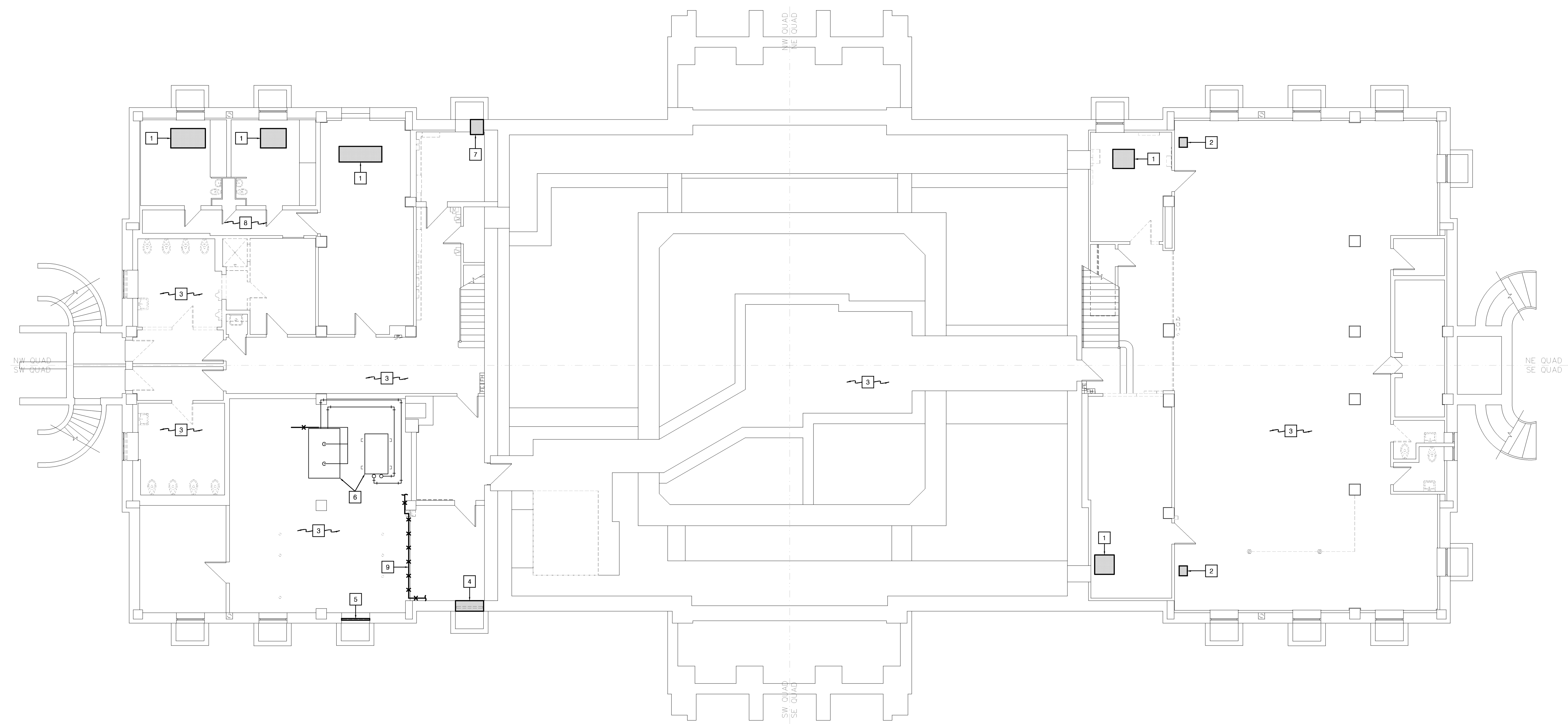


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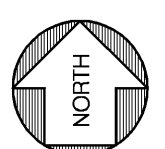
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 TEL. (816) 221-1411  
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### FLOOR PLAN NOTES

- 1 REMOVE ALL EXISTING CEILING MOUNTED RADIATOR UNITS, HANGERS, BRACKETS, ETC IN THEIR ENTIRETY.
- 2 REMOVE CEILING MOUNTED HEATER, HANGERS, BRACKETS, ETC.
- 3 REMOVE ANY REMAINING HANGERS LEFT FROM THEIR REMOVAL DURING A PRIOR SCOPE OF WORK.
- 4 REMOVE EXISTING COMBUSTION LOUVER, DAMPER AND CONTROL WIRING. CLEAN AND SAVE FOR INSTALLATION IN NEW LOCATION. RE: NEW WORK PLAN
- 5 REMOVE WINDOW AND PREPARE OPENING FOR INSTALLATION OF SALVAGED LOUVER. SALVAGE WINDOW IN ITS ENTIRETY FOR INSTALLATION AT EXISTING LOUVERS CURRENT LOCATION.
- 6 EXISTING STEAM BOILER AND CONDENSATE RECEIVER TO REMAIN.
- 7 REMOVE VENTILATION DUCT. LOUVER TO REMAIN.
- 8 REMOVE REMAINING REFRIGERANT AND CONDENSATE PIPING.
- 9 REMOVE REMAINING CONDENSATE RETURN LINES ABOVE AND BELOW BACK TO CONDENSATE RECEIVER.



**LOWER LEVEL DEMOLITION FLOOR PLAN-MECHANICAL**  
 SCALE: 1/8"=1'-0"



DWG FILE: P:\0020\048\_Jackson County Historic Court House\Drawings\048\MD 100.dwg USER: jwb8 PLOT DATE/TIME: 10/18/2012 2:43pm

# HISTORIC TRUMAN COURTHOUSE

## INTERIOR RENOVATION

102 NORTH MAIN STREET, INDEPENDENCE, MISSOURI 64050

ISSUED FOR CONSTRUCTION

PROJECT NO.	DATE	10-19-2012
DRAWN BY	IDB/SMP	
CHECKED BY	DWE	
CHECKED BY	LDR	
REVISED DATE	DESCRIPTION	

SHEET TITLE & NUMBER

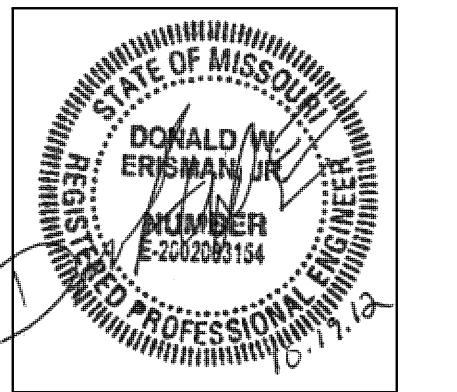
LOWER LEVEL DEMO FLOOR PLAN MECH.

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MD-100

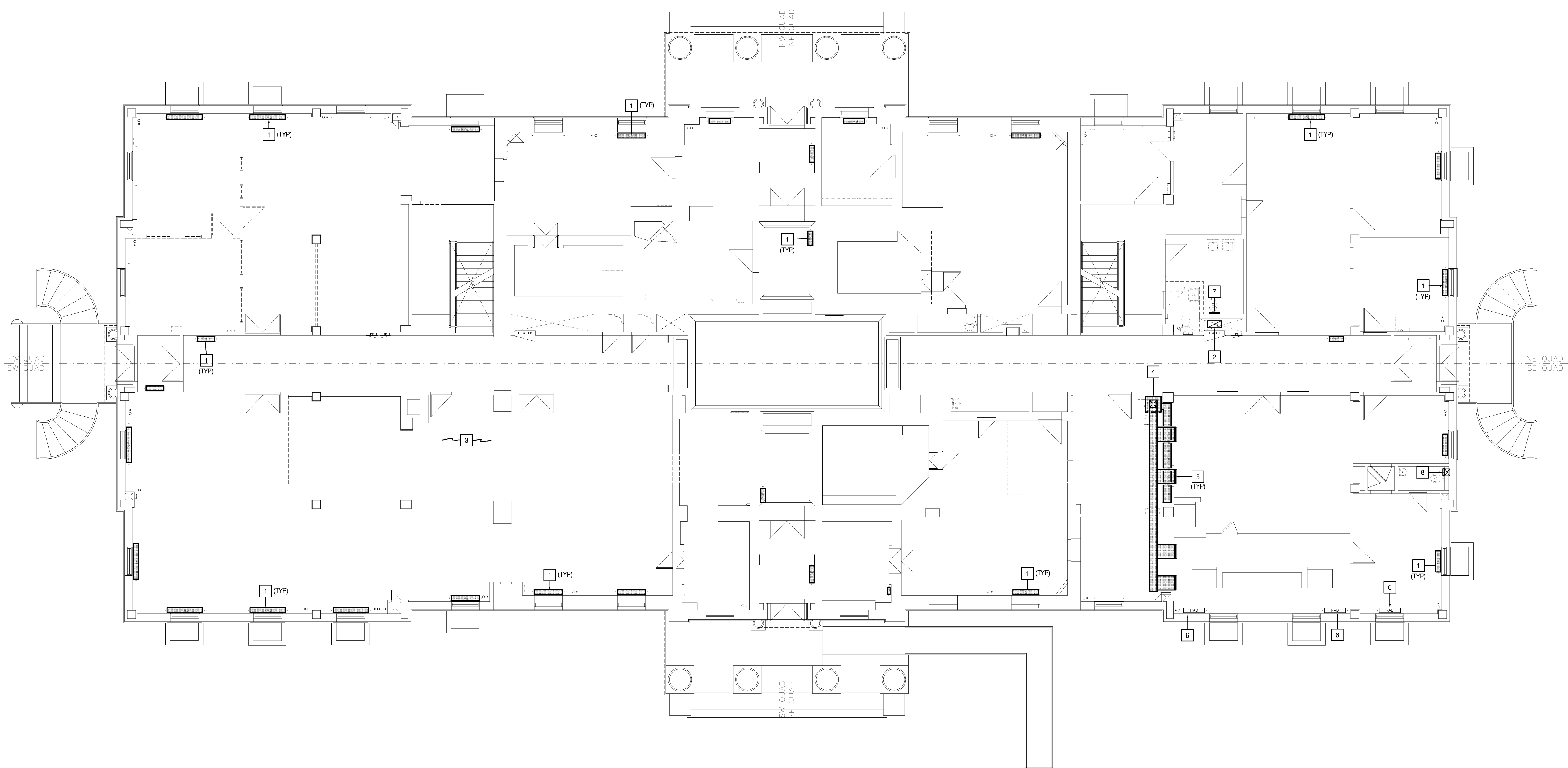


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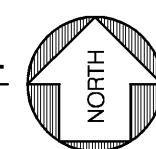
**LANKFORD + associates**  
 1730 WALNUT STREET  
 KANSAS CITY, MISSOURI 64108  
 TEL. (816) 221-1411  
 FAX. (816) 221-1429

### FLOOR PLAN NOTES

- 1 REMOVE ALL RADIATOR UNITS IN THEIR ENTIRETY. REMOVE ANY REMAINING PIPE, HANGERS, AND ACCESSORIES.
- 2 EXISTING VENTILATION DUCTWORK TO REMAIN.
- 3 COMPLETELY REMOVE ALL GRILLES, DIFFUSERS, AND ANY REMAINING DUCTWORK STRAPS AND HANGERS LEFT FROM PREVIOUS DEMOLITION SCOPE.
- 4 COMPLETELY REMOVE EXISTING AIR HANDLING UNIT, DUCTWORK, REFRIGERANT PIPING AND CONTROLS.
- 5 CAREFULLY REMOVE WALL DIFFUSERS. SPECIAL CARE SHOULD BE TAKEN TO PRESERVE FURNISHINGS, WALLS, ETC. EXISTING RETURN AIR LOUVER TO REMAIN.
- 6 EXISTING RADIATOR AND PIPING TO REMAIN FOR AESTHETIC PURPOSES.
- 7 REMOVE EXISTING RESTROOM EXHAUST GRILLE. PREPARE OPENING FOR INSTALLATION OF NEW.
- 8 REMOVE WALL MOUNTED EXHAUST FAN. PREPARE OPENING FOR INSTALLATION OF NEW.



**FIRST FLOOR DEMOLITION PLAN-MECHANICAL**  
 SCALE: 1/8" = 1'-0"



# HISTORIC TRUMAN COURTHOUSE

## INTERIOR RENOVATION

102 NORTH MAIN STREET, INDEPENDENCE, MISSOURI 64050

ISSUED FOR  
 CONSTRUCTION

PROJECT NO.	
DATE	10-19-2012
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CHECKED BY	LDK
REVISED DATE	DESCRIPTION

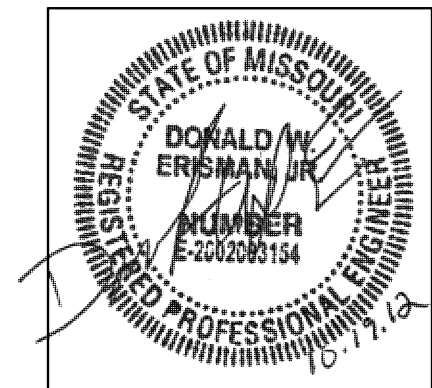
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FIRST FLOOR DEMO  
 PLAN MECHANICAL

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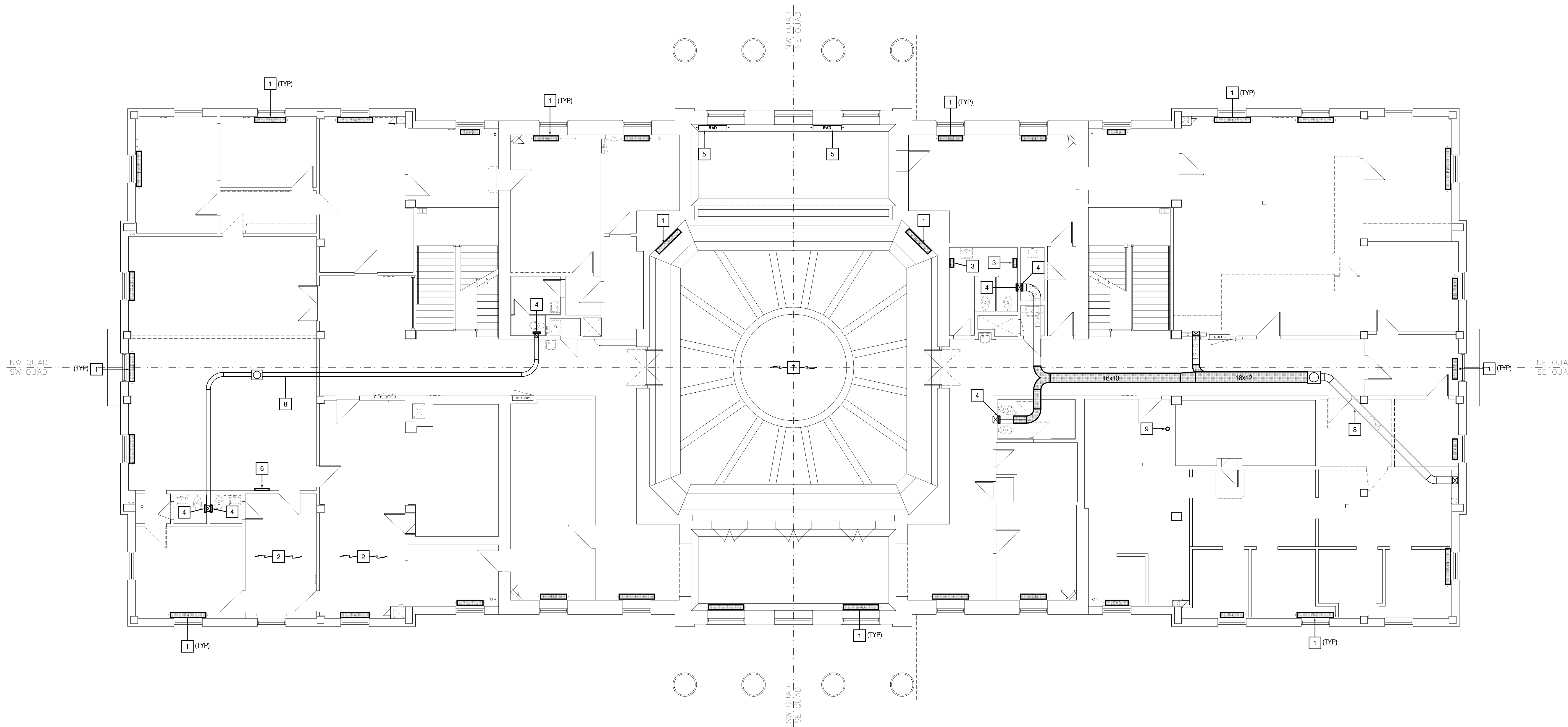


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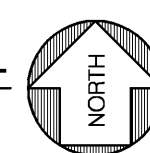
### FLOOR PLAN NOTES

- 1 REMOVE EXISTING RADIATOR UNITS IN THEIR ENTIRETY. REMOVE ANY REMAINING PIPE, HANGERS, AND ACCESSORIES.
- 2 REMOVE ANY REMAINING HANGERS AND STRAPPING.
- 3 REMOVE EXISTING WALL MOUNTED HEATERS AND RELINQUISH TO OWNER.
- 4 REMOVE EXISTING RESTROOM EXHAUST GRILLE. PREPARE OPENING FOR INSTALLATION OF NEW.
- 5 EXISTING RADIATOR AND PIPING TO REMAIN FOR AESTHETIC PURPOSES. DISCONNECT PIPING IN FLOOR BELOW.
- 6 REMOVE SUPPLY DIFFUSER AND RETURN GRILLE ABOVE AND BELOW.
- 7 HISTORICAL AREA, SPECIAL CARE SHOULD BE TAKEN TO PRESERVE WALLS, FURNISHINGS, WOODWORK, ETC.
- 8 EXISTING VENTILATION DUCTWORK TO REMAIN. RE: NEW WORK PLAN
- 9 REMOVE REMAINING LINESET, THERMOSTAT WIRE AND HANGER BRACKETS.



## SECOND FLOOR DEMOLITION PLAN-MECHANICAL

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



# HISTORIC TRUMAN COURTHOUSE

## INTERIOR RENOVATION

102 NORTH MAIN STREET, INDEPENDENCE, MISSOURI 64050

ISSUED FOR CONSTRUCTION

PROJECT NO.	10-19-2012
DATE	JDB/SMP
DRAWN BY	DWE
CHECKED BY	LDR
REVISION DATE	DESCRIPTION

SHEET TITLE & NUMBER

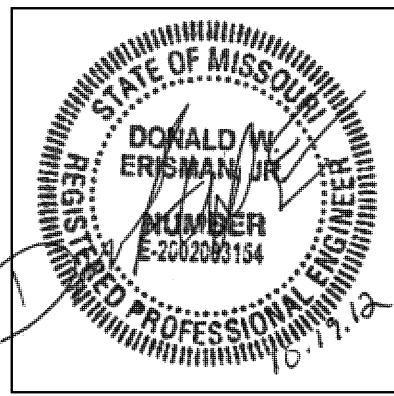
SECOND FLOOR DEMO PLAN MECHANICAL

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MD-102

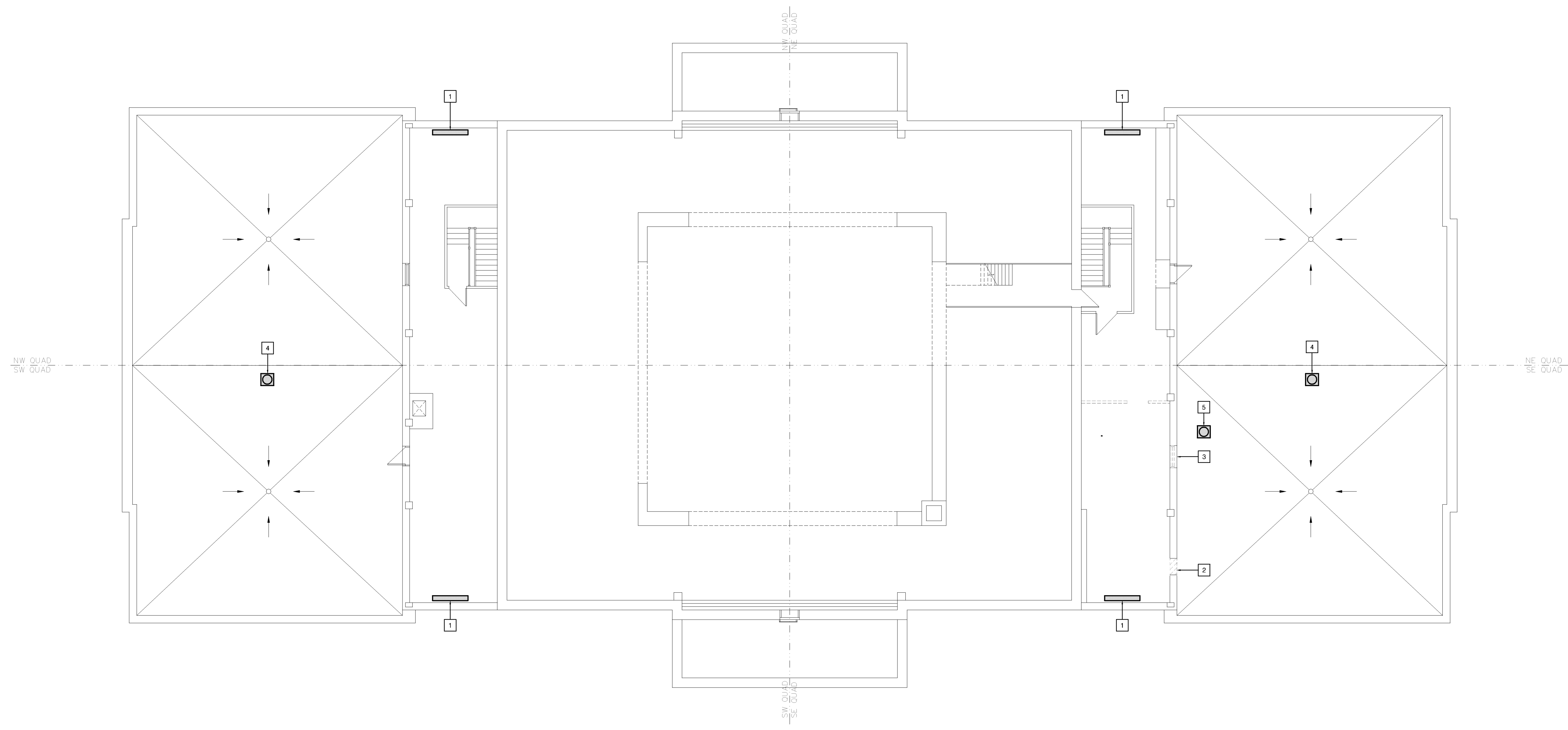


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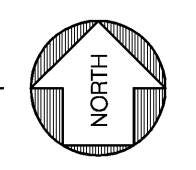
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**FLOOR PLAN NOTES**

- 1 REMOVE EXISTING RADIATOR UNITS IN THEIR ENTIRETY. REMOVE ANY REMAINING PIPE, HANGERS, AND ACCESSORIES.
- 2 SAW CUT OPENING IN PREPARATION OF EXHAUST AIR LOUVER INSTALLATION. RE: NEW WORK PLAN
- 3 REMOVE EXISTING WINDOW AND PREPARE AREA FOR INSTALLATION OF NEW OUTSIDE AIR LOUVER. RE: NEW WORK PLAN
- 4 REMOVE ROOF VENTILATOR. LEAVE VENTILATOR CURB IN PLACE FOR INSTALLATION OF NEW EXHAUST FAN.
- 5 REMOVE CONDENSING UNIT, SUPPORTS AND LINE SET COMPLETELY.



**ATTIC/ROOF DEMOLITION PLAN-MECHANICAL**  
 SCALE: 1/8"=1'-0"



**HISTORIC TRUMAN COURTHOUSE**  
**INTERIOR RENOVATION**  
 102 NORTH MAIN STREET, INDEPENDENCE, MISSOURI 64050

ISSUED FOR CONSTRUCTION

PROJECT NO.	
DATE	10-19-2012
DRAWN BY	JD/SMP
CHECKED BY	DWE
CHECKED BY	LDR
REVISED DATE	DESCRIPTION

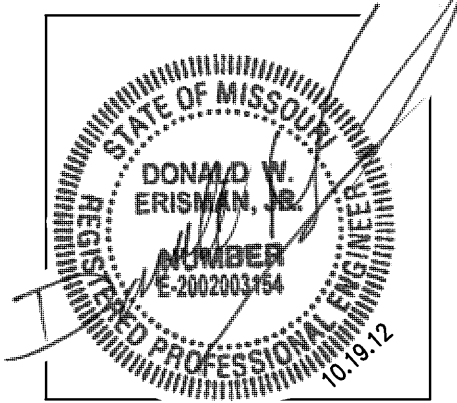
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**MD-103**

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# HISTORIC TRUMAN COURTHOUSE

## INTERIOR RENOVATION

102 NORTH MAIN STREET, INDEPENDENCE, MISSOURI 64050

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PROJECT NO.	10-19-2012
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10-26-12	ADDENDUM #1
SHEET TITLE & NUMBER	

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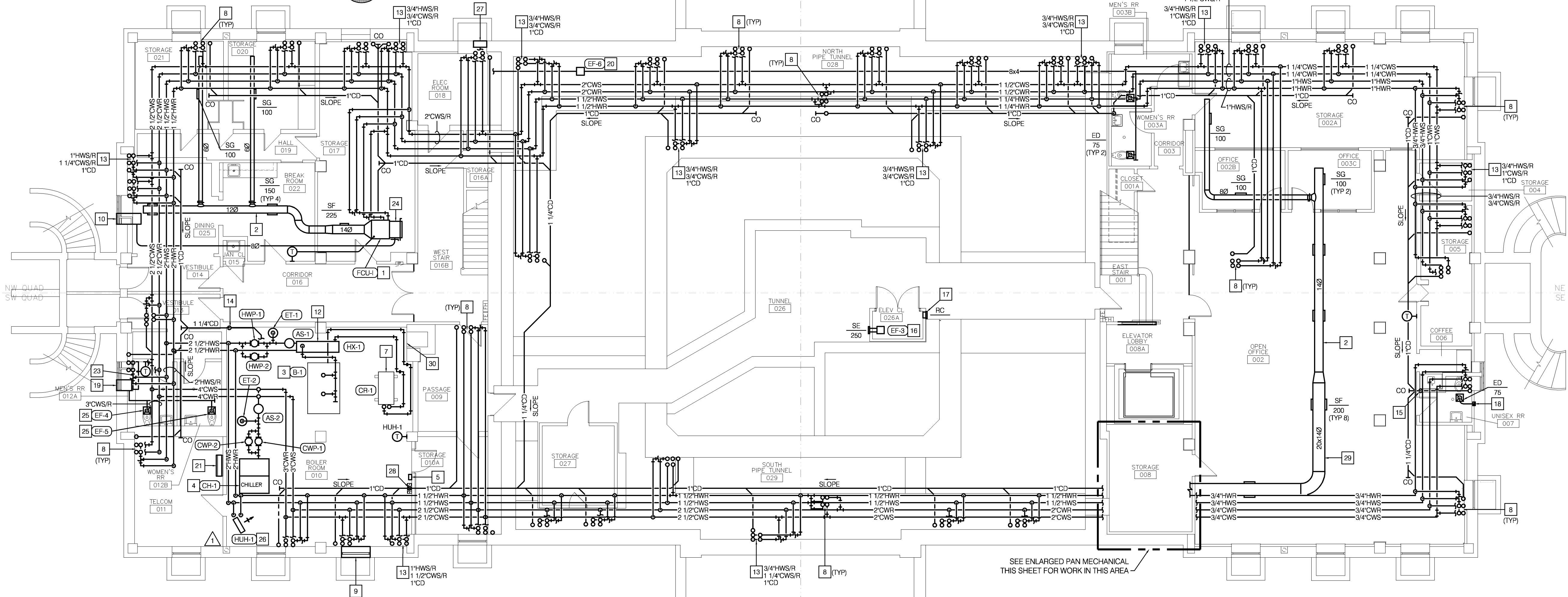
M-100

### FLOOR PLAN NOTES

- 1 INSTALL NEW HORIZONTAL, CEILING MOUNTED FAN COIL UNIT. PROVIDE WITH SPRING VIBRATION ISOLATION.
- 2 INSTALL DUCTWORK USING CABLE AND GRIPPLE FASTENERS. INSTALL DIFFUSERS AT 22° ANGLE.
- 3 PERFORM FULL CLEANING, DESCALING, AND BLOWDOWN MAINTENANCE TO EXISTING STEAM BOILER.
- 4 INSTALL CHILLER MODULES ON FACTORY RAIL SYSTEM AND VIBRATION ISOLATION. INSTALL ON NEW 4" POURED CONCRETE HOUSEKEEPING PAD.
- 5 INSTALL REFRIGERANT MONITORING SYSTEM.
- 6 10X10 OUTSIDE AIR DUCTWORK FROM ABOVE. ROUTE ALONG CEILING AS HIGH AS POSSIBLE.
- 7 TEMPORARILY DISCONNECT EXISTING CONDENSATE RECEIVER. PERFORM ROUTINE MAINTENANCE PER MANUFACTURERS RECOMMENDATIONS. REINSTALL TANK ON NEW 4" HOUSE KEEPING PAD. RECONFIGURE EXISTING CHEMICAL TREATMENT SYSTEM AS FIELD CONDITIONS REQUIRE.
- 8 ROUTE 3/4" HWS/HWR, 3/4" CWS/CWR, AND 1" CD PIPING THRU FLOOR TO UNIT ABOVE. RE: FLOOR MOUNTED FAN COIL UNIT DETAIL.
- 9 INSTALL SALVAGED COMBUSTION LOUVER AND DAMPER. RE: COMBUSTION AIR OPENING DETAIL. RECONNECT CONTROL WIRING TO BOILER CONTROL PANEL.
- 10 PROVIDE AND INSTALL GREENHECK MODEL ESD-403 10"x16" LOUVER. PROVIDE FIELD FABRICATED INSULATED SHEET METAL PLENUM AND CONNECT 10"x16" OUTSIDE AIR DUCT AS SHOWN. BALANCE TO 100 CFM.
- 11 FIELD FABRICATED RETURN PLENUM. ROUTE OUTSIDE AIR DUCT BETWEEN FILTER AND FAN COIL UNIT. BALANCE. OUTSIDE AIR TO FLOW INDICATED ON SCHEDULE.
- 12 PROVIDE AND INSTALL NEW STEAM-TO-WATER HEAT EXCHANGER.
- 13 ROUTE PIPING THRU TO FLOOR INTO EXISTING PIPE CHASE ABOVE. CLEAR EXISTING CHASE OF DEBRIS AS NEEDED. RE: FIRST FLOOR PLAN FOR PIPE CONTINUATION.
- 14 ROUTE 1 1/4" CONDENSATE PIPING DOWN FACE OF WALL AND INDIRECT WASTE TO ADJACENT FLOOR DRAIN.
- 15 PROVIDE NEW 1 1/2" HUB DRAIN WITH AIRGAP FITTING AND TRAP. CONNECT TO EXISTING WASTE RISER.
- 16 MOUNT EXHAUST FAN FROM STRUCTURE USING VIBRATION ISOLATION. ROUTE DUCT THRU WALL TO ADJACENT TUNNEL SPACE. PROVIDE AND INSTALL A RATE-OF-RISE THERMOSTAT.
- 17 PROVIDE 10X10 THRU WALL SLEEVE DAYTON MODEL 4PU48.
- 18 ROUTE 4"x6" DUCT UP INTO FURRED OUT WALL ABOVE. RE: FIRST FLOOR PLAN FOR CONTINUATION.
- 19 PROVIDE AND INSTALL GREENHECK MODEL ESD-403 12"x16" LOUVER. PROVIDE FIELD FABRICATED INSULATED SHEET METAL PLENUM AND CONNECT 6"x6" EXHAUST AIR DUCT AS SHOWN.
- 20 INSTALL EXHAUST FAN IN PIPE TUNNEL. PENETRATE WALL AND CONTINUE EXHAUST DUCT INTO ELECTRICAL ROOM. PROVIDE FLEXIBLE CONNECTION AT UNIT.
- 21 INSTALL INDOOR CASSETTE ON WALL IN AREA INDICATED. ROUTE REFRIGERANT PIPING UP TO ASSOCIATED CONDENSING UNIT ON ROOF. PUMP CONDENSATE TO NEAREST INDIRECT WASTE LINE ABOVE CEILING OF RESTROOM.
- 22 PENETRATE FLOOR AND ROUTE 16x10 SUPPLY AIR DUCTWORK TO ELEVATOR SHAFT ABOVE.
- 23 PROVIDE AND INSTALL BEACON MORRIS MODEL STC14363-03 FLOOR MOUNTED FIN TUBE HEATER WITH COVER.
- 24 FIELD FABRICATED RETURN AIR PLENUM. PROVIDE DAMPER WHERE INDICATED AND CONNECT OUTSIDE AIR DUCT AS SHOWN.
- 25 INSTALL CEILING MOUNTED EXHAUST FAN.
- 26 INSTALL CEILING MOUNTED UNIT HEATER 8" AFF MAINTAIN MANUFACTURERS RECOMMENDED CLEARANCES.
- 27 CONNECT EXHAUST DUCT TO EXISTING LOUVER. PROVIDE INSULATED SHEET METAL PANEL AND PATCH REMAINING UNUSED LOUVER AREA AND CLEAN TO LIKE NEW CONDITION.
- 28 ROUTE CONDENSATE DOWN WALL AND INDIRECT WASTE TO EXISTING TRENCH DRAIN.
- 29 PROVIDE DUCTWORK WITH PAINTGRIP FINISH.
- 30 SEAL EXISTING WATER FLUE CONNECTION AIR TIGHT WITH SHEETMETAL PATCH.

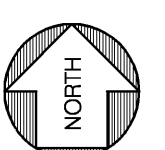
### ENLARGED FLOOR PLAN-MECHANICAL

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

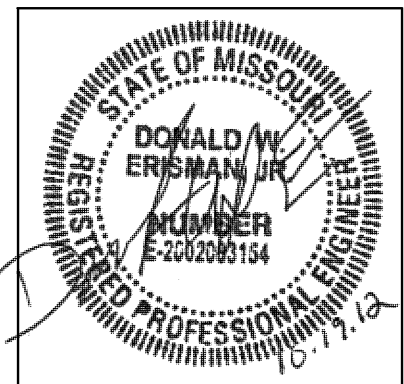


### LOWER LEVEL FLOOR PLAN-MECHANICAL

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



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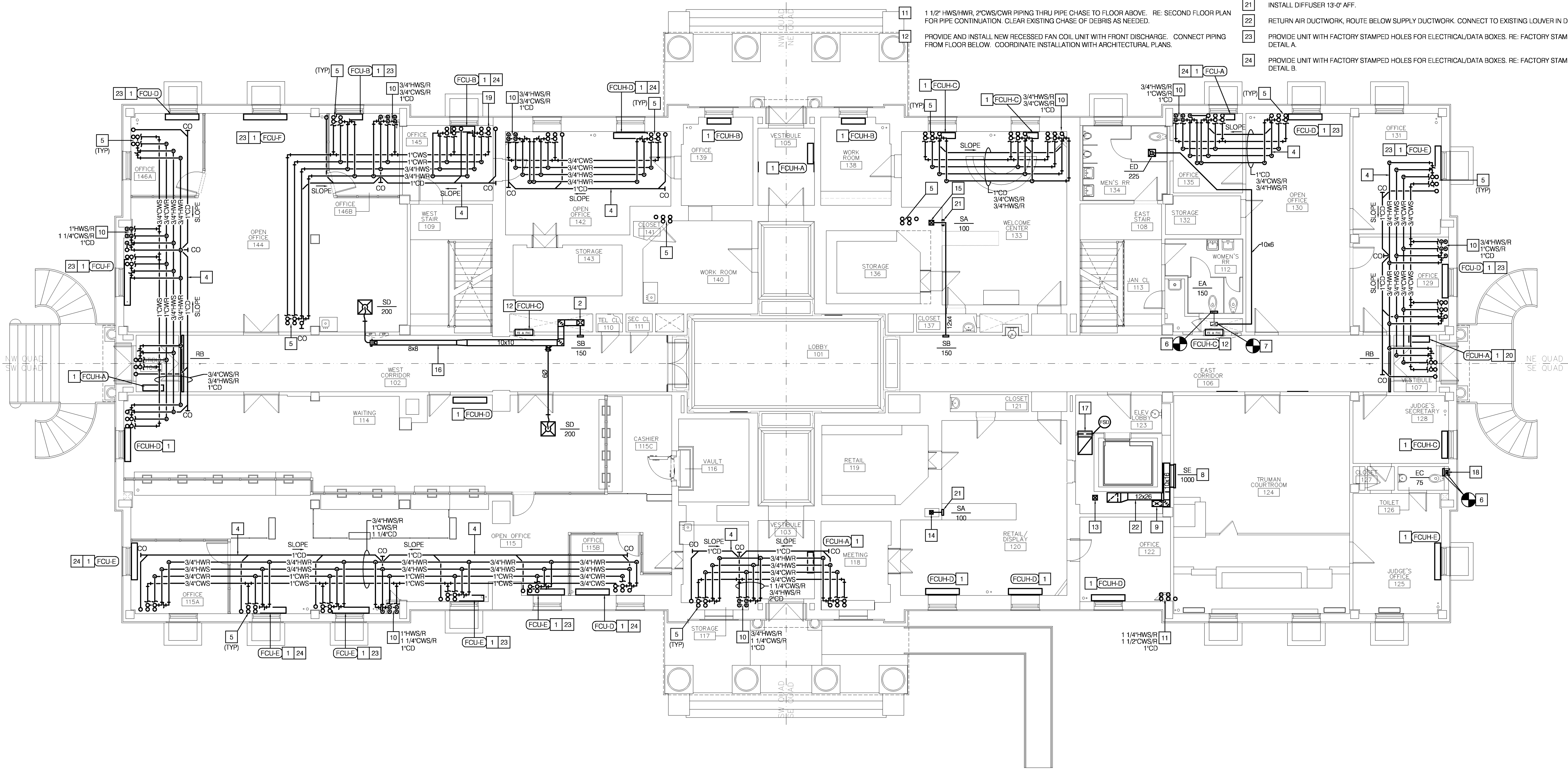


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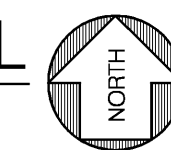
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 1730 WALNUT STREET  
 KANSAS CITY, MISSOURI 64108  
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### FLOOR PLAN NOTES

- 1 INSTALL NEW FLOOR MOUNTED FAN COIL UNIT. CONNECT PIPING FROM FLOOR BELOW.
- 2 12X10 OUTSIDE AIR DUCT FROM ABOVE.
- 3 PENETRATE WALL AND INSTALL DIFFUSER 1'-0" BELOW EXISTING CEILING.
- 4 PIPE ROUTING ABOVE EXISTING CEILING.
- 5 ROUTE 3/4" HWS/HWR, 3/4" CWS/CWR, AND 1" CD PIPING THRU FLOOR TO UNIT ABOVE. RE: FLOOR MOUNTED FAN COIL UNIT DETAIL.
- 6 INSTALL NEW EXHAUST GRILLE UTILIZING EXISTING OPENING.
- 7 CONNECT NEW EXHAUST DUCT TO EXISTING DUCT ABOVE CEILING.
- 8 INSTALL DIFFUSER THE SAME ELEVATION AS PREVIOUS DIFFUSER.
- 9 SUPPLY DUCT FROM FLOOR BELOW, ROUTE THRU ELEVATOR SHAFT AND ACROSS WALL AT PREVIOUS DIFFUSER ELEVATION.
- 10 CONTINUE PIPING FROM FLOOR BELOW THRU EXISTING PIPE CHASE TO CEILING VOID ABOVE. CLEAR EXISTING CHASE OF DEBRIS AS NEEDED.
- 11 1 1/2" HWS/HWR, 2" CWS/CWR PIPING THRU PIPE CHASE TO FLOOR ABOVE. RE: SECOND FLOOR PLAN FOR PIPE CONTINUATION. CLEAR EXISTING CHASE OF DEBRIS AS NEEDED.
- 12 PROVIDE AND INSTALL NEW RECESSED FAN COIL UNIT WITH FRONT DISCHARGE. CONNECT PIPING FROM FLOOR BELOW. COORDINATE INSTALLATION WITH ARCHITECTURAL PLANS.
- 13 10'X10' OUTSIDE AIR DUCTWORK FROM ABOVE. PENETRATE AND CONTINUE TO FLOOR BELOW. PROVIDE AND INSTALL A FIRE DAMPER FOR DUCTWORK CONTINUING TO LOWER LEVEL.
- 14 6'X6' OUTSIDE AIR DUCT FROM FLOOR ABOVE.
- 15 12'X4' OUTSIDE AIR DUCT FROM FLOOR ABOVE. ROUTE DUCT SERVING EAST CORRIDOR 106 ABOVE CEILING.
- 16 INSTALL DUCTWORK ABOVE CEILING SPACE. DO NOT DAMAGE EXISTING CEILING. ROUTE DUCTWORK THROUGH EXISTING STRUCTURAL OPENING.
- 17 PROVIDE 2'X2' GREENHECK MODEL FSD-311 FIRE SMOKE DAMPER FOR TRANSFER OPENING INTO CEILING PLENUM. TERMINATE RETURN DUCT BELOW OPENING.
- 18 CONNECT 4'X6' EXHAUST DUCT FROM BELOW TO BOTTOM OF EXISTING DUCT IN WALL.
- 19 ROUTE 3/4" HWS/HWR, 3/4" CWS/CWR, AND 1" CD PIPING THRU FLOOR ABOVE. RE:M102 FOR PIPE CONTINUATION.
- 20 PROVIDE WITH 3-WAY VALVE PIPING PACKAGE.
- 21 INSTALL DIFFUSER 13'-0" AFF.
- 22 RETURN AIR DUCTWORK, ROUTE BELOW SUPPLY DUCTWORK. CONNECT TO EXISTING LOUVER IN DOOR.
- 23 PROVIDE UNIT WITH FACTORY STAMPED HOLES FOR ELECTRICAL/DATA BOXES. RE: FACTORY STAMPING DETAIL A.
- 24 PROVIDE UNIT WITH FACTORY STAMPED HOLES FOR ELECTRICAL/DATA BOXES. RE: FACTORY STAMPING DETAIL B.



**FIRST FLOOR PLAN-MECHANICAL**  
 SCALE: 1/8"=1'-0"



# HISTORIC TRUMAN COURTHOUSE

## INTERIOR RENOVATION

102 NORTH MAIN STREET, INDEPENDENCE, MISSOURI 64050

ISSUED FOR CONSTRUCTION

PROJECT NO.	10-19-2012
DATE	JDB/SMP
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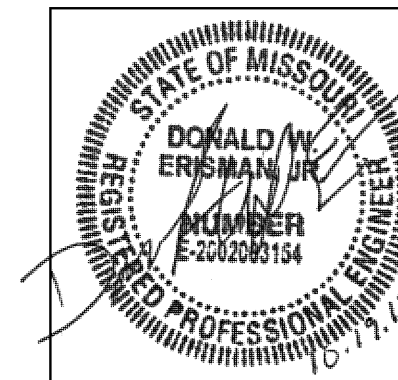
FIRST FLOOR PLAN  
 MECHANICAL

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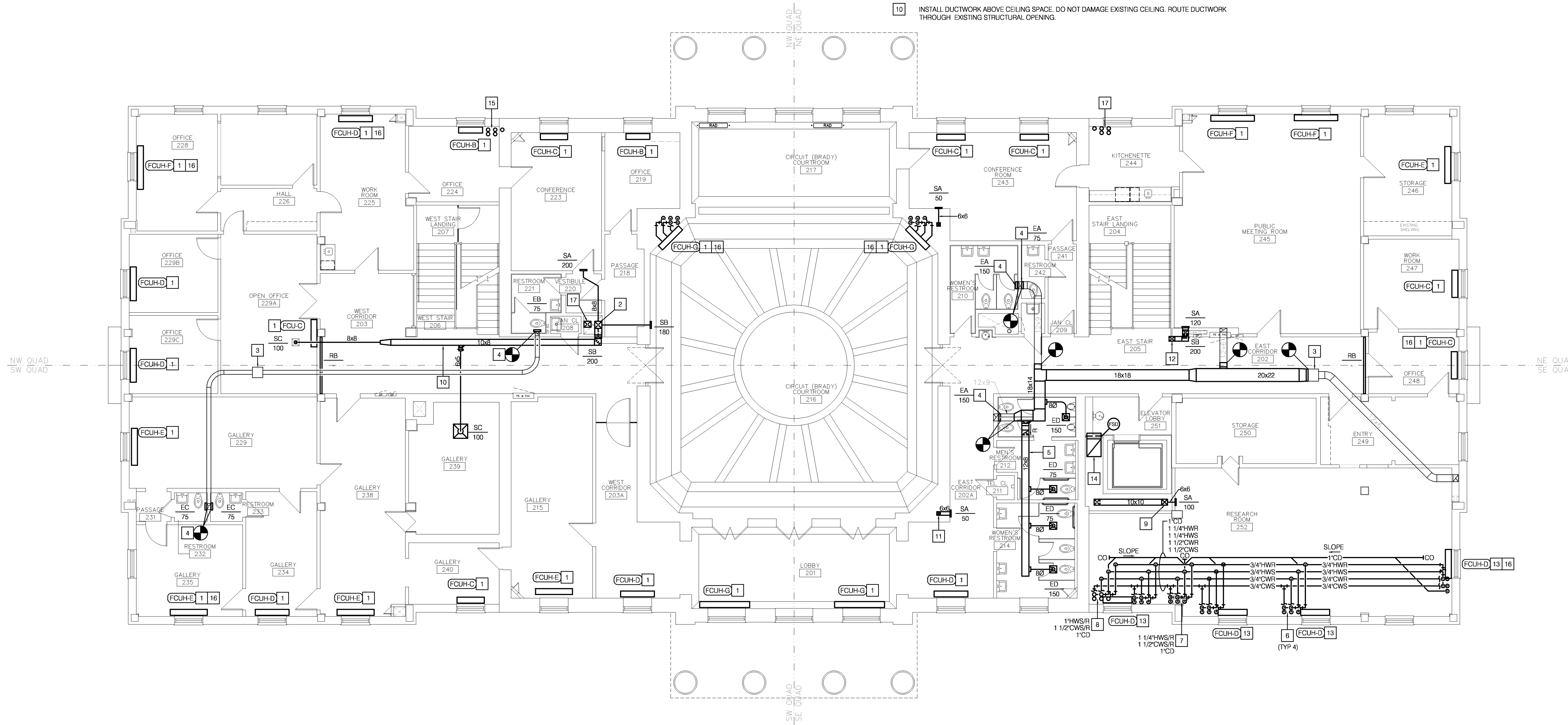


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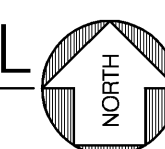
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### FLOOR PLAN NOTES

- 1 INSTALL NEW FLOOR MOUNTED FAN COIL UNIT. CONNECT PIPING FROM FLOOR BELOW.
- 2 12x12" OUTSIDE AIR DUCTWORK FROM ABOVE.
- 3 EXISTING RESTROOM VENTILATOR EXHAUST DUCT UP TO ROOF. REPAIR ANY DAMAGED OR LOOSE DUCT.
- 4 INSTALL NEW EXHAUST GRILLE AT EXISTING DUCT OPENING.
- 5 CONNECT NEW DUCTWORK TO EXISTING. ROUTE DUCT ABOVE CEILING TIGHT TO STRUCTURE.
- 6 3/4" HWS/HWR, 3/4" CWS/CWR PIPING FROM CEILING SPACE ABOVE. ROUTE DOWN WALL TO SIDE OF FAN COIL UNIT BELOW. GROUP PIPING AS TO MINIMIZE SIZE REQUIREMENTS OF ARCHITECTURAL PIPE COVERING.
- 7 1 1/2" HWS/HWR 2" CWS/CWR PIPING FROM FLOOR BELOW. CONTINUE ROUTING, IN CHASE, TO ABOVE CEILING. CLEAR EXISTING CHASE OF DEBRIS AS NEEDED.
- 8 ROUTE PIPING UP THRU FLOOR TO ATTIC SPACE ABOVE. RE: ATTIC/ROOF PLAN FOR PIPE CONTINUATION.
- 9 10"x10" OUTSIDE AIR DUCT FROM FLOOR ABOVE. TRANSITION AS SHOWN AND CONTINUE 10X10 TO FLOOR BELOW. PROVIDE AND INSTALL A FIRE DAMPER FOR DUCTWORK CONTINUING TO FIRST FLOOR.
- 10 INSTALL DUCTWORK ABOVE CEILING SPACE. DO NOT DAMAGE EXISTING CEILING. ROUTE DUCTWORK THROUGH EXISTING STRUCTURAL OPENING.
- 11 8"x6" OUTSIDE AIR DUCT FROM FLOOR ABOVE. CONTINUE 6X6 TO FLOOR BELOW.
- 12 10"x8" OUTSIDE AIR DUCT FROM ABOVE. ROUTE ABOVE CEILING TO EXISTING CHASE IN WALL. ROUTE DUCT DOWN WITHIN EXISTING CHASE AS REQUIRED TO INSTALL DIFFUSERS 1'-0" BELOW FINISHED CEILING.
- 13 PROVIDE UNIT WITH INTERNAL CONDENSATE PUMP.
- 14 PROVIDE 2X2 GREENHECK MODEL FSD-311 FIRE SMOKE DAMPER FOR TRANSFER OPENING INTO CEILING PLENUM.
- 15 ROUTE 3/4" HWS/HWR, 3/4" CWS/CWR, AND 1" CD PIPING FROM BELOW. CONTINUE PIPING UP, THRU FLOOR TO UNIT ON FLOOR ABOVE.
- 16 PROVIDE UNIT WITH 3-WAY VALVE PIPING PACKAGE.
- 17 12"x10" OUTSIDE AIR DUCTWORK FROM ABOVE. CONTINUE DOWN TO FLOOR BELOW. PROVIDE AND INSTALL A FIRE DAMPER FOR DUCTWORK CONTINUING TO FIRST FLOOR. RE: FIRST FLOOR PLAN FOR DUCT CONTINUATION.



**SECOND FLOOR PLAN-MECHANICAL**  
 SCALE: 1/8"=1'-0"



# HISTORIC TRUMAN COURTHOUSE

## INTERIOR RENOVATION

102 NORTH MAIN STREET, INDEPENDENCE, MISSOURI 64050

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CHECKED BY	LDR
REVISED DATE	DESCRIPTION

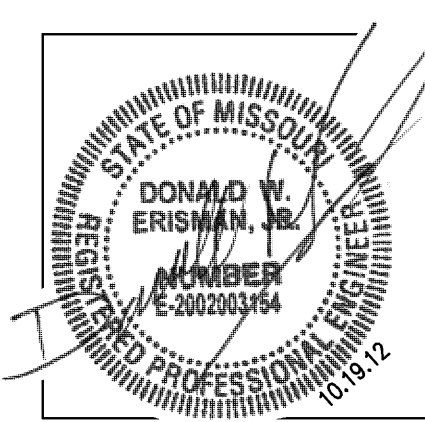
SECOND FLOOR PLAN  
 MECHANICAL

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**M-102**

DWG FILE: P:\4000\046\_Jackson County Historic Court House\Drawings\4048M102.dwg USER: JebB PLOT DATE/TIME: 10/18/2012 3:13pm



MECH / PLUMB / ELECTRICAL ENGINEER

**LANKFORD + associates**  
 1730 WALNUT STREET  
 KANSAS CITY, MISSOURI 64108  
 TEL. (816) 221-1411  
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# HISTORIC TRUMAN COURTHOUSE

## INTERIOR RENOVATION

102 NORTH MAIN STREET, INDEPENDENCE, MISSOURI 64050

ISSUED FOR CONSTRUCTION

PROJECT NO.	
DATE	10-19-2012
DRAWN BY	IDB/SMP
CHECKED BY	DWE
REVISED DATE	DESCRIPTION
11-05-12	ADDENDUM #2

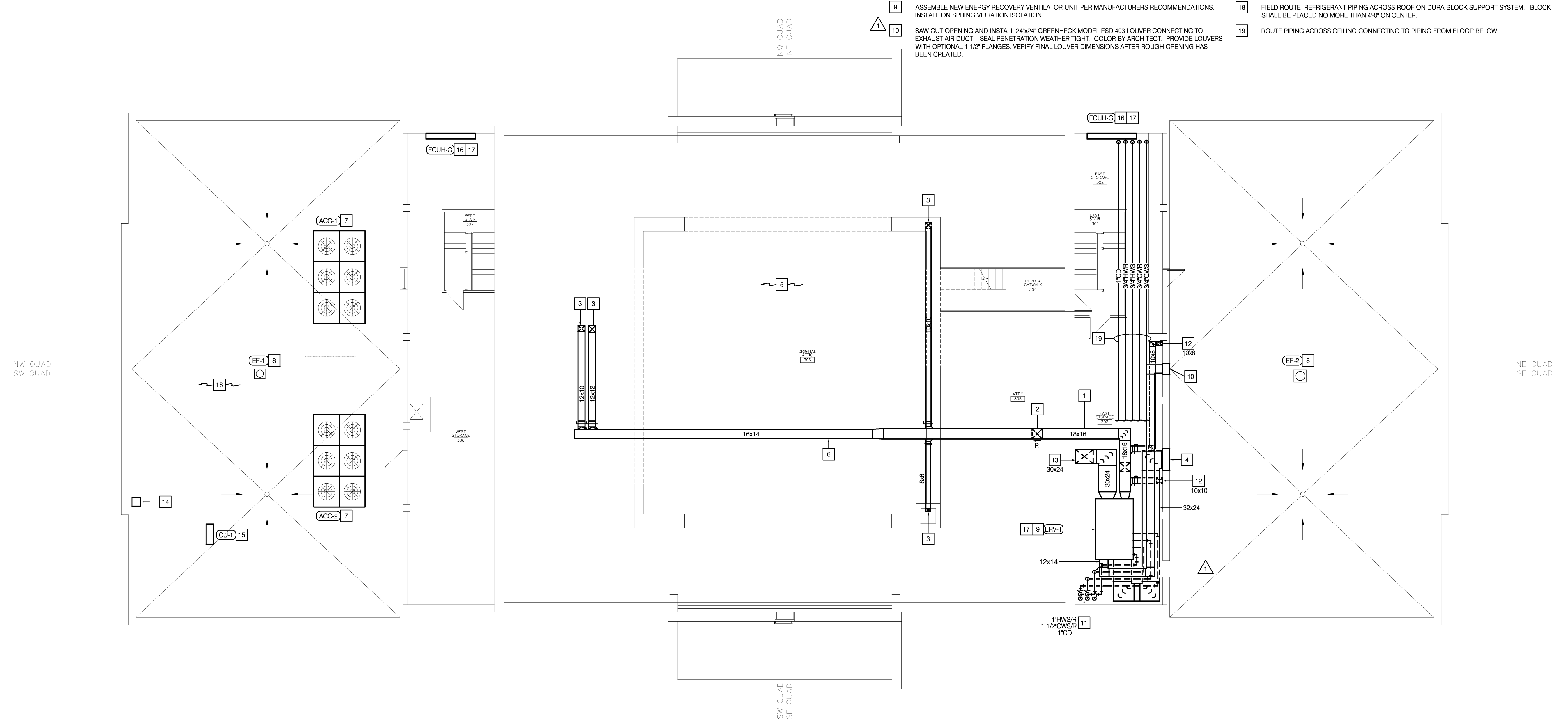
SHEET TITLE & NUMBER

ROOF PLAN  
 MECHANICAL  
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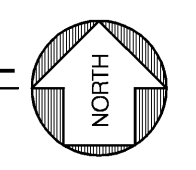
**M-103**

### FLOOR PLAN NOTES

- 1 ROUTE DUCTWORK THRU ATTIC WALL, SEAL PENETRATION.
- 2 TURN DUCTWORK UP. ROUTE TO ORIGINAL ATTIC SPACE.
- 3 INSTALL DUCTWORK INTO EXISTING SHAFT SPACE. INSULATE AND SECURE TO STRUCTURE.
- 4 INSTALL 34"x29" GREENHECK MODEL ESD 403 LOUVER CONNECTING TO OUTSIDE AIR LOUVER. SEAL PENETRATION WEATHER TIGHT. COLOR BY ARCHITECT. PROVIDE LOUVERS WITH OPTIONAL 1 1/2" FLANGES. VERIFY FINAL LOUVER DIMENSIONS AFTER ROUGH OPENING HAS BEEN CREATED.
- 5 INSULATE ALL DUCTWORK IN ATTIC AREA PER OUTSIDE AIR DUCTWORK SPECIFICATIONS.
- 6 ROUTE DUCTWORK OVER ORIGINAL METAL ROOF IN ATTIC SPACE. SECURE TIGHT TO STRUCTURE.
- 7 INSTALL AIR COOLED CONDENSER ON EQUIPMENT RAIL SYSTEM PER MANUFACTURERS RECOMMENDATIONS. ROUTE REFRIGERANT PIPING ACROSS ROOF ON DURA-BLOCK SUPPORT SYSTEM. BLOCK SHALL BE PLACED NO MORE THAN 4'-0" ON CENTER.
- 8 INSTALL NEW EXHAUST FAN AT EXISTING OPENING. PROVIDE NECESSARY CURB ADAPTER FOR AIR TIGHT CONNECTION.
- 9 ASSEMBLE NEW ENERGY RECOVERY VENTILATOR UNIT PER MANUFACTURERS RECOMMENDATIONS. INSTALL ON SPRING VIBRATION ISOLATION.
- 10 SAW CUT OPENING AND INSTALL 24"x24" GREENHECK MODEL ESD 403 LOUVER CONNECTING TO EXHAUST AIR DUCT. SEAL PENETRATION WEATHER TIGHT. COLOR BY ARCHITECT. PROVIDE LOUVERS WITH OPTIONAL 1 1/2" FLANGES. VERIFY FINAL LOUVER DIMENSIONS AFTER ROUGH OPENING HAS BEEN CREATED.
- 11 1 1/4" HOT WATER SUPPLY AND HOT WATER RETURN, 2" CHILLED WATER SUPPLY AND CHILLED WATER RETURN FROM FLOOR BELOW. ROUTE PIPING TO UNIT SECURING TIGHT TO HOUSEKEEPING PAD.
- 12 ROUTE DUCT DOWN THRU FLOOR. RE: SECOND FLOOR PLAN FOR CONTINUATION. CENTER BETWEEN CONCRETE JOISTS.
- 13 PENETRATE FLOOR AND ROUTE RETURN AIR DUCT INTO ELEVATOR SHAFT. REINFORCE DUCT OPENING TO MAKE SOLID. SECURE DUCT TO ATTIC FLOOR. CENTER BETWEEN CONCRETE JOISTS.
- 14 ROUTE REFRIGERANT PIPING THRU EXISTING SHAFT BELOW. PENETRATE ROOF AND ROUTE PIPING THRU PATE MODEL PCA-1 PIPE ASSEMBLY CURB.
- 15 INSTALL UNIT AND ROUTE REFRIGERANT PIPING ON DURA-BLOCK ROOF SUPPORTS. CONNECT REFRIGERANT PIPING FROM UNIT LOCATED IN BASEMENT. MAINTAIN 10'-0" CLEARANCE FROM ROOF EDGE.
- 16 INSTALL NEW FLOOR MOUNTED FAN COIL UNIT. CONNECT PIPING FROM FLOOR BELOW. PIPE ROUTING SHOWN FOR INSTALLATION REFERENCE ONLY AND DOES NOT DEPICT ALL PIPING REQUIRED.
- 17 PROVIDE WITH 3-WAY VALVE PIPING PACKAGE AND CONDENSATE PUMP.
- 18 FIELD ROUTE REFRIGERANT PIPING ACROSS ROOF ON DURA-BLOCK SUPPORT SYSTEM. BLOCK SHALL BE PLACED NO MORE THAN 4'-0" ON CENTER.
- 19 ROUTE PIPING ACROSS CEILING CONNECTING TO PIPING FROM FLOOR BELOW.

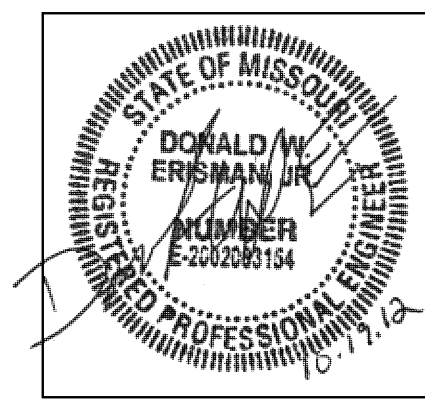


ATTIC/ROOF PLAN-MECHANICAL  
 SCALE: 1/8"=1'-0"



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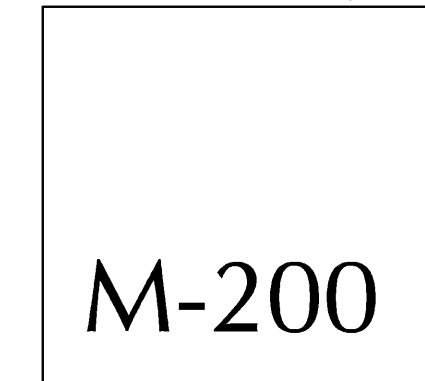
MECH / PLUMB / ELECTRICAL ENGINEER:  
**LANKFORD + associates**  
 1730 WALNUT STREET  
 KANSAS CITY, MISSOURI 64108  
 TEL. (816) 221-1411  
 FAX. (816) 221-1429

**HISTORIC TRUMAN COURTHOUSE**  
 INTERIOR RENOVATION  
 102 NORTH MAIN STREET, INDEPENDENCE, MISSOURI 64050

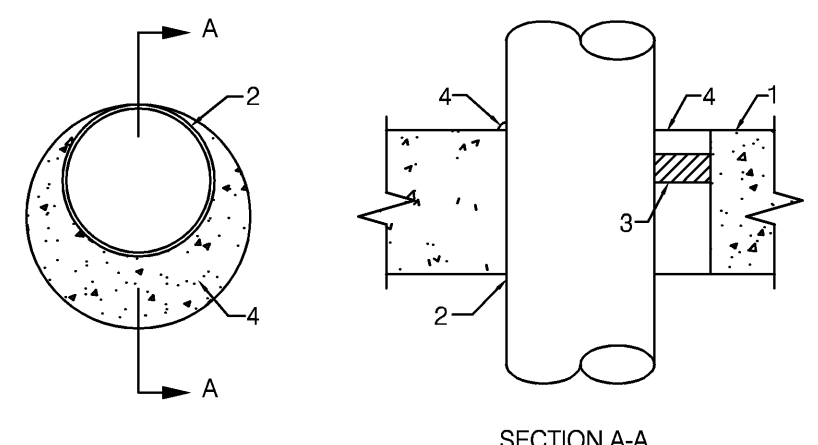
**ISSUED FOR CONSTRUCTION**

PROJECT NO.	
DATE	10-19-2012
DRAWN BY	LD/SMP
CHECKED BY	DWE
CHECKED BY	LDR
REVISED DATE	DESCRIPTION
SHEET TITLE & NUMBER	

**MECHANICAL DETAILS**  
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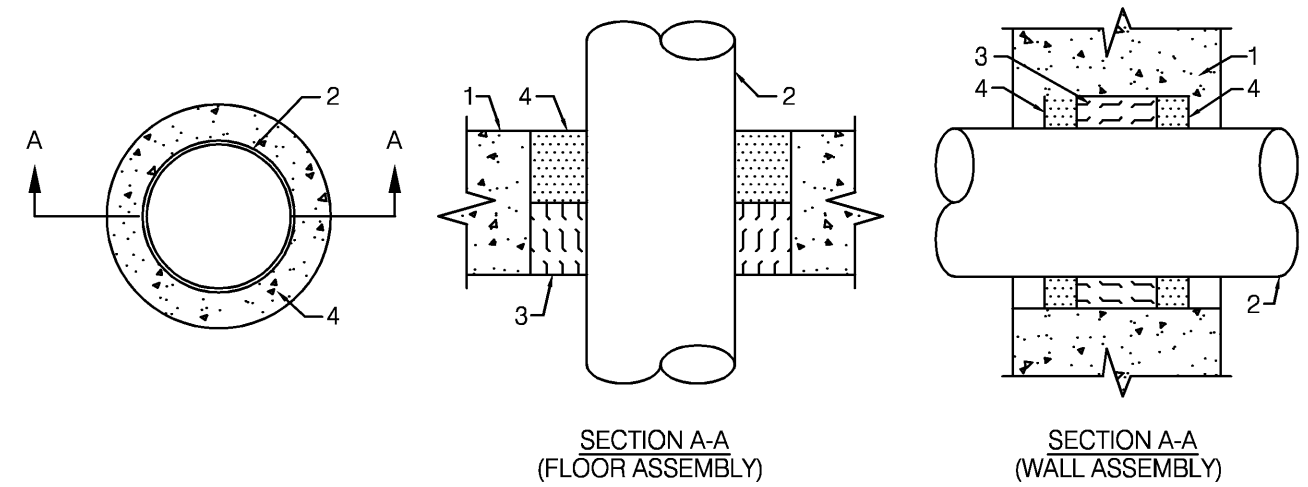


**M-200**



**SYSTEM NO. 49**  
 F RATINGS - 2 AND 3 HR. (SEE ITEM 2A)  
 T RATING - 0 HR.

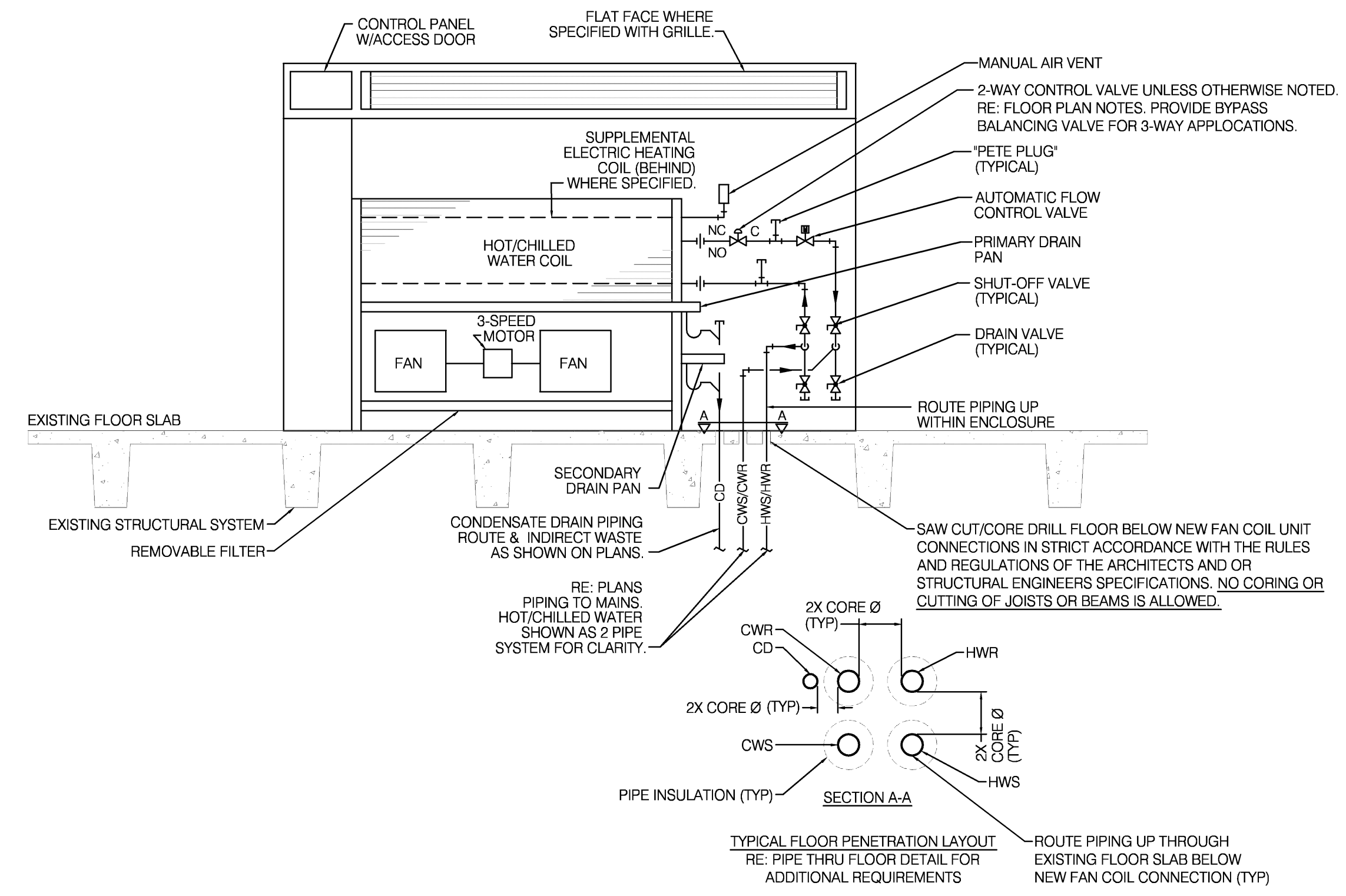
- FLOOR OR WALL ASSEMBLY - MINIMUM 4 1/2" THICK LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF) CONCRETE. WALL ASSEMBLY MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS. MAXIMUM DIAMETER OF CIRCULAR THROUGH OPENING IS 22 1/2". SEE CONCRETE BLOCK (CAZT) CATEGORY IN FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.
  - 1A) STEEL SLEEVE - (OPTIONAL, NOT SHOWN) - NOMINAL 1/2" DIAMETER (OR SMALLER) SCHEDULE 40 (OR HEAVIER) STEEL PIPE SLEEVE CAST INTO CONCRETE FLOOR OR WALL. SLEEVE TO BE FLUSH WITH OR PROJECT MAX 2" FROM TOP SURFACE OF FLOOR OR FROM BOTH SURFACES OF WALL.
  - 2) PIPE OR CONDUIT - NOMINAL 20" DIAMETER (OR SMALLER) SCHEDULE 10S (OR HEAVIER) STEEL PIPE, NOMINAL 6" DIAMETER (OR SMALLER) RIGID STEEL CONDUIT, NOMINAL 6" DIAMETER (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBE, NOMINAL 4" DIAMETER (OR SMALLER) CAST IRON PIPE OR NOMINAL 4" DIAMETER (OR SMALLER) STEEL EMT. MAXIMUM ONE PIPE OR CONDUIT PER THROUGH OPENING. MAXIMUM ANNULAR SPACE BETWEEN PIPE OR CONDUIT AND EDGE OF THROUGH OPENING IS ZERO IN (POINT CONTACT). PIPE OR CONDUIT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY.
  - 2A) STEEL VENT DUCT - (NOT SHOWN) - AS AN ALTERNATE TO THE PIPE OR CONDUIT, NOMINAL 4" DIAMETER (OR SMALLER) NO. 28 GAUGE (OR HEAVIER) GALVANIZED STEEL VENT DUCT MAY BE USED IN THROUGH OPENINGS OF FLOOR ASSEMBLIES PROVIDED MAXIMUM ANNULAR SPACE DOES NOT EXCEED 7/8". WHEN STEEL VENT DUCT IS USED, F RATING IS 2 HRS.
  - 3) PACKING MATERIAL - POLYETHYLENE BACKER ROD OR NOMINAL 1" THICKNESS OF TIGHTLY-PACKED CERAMIC (ALUMINA SILICA) FIBER BLANKET, MINERAL-WOOL BATT OF GLASS FIBER INSULATION MATERIAL USED AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR OR FROM BOTH SURFACES OF WALL AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF CAULK FILL MATERIAL (ITEM 4). AS AN ALTERNATE WHEN MAXIMUM PIPE SIZE IS 10" DIAMETER AND WHEN MAXIMUM ANNULAR SPACE IS 1" OR LESS, A MINIMUM 1" THICKNESS OF TIGHTLY-PACKED CERAMIC FIBER BLANKET OR MINERAL-WOOL BATT PACKING MATERIAL MAY BE RECESSED MINIMUM 1/2" FROM BOTTOM SURFACE OF FLOOR OR FROM EITHER SIDE OF WALL.
  - 4) FILL, VOID OR CAVITY MATERIALS\* - CAULK - APPLIED TO FILL THE ANNULAR SPACE TO THE MINIMUM THICKNESS SHOWN IN THE FOLLOWING TABLE:
- | MAXIMUM PIPE DIAMETER, (IN.) | MAXIMUM ANNULAR SPACE (IN.) | PACKING MATERIAL TYPE (a) | MINIMUM CAULK THICKNESS (IN.) |
|------------------------------|-----------------------------|---------------------------|-------------------------------|
| 10                           | 1                           | BR, CF, GF or MW          | 1/2 (b)                       |
| 10                           | 1                           | CF or MW                  | 1/2 (c)                       |
| 20                           | 2 1/2                       | BR, CF, GF or MW          | 1 (b)                         |
- (a) BR = POLYETHYLENE BACKER ROD.  
 CF = CERAMIC FIBER BLANKET.  
 GF = GLASS FIBER INSULATION.  
 MW = MINERAL-WOOL BATT.  
 (b) CAULK INSTALLED FLUSH WITH TOP SURFACE OF FLOOR OR BOTH SURFACE OF WALL.  
 (c) CAULK INSTALLED FLUSH WITH BOTTOM SURFACE OF FLOOR OR ONE SURFACE OF WALL.  
 \* BEARING THE UL CLASSIFICATION MARKING



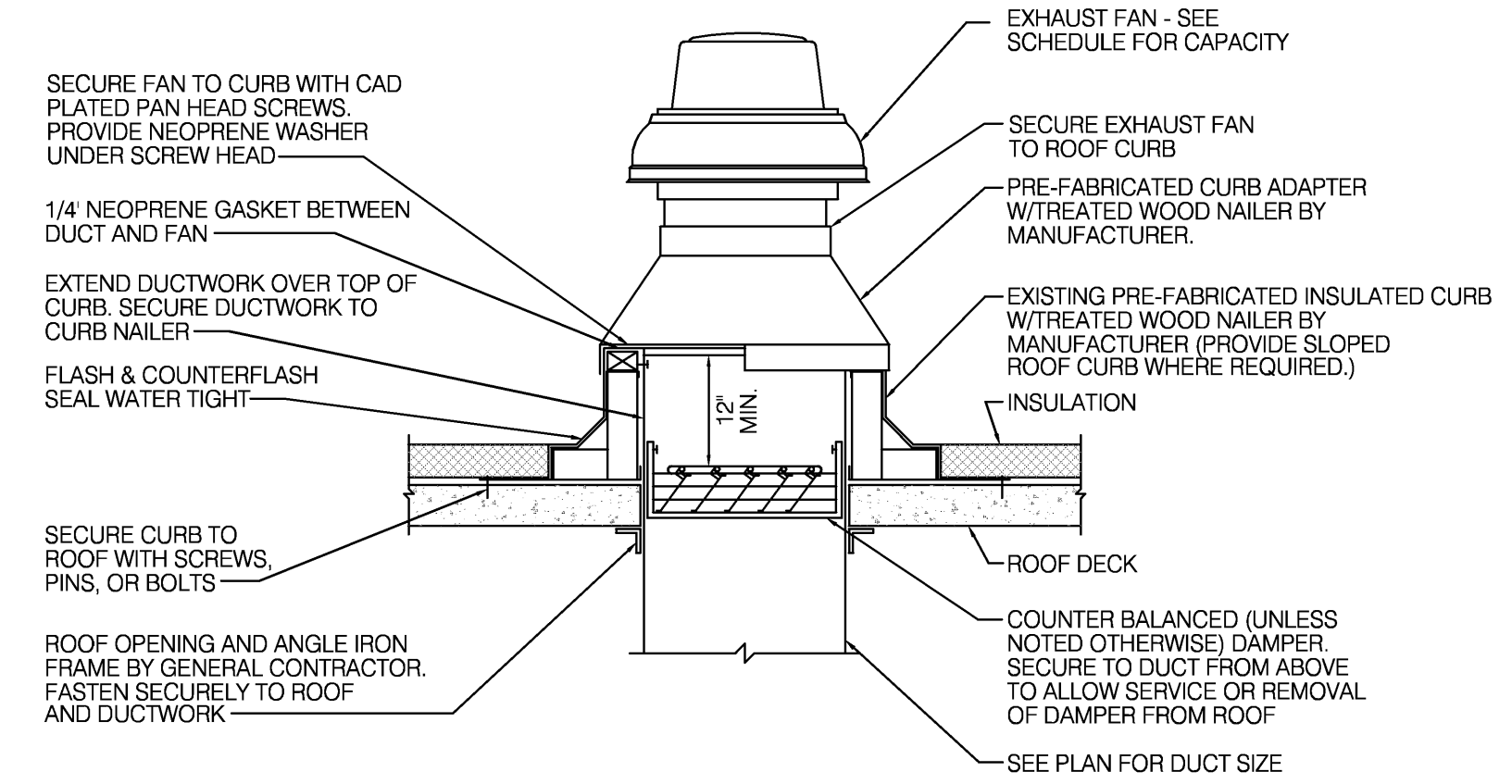
**SYSTEM NO. CAJ1012**  
 (FORMERLY SYSTEM NO. 129)  
 F RATINGS - 1 HR.  
 T RATINGS - 0 HR.

- FLOOR OR WALL ASSEMBLY - MINIMUM 5" THICK REINFORCED NORMAL WEIGHT (100-150 PCF) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS\*. MAXIMUM DIAMETER OF OPENING IS 6". SEE CONCRETE BLOCKS (CAZT) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.
  - THROUGH PENETRANTS - ONE METALLIC PIPE OR CONDUIT TO BE CENTERED WITHIN THE FIRESTOP SYSTEM. A NOMINAL ANNULAR SPACE OF 3/4" IS REQUIRED WITHIN THE FIRESTOP SYSTEM. PIPE OR CONDUIT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES OR CONDUITS MAY BE USED:  
 A. STEEL PIPE - NOMINAL 4" DIAMETER (OR SMALLER) SCHEDULE 5 (OR HEAVIER) STEEL PIPE  
 B. CONDUIT - NOMINAL 4" DIAMETER (OR SMALLER) ELECTRICAL METALLIC TUBING OR STEEL CONDUIT.
  - PACKING MATERIAL - MINIMUM 3" THICKNESS OF MINIMUM 4.4 PCF MINERAL WOOL BATT INSULATION FIRMLY PACKED INTO OPENING AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL. PACKING MATERIAL TO BE CENTERED IN WALL'S MID-DEPTH AND RECESSED TO ALLOW FOR INSTALLATION OF FILL MATERIAL.
  - FILL, VOID OR CAVITY MATERIAL\* - SEALANT OR FOAM - MINIMUM 1/2" THICKNESS OF FILL MATERIAL APPLIED WITHIN ANNULUS, FLUSH WITH TOP SURFACE OF FLOOR. IN WALL, FILL MATERIAL TO BE APPLIED ON EACH SIDE OF PACKING MATERIAL. FOAMED SILICONE TO BE INSTALLED AS DESCRIBED IN THE MANUFACTURERS APPLICATION INSTRUCTIONS AT A DENSITY OF 14 PCF MINIMUM TO 21 PCF MAXIMUM. THE THICKNESS OF FILL MATERIAL IS DEPENDENT UPON THE TYPE OF FILL MATERIAL AS SHOWN IN THE TABLE BELOW.
- | FILL MATERIAL IDENTIFICATION     | MINIMUM THICK OF FILL MATERIAL, (IN.) |
|----------------------------------|---------------------------------------|
| TYPE FS FOAM                     | 1                                     |
| TYPE FS SEALANT OR FS SEALANT SL | 1/2                                   |
- DOW CORNING CORP. - TYPES FS SEALANT, FS SEALANT SL (FLOOR ONLY) OR FS FOAM  
 \* BEARING THE UL CLASSIFICATION MARKING.

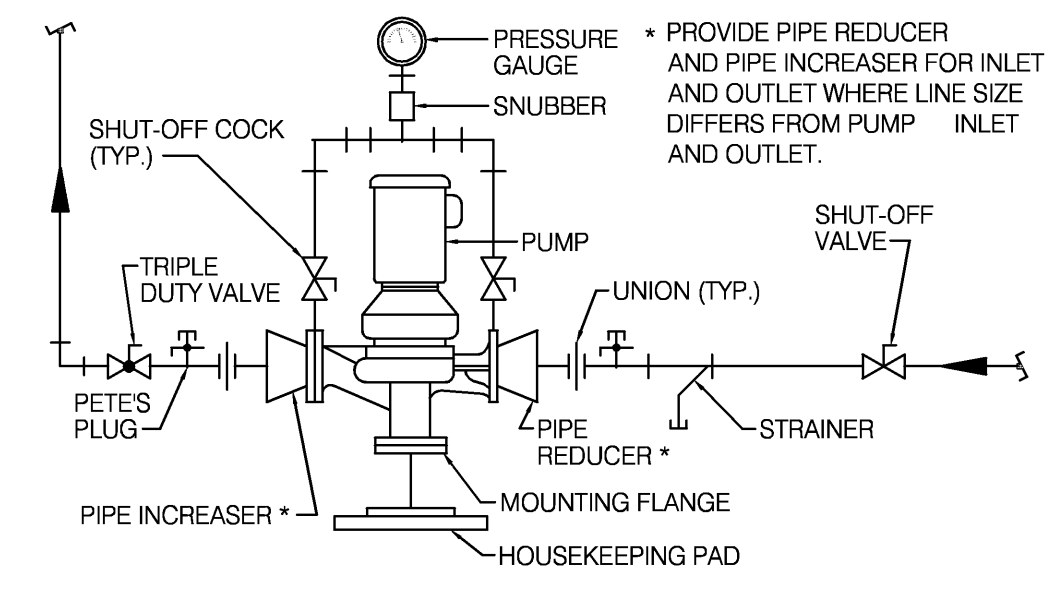
**1 CONCRETE WALL/FLOOR FIRE STOPPING DETAIL**  
 NO SCALE



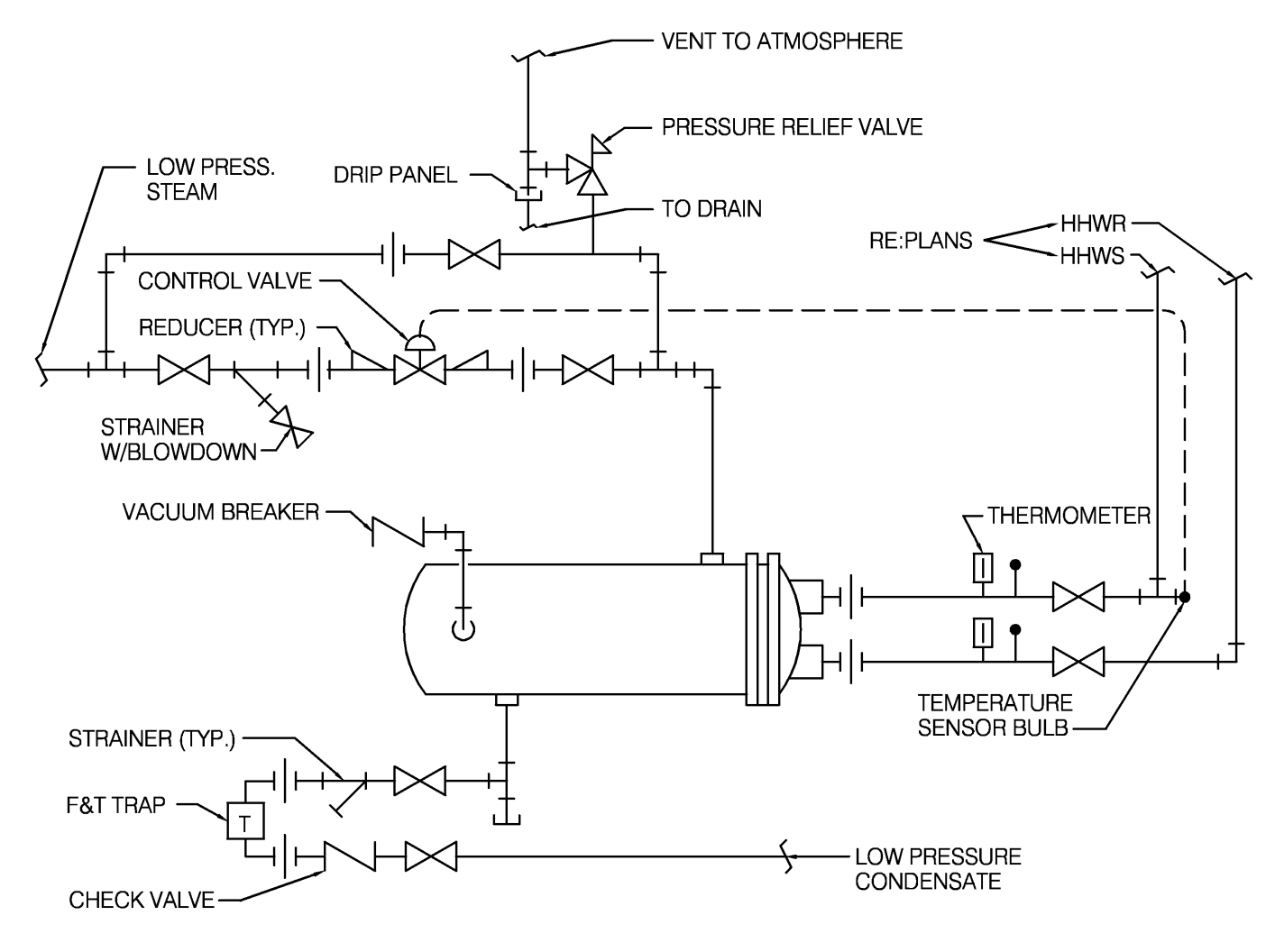
**2 FLOOR MOUNTED FAN COIL UNIT DETAIL**  
 NO SCALE



**3 ROOF MOUNTED EXHAUST FAN DETAIL**  
 NO SCALE

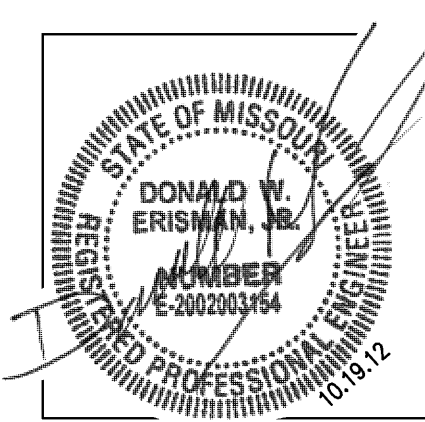


**4 IN-LINE PUMP DETAIL**  
 NO SCALE



**5 HEAT EXCHANGER DETAIL**  
 NO SCALE

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# HISTORIC TRUMAN COURTHOUSE INTERIOR RENOVATION

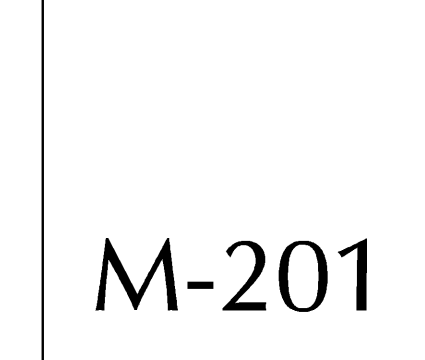
102 NORTH MAIN STREET, INDEPENDENCE, MISSOURI 64050

ISSUED FOR  
 CONSTRUCTION

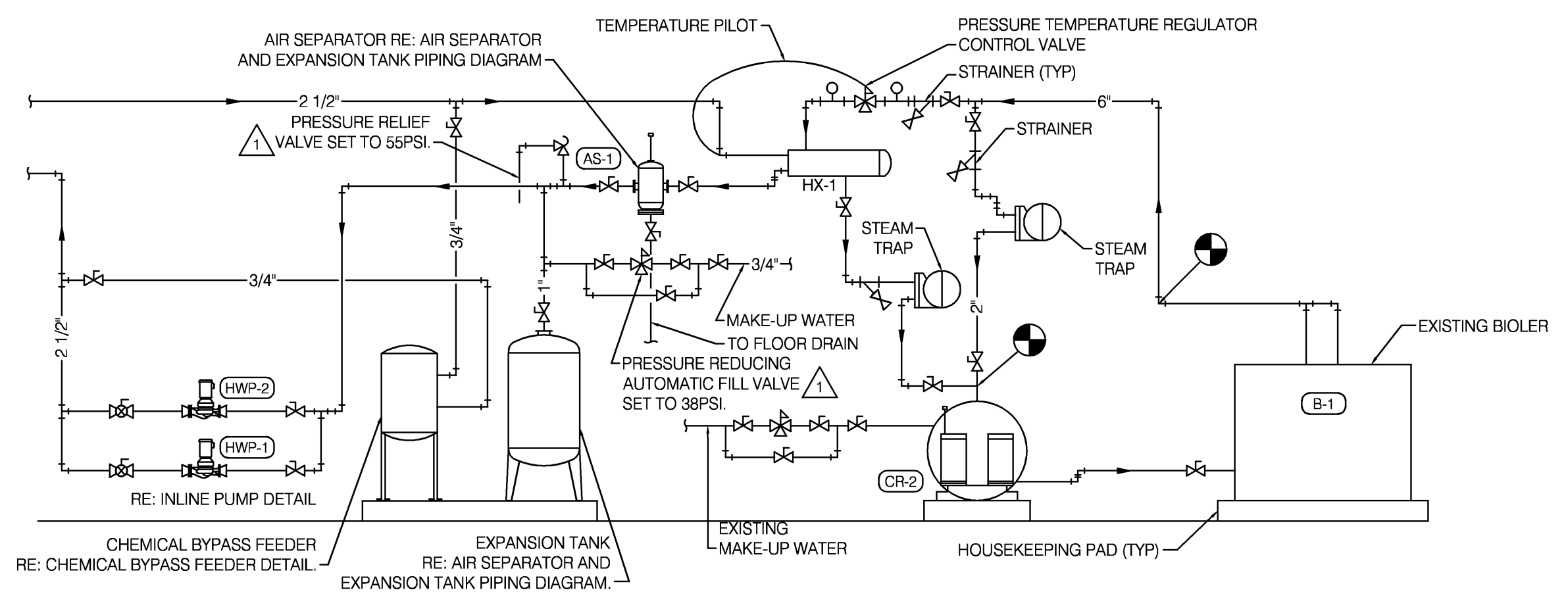
PROJECT NO.	
DATE	10-19-2012
DRAWN BY	LD/SMP
CHECKED BY	DWE
REVIEWED BY	LDR
REVISED DATE	DESCRIPTION
10-26-12	ADDENDUM #1
SHEET TITLE & NUMBER	

SCHEDULES, SYMBOLS  
 & GENERAL NOTES

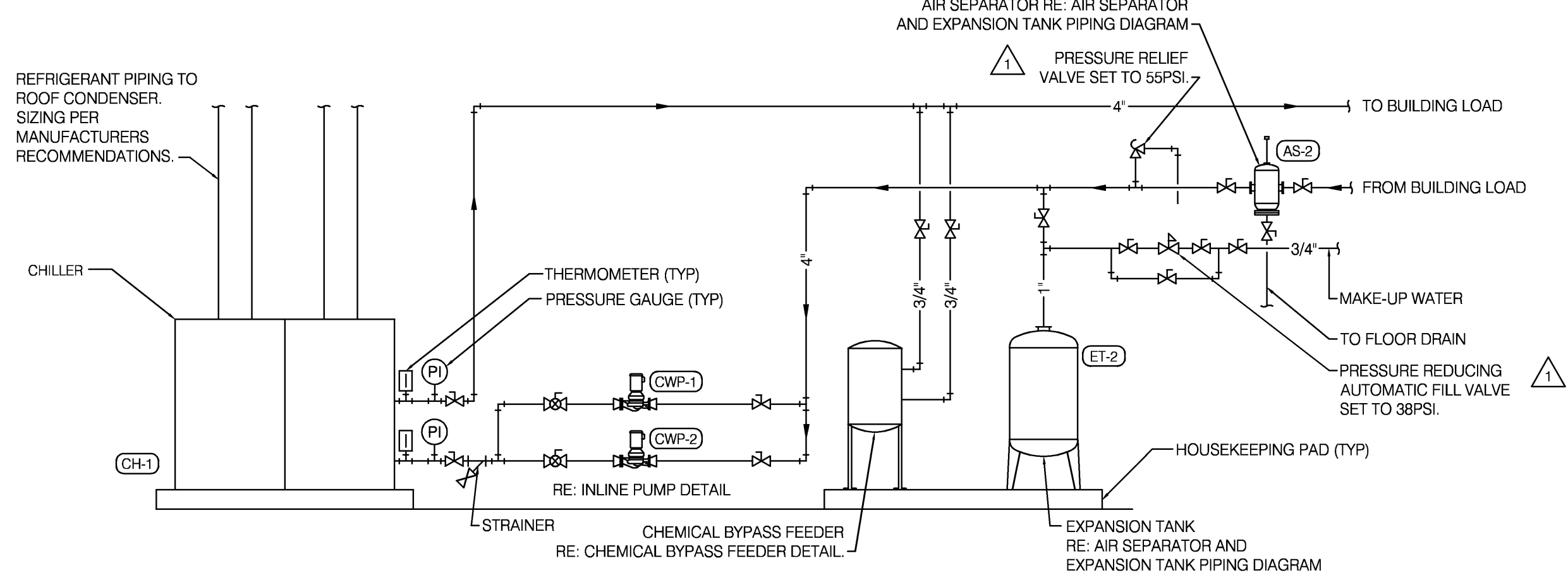
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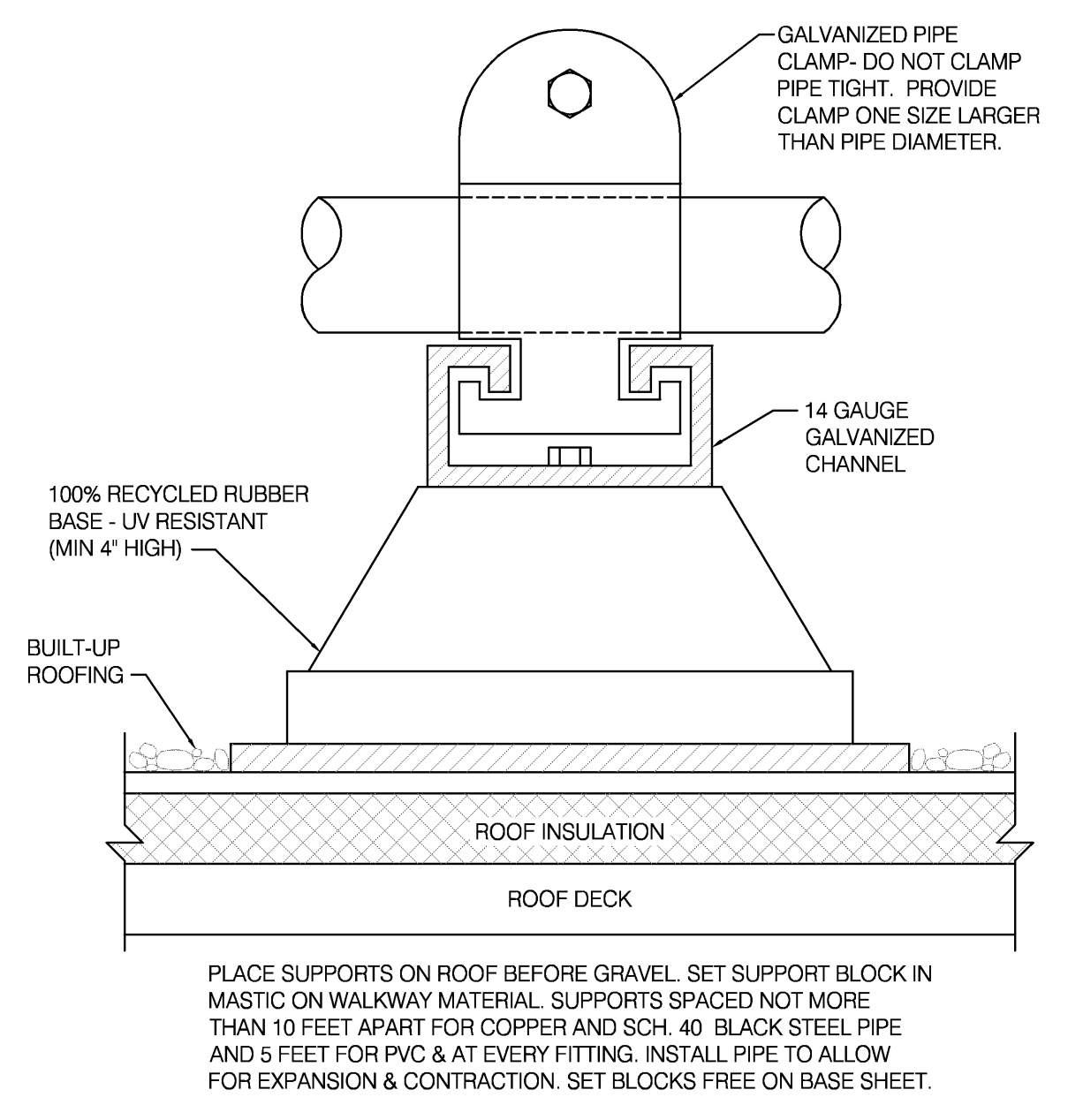
M-201



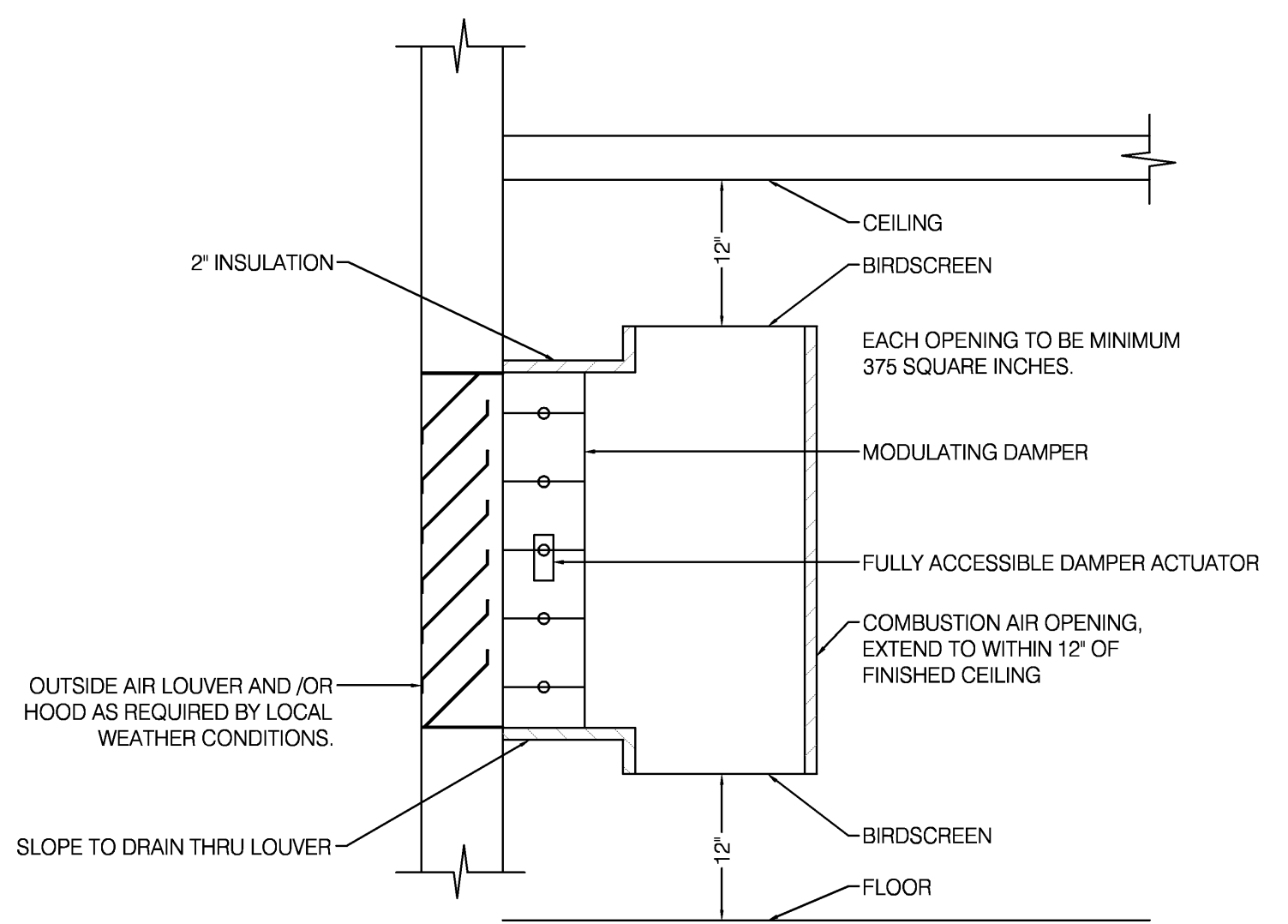
1 STEAM TO HOT WATER FLOW DIAGRAM  
 NO SCALE



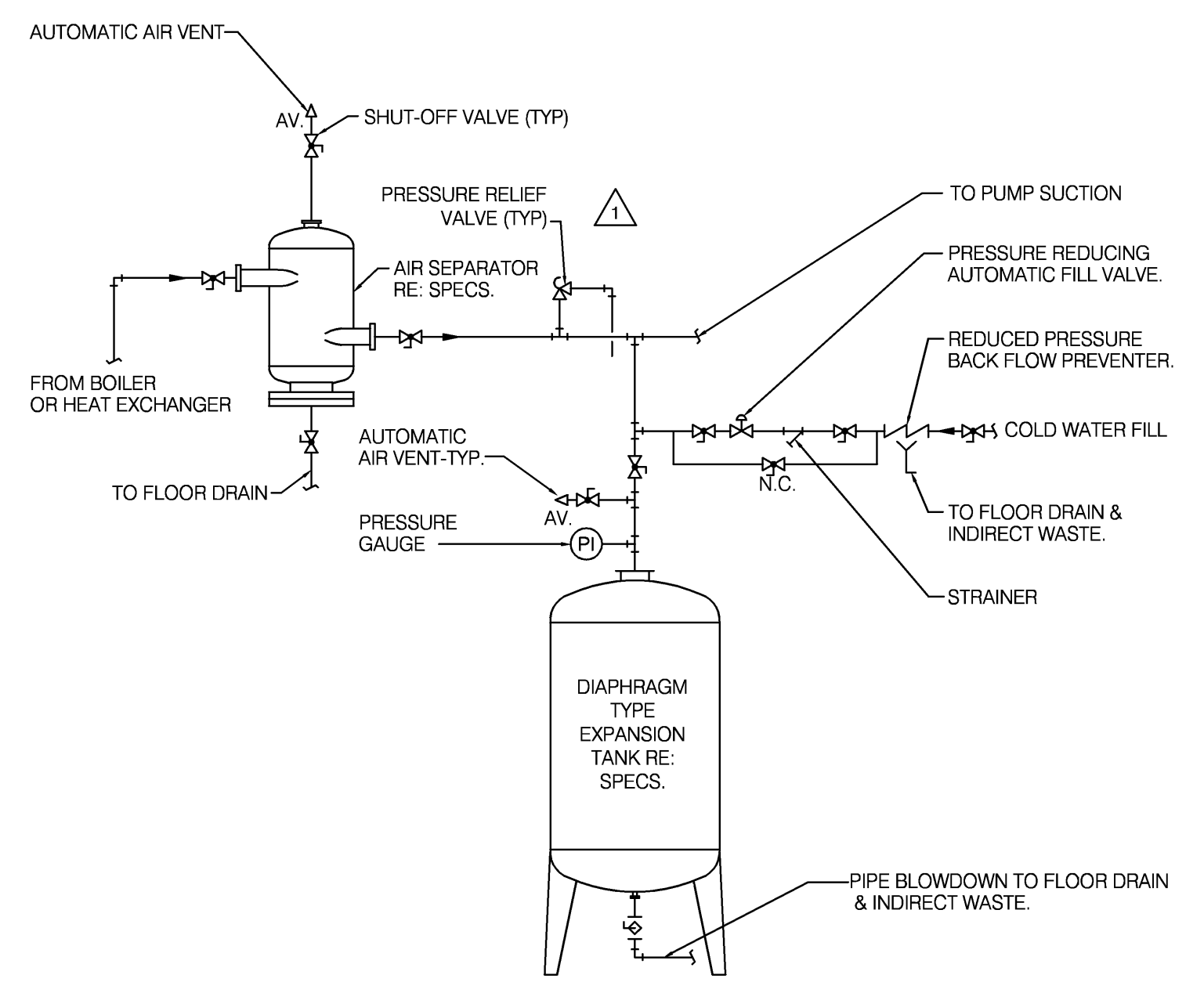
2 CHILLED WATER FLOW DIAGRAM  
 NO SCALE



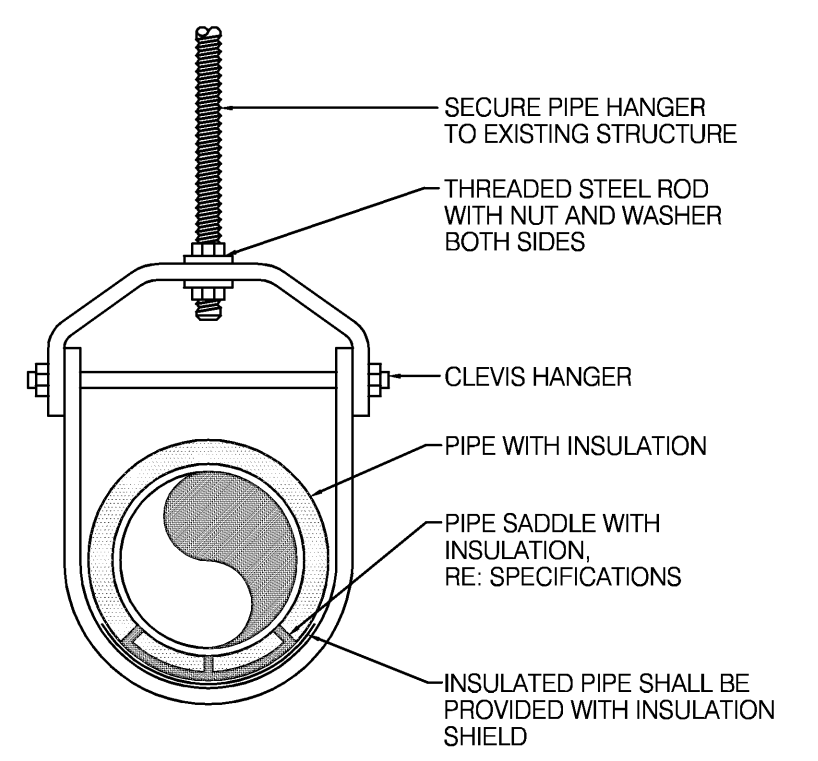
3 ROOF PIPE SUPPORT DETAIL  
 NO SCALE



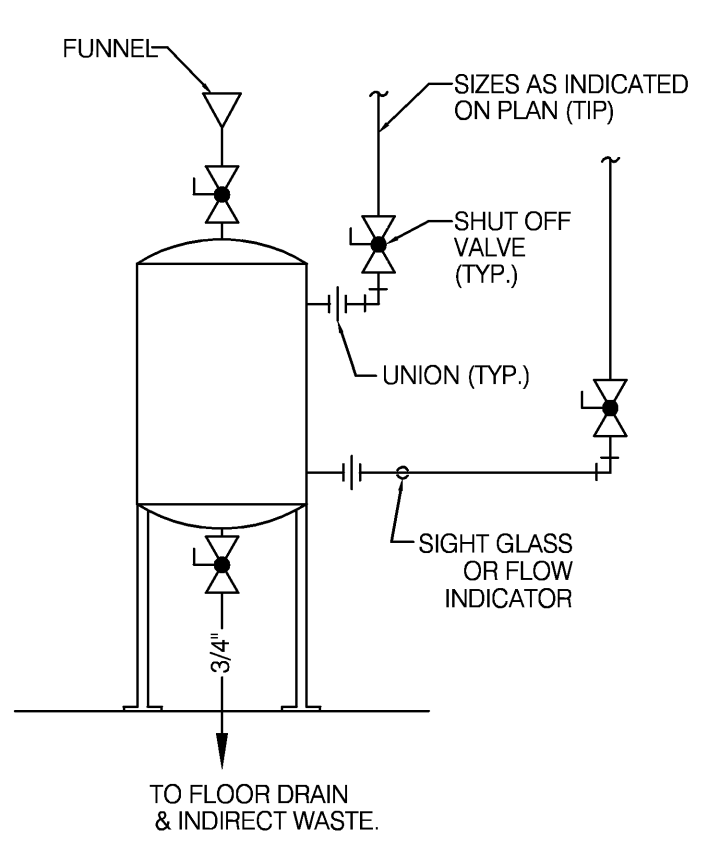
4 COMBUSTION AIR LOUVER DETAIL  
 NO SCALE



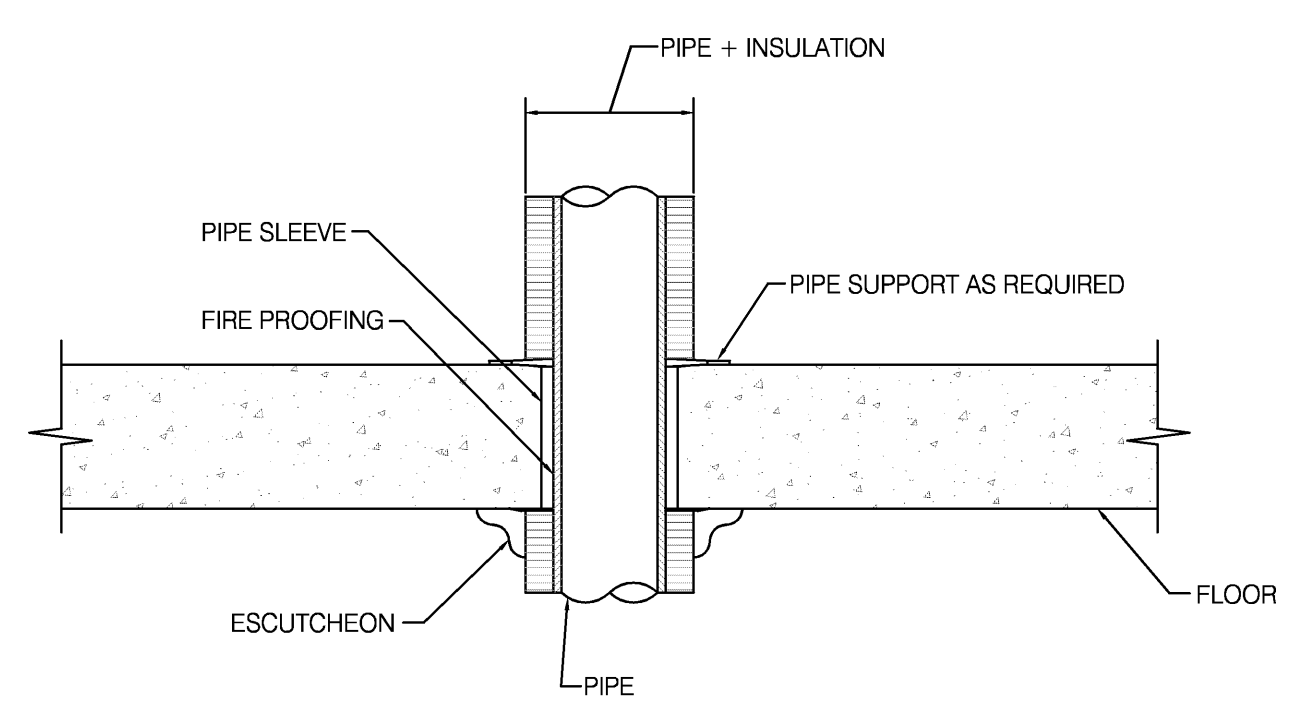
5 AIR SEPARATOR AND EXPANSION  
 TANK PIPING DIAGRAM  
 NO SCALE



6 CHILLED /HOT WATER  
 CLEVIS PIPE HANGER DETAIL  
 NO SCALE

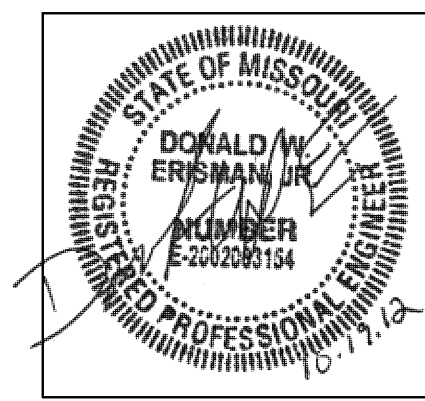


7 CHEMICAL BYPASS FEEDER DETAIL  
 NO SCALE



8 PIPE THRU FLOOR DETAIL  
 NO SCALE

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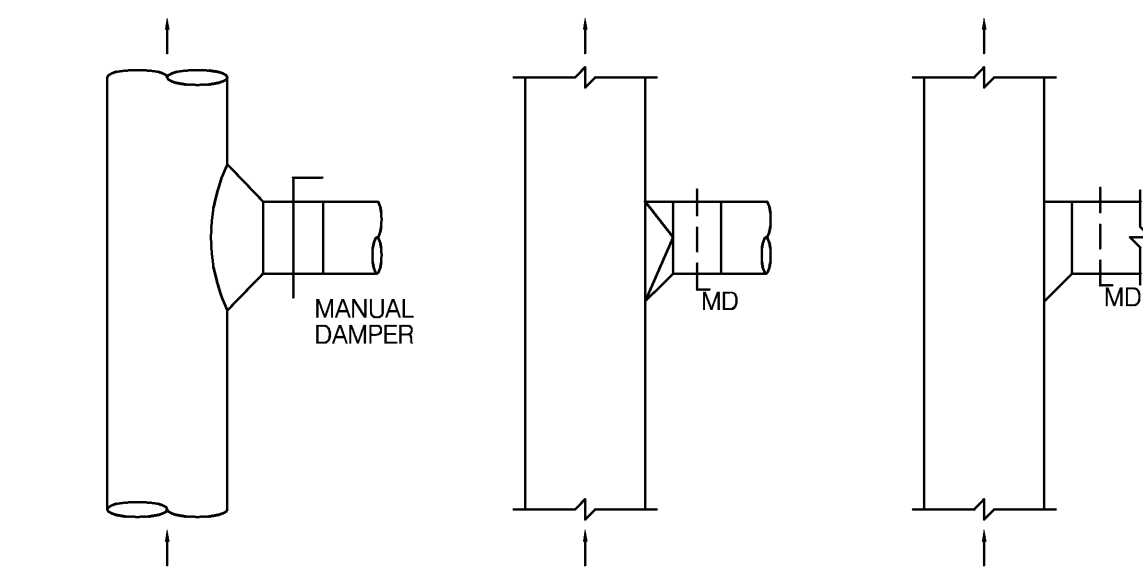
MECH / PLUMB / ELECTRICAL ENGINEER:

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 1730 WALNUT STREET  
 KANSAS CITY, MISSOURI 64108  
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### ENERGY RECOVERY UNIT SCHEDULE

MARK NO.	MANUFACTURER	UNIT MODEL	SUPPLY FAN						EXHAUST FAN				HEATING			COOLING			ELECTRICAL				
			AIRFLOW (CFM)	RPM	HP	EXT. S.P. (IN.W.G.)	SUMMER °F	WINTER °F	AIRFLOW (CFM)	RPM	HP	EXT. S.P. (IN.W.G.)	TEMP. RISE (°F)	OUTPUT (MBH)	FLOW GPM	TEMP. RISE (°F)	OUTPUT (MBH)	FLOW GPM	DRIVES	VOLT	Ø	HZ	NOTES
ERV-1	GREENHECK	ERCH-45L-15	2600	1079	1.54	0.50	54.20	79.50	1700	735	0.42	0.50	39.50	119.90	12.30	29.80	145.60	29.10	BELT	208	3	60	1.2

NOTES:  
 1. PROVIDE WITH THE FOLLOWING ACCESSORIES: DIRTY FILTER SENSOR, TIMED EXHAUST, AND RETURN AND SUPPLY DUCT SMOKE SENSORS.  
 2. UNIT SHALL BE FULLY ASSEMBLED AND FACTORY TESTED. FACTORY SHALL DISASSEMBLE AND SHIP IN SECTIONS TO ALLOW FOR ASSEMBLY IN FINAL LOCATION. MECHANICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING MANUFACTURER REPRESENTATIVE TO SUPERVISE REASSEMBLY PROCESS.



ROUND SUPPLY BRANCH 'TAKE-OFFS'  
 (20% OR LESS AIRFLOW TO BRANCH LOW & HIGH VELOCITY)

ROUND SUPPLY BRANCH 'TAKE-OFFS'  
 (20% OR LESS AIRFLOW TO BRANCH LOW & HIGH VELOCITY)

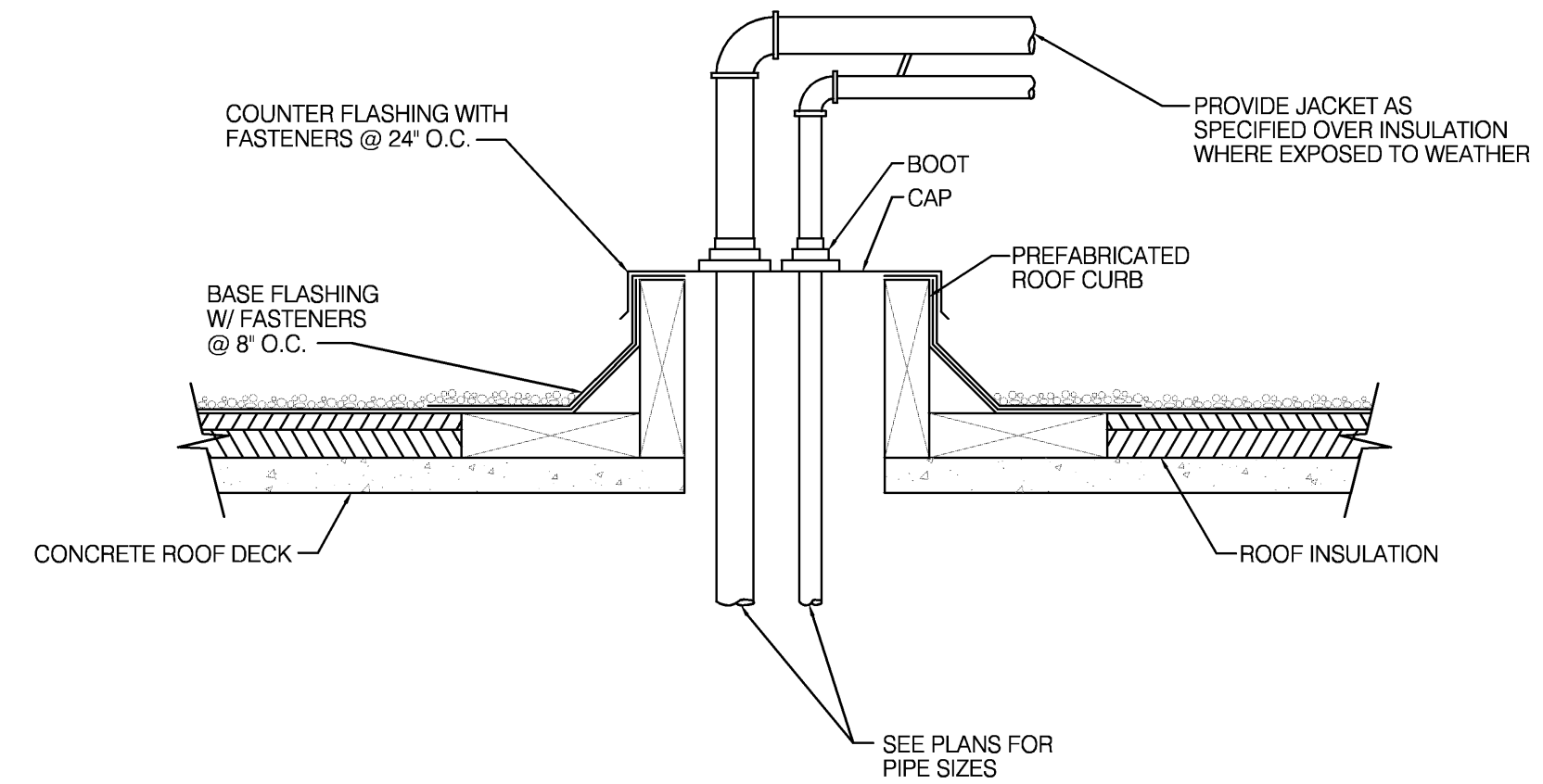
RECTANGULAR SUPPLY BRANCH 'TAKE-OFFS'  
 (20% OR LESS AIRFLOW TO BRANCH LOW & HIGH VELOCITY)

### 1 DUCT STANDARDS NO SCALE

### FAN COIL UNIT SCHEDULE

MARK NO.	MANUFACTURER	MODEL	SIZE	AIRFLOW (CFM)	MIN. OA	FLOW (GPM)	COOLING (@ 45°F EWT)				HEATING (@ 180°F EWT)				ELECTRICAL			MOTOR (HP)	NOTES
							MAX. WPD HOSES (FT.)	EAT (°F) D.B./W.B.	TOT. CAP. (MBH)	SEN. CAP. (MBH)	FLOW (GPM)	MAX. WPD HOSES (FT.)	EAT (°F) DB	CAPACITY (MBH)	VOLT	Ø	HZ		
FCU-A	MCQUAY	FCVC	102	200	-	1.1	0.4	80/67	5.5	4.4	0.6	0.4	70	9.5	115	1	60	1/30	1.2,3,4
FCU-HA	MCQUAY	FCVH	102	200	-	1.1	0.4	80/67	5.5	4.4	0.6	0.4	70	9.5	115	1	60	1/30	1.2,4,5
FCU-B	MCQUAY	FCVC	103	275	-	1.3	0.6	80/67	6.4	5.5	0.9	0.6	70	13.1	115	1	60	1/30	1.2,3,4
FCU-HB	MCQUAY	FCVH	103	275	-	1.3	0.6	80/67	6.4	5.5	0.9	0.6	70	13.1	115	1	60	1/30	1.2,4,5
FCU-C	MCQUAY	FCVC	104	350	-	2.0	1.5	80/67	10.0	8.1	1.1	1.5	70	16.5	115	1	60	1/25	1.2,3,4
FCU-HC	MCQUAY	FCVH	104	350	-	2.0	1.5	80/67	10.0	8.1	1.1	1.5	70	16.5	115	1	60	1/25	1.2,4,5
FCU-D	MCQUAY	FCVC	106	525	-	3.3	4.3	80/67	16.6	12.4	1.5	4.3	70	22.4	115	1	60	1/12	1.2,3,4
FCU-HD	MCQUAY	FCVH	106	525	-	3.3	4.3	80/67	16.6	12.4	1.5	4.3	70	22.4	115	1	60	1/12	1.2,4,5
FCU-E	MCQUAY	FCVC	108	600	-	4.1	6.8	80/67	20.4	14.8	1.9	6.8	70	27.9	115	1	60	1/12	1.2,3,4
FCU-HE	MCQUAY	FCVH	108	600	-	4.1	6.8	80/67	20.4	14.8	1.9	6.8	70	27.9	115	1	60	1/12	1.2,4,5
FCU-F	MCQUAY	FCVC	110	750	-	5.2	7.1	80/67	25.8	18.6	2.3	7.1	70	35.3	115	1	60	1/25	1.2,3,4
FCU-HF	MCQUAY	FCVH	110	750	-	5.2	7.1	80/67	25.8	18.6	2.3	7.1	70	35.3	115	1	60	1/25	1.2,4,5
FCU-G	MCQUAY	FCVH	112	975	-	6.5	12.9	80/67	32.5	23.3	2.9	12.9	70	44.1	115	1	60	1/12	1.2,3,4
FCU-HG	MCQUAY	FCVH	112	975	-	6.5	12.9	80/67	32.5	23.3	2.9	12.9	70	44.1	115	1	60	1/12	1.2,4,5
FCU-H	MCQUAY	FSDH	S12	1000	150	6.8	6.9	80/67	33.8	24.3	1.7	2.5	70	24.3	115	1	60	1/3	1.4,7
FCU-J	MCQUAY	FSDH	S12	1025	-	8.0	10.2	80/67	40.3	27.4	1.7	2.5	70	24.6	115	1	60	1/3	1.4,6
FCU-K	MCQUAY	FSDH	S20	1900	200	14.0	8.7	80/67	70.4	48.6	2.9	0.6	70	42.3	115	1	60	1/3	1.4,6

NOTES:  
 1. PROVIDE WITH THE FOLLOWING FACTORY INSTALLED PIPING PACKAGE OPTIONS: AUTOMATIC FLOW VALVES, DDC SYSTEM COMPATIBLE CONTROL VALVES, SHUTOFF VALVES, STRAINERS, AND CONDENSATE OVERFLOW SWITCH.  
 2. ALL PIPING SHALL BE SAME SIDE CONNECTIONS.  
 3. PROVIDE UNITS WITH LEVELING LEG, INTEGRAL THERMOSTAT, INTERFACE MODULE FOR CONNECTION TO BUILDING AUTOMATION SYSTEM, AND SECONDARY DRAIN PAN OPTIONS.  
 4. PROVIDE COVER WITH 4" END EXTENSION ON BOTH SIDES, FLAT TOP AND FACTORY STAMPED HOLES FOR ELECTRICAL/DATA BOXES. RE: PLANS AND DETAILS.  
 5. PROVIDE WITH INTEGRAL DISCONNECT SWITCH.  
 6. PROVIDE WITH FULL SIZED FIELD FABRICATED SUPPLY DUCT COLLAR EXTENDING TO THE TOP OF ARCHITECTURAL COVER. ATTACH NEOPRENE GASKET TO DUCT AS FINAL CONNECTION TO COVER.  
 7. PROVIDE WITH FULL SIZED FIELD FABRICATED SUPPLY DUCT COLLAR EXTENDING TO THE TOP OF ARCHITECTURAL COVER. ATTACH NEOPRENE GASKET TO DUCT AS FINAL CONNECTION TO COVER.  
 8. PROVIDE WITH DDC SYSTEM COMPATIBLE THERMOSTAT.  
 9. PROVIDE WITH RETURN DUCT MOUNTED, DDC SYSTEM COMPATIBLE THERMOSTAT.



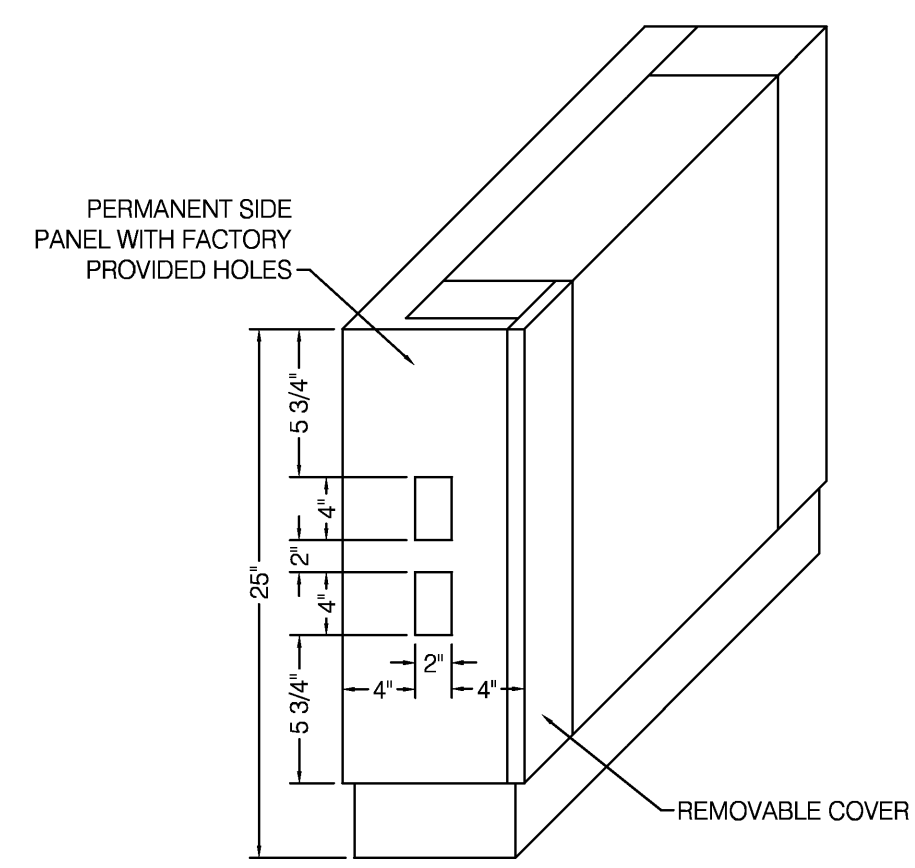
### 2 MULTIPLE PIPE ROOF PENETRATIONS NO SCALE

### CONDENSATE PUMP SCHEDULE

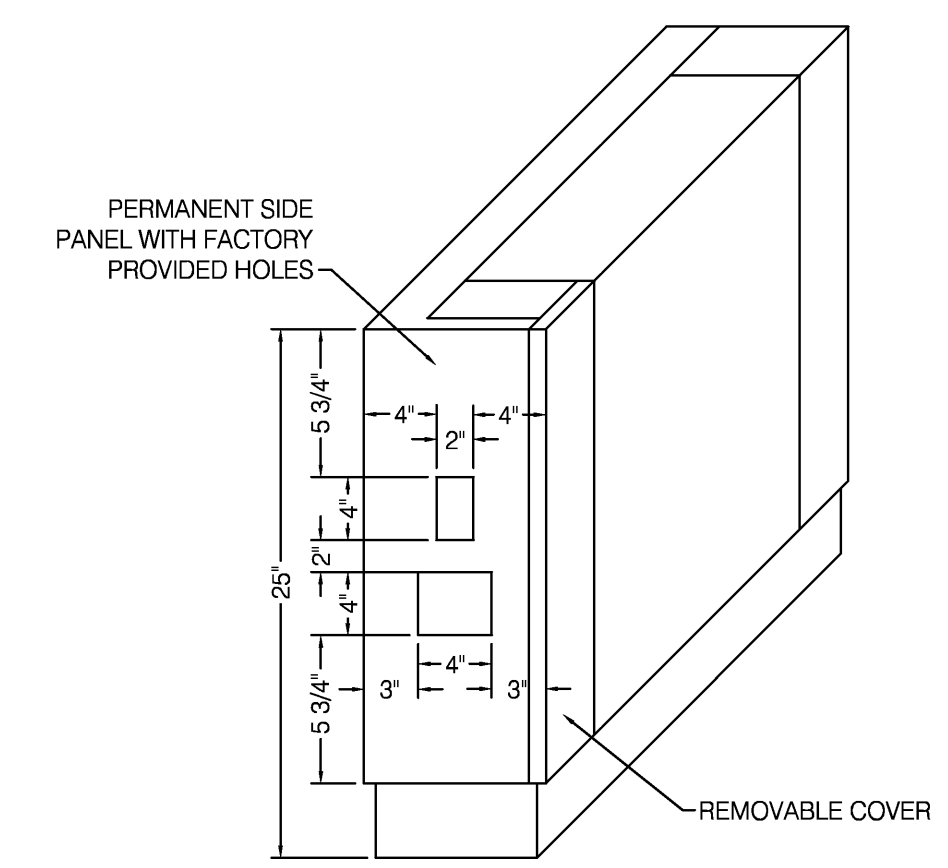
MARK NO.	MANUFACTURER	MODEL NO.	USE	RESERVOIR SIZE (GALLONS)	FLOW RATE (GPM)	HEAD (FT.)	MOTOR SPEED (RPM)	ELECTRICAL			NOTES	
								VOLT	Ø	HZ		
P-1	LITTLE GIANT	VCMA-1SULS	CONDENSATE	1/2	1/2	9	-	120	1	60	1/50HP	1

NOTES:  
 1. CONTRACTOR SHALL WIRE AUXILIARY SAFETY SWITCH INTO CONTROL CIRCUIT FOR COOLING UNIT SHUTDOWN UPON PUMP FAILURE.

### 3 FACTORY STAMPING DETAIL A NO SCALE



### 4 FACTORY STAMPING DETAIL B NO SCALE



**HISTORIC TRUMAN COURTHOUSE**  
 INTERIOR RENOVATION  
 102 NORTH MAIN STREET, INDEPENDENCE, MISSOURI 64050

ISSUED FOR CONSTRUCTION

PROJECT NO.	
DATE	10-19-2012
DRAWN BY	LD/SMP
CHECKED BY	DWE
CHECKED BY	LDR
REVISED DATE	DESCRIPTION

SCHEDULES, SYMBOLS & GENERAL NOTES  
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M-202

DWG FILE: P:\0000\048\_Jackson County Courthouse\Drawings\48R420-203.dwg USER: dan PLOT DATE/TIME: 10/19/2012 3:24pm

