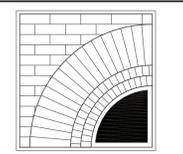


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DAVID P. LAW  
077492  
REGISTERED PROFESSIONAL ENGINEER

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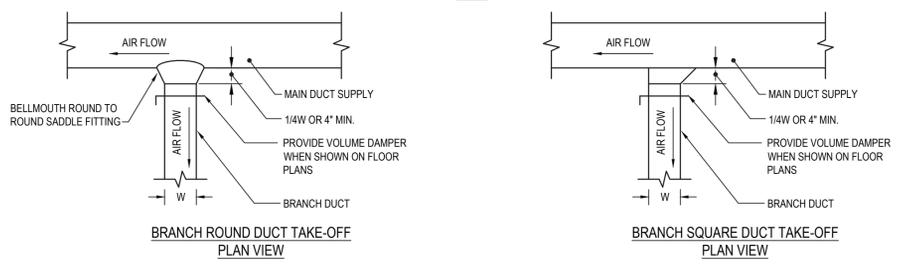
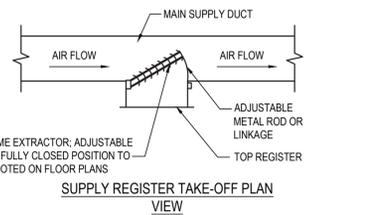
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JOB NO.: 23-46-06  
DATE: 05/20/25

**DETAILS**

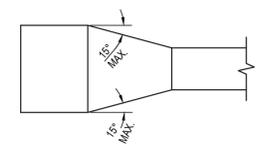
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**M002**

DWG. NO.



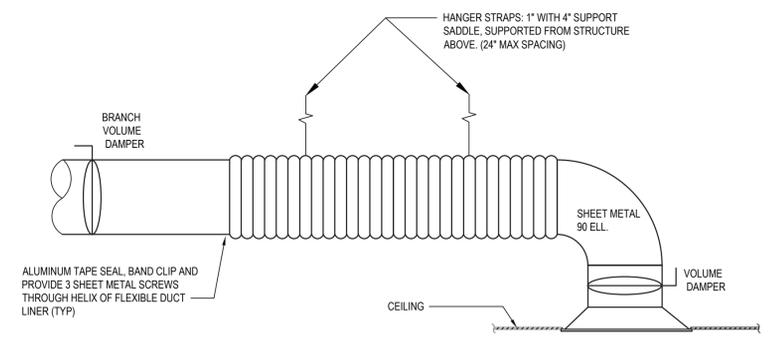
**1 SUPPLY DUCTWORK TAKE-OFF DETAILS**  
SCALE: NTS



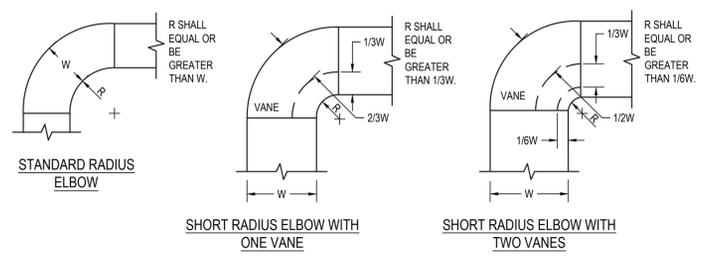
**TYPICAL DUCTWORK TRANSITION  
PLAN OR SIDE VIEW**

**NOTE:**  
1. UNLESS OTHERWISE INDICATED ON PLANS, MAXIMUM ANGLES SHOWN SHALL APPLY.

**3 DUCTWORK TRANSITION DETAILS**  
SCALE: NTS

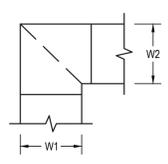


**5 REGISTER, DIFFUSER, GRILLE AND DUCT CONNECTION DETAIL**  
SCALE: NTS



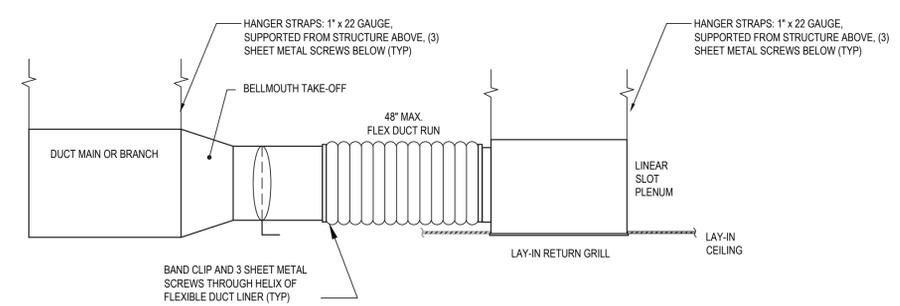
**NOTE:**  
1. THE INTERIOR SURFACE OF ALL RADIUS ELBOWS SHALL BE MADE ROUND.  
2. ALL STANDARD RADIUS ELBOWS SHOWN ON FLOOR PLANS MAY BE MADE SHORT RADIUS ELBOWS. ALL SHORT RADIUS ELBOWS SHALL HAVE VANES. VANES SHALL BE CONSTRUCTED, SUPPORTED AND FASTENED AS RECOMMENDED BY SMACNA.

**2 DUCTWORK RADIUS ELBOW DETAILS**  
SCALE: NTS



**NOTE:**  
1. ALL VANED ELBOWS SHALL BE CONSTRUCTED AND INSTALLED AS DETAILED BY SMACNA.  
2. WHEN W1 DOES NOT EQUAL W2, VANE SHALL BE SINGLE VANE TYPE REGARDLESS OF W DIMENSION.  
3. ALL SINGLE VANES SHALL HAVE A 2" RADIUS, 1 1/2" MAXIMUM SPACE BETWEEN VANES AND A 3/4" TRAILING EDGE.  
4. WHEN W EQUALS W2 AND W1 IS GREATER THAN 20" VANES SHALL BE DOUBLE VANE TYPE.

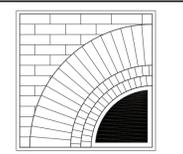
**4 SQUARE VANE ELBOW DETAIL**  
SCALE: NTS



**6 RETURN GRILLE CONNECTION DETAIL**  
SCALE: NTS

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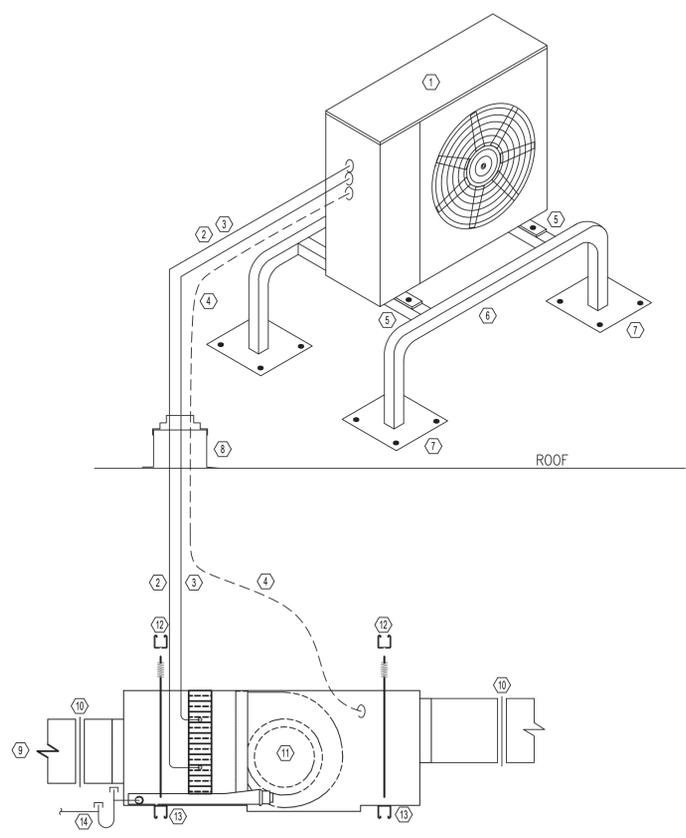
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**DETAILS**

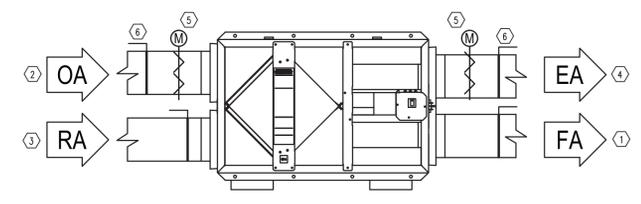
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**M003**  
DWG. NO.



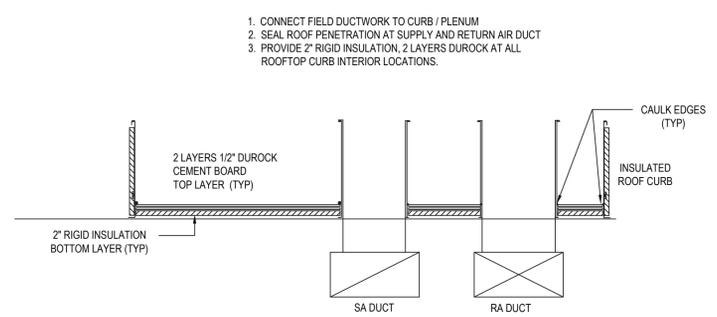
- ① HEAT PUMP CONDENSING UNIT
- ② REFRIGERANT LIQUID LINE (TYPE L DRAWN TEMPER COPPER WITH ELASTOMERIC INSULATION)
- ③ REFRIGERANT SUCTION LINE (TYPE L DRAWN TEMPER COPPER WITH ELASTOMERIC INSULATION)
- ④ CONTROL WIRING/POWER WIRING FROM CONDENSER TO FAN COIL.
- ⑤ CONDENSING UNIT ANCHOR POINT (ANCHOR TO EQUIPMENT STAND TYP 4)
- ⑥ HEAT PUMP STAND (MIN 16" AFG) . DIVERSITECH QSMS SERIES OR EQUAL
- ⑦ ANCHOR TO ROOF (TYP 16). PROVIDE ROOF PATCH AND SEAL. (WARRANTED ROOF)
- ⑧ PROVIDE ROOF PENETRATION AND WEATHERPROOF EDPM BOOT
- ⑨ SUPPLY DUCT
- ⑩ FLEX COLLAR
- ⑪ HEAT PUMP DUCTED FAN/COIL UNIT
- ⑫ 3/8" THREADED ROD SUPPORT TO STRUCTURE (BAR JOIST) WITH STRUT (TYP 4)
- ⑬ FAN/COIL SUPPORT STRUTS (TYP 2)
- ⑭ CONDENSATE PIPING / TRAP. PIPE TO EXTERIOR LOCATION (SEE DWG)  
PROVIDE CONDENSATE PUMP IF REQUIRED TO MEET MIN. DRAINAGE PITCH

**1 DUCTED HEAT PUMP SPLIT DETAIL**  
M003 SCALE: NONE



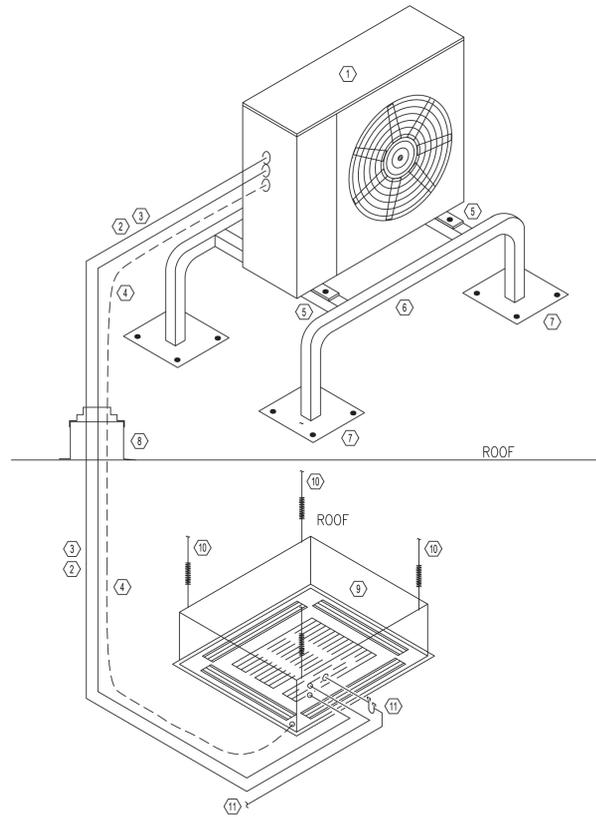
- ① FRESH AIR TO SPACE.
- ② OUTDOOR AIR INTAKE
- ③ RETURN FROM SPACE.
- ④ EXHAUST AIR TO EXTERIOR.
- ⑤ MOTORIZED SHUT-OFF DAMPER. INTERLOCK WITH ERV OPERATION. DAMPER N.O. UPON ERV ENABLE.
- ⑥ VOLUME DAMPER (TYP 4)

**2 ENERGY RECOVERY VENTILATOR DETAIL (TYP)**  
M003 SCALE: NONE



- 1. CONNECT FIELD DUCTWORK TO CURB / PLENUM
- 2. SEAL ROOF PENETRATION AT SUPPLY AND RETURN AIR DUCT
- 3. PROVIDE 2" RIGID INSULATION. 2 LAYERS DUROCK AT ALL ROOFTOP CURB INTERIOR LOCATIONS.

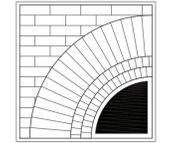
**3 ACCOUSTICAL ROOF CURB DETAIL (TYP)**  
M003 SCALE: NONE



- ① HEAT PUMP CONDENSING UNIT
- ② REFRIGERANT LIQUID LINE (TYPE L DRAWN TEMPER COPPER WITH ELASTOMERIC INSULATION)
- ③ REFRIGERANT SUCTION LINE (TYPE L DRAWN TEMPER COPPER WITH ELASTOMERIC INSULATION)
- ④ CONTROL WIRING/POWER WIRING FROM CONDENSER TO FAN COIL.
- ⑤ CONDENSING UNIT ANCHOR POINT (ANCHOR TO EQUIPMENT STAND TYP 4)
- ⑥ HEAT PUMP STAND (MIN 16" AFG) . DIVERSITECH QSMS SERIES OR EQUAL
- ⑦ ANCHOR TO ROOF (TYP 16). PROVIDE ROOF PATCH AND SEAL. (WARRANTED ROOF)
- ⑧ PROVIDE ROOF PENETRATION AND WEATHERPROOF EDPM BOOT
- ⑨ HEAT PUMP CASSETTE FAN/COIL
- ⑩ 3/8" THREADED ROD SUPPORT TO STRUCTURE (BAR JOIST) WITH STRUT (TYP 4)
- ⑪ CONDENSATE PIPING / TRAP. PIPE DRAIN TO EXTERIOR LOCATION.

**4 DUCTLESS (CASSETTE) HEAT PUMP SPLIT DETAIL**  
M003 SCALE: NONE

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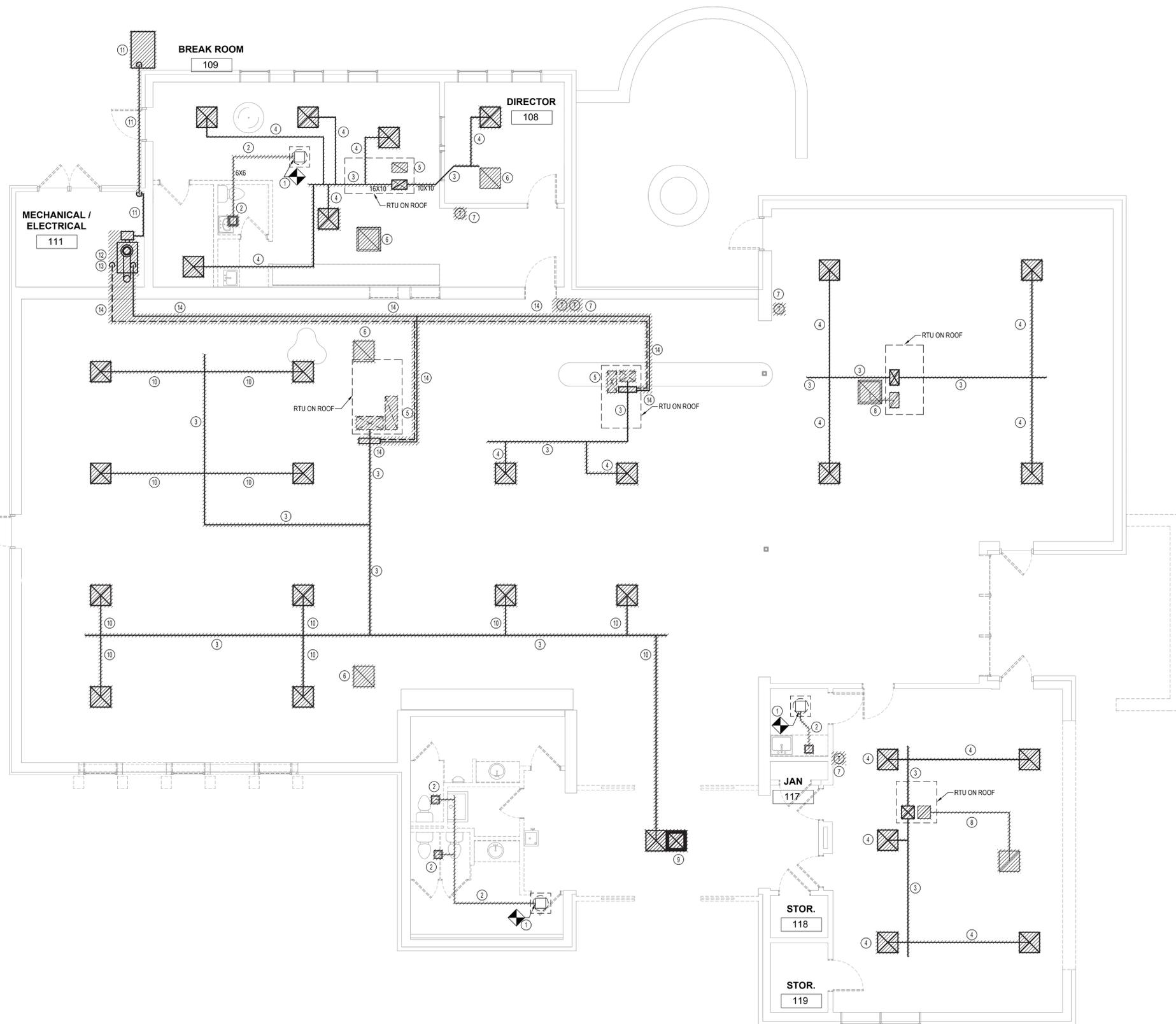
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SCALE: AS SHOWN  
JOB NO.: 23-46-06  
DATE: 05/20/25

**REMOVALS  
PLAN**

TITLE

**MR101**

DWG. NO.



**KEYED NOTES:**

- ① DISCONNECT POINT FOR EXHAUST DUCT WORK. DUCT RISER TO FAN ASSEMBLY ON ROOF REMAINS IN PLACE.
- ② REMOVE EXHAUST DUCTWORK, INSULATION, SUPPORTS, AND REGISTER GRILL.
- ③ REMOVE SUPPLY MAIN DUCT TRUNK, SUPPORTS, AND INSULATION.
- ④ REMOVE SUPPLY DUCT BRANCH DUCT, SUPPORTS, INSULATION, FLEX DUCT AND DIFFUSERS.
- ⑤ REMOVE RETURN DUCT RISER, SUPPORTS AND INSULATION UP TO ROOFTOP UNIT CURB.
- ⑥ REMOVE RETURN REGISTER AND SUPPORTS.
- ⑦ REMOVE THERMOSTAT AND CONTROL WIRING TO ROOF TOP UNIT.
- ⑧ REMOVE RETURN REGISTER, RETURN DUCT WORK, SUPPORTS, INSULATION AND DUCT RISER TO ROOF TOP UNIT.
- ⑨ REMOVE CEILING MOUNTED ELECTRIC CABINET HEATER.
- ⑩ REMOVE SUPPLY DUCT BRANCH TAKEOFF AND DAMPER, DUCT, INSULATION AND SUPPORTS. PATCH AND SEAL OPENINGS IN MAIN SUPPLY TRUNK NOT REUSED IN FUTURE INSTALLATION. SEE M-101
- ⑪ REMOVE EXTERIOR ROTH DOUBLE WALL 275 GALLON OIL TANK. REMOVE OIL AS PER EPA GUIDELINES. (APPROX 100 GALLONS). REMOVE OIL PIPING AND SUPPORTS FROM EXTERIOR OIL TANK TO OIL BURNER IN MECHANICAL ROOM.
- ⑫ REMOVE OIL BOILER AND BURNER. REMOVE HWS AND HWR PIPING, PIPE INSULATION AND SUPPORTS FROM BOILER THRU WALL TO LIBRARY SPACE. REMOVE HEATING SYSTEM PUMPS AND HYDRONIC ACCESSORIES.
- ⑬ REMOVE BOILER BREECHING TO CHIMNEY. REMOVE CHIMNEY UP THRU ROOF. SEE MR-102 FOR ROOF REMOVALS AND PATCHING.
- ⑭ REMOVE HWS AND HWR PIPING AND INSULATION. REMOVE PIPING SUPPORTS. REMOVE ZONE CONTROL VALVES, AND HOT WATER COIL. REMOVE HYDRONIC ACCESSORIES.

① REMOVALS PLAN  
3/16" = 1'-0"

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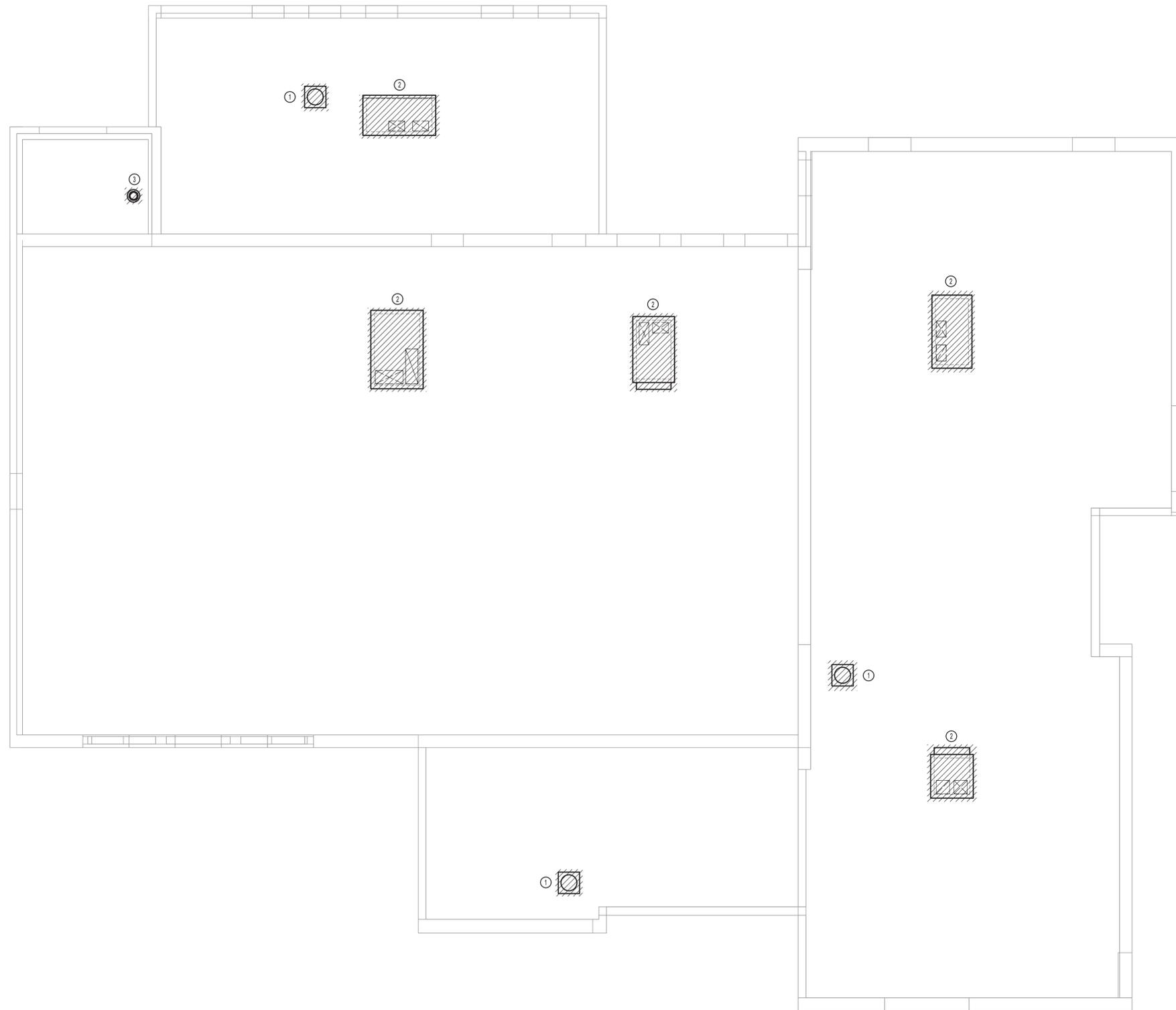
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**ROOF  
REMOVALS  
PLAN**

TITLE

**MR102**

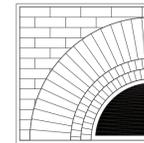
DWG. NO.



KEYED NOTES:

- ① REMOVE FAN ASSEMBLY. FAN CURB IS TO REMAIN IN PLACE. PROVIDE TEMPORARY WEATHERPROOFING OF OPENING. SEE M-102 FOR FAN REPLACEMENT.
- ② REMOVE ROOF TOP UNIT AND DISCARD. RECOVER REFRIGERANT AS PER EPA GUIDELINES. REMOVE CURB. PROVIDE TEMPORARY WEATHERPROOFING OF OPENING. SEE M-102 FOR ROOF TOP UNIT REPLACEMENT. SEE ARCHITECTURAL DRAWINGS FOR WARRANTED ROOF PATCH AND SEAL DETAILS.
- ③ REMOVE OIL CHIMNEY SERVING OIL FIRED BOILER. SEE ARCHITECTURAL DRAWINGS FOR WARRANTED ROOF PATCH AND SEAL DETAILS.

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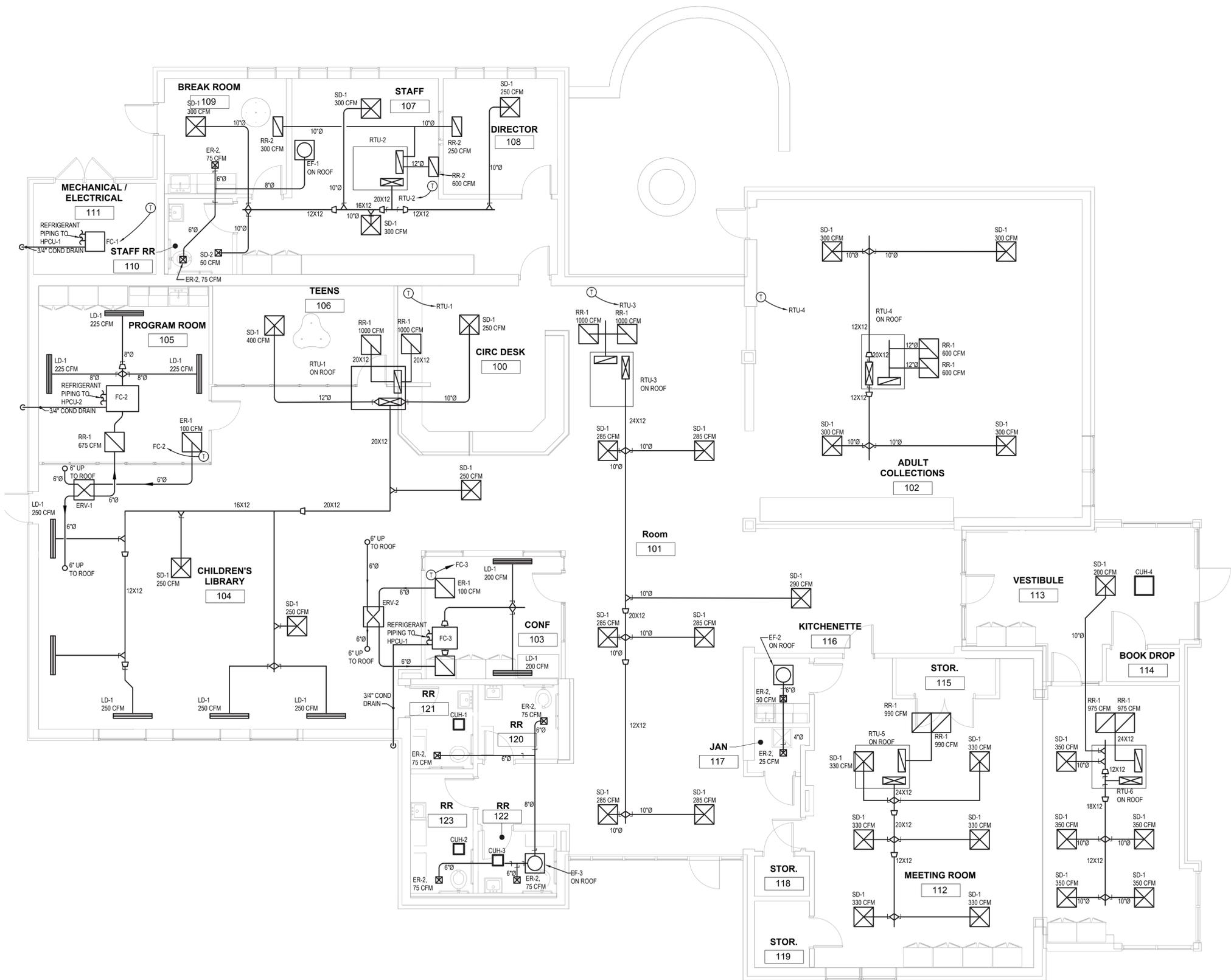
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**HVAC  
INSTALLATION  
PLAN**

TITLE

**M101**

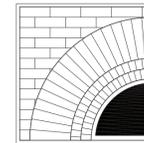
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1 HVAC INSTALLATION PLAN  
3/16" = 1'-0"

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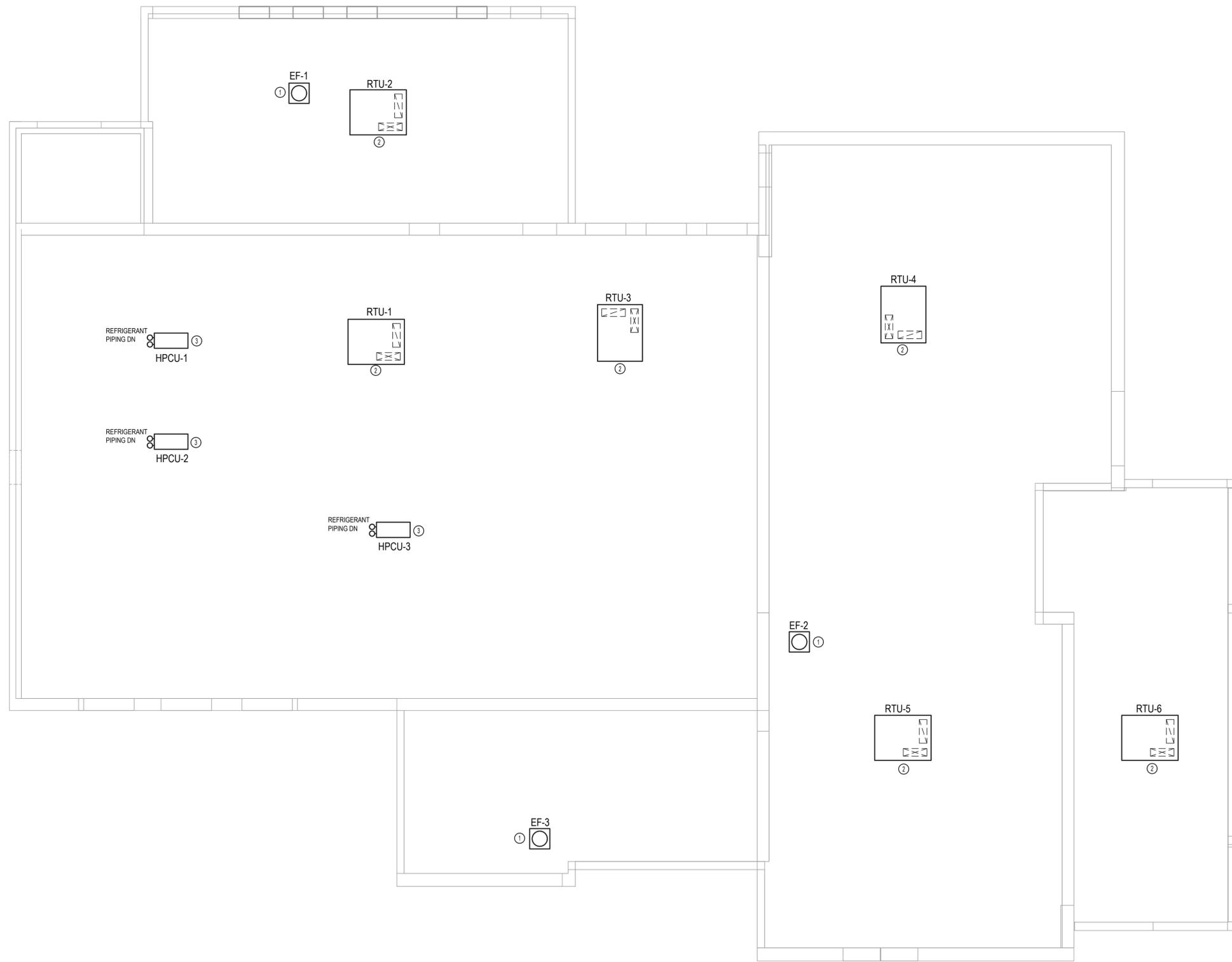
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**HVAC ROOF  
INSTALLATION  
PLAN**

TITLE

**M102**

DWG. NO.



KEYED NOTES:

- ① INSTALL FAN ON EXISTING CURB. PROVIDE CURB ADAPTER IF REQUIRED. SEAL AND WEATHERPROOF CONNECTION POINT
- ② INSTALL ROOF CURB AND ROOF TOP UNIT AT LOCATION SHOWN. COORDINATE WITH ARCHITECT. MECHANICAL AND STRUCTURAL ENGINEERS FOR FINAL LOCATION AND ORIENTATION. EXISTING ROOF IS WARRANTED.
- ③ INSTALL HPCU'S AT LOCATION SHOWN. SEE INSTALLATION DETAIL 1/M003. COORDINATE ROOF PENETRATIONS AND SUPPORT STAND ANCHORING AND SEALING WITH ARCHITECT AND GC.