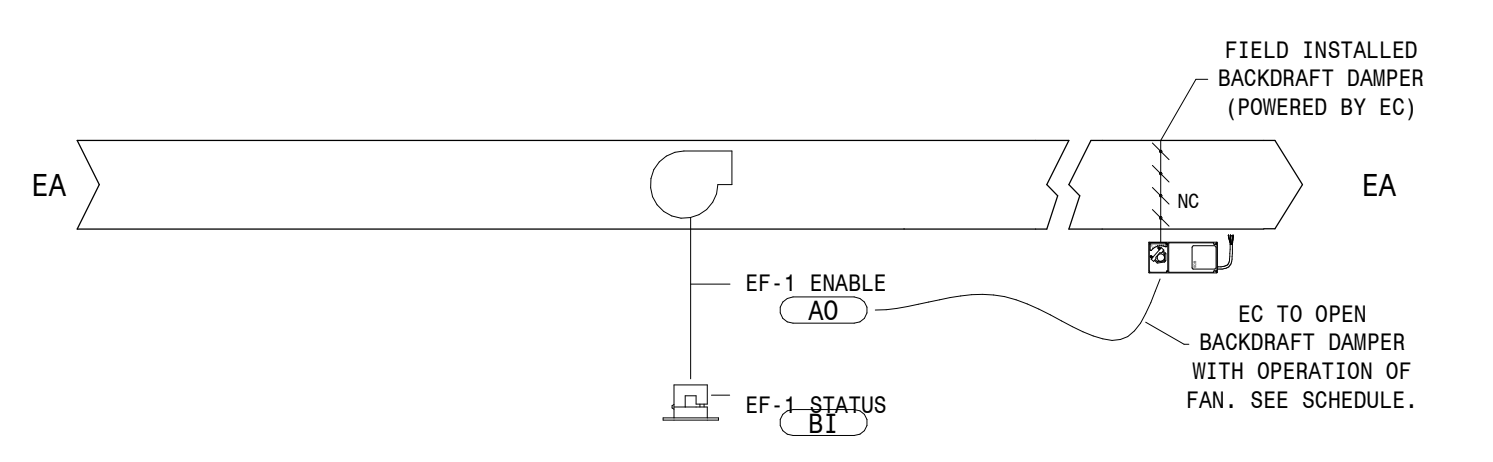
Typical VAV Control Diagram
NOT TO SCALE



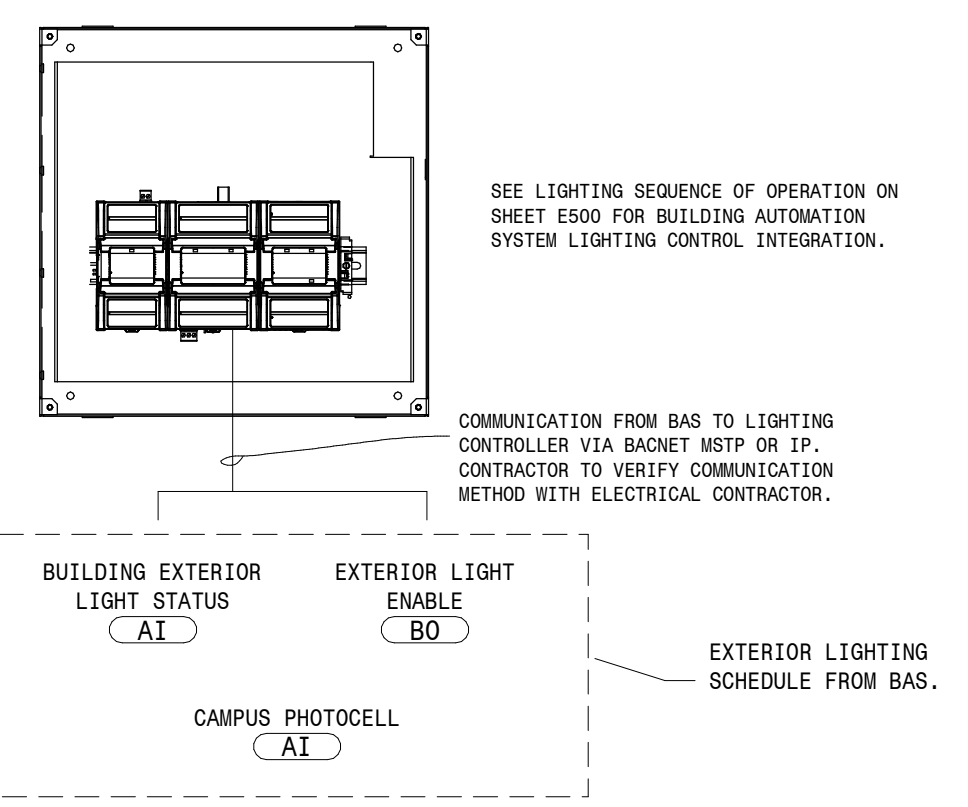
Typical CUH Control Diagram (CUH-100A,100B,114A)
NOT TO SCALE



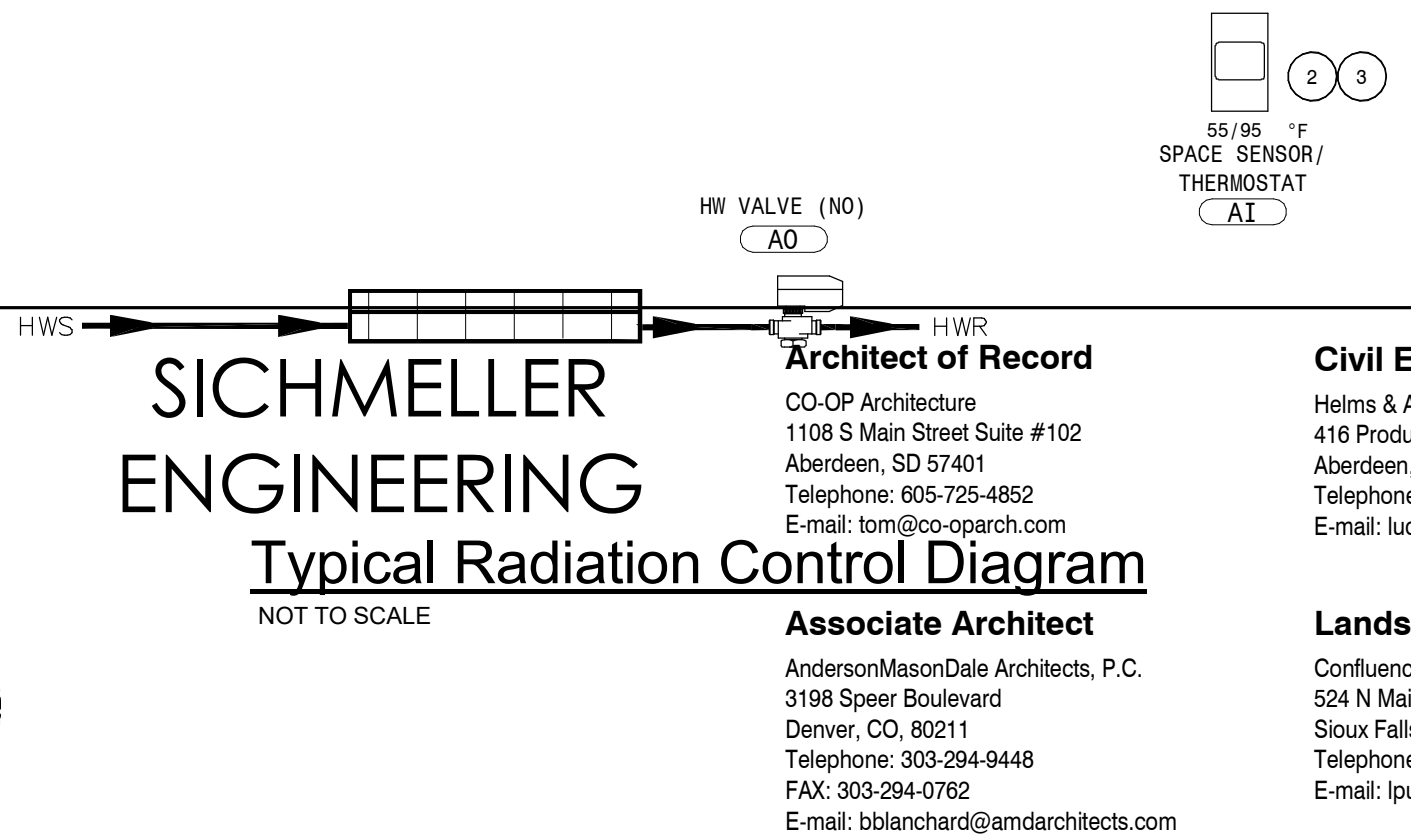
Typical HUH Control Diagram (HUH-161, M300)
NOT TO SCALE



Exhaust Fan EF-1 Control Diagram
NOT TO SCALE



Lighting Control Interface Controls Diagram
NOT TO SCALE



Typical Radiation Control Diagram
NOT TO SCALE



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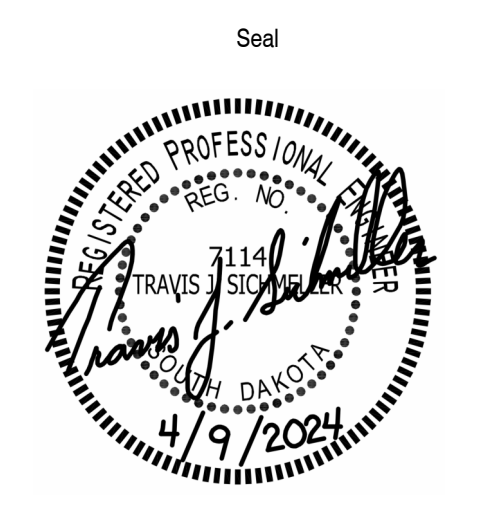
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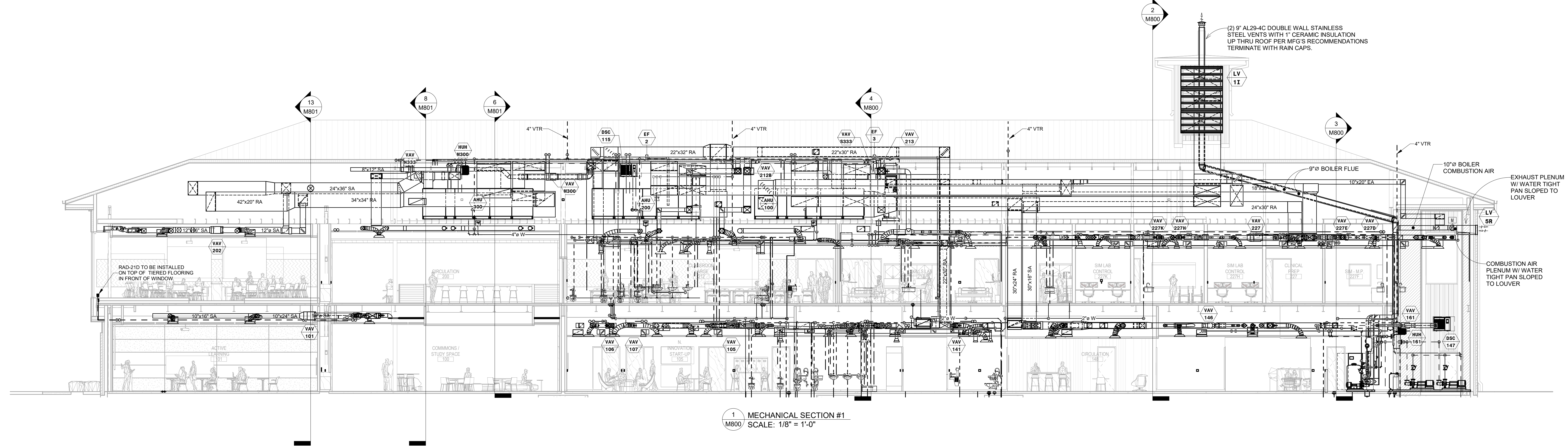
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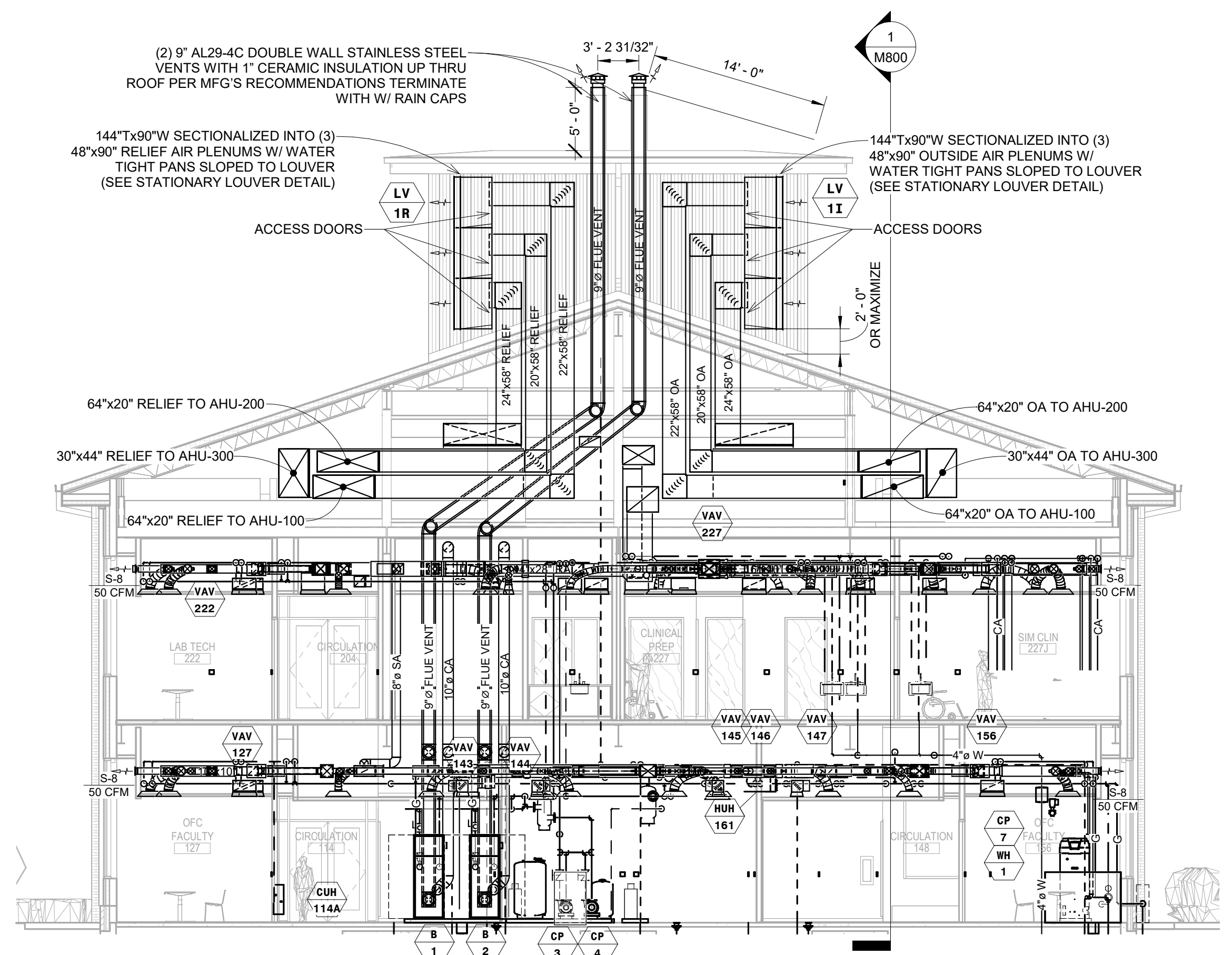
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MECHANICAL DETAILS (4 OF 4)

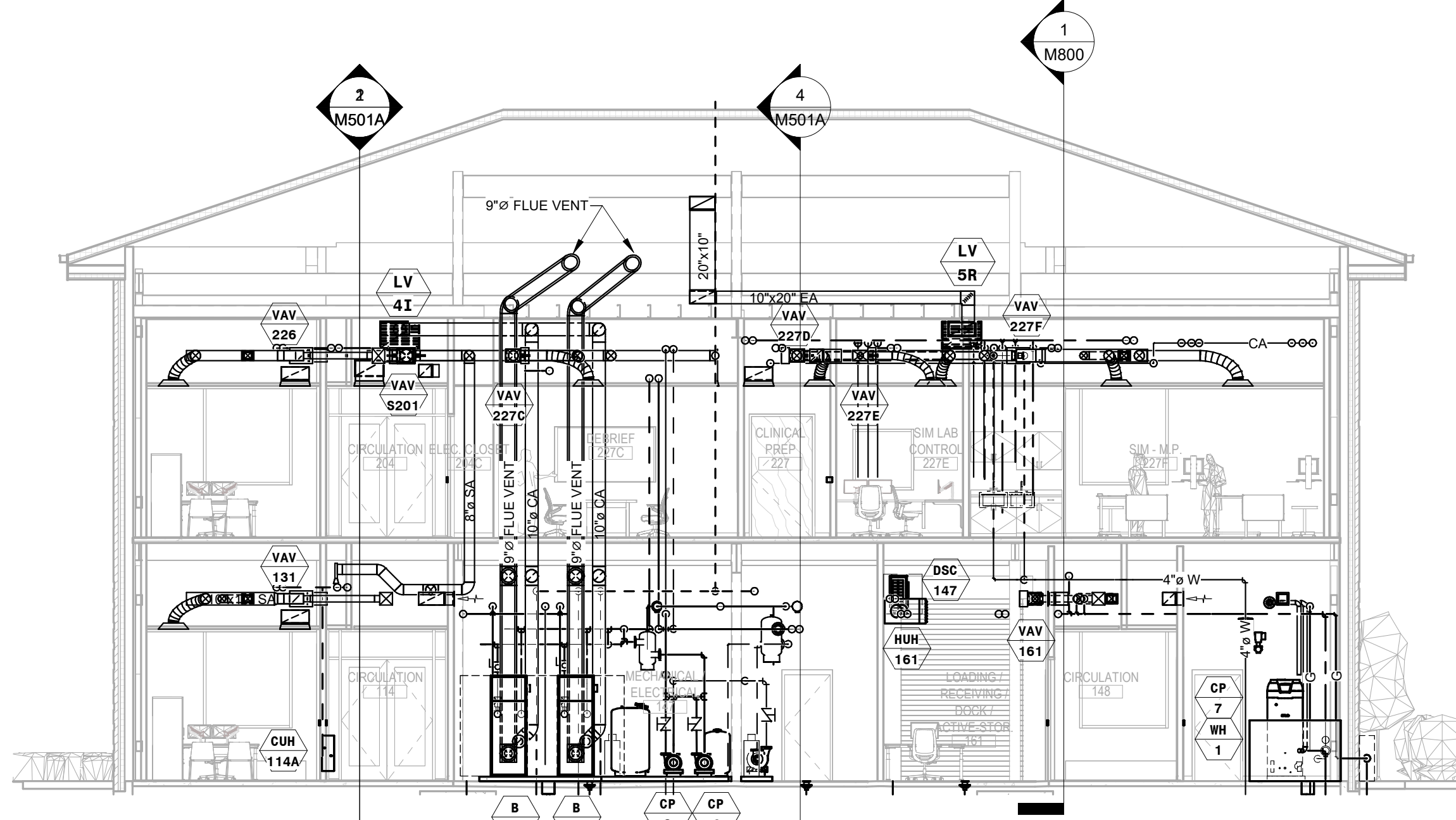
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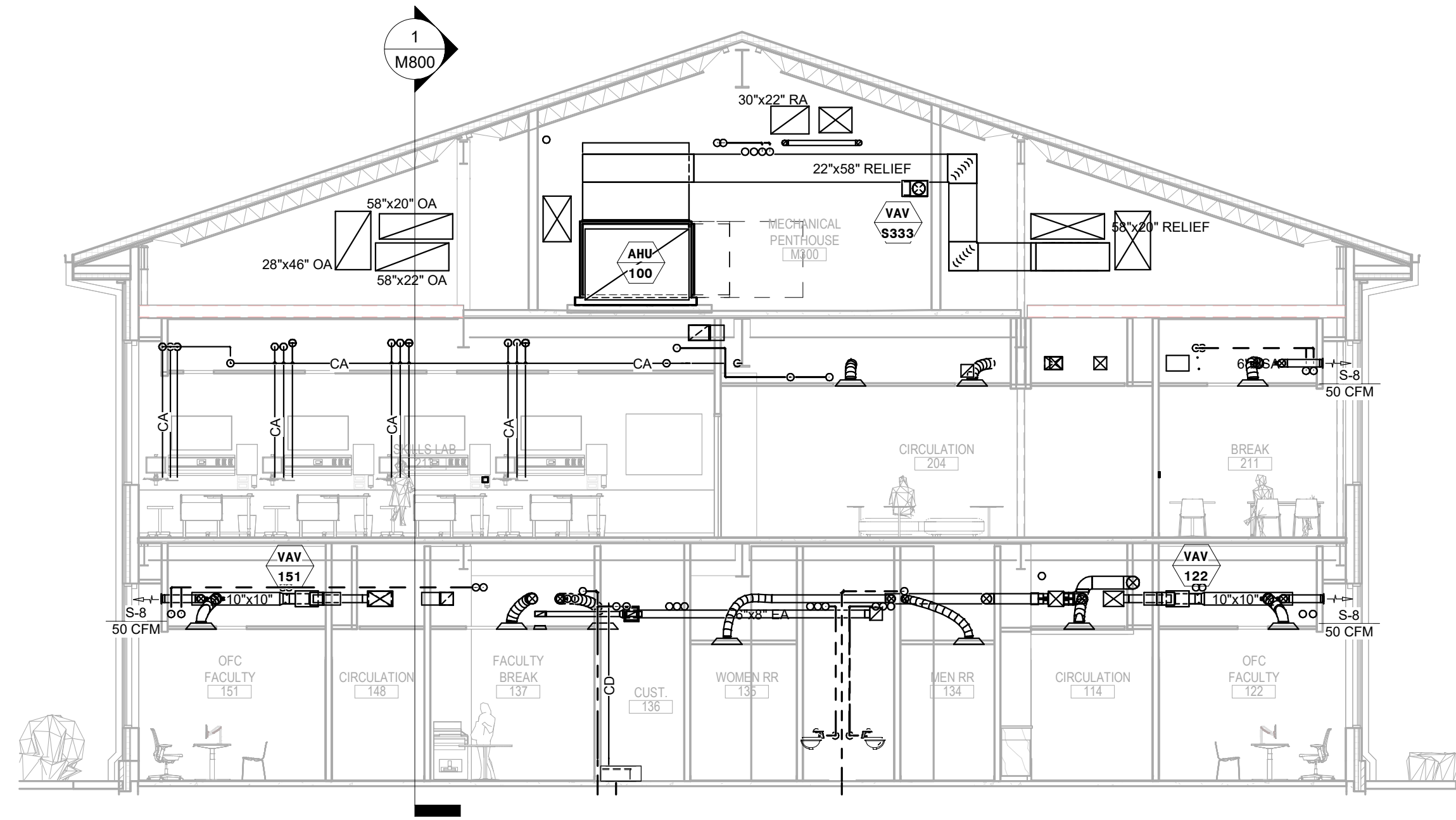
1 MECHANICAL SECTION #1
M800 SCALE: 1/8" = 1'-0"



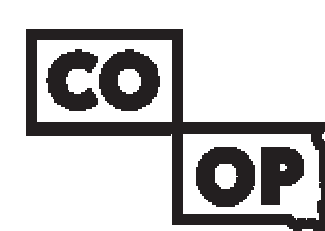
2 MECHANICAL SECTION #2
M800 SCALE: 1/8" = 1'-0"



3 MECHANICAL SECTION #3
M800 SCALE: 1/8" = 1'-0"



4 MECHANICAL SECTION #4
M800 SCALE: 1/8" = 1'-0"



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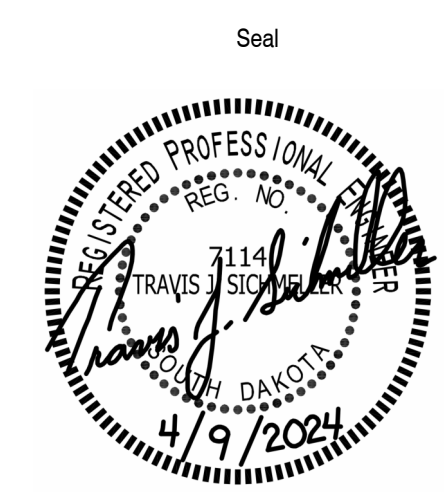
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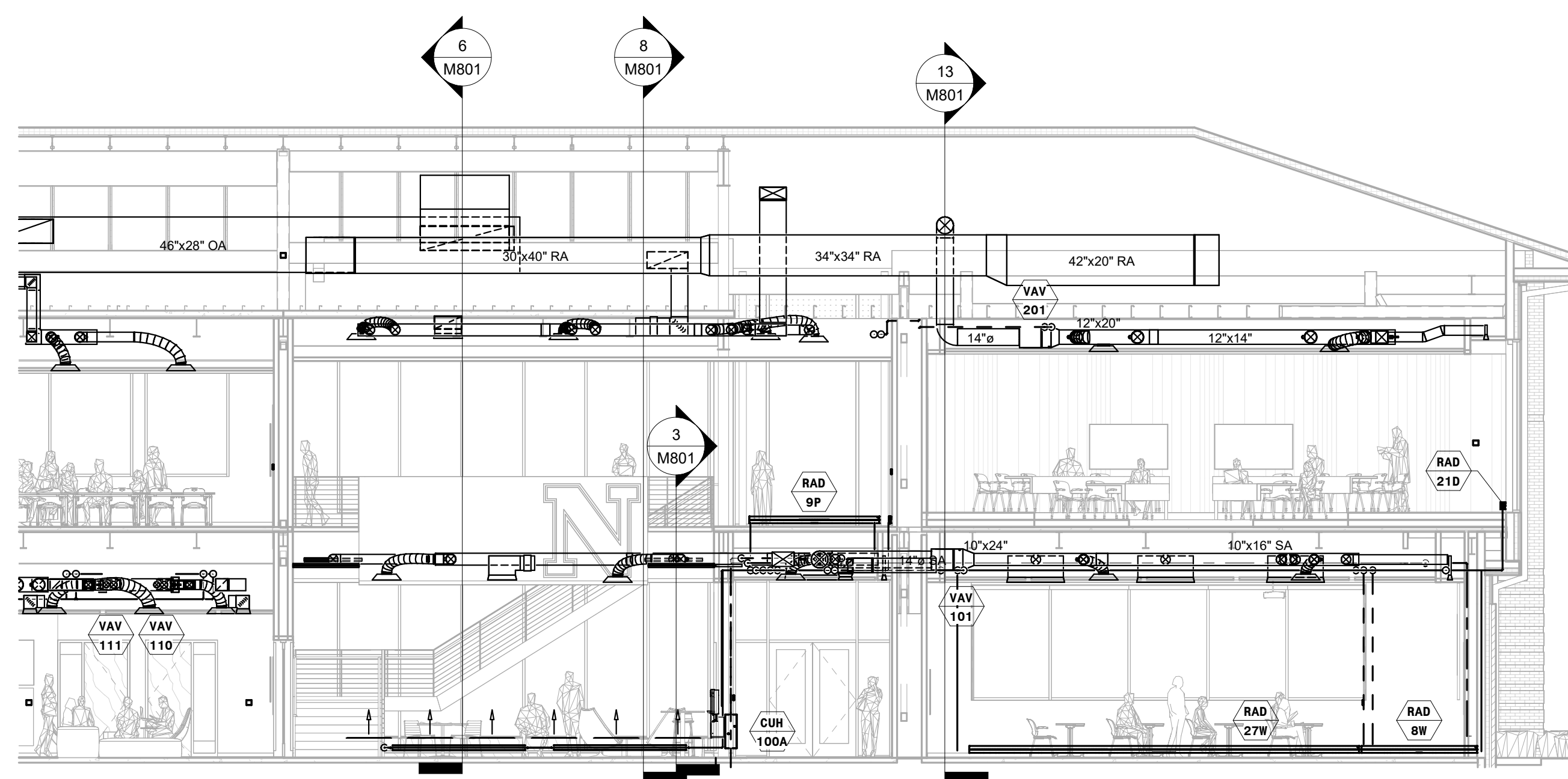
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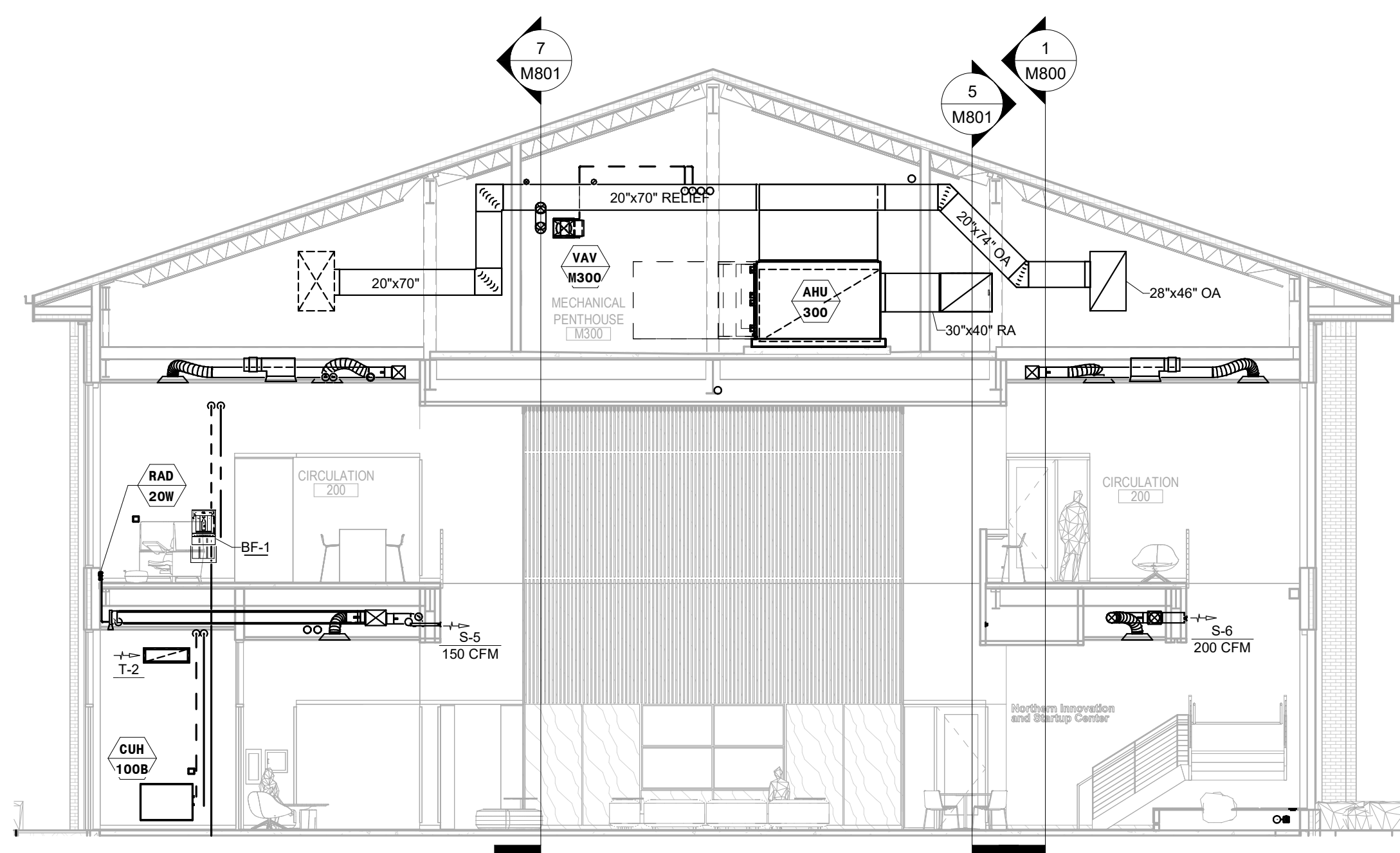
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MECHANICAL SECTIONS

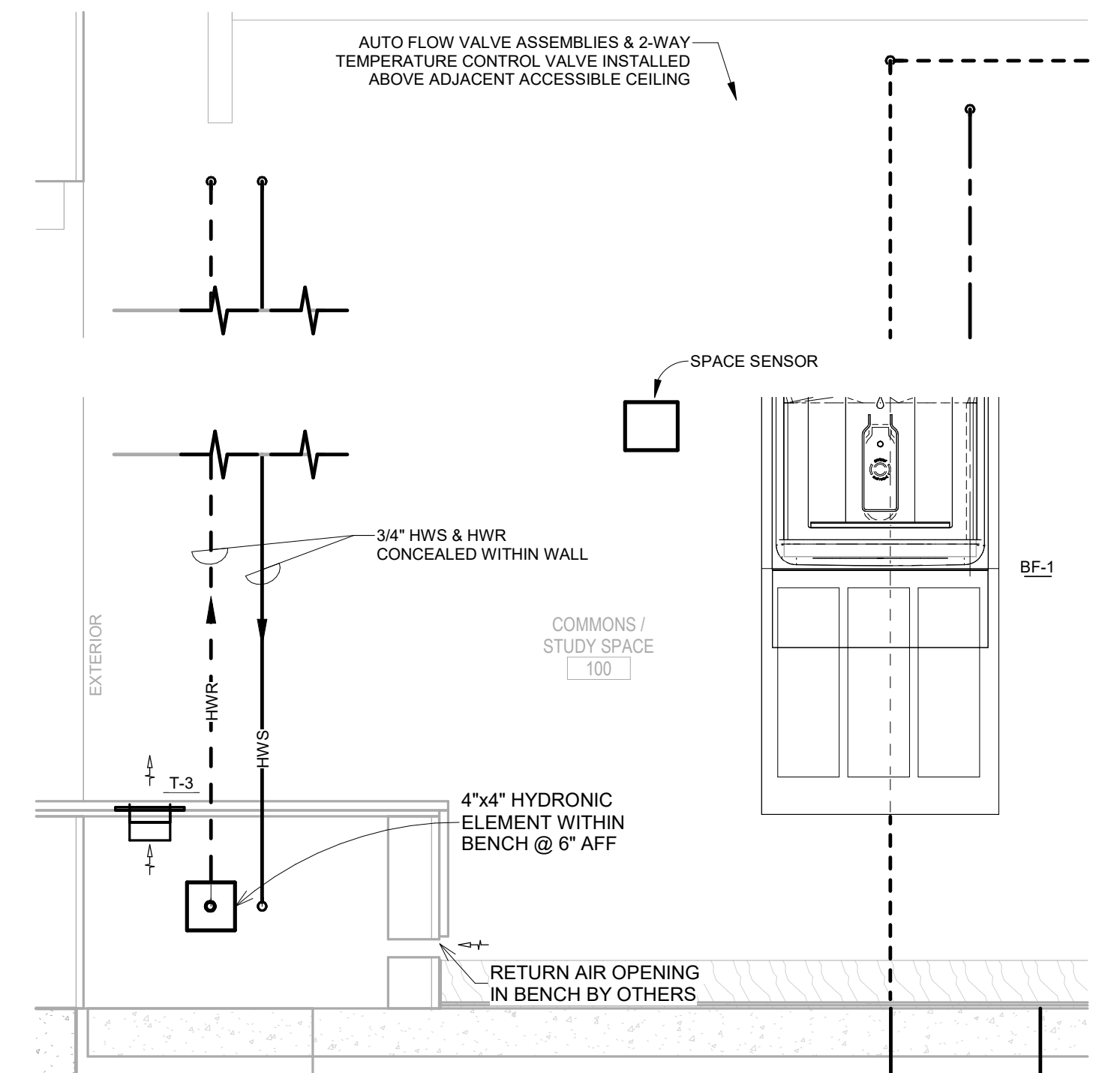
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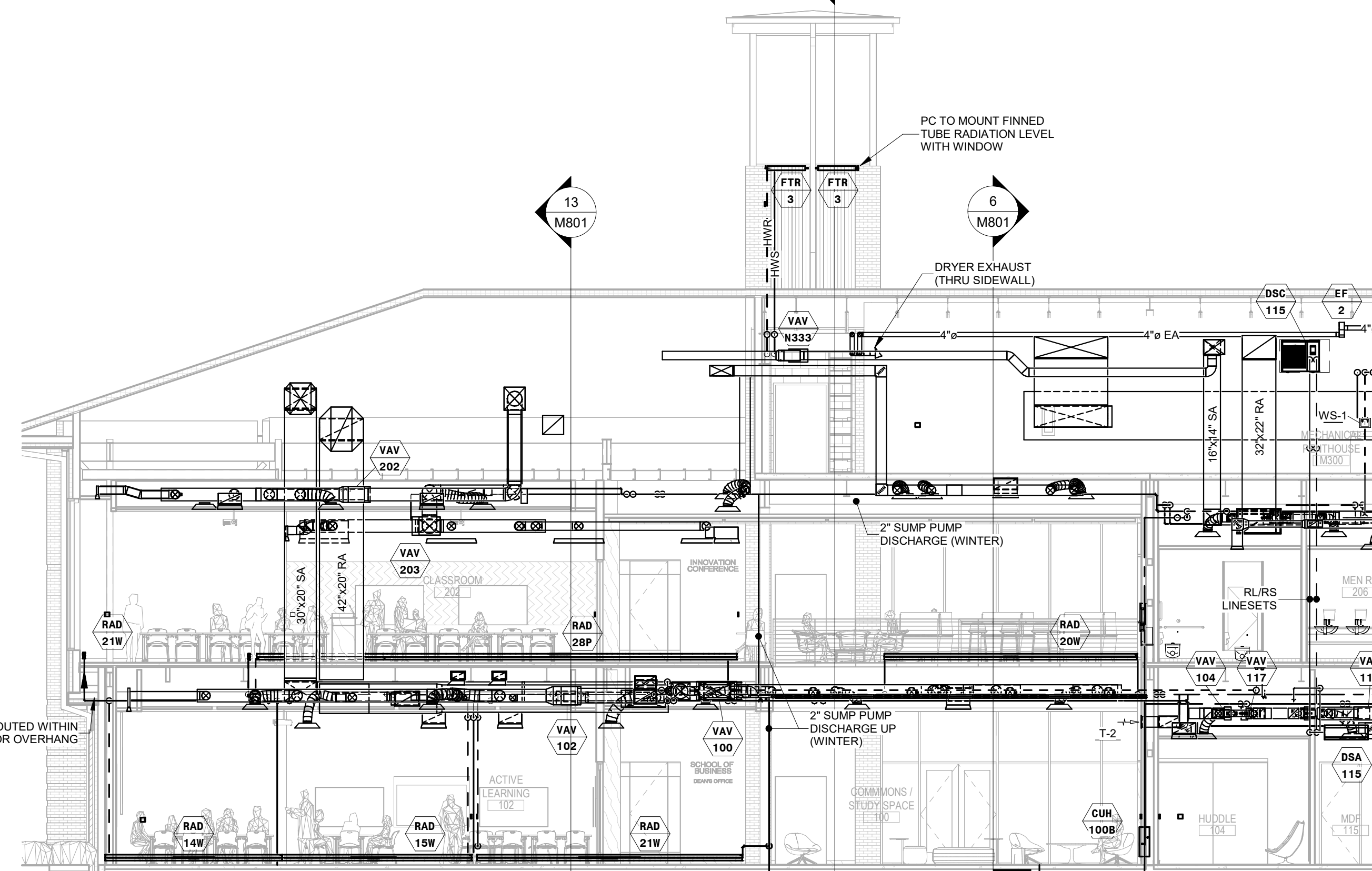
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M801 SCALE: 1/8" = 1'-0"



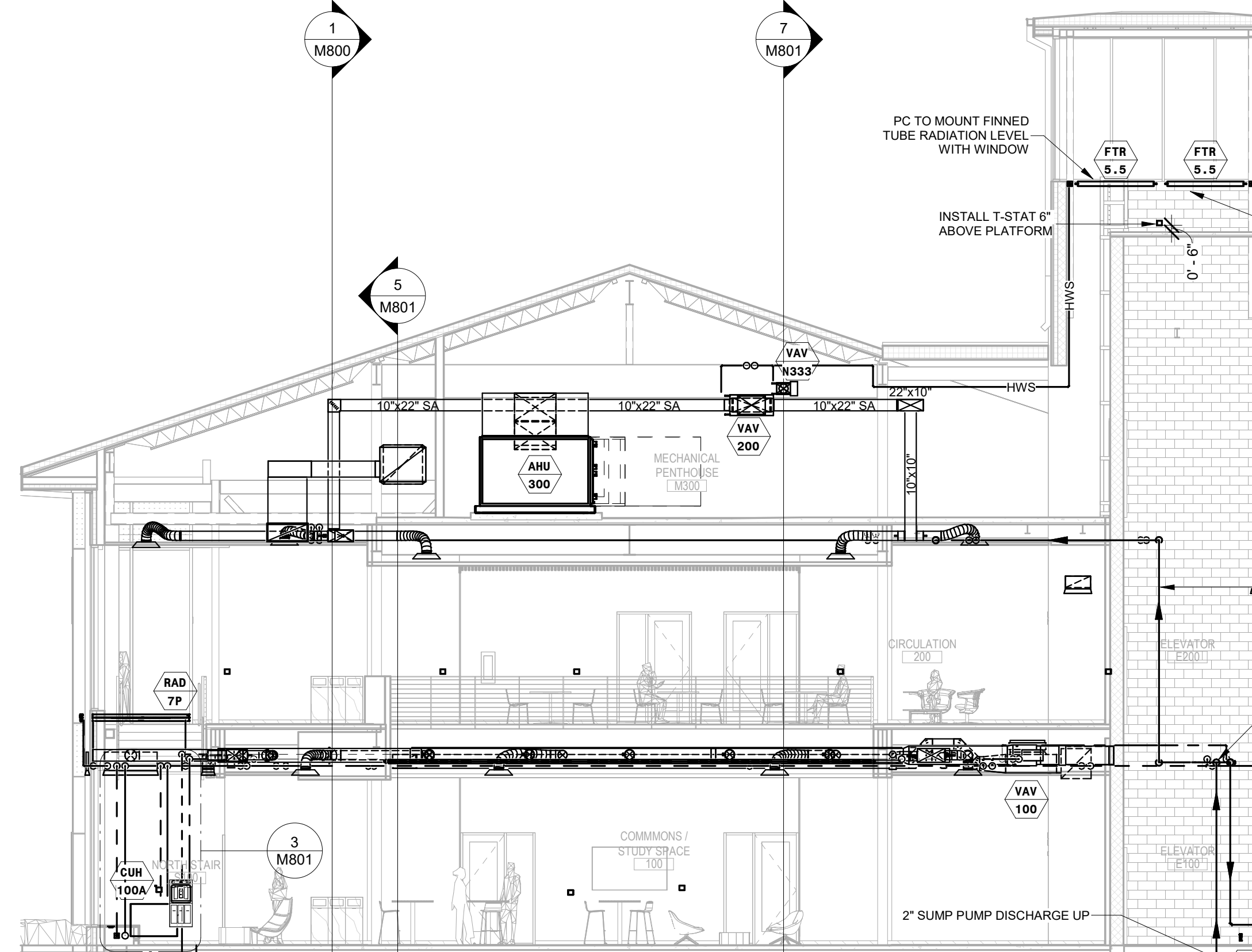
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M801 SCALE: 1/8" = 1'-0"



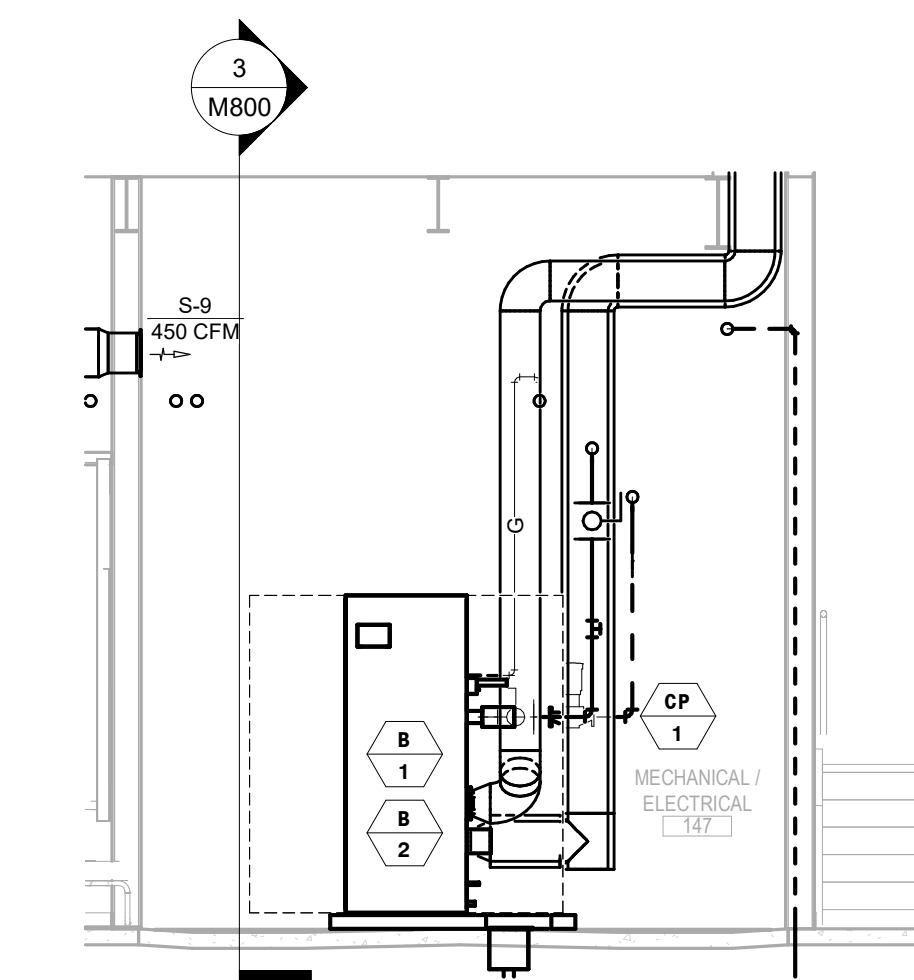
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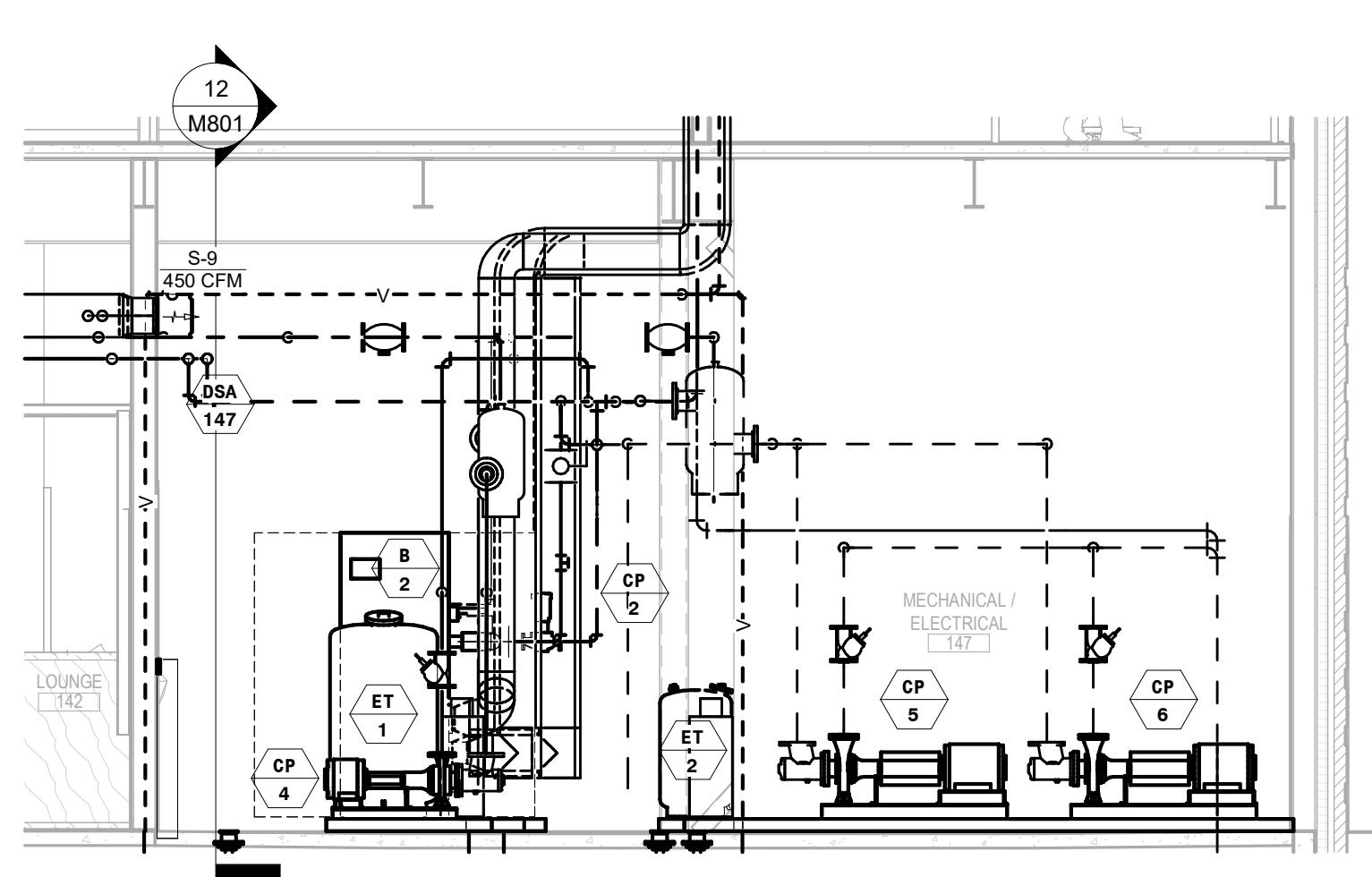
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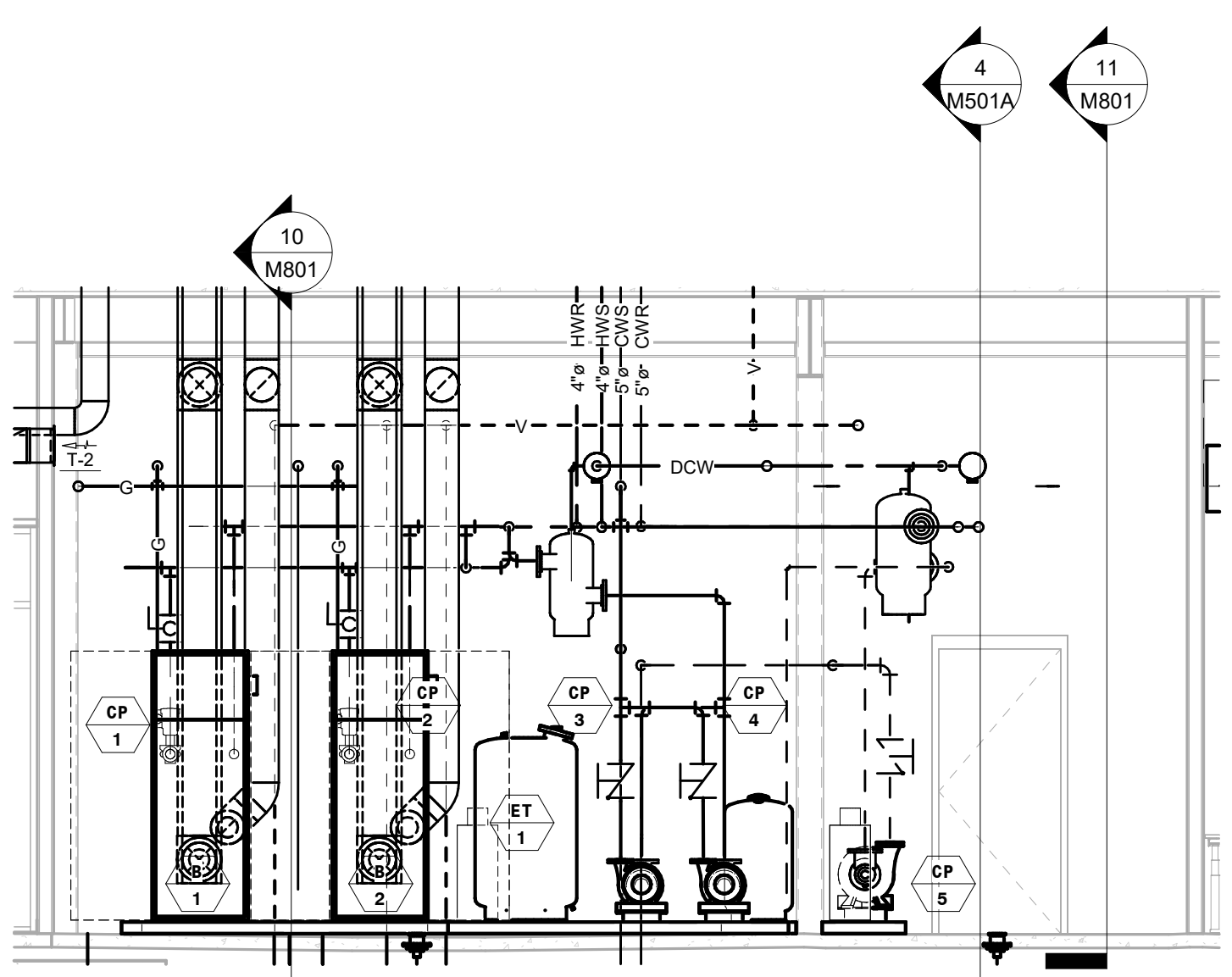
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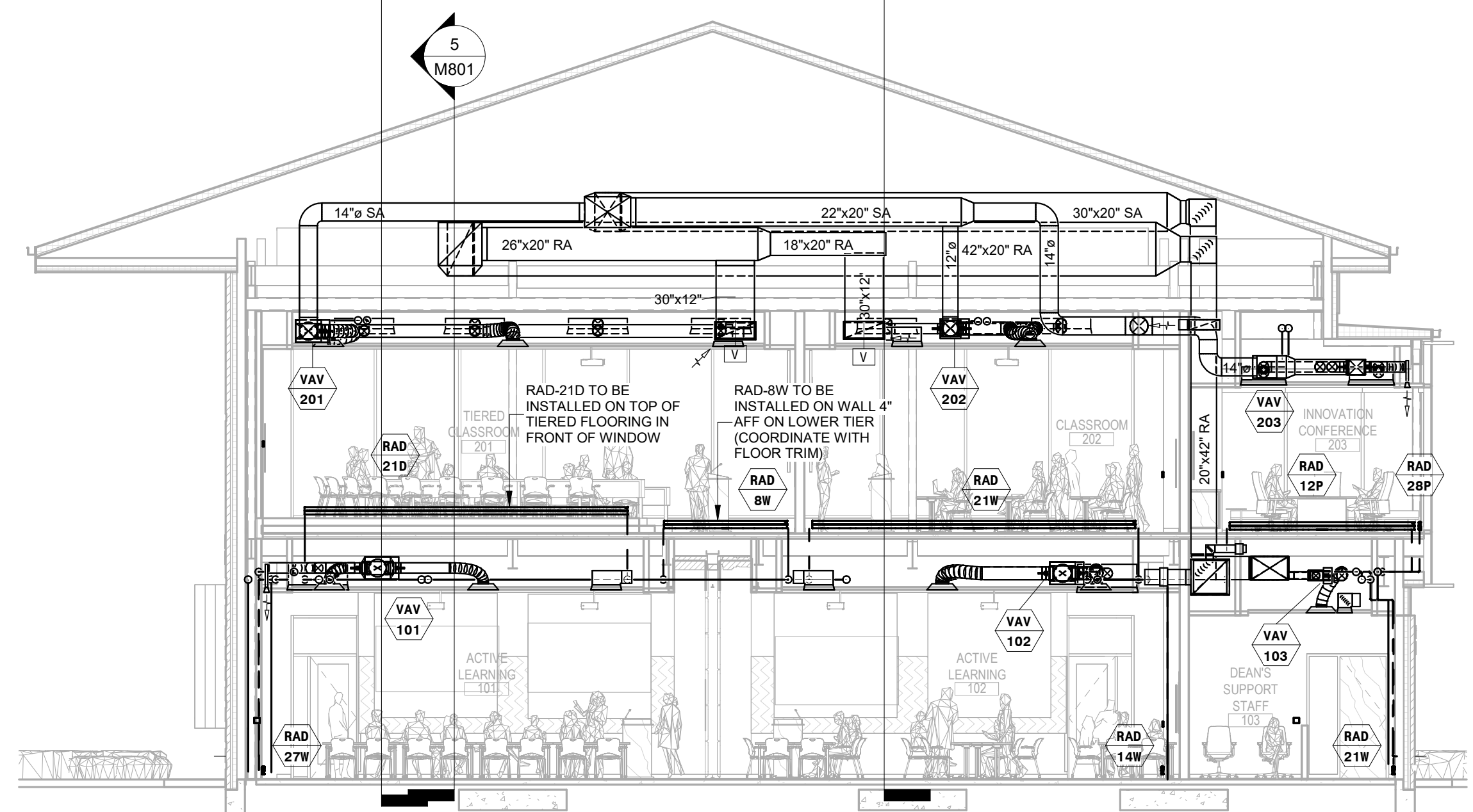
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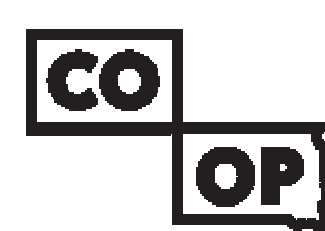
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M801 SCALE: 1/4" = 1'-0"



12 MECHANICAL SECTION #12
M801 SCALE: 1/4" = 1'-0"



13 MECHANICAL SECTION #13
M801 SCALE: 1/8" = 1'-0"



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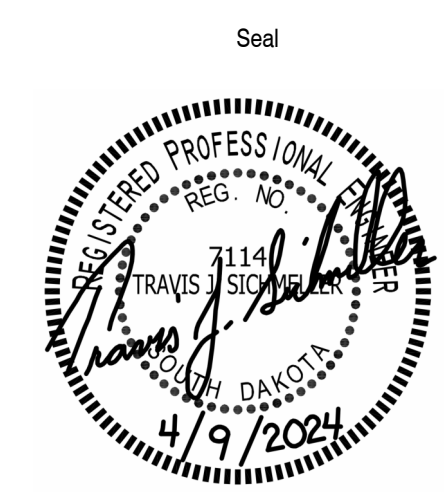
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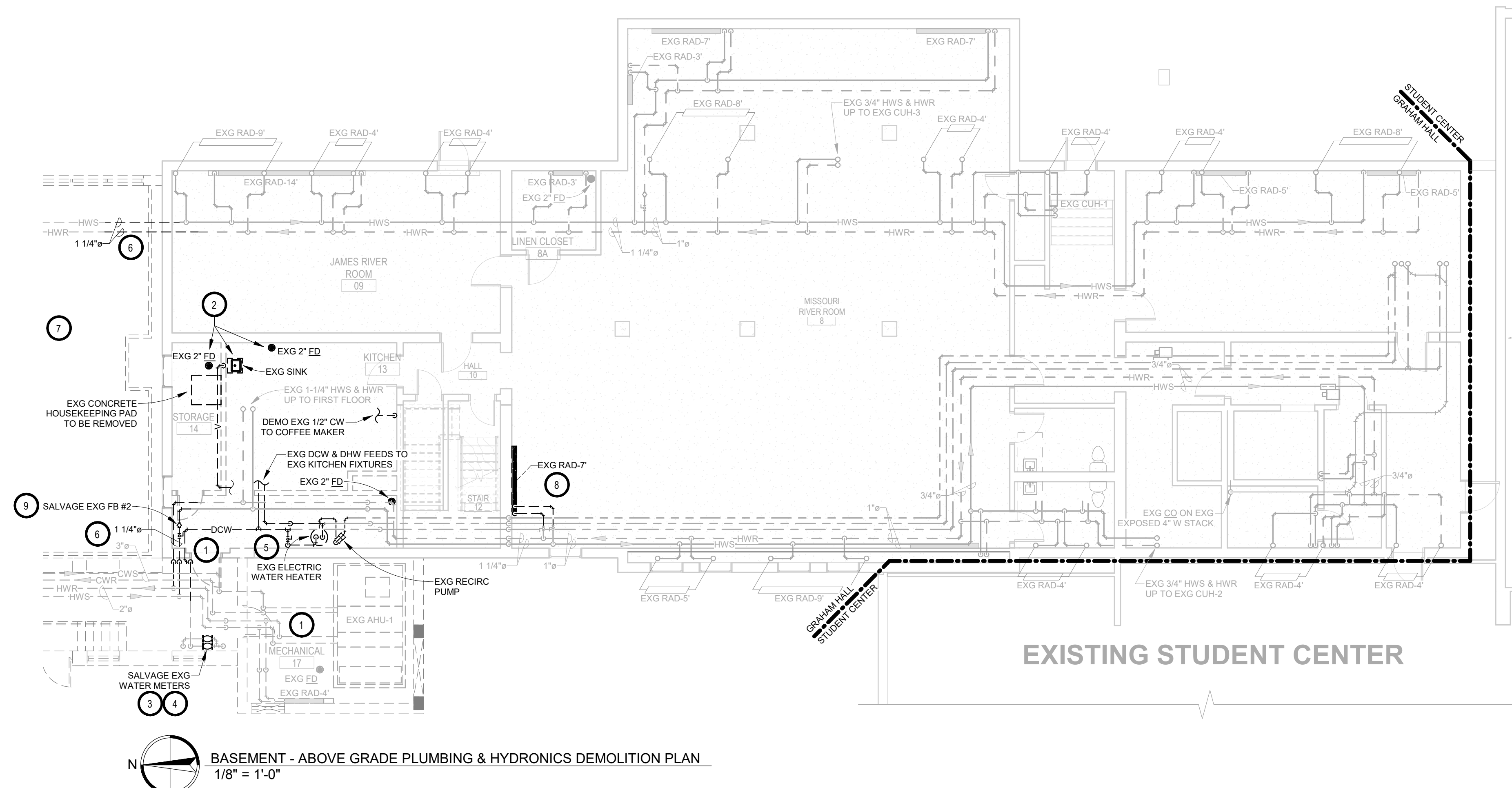
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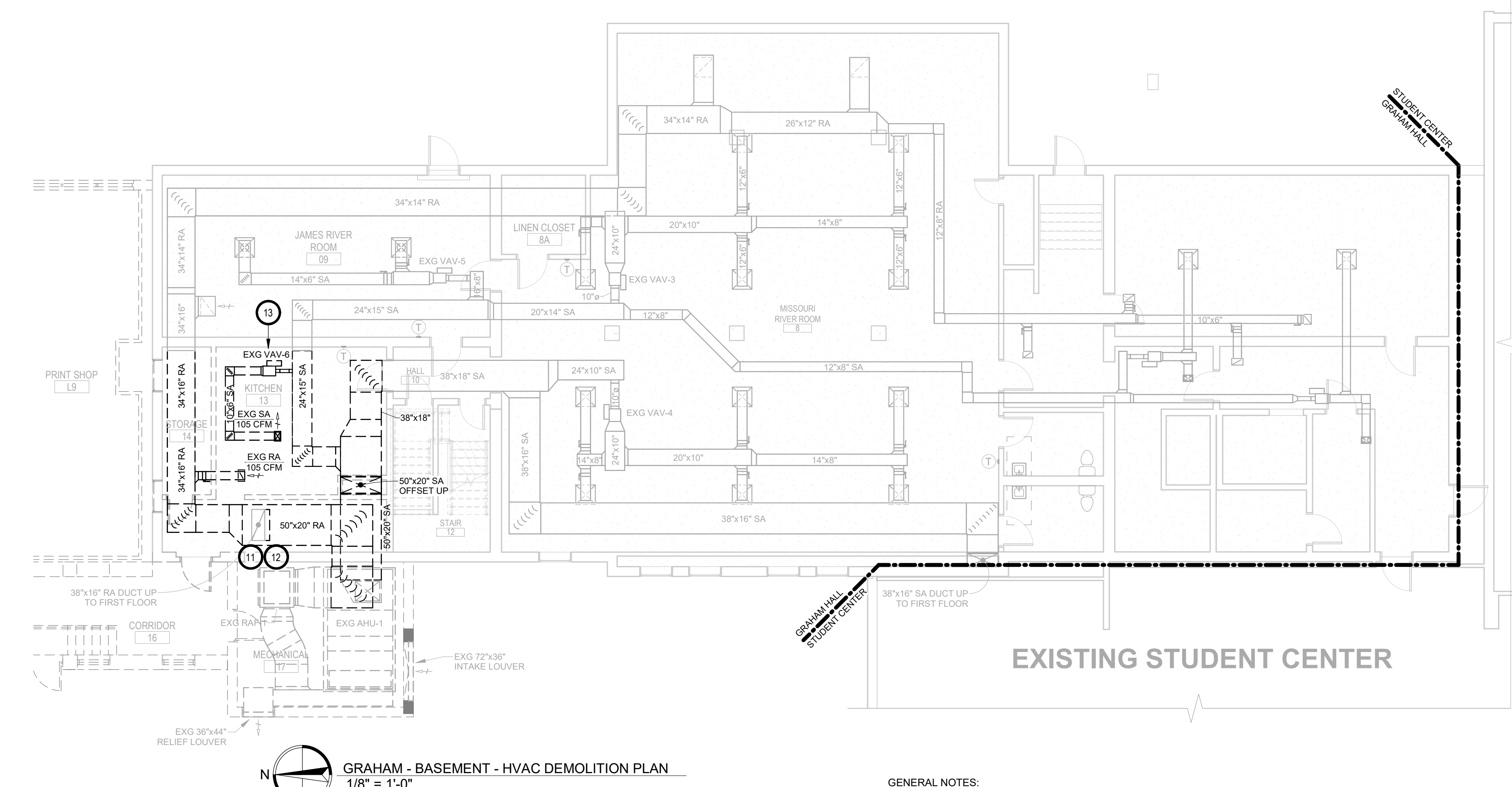
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**MECHANICAL SECTIONS
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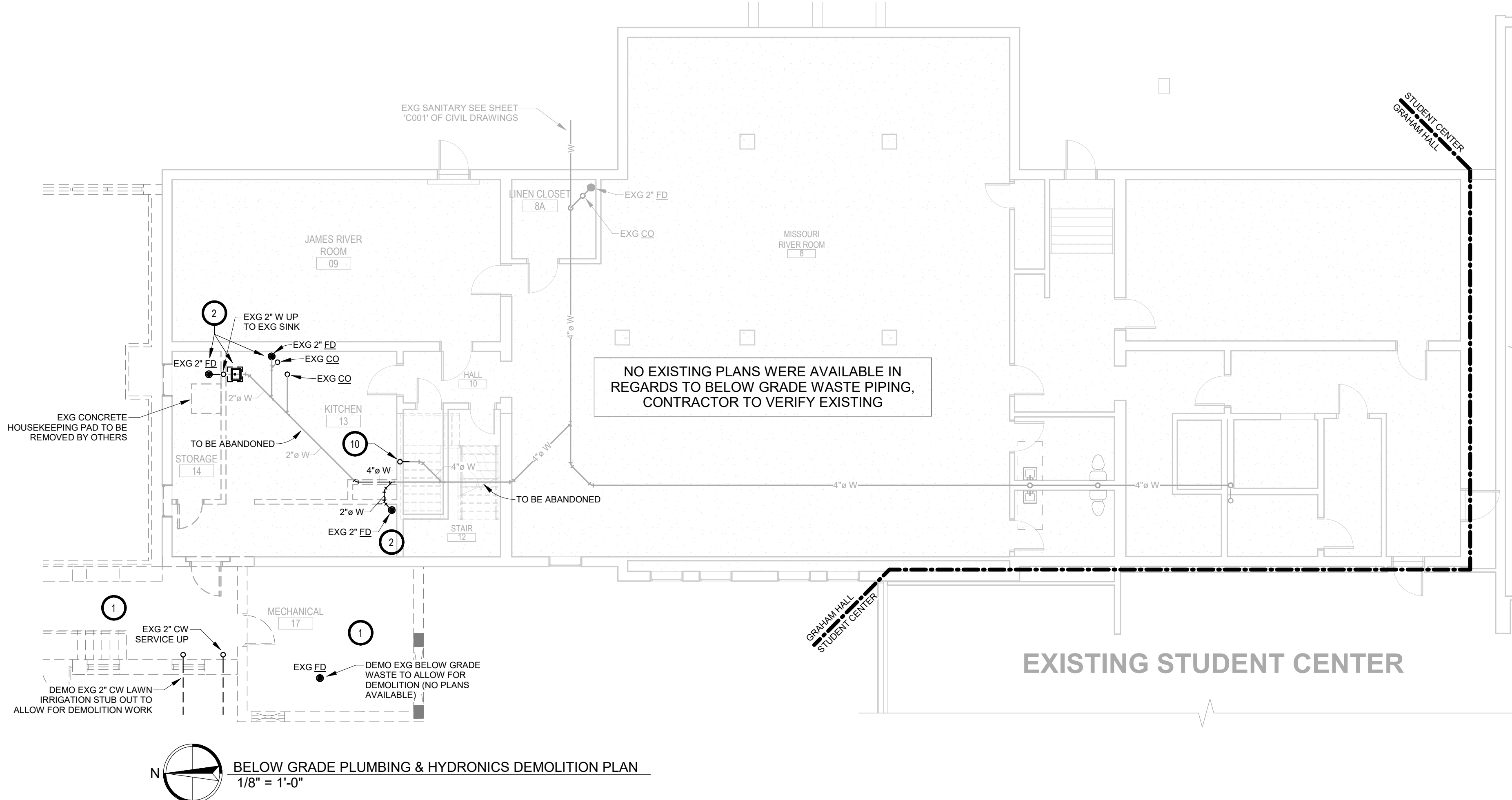
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BASEMENT - ABOVE GRADE PLUMBING & HYDRONICS DEMOLITION PLAN
1/8" = 1'-0"

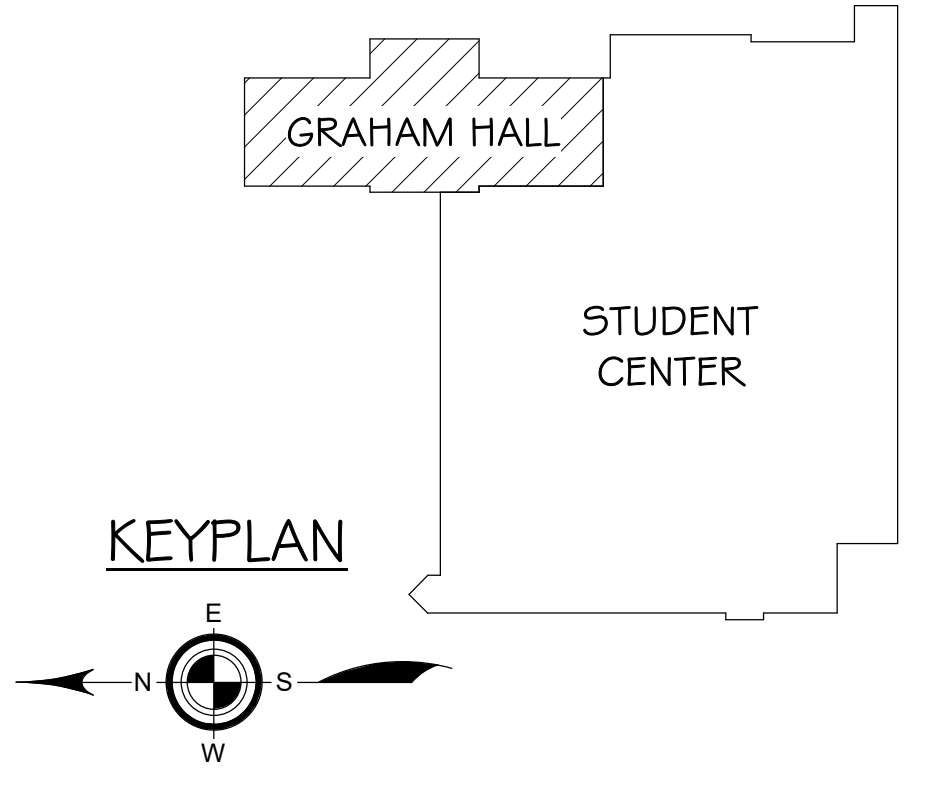


GRAHAM - BASEMENT - HVAC DEMOLITION PLAN
1/8" = 1'-0"



BASEMENT PLUMBING & HYDRONICS DEMOLITION PLAN
1/8" = 1'-0"

**NO EXG FIRE SPRINKLER IN THIS BUILDING
(SEE PROPOSED FOR NEW FIRE SPRINKLER PROVISIONS)**



KEYPLAN

- GENERAL NOTES:**
- CONTRACTOR SHALL VISIT THE SITE AND VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS. NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES, INCLUDING ANY NECESSARY DEMOLITION.
 - 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, CONFERENCE 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.
 - 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.
 - 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.
 - 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 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 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**
- PLUMBING CONTRACTOR TO DISCONNECT ANY DOMESTIC WATER PIPING OR PLUMBING SYSTEMS AS NECESSARY TO ALLOW FOR THE PROPOSED BUILDING DEMOLITION.
 - PLUMBING CONTRACTOR TO DISCONNECT AND REMOVE EXISTING PLUMBING FIXTURES INCLUDING FLOOR DRAINS ETC AND ALL ASSOCIATED DOMESTIC WATER, VENTING, AND SANITARY PIPING (CAP NEAR MAIN), AND PATCH AS NECESSARY. SEE PROPOSED.
 - PLUMBING CONTRACTOR TO DISCONNECT AND SALVAGE 2" CITY OWNED DOMESTIC WATER METER.
 - PLUMBING CONTRACTOR TO DISCONNECT AND SALVAGE 2" CITY OWNED LAWN IRRIGATION WATER METER.
 - PLUMBING CONTRACTOR TO DISCONNECT AND REMOVE EXISTING ELECTRIC DOMESTIC HOT WATER HEATER AND RECIRC PUMP AND ASSOCIATED PIPING, SEE PROPOSED.
 - PLUMBING CONTRACTOR TO DISCONNECT EXISTING HEATING HYDRONIC PIPING TO ALLOW FOR PROPOSED BUILDING DEMOLITION.
 - PLUMBING CONTRACTOR TO DISCONNECT AND SALVAGE EXISTING 6" PANEL RADIATOR FROM LINCOLN HALL LOWER STORAGE ROOM PRIOR TO EXISTING DEMOLITION AND CAP R/OUTS. RELOCATE TO IN GRAHAM HALL, SEE PROPOSED.
 - PLUMBING CONTRACTOR TO DISCONNECT AND RELOCATE EXISTING 7" PANEL RADIATOR TO ACCOMMODATE PROPOSED CLOSET FOR ELECTRICAL 8A; EXISTING ISOLATION AND CONTROL VALVES TO REMAIN, SEE PROPOSED.
 - PLUMBING CONTRACTOR TO DISCONNECT AND SALVAGE FOR RELOCATION THE EXISTING FLOW BALANCING VALVE EXG FB #2 AND RELOCATE, SEE PROPOSED.
 - PLUMBING CONTRACTOR TO DEMO EXG 4" W STACK UP AS NECESSARY TO ALLOW FOR PROPOSED SANITARY TEE WITH CLEAN OUT. SEE PROPOSED.
 - VENTILATION CONTRACTOR TO DISCONNECT AND REMOVE EXISTING DUCT SYSTEMS (SUPPLY AIR AND RETURN AIR) TO ALLOW FOR THE PROPOSED LINCOLN BUILDING DEMOLITION & GRAHAM REMODEL WORK.
 - TEMPERATURE CONTROL CONTRACTOR TO DISCONNECT AND REMOVE EXISTING TEMPERATURE CONTROL SYSTEMS TO ALLOW FOR PROPOSED BUILDING DEMOLITION; SEE PROPOSED.
 - VENTILATION CONTRACTOR TO DISCONNECT AND SALVAGE EXISTING VAV-6. VC TO REINSTALL VAV-6. SEE PROPOSED.

- SPECIAL NOTES**
- BALANCING CONTRACTOR TAKE READINGS FROM EXISTING MANUAL FLOW BALANCING VALVES PRIOR TO BEGINNING WORK ON EXISTING HEATING SYSTEM.
 - BALANCING CONTRACTOR TAKE READINGS FROM GRAHAM & STUDENT CENTER EXISTING MANUAL FLOW BALANCING VALVES PRIOR TO BEGINNING WORK ON EXISTING HEATING SYSTEM. EXISTING PLANS AND BALANCING REPORT ARE AVAILABLE. CONTACT ENGINEER'S OFFICE.

<p>Seal</p>	<p>Issue</p> <p>100% CONSTRUCTION DOCUMENTS</p>	<p>Date</p> <p>9 APRIL 2024</p>	<p>LINCOLN HALL</p> <p>12th Ave SE, Aberdeen, SD 57401 211100748</p> <p>Northern State University</p> <p>1939 S. Jay St Aberdeen, South Dakota 57401 Telephone: 605-626-3011 E-mail:</p>	<p>Project Number: 211100748</p> <p>Drawn By: SICHMELLER ENGINEERING</p> <p>Reviewed By: TS</p> <p>Approved By: TS</p>
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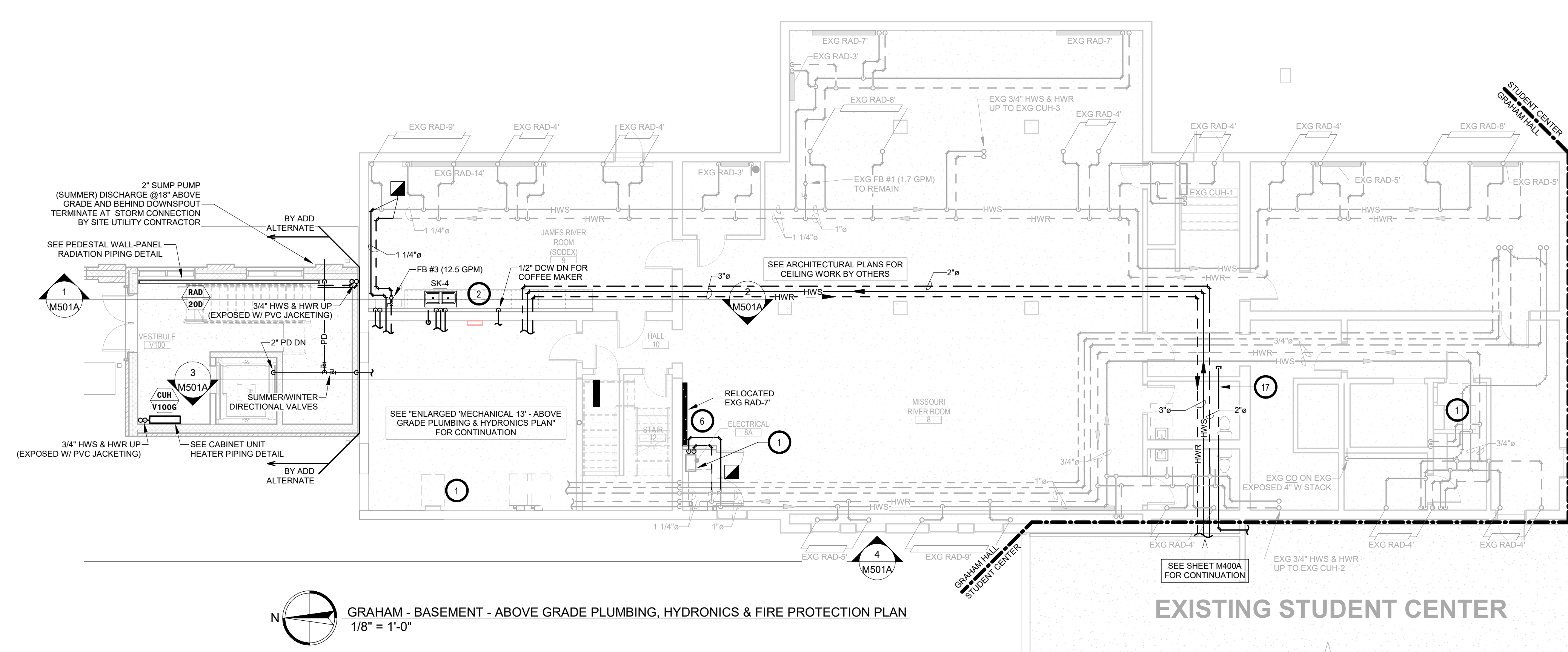
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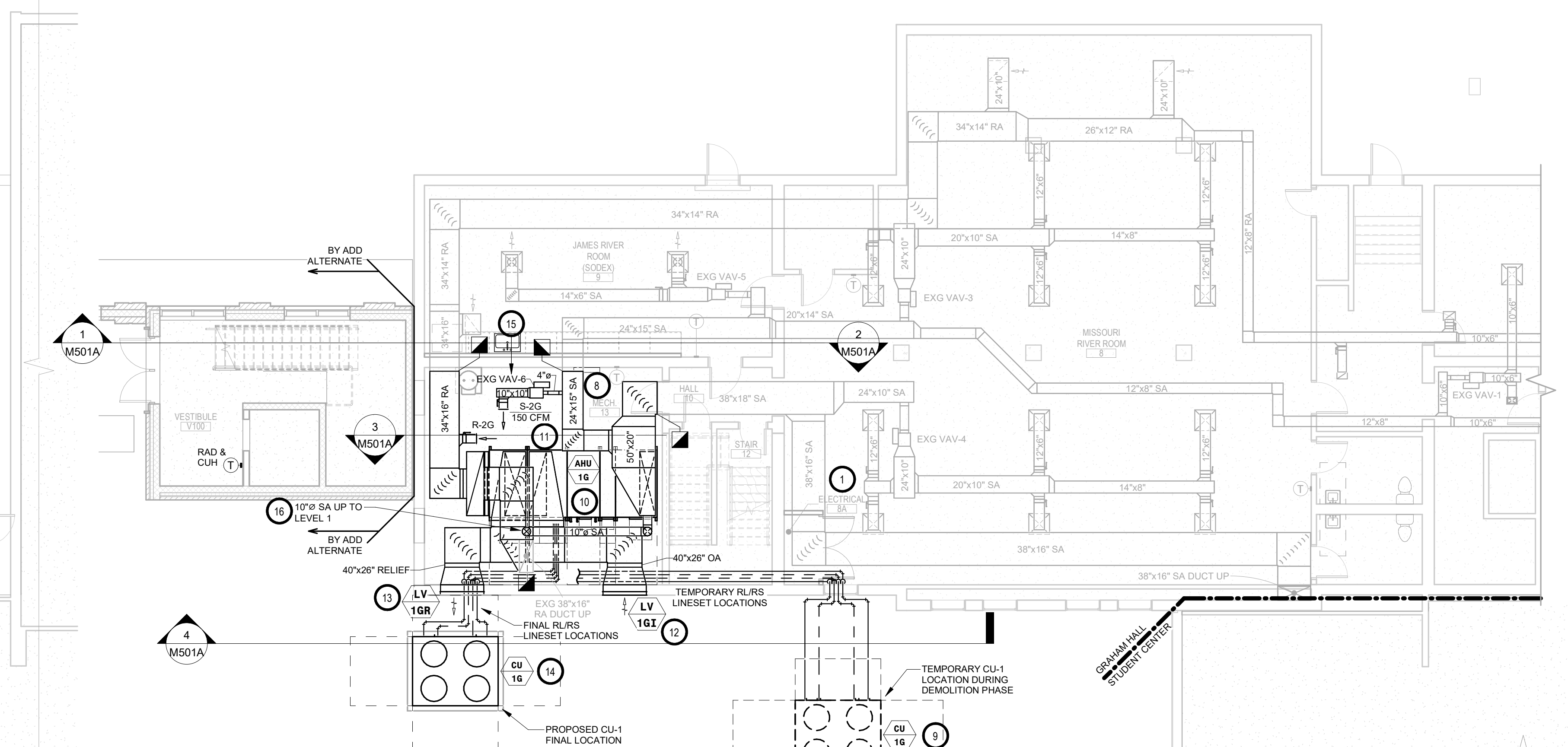
AndersonMasonDale Architects

GRAHAM HALL - BASEMENT MECHANICAL DEMOLITION PLAN

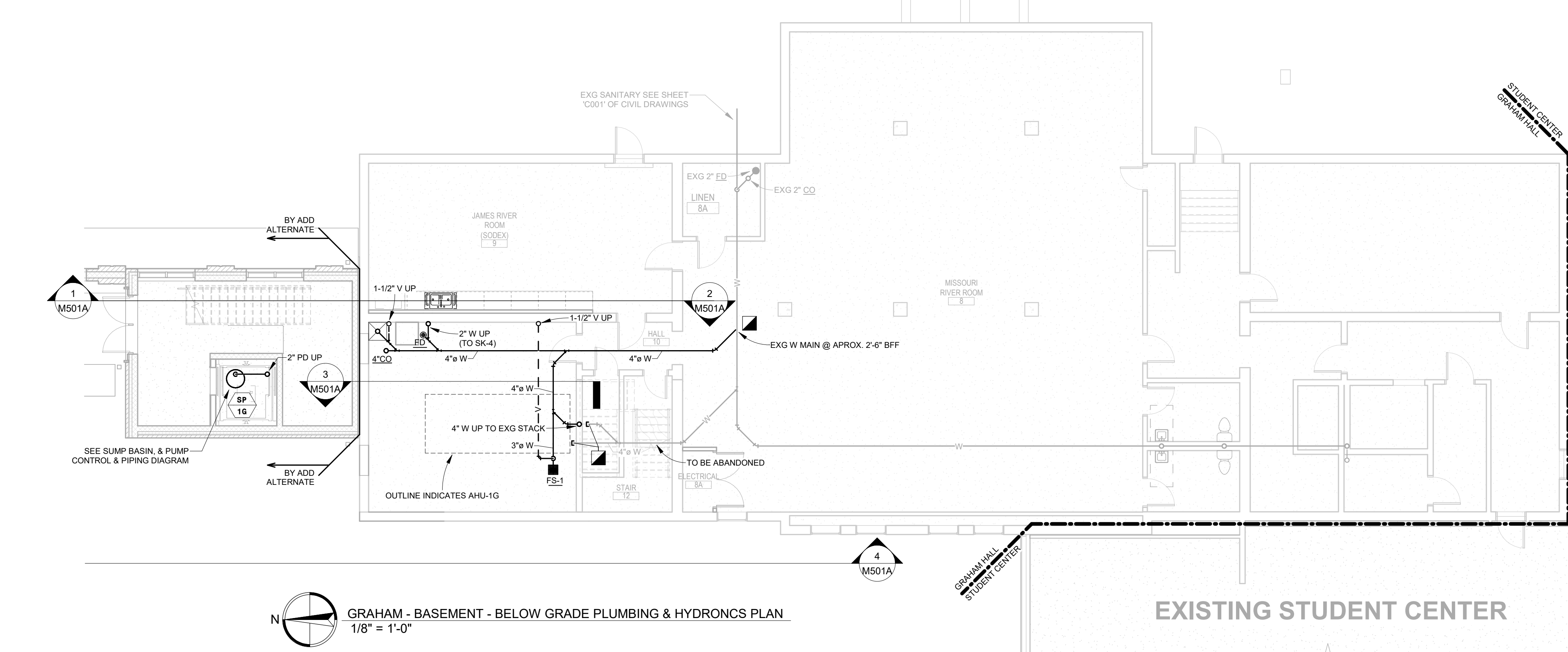
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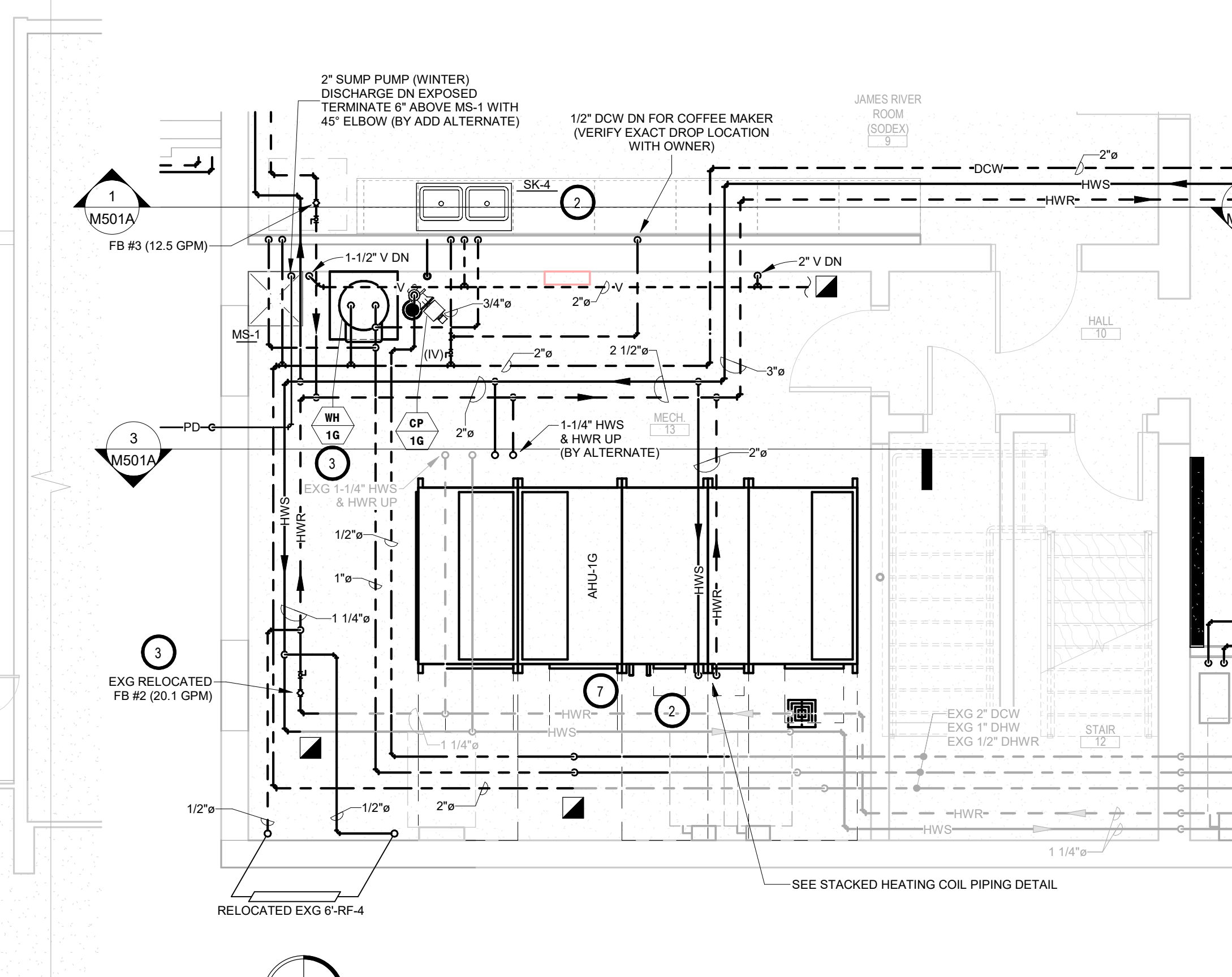
GRAHAM - BASEMENT - ABOVE GRADE PLUMBING, HYDRONICS & FIRE PROTECTION PLAN
1/8" = 1'-0"



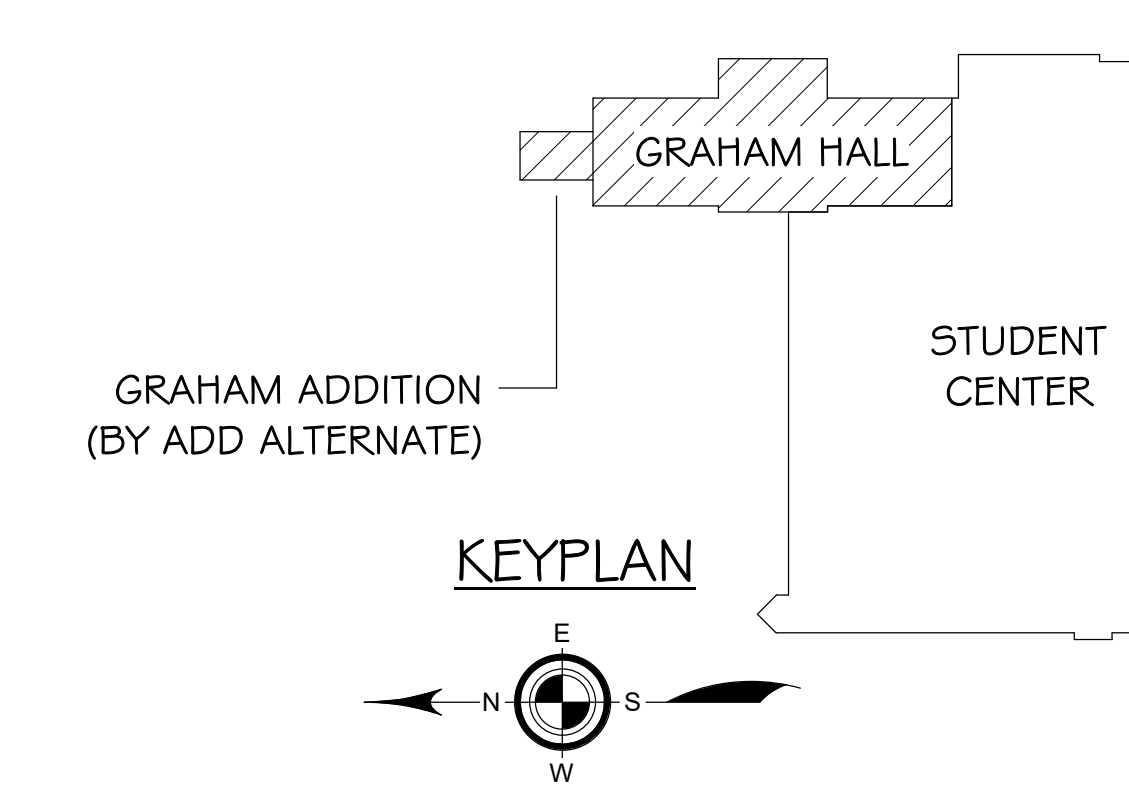
GRAHAM - BASEMENT - HVAC PLAN
1/8" = 1'-0"



GRAHAM - BASEMENT - BELOW GRADE PLUMBING & HYDRONICS PLAN
1/8" = 1'-0"



ENLARGED 'MECHANICAL 13' - ABOVE GRADE PLUMBING & HYDRONICS PLAN
1/4" = 1'-0"



GRAHAM ADDITION
(BY ADD ALTERNATE)

KEYPLAN

SPECIAL NOTES

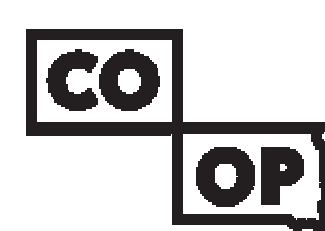
- A. ALL MECHANICAL SYSTEMS, EXCLUDING DROPS, TO BE INSTALLED AS HIGH AS POSSIBLE TO PROVIDE MAXIMUM CLEARANCES FOR OWNER.
- B. FLOOR DRAINS & SINK LOCATIONS SHALL BE INSTALLED IN LOCATIONS PROPER TO ACCEPT INDIRECT DRAIN PIPING FROM BOILERS, WATER HEATER, RELIEFS, ETC. (TRIP HAZARDS FROM PIPING WILL 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.

GENERAL NOTES:

- A. ALL WORK SHALL BE PERFORMED IN A CLEAN AND WORKMANLIKE MANNER.
- B. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PATCHING WORK 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. PLUMBING CONTRACTOR & VENTILATION CONTRACTOR SHALL COORDINATE ALL PROPOSED WORK WITH ALL OTHER TRADES TO ACCOMMODATE LIMITED CEILING SPACE.
- G. FOR SIMPLY DUCT INSULATION NOT SHOWN, DUCT SIZES INDICATED ON DRAWING ARE INTERNAL DIMENSIONS. AS NEEDED ADJUST ACTUAL SIZE FOR INSULATION THICKNESS AS SPECIFIED.
- H. ALL FLEXIBLE DUCTWORK AND CONNECTORS BETWEEN THE LOW PRESSURE DUCTWORK AND THE DIFFUSERS SHALL BE THE SIZE OF THE DIFFUSER INLET.
- I. PROVIDE & INSTALL VIBRATION ISOLATION ON ALL HANGING EQUIPMENT. PROVIDE & INSTALL VIBRATION ABSORPTION MOUNTING PADS ON ALL EQUIPMENT MOUNTED ON FLOOR.
- J. PROVIDE & INSTALL DURABLE FLEX DUCT CONNECTORS AT ALL EQUIPMENT CONNECTIONS.
- K. ALL DUCTWORK TO BE SEALED AIRTIGHT.
- L. FRESH AIR INTAKES TO BE MINIMUM 10' FROM ANY EXHAUST TERMINATION.
- M. ALL FLOOR EQUIPMENT SHALL BE SET ON 4" HIGH CONCRETE BASES FURNISHED BY THIS CONTRACTOR.
- N. CONTRACTOR SHALL VISIT THE SITE AND VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS. NOTIFY THE A/E IMMEDIATELY OF ANY DISCREPANCIES.
- O. COORDINATE NEW SERVICES WITH LOCAL UTILITIES.
- P. PLUMBING CONTRACTOR TO PROVIDE VENTING FOR ALL FLOOR DRAINS, TRENCH DRAINS, AND FLOOR SINKS AS SHOWN OR AS REQUIRED BY CODE.

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 INSTALL NEW DOMESTIC PLUMBING SYSTEMS IN NEW MECH 13 AND JAMES RIVER ROOM (SODEX). FLOOR CUTTING AND PATCHING BY OTHERS.
3. PLUMBING CONTRACTOR TO PROVIDE & INSTALL NEW ELECTRIC WATER HEATER WH-1G AND RECIRC PUMP CR-1G. SEE ELECTRIC WATER HEATER CONTROL AND PIPING DIAGRAM.
4. PLUMBING CONTRACTOR TO REINSTALL EXISTING FLOW BALANCING VALVE EXG FB#2 TO THIS LOCATION.
5. NOT USED.
6. PLUMBING CONTRACTOR TO EXTEND 1/2" HWS/HWR RUNOUTS AND REINSTALL EXISTING PANEL RADIATOR TO ACCOMMODATE PROPOSED CLOSET FOR ELECTRICAL 8A.
7. PROVIDE & INSTALL FULL SIZE CONDENSATE P-TRAP INSTALLED PER AHU MANUFACTURER'S INSTALLATION REQUIREMENTS, & TERMINATE AT FLOOR SINK WITH NO TRIP HAZARDS ALLOWED. AHU-1G TO BE 1-1/4" & TERMINATE AT SINK TAILPIECE. EXACT FLOOR SINK LOCATION TO AVOID TRIP HAZARDS & EXACT SIZES TO BE COORDINATED WITH THE V.C.
8. TEMPERATURE CONTROL CONTRACTOR TO INSTALL NEW TEMPERATURE CONTROL PANEL TO CONTROL GRAHAM HVAC EQUIPMENT.
9. VENTILATION CONTRACTOR TO INSTALL OWNER PROVIDED AIR COOLED CONDENSING UNIT CU-1G AND ASSOCIATED TEMPORARY REFRIGERATION PIPING IN THIS TEMPORARY LOCATION. SEE LINCOLN HALL MECHANICAL SITE PLAN M200.
10. TEMPERATURE CONTROL CONTRACTOR TO INSTALL NEW TEMPERATURE CONTROLS NECESSARY FOR VENTILATION AND AIR CONDITIONING AHU-1G.
11. VENTILATION CONTRACTOR TO INSTALL OWNER PROVIDED AIR HANDLING UNIT AHU-1G WITH INTEGRAL RETURN AIR FAN. RECONNECT SUPPLY AND RETURN AIR SYSTEMS.
12. VENTILATION CONTRACTOR TO PROVIDE AND INSTALL 50"WIDE X 64"TALL NEW OUTSIDE AIR LOUVER AT THIS LOCATION. OPENING TO BE BY OTHERS. INSTALL NEW OUTSIDE AIR DUCT.
13. VENTILATION CONTRACTOR TO PROVIDE AND INSTALL 50"WIDE X 64"TALL NEW RELIEF AIR LOUVER AT THIS LOCATION. OPENING TO BE BY OTHERS. INSTALL NEW RELIEF AIR DUCT.
14. AFTER COURTYARD WORK BY OTHERS - VENTILATION CONTRACTOR TO INSTALL OWNER PROVIDED AIR-COOLED CONDENSING UNIT CU-1G. VC TO PROVIDE & INSTALL LV RESISTANT LINE SETS ON UNISTRUT TRACK WITH PREMANUFACTURED BLOCKS IN THIS PERMANENT LOCATION. TC TO INSTALL CONTROL WIRING. CONCRETE PAD BY OTHERS. SEE LINCOLN HALL MECHANICAL SITE PLAN M200.
15. REBALANCE EXG VAV-6 TO 150CFM (MINIMUM 75 CFM).
16. BY ADD ALTERNATE - VENTILATION CONTRACTOR TO PROVIDE AND INSTALL 10" DIAMETER SUPPLY AIR DUCT TO SERVE PROPOSED GRAHAM ADDITION.
17. FIRE SPRINKLER CONTRACTOR TO INSTALL NEW 4" FIRE SPRINKLER MAIN W/ CAP FOR FUTURE PROJECT. COORDINATE INSTALLATION & ROUTING WITH OTHER TRADES & EXISTING CONDITIONS.



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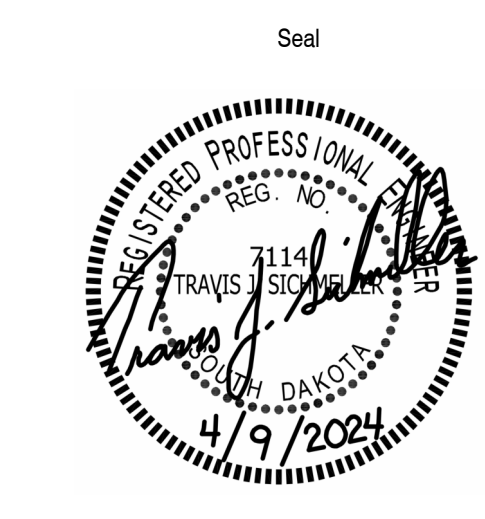
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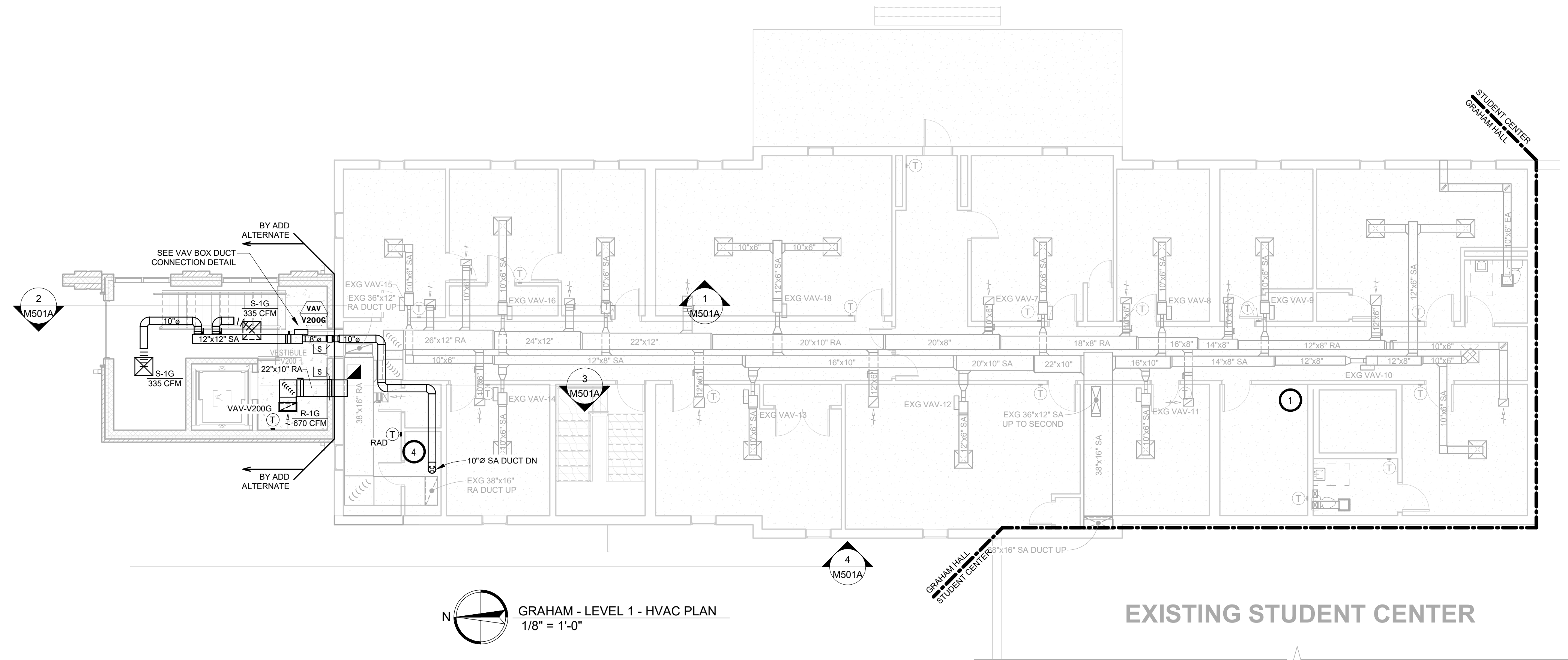
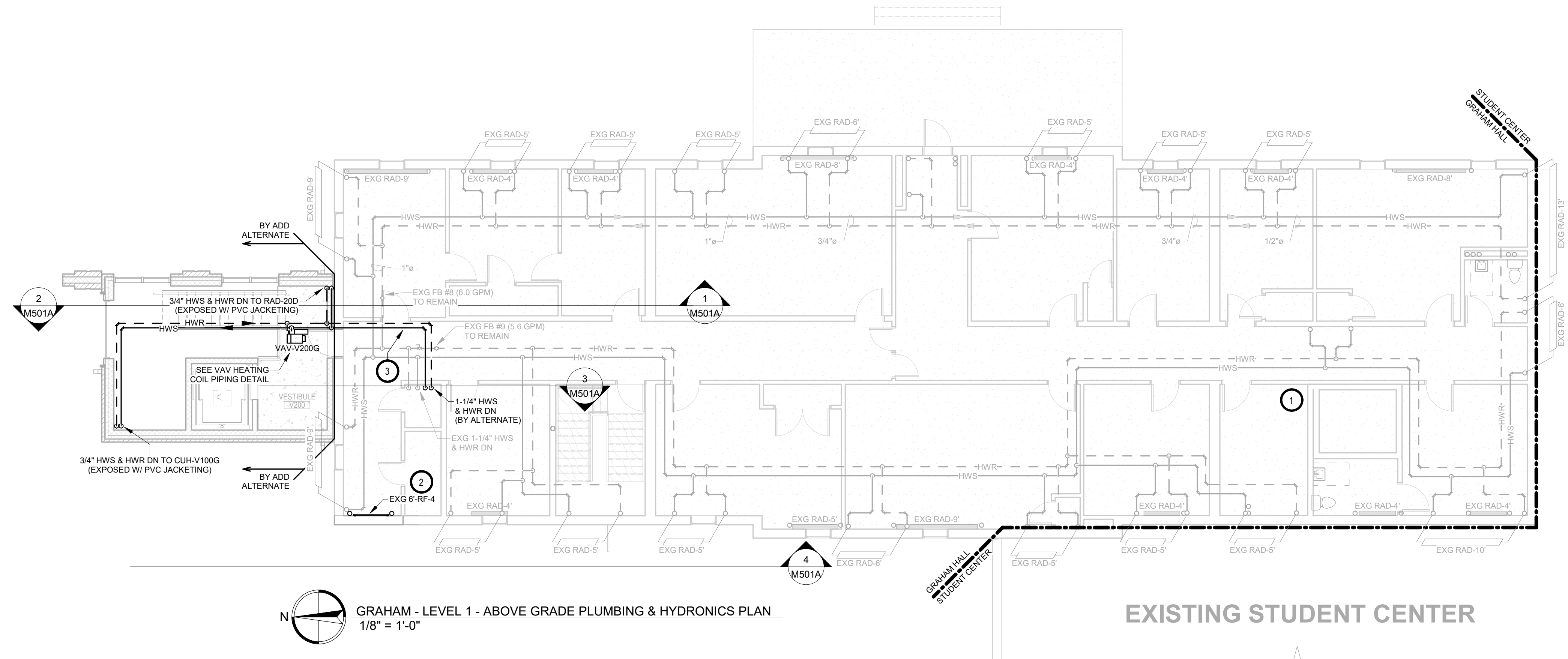
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100% CONSTRUCTION DOCUMENTS 9 APRIL 2024

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Project Number: 211100748
Drawn By: SICHMELLER ENGINEERING
Reviewed By: TS
Approved By: TS

GRAHAM HALL - BASEMENT MECHANICAL PROPOSED PLAN

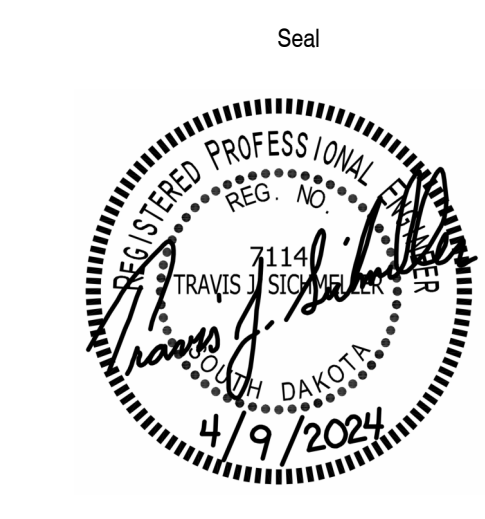
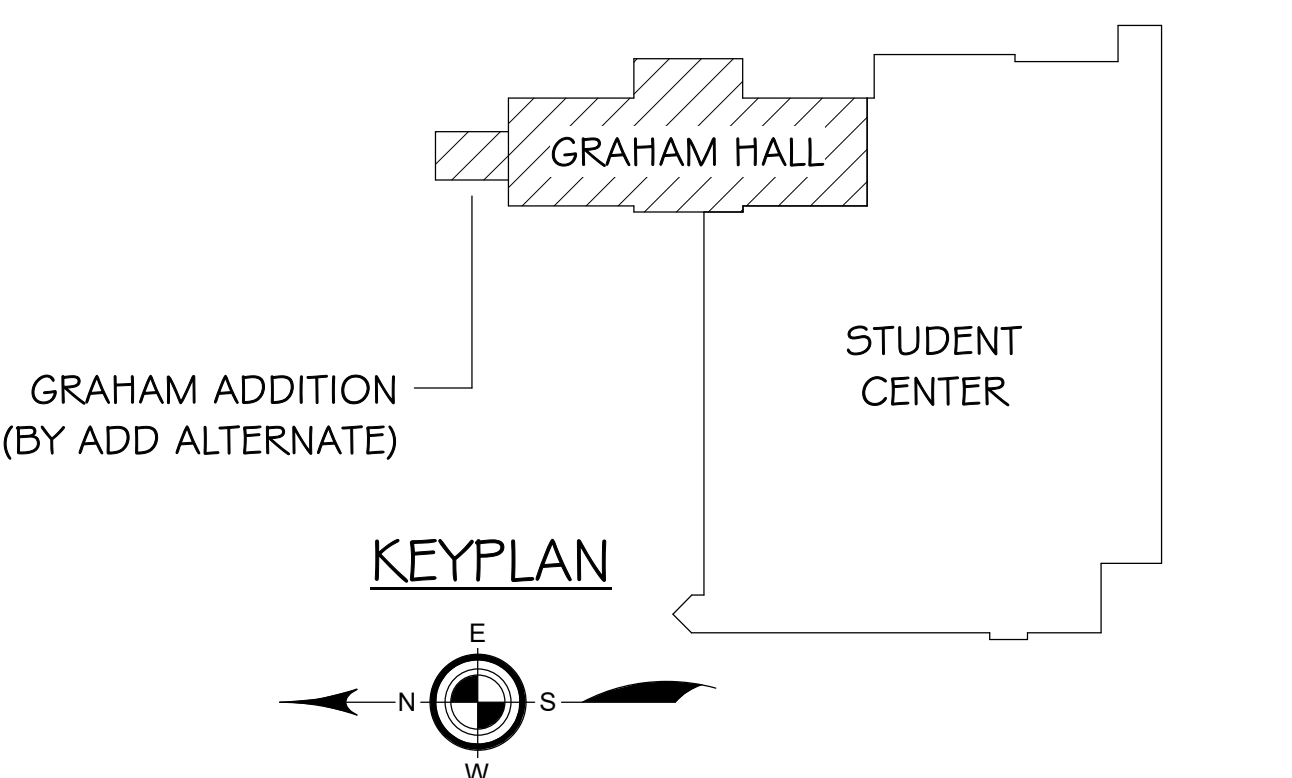
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- ALL WORK SHALL BE PERFORMED IN A CLEAN AND WORKMANLIKE MANNER.
 - THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PATCHING ANY OPENINGS LEFT IN FLOORS, WALLS, AND CEILINGS THAT WERE CAUSED BY HISHER ACTIONS. PATCHING SHALL MATCH EXISTING SURFACE IN COLOR, TEXTURE AND QUALITY SO THAT PATCH IS INDISTINGUISHABLE FROM ORIGINAL SURFACE.
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 - ALL DUCTWORK TO BE SEALED AIRTIGHT.
 - FRESH AIR INTAKES TO BE MINIMUM 10' FROM ANY EXHAUST TERMINATION.
 - ALL FLOOR EQUIPMENT SHALL BE SET ON 4" HIGH CONCRETE BASES FURNISHED BY THIS CONTRACTOR.
 - 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.

- 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 REINSTALL SALVAGED EXISTING 6" PANEL RADIATOR FROM LINCOLN HALL AT THIS LOCATION. PROVIDE AND INSTALL ADDITIONAL NECESSARY FACTORY MATCHING COVERS TO CONCEAL ASSOCIATED PIPING.
 - BY ADD ALTERNATE - PLUMBING CONTRACTOR TO PROVIDE AND INSTALL 1-1/4" HWS & HWR TO SERVE PROPOSED GRAHAM ADDITION.
 - BY ADD ALTERNATE - VENTILATION CONTRACTOR TO PROVIDE AND INSTALL 10" DIAMETER SUPPLY AIR DUCT TO SERVE PROPOSED GRAHAM ADDITION.

- SPECIAL NOTES**
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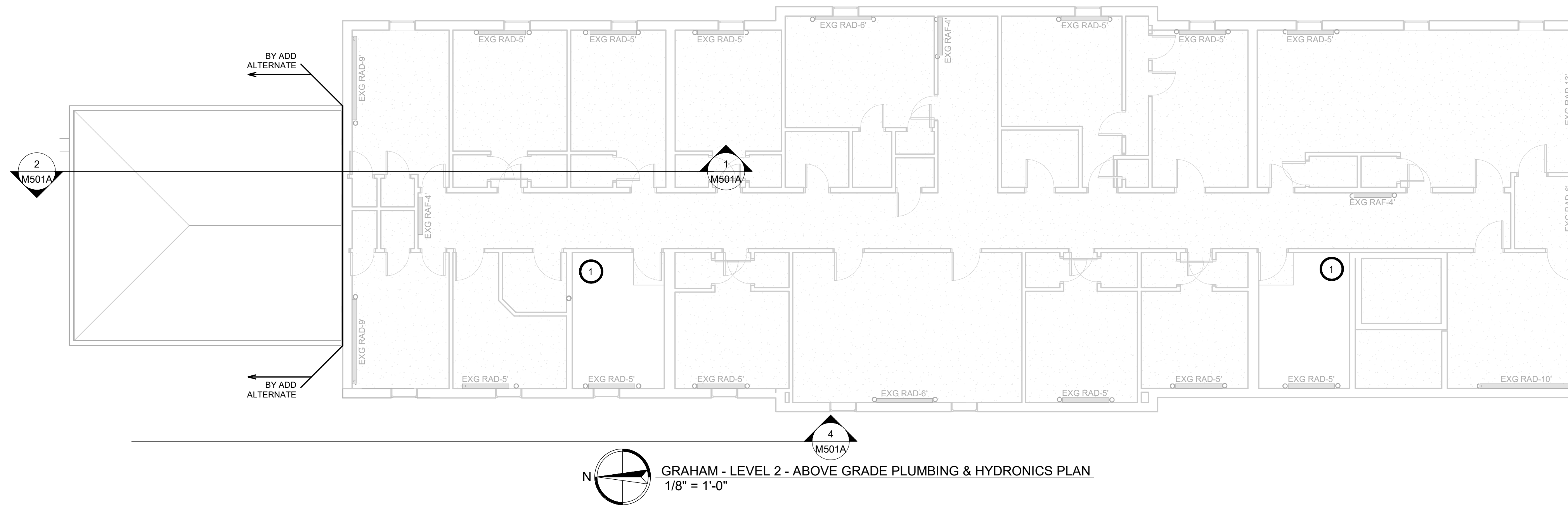
Issue
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Date
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211100748
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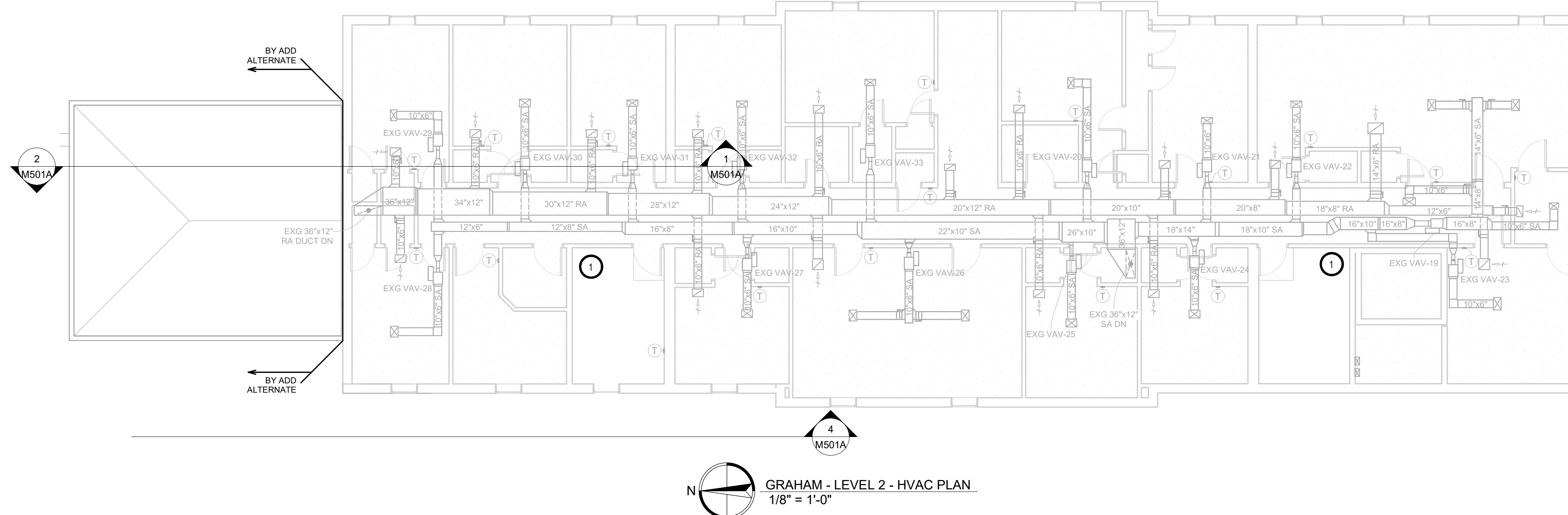
Project Number: 211100748
Drawn By: SICHMELLER ENGINEERING
Reviewed By: TS
Approved By: TS

**GRAHAM HALL - LEVEL 1
MECHANICAL PROPOSED PLAN
M301A**

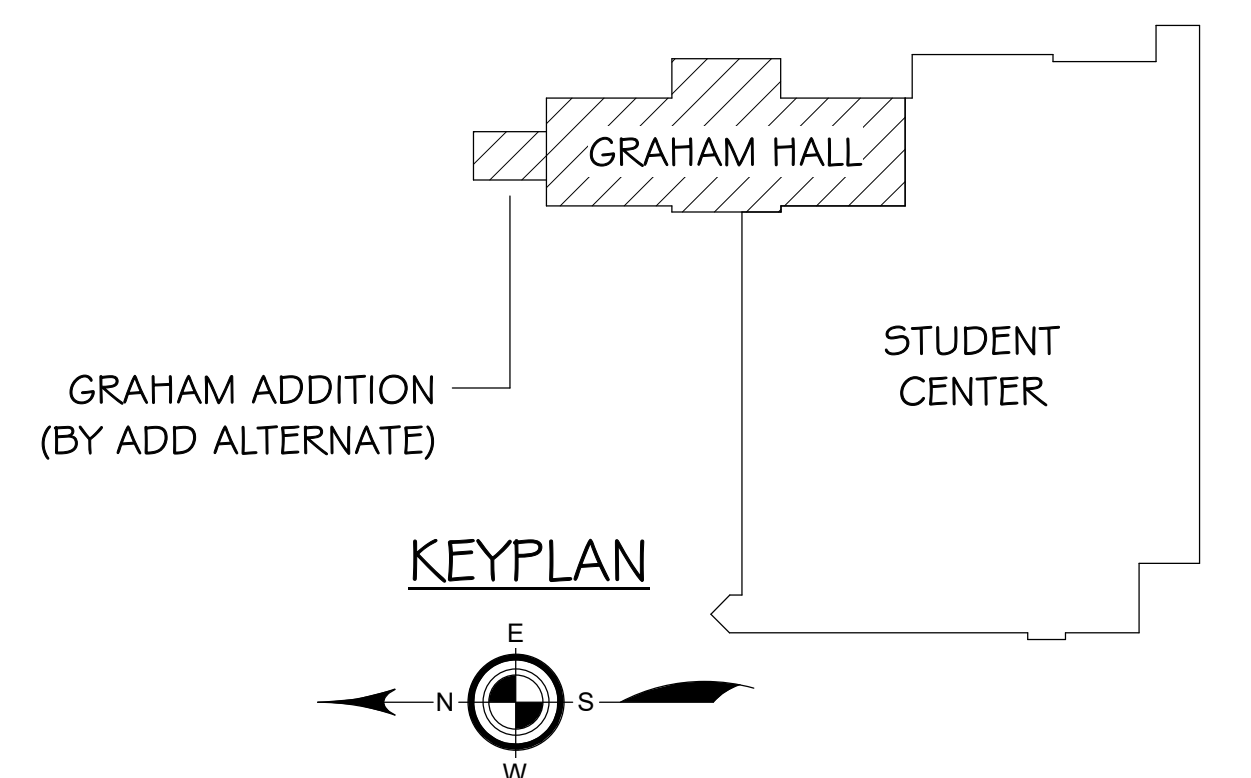
 AndersonMasonDale Architects	SICHMELLER ENGINEERING Architect of Record CO-OP Architecture 1108 S Main Street Suite #102 Aberdeen, SD 57401 Telephone: 605-254-4852 E-mail: tom@co-oparch.com	Civil Engineer Helms & Associates 418 Production Street Aberdeen, SD 57401 Telephone: 605-225-1212 E-mail: lucash@helmsengineering.com	Structural Engineer Rise Structural Associates, Inc. 609 S. Lyncrest Place, Suite 110 Sioux Falls, SD 57108 Telephone: 605-743-2510 E-mail: jjchristensen@riseincorp.com	Electrical Engineer IMEG Corporation 3314 Milwaukee Ave. NE Aberdeen, SD 57401 Telephone: 605-225-1349 E-mail: thomas.j.heinz@megcorp.com
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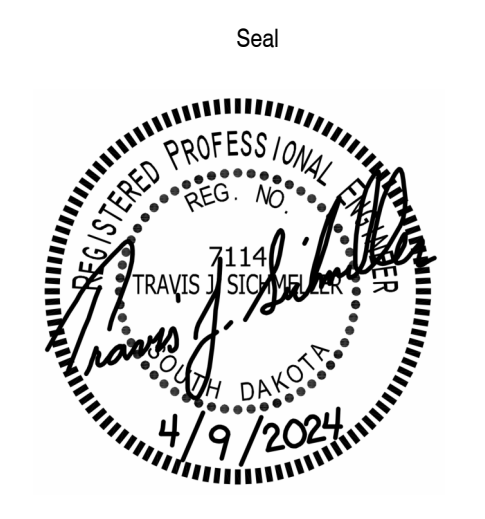
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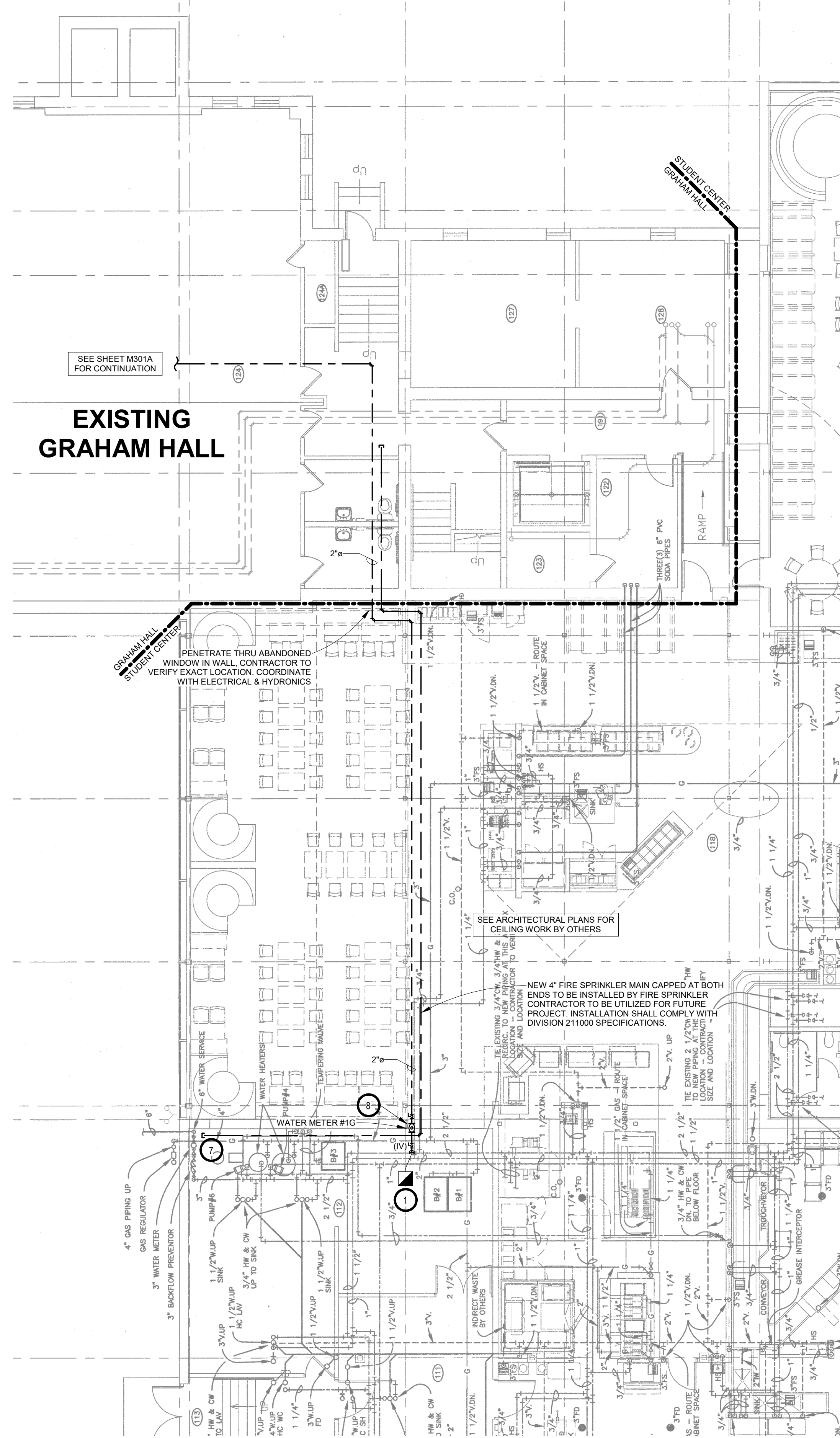
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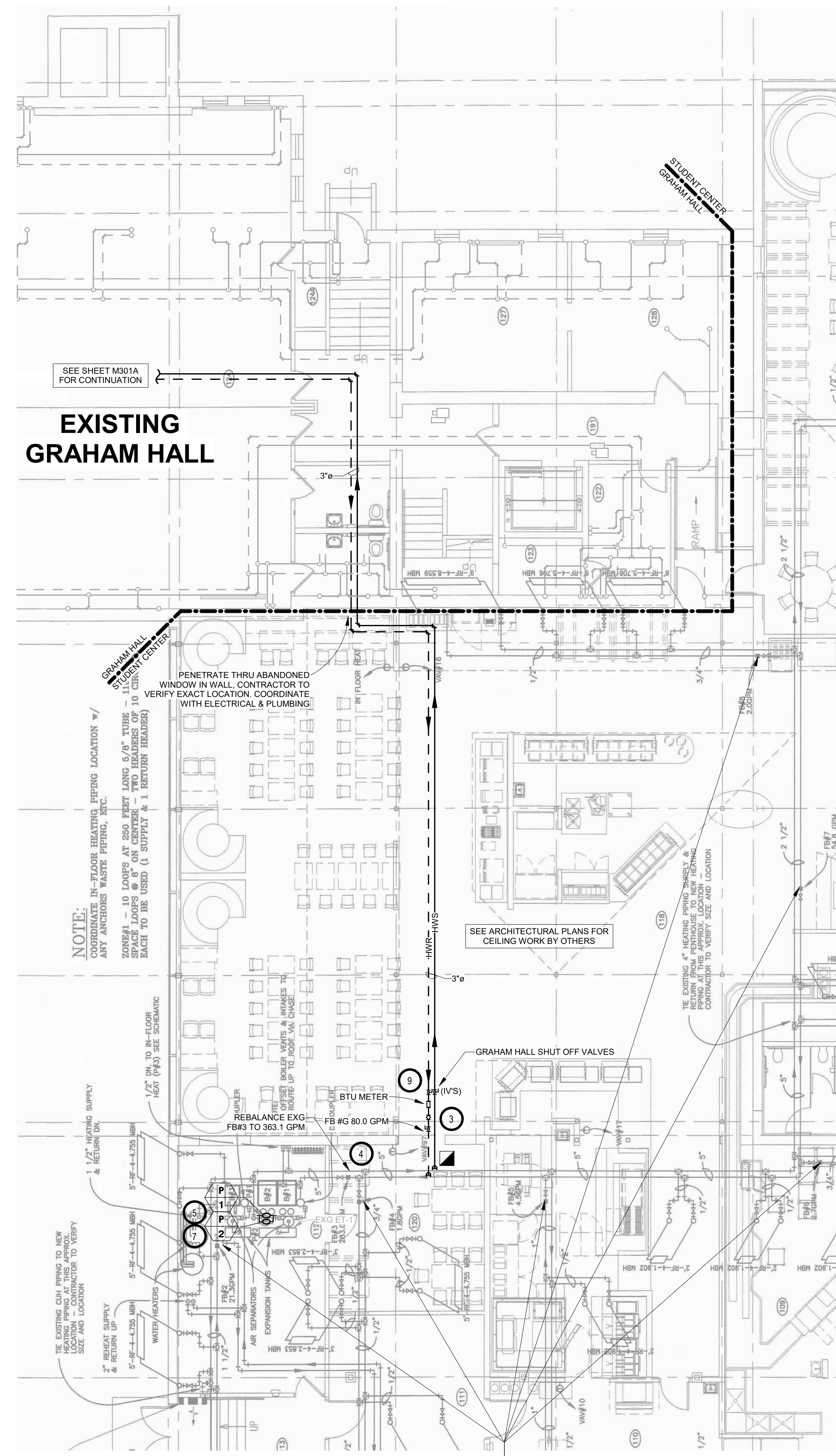
Project Number: 211100748
Drawn By: SICHMELLER ENGINEERING
Reviewed By: TS
Approved By: TS

**GRAHAM HALL - LEVEL 2
MECHANICAL PROPOSED PLAN**

M302A



STUDENT CENTER - LOWER LEVEL - PLUMBING & FIRE PROTECTION PLAN
1/8" = 1'-0"



STUDENT CENTER - LOWER LEVEL - HYDRONICS & HVAC PLAN
1/8" = 1'-0"

GENERAL NOTES:

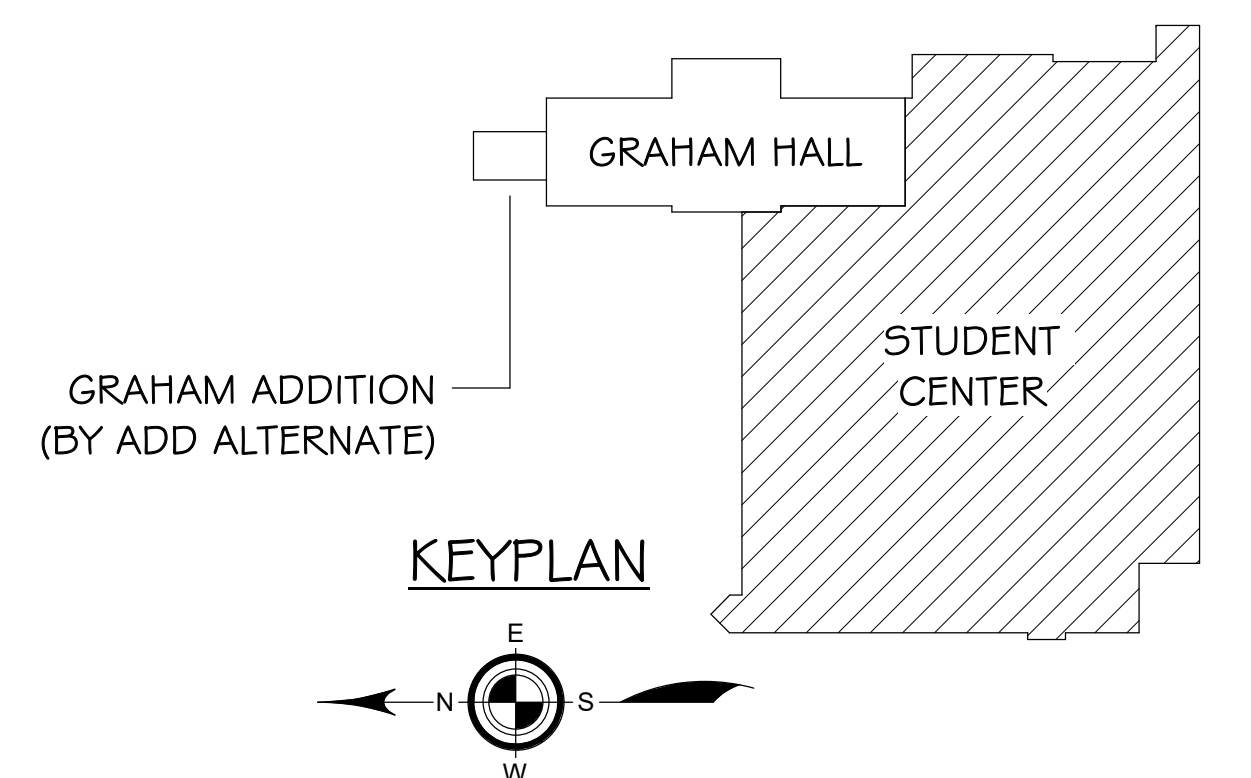
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KEYNOTES

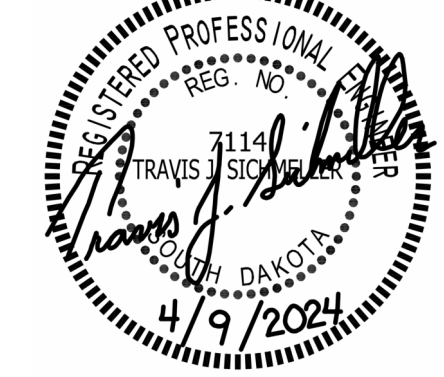
- 1. PLUMBING CONTRACTOR TO PROVIDE AND INSTALL 2" DOMESTIC WATER MAIN WITH ISOLATION VALVE TO GRAHAM HALL. CONNECT TO EXISTING 2-1/2" DOMESTIC COLD WATER PIPE AT THIS APPROXIMATE LOCATION. CONTRACTOR TO VERIFY SIZE AND LOCATION.
- 2. PLUMBING CONTRACTOR TO PROVIDE AND INSTALL 3" HWS & HWR PIPING WITH ISOLATION VALVES TO GRAHAM HALL. CONNECT TO EXISTING 5" HWS & HWR PIPING MAINS IN THIS APPROXIMATE LOCATION. CONTRACTOR TO VERIFY EXACT SIZE AND LOCATION.
- 3. PLUMBING CONTRACTOR TO PROVIDE AND INSTALL 3" FLOW BALANCING VALVE IN 3" HWR FROM GRAHAM. BALANCE TO VALUE LISTED IN FLOW BALANCING VALVE SCHEDULE.
- 4. EXISTING FLOW BALANCING VALVE FB#3 TO BE REBALANCED TO VALUE LISTED IN FLOW BALANCING VALVE SCHEDULE.
- 5. PLUMBING CONTRACTOR TO PROVIDE AND INSTALL PROPOSED P-1 AND P-2 TO REPLACE EXISTING PUMPS (P-1 AND P-2). CONTRACTOR TO MODIFY EXISTING PIPING AS NECESSARY. COORDINATE ELECTRICAL REQUIREMENTS WITH ELECTRICAL CONTRACTOR. SEE MODIFICATIONS TO EXISTING HEATING PUMPS PIPING DIAGRAM.
- 6. TEMPERATURE CONTROLS CONTRACTOR TO DISCONNECT CONTROLS TO EXISTING PUMPS P-1 AND P-2. TC TO PROVIDE & INSTALL NEW CONTROLS, AND PROVIDE NEW VFD'S FOR PROPOSED PUMPS (P-1 AND P-2), ETC TO INSTALL VFD'S.
- 7. FIRE SPRINKLER CONTRACTOR TO INSTALL FIRE SPRINKLER MAIN FOR FUTURE PROJECT. COORDINATE INSTALLATION & ROUTING WITH OTHER TRADES & EXISTING CONDITIONS.
- 8. PLUMBING CONTRACTOR TO PROVIDE AND INSTALL 2" WATER METER. TC TO INTERFACE. COORDINATE SIGNAL REQUIREMENTS WITH TC.
- 9. PLUMBING CONTRACTOR TO INSTALL BTU METER PROVIDED BY TEMPERATURE CONTROLS CONTRACTOR. TC TO PROVIDE & INSTALL ANY REQUIRED TEMPERATURE PROBES FOR BTU METER IN HWS & HWR PIPING AT THIS LOCATION.

SPECIAL NOTES

- A. ALL MECHANICAL SYSTEMS, EXCLUDING DROPS, TO BE INSTALLED AS HIGH AS POSSIBLE TO PROVIDE MAXIMUM CLEARANCES FOR OWNER.
- B. BALANCING CONTRACTOR TAKE READINGS FROM GRAHAM & STUDENT CENTER EXISTING MANUAL FLOW BALANCING VALVES PRIOR TO BEGINNING WORK ON EXISTING HEATING SYSTEM. EXISTING PLANS AND BALANCING REPORT ARE AVAILABLE. CONTACT ENGINEER'S OFFICE.



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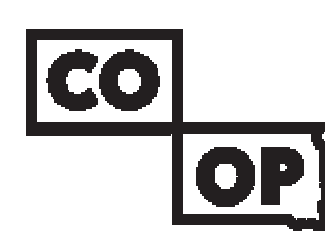


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211100748

Project Number: 211100748
Drawn By: SICHMELLER ENGINEERING
Reviewed By: TS
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STUDENT CENTER - LOWER LEVEL MECHANICAL & FIRE PROTECTION DEMOLITION & PROPOSED PLAN
M400A



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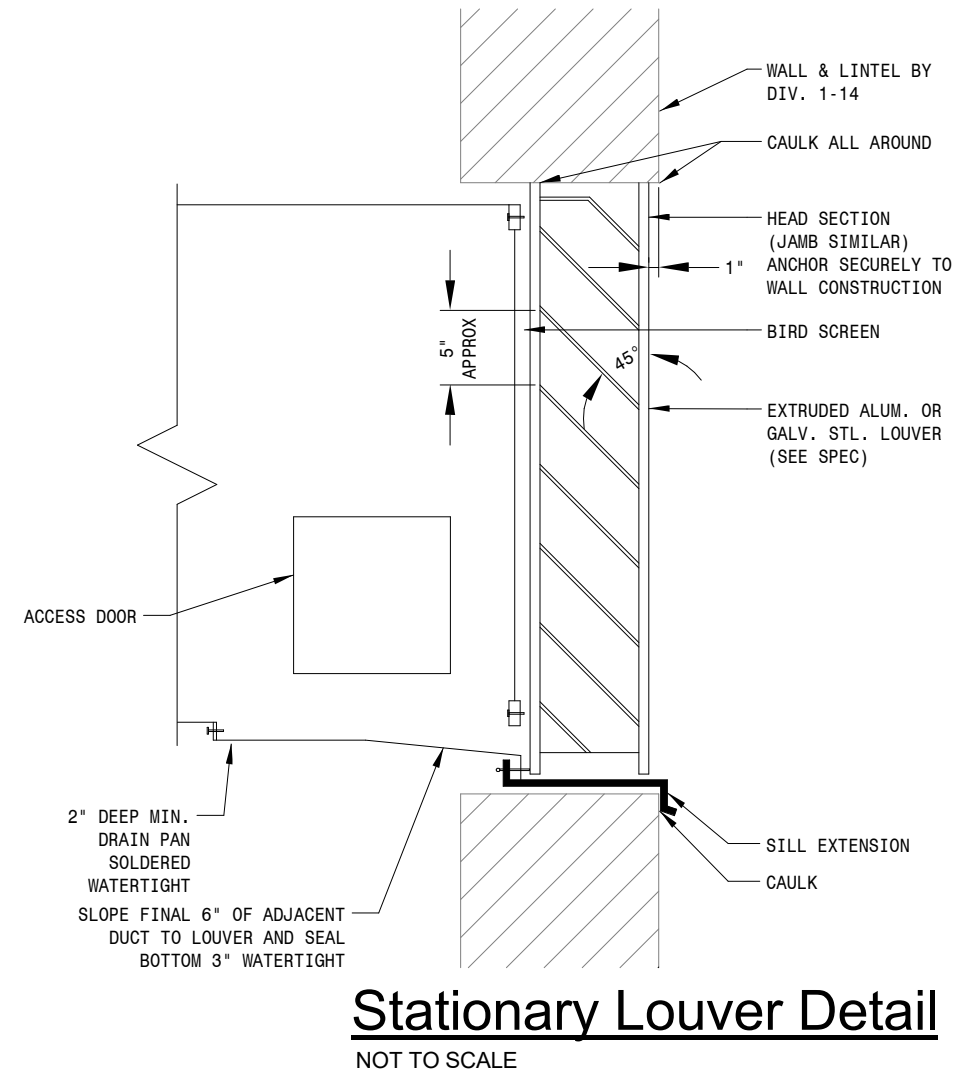
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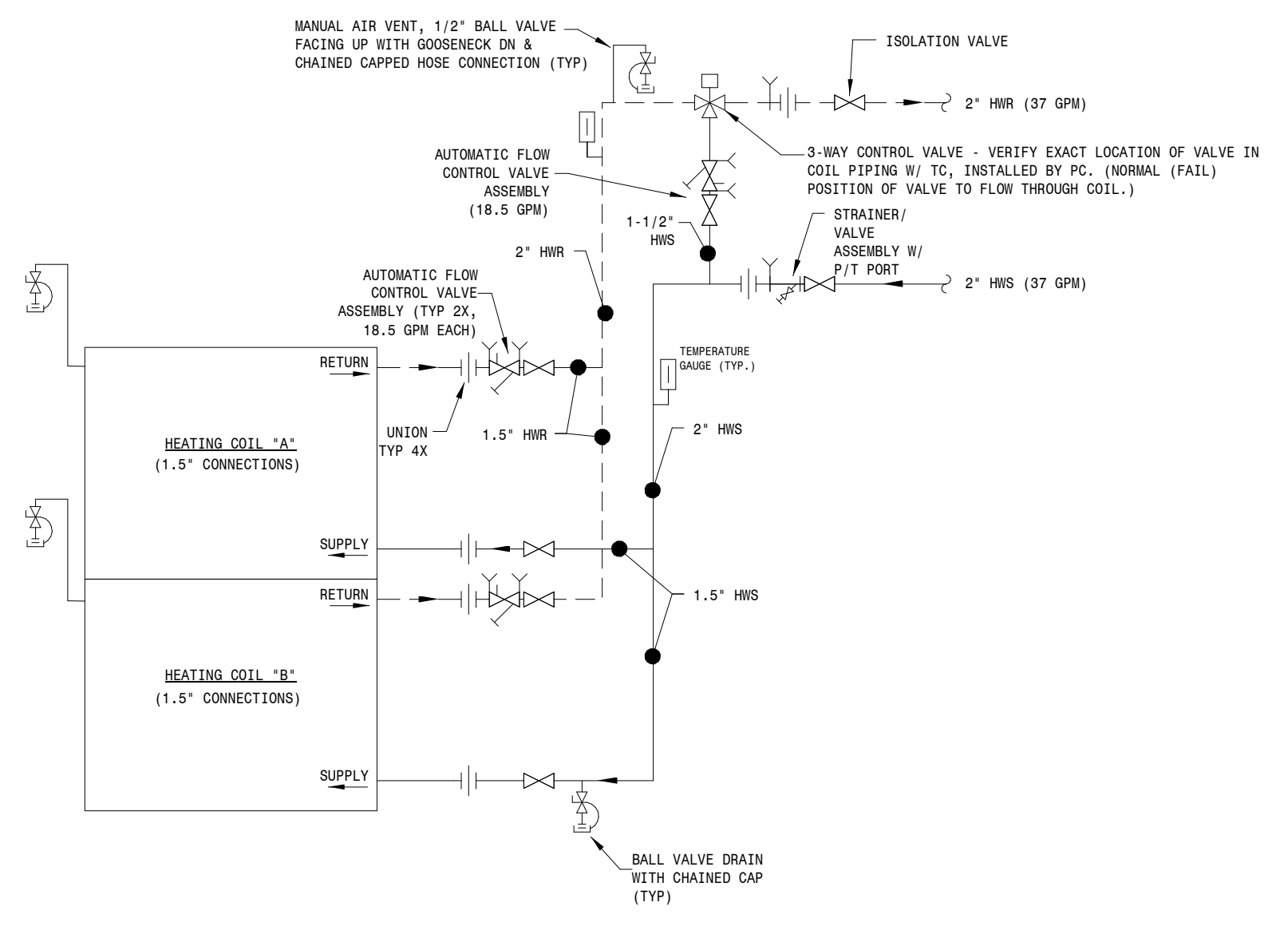
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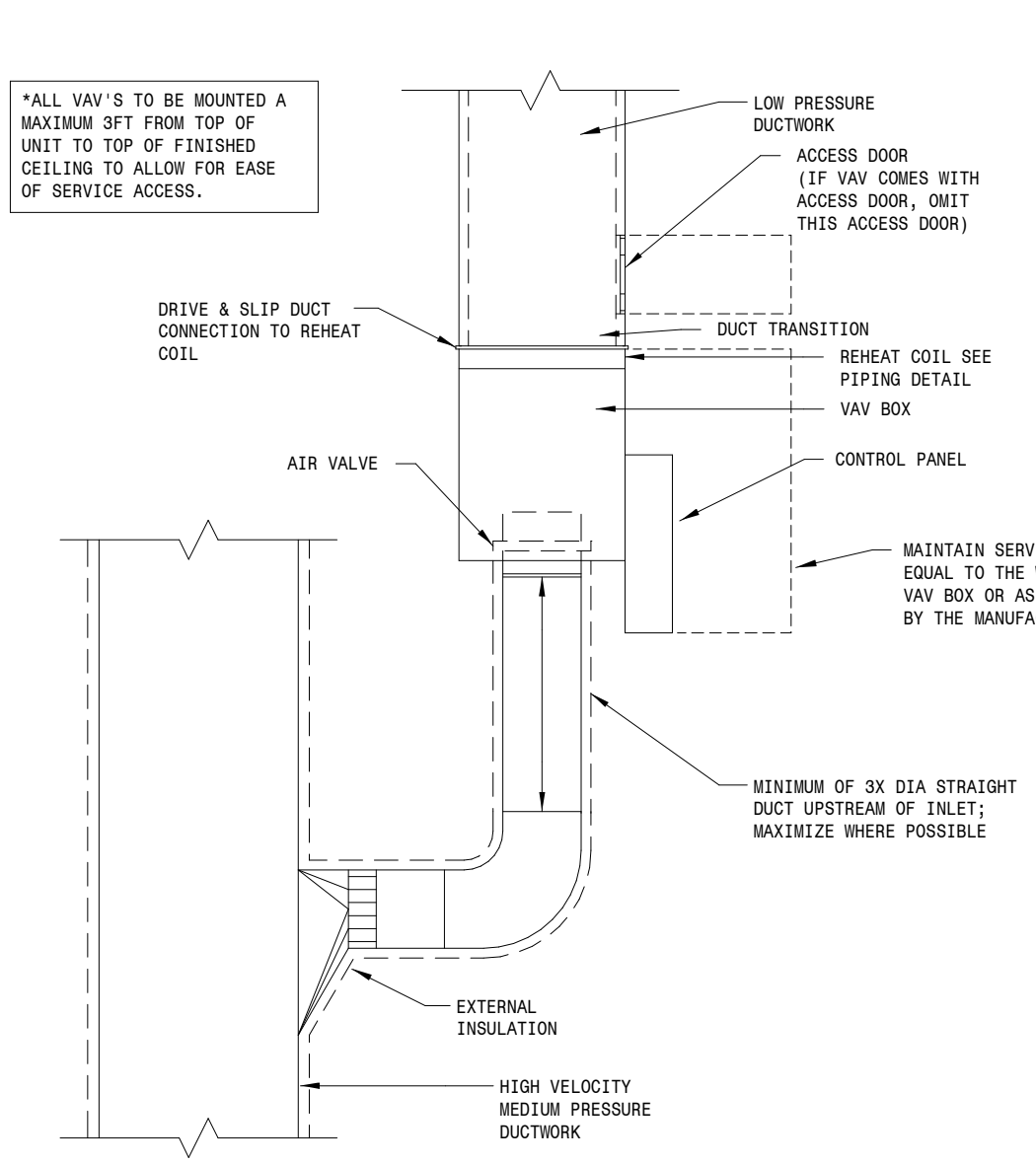
AndersonMasonDale Architects



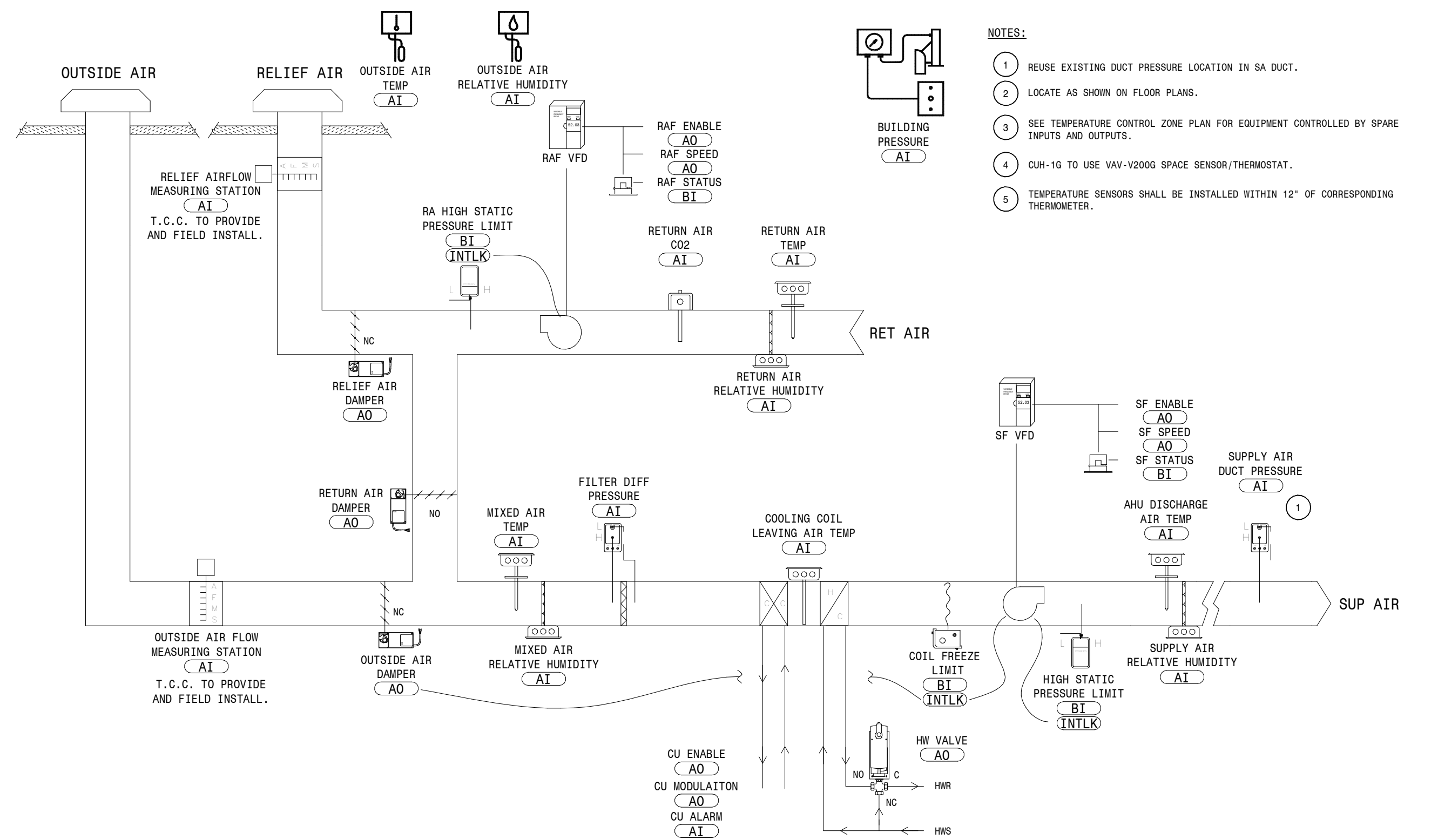
Stationary Louver Detail
NOT TO SCALE



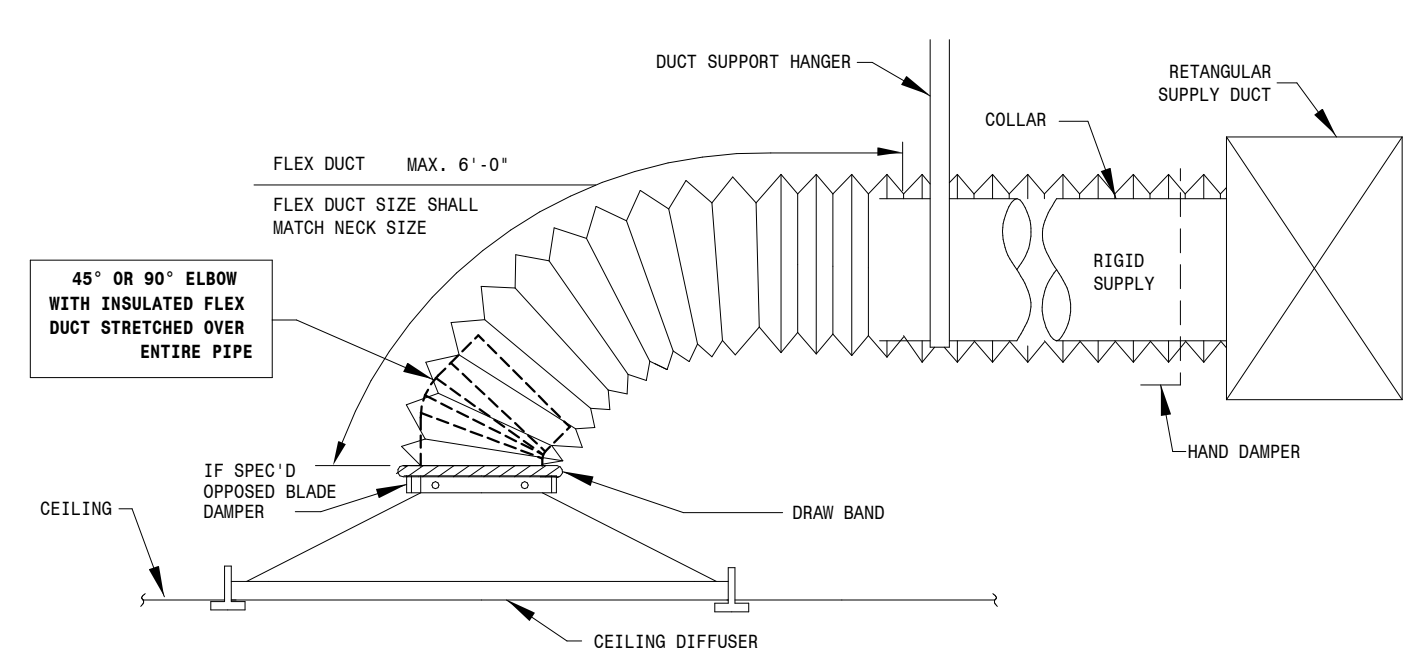
Stacked Heating Coil Piping Detail (AHU-1G)
NOT TO SCALE



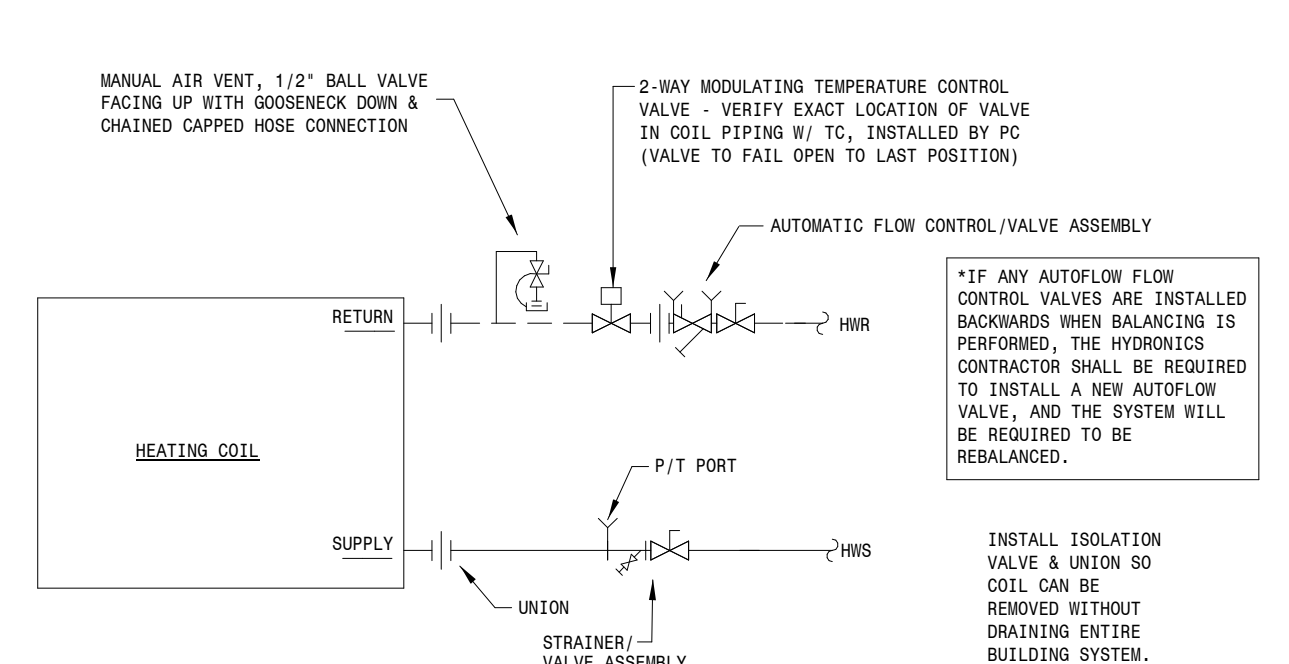
VAV Box Duct Connection Detail
NOT TO SCALE



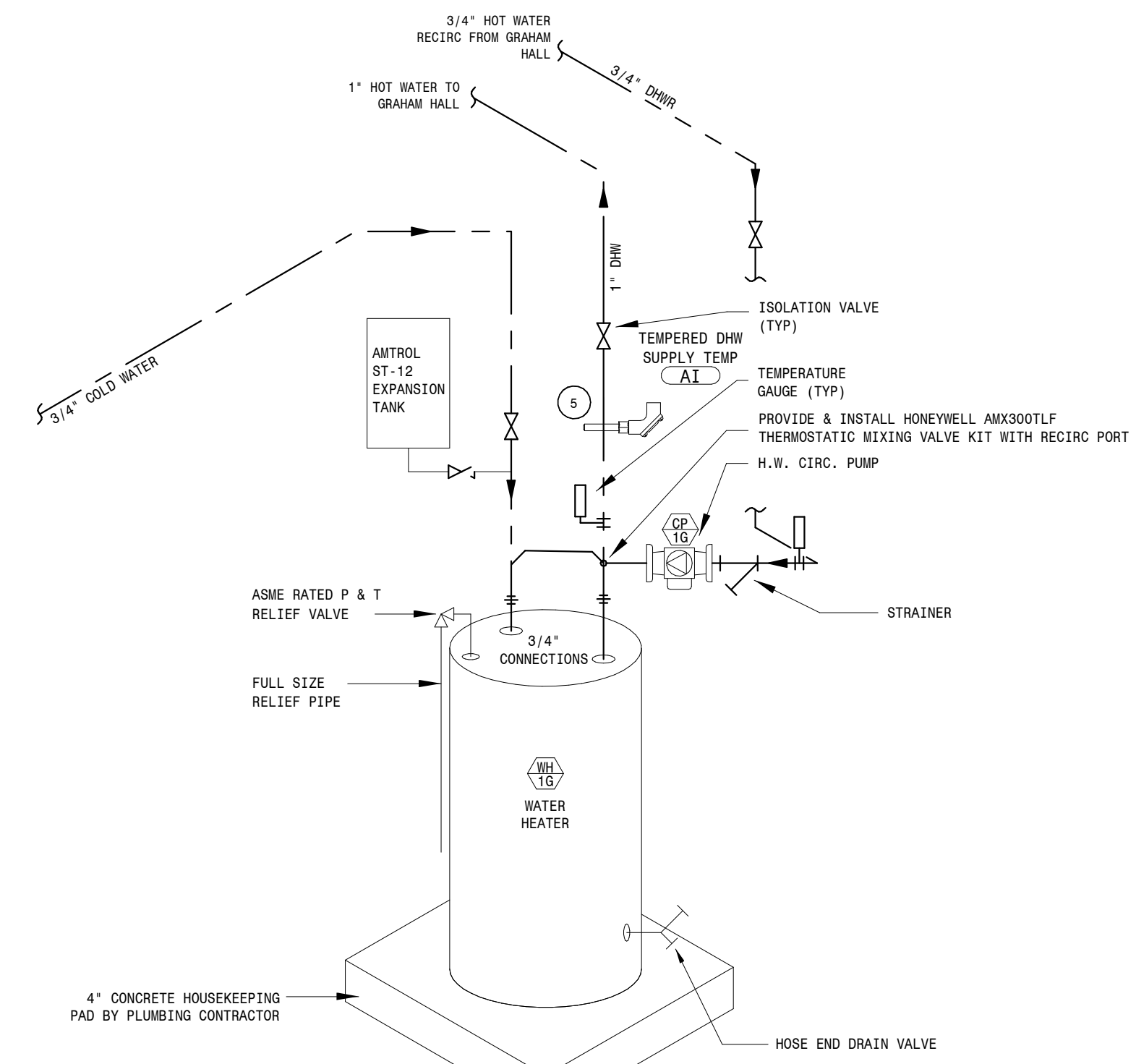
AHU System Control Diagram (AHU-1G)
NOT TO SCALE



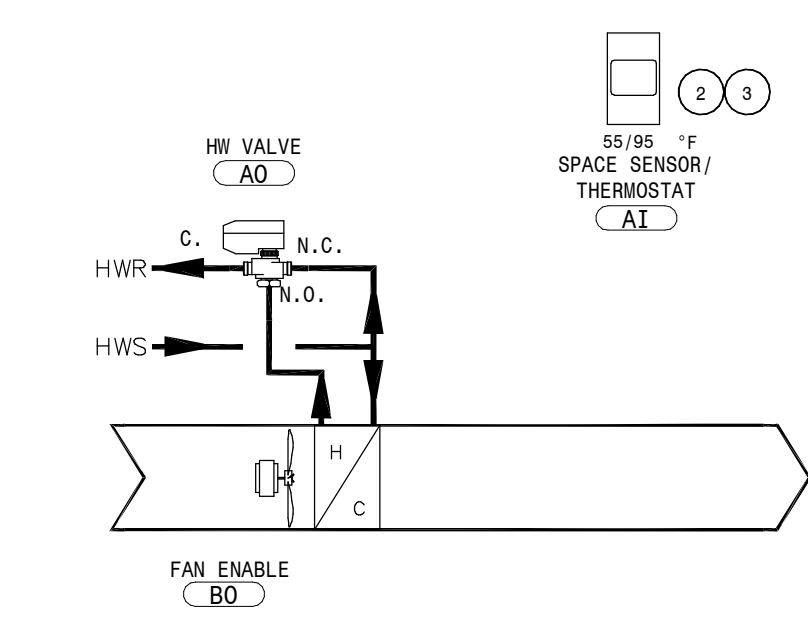
Typical Diffuser Connection Detail
NOT TO SCALE



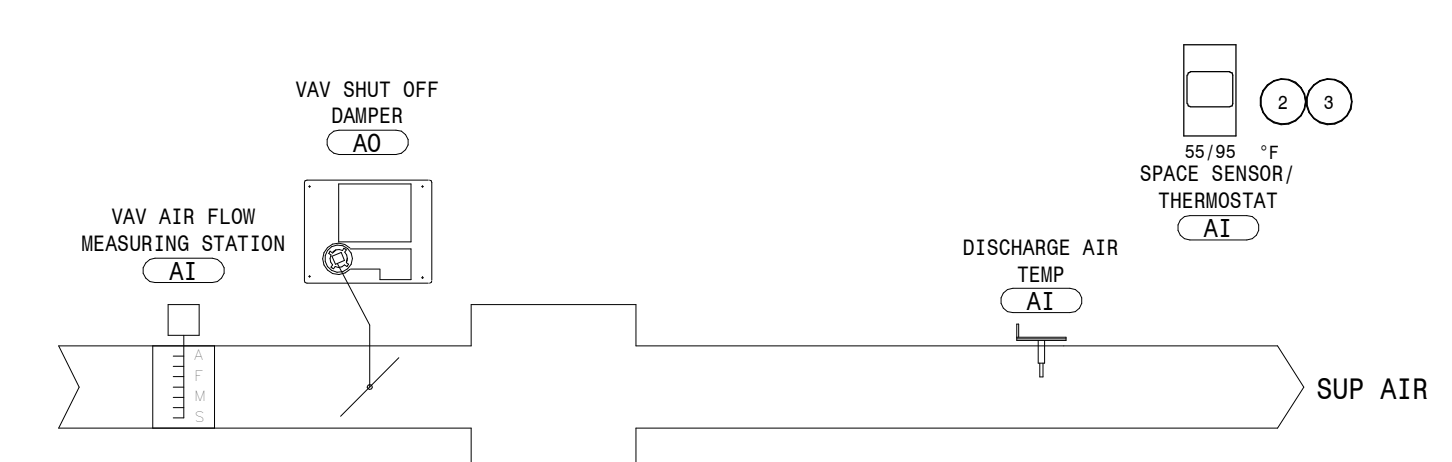
VAV Heating Coil Piping Detail
NOT TO SCALE



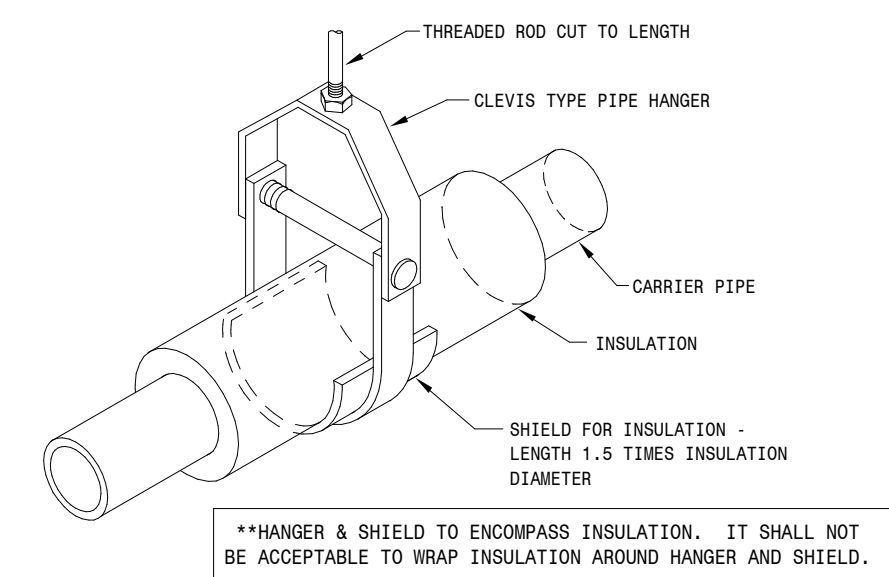
Electric Water Heater Control & Piping Diagram
NOT TO SCALE



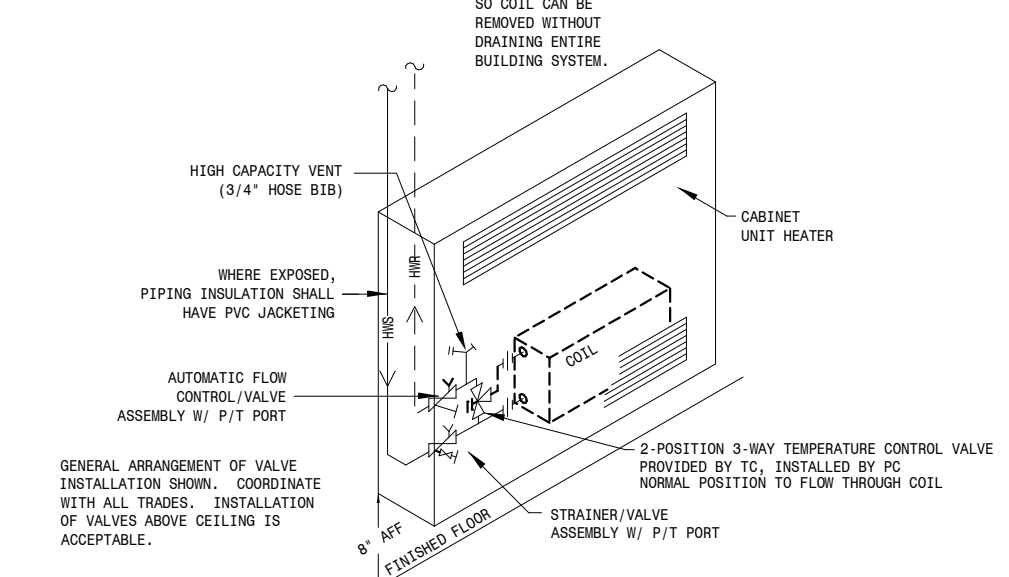
CUH Control Diagram (CUH-1G)
NOT TO SCALE



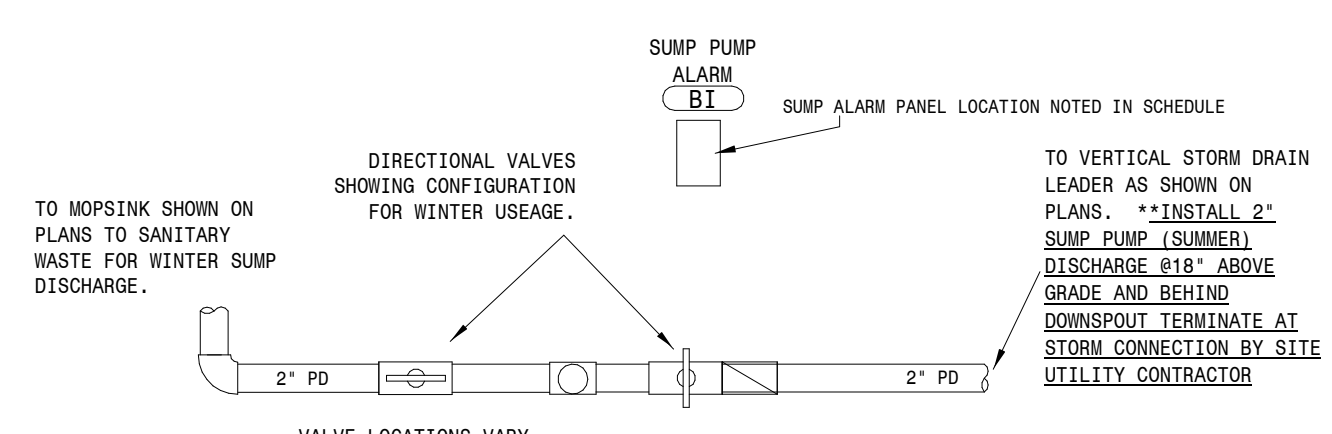
Typical VAV Control Diagram
NOT TO SCALE



Clevis Type Pipe Hanger For Insulated Pipe Detail
NOT TO SCALE

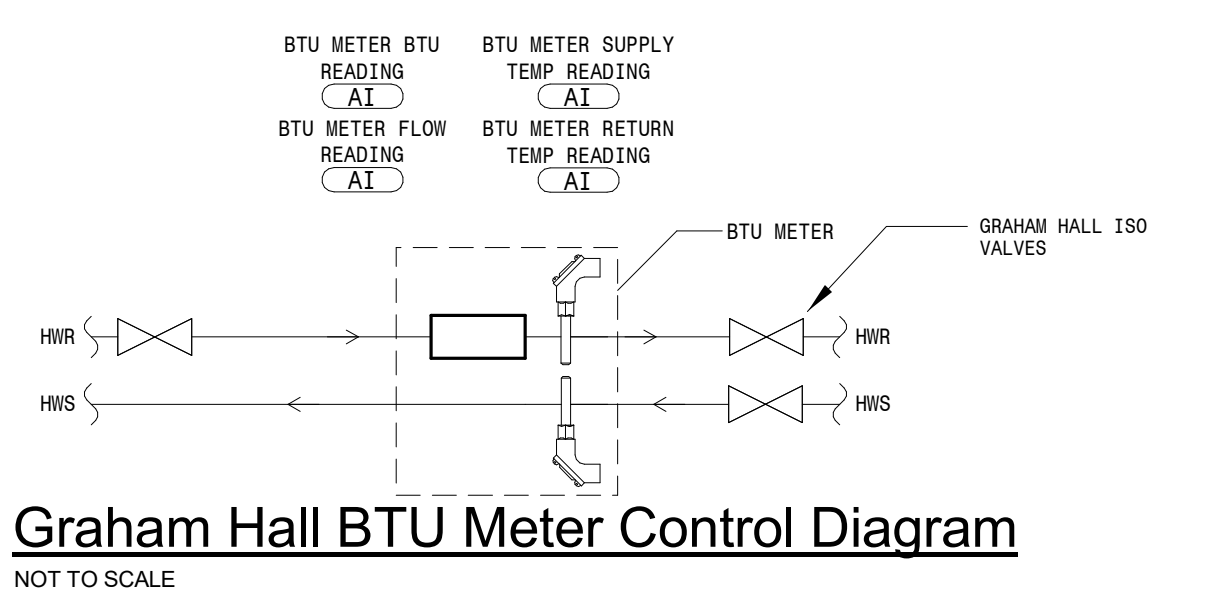


Cabinet Unit Heater Piping Detail
NOT TO SCALE

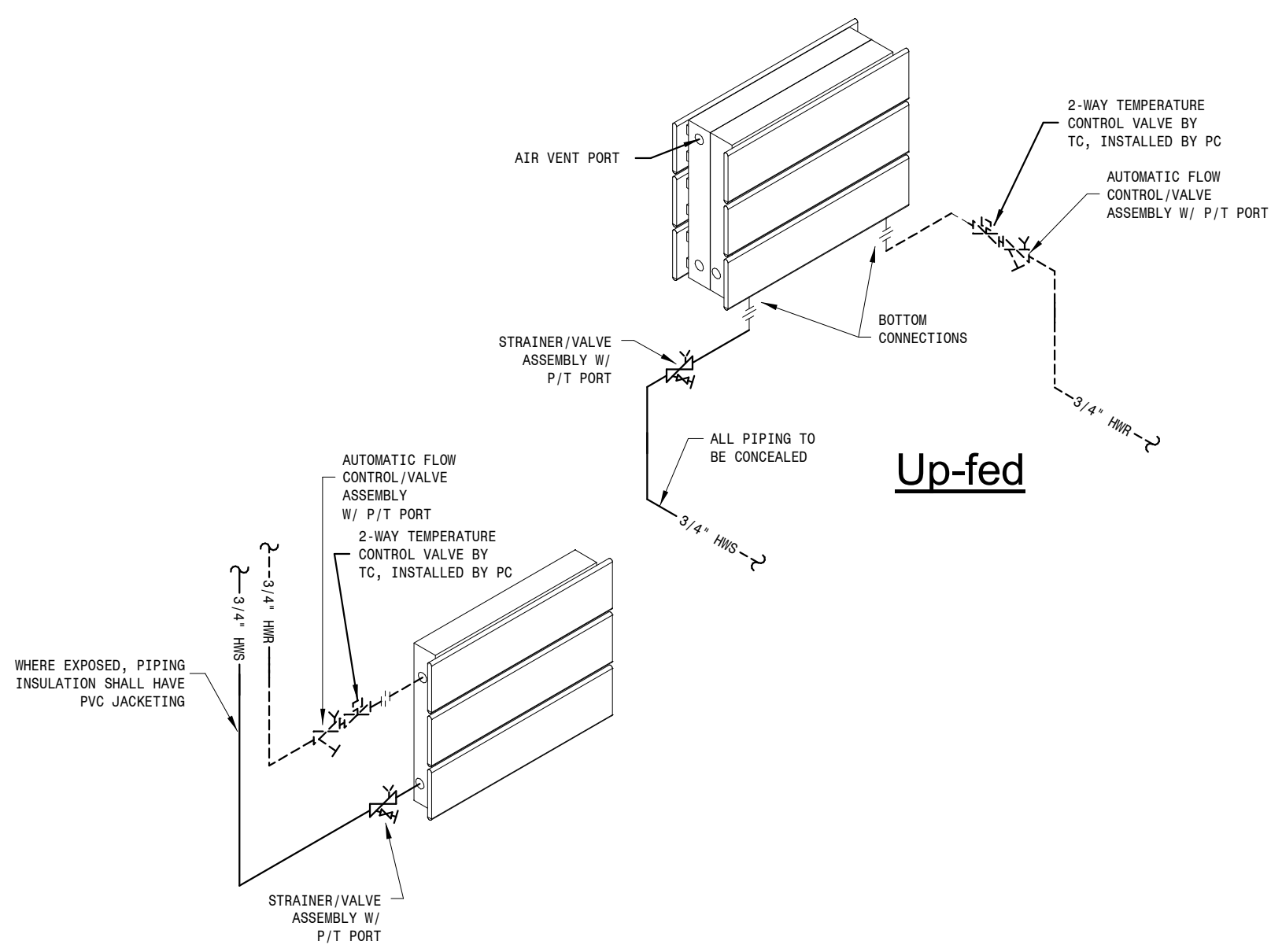


Sump Basin & Pump Piping & Control Detail
NOT TO SCALE

Water Meter #1G Control Diagram
NOT TO SCALE

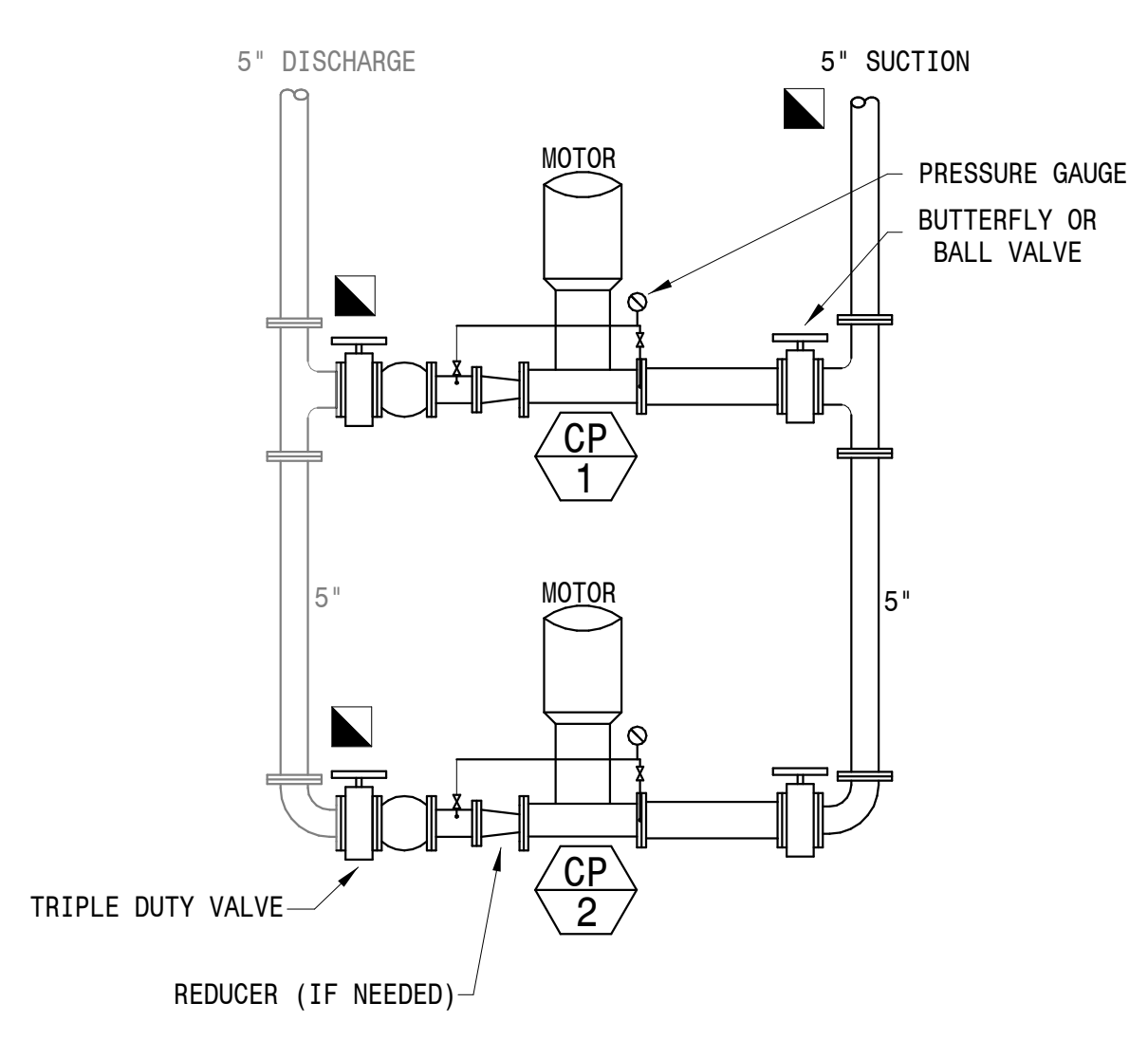


Graham Hall BTU Meter Control Diagram
NOT TO SCALE

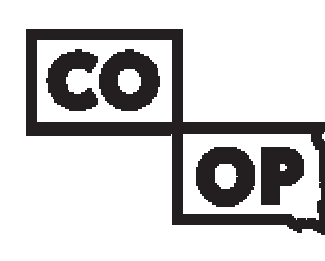


Return Same Side (Down-fed)

Panel Radiation Piping Detail
NOT TO SCALE



Modifications to Existing Heating Pumps Piping Diagram
NOT TO SCALE



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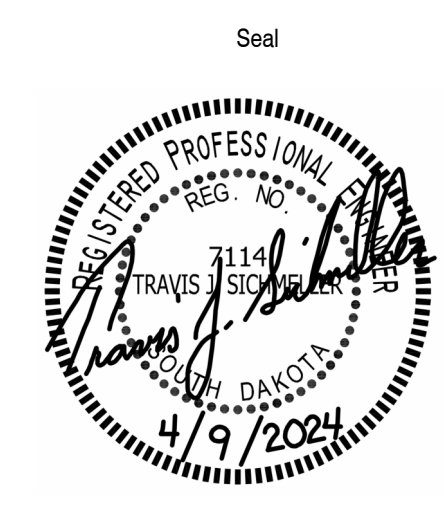
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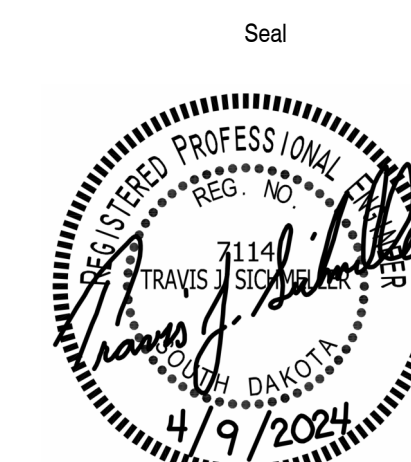
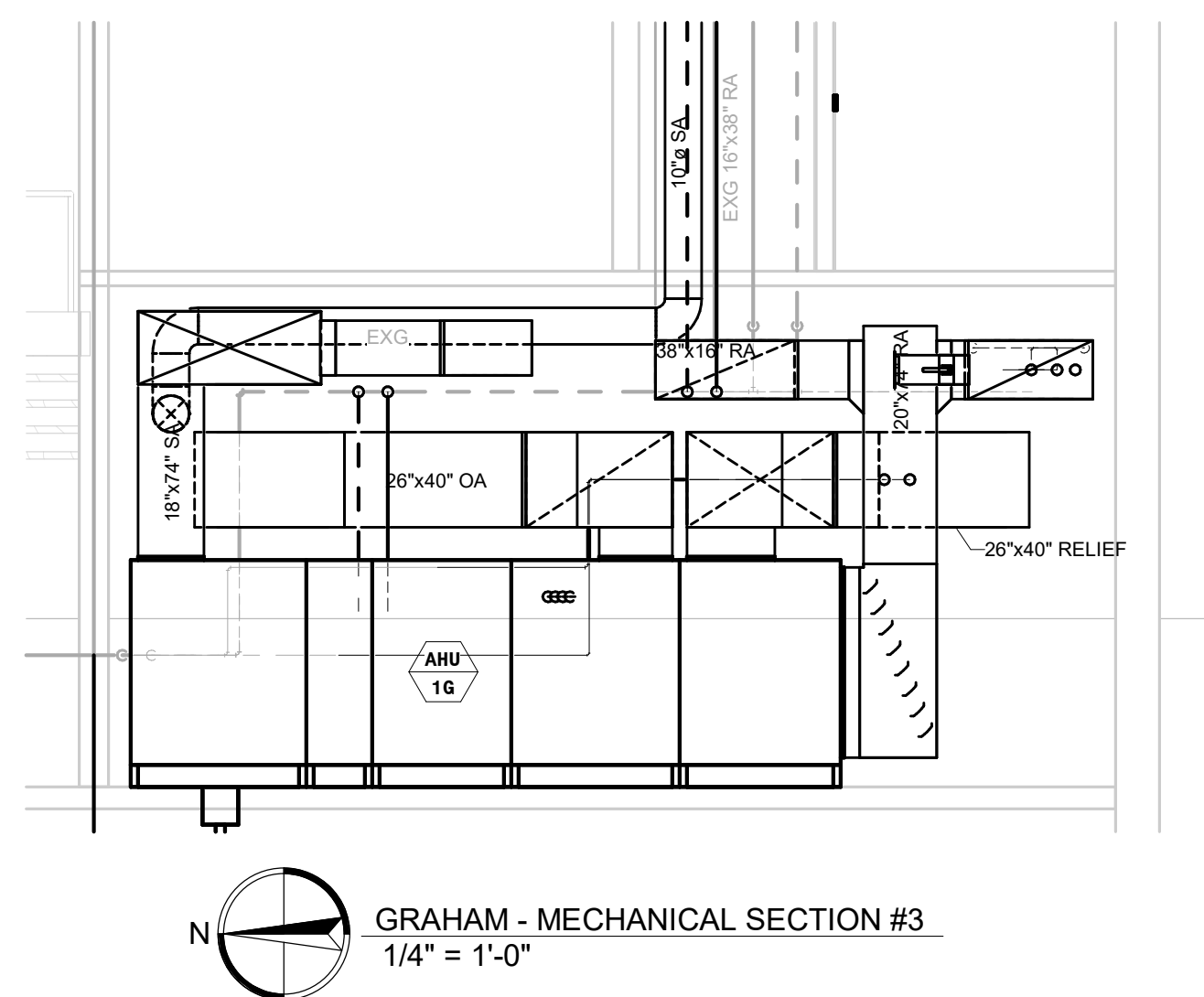
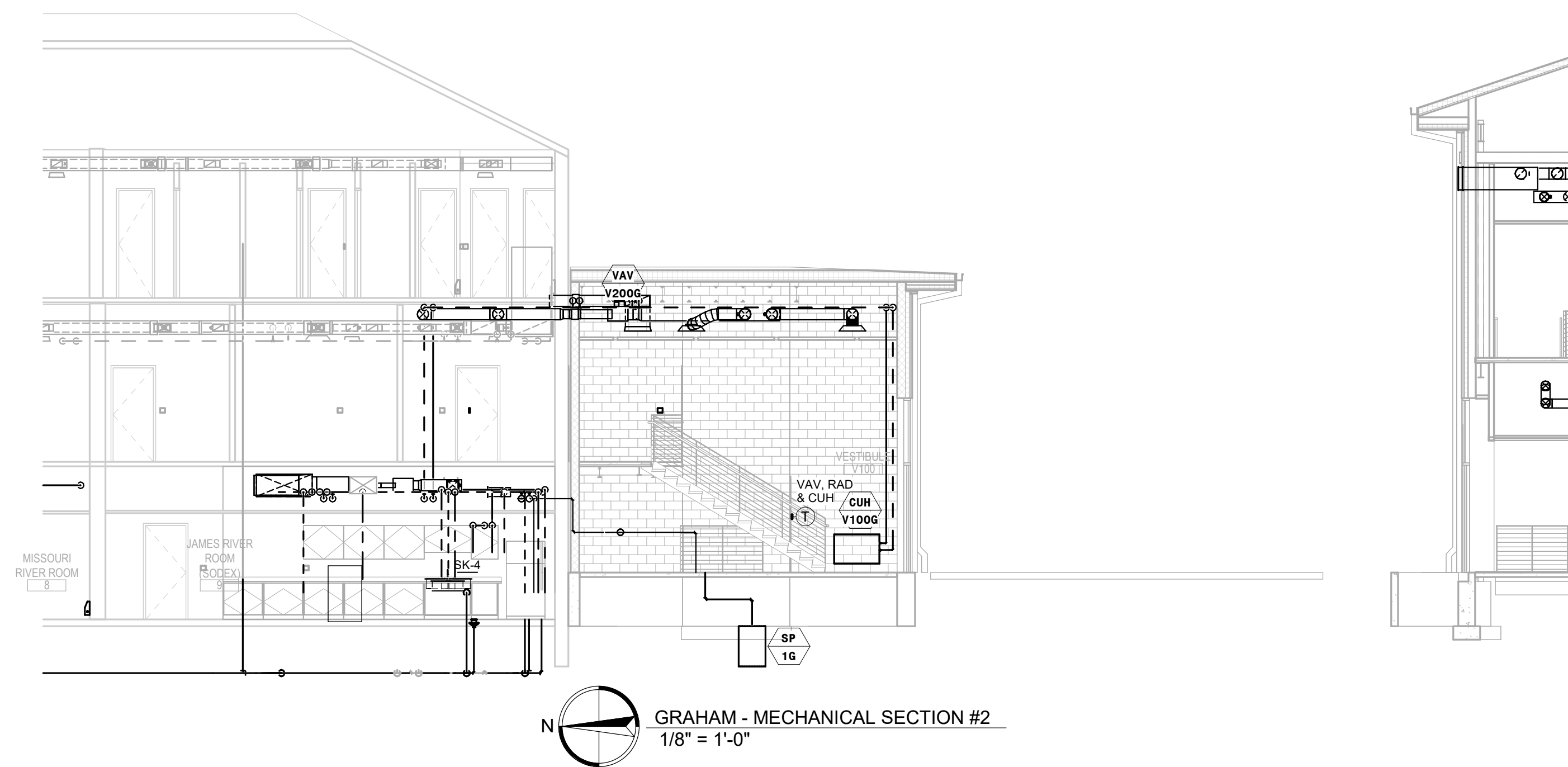
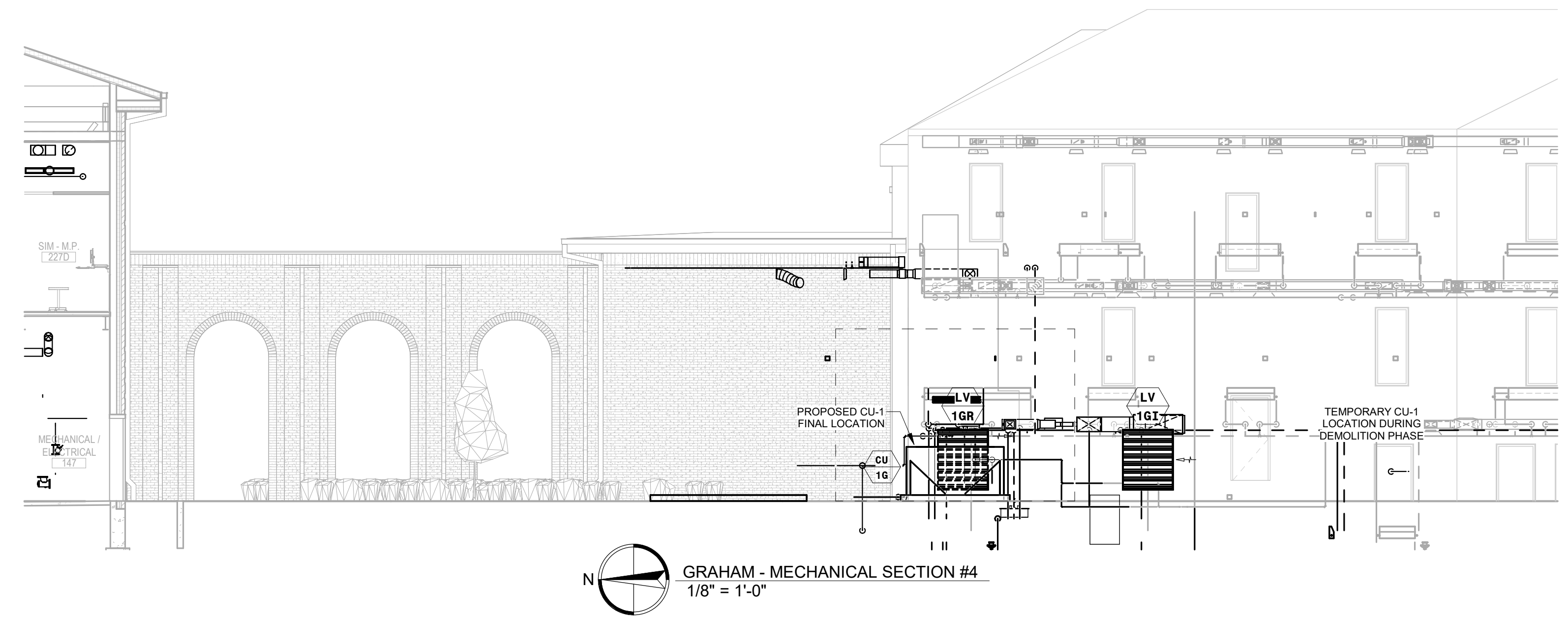
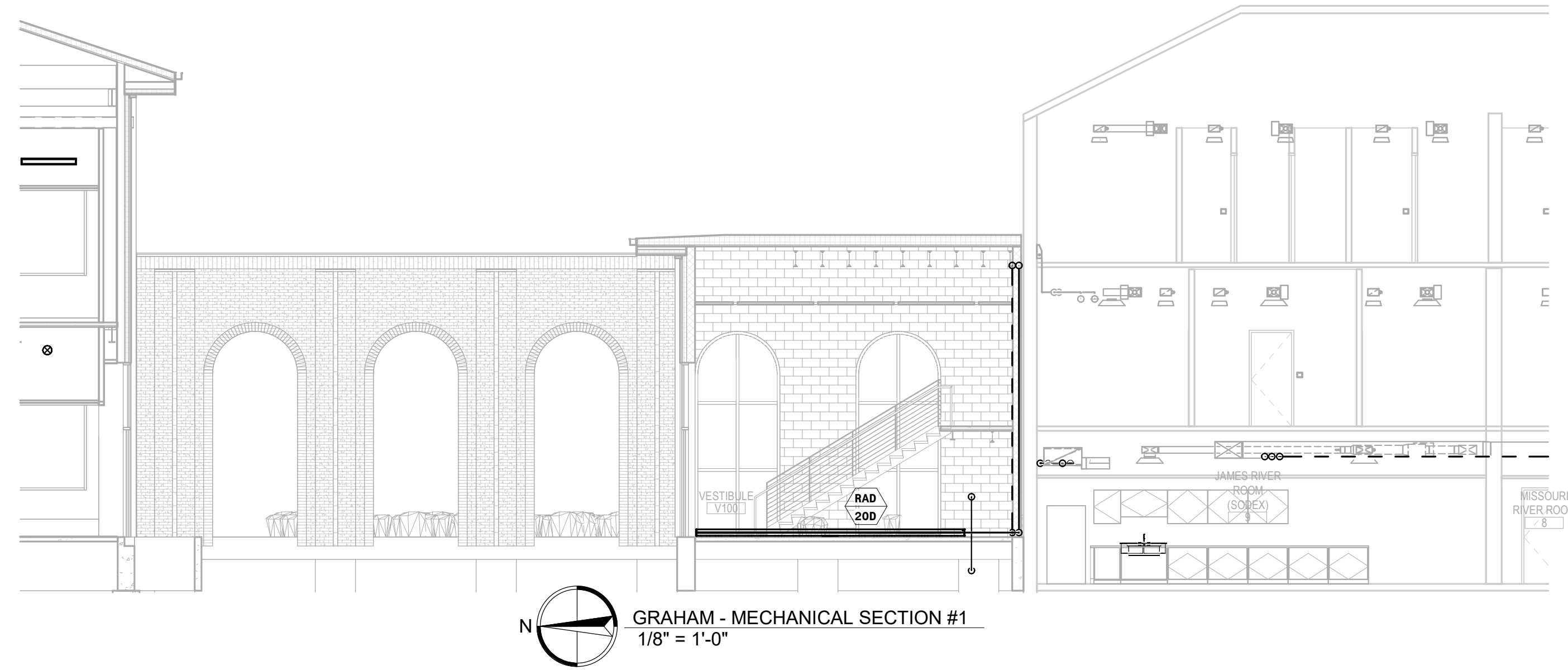
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Project Number: 211100748
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Reviewed By: TS
Approved By: TS

GRAHAM/STUDENT CENTER MECHANICAL DETAILS

M500A



AHU SCHEDULE (OWNER PROVIDED, CONTRACTOR INSTALLED)

Table with columns: EQUIP. NO., MANUFACTURER & MODEL, SERVED, LOCATION, SUPPLY FAN/MOTOR, RETURN/EXHAUST FAN/MOTOR, DX COOLING COIL CAP., HEATING COIL CAP., TOTAL CONNECTIONS, UNIT WEIGHT, NOTES.

AIR COOLED CONDENSING UNIT SCHEDULE (OWNER PROVIDED, CONTRACTOR INSTALLED)

Table with columns: EQUIP. NO., MANUFACTURER & MODEL, SERVICE, LOCATION, COOLING, ELECTRICAL, WEIGHT, NOTES.

PUMP SCHEDULE

Table with columns: EQUIP. NO., MANUFACTURER & MODEL, SERVING, LOCATION, GPM, HEAD, TYPE, ELECTRICAL, WEIGHT, NOTES.

SUMP PUMP SCHEDULE

Table with columns: EQUIP. NO., MANUFACTURER & MODEL, LOCATION, GPM, HEAD, SIZE, MOTOR, WEIGHT, NOTES.

LOUVER SCHEDULE

Table with columns: EQUIP. NO., MANUFACTURER & MODEL, FUNCTION, SIZE, CFM, S.P., FREE AREA, FREE AREA VELOCITY, SCREEN, NOTES.

GRILLE - REGISTER - DIFFUSER SCHEDULE

Table with columns: EQUIP. NO., MANUFACTURER & MODEL, NOMINAL SIZE, THROAT SIZE, MAX CFM, MAX APO, THRON (SO FPM), NC, FRAME, FINISH, NOTES.

VAV TERMINAL SCHEDULE

Table with columns: EQUIP. NO., MANUFACTURER & MODEL, INLET SIZE, MAX CFM, MIN CFM, MAX TAP APO, MAX RAD MC, MAX DISH MC, HEATING COIL, COIL COMP. SIZE, RUNOUT SIZE, UNIT WEIGHT, NOTES.

HOT WATER CABINET UNIT HEATER

Table with columns: EQUIP. NO., MANUFACTURER & MODEL, LOCATION, CFM, BHP, GPH, EWT, LVT, WPD, ELECTRICAL, RUNOUT SIZE, UNIT WEIGHT, NOTES.

RADIATION HEATER SCHEDULE

Table with columns: EQUIP. NO., MANUFACTURER & MODEL, TYPE AND/OR MOUNTING, CAPACITY, LOCATIONS, AVG WATER TEMP., FLOW/FOOT, ELEMENT, ENCLOSURE, NOTES.

ELECTRIC WATER HEATER SCHEDULE

Table with columns: EQUIP. NO., MANUFACTURER & MODEL, SERVING, LOCATION, STORAGE CAPACITY, RECOVERY @ 90°F, ELECTRICAL, PIPING CONNECTIONS, DIMENSIONS, WEIGHT, NOTES.

HVAC SHEET METAL DUCTWORK CONSTRUCTION & INSULATION SCHEDULE

Table with columns: SYSTEM, MAX DIMENSION OF RECTANGULAR DUCTS OR DIAMETER OF ROUND DUCTS, GALVANIZED SHEET METAL/RESISTANCE BATHING CONSTRUCTION, INSULATION THICKNESS, RECTANGULAR SUPPLY AIR BEFORE VAV, ROUND SUPPLY AIR BEFORE VAV, RECTANGULAR SUPPLY AIR AFTER VAV, ROUND SUPPLY AIR AFTER VAV, RETURN AIR, OUTSIDE AIR, RELIEF AIR, NOTES.

DOMESTIC & HYDRONIC PIPING MATERIAL & INSULATION SCHEDULE

Table with columns: SYSTEM, TYPE/MATERIAL, FITTINGS, PIPE SIZES, INSULATION THICKNESS, NOTES.

GRAHAM FLOW BALANCER SCHEDULE

Table with columns: NO., LOCATION, SERVING, FLOW (GPM), NOTES.

EXISTING NATURAL GAS BOILER SCHEDULE

Table with columns: EQUIP. NO., MANUFACTURER & MODEL, LOCATION, MEDIA, SYSTEM PRESSURE, RELIEF PRESSURE, FUEL, INPUT BHP, OUTPUT BHP, AFUE %, MIN EXH. TEMP., VOLUME, MOTOR, OPERATING WEIGHT, NOTES.

PUMP SCHEDULE

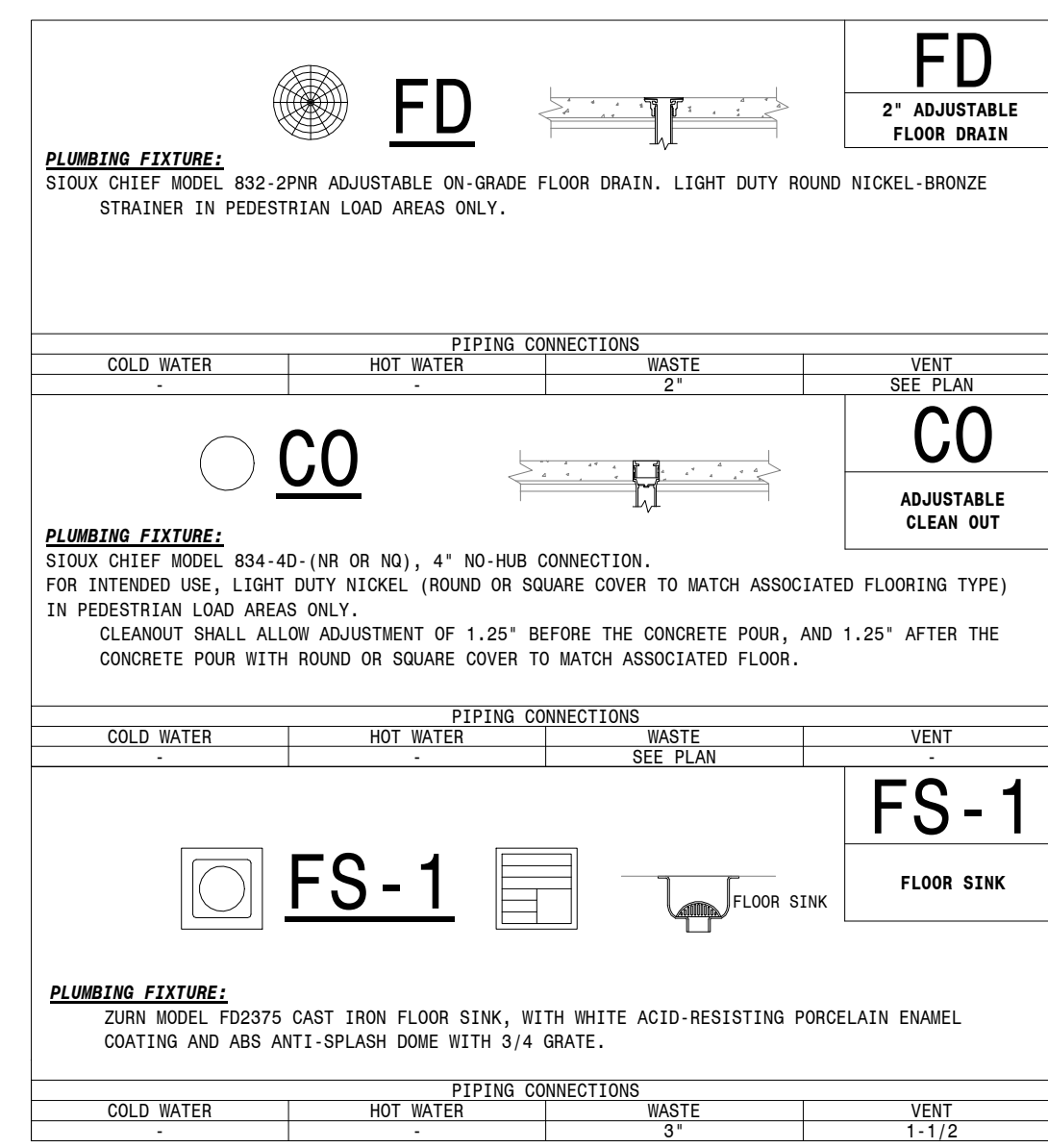
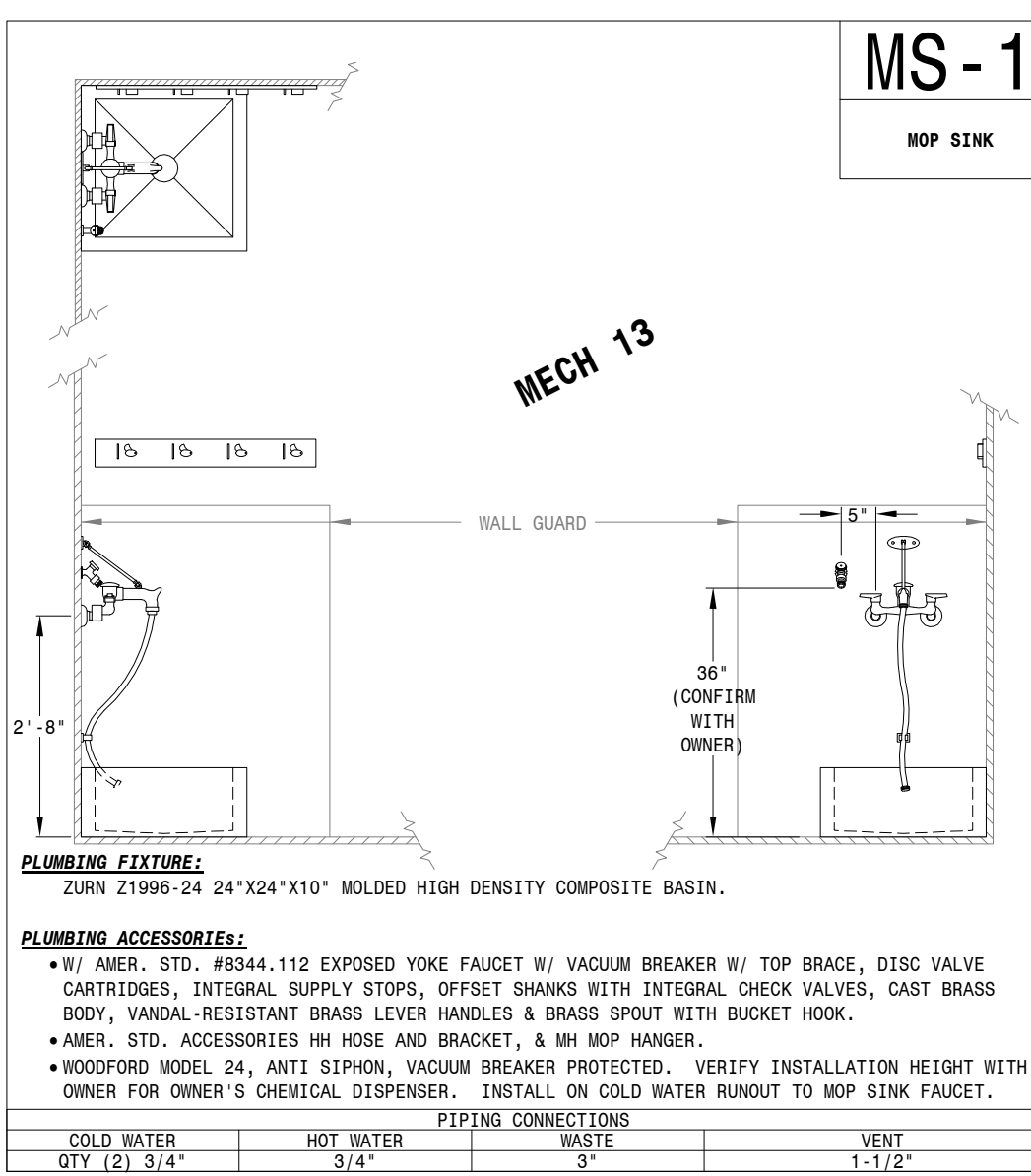
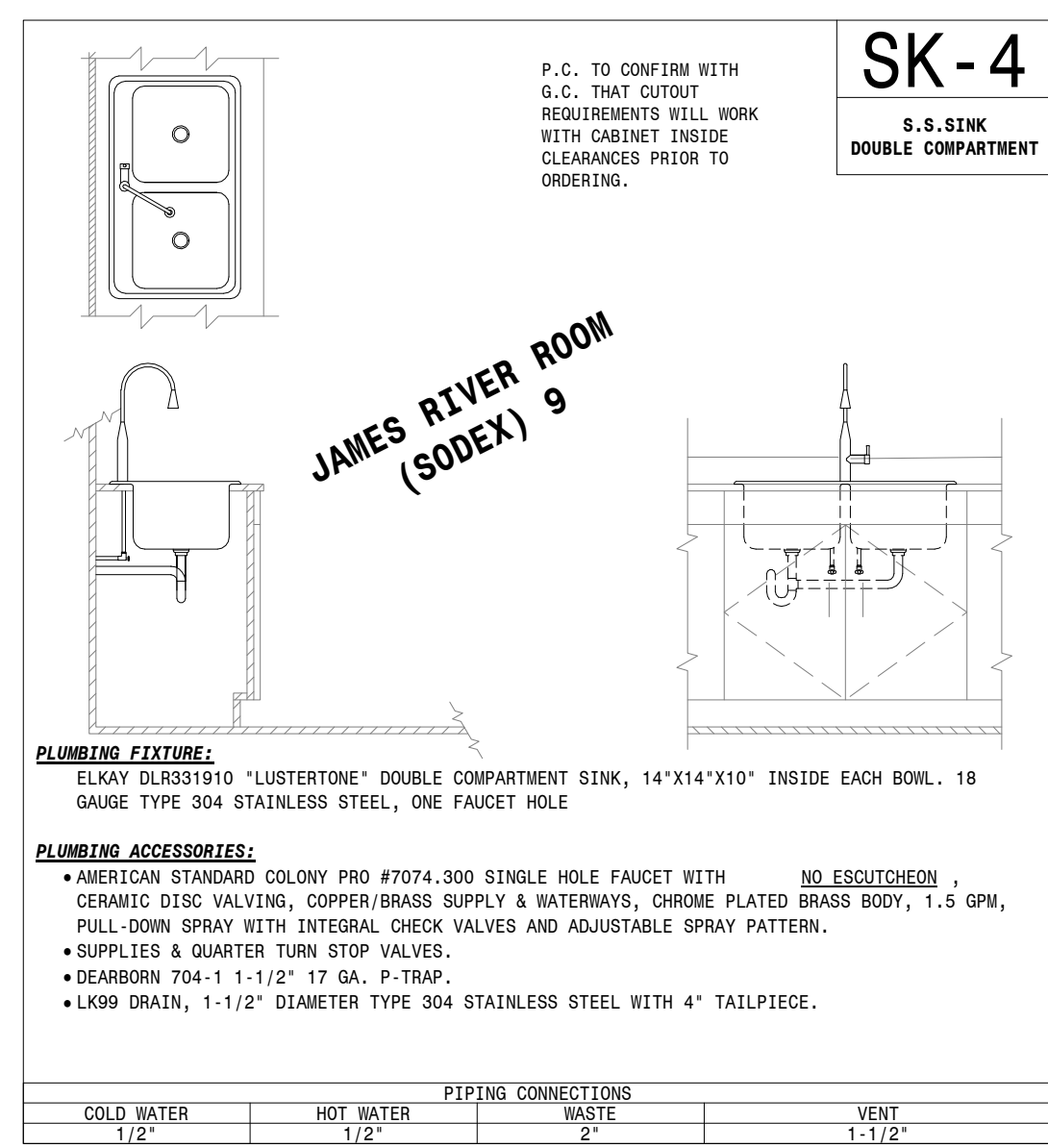
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EXISTING EXPANSION TANK SCHEDULE

Table with columns: EQUIP. NO., MANUFACTURER & MODEL, SERVING, LOCATION, CALCULATED SYSTEM VOLUME, SYSTEM VOLUME WITH SAFETY FACTOR, TEMP RANGE, PRESSURE RANGE, REQ'D TANK VOLUME, REQ'D TANK VOLUME, ACTUAL TANK VOLUME, ACTUAL ACCEPTANCE VOLUME, SHIPPING WEIGHT, NOTES.

STUDENT CENTER FLOW BALANCER SCHEDULE

Table with columns: NO., LOCATION, SERVING, FLOW (GPM), NOTES.

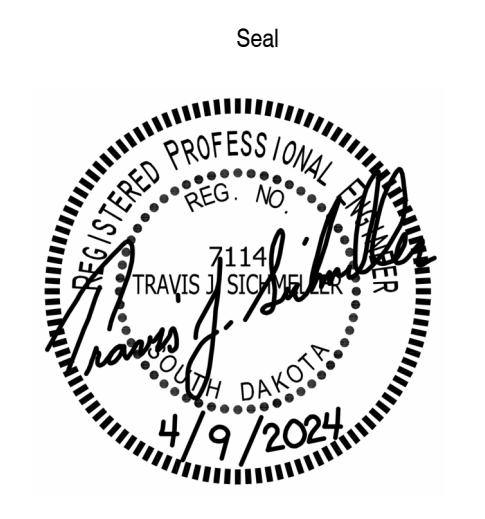


PRIOR TO ALL PLUMBING ROUGH-INS FOR ALL PLUMBING FIXTURES COORDINATE WITH GC & REFER TO ARCHITECTURAL ELEVATIONS. DOMESTIC PIPING SHALL BE INSTALLED WITH PROPER SAFEGUARDS TO PREVENT WATER HAMMER. THIS WILL BE DONE BY INSTALLING A SUFFICIENT NUMBER OF PREMANUFACTURED SHOCK ABSORBERS. SHOCK ABSORBERS SHALL BE RATED ON QUAL. EACH MODEL TO BE INSTALLED PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.

CO-OP ARCHITECTS logo and AndersonMasonDale Architects logo.

SICHMELLER ENGINEERING logo and contact information for Architect of Record, Associate Architect, and Landscape Architect.

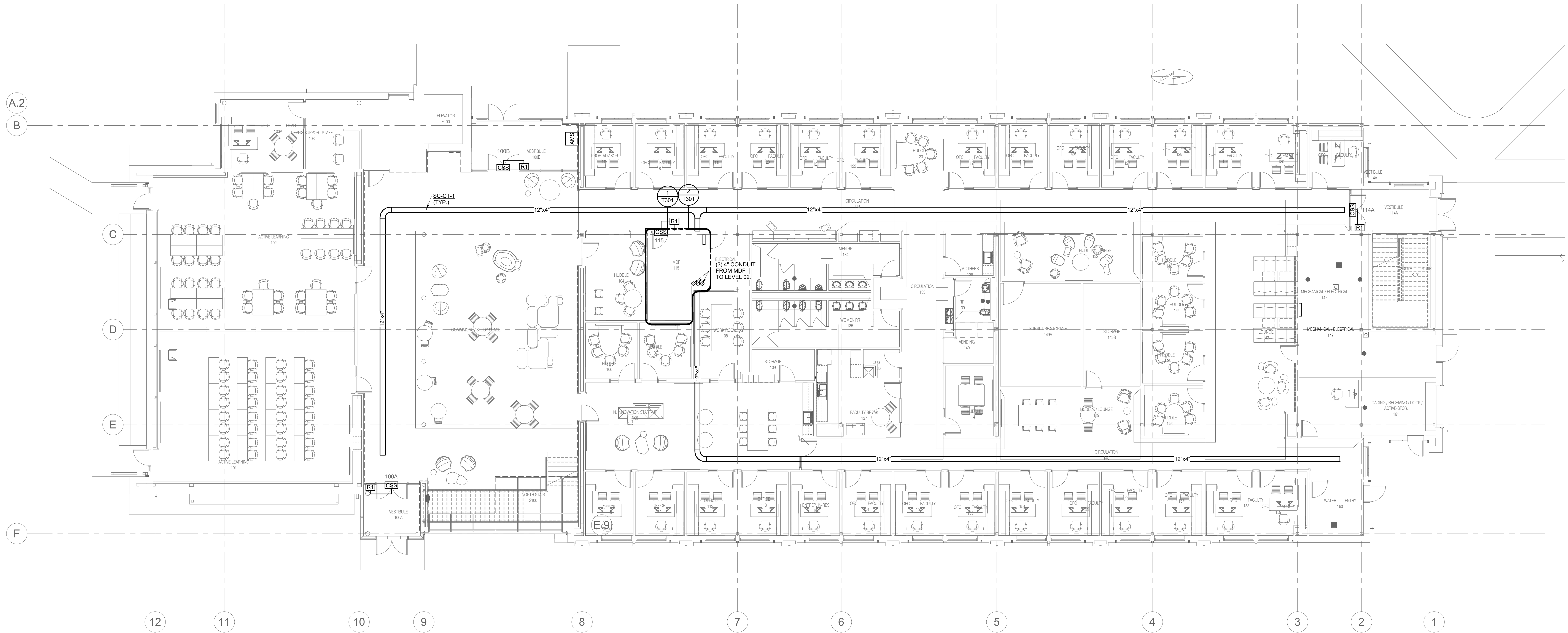
Contact information for Civil Engineer, Structural Engineer, Mech & Plumbing Engineer, and Electrical Engineer.



Seal Issue Date 100% CONSTRUCTION DOCUMENTS 9 APRIL 2024

LINCOLN HALL project information including address, contact details, and project number.

M502A



1 LEVEL 01 PLAN - PATHWAY AND SECURITY
1/8" = 1'-0"

4/9/2024 3:33:37 PM

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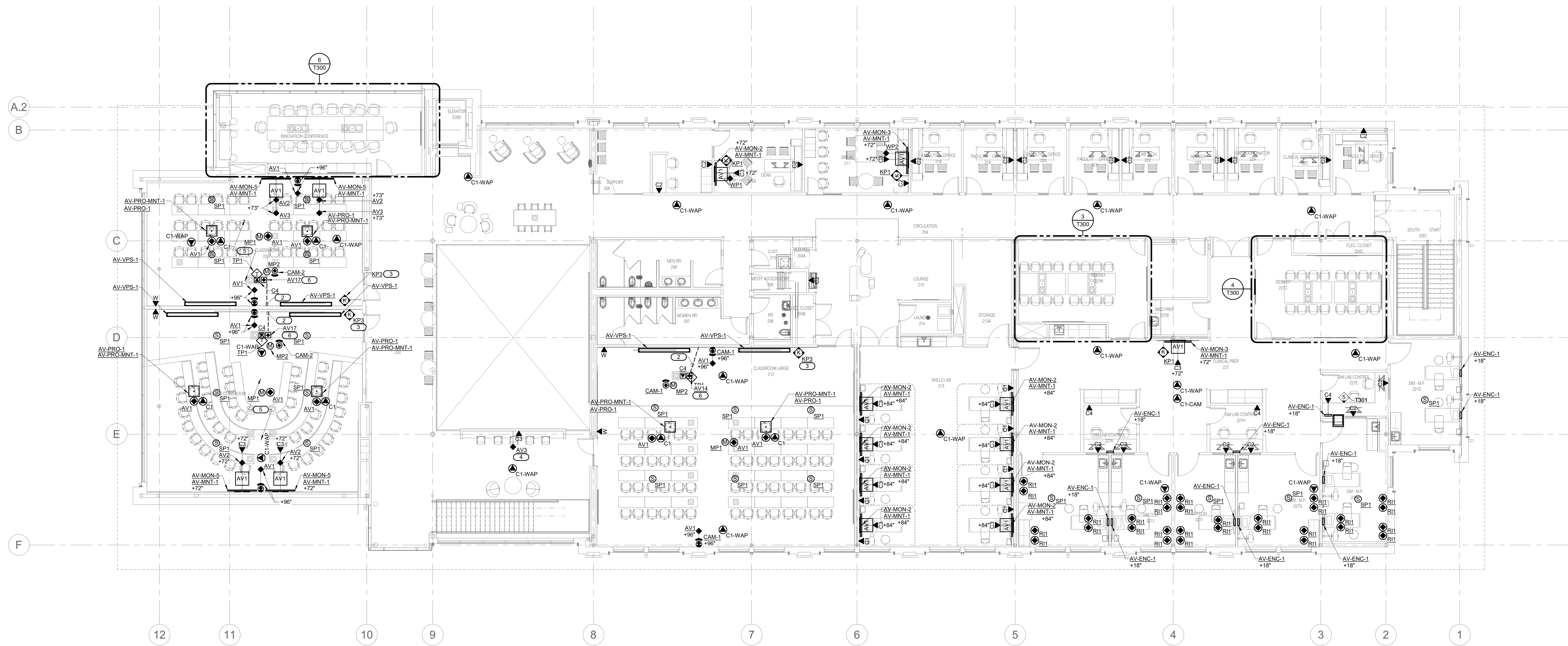
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Project Number: 21008080.00
Drawn By: IMEG
Reviewed By: IMEG
Approved By: IMEG

LEVEL 01 PLAN - PATHWAY AND SECURITY

T101

- SHEET NOTES:**
- ALL THE LOW VOLTAGE DEVICES ON THIS FLOOR WILL BE SERVED FROM THE MDF. REFER TO SHEET T100 FOR MDF LOCATION.
 - AV1 FLAT PANEL DISPLAY BACKBOX TO HAVE QUANTITY TWO (2) 1-1/4" CONDUIT TO ACCESSIBLE CEILING ABOVE DISPLAY OR LEVEL 01 CABLE TRAY.
- KEYNOTES: (#)**
- MOUNT CAMERA BELOW FLAT PANEL DISPLAY.
 - PROVIDE QTY ONE (1) 1-1/2" CONDUIT FROM FLOOR BOX TO ACCESSIBLE CEILING AND PROVIDE QTY ONE (1) 1-1/2" CONDUIT FROM FLOOR BOX TO LEVEL 01 CABLE TRAY.
 - QUANTITY TWO (2) VIDEO PROJECTION SCREEN CONTROL KEYPADS. LOCATE ADJACENT TO LIGHT SWITCHES.
 - FUTURE GLED WALL TO BE INSTALLED ON OPPOSITE SIDE OF WALL. PRE-WIRE AV NETWORK AND DATA NETWORK TO A 4 GANG BOX WITH 4 GANG PLASTER RING. INSTALL METAL COVER PLATE.
 - REFER TO 217403 FOR AV CONNECTIVITY RISER DIAGRAM.
 - REFERENCE AV RISER DIAGRAMS FOR AV OVER IP NETWORK CABLING QUANTITY AND DESTINATION. THERE IS IN-ROOM AV OVER IP NETWORK CABLING AND THERE IS AV OVER IP NETWORK CABLING THAT RUNS BETWEEN THE ROOM AND THE AV-APPS-1 LOCATED IN AV-ER-2 EQUIPMENT RACK IN MDF 115.



1 LEVEL 02 PLAN - TECHNOLOGY
1/8" = 1'-0"



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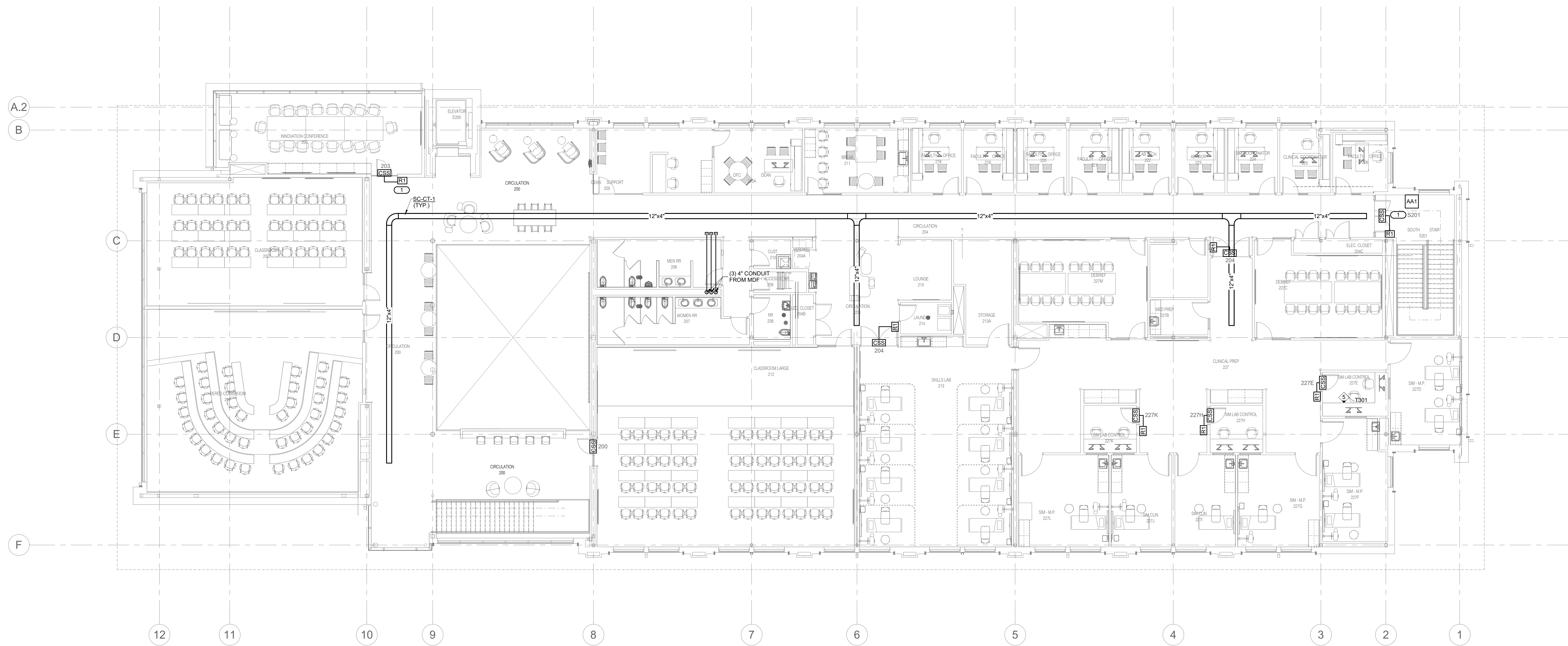
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Reviewed By: IMEG
Approved By: IMEG

LEVEL 02 PLAN - TECHNOLOGY

T200

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KEYNOTES: #
 1. INSTALL WIRE FOR FUTURE CARD READER. DO NOT INSTALL CARD READER.



1 LEVEL 02 PLAN - PATHWAY AND SECURITY
 1/8" = 1'-0"



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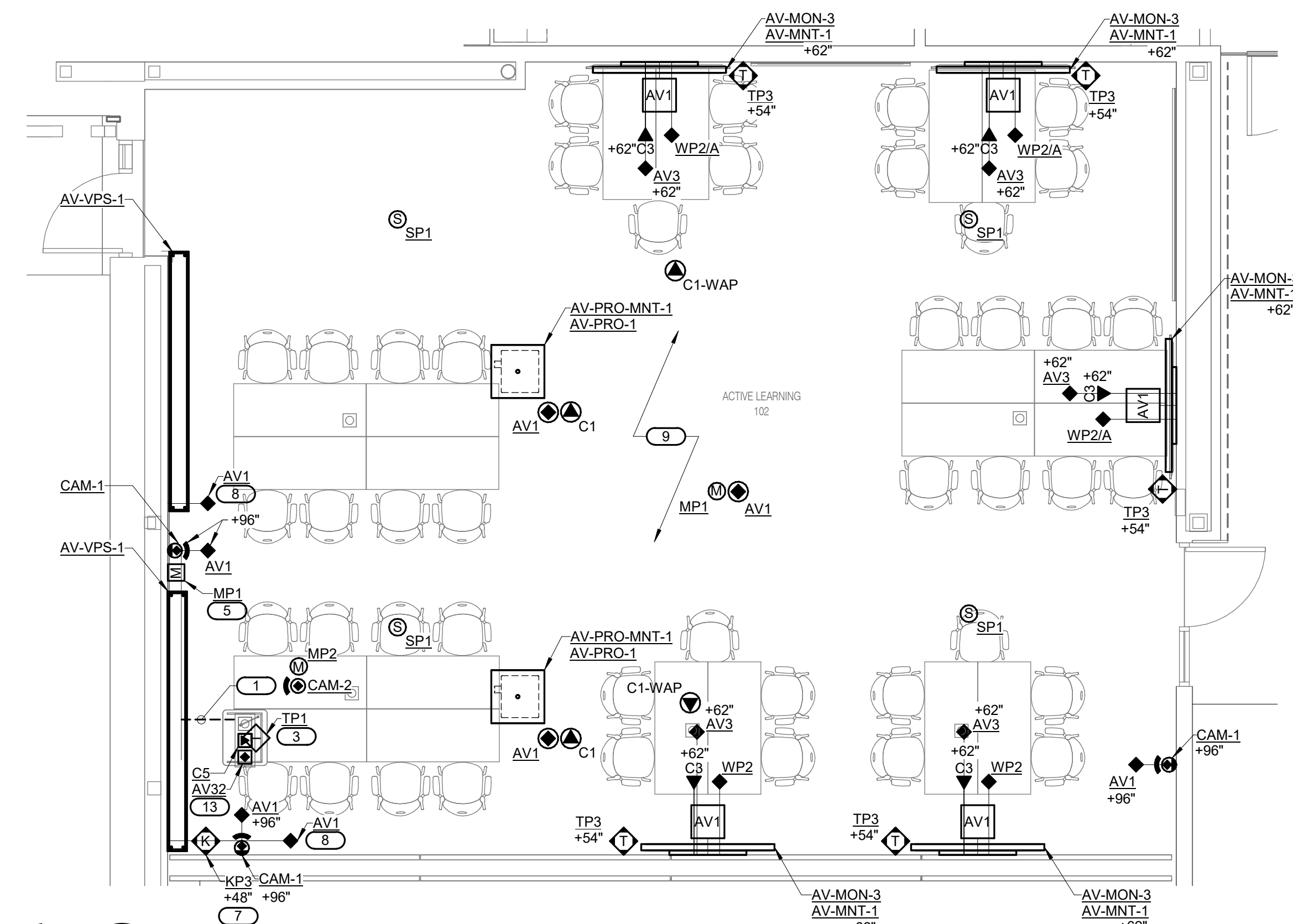
Project Number: 21008080.00
 Drawn By: IMEG
 Reviewed By: IMEG
 Approved By: IMEG

LEVEL 02 PLAN - PATHWAY AND SECURITY

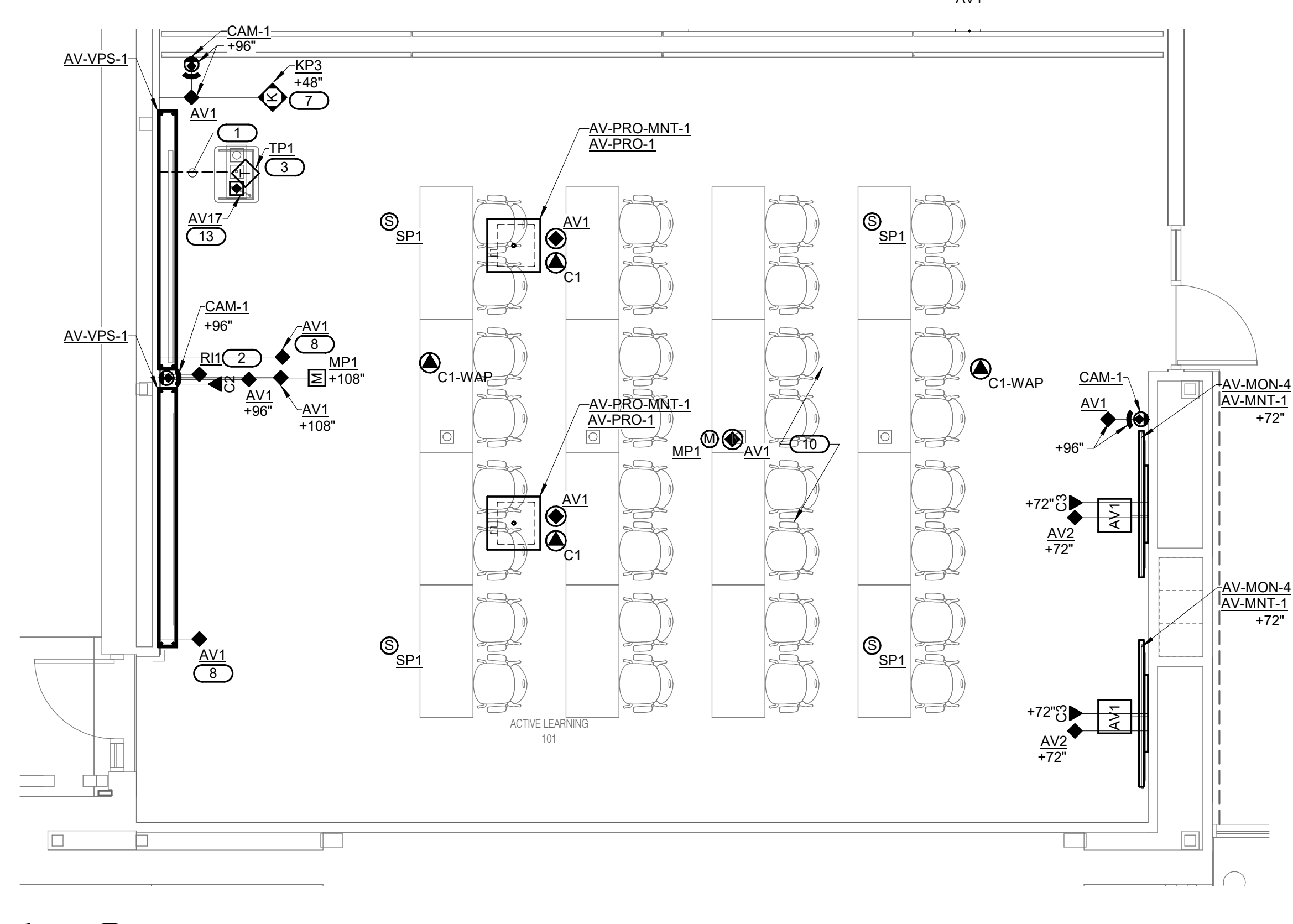
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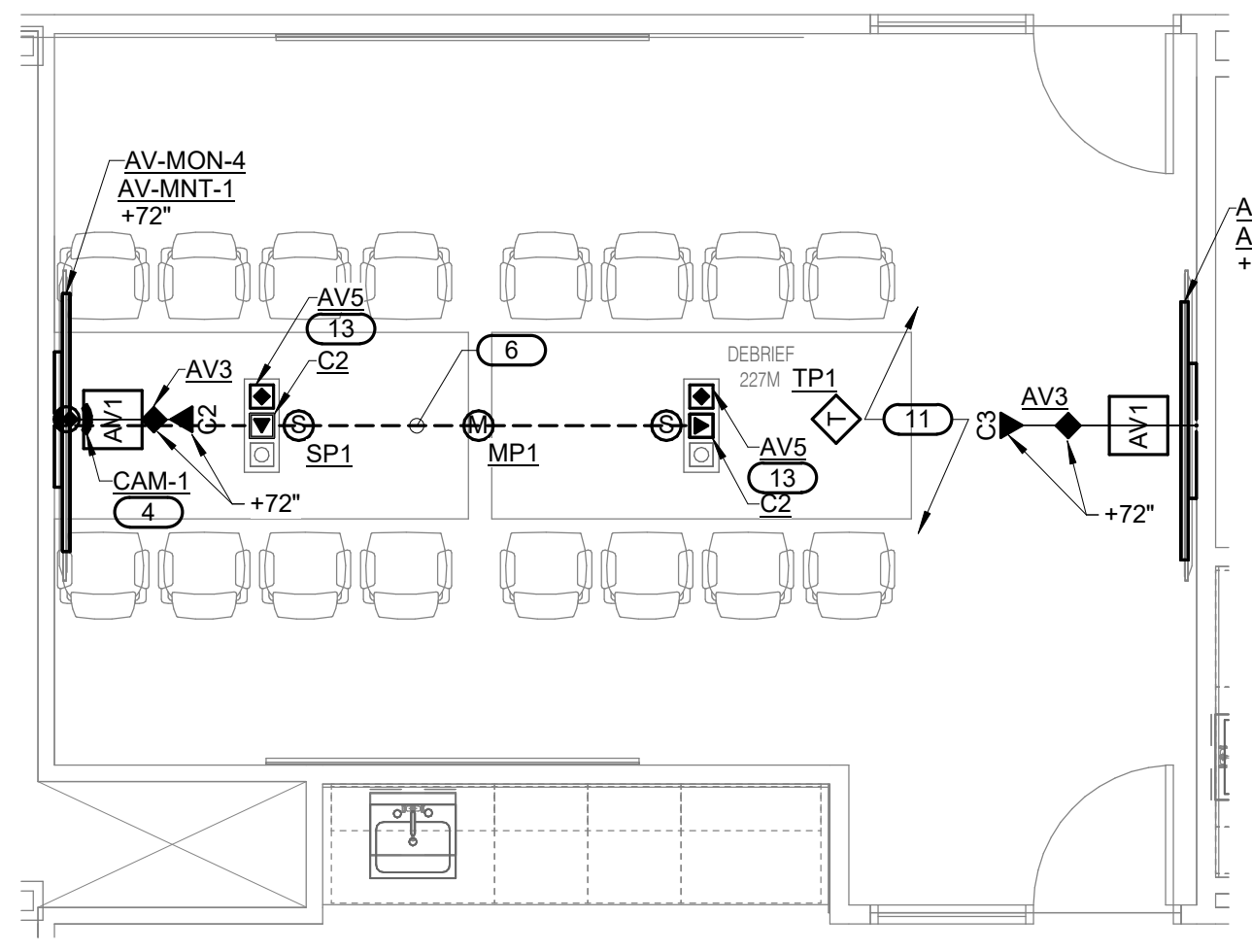
- KEYNOTES:**
1. PROVIDE QTY THREE (3) 1-1/2" CONDUIT FROM FLOOR BOX TO ACCESSIBLE CEILING.
 2. PROVIDE QTY ONE (1) 1-1/4" CONDUIT FROM ROUGH-IN BOX TO ACCESSIBLE CEILING. OWNER FURNISHED LECTERN WITH AV EQUIPMENT RACK.
 3. WIRELESS MICROPHONE AV NETWORK-CONNECTED ANTENNA.
 4. MOUNT CAMERA BELOW FLAT PANEL DISPLAY.
 5. PROVIDE QTY ONE (1) 1-1/2" CONDUIT FROM FLOOR BOX TO ACCESSIBLE CEILING AND PROVIDE QTY ONE (1) 1-1/2" CONDUIT FROM FLOOR BOX TO LEVEL 01 CABLE TRAY.
 6. QUANTITY TWO (2) VIDEO PROJECTION SCREEN CONTROL KEYPADS. PROVIDE 4" SQUARE BACKBOX WITH 2 GANG PLASTER RING. PROVIDE ONE (1) 1-1/4" CONDUIT TO ACCESSIBLE CEILING SPACE.
 7. AV NETWORK OUTLET FOR PROJECTION SCREEN CONTROL INTERFACE MODULE. MOUNT 4" SQUARE BACKBOX WITH SINGLE GANG PLASTER RING ABOVE CEILING ADJACENT TO PROJECTION SCREEN CONTROL CONNECTION.
 8. REFER TO 1/7404 FOR AV CONNECTIVITY RISER DIAGRAM.
 9. REFER TO 1/7403 FOR AV CONNECTIVITY RISER DIAGRAM.
 10. REFER TO 2/7402 FOR AV CONNECTIVITY RISER DIAGRAM.
 11. REFER TO 1/7402 FOR AV CONNECTIVITY RISER DIAGRAM.
 12. REFERENCE AV RISER DIAGRAMS FOR AV OVER IP NETWORK CABLING QUANTITY AND DESTINATION. THERE IS IN-ROOM AV OVER IP NETWORK CABLING AND THERE IS AV OVER IP NETWORK CABLING THAT RUNS BETWEEN THE ROOM AND THE AV-RPS-1 LOCATED IN AV-ER-2 EQUIPMENT RACK IN MDF 115.



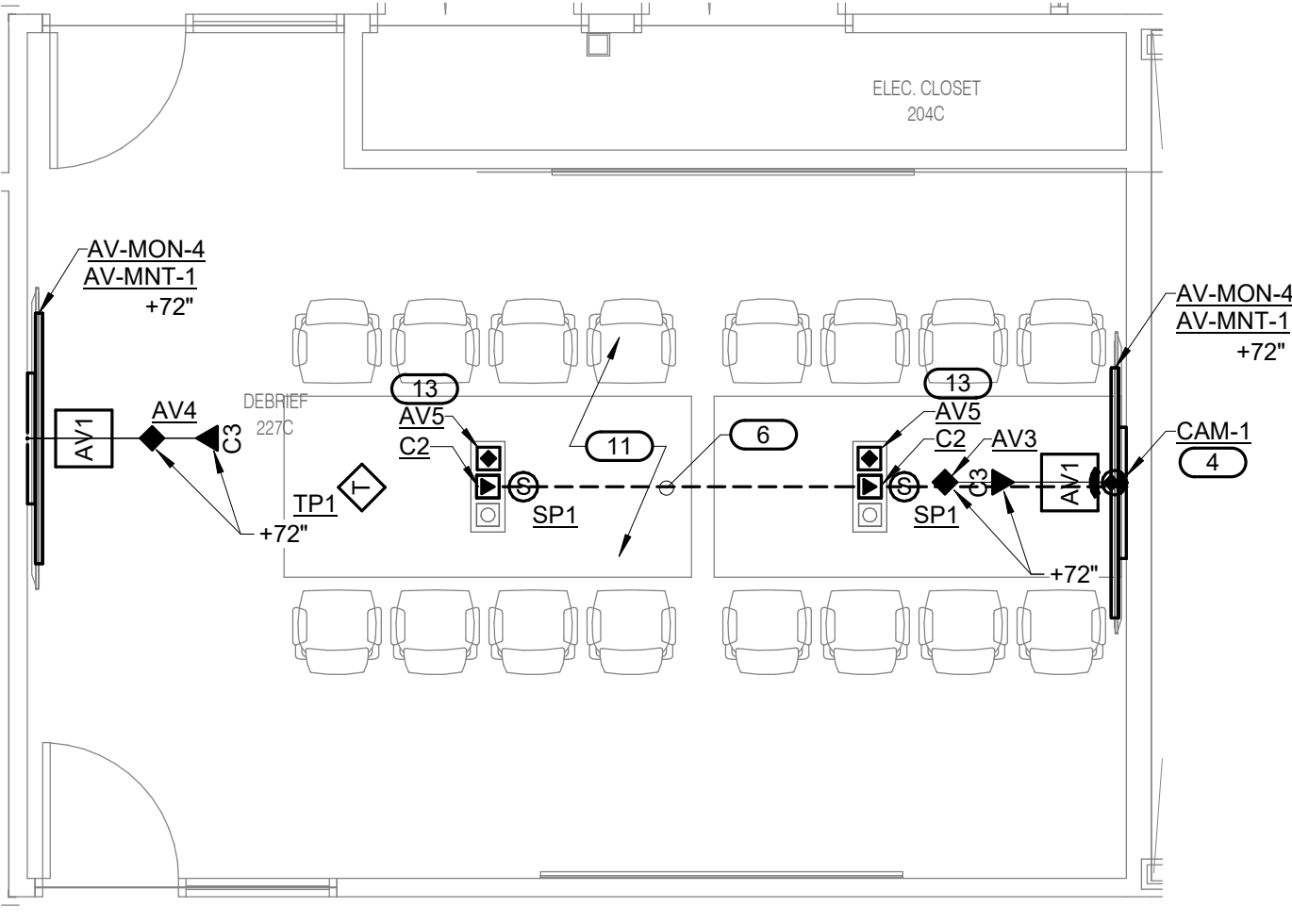
1 ACTIVE LEARNING - 102
1/4" = 1'-0"



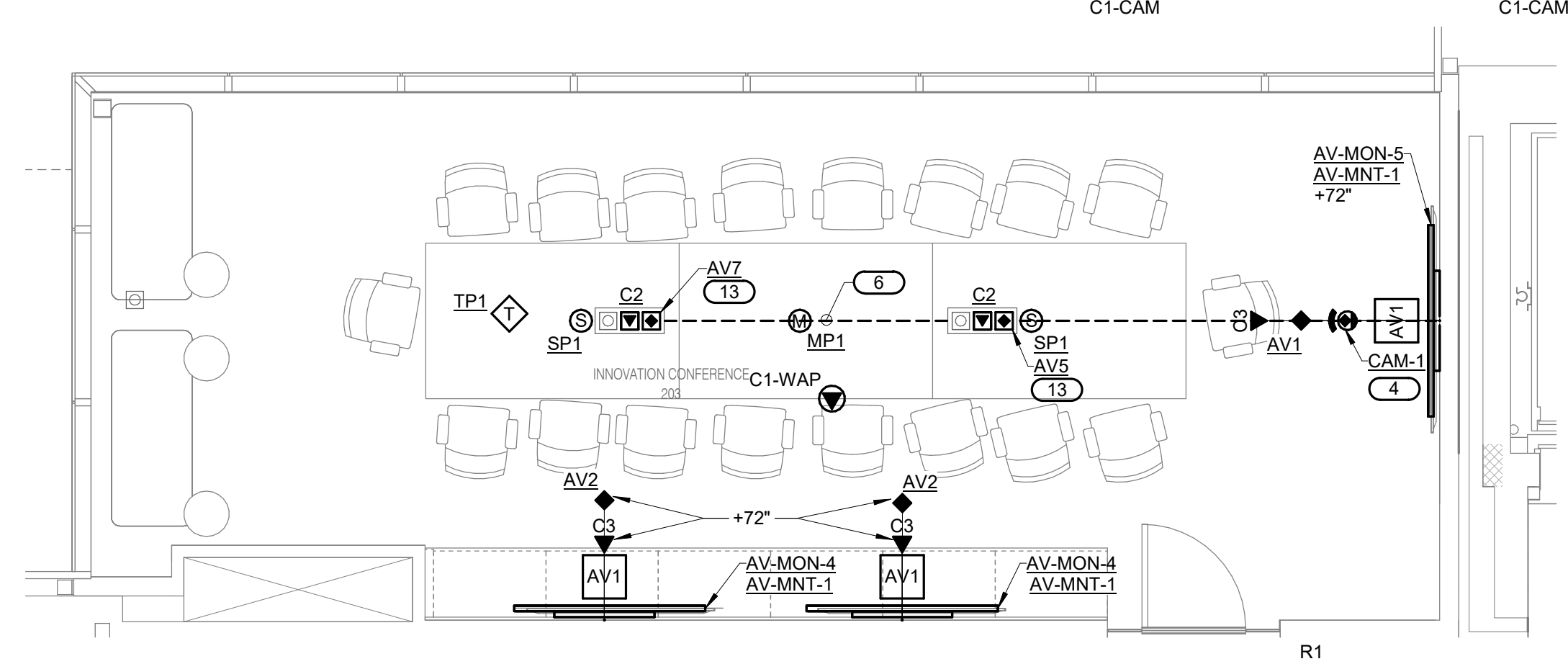
2 ACTIVE LEARNING - 101
1/4" = 1'-0"



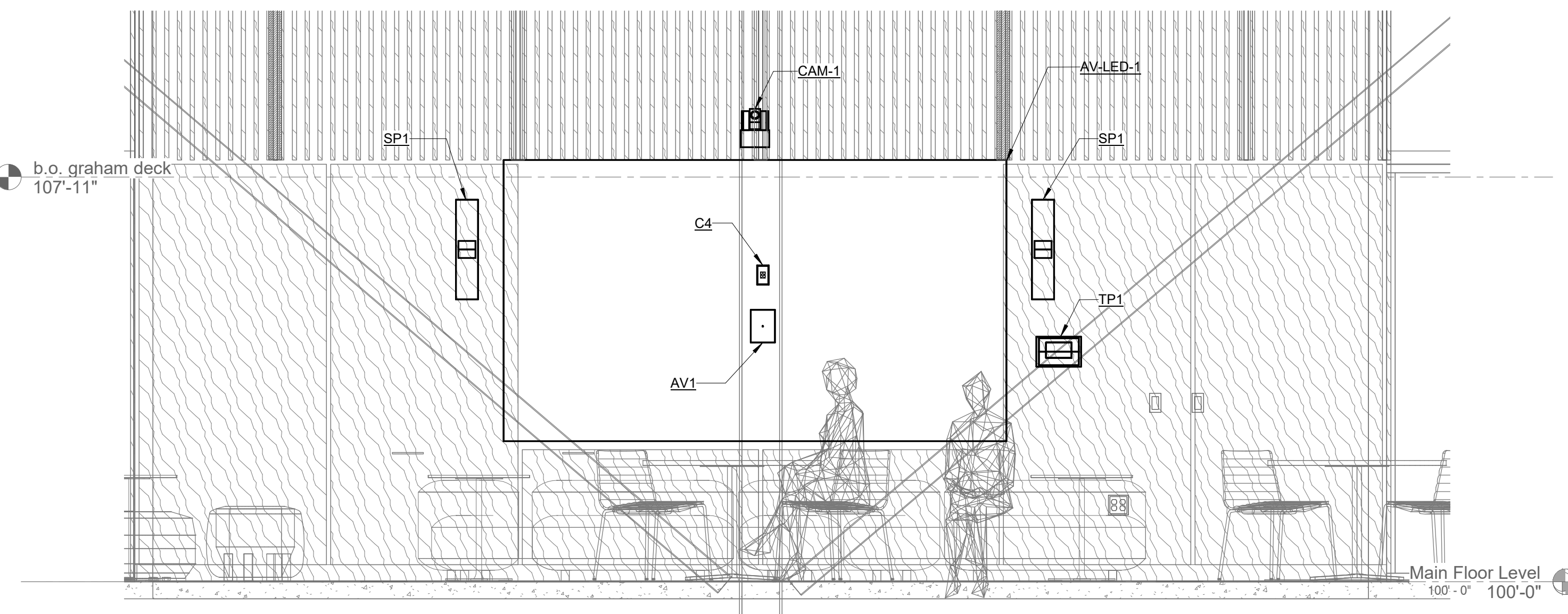
3 DEBRIEF 227M
1/4" = 1'-0"



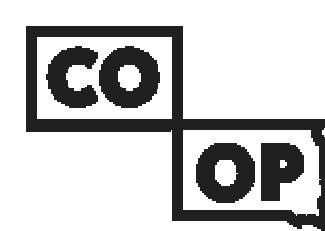
4 DEBRIEF 227C
1/4" = 1'-0"



6 INNOVATION CONFERENCE 203
1/4" = 1'-0"



5 WALL ELEVATION OF COMMON STUDY SPACE 100
1/2" = 1'-0"



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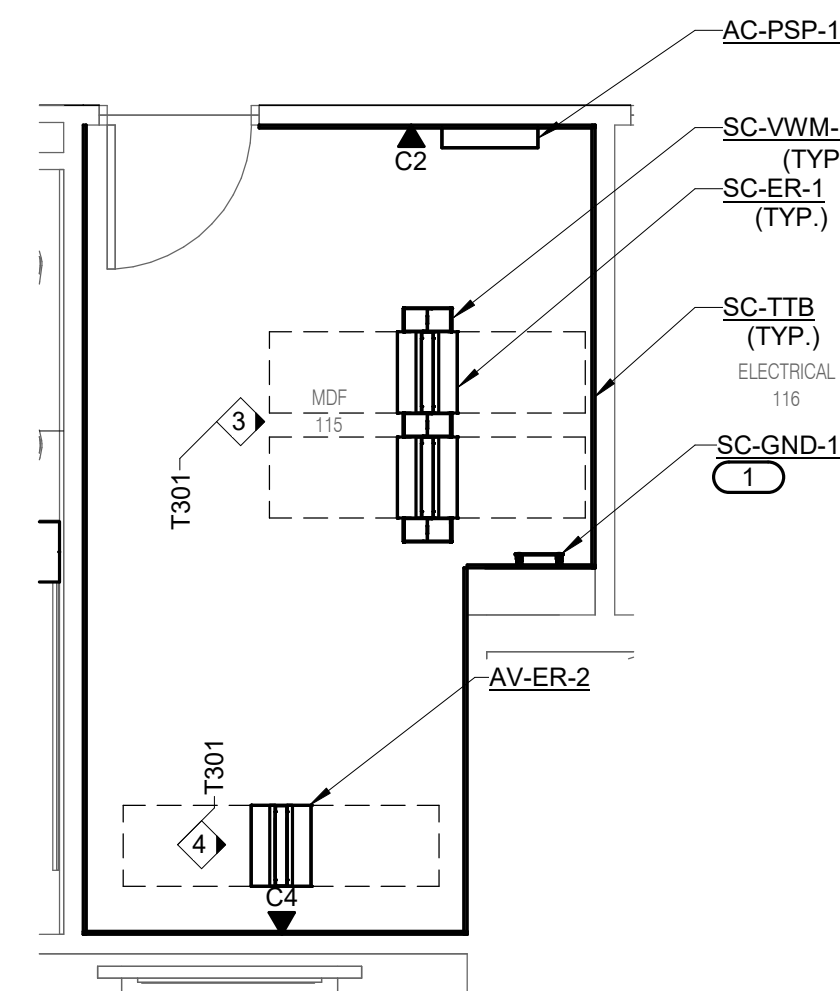
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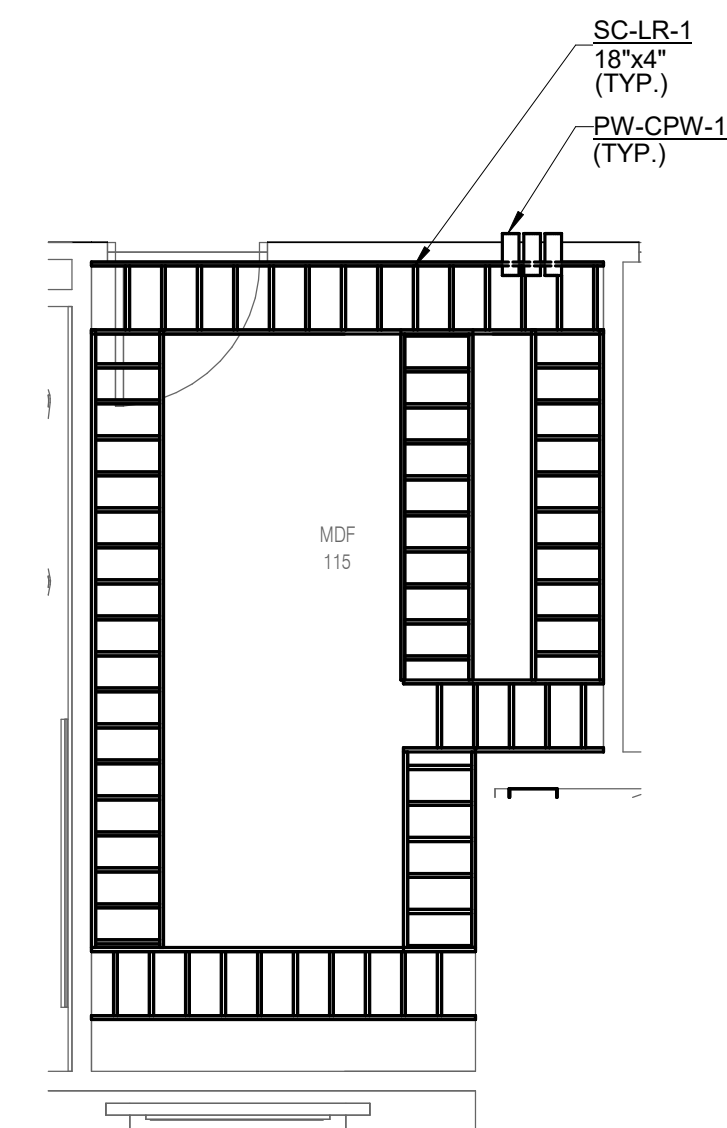
Project Number: 21008080.00
Drawn By: IMEG
Reviewed By: IMEG
Approved By: IMEG

TECHNOLOGY ENLARGEMENT

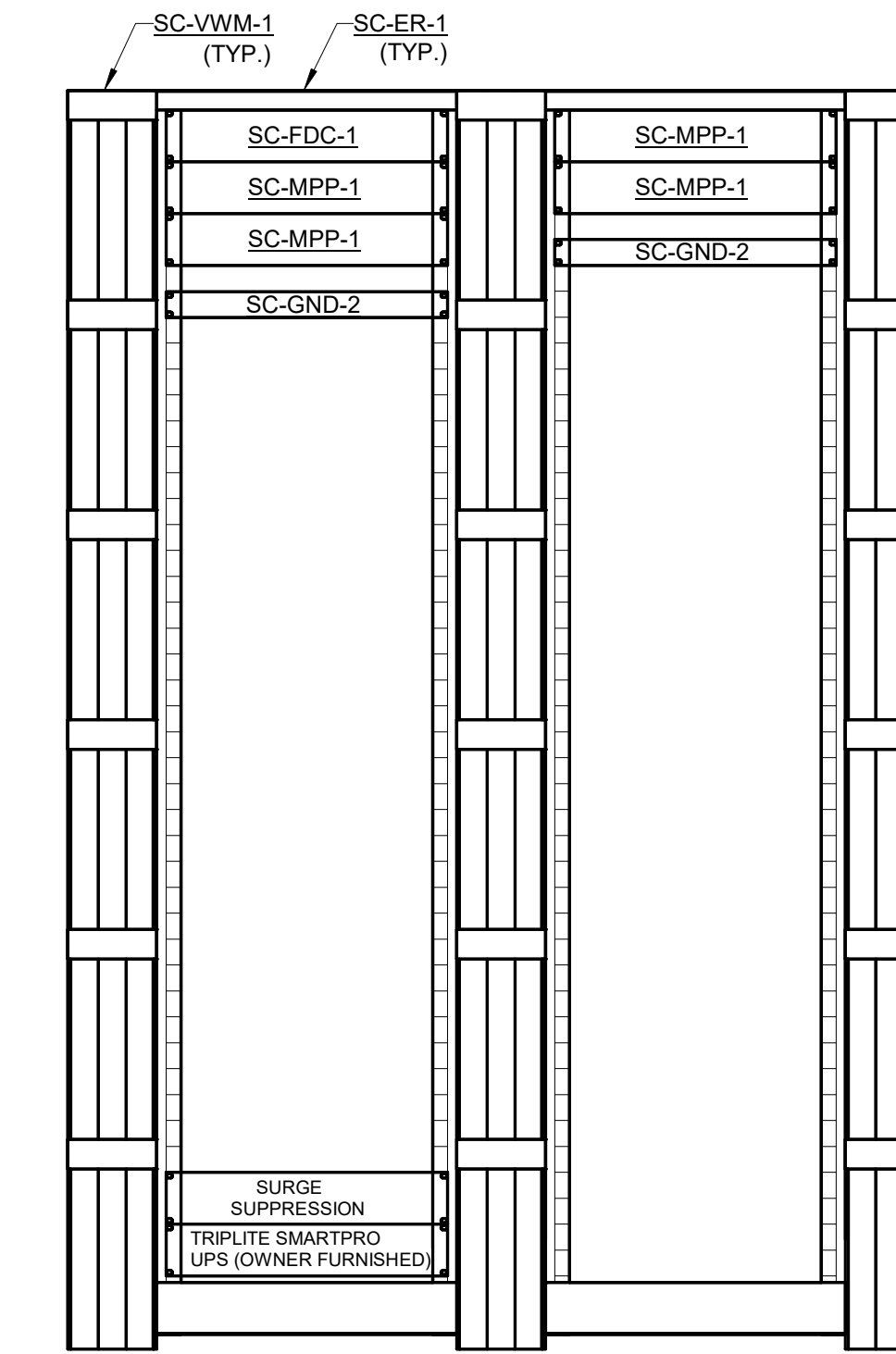
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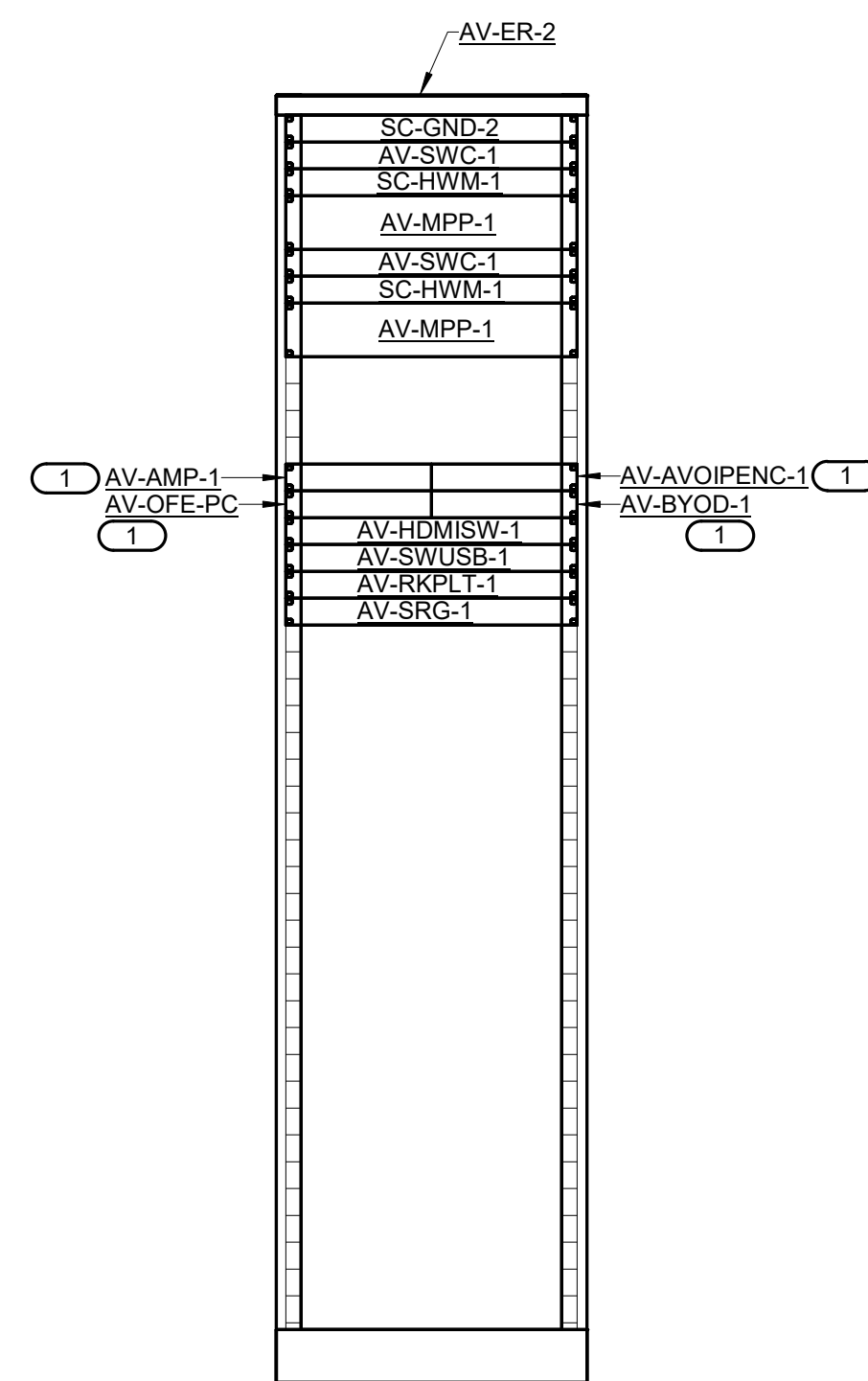
1 EQUIPMENT ROOM LAYOUT - MDF
 1/4" = 1'-0"
 NOTE:
 1. REFER TO 2/T300 FOR PATHWAY ROOM LAYOUT - MDF
 KEYNOTE: (E)
 1. REFER TO 1/T400 FOR BONDING BUS BAR DETAIL.



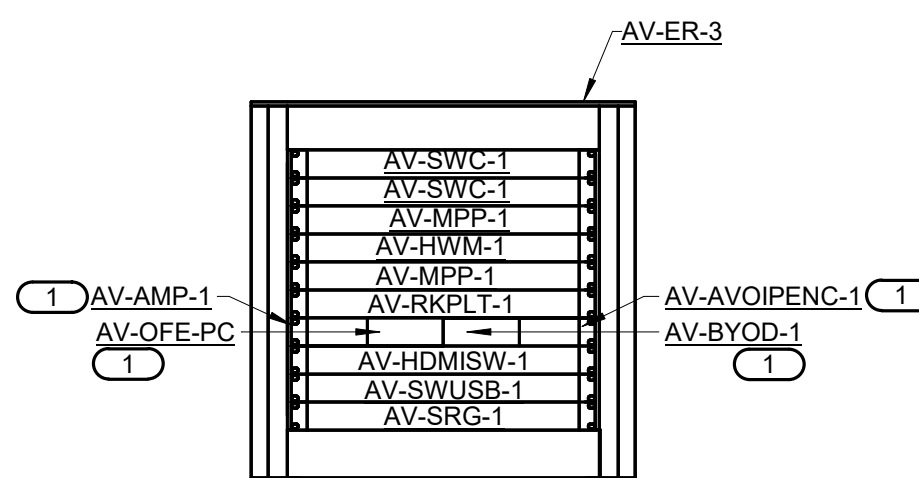
2 PATHWAY ROOM LAYOUT - MDF
 1/4" = 1'-0"
 NOTE:
 1. REFER TO 1/T300 FOR EQUIPMENT ROOM LAYOUT - MDF



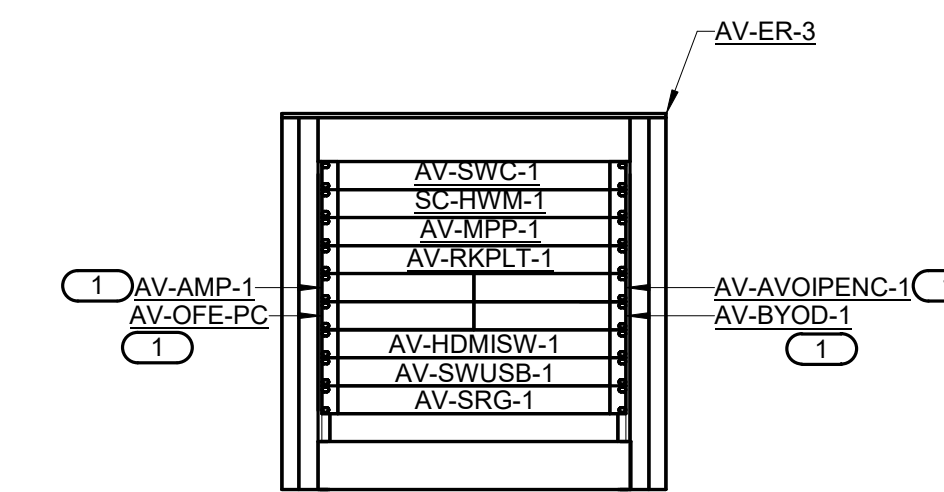
3 EQUIPMENT RACK ELEVATION - MDF
 1" = 1'-0"



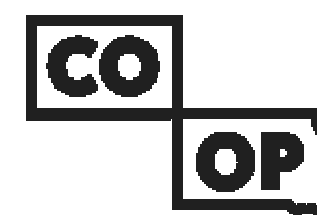
4 EQUIPMENT RACK ELEVATION (AV) - MDF
 1" = 1'-0"
 KEYNOTES: (E)
 1. DEVICE TO BE PLACED ON SHELF (AV-SHLE-1). REFER TO TECHNOLOGY EQUIPMENT SCHEDULE ON T500 FOR MORE INFORMATION.



5 LECTERN RACK ELEVATION ACTIVE LEARNING 102
 1" = 1'-0"
 KEYNOTES: (E)
 1. DEVICE TO BE PLACED ON SHELF (AV-SHLE-1). REFER TO TECHNOLOGY EQUIPMENT SCHEDULE ON T500 FOR MORE INFORMATION.



6 LECTERN RACK ELEVATION ACTIVE LEARNING 101 AND CLASSROOM 201,202,212
 1" = 1'-0"
 KEYNOTES: (E)
 1. DEVICE TO BE PLACED ON SHELF (AV-SHLE-1). REFER TO TECHNOLOGY EQUIPMENT SCHEDULE ON T500 FOR MORE INFORMATION.



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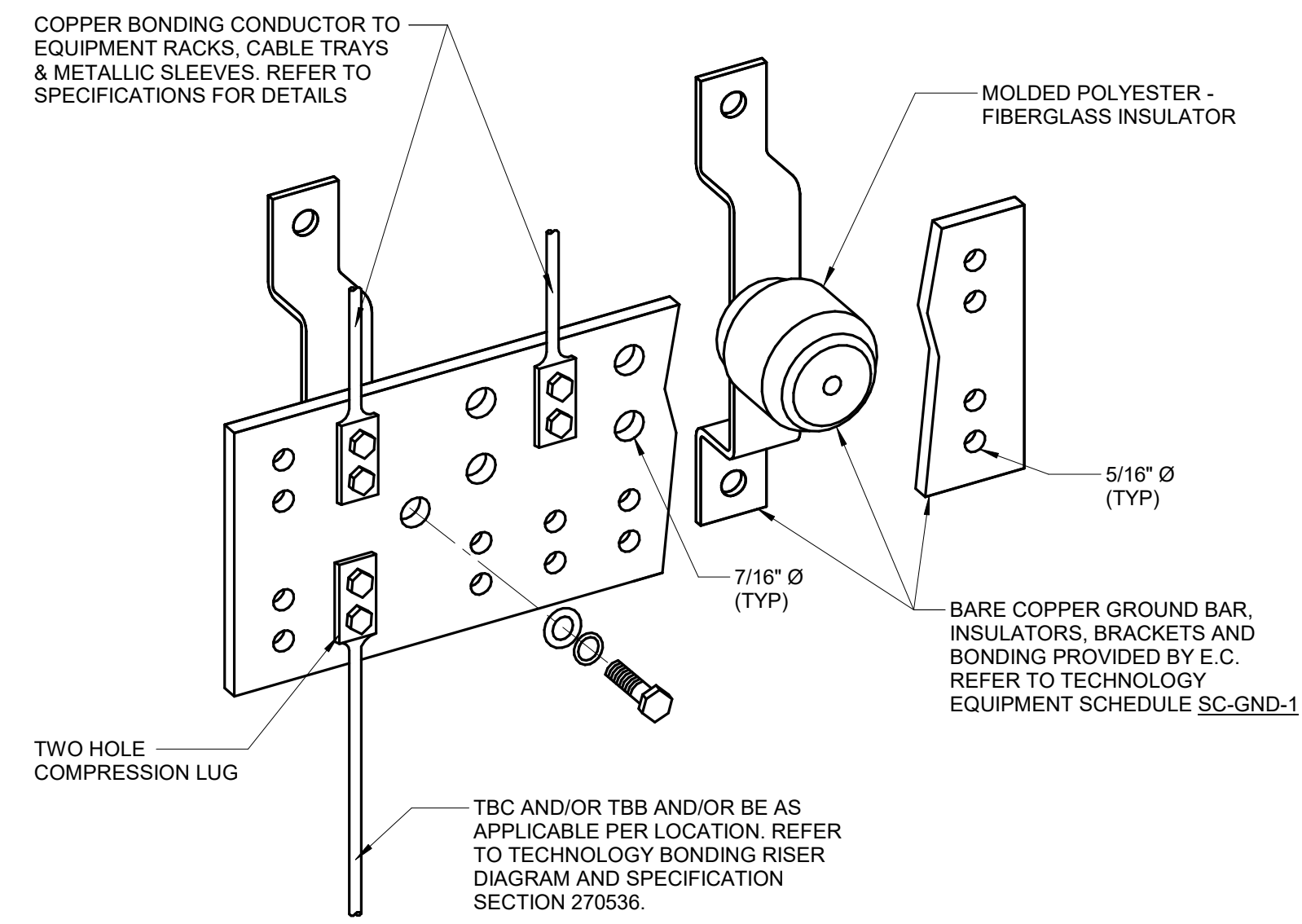
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TECHNOLOGY ENLARGEMENT

T301

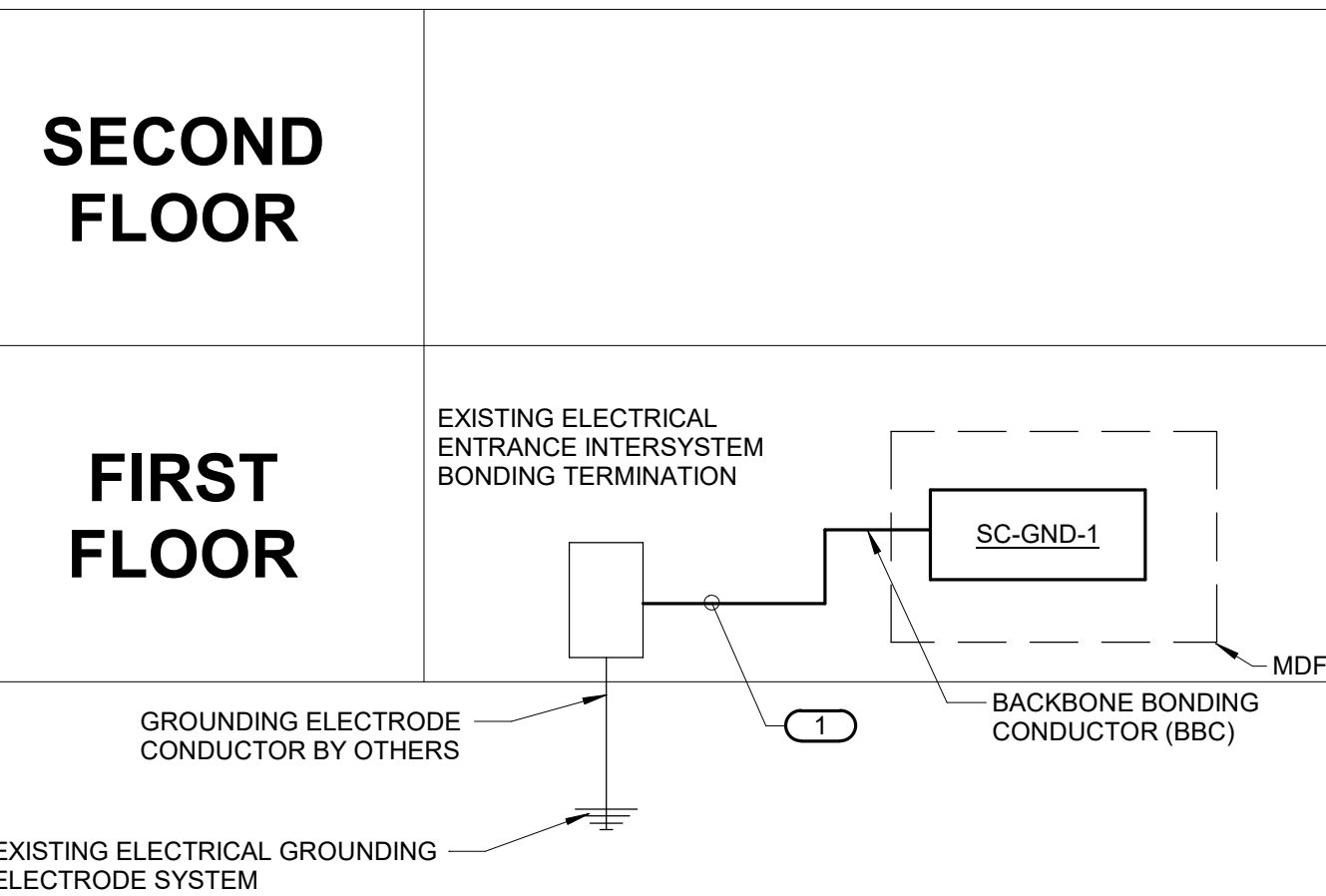


1 BONDING BUS BAR DETAIL

NO SCALE

NOTES:

- REFER TO TECHNOLOGY EQUIPMENT SCHEDULE SC-GND-1 FOR MINIMUM DIMENSION REQUIREMENTS.



2 TECHNOLOGY BONDING RISER DIAGRAM

NO SCALE

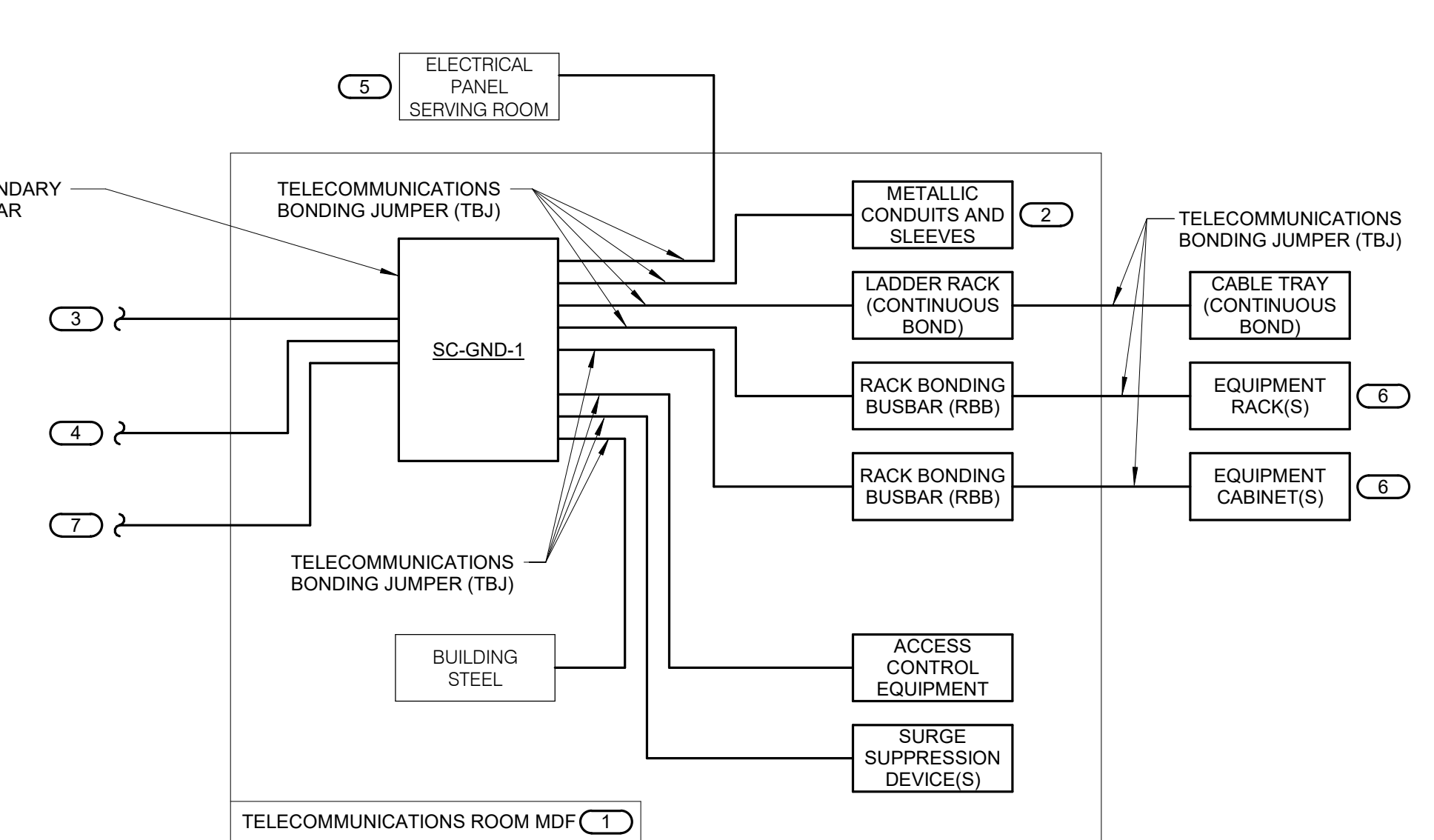
NOTES:

- THIS RISER IS DIAGRAMMATIC AND MAY NOT SHOW ACTUAL ROUTING OR QUANTITIES OF MATERIALS. THIS RISER IS SHOWN FOR CLARIFICATION OF CONNECTION LOCATIONS AND CONDUCTOR TYPE. ALL CONNECTIONS AND SYSTEM DEVICES SHOWN ARE TYPICAL AND NOT REPRESENTATIVE OF ACTUAL PROJECT QUANTITIES. REFER TO FLOOR PLANS AND ENLARGED FLOOR PLANS FOR ACTUAL QUANTITIES AND LOCATIONS OF DEVICES AND MORE SPECIFIC ROUTING INFORMATION. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
- TELECOM BONDING BACKBONE SHALL BE PROVIDED PER BONDING CONDUCTOR SIZING SCHEDULE.
- ALL CONDUCTORS IN THE TECHNOLOGY BONDING SYSTEM SHALL BE (PLENUM RATED) COPPER (GREEN OR MARKED WITH A DISTINCTIVE GREEN COLOR). REFER TO BONDING CONDUCTOR SIZING SCHEDULE FOR SIZING CRITERIA FOR CONDUCTORS. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
- ALL BONDING CONDUCTORS AND BONDING JUMPERS SHALL BE CONNECTED BY COMPRESSION LUGS, EXOTHERMIC WELDING, OR IRREVERSIBLE COMPRESSION CONNECTORS. SOLDER IS NOT AN ACCEPTABLE MEANS OF CONNECTION. SHEET METAL SCREWS SHALL NOT BE USED TO CONNECT COMMUNICATIONS BONDING CONDUCTORS TO EQUIPMENT. WHERE NECESSARY, REMOVE PAINT AND/OR USE PAINT-PIERCING WASHERS TO PROVIDE PROPER ELECTRICAL BOND AT ALL CONNECTIONS.
- SC-GND-1 IS THE PRIMARY BONDING BUSBAR (PBB) WHICH CONNECTS TO THE (TBC) AND CONNECTS ALL SECONDARY BONDING BUSBAR (SBB) VIA THE (BBC).
- REFER TO TYPICAL TELECOM ROOM BONDING FLOW DIAGRAM.
- REFER TO TELECOM ROOM REFERENCES SCHEDULE FOR TELECOMMUNICATIONS ROOM NUMBER AND LOCATION INFORMATION.

KEYNOTES: (Z)

- TELECOMMUNICATIONS BONDING CONDUCTOR (TBC). TBC SHALL BE THE SAME SIZE AS THE TBB OR LARGER. REFER TO BONDING CONDUCTOR SIZING SCHEDULE FOR SIZING REQUIREMENTS.

BONDING CONDUCTOR LENGTH IN FEET	MINIMUM ACCEPTABLE SIZE - AWG
LESS THAN 13'	6
14' - 20'	4
21' - 26'	3
27' - 33'	2
34' - 41'	1
42' - 52'	1/0
53' - 66'	2/0
67' - 84'	3/0
85' - 105'	4/0
106' - 120'	250 kcmil
120' - 150'	300 kcmil
151' - 175'	350 kcmil
176' - 250'	500 kcmil
251' - 300'	600 kcmil
GREATER THAN 301'	750 kcmil



3 TYPICAL TELECOM ROOM BONDING FLOW DIAGRAM

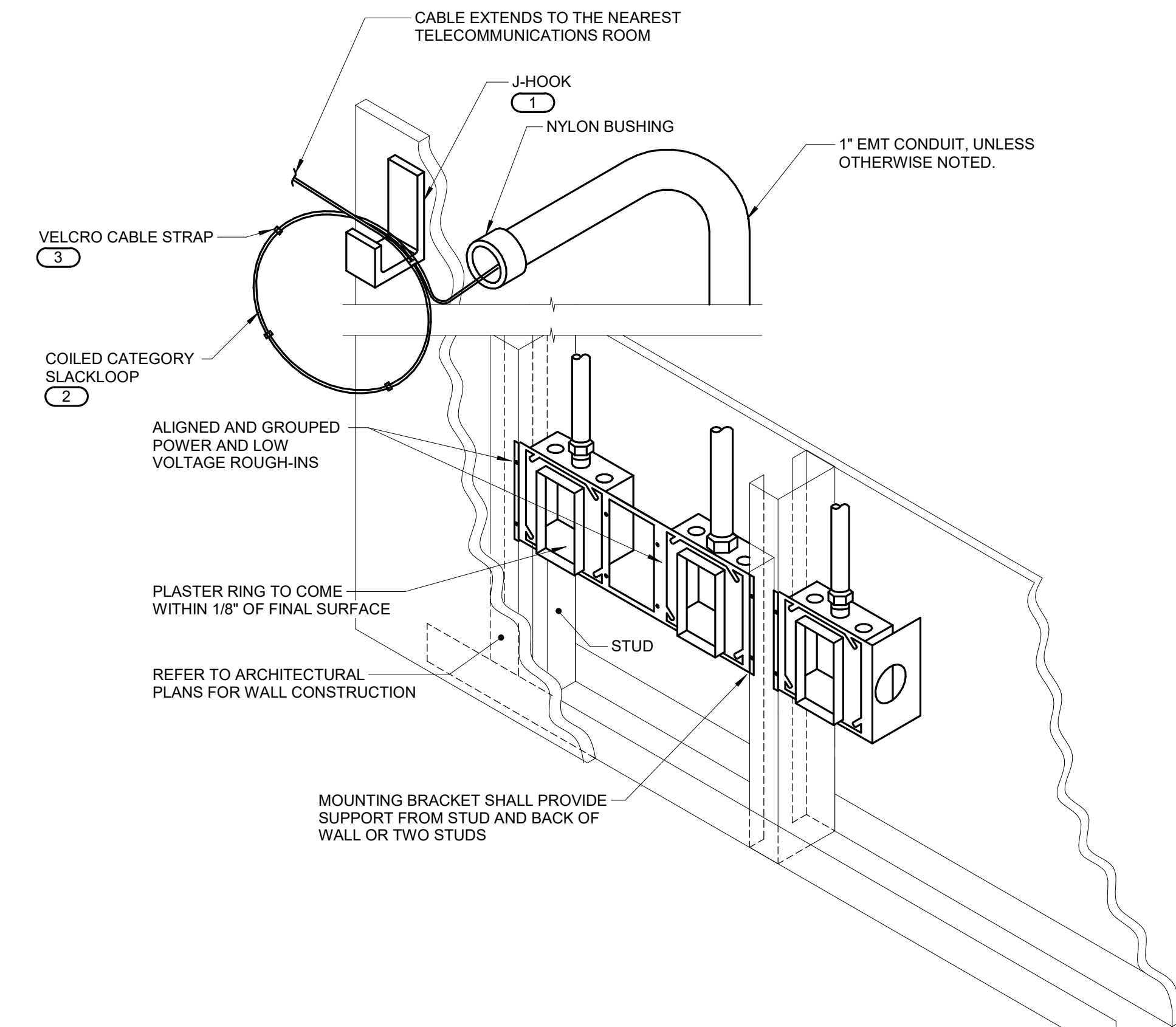
NO SCALE

NOTES:

- THIS FLOW DIAGRAM IS DIAGRAMMATIC AND MAY NOT SHOW ACTUAL ROUTING OR QUANTITIES OF MATERIALS. THIS FLOW DIAGRAM IS SHOWN FOR CLARIFICATION OF CONNECTION LOCATIONS AND CONDUCTOR TYPE. ALL CONNECTIONS AND SYSTEM DEVICES SHOWN ARE TYPICAL AND NOT REPRESENTATIVE OF ACTUAL PROJECT QUANTITIES. REFER TO FLOOR PLANS AND ENLARGED FLOOR PLANS FOR ACTUAL QUANTITIES AND LOCATIONS OF DEVICES AND SPECIFIC ROUTING INFORMATION. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
- ALL CONDUCTORS IN THE TECHNOLOGY BONDING SYSTEM SHALL BE (PLENUM RATED) COPPER (GREEN OR MARKED WITH A DISTINCTIVE GREEN COLOR). REFER TO BONDING CONDUCTOR SIZING SCHEDULE FOR SIZING CRITERIA FOR CONDUCTORS. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
- ALL BONDING CONDUCTORS AND BONDING JUMPERS SHALL BE CONNECTED BY COMPRESSION LUGS, EXOTHERMIC WELDING, OR IRREVERSIBLE COMPRESSION CONNECTORS. SOLDER IS NOT AN ACCEPTABLE MEANS OF CONNECTION. SHEET METAL SCREWS SHALL NOT BE USED TO CONNECT COMMUNICATIONS BONDING CONDUCTORS TO EQUIPMENT. WHERE NECESSARY, REMOVE PAINT AND/OR USE PAINT-PIERCING WASHERS TO PROVIDE PROPER ELECTRICAL BOND AT ALL CONNECTIONS.

KEYNOTES: (Z)

- REFER TO TELECOM ROOM REFERENCES SCHEDULE FOR TELECOMMUNICATIONS ROOM NUMBER AND LOCATION INFORMATION.
- INCLUDES HORIZONTAL AND VERTICAL CONDUIT SLEEVES FOR TECHNOLOGY CABLING.
- TELECOMMUNICATIONS BONDING BACKBONE (TBB). REFER TO TELECOMMUNICATIONS BONDING RISER DIAGRAM.
- TELECOMMUNICATIONS BONDING CONDUCTOR (TBC), TO EXISTING ELECTRICAL ENTRANCE INTERSYSTEM BONDING TERMINATION.
- REFER TO TELECOMMUNICATIONS BONDING RISER DIAGRAM FOR CONTINUATION AND ADDITIONAL INFORMATION AND REQUIREMENTS. THIS CONNECTION OCCURS IN IMC-1 ONLY.
- REFER TO THE ELECTRICAL DRAWINGS FOR LOCATION.
- PROVIDE SC-GND-2 RACK MOUNT TELECOMMUNICATIONS BONDING BUSBAR AT EACH EQUIPMENT RACK AND CABINET.
- BACKBONE BONDING CONDUCTOR (BBC). REFER TO TELECOMMUNICATIONS BONDING RISER DIAGRAM FOR CONTINUATION AND ADDITIONAL INFORMATION AND REQUIREMENTS ON TELECOMMUNICATIONS ROOMS THAT REQUIRE CONNECTIONS.



4 INFORMATION OUTLET ROUGH-IN DETAIL

NO SCALE

NOTES:

- THE INTENT OF THE DETAIL IS TO ALIGN AND GROUP DEVICE ROUGH-INS FOR POWER AND LOW VOLTAGE TECHNOLOGY SYSTEMS. SOLIDLY MOUNTED AND THE SURFACE OF THE TRIM IS EITHER FLUSH WITH THE WALL SURFACE OR WITHIN 1/8" OF THE WALL SURFACE. JUNCTION BOXES LARGER THAN 4" SQUARE SHALL BE MOUNTED IN A MANNER THAT IS SIMILAR TO THE SYSTEM NOTED ABOVE OR ACHIEVES THE SAME RESULTS.
- PLASTER RINGS DEPTH SHALL BE 1/8" DEEPER THAN THE GYP BOARD APPLIED TO THE WALL. PLASTER RING SHALL BE 3/4" FOR USE WITH 5/8" GYP BOARD.
- METAL STUD-TO-STUD MOUNTING BRACKETS FOR MULTIPLE BOXES BETWEEN STUD. ERICO CADDY R5M SERIES, EATON B-LINE BB SERIES, OR EQUAL.
- MOUNTING SUPPORT BRACKETS SIZES FOR SINGLE BOXES IN A STUD CAVITY SHALL MATCH THE STUD DEPTH. ERICO CADDY H#H SERIES, EATON B-LINE BB#H SERIES, OR EQUAL.
- WHERE RECTANGLE AND TECHNOLOGY DEVICES ARE SHOWN SERVING A COMMON COMPUTER OR EQUIPMENT, OR SHOWN IN SIMILAR LOCATIONS ON THE DRAWINGS THE DEVICES SHALL BE INSTALLED IN THE SAME STUD CAVITY WITH MOUNTING BRACKETS OR ALIGNED ON OPPOSITE SIDES OF A COMMON STUD WITH SEPARATE SUPPORT.
- TERMINATE CONDUIT STUB ORIENTED HORIZONTALLY AT THE HEIGHT OF THE ASSOCIATED CABLE TRAY OR J-HOOK ROUTE. CONDUIT RUN SHALL NOT CONTAIN MORE THAN 180 DEGREES OF BEND BETWEEN ACCESSIBLE JUNCTION BOXES OR BETWEEN JUNCTION BOX AND END OF CONDUIT.
- WHERE CONDUIT STUB IS LOCATED IN A ROOM WITH AN ACCESSIBLE CEILING AND IS NOT REQUIRED TO RUN TO CABLE ROUTE LOCATED OUTSIDE THE ROOM, STUB MUST TERMINATE ABOVE THE ACCESSIBLE CEILING WITH A 90-DEGREE BEND AT THE TOP ORIENTED IN TO THE ROOM AT THE HEIGHT OF THE ASSOCIATED CABLE TRAY OR J-HOOK ROUTE IN THE ROOM.
- ALL STUBS MUST BE FITTED WITH A NYLON BUSHING ON EACH END OF THE CONDUIT.
- INSTALLING CONTRACTOR SHALL FURNISH AND INSTALL FIRESTOP MATERIALS FOR TECHNOLOGY ROUGH-INS PER PROJECT REQUIREMENTS. REFER TO SPECIFICATIONS FOR FIRESTOP REQUIREMENTS.

KEYNOTES: (Z)

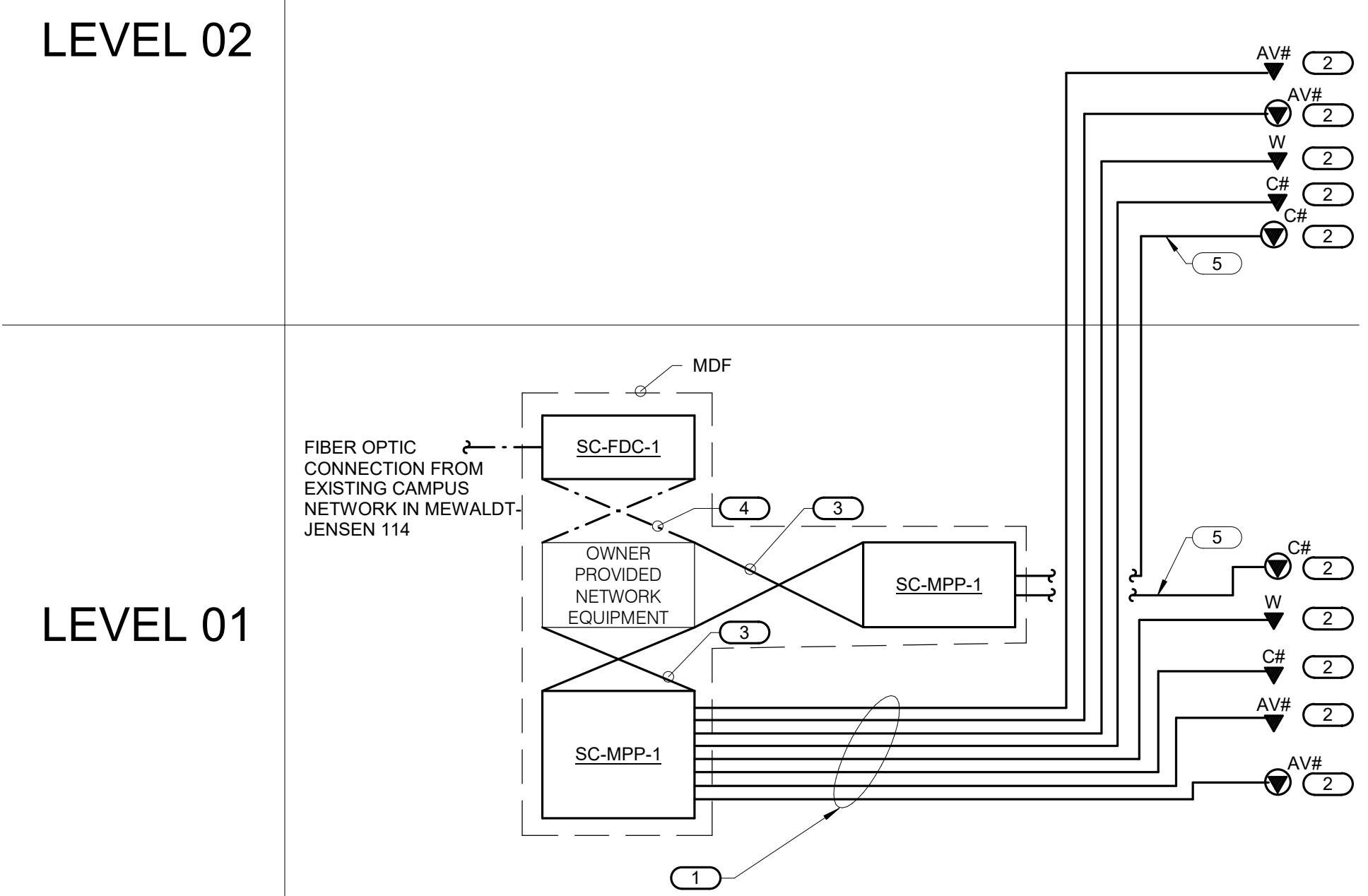
- MOUNT A DEDICATED J-HOOK TO THE NEAREST CEILING SUBSTRUCTURE, COLUMN, JOIST, OR WALL ABOVE THE CEILING AS SHOWN ON THE DRAWINGS. PROVIDE THE PROPER SUPPORT WHEN HANGING FROM THE CEILING SUBSTRUCTURE OR COLUMN, WALL, OR JOIST. REFER TO SPECIFICATION SECTION 27 05 28 FOR ADDITIONAL REQUIREMENTS.
- REFER TO SECTION 27 15 00 FOR SLACKLOOP LENGTH. MAINTAIN THE MANUFACTURERS BEND RADII FOR SLACKLOOP SIZE.
- PROVIDE AND INSTALL A VELCRO CABLE STRAP ON THE SLACKLOOP APPROXIMATELY EVERY 6" ALONG THE SLACKLOOP. FOR SLACKLOOPS GREATER THAN 3' A MINIMUM OF (4) STRAPS WILL BE INSTALLED.

5 CEILING SPEAKER MOUNTING DETAIL

NO SCALE

NOTES:

- WHERE SUPPORTS ATTACH TO METAL ROOF DECKING, EXCLUDING CONCRETE ON METAL DECKING, DO NOT EXCEED 25 LBS. PER HANGER AND A MINIMUM SPACING OF 2'-0" ON CENTER. THIS 25 LB. LOAD AND 2'-0" SPACING INCLUDE ELECTRICAL AND MECHANICAL ITEMS HANGING FROM DECK. IF THE HANGER RESTRICTIONS CANNOT BE ACHIEVED, THE ADDITION OF SUPPLEMENTAL FRAMING OFF STEEL FRAMING WILL BE REQUIRED.



6 CONNECTIVITY RISER DIAGRAM -MDF

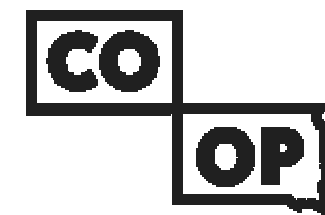
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NOTES:

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KEYNOTES: (Z)

- 23 GAUGE, 4-PAIR, CATEGORY 6, UNSHIELDED TWISTED PAIR CABLE. SEE SPECIFICATIONS.
- REFER TO INFORMATION OUTLET SCHEDULE ON T600 AND THE FLOOR PLANS FOR QUANTITY OF CABLES AND JACKS TO BE INSTALLED AT EACH INFORMATION OUTLET.
- RJ-45 TO RJ-45 CATEGORY CAT 6 UTP PATCH CORD. SEE SPECIFICATIONS.
- FIBER PATCH CORD. SEE SPECIFICATIONS.
- 23 GAUGE, 4 PAIR, CATEGORY 6A, UNSHIELDED TWISTED PAIR CABLE. SEE SPECIFICATIONS.



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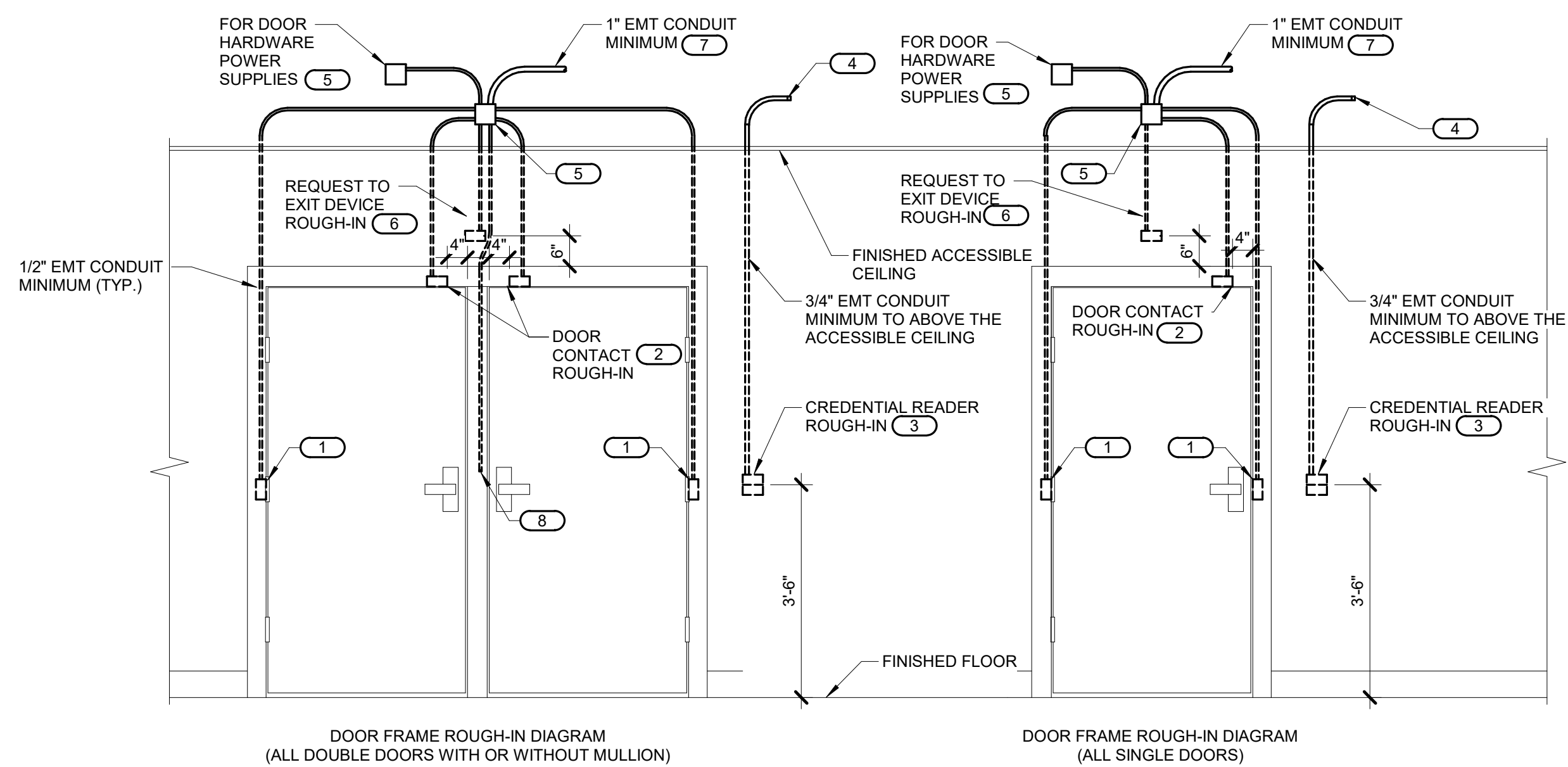
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Drawn By: IMEG
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TECHNOLOGY DETAILS AND DIAGRAMS

T400



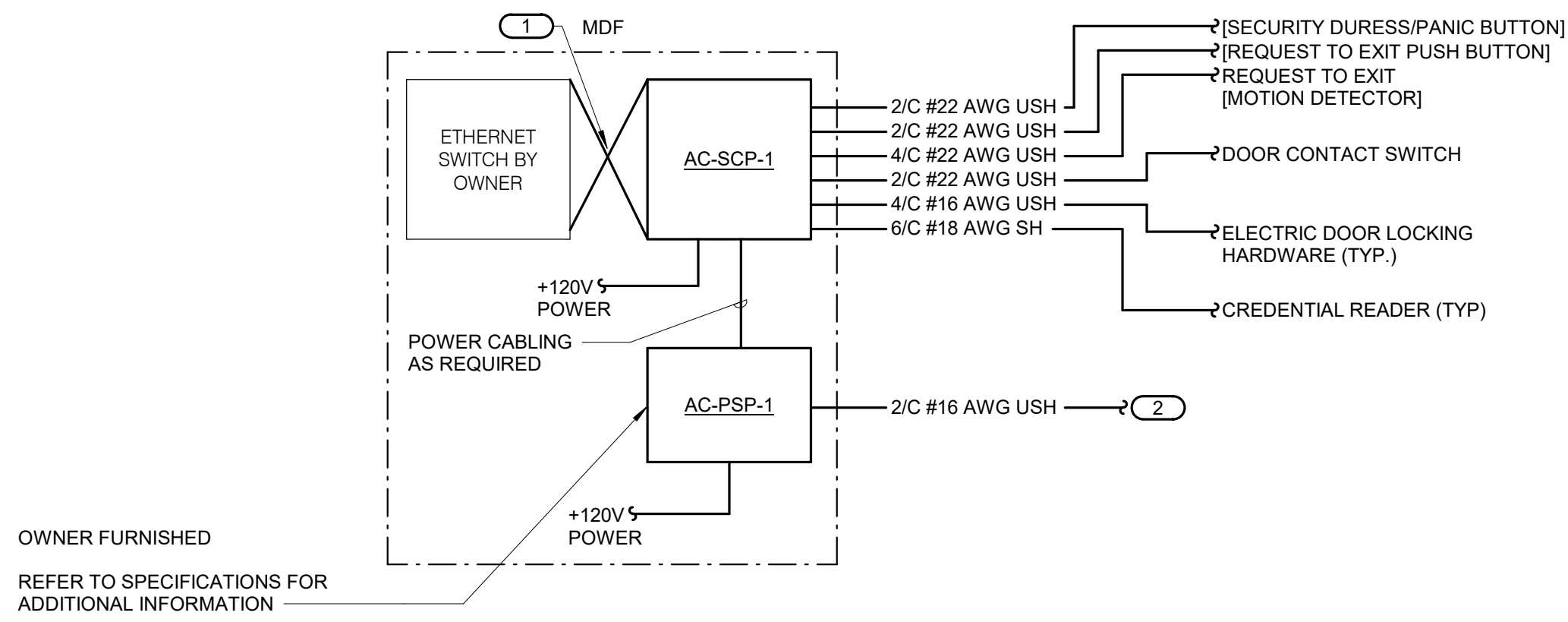
1 **CONTROLLED SECURITY SCHEME DOOR ROUGH-IN DETAIL**

NO SCALE
NOTES:

1. CONFIGURATIONS SHOWN IN THE DETAIL ABOVE ARE DIAGRAMMATIC, INTENDED TO DESCRIBE THE CONTROLLED SECURITY SCHEME ROUGH-IN REQUIREMENTS OF THE DOORS. DETAILS ABOVE MAY NOT ACCURATELY REPRESENT DOOR SIZE, DOOR SWING, DOOR HARDWARE, OR DOOR FUNCTIONALITY. REFER TO ARCHITECTURAL DOOR HARDWARE SCHEDULE, DOOR HARDWARE GROUPS AND DOOR HARDWARE SPECIFICATIONS FOR COMPLETE INFORMATION. MIRROR THE DETAIL AS REQUIRED.
2. ROUGH-IN SHOWN IN THE DETAIL ABOVE REPRESENTS THE MINIMUM REQUIREMENTS FOR ALL CONTROLLED SECURITY SYSTEM DEVICES AND CABLING UNLESS OTHERWISE NOTED. COORDINATE EXACT REQUIREMENTS WITH SELECTED DOOR MATERIALS, DOOR HARDWARE, AND CONTROLLED SECURITY DEVICES AND CABLING PRIOR TO INSTALLATION.
3. ALL CABLING IN WALLS AND WHERE EXPOSED ON VERTICAL SURFACES SHALL BE INSTALLED IN EMT CONDUIT OR SURFACE MOUNT RACEWAY. CABLING ROUTED HORIZONTALLY ABOVE THE ACCESSIBLE CEILING MAY BE INSTALLED FREE-AIR CABLING PROPERLY RATED FOR THE CEILING ENVIRONMENT.
4. THE ELECTRICAL OR SECURITY CONTRACTOR SHALL NOT MODIFY ANY FIRE RATED DOOR AND/OR DOOR FRAME. REFER TO THE ARCHITECTURAL DOOR SCHEDULE, DOOR HARDWARE SCHEDULE, AND DOOR HARDWARE SPECIFICATION FOR ADDITIONAL INFORMATION. MODIFICATION TO ANY FIRE RATED DOOR AND/OR FRAME WILL REQUIRE A RE-CERTIFICATION OF THE DOOR AND FRAME WITH THE LOCAL AUTHORITY HAVING JURISDICTION (AAJ).
5. INSTALLING CONTRACTOR SHALL FURNISH AND INSTALL FIRESTOP MATERIALS FOR ALL CONTROLLED SECURITY SCHEME ROUGH-INS PER PROJECT REQUIREMENTS. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
6. REFER TO THE CONTROLLED SECURITY SCHEME WIRING DIAGRAM ON 2/1401 FOR CABLING REQUIREMENTS AND THE CONTROLLED SECURITY SCHEME SCHEDULE ON T401 FOR ADDITIONAL INFORMATION.
7. INSTALLATION SHALL INCLUDE ALL POWER REQUIRED FOR SYSTEM OPERATION INCLUDING +120VAC. REFER TO THE SUGGESTED MATRIX OF SCOPE RESPONSIBILITY FOR ADDITIONAL INFORMATION.

KEYNOTES: (#)

1. PROVIDE JUNCTION BOXES IN THE DOOR FRAME WHERE SHOWN ON THIS DETAIL. ROUGH-IN SHALL BE PROVIDED WHETHER THE CURRENT SECURITY SCHEME UTILIZES THEM OR NOT. ALL CONDUITS SHALL BE EMT CONDUIT UNLESS OTHERWISE NOTED. FLEXIBLE CONDUIT OF ANY TYPE WILL NOT BE ACCEPTED. COORDINATE INSTALLATION WITH ON-SITE DOOR FRAME INSTALLATION CONTRACTOR.
2. ALL DOOR POSITION SWITCHES ARE REQUIRED TO BE RECESSED UNLESS OTHERWISE NOTED. ELECTRIC HINGE MONITORS ARE NOT AN ACCEPTABLE REPLACEMENT FOR THE RECESSED DOOR POSITION SWITCH.
3. 4" SQUARE BACKBOX WITH SINGLE GANG PLASTER RING. PROVIDE 2 1/2" DEEP MASONRY BOX WHERE APPLICABLE. REFER TO FLOOR PLAN(S) FOR ACTUAL CREDENTIAL READER TYPE AND ROUGH-IN LOCATIONS.
4. CONDUIT SHALL ROUTE FROM THE CREDENTIAL READER TO THE SECURE SIDE OF THE DOOR. CONDUIT SHALL ROUTE A MINIMUM OF 12" FROM THE JUNCTION BOX TO NEAREST CABLE TRAY.
5. MOUNT A MINIMUM 4" SQUARE 2-1/8" DEEP JUNCTION BOX WITH BLANK COVER PLATE ON THE SECURE SIDE OF THE DOOR ABOVE ACCESSIBLE CEILING. INSTALLING CONTRACTOR SHALL SIZE THE JUNCTION BOXES PER SYSTEM INSTALLATION REQUIREMENTS AND APPLICABLE CODES. MAINTAIN ACCESS TO THE JUNCTION BOX.
6. PROVIDE A HORIZONTALLY MOUNTED SINGLE GANG BACKBOX FOR THE REQUEST TO EXIT SENSOR. REFER TO THE CONTROLLED SECURITY SCHEME SCHEDULE ON T401 FOR DOORS THAT REQUIRE THIS ROUGH-IN.
7. CONDUIT SHALL ROUTE A MINIMUM OF 12" FROM THE JUNCTION BOX TO NEAREST CABLE TRAY.
8. CONDUIT INSTALLED IN PERMANENT MULLIONS ONLY. REFER TO THE ARCHITECTURAL DOOR SCHEDULE AND DOOR HARDWARE GROUPS FOR LOCATIONS THAT REQUIRE THIS ROUGH-IN. PROVIDE A NYLON BUSHING ON THE CONDUIT END.



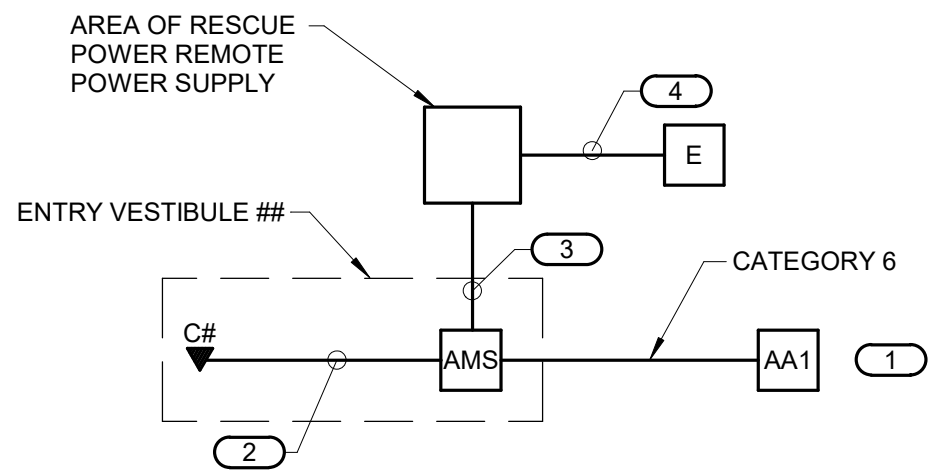
2 **ACCESS CONTROL RISER DIAGRAM**

NO SCALE
NOTES:

1. THIS DIAGRAM IS DIAGRAMMATIC AND MAY NOT SHOW ACTUAL DEVICE QUANTITIES OR LOCATIONS. ALL DEVICES SHOWN ARE TYPICAL AND MAY NOT REFLECT EVERY WIRE OR CONNECTION THAT MUST BE MADE. WIRING SHOWN ON THIS DIAGRAM REFLECTS THE REQUIREMENTS FOR THE BASIS OF DESIGN MANUFACTURER. ANY CHANGES REQUIRED DUE TO THE T.C.'S SELECTION OF AN ALTERNATE MANUFACTURER, INCLUDING ANY POWER REQUIRED FOR FIELD LOCATED SECURITY CONTROLLERS, SHALL BE INCLUDED IN THE T.C.'S BID.
2. ALL CONDUCTOR SIZES ARE LISTED A MINIMUM SIZES.
3. ALL WORKSTATIONS AND SERVERS REQUIRE A KEYBOARD AND MOUSE.
4. MULTICONDUCTOR COMPOSITE CABLES ARE ACCEPTABLE.

KEYNOTES: (#)

1. CATEGORY 6 RJ-45 TO RJ-45 PATCH CABLE.
2. CONNECT TO FIRE ALARM PANEL. REFER TO ELECTRICAL DRAWINGS FOR PANEL LOCATION.



3 **AREA OF REFUGE RISER DIAGRAM**

NO SCALE
NOTES:

1. THIS RISER IS DIAGRAMMATIC AND NOT INTENDED TO SHOW ACTUAL ROUTING OR QUANTITIES OF MATERIALS SHOWN. THIS RISER IS SHOWN FOR CLARIFICATION OF CONNECTION LOCATIONS AND CABLE TYPE. ALL INFORMATION OUTLETS ARE TYPICAL OF THE OUTLETS IN THE AREA SHOWN. REFER TO PLANS FOR MORE SPECIFIC ROUTING INFORMATION. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

KEYNOTES: (#)

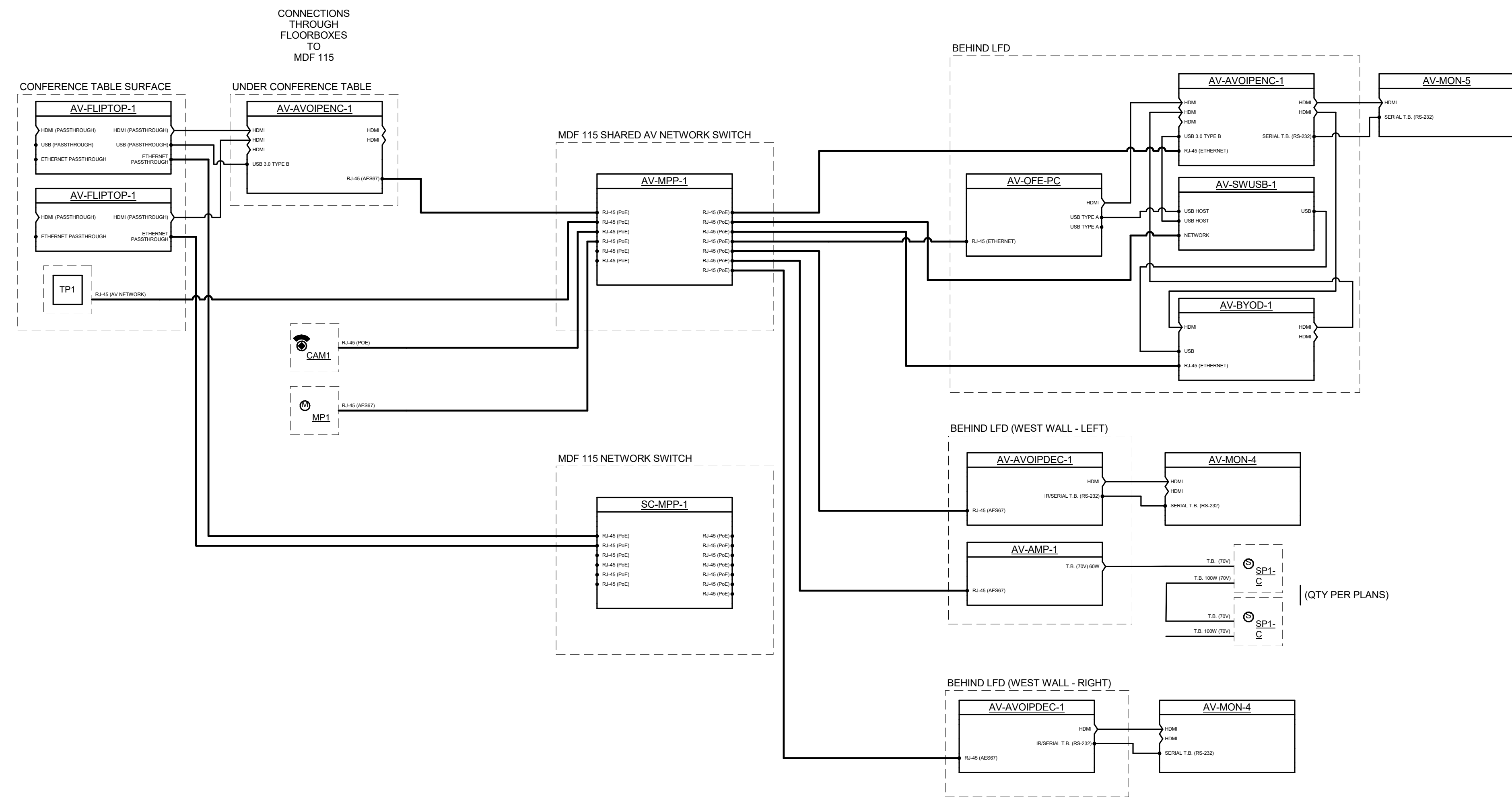
1. REFER TO FLOOR PLANS FOR QUANTITIES AND LOCATIONS.
2. CATEGORY 6 DATA PATCH CORD.
3. ONE (1) 2/16 AWG FOR REMOTE MONITORING OF THE AREA OF REFUGE MASTER STATION.
4. 110V POWER CONNECTION. COORDINATE LOCATION WITH E.C. PRIOR TO INSTALLATION.

DOOR #	ROUGH-IN ONLY	CREDENTIAL READER		INTEGRATION		REQUEST TO EXIT		DOOR HARDWARE / MONITORING		OTHER (REFER TO NOTES)		NOTES
		READER TYPE	OPERATES SINGLE DOOR	OPERATOR	SEQUENCE	OPERATION	TO EXIT	MONITORING	LOCKING	ALARM	ALARM	
100A	R1	•	•	•	•	•	•	•	•	•	•	
100B	R1	•	•	•	•	•	•	•	•	•	•	
114A	R1	•	•	•	•	•	•	•	•	•	•	
115	R1	•	•	•	•	•	•	•	•	•	•	
200												
203	R1	•	•	•	•	•	•	•	•	•	•	
204	R1	•	•	•	•	•	•	•	•	•	•	
204	R1	•	•	•	•	•	•	•	•	•	•	
204	R1	•	•	•	•	•	•	•	•	•	•	
227E	R1	•	•	•	•	•	•	•	•	•	•	
227H	R1	•	•	•	•	•	•	•	•	•	•	
227K	R1	•	•	•	•	•	•	•	•	•	•	

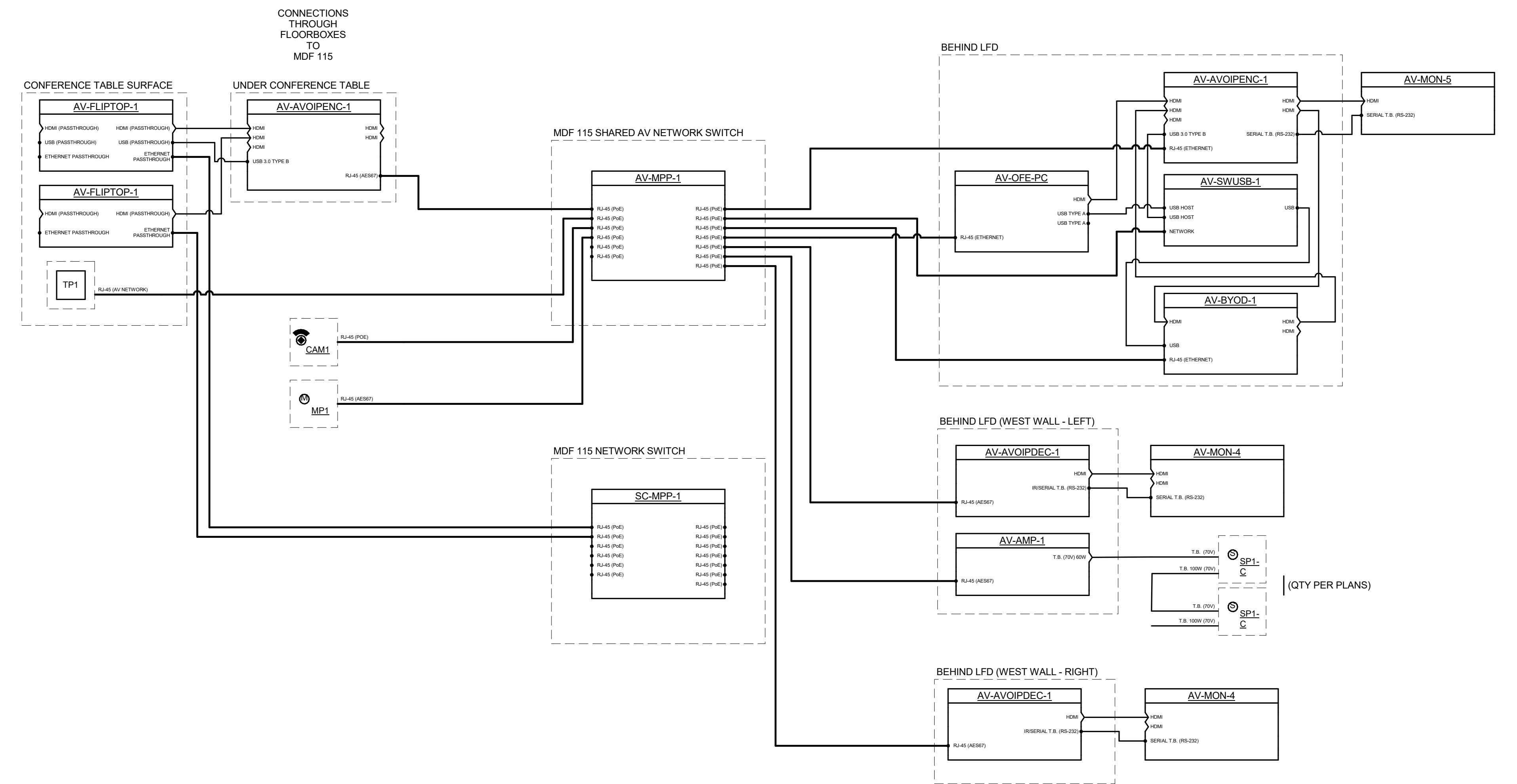
CONTROLLED SECURITY SCHEME (CSS) TYPE SCHEDULE
 1. ELECTRONIC DOOR HARDWARE SUCH AS ELECTRIC STRIKES, ELECTRIC LATCH RETRACTION, ETC. SHALL BE PROVIDED AND INSTALLED BY OTHERS.
 2. REFER TO THE TECHNOLOGY EQUIPMENT SCHEDULE FOR CREDENTIAL READER TYPE INFORMATION.

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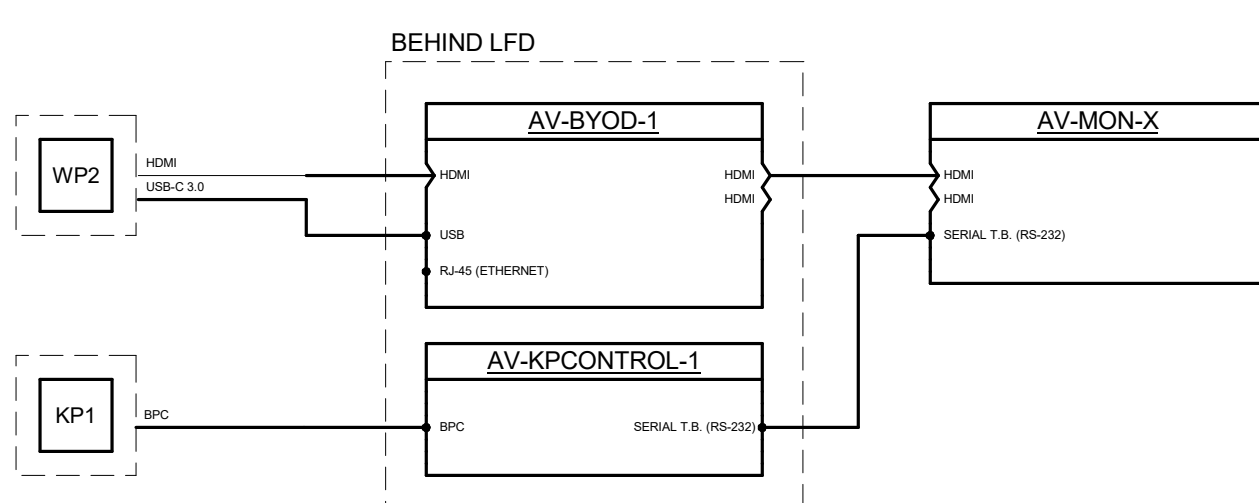
Seal	Issue 100% CONSTRUCTION DOCUMENTS	Date 9 APRIL 2024	LINCOLN HALL 12th Ave SE, Aberdeen, SD 57401 21008080.00 Northern State University 1200 S Jay St Aberdeen, South Dakota 57401 Telephone: 605-626-3011 E-mail:	Project Number: 21008080.00 Drawn By: IMEG Reviewed By: IMEG Approved By: IMEG TECHNOLOGY DETAILS AND DIAGRAMS T401
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1 INNOVATIVE CONFERENCE 203
12" = 1'-0"



2 DEBRIEF 27C AND 227M
12" = 1'-0"



3 HUDDLE/LOUNGE
12" = 1'-0"

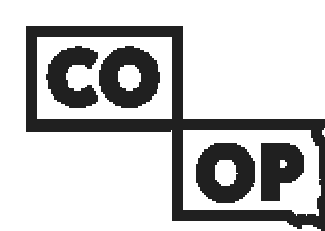
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TECHNOLOGY DIAGRAMS

T402



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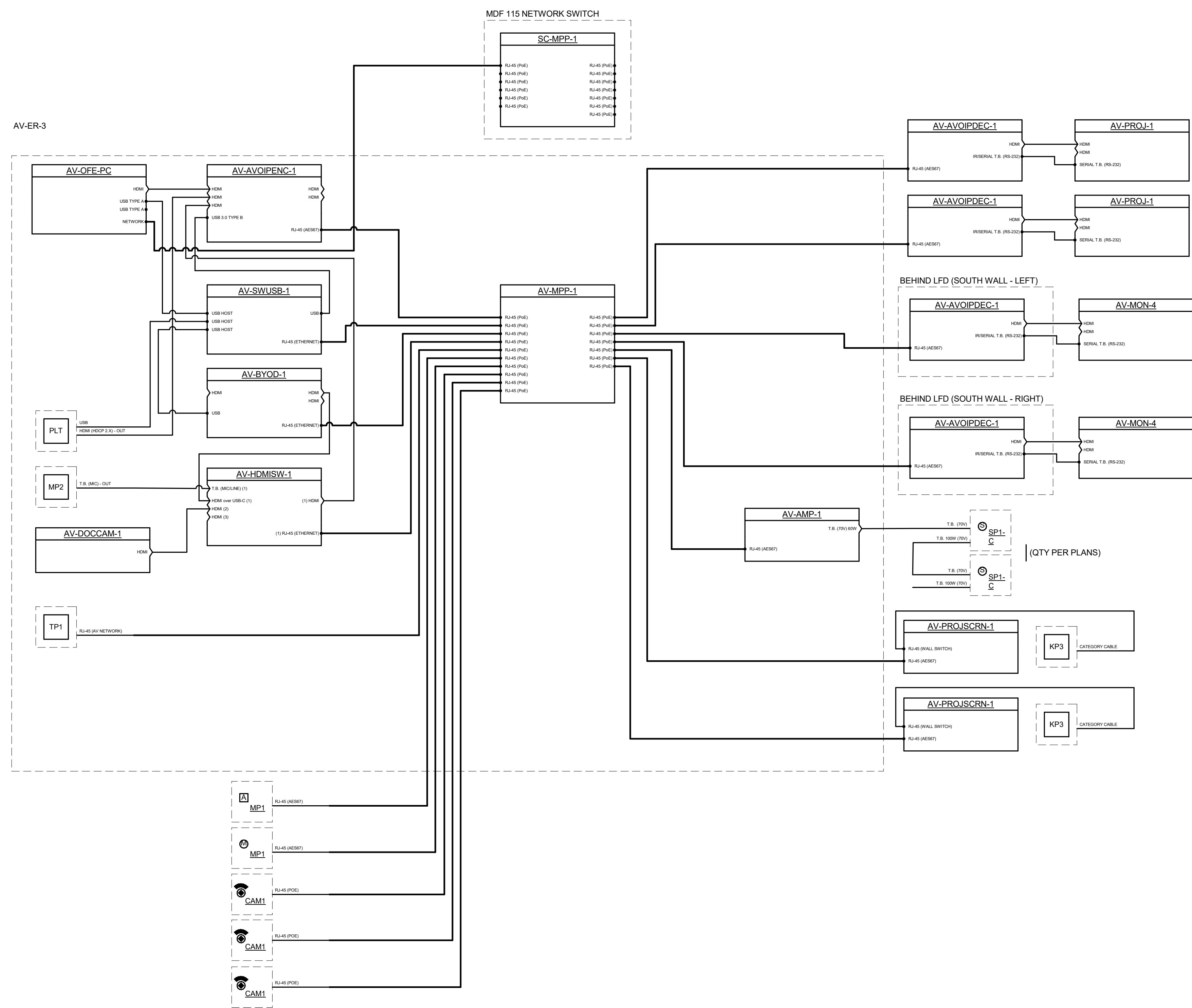
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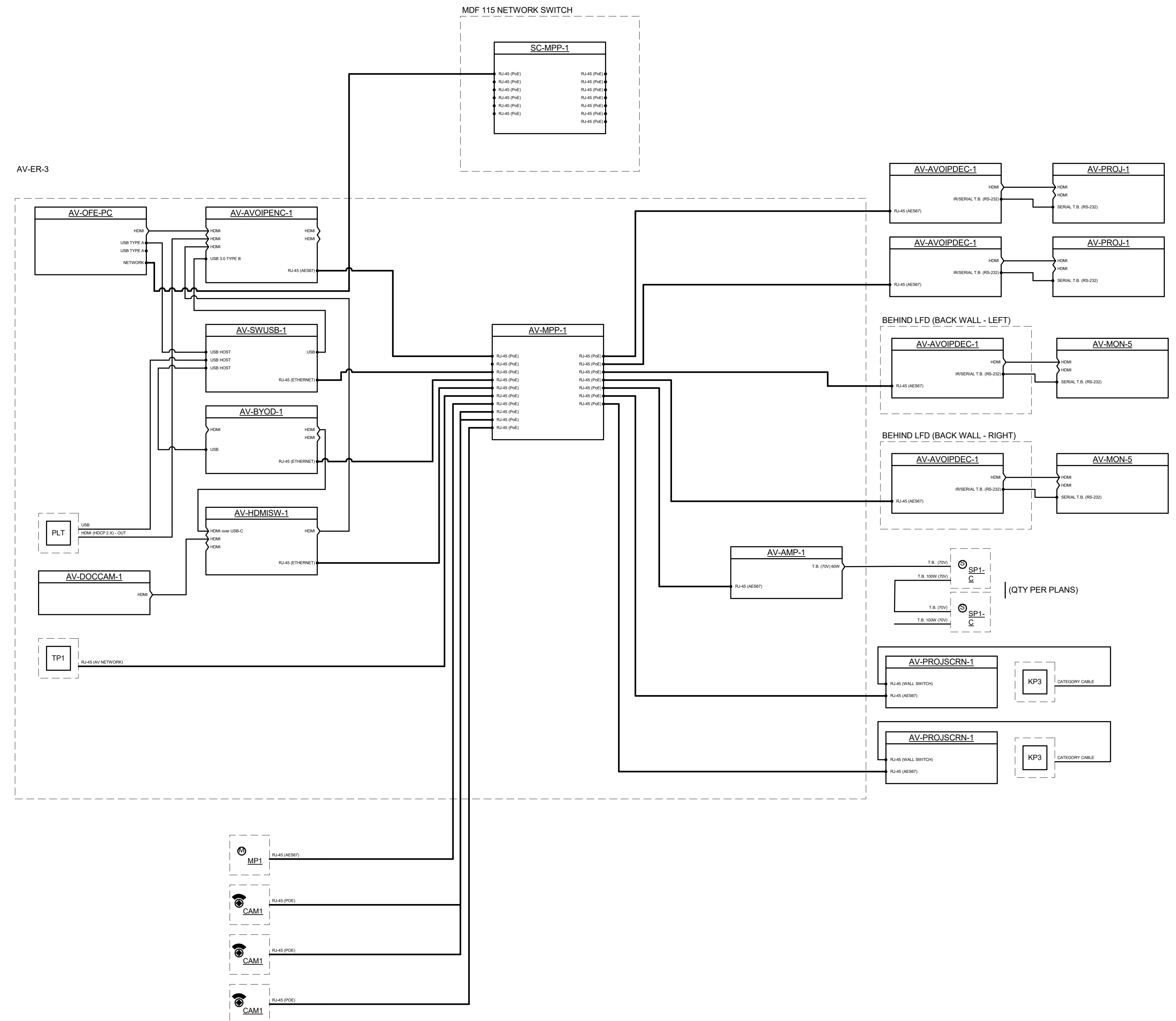
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1 ACTIVE LEARNING 101
1/2" = 1'-0"



2 CLASSROOM 201 202
1/2" = 1'-0"

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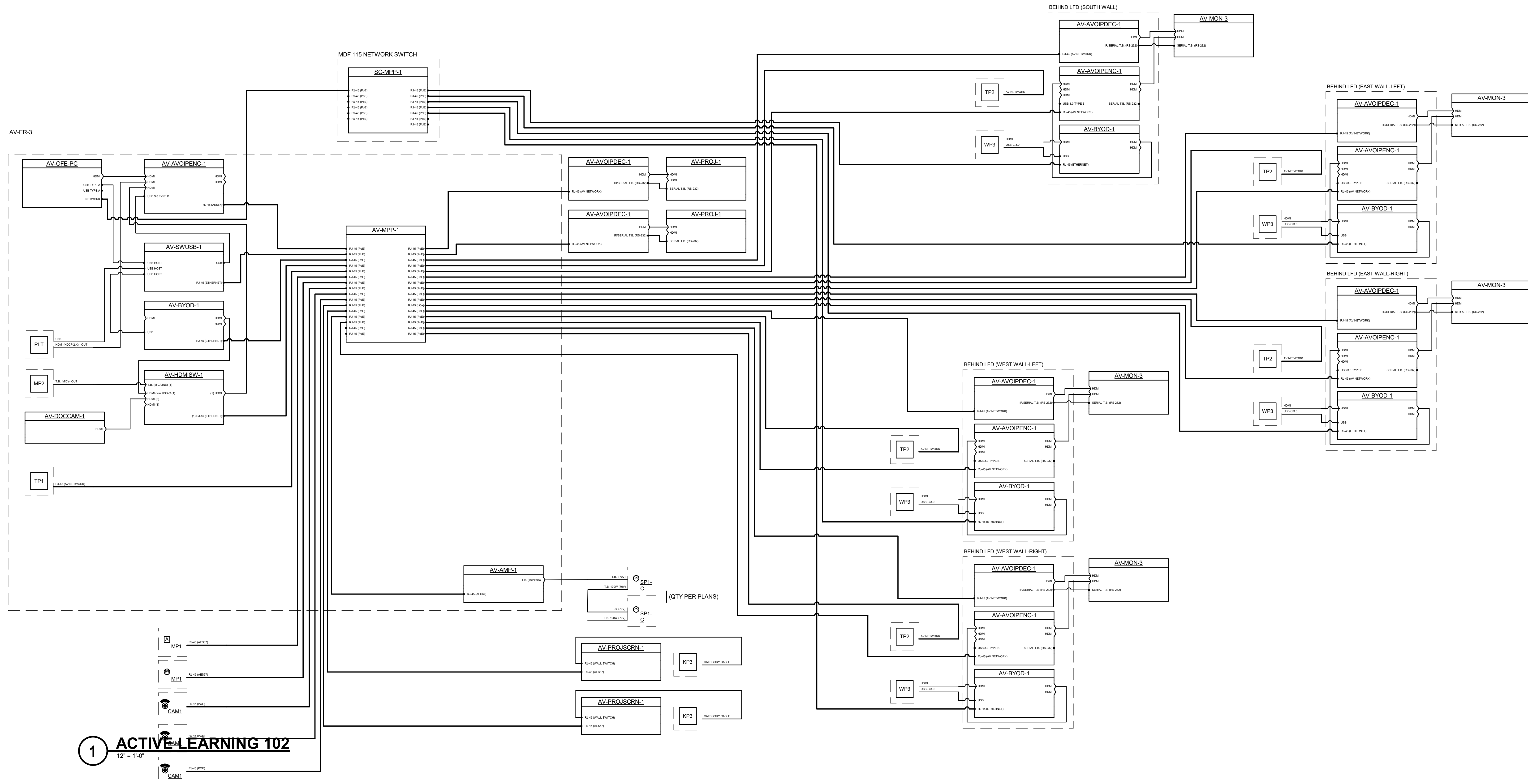
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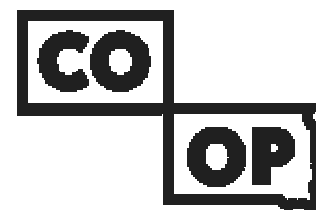
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TECHNOLOGY DIAGRAMS

T403



1 ACTIVE LEARNING 102
12" = 1'-0"



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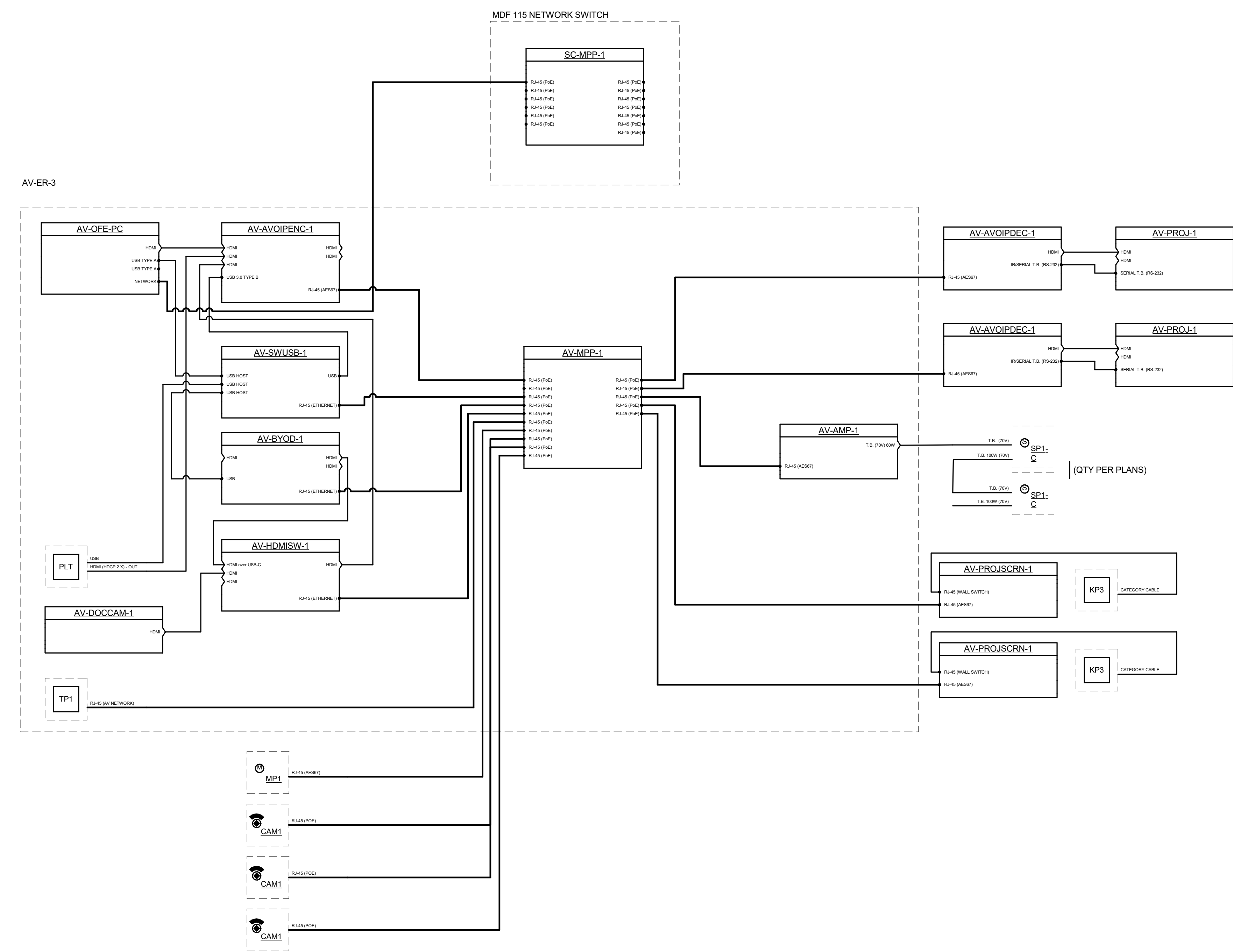
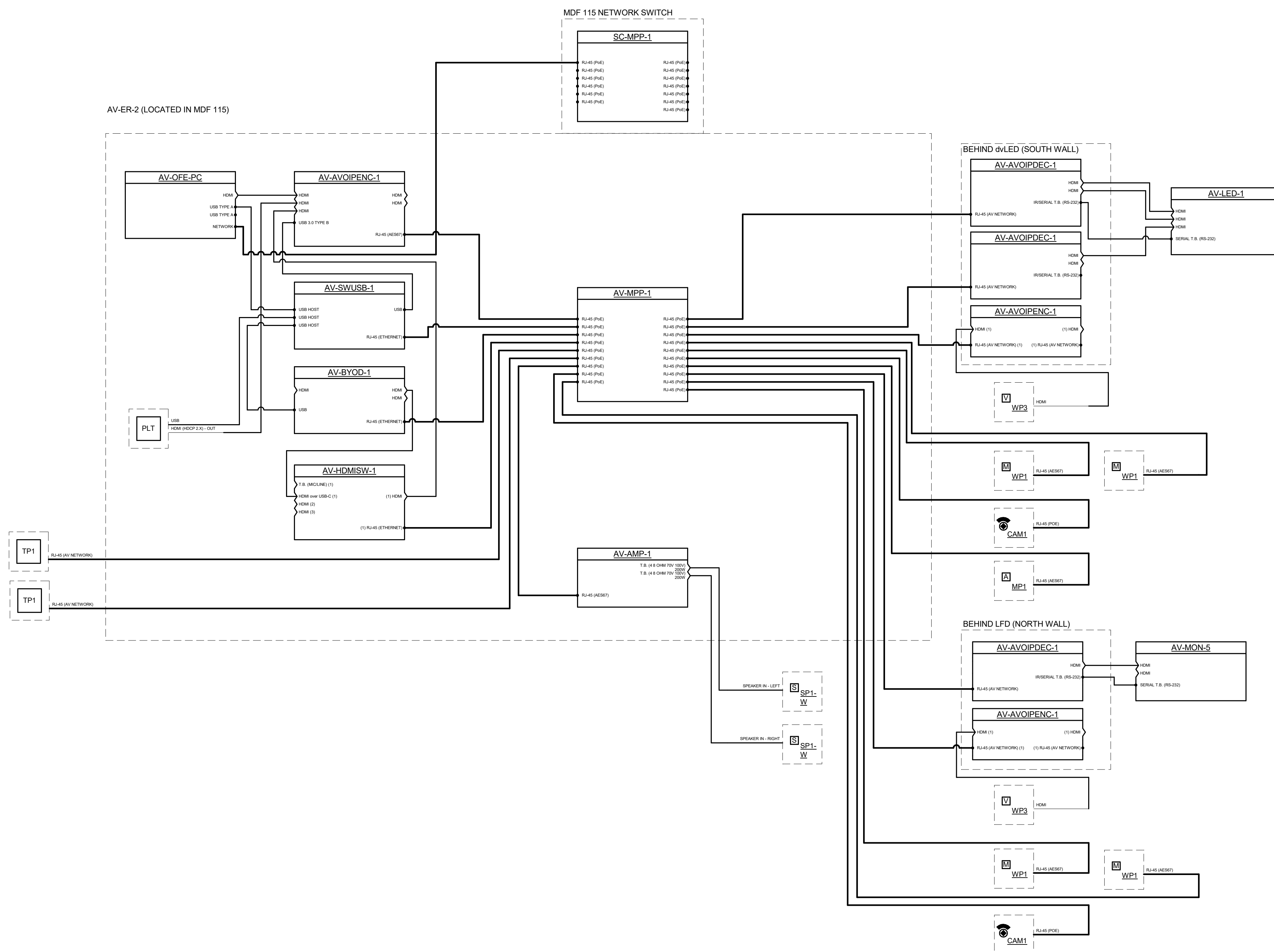
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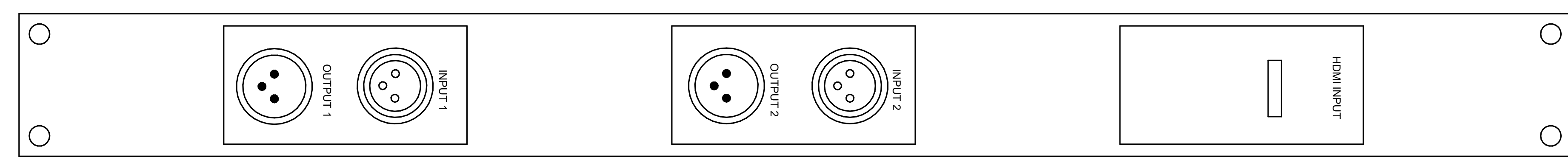
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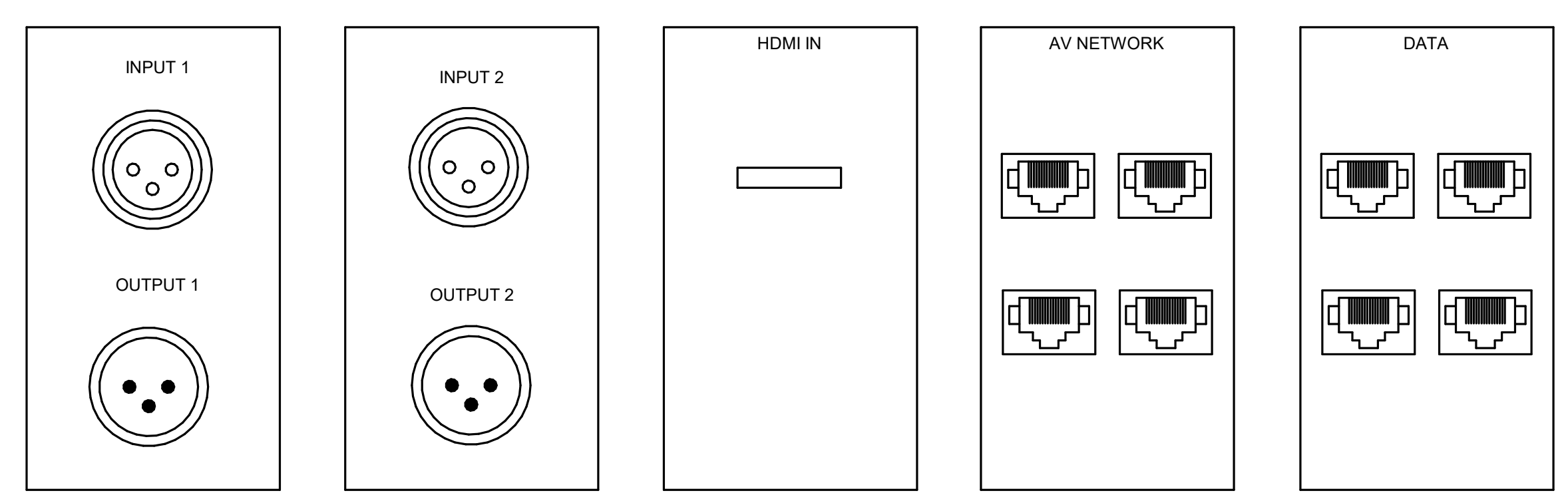


1 COMMON STUDY 101
12" = 1'-0"

2 CLASSROOM LARGE 212
12" = 1'-0"



3 HDMI/AUDIO INPUT/OUTPUT RACK PLATE (1RU)
NO SCALE



4 5 GANG AUDIO VIDEO INPUT/OUTPUT WALL PLATE
NO SCALE

4/9/2024 3:31:18 PM



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