

BOILER SCHEDULE																	
UNIT NO.	MBH CAPACITY			ASME PRESS. RATING	MAXIMUM WORKING TEMPERATURE	FLUE TYPE	COMBUSTION AIR INLET	FLUE SIZE	STEAM OUTLET	BOILER PRESS.	SIZE			VOLTAGE & PHASE	NOTES	MANUF. & MODEL NO.	
	OUTPUT @ SEA LEVEL	OUTPUT @ SEA LEVEL	INPUT @ SEA LEVEL								LENGTH	WIDTH	HEIGHT				OPERATING WT. (LBS.)
1	954.8	1005.0	1211.0	150 PSI	-	CAT. III	FROM WALL LOUVER	12"	3"	15 psi	46"	46"	106"	6,868	120V/1Ø 19.8 AMPS	1 2 3 4 5	FULTON CLASSIC ICS-30
2	954.8	1005.0	1211.0	150 PSI	-	CAT. III	FROM INTAKE	12"	3"	15 psi	46"	46"	106"	6,868	120V/1Ø 19.8 AMPS	1 2 3 4 5	FULTON CLASSIC ICS-30

- 1 PROVIDE HIGH ALTITUDE FAN AND FRESH AIR DAMPER RELAY.
- 2 BOILER APPROVAL: HURST - CONTACT CLAYTON ROOP AT IHS 801-803-0796
- 3 GAS PRESSURE 7" TO 11" WC.
- 4 BOILER CONTROLS BY MECHANICAL CONTRACTOR.
- 5 PROVIDE FULTON VT-60 FEED WATER TANK WITH DUAL PUMPS, PREHEAT KIT AND PANEL BOX.

### PIPING NOTES

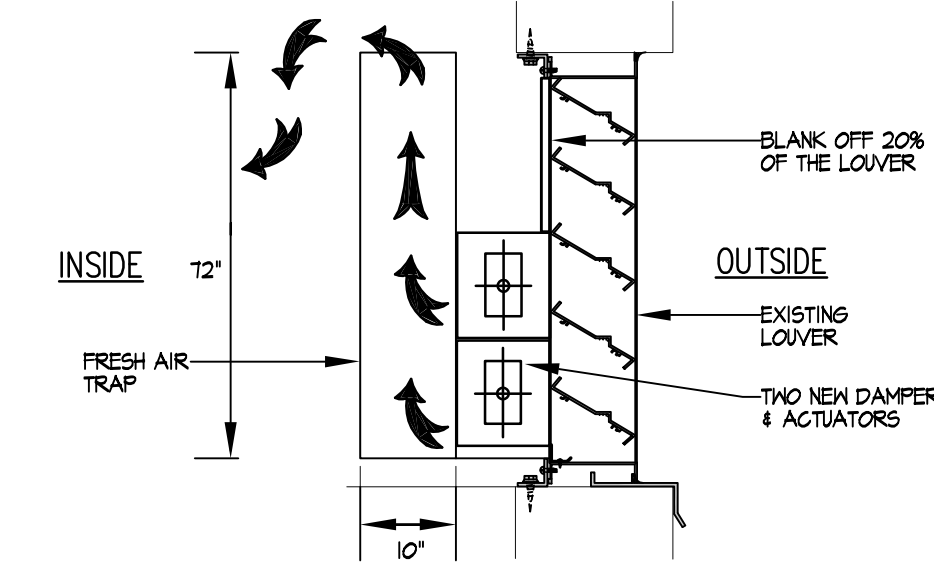
STEAM PIPING - SCHEDULE 40 BLACK STEEL  
CONDENSATE PIPING - SCHEDULE 80 BLACK STEEL

### REMODEL KEY NOTES

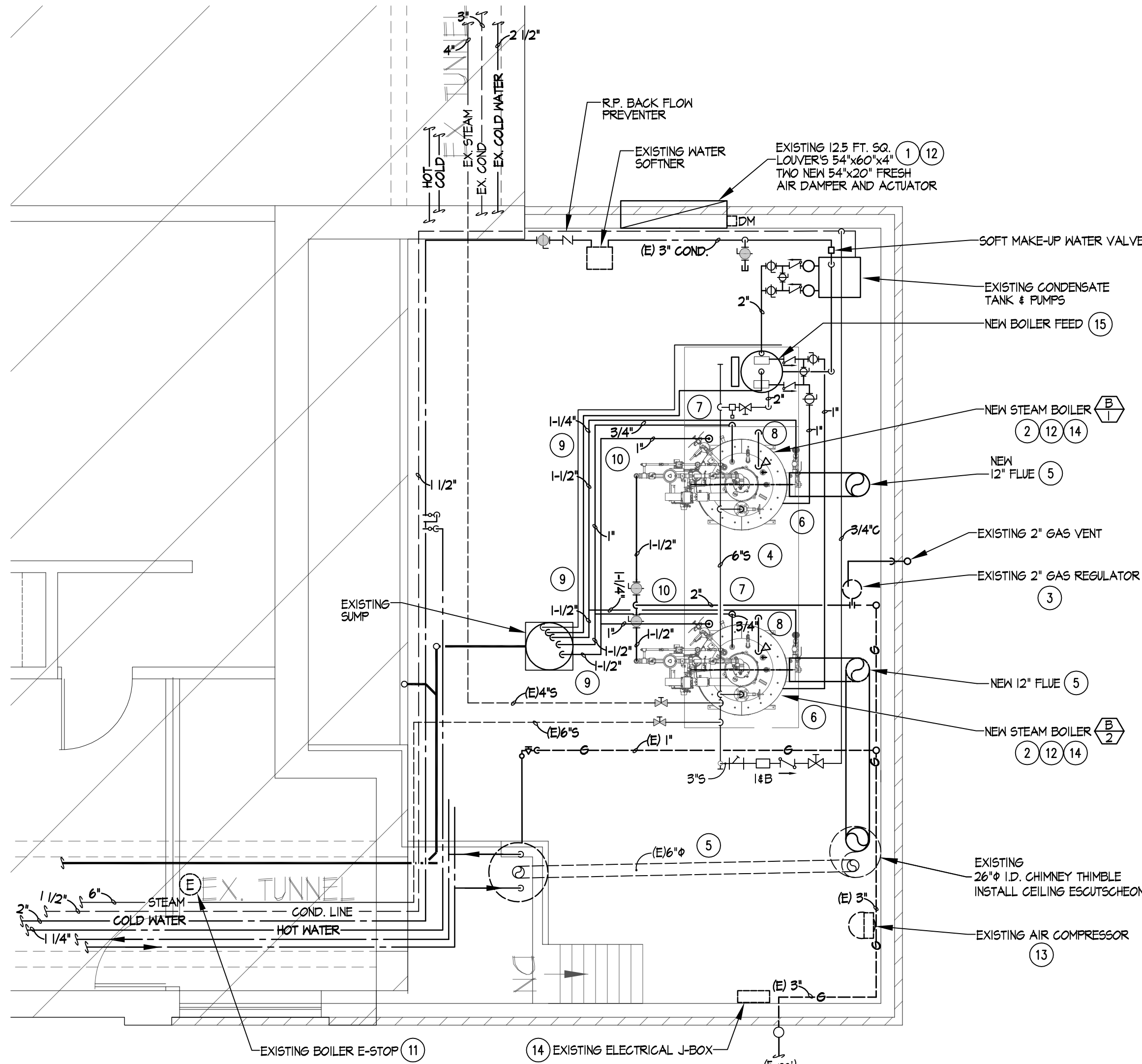
- 1 PLAN TO REMOVE EXISTING 54"x60" WALL LOUVER & DAMPER TO INSTALL NEW STEAM BOILERS. RE-INSTALL WALL LOUVER AND TWO NEW RUSKIN CDGS 54"x20" NEW FRESH AIR DAMPERS & ACTUATORS WHEN FINISHED. BLANK OFF 54"x20" SECTION OF THE LOUVER WITH 24 GAUGE ALUMINUM. INSTALL 54"x72" FRESH AIR TRAP ON FRESH AIR DAMPER. SEE DETAIL.
- 2 INSTALL BOTH NEW STEAM BOILERS ON EXISTING CONCRETE PAD. COORDINATE BOILER POSITION WITH EXISTING UTILITY CONNECTIONS. (FLUE, GAS, STEAM, & FEED WATER) SEISMIC ANCHOR BOILERS AND FEED WATER TANK TO CONCRETE PAD.
- 3 CONNECT BOILER TO EXISTING 2" GAS LINE LINE AFTER THE EXISTING GAS REGULATOR (7 psi to 11" W.C.). FEED EACH BOILER WITH 1-1/2" GAS LINE.
- 4 INSTALL NEW 10" STEAM MANIFOLD AND CONNECT NEW BOILER 3" STEAM LINES AND EXISTING 6" & 4" STEAM LINES TO MANIFOLD. SLOPE 10" STEAM MANIFOLD BACK TO BOILERS. SUPPORT STEAM PIPING WITH SEISMIC SUPPORTS. INSULATE STEAM PIPING WITH 3" FIBERGLASS. PIPE DRIP LEG TO EXISTING CONDENSATE PIPE AND CONNECT.
- 5 INSTALL TWO NEW 12" BOILER FLUES. FOLLOW MANUFACTURER INSTALLATION MANUAL FOR FLUE CLEAN OUT, HORIZONTAL & VERTICAL LENGTHS FOR PROPER VENTING & BACK PRESSURE. PROVIDE VENTING EQUAL TO DURAVENT MANUFACTURE. 12" S.S. DOUBLE WALL FLUE. CATEGORY II VENTING FROM BOILER UP TO ROOF. CUT NEW OPENING IN ROOF FOR THE EAST BOILER AND REUSE THE EXISTING FLUE OPENING TO THE WEST FOR BOILER B-2 AND WATER HEATER. ROUTE WATER HEATER FLUE TO ROOF TOO. FLASH BOTH FLUE ROOF PENETRATION.
- 6 CONNECT EXISTING CONDENSATE TANK TO NEW BOILER FEED TANK 2" INLET. INSTALL NEW PIPING FROM BOILER FEED TANK PUMPS TO EACH NEW BOILER WATER 1" INLET.
- 7 CONNECT TO EACH BOILER 1-1/4" BLOW DOWN OUTLET AND ROUTE TO EXISTING FLOOR SUMP DRAIN.
- 8 CONNECT TO EACH BOILER 1" SAFETY RELIEF VALVE AND ROUTE IT TO THE FLOOR DRAIN.
- 9 CONNECT ONTO EACH BOILER SURFACE BLOW DOWN & ROUTE 3/4" DOWN TO THE FLOOR & ROUTE OVER TO THE EXISTING FLOOR SUMP DRAIN.
- 10 CONNECT ONTO EACH BOILER WATER COLUMN DRAIN & ROUTE 1" DOWN TO THE FLOOR AND ROUTE OVER TO THE EXISTING FLOOR SUMP DRAIN.
- 11 INTERLOCK BOTH BOILERS WITH EXISTING EMERGENCY E-STOP LOCATED AT THE DOOR. ACTIVATION OF E-STOP SHALL DISCONNECT POWER TO BOILER.
- 12 WIRE EACH BOILER CONTROL PANEL WITH A 120V/1Ø/19.8A CIRCUIT. WIRE EACH FRESH AIR DAMPER ACTUATOR TO EACH BOILER TO OPEN ON CALL FOR BOILER TO FIRE.
- 13 PIPE AIR COMPRESSOR BLOW DOWN OUTLET TO FLOOR DRAIN.
- 14 PROVIDE AND INSTALL A 3/4" CONDUIT WITH TWO (2) #10 AWG PLUS ONE (1) #10 AWG GROUND FROM BOILER CONTROL PANEL, THROUGH EXISTING ELECTRICAL J-BOX AND ON TO EXISTING PANEL. PROVIDE AND INSTALL A 1-POLE 25 AMP BREAKER IN EXISTING PANEL. UPDATE PANEL DIRECTORY PER NEC (TYPEWRITTEN). CONTRACTOR SHALL BE PERMITTED TO REUSE EXISTING CONDUIT IF IT MEETS NEC FOR CONDUIT FILL ANF IF CONDUCTORS ARE DERATED.
- 15 PROVIDE AND INSTALL A 3/4" CONDUIT WITH TWO (2) #10 AWG PLUS ONE (1) #10 AWG GROUND FROM NEW BOILER FEED TANK PUMPS (QTY. 2), THROUGH EXISTING ELECTRICAL J-BOX AND ON TO EXISTING PANEL. PROVIDE AND INSTALL A 1-POLE 30 AMP BREAKER IN EXISTING PANEL AT EACH BOILER FEED TANK PUMP. INSTALL A THERMAL SWITCH WITH OVERLOADS SIZED TO PROTECT PUMP (SQ. D" #2510 FG IP). UPDATE PANEL DIRECTORY PER NEC (TYPEWRITTEN). CONTRACTOR SHALL BE PERMITTED TO REUSE EXISTING CONDUIT IF IT MEETS NEC FOR CONDUIT FILL ANF IF CONDUCTORS ARE DERATED.

### DEMOLITION KEY NOTES

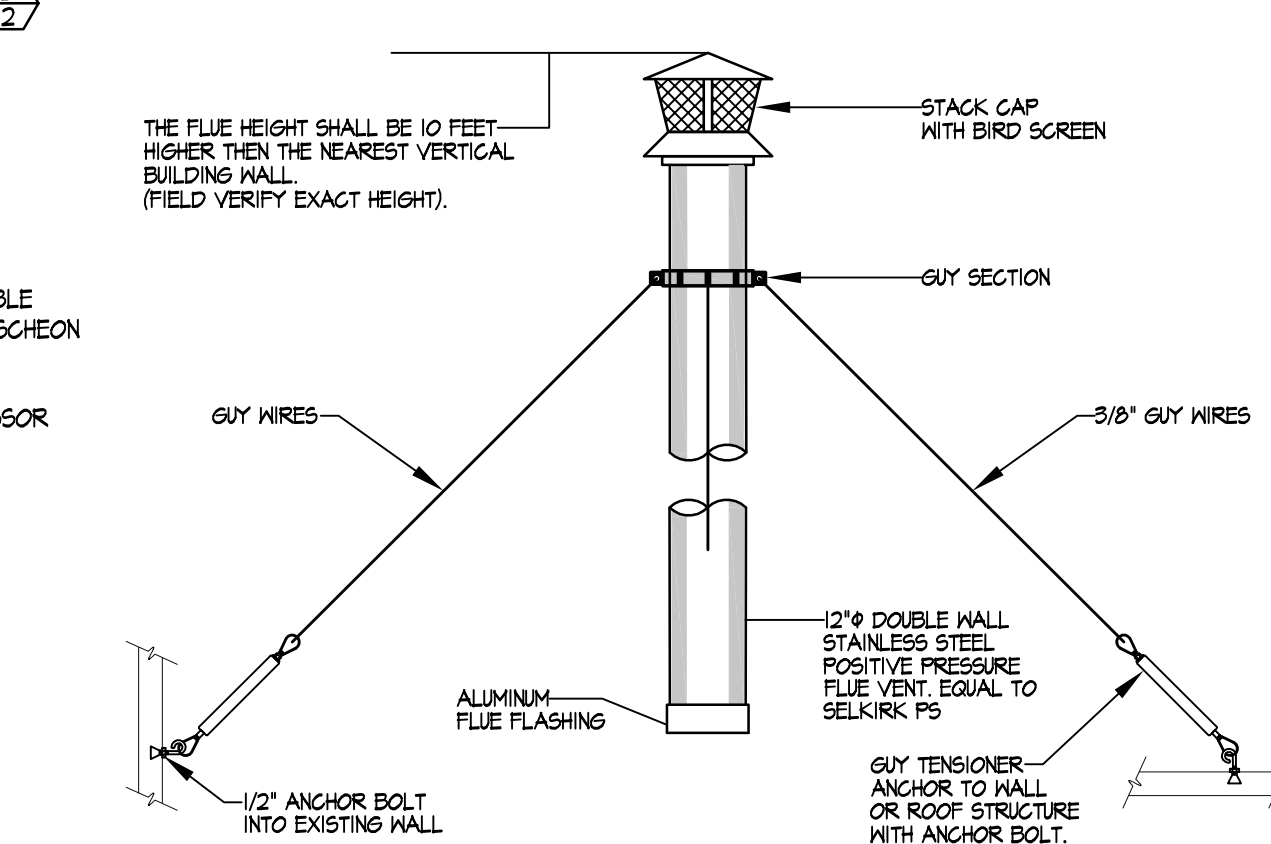
- 1 DISCONNECT AND REMOVE THE POWER AND CONTROLS TO THE BOILER.
- 2 SHUT OFF THE GAS MAIN SERVING THE BOILER. REMOVE ALL THE GAS PIPING FROM THE GAS REGULATOR TO THE BOILER TWO GAS TRAINS.
- 3 DISCONNECT THE CONDENSATE PIPING FROM THE HARTFORD LOOP TO THE CONDENSATE PUMPS.
- 4 REMOVE THE FIVE (5) 14"Ø BOILER FLUES FROM THE BOILER TO THE 26"Ø CHIMNEY FLUE. REMOVE THE 26"Ø BOILER FLUE SECTION. STOP AT CEILING
- 5 CLOSE THE 6" AND 4" ZONE STEAM VALVES. REMOVE ALL THE STEAM PIPING CONNECTED TO THE BOILER UP TO THE TWO (2) ZONE VALVES.
- 6 REMOVE ALL THE STEAM BOILER CONTROLS, BLOW DOWNS, P&T VALVES, DRAIN PIPE & PIPING.
- 7 TOTALLY REMOVE THE WHOLE BOILER. REMOVE AN OLD WATER HEATER AND CAST IRON BOILER SECTION FROM THE ROOM TOO. WASH AND CLEAN EXISTING PAD, CLEAN CONCRETE FLOOR & MAKE READY TO INSTALL THE NEW BOILERS.
- 8 PLAN TO REMOVE EXISTING 54"x60" WALL LOUVER AND DAMPER TO INSTALL NEW STEAM BOILERS.
- 9 RELOCATE EXISTING LIGHT FIXTURE ABOVE FRESH AIR INTAKE, IF IT CONFLICTS WITH INSTALLING THE NEW BOILERS.



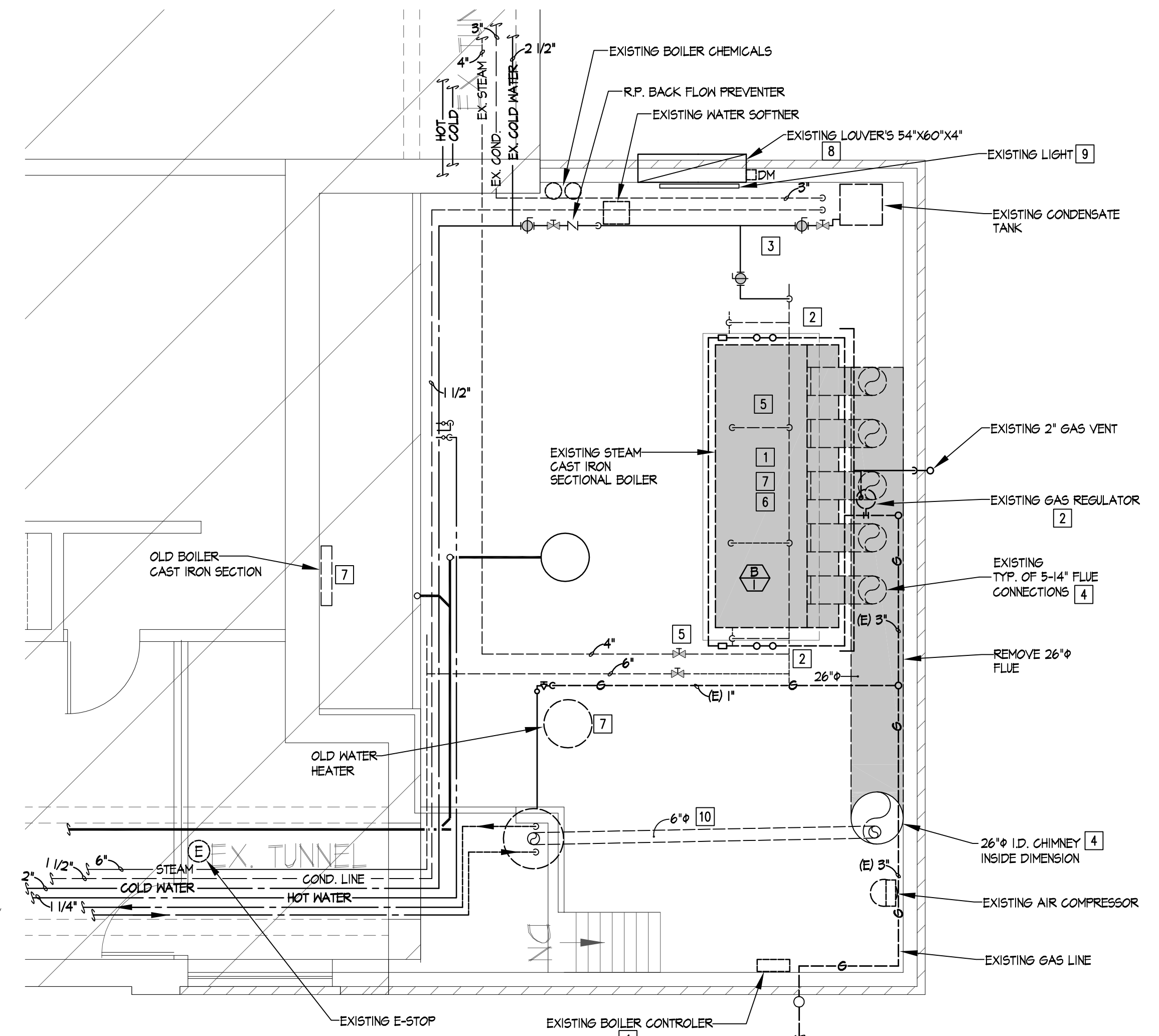
LOUVER AND FRESH AIR DAMPER DETAIL N.T.S.



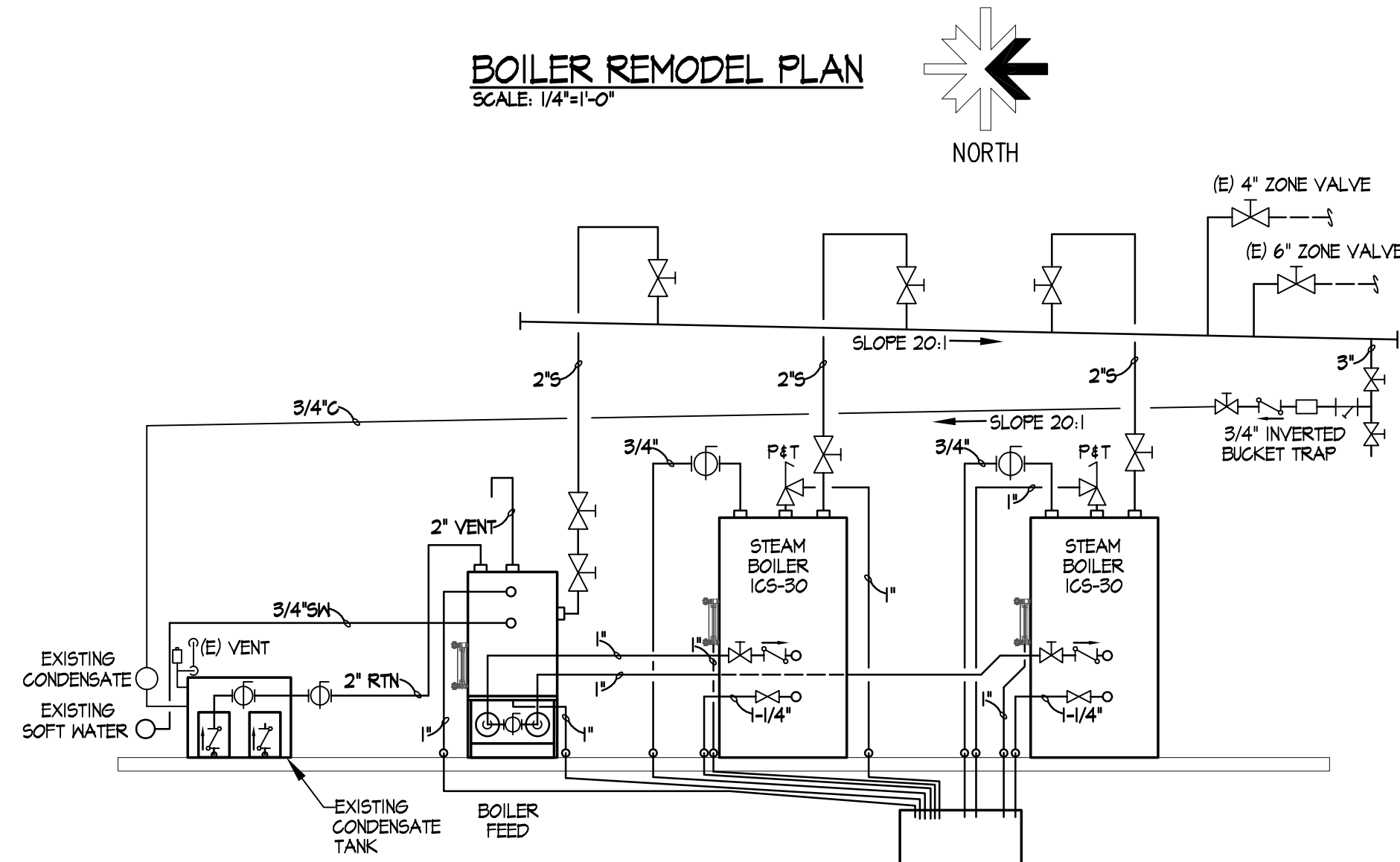
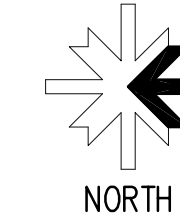
BOILER REMODEL PLAN SCALE: 1/4"=1'-0"



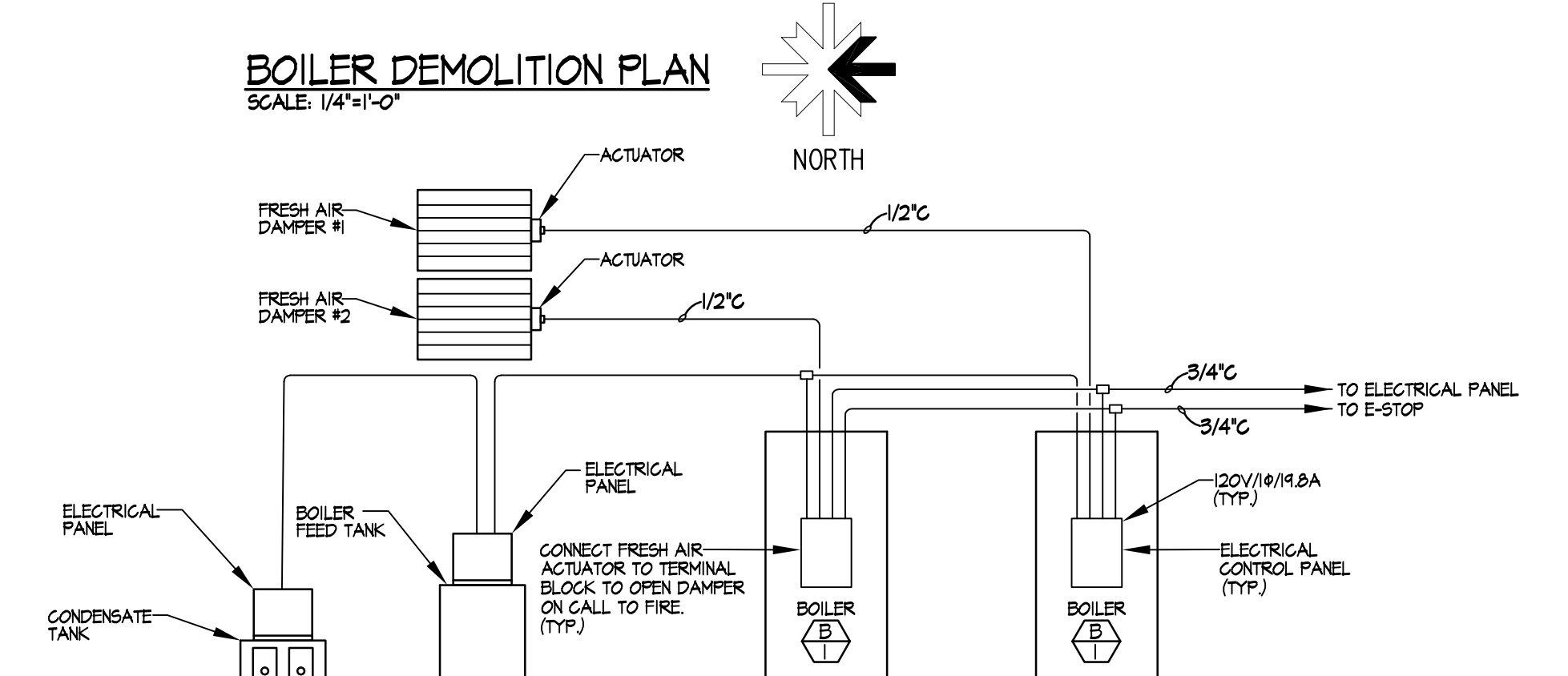
BOILER FLUE DETAIL N.T.S.



BOILER DEMOLITION PLAN SCALE: 1/4"=1'-0"



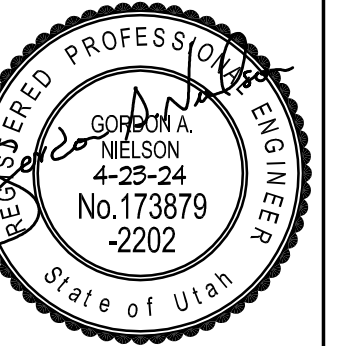
BOILER PIPING SCHEMATIC N.T.S.



BOILER WIRING DIAGRAM N.T.S.

### OWNERSHIP OF DOCUMENTS

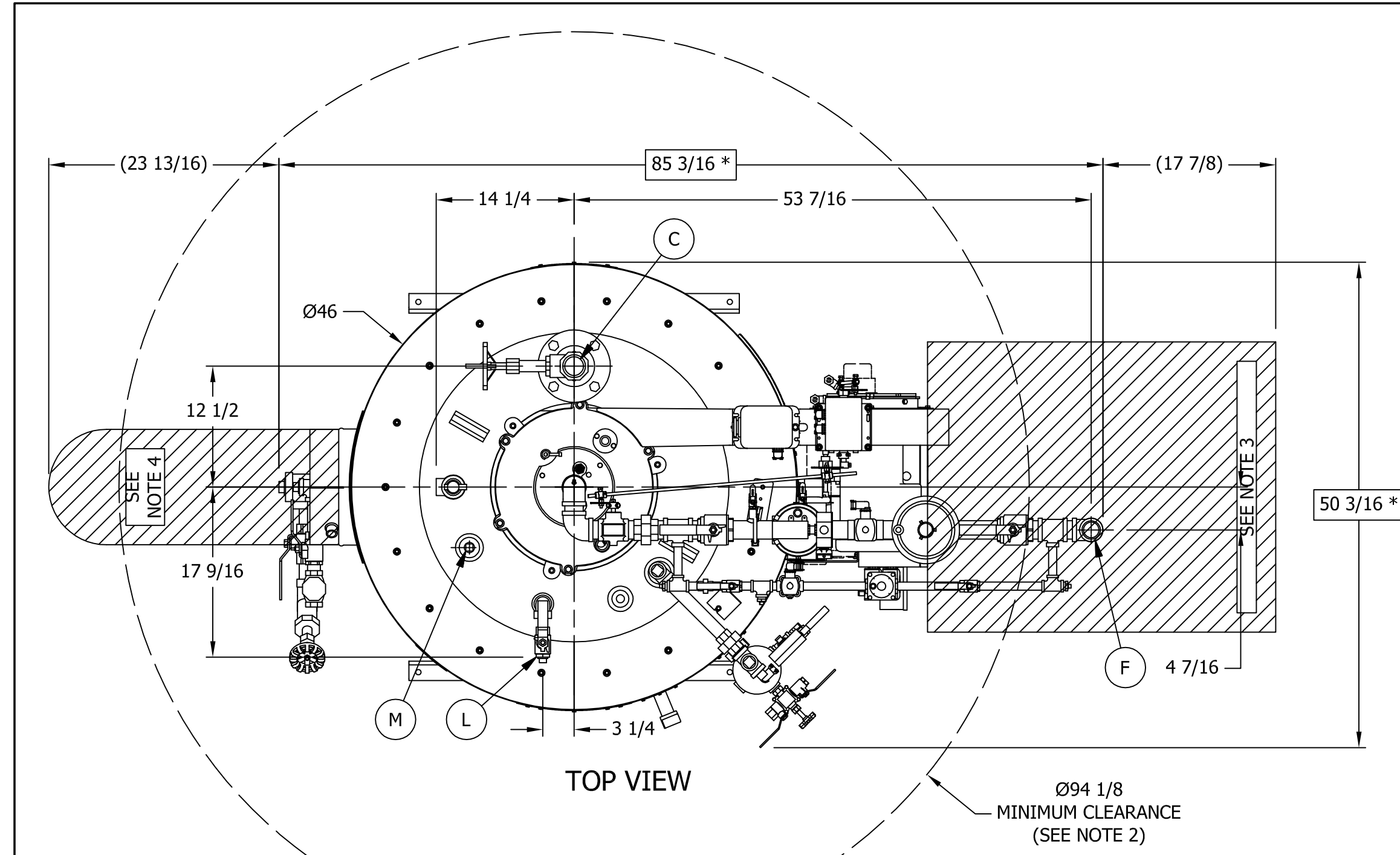
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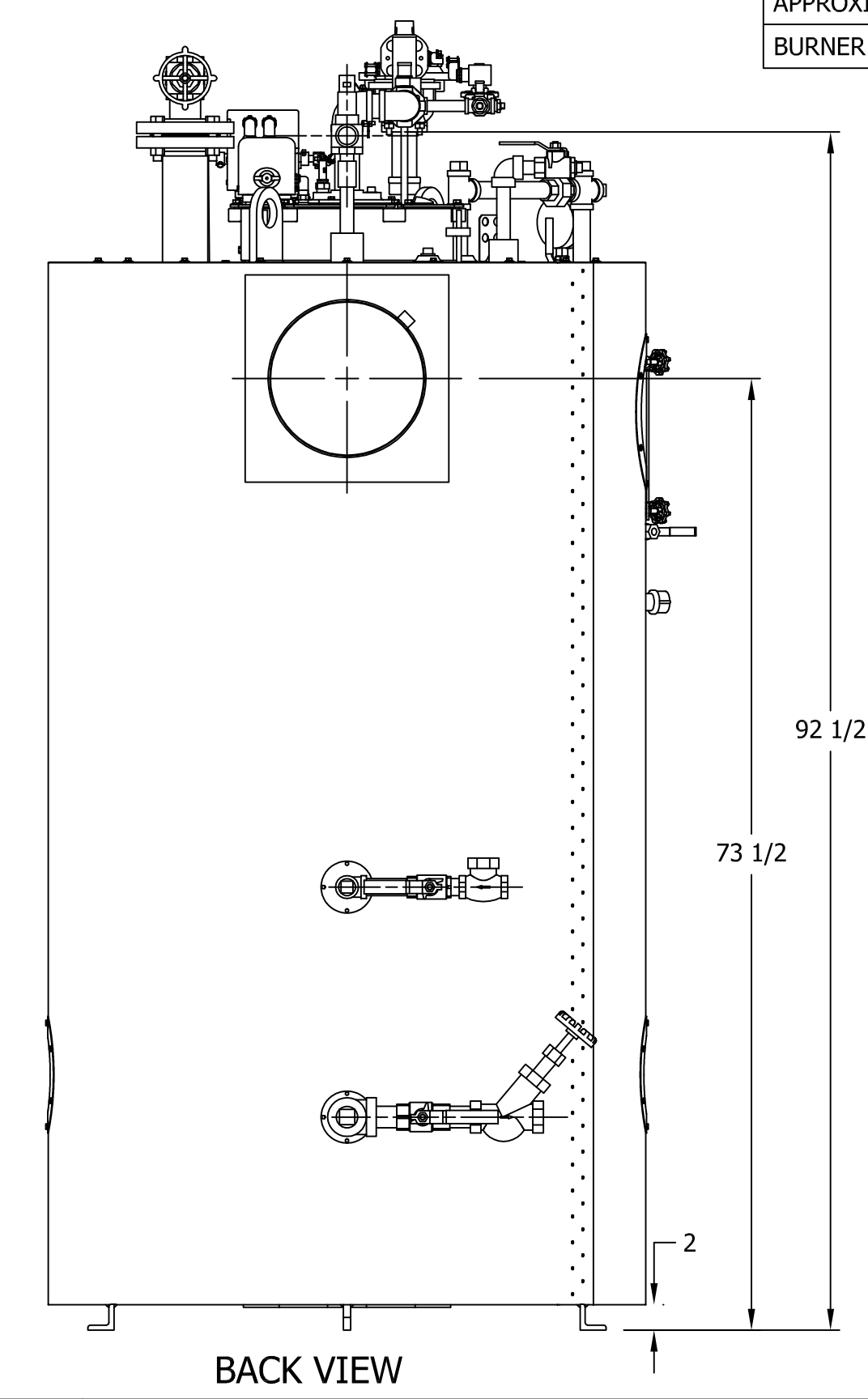
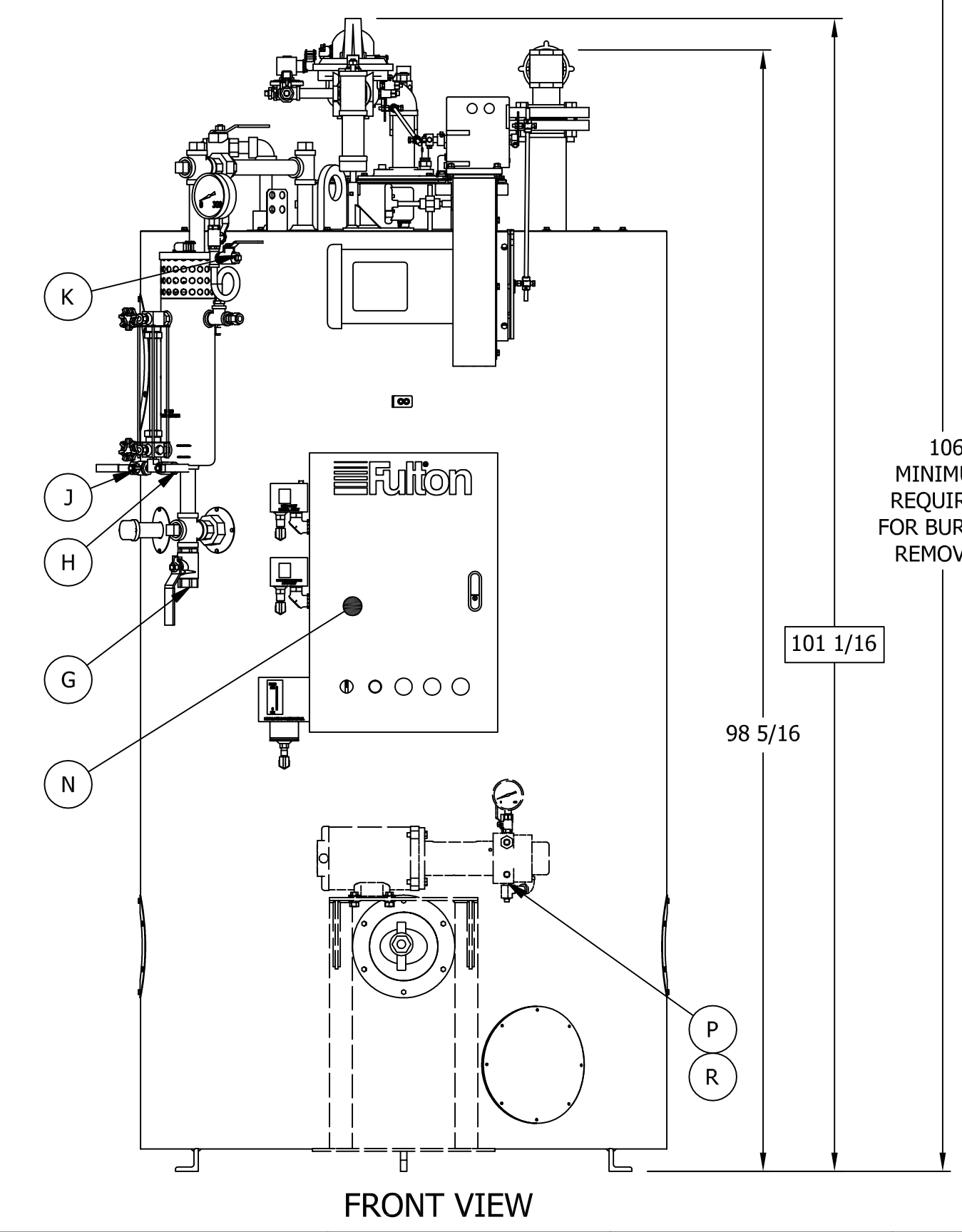
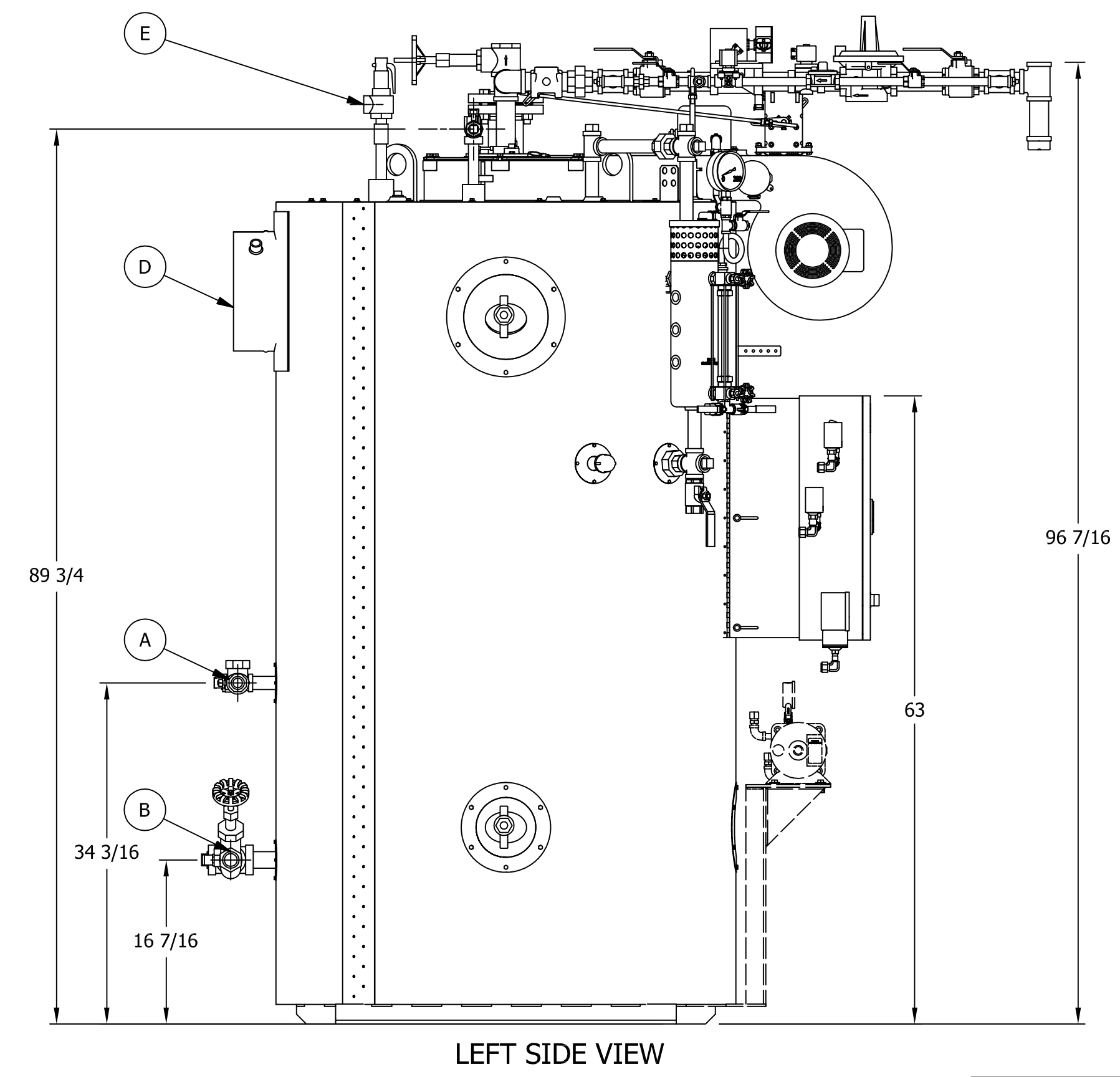
sheet title: **BOILER ROOM MECHANICAL DEMO**  
project: **NORTH CACHE MIDDLE SCHOOL BOILER REPLACEMENT RICHMOND, UTAH**  
file name: **N\_CACHE**  
job no.: **2416**  
date: **APRIL, 2024**  
drawn by: **SVB**  
sheet

M-1  
1 of 2



CUSTOMER CONNECTIONS			
ITEM	DESCRIPTION	SIZE	TYPE
A	FEED WATER INLET	1"	N.P.T.
B	BLOWDOWN OUTLET	1 1/4"	N.P.T.
C	STEAM OUTLET *	2"	N.P.T.
D	EXHAUST STACK	12"	---
E	SAFETY RELIEF VALVE *	1"	N.P.T.
F	GAS INLET	1 1/2"	N.P.T.
G	WATER COLUMN DRAIN	1"	N.P.T.
H	SIGHT GLASS DRAIN	1/4"	N.P.T.
J	WATER SAMPLE PORT	1/4"	N.P.T.
K	STEAM SAMPLE PORT	1/4"	N.P.T.
L	SURFACE BLOWDOWN (PLUGGED) (SEE NOTES)	3/4"	N.P.T.
M	HIGH WATER PROTECTION (PLUGGED)	3/4"	N.P.T.
N	PANEL BOX	---	---
P	OIL INLET **	1/4"	N.P.T.
R	OIL RETURN **	1/4"	N.P.T.

EQUIPMENT SPECIFICATION CHART	
MAX ALLOWABLE WORKING PRESSURE:	150 PSI
BOILER INPUT: (NATURAL GAS) †	1,211 FT <sup>3</sup> /HR
BOILER INPUT: (PROPANE) †	484 FT <sup>3</sup> /HR
BOILER INPUT: (OIL) †	9.0 GPH
BOILER OUTPUT:	1,005,000 BTU/HR
STEAM OUTPUT/MIN. SRV CAPACITY:	1,035 LBS/HR
NET EFFECTIVE HEATING SURFACE	90 FT <sup>2</sup>
WATER CAPACITY (OPERATING)	170 GAL
APPROXIMATE SHIPPING WEIGHT	5,450 LBS.
APPROXIMATE OPERATING WEIGHT	6,868 LBS.
BURNER MOTOR	3/4 HP



- NOTES:
- STEAM OUTPUT LB/HR: FROM 0 PSIG AT 212°F (0 KG/CM AT 100°C)
  - ALL CLEARANCES ARE FACTORY RECOMMENDATIONS. REFER TO THE O&M MANUAL FOR ADDITIONAL INFORMATION REGARDING CLEARANCES AND INSTALLATION INSTRUCTIONS. CONSULT LOCAL JURISDICTION FOR EXACT CODE COMPLIANCE.
  - FULTON RECOMMENDS 36" MINIMUM CLEARANCE IN FRONT OF ELECTRICAL PANELS AND 24" MINIMUM CLEARANCE ALL AROUND BOILER.
  - FULTON RECOMMENDS 24" OF STRAIGHT, HORIZONTAL FLUE BEFORE ANY BENDS OR TURNS.
  - ALL DIMENSIONS INSIDE ( ) DENOTE REFERENCE DIMENSIONS.
  - ALL DIMENSIONS INSIDE Ø DENOTE OVERALL DIMENSIONS.
  - SURFACE BLOWDOWN CONNECTION IS 3/4" IN VESSEL, 1/2" WITH DIPTUBE INSTALLED.
  - \* SIZE MAY VARY BASED ON OPTIONS AND TRIM PRESSURE.
  - \*\* OIL PUMP ONLY PROVIDED WITH COMBO AND OIL FIRED BOILERS. OPTIONAL ACCESSORIES MAY BE SHOWN.
  - † CONSULT FACTORY FOR INPUT ON DUAL FUJEL BOILERS

REV	REVISION DESCRIPTION	B.O.M.	ELEC. ENG	MECH. ENG	CHECKED	APPROVED
-	- INITIAL RELEASE -	-	-	-	-	-

UNLESS OTHERWISE NOTED DIMENSIONS ARE IN INCHES.  
 TOLERANCES INCH (METRIC)  
 FRACTION (DECIMAL)  
 (1) PLACE DEC. ±0.01 (±0.25mm)  
 (2) PLACE DEC. ±0.005 (±0.127mm)  
 (3) PLACE DEC. ±0.0005 (±0.0127mm)  
 ANGLE ±0.500 DEG ±0.5 DEG  
 SURFACE FINISH 250 MICRO-INCHES 6.35 MICRO-METERS

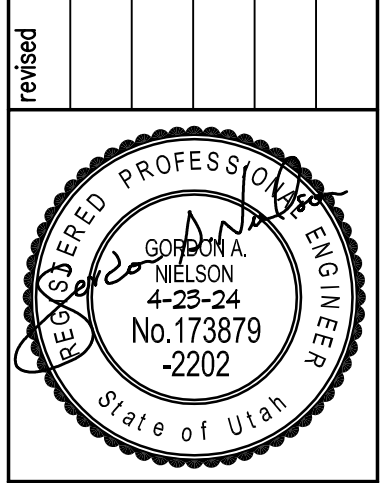
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The items shown in this drawing may be covered by one or more patents of The Fulton Companies.

DRAWN BY: S. CLARK 5/18/2023  
 MECHANICAL REVIEW: N/A  
 CHECKED BY: N/A  
 ELECTRICAL REVIEW: N/A  
 B.O.M. REVIEW: N/A  
 APPROVED BY: TK 5/25/2023

JOB NUMBER:  
 PROJECT NAME:  
 PROJECT MANAGER:  
 DESCRIPTION: ICS 30 HP HIGH PRESSURE WITH LOW PRESSURE OPENINGS STEAM BOILER

DRAWING NUMBER: 6-91-C30100 - PDS  
 REVISION: -



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BOILER DETAILS & NOTES  
 NORTH CACHE MIDDLE SCHOOL  
 BOILER REPLACEMENT  
 RICHMOND, UTAH

File name: N\_CACHE  
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 date: APRIL, 2024  
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