

# CODE ANALYSIS

## APPLICABLE CODES

	Year		Year
International Building Code	2006	National Electrical Code	2005
International Mechanical Code	2006	Uniform Code for Building Conservation	
International Plumbing Code	2006	ADA Accessibility Guidelines	
International Fire Code	2006		
International Energy Conservation Code	2006		

A. Occupancy and Group: EXISTING MECHANICAL EQUIPMENT ROOM/ SEPARATE AND EXTERIOR FROM MAIN BLDG.

Change in Use: Yes  No  Mixed Occupancy: Yes  No   
Special Use and Occupancy (e.g. High Rise, Covered Mall): N/A

B. Seismic Design Category: N/A Design Wind Speed: N/A mph

C. Type of Construction (circle one): N/A

$\frac{I}{A}$   $\frac{I}{B}$   $\frac{II}{A}$   $\frac{II}{B}$   $\frac{III}{A}$   $\frac{III}{B}$   $\frac{IV}{HT}$   $\frac{V}{A}$   $\frac{V}{B}$

D. Fire Resistance Rating Requirements for the Exterior Walls based on the fire separation distance (in hours): N/A

North: \_\_\_\_\_ South: \_\_\_\_\_ East: \_\_\_\_\_ West: \_\_\_\_\_

E. Mixed Occupancies: N/A Nonseparated Uses: N/A

F. Sprinklers: EXISTING

Required: \_\_\_\_\_ Provided: \_\_\_\_\_ Type of Sprinkler System: \_\_\_\_\_

G. Number of Stories: ONE Building Height: 8'-4"

H. Actual Area per Floor (square feet): N/A

I. Tabular Area: N/A

J. Area Modifications: N/A

$$a) A_a = A_t + \left[ \frac{A_t I_f}{100} \right] + \left[ \frac{A_t I_s}{100} \right] \quad I_f = 100 \left[ \frac{F}{P} - 0.25 \right] \frac{W}{30}$$

b) Sum of the Ratio Calculations for Mixed Occupancies:

$$\frac{\text{Actual Area}}{\text{Allowable Area}} \leq 1$$

c) Total Allowable Area for:

- 1) One Story: \_\_\_\_\_
- 2) Two Story:  $A_a(2)$  \_\_\_\_\_
- 3) Three Story:  $A_a(3)$  \_\_\_\_\_

d) Unlimited Area Building: Yes  No  Code Section: \_\_\_\_\_

K. Fire Resistance Rating Requirements for Building Elements (hours): N/A EXISTING

Element	Hours	Assembly Listing	Element	Hours	Assembly Listing
Exterior Bearing Walls			Floors - Ceiling Floors		
Interior Bearing Walls			Roofs - Ceiling Roofs		
Exterior Non-Bearing Walls			Exterior Doors and Windows		
Structural Frame			Shaft Enclosures		
Partitions - Permanent			Fire Walls		
Fire Barriers			Fire Partitions		
			Smoke Partitions		

L. Design Occupant Load: 1

Exit Width Required: 3.0 FT. Exit Width Provided: 3.0 FT.

ENCLOSURE HAS TWO EXITS EACH 3.0 FT. IN WIDTH AT OPPOSITE ENDS OF THE ENCLOSURE. N/A

M. Minimum Number of Required Plumbing Facilities: WITHIN 500 FT. OF RESTROOM

- a) Water Closets - Required (m) \_\_\_\_\_ (f) \_\_\_\_\_ Provided (m) \_\_\_\_\_ (f) \_\_\_\_\_
- b) Lavatories - Required (m) \_\_\_\_\_ (f) \_\_\_\_\_ Provided (m) \_\_\_\_\_ (f) \_\_\_\_\_
- c) Bath Tubs or Showers: \_\_\_\_\_
- d) Drinking Fountains: \_\_\_\_\_ Service Sinks: \_\_\_\_\_

### FOOTNOTES:

1) In case of conflict with the U.S. Department of Justice Federal Registers Parts I through V - ADA Guidelines and specific reference to the International Building Code Accessibility Chapters, the more restrictive requirement shall govern.

2) Additional Code Information shall be provided at the discretion of the Building Official for Complex Buildings. Including, but not limited to:

- a) High Rise Requirements.
- b) Atriums.
- c) Performance Based Criteria.
- d) Means or Egress Analysis.
- e) Fire Assembly Locator Sheet.
- f) Exterior and Interior Accessibility Route.
- g) Fire Stopping, Including Tested Design Number.

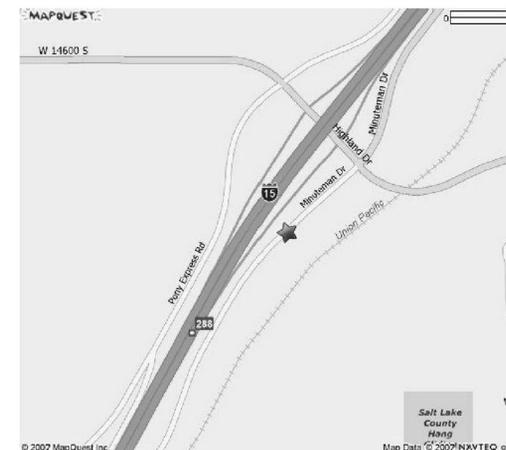
# CORRECTIONS ADMINISTRATION BLDG. BOILER REPLACEMENT DFCM #07175100



State of Utah—Department of Administrative Services

## DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT

4110 State Office Building / Salt Lake City, Utah 84114 / 538-3018



### DRAWING INDEX:

M000 - TITLE SHEET  
MG001- MECHANICAL GENERAL NOTES AND LEGEND  
MD401- LARGE SCALE MECHANICAL DEMOLITION PLAN  
ME401- LARGE SCALE MECHANICAL PLAN AND SCHEDULES  
ME501- MECHANICAL DETAILS AND BOILER SCHEDULE  
ME701- HEATING HOT WATER FLOWSHEET

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PROJECT NAME & ADDRESS

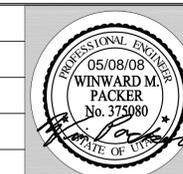
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**DFCM No. #07175100**

Draper, Utah 84020

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PROJECT MANAGER:  
**WP**  
DRAWN BY:  
**LGD**  
CHECKED BY:  
**SLW**  
DATE:  
**05/08/08**  
WHW JOB NO.:  
**07068**



SHEET TITLE

**MECHANICAL GENERAL  
NOTES AND LEGEND**

SHEET NO.

**MG001**

**MECHANICAL LEGEND**

SYMBOL	ABR.	DESCRIPTION	SYMBOL	ABR.	DESCRIPTION	SYMBOL	ABR.	DESCRIPTION
GENERAL TERMINOLOGY			WET SIDE			WET SIDE CONT		
		SECTION LETTER DESIGNATION			PUMP			PITCH DOWN
		SECTION DRAWN ON THIS SHEET			UNION			ELBOW UP
		DETAIL NUMBER DESIGNATION CORRESPONDING WITH GRID LOCATION			MANUAL ACTUATOR (BALL, BUTTERFLY, NEEDLE, ETC. VALVES)			ELBOW DOWN
		MECHANICAL EQUIPMENT DESIGNATION			MANUAL ACTUATOR (GATE, GLOBE, S&D, OS&Y, ETC. VALVES)			TEE UP
		EQUIPMENT ITEM DESIGNATION			THREADED OR SWEAT VALVE CONNECTION			TEE DOWN
		REVISION DESIGNATOR AND NUMBER			FLANGED VALVE CONNECTION			EXISTING PIPING TO BE REMOVED
		KEY NOTE DESIGNATOR AND NUMBER			NEW PIPING			EXISTING PIPING TO REMAIN
	POC	POINT OF CONNECTION			BUTTERFLY VALVE			PIPE CAP OR PLUG
	POR	POINT OF REMOVAL			GATE VALVE			CONCENTRIC REDUCER
	AFF	ABOVE FINISHED FLOOR			CHECK VALVE			ECCENTRIC REDUCER
	EL	CENTER LINE ELEVATION		PRV	PRESSURE REDUCING VALVE			EXPANSION JOINT
	GC	GENERAL CONTRACTOR		CBV	CIRCUIT BALANCING VALVE			NATURAL GAS PIPING
	MC	MECHANICAL CONTRACTOR		BV	BALL VALVE			CHEMICAL FEED LINE
	EC	ELECTRICAL CONTRACTOR		PRV	PRESSURE RELIEF VALVE			MAKE-UP WATER LINE
	NIC	NOT IN CONTRACT			AUTOMATIC AIR VENT			CULINARY COLD WATER
	NTS	NOT TO SCALE			MANUAL AIR VENT			EQUIPMENT DRAIN
		STRAINER			STRAINER W/ PLUGGED BLOW OFF			HEATING WATER SUPPLY
		EXISTING EQUIPMENT TO BE REMOVED		VTI	VENTURI			HEATING WATER RETURN
		EXISTING EQUIPMENT TO REMAIN			PRESSURE GAUGE AND GAUGE COCK - WATER			
		NEW EQUIPMENT			THERMOMETER AND THERMOWELL			
					THERMOWELL			
					DIRECTION OF FLOW			

GENERAL NOTES:

**G-1** MECHANICAL INFORMATION IS NOT LIMITED TO THE MECHANICAL DRAWINGS. CONTRACTOR SHALL BE RESPONSIBLE FOR INFORMATION ON ALL OTHER CONSTRUCTION DOCUMENTS, SPECIFICATIONS, AND EXISTING SITE CONDITIONS.

**A** - EACH DRAWING SHEET AND THE SPECIFICATIONS HAVE BEEN PREPARED TO SUPPLEMENT EACH OTHER AND THEY SHALL BE INTERPRETED AS AN INTEGRAL UNIT WITH ITEMS SHOWN AND NOTED ON ONE AND NOT THE OTHER BEING FURNISHED AND INSTALLED AS THOUGH SHOWN AND CALLED OUT IN ALL PLACES. ITEMS IN SPECIFICATIONS OR DRAWINGS LISTED WHICH ARE DIFFERING IN EFFICIENCY OR QUALITY SHALL BE HELD TO THE GREATEST OF: EFFICIENCY, QUALITY OR GOVERNING CODE.

**B** - THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR THE INSTALLATION OF THE SYSTEMS ACCORDING TO THE TRUE INTENT AND MEANING OF THE CONTRACT DOCUMENTS.

**C** - THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT WITH PROPER SERVICE ACCESS AND CLEARANCES ACCORDING TO MANUFACTURERS RECOMMENDATIONS. THE CONTRACTOR SHALL REVIEW SUPPLIERS BID PACKAGES FOR COMPLETENESS AND COMPLIANCE TO THE SPECIFICATIONS, SCHEDULES, AND DESIGN INTENT (ALL EQUIPMENT AND METHODS). THE CONTRACTOR SHALL REMOVE AND REINSTALL CORRECTLY AT HIS OWN EXPENSE ANY EQUIPMENT NOT IN COMPLIANCE.

**D** - THE CONTRACTOR SHALL CONSULT MANUFACTURERS INSTALLATION INSTRUCTIONS FOR SIZES, METHODS, ACCESSORIES, AND CLEARANCES IN SPACE AVAILABLE PRIOR TO BIDDING PROJECT.

**E** - ANYTHING NOT CLEAR OR IN CONFLICT WILL BE EXPLAINED BY MAKING APPLICATION TO THE ENGINEER IN WRITING.

**G-2** ANY AND ALL ALTERATIONS TO THE SYSTEM SHOWN SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO CHANGES FOR APPROVAL. CONTRACTOR SHALL NOT START ANY CHANGES UNTIL NOTIFIED IN WRITING. IF CHANGES ARE MADE PRIOR TO APPROVAL CONTRACTOR SHALL TAKE ALL RESPONSIBILITY FOR THE CHANGES MADE AND ALL COSTS RELATING TO FAILURE OR REPLACEMENT OF ALTERATIONS.

**G-3** CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND LOCATIONS.

**G-4** THE WORKING DRAWINGS ARE DIAGRAMMATIC. THEY DO NOT SHOW EVERY OFFSET, BEND, OR ELBOW NECESSARY FOR THE COMPLETE INSTALLATION IN THE SPACE PROVIDED. ALL LOCATIONS FOR MECHANICAL EQUIPMENT SHALL BE FIELD VERIFIED AND COORDINATED WITH ALL DRAWINGS.

**G-5** THE INSTRUCTION TO "PROVIDE" ALSO INCLUDES INSTALLATION.

**G-6** THE MECHANICAL CONTRACTOR SHALL VERIFY MOTOR VOLTAGES WITH THE ELECTRICAL DRAWING BEFORE ORDERING MOTORIZED EQUIPMENT AND CONTROLS.

**G-7** SUPPLIERS SHALL REVIEW ALL DRAWINGS AND THE SPECIFICATIONS PRIOR TO SUBMITTING PRICES TO THE CONTRACTOR. ALL QUESTIONS AND DISCREPANCIES SHALL BE BROUGHT TO THE ENGINEERS ATTENTION PRIOR TO BIDDING.

**G-8** CONTRACTOR SHALL THOROUGHLY REVIEW AND SIGN SUBMITTALS FOR COMPLETENESS AND COMPLIANCE TO THE SPECIFICATIONS PRIOR TO ENGINEERS REVIEW. SUPPLIERS SHALL HIGHLIGHT OR MARK ALL INFORMATION REQUIRED TO SHOW COMPLIANCE TO THE SPECIFICATIONS. ALL REQUESTED EXCEPTIONS TO THE SPECIFICATIONS, OR SCHEDULES SHALL BE CLEARLY NOTED AND EXPLAINED. SUBMITTAL REVIEW AND ACCEPTANCE IS FOR DESIGN CONCEPT ONLY, AND DOES NOT AT ANY TIME RELIEVE THE CONTRACTOR OF RESPONSIBILITY TO MEET SPECIFICATIONS, CAPACITIES, OR DESIGN INTENT.

**G-9** ALL MECHANICAL AND PLUMBING SHALL BE INSTALLED AND CONFORM TO THE 2006 EDITION OF THE IMC AND IPC WITH UTAH ANNOTATIONS AND LOCAL AUTHORITY REQUIREMENTS.

**G-10** THIS CONTRACTOR SHALL BE RESPONSIBLE FOR THE DRAINING DOWN AND RE-FILLING OF THE EXISTING HOT WATER SYSTEM NECESSARY TO COMPLETE THE WORK OUTLINED BY THIS PROJECT. THIS INCLUDES PROVIDING THE REQUIRED CHEMICAL TREATMENT OR GLYCOL WHEN RE-FILLING THE SYSTEM.

**G-11** ALL PIPING, MATERIALS, ETC. SHALL BE NEW AND DOMESTIC MADE UNLESS SPECIFICALLY AUTHORIZED IN WRITING PRIOR TO BID.

**G-12** THIS CONTRACTOR SHALL CONTRACT WITH A DESIGN BUILD ELECTRICAL CONTRACTOR FOR THE DESIGN AND CONSTRUCTION OF THE ELECTRICAL PORTION OF THIS PROJECT. ELECTRICAL INSTALLATION AND DESIGN SHALL BE PER NEC LATEST EDITION.

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PROJECT NAME & ADDRESS

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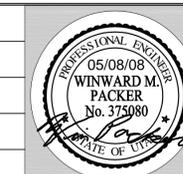
WHW JOB NO.:  
07068

SHEET TITLE

**LARGE SCALE  
MECHANICAL DEMOLITION  
PLAN**

SHEET NO.

**MD401**



SHEET NOTES:

- 19 EXISTING HOT WATER RETURN FROM AIR HANDLING UNIT SHALL REMAIN.
- 20 EXISTING HOT WATER RETURN FROM BUILDING VAV BOXES SHALL REMAIN.
- 21 REMOVE EXISTING HOT WATER SUPPLY FROM BOILERS TO HEADER CONNECTION. CAP AT HEADER.
- 22 HWR AND HWS HEADER SHALL REMAIN.
- 23 HWR PIPING FROM HEADER TO PUMPS SHALL REMAIN.
- 24 GLYCOL FEED TANK AND PIPING SHALL REMAIN.

SHEET NOTES:

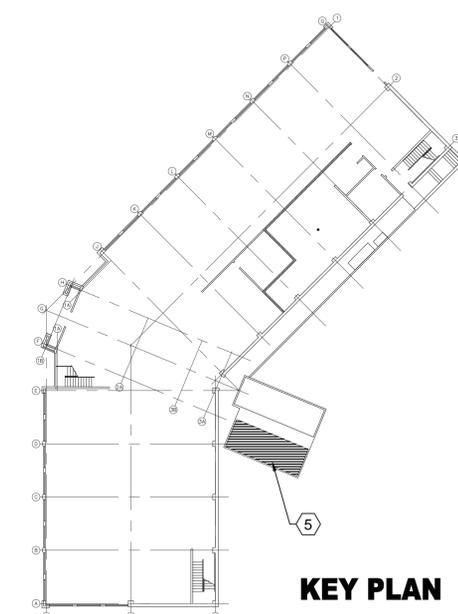
- 1 REMOVE BOILERS AND ALL ASSOCIATED ITEMS INCLUDING, VALVES, STEEL SUPPORTS, ELECTRICAL, FLUES THROUGH ROOF, COMBUSTION AIR. PATCH AND SEAL ALL WALL AND ROOF OPENINGS WATER AND AIR TIGHT, USING THE SAME TYPE OF MATERIALS USED FOR THE WALL AND ROOF.
- 2 REMOVE GAS PIPING TO THIS APPROXIMATE LOCATION. FIELD VERIFY. RELOCATE EXISTING PRV VALVE AS SHOWN.
- 3 REMOVE HOT WATER RETURN PIPING AND VALVES FROM PUMPS TO BOILERS.
- 4 PROVIDE TEMPORARY 500 MBH BOILER TO PROVIDE REHEAT FOR BUILDING DURING BOILER CHANGE-OUT. DISCONNECT EXISTING BOILERS AND RE-CONNECT TEMPORARY BOILER ON A WEEKEND OR AFTER HOURS. PROVIDE TEMPORARY CONNECTIONS TO EXISTING GAS AND WATER LINES. WHEN NEW BOILERS ARE READY TO CONNECT, DISCONNECT TEMPORARY AND PATCH AND SEAL WALL. RE-CONNECTING OF NEW BOILERS SHALL ALSO BE DONE AFTER HOURS.
- 5 BOILER ROOM.
- 6 EXISTING ELECTRICAL TO REMAIN.
- 7 EXISTING CHILLER SHALL REMAIN.
- 8 PROVIDE NEW GAS LINE TO TEMPORARY BOILER.
- 9 TEMPORARY HOT WATER SUPPLY AND RETURN PIPING FROM TEMPORARY BOILER.
- 10 TEMPORARY STACK SHALL BE INSTALLED WITH DISCHARGE FACING EAST.
- 11 PROVIDE TEMPORARY GAS TRAIN WITH TEMPORARY BOILER.
- 12 SET TEMPORARY BOILER ON LEVEL SURFACE i.e. SKIDS OR I-BEAMS.
- 13 EXISTING AIR SEPARATOR SHALL REMAIN.
- 14 EXISTING BLADDER TYPE EXPANSION TANK SHALL REMAIN.
- 15 EXISTING INLINE MAIN DISTRIBUTION HOT WATER PUMPS SHALL REMAIN.
- 16 EXISTING INLINE BOILER CIRCULATION PUMPS SHALL REMAIN. TYPICAL OF TWO.
- 17 EXISTING HOT WATER SUPPLY TO AIR HANDLING UNIT SHALL REMAIN.
- 18 EXISTING HOT WATER SUPPLY TO BUILDING VAV BOXES SHALL REMAIN.

NOTES:

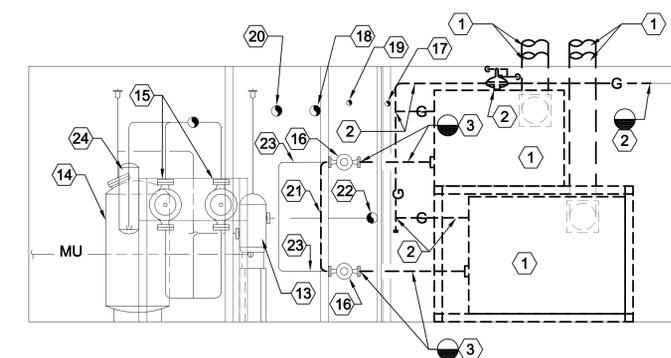
DRAWINGS INDICATE USING A TEMPORARY SKID MOUNTED BOILER DURING DEMOLITION OF EXISTING BOILERS. CONTRACTOR IS ALLOWED TO PROVIDE A DIFFERENT SOLUTION OR USING ONE OF THE NEW BOILERS FOR OPERATION DURING CONSTRUCTION.

**LARGE SCALE  
MECHANICAL DEMOLITION PLAN**

SCALE: 3/8" = 1'-0"

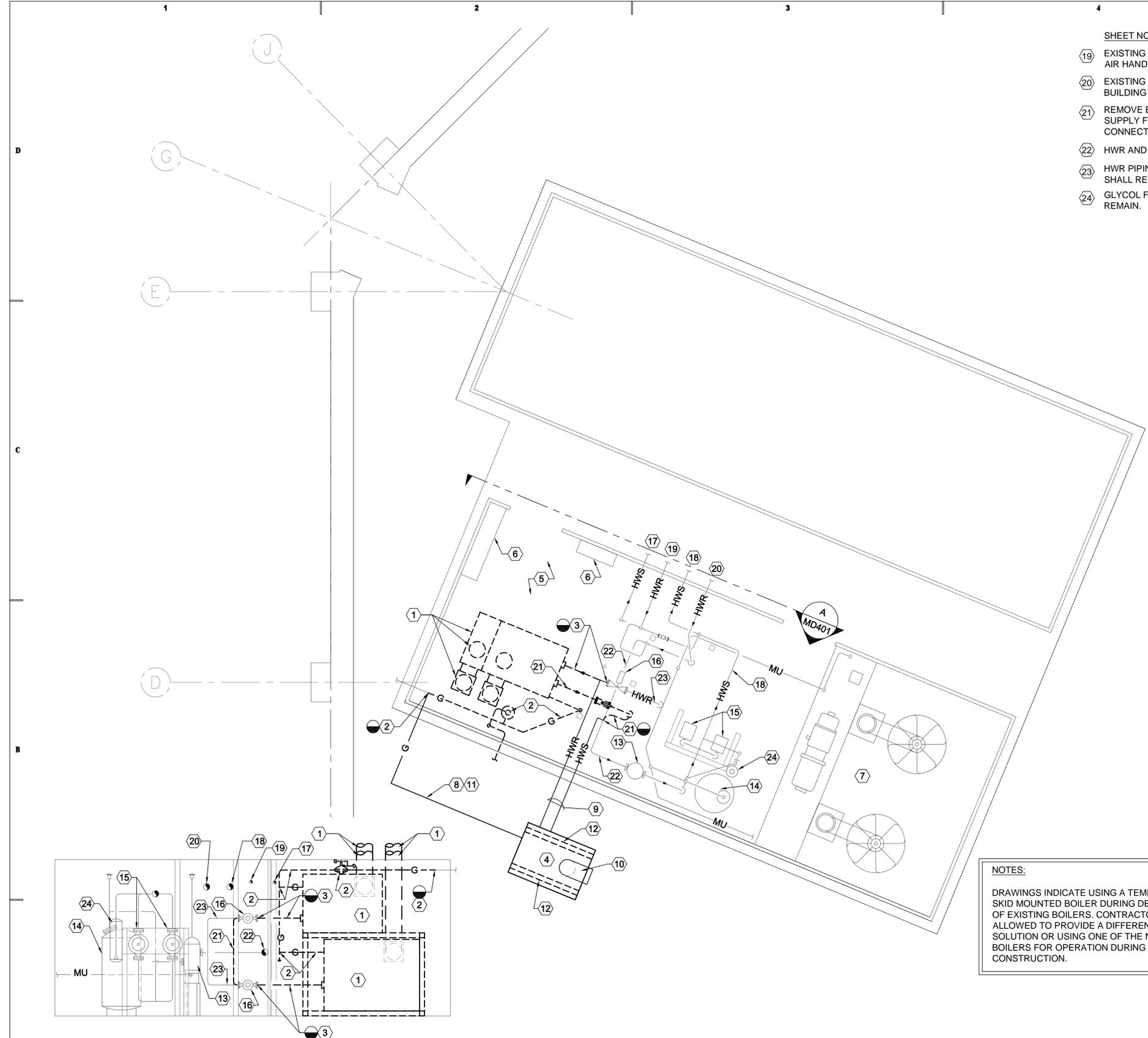


**KEY PLAN**



**BOILER DEMOLITION SECTION**

SCALE: 3/8" = 1'-0"



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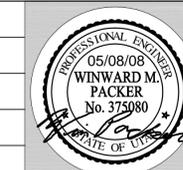
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SHEET TITLE

**LARGE SCALE  
MECHANICAL PLAN AND  
SCHEDULES**

SHEET NO.

**ME401**

SHEET NOTES:

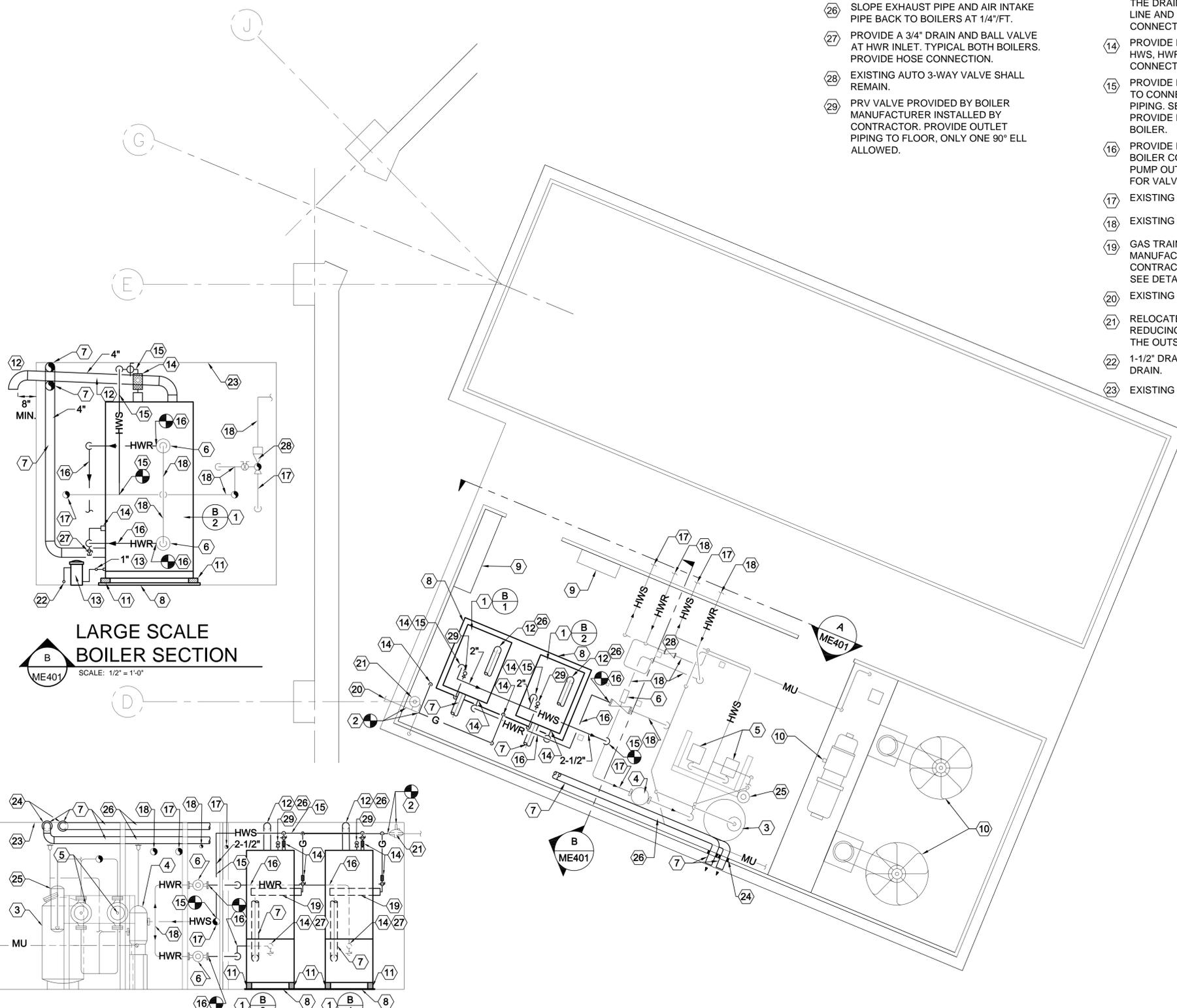
- (24) SEE WALL THIMBLE DETAIL A1/ME501.
- (25) EXISTING GLYCOL FEED TANK SHALL REMAIN.
- (26) SLOPE EXHAUST PIPE AND AIR INTAKE PIPE BACK TO BOILERS AT 1/4"/FT.
- (27) PROVIDE A 3/4" DRAIN AND BALL VALVE AT HWR INLET. TYPICAL BOTH BOILERS. PROVIDE HOSE CONNECTION.
- (28) EXISTING AUTO 3-WAY VALVE SHALL REMAIN.
- (29) PRV VALVE PROVIDED BY BOILER MANUFACTURER INSTALLED BY CONTRACTOR. PROVIDE OUTLET PIPING TO FLOOR, ONLY ONE 90° ELL ALLOWED.

SHEET NOTES:

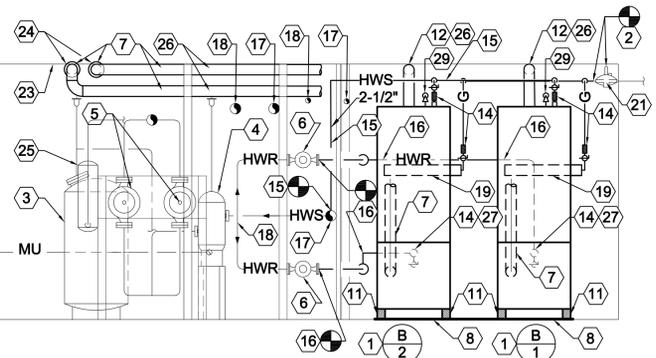
- (13) PROVIDE CONDENSATE DRAIN KIT. CONNECT BOTH BOILERS 3/4" CONDENSATE DRAINS INTO ONE 1" HEADER. CONNECT 1" MAIN DRAIN TO THE DRAIN KIT. PROVIDE 1/2" WATER LINE AND BALL VALVE CONNECT TO CONNECTION ON DRAIN KIT.
- (14) PROVIDE FLEXIBLE CONNECTION ON HWS, HWR, AND GAS PIPING CONNECTIONS TO BOILERS.
- (15) PROVIDE NEW 2" HWS FROM BOILER TO CONNECTION IN EXISTING HWS PIPING. SEE ME701 FOR VALVING. PROVIDE FLEXIBLE CONNECTION TO BOILER.
- (16) PROVIDE NEW 2" HWR TO BOILER FROM BOILER CONNECTION TO EXISTING PUMP OUTLETS. SEE SHEET ME701 FOR VALVES ETC.
- (17) EXISTING HWS PIPING SHALL REMAIN.
- (18) EXISTING HWR PIPING SHALL REMAIN.
- (19) GAS TRAIN PROVIDED BY BOILER MANUFACTURER AND INSTALLED BY CONTRACTOR IF SHIPPED SEPARATE. SEE DETAIL C4/ME501.
- (20) EXISTING GAS PIPING SHALL REMAIN.
- (21) RELOCATE EXISTING PRESSURE REDUCING VALVE AS SHOWN. VENT TO THE OUTSIDE.
- (22) 1-1/2" DRAIN PIPE TO EXISTING FLOOR DRAIN.
- (23) EXISTING CEILING.

SHEET NOTES:

- (1) PROVIDE NEW BOILER AND ALL ASSOCIATED MATERIALS, ELECTRICAL ETC.
- (2) CONNECT NEW GAS LINE INTO EXISTING AT THIS APPROXIMATE LOCATION. FIELD VERIFY.
- (3) EXISTING EXPANSION TANK SHALL REMAIN.
- (4) EXISTING AIR SEPARATOR SHALL REMAIN.
- (5) EXISTING MAIN IN-LINE DISTRIBUTION PUMPS SHALL REMAIN.
- (6) EXISTING IN-LINE BOILER CIRCULATING PUMPS SHALL REMAIN.
- (7) PROVIDE 4" DIA. EXHAUST VENT PIPING FROM BOILER CONNECTION TO EXTERIOR. VENT PIPING SHALL BE STAINLESS STEEL, UL TEMPERATURE RATED AT 5" MINIMUM AIR SPACE CLEARANCE TO COMBUSTIBLES.
- (8) PROVIDE 3/8" THK. STEEL PLATE ON TOP OF EXISTING FLOOR PLATE FOR BOTH BOILERS. CONTRACTOR SHALL USE ONE PLATE FOR BOTH BOILERS OR TWO SEPARATE PLATES ONE FOR EACH BOILER. WELD NEW PLATE TO EXISTING FLOOR PLATE.
- (9) EXISTING ELECTRICAL PANELS SHALL REMAIN.
- (10) EXISTING CHILLERS AND CONDENSING FANS, AND EVERYTHING ASSOCIATED WITH COOLING SHALL REMAIN.
- (11) FOUR ELASTOMER COATED FIBERGLASS 3"x3"x2" CUBES SHALL BE PROVIDED BY BOILER MANUFACTURER AND INSTALLED BY CONTRACTOR. CUBES SHALL BE INSTALLED UNDER EACH FOOT OF THE BOILER. INSTALL PER MANUFACTURERS INSTRUCTIONS.
- (12) PROVIDE 4" DIA. AIR INTAKE SUPPLY PIPING. ALL PIPING, FITTING ETC. SHALL BE SCHEDULE 40 PVC. ALL SCHEDULE 40 PVC PIPING, FITTINGS, PRIMER AND SOLVENT CEMENT SHALL CONFORM WITH ANSI AND ASTM STANDARDS. INSTALL PER MANUFACTURERS INSTRUCTIONS USING CEMENT PER ASTM D2855.

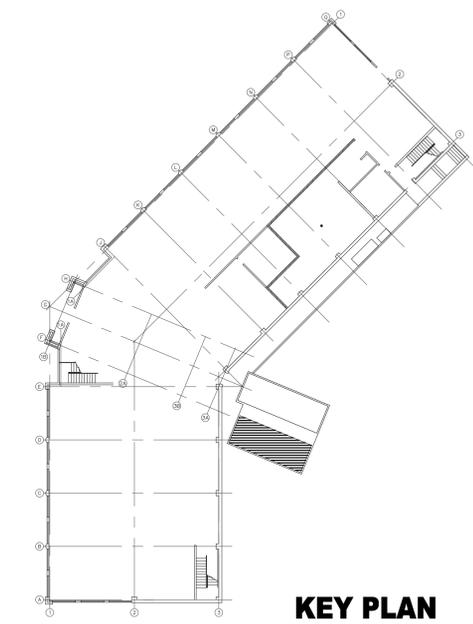


**LARGE SCALE  
BOILER SECTION**  
SCALE: 1/2" = 1'-0"  
ME401



**LARGE SCALE BOILER SECTION**  
SCALE: 3/8" = 1'-0"  
ME401

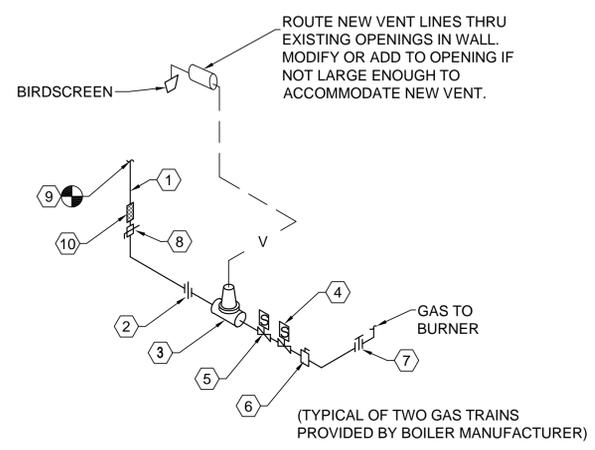
**LARGE SCALE MECHANICAL PLAN**  
SCALE: 3/8" = 1'-0"



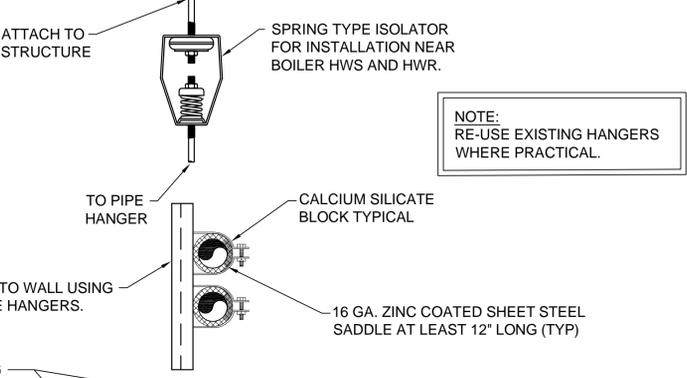
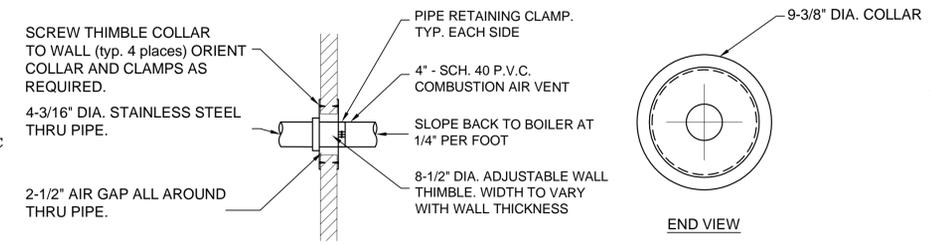
**KEY PLAN**

BOILER SCHEDULE										
SYMBOL	MBH INPUT	MBH OUTPUT	WATER TEMP		GPM	DELTA P FT	FAN MOTOR	OPERATION WEIGHT LBS	MAKE AND MODEL #	SCHEDULE NOTES
			IN	OUT						
	1000	900	140	180	40	8'	10 AMPS	700	FULTON PHW1000	1,2,3,4,5,6
	1000	900	140	180	40	8'	10 AMPS	700	FULTON PHW1000	1,2,3,4,5,6

1. BOILER RATINGS ARE FOR SEA LEVEL.  
 2. SEE SPECIFICATION FOR OTHER APPROVED MANUFACTURERS.  
 3. PROVIDE DIRECT VENT / SEALED COMBUSTION BOILER WITH FLUES AND ACCESSORIES AS REQUIRED.  
 4. PROVIDE 120V/1/60 CONTROL CIRCUIT FOR EACH BOILER.  
 5. BOILERS SHALL HAVE MINIMUM 90% EFFICIENCY AT OPERATING CONDITIONS SHOWN. SEE CONTROLS SPECIFICATIONS FOR RESET SCHEDULE.  
 6. SIZE FOR 30% PROPYLENE GLYCOL.

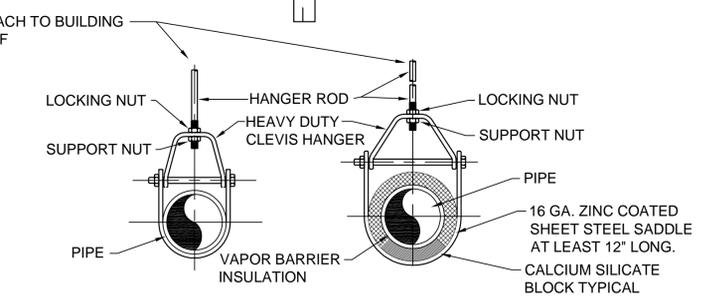
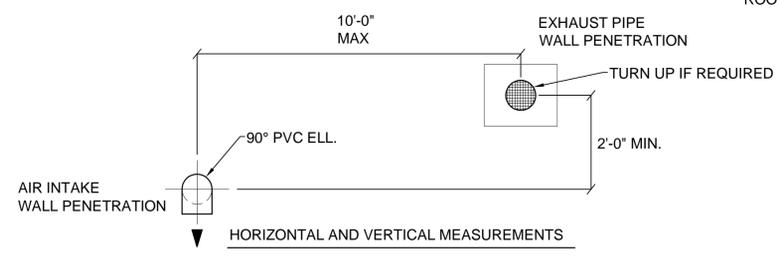


LEGEND	
NO.	ITEM
1	GAS INLET
2	UNION
3	GAS PRESSURE REGULATOR
4	MOTORIZED SAFETY VALVE
5	SAFETY GAS VALVE SOLENOID
6	LEAK TEST VALVE
7	SHUT-OFF VALVE
8	LUBRICATED GAS COCK
9	CONNECT TO EXISTING GAS LINE. SEE SHEET ME401. FIELD VERIFY EXACT LOCATION.
10	FLEXIBLE CONNECTION

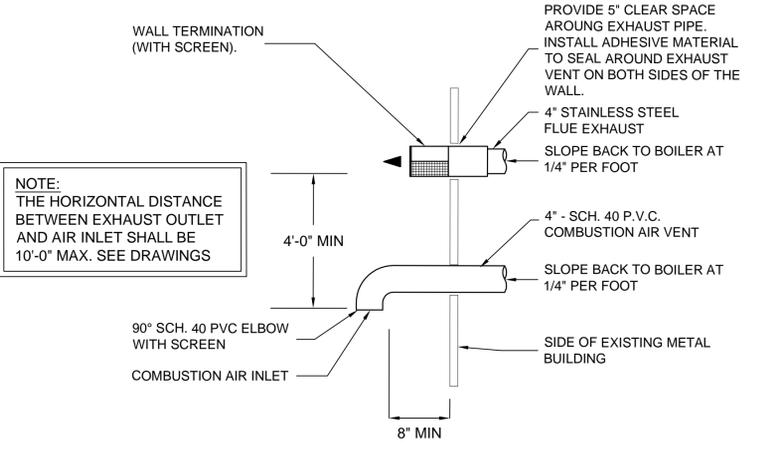


**C4 CSD-1 AUTO-IGNITION GAS TRAIN DETAIL**  
SCALE: NONE

NOTE:  
AIR INTAKE AND EXHAUST TERMINATION SHALL BE SEPARATED AS FAR AS POSSIBLE TO PREVENT FLUE GAS RECIRCULATION DURING DIFFERENT WIND CONDITIONS.

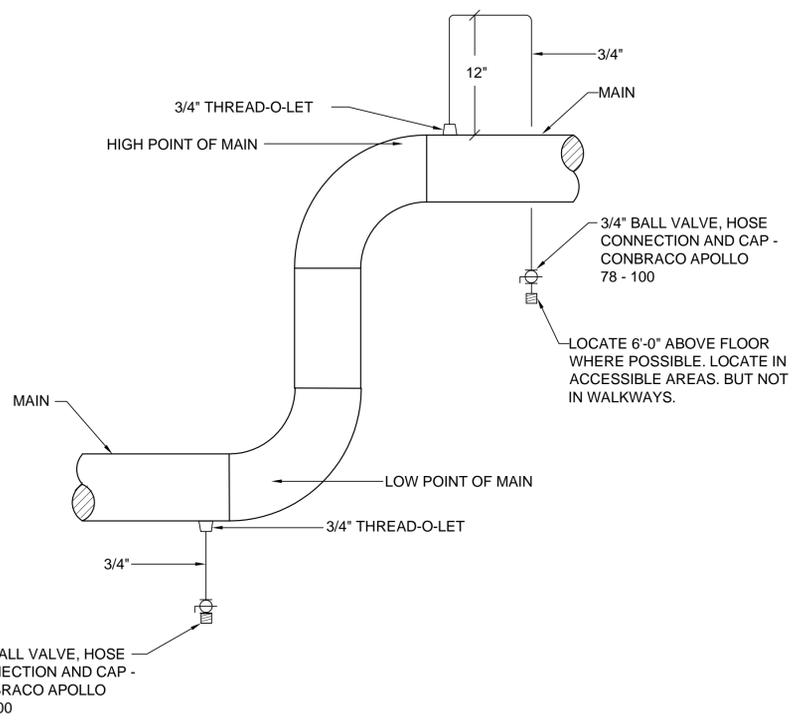


**B2 PIPE HANGER DETAIL**  
SCALE: NONE



NOTE:  
THE HORIZONTAL DISTANCE BETWEEN EXHAUST OUTLET AND AIR INLET SHALL BE 10'-0" MAX. SEE DRAWINGS

**A1 FLUE DETAIL**  
SCALE: NONE



**A4 MANUAL AIR VENT AND DRAIN DETAIL**  
SCALE: NONE

**CONSULTANTS**

**WHW ENGINEERING INC.**  
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(801) 466-4021, FAX 466-8536  
EMAIL: [excellence@whw-engineering.com](mailto:excellence@whw-engineering.com)

**PROJECT NAME & ADDRESS**  
**CORRECTIONS ADMINISTRATION BLDG. BOILER REPLACEMENT**

**DFCM No. #07175100**  
Draper, Utah 84020

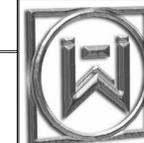
MARK	DATE	REVISION

PROJECT MANAGER: **WP**  
 DRAWN BY: **LGD**  
 CHECKED BY: **SLW**  
 DATE: **05/08/08**  
 WHW JOB NO.: **07068**  
 SHEET TITLE

**MECHANICAL DETAILS AND BOILER SCHEDULE**

SHEET NO. **ME501**

CONSULTANTS



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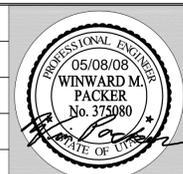
**CORRECTIONS  
ADMINISTRATION  
BLDG. BOILER  
REPLACEMENT**

**DFCM No. #07175100**

Draper, Utah 84020

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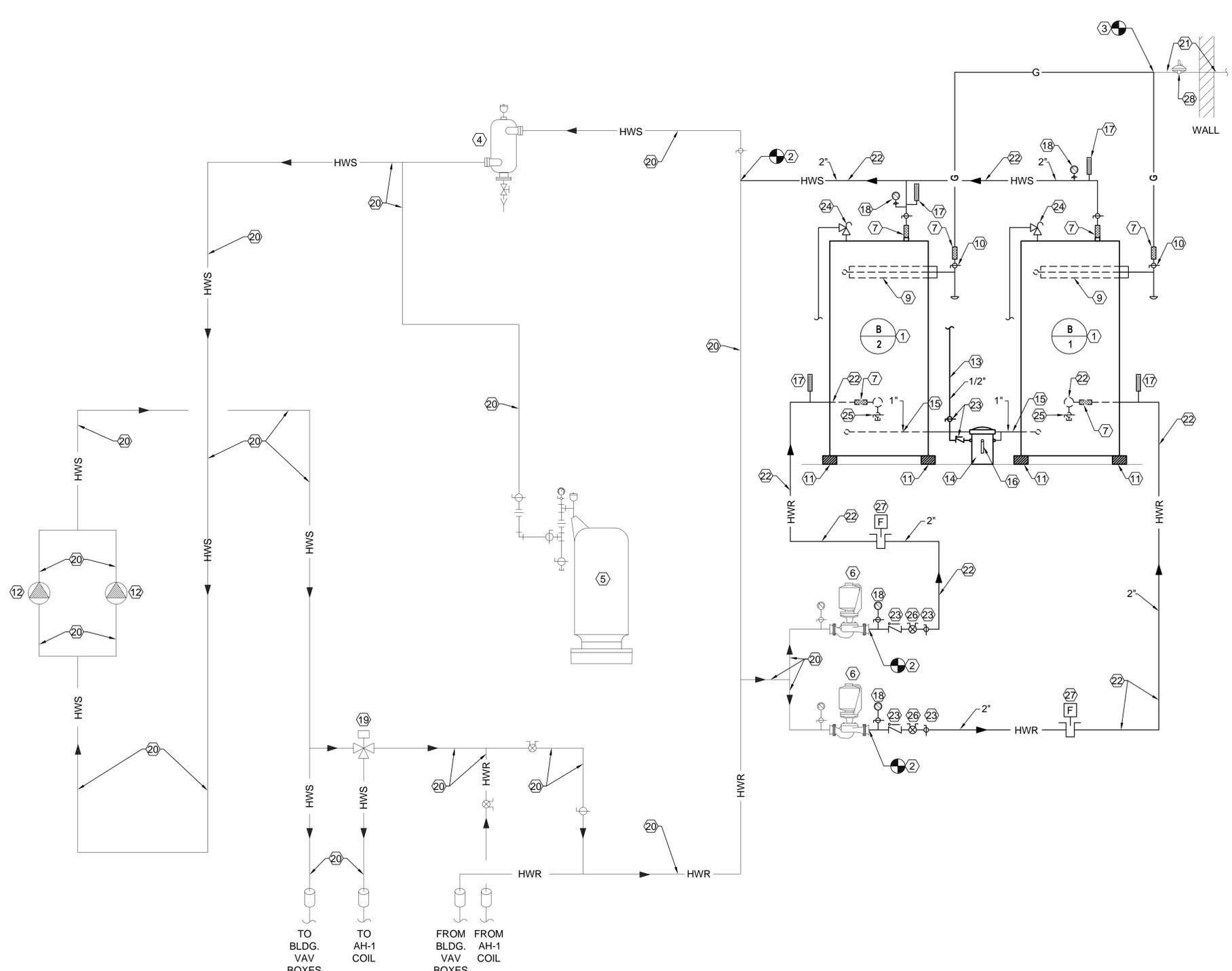


SHEET TITLE

**HEATING HOT WATER  
FLOW SHEET**

SHEET NO.  
**ME701**

- SHEET NOTES:**
- ① PROVIDE NEW GAS FIRED HOT WATER BOILERS AS SHOWN.
  - ② RE-CONNECT TO EXISTING HOT WATER SUPPLY AND RETURN PIPING.
  - ③ RE-CONNECT TO EXISTING GAS PIPING.
  - ④ EXISTING AIR SEPARATOR SHALL REMAIN.
  - ⑤ EXISTING EXPANSION TANK SHALL REMAIN.
  - ⑥ EXISTING BOILER CIRCULATING PUMPS SHALL REMAIN.
  - ⑦ PROVIDE FLEXIBLE CONNECTION.
  - ⑧ HOT WATER SUPPLY AND RETURN FROM BUILDING.
  - ⑨ GAS TRAIN PROVIDED BY BOILER MANUFACTURER AND INSTALLED BY CONTRACTOR. PROVIDE FLEXIBLE CONNECTION ON GAS LINE.
  - ⑩ LUBRICATED GAS COCK PROVIDED WITH GAS TRAIN.
  - ⑪ FOUR ELASTOMER COATED FIBERGLASS INSULATION CUBES PROVIDED BY BOILER MANUFACTURER AND INSTALLED BY CONTRACTOR.
  - ⑫ EXISTING MAIN INLINE DISTRIBUTION PUMPS SHALL REMAIN.
  - ⑬ NEW 1/2" WATER SUPPLY TO CONDENSATE DRAIN KIT. CONTRACTOR SHALL FIELD LOCATE A WATER SOURCE WITHIN THE MECHANICAL ROOM.
  - ⑭ PROVIDE CONDENSATE DRAIN KIT. LOCATE IN THE BACK AND BETWEEN THE NEW BOILERS.
  - ⑮ 1" CONDENSATE DRAIN HEADER. PIPING SHALL BE ACID RESISTANT PLASTIC PIPING.
  - ⑯ 1-1/2" DRAIN TO NEAREST FLOOR DRAIN.
  - ⑰ 9" LONG THERMOMETER.
  - ⑱ 4-1/2" DIA. PRESSURE GAUGE 0 TO 150 PSIG WITH GAUGE COCK AND SNUBBER..
  - ⑲ EXISTING AUTO 3-WAY VALVE SHALL REMAIN.
  - ⑳ EXISTING PIPING SHALL REMAIN.
  - ㉑ EXISTING GAS PIPING FROM METER SHALL REMAIN.
  - ㉒ PROVIDE NEW HWS AND HWR PIPING.
  - ㉓ PROVIDE NEW CHECK AND BALL VALVES.
  - ㉔ PROVIDE 6" LONG NIPPLE BETWEEN BOILER CONNECTION AND SAFETY RELIEF VALVE INLET. VERIFY SIZE WITH SIZE OF RELIEF VALVE PROVIDED BY BOILER MANUFACTURER.
  - ㉕ 3/4" DRAIN AT BOTTOM OF HWR INLET C/W BALL VALVE WITH HOSE CONNECTION.
  - ㉖ PROVIDE NEW BALANCING VALVES.
  - ㉗ PROVIDE NEW FLOW SWITCH FOR EACH BOILER.
  - ㉘ RELOCATE EXISTING PRESSURE REDUCING VALVE AS SHOWN. VENT TO THE OUTSIDE.



**HEATING HOT WATER FLOW SHEET**  
SCALE: NONE

TO BLDG. VAV BOXES  
TO AH-1 COIL

FROM BLDG. VAV BOXES  
FROM AH-1 COIL