

MECHANICAL DEMOLITION PLAN  
1/8" = 1'-0"

Joseph Floyd Manor  
Boiler Replacement  
2106 MT. PLEASANT ST.  
CHARLESTON, SC 29403

PROJECT NUMBER:  
2119  
ISSUE DATE:  
10/8/2021

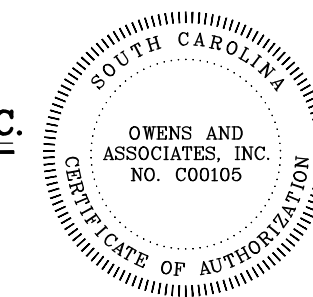
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CONSTRUCTION  
DOCUMENTS

Revision Schedule		
#	Description	Date

**OWENS AND ASSOCIATES, INC.**  
CONSULTING ENGINEERS

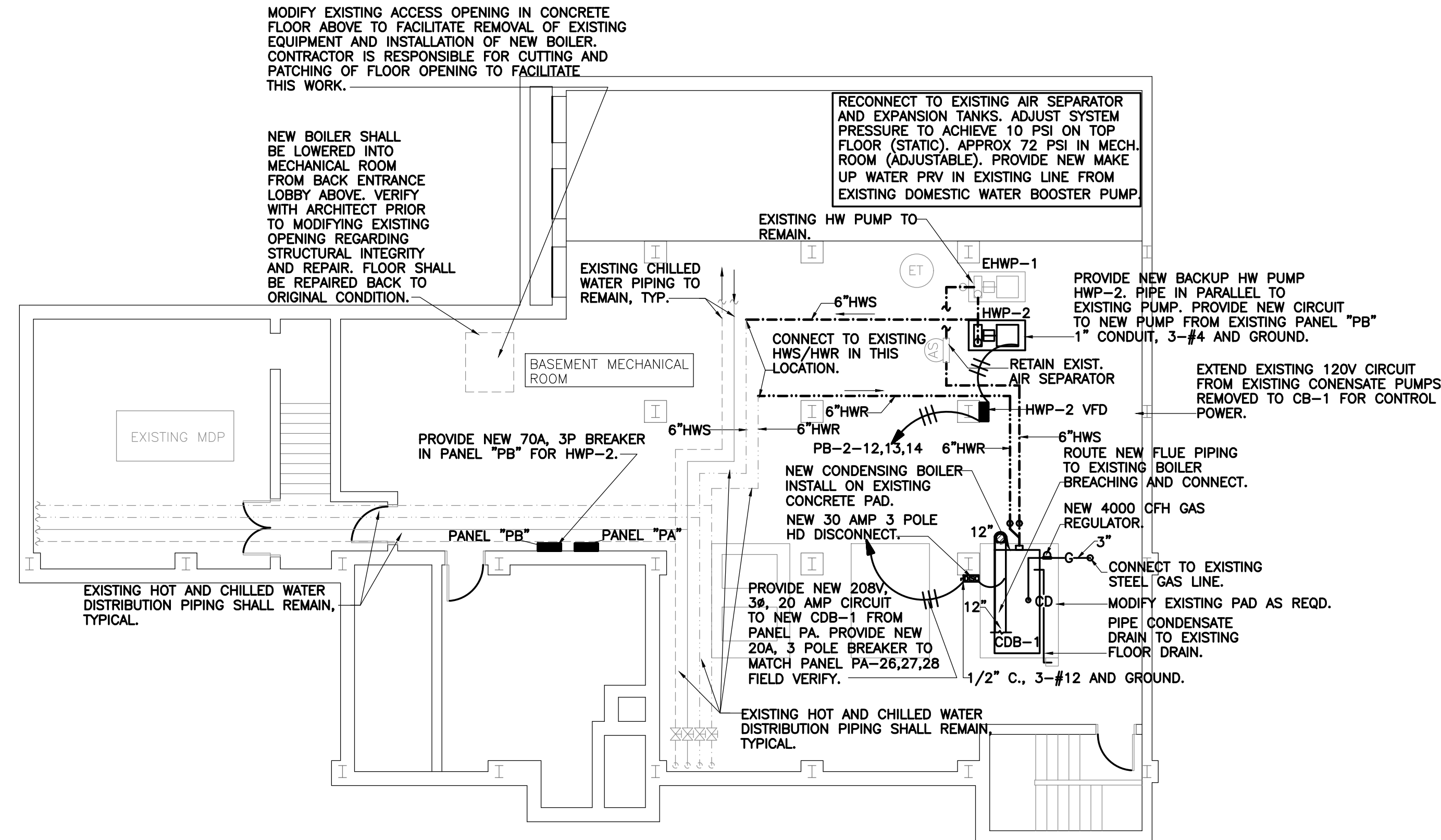
1507 LAKE HUNTER CIRCLE  
MT. PLEASANT, SC  
29464



MECHANICAL  
DEMOLITION PLAN

M101

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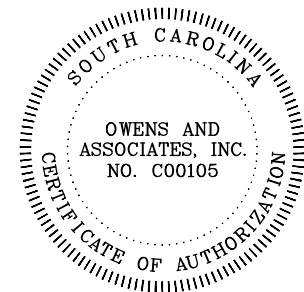
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MECHANICAL  
PLAN

M102

GENERAL MEP NOTES

- CONTRACTOR IS RESPONSIBLE FOR VISITING THE SITE TO INVESTIGATE EXISTING CONDITIONS PRIOR TO BID. FAILURE VISIT THE SITE AND TO PROPERLY IDENTIFY SCOPE OF WORK WILL NOT CONSTITUTE A CHANGE IN PRICE AFTER BID.
- THE CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF ALL BOILERS, PIPE, INSULATION AND APPURTENANCES SCHEDULED TO BE DEMOLISHED OFF SITE.
- ELECTRICAL WORK ASSOCIATED WITH POWER WIRING FOR THE NEW BOILER (CB-1) SHALL BE PERFORMED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC). ALL POWER WIRING SHALL BE INSTALLED WITHIN GALVANIZED EMT WITH THWN/THHN WIRE. ELECTRICAL CONTRACTOR SHALL PROVIDE NEW 20 AMP, 3 POLE BREAKER IN EXISTING PANEL "PA". MATCH EXISTING MANUFACTURER. PROVIDE NEW HEAVY DUTY 3-POLE FUSED DISCONNECT FOR BOILER AS SHOWN ON PLAN. FUSE BOILER PER THE MANUFACTURERS MOCPP REQUIREMENTS. ALL ELECTRICAL WORK ASSOCIATED WITH STANDBY HOT WATER PUMP HWP-2 SHALL BE PERFORMED BY THE OWNER.
- ALL HORIZONTAL HOT WATER PIPING SHALL BE FITTED WITH ECCENTRIC REDUCERS ORIENTED WITH FLAT SURFACE UP. VERTICAL PIPING SHALL BE REDUCED WITH CONCENTRIC REDUCERS.
- REFER TO SPECIFICATION FOR PIPE PAINTING AND INSPECTION REQUIREMENTS.
- ALL STEEL PIPING IN MECHANICAL ROOM SHALL BE FREE FROM RUST AND CORROSION PRIOR TO INSTALLATION. PIPING THAT IS CORRODED INTERNALLY OR EXTERNALLY IS NOT ACCEPTABLE.
- AFTER PIPE FLUSHING IS COMPLETE AND CONTRACTOR HAS DEMONSTRATED THAT THE SYSTEM IS FILLED WITH CLEAN AND CLEAR WATER, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE TREATMENT OF THE SYSTEM THRU THE FIRST YEAR WARRANTY. AFTER THE FIRST YEAR, THE OWNER IS RESPONSIBLE FOR MAINTENANCE OF THE WATER TREATMENT. AFTER FLUSHING IS COMPLETE AND THE CONTRACTOR SHALL PULL WATER TESTS AND DEMONSTRATE A CLEAN SYSTEM TO THE OWNER AND ENGINEER PRIOR TO ADDING WATER TREATMENT CHEMICALS.
- AFTER INSTALLATION OF NEW BOILER, MECHANICAL CONTRACTOR SHALL BLEED AIR OUT OF SYSTEM ON TOP FLOOR FAN COIL UNITS. CONTRACTOR SHALL ENSURE ALL ENTRAINED AIR IS REMOVED FROM THE SYSTEM PRIOR TO PROJECT COMPLETION AND VERIFY PROPER OPERATION OF HEATING SYSTEM.

DESIGN CONDITIONS		
	COOLING	HEATING
OUTSIDE	95F DB, 80F WB	27F DB
INSIDE	78F DB, 65F WB	72F DB

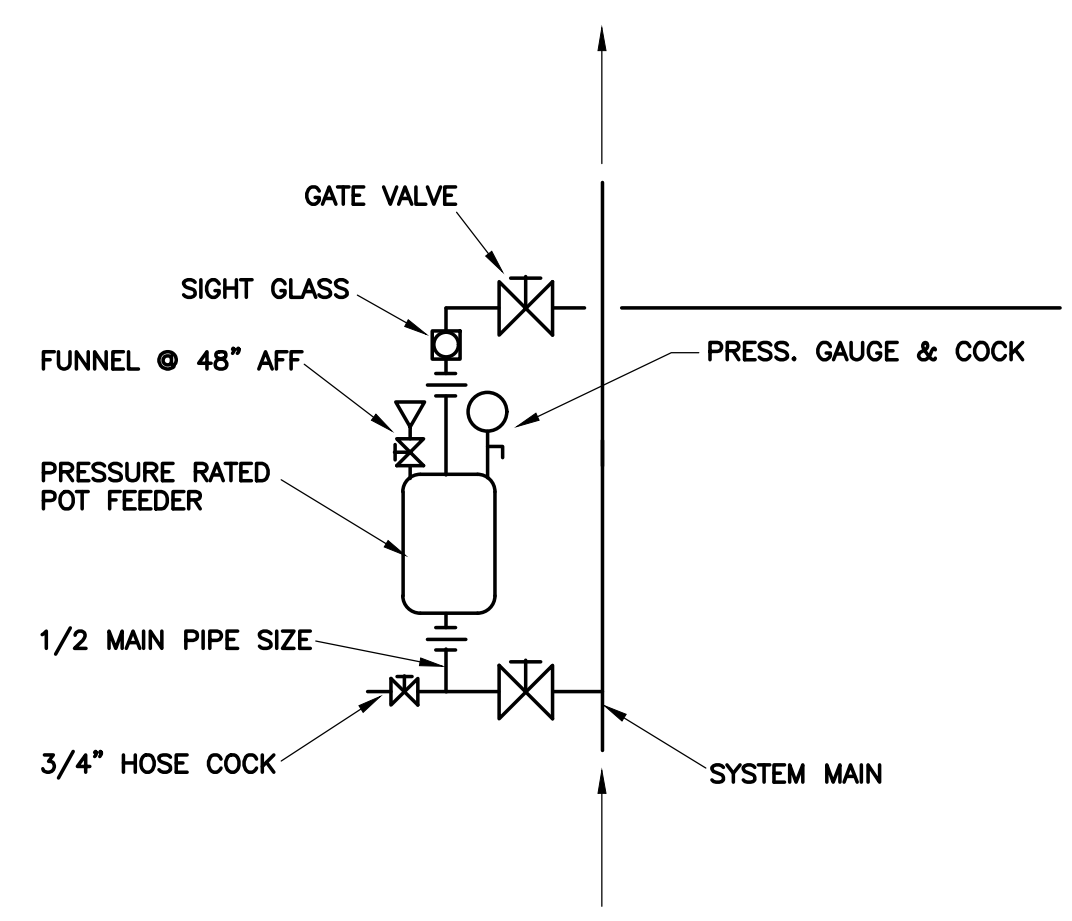
SYMBOL SCHEDULE	
SYMBOL	DESCRIPTION
Ⓣ	THERMOSTAT WITH LOCK COVER
Ⓜ	HUMIDISTAT WITH LOCK COVER
Ⓢ	CO2 SENSOR WITH LOCK COVER
Ⓟ	BI-POLAR IONIZATION UNIT
Ⓢ	DUCT MOUNTED SMOKE DAMPER
Ⓢ	DUCT SMOKE DETECTOR-SEE FIRE ALARM PLAN
Ⓢ	EXHAUST FAN
TR GR/EX GR	TRANSFER GRILLE / EXHAUST GRILLE
↺	AIR TURNING VANE
↺ S	SPLITTER DAMPER
FD/-	FIRE DAMPER / HOUR RATING
SD	SMOKE DAMPER
FSD	COMBINATION FIRE/SMOKE DAMPER
Ⓢ	INDICATION OF ROOF MOUNTED EQUIPMENT
Ⓢ	MANUAL DAMPER (O.B.M.D.)
Ⓢ	GATE VALVE
Ⓢ	GLOBE VALVE
Ⓢ	FLOW STATION
Ⓢ	CHECK VALVE
Ⓢ	STRAINER
Ⓢ	UNION/FLANGE
Ⓢ	PRESSURE GAUGE WITH PETCOCK
Ⓢ	THERMOMETER
Ⓢ	CIRCUIT SETTER
Ⓢ	PRESSURE REDUCING VALVE
Ⓢ	PRESSURE RELIEF VALVE
Ⓢ	MANUAL AIR VENT
Ⓢ	FLEXIBLE CONNECTION

CONDENSING WATER BOILER SCHEDULE													
HTR. NO.	MODEL NO.	GALLONS	MOUNTING	VOLTAGE	PHASE	MOCPP	LABEL	GAS	GPM	BTU INPUT	BTU OUTPUT	DELTA P FT H2O	DELTA T °F
CB-1	FCB4000	201	CONC. PAD	208	THREE	20	ASME	NATURAL	300	3,999,000	3,843,000	10'	20'

- NOTES:
- BOILER SHALL BE LOCHINVAR CREST-HELLCAT OR PRIOR APPROVED EQUAL AND MEET ANSI STANDARD Z21.13, THERMAL COMBUSTION EFFICIENCIES AND BE AHRI CERTIFIED.
  - BOILER SHALL BE CSD-1 /FM/GAPS AND CALIFORNIA CODE COMPLIANT.
  - BOILER HEAT EXCHANGER SHALL BE STAINLESS STEEL, CONDENSING, FIRE TUBE DESIGN PROVIDED WITH OPTIONAL 150 PSI ASME PRESSURE RELIEF VALVE.
  - BOILER VOLUME SHALL BE 201 GALLONS MINIMUM.
  - BOILER SHALL BE PROVIDED WITH 20:1 TURNDOWN MINIMUM.
  - BOILER SHALL BE PROVIDED WITH HELLCAT COMBUSTION TECHNOLOGY FOR FEEDFORWARD, FEEDBACK, COMMISSION TRIM AND LEARNED TRIM O2 SENSOR.
  - MAX GAS PRESSURE SHALL BE 2PSI
  - BOILER SHALL BE PROVIDED WITH INTEGRAL CASCADE SEQUENCING WITH BACNET MSTP INTERFACE, EFFICIENCY OPTIMIZATION AND CASCADE REDUNDANCY. BOILER SHALL BE PROVIDED WITH TOUCHSCREEN USER INTERFACE TO MANUALLY CONTROL ALL BOILER FUNCTIONS FROM USER INTERFACE AND CAPABLE OF WIFI AND ETHERNET CONNECTION FOR REMOTE MONITORING AND CONTROL.
  - PROVIDE BOILER WITH CONDENSATE NEUTRALIZATION KIT.
  - PRESSURE VESSEL AND HEAT EXCHANGER SHALL BE PROVIDED WITH FACTORY LIFETIME THERMAL SHOCK WARRANTY AND 5 YEAR PARTS AND LABOR WARRANTY FOR ENTIRE UNIT.
  - BOILER SHALL BE STARTED UP BY FACTORY TRAINED PERSONNEL. FULL VERIFICATION OF BOILER FUNCTIONS SHALL BE WITNESSED BY OWNER DURING OWNERS TRAINING.
  - BOILER PIPING SHALL BE PRIMARY FLOW/CONSTANT VOLUME. SEE PLANS FOR PIPING ARRANGEMENT.
  - BOILER SHALL BE PROVIDED WITH FACTORY 208V/3Ø TO 120V/1Ø ELECTRICAL TRANSFORMER.
  - BOILER SHALL BE PROVIDED WITH FACTORY INSTALLED FAILURE (ANY FAILURE) ALARM.

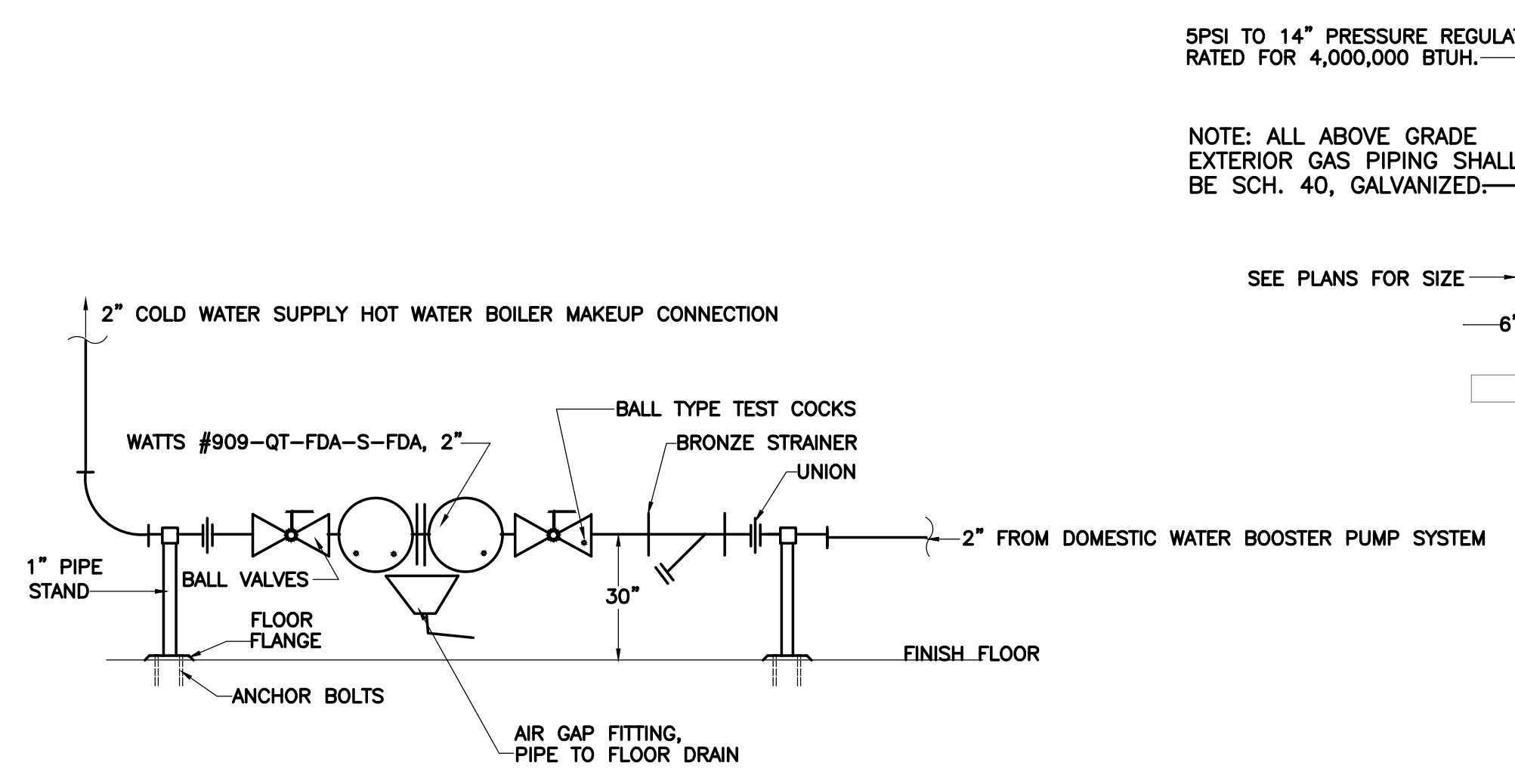
PUMP SCHEDULE											
SYMBOL	SERVICE	TYPE PUMP	PUMP EFF. %	GPM	TOTAL HEAD FT. OF WTR.	HP	RPM	VOLTS	PH	HZ	REMARKS
HWP-2	STANDBY HW	CENTRIFUGAL	71.2	300	105	15	1750	480	3	60	SERIES 1510, 3Ø 10, 7.5" IMPELLER

- BASIS OF DESIGN IS ITT BELL & GOSSETT. ANY REQUIREMENTS ELECTRICAL OR OTHERWISE TO FURNISH ALTERNATE APPROVED EQUIPMENT ARE THE RESPONSIBILITY OF THIS CONTRACTOR.
- HWP-2 IS FOR STANDBY EMERGENCY USE. ELECTRICAL WIRING TO NEW PUMP SHALL BE BY THE OWNER. MECHANICAL CONTRACTOR SHALL PIPE PUMP AND ACCESSORIES COMPLETE AS SHOWN. PROVIDE VFD FOR STANDBY PUMP WITH HOA CONTROL. VFD SHALL BE AS MANUFACTURED BY ABB OR DANFOSS WITH INTEGRAL CIRCUIT BREAKER. PUMP MOTOR SHALL BE INVERTER RATED.



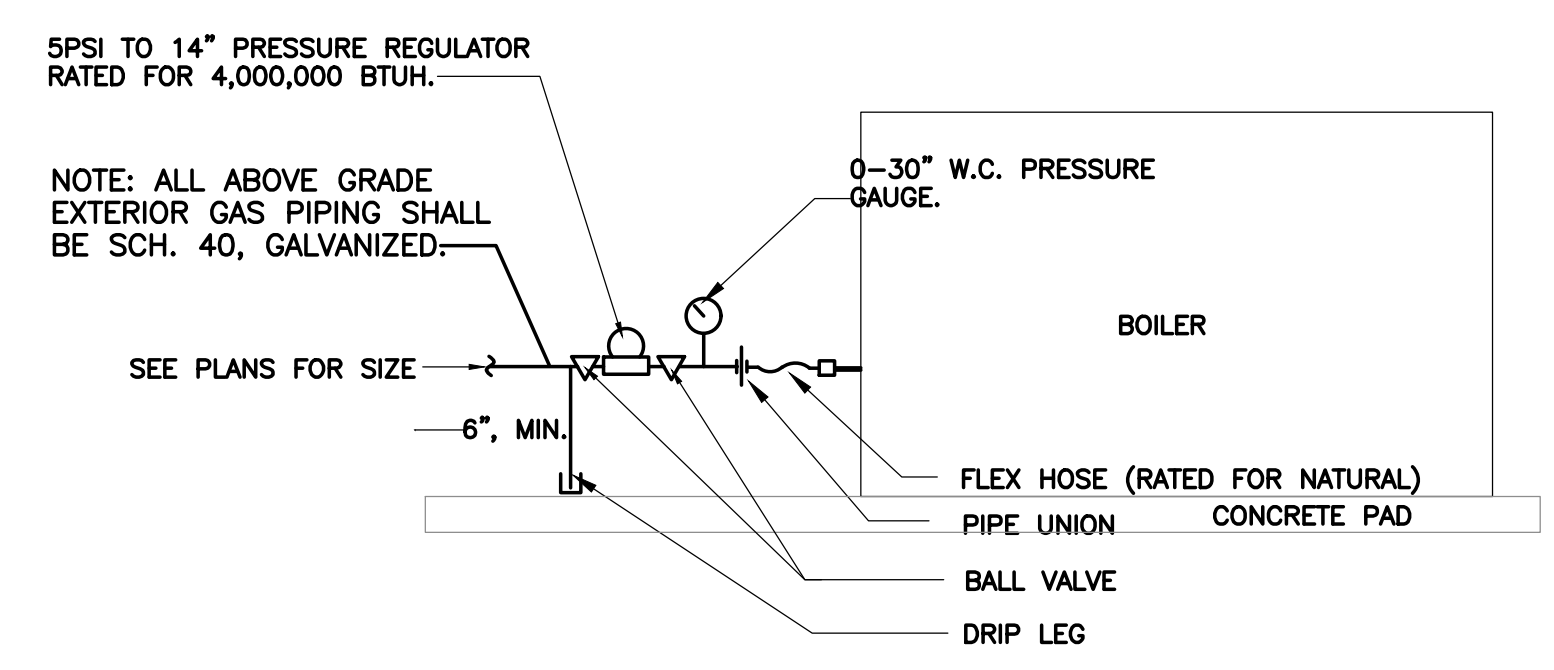
CHEMICAL FEEDER DETAIL

NO SCALE



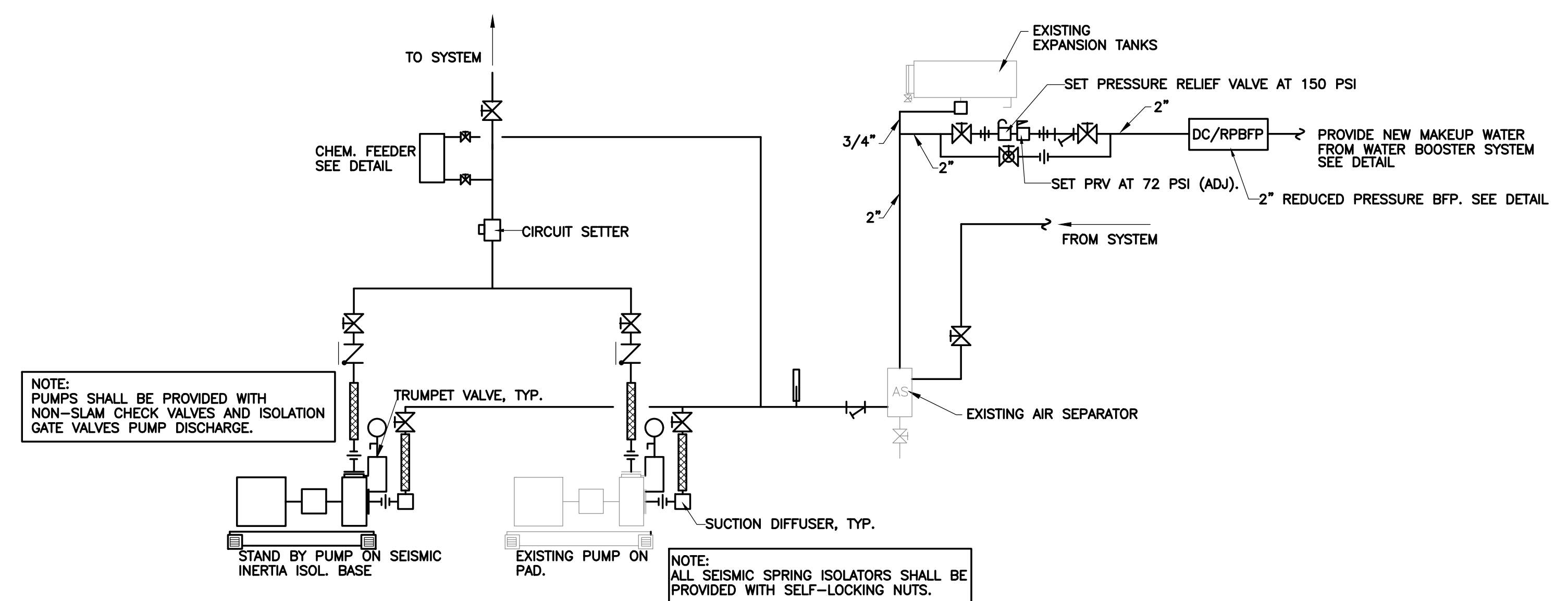
REDUCED PRESSURE BACKFLOW PREVENTER DETAIL

NO SCALE



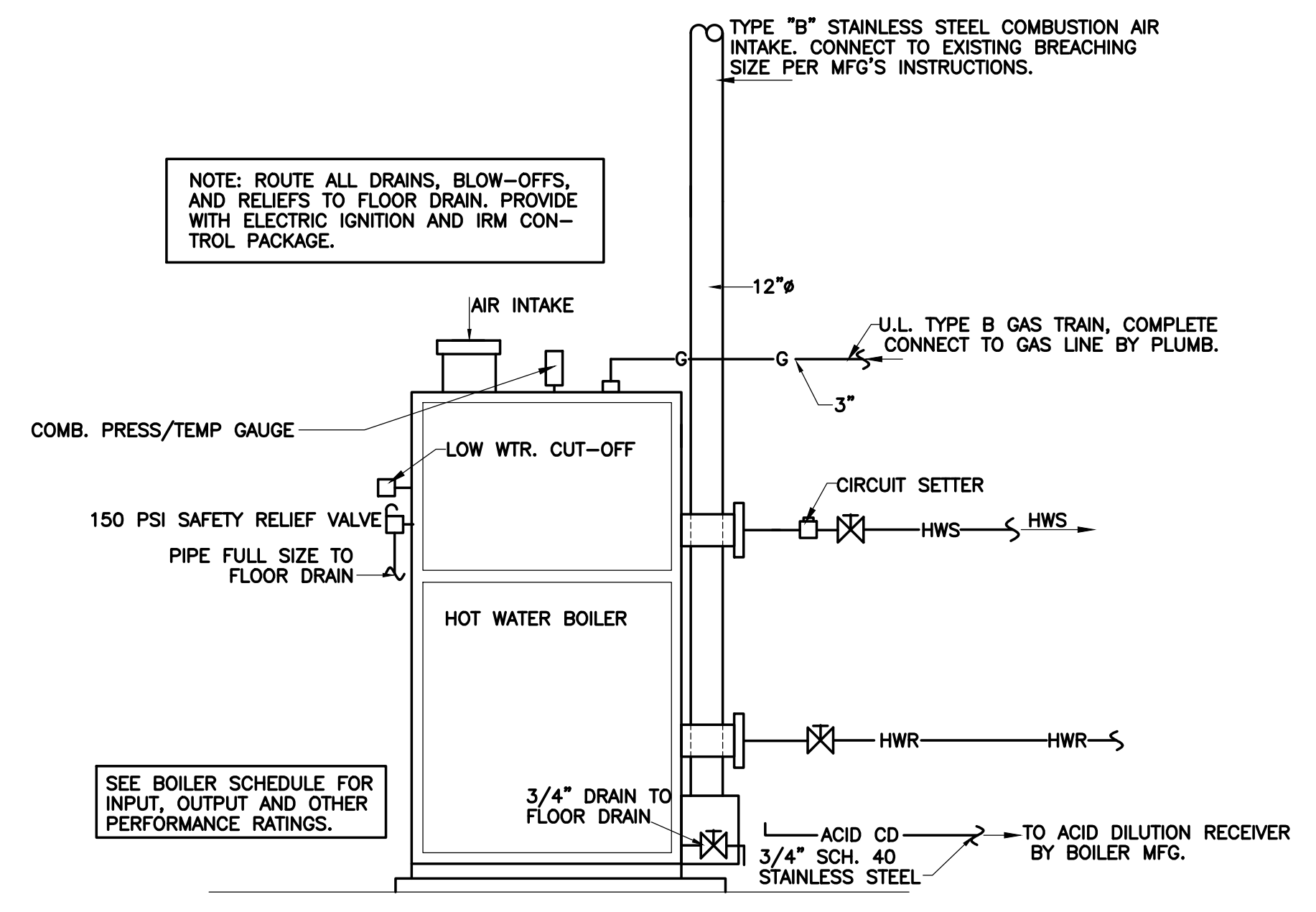
BOILER GAS PIPING DETAIL

NO SCALE



PRIMARY HOT WATER PUMP PIPING DETAIL

NO SCALE

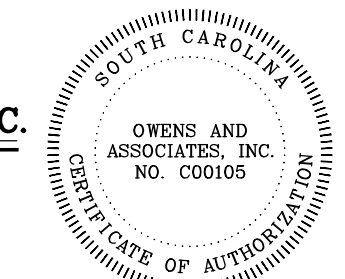


CONDENSING HOT WATER BOILER DETAIL

NO SCALE

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