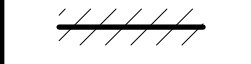
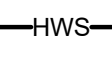
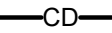
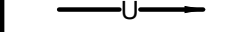


MECHANICAL LEGEND			
SYMBOLS	DESCRIPTION	SYMBOLS	DESCRIPTION
	NEW DUCT OR PIPE		TOP: EQUIPMENT DESIGNATION BOTTOM: UNIT NUMBER (E-SIGNIFIES EXISTING)
	EXISTING DUCT OR PIPE		COLD WATER PIPING
	TO BE REMOVED		HOT WATER SUPPLY PIPING
	FLEX TO DIFFUSER (5'-0" MAXIMUM)		HOT WATER RETURN PIPING
	RISE IN DUCT		LOW PRESSURE STEAM PIPING
	DROP IN DUCT		LOW PRESSURE CONDENSATE PIPING
	FLEXIBLE DUCT CONNECTION		PUMPED CONDENSATE PIPING
	CEILING DIFFUSER 4 WAY BLOW		CONDENSATE DRAIN PIPING
	CEILING DIFFUSER 3 WAY BLOW		SHUT-OFF VALVE
	CEILING DIFFUSER 2 WAY BLOW		BALANCE VALVE
	CEILING DIFFUSER 1 WAY BLOW		THROTTLING VALVE
	RETURN OR EXHAUST REGISTER		MOTOR OPERATED VALVE, THREE WAY
	VOLUME DAMPER		MOTOR OPERATED VALVE, TWO WAY
	FIRE DAMPER AND ACCESS DOOR		CHECK VALVE
	MOTOR OPERATED DAMPER		GAS COCK
	UNDERCUT DOOR		UNION
	LOUVERED DOOR		STRAINER WITH BLOWDOWN
	THERMOSTAT		RELIEF VALVE
	SENSOR		PRESSURE GAUGE
	HUMIDISTAT		THERMOMETER
	DUCT SMOKE DETECTOR		AUTOMATIC FLOW CONTROL VALVE - B&G CIRCUIT SETTER OR EQUAL
	CO2 DETECTOR		HVAC UNIT (SEE PLANS AND SCHEDULES) HVAC UNIT CLEARANCE
	CONNECT TO EXISTING		POINT OF DISCONNECTION
	KEY NOTE DESIGNATION		

MECHANICAL ABBREVIATIONS			
AFF	ABOVE FINISHED FLOOR	MC	MECHANICAL CONTRACTOR
AD	ACCESS DOOR	MOD	MOTOR OPERATED DAMPER
ATC	AUTOMATIC TEMPERATURE CONTROLS	OA	OUTDOOR AIR
BDD	BACKDRAFT DAMPER	OAI	OUTDOOR AIR INTAKE
BMS	BUILDING MANAGEMENT SYSTEM	OC	ON CENTER
BOD	BOTTOM OF DUCT	OED	OPEN ENDED DUCT
BOP	BOTTOM OF PIPE	PC	PLUMBING CONTRACTOR
CD	CEILING DIFFUSER	RA	RETURN AIR
CO	CLEANOUT	RP	RADIANT PANEL
CFM	CUBIC FEET PER MINUTE	RR	RETURN GRILLE
D	DIAMETER	RR	RETURN REGISTER
E	EXISTING	SA	SUPPLY AIR
EA	EXHAUST AIR	SG	SUPPLY GRILLE
EC	ELECTRICAL CONTRACTOR	SR	SUPPLY REGISTER
EG	EXHAUST GRILLE	TD	TRANSFER DUCT
EG	EXHAUST REGISTER	TG	TRANSFER GRILLE
FO	FLAT OVAL	WMS	WIRE MESH SCREEN
IOM	INSTALLATION AND OPERATION MANUAL	WR	WALL REGISTER

APPLICABLE CODES:

ALL WORK SHALL BE IN STRICT ACCORDANCE WITH THE LATEST CODES AND SUBCODES AS ADOPTED BY THE STATE OF NEW JERSEY:

- NEW JERSEY UNIFORM CONSTRUCTION CODE (NJUCC)
- REHABILITATION SUBCODE 523-6
- 2021 INTERNATIONAL BUILDING CODE - NJ EDITION
- 2021 INTERNATIONAL MECHANICAL CODE
- 2021 INTERNATIONAL FUEL GAS CODE
- 2019 ASHRAE 90.1 ENERGY CONSERVATION CODE
- REQUIREMENTS OF LOCAL AUTHORITY HAVING JURISDICTION

GENERAL DEMOLITION NOTES

SCOPE OF WORK

CONTRACTOR SHALL SUPPLY ALL LABOR, MATERIALS, EQUIPMENT, AND SERVICES NECESSARY TO COMPLETE ALL REMOVALS AND RENOVATION WORK AS SHOWN ON THE CONTRACT DRAWINGS AND CALLED FOR IN THE SPECIFICATIONS. THE WORK SHALL INCLUDE BUT IS NOT LIMITED TO THE FOLLOWING:

- DISCONNECT, DEMOLISH, AND REMOVE ALL EXISTING DUCTWORK, INSULATION, EQUIPMENT, AND OTHER ASSOCIATED ITEMS.
- CAPPING ALL EXISTING PIPING NOT BEING REUSED (AT THE MAINS). WHERE REMOVAL OF PIPING LEAVES OPEN CONNECTIONS, PROVIDE SCREWED CAPS OR PLUGS OR WELDED CAPS TO CLOSE SUCH CONNECTIONS.
- CAPPING ALL EXISTING DUCTWORK NOT BEING REUSED (AT THE MAINS).
- INSULATE DUCT CAPS TO MATCH THE EXISTING INSULATION.
- CAPPING ALL OPENINGS CREATED BY THE REMOVAL OF ROOFTOP HVAC EQUIPMENT. PROVIDE INSULATED CURB CAPS FOR ALL REMOVED ROOF FANS, ROOFTOP UNITS, ETC. INSULATED CURB CAPS SHALL BE BRACED FROM BELOW AND SHALL BE CAPABLE OF WITH STANDING LIVE LOAD. PROVIDE NECESSARY FLASHING AND COORDINATE WITH ROOFING CONTRACTOR AND/OR EXISTING ROOF GUARANTEE.
- PROVIDE ADDITIONAL HANGERS AND OTHER SUPPORTS AS REQUIRED BY THE REMOVAL OF EXISTING PIPING AND/OR DUCTWORK. ALL REMAINING PIPING AND/OR DUCTWORK SHALL BE SUPPORTED IN ACCORDANCE WITH THE SPECIFICATIONS.

VERIFICATION OF FIELD CONDITIONS

LOCATION, SIZE, AND DIMENSIONS OF EXISTING EQUIPMENT, PIPING, DUCTWORK, AND ACCESSORIES SHOWN ARE APPROXIMATE. NOT ALL EXISTING PIPING, DUCTWORK AND EQUIPMENT ARE SHOWN ON DRAWINGS.

CONTRACTOR SHALL VERIFY EXACT LOCATIONS AND DIMENSIONS OF EXISTING EQUIPMENT, PIPING, DUCTWORK AND ACCESSORIES IN FIELD PRIOR TO PREPARATION OF DETAILED SHOP DRAWINGS AND ANY REMOVALS AND RELOCATIONS.

SEQUENCING & SCHEDULING

CONTRACTOR SHALL COORDINATE ALL REQUIRED REMOVAL AND RELOCATIONS OF MECHANICAL SYSTEMS IN THE EXISTING BUILDING, RELATED TO NEW CONSTRUCTION, AS SHOWN ON CONTRACT DRAWINGS.

NOTE: CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLETING THE ATTACHED FORM AND SUBMITTING IT TO ALL APPROPRIATE AGENCIES. PROVIDE COMPLETED COPY TO THE OWNER FOR THEIR RECORDS. ONLINE FORM CAN BE FOUND AT:

[HTTPS://WWW.NJ.GOV/LABOR/SAFETYANDHEALTH/ASSETS/PDFS/BOILER%20AND%20PRESSURE%20VESSEL%20COMPLIANCE/BPVCINST101.PDF](https://www.nj.gov/Labor/SafetyAndHealth/Assets/Pdfs/Boiler%20and%20Pressure%20Vessel%20Compliance/BPVCINST101.PDF)

PROVIDE RELOCATIONS, REMOVALS AND RE-ROUTING OF ANY EXISTING EQUIPMENT THAT INTERFERES WITH INSTALLATION OF THE NEW EQUIPMENT. COORDINATE IN ADVANCE AND OBTAIN OWNERS APPROVAL FOR THESE RELOCATIONS, EITHER TEMPORARY OR PERMANENT.

CONTRACTOR TO REMOVE EXISTING PARTITIONS, CEILING TILES AND SUPPORTS AS NECESSARY TO PERFORM REMOVALS AND NEW INSTALLATION IN EXISTING AREAS. REINSTALL EXISTING AND REPLACE THOSE DAMAGED DUE TO THE NEW WORK.

COORDINATION WITH OWNER

THE CONTRACTOR SHALL CAREFULLY INSPECT ALL AREAS INVOLVED WITH REMOVALS AND PROVIDE THE PROPER COORDINATION AND MANPOWER REQUIRED FOR AN EFFICIENT OPERATION WITHOUT INTERFERING WITH THE BUILDING FUNCTION.

EQUIPMENT AND MATERIALS DESIRED BY THE OWNER SHALL BE DELIVERED BY THE CONTRACTOR TO AN ON-SITE STORAGE LOCATION DESIGNATED BY THE OWNER.

REMOVED EQUIPMENT AND MATERIALS NOT DESIRED BY THE OWNER SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE PROMPTLY REMOVED FROM THE SITE.

DISPOSAL OF MATERIALS REMOVED

CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL DEBRIS RESULTING FROM DEMOLITION WORK AND CONSTRUCTION FOR THIS PROJECT. THIS WILL INCLUDE, BUT NOT BE LIMITED TO PROVISIONS FOR PORTABLE CONTAINERS (DUMPSTERS) AND ALL CARTAGE AND DUMPING FEES.

THE CONTRACTOR SHALL AT ALL TIMES MAINTAIN ALL AREAS IN AND ABOUT THE WORK IN A NEAT AND SAFE CONDITION. TRASH AND OTHER WASTE RESULTING FROM THE WORK SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR. USE OF THE OWNER'S TRASH RECEPTACLES IS FORBIDDEN FOR DISPOSAL OF ANY REMOVALS, RUBBISH, OR WASTE RESULTING FROM WORK UNDER THIS CONTRACT.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR SAFE DISPOSAL AT HIS COST IN ACCORDANCE WITH ANY APPLICABLE STATE OR FEDERAL REGULATION.

THE EXISTING A O SMITH BOILERS (TOTAL 6) WHICH IS BEING USED FOR DOMESTIC HOT WATER WILL BE DELIVERED TO TWO SITES IN TRENTON AS PER OWNER'S DIRECTION.

DAMAGES

CONTRACTOR SHALL EXERCISE SPECIAL CARE NOT TO DAMAGE ANY OF THE OWNERS' FACILITIES OR EQUIPMENT WHILE PERFORMING CONSTRUCTION WORK. CONTRACTOR WILL BE HELD RESPONSIBLE FOR ANY DAMAGE THAT OCCURS.

ANY EXISTING OR NEW CONSTRUCTION THAT IS DAMAGED DURING THE COURSE OF THE

MECHANICAL WORK SHALL BE RESTORED TO ITS ORIGINAL CONDITION BY THE MECHANICAL CONTRACTOR.

CONTRACTOR SHALL PROVIDE AND INSTALL NEW INSULATION FOR ALL EXISTING DUCT THAT IS DAMAGED DUE TO THE IMPLEMENTATION OF THIS CONTRACT.

CUTTING & PATCHING

CONTRACTOR SHALL PERFORM ALL CUTTING AND PATCHING AS REQUIRED UNDER THIS CONTRACT, INCLUDING WORK DUE TO EQUIPMENT, PIPING, AND DUCTWORK REMOVALS TO MATCH ADJACENT CONSTRUCTION.

PATCH AND SEAL OPENINGS WITH APPROVED MATERIALS TO MAINTAIN EXISTING FIRE AND/OR SMOKE RESISTANCE RATINGS OF THE EXISTING STRUCTURE.

SEAL ROOF OPENINGS WEATHER AND AIR TIGHT. ALL ROOFING WORK WILL BE DONE BY AUTHORIZED ROOFER AS OUTLINED IN PROJECT DOCUMENTS.

PATCH ALL WALL, ROOF AND FLOOR OPENINGS AS NECESSARY DUE TO PIPING, DUCTWORK, OR EQUIPMENT REMOVALS TO MATCH EXISTING ADJACENT CONSTRUCTION.

RESTORING SURFACE FINISHES

WHERE CONCRETE PADS ARE REMOVED OR ATTACHMENTS TO FLOORS, WALLS, AND CEILINGS ARE REMOVED, THE FLOORS, WALLS, AND CEILINGS SHALL BE PATCHED AND FINISHED AS NECESSARY TO PROVIDE A SMOOTH FINISHED SURFACE, INCLUDING PAINT, TO MATCH THE ADJACENT FINISHES OF THE SURROUNDING AREA.

ADDITIONAL FINISHES ARE NOT PART OF THIS WORK (COMPLICATED FINISHES, WALL PAPER, ETC.).

DUCTWORK IN PARTITIONS

ALL DUCTWORK LOCATED IN EXISTING PARTITIONS CALLED TO BE DEMOLISHED MUST BE REMOVED. ALL ACTIVE DUCTWORK TO REMAIN MUST BE OFFSET IN THE CEILING BELOW AND BROUGHT UP THROUGH A NEW PARTITION WALL, OFFSET IN THE RENOVATION AREA CEILING, AND RECONNECTED TO THE EXISTING DUCTWORK IN THE CEILING. ALL INACTIVE DUCTS MUST BE CAPPED AS CLOSE TO THE MAIN AS POSSIBLE.

CONTROLS

REMOVE CONTROLS, WHICH DO NOT REMAIN AS PART OF THE BUILDING AUTOMATION SYSTEM, ALL ASSOCIATED ABANDONED WIRING AND CONDUIT, AND ALL ASSOCIATED PNEUMATIC TUBING. THE OWNER WILL INFORM THE CONTRACTOR OF ANY EQUIPMENT, WHICH IS TO BE REMOVED, THAT WILL REMAIN THE PROPERTY OF THE OWNER. ALL OTHER EQUIPMENT, WHICH IS REMOVED, WILL BE DISPOSED OF BY THE CONTRACTOR.

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HABITECH

ARCHITECTURE

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REVISIONS

NO.	DATE	DESCRIPTION

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BOILER SYSTEM REPLACEMENT

AT

RICHARD F. STACK APARTMENTS

FOR THE HOUSING AUTHORITY

OF THE CITY OF PERTH AMBOY

PERTH AMBOY, NEW JERSEY 08862

HABITECH ARCHITECTURE, LLC

Architecture and Planning

12 Pinecrest Drive

Medford, NJ 08055

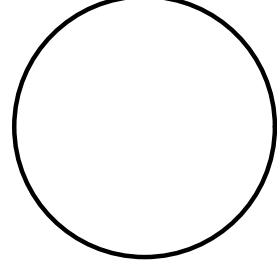
Telephone: (609) 413-2566

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LEE G. MESTRES, JR., RA ~ NJ LIC. NO. AI-12017

DATE: June 10, 2026

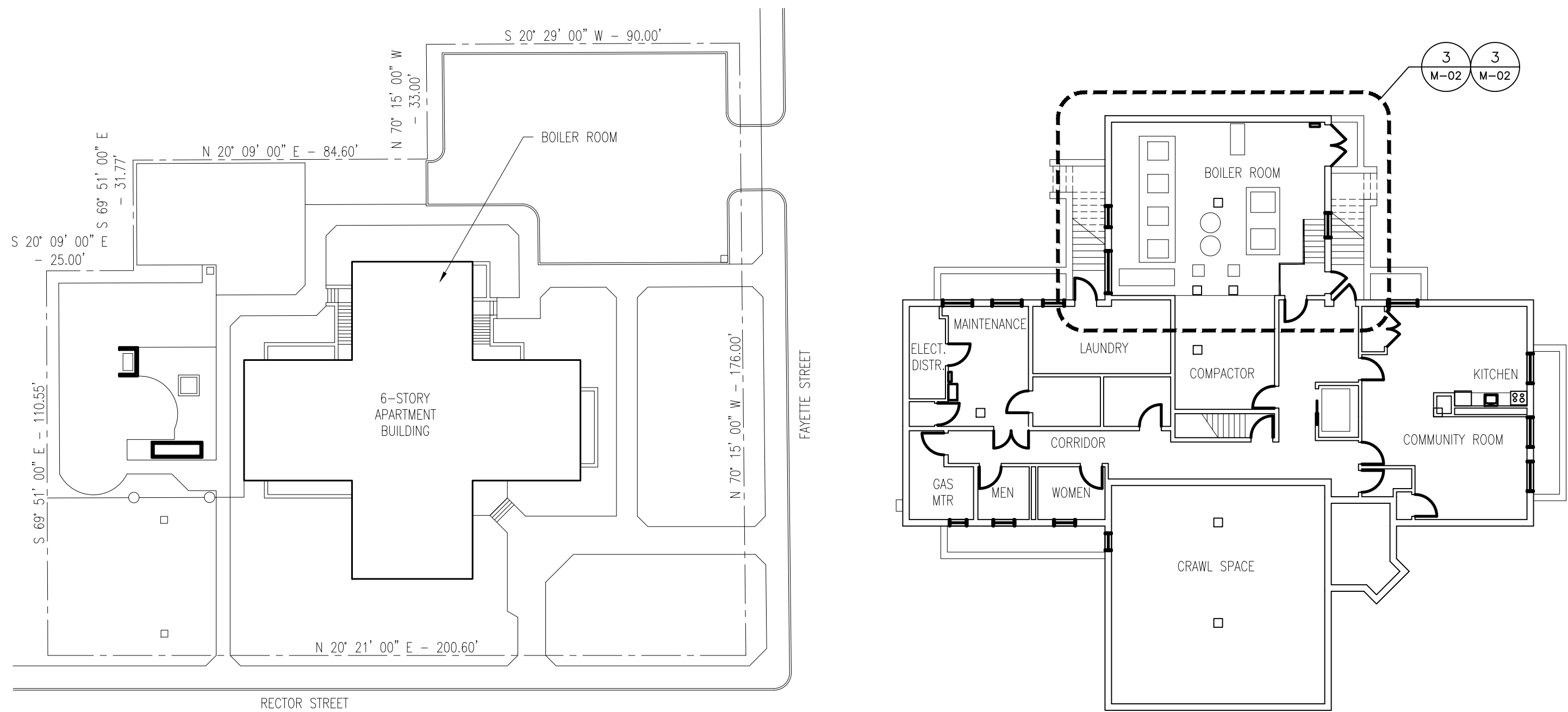


ABBREVIATIONS & SYMBOLS

GENERAL DEMOLITION NOTES

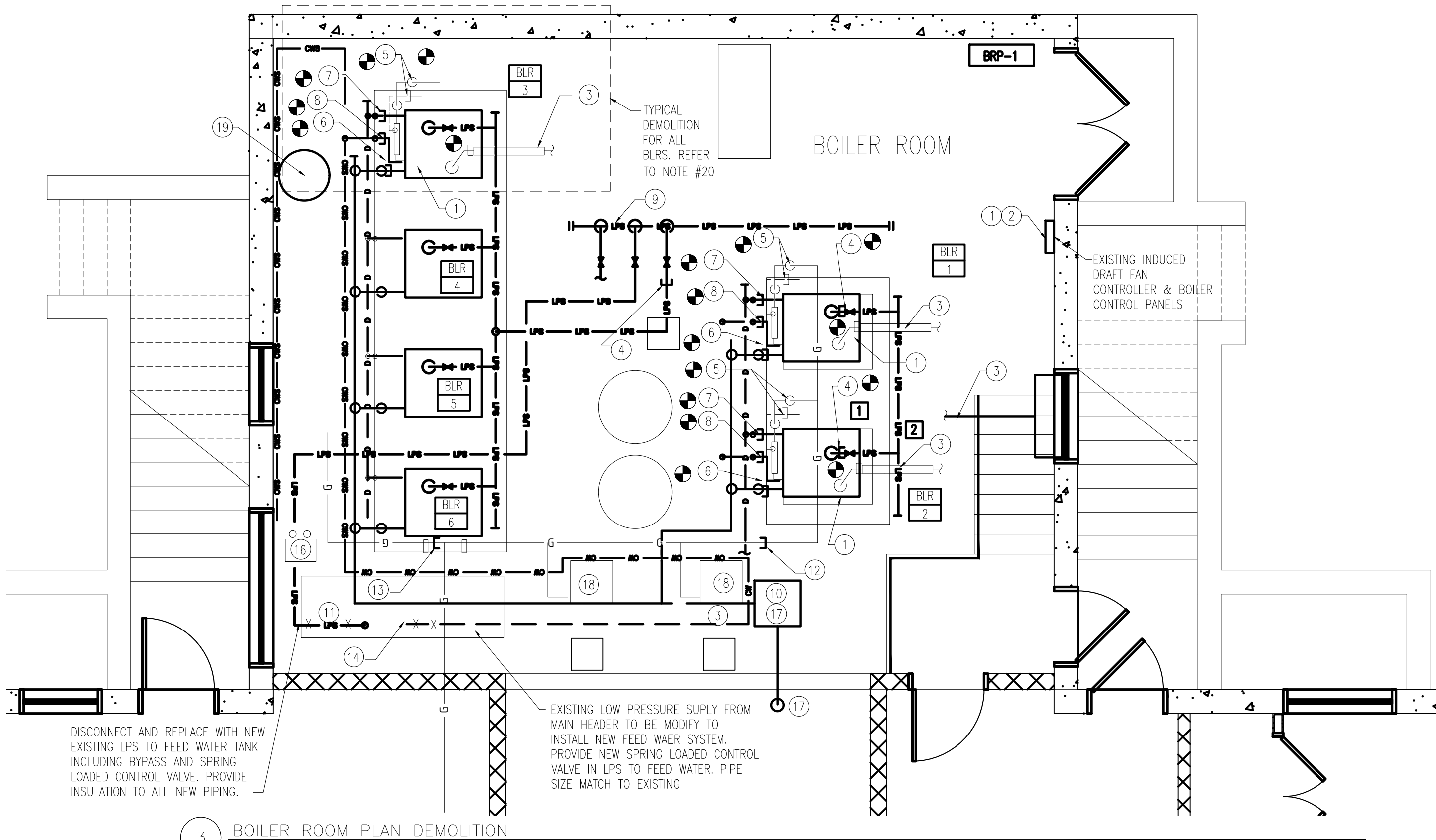
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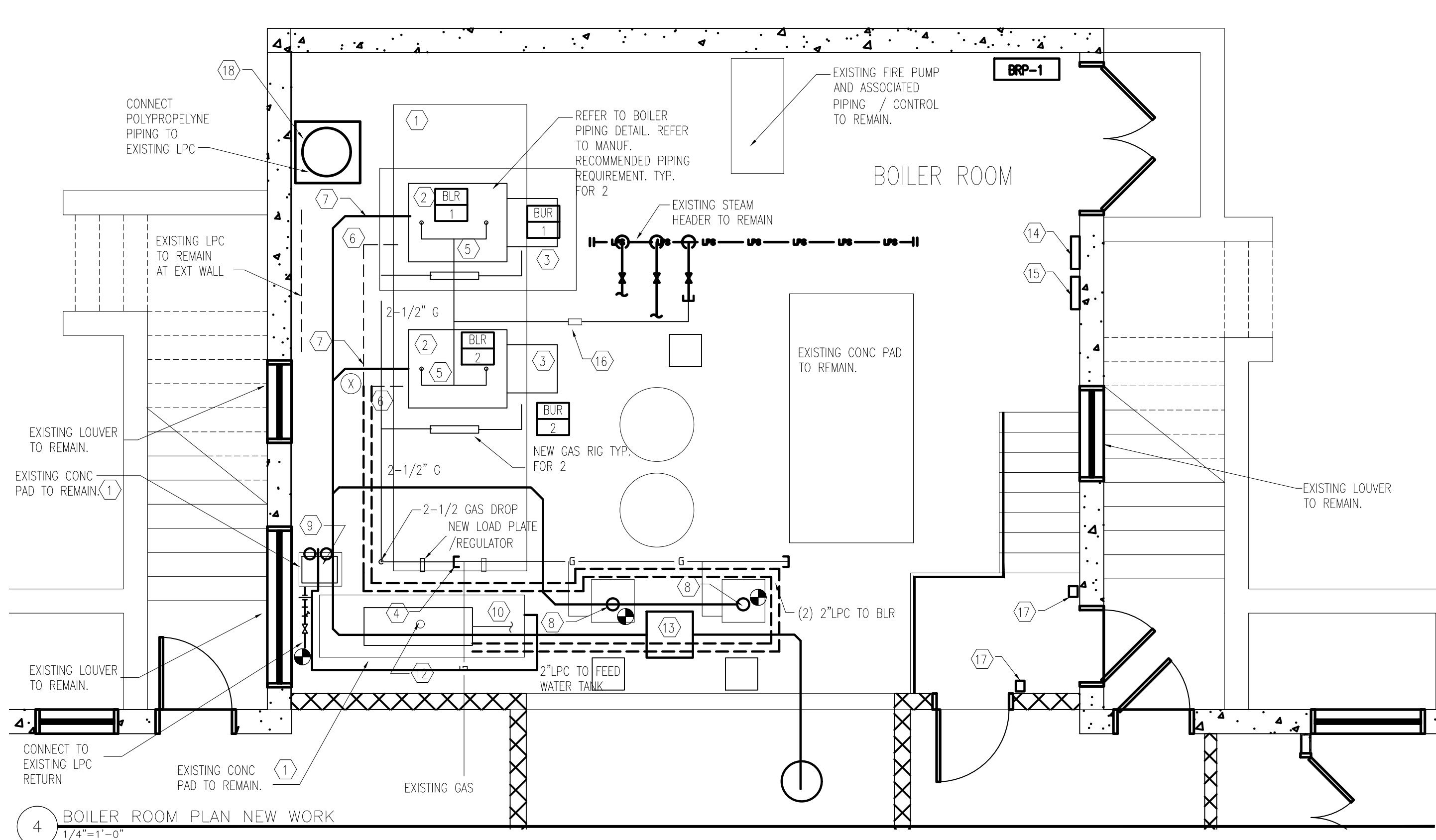
1 SITE PLAN
1"=30'-0"

2 BASEMENT PLAN
1/16"=1'-0"



3 BOILER ROOM PLAN DEMOLITION
1/4"=1'-0"

- MECHANICAL DEMOLITION KEY NOTES**
- CONTRACTOR SHALL DISCONNECT, REMOVE AND ALL ELECTRICAL CONNECTION AND ALL CONTROL WIRING TO THE MAIN FOR EXISTING FULTON MAKE 1050 MBH STEAM CONDENSING BOILER # 1, 2, 3, 4 5 & 6. ALL BOILERS WILL BE REMOVED UNDER PHASING TO PROVIDE REQUIRED HEATING.
 - REPLACE EXISTING "INDUCED DRAFT FAN" CONTROL WITH NEW CONTROLLER FOR INDUCED DRAFT FAN. PROVIDE ALL INPUT / OUTPUT POINTS AND ASSOCIATED SENSORS.
 - CONTRACTOR SHALL DISCONNECT OUTSIDE AIR TO THE BOILERS BEING REMOVED TYPICAL FOR ALL 6 BOILERS. DISCONNECT AND REMOVE EXISTING INTAKE PLENUM
 - DISCONNECT AND CAP STEAM SUPPLY AT THE TOP OF THE BOILER.
 - DISCONNECT AND CAP EXISTING GAS SUPPLY AND ASSOCIATED GAS VENT PIPE FROM REGULATOR TO EACH BOILER BEING REMOVED.
 - CONTRACTOR SHALL DISCONNECT BOILER VENT TO THE BOILERS BEING REMOVED. CONTRACTOR SHALL CAP OPENING AIR TIGHT. THE EXISTING SILENCER TO BE REMOVED.
 - DISCONNECT EXISTING DRAIN AND BLOW DOWN PIPING UP TO MAIN. CAP AT BOTH OPEN ENDS.
 - DISCONNECT AND REMOVE MAKE UP WATER CONNECTION TO THE BOILERS 1, 2 AND 3. CAP OPENINGS.
 - CONTRACTOR SHALL PROVIDE NEW STEAM PIPE INSULATION AT MAIN HEADER AS PER SPECIFICATION. CONTRACTOR SHALL REMOVE EXISTING INSULATION AT MAIN STEAM HEADER AND PROVIDE NEW INSULATION.
 - EXISTING EXHAUST FAN FOR VENTING, TO BE REPLACED.
 - DISCONNECT AND REMOVE EXISTING STEAM CONDENSATE RECEIVER TANK / BOILER FEED WATER SYSTEM AND ASSOCIATED PUMP CONTROLS. EXISTING CONCRETE PAD REMAIN. MODIFY / REPAIR FOR NEW SPECIFIED BOILER FEED WATER SYSTEM WITH NEW PUMPS.
 - DISCONNECT AND REMOVE EXISTING GAS PIPE SERVING BOILERS
 - DISCONNECT AND REMOVE EXISTING GAS BRANCH SERVING BOILERS
 - DISCONNECT AND REMOVE EXISTING CONDENSATE TO BOILER
 - EXISTING GAS METER TO REMAIN. RESET TO NEW LOAD.
 - DISCONNECT AND REMOVE EXISTING STEAM CONDENSATE RECEIVER AND PUMP(S) WITH ALL ACCESSORIES AND CONTROLS. REPLACE ALL PIPING ASSOCIATED BETWEEN CONDENSATE SYSTEM AND BOILER FEED WATER SYSTEM WITH NEW. ALL PIPING TO MATCH TO EXISTING. PROVIDE NEW INSULATION TO ALL PIPING.
 - DISCONNECT AND REMOVE EXISTING VENTING SYSTEM CONNECTED TO ALL EXISTING (6) FULTON BOILERS. EXISTING INDUCED DRAFT FAN AND CONTROLS AND ACCESSORIES. DISCONNECT AND REMOVE EXISTING (2) VENTING OF RBI DOMESTIC HOT WATER HEATERS CONNECTED TO EXISTING VENTING SYSTEM.
 - EXISTING RBI DOMESTIC HOT WATER HEATER TO REMAIN. MODIFY VENTING TO CONNECT TO NEW VENTING SYSTEM AS PROPOSED. COORDINATE PHASING WITH OWNER.
 - UNPLUG FROM ELECTRICAL RECEPTACLE AND REMOVE EXISTING CHEMICAL TREATMENT SYSTEM AND ASSOCIATED PIPING CONNECTION TO EXISTING STEAM CONDENSATE MAIN. CAP PIPE CONNECTION WITH MINIMUM 2" OF PIPE FOR FUTURE CONNECTION.
 - FOR DEMOLITION AND NEW BOILER, PLEASE COORDINATE ALL DEMOLITION AND NEW WORK WITH OWNER FOR PHASING TO PROVIDE HEATING AND DOMESTIC HOT WATER TO THE RESIDENCE.



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

- MECHANICAL NEW WORK KEY NOTES**
- CONTRACTOR SHALL INSPECT AND REPAIR EXISTING CONCRETE PAD FOR NEW PROPOSED EQUIPMENT.
 - INSTALL NEW SPECIFIED BOILERS AS SHOWN.
 - INSTALL NEW GAS FIRED BURNERS.
 - CONTRACTOR SHALL TAKE EXISTING GAS PRESSURE AT INLET OF THE SERVICE AND AT BOILER ROOM. PROVIDE APPROPRIATE GAS TRAIN SUITABLE FOR THE SPECIFIED BURNER. GAS TRAIN SIZE MUST BE LARGE ENOUGH TO PROVIDE REQUIRED GAS PRESSURE TO THE BURNER.
 - CONTRACTOR SHALL PROVIDE NEW LOW PRESSURE STEAM OUTLET WITH ISOLATION VALVE. REFER TO BOILER PIPING DETAIL FOR ADDITIONAL INFORMATION. ALL PIPING TO BE INSULATED AND TAG AS PER PROJECT SPECIFICATION.
 - CONTRACTOR SHALL PROVIDE CONDENSATE RETURN FROM BOILER FEED WATER WITH SOLENOID VALVE AND ISOLATION VALVE. ALL PIPING TO BE INSULATED AND TAG AS PER PROJECT SPECIFICATION.
 - CONTRACTOR SHALL CONNECT AND PROVIDE BOILER VENTING AS PER DETAIL SHOWN. PROVIDE CLEAN OUTS.
 - CONTRACTOR SHALL PROVIDE NEW VENTING TO EXISTING (2) RBI DOMESTIC HOT WATER HEATERS AS PER MANUF. REQUIREMENTS.
 - CONTRACTOR SHALL PROVIDE NEW DUPLEX STEAM CONDENSATE SYSTEM AS SPECIFIED. RECONNECT EXISTING STEAM CONDENSATE AND VENTING PIPING TO NEW CONDENSATE RECEIVER AND NEW DUPLEX PUMPS. REFER TO DETAIL FOR PIPING ARRANGEMENT. RECONNECT EXISTING INCOMING LPC TO THE NEW RECEIVER. ALL PIPING FROM CONDENSATE PUMP SYSTEM TO FEED WATER TANK IS NEW.
 - CONTRACTOR SHALL PROVIDE NEW BOILER FEED WATER SYSTEM AS SPECIFIED. CONNECT CONDENSATE PIPING TO NEW BOILERS. REFER TO PLAN.
 - CONTRACTOR SHALL RECONNECT EXISTING COLD WATER TO THE BOILER FEED WATER TANK. PROVIDE NEW SOLENOID VALVE AND COLD WATER METER.
 - CONTRACTOR SHALL RECONNECT VENTING FROM THE NEW BOILER FEED WATER TO EXISTING VENTING BEING DISCONNECTED FROM REMOVED EXISTING FEED WATER TANK.
 - CONTRACTOR SHALL INSTALL NEW SPECIFIED DRAFT FAN FOR VENTING SYSTEM. PROVIDE ALL AUXILIARY PARTS /SYSTEM AND CONTROL WIRING. REFER TO ONE LINE DIAGRAM.
 - CONTRACTOR SHALL CONNECT NEW BOILERS TO EXISTING HEAT TIMER CONTROL SYSTEM EXISTING HEAT TIMER CONTROL SYSTEM TO BE REPROGRAMMED FOR SPECIFIED NEW BOILERS / BURNERS.
 - CONTRACTOR SHALL PROVIDE NEW GAS MONITORING SYSTEM WITH REMOTE SENSORS.
 - PROVIDE NEW MIN 3" STEAM METER F-2630 BY UNICON. PROVIDE MANUF. RECOMMENDED INSTALLATION. PROVIDE MIN 3" STEAM BYPASS WITH ISOLATION VALVE AT STEAM METER.
 - CONNECT TO EXISTING BOILER BREAK GLASS (EMERG. SHUT DOWN SWITCH)
 - PROVIDE NEW CHEMICAL TREATMENT SYSTEM AS SPECIFIED. PROVIDE POWER TO THE NEW SPECIFIED SYSTEM. PROVIDE NEW MIN. 4" HIGH CONCRETE PAD.

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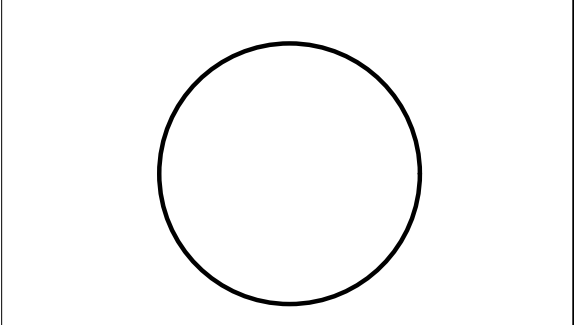
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Lee G. Mestres Jr.
LEE G. MESTRES JR., RA ~ N.J. LIC. NO. AI-12017

DATE: June 10, 2026



SITE PLAN & BASEMENT FLOOR PLAN		
BOILER ROOM DEMOLITION PLAN		
BOILER ROOM NEW WORK PLAN		
COMM NO.	N/A	DRAWING
DATE	JUNE 2026	M-02
SCALE	AS NOTED	
DRAWN BY	LGM	
CHECKED BY	LGM / JPB	3 OF 8

STEAM BOILER SCHEDULE - HPS											B 1
PLAN NO.	MANUFACTURER MODEL	AGA INPUT CFH	GROSS HEATING CAP MBH OUTPUT	BOILER HP	MAX % EFF	PRESS PSI	BURNER HP	ELECTRICAL DATA	VENT SIZE INCH DIA	OPER WEIGHT LBS	REMARKS
								VOLTS/Ø	MOP	INLET	OUTLET
B-1&2	WEIL-MCLAIN 688	1701	1420 LBS/HR	50	85	15	0.75		15	10	10
BUR-1&2	WEBSTER WJB1-G										
NOTES:											
1. PROVIDE SAFETY VALVES PIPED FULL SIZE OF BOILER CONNECTION DOWN TO TERMINATION 6" ABOVE FLOOR. 2. PROVIDE / REPAIR REINFORCED 6" THICK CONCRETE PAD. 3. VERIFY EXISTING INLET GAS PRESSURE. IF IN EXCESS OF 14" WC PROVIDE LOCKUP STYLE, ANSI Z21.80 GAS PRESSURE REGULATOR (MINIMUM 10"-0" UPSTREAM OF BOILER CONNECTION). EXTEND REGULATOR VENT FULL SIZE TO EXTERIOR. MAINTAIN MINIMUM 10"-0" FROM ALL INTAKES. 4. INTEGRATE NEW BOILER/BURNER WITH NEW BOILER FEED UNIT AND TIE TO NEW EMERGENCY BURNER SWITCHES. BURNER HAS BACNET PROTOCOL INTERFACE. 5. BOILER COMES WITH WEBSTER GAS BURNER AND FIREYE WXF4000 CONTROLLER. PROVIDE NEW GAS TRAIN WITH NEW BURNER. 6. PROVIDE AND INSTALL GAS VENTS, AS REQUIRED, FROM REGULATORS AND GAS TRAINS TO EXTERIOR. TERMINATE AS PER IFGC. 7. PROVIDE ASME CSD-1 CONTROLS & SAFETY DEVICES FOR AUTOMATICALLY FIRED BOILERS. 8. BURNER: WEBSTER MODEL# WJB1-G07, COMBUSTION CONTROL RM7896A, BURNER MOTOR 3/4@ 1201-60. GAS CONTROL VALVE - MANUAL WITH COMBINATION OPERATING GAS VALVE AND REGULATOR, SAFETY GAS VALVE,MANUAL CHECKING GAS VALVE. BURNER MIN GAS PRESSURE 6.00"W.C., PRESSURE DROP THRU GAS TRAIN NOT MORE THAN 2.0" W.C.											

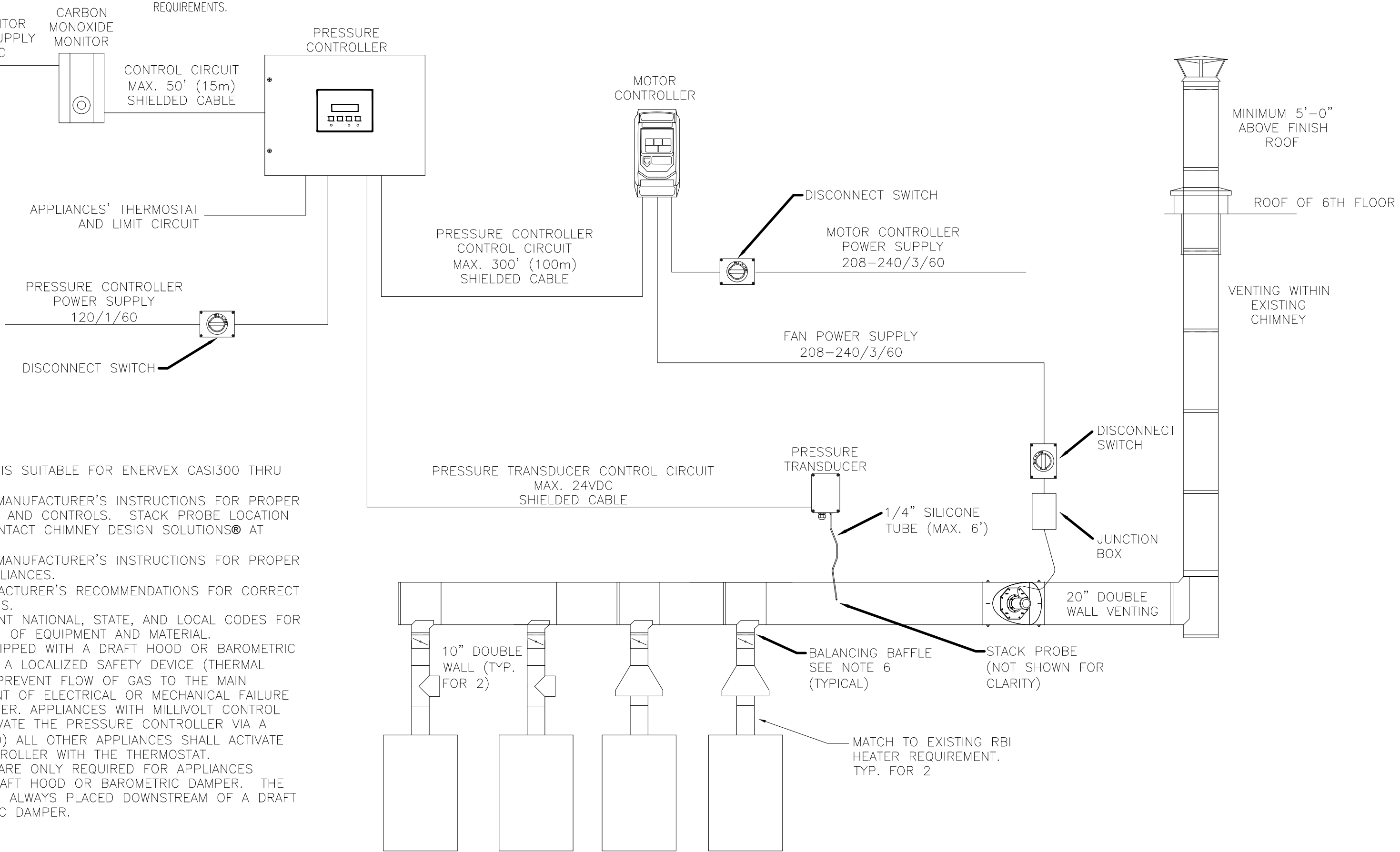
DUPLEX CONDENSATE PUMP WITH RESERVOIR SCHEDULE											CP X	
PLAN NO	EQUIPMENT SERVED	MANUFACTURER MODEL	GPM	PSIG	RESERVOIR SIZE GAL	MOTOR HP (EACH)	ELECTRICAL DATA	PIPING CONNECTIONS				REMARKS
							VOLTS/Ø	INLET NPT	OVERFLOW NPT	VENT NPT	DRAIN NPT	
CP-1	SEE PLAN	1LPS22 LOW PROFILE	8	20	40	1/3	120/1	2"	1-1/4"	1-1/4"	1-1/2"	SEE NOTES
NOTES:												
1. PROVIDE BUILT-IN CHECK VALVE, SQ-D DUPLEX ALTERNATING FLOAT SWITCH, BOTH PUMP CAN RUN HIGH LEVEL.												
2. PROVIDE SAFETY SWITCH AND CONNECT TO ASSOCIATED MECHANICAL EQUIPMENT TO SHUTDOWN ON HIGH LEVEL.												
3. PROVIDE HARD WIRED FOR ALL UNITS.												
4. ALL PUMP SHALL BE UL 2043 AND LABELED "FOR PLENUM APPLICATION".												
5. WATER GLASS GAUGE, WATER STORAGE THERMOMETER.												
6. BUTTERFLY TYPE TANK / PUMP ISOLATION VALVES.												
7. PUMPS ARE MOUNTED ON TANK.												

BOILER FEED UNIT SCHEDULE		BFI 1
BOILER FEED SYSTEM: TAG: BFFP-1 QUANTITY: 1 FABTEK MODEL: HT-100 TANK SIZE: 250 GALLON DIMENSIONS: 36" D X 60" L RECEIVER MATERIAL: RECEIVER MATERIAL: 304 STAINLESS STEEL MOUNTED TO FLOOR WITH STAINLESS STEEL SADDLES STANDARD TANK TRIM TRIM: SS SITE GAUGE ASSEMBLY, 3" SS DIAL THERMOMETER PUMPS: PUMP MANUFACTURER: PUMP MODEL: 30505C4AB-F VFM (VERTICAL FLANGE MOUNT CENTRIFUGAL) PUMPS CLOSE COUPLED TO ¾ HP 208V THREE PHASE TEFC MOTOR PUMP QUANTITY: 3 (ONE STAND BY) PUMP MOTOR RATING: 12.42 GPM @ 15 PSIG PUMPS TO BE MOUNTED TO SHELL OF TANK WITH STAINLESS STEEL ISOLATION VALVES MAKE-UP: ELECTRONIC MAKE-UP FLOAT SWITCH SIZE: 3/4" SOLENOID / FLOAT SWITCH FLOAT SWITCH PART NUMBER: EMU-34 UL LISTED CONTROL PANEL: PANEL MODEL: MW-FT208-3P-TPX-NSS-N3R-A2HL PANEL TYPE: TRIPLEX CONTROL PANEL - NORMAL SERVICE SELECTOR SWITCH VOLTAGE: 208V 3/ 60 ENCLOSURE: NEMA N3R STANDARD COMPONENTS: MOTOR STARTERS & OVERLOADS, INDIVIDUAL PUMP CIRCUIT BREAKERS, ELECTRIC ALTERNATOR, HOA SELECTOR SWITCHES AND PUMP RUN INDICATOR LIGHTS MOUNTING: MOUNTED & WIRED ALARM: HIGH & LOW LEVEL ALARM CIRCUITS LOW WATER CUT-OFF TYPE: TYPE 9 316 SS LOW LEVEL ALARM SWITCH HIGH WATER ALARM TYPE: TYPE 9 316 SS HIGH LEVEL ALARM SWITCH		REMARKS: PROVIDE WATER LEVEL GAUGE WITH SHUTOFF VALVE. PROVIDE DIAL THERMOMETER. PROVIDE INLET BASKET STRAINER. PROVIDE DISCHARGE PRESSURE GAUGES. PROVIDE SUCTION BUTTERFLY VALVE. PROVIDE FLOAT SWITCH AND SOLENOID VALVE WITH "Y" STRAINER TO ADD MAKE-UP WATER ON LOW LEVEL. PROVIDE MAGNETIC STARTERS - FACTORY INSTALLED & WIRED. PROVIDE DISCONNECT SWITCHES AND CIRCUIT BREAKERS. PROVIDE SELECTOR SWITCHES: OFF-HAND-LEAD-LAG. PROVIDE PUMP RUNNING PILOT LIGHT. PROVIDE AUDIBLE ALARM TO INDICATE HIGH & LOW LEVEL ALARM. A SEPARATE TANK MOUNTED LEVEL SWITCH SHALL BE PROVIDED WITH AN ALARM. PROVIDE 3-VALVE BY-PASS ASSEMBLY AROUND SOLENOID MAKE-UP WATER VALVE. PROVIDE CHECK VALVE AT EACH PUMP. PROVIDE CONTROL POWER TRANSFORMER. PROVIDE CONTROL POWER SWITCHING RELAY WHICH MAINTAINS CONTROL POWER TO THE WATER MAKEUP SYSTEM IN THE EVENT PUMP #1 DISCONNECT SWITCH IS TURNED OFF OR PUMP #1 FAILS. IN THIS EVENT, THE CONTROL POWER WILL BE AUTOMATICALLY SUPPLIED TO PUMP #2. PROVIDE DEDUCT ALTERNATE PRICE FOR REPLACEMENT OF THE EXISTING STEAM CONDENSATE PUMP UNIT WITH PUMPS.

CHEMICAL TREATMENT SYSTEM	
E W MAKE : FULTON DIMENSIONS: 23" DIA X 47" HEIGHT SYSTEM CAPACITY: 50 GALLONS W/ LID OPERATING WEIGHT (FULL) : 500 LBS PUMP RATED PRESSURE: 150 PSI PUMP OUTPUT: 0.6 GPH PUMP ELECTRICAL: 120 VAC PUMP DISCHARGE PIPING: ½" POLYPROPYLENE TUBING COMPONENTS: 50 GALLON POLYPROPYLENE TNK W/ LID PROPORTIONAL CHEMICAL METERING PUMP (EWN-B11PEUR) TANK AGITATOR W/ STAINLESS STEEL AGITATOR SET OF SUCTION / DISCHARGE TUBING INCLUDING QUILL WATER METER WITH REED SWITCH SENSOR	METERING PUMP MOTOR HZS: 60 VOLTAGE: 120 AMPS DRAW : 0.8 AMPS MAX. POWER REQUIREMENT : 80 WATTS AGITATOR SPECIFICATION: MOTOR SPEED: 1550 MOTOR VOLTAGE: 115 MOTOR AMOS: 2.3 MAX. IMPELLER MATERIAL: 303 STAINLESS STEEL SHAFT: 32" STAINLESS STEEL

INDUCED DRAFT FAN FOR BOILERS		IDF 1
MARK No. LOCATION AREA SERVED MANUFACTURER MODEL No.	IDF-1 MER -BASEMENT HOT WATER SYSTEM ENERVAX TDF 300 / 321.0908.200 (EDRW)	
FAN DATA: NEMA RATING DRIVE MIN. / MAX. OPERATING TEMP.	4X / IP66 ECM, PERMANENT MAGNET -4 / 104	
MOTOR DATA: POWER MAX INPT CURRENT	1.5 KW / 2 HP 9.5	
MOTOR RATING:		
MOTOR EFFICIENCY CLASS TEMPERATURE CLASS NEMA /P RATING MAX. CURRENT MAX. SPEED POWER KW /HP TORQUE-Nm	IE 5 H 3S /PS4 6.7 AMPS 3160 1.5 / 2.0 6	
MOTOR OPERATING SETTING FAN SPEED MAX. TORQUE Nm	2200 5	
Edrive WEIGHT WEIGHT	LBS LBS	10 100
ACCESSORIES PROVIDE VIBRATION ISOLATORS AND HANGERS. PROVIDE DISCONNECT SWITCH		

DRAWING NOTES	
1.	WIRING INFORMATION IS SUITABLE FOR ENERVEX CASI300 THRU CASI500
2.	FOLLOW EQUIPMENT MANUFACTURER'S INSTRUCTIONS FOR PROPER INSTALLATION OF FAN AND CONTROLS. STACK PROBE LOCATION IS JOB SPECIFIC; CONTACT CHIMNEY DESIGN SOLUTIONS@ 800-685-7077.
3.	FOLLOW EQUIPMENT MANUFACTURER'S INSTRUCTIONS FOR PROPER INSTALLATION OF APPLIANCES.
4.	FOLLOW VENT MANUFACTURER'S RECOMMENDATIONS FOR CORRECT INSTALLATION METHODS.
5.	FOLLOW ALL PERTINENT NATIONAL, STATE, AND LOCAL CODES FOR PROPER INSTALLATION OF EQUIPMENT AND MATERIAL.
6.	ALL APPLIANCES EQUIPPED WITH A DRAFT HOOD OR BAROMETRIC DAMPER SHALL HAVE A LOCALIZED SAFETY DEVICE (THERMAL SAFETY SWITCH) TO PREVENT FLOW OF GAS TO THE MAIN BURNER IN THE EVENT OF ELECTRICAL OR MECHANICAL FAILURE OF THE DRAFT INDUCER. APPLIANCES WITH MILLIVOLT CONTROL SYSTEMS SHALL ACTIVATE THE PRESSURE CONTROLLER VIA A CONTROL KIT (CK-20) ALL OTHER APPLIANCES SHALL ACTIVATE THE PRESSURE CONTROLLER WITH THE THERMOSTAT.
7.	BALANCING BAFFLES ARE ONLY REQUIRED FOR APPLIANCES EQUIPPED WITH A DRAFT HOOD OR BAROMETRIC DAMPER. THE BALANCING BAFFLE IS ALWAYS PLACED DOWNSTREAM OF A DRAFT HOOD OR BAROMETRIC DAMPER.



PART 1 - BREECING, CHIMNEY & STACKS

1.1 SCOPE ALL-IN-ONE UNIVERSAL CHIMNEY SYSTEM

A. THE MANUFACTURER SHALL PROVIDE FACTORY-BUILT MODULAR UNIVERSAL CHIMNEY SYSTEM TESTED AND LISTED BY UNDERWRITERS LABORATORIES INC. (UL) FOR USE WITH SIX DIFFERENT UL STANDARDS RANGING FROM BUILDING HEATING APPLIANCES CHIMNEYS (PRESSURE STACKS), SPECIAL GAS VENTS, AND LOW TEMPERATURE OIL-FIRED APPLIANCES. UL LISTINGS SHALL INCLUDE:

- UL 2561 STANDARD FOR 1400 DEGREE FAHRENHEIT FACTORY-BUILT CHIMNEYS.
- 1400°F CONTINUOUS AND 1800°F INTERMITTENT.
- GASEOUS, SOLID, OR LIQUID FUELS AS DESCRIBED IN NFPA 211.
- UL 103 STANDARD FOR FACTORY-BUILT CHIMNEYS FOR RESIDENTIAL TYPE AND BUILDING HEATING APPLIANCES.
- 1000°F CONTINUOUS AND 1400°F INTERMITTENT.
- GASEOUS, SOLID, OR LIQUID FUELS AS DESCRIBED IN NFPA 211.
- UL 103 ADDITIONAL POSITIVE PRESSURE TEST (60 INCHES W.C.)
- UL 1738 STANDARD FOR VENTING SYSTEMS FOR GAS-BURNING APPLIANCES, CATEGORIES II, III, AND IV.
- VENT SYSTEMS FOR USE WITH LISTED CATEGORY II, III, AND IV APPLIANCES.
- UL 441 STANDARD FOR GAS VENTS.
- VENT SYSTEMS FOR USE WITH LISTED CATEGORY I APPLIANCES, LISTED APPLIANCES EQUIPPED WITH A DRAFT HOOD, AND APPLIANCES LISTED FOR USE WITH TYPE B GAS VENT.
- UL 641 STANDARD FOR TYPE L LOW-TEMPERATURE VENTING SYSTEMS.
- VENTING SYSTEMS FOR USE WITH GAS AND LIQUID FUEL-BURNING APPLIANCES THAT EXHAUST LOW-TEMPERATURE FLUE GASES AND THAT ARE APPROVED FOR USE WITH TYPE L VENTING SYSTEMS.

B. THE MANUFACTURER SHALL PROVIDE FACTORY-BUILT MODULAR UNIVERSAL CHIMNEY LINER TESTED AND LISTED BY UNDERWRITERS LABORATORIES INC. (UL) FOR USE WITH FOUR DIFFERENT UL STANDARDS RANGING FROM BUILDING HEATING APPLIANCES CHIMNEYS (PRESSURE STACKS), SPECIAL GAS VENTS, LOW TEMPERATURE OIL-FIRED APPLIANCES, AND CHIMNEY LINERS. UL LISTINGS SHALL INCLUDE:

- UL 103 STANDARD FOR FACTORY-BUILT CHIMNEYS FOR RESIDENTIAL TYPE AND BUILDING HEATING APPLIANCES.
- UL 103 ADDITIONAL POSITIVE PRESSURE TEST (60 INCHES W.C.)
- UL 1738 STANDARD FOR VENTING SYSTEMS FOR GAS-BURNING APPLIANCES, CATEGORIES II, III, AND IV.
- UL 1777 STANDARD FOR CHIMNEY LINERS.

C. THE BASIS OF DESIGN IS ENERVEX. ACCEPTABLE MANUFACTURERS ARE LIMITED TO JEREMIAS.

1.2 CONSTRUCTION

A. THE CHIMNEY SYSTEM SHALL BE CONSTRUCTED OF STAINLESS STEEL. THE MATERIALS AND CONSTRUCTION OF MODULAR SECTIONS AND ACCESSORIES SHALL BE AS SPECIFIED BY THE TERMS OF THE PRODUCTS' UL LISTING.

- THE INNER WALL MATERIAL SHALL BE 316L-PCM STAINLESS STEEL.
- THE OUTER JACKET MATERIAL SHALL BE 304 STAINLESS STEEL; THE OUTER JACKET IS NOT REQUIRED FOR THE LINER.
- THE INSULATION BETWEEN THE INNER WALL AND OUTER JACKET SHALL BE ONE-INCH-THICK CERAMIC FIBER INSULATION; INSULATION IS NOT REQUIRED FOR THE LINER.
- THE ENTIRE CHIMNEY SYSTEM, INCLUDING ALL ACCESSORIES (CONNECTORS, HARDWARE, ANCHOR PLATE SUPPORTS, GUIDES, DRAINS, AND TERMINALS), SHALL BE STAINLESS STEEL.

B. THE CHIMNEY SYSTEM SECTIONS AND FITTINGS SHALL BE JOINED BY CLAMPING A U BAND OVER THE MATING MALE-FEMALE FLANGES OF ADJACENT COMPONENTS; THE MALE FLANGE CONNECTION SHALL HAVE AN INTEGRATED GRAPHITE SEAL, SILICONE GASKETS AND SILICONE SEALANT AT SECTION JOINTS ARE NOT ACCEPTABLE. ALL JOINTS SHALL HAVE MALE-FEMALE CONNECTIONS; CHIMNEY SYSTEMS WITHOUT MALE-FEMALE CONNECTIONS ARE NOT ACCEPTABLE. ALL TEES SHALL BE LATERAL (45°) TEES; BOOT TEES AND 90° TEES ARE NOT ACCEPTABLE.

C. THE CHIMNEY SYSTEM SHALL BE DESIGNED TO COMPENSATE FOR ALL TEMPERATURE INDUCED THERMAL EXPANSION, INSTALLED TO BE GASTIGHT, AND THUS PREVENT LEAKAGE OF COMBUSTION PRODUCTS INTO A BUILDING. THE CHIMNEY SYSTEM'S ADJUSTABLE LENGTHS SHALL BE RATED FOR 1400°F AND 60 INCHES W.C.

D. THE CHIMNEY SYSTEM IS BASED UPON ENERVEX EPS1; THE LINER IS BASED UPON ENERVEX EPS.

E. DETAILED MANUFACTURER'S SUBMITTAL DRAWINGS SHALL BE PROVIDED FOR APPROVAL PRIOR TO INSTALLATION OF THE CHIMNEY SYSTEM.

PART 2 - EXECUTION

2.1 INSTALLATION

A. WHEN INSTALLED ACCORDING TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS, THE CHIMNEY SYSTEM AND ITS SUPPORTING SYSTEM SHALL RESIST SIDE LOADS AT LEAST 1.5 TIMES GREATER THAN THE WEIGHT PER FOOT OF THE PIPING FOR BOTH HORIZONTAL AND VERTICAL PORTIONS OF THE SYSTEM.

B. THE CHIMNEY SYSTEM SHALL BE INSTALLED ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS AND SHALL CONFORM TO ALL APPLICABLE STATE AND LOCAL CODES.

C. PROVIDE ALL MODULAR STRAIGHT SECTIONS, FITTINGS, SUPPORTS, GUIDES, EXPANSION JOINTS, GUY SECTIONS, GUY TENSIONERS, ROOF THIMBLES, ROOF FLASHINGS, STORM COLLARS AND STACK CAP TERMINATIONS AS REQUIRED TO PROVIDE A COMPLETE SYSTEM PER THE MANUFACTURER'S INSTRUCTIONS.

D. THE ENTIRE CHIMNEY SYSTEM FROM THE APPLIANCE OUTLET TO THE TERMINATION POINT, INCLUDING ALL ACCESSORIES, EXCEPT AS NOTED, SHALL BE FROM ONE MANUFACTURER.

E. THE VERTICAL TERMINATION SHALL BE NO LESS THAN TWO FEET ABOVE ANY PORTION OF THE BUILDING WITHIN TEN FEET OF THE STACK PENETRATION. FOLLOW ALL PERTINENT NATIONAL, STATE, AND/OR LOCAL CODES WHERE APPLICABLE.

F. ROOF PENETRATIONS SHALL BE SUITABLE FOR THE SPECIFIED ROOF CONSTRUCTION AND SHALL COMPLY WITH THE MANUFACTURER'S INSTRUCTIONS.

PART 3 - WARRANTY

3.1 WARRANTY

A. THE CHIMNEY SYSTEM SHALL BE WARRANTED AGAINST FUNCTIONAL FAILURE DUE TO DEFECTS IN MATERIAL AND MANUFACTURER'S WORKMANSHIP FOR A PERIOD OF 15 YEARS FROM DATE OF INSTALLATION.

B. THE INNER DIAMETER OF THE CHIMNEY SYSTEM SHALL BE VERIFIED BY THE MANUFACTURER'S VENTING COMPUTATIONS. THE COMPUTATIONS SUBMITTED SHALL FOLLOW ASHRAE CALCULATION METHODS AND SHALL INCORPORATE THE SPECIFIC FLOW CHARACTERISTICS OF THE INNER PIPE. THE CONTRACTOR SHALL FURNISH THE EXACT OPERATING CHARACTERISTICS OF ALL APPLIANCES TO THE FACTORY REPRESENTATIVE.

C. THE MANUFACTURER SHALL PROVIDE TO SCALE DRAWINGS DEPICTING THE ACTUAL LAYOUT. THE CHIMNEY SYSTEM SHALL BE INSTALLED AS DESIGNED BY THE MANUFACTURER AND IN ACCORDANCE WITH THE TERMS OF THE MANUFACTURER'S WARRANTY.

D. THE CHIMNEY SYSTEM SHALL BE FURNISHED BY A VENDOR ORGANIZATION THAT ASSURES DESIGN, INSTALLATION AND SERVICES COORDINATION. AS WELL AS, PROVIDING "IN-WARRANTY" AND "POST-WARRANTY" UNIFIED RESPONSIBILITY FOR OWNER, ARCHITECT, CONSULTING ENGINEER AND CONTRACTOR.

PART 4 - PRODUCTS

4.1 MANUFACTURERS

A. PRODUCT SPECIFICATION REQUIREMENTS SHALL BE MET BY USING, ENERVEX EPS1/EPS OR EQUIVALENT AS APPROVED BY THE ENGINEER. CONTACT CHIMNEY DESIGN SOLUTIONS, INC. AT 212-685-7077 OR 973-427-8600. EQUIVALENT SUBMITTALS SHALL SPECIFY MANUFACTURER'S MODEL NUMBER, OTHER PERTINENT IDENTIFICATION, AND ATTEST THAT THE ALTERNATE MATERIAL IS IN COMPLIANCE WITH ALL SPECIFICATION REQUIREMENTS.

- A. DESCRIPTION:
THE CASI CONSISTS OF A SINGLE TDF POWER VENTER, AN EBC31 PRESSURE CONTROL WITH DIFFERENTIAL PRESSURE TRANSDUCER, AND AN EDRIE MOTOR CONTROLLER. THE EBC31 MAINTAINS A CONSTANT PRESSURE FOR THE HEATING APPLIANCES BY MODULATING THE SPEED OF THE POWER VENTER VIA THE MOTOR CONTROLLER. THE CASI IS SUPPLIED AS A COMPLETE PACKAGE WITH POWER VENTER, DISCONNECT, PRESSURE CONTROL, MOTOR CONTROLLER, DIFFERENTIAL PRESSURE TRANSDUCER, CARBON MONOXIDE MONITOR, STACK PROBE, AND BALANCING BAFFLES (AS REQUIRED).
- B. OPERATION:
DURING INSTALLATION THE EBC31 AUTOMATICALLY DETECTS CONNECTIONS. SETTING REQUIREMENTS AND ANY ADD-ON DEVICES. THE PLANNED PRESSURE SETTING MUST BE ENTERED MANUALLY VIA THE CONTROL PANEL. AFTER THESE STEPS HAVE BEEN TAKEN, THE CONTROL WILL KEEP THE SETTINGS IN MEMORY. MANY OTHER FUNCTIONS CAN BE PROGRAMMED IN THE FIELD.
- C. EACH APPLIANCE IS INTERLOCKED WITH THE CONTROL. A CALL FOR HEAT ACTIVATES THE POWER VENTER AND RELEASES THE APPLIANCES ONCE AN ADEQUATE, PRE-SET PRESSURE IS ESTABLISHED. THE SEQUENCE IS REPEATED EVERY TIME A NEW APPLIANCE CALLS FOR HEAT. UNDER A HIGH LOAD DEMAND THE POWER VENTER MODULATES TO MAINTAIN THE PROPER PRESSURE. WHEN AN APPLIANCE SHUTS DOWN, THE POWER VENTER WILL SLOW DOWN WHILE STILL MAINTAINING THE PRESSURE SETTING. WHEN THE LAST APPLIANCE SHUTS DOWN THE POWER VENTER WILL OPERATE IN POST-PURGE MODE FOR A PRESET TIME PERIOD.
- D. IF THE PROPER PRESSURE CANNOT BE MAINTAINED DUE TO A POWER OR MECHANICAL FAILURE, THE INTEGRATED PROVEN DRAFT FUNCTION WILL SHUT DOWN THE ENTIRE SYSTEM. DURING A FOLLOWING CALL FOR HEAT, THE OPERATING PRIORITY FUNCTION WILL DETECT IF ONE OR MORE APPLIANCES CAN BE OPERATED SAFELY. IF SO, THE APPLIANCE WILL BE ABLE TO OPERATE WITHOUT POWER VENTER OPERATION. THE EBC31 WILL ALLOW AS MANY APPLIANCES TO OPERATE AS LONG AS A SAFE PRESSURE IS AVAILABLE IN THE CHIMNEY/VENT SYSTEM. AFTER TWO HOURS, THE EBC31 VERIFIES POWER VENTER OPERATION AND, IF PRESENT, THE EBC31 WILL GO BACK TO NORMAL OPERATION. OTHERWISE, THE EBC31 WILL CONTINUE TO OPERATE IN OPERATING PRIORITY MODE; THE SELF-CHECK IS REPEATED EVERY TWO HOURS INFINITELY. DURING A PERIOD WITHOUT POWER VENTER OPERATION, THE CONTROL IS IN ALARM MODE TO NOTIFY THE BUILDING.
- E. THE CARBON MONOXIDE (CO) DETECTOR ACTIVATES AN AUDIBLE ALARM (RATED AT NO LESS THAN 85DB AT A DISTANCE OF THREE FEET) WHEN CO LEVELS REACH 50PPM. THE CO DETECTOR DEACTIVATES THE CONNECTED EQUIPMENT WHEN CO LEVELS REACH 100PPM. A NORMALLY OPEN (NO) CONTACT IS AVAILABLE WITHIN THE EBC31 TO ACTIVATE A VISUAL OR AUDIBLE ALARM (BY OTHERS).
- F. IF THE POWER VENTER HAS BEEN OUT OF COMMISSION FOR SEVEN DAYS, THE BEARING CYCLE ACTIVATION FUNCTION WILL OPERATE THE POWER VENTER AT A LOW SPEED FOR A SHORT TIME. THIS IS AUTOMATICALLY REPEATED EVERY SEVEN DAYS.
- G. ANY ERRORS DETECTED DURING OPERATION ARE ACCESSIBLE VIA THE EBC31'S INTERFACE.
- H. NUMBER, OTHER PERTINENT IDENTIFICATION, AND ATTEST THAT THE ALTERNATE MATERIAL IS IN COMPLIANCE WITH ALL SPECIFICATION REQUIREMENTS.

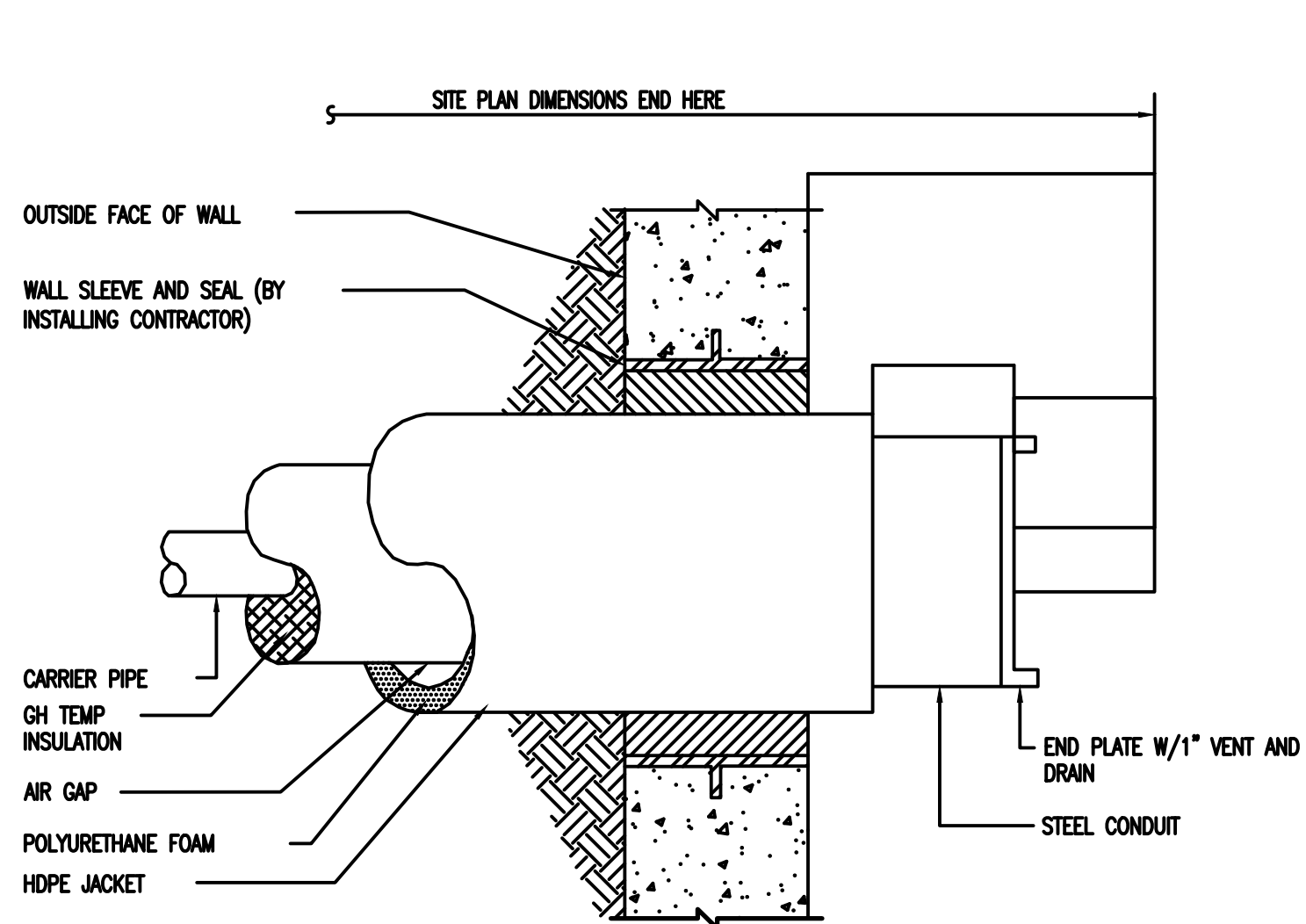
COMBUSTION AIR CALCULATION	
FUEL INPUT SUMMARY	
EQUIPMENT BOILER #1 & 2 HOT WATER HEATER DHWH-1&2	INPUT_MBH 3420 INPUT 800
2021 INTERNATIONAL FIRE CODE\SECTION 304.6.2	
SECTION 304.6.2 ONE PERMANENT OPENING DIRECTLY COMMUNICATING WITH OUTDOOR.	
ONE OPENING SHALL BE PROVIDED TO THE OUTDOORS, ONE WITHIN 1 FOOT OF THE CEILING OF TH ROOM.	
SECTION 703.1.2: DIRECT OPENINGS (LOUVERS)	
NET FREE AREA REQUIRED (EACH OPENING) = (1 SQ. IN./3,000 BTUH) X 4220 MBH INPUT (MBH/1000 BTUH)(144 SQ. IN./SQ. FT.)	
NET FREE AREA REQUIRED (EACH OPENING) = 9.8 SQ. FT.	
ACTUAL FREE AREA PROVIDED CONSIDERING 50% FREE AREA = 13.0 SQ. FT.	

BOILER SYSTEM REPLACEMENT	
AT	
RICHARD F. STACK APARTMENTS	
FOR THE HOUSING AUTHORITY	
OF THE CITY OF PERTH AMBOY	
PERTH AMBOY, NEW JERSEY 08862	
HABITECH ARCHITECTURE, LLC Architecture and Planning	
12 Pinecrest Drive Medford, NJ 08055	
Telephone: (609) 413-2566 Email lgmestres@gmail.com	

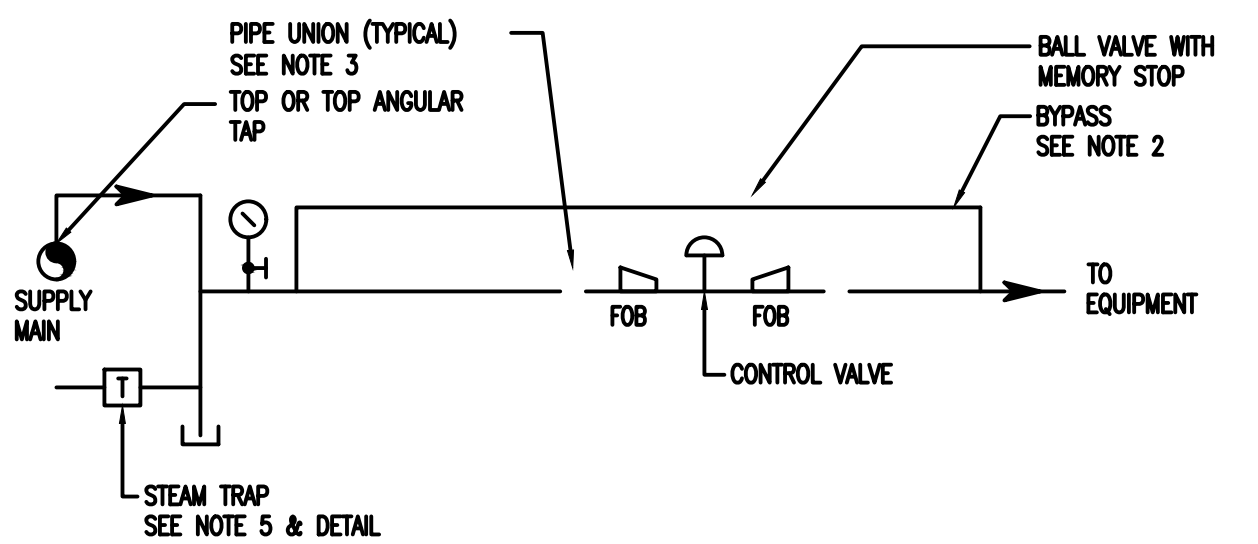
LEE G. MESTRES JR., RA ~ NJ LIC. NO. A1-12017

DATE: June 10, 2026

SCHEDULES & BREECING SPECIFICATIONS	
COMBUSTION AIR CALCULATIONS	
ENERVAX SCHEMATIC	
COMM NO. N/A	DRAWING
DATE JUNE 2026	M-03
SCALE AS NOTED	
DRAWN BY LGM	
CHECKED BY LGM / JPB	4 OF 8

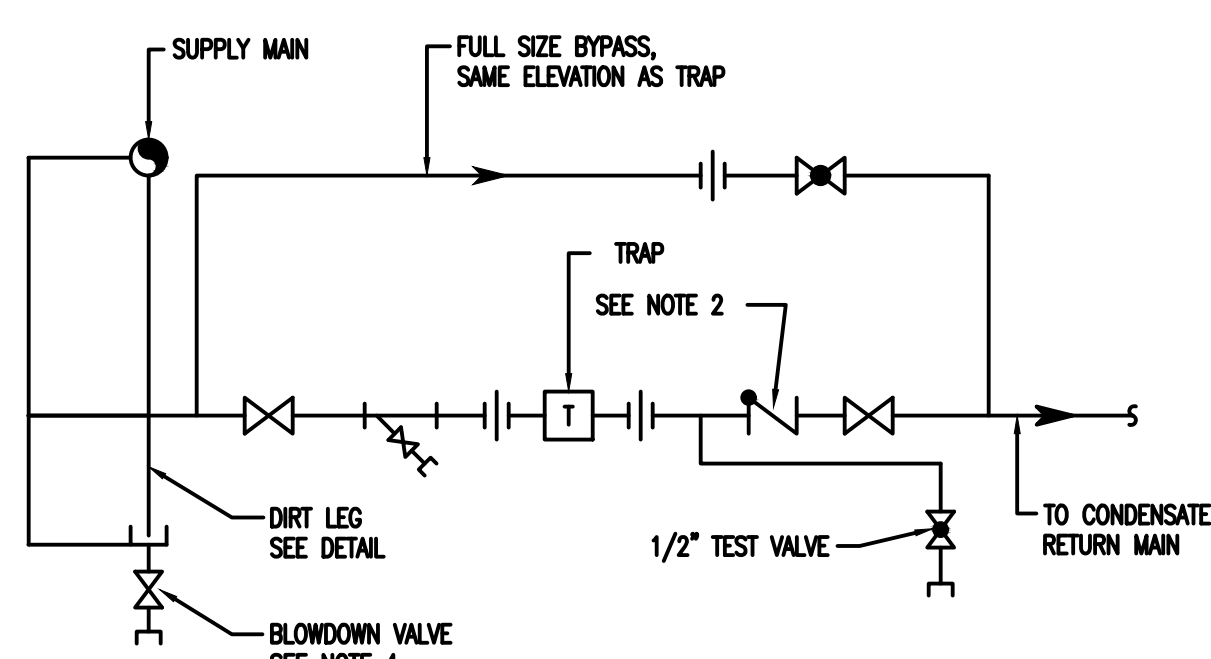


WALL PENETRATION DETAIL
NOT TO SCALE



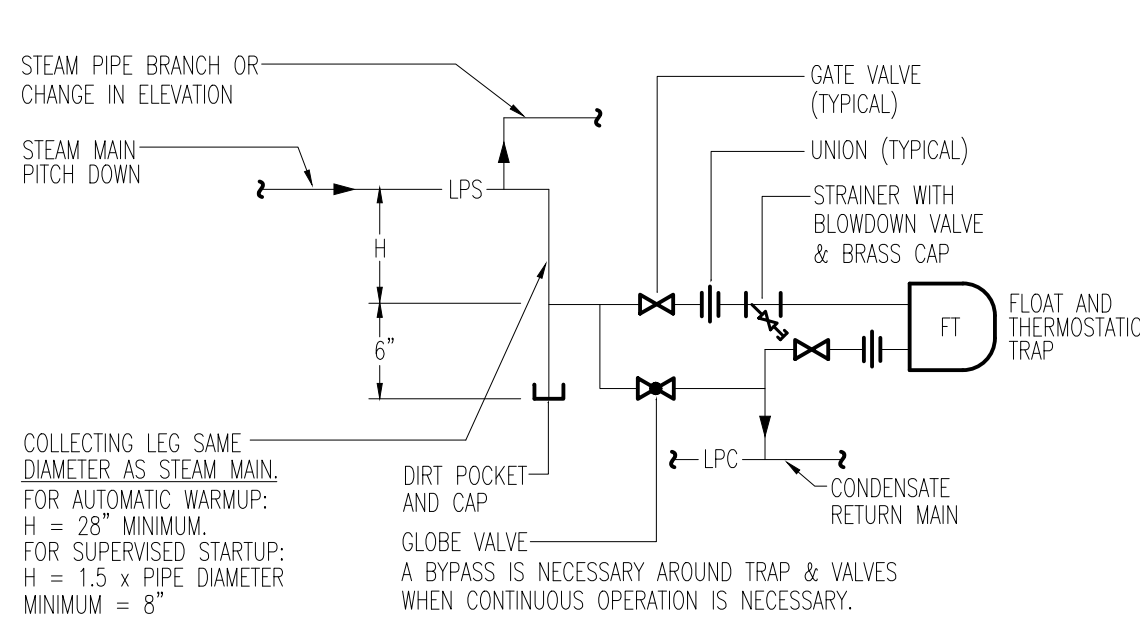
- NOTES:
1. REFER TO ATC DRAWINGS AND/OR SPECIFICATION SECTION 15950 FOR CONTROL VALVE REQUIREMENTS.
 2. PROVIDE BYPASS LINE FULL SIZE OF CONTROL VALVE AROUND VALVE ASSEMBLY.
 3. BYPASS SHOULD BE AT SAME ELEVATION AS CONTROL VALVE.
 4. MOUNT CONTROL VALVE ASSEMBLY APPROXIMATELY 6"-0" AFF AND IN A MANNER AS NOT TO INTERFERE WITH COIL PULL AREAS OR EQUIPMENT ACCESS.
 5. PROVIDE STEAM DRIP LEG AND TRAP ASSEMBLY WITHOUT BYPASS TO PROTECT CONTROL VALVE ASSEMBLY AS REQUIRED OR SHOWN ON DRAWINGS.

STEAM CONTROL VALVE ASSEMBLY
NOT TO SCALE

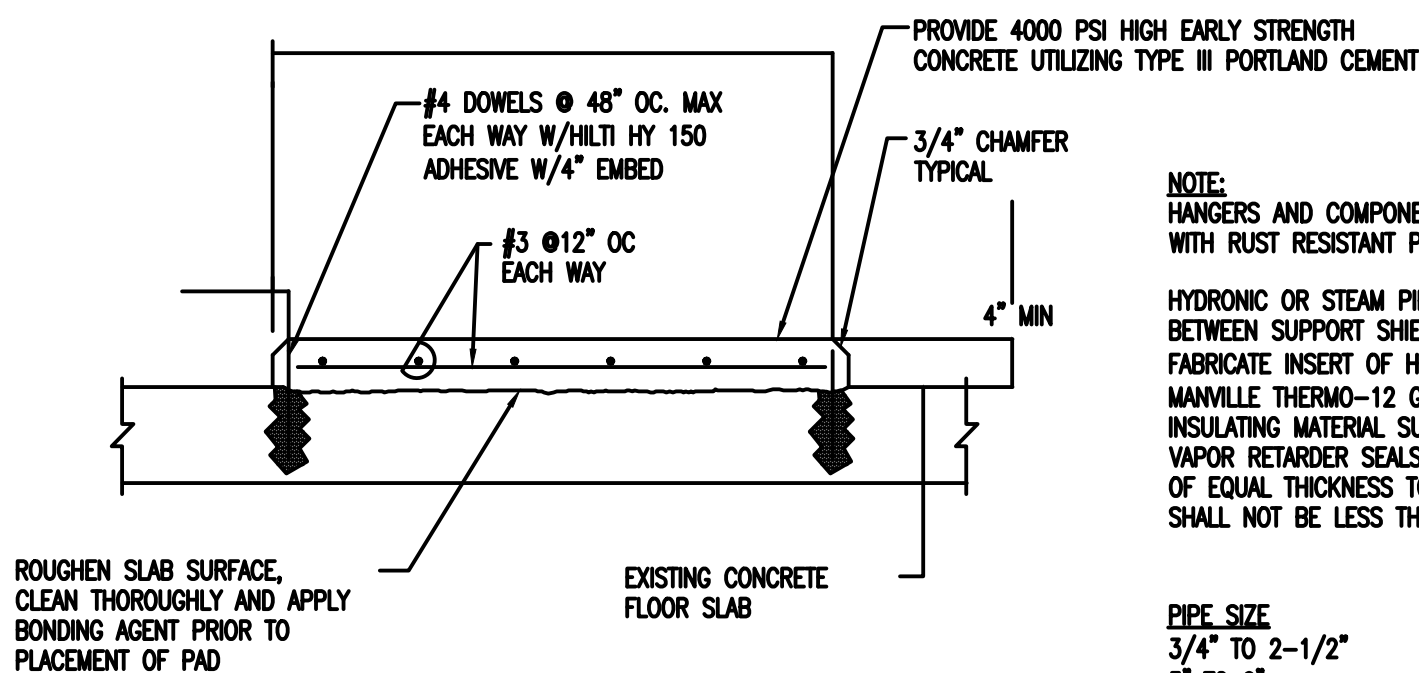


- NOTES:
1. PROVIDE TEST VALVE AND BYPASS AT ALL MAJOR EQUIPMENT.
 2. PROVIDE CHECK VALVE WHEN CONDENSATE MAIN IS HIGHER THAN TRAP OUTLET.
 3. PROVIDE AT END OF MAIN DRIPS A MINIMUM 3/4" STEAM TRAP.
 4. SCREWED CAP WITH 1/2" DRAIN VALVE w/HOSE BIBB FOR PIPE SIZES 2" AND SMALLER. WELDED CAP WITH 3/4" DRAIN VALVE w/HOSE BIBB FOR PIPE SIZES 2 1/2" AND LARGER.

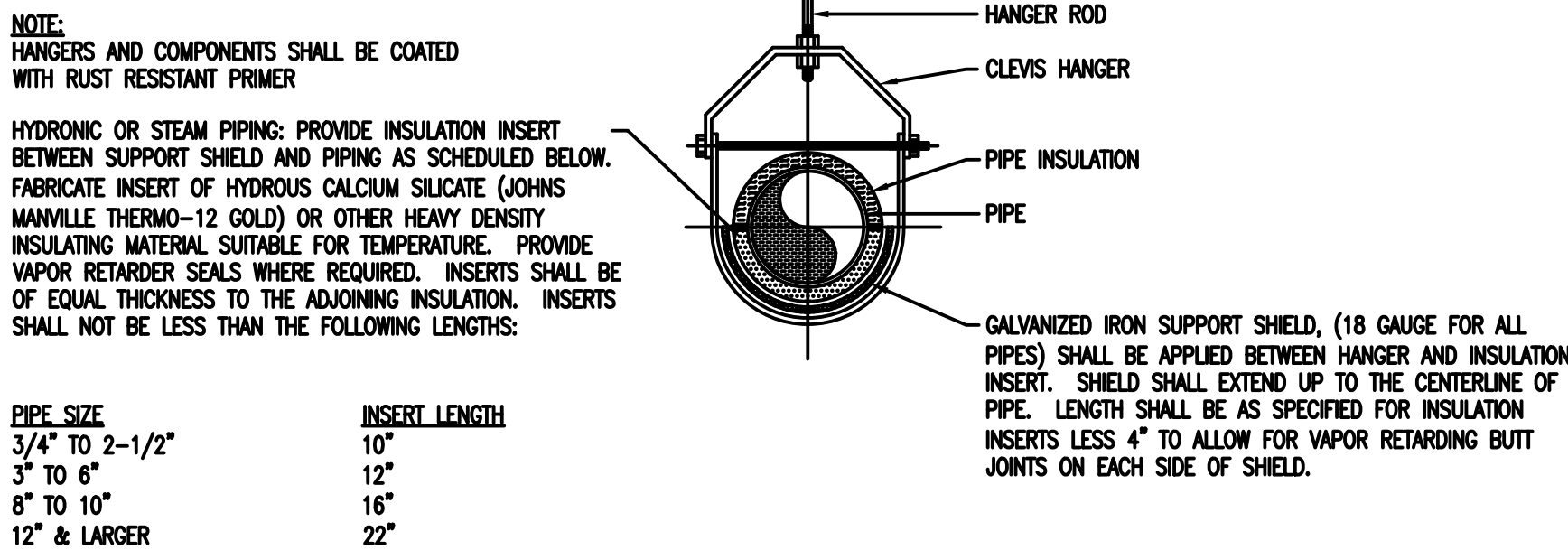
STEAM TRAP DETAIL
NOT TO SCALE



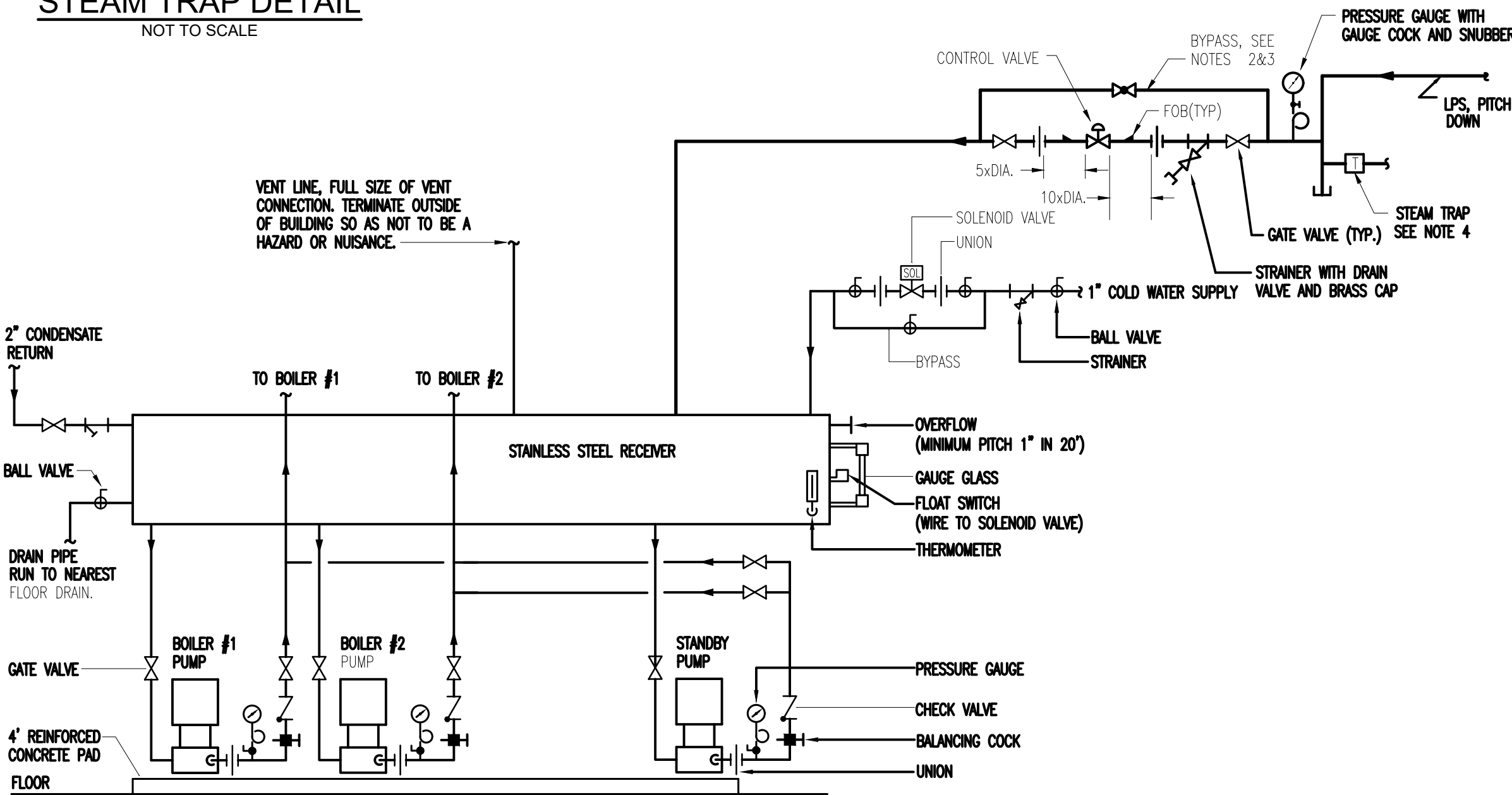
**- VERTICAL RISERS & END OF MAIN -
- LOW PRESSURE STEAM -
- TRAP PIPING DETAIL -**
NOT TO SCALE



**TYPICAL EQUIPMENT HOUSEKEEPING
PAD ON EXISTING SLAB DETAIL**
NOT TO SCALE

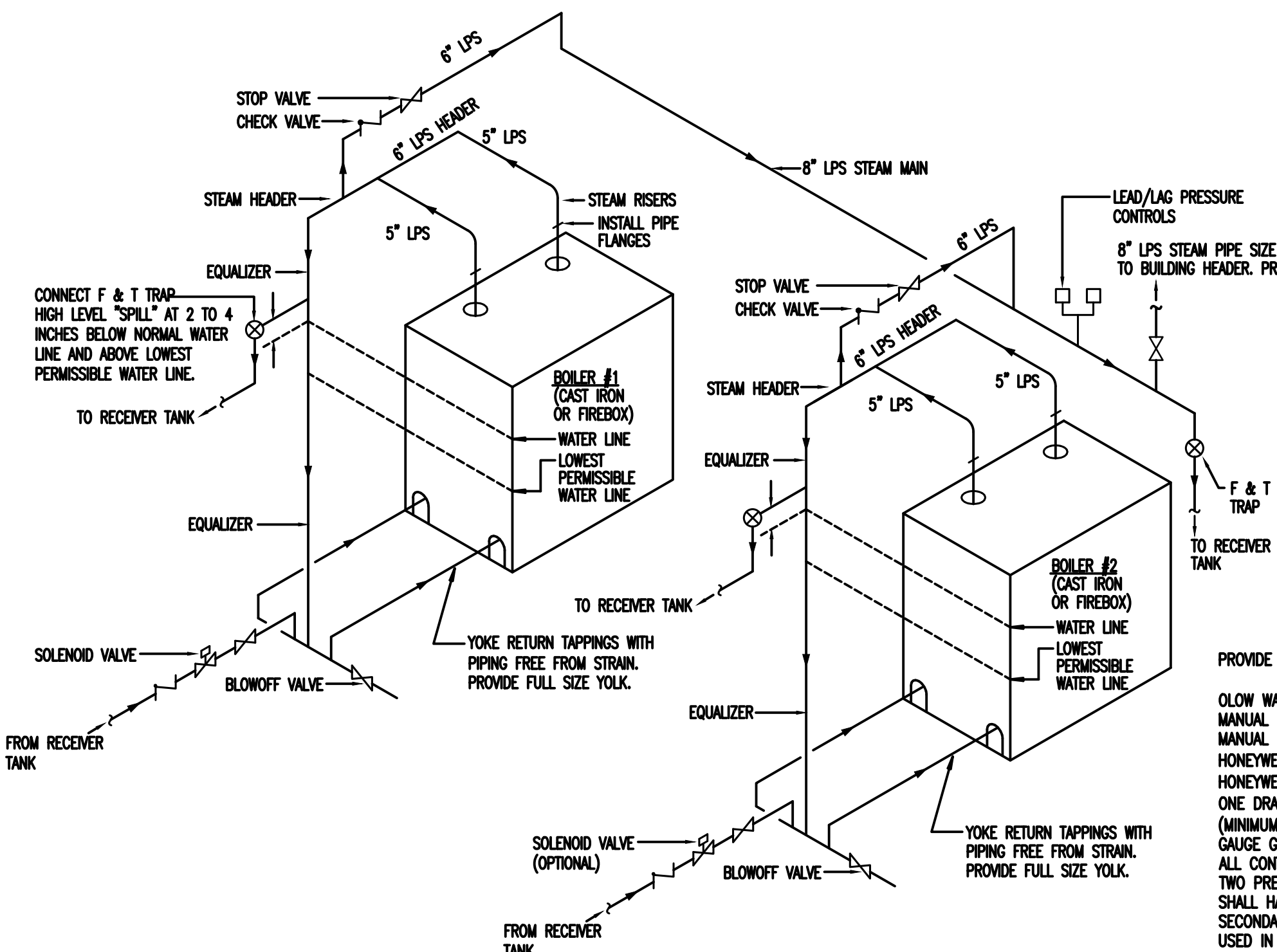


PIPE HANGER & INSULATED PIPE DETAIL
NOT TO SCALE

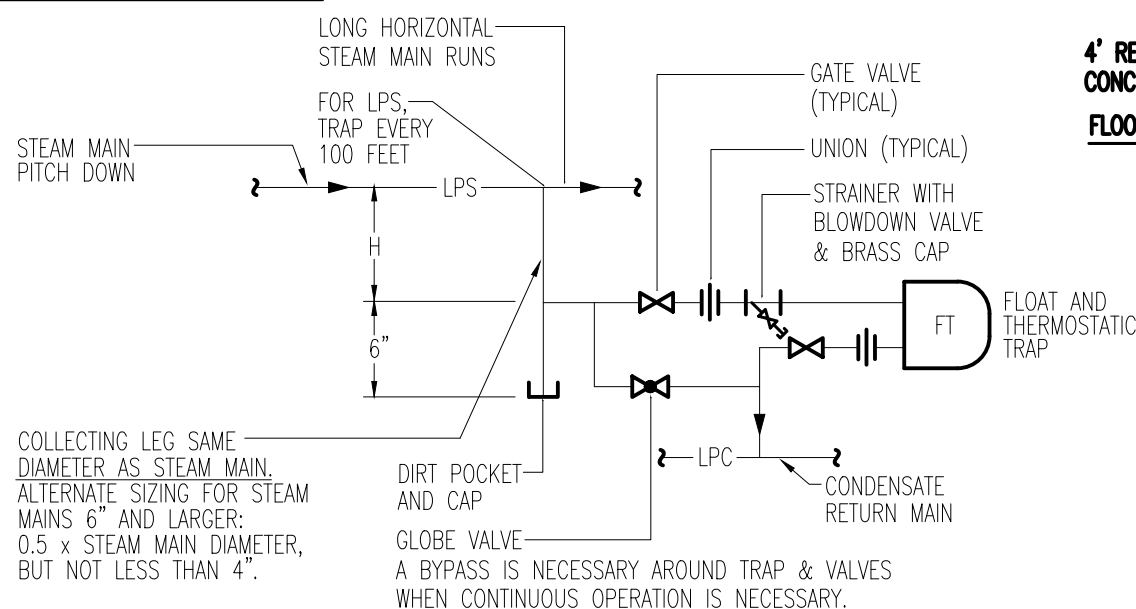


- NOTES:
1. PROVIDE BYPASS LINE FULL SIZE OF CONTROL VALVE AROUND VALVE ASSEMBLY.
 2. BYPASS SHOULD BE AT SAME ELEVATION AS CONTROL VALVE.
 3. MOUNT CONTROL VALVE ASSEMBLY APPROXIMATELY 2'-0" ABOVE TANK AND IN A MANNER WITH ACCESS FOR SERVICE.
 4. PROVIDE STEAM DRIP LEG AND TRAP ASSEMBLY AT LOW POINTS AND AHEAD OF ALL CONTROL VALVES.
 5. BOILERFEED - THE BOILERFEED PUMPS ARE OPERATED AUTOMATICALLY BY LEVEL CONTROLS MOUNTED ON THE BOILERS. FEED PUMPS ARE NORMALLY ARRANGED AND

**- BOILER FEED UNIT -
- PIPING SCHEMATIC -**
NOT TO SCALE



**- STEAM BOILER PIPING DETAIL -
- PUMPED RETURN -**
NOT TO SCALE

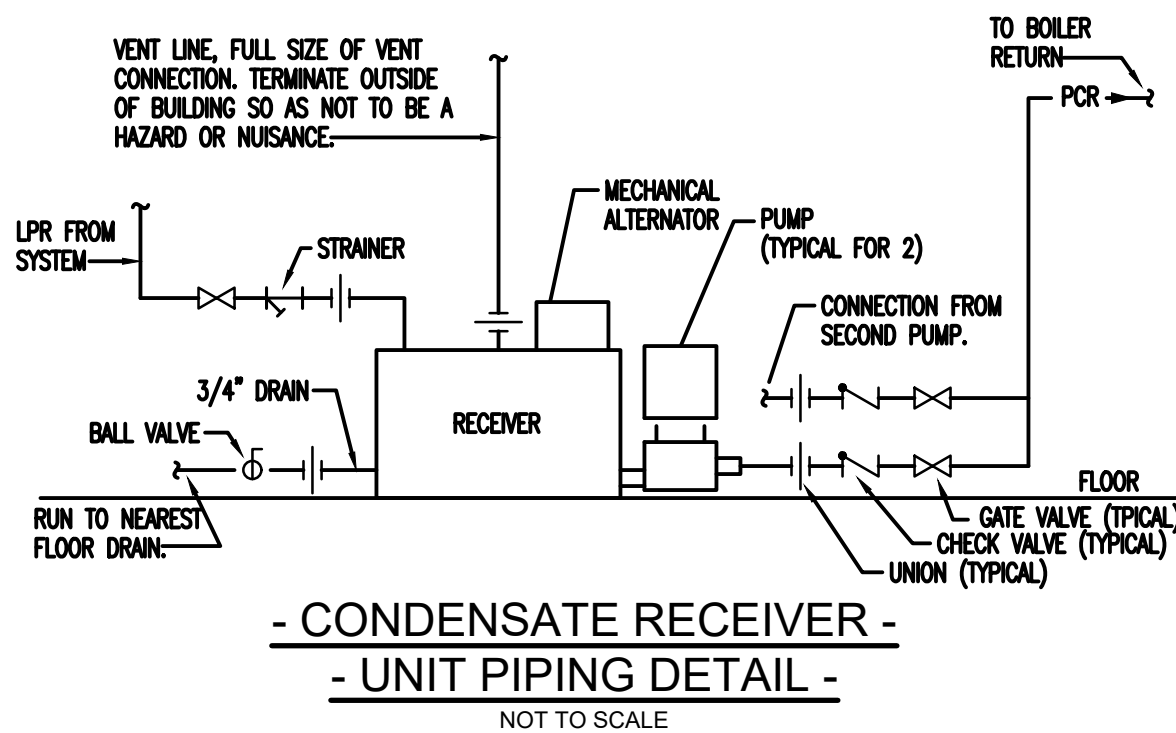


**- HORIZONTAL RUNS -
- LOW PRESSURE STEAM -
- TRAP PIPING DETAIL -**
NOT TO SCALE

DETAIL BASED ON 1996 ASHRAE SYSTEMS & EQUIPMENT HANDBOOK, PAGE 10.6, FIGURE 4 & 8.

PROVIDE ALL SUPPORTING DEVICES FOR EACH BOILER AS PER MANUFACTURER RECOMMENDATION

GLOW WATER CUTOFF/PUMP CONTROLLER MODEL #150MD FOR EACH BOILER.
MANUAL RESET LOW WATER CUTOFF MODEL 63M FOR EACH BOILER.
MANUAL RESET PRESSURE CONTROL FOR EACH BOILER.
HONEYWELL/SIEMENS MODULATING PRESSURE CONTROLLER FOR EACH BOILER.
HONEYWELL/SIEMENS OPERATING PRESSURE CONTROLLER FOR EACH BOILER.
ONE DRAIN WITH PIPING PER BOILER, SIZED BASED ON MANUFACTURER'S INSTRUCTIONS (MINIMUM 1/2") FOR EACH BOILER.
GAUGE GLASS SET WITH BLOWDOWN FOR EACH BOILER.
ALL CONTROL PIPING SHALL BE FITTED WITH CROSS TEES AND PLUGS.
TWO PRESSURE GAUGES SHALL BE PROVIDED ON EACH BOILER. THE FACTORY SUPPLIED GAUGE SHALL HAVE THE MAXIMUM ALLOWABLE INDICATION AT MID-SCALE WITH A MINIMUM 3 FACE. THE SECONDARY GAUGE WILL BE USED IN CONJUNCTION FOR THE PURPOSE OF LOW-PRESSURE CONTROLS.
15-PSI STEAM RELIEF VALVE.
BURNER MOUNTING PLATE WITH HARDWARE.
CLEAN-OUT PLATES WITH GASKETS.
HYDROSTATIC TEST ON BOILER BLOCK ONCE BUILT.
CODE MINIMUM HIGH QUALITY CABINET WITH INSULATION.



**- CONDENSATE RECEIVER -
- UNIT PIPING DETAIL -**
NOT TO SCALE

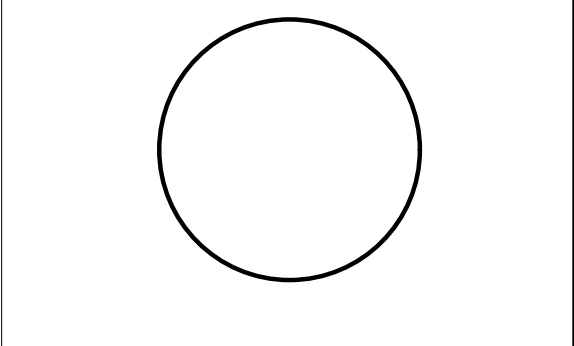
HABITECH ARCHITECTURE
A PROFESSIONAL LIMITED LIABILITY COMPANY
12 PINECREST DRIVE MEDFORD, NJ 08055
VOICE: (609) 413-2566 ~ LGMESTRES@GMAIL.COM

REVISIONS		
NO.	DATE	DESCRIPTION

THESE PLANS ARE AN INSTRUMENT OF SERVICE AND ARE THE PROPERTY OF THE ARCHITECT. INFRINGEMENTS WILL BE PROSECUTED. CONTRACTOR SHALL VERIFY ALL FIELD CONDITIONS AND DIMENSIONS AND BE RESPONSIBLE FOR FIELD FIT AND QUANTITY OF WORK. NO ALLOWANCES SHALL BE MADE ON BEHALF OF THE CONTRACTOR FOR ANY ERROR OR NEGLECT ON HIS PART.

BOILER SYSTEM REPLACEMENT
AT
RICHARD F. STACK APARTMENTS
FOR THE HOUSING AUTHORITY
OF THE CITY OF PERTH AMBOY
PERTH AMBOY, NEW JERSEY 08862
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DATE: June 10, 2026



MISCELLANEOUS DETAILS		
COMM NO.	N/A	DRAWING
DATE	JUNE 2026	M-04
SCALE	AS NOTED	
DRAWN BY	LGM	
CHECKED BY	LGM / JPB	
		5 OF 8

ELECTRICAL SPECIFICATIONS

CKT NO.	AMPS PER PHASE			DESCRIPTION	LOAD TYPE	CKT BKR			CKT BKR		LOAD TYPE	DESCRIPTION	AMPS PER PHASE			CKT NO.
	A	B	C			TRIP	POLE		TRIP	POLE			A	B	C	
1	5	X	X	(DUPLEX) CONDENSATE PUMP (NEW) (CP-1)	R	20	1		20	1	R	GAS MONITORING SYSTEM	4	X	X	2
	3	X	0			20	1		20	1			4	X	X	
5	X	X	7	DOMESTIC WATER	R				20	3	R	TRASH COMPACTOR	X	X	0	6
	7	7	X						20	3			0	X	X	
9	X	7	X	PUMP #2 (FOR BFU)	M	20	3		20	1	R	BUILDING FIRE ALARM	X	0	X	10
	11	X	0						20	1			R	BOILER ROOM LIGHTS	X	
13	0	X	X	EXISTING LOADS	R	20	1		20	1	R	COMPUTER	0	X	X	14
15	X	0	X	EXISTING LOADS	R	20	1		20	1	M	RECEPTACLES	X	0	X	16
17	X	X	0	EXISTING LOADS	R	20	1		20	1	M	BOILER #1 (NEW) BURNER	X	X	6	18
19	0	X	X						20	1		EMERGENCY SWITCH	0	X	X	
21	X	0	X	WATER PUMP	M	20	3		15	2	M	INDUCED DRAFT FAN (2HP)	X	7	X	22
23	X	X	0												X	
25	0	X	X	JOCKEY PUMP	M	100	3		20	3	M	CONTROL PANEL FOR BFU-1	4	X	X	26
27	X	0	X												X	
29	X	X	0										X	X	4	30
31	0	X	X	MIX WATER	R	20	1		20	1		SPARE	0	X	X	32
33	X	5	X	CONTROL PANEL	R	20	1		20	1	R	DOMESTIC WATER	X	0	X	34
35	X	X	0	EXHAUST DAMPER	M	20	1		20	1	M	BOILER #2 (NEW) BURNER	X	X	6	36
37	7	X	X	PUMP #1(FOR BFU)	M	20	3		20	1	R	RECEPTACLES	0	X	X	38
39	X	7	X						20	1		SPARE	X	0	X	
41	X	X	7						20	1	R	DOMESTIC WATER	X	X	0	42
	NA	NA	NA										NA	NA	NA	
TOTAL/PHASE				NA	VOLTS:	240/120 V, 3 PH, 4 W + G						DESIGNATION:	BRP-1 PANEL (EXISTING)			
CODE AMPS				NA	MLO AMPS:	225A						LOCATION:	BOILER ROOM			
TOTAL = CODE AMPS x 1.25				NA	BUS AMPS:	225A						MOUNTING:	SURFACE			
					FAULT AMPS:	22KA						FEEDER SIZE:	EXISTING TO REMAIN			

NOTE;
ONLY CIRCUITS TO BE MODIFIED ARE SHOWN WITH " * ", ALL OTHER CIRCUITS/LOADS TO REMAIN U.O.N.
PROVIDE NEW "SQUARE D" BREAKERS (COMPATIBLE WITH EXISTING PANEL). RECONFIGURE PANEL SCHEDULE
AS PER CIRCUIT REQUIREMENT AS SHOWN.

A. GENERAL;

1. PERFORM ALL WORK IN ACCORDANCE WITH THE N.E.C. ELECTRICAL CODE, O.S.H.A. PERTINENT NFPA CODES, AND THE RULES AND REGULATIONS OF ALL LOCAL, STATE AND FEDERAL AUTHORITIES HAVING JURISDICTION. PROVIDE OWNER WITH CERTIFICATES OF INSPECTION. IN CASE OF CONFLICTS BETWEEN PROVISIONS OF CODES, LAWS, ORDINANCES, ETC., THE MORE STRINGENT SHALL APPLY.
2. ALL RACEWAYS AND EQUIPMENT SUSPENDED FROM THE BUILDING STRUCTURE SHALL BE PROVIDED WITH SWAY BRACING FOR SEISMIC RESTRAINTS.
3. OBTAIN ALL PERMITS, FILE DOCUMENTS, PAY ALL FEES, AND PERFORM ALL TESTING AS REQUIRED BY ALL AUTHORITIES HAVING JURISDICTION.
4. DO ALL NECESSARY CUTTING AND ROUGH PATCHING. THE FOLLOWING WORK WILL BE DONE BY OTHERS: FINISH PAINTING AND PATCHING, MASONRY, AND CONCRETE FOUNDATIONS FOR EQUIPMENT, AND FURNISHING AND SETTING OF MOTORS.
5. THESE DRAWINGS INDICATE THE SIZES AND GENERAL LOCATION OF WORK. SCALED DIMENSIONS SHALL NOT BE USED. ANY DIMENSIONS NOT SHOWN SHALL BE OBTAINED FROM THE ARCHITECTURAL DRAWINGS OR AS DIRECTED BY ARCHITECT. FOR EXACT LOCATIONS, HEIGHT, DOOR SWINGS, MOUNTING HEIGHTS, ETC., REFER TO ARCHITECTS DRAWINGS AND DETAILS.
6. COORDINATE WORK WITH OTHER TRADES. CONFER WITH OTHER CONTRACTOR WHOSE WORK MIGHT AFFECT THIS INSTALLATION AND ARRANGE ALL PARTS OF THIS WORK AND EQUIPMENT IN PROPER RELATION TO THE WORK AND EQUIPMENT OF OTHERS, WITH THE BUILDING CONSTRUCTION AND WITH ARCHITECTURAL FINISH SO THAT IT WILL HARMONIZE IN SERVICE AND APPEARANCE.
7. ELECTRICAL CONTRACTOR SHALL MEET WITH SPRINKLER, HVAC SHEETMETAL AND PLUMBING CONTRACTORS AND MAKE THOROUGH ARRANGEMENTS. THE INSTRUCTION CONTRACTOR TO COORDINATE ALL WORK TO MAINTAIN CEILING HEIGHTS SHOWN ON ARCHITECTURAL DRAWINGS. EXTRA COMPENSATION WILL NOT BE GRANTED FOR MISSED COORDINATED WORK.
8. ELECTRICAL CONTRACTOR, BEFORE SUBMITTING A PROPOSAL, SHALL VISIT AND EXAMINE CAREFULLY THE AREAS AFFECTED BY THIS WORK TO BECOME FAMILIAR WITH EXISTING CONDITIONS AND WITH THE DIFFICULTIES THAT WILL ATTEND THE EXECUTION OF THIS WORK. SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE AND LATER CLAIMS WILL NOT BE RECOGNIZED FOR EXTRA LABOR, EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD SUCH EXAMINATION BEEN MADE.
9. ALL PARTS OF THE EXISTING WORK AND ASSOCIATED EQUIPMENT SHALL BE INSPECTED FOR COMPLIANCE WITH THE NATIONAL ELECTRICAL CODE. ALL VIOLATIONS MUST BE INCLUDED IN THE BID AS ADDITIONAL SERVICES. SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH EXAMINATIONS HAVE BEEN MADE.
10. ALL WORK SHALL BE GUARANTEED AGAINST DEFECTS FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE OF THE INSTALLATION, AND ANY PORTIONS OF THE WORK WHICH DEVELOP DEFECT DURING THAT TIME SHALL BE REPLACED OR REPAIRED IN A MANNER SATISFACTORY TO THE ARCHITECT.
11. FURNISH ADEQUATE LIABILITY INSURANCE AND BONDING AS REQUIRED BY THE OWNER AND SUBMIT DOCUMENTATION.
12. PREPARE AND FURNISH TO THE OWNER "AS-BUILT" PLANS FOR ALL WORK INSTALLED IN REPRODUCIBLE MYLAR FORM UNLESS OTHERWISE NOTED.
13. THE CONTRACTOR SHALL PREPARE AND SUBMIT TO THE ARCHITECT FOR APPROVAL SIX (6) COPIES OF OPERATION AND MAINTENANCE INSTRUCTIONS IN PRINTED FORM FOR EACH ITEMS OF EQUIPMENT OR SYSTEM INSTALLED IN THE BUILDING. COMPLETE INSTRUCTIONS FOR EACH SYSTEM SHALL BE ASSEMBLED AND BOUND IN A BROCHURE WITH HINGED HARD COVERS.
14. IF SUBSTITUTIONS FOR SPECIFIED EQUIPMENT ARE DESIRED, A LIST OF SUCH REQUEST SHALL BE SUBMITTED. IT SHALL BE UNDERSTOOD THAT ALL MATERIALS AND EQUIPMENT WILL BE FURNISHED AS SPECIFIED. ALL INFORMATION PERTINENT TO THE ADEQUACY AND ADAPTABILITY OF THE PROPOSED SUBSTITUTE ITEMS SHALL BE SUBMITTED TO THE ARCHITECT FOR APPROVAL. NO PROPOSED SUBSTITUTE ITEMS SHALL BE ORDERED OR CONSTRUCTED PRIOR TO RECEIVING THE ARCHITECTS WRITTEN APPROVAL.
15. "APPROVED EQUAL" MEANS ANY DEVICE, MATERIAL, OR EQUIPMENT CONSIDERED BY THE ARCHITECT TO BE EQUIVALENT IN QUALITY, CONSTRUCTION, PERFORMANCE, FINISH AND APPEARANCE TO THAT SPECIFIED. "FURNISH" AND "INSTALL" MEANS PURCHASE, ARRANGE DELIVERY OF, UNLOAD, INSTALL, CONNECT, TEST AND LEAVE READY FOR OPERATION.
16. ELECTRICAL CONTRACTOR SHALL PROVIDE TEMPORARY LIGHT AND POWER FOR THE NEW CONSTRUCTION AREAS IN ACCORDANCE WITH ACCEPTED STANDARDS ESTABLISHED BY O.S.H.A. ENERGY COSTS WILL BE BORNE BY THE OWNER.
17. ALL PARTS OF THE WORK AND ASSOCIATED EQUIPMENT SHALL BE TESTED AND ADJUSTED TO WORK PROPERLY AND BE LEFT IN PERFECT OPERATING CONDITION. THIS SHALL INCLUDE MECHANICAL TESTS BETWEEN PHASES AND BETWEEN EACH PHASE AND GROUND OF ALL FEEDERS AND SUB FEEDERS. CORRECT DEFECTS DISCLOSED BY THESE TESTS WITHOUT ANY ADDITIONAL COST TO THE OWNER. REPEAT TESTS ON REPAIRED OR REPLACED WORK. FINAL DOCUMENTED DATA SHALL BE GIVEN TO ARCHITECT.
18. CONTRACTOR SHALL STATE IN HIS PROPOSAL UNIT PRICES FOR ALL ELECTRICAL SYSTEMS, MATERIALS, EQUIPMENT, ETC. ANY ADDITIONAL WORK NOT CALLED FOR UNDER THIS CONTRACT WILL BE PERFORMED AT ANY TIME AND IN ANY QUANTITY AS DIRECTED BY THE GENERAL CONTRACTOR AT THE UNIT PRICES SET FORTH. SUCH WORK WILL BE PERFORMED UPON REQUEST AT ANY TIME UNTIL FINAL ACCEPTANCE OF ALL WORK. ALL SUCH ADDITIONAL WORK WILL BE PERFORMED IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF THIS CONTRACT. IN THE EVENT THAT THE GENERAL CONTRACTOR SHALL DIRECT THE ELIMINATION OF ANY WORK UNDER THIS CONTRACT, THE CONTRACTOR WILL CREDIT TO THE GENERAL CONTRACTOR THE COST OF SAID ELIMINATED WORK AT THE UNIT PRICES SET FORTH.

B. CONDUIT AND RACEWAYS;

1. ALL WIRING SHALL BE RUN IN CONDUIT. UL LISTED ARMORED CABLE APPROVED FOR CONCEALED APPLICATION MAY BE USED FOR WIRING ABOVE DROPPED CEILING AND CONCEALED THE BEHIND WALLS. CONDUIT SHALL BE MADE OF STANDARD RIGID PIPE, AND SHALL BE ALUMINUM WHERE PERMITTED BY CODE. WHERE ALUMINUM IS NOT PERMITTED BY CODE, USE RIGID STEEL OR IMC CONDUIT. RIGID STEEL CONDUIT SHALL BE USED FOR ALL RACEWAYS IN FLOOR SLABS AND OUTDOOR LOCATIONS. ELECTRIC METALLIC TUBING MAY BE USED IN DRY LOCATIONS FOR BRANCH CIRCUITING.
2. PROVIDE EMPTY CONDUIT FOR SIGNAL, TELEPHONE, FIBER OPTIC AND DATA COMMUNICATION SYSTEMS. RUN 3/4" CONDUIT FOR EACH OUTLET UNLESS OTHERWISE NOTED. ALL EMPTY CONDUIT SHALL BE PROVIDED WITH A DRAG WIRE.
3. FINAL CONNECTION FROM MOTOR STARTING SWITCHED TO MOTOR SHALL BE BY MEANS OF CONDUCTORS IN FLEXIBLE STEEL CONDUIT, MAXIMUM LENGTH 18".
4. HANGERS, SUPPORTS AND SLEEVES SHALL BE AS ACCEPTABLE TO THE ARCHITECT. SUPPORT CONDUITS ON EACH SIDE OF BENDS AND NOT GREATER THAN 10'-0" CENTERS.
5. ALL CONDUIT AND TUBING SHALL BE CUT SQUARE AND REAMED AT THE ENDS. THOMAS & BETTS KOPR/SHIELD SHALL BE APPLIED TO ALL EXPOSED THREADS AFTER JOINTS HAVE BEEN MADE UP CLEAN AND TIGHT.
6. CONDUIT AND TUBING RUNS SHALL BE MECHANICALLY AND ELECTRICALLY CONTINUOUS FROM SERVICE STARTING TO ALL OUTLETS. CONDUIT SHALL ENTER AND BE SECURELY CONNECTED TO CABINET, JUNCTION BOX, PULL BOX OR OUTLET BOX BY MEANS OF LOCKNUTS ON THE OUTSIDE AND INSIDE AND AN INSULATED BUSHING ON THE INSIDE. IN TUBING OR FLEXIBLE METAL CONDUIT, THE ONE COMPRESSION LOCKNUT SHALL BE MADE WRENCH-TIGHT. ALL LOCKNUTS SHALL BE THE BONDING TYPE WITH SHARP EDGES FOR DIGGING INTO THE METAL WALL OF AN ENCLOSURE AND SHALL BE INSTALLED IN A MANNER THAT WILL ASSURE A LOCKING AND ELECTRICALLY CONTINUOUS INSTALLATION. LOCKNUTS AND BUSHINGS WILL NOT BE REQUIRED WHERE CONDUITS ARE SCREWED INTO TAPPED CONNECTIONS.
7. ALL VERTICAL RUNS OF CONDUIT OR TUBING TERMINATING IN THE BOTTOMS OF WALL BOXES OR CABINETS, OR SIMILAR LOCATIONS, SHALL BE PROTECTED FROM THE ENTRANCE OF FOREIGN MATERIAL PRIOR TO THE INSTALLATION OF CONDUCTORS.
8. EVERY CONDUIT SYSTEM SHALL BE INSTALLED COMPLETE BEFORE ANY CONDUCTORS ARE DRAWN IN. WIRE PULLING LUBRICANTS, WHEN UTILIZED, SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF UNDERWRITERS' LABORATORIES, INC., APPLICABLE TO THE SPECIFIC CONDUCTOR OR CABLE INSULATION AND RACEWAY MATERIAL.
9. FIRE RATED FITTINGS SHALL BE PROVIDED FOR EACH CONDUIT PASSING THROUGH FIRE-RATED SLABS AND PARTITIONS. WHERE SLEEVES OR OTHER TYPES OF OPENINGS ARE PROVIDED FOR RACEWAY OR CABLE/WIRING PENETRATIONS THROUGH FLOOR SLABS AND FIRE RATED WALLS, THE SPACE BETWEEN THE RACEWAY AND THE SLEEVE OR OPENING SHALL BE FILLED WITH A FIRE RESISTANT MATERIAL.

C. CONDUCTORS;

1. ALL WIRES AND CABLES SHALL BE "THIN/THINN" FOR BRANCH CIRCUITS AND FEEDERS IN RACEWAY. NO WIRE SMALLER THAN #12 AWG SHALL BE USED FOR LIGHT OR POWER SERVICES. ALL 120 VOLT BRANCH CIRCUITS MORE THAN 75 FEET TO THE FIRST OUTLET SHALL BE #10 FOR THE ENTIRE LENGTH OF THE BRANCH CIRCUIT. ALL CONDUCTORS SHALL BE COPPER UNLESS SHOWN OTHERWISE. SOLID CONDUCTORS SHALL BE USED FOR ALL WIRING #10 AWG AND SMALLER. STRANDED CONDUCTORS SHALL BE USED FOR #8 AND LARGER. ALL CONTROL CONDUCTORS SHALL BE #14 AWG. CONNECTIONS FOR WIRE #8 AND SMALLER SHALL BE MADE WITH T&B "PIGGY PIGTAILS".
2. ALL WIRING FOR TELEPHONE AND COMMUNICATION INCLUDING LOW VOLTAGE, 24V BELL WIRING, AND OTHER SIGNAL WIRING SHALL BE PLENUM RATED TYPE UNLESS OTHERWISE NOTED. PLENUM SLEEVES FOR WIRING PASSING THROUGH FIRE RATED PARTITIONS AND FLOOR SLABS. AFTER WIRING IS INSTALLED SLEEVES SHALL BE FILLED WITH FIRE RESISTANT MATERIAL TO CLOSE OFF ALL VOIDS WITHIN SLEEVES.
3. ALL WIRES AND CABLES IN PULL, SPICE AND CABLE SUPPORT BOXES, IN PANELS AND POINTS OF TERMINATION SHALL BE BUNDLED AND LACED BY CIRCUITS AND TAGGED USING NYLON TIEWRAP MATERIAL AND USING FLAME RESISTING TAGS OF ADHESIVE MATERIAL. TAGS SHALL IDENTIFY CABLES AND PIECES OF EQUIPMENT SERVED. TAGS SHALL BE T&B'S "TY-RAP" OR "E-Z CODE".
4. EXCEPT IN MOTOR CONTROLLERS, SWITCHES AND PANELBOARDS, ALL CABLES SHALL BE TERMINATED, SPLICED AND TAPPED WITH COLOR-KEYED, DOUBLE ENDED COMPRESSION CONNECTORS, AS MANUFACTURED BY THE THOMAS & BETTS COMPANY, SERIES 54000 OR AS ACCEPTABLE. MANUFACTURER'S RECOMMENDED TOOLING SHALL BE USED TO APPLY. LUGS SHALL BE THE TWO-HOLE TYPE. INSULATE ALL SPLICES AND TAPS WITH HEAT SHRINKABLE INSULATION, RAYCHEM OR THOMAS & BETTS.
5. CABLES SHALL BE COLOR-CODED TO INDICATE PHASING, NEUTRAL AND GROUND AS WELL AS VOLTAGE. THE FOLLOWING COLOR CODING SHALL BE USED UNLESS THE BUILDING USES A DIFFERENT COLOR CODING SYSTEM TO IDENTIFY CABLES.
6. SYSTEM VOLTAGE

120/208V BLACK RED BLUE WHITE GREEN	PHASE C NEUTRAL GROUND	A B	120/240V BLACK RED WHITE GREEN	PHASE NEUTRAL GROUND	A B
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7. WIRING WHEN INSTALLED SHALL NOT HAVE VOLTAGE DROP IN EXCESS OF LIMITATIONS AS ESTABLISHED BY THE SEVERAL AGENCIES HAVING JURISDICTION OVER THIS WORK AND AS RECOMMENDED OR REQUIRED BY THE VARIOUS SPECIAL EQUIPMENT SUPPLIERS.
8. TOTAL ELECTRIC LOAD SHALL BE BALANCED WITHIN TEN PERCENT ON FEEDER CONDUCTORS. MAKE SUCH ADJUSTMENTS OF CIRCUITS AFTER SYSTEMS ARE PUT INTO OPERATION AS REQUIRED TO ATTAIN SCALABLE VOLTAGE AND AMPERAGE READINGS SHALL BE TAKEN TO ASSURE COMPLIANCE. MAKE ALL NECESSARY ADJUSTMENTS OF TRANSFORMER TAPS, ETC. AS REQUIRED AND INDICATE SUCH CHANGES ON SCHEDULES AND AS-BUILT DRAWINGS.

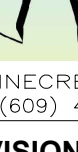
D. POWER MATERIALS;

1. DISCONNECTS
 - A) GENERAL
 - 1) EXTERNAL OPERATING HANDLE WITH POSITION INDICATION INTERLOCKED WITH ENCLOSURE COVER TO PREVENT OPENING COVER UNLESS DISCONNECT IS IN THE "OFF" POSITION. INTERLOCK TO BE DEFEATABLE FOR MAINTENANCE PURPOSES.
 - 2) PROVISIONS FOR LOCKING HANDLE IN THE "OFF" POSITION.
 - 3) ENCLOSURES SHALL BE NEMA 1, UNLESS OTHERWISE NOTED.
 - 4) WHERE WEATHERPROOF ENCLOSURES ARE INDICATED PROVIDE NEMA 3R.
 - 5) FUSE CLIPS SHALL BE REJECTION TYPE.
 - B) DISCONNECT SWITCHES SHALL BE 2-POLE, HEAVY DUTY, HORSEPOWER RATED QUICK-MAKE, QUICK-BREAK MECHANISM WITH ARC-QUENCHING DEVICE ON EACH POLE FOR SWITCHES ABOVE 240 VOLTS AND FUSED TYPE UNLESS NOTED ON THE DRAWINGS AS NON-FUSED TYPE.
 - C) DISCONNECT - CIRCUIT BREAKER - THERMAL-MAGNETIC, MOLDED CASE TYPE, TRIP-FREE, WITH EACH POLE CONTAINING THERMAL INVERSE TIME DELAY AND MAGNETIC INSTANTANEOUS OVERCURRENT TRIP ELEMENTS AND INTERCHANGEABLE TRIP UNITS FOR 225 AMPERE FRAME SIZE AND LARGER.
2. FUSES - DUAL ELEMENT, CURRENT LIMITING, HIGH INTERRUPTING CAPACITY, SUITABLE FOR USE ON CIRCUITS UP TO 200,000 AMPERES AVAILABLE AT RATED VOLTAGE, U.L. CLASS RKL.

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HBIIECH ARCHITECTURE

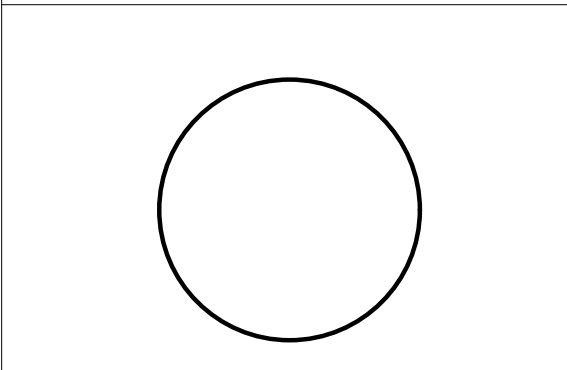


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REVISIONS

NO.	DATE	DESCRIPTION

THESE PLANS ARE AN INSTRUMENT OF SERVICE AND ARE THE PROPERTY OF THE ARCHITECT.INFRINGEMENTS WILL BE PROSECUTED. CONTRACTOR SHALL VERIFY ALL FIELD CONDITIONS AND DIMENSIONS AND BE RESPONSIBLE FOR FIELD FIT AND QUANTITY OF WORK. NO ALLOWANCES SHALL BE MADE ON BEHALF OF THE CONTRACTOR FOR ANY ERROR OR NEGLECT ON HIS PART.

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