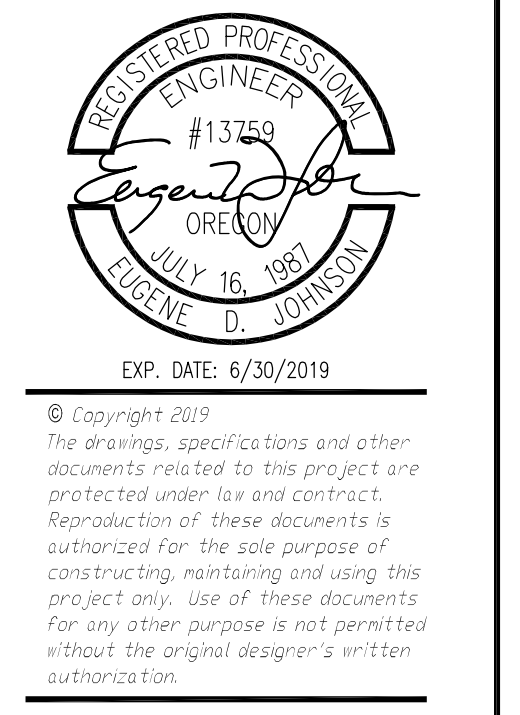
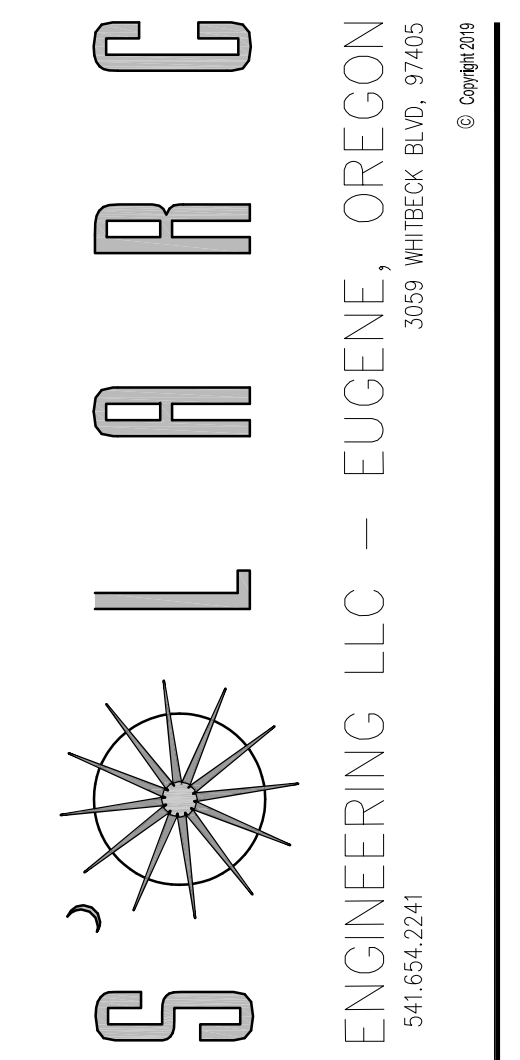


# SHELDON HIGH SCHOOL BOILER REPLACEMENT - 2019



**SHELDON HIGH SCHOOL  
BOILER REPLACEMENT - 2019**  
 2455 WILLAKENZIE RD  
 EUGENE, OREGON 97401

## PROJECT LOCATION

SHELDON HIGH SCHOOL  
2455 WILLAKENZIE RD.  
EUGENE, OR 97401

## PROJECT TEAM

### OWNER/PROJECT MANAGER/ELECTRICIAN

EUGENE SCHOOL DISTRICT 4J  
715 WEST 4TH AVENUE  
EUGENE, OREGON 97402-4295  
PHONE: (541) 790-7417 OFFICE, (541) 968-0950 CELL  
CONTACT: KIRK GEBB

### MECHANICAL ENGINEER

SOLARC ENGINEERING LLC  
3059 WHITBECK BLVD  
EUGENE, OREGON 97405  
PHONE: (541) 654-2241  
CONTACT: GENE JOHNSON, P.E.

## SHEET INDEX

- 1 G001 COVER SHEET
- 2 M001 MECHANICAL SYMBOLS & ABBREVIATIONS
- 3 M100 BOILER RM DEMO PLANS
- 4 M101 BOILER RM PLAN
- 5 M201 BOILER RM ROOF PLAN
- 6 M301 BOILER RM SECTIONS
- 7 M501 SCHEMATIC DIAGRAMS & DETAILS
- 8 M502 SCHEMATIC DIAGRAMS & DETAILS
- 9 M601 EQUIPMENT SCHEDULES
- 10 E100 ELECTRICAL BOILER RM DEMO PLAN
- 11 E101 ELECTRICAL PLAN & DETAILS

## PROJECT DESCRIPTION

THE PROJECT CONSISTS OF THE FOLLOWING ELEMENTS:

### DEMOLITION BY CONTRACTOR:

1. REMOVE TWO (E) HW BOILERS AND ASSOCIATED EXHAUST FLUE, AND ALL OVERHEAD HW & FUEL GAS PIPING SHOWN ON DEMOLITION PLAN.
2. DURING DEMOLITION, CARE MUST BE TAKEN TO AVOID DAMAGE TO (E) EQUIPMENT TO REMAIN UNDISTURBED, INCLUDING:
  - ENGINE-GENERATOR AND RELATED PIPING, CONTROLS, AND SWITCHGEAR;
  - VERTICAL EXPANSION TANKS (2);
  - DOMESTIC WATER HEATERS (3);
  - HWS/R PUMPS AND ASSOCIATED PIPING TO POINT OF CONNECTION OF NEW BOILERS AS SHOWN ON PLANS;
  - ALL (E) ELECTRICAL PANELS.
3. REMOVE ALL FUEL OIL PIPING AND APPURTENANCES INSIDE BOILER ROOM. (OIL TANK REMOVAL IS NOT A PART OF THE SCOPE OF THIS PROJECT.)

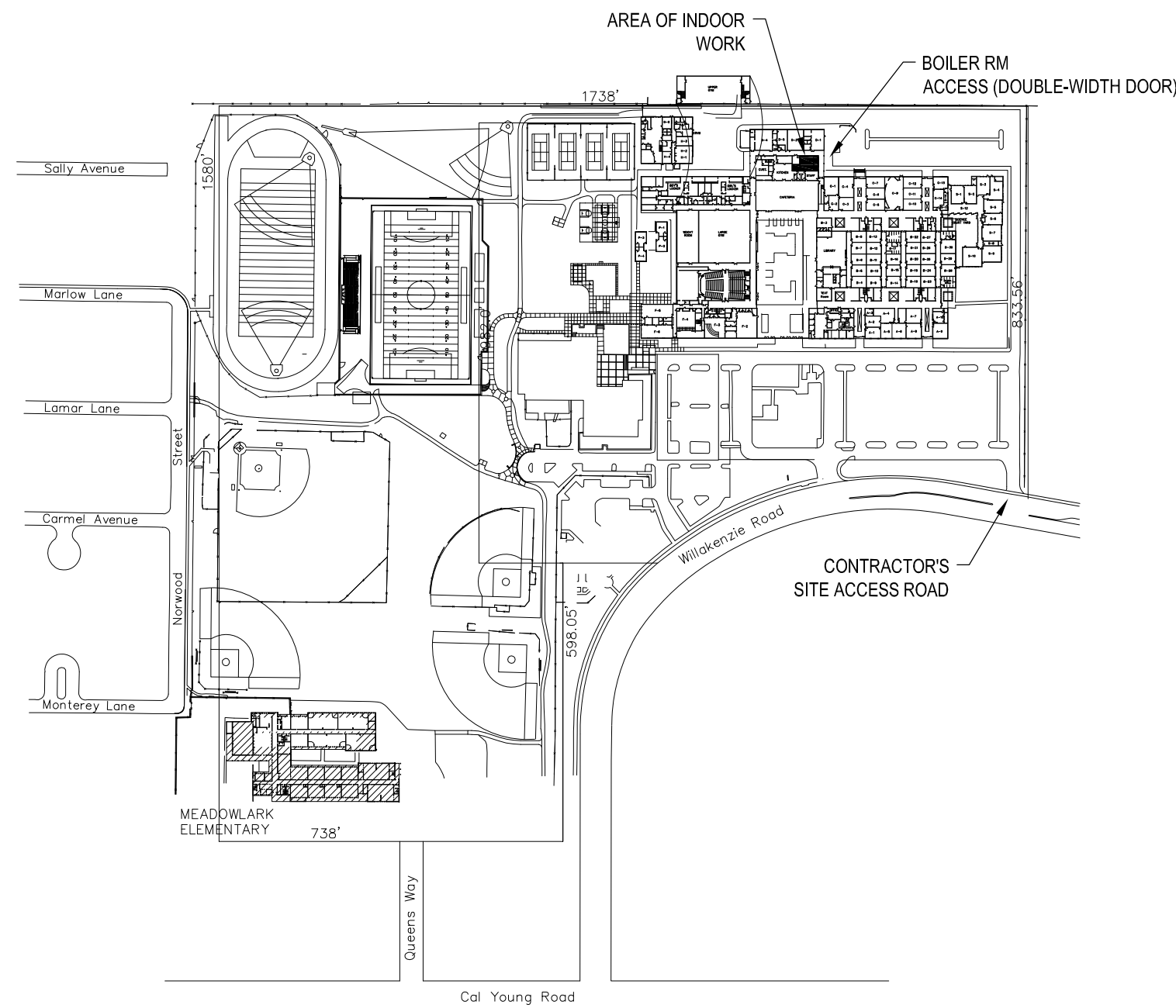
### NEW WORK BY CONTRACTOR:

1. PREPARE (E) SLAB AND PROVIDE NEW EQUIPMENT PAD FOR NEW BOILER AS SHOWN ON DRAWINGS.
2. PROVIDE MACHINE ROOM GRAY EPOXY COATING TO FLOOR, PER DISTRICT'S STANDARDS.
3. PROVIDE NEW HWS/R PIPING AS SHOWN.
4. PROVIDE NEW NATURAL GAS AND PROPANE PIPING AS SHOWN.
5. PROVIDE NEW BOILERS AS SHOWN.
6. PROVIDE NEW ELECTRIC FEEDER CIRCUITS FOR EACH BOILER.
7. PROVIDE FLUSHING OF NEW BOILER AND RELATED PIPING MODIFICATIONS. FLUSHING MATERIALS AND METHODS SHALL BE COMPLETED AS RECOMMENDED BY BOILER MFR.
8. PROVIDE STARTUP SERVICES OF QUALIFIED BOILER MANUFACTURER'S REPRESENTATIVE. COORDINATE WITH DISTRICT STAFF ON STARTUP A MINIMUM OF ONE WEEK PRIOR TO STARTUP DATE.
9. NOTE: DEMO AND NEW WORK RELATED TO (E) AUTOMATED LOGIC DDC SYSTEM IS BY OWNER. CONTRACTOR SHALL PROVIDE COORDINATION AND ASSISTANCE IN DISTRICT'S COMMISSIONING OF DDC CONTROL AS PART OF THE STARTUP OF NEW BOILERS AND OEM BOILER CONTROLLER.

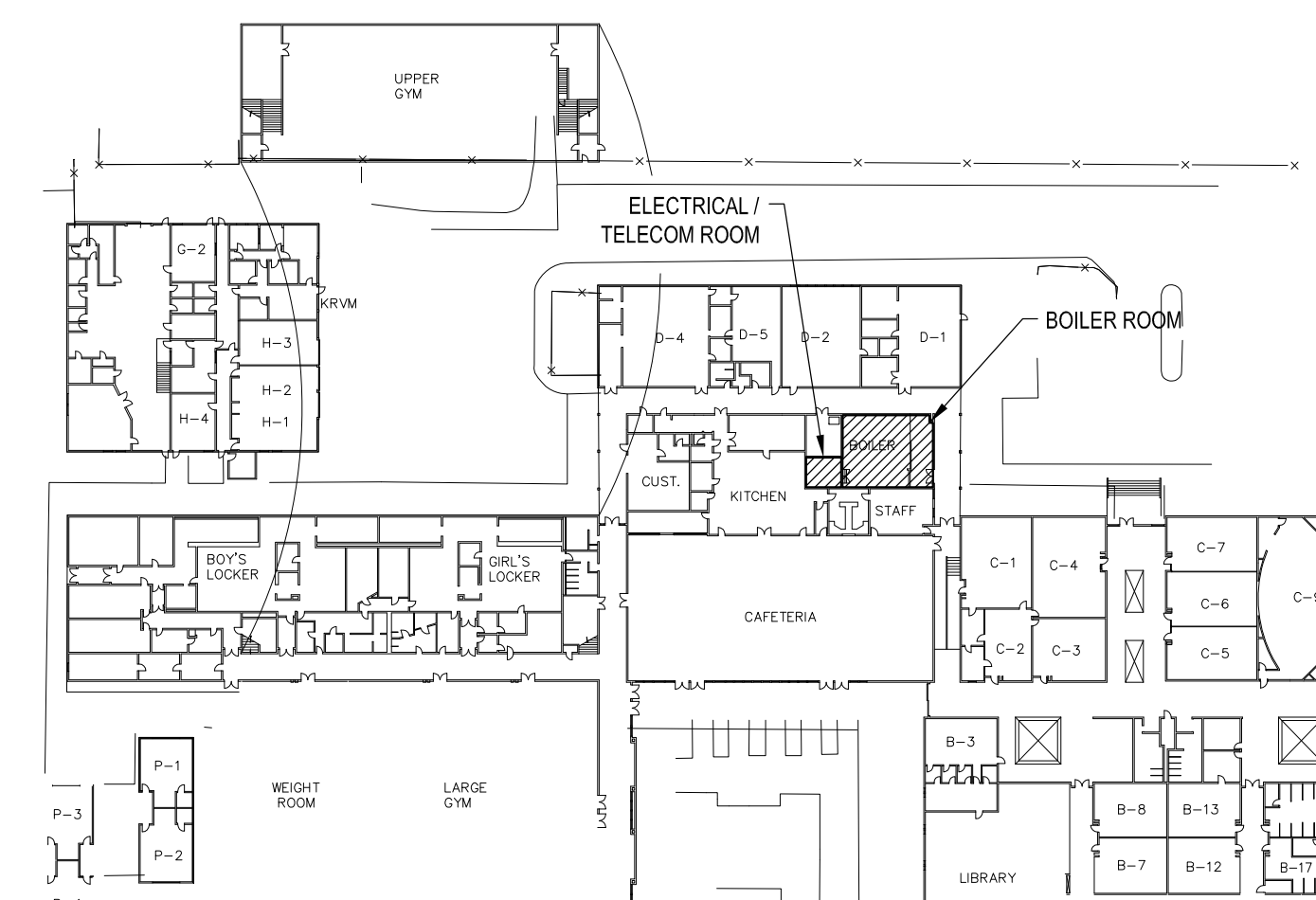
## APPLICABLE CODES

CONTRACTOR SHALL PERFORM ALL WORK IN CONFORMANCE WITH THE FOLLOWING CODES IN EFFECT:

- 2017 OREGON ELECTRICAL SPECIALTY CODE
- 2017 OREGON PLUMBING SPECIALTY CODE
- 2014 OREGON MECHANICAL SPECIALTY CODE
- 2014 OREGON ENERGY EFFICIENCY SPECIALTY CODE
- 2014 OREGON STRUCTURAL SPECIALTY CODE
- 2018 OREGON BOILER & PRESSURE VESSEL SPECIALTY CODE



**13 SITE ACCESS PLAN**  
SCALE: 1" = 320'



**16 AREA PLAN**  
SCALE: 1" = 80'



### REVISIONS:

PROJECT NO:	19-001
DATE:	04-30-19
DRAFT DATE:	04-30-19
REVISED:	
DRAWN BY:	GJ
CHECKED BY:	EDJ

COVER SHEET

**G001**

**PIPING LABELS**

— HWS —	HEATING WATER SUPPLY
— HWR —	HEATING WATER RETURN
— PC —	PUMPED CONDENSATE
— FOS —	FUEL OIL SUPPLY
— FOR —	FUEL OIL RETURN
— FOV —	FUEL OIL VENT
— MU —	MAKEUP WATER
— D —	EQUIPMENT DRAIN
— CD —	CONDENSATE DRAIN
— — —	DOMESTIC COLD WATER
— — —	DOMESTIC HOT WATER SUPPLY
— — — (140) —	DOMESTIC HOT WATER SUPPLY - 140 F
— — —	DOMESTIC HOT WATER RETURN
— TW —	TEPID WATER (60 F TO 100 F)
— NPW —	NON-POTABLE WATER
— NG —	NATURAL GAS
— G2 —	(NOT USED)
— G5 —	(NOT USED)
— NAME —	MISCELLANEOUS
— (E) NAME —	EXISTING PIPING
— X- (R) NAME — X-	EXISTING PIPING TO BE REMOVED
— - (R) NAME — -	EXISTING PIPING TO BE REMOVED
— 1-1/4" PIPE —	PIPE WITH SIZE CALLOUT

**VALVES**

	TWO WAY CONTROL VALVE
	THREE WAY CONTROL VALVE
	BALL VALVE
	GATE VALVE
	GATE VALVE - OS&Y
	GLOBE VALVE
	BUTTERFLY VALVE
	NEEDLE VALVE
	GAS COCK
	CHECK VALVE
	SOLENOID VALVE
	PRESSURE REDUCING VALVE
	RELIEF (R), OR SAFETY (S) VALVE
	BALANCING VALVE
	AUTOMATIC FLOW LIMITING VALVE
	STRAINER, STRAINER W/BLOWOFF
	HOSE END DRAIN VALVE
	VALVE IN RISER
	REDUCED PRESSURE BACKFLOW PREVENTER
	DOUBLE CHECK VALVE

**HVAC SPECIALTIES**

	DUCT OR PIPE MOUNTED TEMPERATURE SENSOR
	THERMOSTAT OR TEMPERATURE SENSOR
	WALL MOUNTED CARBON DIOXIDE SENSOR
	DUCT SMOKE DETECTOR
	DDC BINARY INPUT
	DDC BINARY OUTPUT
	DDC ANALOG INPUT
	DDC ANALOG OUTPUT

**PIPING SPECIALTIES**

	FLEXIBLE PIPE CONNECTOR
	EXPANSION JOINT
	PRESSURE GAUGE
	THERMOMETER
	AUTOMATIC AIR VENT
	MANUAL AIR VENT
	TEMPERATURE/PRESSURE TEST PORT
	SENSOR WELL
	HOSE BIBB
	PUMP, IN SCHEMATIC PRESENTATION
	STEAM TRAP
	POINT OF CONNECTION

**GENERAL SYMBOLS**

@	AT
∅	DIAMETER
"	INCHES
&	AND
X°	X DEGREES (ANGLE)
①	KEYED NOTE DESIGNATION
③	OWNER'S EQUIPMENT NUMBER
	DETAIL OR DETAIL REFERENCE
	ELEVATION
	SECTION TAKEN AT
	EQUIPMENT TAG

**PIPE FITTINGS**

	FLANGE
	UNION
	PIPING REDUCER
	PIPE SLEEVE
	PIPE ANCHOR
	ELBOW INTO PAPER PLANE
	ELBOW OUT OF PAPER PLANE
	TEE OUT OF PAPER PLANE
	TEE INTO PAPER PLANE
	PIPE CAP OR PLUG
	FLOW ARROW
	BREAK IN LINE

**ABBREVIATIONS**

AC	AIR CONDITIONING	F	FAHRENHEIT	(R)	REMOVE
ACH	AIR CHANGES PER HOUR	FC	FORWARD CURVED	R	RADIUS
AD	ACCESS DOOR	FCU	FAN COIL UNIT	RA	RETURN AIR
AF	AIR FOIL	FLA	FULL LOAD AMPS	RAD	RETURN AIR DAMPER
AFF	ABOVE FINISHED FLOOR	FLR	FLOOR	(RL)	RELOCATE
AH	AIR HANDLING UNIT	FPM	FEET PER MINUTE	REQD	REQUIRED
ALT	ALTERNATE	FPS	FEET PER SECOND	RF	RETURN FAN
AMP	AMPERE	FT	FEET	RP	REDUCED PRESSURE BACKFLOW PREVENTER
AP	ACCESS PANEL	G	NATURAL GAS	RPM	REVOLUTIONS PER MINUTE
ARCH	ARCHITECTURAL	GA	GAUGE	SA	SUPPLY AIR
ASSY	ASSEMBLY	GAL	GALLON	SAN	SANITARY
B	BOILER	GALV	GALVANIZED	SCH	SCHEDULE
BG	BELOW GRADE	GPM	GALLONS PER MINUTE	SF	SQUARE FEET
BHP	BRAKE HORSEPOWER	GSM	GALVANIZED SHEET METAL	SHT	SHEET
BI	BASKWARD INCLINED	HB	HOSE BIBB	SP	STATIC PRESSURE
BLDG	BUILDING	HP	HORSEPOWER, OR HEAT PUMP	SQ	SQUARE
BOP	BOTTOM OF PIPE	HZ	HERTZ	SR	SPRING RANGE
BS	BELOW SLAB	ID	INSIDE DIAMETER	SS	STAINLESS STEEL
BTU	BRITISH THERMAL UNIT	IN	INCHES	STD	STANDARD
BTUH	BRITISH THERMAL UNITS PER HOUR	KW	KILOWATTS	TDH	TOTAL DYNAMIC HEAD
C	COMMON	KWH	KILOWATT HOURS	TEMP	TEMPERATURE, OR TEMPORARY
CA	COMPRESSED AIR, COMBUSTION AIR	L	LENGTH	TOS	TOP OF SLAB
CAP	CAPACITY	LAT	LEAVING AIR TEMPERATURE	TSP	TOTAL STATIC PRESSURE
CB	CIRCUIT BREAKER	LBS	POUNDS	TTC	TIGHT TO CEILING
CC	COOLING COIL	LRA	LOCKED ROTOR AMPS	TYP	TYPICAL
CD	CONDENSATE DRAIN	LTG	LIGHTING	UNO	UNLESS NOTED OTHERWISE
CFCI	CONTRACTOR FURNISHED, CONTRACTOR INSTALLED	LWT	LEAVING WATER TEMPERATURE	V	VENT OR VOLTS
CFM	CUBIC FEET PER MINUTE	MAX	MAXIMUM	VA	VOLT-AMPERE
CH	CHILLER	MBH	THOUSAND BTUH	VAV	VARIABLE AIR VOLUME
CLG	CEILING	MCA	MINIMUM CIRCUIT AMPACITY	VEL	VELOCITY
CMU	CONCRETE MASONRY UNIT	MEZZ	MEZZANINE	VFD	VARIABLE FREQUENCY DRIVE
COND	CONDENSER, CONDENSATE	MFR	MANUFACTURER	VOL	VOLUME
CONT	CONTINUATION	MIN	MINIMUM	VV	VARIABLE VOLUME
COP	COEFFICIENT OF PERFORMANCE	MISC	MISCELLANEOUS	W/	WITH
CTE	CONNECT TO EXISTING	MTD	MOUNTED	WB	WET BULB
CW	COLD WATER	MTG	MEETING	WC	WATER COLUMN
D	DRAIN	(N)	NEW	WG	WATER GAGE
DDC	DIRECT DIGITAL CONTROL	NC	NORMALLY CLOSED	W/O	WITHOUT
DET	DETAIL	NO	NORMALLY OPEN, OR NUMBER		
DHW	DOMESTIC HOT WATER	NPT	NATIONAL PIPE THREAD		
DHR	DOMESTIC HOT WATER RETURN	NTS	NOT TO SCALE		
DIA	DIAMETER	OC	ON CENTER		
DIM	DIMENSION	OD	OUTSIDE DIAMETER		
DN	DOWN	OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED		
DWG	DRAWING	OFOI	OWNER FURNISHED, OWNER INSTALLED		
(E)	EXISTING	OSA	OUTSIDE AIR		
EA	EACH, OR EXHAUST AIR	OSAD	OUTSIDE AIR DAMPER		
EAD	EXHAUST AIR DAMPER	P	PUMP		
EAT	ENTERING AIR TEMPERATURE	PD	PRESSURE DROP		
EF	EXHAUST FAN	PH	PHASE		
EFF	EFFICIENCY	PLBG	PLUMBING		
EG	EXHAUST GRILLE	PLC	PROGRAMMABLE LOGIC CONTROL		
ELEV	ELEVATION	PRV	PRESSURE REDUCING VALVE		
ENT	ENTERING	PSI	POUNDS PER SQUARE INCH		
EQUIP	EQUIPMENT	PSIG	POUNDS PER SQUARE INCH GAGE		
ESP	EXTERNAL STATIC PRESSURE				
ET	EXPANSION TANK				
ETR	EXISTING TO REMAIN				
EWT	ENTERING WATER TEMPERATURE				
EXT	EXTERIOR				

**GENERAL NOTES - MECHANICAL**

1. PROVIDE ESCUTCHEON PLATES FOR EXPOSED PIPING PENETRATIONS.
2. MECHANICAL CONTRACTOR SHALL PROVIDE PIPING OFFSETS AS NEEDED TO MAINTAIN NEC REQUIRED CLEARANCES AROUND ELECTRICAL PANELS.

**MECHANICAL EQUIPMENT INSTALLATION NOTES**

1. VERIFY LAYOUT, INSTALLATION REQUIREMENTS, AND PHYSICAL DIMENSIONS OF ACTUAL EQUIPMENT PROVIDED TO ENSURE THAT ACCESS CLEARANCES CAN BE MET.
2. PROVIDE SEISMIC BRACING FOR EQUIPMENT AND PIPING WEIGHING GREATER THAN 75 POUNDS. USE CABLE SYSTEM TO ENSURE THAT BRACING DOES NOT SHORT-CIRCUIT VIBRATION ISOLATION, WHERE APPLICABLE.

**PIPING NOTES**

1. PROVIDE UNIONS OR FLANGES AT PIPING CONNECTIONS FOR EQUIPMENT, CONTROL VALVES, AND OTHER COMPONENTS TO ALLOW DISASSEMBLY FOR MAINTENANCE.
2. PIPE ROUTING INDICATED IS DIAGRAMMATIC IN NATURE AND IS NOT INTENDED TO SHOW EVERY OFFSET REQUIRED TO MAKE FINAL CONNECTION TO EQUIPMENT. CONTRACTOR SHALL DETERMINE THE EXACT ROUTE OF PIPING, INCLUDING OFFSETS, TO MAKE THE SIMPLEST AND MOST EFFICIENT PIPING SYSTEM.
3. PROVIDE DIELECTRIC NIPPLES AT CONNECTIONS OF DISSIMILAR PIPE MATERIALS.

**REGISTERED PROFESSIONAL ENGINEER**  
#13759  
*Eugene D. Johnson*  
OREGON  
JULY 16, 1991  
EUGENE, D. JOHNSON  
EXP. DATE: 6/30/2019

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**SHELDON HIGH SCHOOL  
BOILER REPLACEMENT - 2019**  
2455 WILLAKENZIE RD  
EUGENE, OREGON 97401

REVISIONS:

PROJECT NO:	19-001
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DRAWN BY:	GJ
CHECKED BY:	EDJ

SYMBOLS &  
ABBREVIATIONS

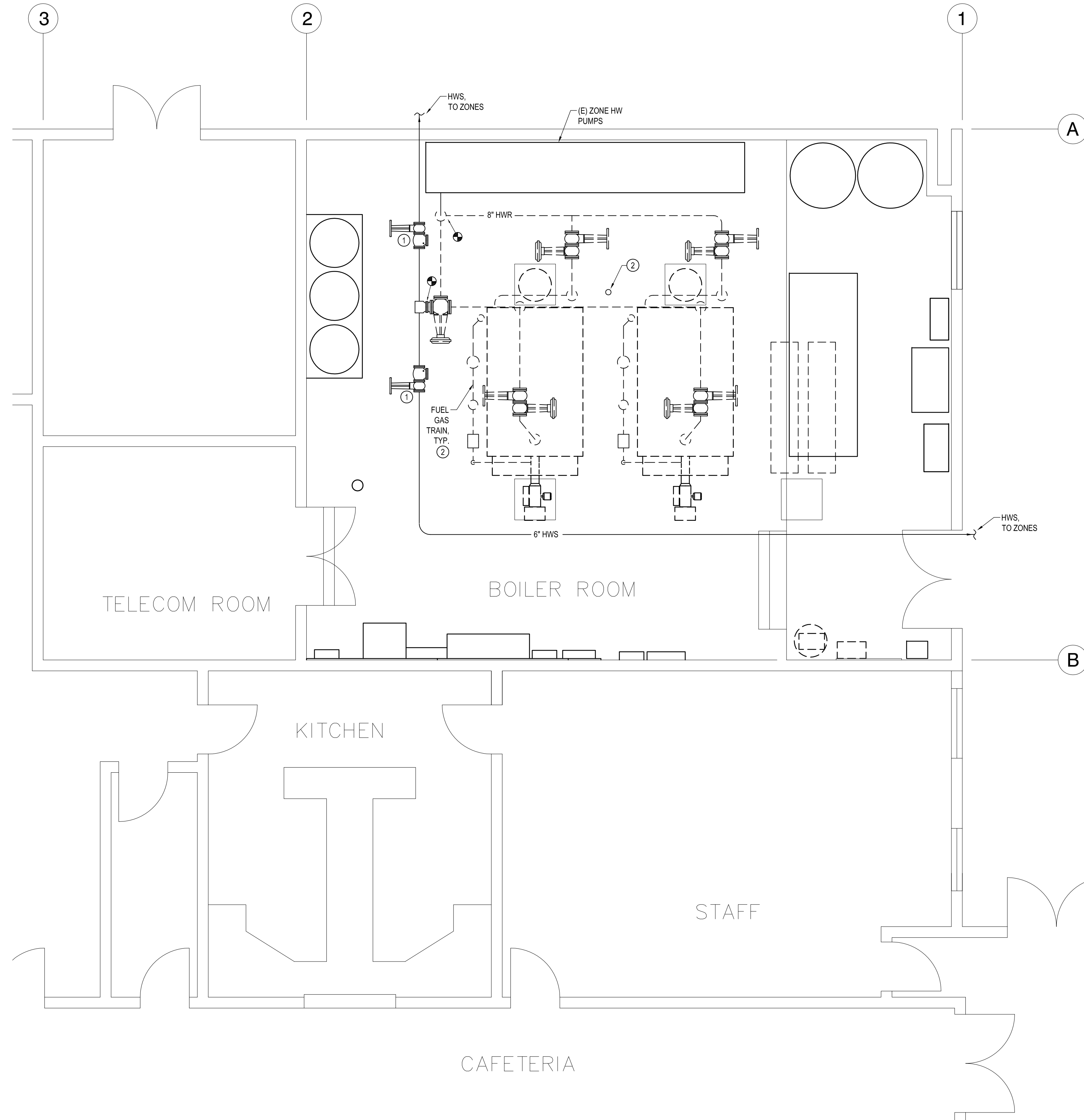
**M001**

**KEYED SHEET NOTES**

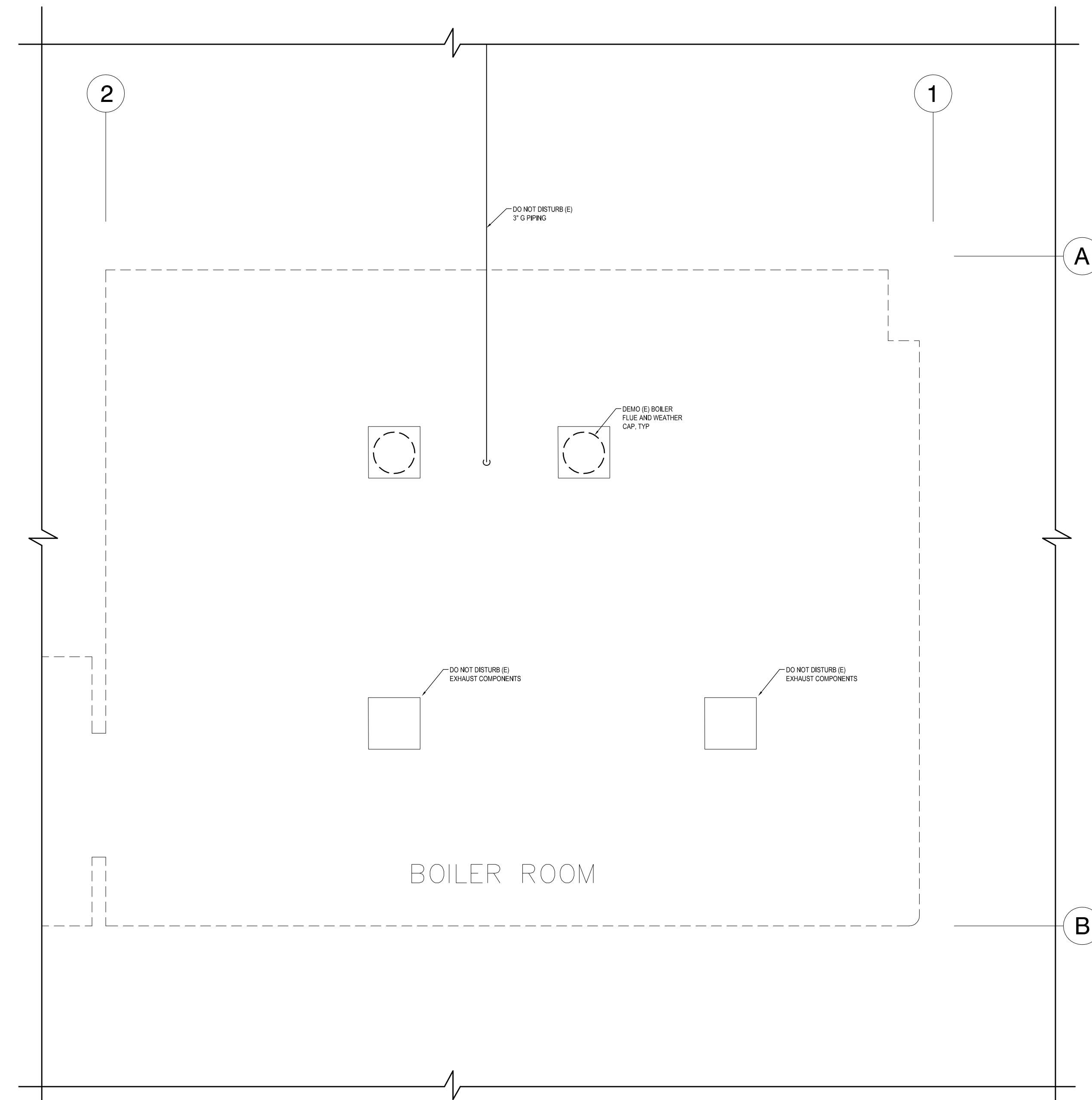
- ① RETAIN (E) ISOLATION VALVE.
- ② DEMO ALL (E) NG FUEL PIPING, METERS, VALVES, AND INSTRUMENTATION FROM (E) BOILERS UP TO (E) 3" TEE WHERE PIPING BRANCHES TO TWO (E) BOILERS. (N) NG PIPING WILL CONNECT AT THIS POINT (REFER TO PLANS).

**GENERAL SHEET NOTES**

- 1. DEMOLITION OF (E) BOILERS SHALL INCLUDE CUTTING AND/OR DISMANTLING AS REQUIRED TO FIT THROUGH (E) DOORS.
- 2. DEMOLITION OF (E) FUEL TANK IS NOT IN THE SCOPE OF THIS PROJECT, AND WILL BE REMOVED BY OTHERS.
- 3. CONTRACTOR SHALL REMOVE ALL (E) FUEL OIL PIPING, FITTINGS, AND APPURTENANCES.
- 4. DDC DEMOLITION BY OWNER ONLY.



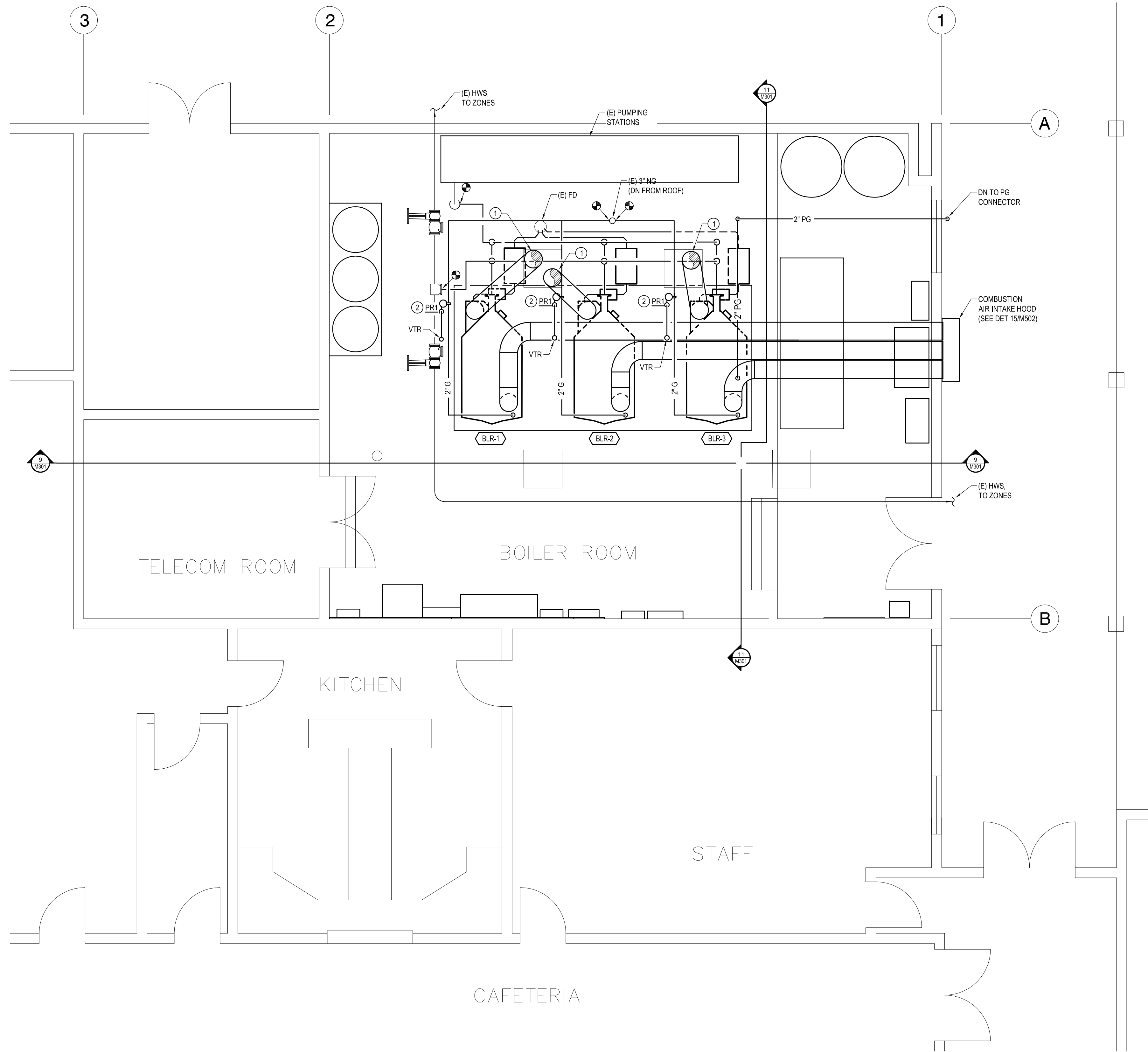
**13 BOILER RM DEMOLITION FLOOR PLAN**  
SCALE: 1/4" = 1'-0"



**11 BOILER RM DEMOLITION ROOF PLAN**  
SCALE: 1/4" = 1'-0"

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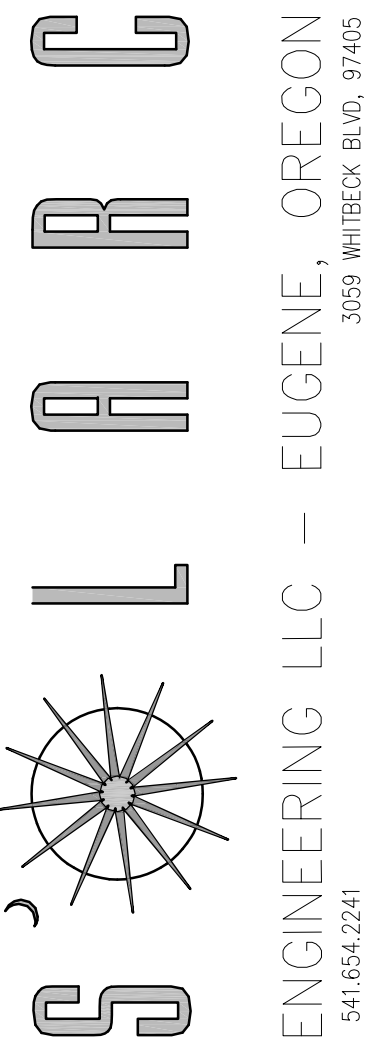


**KEYED SHEET NOTES**

- ① UP THROUGH ROOF AT (E) ROOF CURB. PROVIDE NEW CURB CAP, EXHAUST PIPE SUPPORT, FLASHING OF EXHAUST PIPE TO CURB CAP, AND EXHAUST PIPE RAIN-PROOF TERMINATION, ALL PER MFR. INSTALLATION REQUIREMENTS.
- ② NATURAL GAS REGULATOR. REFER TO SHEET M501.

**GENERAL SHEET NOTES**

- 1. PROVIDE ALL COMPONENTS AND LABOR NECESSARY SO THAT INSTALLATION CONFORMS TO THE STANDARD FOR CONTROLS AND SAFETY DEVICES FOR AUTOMATICALLY FIRED BOILERS, ASME CSD-1, LATEST EDITION.
- 2. ALL WORK SHALL CONFORM TO REQUIREMENTS OF LATEST EDITIONS OF APPLICABLE SECTIONS OF BOILER, MECHANICAL, AND ELECTRICAL CODES FOR THE PROJECT LOCATION.
- 3. PROVIDE CO DETECTOR IN BOILER ROOM WITH AUDIBLE AND VISIBLE ALARM (SIREN & STROBE).



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 EUGENE, OREGON 97401

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**BOILER RM  
 FLOOR  
 PLAN,  
 NEW WORK**

**M101**

**13 BOILER ROOM PLAN, NEW WORK**  
 SCALE: 1/4" = 1'-0"

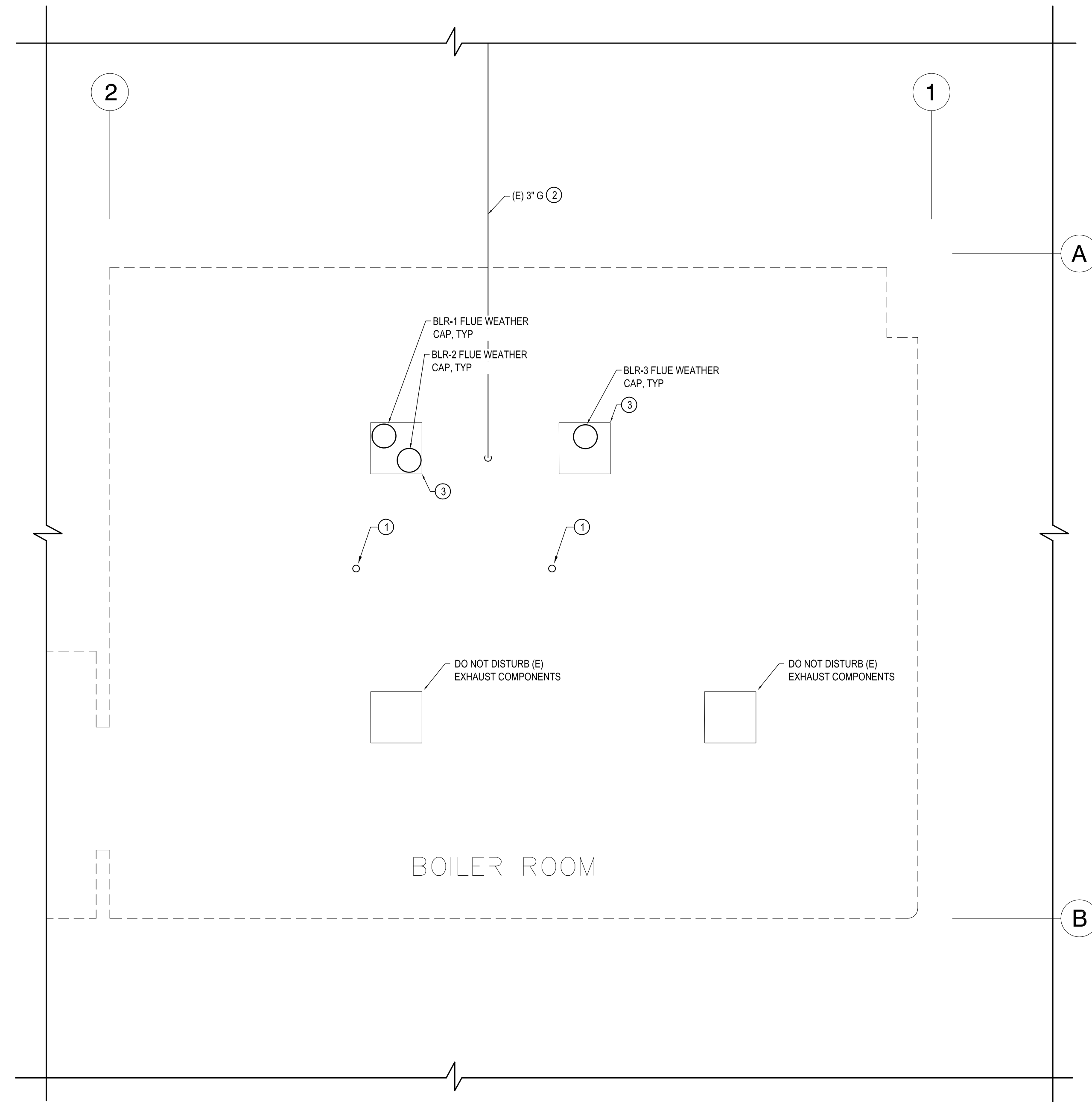


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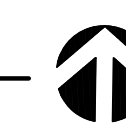
- ① (E) NATURAL GAS VENTS: 1" IRON PIPE, TYP. LOCATIONS SHOWN ARE APPROXIMATE. FIELD LOCATE, AND RE-USE (E) ROOF PENETRATIONS FOR NEW REGULATOR VENT PIPING WHERE POSSIBLE.
- ② (E) NATURAL GAS PIPING: DO NOT DISTURB (E) PIPING ABOVE ROOF. CONNECTION TO NEW PIPING TO NEW BOILERS WILL BE MADE BELOW ROOF. REFER TO MECHANICAL DRAWINGS.
- ③ FABRICATE 22GA. SS CAP ON (E) ROOF CURB TO ACCOMMODATE NEW BOILER EXHAUST FLUE PIPE PENETRATION. PROVIDE FLASHING ON FLUE TO NEW CURB CAP.

**GENERAL SHEET NOTES**

- 1. CONTRACTOR SHALL CONFIRM DIMENSIONS, LOCATION, AND CONFIGURATION OF EXISTING ROOF CURBS, AND NATURAL GAS PIPING, AND MAKE ANY REQUIRED ADJUSTMENTS TO LOCATIONS OF NEW EQUIPMENT SHOWN ON DRAWINGS OF THIS PROJECT.



**14 BOILER ROOM ROOF PLAN**  
SCALE: 1/4" = 1'-0"



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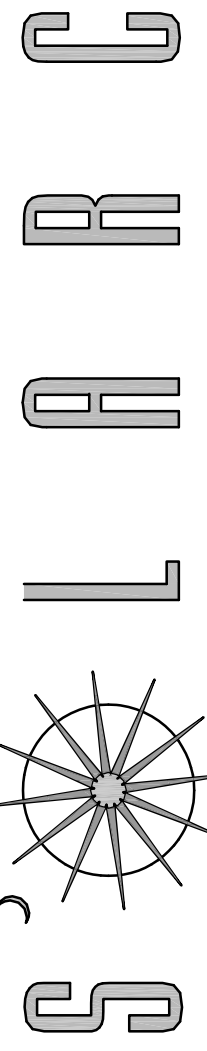
**BOILER RM  
 ROOF  
 PLAN,  
 NEW WORK**

**KEYED SHEET NOTES**

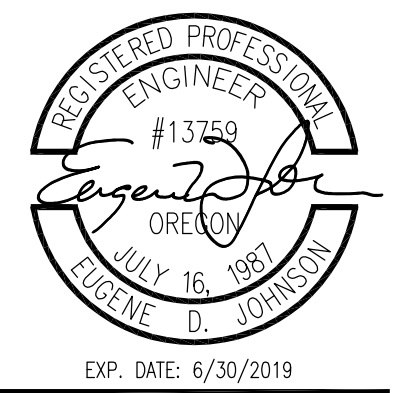
- ① WEATHER HOOD: FABRICATE USING GALVANIZED SHEET METAL, 22GA.

**GENERAL SHEET NOTES**

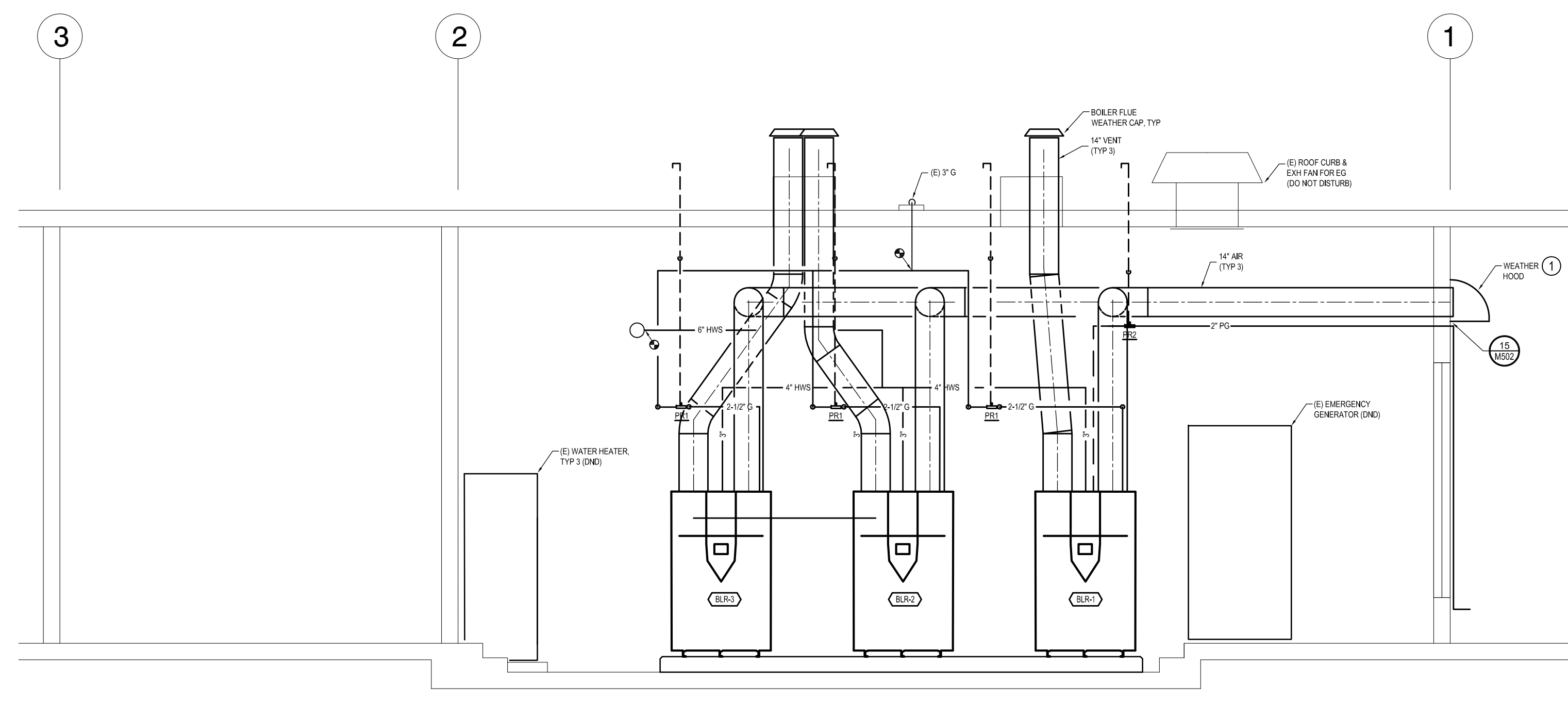
- ENGINE-GENERATOR EQUIPMENT, HYDRONIC PUMP STATIONS, AND DOMESTIC WATER HEATER PIPING AND EQUIPMENT SHALL ALL REMAIN UNDISTURBED THROUGHOUT THIS PROJECT.
- CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN FIELD AND ADJUST PIPING AND EQUIPMENT LAYOUTS AS REQUIRED TO ACCOMMODATE FIELD CONDITIONS.
- IF EQUIPMENT NOT SHOWN SPECIFICALLY TO BE DEMOLISHED MUST BE TEMPORARILY REMOVED IN ORDER TO INSTALL NEW EQUIPMENT SHOWN. CONTRACTOR SHALL COORDINATE WITH OWNER AND ENGINEER BEFORE PROCEEDING WITH SUCH REMOVAL.
- PROVIDE ALL COMPONENTS AND LABOR NECESSARY SUCH THAT INSTALLATION CONFORMS TO THE STANDARD FOR CONTROLS AND SAFETY DEVICES FOR AUTOMATICALLY FIRED BOILERS, ASME CSD-1, LATEST EDITION.
- ALL WORK SHALL CONFORM TO REQUIREMENTS OF LATEST EDITIONS OF APPLICABLE SECTIONS OF BOILER, MECHANICAL, AND ELECTRICAL CODES FOR THE PROJECT LOCATION.
- PROVIDE CO DETECTOR IN BOILER ROOM WITH AUDIBLE AND VISIBLE ALARM (SIREN & STROBE).



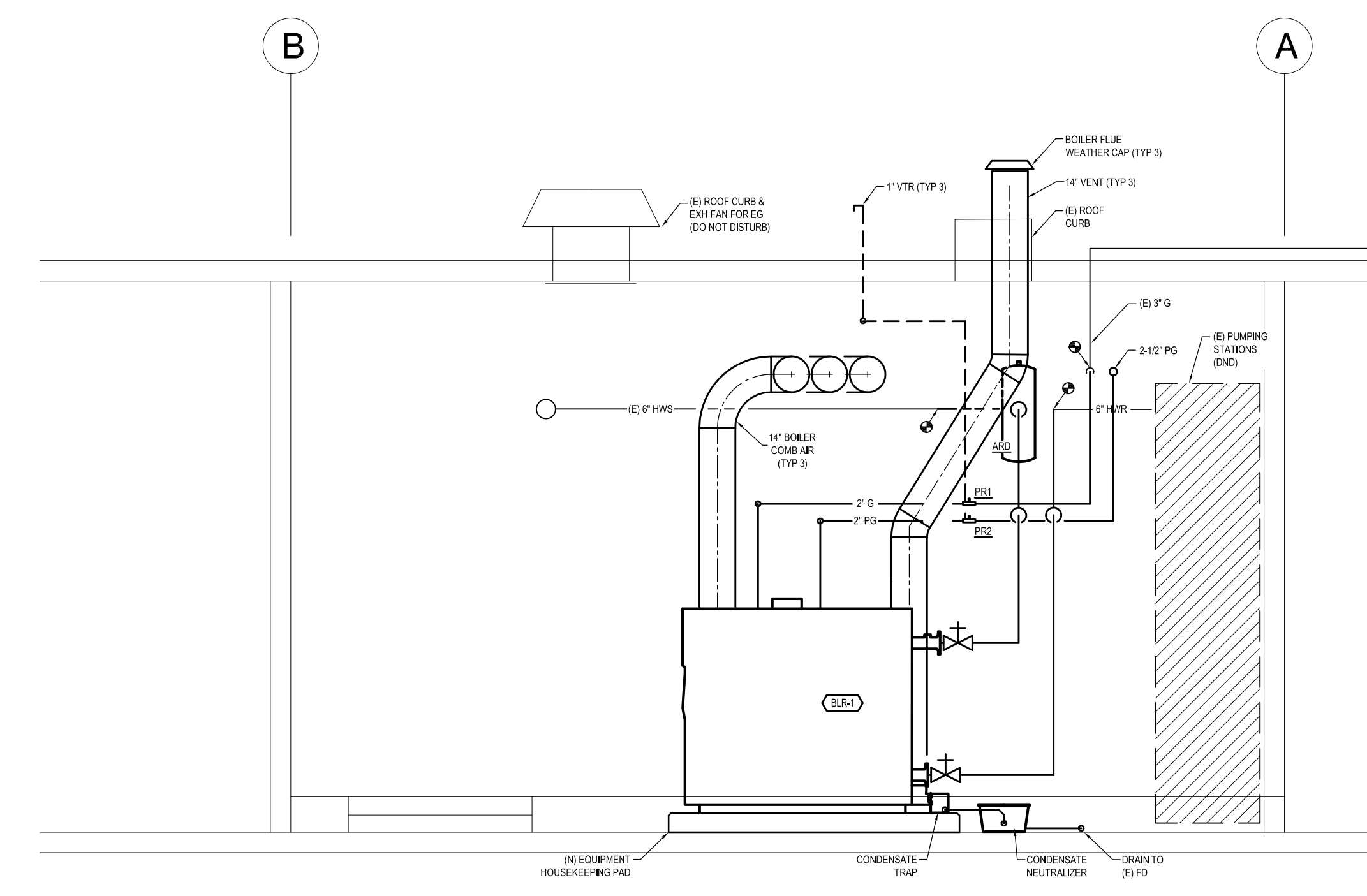
ENGINEERING LLC - EUGENE, OREGON  
3059 WHITEOCK BLVD, 97405  
541.654.2241



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**9 SECTION - BOILER ROOM, LOOKING NORTH**  
SCALE: 1/4" = 1'-0"



**11 SECTION - BOILER ROOM, LOOKING WEST**  
SCALE: 1/4" = 1'-0"

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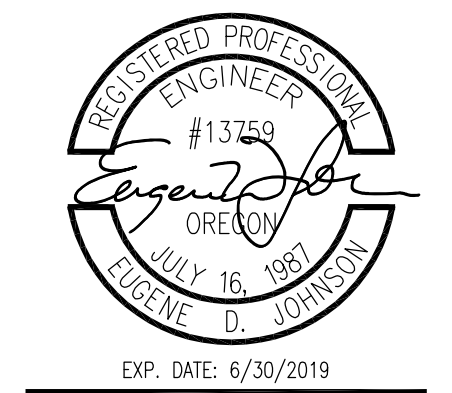
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BOILER RM  
MECHANICAL  
SECTIONS

**M301**  
SHEET 6 OF 9





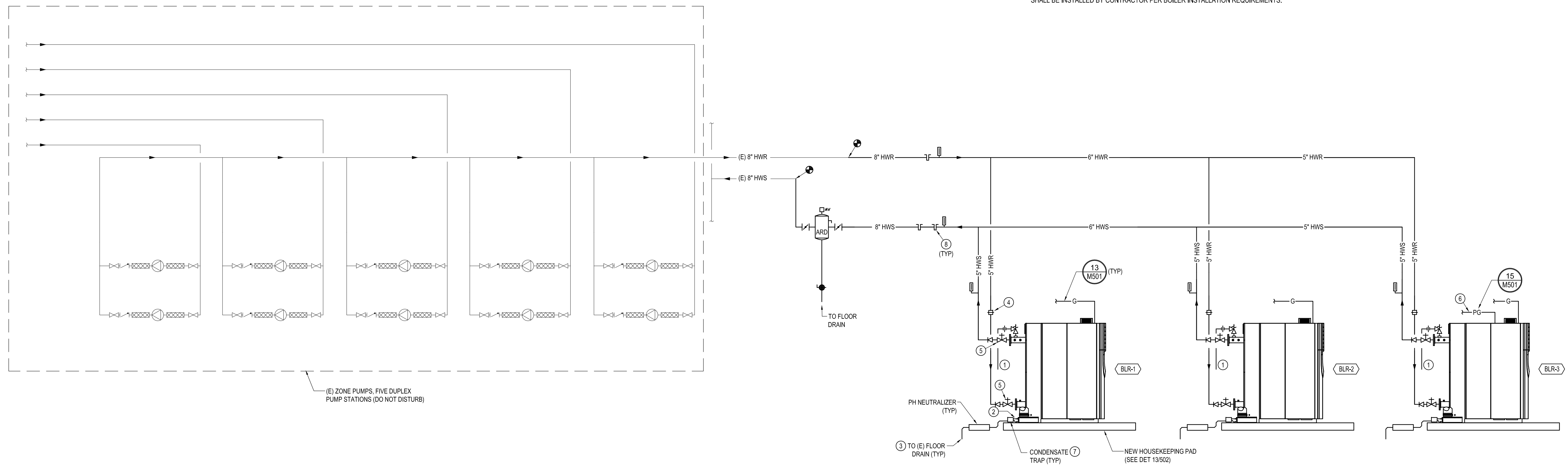
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**KEYED SHEET NOTES**

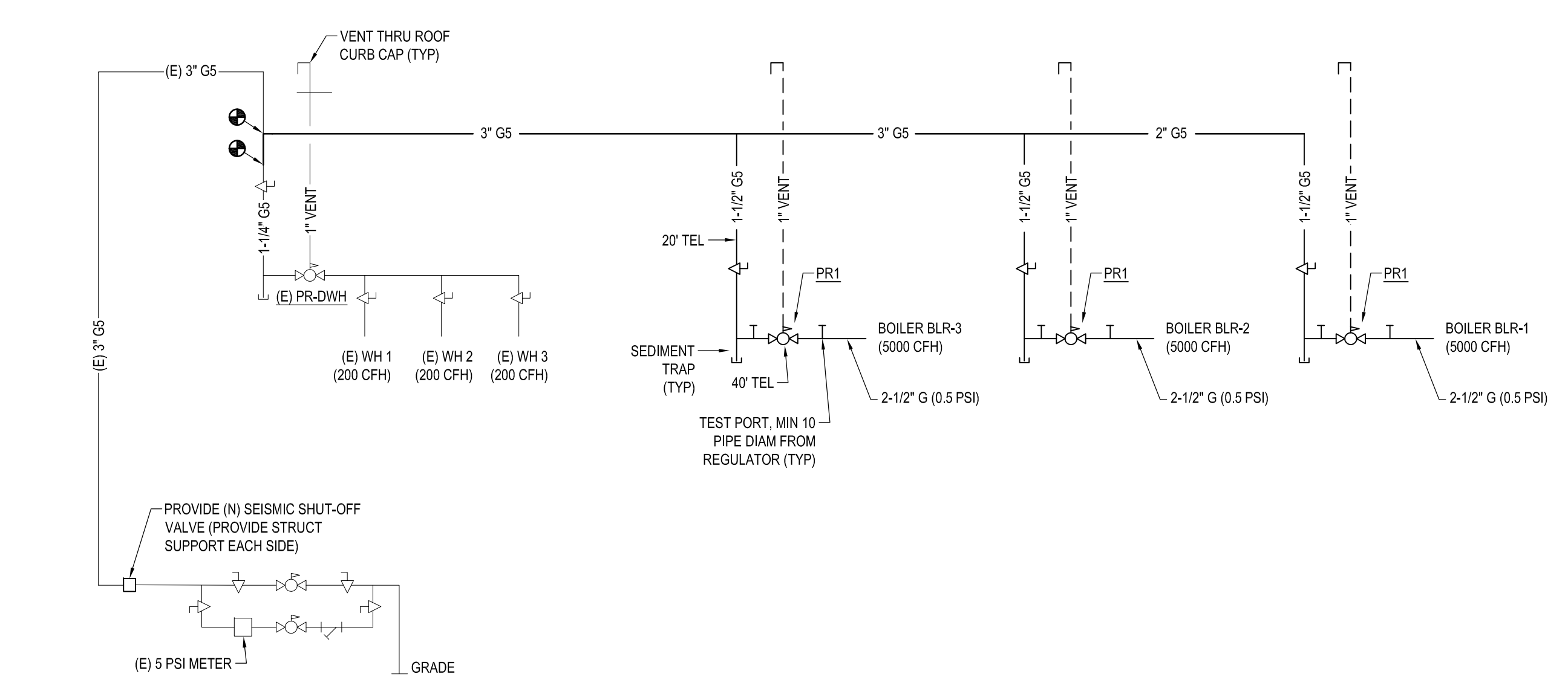
- ① ROUTE RELIEF VALVE OUTLET PIPING TO WITHIN 6 INCHES OF FLOOR. TERMINATE WITH 45 DEG ELBOW, DIRECTED TOWARD NEAREST (E) FLOOR DRAIN.
- ② CONNECT TRAP TO BOILER WITH TUBING FURNISHED WITH BOILER.
- ③ SLOPE CONDENSATE DRAIN PIPING AT 1/8" PER FOOT.
- ④ BALANCE EACH BOILER TO IDENTICAL FLOWRATE.
- ⑤ PROVIDE 5" OS&Y GATE VALVE PER STATE BOILER CODE.
- ⑥ PROPANE TO BLR-1 ONLY.
- ⑦ PVC CONDENSATE DRAIN PIPING TO ACID NEUTRALIZING FILTER
- ⑧ INSTRUMENT WELLS: COORDINATE NUMBER AND LOCATION WITH DISTRICT ENGINEERING STAFF. CONTRACTOR SHALL INSTALL OWNER-PROVIDED WELLS AT LOCATIONS DETERMINED BY OWNER. SENSORS FURNISHED BY BOILER MFR SHALL BE INSTALLED BY CONTRACTOR PER BOILER INSTALLATION REQUIREMENTS.

**GENERAL SHEET NOTES**

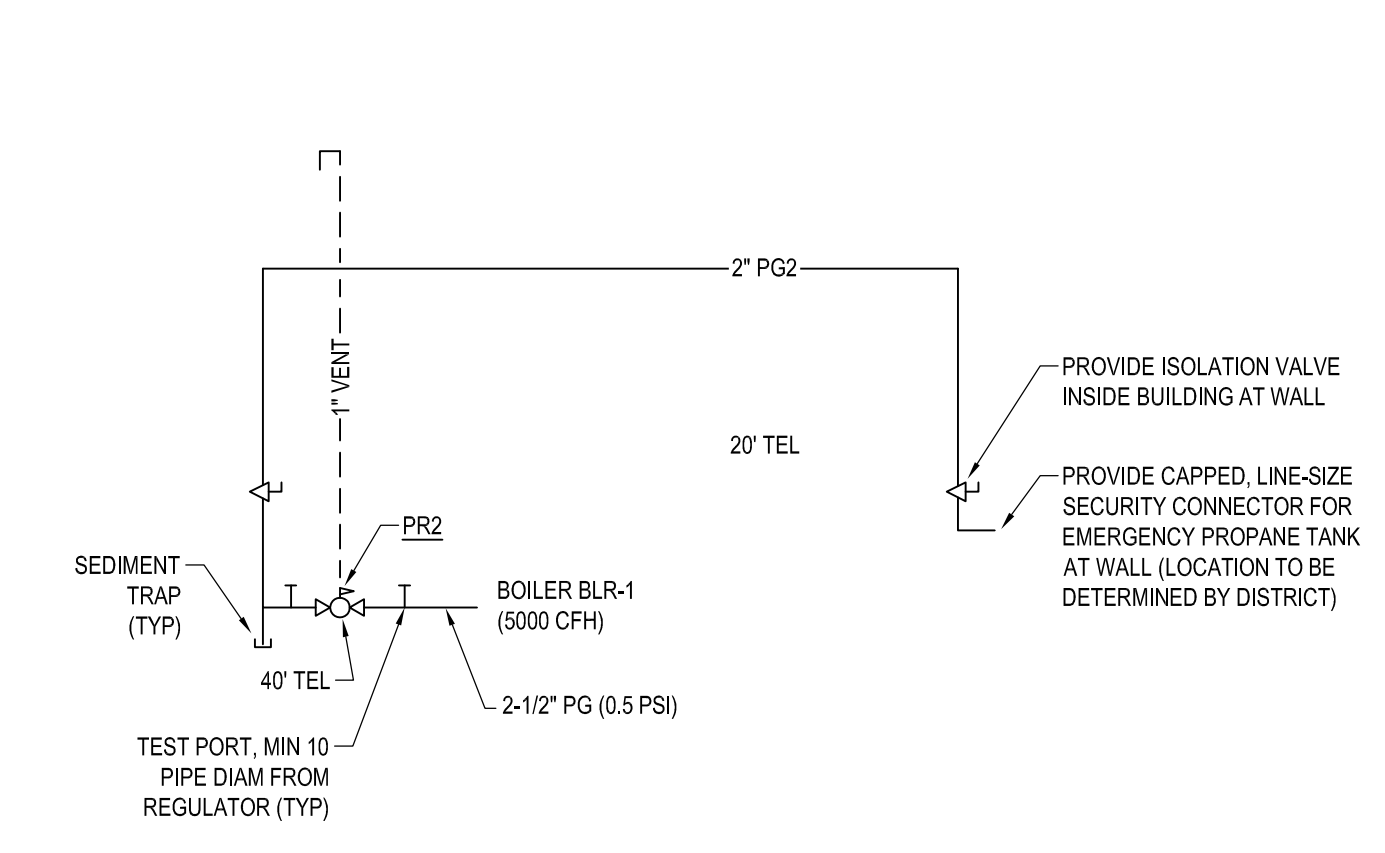
1. DISTRICT DDC TECHNICIANS WILL PROVIDE "ENABLE" (DI) AND "HWS SETPOINT" (AI) TO BE USED AS INPUTS TO BOILER MFR MULTIPLE BOILER CONTROLLER. CONTRACTOR SHALL PROVIDE ALL COORDINATION, INSTALLATION, AND STARTUP WORKING WITH DISTRICT TO THOROUGHLY TEST THIS CONTROL INTERFACE.



**9 HW SYSTEM SCHEMATIC DIAGRAM**  
SCALE: NTS



**13 NATURAL GAS PIPING DIAGRAM**  
SCALE: NTS



**15 PROPANE PIPING DIAGRAM**  
SCALE: NTS

**SHELDON HIGH SCHOOL  
BOILER REPLACEMENT - 2019**  
2455 WILLAKENZIE RD  
EUGENE, OREGON 97401

REVISIONS:

PROJECT NO:	19-001
DATE:	04-30-19
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REVISED:	
DRAWN BY:	GJ
CHECKED BY:	EDJ

SCHEMATIC  
DIAGRAMS &  
DETAILS

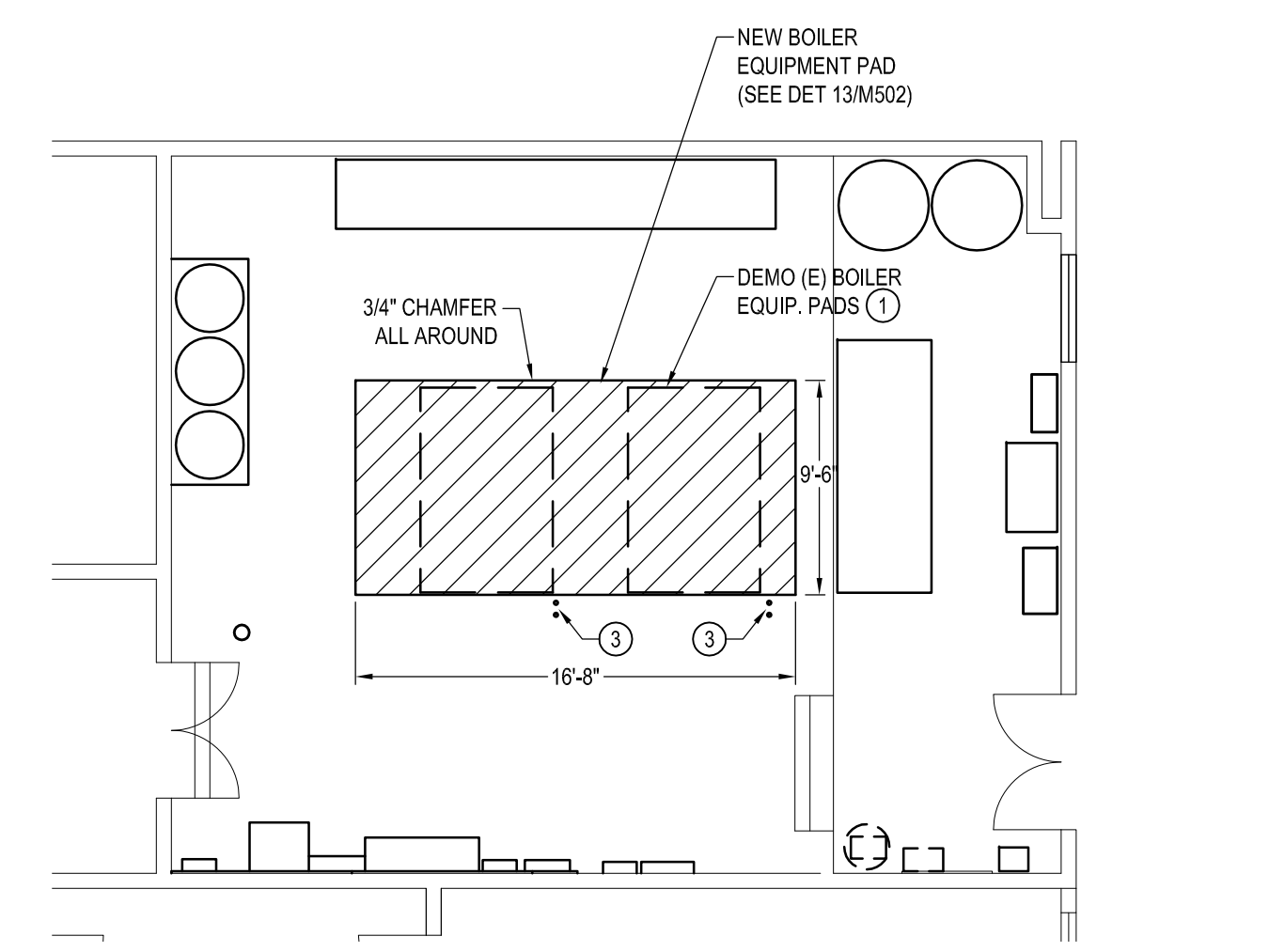
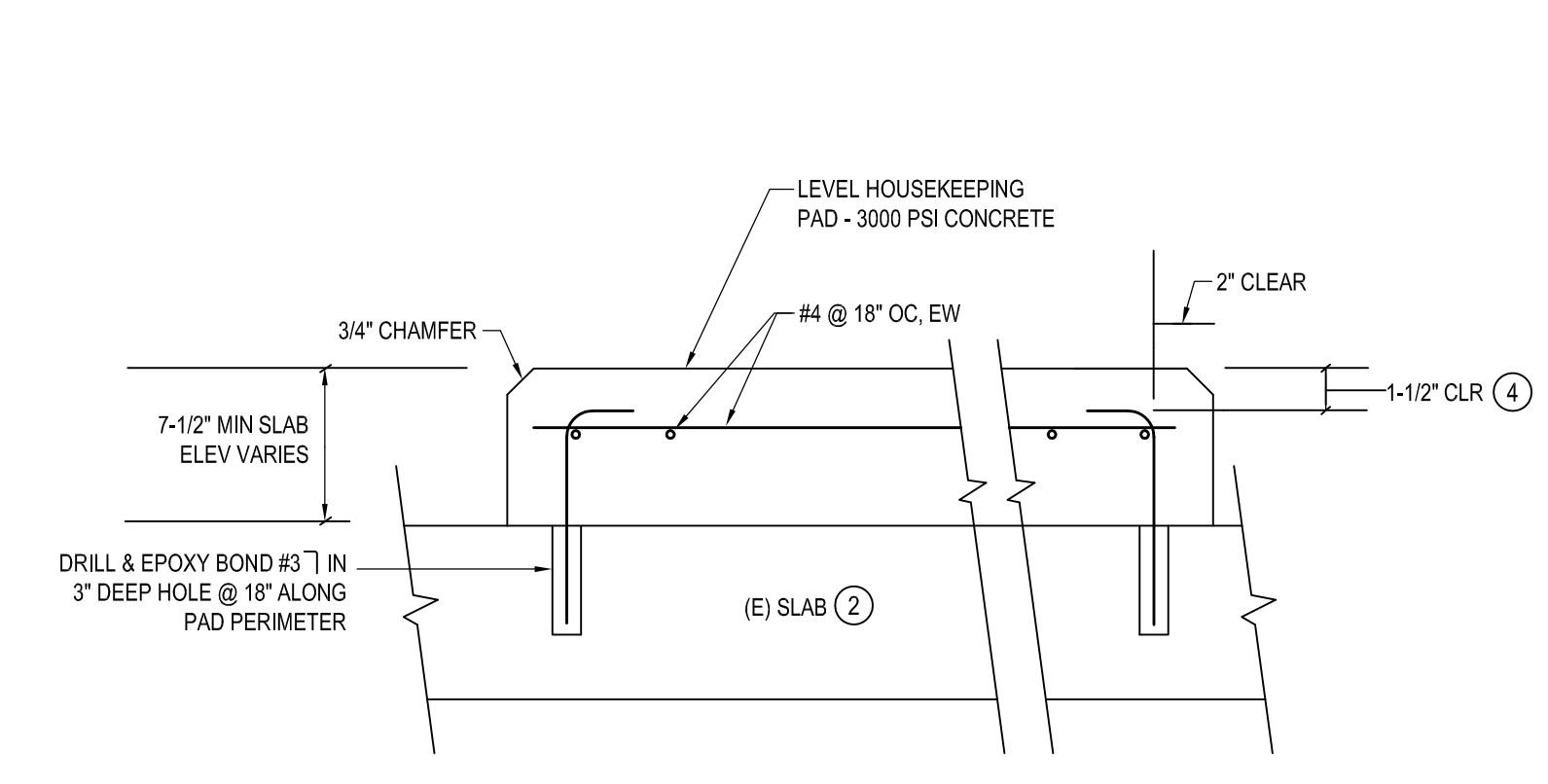
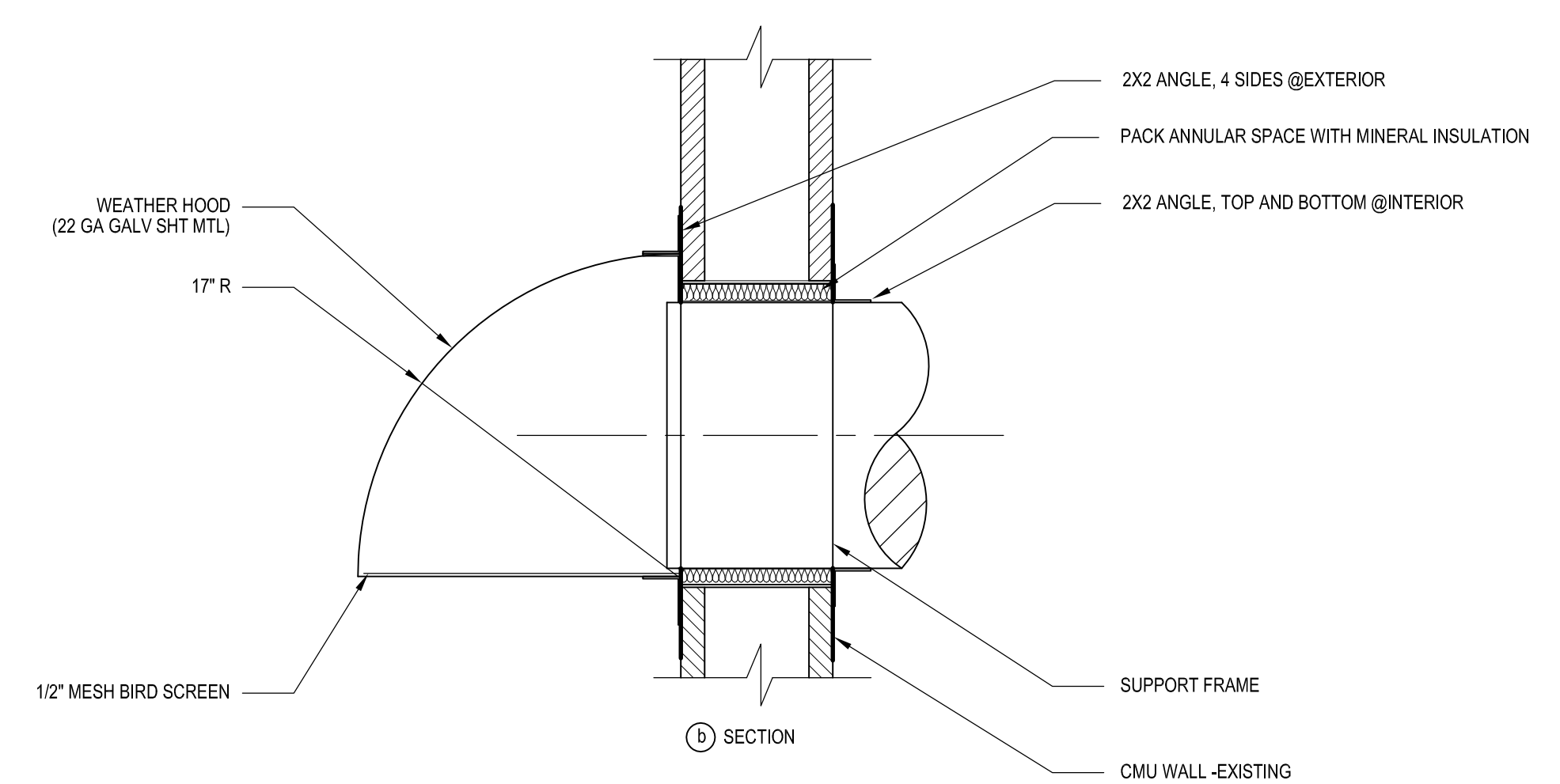
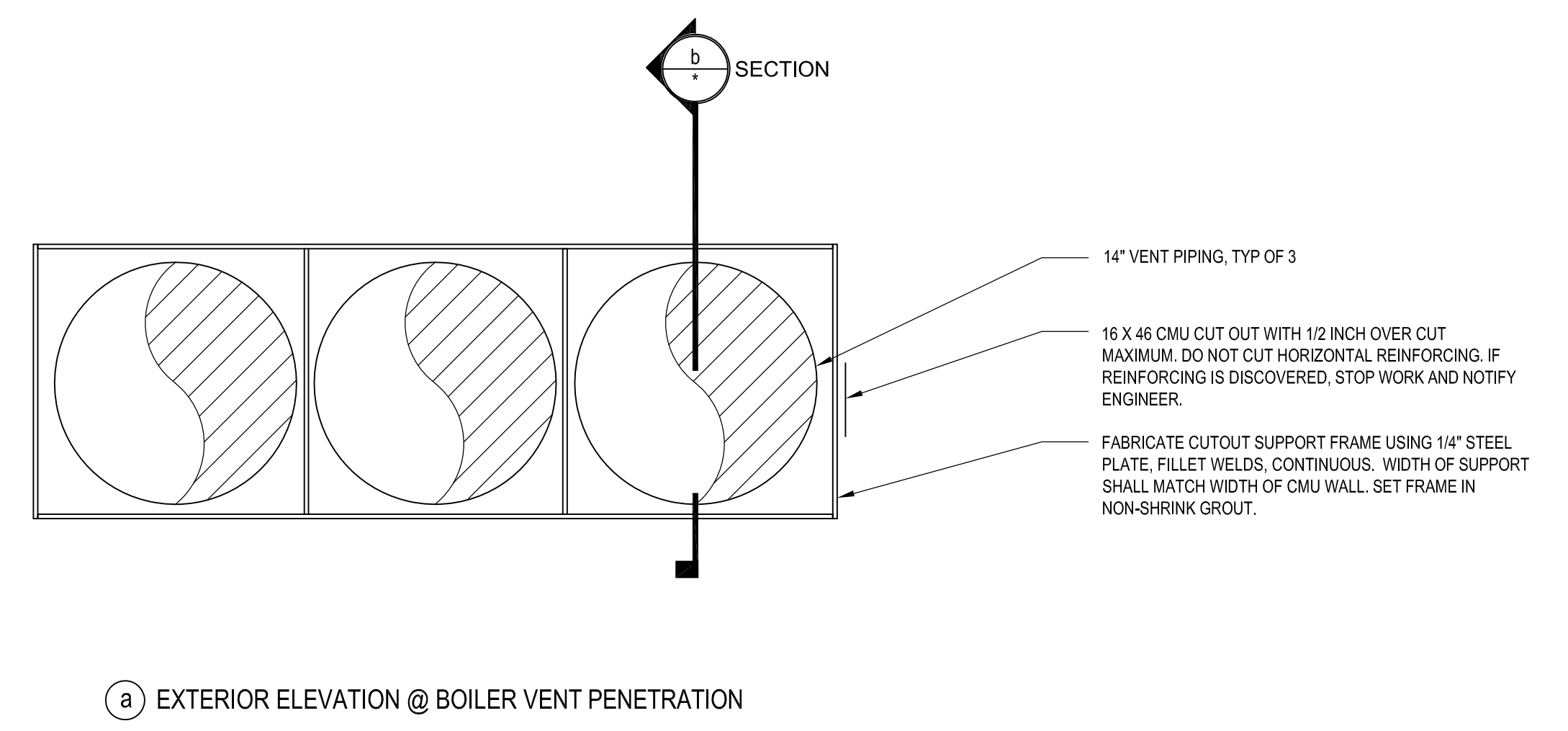
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**KEYED SHEET NOTES**

- ① DEMO (E) BOILER EQUIPMENT PAD, APPROX. 2" HIGH.
- ② SANDBLAST AND CLEAN IN AREA OF NEW EQUIPMENT PAD PRIOR TO PLACING FORMWORK AND POURING NEW PAD.
- ③ CUT (E) LOS/LOR PIPING FLUSH WITH FLOOR. INSERT A REMOVABLE PLUG, FLUSH WITH FINISHED FLOOR.
- ④ MOUNT BOILER TO HOUSEKEEPING PAD WITH ANCHOR BOLTS SIZED PER BOILER MANUFACTURER.

**GENERAL SHEET NOTES**



**15) COMBUSTION AIR DUCT PENETRATION AT WALL**  
SCALE: NTS

**13) BOILER EQUIPMENT PAD DETAIL**  
SCALE: NTS

**14) NEW EQUIPMENT PAD PARTIAL PLAN**  
SCALE: NTS



**CONDENSING BOILER SCHEDULE**

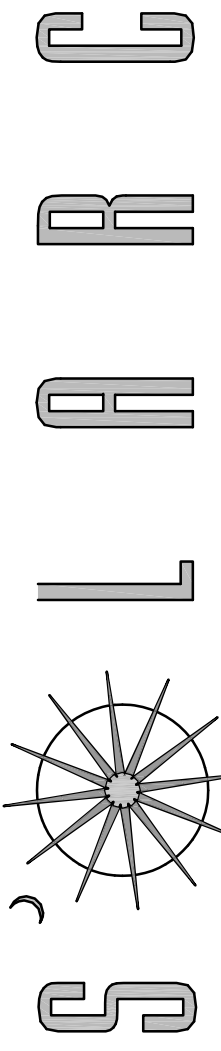
TAG	SERVICE	BASIS OF DESIGN		INPUT CAPACITY		MBH	AHRI EFF %	TURN DOWN RATIO	FLUID FLOW GPM	ELECTRICAL DATA			FUEL TYPE		SHIPPING WT. LBS	NOTES
		MANUFACTURER	MODEL	MIN	MAX					VOLTS	PH	AMPS FLA	PRIMARY	SECOND.		
BLR-1	CENTRAL BOILER 1	LOCHINVAR	FBN-5000	500	5,000		92	10:1	50-600	460	3	5.0	NAT GAS	NONE	5900	[1],[2],[3]
BLR-2	CENTRAL BOILER 2	LOCHINVAR	FBN-5000	500	5,000		92	10:1	50-600	460	3	5.0	NAT GAS	NONE	5900	[1],[2],[3]
BLR-3	CENTRAL BOILER 3	LOCHINVAR	FBNL-5000	500	5,000		92	10:1	50-600	460	3	5.0	NAT GAS	PROPANE	5900	[1],[2],[3],[4]

**NOTES:**

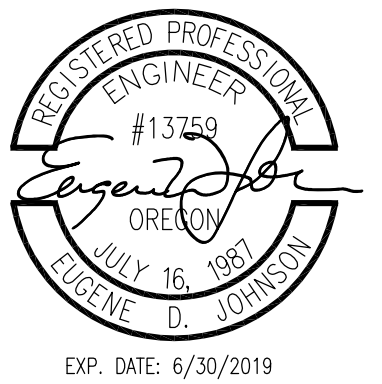
1. PROVIDE WITH MASTER CONTROLLER TO SEQUENCE 3 BOILERS.
2. PROVIDE WITH BMS GATEWAY AS REQUIRED FOR COMMUNICATION WITH AUTOMATED LOGIC DDC SYSTEM.
3. PROVIDE EACH BOILER WITH CONDENSATE NEUTRALIZING TANK AND ASSOCIATED COMPONENTS.
4. PROVIDE BOILER WITH DUAL FUEL GAS TRAIN.

**5 MECHANICAL EQUIPMENT SCHEDULES**

SCALE: NTS



ENGINEERING LLC - EUGENE, OREGON  
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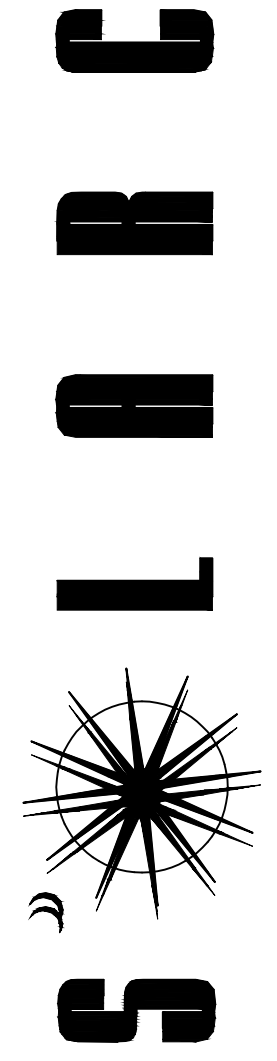
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EQUIPMENT  
SCHEDULES

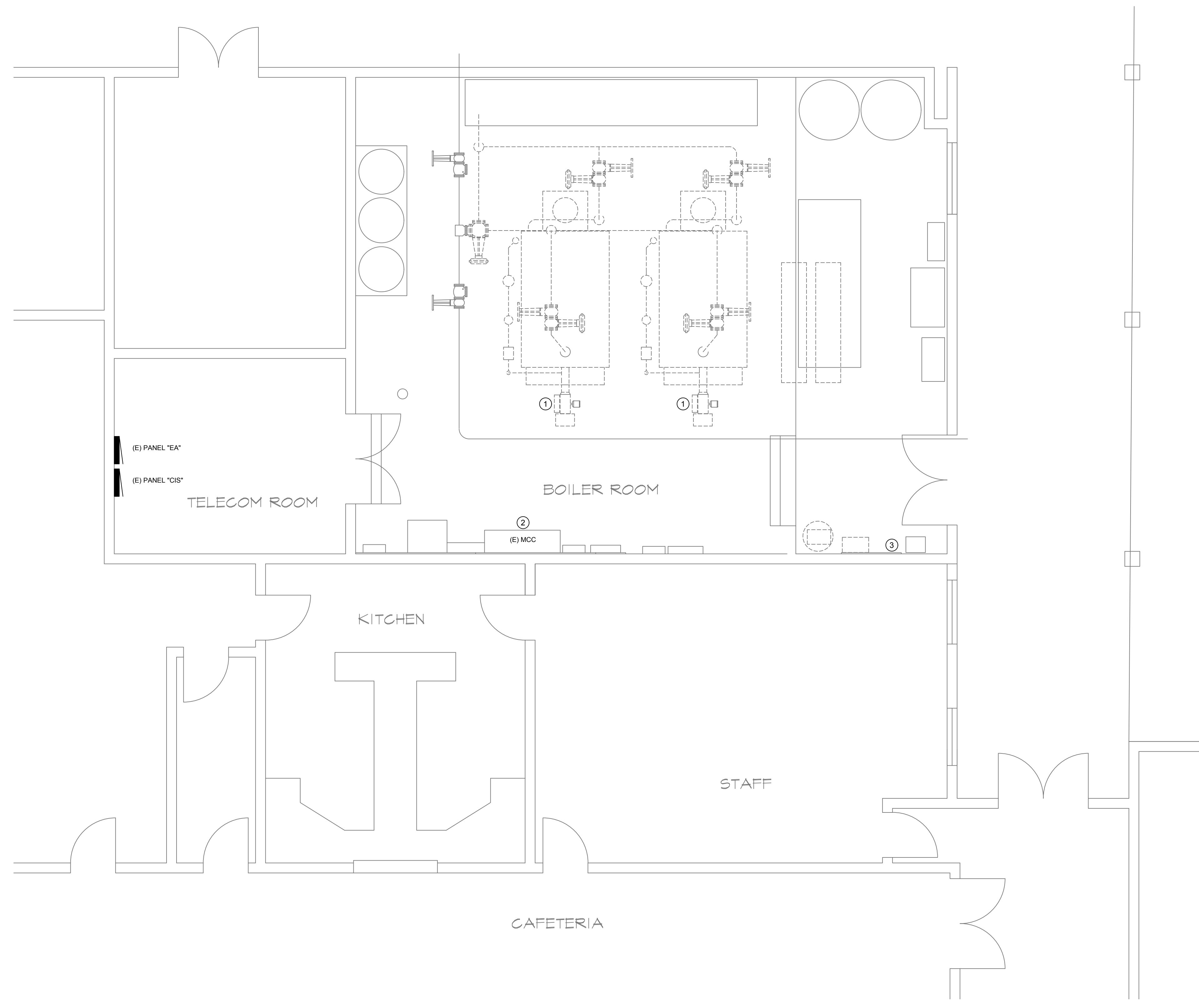
**M601**

SHEET 9 OF 9

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**SHEET NOTES:**

- ① DISCONNECT EXISTING BOILER, OIL PUMP AND BURNER REUSE EXISTING CONDUIT TO SERVE NEW BOILERS IF PRACTICAL.
- ② EXISTING MCC SERVING BOILERS. REUSE ③ EXISTING CIRCUIT BREAKERS FOR NEW BOILERS. RELABEL ① EXISTING MCC BREAKER AS SPARE.
- ③ REMOVE ② EXISTING PNEUMATIC SOLENOIDS AND ASSOCIATED SINGLE POLE SWITCHES.

**LEGEND:**

- ① JUNCTION BOX
- G EMERGENCY GENERATOR
- ② NOTE REFERENCE
- ▬ ELECTRICAL PANEL BOARD
- CONDUIT RUN EXPOSED ON WALLS AND CEILING. CROSS HATCHES INDICATE CONDUCTOR QUANTITY.
- (E) EXISTING

**1 BOILER ROOM DEMOLITION FLOOR PLAN - ELECTRICAL**  
SCALE: 1/4" = 1'-0"



**SHELDON HIGH SCHOOL  
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**BOILER ROOM  
DEMO PLANS  
ELECTRICAL**

**E100**

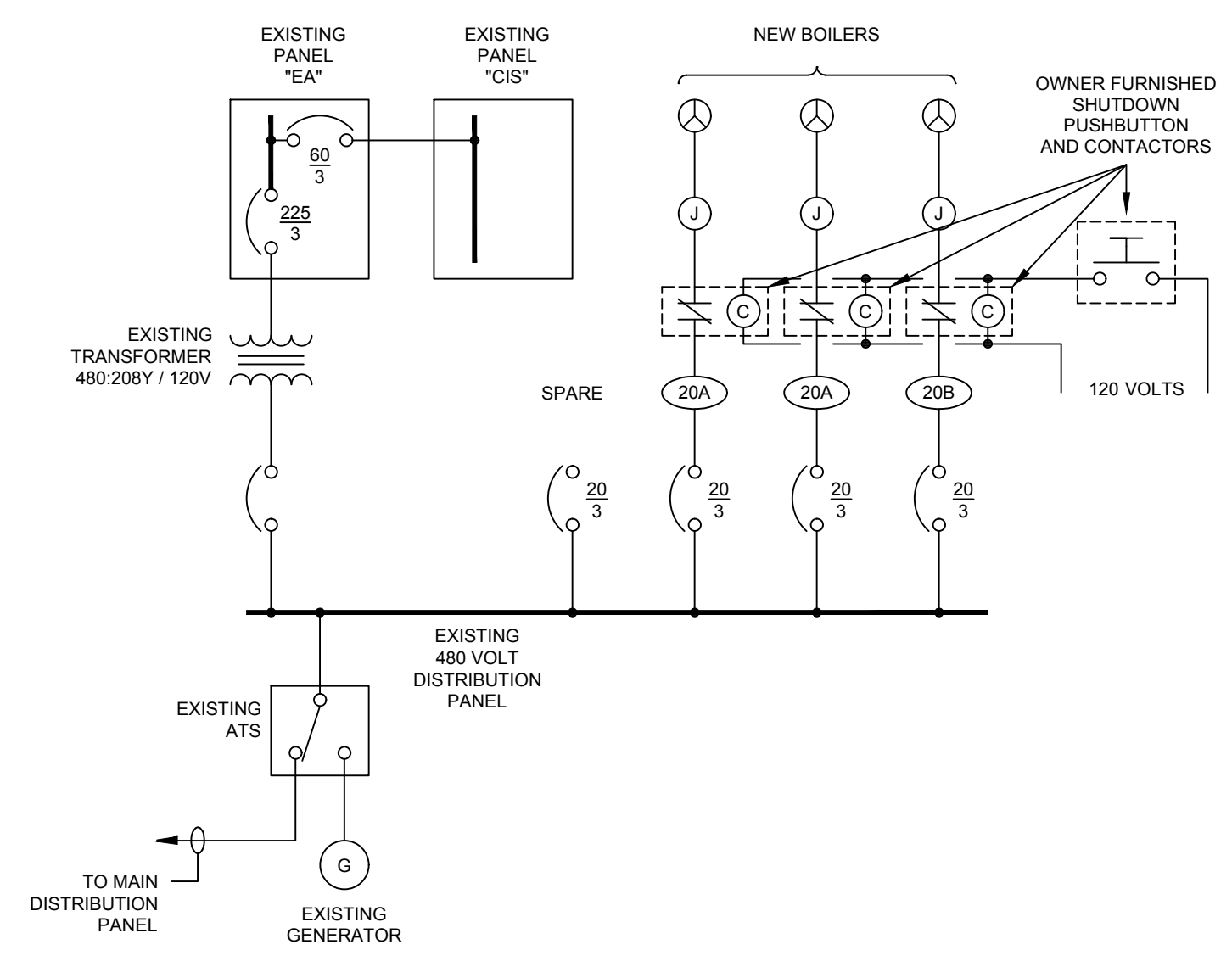
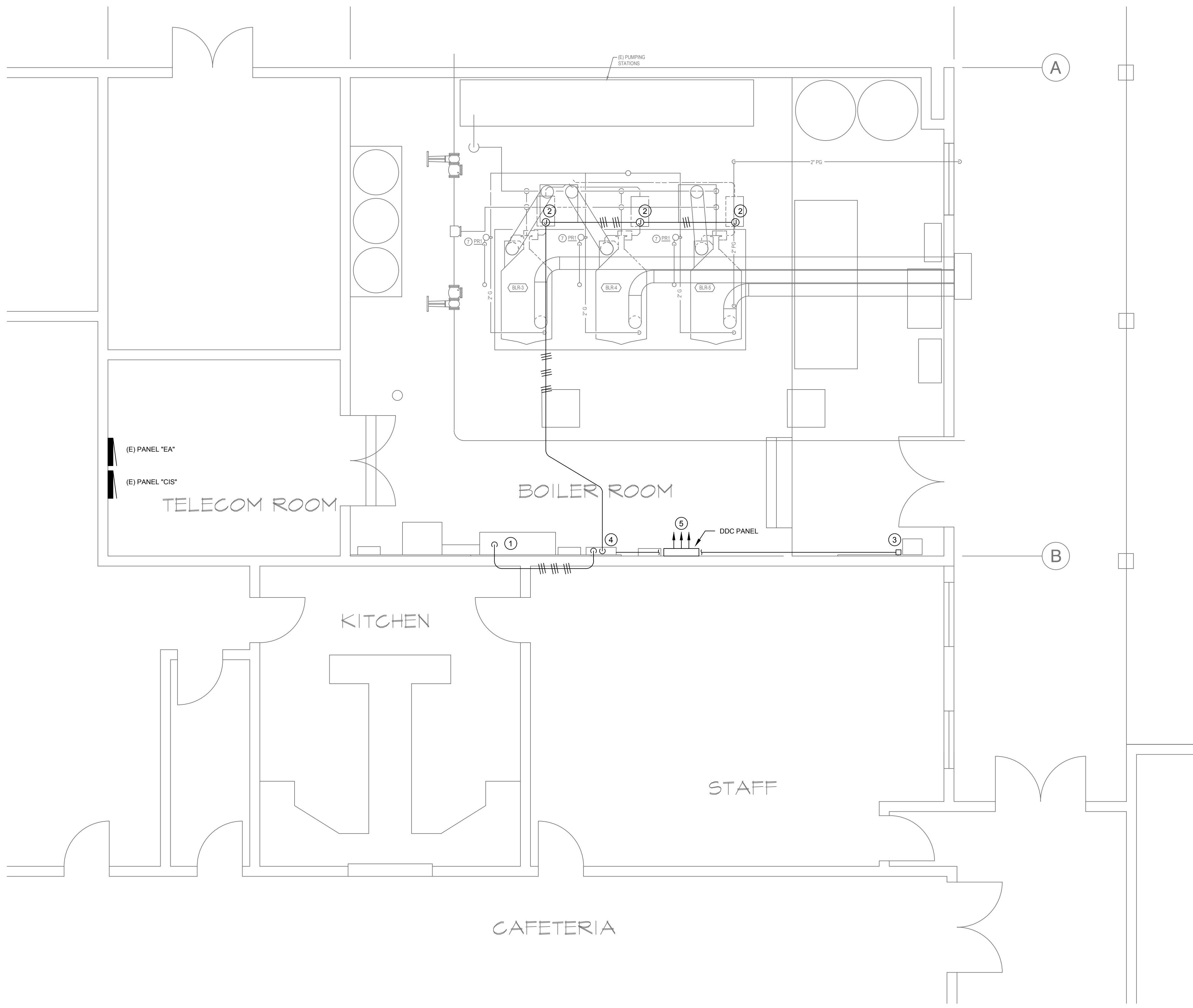
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ELECTRICAL ONE LINE DIAGRAM

SHEET NOTES:

- ① REUSE (3) EXISTING 20 / 3, 480 VOLT CIRCUIT BREAKERS IN MCC CURRENTLY SERVING (1) BOILER FEED AND (2) OIL PUMPS. RELABEL AS BOILER #1, BOILER #2 AND BOILER #3.
- ② PROVIDE 480 VOLT CONNECT TO NEW BOILER. INSTALL JUNCTION BOX AT CEILING AND PROVIDE CONDUIT DROP TO BOILER. REUSE EXISTING CONDUIT IF PRACTICAL.
- ③ EXISTING EMERGENCY SHUT DOWN SWITCH. CONNECTED TO EXISTING CONTACTORS TO PROVIDE BOILER SHUT DOWN. CONNECT AS REQUIRED.
- ④ ROUTE BOILER CONDUCTORS THROUGH (3) EXISTING CONTACTORS MOUNTED IN CONTROL CABINET. FOR BOILER SHUT DOWN. SEE ELECTRICAL ONE LINE DIAGRAM.
- ⑤ RUN 1" CONDUIT FROM EXISTING ADC CABINET TO LOW VOLTAGE WIRING COMPARTMENT AT EACH OF (3) BOILERS.

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BOILER ROOM  
FLOOR PLAN  
ELECTRICAL

E101  
SHEET 2 OF 2

1 BOILER ROOM PLAN - NEW WORK - ELECTRICAL  
SCALE: 1/4" = 1'-0"



PERMIT / BID DRAWINGS - APRIL 30, 2019