

ADDENDUM NO. 02

The following items shall take precedence over the drawings and specifications for the above named project and shall become a part of the contract documents. Where any item called for in the specifications, or indicated on the drawings, is not supplemented hereby, the original requirements shall remain in effect. Where any original item is amended, voided, or superseded hereby, the provisions of such item not specifically amended, voided or superseded shall remain in effect.

Acknowledge receipt of this Addendum in the appropriate space on the Bid Form. Failure to do so may subject the bidder to disqualification.

Attachments

Documents: MD101, M201.

General

1. Bidders are hereby advised that information from bid documents which are not received from the sources listed in the Invitation for Bids is not legitimate and the bidder accepts full responsibility for any differences. RMF Engineering, Inc. has not authorized the scanning of their documents. Bidders should be aware that the plans are copyrighted and any unlawful use is subject to legal action. Bidders are further advised that the purchase and/or use of partial bid documents is not recommended and bidder will be responsible for any discrepancies which might have been avoided had a full set of documents been reviewed.
2. All communication regarding this project shall be through RMF Engineering Inc. Project contacts – David Crutchfield david.crutchfield@rmf.com; Brian Keiser brian.keiser@rmf.com; 843-971-9639.
3. Bid closing date is scheduled for October 29, 2014 at 2:00pm at University of South Carolina, 743 Green Street, Conference Room 57, Columbia, SC 29208. Late Bids will not be accepted as responsive.

Clarifications

1. There appear to be (4) field devices that require control wiring: (2) temperature sensors/probes (I/O points 7 & 8), (1) differential pressure switch (I/O point 2) & (1) automatic butterfly valve with solenoid/actuator (I/O point 1). Is this correct?
Response: Please refer to updated mechanical schematic attached to this addendum.
2. If control wiring is required, can you provide the type control wiring required for each device? We're assuming all control wiring from these field devices go back to the BCP (Boiler Control Panel)...is this correct?
Response: The boiler shall be provided with integral control panel which will control boiler operation. Please refer to updated mechanical schematic attached to this addendum.

3. I can't readily see the control devices on the layout drawing. Can you provide locations for each of these devices, as well as, the Control Panel; or a nominal footage to use for bid purposes?
Response: Please refer to updated mechanical schematic attached to this addendum.
4. Are the point connections for 3, 4, 5 & 6 of the Input/Output Summary wired internal within the BCP? Is this Control Panel coming preassembled, prewired & preinstalled on the Boiler?
Response: Yes. Please refer to updated mechanical schematic attached to this addendum.
5. Is a communication gateway cable required between the new BCP and the existing system's BMS Panel? If so, what type cable and how far will the run be?
Response: No. The new Boiler will not tie into the existing BMS panel. Please refer to updated mechanical schematic attached to this addendum.
6. According to drawing M101 drawing note 5, only one 120V circuit is required to feed power to both the Boiler and the Boiler Recirculation Pump. Is this the intent?
Response: Yes.
7. What type of conduit is required for the installation?
Response: Please refer to Drawing Notes located on drawing M101.
8. Is there a Division 26 specification?
Response: There is not a Division 26 specification. All electrical information is listed on drawing MD101 and M101.
9. Does the combustion air inlet and the flue gas outlet need to have a 45* fitting with a bird screen on the end to keep rain and varmints out?
Response: The combustion air inlet shall be turned down with a 90 degree elbow and insect screen shall be provided over opening. The boiler flue outlet shall be turned down with a 45 degree elbow and insect screen shall be provided over opening.
10. What type valves are required for the four inch (4") heating water supply and return at the existing tie-in points? Looks to be gate valves that will be removed in the demo.
Response: Gate valves shall be located at the existing system tie-in points. Please refer to updated mechanical schematic attached to this addendum.

Substitutions

1. Fulton Model EDR-1500 Condensing Hydronic Boiler
Response: Not accepted.

Revisions to Project Manual

- | Item | Title and Revision |
|------|---|
| 1. | Specification section 230530 The footer for specification section 230530 shall be changed from Mechanical and Electrical General Provisions to Basic Materials and Methods |

Revisions to Drawings

- | Item | Title and Revision |
|------|---|
| 1. | M201 – MECHANICAL SCHEMATICS Update drawing M201 to show schematic modifications as indicated by revision #1, Addendum #2, dated 10-24-2014. |
| 2. | MD101 – MECHANICAL/ELECTRICAL DEMOLITION Update drawing MD101 to include domestic water valve demolition as indicated by revision #1, Addendum #2, dated 10-24-2014. |
| 3. | M101 – MECHANICAL/ELECTRICAL NEW WORK PLAN Update drawing M101 to include domestic water valve as indicated by revision #1, Addendum #2, dated 10-24-2014. |

END OF ADDENDUM NO. 2

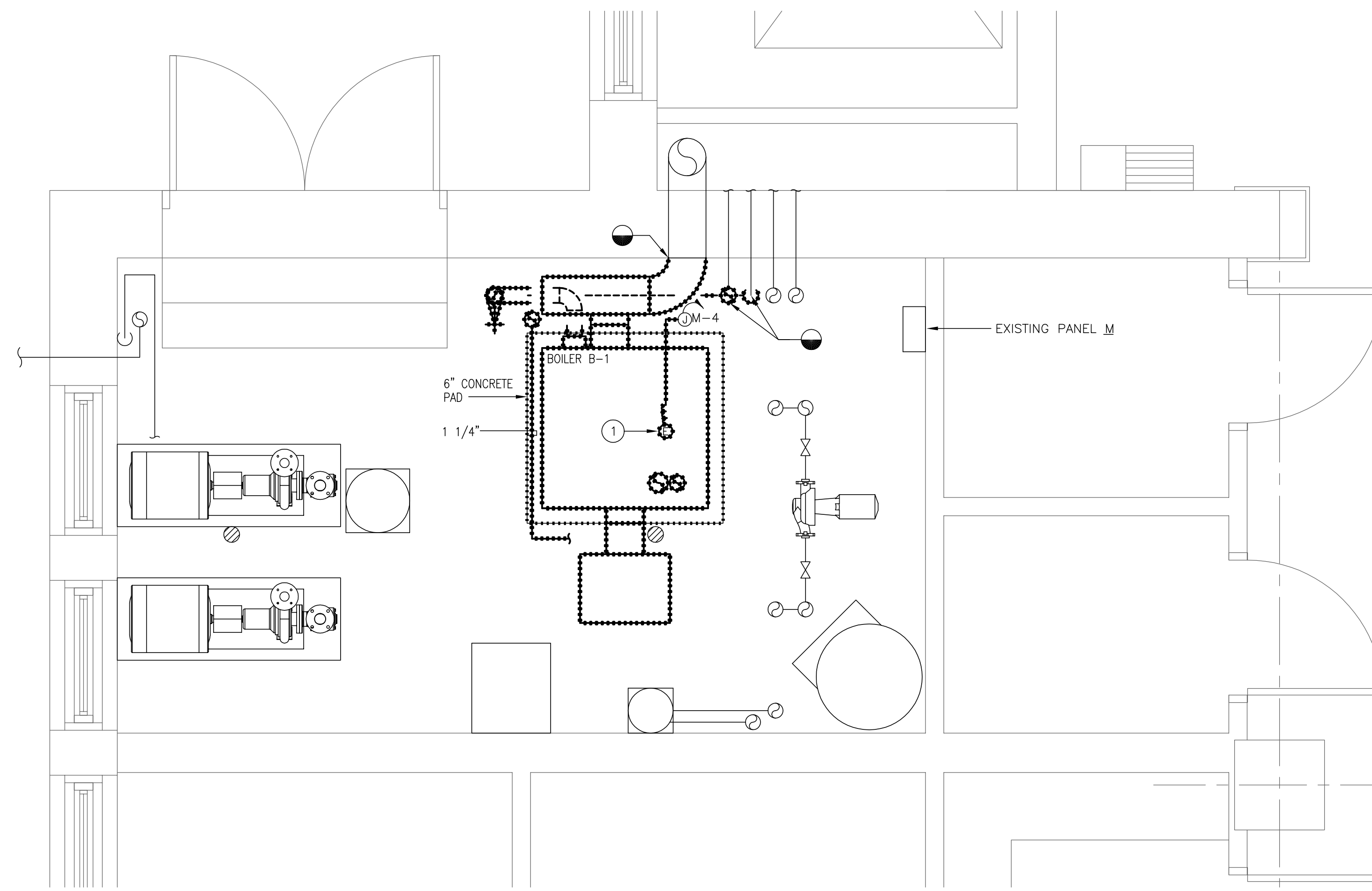
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| 1 | SUBMISSION PACKAGE | DATE | |
| 1 | ADDENDUM #2 | 10-24-2014 | |
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GENERAL NOTES:

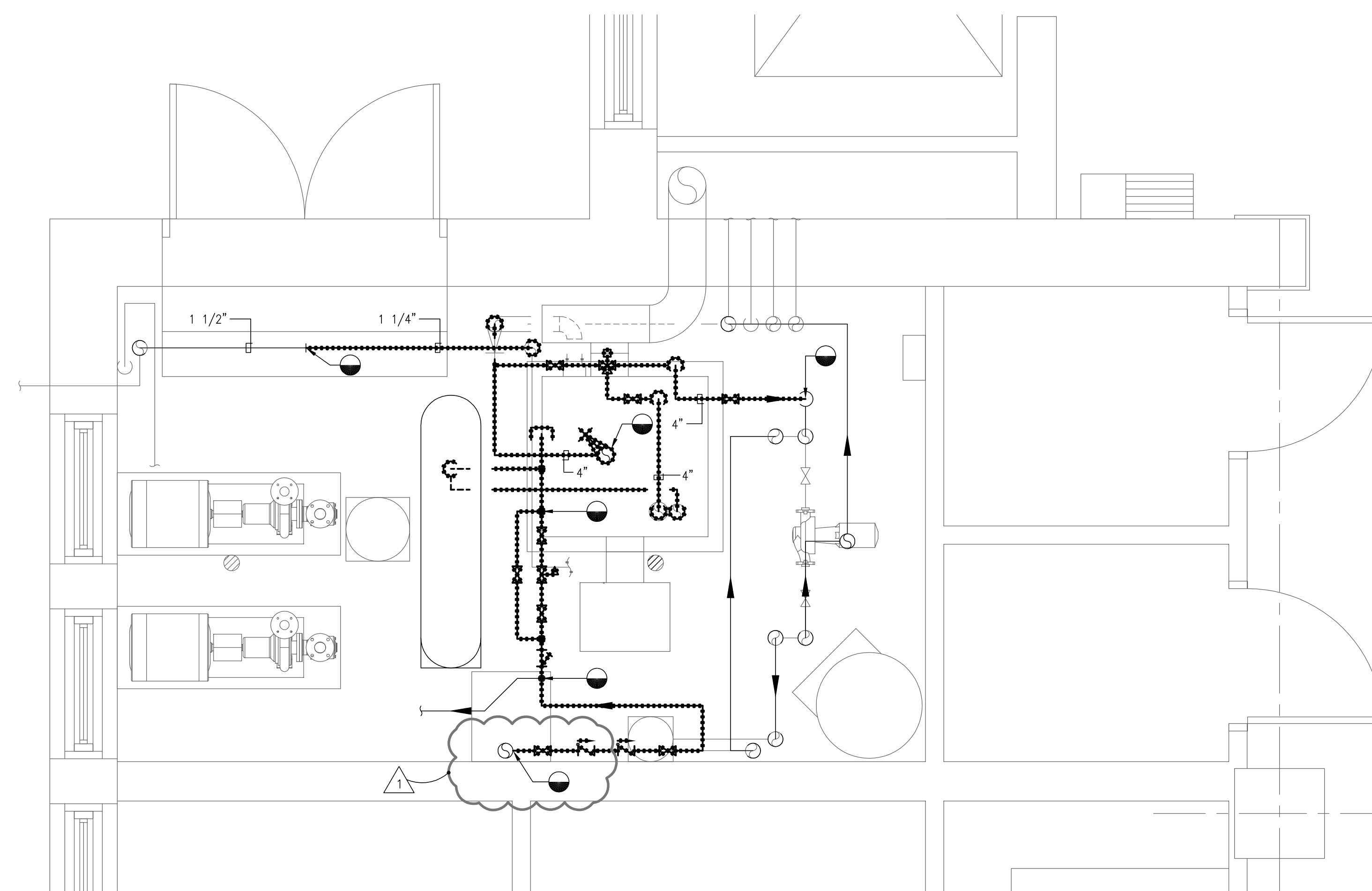
1. REFER TO M000 FOR GENERAL DEMOLITION NOTES.
2. DURING THE DEMOLITION PROCESS ALL OPEN END PIPES, FLUES, ETC. SHALL REMAIN COVERED UNTIL FINAL CONNECTION OR CAP IS PROVIDED.
3. THE FLOOR DRAINS SHALL BE COVERED DURING THE DEMOLITION PROCESS TO PROTECT THE SYSTEM FROM DIRT AND DEBRIS.
4. THE CONTRACTOR SHALL TURN ALL VALVES REMOVED OVER TO THE OWNER.

DRAWING NOTES:

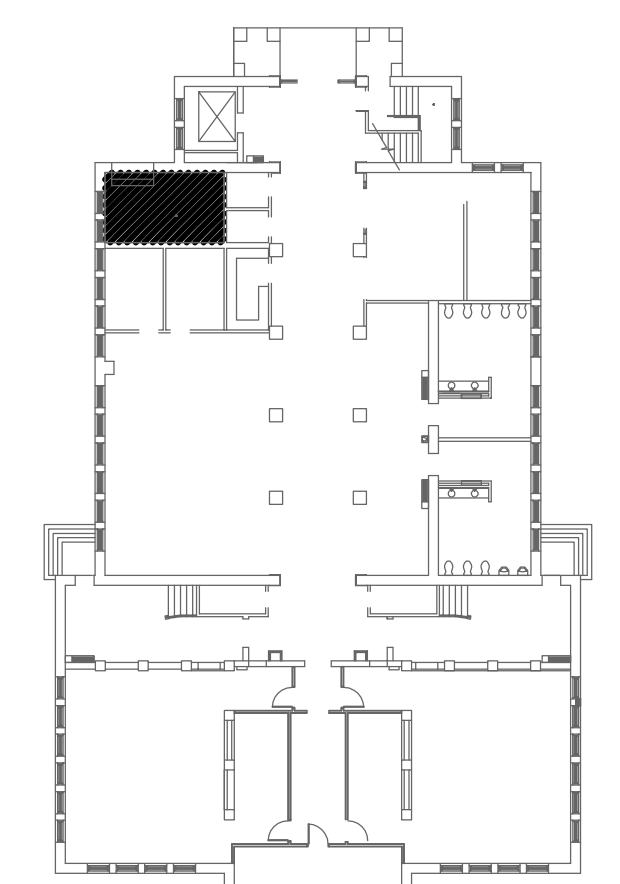
- DISCONNECT EXISTING BOILER. CIRCUIT TO BE REUSED.



LOWER LEVEL — MECHANICAL DEMOLITION
SCALE: 1/2"=1'-0"



UPPER LEVEL — MECHANICAL DEMOLITION
SCALE: 1/2"=1'-0"



KEY PLAN
SCALE: NONE

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SCALE: 1/2"=1'-0" DATE: 10/09/2014
 DRAWN BY: BEK RMF JOB #: 314323.B0
 DESIGNED BY: BEK CLIENT JOB #: CP00386106
 PROJ. MANAGER: DSC STATE JOB #: H40-9509

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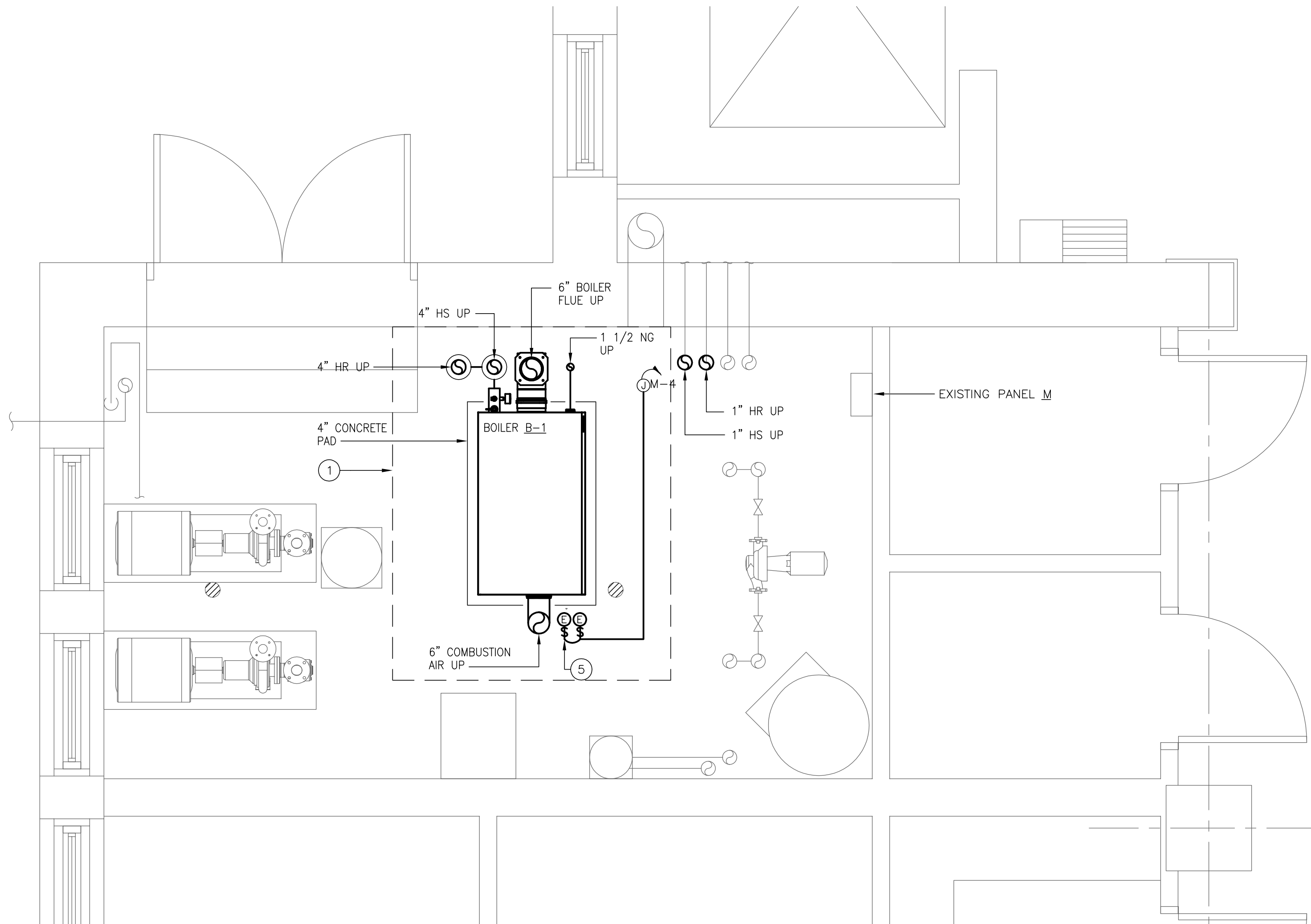


MECHANICAL/ELECTRICAL DEMOLITION PLAN

rmf RMF ENGINEERING, INC.
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MD101

| REVISIONS | | | |
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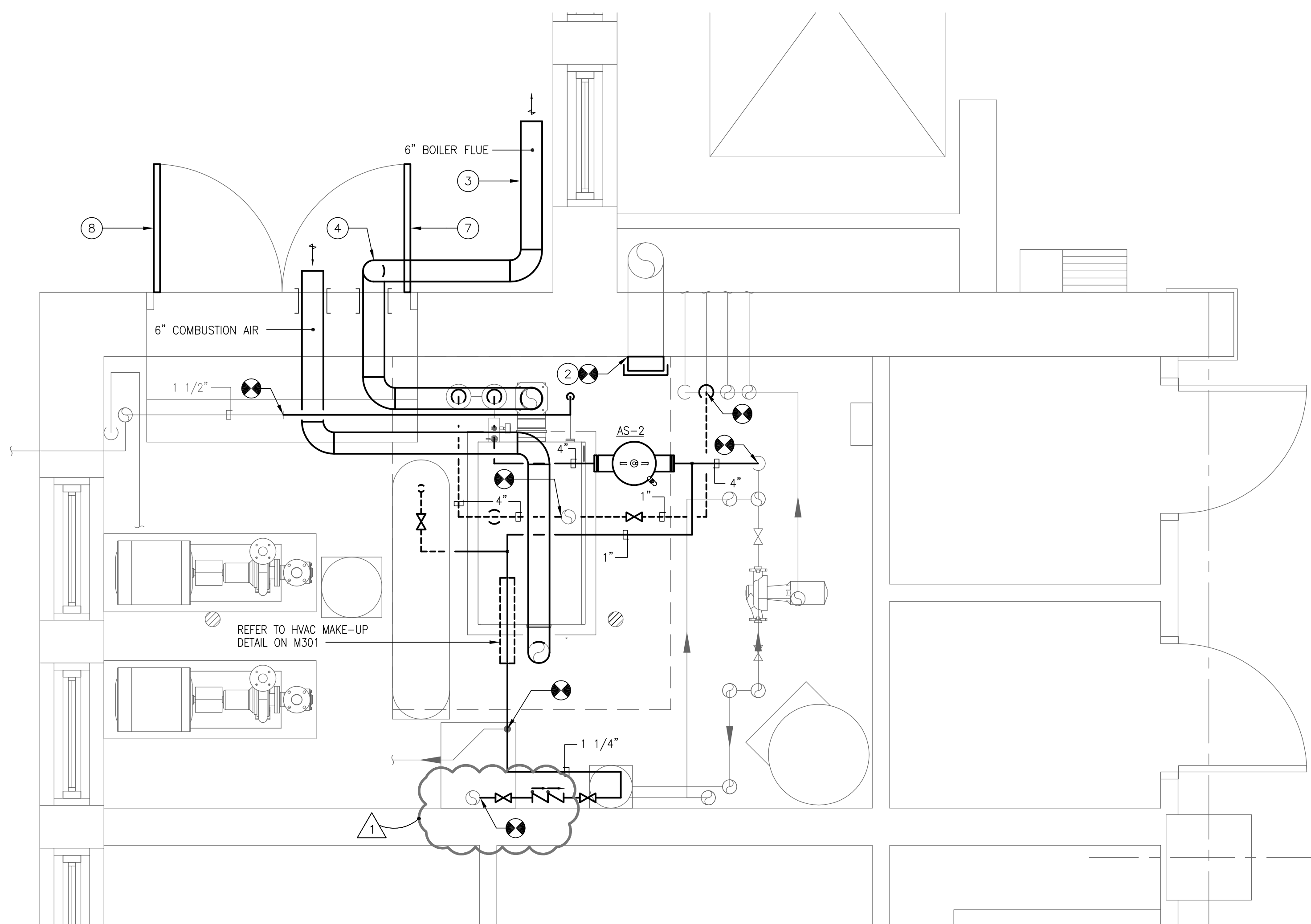
LOWER LEVEL — MECHANICAL NEW WORK
SCALE: 1/2"=1'-0"

GENERAL NOTES:

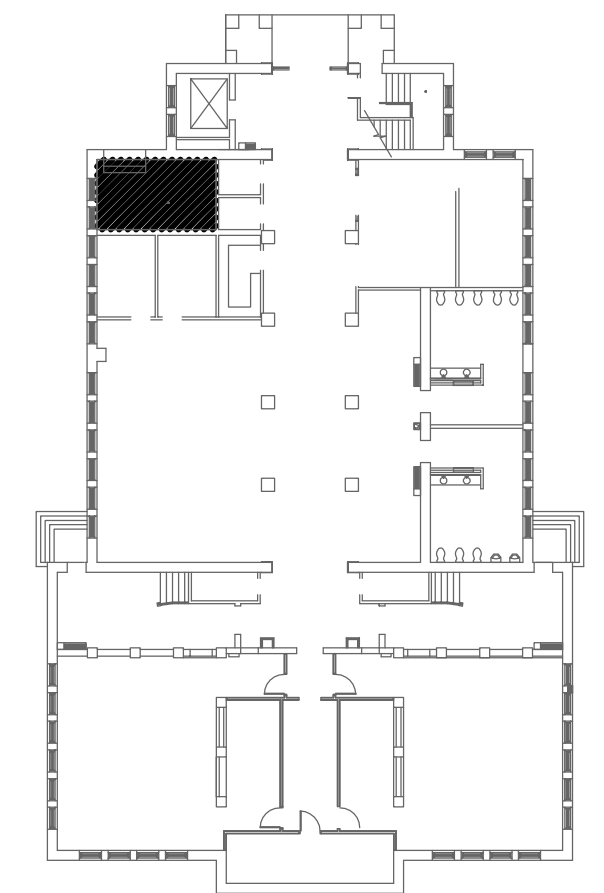
1. ALL FLOOR MOUNTED EQUIPMENT SHALL BE PROVIDED WITH A SIX (6) INCH CONCRETE EQUIPMENT PAD. PAD SHALL BE A MINIMUM OF SIX (6) INCHES LARGER THAN THE EQUIPMENT.
2. THE COMBUSTION AIR AND EXHAUST FLUE FOR THE BOILER SHALL BE PROVIDED BY THE CONTRACTOR. EACH SHALL BE PAINTED TO MATCH THE BUILDINGS EXTERIOR COLOR. A COLOR SAMPLE SHALL BE SUBMITTED TO THE ENGINEER AND OWNER FOR REVIEW AND ACCEPTANCE PRIOR TO PAINTING.
3. COMBUSTION AIR AND BOILER FLUE SHALL BE INSTALLED PER MANUFACTURERS WRITTEN INSTRUCTIONS AND ALL STATE AND LOCAL CODES.
4. COORDINATE ALL EQUIPMENT INSTALLATION WITH ELECTRICAL PANELS/ SERVICE TO COMPLY WITH NEC.
5. THE BOILER PRESSURE RELIEF SHALL BE ROUTED THROUGH THE EXTERIOR WALL AND SHALL DISCHARGE IN AN AREA VISIBLE TO THE USC MAINTENANCE STAFF. FINAL LOCATION SHALL BE COORDINATED WITH THE OWNER.

DRAWING NOTES:

- 1 EQUIPMENT CLEARANCE PER MANUFACTURERS WRITTEN INSTRUCTION.
- 2 EXISTING BOILER FLUE SHALL BE CAPPED AND SEALED AIRTIGHT AT WALL. THE BOILER FLUE ON THE ROOF SHALL BE REMOVED TO WITHIN 12" OF THE ROOF LEVEL AND CAPPED AND SEALED AIRTIGHT.
- 3 BOILER FLUE SHALL BE MOUNTED TO THE EXTERIOR OF THE BUILDING PER MANUFACTURERS WRITTEN INSTRUCTION. FINAL LOCATION SHALL BE COORDINATED WITH DOWNSPOUT.
- 4 BOILER FLUE SHALL RISE UPON EXIT OF THE MECHANICAL ROOM TO CLEAR WINDOWS ALONG THE WEST WALL.
- 5 PROVIDE 2#12 & 1#12 AWG GROUND IN 3/4" LIQUIDTIGHT FLEXIBLE CONDUIT FOR 120V CONNECTION TO BOILER AND BOILER RECIRC PUMP. CONNECT TO EXISTING CIRCUIT. PROVIDE TOGGLE SWITCH DISCONNECTING MEANS WITH LABEL OF EQUIPMENT SERVED. COORDINATE ALL CONNECTION POINTS WITH AWARDED MANUFACTURER.
- 6 BOILER FLUE AND COMBUSTION AIR INLET SHALL BE RUN THROUGH THE EXISTING DOOR. ALL PENETRATIONS SHALL BE SEALED AIRTIGHT.
- 7 THE EXISTING DOOR SHALL BE FIXED IN THE CLOSED POSITION AND THE LOUVER SHALL BE COVERED WITH SHEET METAL. THE SHEET METAL SHALL BE INSTALLED ON THE INTERIOR SIDE OF THE DOOR.
- 8 THE EXISTING DOOR LOUVER SHALL BE COVERED WITH SHEET METAL. THE SHEET METAL SHALL BE INSTALLED ON THE INTERIOR SIDE OF THE DOOR.



UPPER LEVEL — MECHANICAL NEW WORK
SCALE: 1/2"=1'-0"



KEY PLAN
SCALE: NONE

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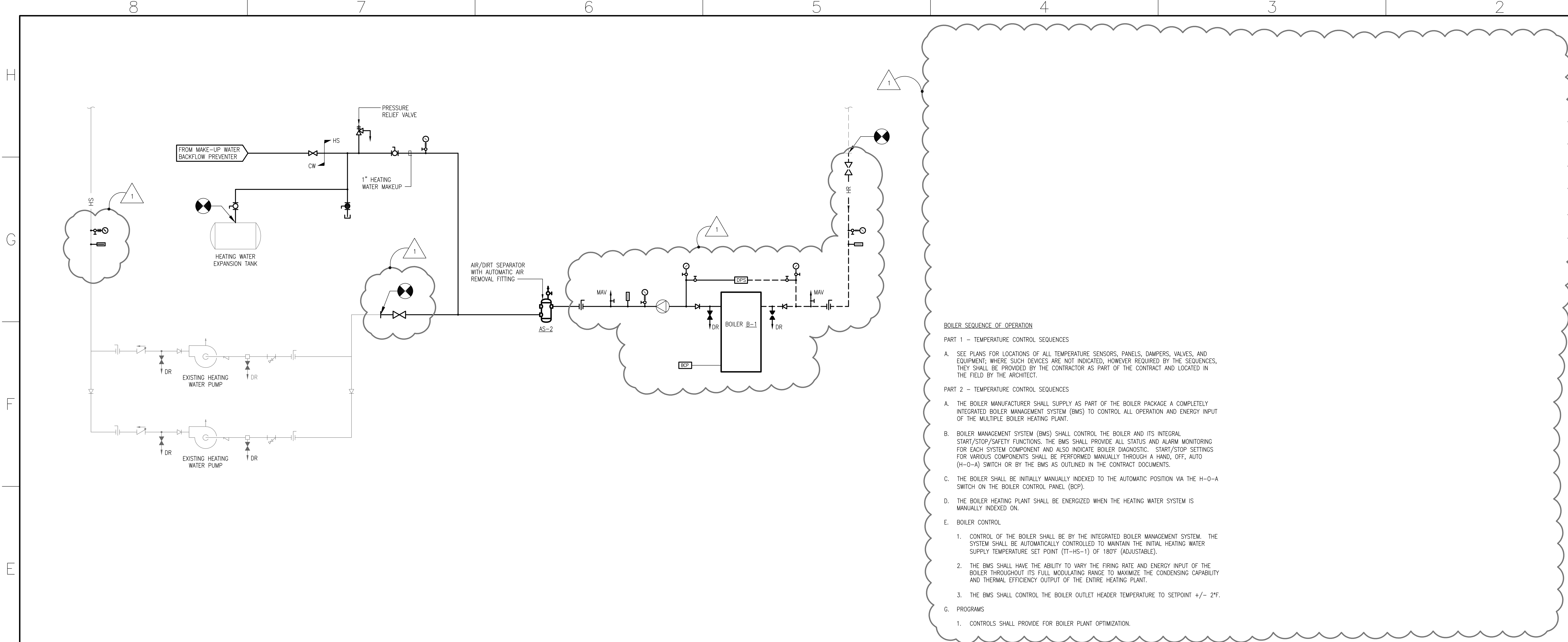
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MECHANICAL/ELECTRICAL NEW WORK PLAN

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M101



BOILER SEQUENCE OF OPERATION

PART 1 - TEMPERATURE CONTROL SEQUENCES

A. SEE PLANS FOR LOCATIONS OF ALL TEMPERATURE SENSORS, PANELS, DAMPERS, VALVES, AND EQUIPMENT; WHERE SUCH DEVICES ARE NOT INDICATED, HOWEVER REQUIRED BY THE SEQUENCES, THEY SHALL BE PROVIDED BY THE CONTRACTOR AS PART OF THE CONTRACT AND LOCATED IN THE FIELD BY THE ARCHITECT.

PART 2 - TEMPERATURE CONTROL SEQUENCES

A. THE BOILER MANUFACTURER SHALL SUPPLY AS PART OF THE BOILER PACKAGE A COMPLETELY INTEGRATED BOILER MANAGEMENT SYSTEM (BMS) TO CONTROL ALL OPERATION AND ENERGY INPUT OF THE MULTIPLE BOILER HEATING PLANT.

B. BOILER MANAGEMENT SYSTEM (BMS) SHALL CONTROL THE BOILER AND ITS INTEGRAL START/STOP/SAFETY FUNCTIONS. THE BMS SHALL PROVIDE ALL STATUS AND ALARM MONITORING FOR EACH SYSTEM COMPONENT AND ALSO INDICATE BOILER DIAGNOSTIC. START/STOP SETTINGS FOR VARIOUS COMPONENTS SHALL BE PERFORMED MANUALLY THROUGH A HAND, OFF, AUTO (H-O-A) SWITCH OR BY THE BMS AS OUTLINED IN THE CONTRACT DOCUMENTS.

C. THE BOILER SHALL BE INITIALLY MANUALLY INDEXED TO THE AUTOMATIC POSITION VIA THE H-O-A SWITCH ON THE BOILER CONTROL PANEL (BCP).

D. THE BOILER HEATING PLANT SHALL BE ENERGIZED WHEN THE HEATING WATER SYSTEM IS MANUALLY INDEXED ON.

E. BOILER CONTROL

- CONTROL OF THE BOILER SHALL BE BY THE INTEGRATED BOILER MANAGEMENT SYSTEM. THE SYSTEM SHALL BE AUTOMATICALLY CONTROLLED TO MAINTAIN THE INITIAL HEATING WATER SUPPLY TEMPERATURE SET POINT (TI-HS-1) OF 180°F (ADJUSTABLE).
- THE BMS SHALL HAVE THE ABILITY TO VARY THE FIRING RATE AND ENERGY INPUT OF THE BOILER THROUGHOUT ITS FULL MODULATING RANGE TO MAXIMIZE THE CONDENSING CAPABILITY AND THERMAL EFFICIENCY OUTPUT OF THE ENTIRE HEATING PLANT.
- THE BMS SHALL CONTROL THE BOILER OUTLET HEADER TEMPERATURE TO SETPOINT +/- 2°F.

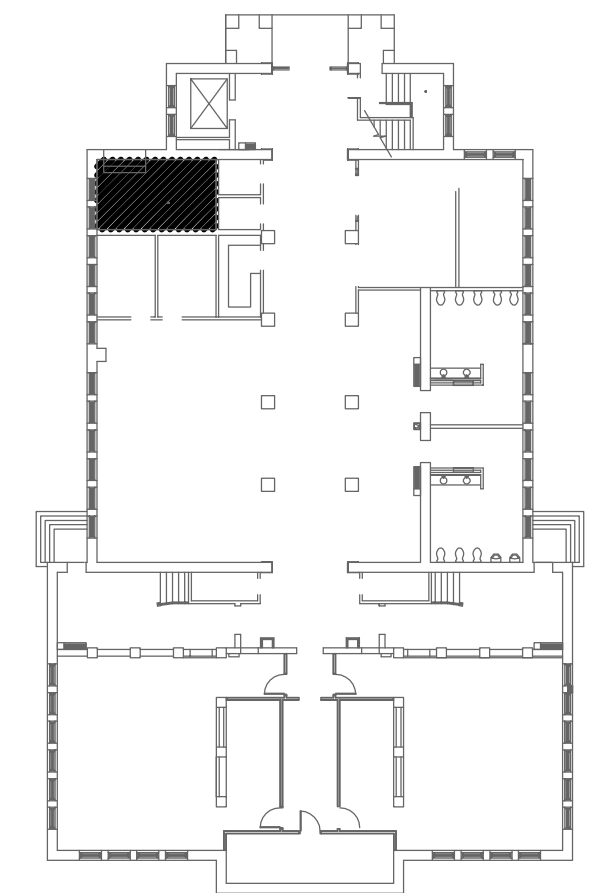
G. PROGRAMS

- CONTROLS SHALL PROVIDE FOR BOILER PLANT OPTIMIZATION.

HEATING WATER SYSTEM SCHEMATIC AND CONTROL DIAGRAM

SCALE: NONE

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MECHANICAL SCHEMATICS

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