

EXHAUST FAN CONTROL

1. EXHAUST FAN EF-1 SHALL BE CONTROLLED VIA A REVERSE-ACTING THERMOSTAT WITHIN THE MECHANICAL ROOM AND VIA A HUMIDITY SENSOR LOCATED IN THE CRAWL SPACE.
2. WHEN SPACE TEMPERATURE RISES ABOVE 85 DEGREES F, THE FAN SHALL ENERGIZE. ON A FALL IN TEMPERATURE, THE REVERSE SHALL OCCUR.
3. WHEN SPACE HUMIDITY RISES ABOVE 60%, THE FAN SHALL ENERGIZE. ON A FALL IN HUMIDITY, THE REVERSE SHALL OCCUR.

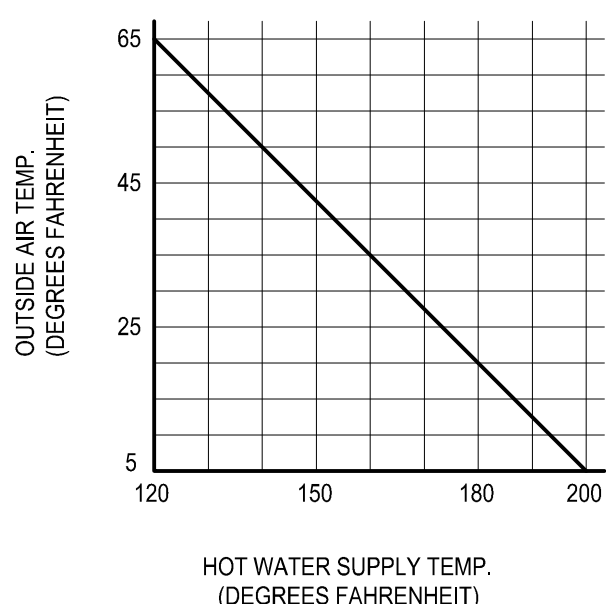
GEO THERMAL HEAT PUMP CONTROL

1. IN THE OCCUPIED MODE, FAN SHALL OPERATE CONTINUOUSLY, AND T-1 SHALL MODULATE VALVE V-1 TO MAINTAIN OCCUPIED SETPOINTS OF 75F (ADJUSTABLE) IN COOLING MODE AND 72F (ADJUSTABLE) IN HEATING MODE.
2. IN THE UNOCCUPIED MODE, FAN SHALL BE DE-ENERGIZED, AND VALVE V-1 SHALL BE CLOSED. ON EITHER A CALL FOR HEAT OR COOLING, THE FAN SHALL ENERGIZE, AND T-1 SHALL MODULATE VALVE V-1 TO MAINTAIN UNOCCUPIED SETPOINTS OF 65F (ADJUSTABLE) IN COOLING MODE AND 60F (ADJUSTABLE) IN HEATING MODE.
3. OCCUPIED/UNOCCUPIED MODE SHALL BE AS DETERMINED BY THE ENERGY MANAGEMENT CONTROL SYSTEM (EMCS).
4. T-1 SHALL BE A HEATING/COOLING THERMOSTAT WITH AN ADJUSTABLE DEADBAND OF 3 DEGREES F BETWEEN HEATING AND COOLING SETPOINT.

RADIATION CONTROL

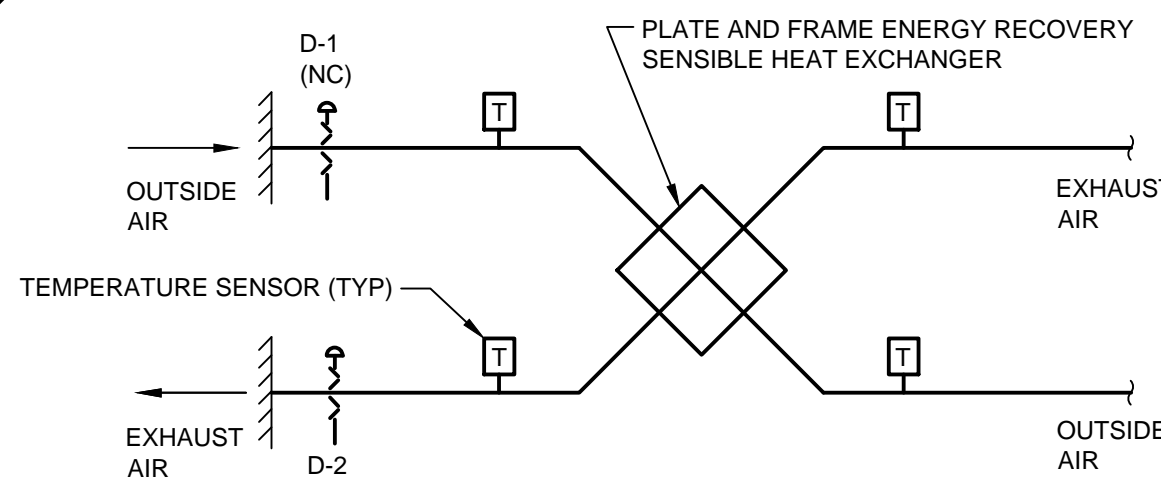
SPACE THERMOSTAT, TI, SHALL MODULATE VALVE, V-1, TO MAINTAIN SETPOINT.

1. STEAM CONTROL VALVES V1 AND V2 SHALL REMAIN CLOSED WHEN CIRCULATOR PUMPS ARE DE-ENERGIZED.
2. LEAD CIRCULATOR PUMP SHALL RUN CONTINUOUSLY. LAG PUMP SHALL START AUTOMATICALLY WHEN LOSS OF FLOW IS SENSED BY CURRENT SENSING RELAYS AT EACH PUMP. PROVIDE ALTERNATOR TO CONTROL LEAD/LAG PUMP OPERATION. LEAD PUMP SHALL BE ALTERNATED EVERY 300 HOURS (ADJUSTABLE) OF RUN TIME.
3. V1 SHALL MODULATE V1 AND V2 TO MAINTAIN SETPOINT OF 180°F (ADJUSTABLE).
4. DIFFERENTIAL PRESSURE SENSOR SHALL CONTROL DIFFERENTIAL PRESSURE VALVE TO MAINTAIN SYSTEM DIFFERENTIAL SETPOINT. DIFFERENTIAL PRESSURE SETPOINT SHALL BE DETERMINED BY THE A/C CONTRACTOR.
5. V2 SHALL MODULATE V1 & V2 TO MAINTAIN SETPOINT (ADJUSTABLE), AS INDICATED ON RESET SCHEDULE. VALVE V-3 SHALL BE MINIMUM 10% DIFFERENTIAL OPEN TO THE SYSTEM.



NOTE:
THE TEMPERATURE RESET
SCHEDULE SHALL BE CAPABLE
OF BEING ADJUSTED THROUGHOUT
THE COMPLETE SPAN OF THE
SENSORS.

ENERGY RECOVERY UNIT CONTROL



SUPPLY AIR FAN AND EXHAUST AIR FAN OPERATION SHALL BE INTERLOCKED. SUPPLY AND EXHAUST FANS SHALL OPERATE CONTINUOUSLY IN THE OCCUPIED MODE, H-O-A SWITCH SHALL BE KEPT IN 'AUTO' POSITION, AND ASSOCIATED MOTOR OPERATED DAMPERS D-1 AND D-2 SHALL BE FULLY OPEN. IN THE UNOCCUPIED MODE, THE FANS SHALL BE DE-ENERGIZED AND ASSOCIATED MOTOR OPERATED DAMPERS SHALL BE CLOSED.

OCCUPIED-UNOCCUPIED MODE SHALL BE AS DETERMINED BY THE ENERGY MANAGEMENT CONTROL SYSTEM (EMCS).

FULLY SPRINKLERED
CONTRACT DOCUMENTS SUBMISSION

Project Title: BUILDING 5 RENOVATION			Date: 6-15-2012
			Project No: 460-13-111
Building No: 5	Checked: MAF	Drawn: ERS	DRAWING NO: M6.04
Location: VAMHCS MEDICAL CENTER WILMINGTON, DELAWARE			Dwg. 45 of 67