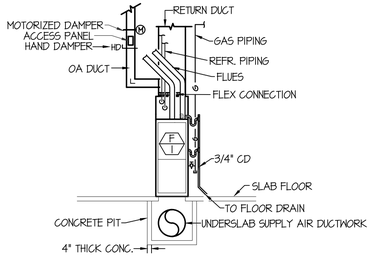
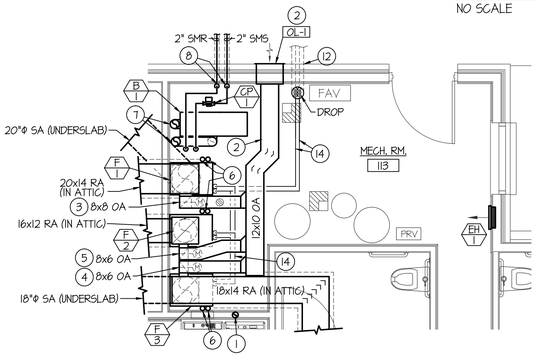


TYPICAL DOWNFLOW FURNACE ELEVATION

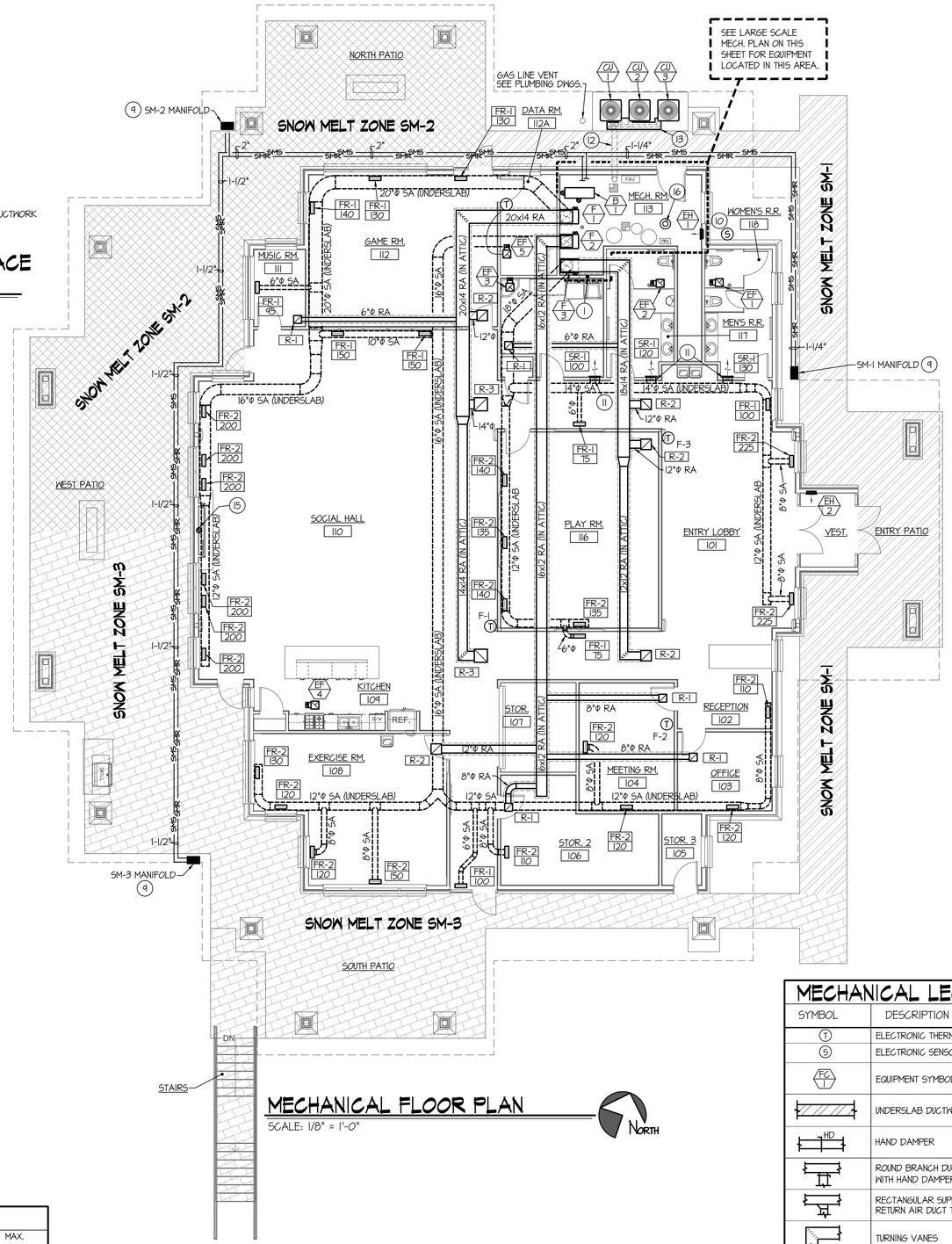
NO SCALE



LARGE SCALE MECH. ROOM MECHANICAL PLAN

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

NORTH



MECHANICAL FLOOR PLAN

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

NORTH

SNOW MELT DESIGN

LOCATION	REXBURG, IDAHO
OUTDOOR DESIGN TEMP.	-15°F
PIPING LAYOUT	5/8"Φ ID PEX @ 9" O.C.
FLUID TYPE	40% GLYCOL
TOTAL FLOOR AREA	4,351 SQ. FT.
TOTAL HEAT LOAD	655,650 BTU
SUPPLY WATER TEMP.	120° F
TEMPERATURE DROP	20° F
SURFACE TEMPERATURE	83° F
BTU/HR/SQFT	150 BTH
TOTAL FLOW	53 GPM

SNOW MELT ZONE SCHEDULE

	AREA SERVED	SQUARE FOOTAGE	LOOPS REQUIRED	GPM PER LOOP	TOTAL GPM	MANIFOLD PIPE SIZE	APPROXIMATE LOOP LENGTH	SNOWMELT SYSTEM BTU	MAX. PD
SM-1	NORTH - EAST SIDEWALKS & PATIO	1,039	7	2.0	14.0	1-1/4"	250'	158,850	17.6'
SM-2	WEST SIDEWALKS & PATIO	1,465	9	2.0	18.0	1-1/2"	250'	219,750	17.8'
SM-3	SOUTH SIDEWALKS & PATIO	1,847	11	2.0	21.0	1-1/2"	250'	277,050	22.8'

* RADIANT SNOWMELT HEAT SYSTEM TO BE 40% GLYCOL

MECHANICAL LEGEND

SYMBOL	DESCRIPTION
T	ELECTRONIC THERMOSTAT
S	ELECTRONIC SENSOR
EQ 1	EQUIPMENT SYMBOL
	UNDERSLAB DUCTWORK
HD	HAND DAMPER
	ROUND BRANCH DUCT WITH HAND DAMPER
	RECTANGULAR SUPPLY AND RETURN AIR DUCT TAKE-OFF
	TURNING VANES
	DUCT TRANSITION
	RETURN AIR OR EXHAUST GRILLE
	CEILING DIFFUSER
S	CEILING MOUNTED EXHAUST FAN
SMS	SNOWMELT SUPPLY PIPING
SMR	SNOWMELT RETURN PIPING

PLAN NOTES:

1. INSTALL DRYER VENT BOX IN WALL AND RISE 4"Φ DRYER VENT UP IN WALL TO ROOF VENT AS SHOWN ON DETAIL ON SHEET M200.
2. INSTALL LOUVER OL-1 AS HIGH AS POSSIBLE ON EXTERIOR WALL AND RUN 12x10 OA DUCT AS HIGH AS POSSIBLE IN MECH. ROOM.
3. CONNECT 8x8 OA DUCT TO RETURN AIR DUCT ON TOP OF FURNACE AND INSTALL MOTORIZED DAMPER, ACCESS PANEL AND HAND DAMPER IN VERTICAL PORTION OF 8x8 OA DUCT. INTERLOCK MOTORIZED DAMPER WITH FURNACE OPERATION AND BALANCE HAND DAMPER TO 200 CFM.
4. CONNECT 8x6 OA DUCT TO RETURN AIR DUCT ON TOP OF FURNACE AND INSTALL MOTORIZED DAMPER, ACCESS PANEL AND HAND DAMPER IN VERTICAL PORTION OF 8x6 OA DUCT. INTERLOCK MOTORIZED DAMPER WITH FURNACE OPERATION AND BALANCE HAND DAMPER TO 160 CFM.
5. CONNECT 8x6 OA DUCT TO RETURN AIR DUCT ON TOP OF FURNACE AND INSTALL MOTORIZED DAMPER, ACCESS PANEL AND HAND DAMPER IN VERTICAL PORTION OF 8x6 OA DUCT. INTERLOCK MOTORIZED DAMPER WITH FURNACE OPERATION AND BALANCE HAND DAMPER TO 120 CFM.
6. RISE (2) 3"Φ FURNACE FLUES UP THRU ROOF TO VERTICAL VENT TERMINATION ASSEMBLY AND SEAL ROOF PENETRATION WEATHERTIGHT. SEE DETAIL ON SHEET M200.
7. RISE (2) 6"Φ BOILER FLUES UP THRU ROOF TO VERTICAL VENT TERMINATION ASSEMBLY PROVIDED BY MFG. AND SEAL ROOF PENETRATION WEATHERTIGHT.
8. DROP 2" SNOWMELT SUPPLY AND 2" SNOWMELT RETURN PIPING DOWN EXPOSED ON WALL AND RUN TO ZONE BOXES AS SHOWN ON PLAN.
9. INSTALL SNOWMELT MANIFOLDS IN LANDSCAPING BOX LOCATED IN LAWN ADJACENT TO CONCRETE SLAB PATIO / SIDEWALKS. SEE BOILER PIPING DIAGRAM ON SHEET M201.
10. INSTALL OUTDOOR AIR TEMP SENSOR ON NORTH WALL OF BUILDING AS SHOWN. SENSOR TO BE TEKMAR 070 OR APPROVED EQUAL.
11. RISE 14x3-1/2" UNLINED SUPPLY DUCT UP IN WALL TO SERVE SIDEWALL SUPPLY REGISTER ON WALL. MOUNT REGISTER AT 12" A.F.F.
12. INSTALL 8"Φ PVC SLEEVE UNDERSLAB FROM CONDENSING UNIT PAD TO MECH ROOM AND RISE UP THRU SLAB IN MECH. ROOM AS SHOWN. ALL ELBOWS TO BE LONG SWEEP UNDER SLAB. RUN ALL REFRIGERANT PIPING & CONTROL CONDUIT FROM CONDENSING UNIT TO FURNACE DX COOLING COIL IN 8"Φ PVC SLEEVE. SEAL OPENINGS IN ENDS OF SLEEVE WEATHERTIGHT.
13. COVER EXPOSED REFRIGERANT PIPING WITH 18 GA. GALVANIZED SHEET METAL COVER WITH 24 GA. PREFINISHED SHEET METAL SKIN. SEE DETAIL ON SHEET M201.
14. RISE REFRIGERANT PIPING AS HIGH AS POSSIBLE IN MECH. ROOM AND RUN TO SERVE FURNACES AS SHOWN.
15. INSTALL 8"Φ FIRE PLACE FLUE THRU ROOF TO VERTICAL VENT TERMINATION KIT. SEAL ROOF PENETRATION WEATHERTIGHT. SEE MANUFACTURER'S DATA FOR FIRE PLACE FLUE MATERIAL.
16. INSTALL NEW SNOWMELT SENSOR ON ROOF. TIE INTO EXISTING CAMPUS POWERLINK SYSTEM. POWERLINK SYSTEM TO SEND SIGNAL TO 3-WAY VALVES TO OPEN UPON DETECTION OF SNOW / TEMPERATURE. PROVIDE RELAYS AS REQUIRED.

    INSTALL SNOWMELT ON FOR STAIRS AS PER DETAIL ON SHEET M201

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PROJECT:
A NEW COMMUNITY CENTER FOR:
BYU-IDAHO VILLAGE APTS.
REXBURG, IDAHO

SHEET TITLE:
MECHANICAL FLOOR PLANS

PROFESSIONAL ENGINEER REGISTERED 5762 STATE OF IDAHO DWAYNE C. SUDWEEKS

DRWN. BY:	CKD. BY:
SR	DCS
JOB NO.	DATE:
18089	MAY 2019

ORIGINAL DRAWING SIGNED BY: DWAYNE C. SUDWEEKS
DATE ORIGINAL SIGNED: MAY 09, 2019
ORIGINAL ON FILE AT ENGINEERED SYSTEMS ASSOCIATES
1355 EAST CENTER, POCATELLO, IDAHO 83201

SHEET: M100
OF: THREE

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