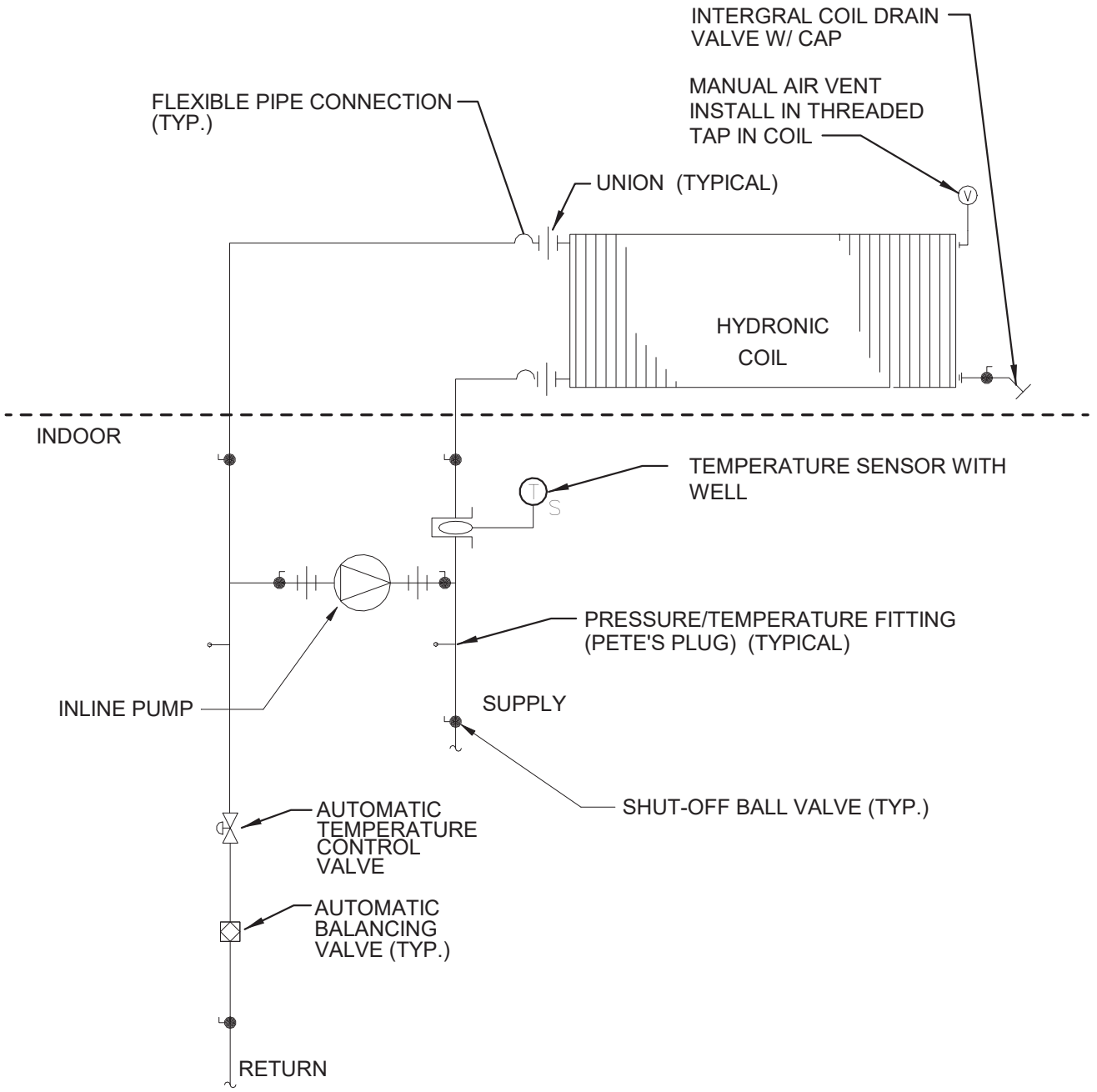

1 Hot Water Pumped Coil Detail

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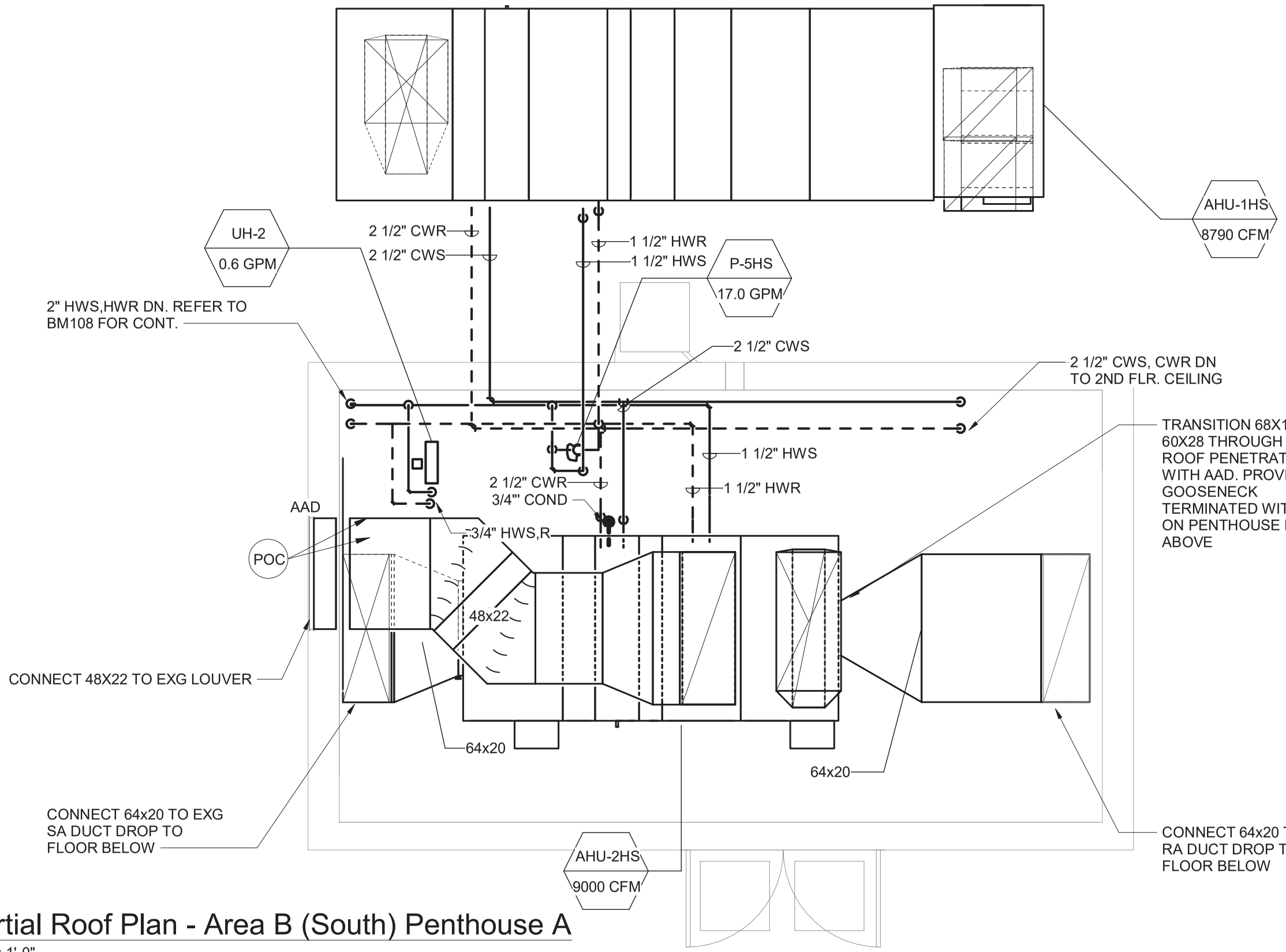
			Date:04/06/21
	Rev.:	Date:	Drawn By: DPM/jtk
Dobbs Ferry Union Free School District			Drawing No.:
Middle / High School			
Hot Water Pumped Coil Detail			BM02B



1 Partial Roof Plan - Area B (South) Penthouse A

1/4" = 1'-0"

NOTE. MOUNT ALL CONTROL VALVES,BALANCE VALVES, SHUT-OFF VALVES WITHIN THE PENTHOUSE.

Proj. No.:2349003-20001
Date:03/29/21
Drawn By: Author
Drawing No.: BM01B

Rev.:	Date:	Description:

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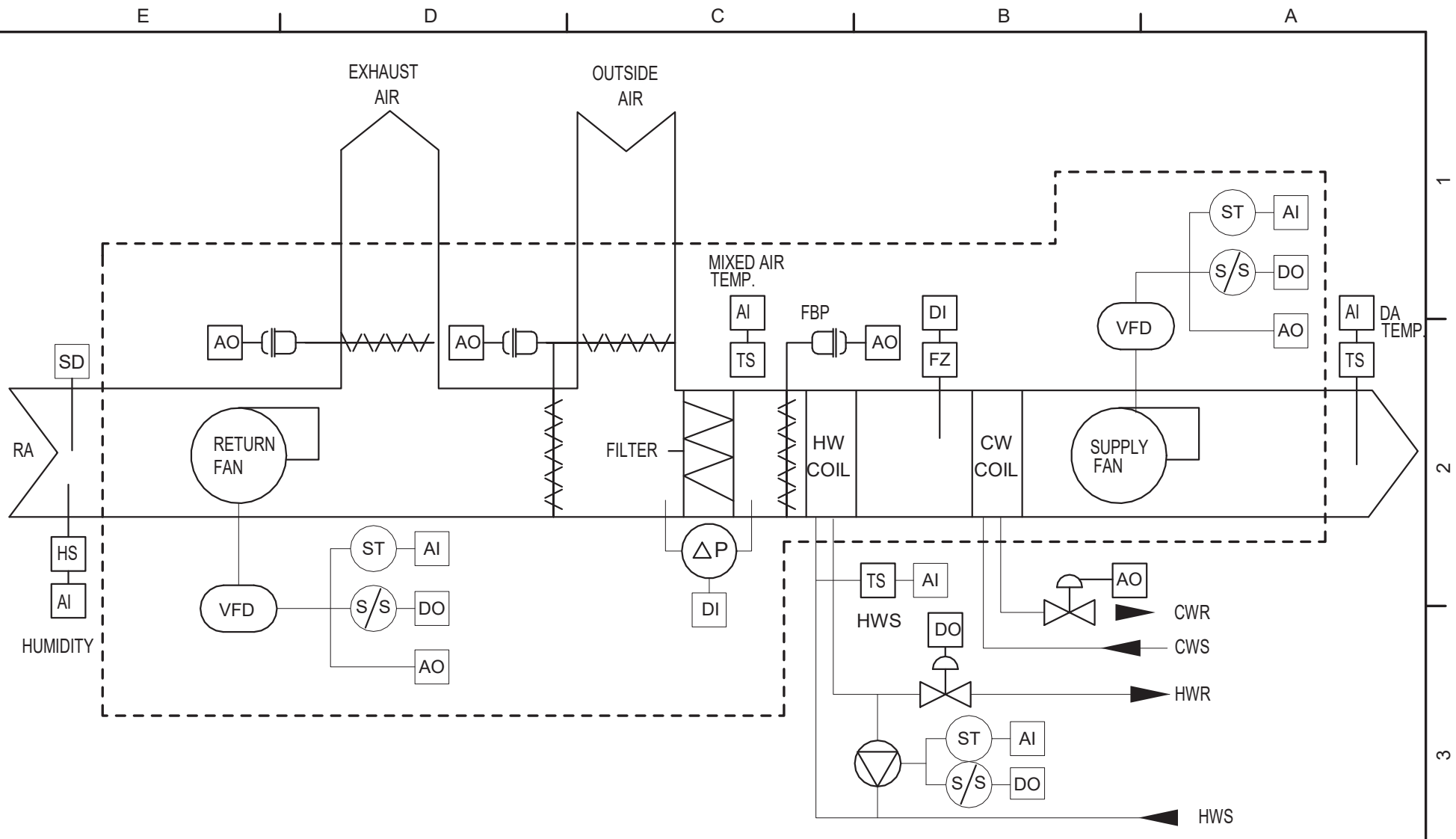
Dobbs Ferry Union Free School District
Middle / High School
Partial Roof Plan - Area B (South) Penthouse A



AIR HANDLING UNIT - HOT WATER/FACE & BYPASS AND CHILLED WATER VALVE CONTROL - SEQUENCE OF OPERATIONS:

NOTE: ALL CONTROL DEVICES WITHIN DASHLINE BOUNDARY WILL BE FACTORY INSTALLED AND WIRED TO A CONTROL TERMINAL STRIP WITHIN THE UNIT OR EXTENSION TO THE BUILDING AUTOMATION SYSTEM

1. OCCUPIED MODE:

a. SUPPLY FAN AND ASSOCIATED RETURN FAN SHALL RUN CONTINUOUSLY.
b. THE OUTSIDE AIR DAMPER SHALL OPEN TO THE POSITION REQUIRED TO MAINTAIN THE MINIMUM OUTSIDE AIR QUANTITY INDICATED. OUTSIDE AIR DAMPER SHALL NEVER BE POSITIONED BELOW THIS MINIMUM POSITION EXCEPT IN CASE OF ALARM.
c. THE RETURN FAN VFD SHALL TRACK THE SUPPLY FAN VFD AT 80% (ADJ.) OF THE SUPPLY FAN VFD SPEED AND NEVER DROP BELOW 20%.

d. WHEN THE OUTSIDE AIR TEMPERATURE IS 50 DEG. F. OR LOWER, START COIL PUMP AND OPEN HOT WATER VALVE.
e. THE CONTROLLER SHALL MEASURE THE SUPPLY AIR TEMPERATURE AND MODULATE THE FACE AND BYPASS DAMPER TO MAINTAIN A SUPPLY TEMPERATURE SETPOINT OF 55 DEG. F. (ADJ.).
f. THE CONTROLLER SHALL MEASURE THE MIXED AIR TEMPERATURE AND MODULATE THE ECONOMIZER DAMPERS IN SEQUENCE TO MAINTAIN A SETPOINT 2 DEG. F. (ADJ.) LESS THAN THE SUPPLY AIR TEMPERATURE SETPOINT. THE OUTSIDE AIR DAMPER SHALL NEVER BELOW THE MINIMUM OUTSIDE AIR SETPOINT.
g. AS THE MIXED AIR TEMPERATURE CONTINUES TO RISE AND THE OUTSIDE AIR CAN NO LONGER PROVIDE ECONOMIZER COOLING, RETURN THE OUTSIDE AND RETURN AIR DAMPERS TO MiNIMUM POSITION AND OPEN THE CHILLED WATER CONTROL VALVE TO MAINTAIN THE SUPPLY AIR TEMPERATURE SETPOINT.

2. UNOCCUPIED MODE:

a. SUPPLY FAN AND ASSOCIATED EXHAUST FAN SHALL BE OFF.
b. THE OUTSIDE AIR DAMPER AND ASSOCIATED RELIEF HOOD DAMPER SHALL BE FULLY CLOSED.
c. WHERE SPACE HAS FINNED TUBE RADIATION, RADIATION SHALL PROVIDE FIRST STAGE UNOCCUPIED HEATING.
d. ON DROP IN SPACE TEMPERATURE BELOW THE UNOCCUPIED SETPOINT, CYCLE THE FAN ON AND MODULATE THE RESPECTIVE ZONE HEATING COIL CONTROL VALVE AS REQUIRED TO MAINTAIN REDUCED SPACE TEMPERATURE SETPOINT. USE 5 DEG. F (ADJUSTABLE) DEADBAND AS REQ'D TO MINIMIZE SHORT CYCLING.
e. A TIMED LOCAL OVERRIDE CONTROL SHALL ALLOW AN OCCUPANT TO OVERRIDE THE SCHEDULE AND PLACE THE UNIT INTO OCCUPIED MODE FOR 1 HOUR (ADJUSTABLE). AT EXPIRATION OF THIS TIME, CONTROL OF THE UNIT SHALL AUTOMATICALLY RETURN TO THE SCHEDULE.

3. WARM-UP MODE:

a. THE UNIT SHALL START PER AN OPTIMUM START PROGRAM.
b. THE OUTSIDE AIR DAMPER AND ASSOCIATED RELIEF HOOD DAMPER SHALL BE FULLY CLOSED AND THE ASSOCIATED EXHAUST FAN SHALL BE OFF.
c. THE SUPPLY FAN SHALL RUN AND THE FACE AND BYPASS SHALL MODULATE TO MAINTAIN DISCHARGE AIR SETPOINT.

4. SAFETIES

a. A SEPARATE LOW LIMIT FREEZE STAT WITH AUTOMATIC RESET SHALL BE INSTALLED WITH SENSING ELEMENT SERPENTINED ACROSS THE FACE OF THE COIL; WHENEVER COIL FREEZE-UP CONDITIONS ARISE (36 DEG. F ADJUSTABLE) THE SUPPLY FAN SHALL STOP, THE OUTSIDE AIR DAMPER SHALL CLOSE 100%, AND FACE AND BYPASS DAMPER SHALL OPEN TO 100% FACE POSITION. AN ALARM SHALL ALSO BE ACTIVATED.
b. FIRE ALARM SHUTDOWN

1 Air Handling Unit - With Supply Air Temperature Control & Coil Pump (AHU-1HS)
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Drawing No.: BM03B

Dobbs Ferry Union Free School District
Middle / High School
Air Handling Unit - Supply Air Temperature Control (AHU-1HS)