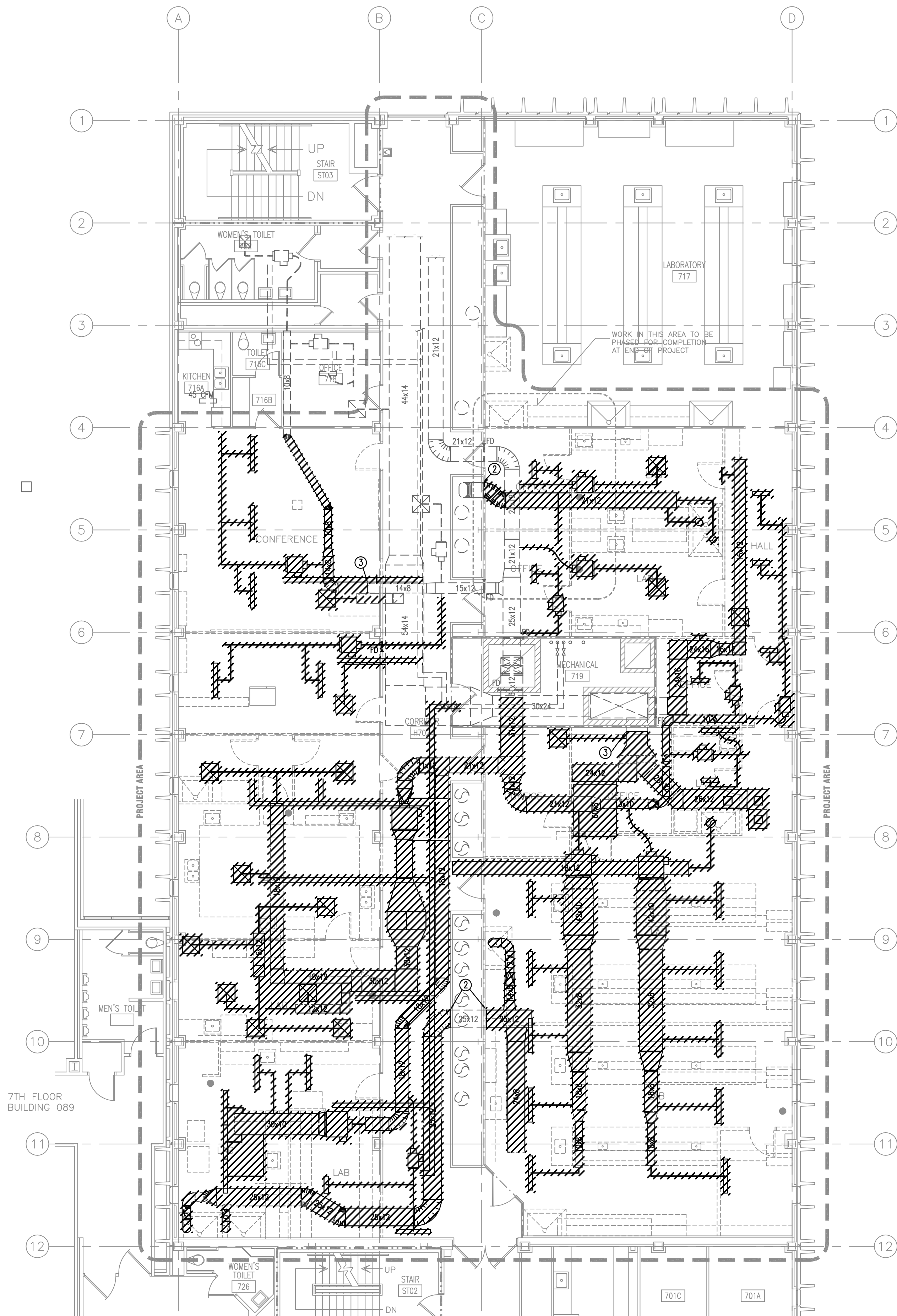
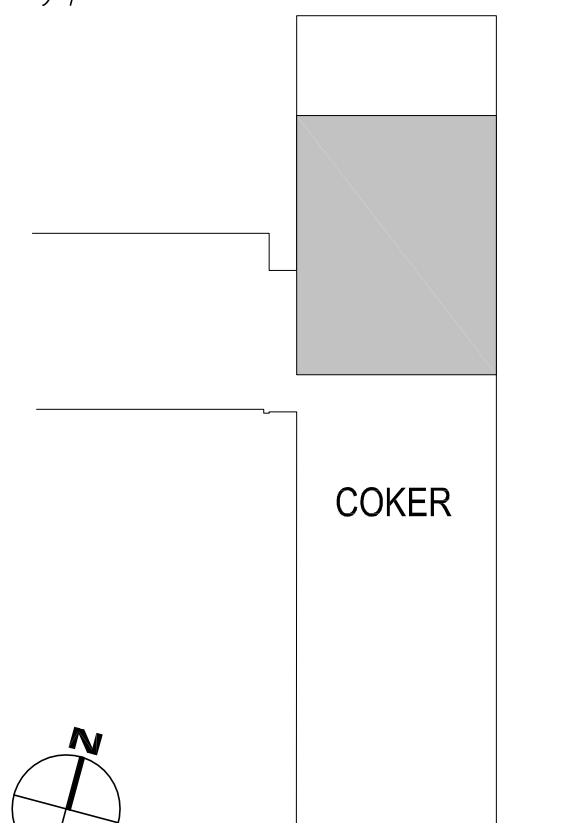
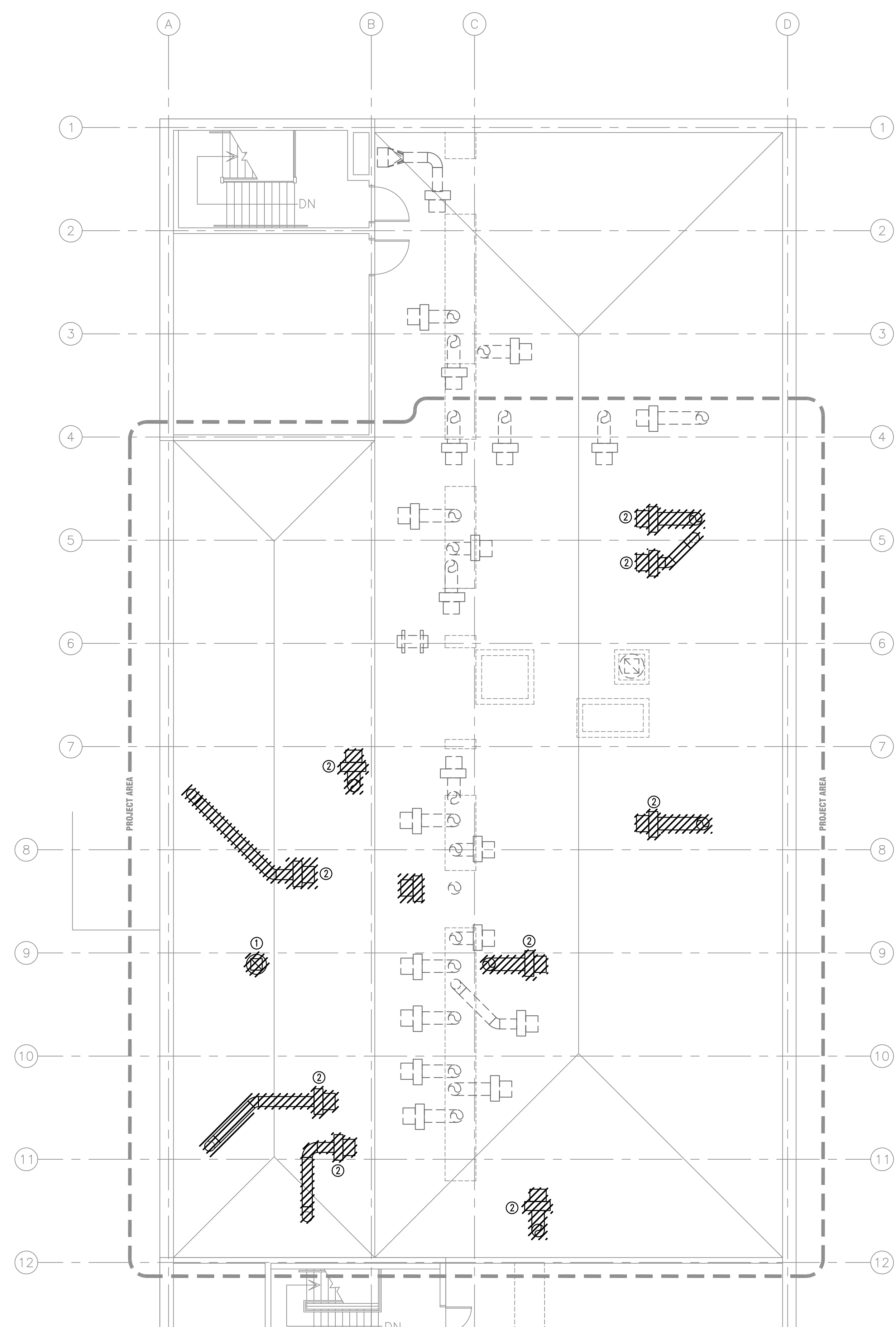


number	item	date



- DEMOLITION NOTES:**
- ① REMOVE ALL DUCTWORK, GRILLES, CONTROLS, WIRING, TERMINAL BOXES, AND PIPING AS HATCHED ON PLAN.
 - ② REMOVE DUCT UP TO THIS POINT CAN CAP.
 - ③ REMOVE DUCT UP TO THIS POINT. SEE SHEET M2.7 FOR ADDITIONAL INFORMATION.

① PARTIAL SEVENTH FLOOR PLAN – HVAC DEMOLITION
1/8"=1'-0"



- DEMOLITION NOTES:**
- ① REMOVE EXISTING EXHAUST FAN AND CAP EXISTING CURB.
 - ② REMOVE EXISTING EXHAUST FAN, DUCTWORK, SUPPORTS, ALL ASSOCIATED WIRING, CONTROL AND PATCH ROOF OPENING.

② PARTIAL ROOF PLAN – HVAC DEMOLITION
1/8"=1'-0"

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project name
**COKER - 7th FLOOR
PHARMACY RENOVATION**

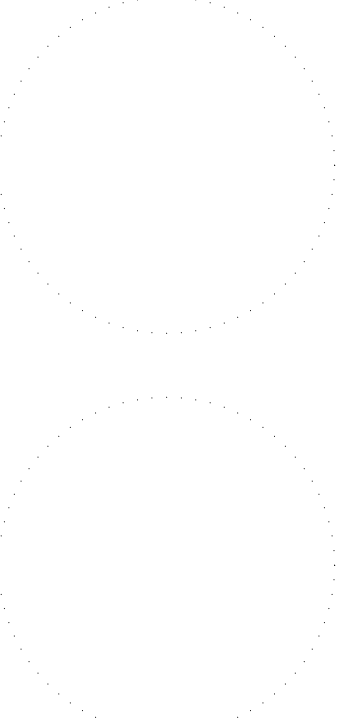
State project number

H27- 6101

project number

12023.01

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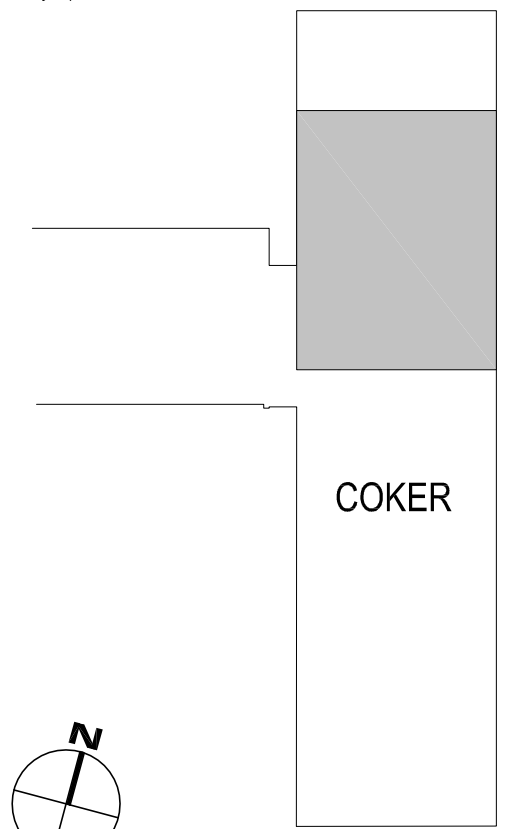


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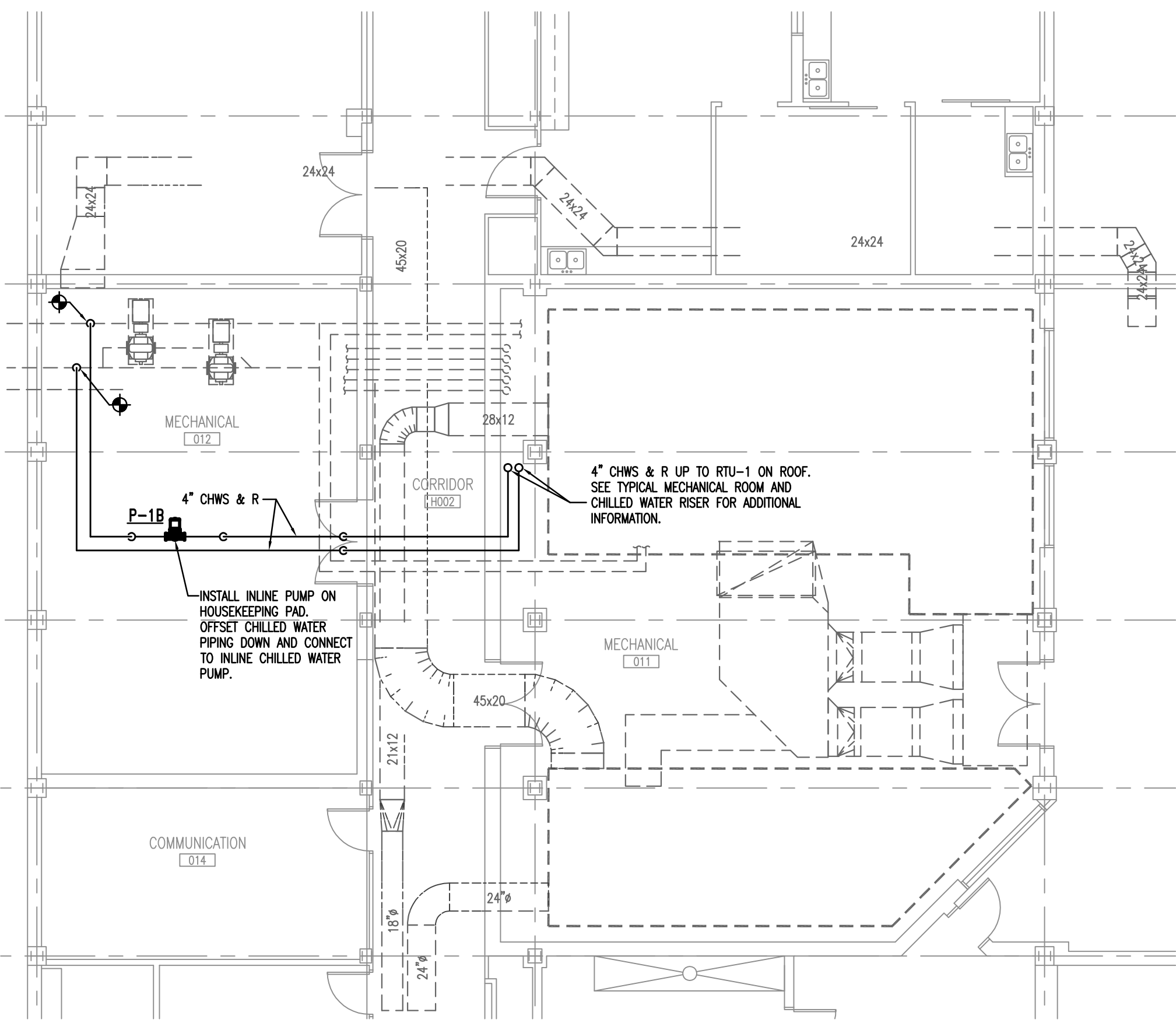


sheet title
**PARTIAL BASEMENT FLOOR PLAN
HVAC RENOVATIONS**

sheet number

M2.0

drawn by **JDR**
checked by **JDR**



1 PARTIAL BASEMENT FLOOR PLAN – HVAC RENOVATIONS
1/8"=1'-0"

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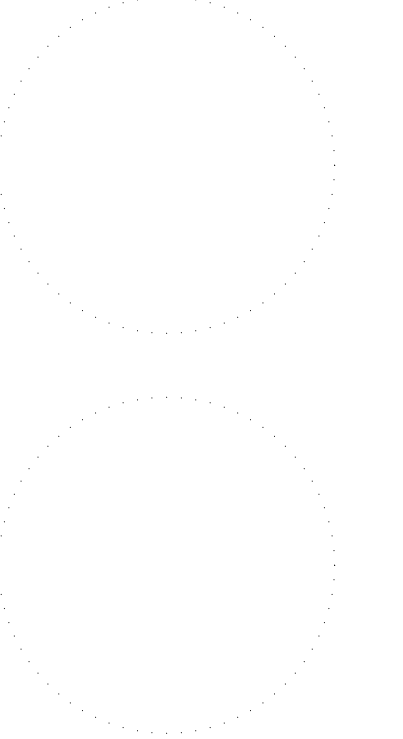
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project name
**COKER - 7th FLOOR
PHARMACY RENOVATION**
State project number
H27- 6101
project number
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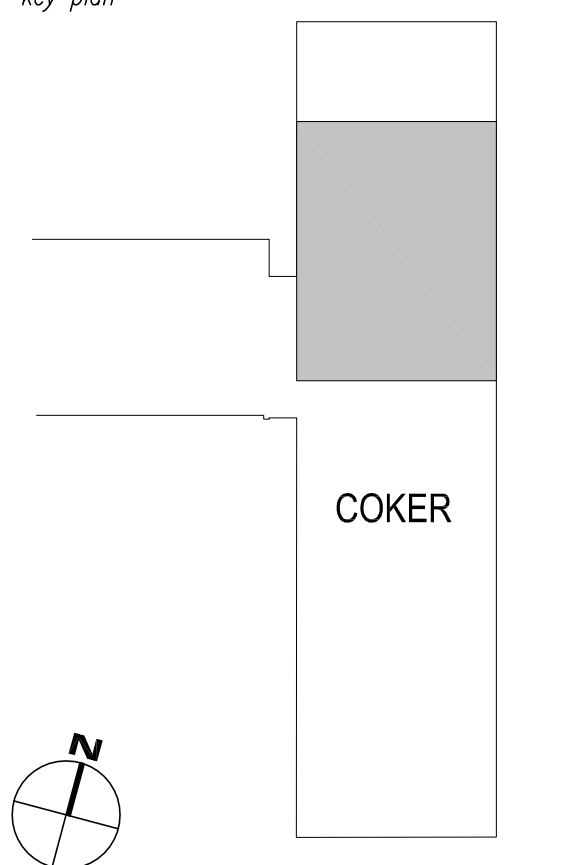


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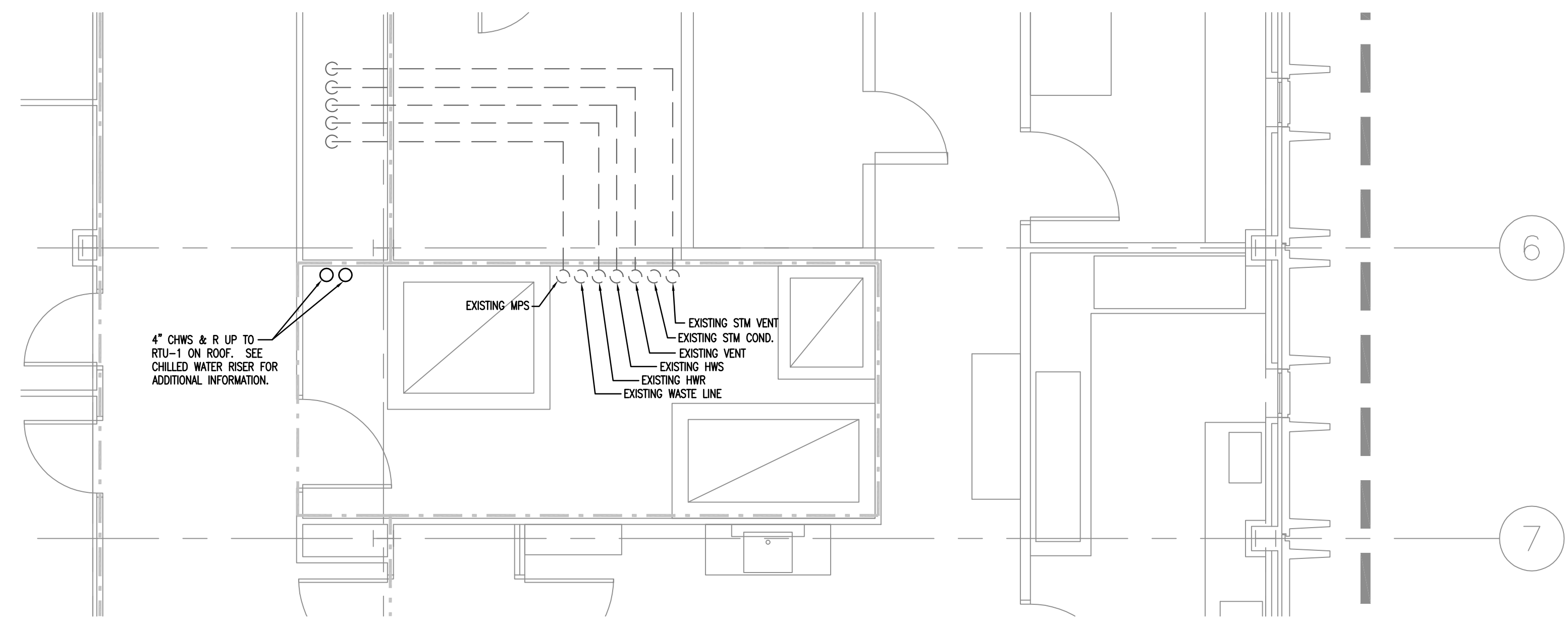


sheet title
**PARTIAL FIRST, SECOND, THIRD,
FOURTH, FIFTH, & SIXTH FLOOR
PLAN - HVAC RENOVATIONS**

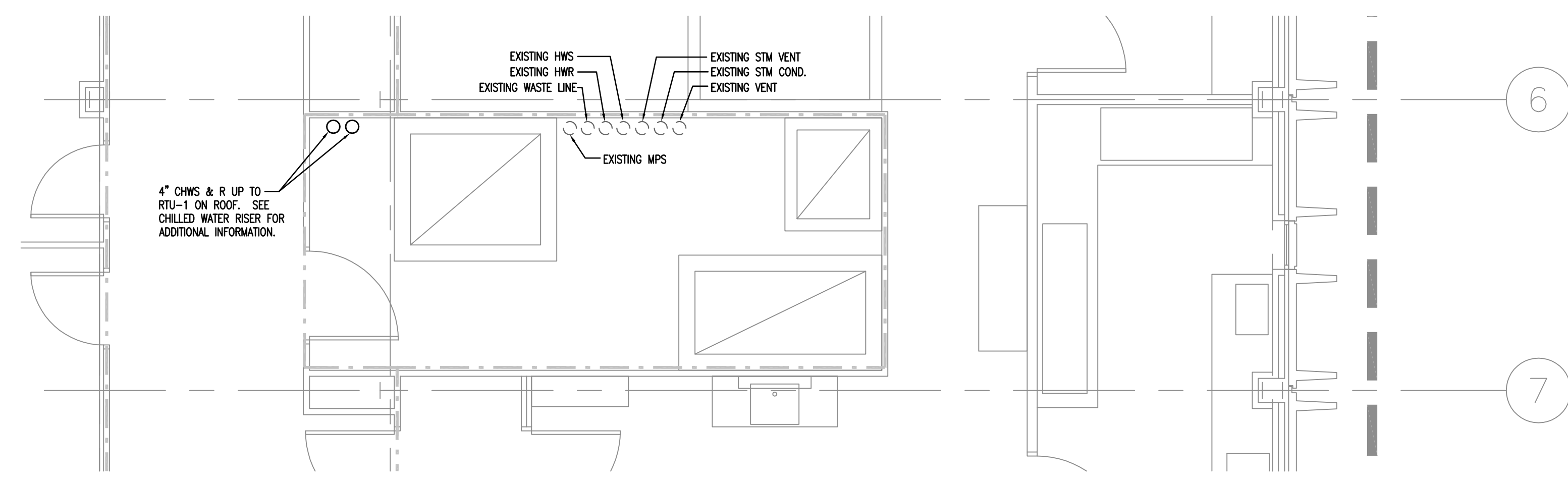
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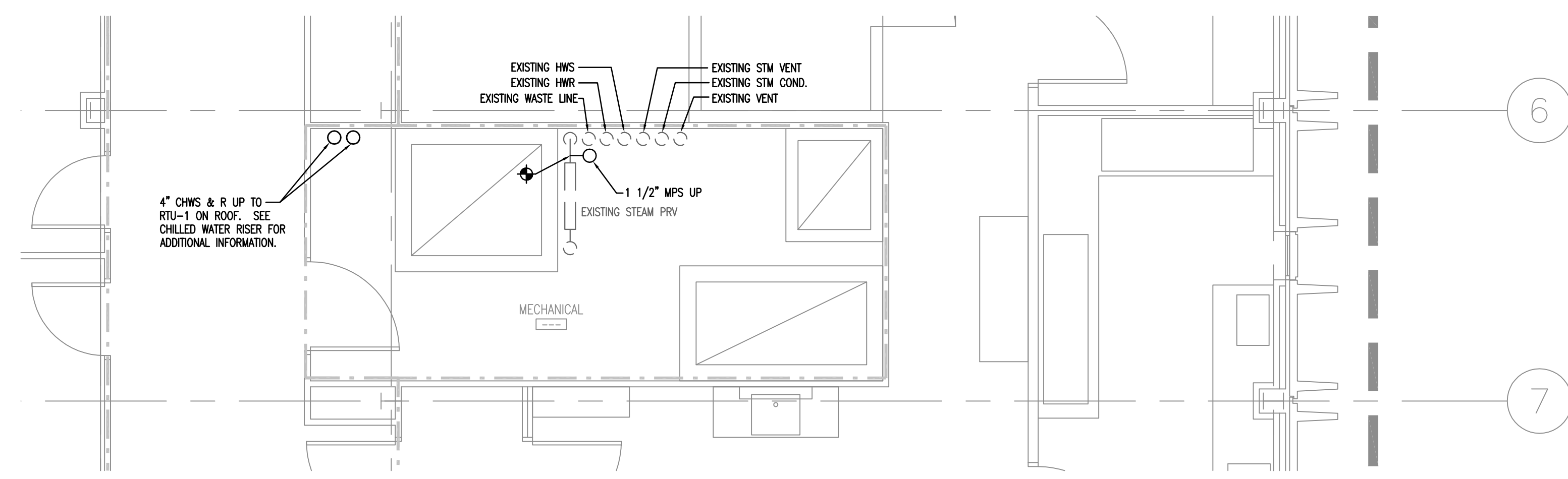
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checked by **JDR**



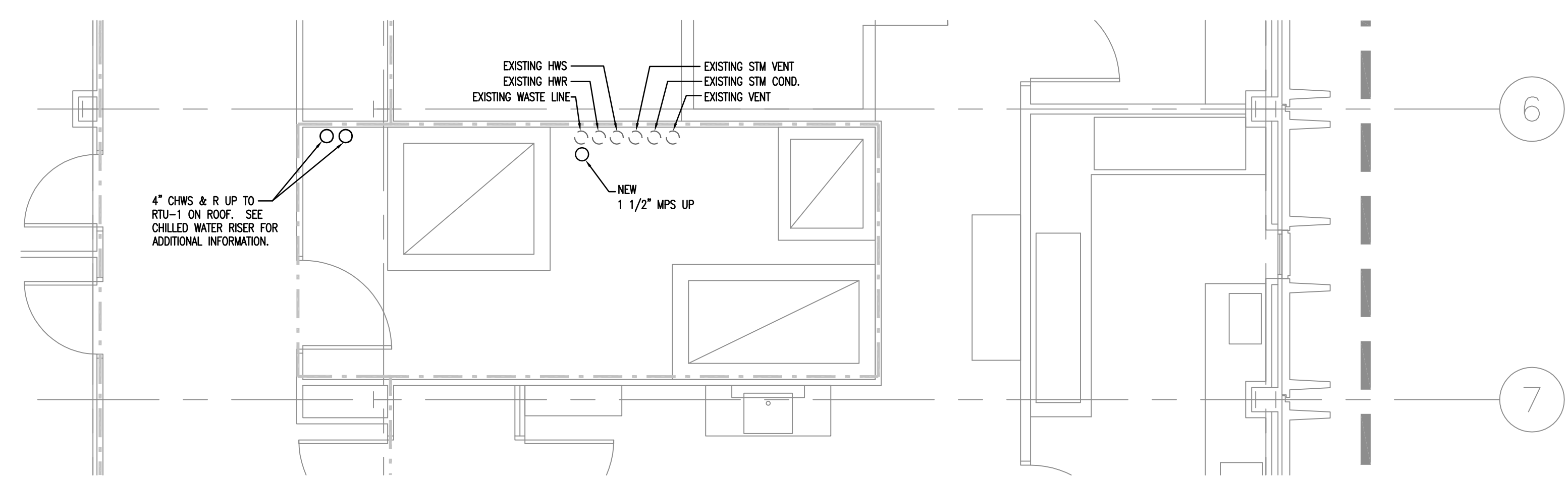
① PARTIAL FIRST FLOOR PLAN – HVAC RENOVATIONS
1/4"=1'-0"



② PARTIAL SECOND FLOOR PLAN – HVAC RENOVATIONS
1/4"=1'-0"



③ PARTIAL THIRD FLOOR PLAN – HVAC RENOVATIONS
1/4"=1'-0"



④ PARTIAL FOURTH THROUGH SIXTH FLOOR PLAN – HVAC RENOVATIONS
1/4"=1'-0"

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PHARMACY RENOVATION**
State project number
H27- 6101
project number
12023.01

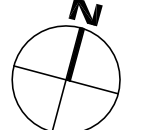
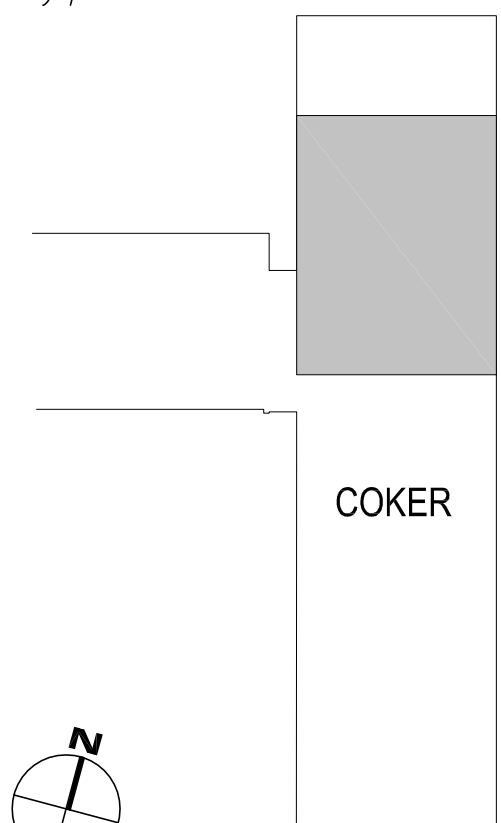
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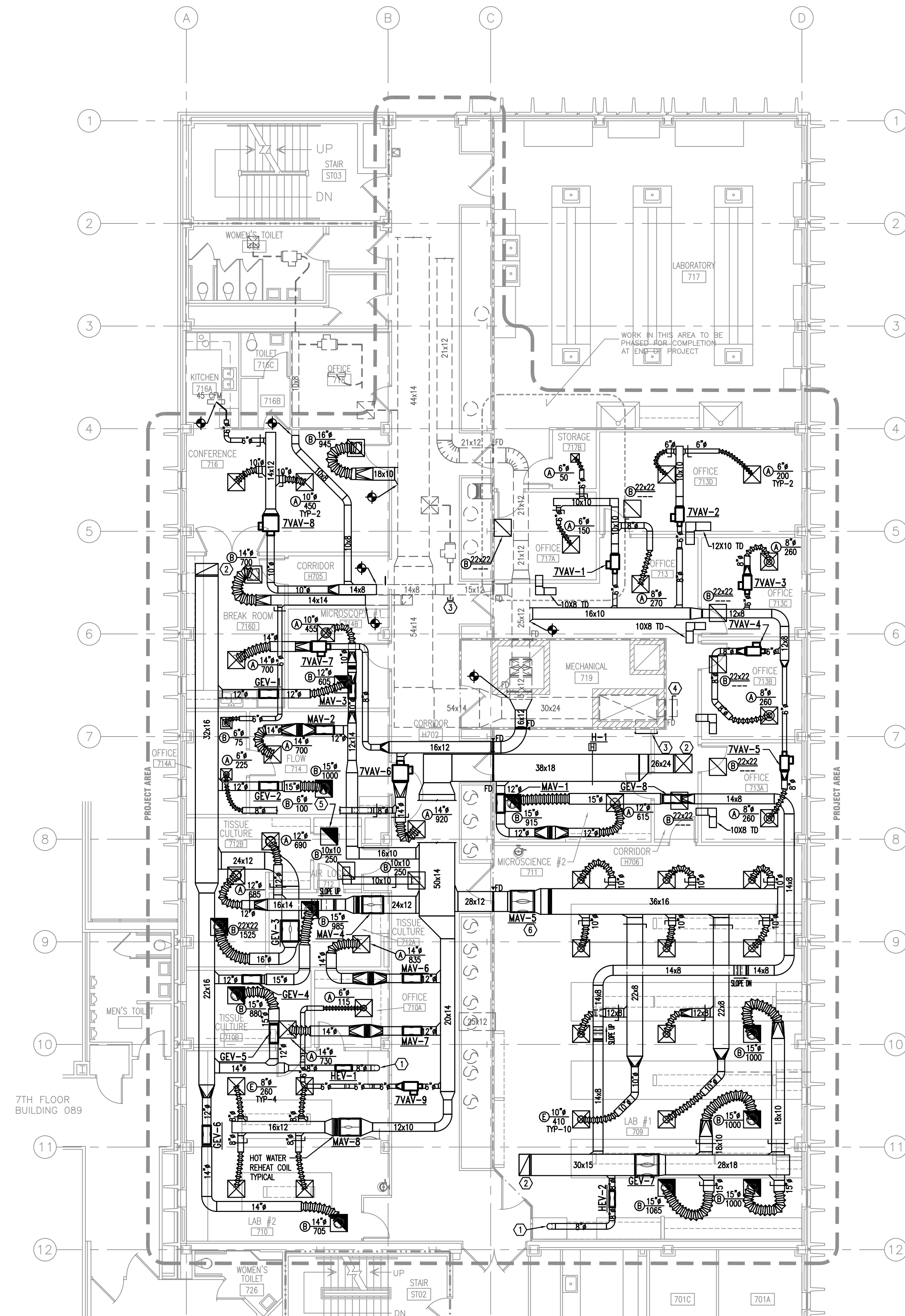


sheet title
**PARTIAL SEVENTH FLOOR PLAN
HVAC DUCTWORK AND PIPING**

sheet number

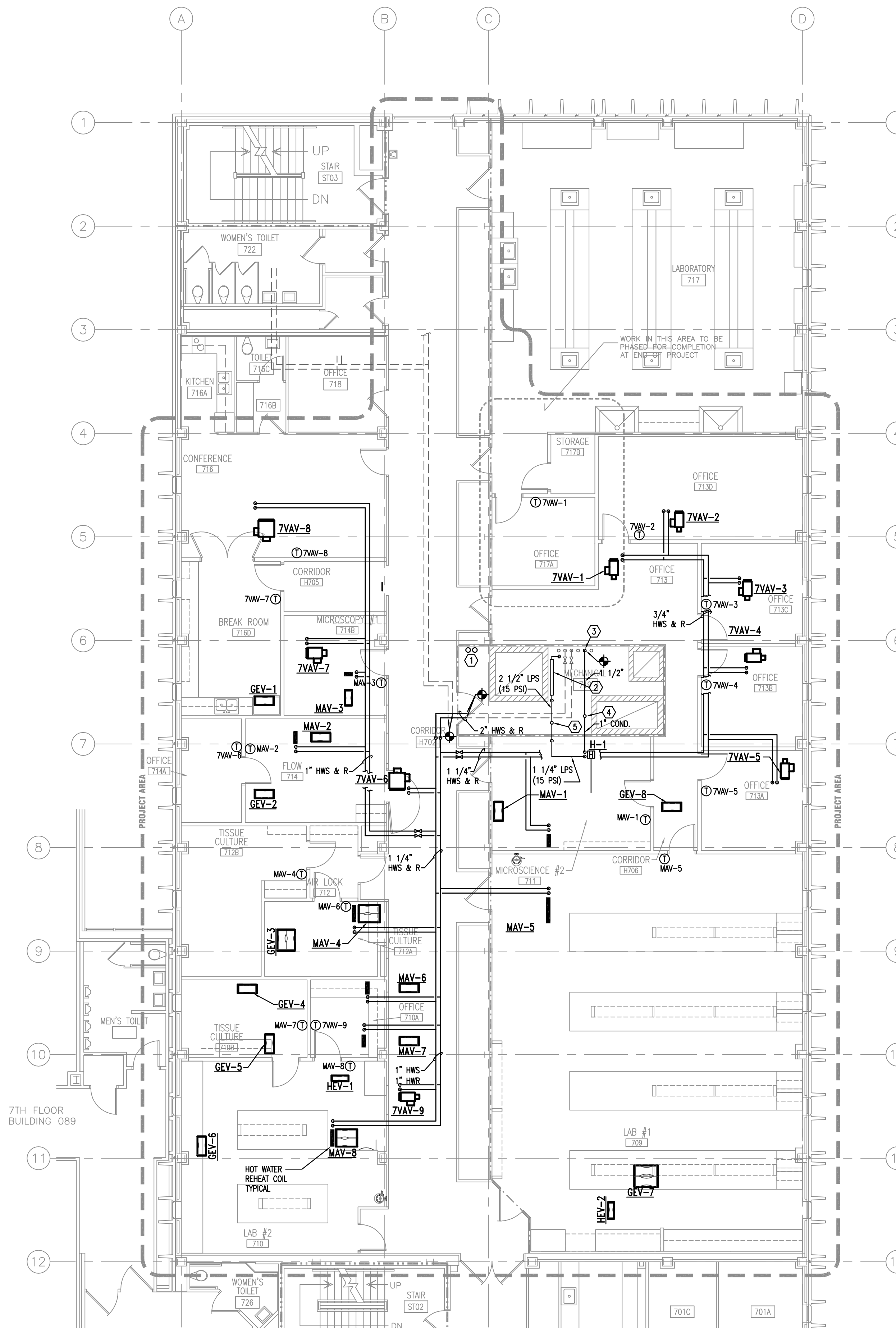
M2.7

drawn by **JDR**
checked by **JDR**



- NOTES:**
- ROUTE DUCT DOWN AND CONNECT TO FUME HOOD. TRANSITION DUCT AS REQUIRED TO FUME HOOD CONNECTION SIZE. COORDINATE SIZE AND LOCATION WITH FUME HOOD MANUFACTURER.
 - DUCT UP THROUGH ROOF. SEE SHEET M2.8 FOR CONTINUATION.
 - CAP AND REINSULATE EXISTING DUCT.
 - ADD NEW BALANCING DAMPER IN EXISTING RETURN DUCT AND BALANCE TO 1400 CFM.
 - 6" UP TO ET-1 ON ROOF AND DOWN TO 6" EX-1. PROVIDE TRANSITION FROM 6" EXHAUST DUCT TO CONNECTION OF EX-1.
 - SEE VENTURI TYPE VALVE WITH REHEAT DETAIL FOR ADDITIONAL INFORMATION.

1 PARTIAL SEVENTH FLOOR PLAN – HVAC DUCTWORK
1/8"=1'-0"



- PIPING NOTES:**
- 4" CHWS & R UP TO ROOF. SEE ROOF PLAN FOR CONTINUATION.
 - NEW STEAM PRESSURE REDUCING STATION. SEE STEAM PRESSURE REDUCING STATION DETAIL ON SHEET M2.3 FOR ADDITIONAL INFORMATION.
 - 1 1/2" CONDENSATE DOWN. SEE PARTIAL MECHANICAL ROOM PLANS FOR CONTINUATION.
 - 1 1/2" CONDENSATE UP TO ROOF. SEE SHEET M2.8 FOR CONTINUATION.
 - 2" LPS (15 PS) UP TO ROOF. SEE SHEET M2.8 FOR CONTINUATION.

2 PARTIAL SEVENTH FLOOR PLAN – HVAC PIPING
1/8"=1'-0"

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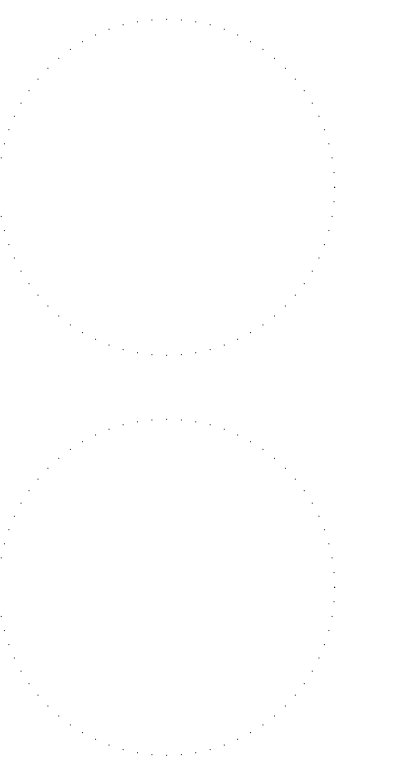
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COKER - 7th FLOOR PHARMACY RENOVATION
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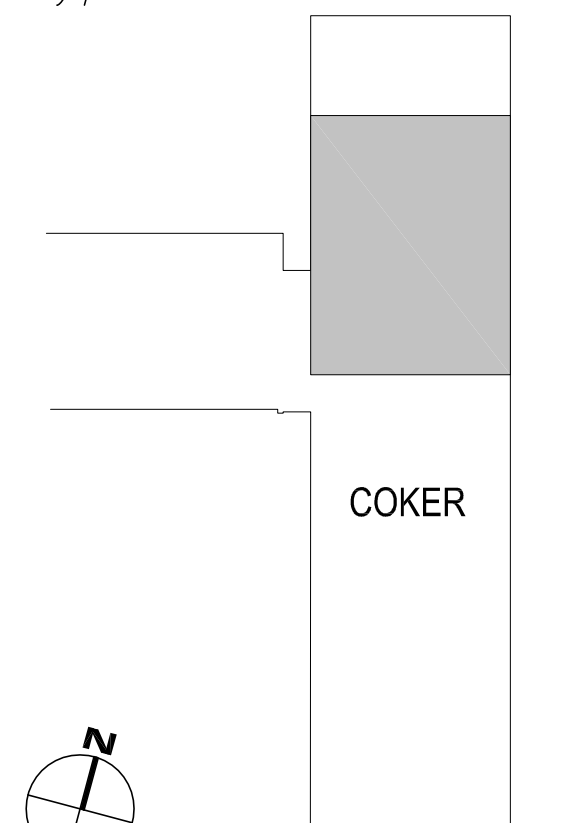


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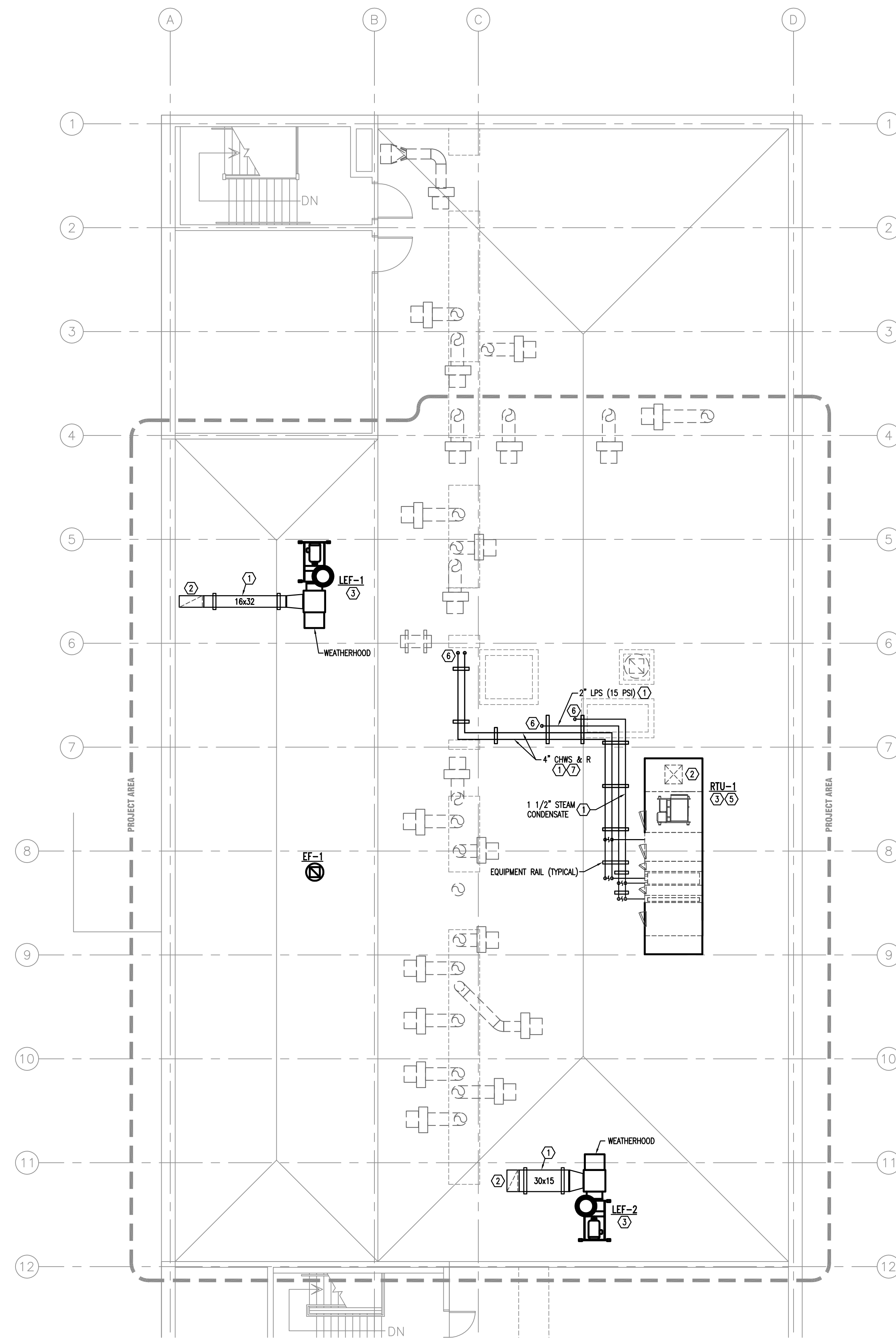


sheet title
PARTIAL ROOF PLAN - HVAC RENOVATIONS

sheet number

M2.8

drawn by **JDR**
checked by **JDR**



- NOTES:
1. INSTALL DUCTWORK AND PIPING ON EQUIPMENT RAILS. SEE EQUIPMENT RAIL DETAIL FOR ADDITIONAL INFORMATION.
 2. DUCT DOWN THROUGH ROOF. SEE SHEET M2.7 FOR CONTINUATION. SEE ROOF FLASHING DETAILS FOR ADDITIONAL INFORMATION.
 3. INSTALL EXHAUST FAN ON STRUCTURAL SUPPORT. SEE STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION. CONTRACTOR SHALL PROVIDE SUPPLEMENTAL SUPPORT TO SUPPORT FAN IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. SEE LAB EXHAUST FAN DETAIL FOR ADDITIONAL INFORMATION.
 4. INSTALL ROOFTOP UNIT ON STRUCTURAL SUPPORT. SEE STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
 5. PROVIDE DEEP SEAL P-TRAP FULL SIZE OF UNIT CONNECTION AND ROUTE CONDENSATE TO NEAREST ROOF DRAIN.
 6. PIPING THROUGH ROOF. SEE SHEET M2.7 FOR CONTINUATION. SEE ROOF FLASHING DETAILS FOR ADDITIONAL INFORMATION.
 7. PROVIDE HEAT TRACING ON CHILLED WATER PIPING. SEE DIVISION 16 DRAWINGS FOR CIRCUIT LOCATION. HEAT TRACING SHALL BE 5W/FT @ 120v/20A CIRCUIT.

1 PARTIAL ROOF PLAN - HVAC RENOVATIONS
1/8"=1'-0"

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project name
**COKER - 7th FLOOR
PHARMACY RENOVATION**

State project number
H27- 6101
project number
12023.01

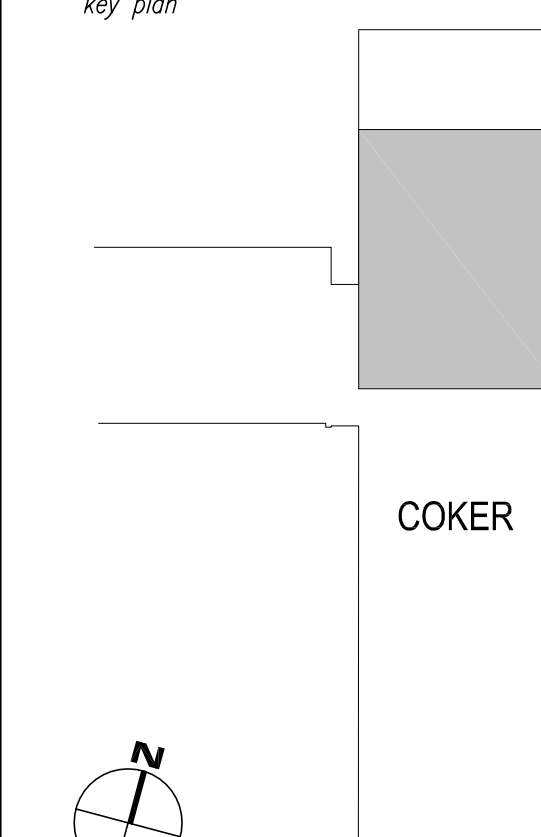
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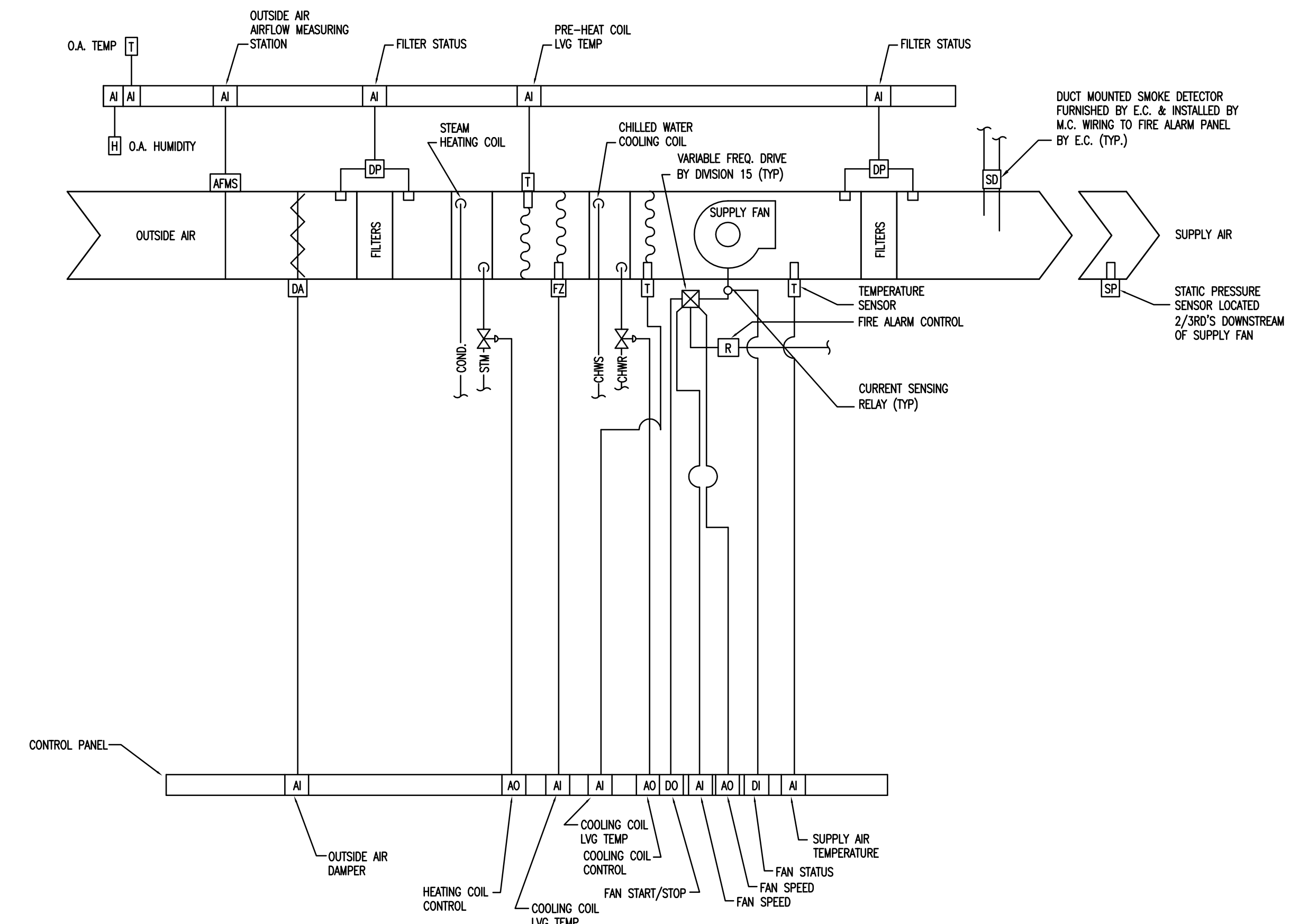


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HVAC CONTROL SCHEMATICS

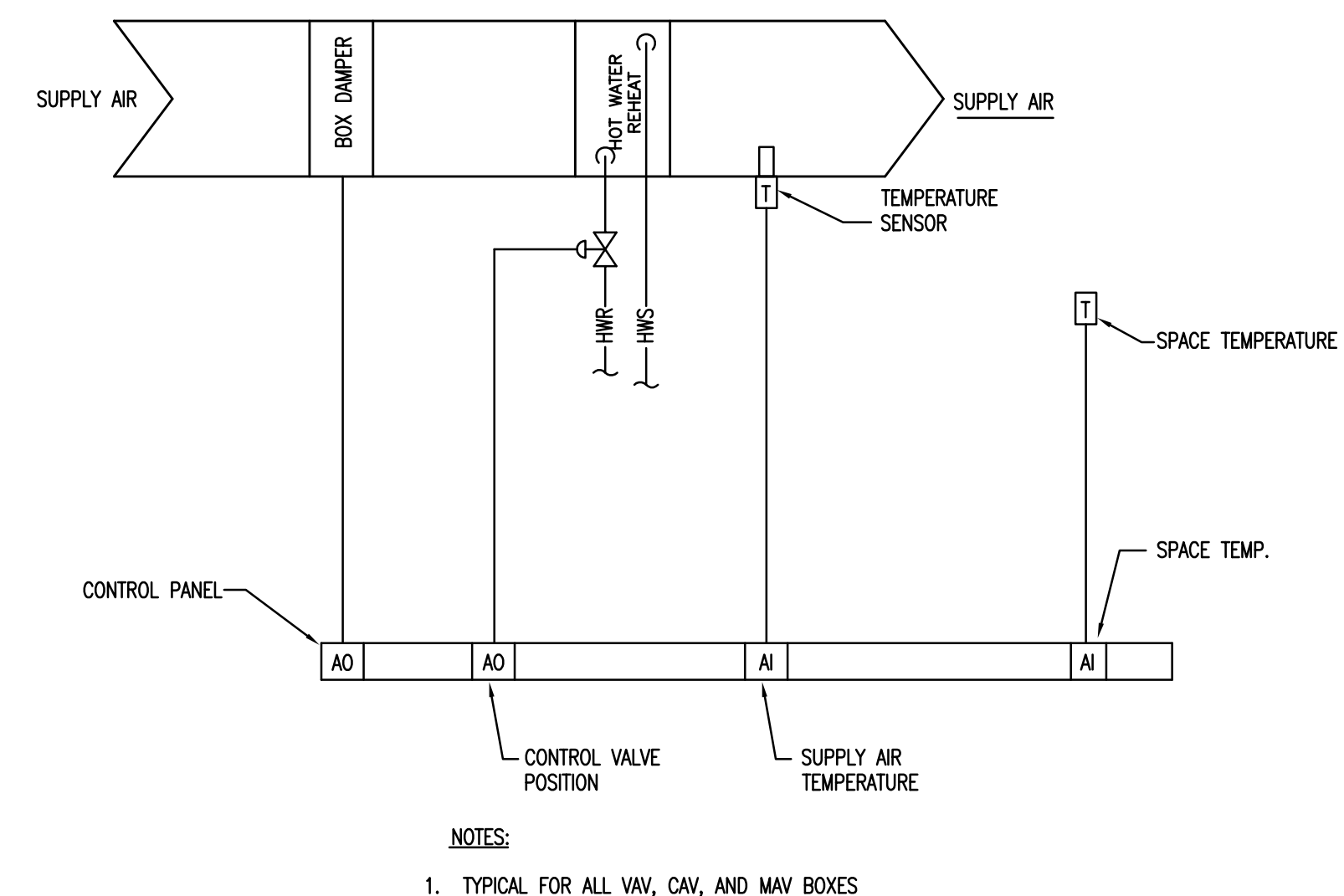
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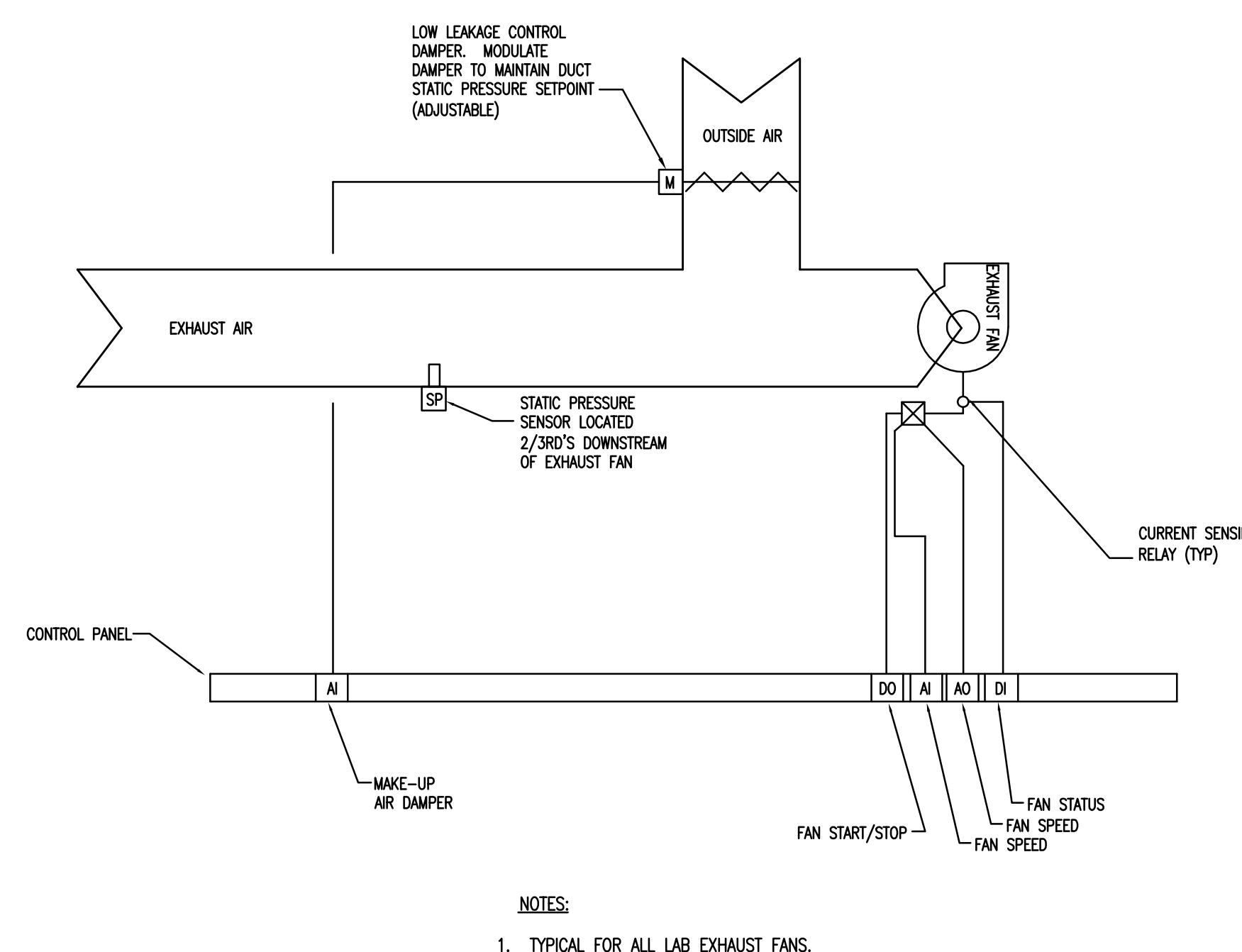
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1 RTU-1 CONTROL DIAGRAM
NTS



2 TERMINAL BOX CONTROL DIAGRAM
NTS



3 LAB EXHAUST FAN CONTROL DIAGRAM
NTS

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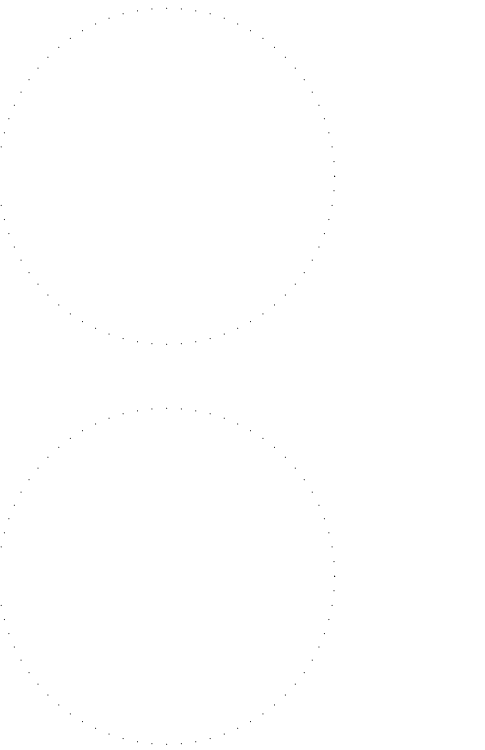
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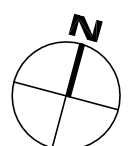
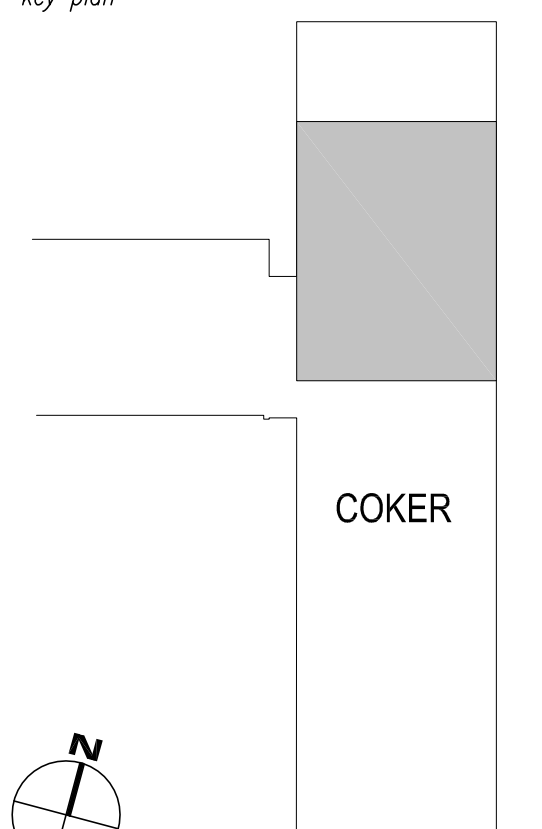


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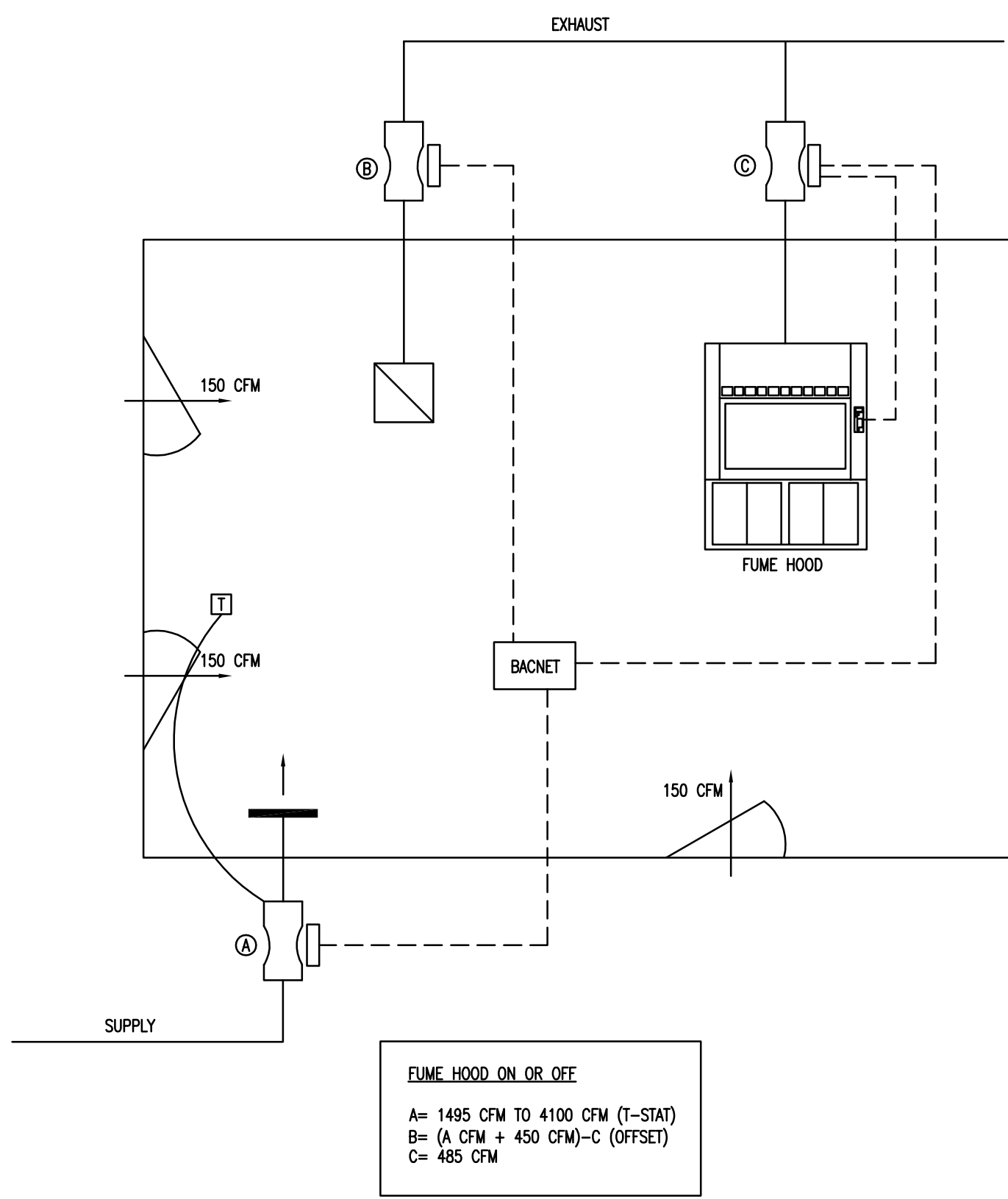


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HVAC CONTROL SCHEMATICS

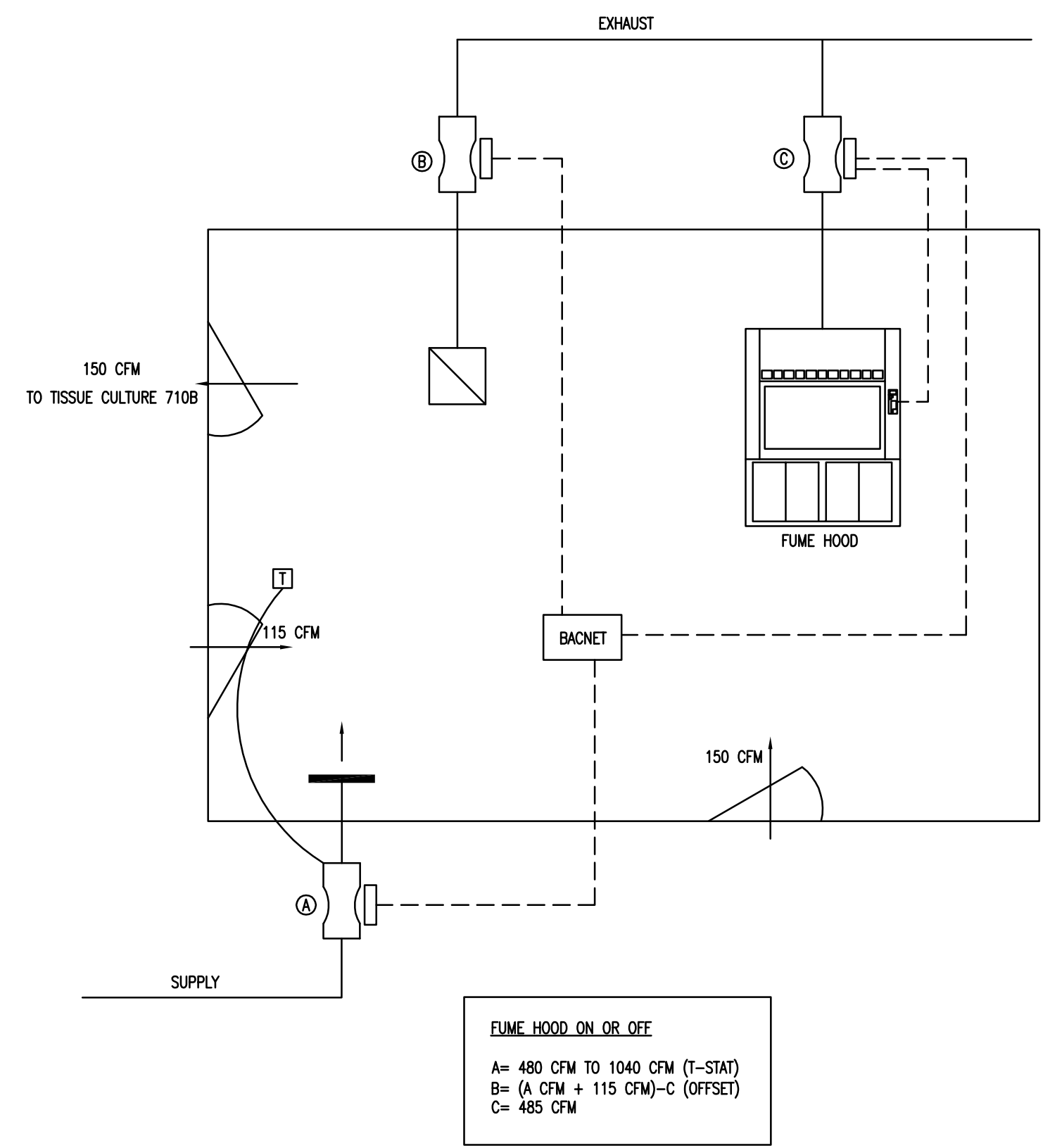
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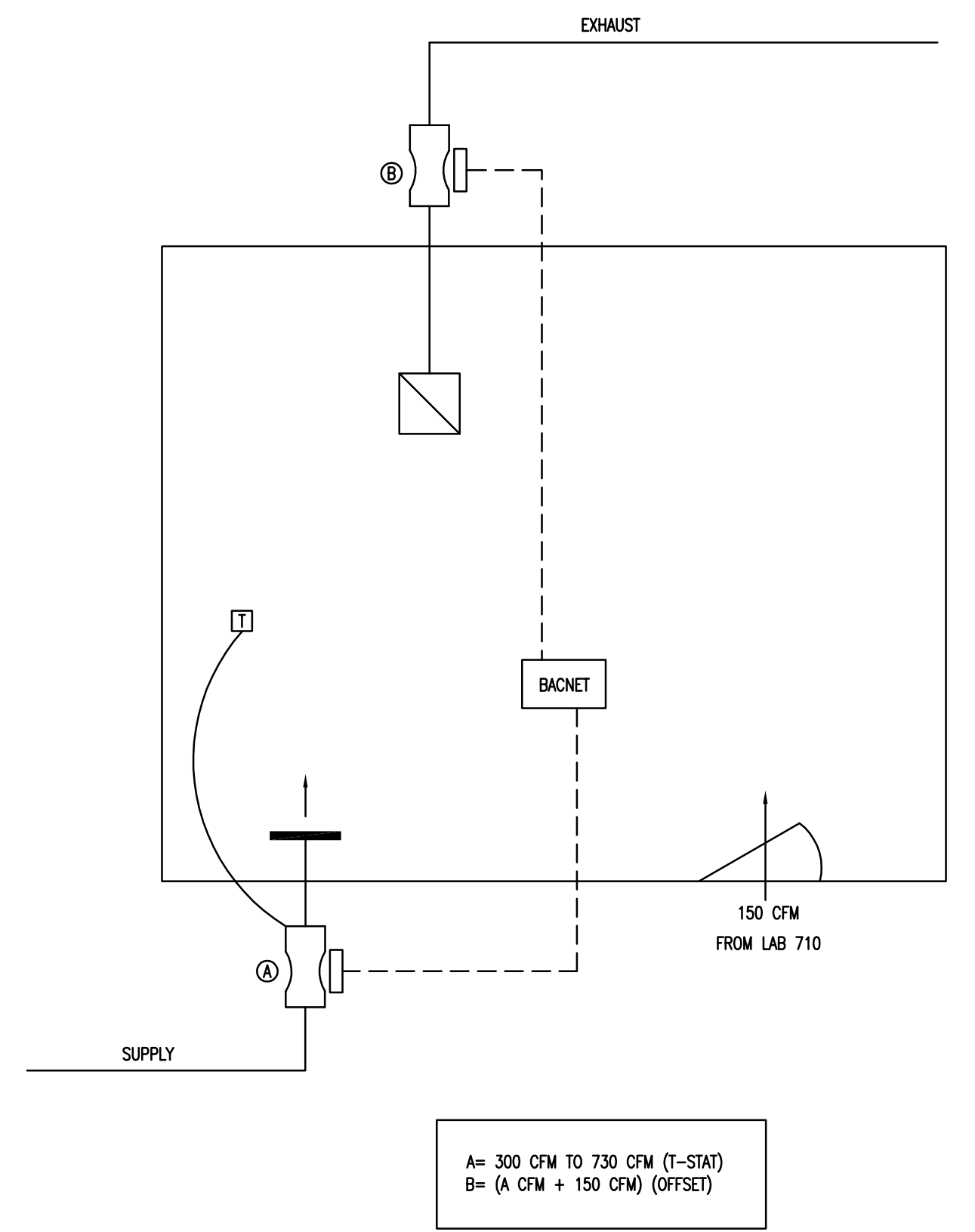
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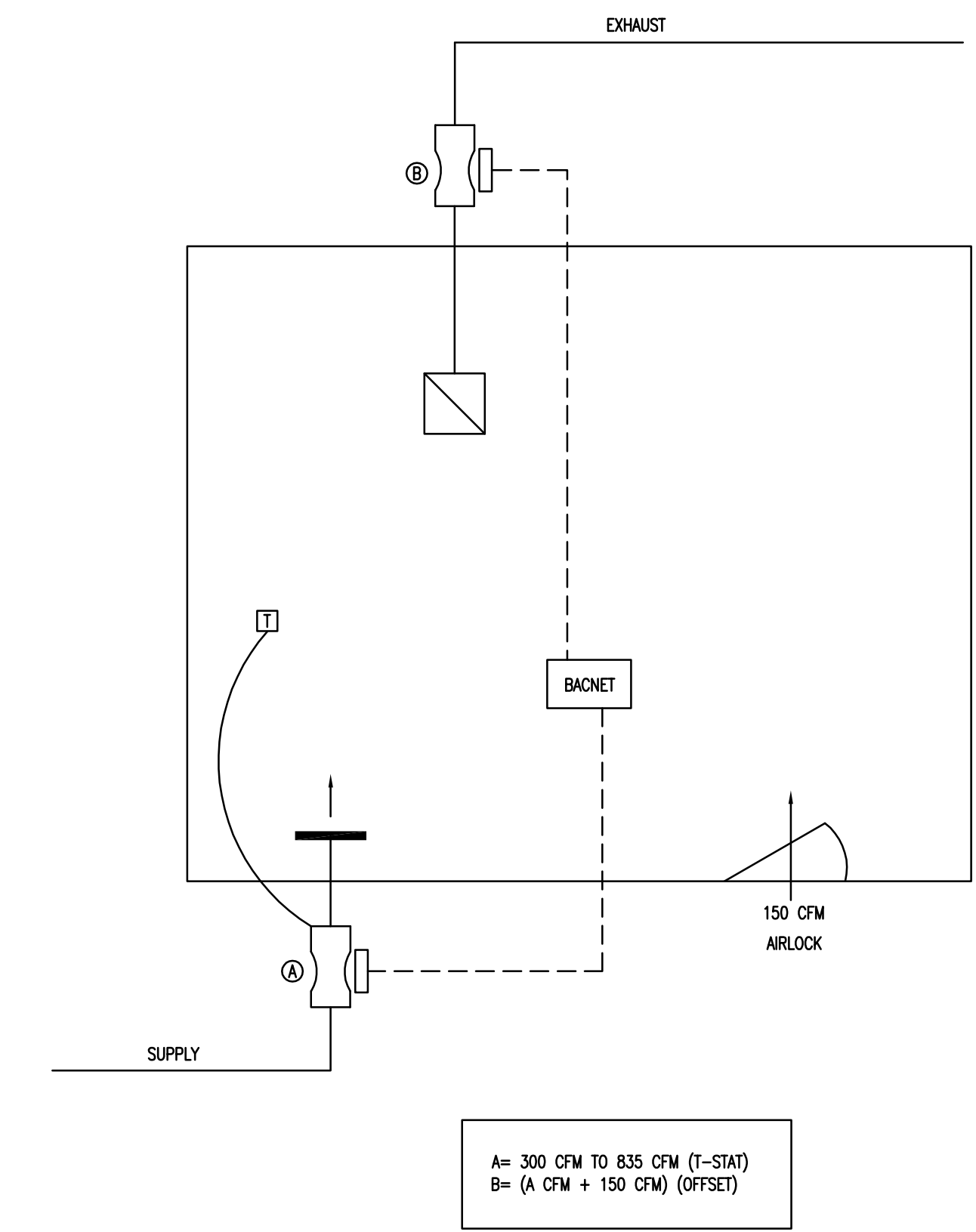
1 LAB 709 CONTROL DIAGRAM
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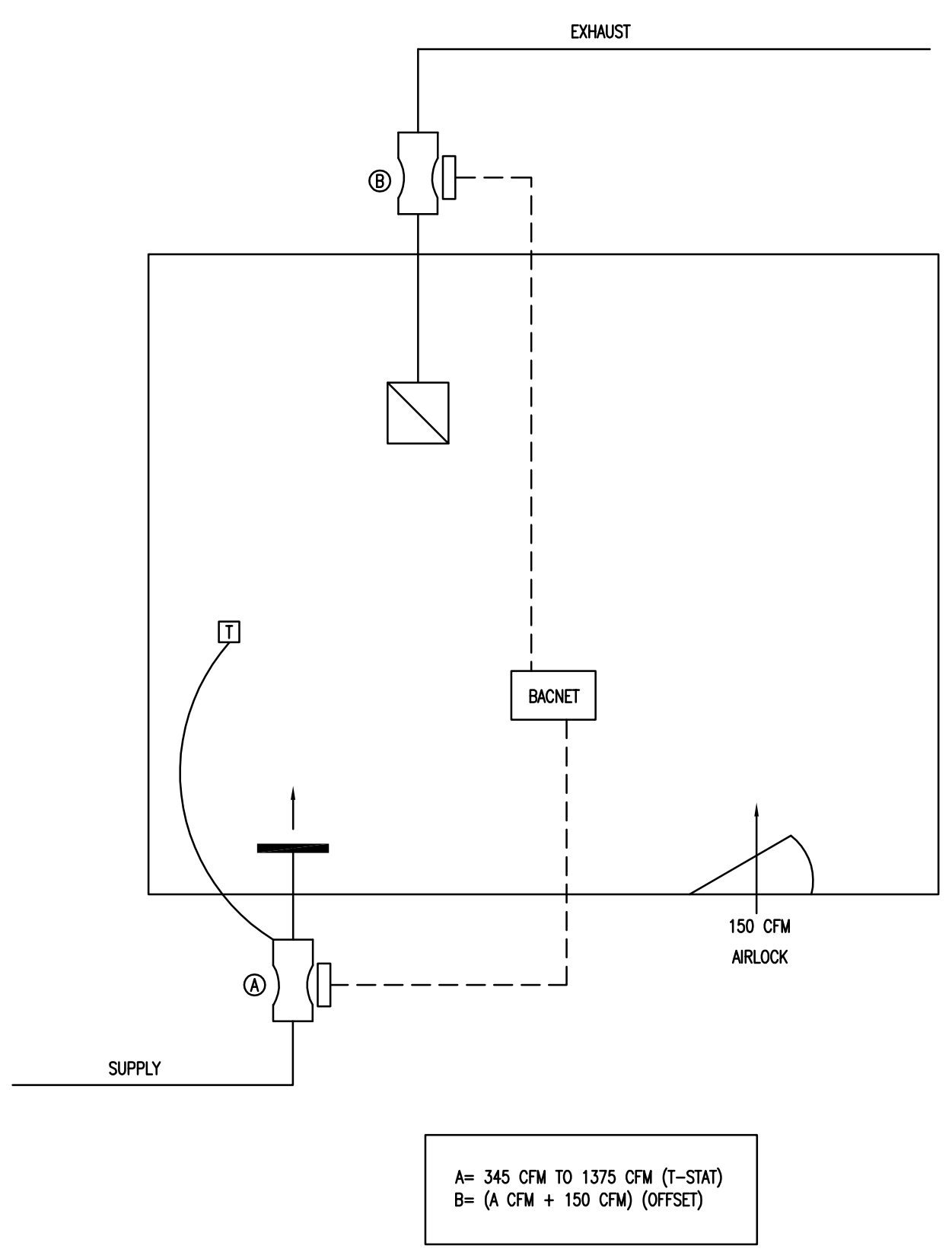
2 LAB 710 CONTROL DIAGRAM
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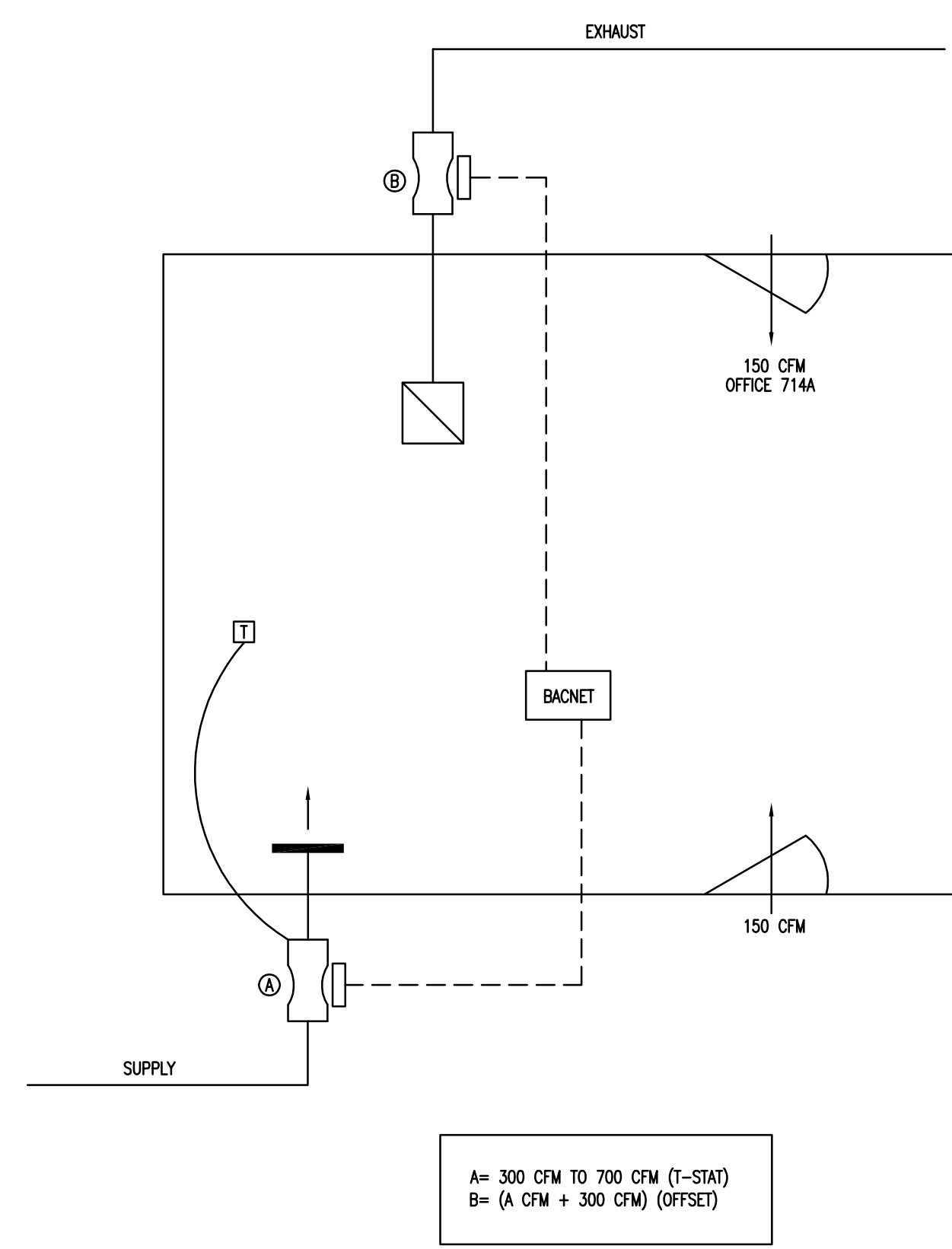
3 TISSUE CULTURE 710B CONTROL DIAGRAM
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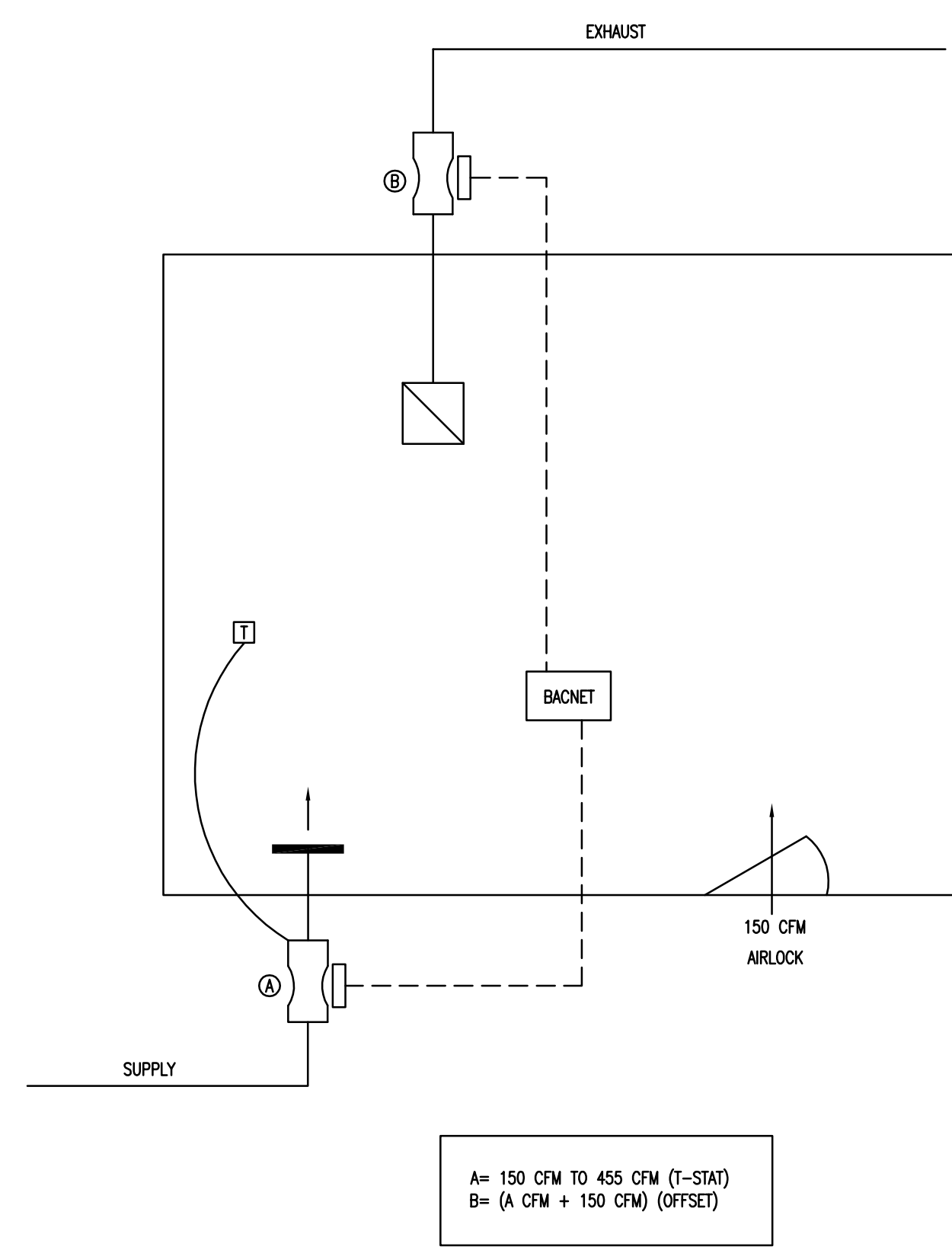
4 TISSUE CULTURE 712A CONTROL DIAGRAM
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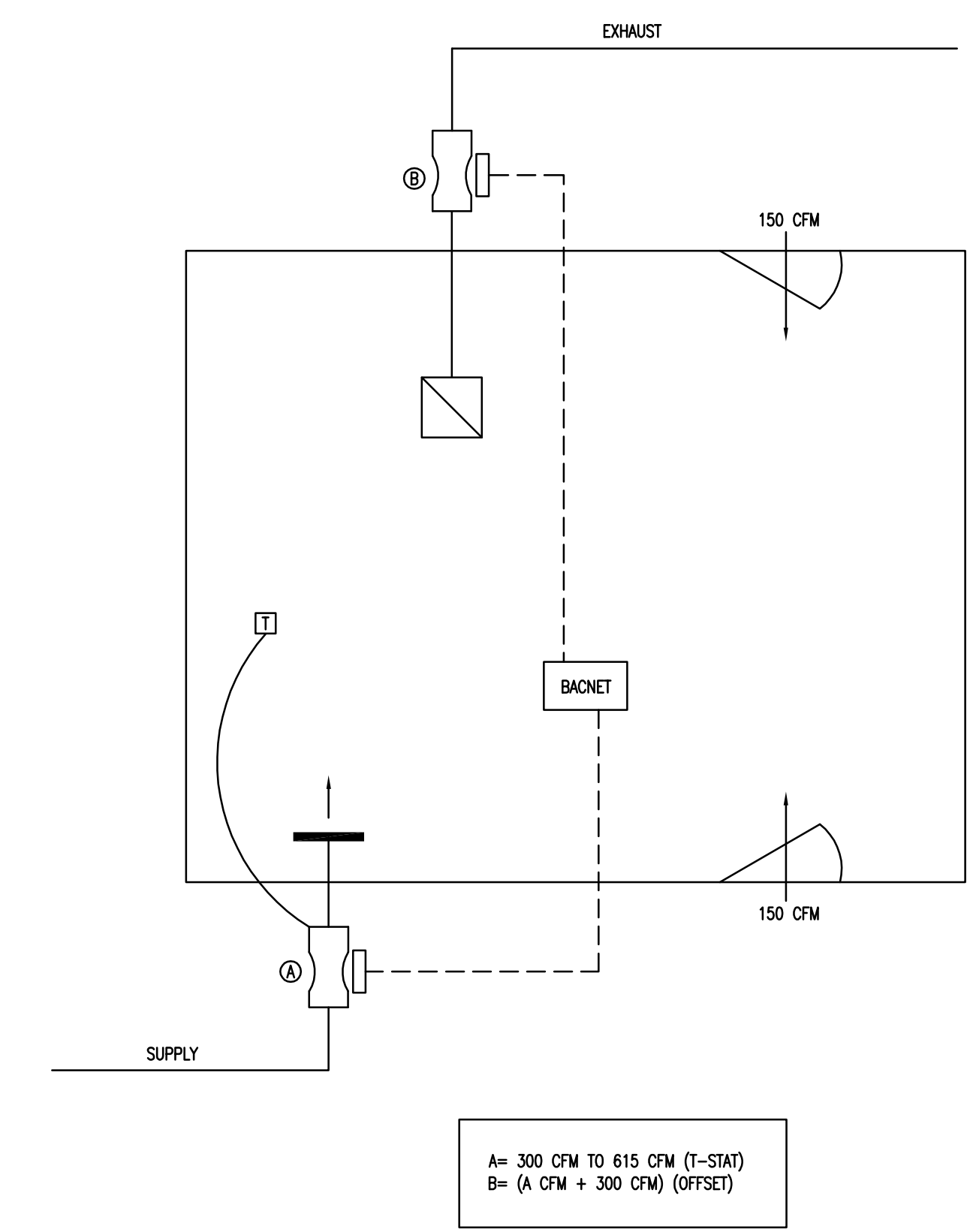
5 TISSUE CULTURE 712B CONTROL DIAGRAM
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6 FLOW 714 CONTROL DIAGRAM
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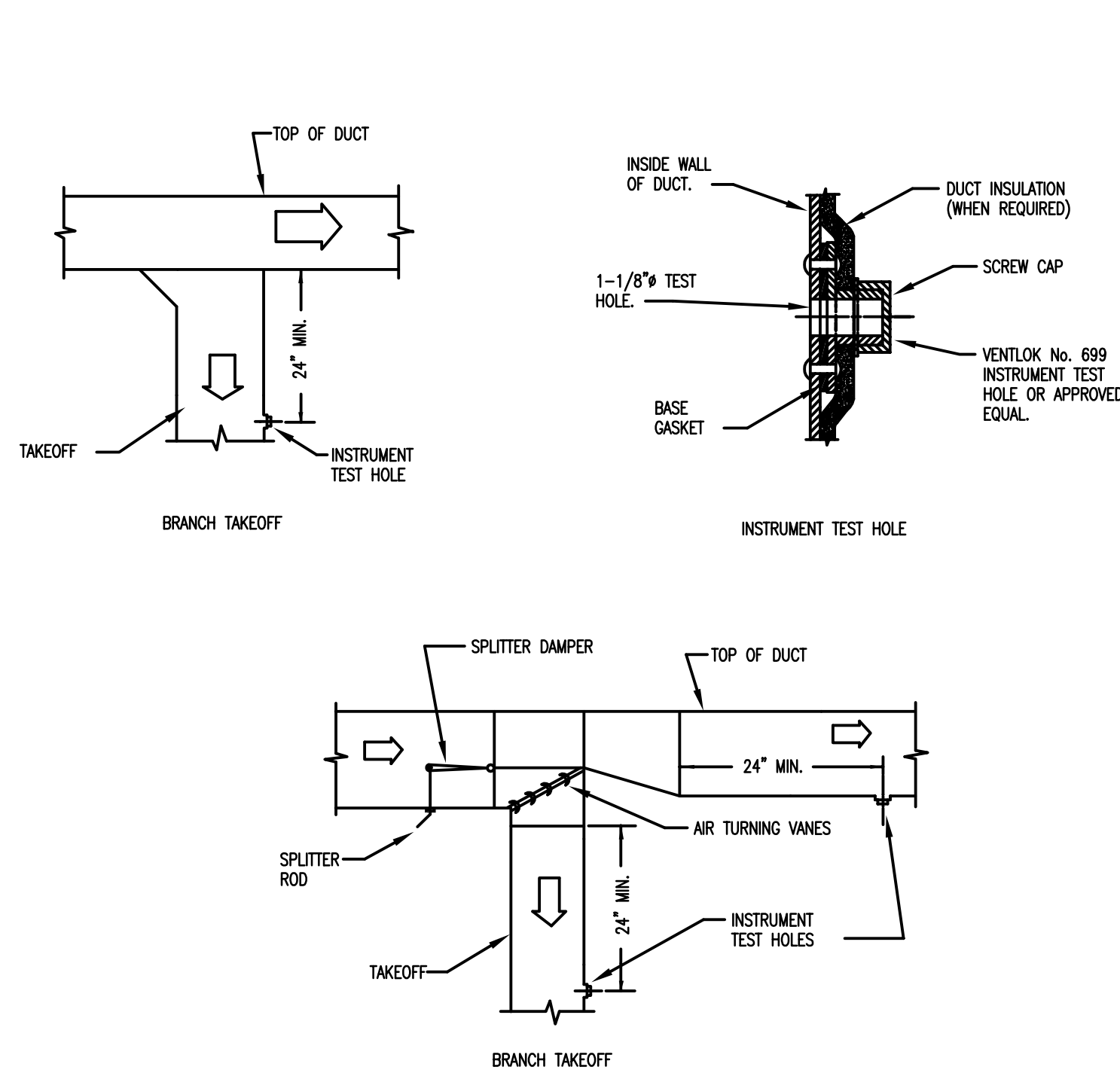
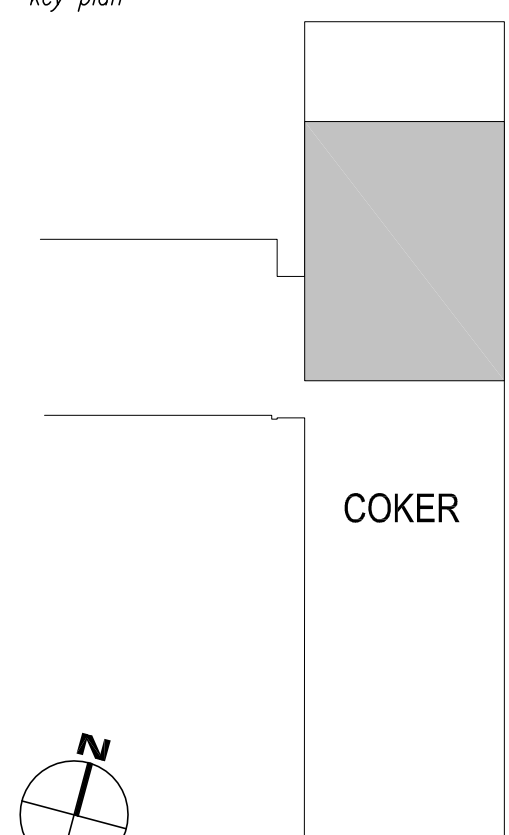


7 MICROSCOPY 714B CONTROL DIAGRAM
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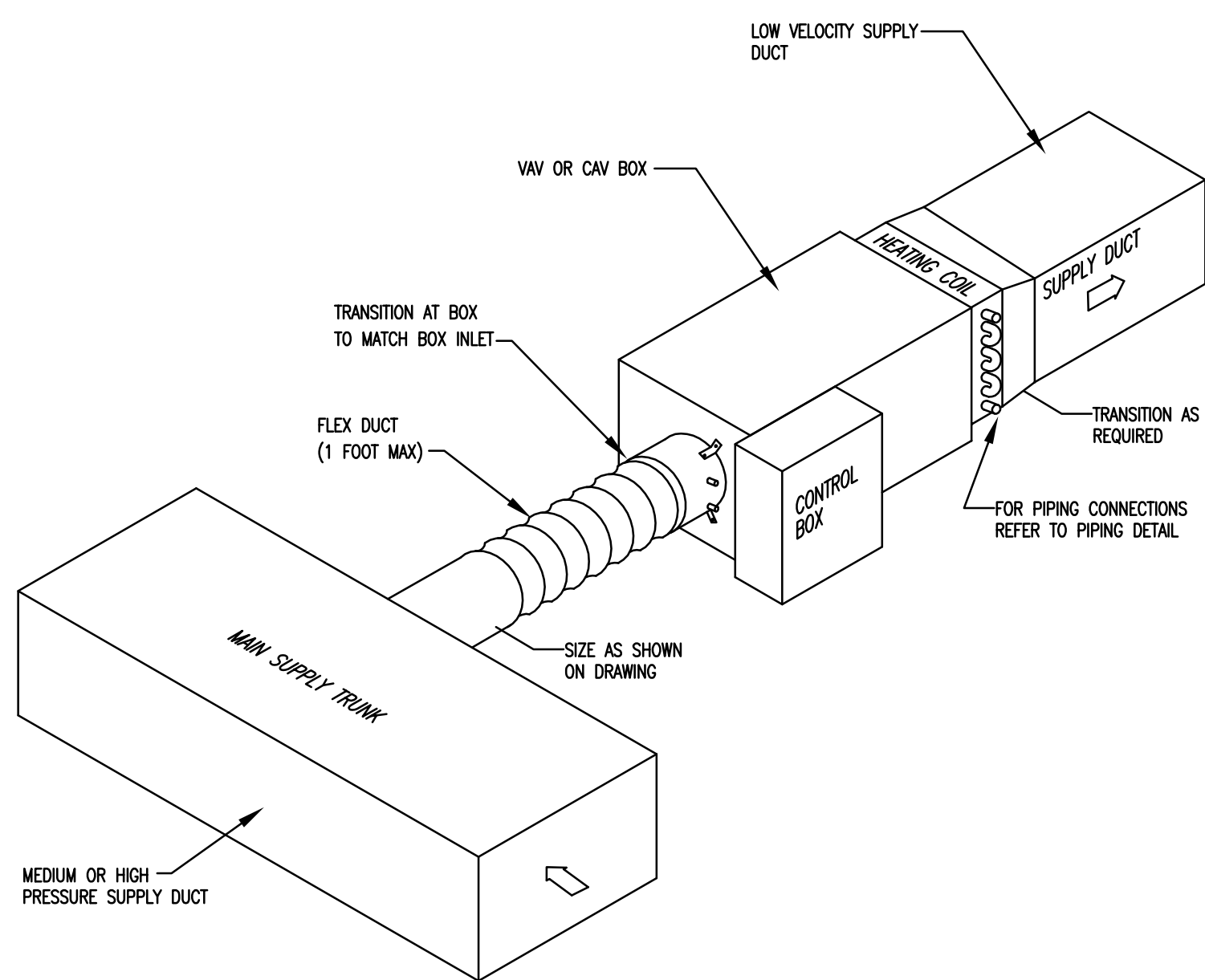


8 MICROSCOPY 711 CONTROL DIAGRAM
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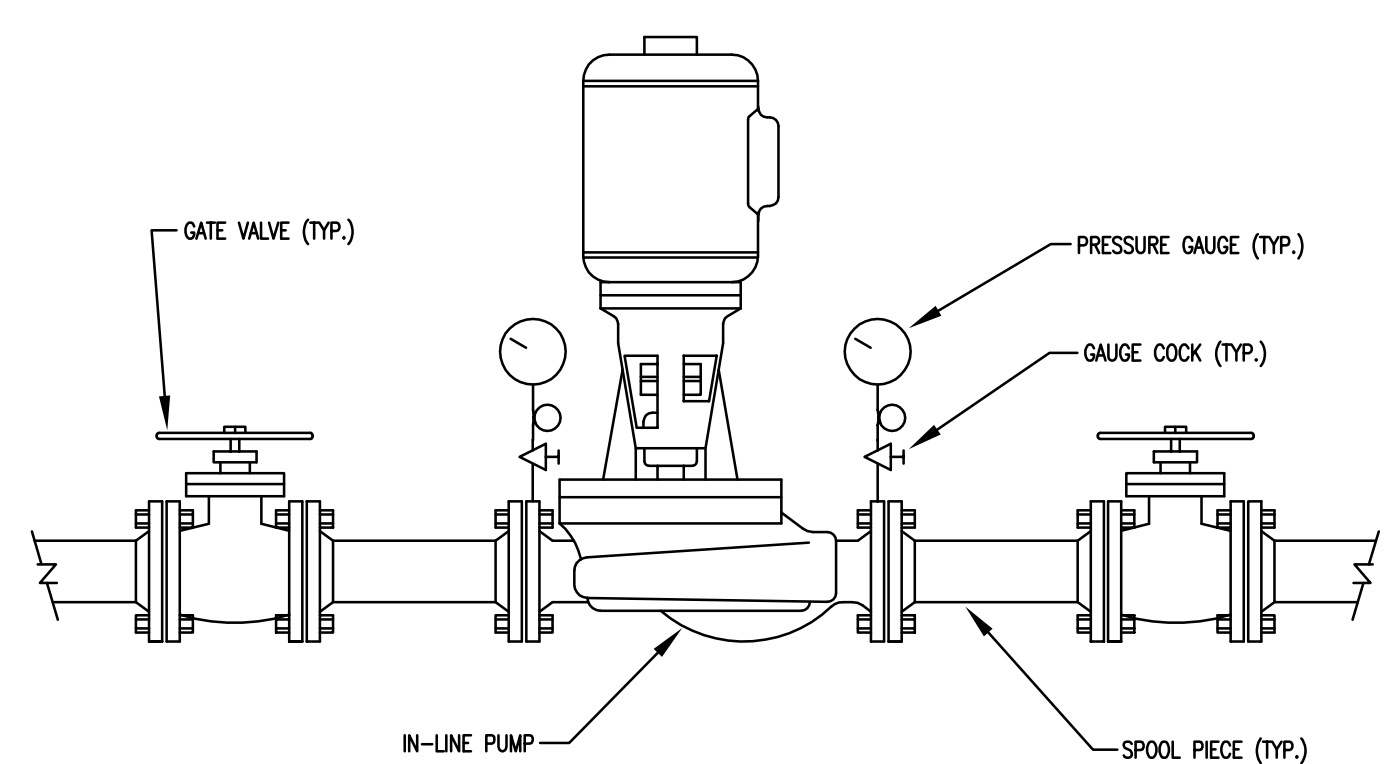
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1 TYPICAL LOW PRESSURE DUCT DETAILS
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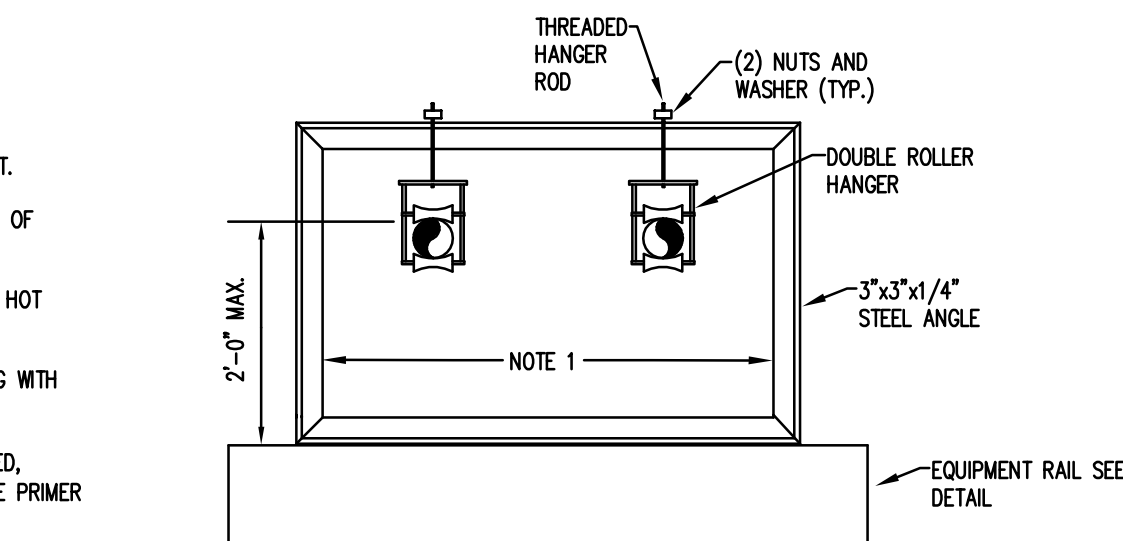
5 SHUT OFF TYPE VAV OR CAV DETAIL
NTS



9 IN-LINE PUMP DETAIL
NTS

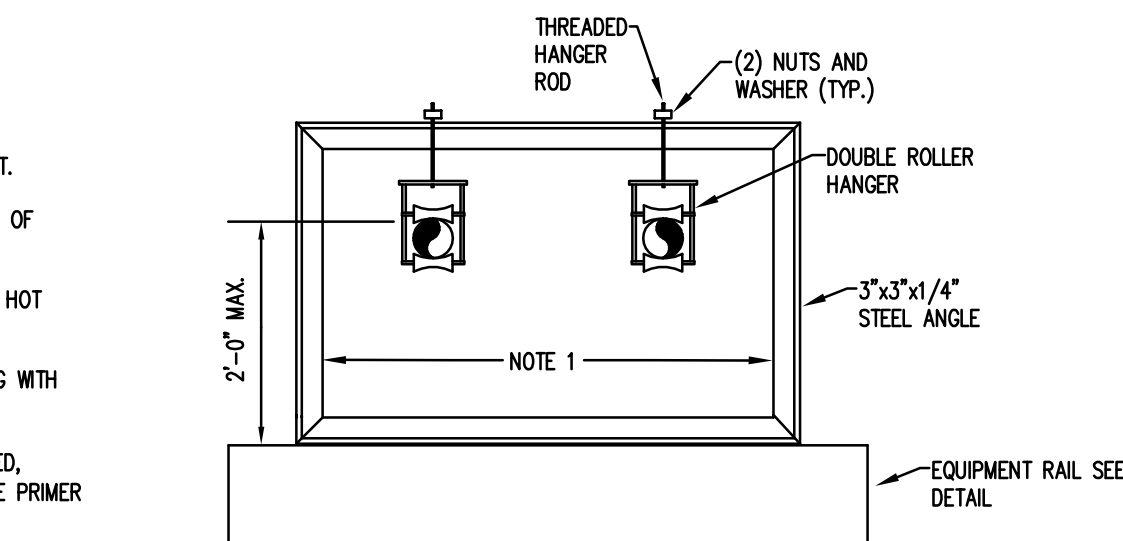
- NOTES:
1. WIDTH SHALL BE AS SMALL AS POSSIBLE AND NO GREATER THAN 3 FEET.
 2. ALL SUPPORTS SHALL BE CLEANED, PRIMED AND PAINTED WITH 2 COATS OF INDUSTRIAL ENAMEL.
 3. ALL HANGERS, FASTENERS, THREADED ROD AND ACCESSORIES SHALL BE HOT DIPPED GALVANIZED, ALUMINUM OR STAINLESS STEEL.
 4. ALTERNATIVE INSTALLATIONS MAY BE APPROVED IF SUBMITTED IN WRITING WITH FULL DESCRIPTION AND SKETCHES TO ENGINEER.
 5. AFTER FINISH PAINTING, ALL METAL (EXCEPT FOR HOT DIPPED GALVANIZED, STAINLESS STEEL OR ALUMINUM) SHALL BE COATED WITH RUST INHIBITIVE PRIMER IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.

13 EXTERIOR PIPE SUPPORT ON ROOF DETAIL
NTS

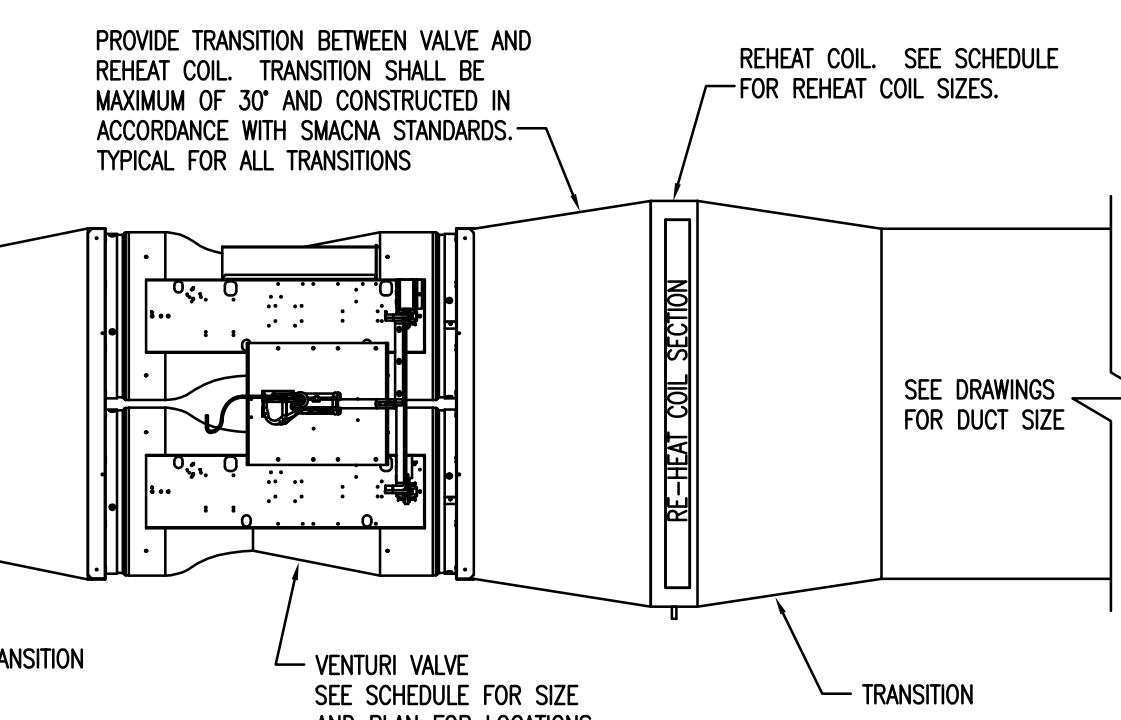


14 EQUIPMENT RAIL DETAIL
NTS

- NOTES:
1. PROVIDE RAISED CANT. SEE SPECIFICATIONS.
 2. SEE SPECIFICATIONS FOR TYPE OF BASE REQUIRED.
 3. SPOT WELD OR ANCHOR CURB TO ROOF BECKING OR SUPPORTS PER SEISMIC REQUIREMENTS.
 4. ATTACH CAP TO CURB 12" O.C. MINIMUM, 2 PER SIDE PROVIDE 3/4" SPACE BETWEEN CURB CAP AND CURB FOR ROOFING AND FLASHING.
 5. COORDINATE INSTALLATION OF CURB CAP WITH ROOFING FLASHING.



15 VENTURI TYPE (MAV-#) VALVE WITH REHEAT DETAIL
NTS



- NOTES:
1. INSTALL VENTURI VALVE IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.
 2. INSTALLATION FOR SINGLE AND TRIPPLE VALVE BODIES SIMILAR.

2 HEAT CABLE DETAIL
NTS



- NOTE:
FORM LOOP & WRAP CABLE AROUND VALVE BODY AS RECOMMENDED BY CABLE MANUFACTURER



3 HARD DUCTED RETURN
NTS



3 HARD DUCTED RETURN
NTS

4 FLEXIBLE DUCT CONNECTION TO GRILL
NTS



- NOTES:
1. HIGH EFFICIENCY TAKE-OFF SHALL BE DESIGNED WITH A RECTANGULAR OPENING AND AN APPROXIMATE 45° SLOPE ON THE BODY. A FLANGE IS TURNED OUT ON ALL FOUR SIDES WITH EACH CORNER BEING FILLED. THE FLANGE ALSO HAS PRE-PUNCHED HOLES FOR EASY INSTALLATION. THERE IS A CLOSED CELL NEOPRENE GASKET APPLIED TO THE FLANGE TO ASSURE A TIGHT SEAL. PROVIDE INTEGRAL BALANCING DAMPER IN TAKE-OFF.
 2. PROVIDE MIN OF 3 DUCT DIAMETERS BETWEEN TAPS OR AFTER ELBOWS.

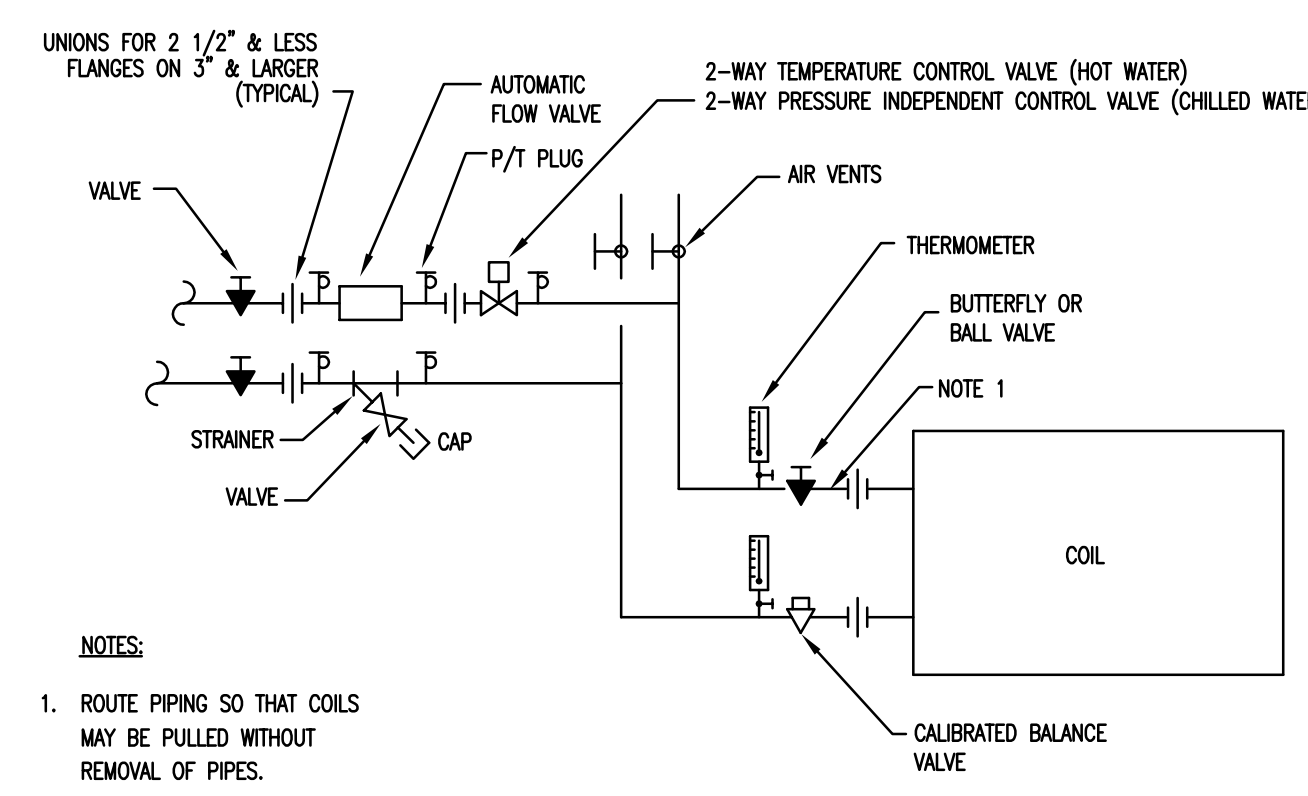
6 EQUIPMENT CONDENSATE DRAIN DETAIL
NTS



- NOTE:
1. LOCATE TRAPS SO AS TO BE ACCESSIBLE FOR CLEANING.
 2. HEIGHT SHALL BE EQUAL TO UNIT MAXIMUM TOTAL STATIC PRESSURE PLUS 1/2".
 3. HEIGHT SHALL BE EQUAL TO UNIT MAXIMUM NEGATIVE STATIC PRESSURE PLUS 1".
 4. HEIGHT SHALL BE 1/2 OF HEIGHT INSTALLED IN NOTE 3.
 5. PIPE TO NEAREST FLOOR DRAIN.
 6. TRAP SHALL NOT BLOCK ACCESS TO EQUIPMENT.
 7. INSULATE TRAPS.

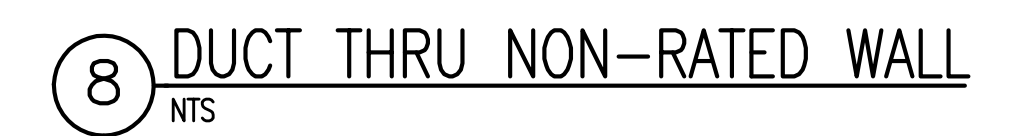


7 TWO WAY COIL PIPING DETAIL
NTS



- NOTES:
1. ROUTE PIPING SO THAT COILS MAY BE PULLED WITHOUT REMOVAL OF PIPES.

8 DUCT THRU NON-RATED WALL
NTS



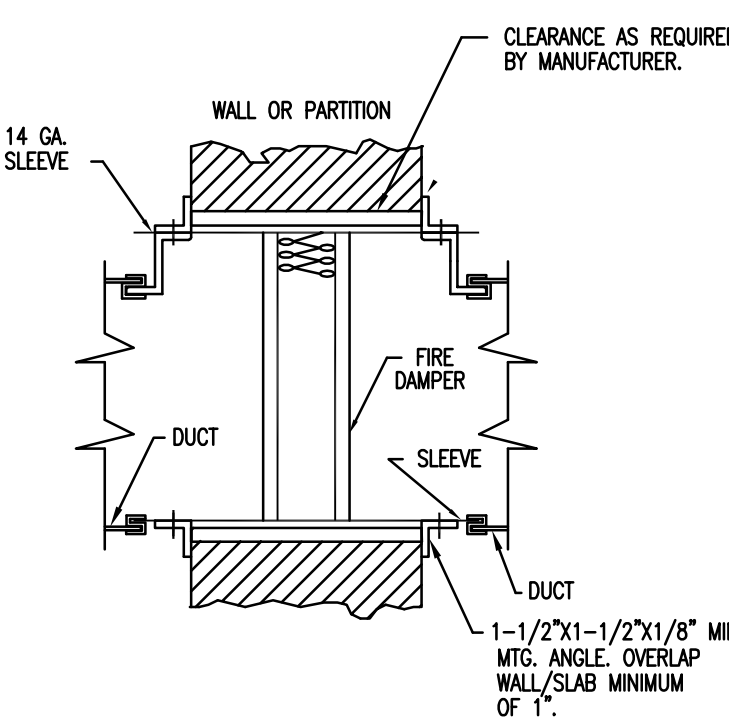
- NOTE:
EXTERNALLY WRAPPED DUCT INSTALLED SIMILARLY. BLANKET INSULATION SHALL BE INSTALLED OVER ANGLES AND SEALED TO WALL.

10 THREE WAY COIL PIPING DETAIL
NTS



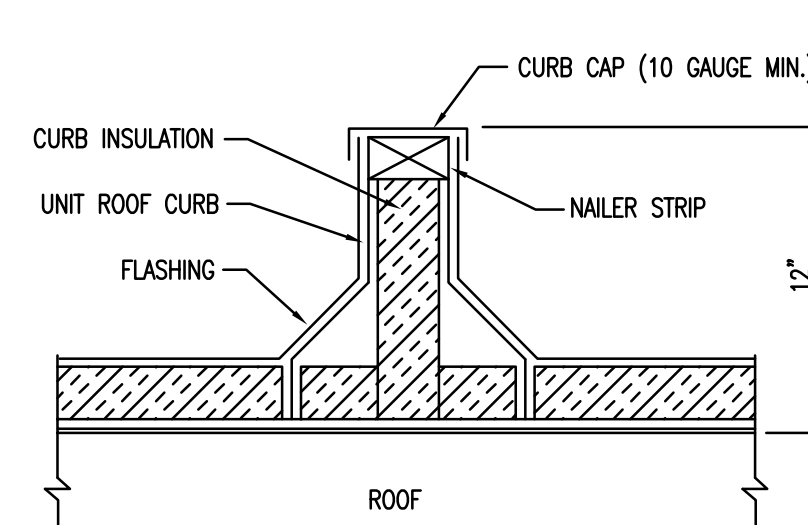
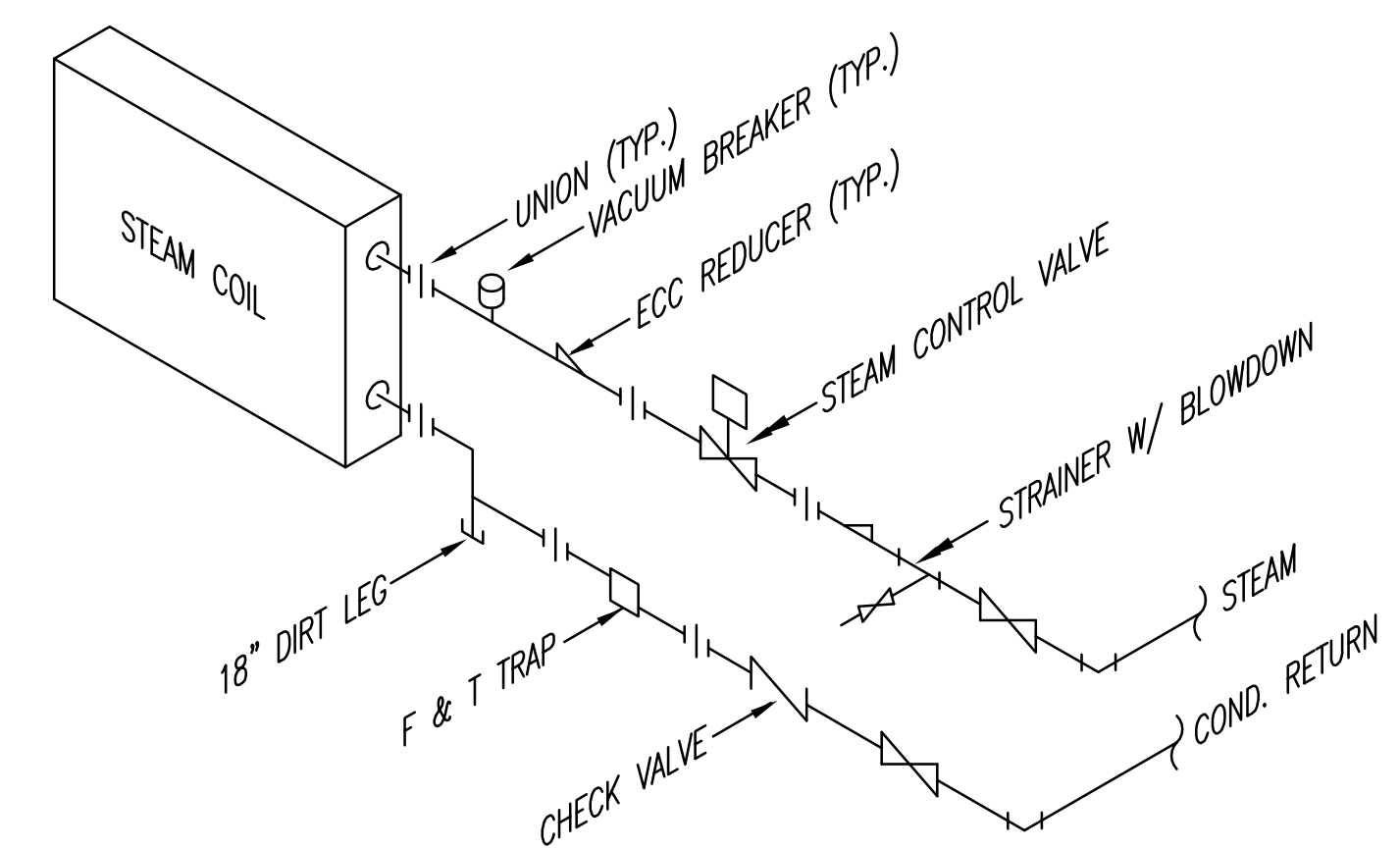
- NOTES:
1. VALVE ASSEMBLY No. 1: COMBINATION BALL VALVE, Y-STRAINER, UNION, 2P/T'S, BYPASS ADAPTER, HOSE END DRAIN VALVE WITH CAP AND CHAIN.
 2. VALVE ASSEMBLY No. 2: AUTOMATIC FLOW LIMITING DEVICE, 2P/T'S, BALL VALVE. PROVIDE ON EQUIPMENT UP TO 80 GPM
 3. PROVIDE ON EQUIPMENT UP TO 80 GPM
 4. IF FLOW MODULE CAN NOT BE REMOVED WITHOUT REMOVAL OF ASSEMBLY, THE BALL VALVES MUST BE SEPARATED FROM FLOW DEVICE BY A UNION.
 5. PROVIDE ON THE FOLLOWING: 7"HW-2,7"HW-8,MMW-8

11 FIRE DAMPER DETAIL
NTS



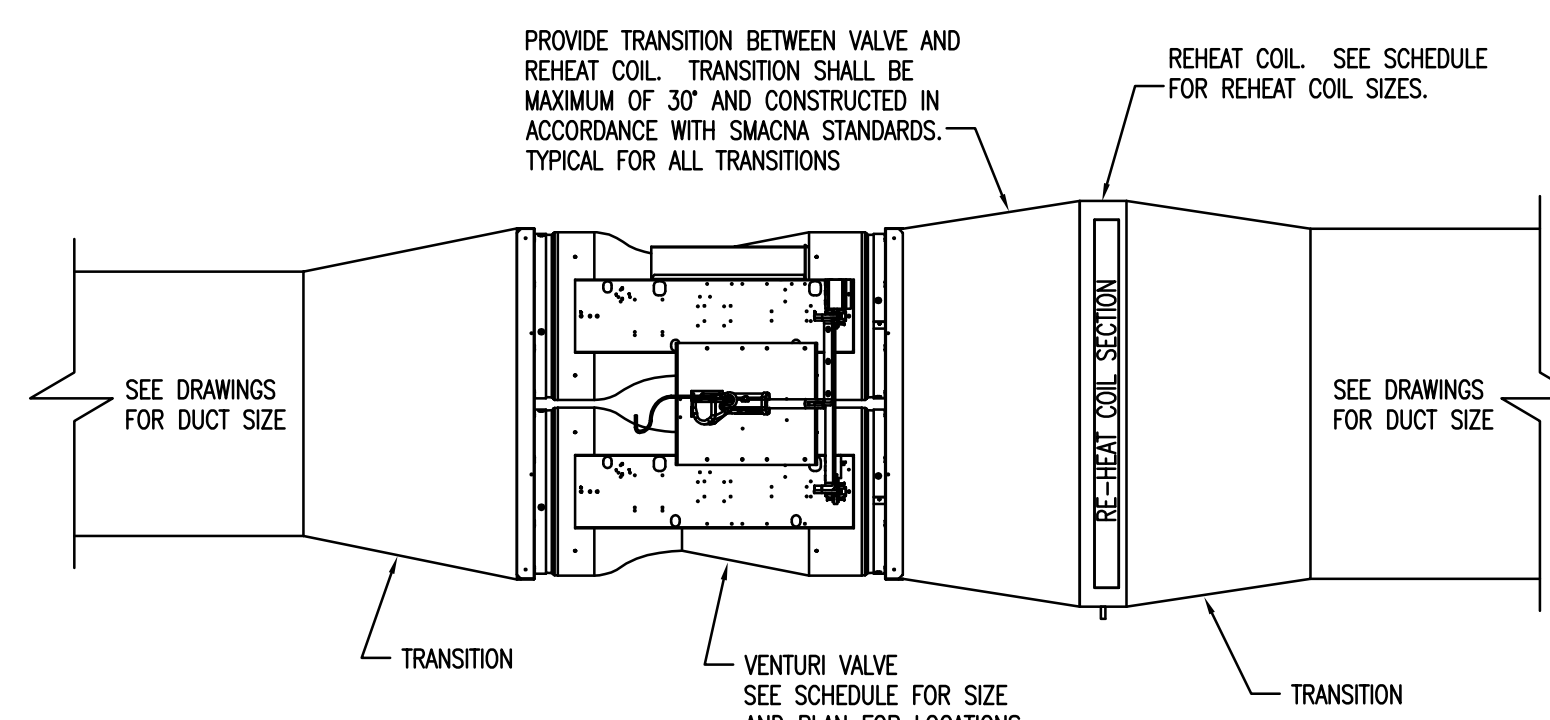
- NOTES:
1. PROVIDE FIRE DAMPERS IN ALL 1 HR. THRU 4 HR. WALLS, SLABS, AND PARTITIONS SHOWN ON ARCH. AND MECH. DRAWINGS.
 2. PROVIDE DUCT ACCESS DOOR. ACCESS DOOR SHALL BE LARGE ENOUGH TO PERMIT INSPECTION AND MAINTENANCE OF THE DAMPER AND ITS OPERATING PARTS. ACCESS DOOR SHALL BE LABELED "FIRE DAMPER". THE LETTERS SHALL NOT BE LESS THAN 0.5 INCHES IN HEIGHT.
 3. PROVIDE ALL CEILING, FLOOR, AND WALL ACCESS DOORS NECESSARY FOR ACCESS TO FIRE DAMPER.
 4. FIRE DAMPERS SHALL COMPLY WITH THE REQUIREMENTS OF UL 555 AND INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. ONLY FIRE DAMPERS LABELED FOR USE IN DYNAMIC SYSTEMS SHALL BE INSTALLED IN HEATING, VENTILATION AND AIR-CONDITIONING SYSTEMS DESIGNED TO OPERATE WITH FANS ON DURING A FIRE.
 5. BLANKET INSULATION SHALL BE INSTALLED OVER ANGLES AND SEALED TO WALL.
 6. DAMPER BLADES SHALL BE LOCATED OUT OF THE AIR STREAM.
 7. SMOKE DAMPERS AND COMBINATION FIRE/SMOKE DAMPERS INSTALLED SIMILARLY.

12 STEAM COIL PIPING DETAIL
NTS



- NOTES:
1. PROVIDE RAISED CANT. SEE SPECIFICATIONS.
 2. SEE SPECIFICATIONS FOR TYPE OF BASE REQUIRED.
 3. SPOT WELD OR ANCHOR CURB TO ROOF BECKING OR SUPPORTS PER SEISMIC REQUIREMENTS.
 4. ATTACH CAP TO CURB 12" O.C. MINIMUM, 2 PER SIDE PROVIDE 3/4" SPACE BETWEEN CURB CAP AND CURB FOR ROOFING AND FLASHING.
 5. COORDINATE INSTALLATION OF CURB CAP WITH ROOFING FLASHING.

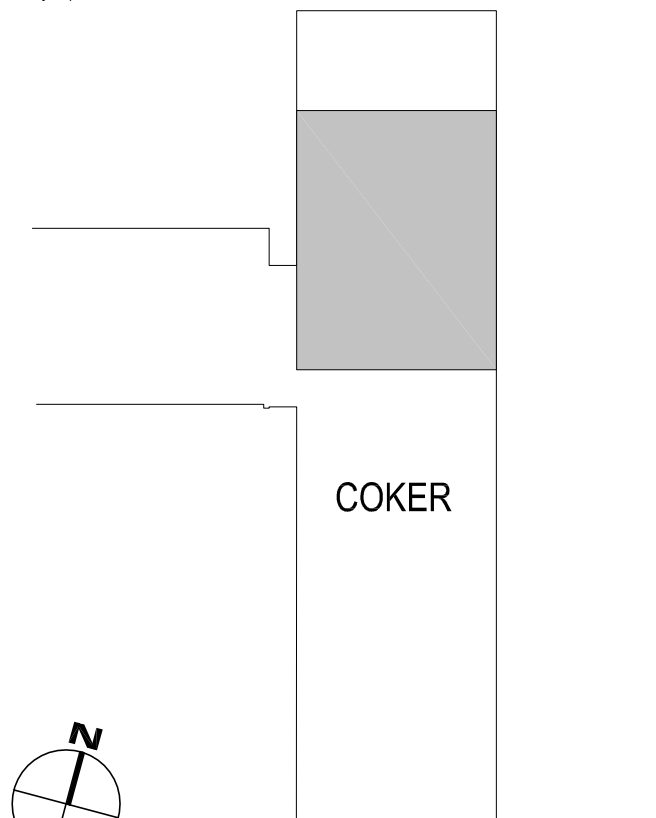
14 EQUIPMENT RAIL DETAIL
NTS



- NOTES:
1. INSTALL VENTURI VALVE IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.
 2. INSTALLATION FOR SINGLE AND TRIPPLE VALVE BODIES SIMILAR.

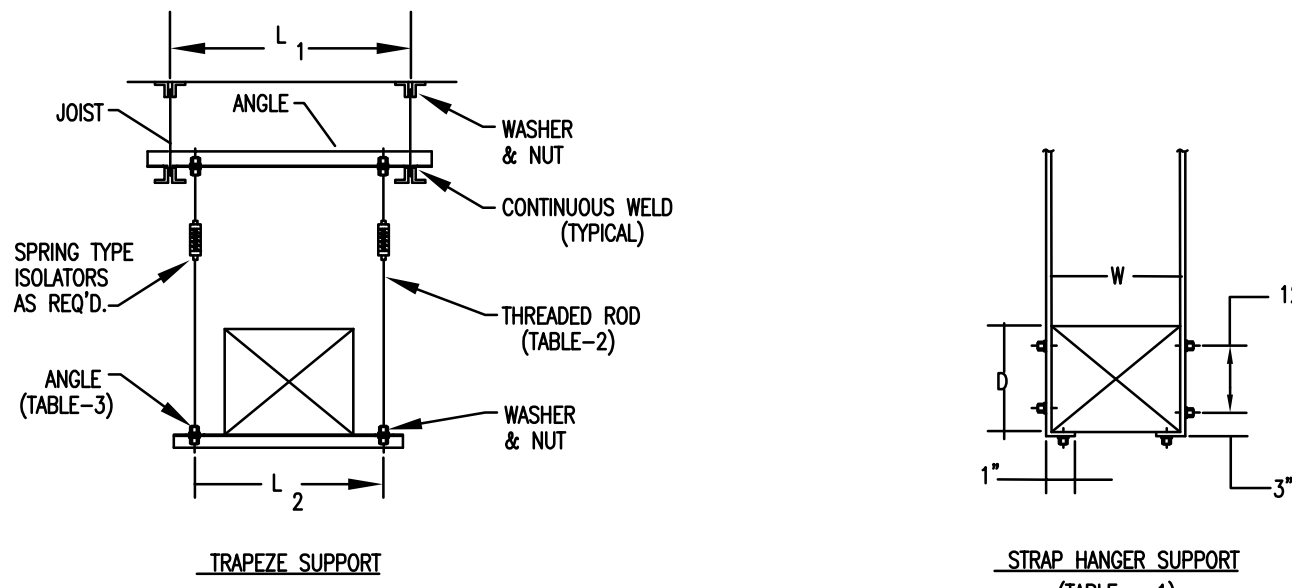
15 VENTURI TYPE (MAV-#) VALVE WITH REHEAT DETAIL
NTS

number	item	date



FIRESTOP SYSTEM SELECTION CHART

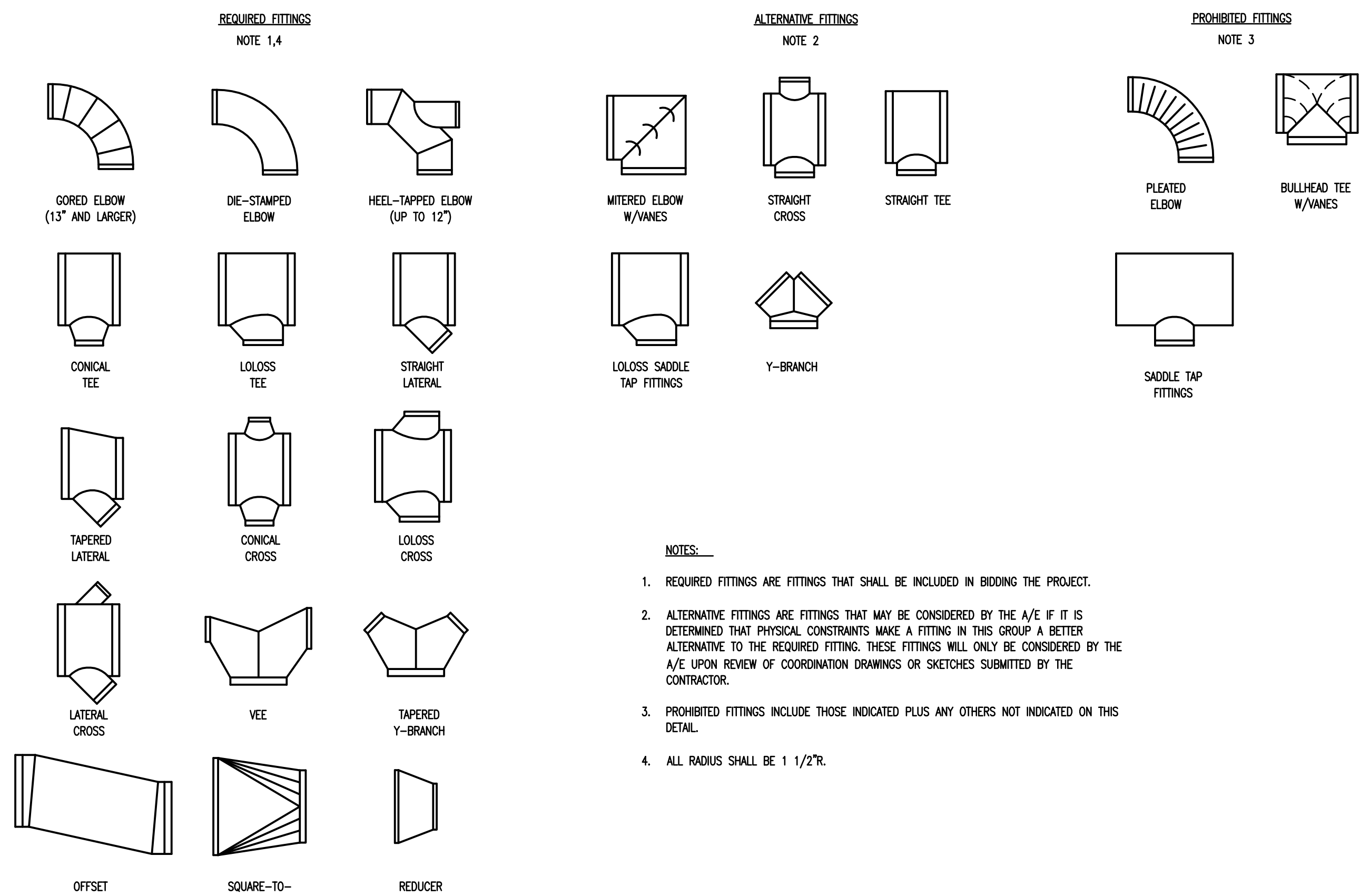
PENETRATION ITEM	FIRE RATING	UL SYSTEM NO.
METAL PIPE THROUGH GYPSUM WALL		
1/2" - 1" STEEL PIPE	2-HOUR	ML1058
1/2" - 3" STEEL PIPE	1-HOUR OR 2-HOUR	ML1054
1/2" - 6" COPPER PIPE (NO SLEEVE)		
METAL INSULATED PIPE THROUGH GYPSUM WALL		
1/2" - 4" STEEL PIPE	1-HOUR	WL5022
1/2" - 2" STEEL PIPE	2-HOUR	WL5027
1/2" - 10" STEEL PIPE (NO SLEEVE)	2-HOUR	WL5029
METAL PIPE THROUGH CONCRETE/CONCRETE BLOCK		
1/2" - 2 1/2" STEEL PIPE (NO SLEEVE)	3-HOUR	CA1155
1/2" - 8" STEEL PIPE (NO SLEEVE)	3-HOUR	CA1154
8" - 10" STEEL PIPE (NO SLEEVE) WHERE FLEXIBLE SEALANT IS REQUIRED	2-HOUR	CA1158
METAL PIPE THROUGH CONCRETE/CONCRETE BLOCK		
1/2" - 6" STEEL PIPE	3-HOUR	CA1150
1/2" - 8" STEEL PIPE	4-HOUR	CA1079
MULTIPLE METAL PIPE THROUGH CONCRETE/CONCRETE BLOCK		
12" OR SMALLER STEEL PIPE AND/OR 4" OR SMALLER COPPER PIPE, EMT OR CONDUIT	3-HOUR	CA1140
INSULATED METAL PIPE THROUGH CONCRETE/CONCRETE BLOCK		
1/2" - 8" STEEL PIPE WITH 1" THICK GLASS FIBER	2-HOUR	CA5046
1/2" - 6" STEEL PIPE OR 1/2" - 4" COPPER PIPE, EMT OR CONDUIT WITH 1-1/2" GLASS FIBER	2-HOUR	CA5045
MULTIPLE INSULATED PIPES, MAXIMUM QUANTITY OF 4	3-HOUR	CA5044
1/2" - 3" STEEL PIPE, COPPER PIPE, EMT OR CONDUIT WITH 3/4" GLASS FIBER		



W & D MAX.	10'-0" MAX.	8'-0" MAX.	5'-0" OR LESS
72"	1" x 22ga.	1" x 22ga.	1" x 22ga.
96"	1" x 20ga.	1" x 22ga.	1" x 22ga.
120"	1" x 18ga.	1" x 22ga.	1" x 22ga.
168"	1" x 18ga.	1" x 18ga.	1" x 18ga.
192"	1" x 18ga.	1" x 18ga.	1" x 18ga.

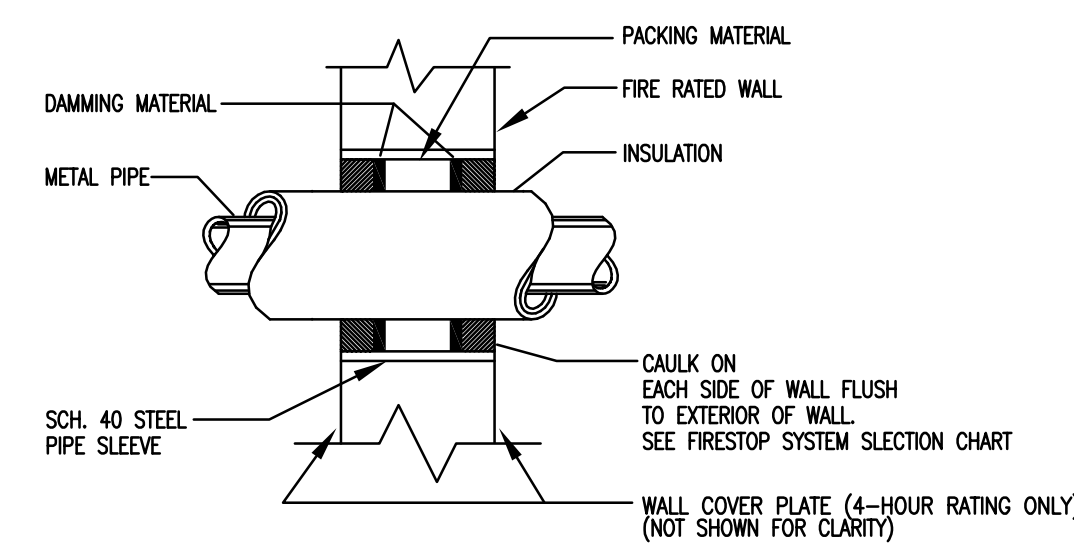
STRAPS	LBS.	RODS	LBS.
2 - 1"x22ga.	520	2 - 1/4" DIA.	540
2 - 1"x20ga.	640	2 - 3/8" DIA.	1360
2 - 1"x18ga.	840	2 - 1/2" DIA.	2500
2 - 1"x18ga.	1400	2 - 5/8" DIA.	4000
2 - 1"x18ga.	1400	2 - 3/4" DIA.	6000

L1 OR L2	2"x2"x1-1/4"	2-1/2"x2-1/2"x1/4"
36"	1200 LBS.	1940 LBS.
48"	1160 LBS.	1900 LBS.
60"	1060 LBS.	1800 LBS.
72"	900 LBS.	1640 LBS.
84"	660 LBS.	1400 LBS.
96"	320 LBS.	1060 LBS.

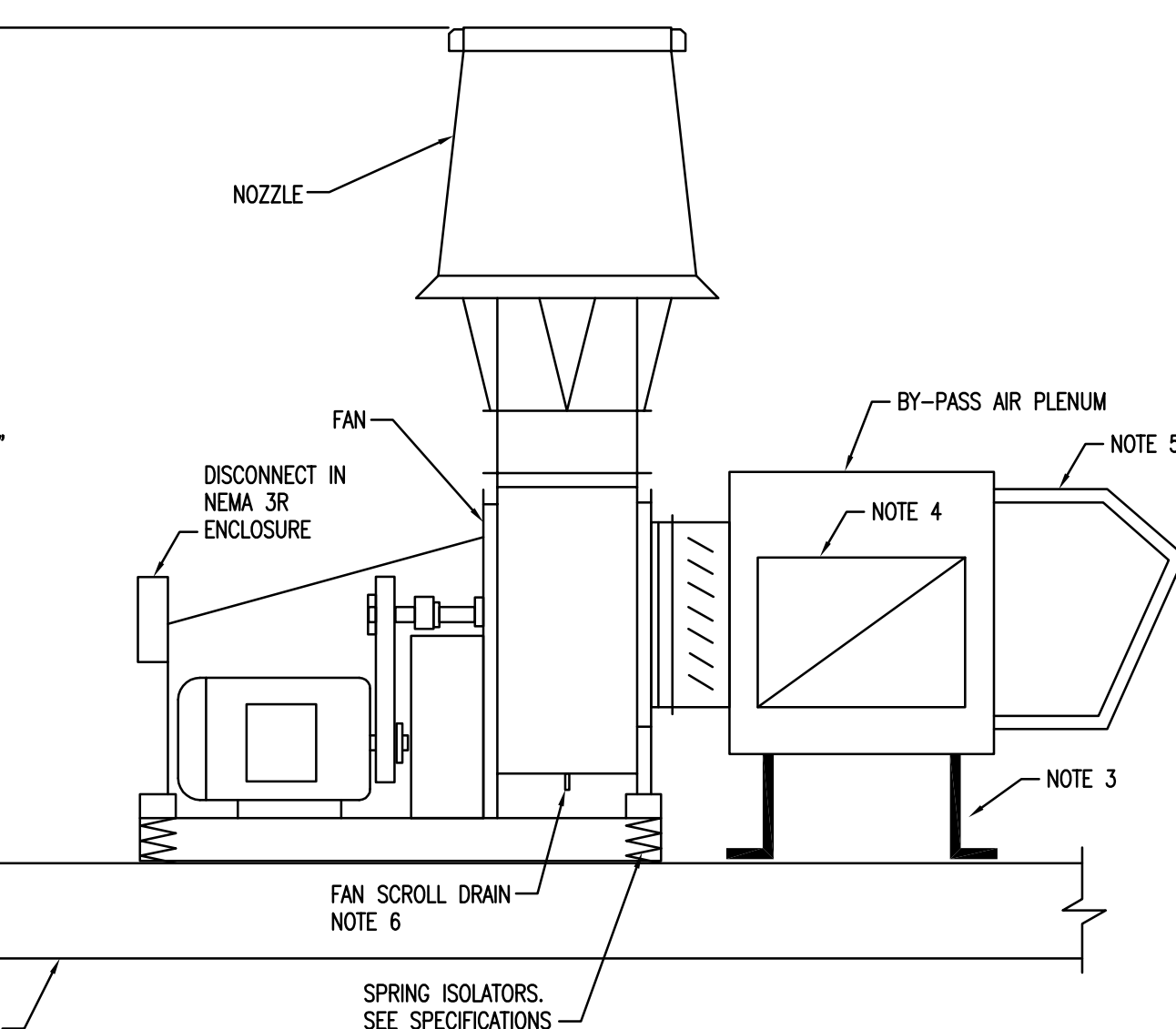


3 ROUND DUCT FITTINGS

- NOTES:**
- REQUIRED FITTINGS ARE FITTINGS THAT SHALL BE INCLUDED IN BIDDING THE PROJECT.
 - ALTERNATIVE FITTINGS ARE FITTINGS THAT MAY BE CONSIDERED BY THE A/E IF IT IS DETERMINED THAT PHYSICAL CONSTRAINTS MAKE A FITTING IN THIS GROUP A BETTER ALTERNATIVE TO THE REQUIRED FITTING. THESE FITTINGS WILL ONLY BE CONSIDERED BY THE A/E UPON REVIEW OF COORDINATION DRAWINGS OR SKETCHES SUBMITTED BY THE CONTRACTOR.
 - PROHIBITED FITTINGS INCLUDE THOSE INDICATED PLUS ANY OTHERS NOT INDICATED ON THIS DETAIL.
 - ALL RADII SHALL BE 1 1/2" R.

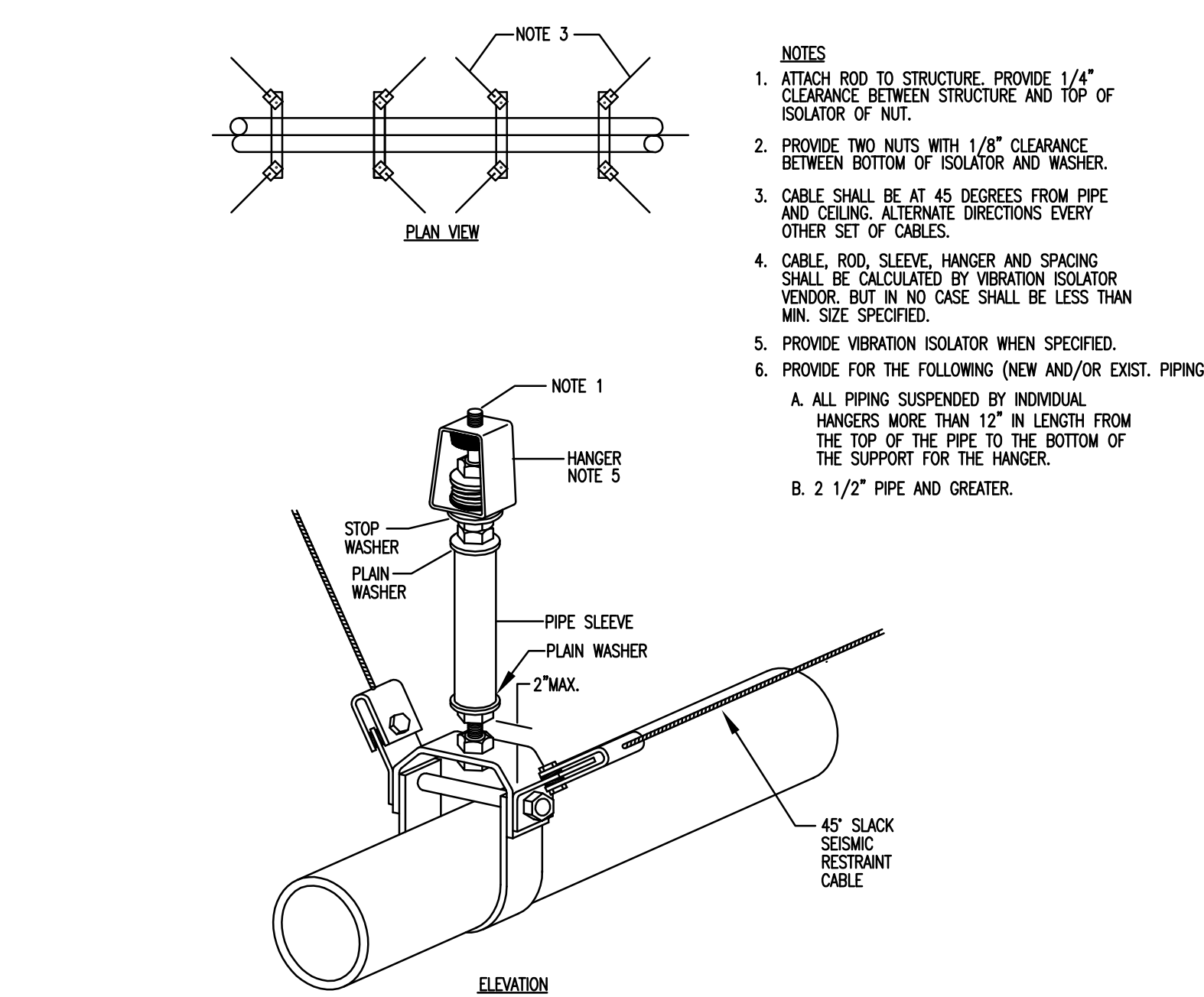


1 RATED WALL PENETRATION

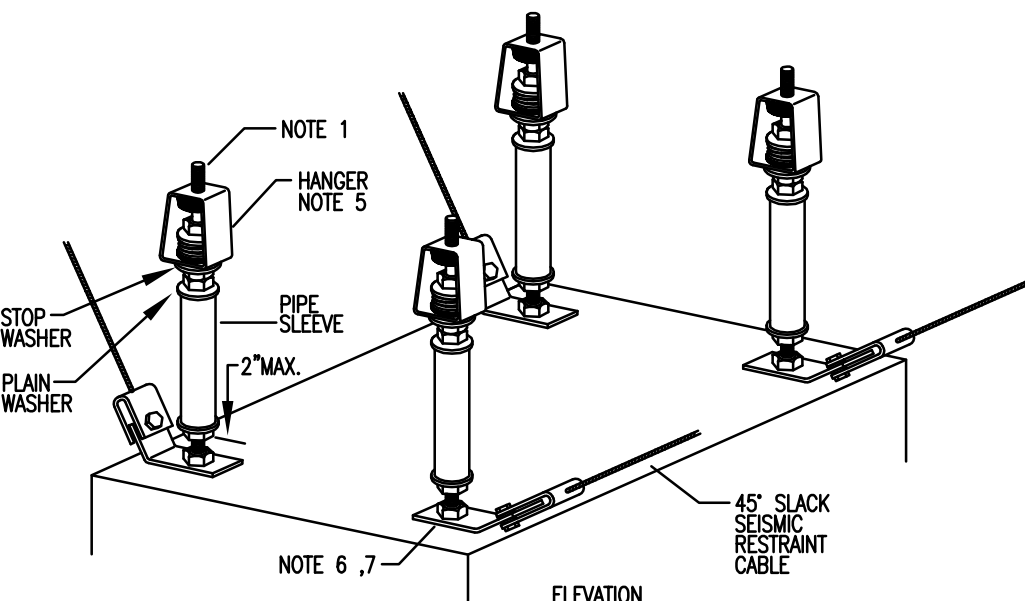


- NOTES:**
- CONTRACTOR SHALL PROVIDE SUPPLEMENT SUPPORTS AS REQUIRED TO SUPPORT EXHAUST FAN ON STRUCTURAL FRAME.
 - INSTALL EXHAUST FAN IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.
 - ATTACH PLENUM BOX TO STRUCTURAL SUPPORT.
 - DUCT CONNECTION TO PLENUM BOX. SEE PLAN FOR ADDITIONAL INFORMATION ON LOCATION OF DUCT CONNECTION.
 - WEATHERHOOD WITH BYPASS DAMPER. SEE PLAN FOR ADDITIONAL INFORMATION ON LOCATION OF MAKE-UP AIR HOOD.
 - PROVIDE P-TRAPS AT EACH DRAIN CONNECTION AND ROUTE DRAIN TO NEAREST ROOF DRAIN. EXHAUST FAN HAS MULTIPLE LOCATIONS FOR DRAIN CONNECTIONS, ONE ON EACH PLENUM SECTION, AND ANOTHER ON EACH TUBULAR FAN HOUSING LOCATED AT THE BOTTOM OF THE SCROLL.

4 LAB EXHAUST FAN DETAIL

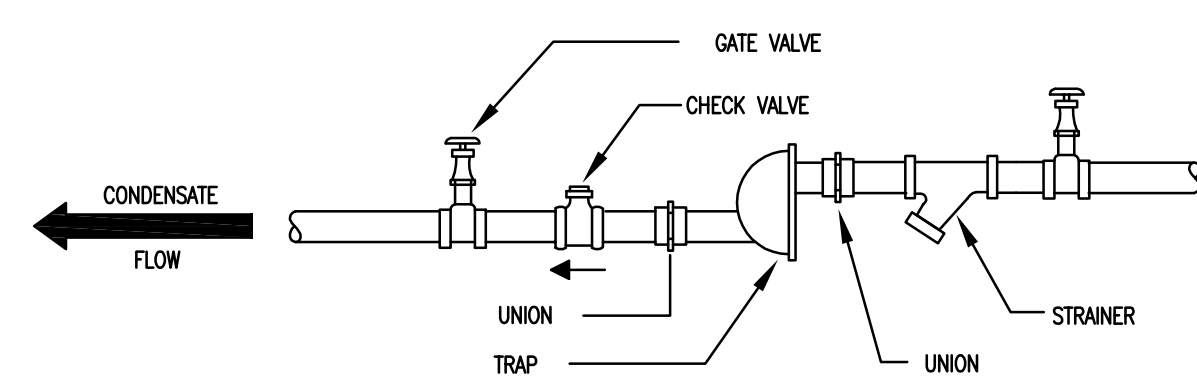


5 PIPE SEISMIC DETAIL

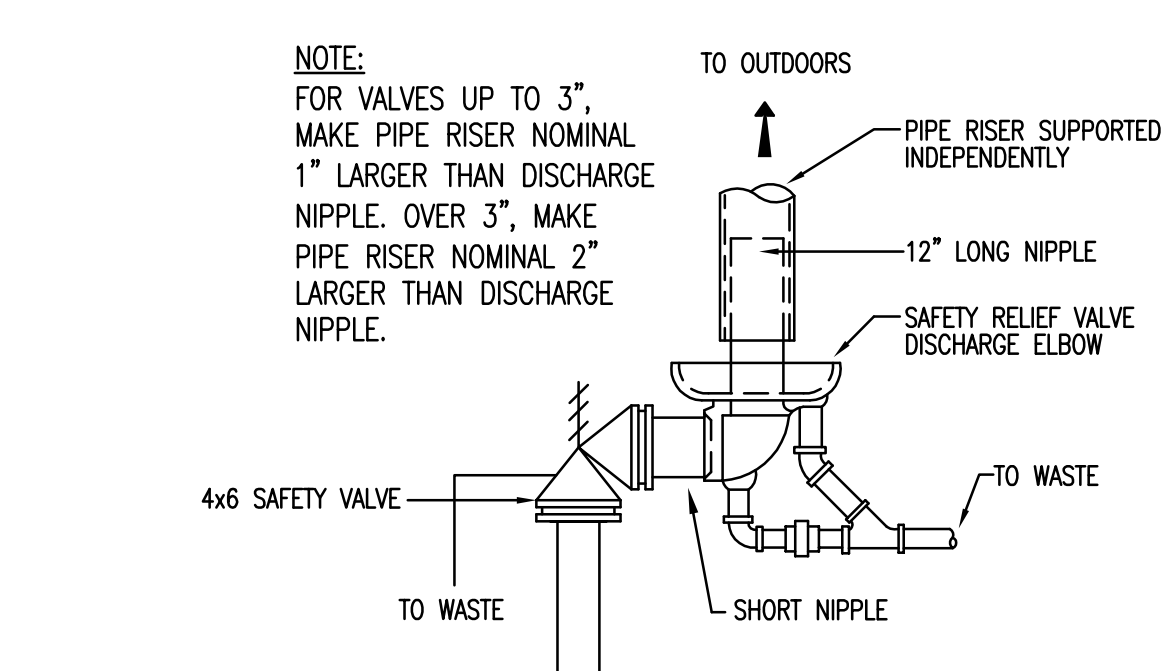


- NOTES:**
- ATTACH ROD TO STRUCTURE. PROVIDE 1/4" CLEARANCE BETWEEN STRUCTURE AND TOP OF ISOLATOR OR NUT.
 - PROVIDE TWO NUTS WITH 1/8" CLEARANCE BETWEEN BOTTOM OF ISOLATOR AND WASHER.
 - CABLE SHALL BE AT 45 DEGREES FROM UNIT AND THING IN OPPOSITE DIRECTIONS EVERY OTHER SET OF CABLES.
 - CABLE, ROD, SLEEVE, HANGER AND SPACING SHALL BE CALCULATED BY VIBRATION ISOLATOR VENDOR. BUT IN NO CASE SHALL BE LESS THAN MIN. SIZE SPECIFIED.
 - PROVIDE VIBRATION ISOLATOR WHEN SPECIFIED.
 - PROVIDE TWO NUTS ON INTERIOR OF UNIT.
 - EQUIPMENT MAY BE TRAPEZOID MOUNTED. TRAPEZOID SHALL BE SECURED TO UNIT.

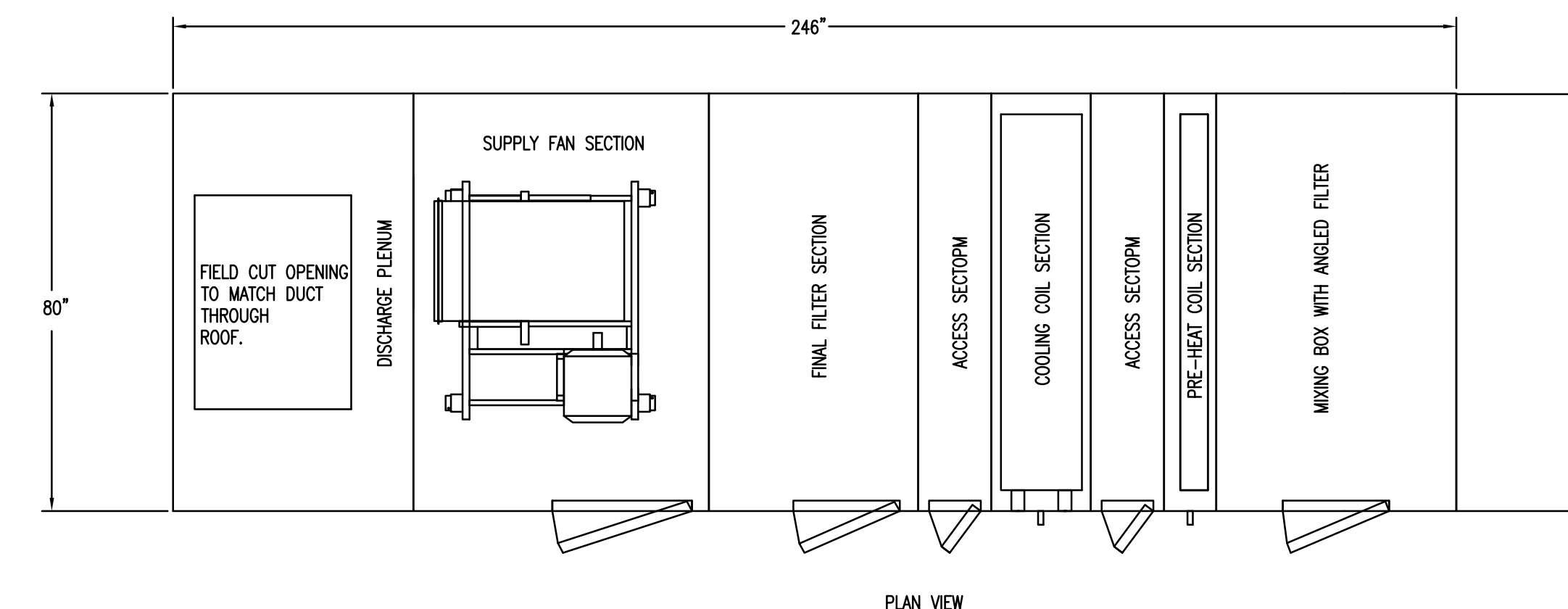
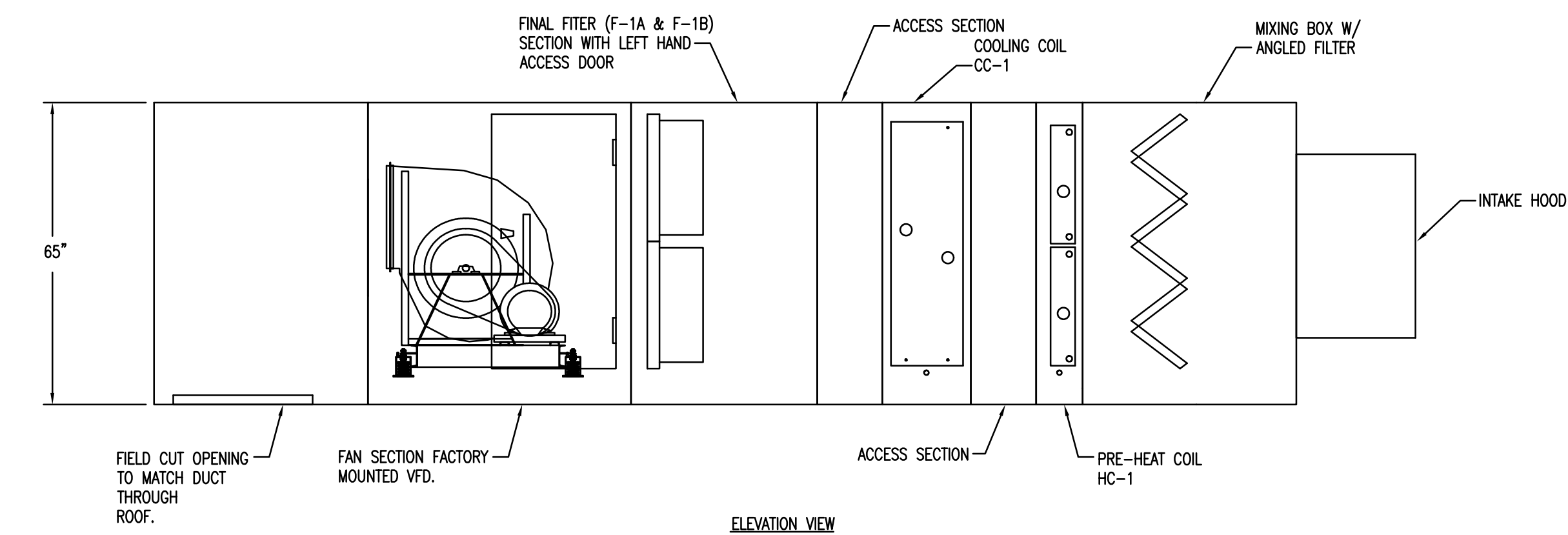
8 SUSPENDED EQUIPMENT SEISMIC DETAIL



9 F & T TRAP DETAIL

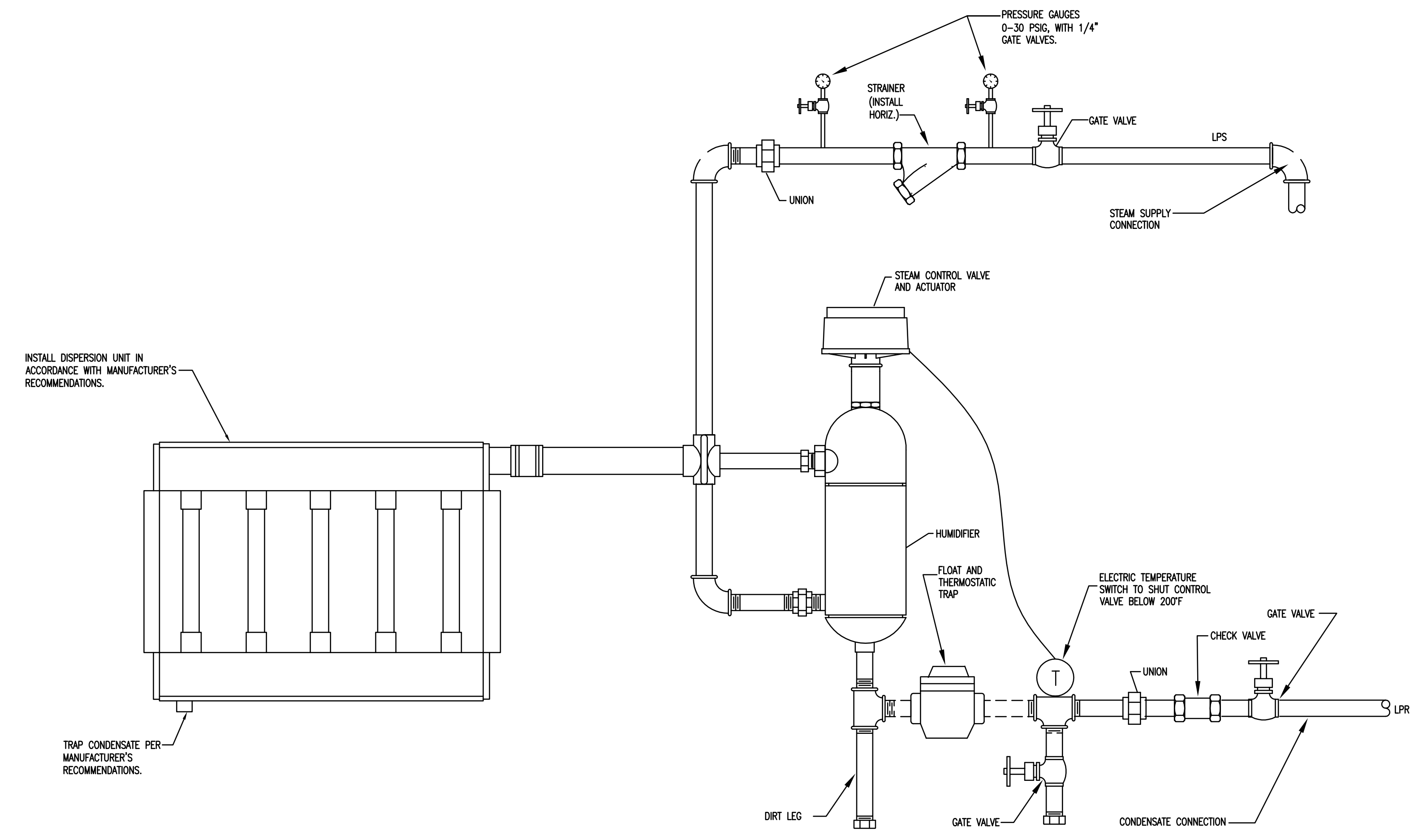
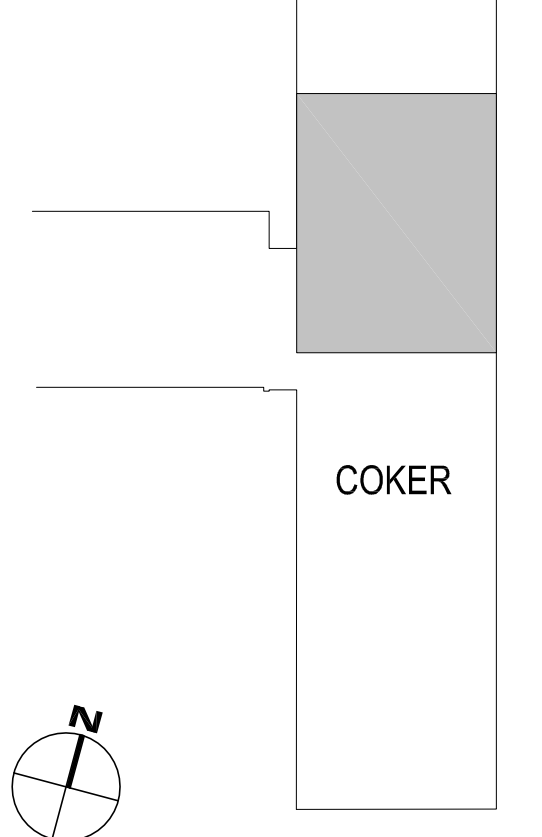


10 SAFETY STEAM RELIEF VALVE DETAIL

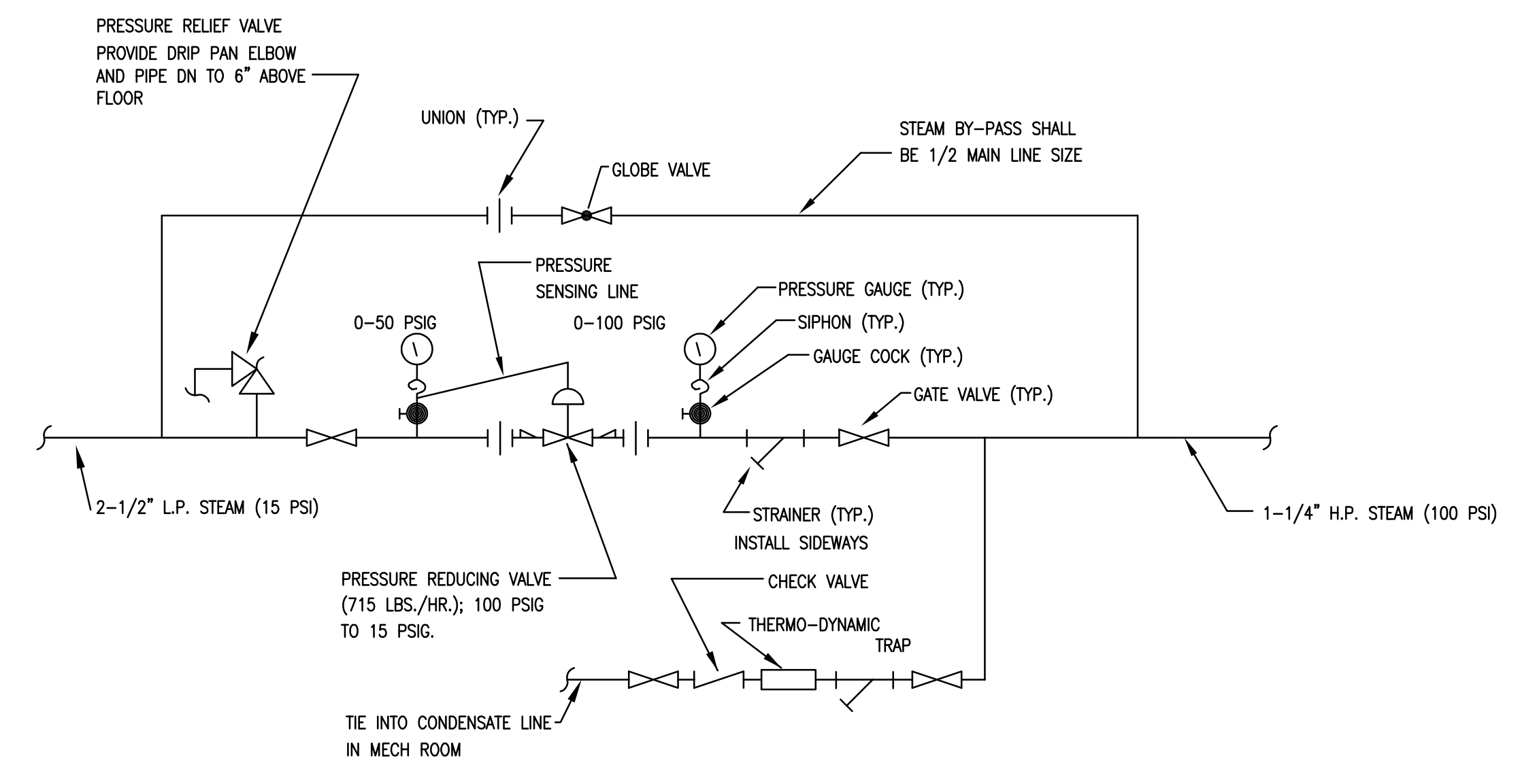


11 RTU-1 UNIT CONFIGURATION DETAIL

number	item	date



① STEAM HUMIDIFIER DETAIL
NTS



② STEAM PRESSURE REDUCING DETAIL
NTS

