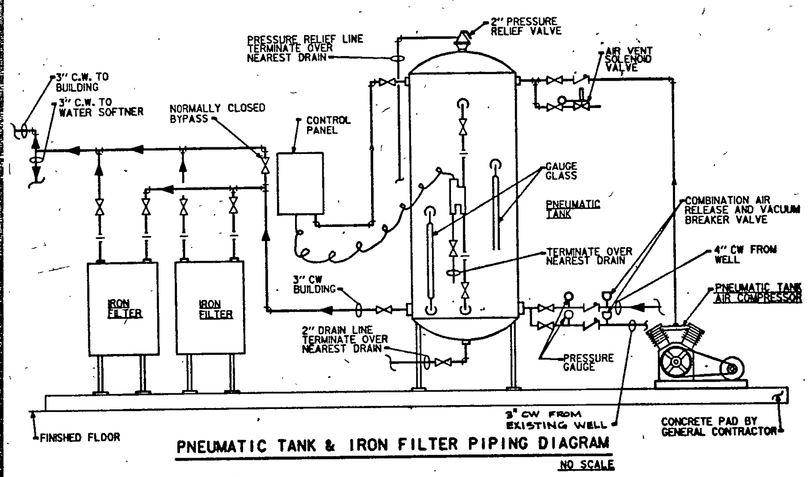
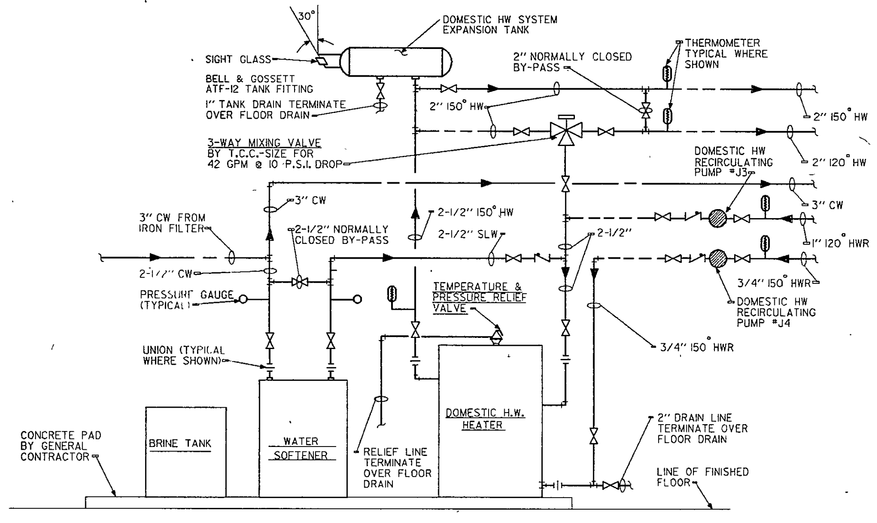


PNEUMATIC TANK & IRON FILTER PIPING DIAGRAM

NO SCALE

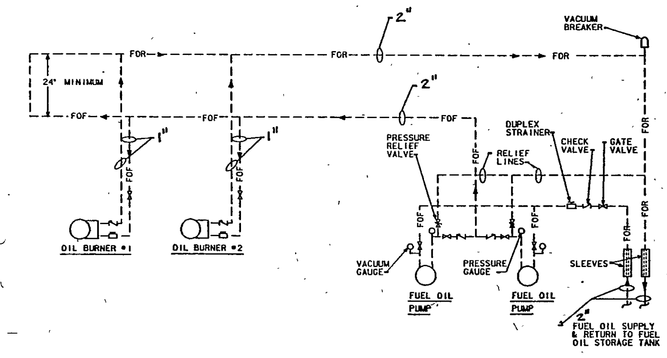


DOMESTIC HOT WATER PIPING DIAGRAM

NO SCALE

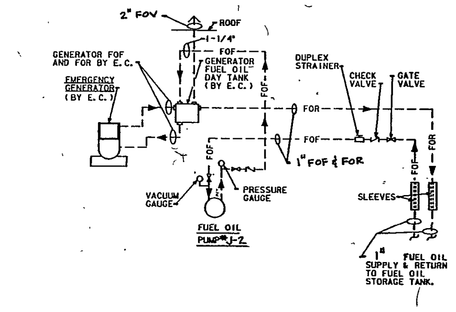
HEATING, VENTILATING, AIR CONDITIONING AND PLUMBING BOILER ROOM NOTES

1. TWO 54" X 54" OPPOSED BLADE MOTORIZED COMBUSTION AIR DAMPER BY TEMPERATURE CONTROL CONTRACTOR. DAMPER SHALL BE CONTROLLED BY A RELAY FURNISHED BY THE BURNER SUPPLIER IN THE HEATING SYSTEM BURNER CONTROL CABINET.
2. ALL VALVES, THERMOMETERS, GAUGES, FEEDERS, FITTINGS, ETC., NOTED ON BOILERS, PUMPS AND COMPRESSION TANKS ARE TYPICAL FOR ALL BOILERS, PUMPS AND COMPRESSION TANKS.
3. ALL COMPRESSION TANK PIPING SHALL PITCH UP IN DIRECTION OF TANKS 1" IN 5'-0" MINIMUM.
4. INSTALL AN AIR VENT AT THE HIGH POINT OF EACH CIRCULATING PUMP DISCHARGE AND AT THE HIGH POINT OF EACH HEATING OR CHILLED WATER RETURN MAIN ENTERING THE BOILER ROOM.
5. ALL SIGHT GLASSES, THERMOMETERS AND GAUGES SHALL BE INSTALLED AT 30° FROM VERTICAL AND SHALL BE EASILY READABLE FROM THE FLOOR (SEE SPECIFICATIONS).
6. ALL PRESSURE RELIEF VALVES, TEMPERATURE RELIEF VALVES, DRAIN VALVES, ETC., SHALL HAVE A DRAIN LINE FULL SIZE OF OUTLET, RUN TO NEAREST HOPPER DRAIN, TRENCH DRAIN OR SUMP PIT.
7. ALL HORIZONTAL PIPING WITHIN THE BOILER ROOM SHALL BE SUSPENDED ON RUBBER-IN-SHEAR HANGERS (SEE SPECIFICATIONS).
8. ALL TEMPERATURE REGULATING VALVES, 3-WAY MIXING VALVES, SOLENOID VALVES, AUTOMATIC DRAIN VALVES, PUMP BY-PASS VALVES, ETC., SHALL BE PROVIDED BY THE TEMPERATURE CONTROL CONTRACTOR.
9. ONE 72" X 18" MANUALLY OPERATED COMBUSTION AIR DAMPER BY TEMPERATURE CONTROL CONTRACTOR.



FLOODED LOOP OIL PIPING DIAGRAM

NO SCALE



EMERGENCY GENERATOR FLOODED LOOP OIL PIPING DIAGRAM

NO SCALE

BOILER ROOM MECHANICAL EQUIPMENT SCHEDULE

1. HEATING SYSTEM BOILERS J1 & J2
BURNHAM SCOTCH MARINE MODEL PSW-90 OR AN APPROVED EQUAL. S.B.J.NET RATING 2620 MBH. EACH.

2. HEATING SYSTEM BURNER:
INDUSTRIAL COMBUSTION MODEL FMOL-42COMBINATION GAS, OIL BURNER, OR AN APPROVED EQUAL TO BURN 4200 CUBIC FEET PER HOUR OF 0.6 SPECIFIC GRAVITY, 1000 BTU PER CUBIC FOOT NATURAL GAS MANIFOLD PRESSURE OF 6" W.C. BURNER MOTOR: 3 HP, 460 VOLTS, 3 PHASE, 60 HERTZ. OIL CAPACITY: 30 GALLONS PER HOUR #2 FUEL OIL WITH HEAT CONTENT OF 140,000 BTU/GALLON.

3. HEATING SYSTEM COMPRESSION TANKS: J1 & J2
(2) 20" DIAMETER X 78" LONG (OVERHEADS) 100 GALLONS ACTUAL CAPACITY EACH. ASME CONSTRUCTION 30LBS. W.P. PROVIDE 3/4" DIAMETER THREADED "U" BAR HANGERS, SUSPENSION ANGLES, ETC. AS REQUIRED TO SUSPEND FROM STRUCTURAL SUPPORTS PROVIDED BY THE GENERAL CONTRACTOR.

4. ONE SHOT CHEMICAL FEEDER: (HEATING SYSTEM)
MOGUL, OR AN APPROVED EQUAL. SEE SPECIFICATIONS.

5. DUAL-TEMPERATURE CONTROL AIR COMPRESSORS AND AFTERCOOLER:
BY TEMPERATURE CONTROL CONTRACTOR. 60 GALLON CAPACITY. COMPRESSOR MOTOR: (2) 3 HP, 460 VOLTS, 3 PHASE, 60 HERTZ. AFTERCOOLER MOTOR: 1/5 HP, 115 VOLTS, 1 PHASE, 60 HERTZ.

6. INCINERATOR:
ECONOTHERM MODEL I-180, OR AN APPROVED EQUAL. GAS FIRED. PRIMARY CHAMBER BURNER NO. J-80 DS TO BURN 50 CUBIC FEET OF 1000 BTU PER CUBIC FOOT NATURAL GAS. BURNER MOTOR: 1/4 HP, 115 VOLTS, 1 PHASE, 60 HERTZ. PROVIDE ONE HOUR AUTOMATIC TIMER. SECONDARY CHAMBER BURNER NO. J-80 DS TO BURN 600 CUBIC FEET OF 1000 BTU PER CUBIC FOOT NATURAL GAS. BURNER MOTOR: 1/4 HP, 115 VOLTS, 1 PHASE, 60 HERTZ. PROVIDE SIX HOUR AUTOMATIC TIMER.

7. DRAFT INDUCER:
QUICKDRAFT MODEL Q-14 CA-1-1/2 OR AN APPROVED EQUAL. FAN MOTOR: 1-1/2 HP, 460 VOLT, 3 PHASE, 60 HERTZ. 1750 RPM. PROVIDE SEVEN DAY TIME CLOCK TO CONTROL FAN.

8. DOMESTIC HOT WATER HEATER:
A.O. SMITH MODEL # BTP-200-800 GAS FIRED, WITH 767 GPH RECOVERY AT 100° F TEMPERATURE RISE AND 220 GALLON STORAGE CAPACITY, A.S.M.E. CONSTRUCTION FOR 125 PSI WORKING PRESSURE, A.G.A. APPROVED AND ENCASED IN AN ENAMELED JACKET; PROVIDE BAROMETRIC DAMPER, THERMOSTATIC CONTROLS, SAFETY SHUTOFF CONTROLS, POWER BURNER FOR MINIMUM 800 MBH NATURAL GAS INPUT AND HAND HOLE CLEANOUTS (SEE SPECIFICATIONS). BURNER MOTOR DATA: 1/3 H.P., 115 VOLTS, 1 PHASE, 60 HERTZ.

9. DOMESTIC HOT WATER SYSTEM EXPANSION TANK:
HORIZONTAL, 12" DIAMETER X 4'-0" (STRAIGHT SHELL) A.S.M.E. CONSTRUCTION FOR 125 PSI WORKING PRESSURE, 24 GALLONS ACTUAL CAPACITY. PROVIDE 3/4" DIAMETER THREADED "U" BAR HANGERS, SUSPENSION ANGLES, ETC., AS REQUIRED.

10. WATER SOFTENING EQUIPMENT:
BRUNER MODEL #SCHBR - 1-1/2 OR AN APPROVED EQUAL, 24" DIAMETER X 60" HIGH BRINE TANK, 58 GPM SERVICE FLOW RATE AND 10 GPM BACKWASH RATE. MECHANICAL CONTRACTOR SHALL PROVIDE A 2-1/2" VALVED RAW WATER BY-PASS AS SHOWN ON THE DRAWINGS-SEE SPECIFICATIONS.

11. PNEUMATIC TANK:
VERTICAL, 72" DIAMETER X 9'-6" HIGH, 1099 GALLON ACTUAL CAPACITY, A.S.M.E. CONSTRUCTION, 125 PSI WORKING PRESSURE; PROVIDE TWO RELIANCE #4BC-3/4" BALL CHECK GAUGE GLASS SETS, RELIEF VALVE, AND ALL CONTROLS-SEE SPECIFICATIONS; PROVIDE (4) 3" X 3" X 1/4" ANGLE IRON LEGS WELDED INTEGRALLY TO THE SIDE OF THE TANK AND TERMINATING IN 4" X 4" X 1/2" FLANGES SECURED TO FLOOR. THE HEIGHT OF LEGS SHALL BE SUCH THAT THE BOTTOM OF TANK WILL BE A MINIMUM OF 18" ABOVE THE CONCRETE PAD.

12. PNEUMATIC TANK AIR COMPRESSOR:
INGERSOLL RAND #23AM.F4 LESS RECEIVER, OR AN APPROVED EQUAL. TWO STAGE BASE MOUNTED WITH RELIEF VALVE, AIR FILTER, MUFFLER AND BELT GUARD. MOTOR 1-1/2 H.P. 460 VOLTS, 3 PHASE, 60 HERTZ; PROVIDE VIBRATION RAILS.

13. WATER SYSTEM CONTROLS:
WARRICK #PACKTROL* OR AN APPROVED EQUAL. PROVIDE NEMA-1 ENCLOSURE CONTAINING A 3-1/2" DAIL PRESSURE GAUGE REGISTERING FROM 0 TO 100 PSI. ALLEN-BRADLEY BULLETIN 712 (FORM 2F) COMBINATION DISCONNECT SWITCH ACROSS THE LINE MAGNETIC STARTERS, SIZE 2, 460 VOLT, 3 PHASE, 3 OVERLOADS FOR THE PUMP, SIZE 0, 460 VOLT, 3 PHASE, 3 OVERLOADS FOR THE AIR COMPRESSOR, AND CONTROL TRANSFORMERS, OIL TIGHT H-O-A SWITCHES, AND RUNNING LIGHTS IN THE CABINET DOOR FOR THE PUMP AS WELL AS THE AIR COMPRESSOR (SEE SPECIFICATIONS).

14. DEEP WELL:
WELL SHALL BE 8" DIAMETER AND DRILLED TO A DEPTH OF 215 FEET. THE WELL SHALL BE CAPABLE OF SUPPLYING 150 GPM BASED ON CONTINUOUS OPERATION (SEE SPECIFICATIONS).

15. DEEP WELL SUBMERSIBLE PUMP:
FLOWAY MODEL #6JOLL, OR AN APPROVED EQUAL, WITH THE CAPACITY TO PUMP 150 GPM AT 282 FEET OF TOTAL DYNAMIC HEAD. MOTOR DATA: 15 H.P., 460 VOLT, 3 PHASE, 60 HERTZ, 3500RPM. THE ELECTRICAL CABLE TO PUMP MOTOR SHALL BE NOT LESS THAN #6 AWG AND SHALL BE COMPRISED OF THREE OR MORE SEPARATE CONDUCTORS. PROVIDE A SUFFICIENT COLUMN ASSEMBLY FOR A 200 FOOT PUMP SETTING IN THE WELL (SEE SPECIFICATIONS).

16. IRON REMOVAL EQUIPMENT:
BRUNER MODEL #M-92BF FILTER TANKS (2 REQUIRED) WITH ONE 24" DIAMETER X 5'-0" HIGH REGENERANT TANK. EACH FILTER SHALL HAVE 40 GPM SERVICE FLOW RATE AND 77 GPM BACKWASH RATE (SEE SPECIFICATIONS).

17. DUPLEX FUEL OIL PUMP SET #J-1:
ACE PUMP SET NUMBER 2B, PUMP NUMBER 2CS OR AN APPROVED EQUAL. CAPACITY WILL BE 130 GPH MEASURED AT HG VACUUM AND 50 PSI HEAD WITH #2 FUEL OIL OF 2000 SSA VISCOSITY. PUMP MOTOR: (2) 1/2 HP, 460 VOLTS, 3 PHASE, 60 HERTZ.

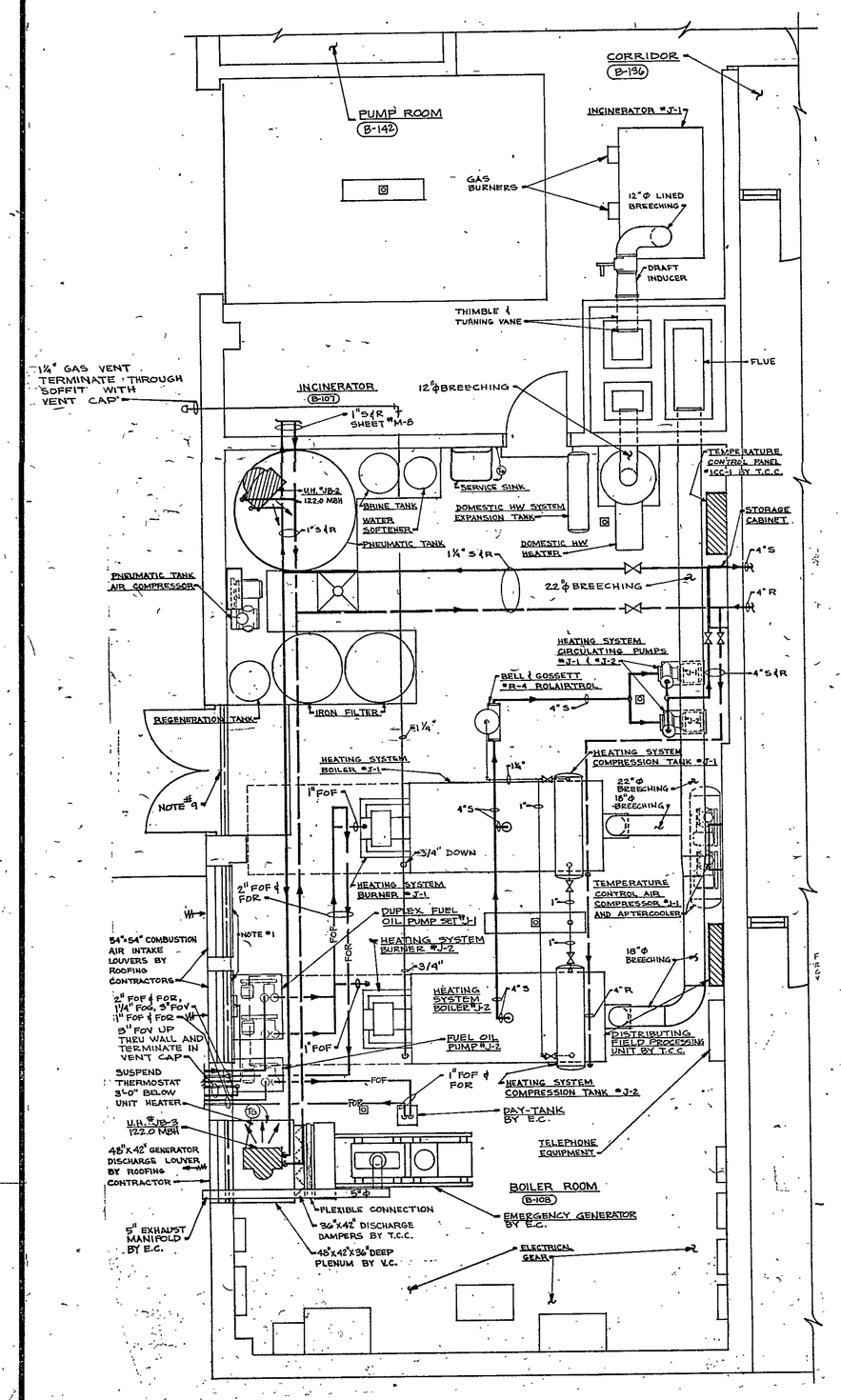
18. EMERGENCY GENERATOR FUEL OIL PUMP #J-2:
ACE PUMP NUMBER 1A, PUMP NUMBER 1LK OR AN APPROVED EQUAL. CAPACITY WILL BE 130 GPH MEASURED AT HG VACUUM AND 50 PSI HEAD WITH #2 FUEL OIL OF 2000 SSA VISCOSITY. PUMP MOTOR: (1) 1/3 HP, 115 VOLTS, 1 PHASE, 60 HERTZ.

CIRCULATING PUMP SCHEDULE

NO.	SYSTEM SERVED	BELL & GOSSETT MODEL NUMBER	SIZE OR MODEL	G.P.M.	FEET HEAD	H.P.	SEE NOTE
J1	HEATING SYSTEM CIRCULATING	1531	2" AB	95	45	2	1
J2	HEATING SYSTEM CIRCULATING	1531	2" AB	95	45	2	1
J3	DOMESTIC HW CIRCULATING	BOOSTER	B-1" HV		12	1/6	2, 3
J4	DOMESTIC HW RECIRCULATING	BOOSTER	B-1", HV	10	12	1/6	2, 3

NOTES:

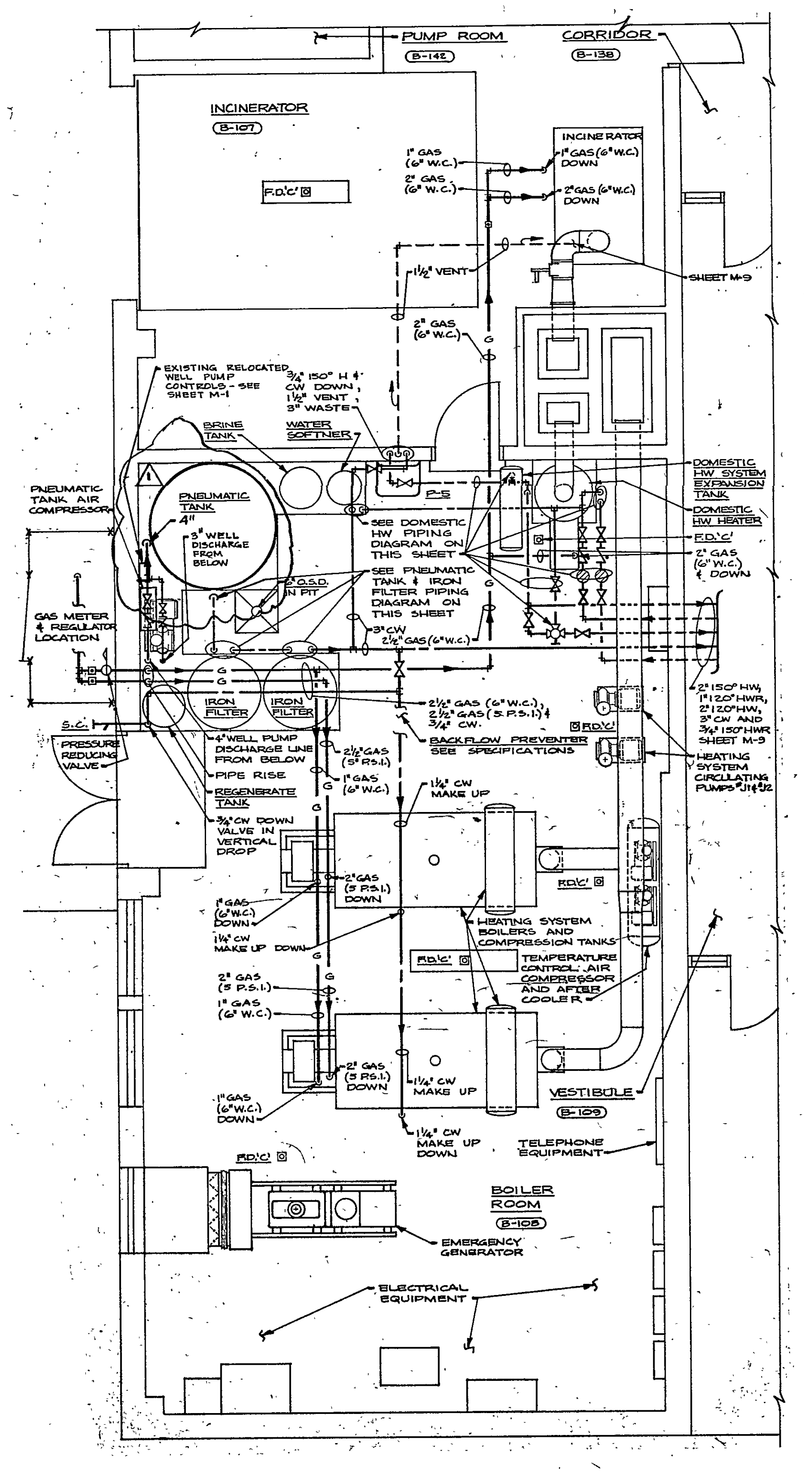
1. PUMP MOTOR: 460 VOLTS, 3 PHASE, 60 HERTZ, 1750 RPM.
2. PUMP MOTOR: 115 VOLTS, 1 PHASE, 60 HERTZ, 1750 RPM.
3. PUMP SHALL START AND STOP ON 10° TEMPERATURE VARIATION IN THE RETURN MAINS.



HEATING & VENTILATING BOILER ROOM LAYOUT

SCALE: 1/4" = 1'-0"

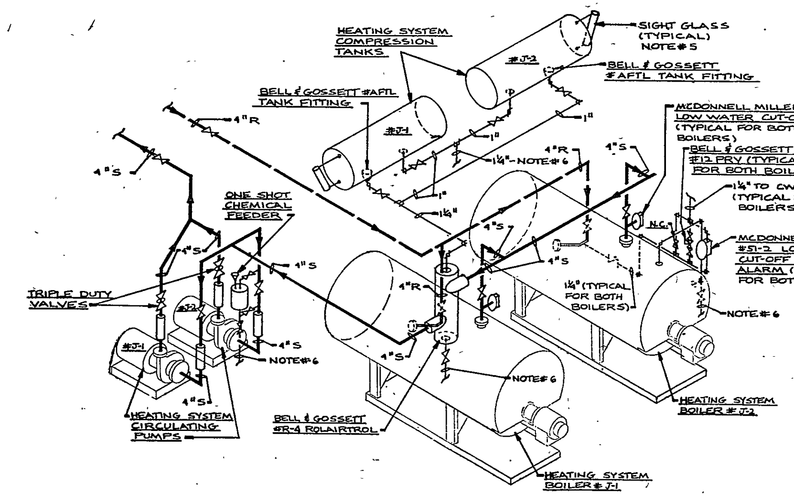
NORTH



PLUMBING BOILER ROOM LAYOUT

SCALE: 1/4" = 1'-0"

NORTH



HEATING PIPING ISOMETRIC

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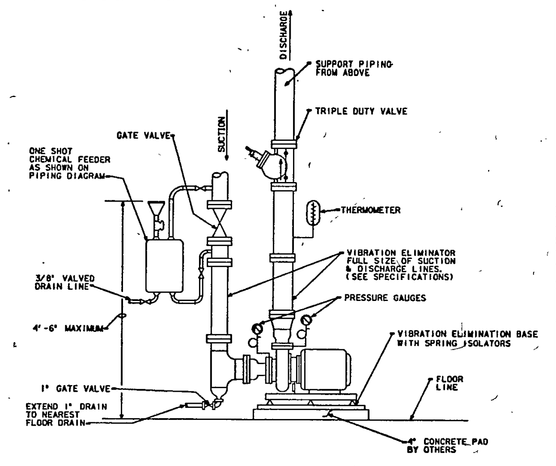

TYPICAL CIRCULATING PUMP CONNECTION

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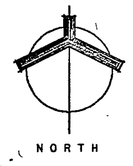

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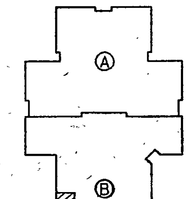

BOILER ROOM KEY PLAN

NO SCALE

AS-BUILT
25 SEPT 1984

REVISION RMEL

EVERETT I. BROWN COMPANY
ARCHITECTS ENGINEERS
• PARK FLETCHER •
• INDIANAPOLIS, INDIANA • 46241

5500 WEST BRADBURY AVENUE •
JACKSON ELEMENTARY SCHOOL

JAMES K. PARTRIDGE REGISTERED PROFESSIONAL ENGINEER 17645 STATE OF INDIANA

PROJECT	DATE	
12519.00	MAY 3, 1982	(AS USED) JULY 23, 1982

NO. M-10
OF 36

82-M-0