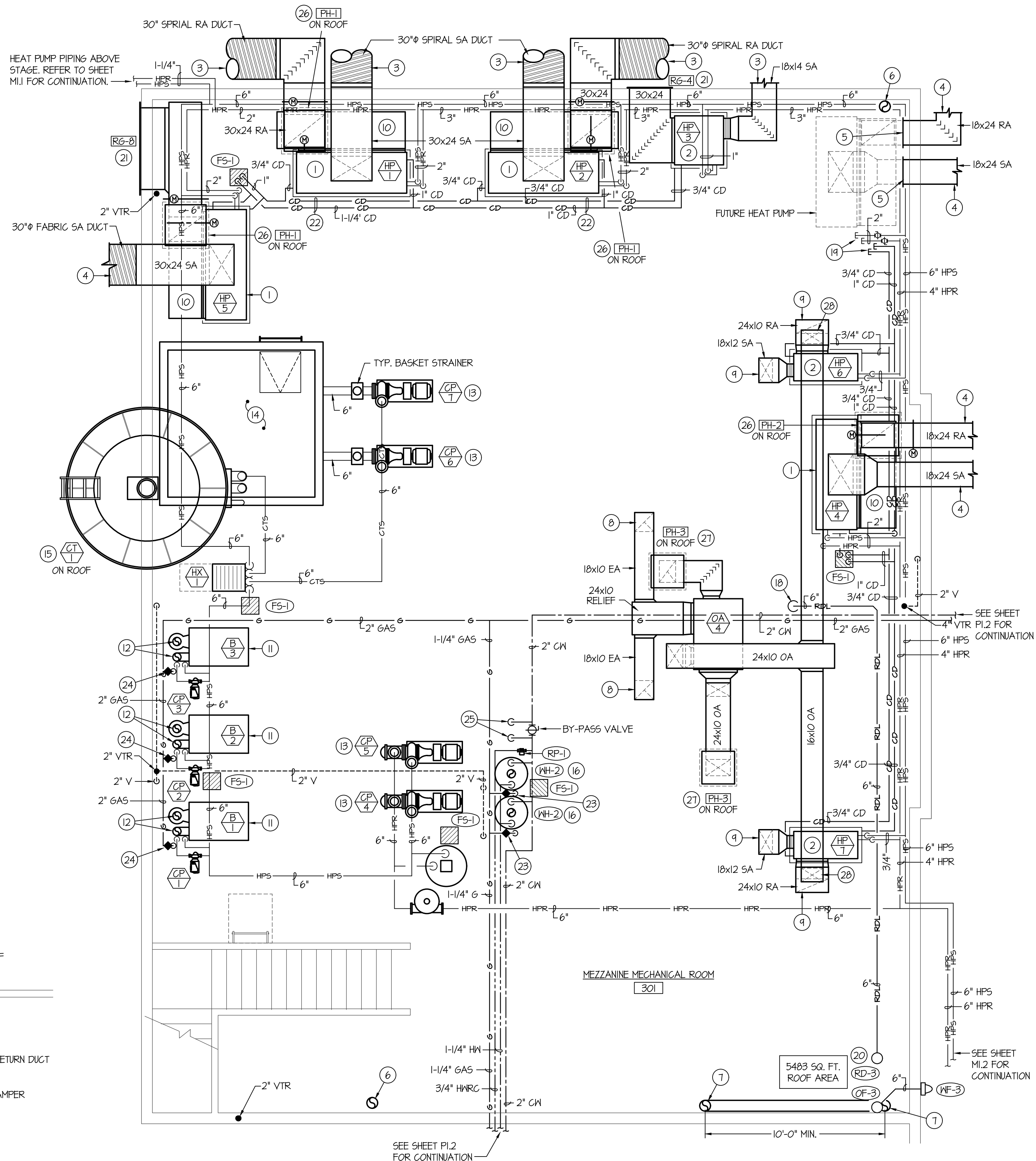
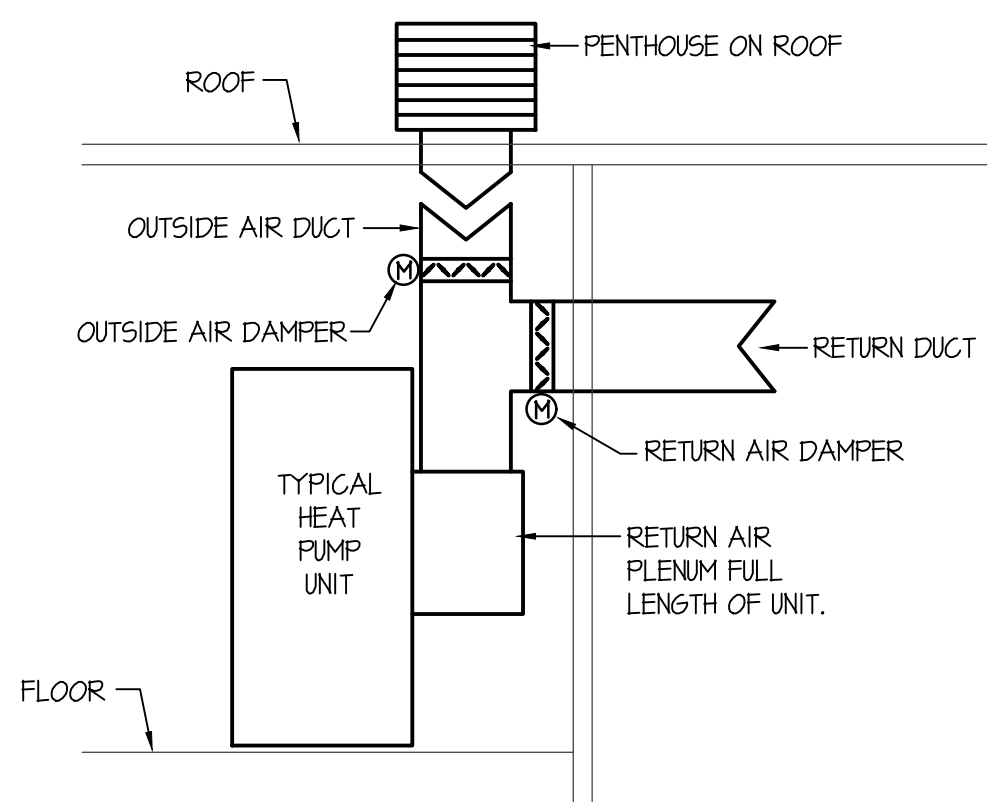
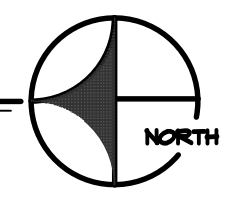


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**ECONOMIZED DAMPER SCHEMATIC**  
NO SCALE



**LARGE SCALE MEZZANINE MECHANICAL ROOM**  
SCALE: 1/4" = 1'-0"



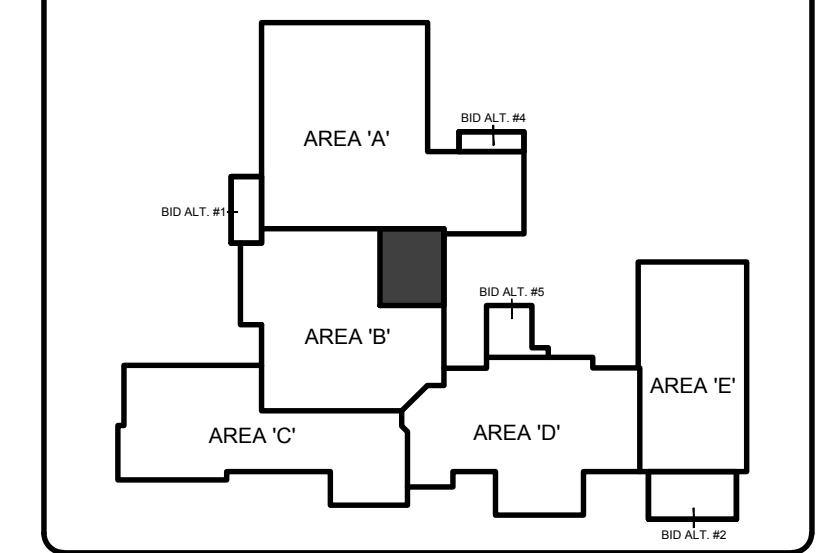
**PLAN NOTES:**

- 1 PROVIDE AND INSTALL LARGE VERTICAL WATER SOURCE HEAT PUMP AS SPECIFIED WITH 2" HIGH SHEET METAL DRAIN PAN BELOW. PROVIDE VIBRATION ISOLATORS AT EACH CORNER. CONNECT DUCTWORK AS SHOWN TO UNIT WITH FLEXIBLE CONNECTIONS. CONNECT TO 2" HEAT PUMP SUPPLY AND RETURN PIPING WITH 2-WAY AUTOMATIC CONTROL VALVE, SHUT-OFF VALVES AND FLEXIBLE HOSE KITS. REFER TO DETAIL AM3.2 FOR TYPICAL PIPING CONNECTION TO HEAT PUMP UNITS. RUN 1" CONDENSATE DRAIN LINE FROM UNIT AND SEPARATE 3/4" DRAIN LINE FROM DRAIN PAN TO NEAREST FLOOR SINK. GRADE DRAIN LINES DOWN IN DIRECTION OF FLOW. AND SUPPORT FROM MEZZANINE FLOOR.
- 2 PROVIDE AND INSTALL HORIZONTAL WATER SOURCE HEAT PUMP AS SPECIFIED. MOUNT UNIT ON MEZZANINE FLOOR WITH 2" HIGH SHEET METAL DRAIN PAN. PROVIDE VIBRATION ISOLATORS AT EACH CORNER. PROVIDE DUCT TRANSITIONS AS REQUIRED TO CONNECT HEAT PUMP. CONNECT TO HEAT PUMP SUPPLY AND RETURN PIPING WITH 2-WAY AUTOMATIC CONTROL VALVE, SHUT-OFF VALVES AND HOSE KITS. REFER TO DETAIL AM3.2 FOR TYPICAL PIPING CONNECTIONS. RUN 3/4" CONDENSATE DRAIN LINE FROM UNIT AND SEPARATE 3/4" DRAIN LINE FROM DRAIN PAN TO NEAREST FLOOR SINK. GRADE DRAIN LINES DOWN IN DIRECTION OF FLOW. AND SUPPORT FROM MEZZANINE FLOOR.
- 3 REFER TO SHEET M1.1 FOR CONTINUATION OF DUCTWORK.
- 4 REFER TO SHEET M1.2 FOR CONTINUATION OF DUCTWORK.
- 5 INSTALL DUCTWORK UNDER BASE BID CONDITIONS. GAP INSIDE MECHANICAL ROOM FOR FUTURE CONNECTION.
- 6 RISE 6" DUCT UP THRU MECHANICAL ROOM FROM EXHAUST FAN BELOW. (SEE SHEET M1.2 FOR CONTINUATION OF DUCTWORK AND EXHAUST FAN BELOW) EXTEND DUCT UP THRU ROOF WITH WEATHER GAP. REFER TO DETAIL HMB.1 FOR TYPICAL INSTALLATION OF FAN AND ROOF CAP.
- 7 RISE 6" DUCT UP THRU MECHANICAL ROOM FROM EXHAUST FAN BELOW. (SEE SHEET M1.2 FOR CONTINUATION OF DUCTWORK AND EXHAUST FAN BELOW) OFFSET DUCT UP THRU ROOF WITH WEATHER GAP. REFER TO DETAIL HMB.1 FOR TYPICAL INSTALLATION OF FAN AND ROOF CAP. ROOF CAP TO MINIMUM OF 10'-0" AWAY FROM ROOF DRAINS.
- 8 RISE 14x14 EXHAUST DUCT UP THRU MEZZANINE MECHANICAL ROOM FROM BELOW. EXTEND TO ERV UNIT AS SHOWN. REFER TO SHEET M1.2 FOR CONTINUATION OF DUCTWORK BELOW.
- 9 RISE 18x10 SUPPLY AIR DUCT AND 24x10 RETURN AIR DUCT UP THRU FLOOR FROM BELOW. CONNECT TO HEAT PUMP WITH FLEXIBLE CONNECTIONS. REFER TO SHEET M1.2 FOR CONTINUATION OF DUCTWORK BELOW.
- 10 PROVIDE RETURN AIR PLENUM AT REAR OF VERTICAL HEAT PUMP. RETURN DUCT AND OUTSIDE AIR DUCT TO PLENUM AS SHOWN.
- 11 PROVIDE AND INSTALL GAS FIRED CONDENSING BOILER AS SPECIFIED. PROVIDE BOILER CIRCULATING PUMP AT EACH BOILER AND CONNECT TO BOILER PIPING LOOP. REFER TO BOILER PIPING DIAGRAM ON SHEET M2.2 FOR TYPICAL PIPING CONNECTIONS.
- 12 RISE (2) 6" BOILER VENTS UP THRU ROOF WITH CONCENTRIC TYPE FITTING. REFER TO DETAIL AM3.3 FOR TYPICAL INSTALLATION.
- 13 MOUNT PUMPS ON INERTIA BASE WITH VIBRATION ISOLATORS UNDER EACH CORNER. REFER TO DETAIL FMB.1 FOR TYPICAL PUMP BASE.
- 14 PROVIDE 4'-0" SQUARE BY 8'-0" HIGH BY 1/4" THICK METAL COOLING TOWER SUMP COMPLETE WITH LID, ACCESS HATCH, AND ACCESS LADDER. REFER TO DETAIL LMB.1 FOR TYPICAL CONSTRUCTION AND PIPING CONNECTIONS.
- 15 PROVIDE COOLING TOWER AS SPECIFIED. TOWER TO BE MOUNTED ON ROOF WITH GALVANIZED METAL SUPPORT TO MATCH FOOT PRINT OF TOWER. PROVIDE. (REFER TO STRUCTURAL DRAWINGS.)
- 16 PLUMBING CONTRACTOR TO PROVIDE AND INSTALL GAS FIRED WATER HEATER AS SPECIFIED. COORDINATE WATER HEATER LOCATION WITH OTHER EQUIPMENT AND PIPING. PROVIDE DRAIN PAN BELOW HEATER AND PIPING TO NEAREST FLOOR SINK. REFER TO DETAIL JPB.1 FOR TYPICAL INSTALLATION AND PIPING CONNECTIONS.
- 17 PLUMBING CONTRACTOR TO PROVIDE AND INSTALL WATER SOFTENER COMPLETE WITH BRINE TANK AS SPECIFIED. COORDINATE SOFTENER LOCATION WITH OTHER EQUIPMENT AND PIPING. PROVIDE DRAIN PAN BELOW EACH PIECE OF EQUIPMENT AND RUN DRAIN LINE TO NEAREST FLOOR SINK. REFER TO DETAIL FMB.2 FOR TYPICAL INSTALLATION AND PIPING CONNECTIONS.

**PLAN NOTES:**

- 18 PLUMBING CONTRACTOR TO DROP 6" ROOF DRAIN LINE DOWN IN PLUMBING CHASE BELOW. REFER TO LARGE SCALE PLAN ON SHEET P2.2 AND TO SHEETS P1.2 AND P1.0 FOR CONTINUATION OF ROOF DRAIN PIPING.
- 19 ROUGH-IN 2" HEAT PUMP SUPPLY AND RETURN LINES COMPLETE WITH SHUT-OFF VALVES. GAP LINES FOR FUTURE CONNECTION. REFER TO DETAIL AM3.2 FOR TYPICAL PIPING CONNECTION TO HEAT PUMP UNITS. RUN 1" CONDENSATE DRAIN LINE FROM UNIT AND SEPARATE 3/4" DRAIN LINE FROM DRAIN PAN TO NEAREST FLOOR SINK. GRADE DRAIN LINES DOWN IN DIRECTION OF FLOW. AND SUPPORT FROM MEZZANINE FLOOR.
- 20 PLUMBING CONTRACTOR TO PROVIDE AND INSTALL ROOF DRAIN AND OVERFLOW DRAIN AS SPECIFIED. REFER TO DETAIL CP3.1. COORDINATE ALL OTHER PIPING AND DUCTWORK WITH ROOF DRAINS. NO ROOF PENETRATIONS ARE TO BE WITHIN 10'-0" MINIMUM OF ROOF DRAINS.
- 21 INSTALL RETURN AIR GRILLE 6" ABOVE MEZZANINE MECHANICAL ROOM FLOOR. REFER TO SHEET M2.1 FOR CONTINUATION OF DUCT.
- 22 SUPPORT DRAIN LINES FROM MEZZANINE FLOOR. GRADE PIPING DOWN IN DIRECTION OF FLOW. DO NOT RUN DRAIN LINE IN FRONT OF EQUIPMENT ACCESS LOCATIONS.
- 23 PROVIDE 3/4" PRESSURE REGULATOR ON HIGH PRESSURE GAS LINE AND VENT TO OUTSIDE AS RECOMMENDED BY MANUFACTURER. DROP 3/4" LOW PRESSURE GAS LINE DOWN AND CONNECT TO WATER HEATER WITH SHUT-OFF VALVE AND FLEXIBLE HOSE. REFER TO DETAIL OP3.1 FOR TYPICAL GAS LINE CONNECTION.
- 24 PROVIDE 1/4" PRESSURE REGULATOR ON HIGH PRESSURE GAS LINE AND VENT TO OUTSIDE AS RECOMMENDED BY MANUFACTURER. DROP 2" LOW PRESSURE GAS LINE DOWN AND CONNECT TO WATER HEATER WITH SHUT-OFF VALVE AND FLEXIBLE HOSE. REFER TO DETAIL OP3.1 FOR TYPICAL GAS LINE CONNECTION.
- 25 DROP 2" COLD WATER LINE DOWN THRU FLOOR. REFER TO SHEET P2.2 FOR CONTINUATION OF 2" COLD WATER LINE TO WATER SOFTENER. RISE 2" SOFT WATER LINE UP THRU FLOOR AND CONNECT TO WATER HEATERS AS SHOWN. PROVIDE BY-PASS VALVE IN 2" WATER LINE IN MECHANICAL ROOM.
- 26 DROP RETURN AIR DUCT DOWN AND CONNECT TO PLENUM BEHIND HEAT PUMP UNIT. RISE OUTSIDE AIR DUCT UP THRU ROOF AND CONNECT TO PENTHOUSE. PROVIDE MOTORIZED DAMPER IN HORIZONTAL RETURN DUCT AND IN VERTICAL OUTSIDE AIR DUCT ABOVE HORIZONTAL DUCT. INTERLOCK WITH CORRESPONDING HEAT PUMP FOR FULL ECONOMIZER CYCLE. REFER TO DAMPER SCHEMATIC - THIS SHEET. REFER TO DETAIL BMB.3 FOR TYPICAL INSTALLATION OF PENTHOUSE. ALL INTAKE VENTS ON ROOF TO BE 10'-0" MINIMUM AWAY FROM ANY EXHAUST VENT OR PLUMBING VENT.
- 27 PROVIDE AND INSTALL PENTHOUSE ON ROOF AS SPECIFIED. REFER TO DETAIL BMB.3 FOR TYPICAL INSTALLATION OF PENTHOUSE. ALL INTAKE VENTS ON ROOF TO BE 10'-0" MINIMUM AWAY FROM ANY EXHAUST VENT OR PLUMBING VENT.
- 28 DROP 16x10 OUTSIDE AIR DUCT DOWN AND CONNECT TO RETURN AIR DUCT NEAR UNIT. PROVIDE MOTORIZED DAMPER, DUCT ACCESS DOOR, AND MANUAL BALANCING DAMPER IN EACH DUCT. BALANCE MANUAL DAMPER TO 800 CFM MAXIMUM. REFER TO DETAIL BMB.1 FOR TYPICAL DAMPER INSTALLATION.

**KEY PLAN:**



ORIGINAL DRAWING SIGNED BY: DWAYNE C. SUDNEEKS  
DATE ORIGINAL SIGNED: Mar 05, 2020  
ORIGINAL ON FILE AT ENGINEERED SYSTEMS ASSOCIATES  
1355 EAST CENTER, POCATELLO, IDAHO 83201

**Professional Engineer**  
REGISTERED  
5762  
STATE OF IDAHO  
DWAYNE C. SUDNEEKS

**Engineered Systems Associates**  
1355 EAST CENTER  
POCATELLO, IDAHO 83201  
PHONE: (208) 233-0501  
FAX: (208) 233-0529  
EMAIL: esa@engsystems.com  
ESA JOB NUMBER: 19099

**BID SET**

BRENT A. MCFARLAND AR-2561

STATE OF IDAHO

**IRMA & ASSOCIATES**  
1152 BOND AVENUE - Suite A REBERG, IDAHO 83440  
WWW.IRMA.COM VOICE (208) 358-2309 FAX (208) 358-2271

CONSULTANTS:  
LANDSCAPE ARCHITECT  
REWER & ASSOCIATES  
1605 South Woodruff  
Idaho Falls, Idaho 83404  
(208) 528-8504

CIVIL ENGINEERING  
CONNECT ENGINEERING  
1000 Harrison Dr.  
Idaho Falls, Idaho 83405  
(208) 681-8000

STRUCTURAL ENGINEERING  
PROST STRUCTURAL ENGINEERING  
1020 Lincoln Road  
Idaho Falls, Idaho 83401  
(208) 227-8404  
Fax (208) 227-8405

MECHANICAL ENGINEERING  
ENGINEERED SYSTEMS ASSOC.  
1355 East Center Street  
Pocatello, Idaho 83204  
(208) 233-0501  
Fax (208) 233-0529

ELECTRICAL ENGINEERING  
PANE ENGINEERING INC.  
1823 East Center St.  
Pocatello, Idaho 83201  
(208) 232-4430  
Fax (208) 232-1435

PROJECT: SUGAR - SALEM  
SD #322  
JUNIOR HIGH SCHOOL

SUGAR CITY IDAHO

DRAWING TITLE: LARGE SCALE MEZZANINE MECH ROOM

REVISION:

#	DATE	COMMENT

DRAWN BY: M. JENSEN JOB NO: 764  
CHECKED BY: D. SUDNEEKS DATE: APR '20  
PLOT DATE: Apr 06, 2020

DRAWING NO. FILE: 19099-M2.1.dwg  
**M2.1**  
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