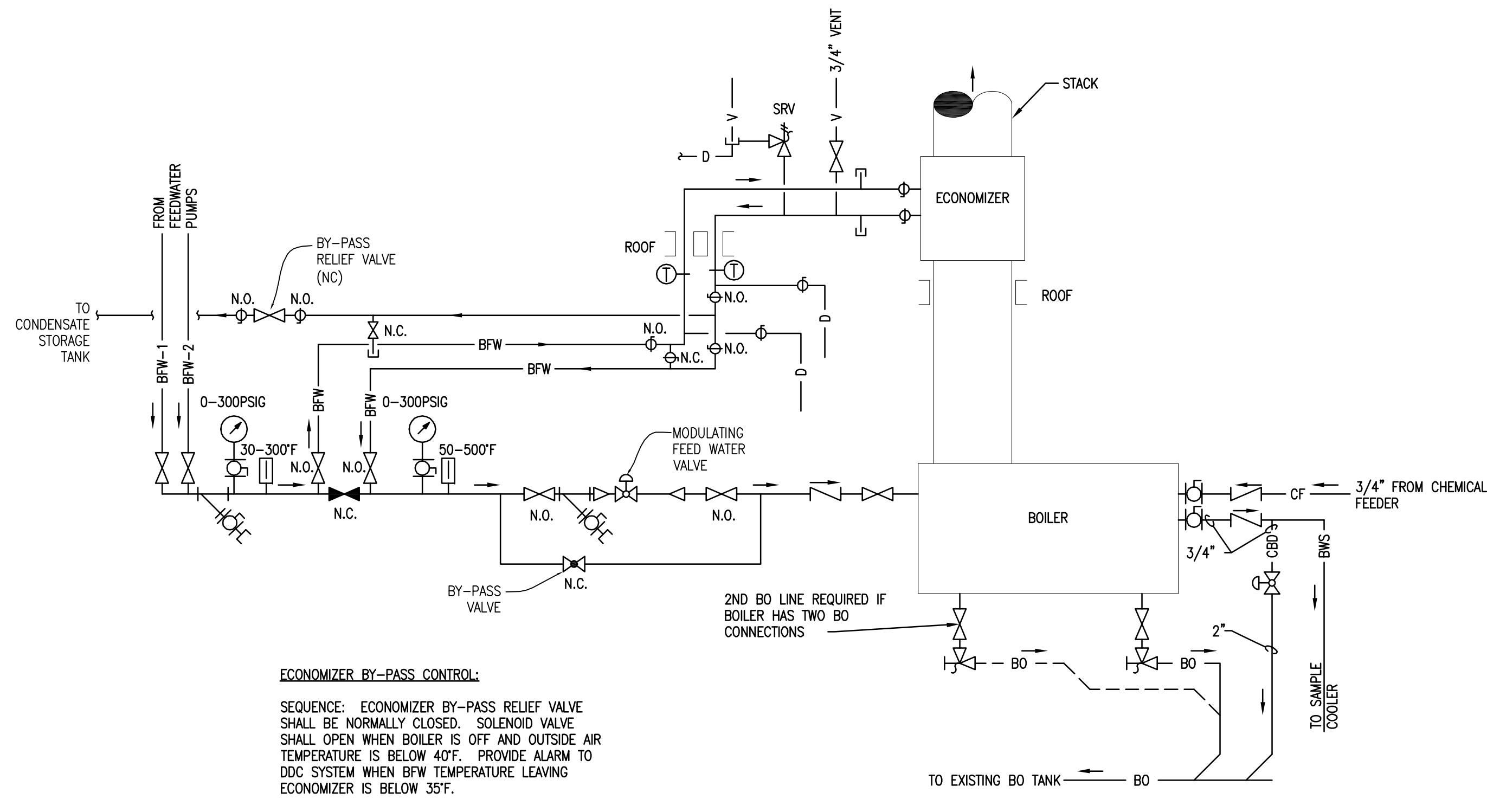
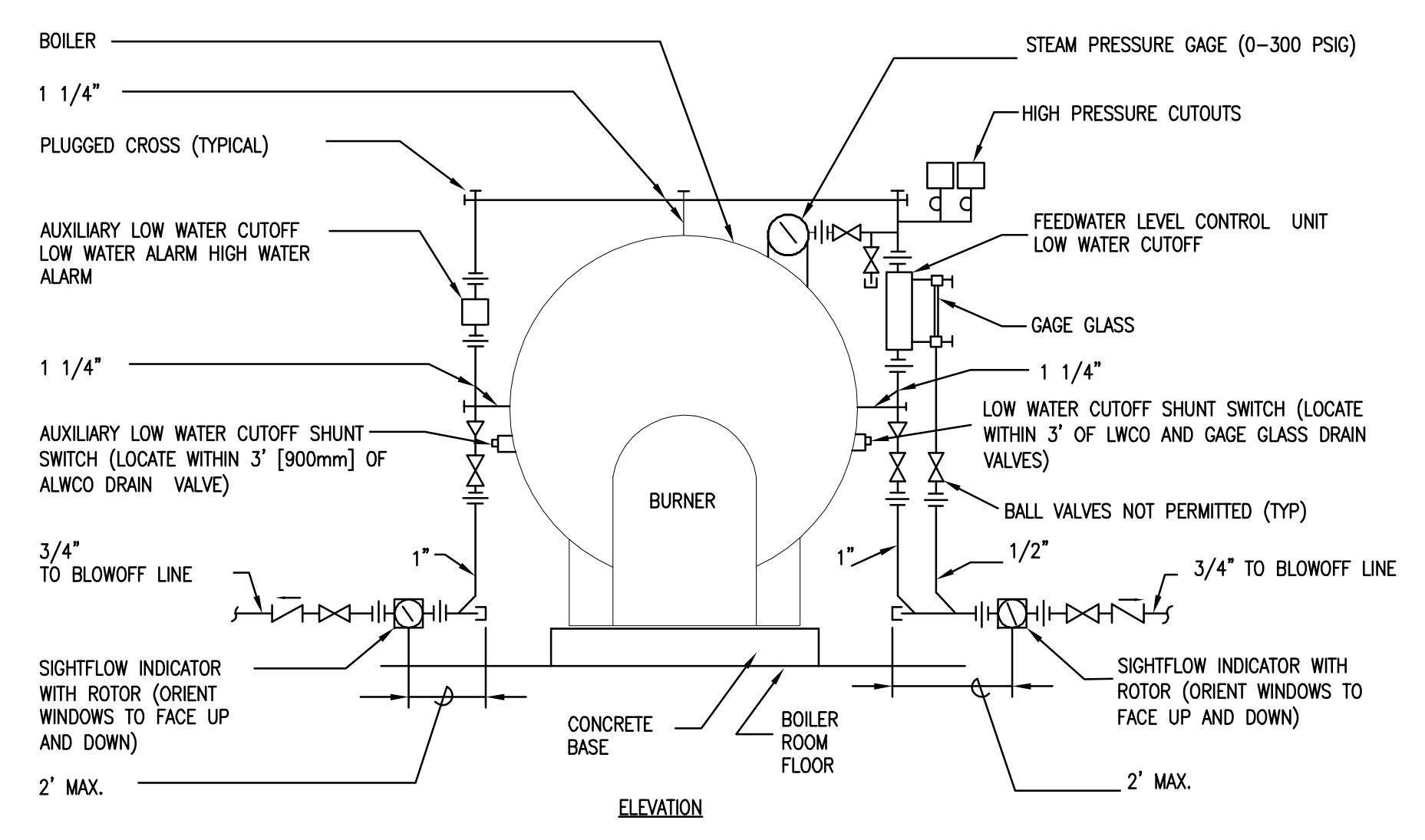


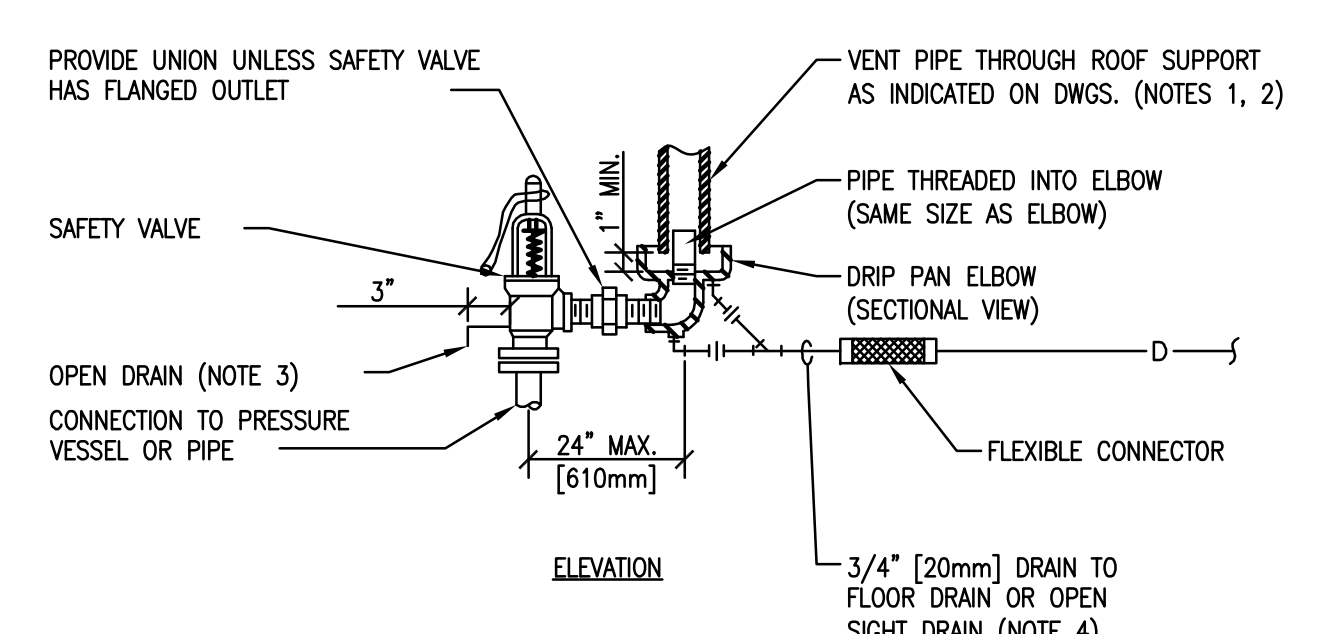
three inches = one foot  
one and one half inches = one foot  
one inch = one foot  
three quarters inch = one foot  
one half inch = one foot  
three eighths inch = one foot  
one quarter inch = one foot  
one eighth inch = one foot  
one sixteenth inch = one foot



1 BOILER FLOW DIAGRAM  
MH104 SCALE: NONE

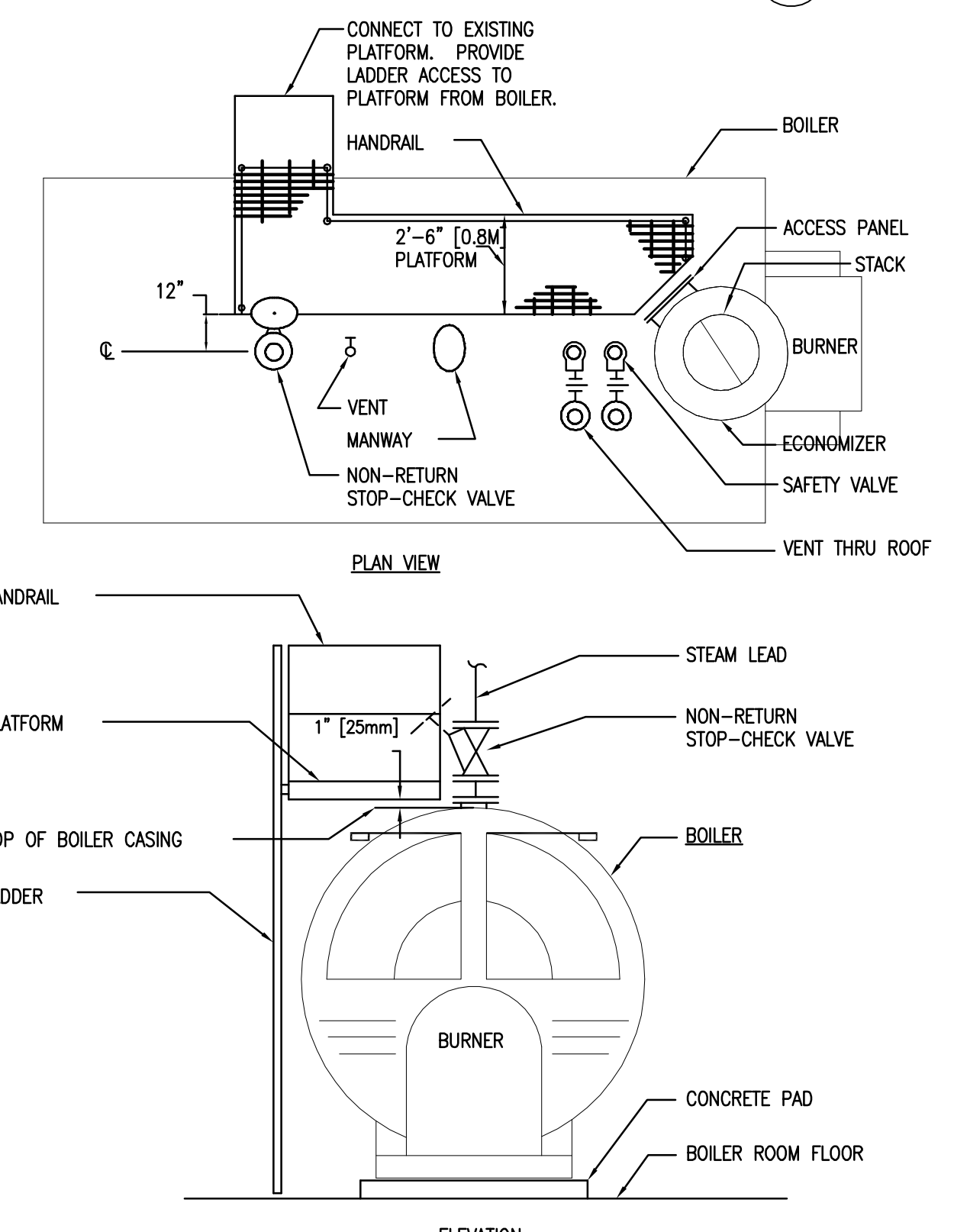


2 FIRE TUBE BOILER  
MH104 SCALE: NONE

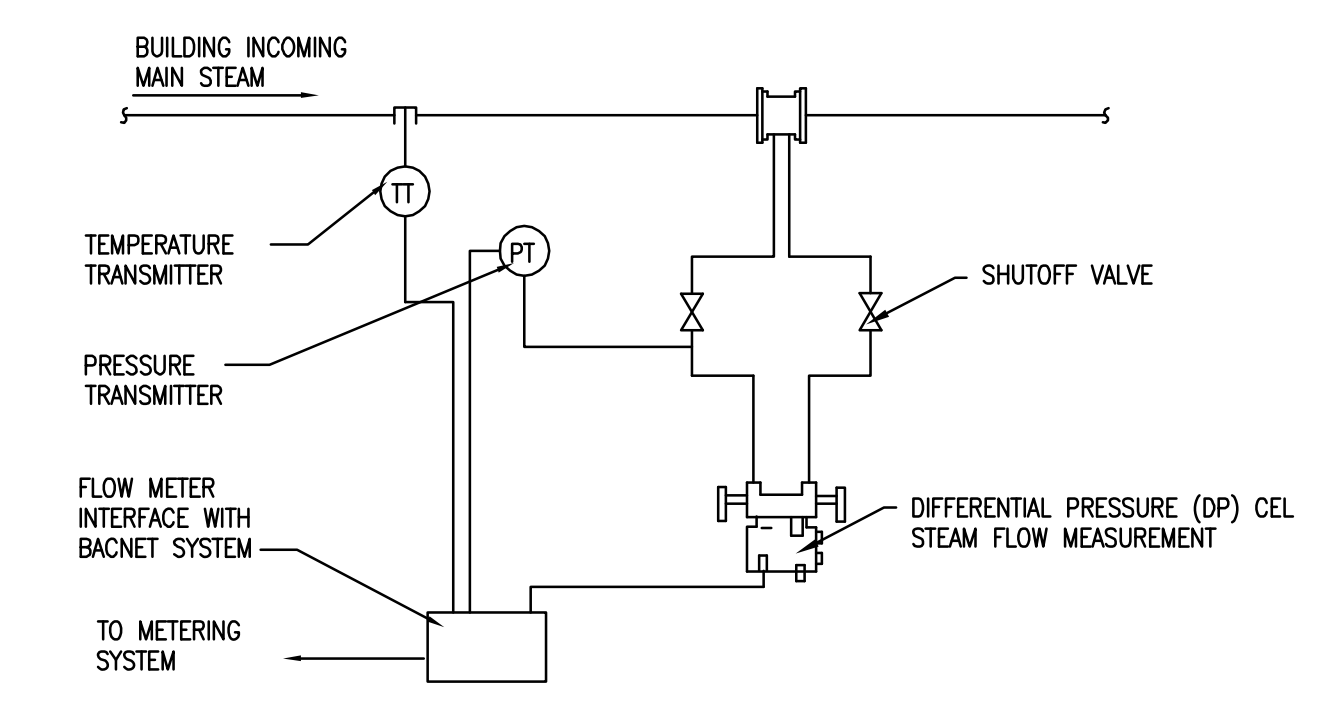


- NOTES:
- UNLESS OTHERWISE SHOWN ON THE DRAWINGS, SIZE THE VENT PIPE SO THAT STEAM IS NOT BLOWN OUT AT THE VENT PIPE ENTRANCE. UTILIZE THE CALCULATION METHOD CONTAINED IN ANSI B31.1, POWER PIPING CODE, APPENDIX II.
  - VENT PIPE SHALL TERMINATE 6" MIN. ABOVE FINISHED ROOF.
  - DISCHARGE OF DRAIN MUST BE DIRECTED AWAY FROM PLATFORMS OR OTHER AREAS WHICH PERSONNEL MAY OCCUPY.
  - DO NOT CONNECT ANY OTHER DRAIN TO THE DRIP PAN ELBOW DRAIN PIPE.

3 STEAM SAFETY VALVE  
MH104 SCALE: NONE

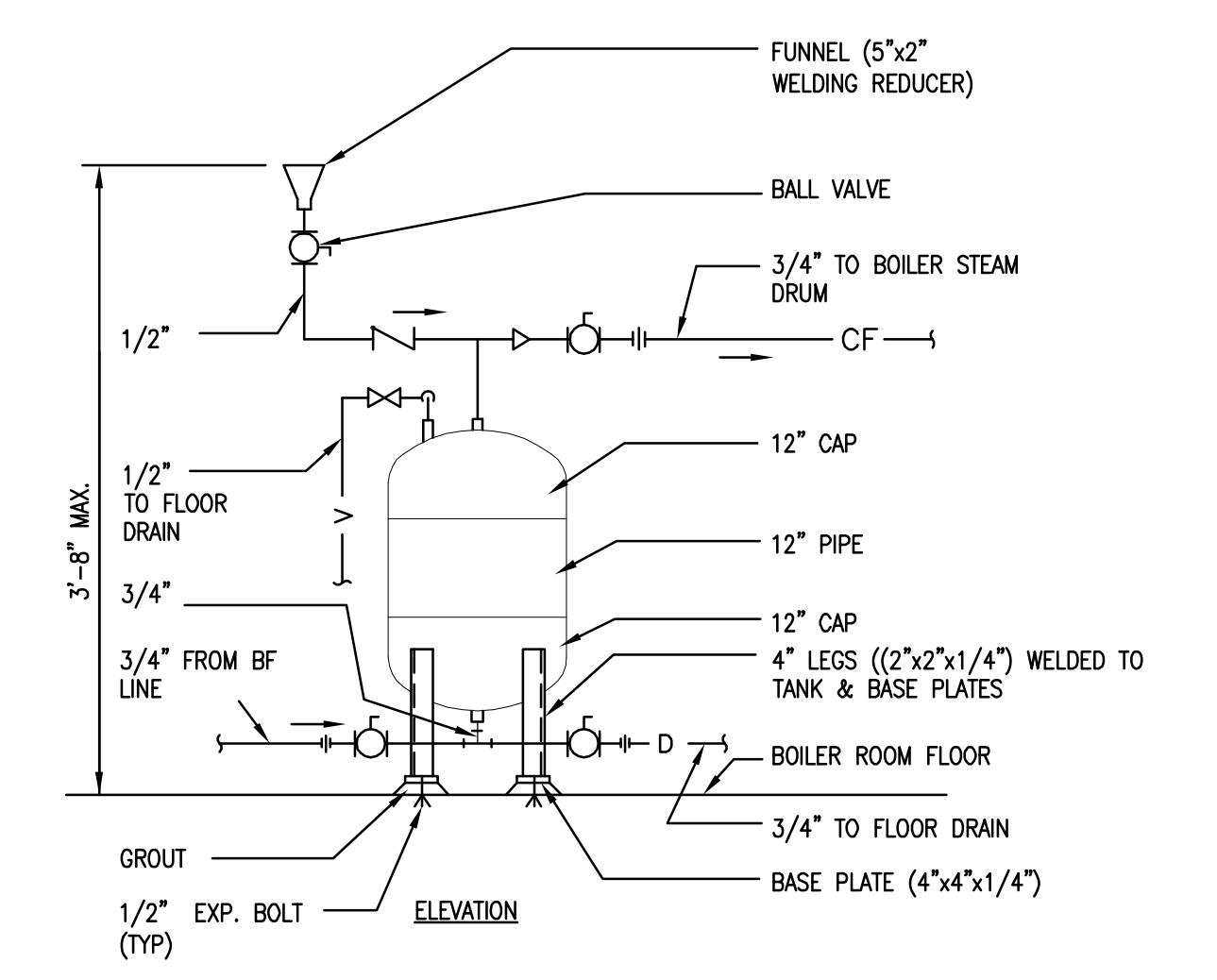


4 ACCESS PLATFORM ARRANGEMENT  
MH104 SCALE: NONE



- NOTE:
- MAINTAIN UPSTREAM AND DOWN STREAM DISTANCES RECOMMENDED BY METER MANUFACTURERS

5 STEAM METER DETAIL  
MH104 SCALE: NONE



NOTE: NORMAL CHEMICAL FEED SHALL BE WITH A PUMP TYPE SYSTEM. SHOT TYPE SHALL BE USED ONLY FOR BOILER LAYOUT.

6 BOILER CHEMICAL FEED SYSTEM - SHOT TYPE  
MH104 SCALE: NONE

BOILER ECONOMIZER SCHEDULE								
MARK	LOCATION	SYSTEM	HEAT EXCHANGED	WATER FLOW	MIN NET CAPACITY	MAX PRESS. DROP WATER SIDE	MAX PRESS. DROP GAS SIDE	REMARKS
			MBT	GPM	GAL	PSIG	IN	
FSE-3	BOILER PLANT	BOILER STACK	320	35	7.8	1	0.35	1,2,3,4,5

- REMARKS:
- FEEDWATER INLET TEMPERATURE SHALL BE 224°F.
  - MINIMUM HEAT EXCHANGED AT 100% BOILER LOAD.
  - ECONOMIZER SHALL BE NON-CONDENSING TYPE.
  - ECONOMIZER SHALL BE CAPABLE IF BOILER IS OPERATIONAL ON NATURAL GAS OR NO. 2 FUEL OIL.
  - ECONOMIZER SHALL BE CONSTRUCTED FOR OUTDOOR INSTALLATION.

FIRE TUBE STEAM BOILER SCHEDULE																										
MARK	LOCATION	SYSTEM	TYPE	MAX CAPACITY	BOILER	OPERATING PRESSURE	HEATING SURFACE	MIN COUNT FIRING RATE	NATURAL GAS		#2 OIL		RELIEF VALVE SETTING PSIG	OIL ATOM COMPRESS MOTOR				OIL ATOM PUMP MOTOR				FAN MOTOR				REMARKS
				LBS/HR					HP	PSIG	SQ FT	LBS/HR		INPUT MBH	OUTPUT MBH	INPUT MBH	OUTPUT MBH	POWER HP	PHASE	VOLT	RPM	POWER HP	PHASE	VOLT	RPM	
B-3	BOILER PLANT	HEATING	FIRE TUBE	17,250	500	120	2527	1725	20,922	16,378	20,922	16,378	150	7.5	3	460	1750	--	--	--	--	25	3	460	1750	1 THRU 12

- REMARKS:
- STEAM QUALITY IS 99% MINIMUM.
  - SHELL DESIGN PRESSURE RATING IS 200 PSIG MINIMUM.
  - FEEDWATER TEMPERATURE IS 212°F MINIMUM, AND 224°F NORMAL.
  - THE FUEL TO BE FIRED SHALL BE NATURAL GAS, #2 FUEL OIL. FUEL OIL SUPPLIED BY PLANT IS 120 PSIG. NATURAL GAS SUPPLIED TO PLANT IS 7.5 PSIG. PROVIDE FUEL OIL AND NATURAL GAS PRESSURE REGULATING VALVE AT BURNER AS REQUIRED.
  - ALTITUDE IS 981 FT ABOVE SEA LEVEL.
  - THERE SHALL BE 5 PSIG BETWEEN VALVES.
  - BOILER, BOILER CONTROL PANEL, BURNER, AND OIL COMPRESSOR SHALL ALL BE PROVIDED AS A SKID MOUNTED UNIT. PROVIDE SINGLE POINT POWER CONNECTION TO UNIT.
  - PROVIDE VFD BURNER BLOWER.
  - PROVIDE LINKAGE-LESS MODULATING TURNDOWN WITH 10:1 RATIO WHILE FIRING UNDER NATURAL GAS.
  - PROVIDE SOUND ATTENUATION ON BURNER BLOWER.
  - BOILER SHALL BE 4-PASS CONSTRUCTION.
  - BOILER SUPPORT FRAME/BASE RAIL TO BE DESIGNED BY BOILER MFR. TO DELIVER FULL WEIGHT OF BOILER TO BEARING WALLS ALONG SIDES OF THE NEW BOILER LOCATION. CLEAR DISTANCE BETWEEN BEARING WALLS IS APPROXIMATELY 8'-0", THEREFORE, LENGTH OF SUPPORT MEMBERS MUST BE APPROXIMATELY 9'-0".

Revisions

Date

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Architect Project No.  
003-10099-009

Drawing Title  
MECHANICAL DETAILS AND SCHEDULES

Approved Project Director

Name

Project Title  
BOILER REPLACEMENT

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OMAHA, NE

Date  
JUNE 28, 2018

Checked  
KRC

Drawn  
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