BUILDING AUTOMATION SYSTEM (BAS) RISER DIAGRAM

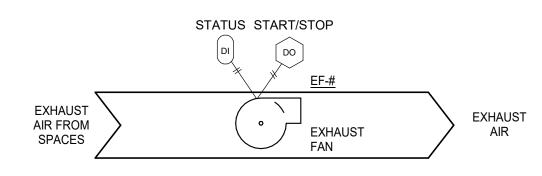
BAS CONTROL SYSTEM GRAPHICS INTEGRATION NOTE

1. BAS CONTRACTOR SHALL BUILD GRAPHICS FOR EACH SYSTEM, AND SHALL COORDINATE WITH THE OWNER WHICH VIEWABLE POINTS FROM THE EQUIPMENT BACNET LIST SHALL BE DISPLAYED ON THE CONTROLS GRAPHICS.

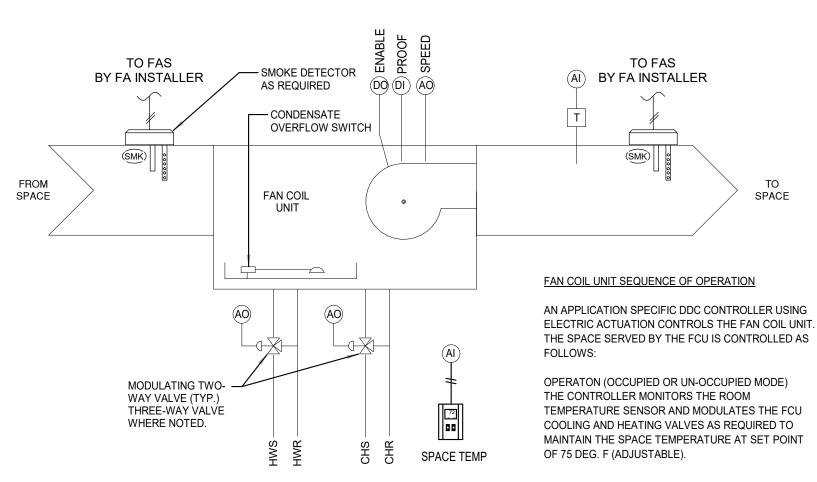
EXHAUST FAN - SEQUENCE OF OPERATION (TYPICAL)

EXHAUST FANS SHALL OPERATE INTERLOCKED WITH A SIGNAL FROM THE BUILDING AUTOMATION SYSTEM.

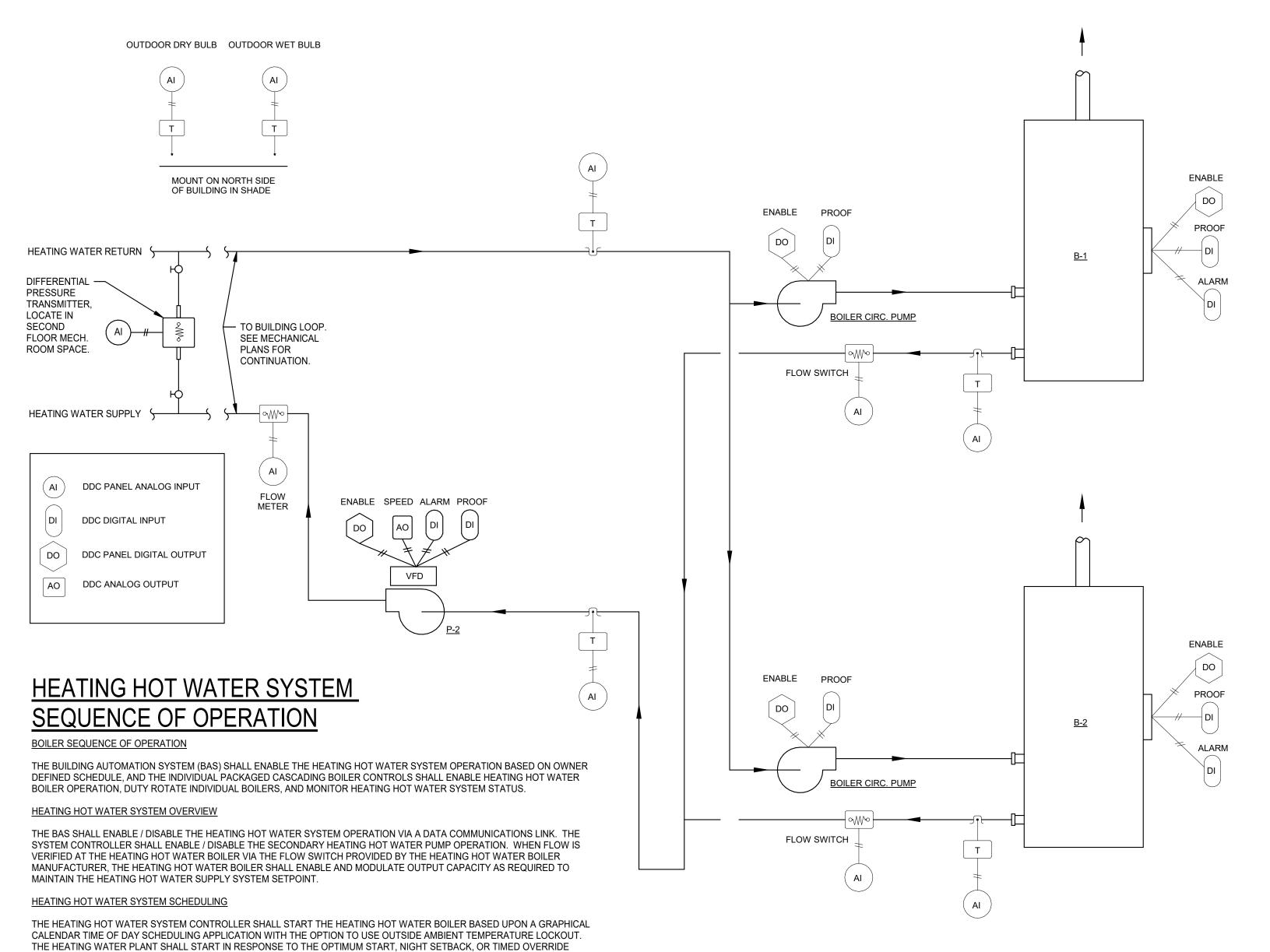
THE EXHAUST FAN SHALL SHUT DOWN UPON A SIGNAL FROM THE BUILDING FIRE ALARM SYSTEM.



2 EXHAUST FAN (TYPICAL) CONTROL DIAGRAM



4-PIPE FAN COIL UNIT CONTROL DIAGRAM



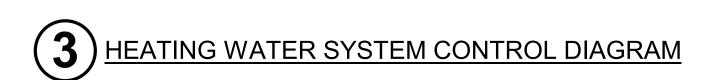
OPERATION OF THE BUILDING AIR HANDLING UNITS.

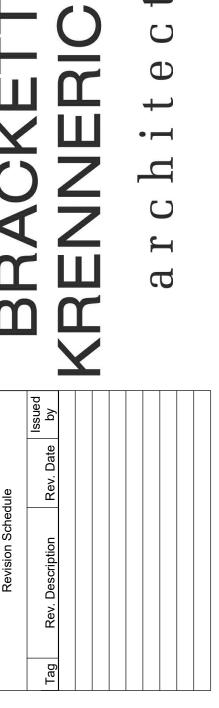
HEATING HOT WATER BOILER SEQUENCE OF OPERATION

UPON A CALL FOR HEATING, THE INDIVIDUAL PACKAGED ON-BOARD BOILER CONTROLLERS SHALL ENABLE AND DISABLE HEATING HOT WATER BOILERS AND THEIR ASSOCIATED BOILER CIRCULATOR PUMP AS REQUIRED TO MAXIMIZE HEATING HOT WATER SYSTEM EFFICIENCY BY UTILIZING A LOWER BOILER FIRING RATE ACROSS MULTIPLE BOILERS TO MAINTAIN CONDENSING OPERATION FOR AS LONG AS POSSIBLE. THE PACKAGED ON-BOARD BOILER CONTROLS SHALL MODULATE FIRING RATE TO MAINTAIN THE SYSTEM LEAVING WATER TEMPERATURE SETPOINT OF 150 DEG. F (ADJ.). RESET OF THE SUPPLY WATER TEMPERATURE FROM A MAXIMUM OF 150 DEG. F (ADJ.) TO A MINIMUM OF 110 DEG. F (ADJ.) SHALL OCCUR IN RESPONSE TO THE MEASURED VALUE FROM THE AMBIENT TEMPERATURE SENSOR PROVIDED BY THE BOILER MANUFACTURER. THE RESET SCHEDULE SHALL OCCUR FROM 70 DEG. F AMBIENT TEMPERATURE (FULL RESET) TO 40 DEG. F AMBIENT (NO RESET).

VARIABLE SPEED PUMPING SEQUENCE OF OPERATION

THE BAS SHALL MONITOR THE HEATING HOT WATER DIFFERENTIAL PRESSURE SENSOR. THE HEATING HOT WATER SYSTEM CONTROLLER SHALL CYCLE THE SYSTEM HEATING HOT WATER PUMPS BETWEEN PRIMARY / STANDBY POSITIONS WEEKLY TO ENSURE EQUAL PUMP RUN TIME. THE PRIMARY HEATING HOT WATER PUMP SHALL BE ENABLED BY THE HEATING HOT WATER SYSTEM CONTROLLER. WHEN ENABLED, THE PRIMARY HEATING HOT WATER PUMP SHALL START AND SHALL RUN CONTINUOUSLY. WHILE RUNNING, THE PRIMARY HEATING HOT WATER PUMP VARIABLE FREQUENCY DRIVE SHALL MODULATE PUMP SPEED AS REQUIRED TO MAINTAIN THE HEATING HOT WATER MINIMUM DIFFERENTIAL PRESSURE SETPOINT OF 15 PSI (ADJ.). IF, FOR ANY REASON, THE PRIMARY HEATING HOT WATER PUMP FAILS TO START OR THE PUMP STATUS DOES NOT MATCH ITS COMMANDED VALUE, THE STANDBY HEATING HOT WATER PUMP SHALL BE STARTED AUTOMATICALLY AND AN ALARM FOR THE FAILED PUMP SHALL BE GENERATED AT THE BAS WORKSTATION.





Commission Number

2309D

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Date: November 11, 2024

CONSULTING ENGINEERS,

PETTIT & PETTIT

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