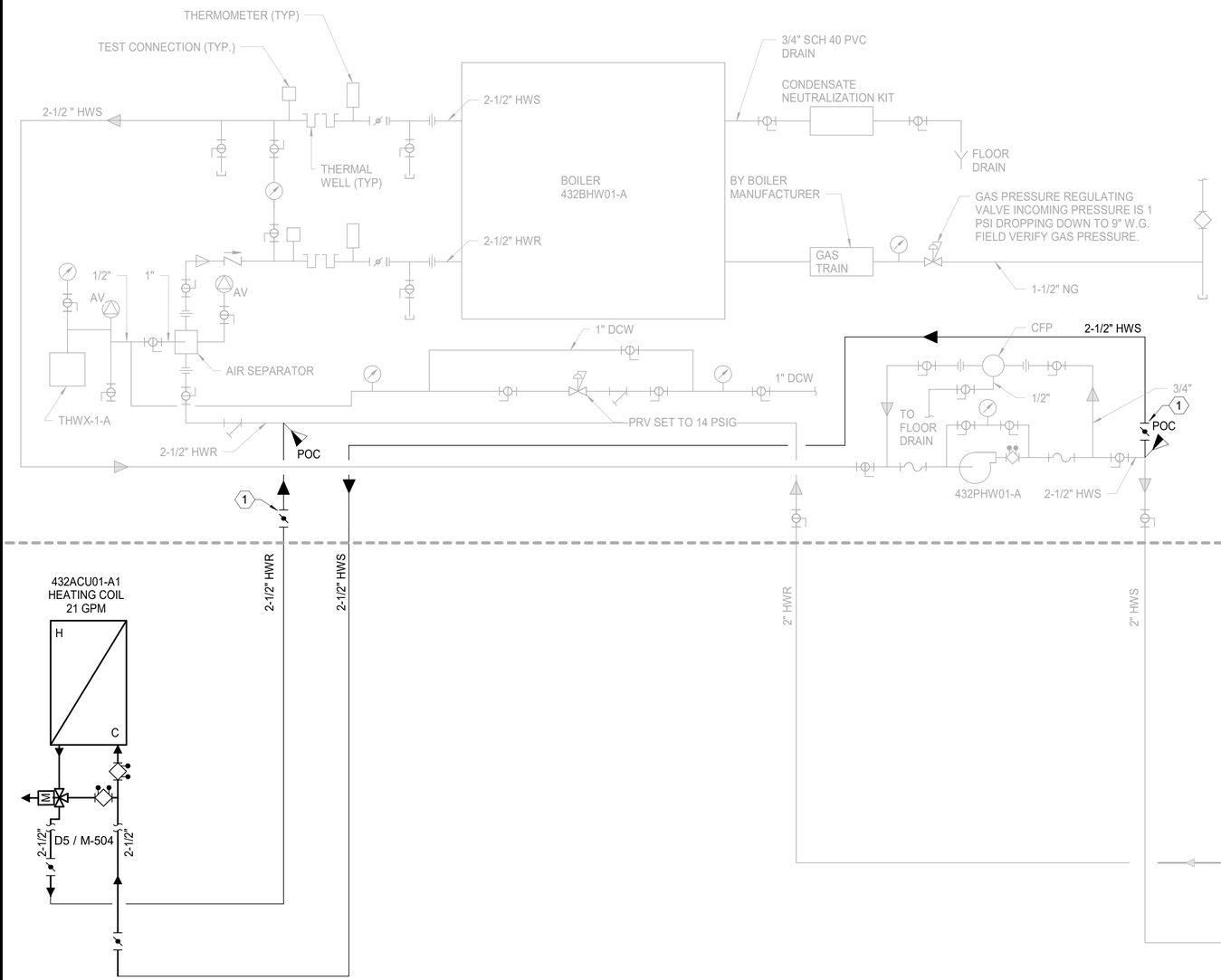

HEATING WATER SYSTEM WITH PRIMARY ONLY PUMPING SEQUENCE OF OPERATION

GENERAL:
BOILER AND HEATING WATER PUMP CONTROLS AND PROGRAMMING TO REMAIN AS IS. CONTROLS DESCRIPTION AND SEQUENCE OF OPERATION IS PROVIDED HERE FOR REFERENCE ONLY.

SYSTEM CONTROLS:
1. START/STOP, LEAVING WATER TEMPERATURE SETPOINTS, STATUS, AND FAULT CONTROL POINTS ARE PROVIDED.
2. ALL INTERNAL SAFETIES MUST BE CONTROLLED BY BOILER MANUFACTURER CONTROLLER.

BOILER:
UPON PROOF OF PUMP FLOW, THE BOILER MUST BE ENABLED. THE BOILER MUST BE COMMANDED TO START. THE BOILER MUST BE CONTROLLED BY THE NATIVE BOILER CONTROLLER TO MAINTAIN HOT WATER SUPPLY TEMPERATURE SETPOINT (ADJ.) THE HOT WATER SUPPLY TEMPLERATURE SETPOINT MUST BE RESET BASED UPON OUTSIDE AIR (OA) TEMPERATURE. WHEN OA TEMPERATURE IS 40 DEGREES OR LOWER THE SETPOINT MUST BE 140 DEGREES. WHEN OA TEMPERATURE IS 70 DEGREES OR HIGHER THE SETPOINT MUST BE 110 DEGREES. THE SETPOINT MUST BE RAMPED LINEARLY BETWEEN 140 DEGREES AND 110 DEGREES AT TEMPERATURES BETWEEN 40 DEGREES AND 70 DEGREES.

PUMP:
PUMP VFD MUST BE INTERLOCKED WITH BOILER. WHEN BOILER IS COMMANDED TO RUN THE PUMP MUST BE COMMANDED ON. PUMP MUST RUN AT CONSTANT FLOW. VFD IS FOR SOFT START AND BALANCING ONLY AS DETERMINED BY INITIAL TEST AND BALANCE. WHEN BOILER IS COMMANDED OFF THE PUMP MUST BE COMMANDED OFF.

EXISTING AIR HANDLING UNIT CONTROL VALVE:
EXISTING 3-WAY PNEUMATIC CONTROL VALVE FUNCTIONALITY TO REMAIN AS-IS.

NEW AIR HANDLING UNIT CONTROL VALVE:
REFER TO M-703.

E1 / M-802 **HEATING WATER FLOW DIAGRAM**
SCALE: NO SCALE SHOWN

GENERAL NOTES

1. REFER TO M-001 FOR MECHANICAL ABBREVIATIONS, LEGEND, SYMBOLS, AND GENERAL NOTES.
2. COMPONENTS SHOWN HALF-TONE ON THIS DRAWING ARE ITEMS TO REMAIN; BOLD COMPONENTS ARE NEW.
3. REFER TO DETAIL D5 ON M-504 FOR COMPLETE VALVE AND PIPELINE ACCESSORY DETAILS FOR NEW HEATING WATER COIL. CONTENT INCLUDED ON THIS DRAWING IS LIMITED TO ONLY THE PIPELINE ACCESSORIES THAT IMPACT SYSTEM FLOW.

KEYED NOTES

1. INSTALL NEW BRANCH PIPING UP TO NEW BRANCH LINE-SIZE ISOLATION VALVES WITHIN FIRST SYSTEM SHUTDOWN AT BEGINNING OF CONSTRUCTION PROJECT TO FACILITATE INSTALLATION OF REMAINING NEW PIPING WITHOUT AN ADDITIONAL SHUTDOWN. REFER TO M-413. WORK SHALL BE ACCOMPLISHED WITHOUT DRAINING FULL SYSTEM. FREEZING PIPE OR USING HOT TAP PIPE PLUG INSERTION SOLUTION IS ACCEPTABLE.
2. FUNCTIONALITY OF EXISTING PNEUMATIC CONTROL VALVE TO REMAIN AS-IS. EXISTING PNEUMATIC TUBING AND CENTRALIZED CONTROL COMPOMENTS SERVING EXISTING VALVE TO REMAIN AS-IS.

Sheet Title
MECHANICAL HEATING WATER FLOW DIAGRAM

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M-802