

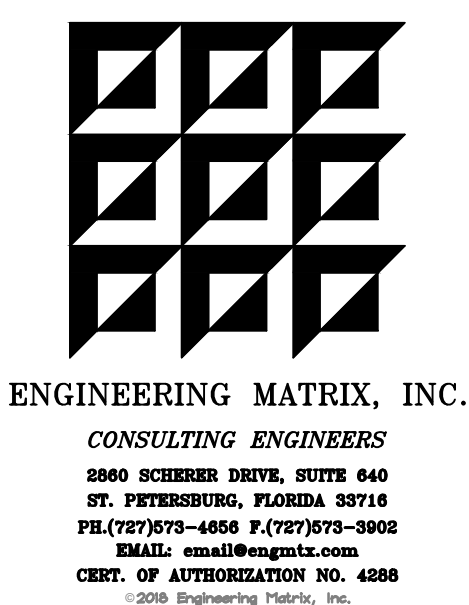
ST. PETERSBURG COLLEGE - EPI-TECH BUILDING

BOILER REPLACEMENT

for
SPC PROJECT NO: 265-W-18-1



BOARD OF TRUSTEES
NATHAN STONECIPHER, CHAIR
KATHERINE E. COLE, VICE CHAIR
BRIDGETTE BELLO, TRUSTEE
BILL FOSTER, TRUSTEE
DEVERON M. GIBBONS, TRUSTEE



DR. TONJUA WILLIAMS, COLLEGE PRESIDENT

SITE LOCATION MAP

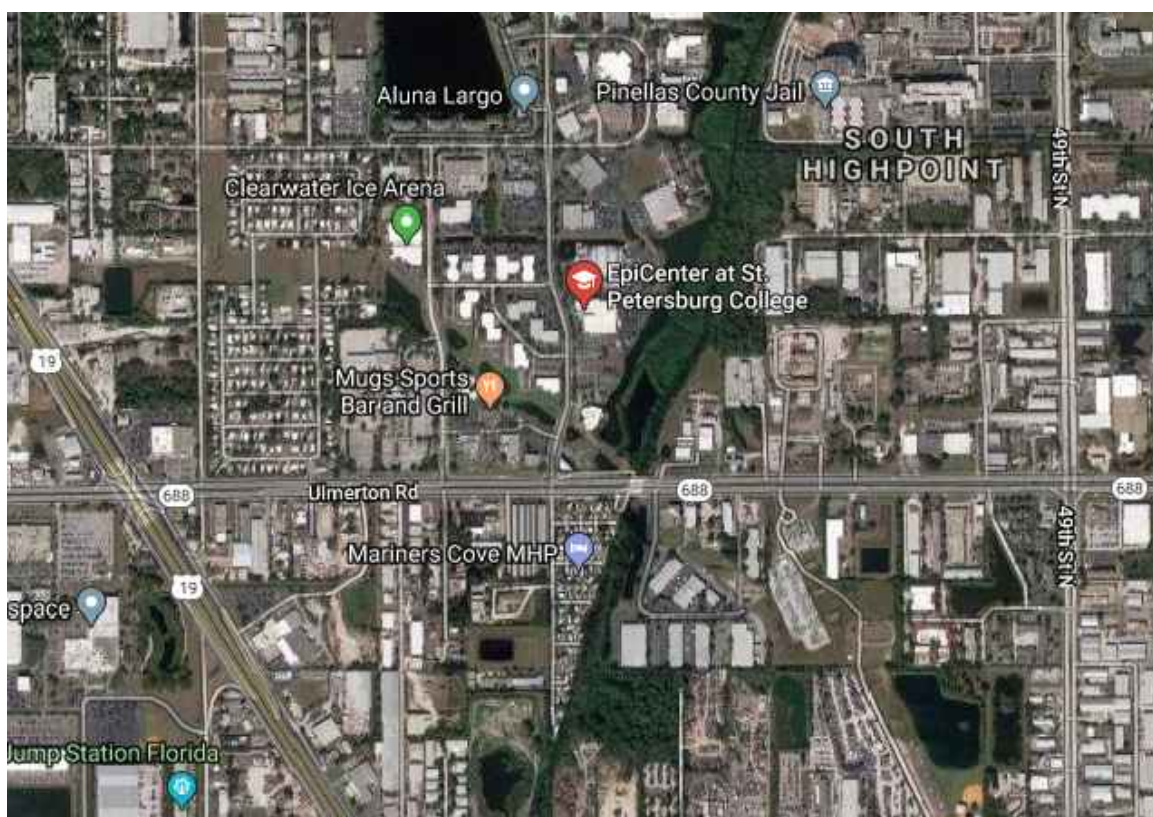
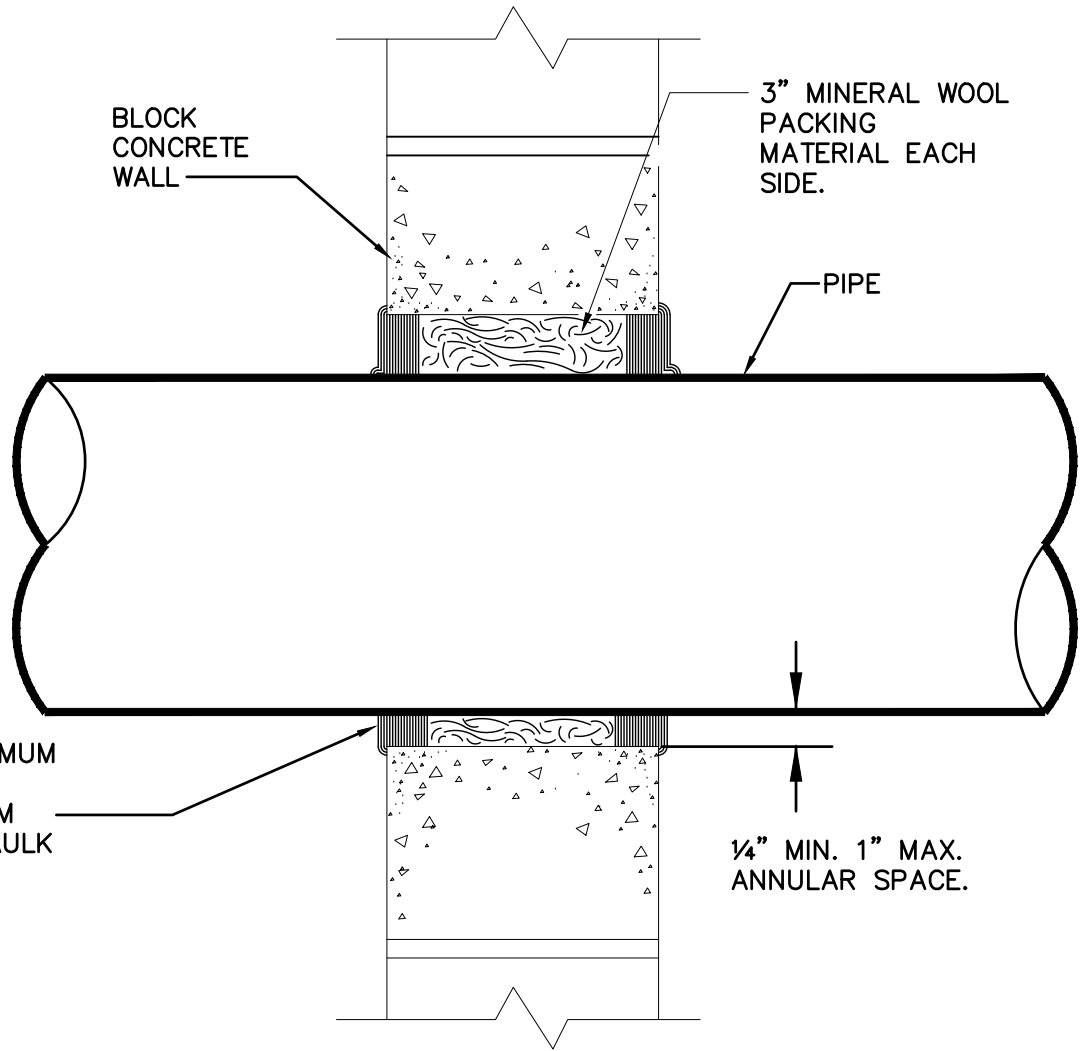


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PERMIT DOCUMENTS
APRIL 13, 2018



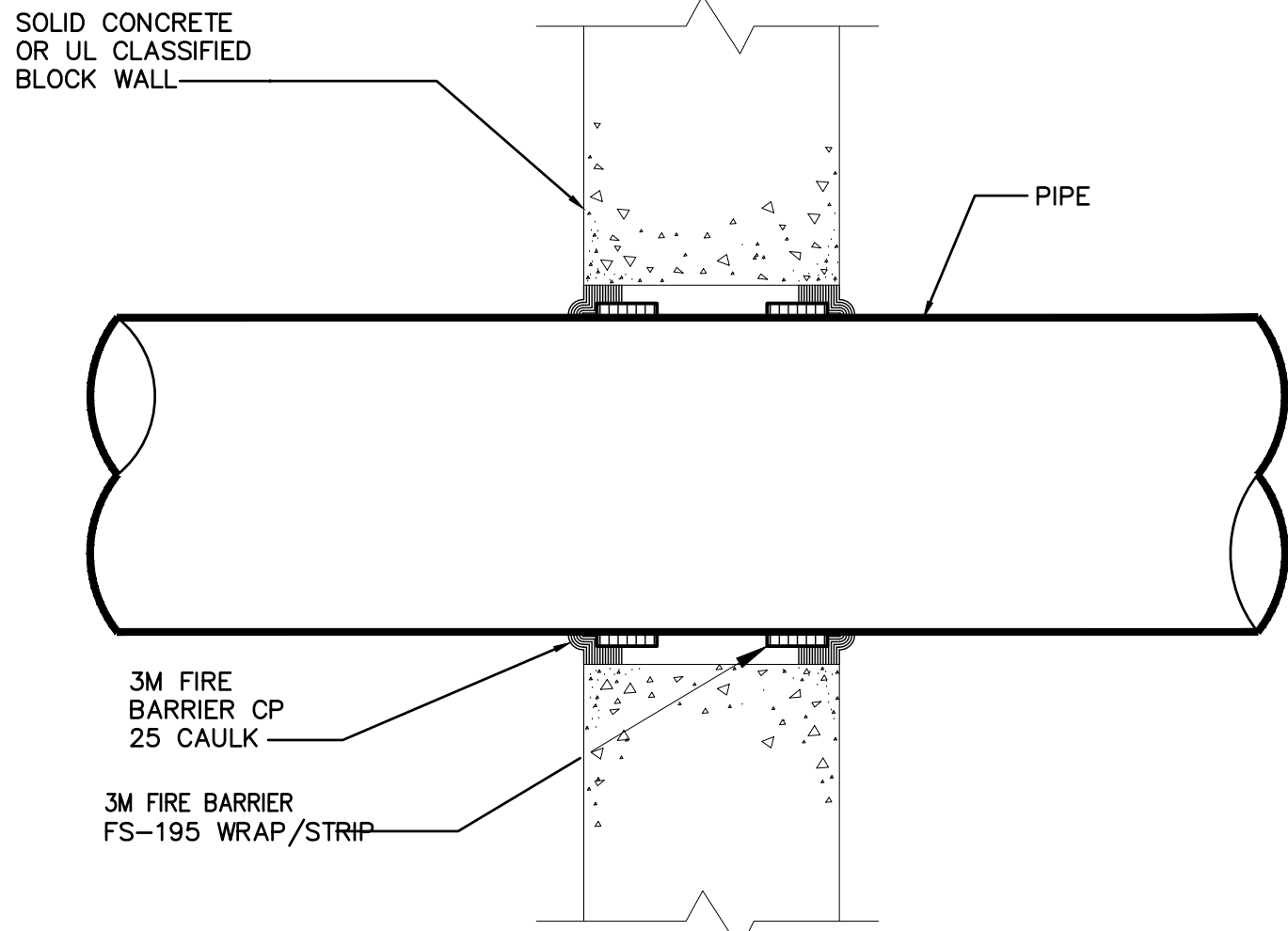
NOTES:

1. MINIMUM ANNULAR SPACE REQUIREMENT IS 1/4". MAXIMUM ANNULAR SPACE ALLOWABLE IS 1 IN.
2. INSTALL THE FIRESTOP SYMMETRICALLY ON BOTH SIDES OF THE WALL ASSEMBLY.
3. FILL THE ANNULAR SPACE AROUND THE PIPE WITH MINIMUM 1" DEPTH OF 3M FIREDAM 150.

U.L. SYSTEM #161

PENETRATION DETAIL FOR 6" MAX. DIA. PIPE

NO SCALE



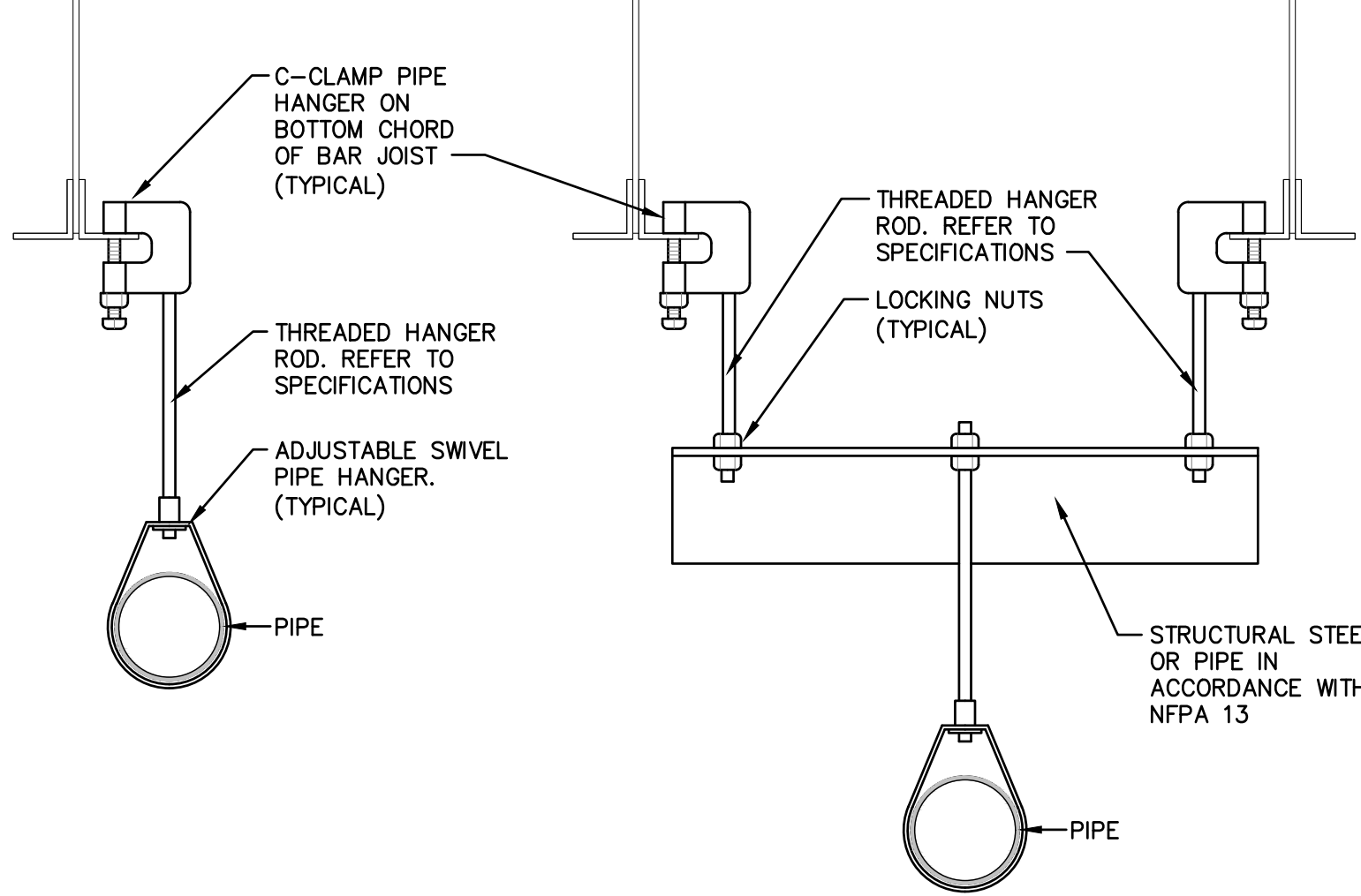
NOTES:

1. MINIMUM ANNULAR SPACE IS 1/4". MAXIMUM ANNULAR SPACE ALLOWABLE IS 3/4".
2. INSTALL THE FIRESTOP SYMMETRICALLY ON BOTH SIDES OF THE WALL ASSEMBLY.
3. TIGHTLY WRAP A LAYER OF 3M FIRE BARRIER FS-195 WRAP/STRIP AROUND THE PIPE/CONDUIT (FOIL SIDE OUT) UNTIL THE O.D. OF THE FS-195 WRAP/STRIP IS EQUAL TO OR 3/16" LESS THE I.D. OF CIRCULAR THROUGH OPENING. SECURE FS-195 WRAP/STRIP WITH STEEL TIE WIRE OR TAPE.
4. SLIDE FS-195 WRAP/STRIP INTO THE OPENING, RECESSING 1/4" FROM THE WALL SURFACE.
5. APPLY 1/4" DEPTH OF 3M FIRE BARRIER CP 25 CAULK TO THE EXPOSED EDGE(S) OF THE FS-195 WRAP/STRIP AND THE FS-195 WRAP/STRIP CONCRETE INTERFACE.

U.L. SYSTEM #95

PENETRATION FIRESTOP FOR 12" MAX. DIA. PIPE THROUGH A CONCRETE WALL

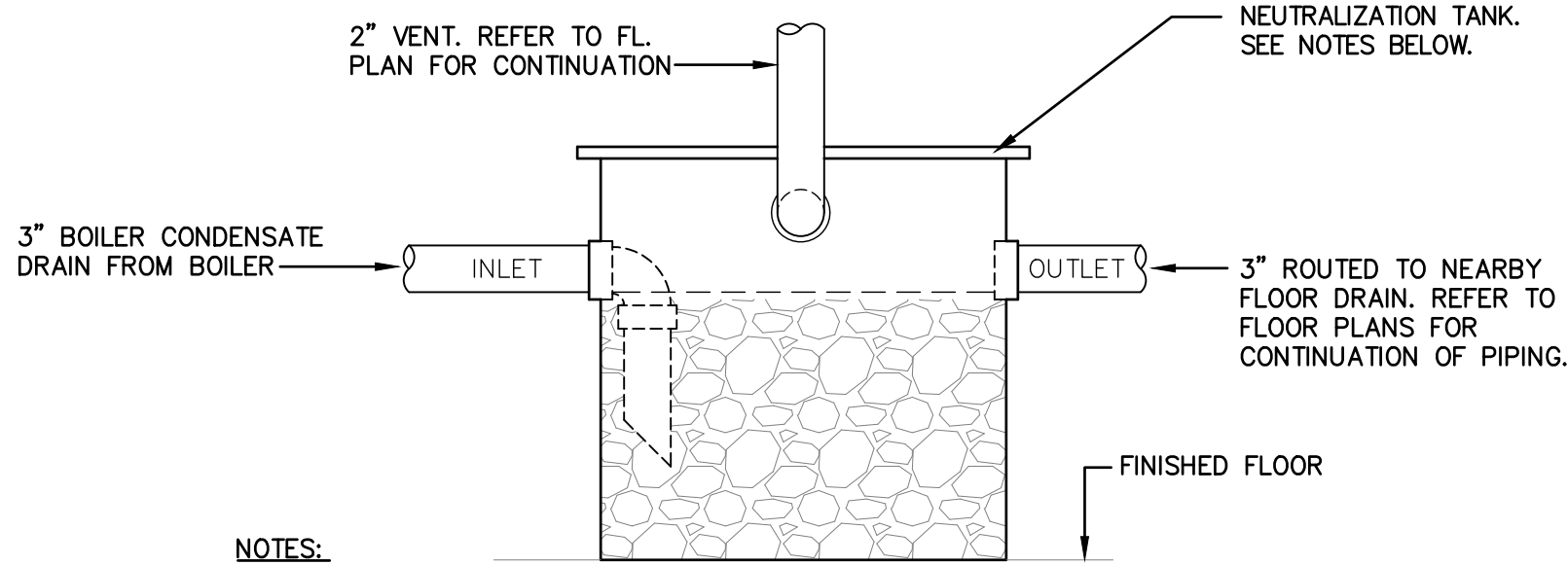
NO SCALE



TRAPEZE PIPE HANGER

PIPE HANGER DETAIL

SCALE: NONE

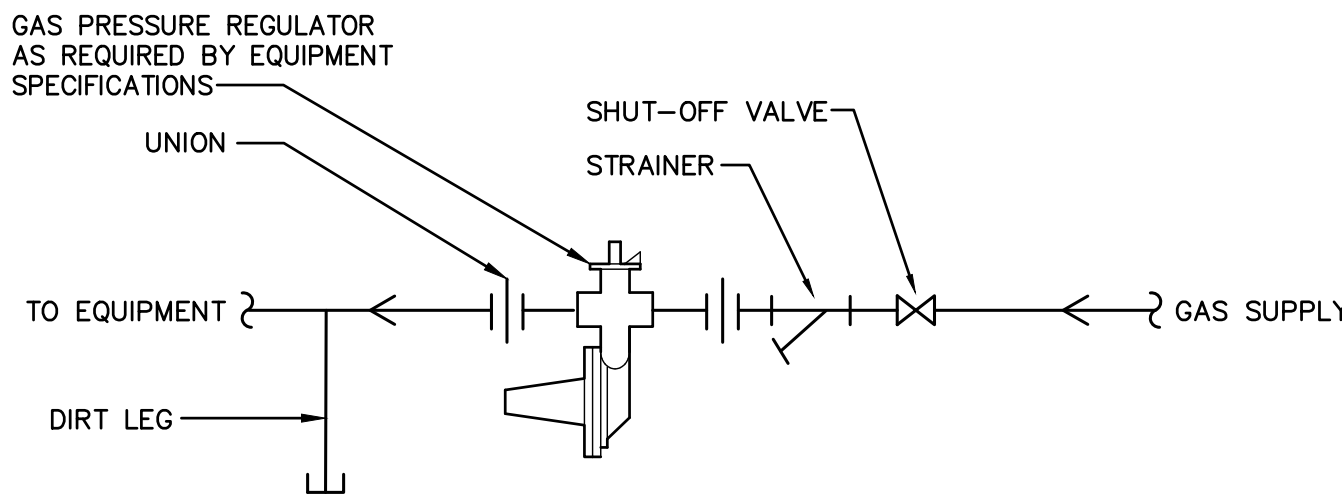


NOTES:

1. COORDINATE ACID NEUTRALIZATION TANK REQUIREMENTS WITH BOILER SHOP DRAWINGS. IF ACID NEUTRALIZATION MEANS IS INTEGRAL TO THE BOILER, A SEPARATE NEUTRALIZATION TANK IS NOT REQUIRED.
2. NEUTRALIZATION TANK AS MANUFACTURED BY ORION FITTINGS INC. OR APPROVED EQUAL. POLYETHYLENE MATERIAL, BOLTED LID. 15 GALLON CAPACITY.
3. NEUTRALIZATION TANK SHALL BE INSTALLED IN A LOCATION THAT DOES NOT LIMIT EQUIPMENT ACCESS OR PRESENT A TRIPPING HAZARD.
4. PROVIDE & INSTALL LIMESTONE CHIPS (1"-3" IN SIZE) CALCIUM CARBONATE CONTENT IN EXCESS OF 90% FILL TO JUST BELOW TANK OUTLET. WATER SHALL BE ADDED TO TANK AFTER PLACEMENT OF NEUTRALIZATION AGENT.

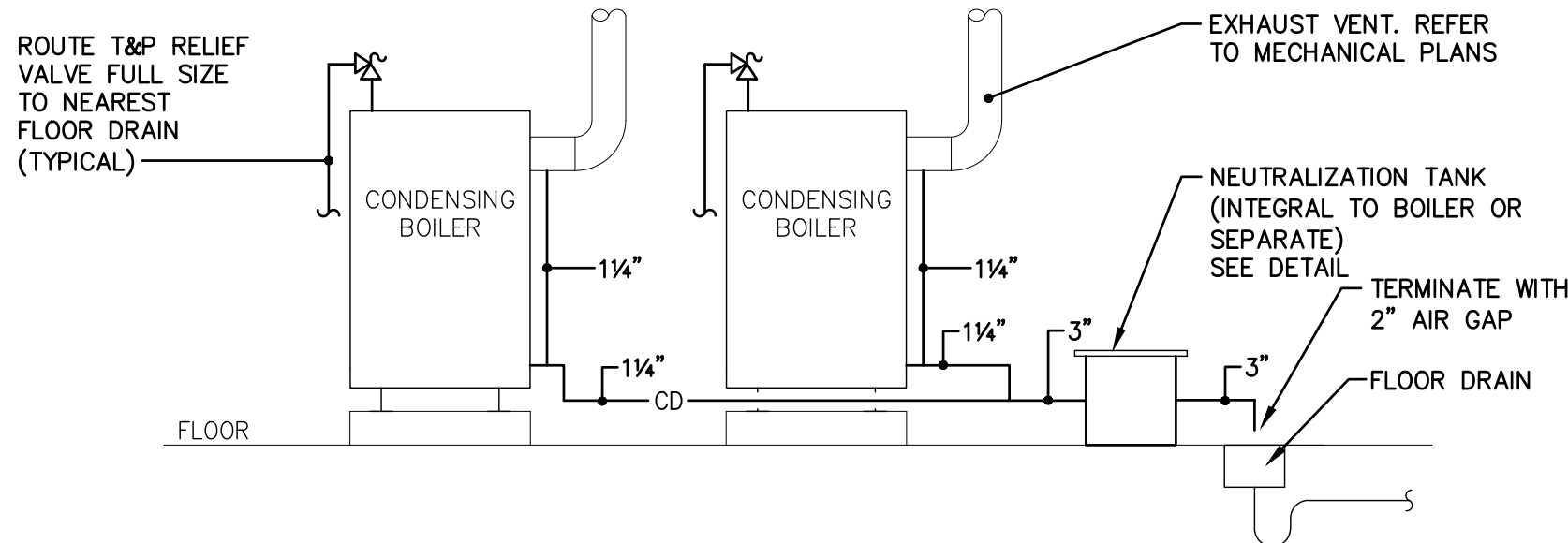
ACID NEUTRALIZATION TANK

NO SCALE



GAS PIPING DIAGRAM

SCALE: NONE



CONDENSATE DETAIL

NO SCALE

PLUMBING SYMBOL LEGEND

SYMBOL	DESCRIPTION	ABBREV.
---CCS---	CONDENSATE COLLECTION SYSTEM	CCS
---CD---	CONDENSATE DRAIN	CD
---ST---	STORM DRAINAGE	ST
---SD---	SECONDARY EMERGENCY ROOF DRAINAGE	SD
---S---	SANITARY DRAINAGE	S
---AW---	ACID WASTE	AW
---GW---	GREASE WASTE	GW
---STO---	STORM & OIL DRAINAGE	STO
---WELL---	WELL WATER	WW
---RW---	RECLAIM WATER	RW
---V---	VENT PIPING	V
---C.W.---	COLD WATER PIPING	C.W.
---H.W.---	HOT WATER PIPING	H.W.
---H.W.R.---	HOT WATER RECIRCULATING	H.W.R.
---G---	GAS PIPING	G
---A---	COMPRESSED AIR PIPING	
--->---	DIRECTION OF FLOW	
---Z---	SWING CHECK VALVE	
---X---	SHUTOFF VALVE	
---SOL---	SOLENOID VALVE	
---BAL---	BALANCING VALVE	
---PR---	PRESSURE REGULATING VALVE	
---EDN---	ELBOW TURNED DOWN	
---EDU---	ELBOW TURNED UP	
---TEE---	TEE TURNED UP	
---TED---	TEE TURNED DOWN	
---P---	P-TRAP	F.D.
---FD---	FLOOR DRAIN	F.D.
---HD---	HUB DRAIN	H.D.
---HB---	HOSE BIB	H.B.
---FS---	FLOOR SINK	F.S.
---RD---	ROOF DRAIN ABOVE	R.D.
---T&P---	T&P RELIEF VALVE (AGA RATED)	
---CUE---	CONNECT TO EXISTING UTILITIES	
---WHA---	WATER HAMMER ARRESTOR	
---KN---	KEYED NOTE	
---IN1---	INSERT INDICATES DETAIL NUMBER	
---IN2---	INSERT INDICATES SHEET NUMBER	
---IN3---	INSERT INDICATES RISER NUMBER	
---IN4---	INSERT INDICATES SHEET NUMBER	
---IN5---	INSERT INDICATES ENLARGED PLAN NUMBER	
---IN6---	INSERT INDICATES SHEET NUMBER	
---CIV1---	BY PLUMBING CONTRACTOR	
---CIV2---	REFER TO CIVIL PLANS FOR CONTINUATION	
---SVB---	SHUT-OFF VALVE IN VALVE BOX	
---IE---	INSERT INDICATES INVERT ELEVATION	I.E.
---TP---	TRAP PRIMER	TP
---A.F.F.---	ABOVE FINISHED FLOOR	A.F.F.
---CONT---	CONTINUATION	CONT.
---DW---	DISHWASHER	DW
---W---	WASHER	W
---DWG---	DRAWING	DWG
---N.T.S.---	NOT TO SCALE	N.T.S.
---RWL---	RAIN WATER LEADER	RWL
---VTR---	VENT THROUGH ROOF	VTR
---FB---	FROM BELOW	FB
---FA---	FROM ABOVE	FA
---BF---	BELOW FLOOR	BF
---BG---	BELOW GRADE	BG
---W.F.U.---	WATER FIXTURE UNIT	W.F.U.
---D.F.U.---	DRAINAGE FIXTURE UNIT	D.F.U.
---E---	EXISTING CONDITION	(E)
---WCO---	WALL CLEANOUT	WCO
---FCO---	FLOOR CLEANOUT	FCO
---CO---	EXTERIOR CLEANOUT	CO
---VTR---	VENT THROUGH ROOF	VTR

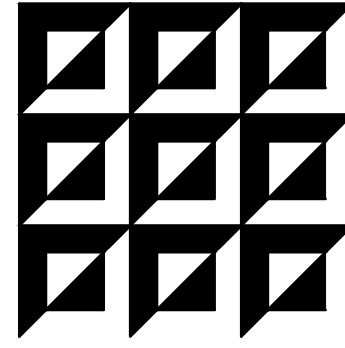
PLUMBING GENERAL NOTES

1. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL NECESSARY FITTINGS AS REQUIRED BY ALL APPLICABLE CODES AND GOVERNING AUTHORITIES.
2. CONTRACTOR SHALL VERIFY AND CORRECT AS REQUIRED TO MEET ALL CODES AND REGULATIONS ANY POSSIBLE DISCREPANCIES BETWEEN TYPE AND SIZE OF CONNECTION SPECIFIED IN PLUMBING FIXTURE SCHEDULE AND FIXTURES ACTUALLY INSTALLED ON THE SITE.
3. SANITARY PIPING 2" SHALL HAVE A 1/4" PER FT. SLOPE. PIPING 3" & LARGER SHALL HAVE A 1/8" PER FT. SLOPE MINIMUM.
4. COORDINATE SANITARY VENTS WITH HVAC O.A. INTAKES. PROVIDE AT LEAST 10'-0" DISTANCE FROM VENT STACKS AND INTAKE VENTS.
5. VALVES AND FITTINGS SHALL BE OF SAME SIZE OF LINE ON WHICH THEY ARE LOCATED, UNLESS OTHERWISE INDICATED ON DRAWINGS.
6. CONTRACTOR SHALL COORDINATE ALL WORK WITH OTHER TRADES.
7. CONTRACTOR SHALL FIELD VERIFY ALL GIVEN MEASUREMENTS PRIOR TO LAYING AND CONNECTING ALL SANITARY AND WASTE PIPING AND NOTIFY ARCHITECT OF ANY DISCREPANCIES.
8. AIR CHAMBERS SHALL NOT BE CONSIDERED AN EQUAL TO WATER HAMMER ARRESTORS. WATER HAMMER ARRESTORS (WHA) SHALL BE INSTALLED ON ALL GROUP TOILETS AND ON THE BRANCH LINES TO INDIVIDUAL FIXTURES. ALL APPLICATIONS SHALL BE INSTALLED AS PER STANDARD PD-WH201. REFER TO PLUMBING FIXTURES SCHEDULE FOR SPECIFICATIONS. PROVIDE ACCESS PANELS IN THE CEILING AS REQUIRED FOR ACCESSIBILITY AND MAINTENANCE. PROVIDE & INSTALL TYPE "A" ON ALL INDIVIDUAL FIXTURES THAT ARE NOT LOCATED IN GROUP TOILETS OR NOT NOTED ON RISER DIAGRAMS.
9. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING FIRE RATING AND WEATHERPROOFING INTEGRITY OF ALL PIPING AND PENETRATIONS. REFER TO DETAILS.
10. ALL WATER SUPPLY AND SANITARY LINES SHALL BE RUN AS CLOSE TO PLANS AS POSSIBLE WITH NO CHANGES IN SIZING.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL NECESSARY SUPPORTING DEVICES FOR ALL FIXTURES INCLUDED IN CONTRACT OR HEREIN SPECIFIED OR OTHERWISE.
12. ALL DRAINAGE PIPING SHALL BE MARKED WITH THE SEAL OF APPROVAL OF THE NATIONAL SANITATION FOUNDATION.
13. ROUTE ALL PIPING CONCEALED ABOVE CEILINGS, WITHIN WALLS, OR IN CHASES EXCEPT AS SPECIFICALLY NOTED, OR IN MECHANICAL ROOMS.
14. PROVIDE ACCESS PANELS TO ALL VALVES WITHIN CHASES OR ABOVE NON-ACCESSIBLE CEILINGS. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPES.
15. SEE ARCHITECTURAL DRAWINGS FOR EXACT ROUGH-IN LOCATION OF PLUMBING FIXTURES.
16. PROVIDE A PRE MANUFACTURED DRAIN INSULATING COVER ON ALL SINKS AND LAVATORIES DESIGNATED AS A HANDICAP FIXTURE. REFER TO PLUMBING DRAWINGS AND THE ARCHITECTS DRAWINGS FOR DESIGNATIONS.
17. CONTRACTOR SHALL VERIFY INVERT ELEVATIONS OF SEWERS TO WHICH NEW SEWER LINES ARE TO BE CONNECTED BEFORE INSTALLATION OF NEW SEWER LINE.
18. CONTRACTOR SHALL INSTALL DIELECTRIC UNIONS AT CONNECTIONS OF DISSIMILAR METALS.
19. CONTRACTOR SHALL ROUGH-IN ALL WASTES AND SUPPLIES TO SPECIAL EQUIPMENT ACCORDING TO MANUFACTURER'S SHOP DRAWINGS AND MAKE FINAL CONNECTIONS. ALL SUPPLIES SHALL BE VALVED. INSTALL VACUUM BREAKERS WHERE REQUIRED BY CODE.
20. PROVIDE REDUCED PRESSURE BACKFLOW PREVENTERS FOR DOMESTIC WATER SUPPLIES AS REQUIRED BY LOCAL WATER PURVEYORS.
21. DO NOT PENETRATE WALL FOOTINGS WITH PIPING, COORDINATE WITH GENERAL CONTRACTOR TO DROP FOOTINGS AS REQUIRED TO CLEAR PLUMBING SERVICES WHERE ABSOLUTELY NECESSARY. ANY PIPING PENETRATING A BEARING WALL OR FOOTING MUST BE SLEEVED AND LOCATION APPROVED BY STRUCTURAL ENGINEER.
22. THE CONTRACTOR SHALL MAKE ALL FINAL CONNECTIONS TO FIXTURES.
23. ASSEMBLE ALL FIXTURES AND EQUIPMENT SHIPPED LOOSE WHICH YOU ARE REQUIRED TO MAKE FINAL CONNECTIONS TO, WHETHER FURNISHED BY YOU OR BY OTHERS, (I.E. WATER FAUCETS, TRIM OR TAILPIECE ETC.)
24. ALL INSTALLATIONS OF FLOOR DRAINS AND HUB DRAINS (LOCATED IN MECHANICAL ROOMS) SHALL BE COORDINATED WITH THE MECHANICAL EQUIPMENT AND HOUSEKEEPING PADS PRIOR TO ROUGH-IN OF DRAINS.
25. PLUMBER SHALL BE LICENSED BY STATE AND LOCAL AUTHORITIES TO INSTALL GAS PIPING.

ALTERNATE DEDUCT #1

CONTRACTOR SHALL PROVIDE AN ALTERNATE DEDUCT PRICE FOR THE FOLLOWING SCOPE OF WORK:

- INSTALL ONE 1,999 MBH BOILER, IN LIEU OF TWO. ALL WORK ASSOCIATED WITH THE SECOND BOILER, INCLUDING THE GAS, HOT WATER PIPING AND CONDENSATE CONNECTIONS WOULD BE ELIMINATED FROM THE SCOPE OF WORK.



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13805 58TH ST N, CLEARWATER, FL 33760

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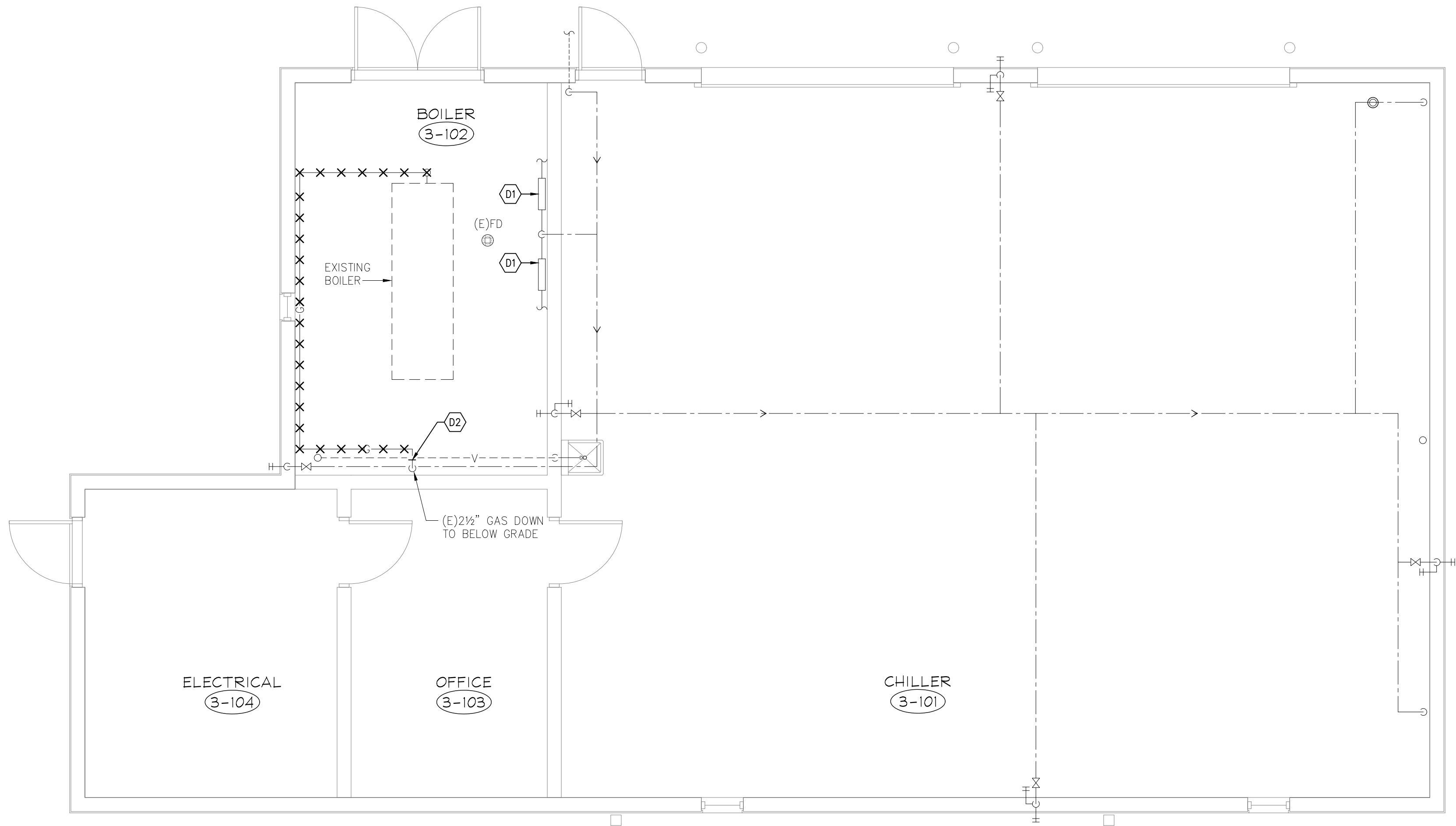
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& DETAILS

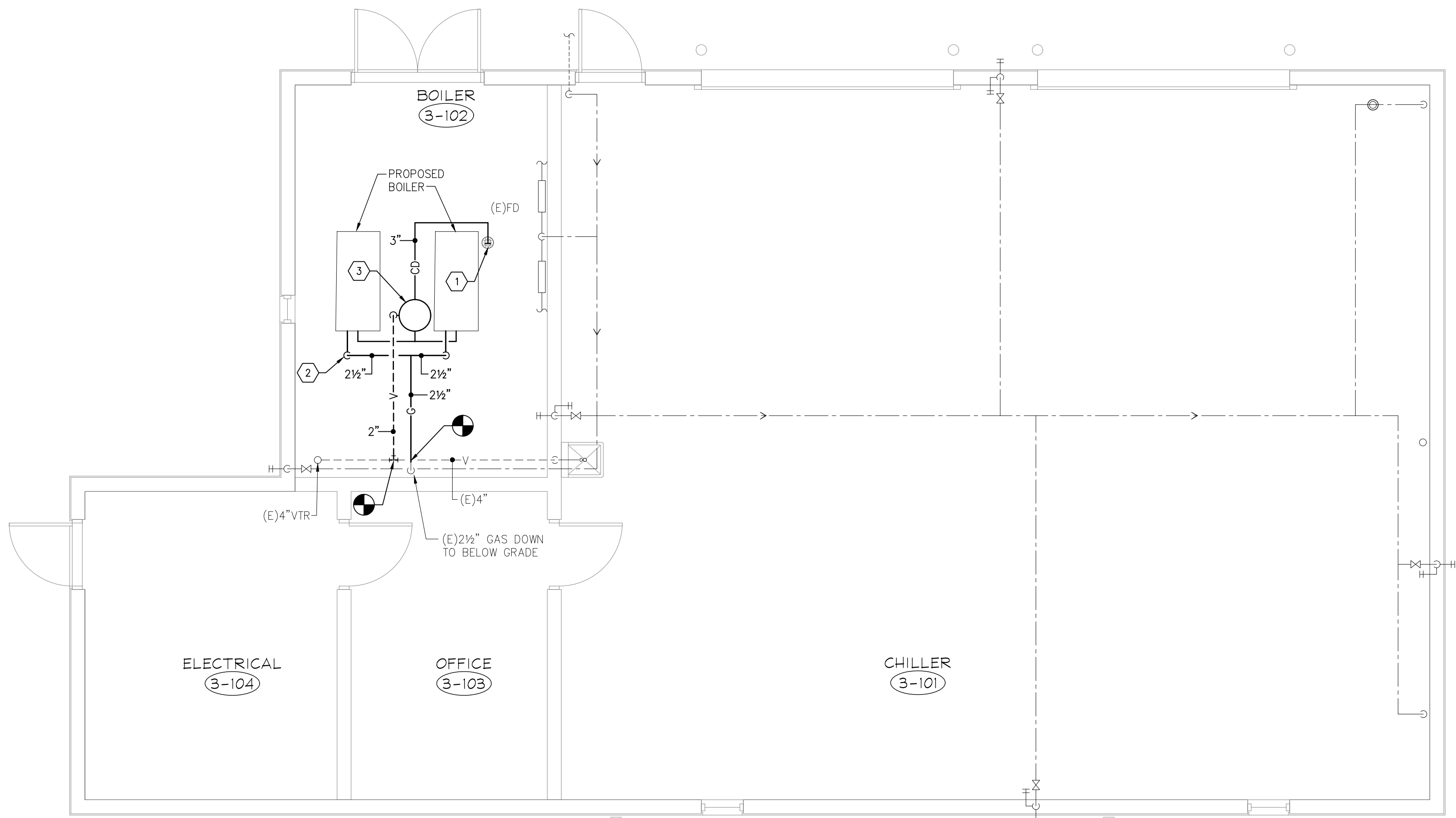
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PLUMBING DEMOLITION PLAN
SCALE: 1/4" = 1'-0"



PLUMBING FLOOR PLAN
SCALE: 1/4" = 1'-0"

GENERAL NOTES

1. EXISTING UTILITIES SHOWN ON PLAN FOR REFERENCE ONLY. CONTRACTOR SHALL VERIFY LOCATION AND SIZE OF THE EXISTING UTILITIES SERVING THE BUILDING. CONTRACTOR SHALL MAKE PROVISIONS IN BID FOR ALL COORDINATION, VERIFICATION, AND INSTALLATION.

DEMOLITION KEYED NOTES

D1 EXISTING REDUCED PRESSURE BACKFLOW PREVENTER SHALL REMAIN.

D2 CUT EXISTING GAS PIPE OVERHEAD FOR NEW CONNECTION. REMOVE GAS PIPING AS SHOWN.

KEYED NOTES

1 TERMINATE CONDENSATE WITH 2" AIR GAP ABOVE EXISTING FLOOR DRAIN.

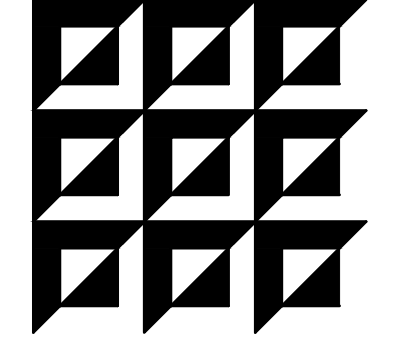
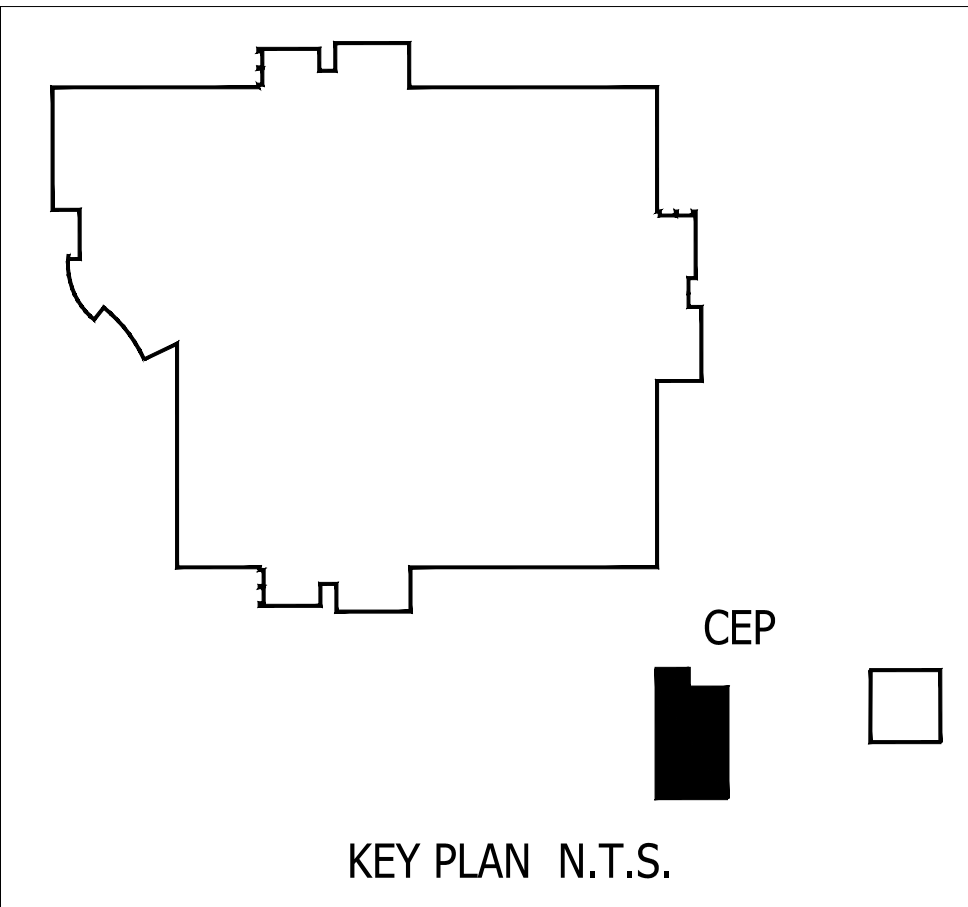
2 GAS DOWN TO BOILER. REFER TO GAS PIPING DETAIL FOR ADDITIONAL INFORMATION.

3 ACID NEUTRALIZATION TANK. REFER TO DETAIL.

ALTERNATE DEDUCT #1

CONTRACTOR SHALL PROVIDE AN ALTERNATE DEDUCT PRICE FOR THE FOLLOWING SCOPE OF WORK:

- INSTALL ONE 1,999 MBH BOILER, IN LIEU OF TWO. ALL WORK ASSOCIATED WITH THE SECOND BOILER, INCLUDING THE GAS, HOT WATER PIPING AND CONDENSATE CONNECTIONS WOULD BE ELIMINATED FROM THE SCOPE OF WORK.



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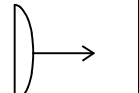
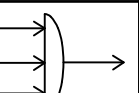
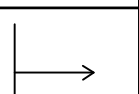
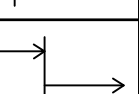
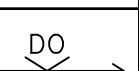

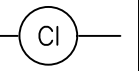
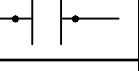
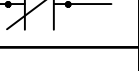
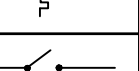
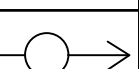
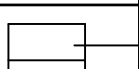
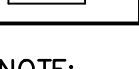
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FLOOR
PLANS**

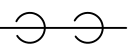
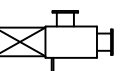
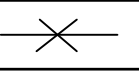
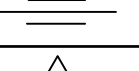
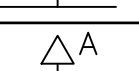
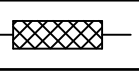
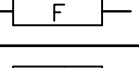

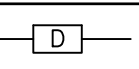

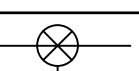
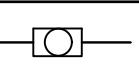
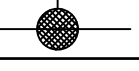

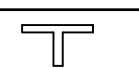
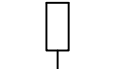
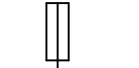
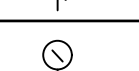



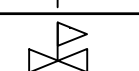
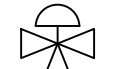



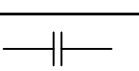
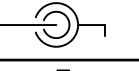


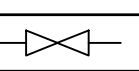
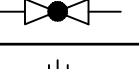
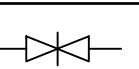
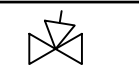
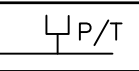


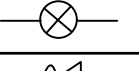
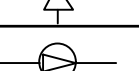


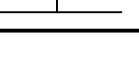




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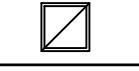
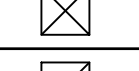
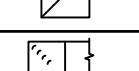
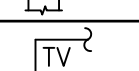
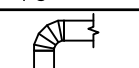

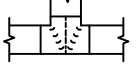
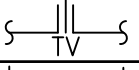
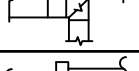
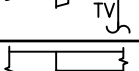
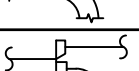

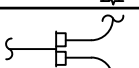
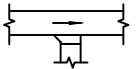
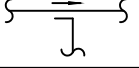
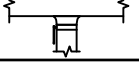
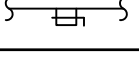
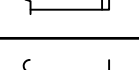

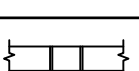
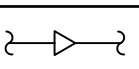
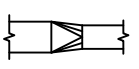

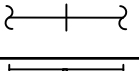
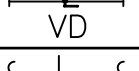
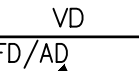


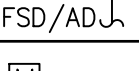
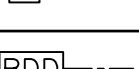
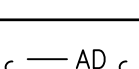
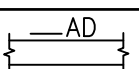

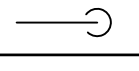
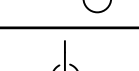

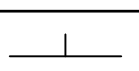
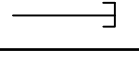
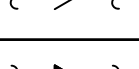
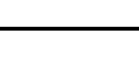




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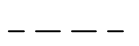
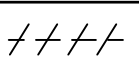
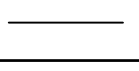

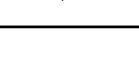
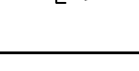
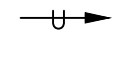
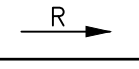
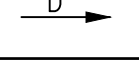
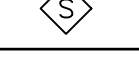
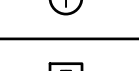
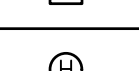
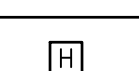
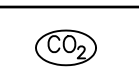
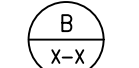







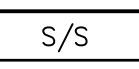
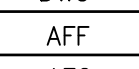
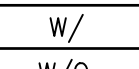
P1.1

CONTROLS SYMBOL LEGEND	
SYMBOL	DESCRIPTION
AI	ANALOG INPUT
AO	ANALOG OUTPUT
DI	DIGITAL INPUT
DO	DIGITAL OUTPUT
SS	START/STOP SIGNAL
FF	FLOW FEEDBACK/STATUS SIGNAL
WR	CHILLED WATER RESET 4–20 mA SIGNAL
VM	PID VALVE MODULATION
T	TEMPERATURE SENSOR/TRANSMITTER
P	PRESSURE SENSOR/TRANSMITTER
DP	PRESSURE DIFFERENTIAL SWITCH
SP	SETPOINT
M	MOTORIZED DAMPER ACTUATOR
H	HUMIDITY SENSOR/TRANSMITTER
CO2	CARBON DIOXIDE SENSOR/TRANSMITTER
TS	THERMOSTAT
HS	HUMIDISTAT
PF	PROPORTIONAL, LINEARIZED FEEDBACK 4–20mA SIGNAL
TD	TIME DELAY (RELAY OR SOFTWARE LATCH)
CT	CURRENT TRANSDUCER WITH GO/NO GO MONITOR CAPABILITY
O.A.	OUTSIDE AIR
LS	LIMIT SWITCH
VFD	VARIABLE FREQUENCY DRIVE
	"AND" LOGIC GATE
	THREE INPUT "AND" LOGIC GATE
	"OR" LOGIC GATE
	TWO INPUT "OR " LOGIC GATE
	SIGNAL OUT OF DIGITAL (EMCS) SOFTWARE INTO HARDWARE
	SIGNAL OUT OF HARDWARE INTO DIGITAL (EMCS) SOFTWARE
	CONTROL RELAY HOLDING COIL
	NORMALLY OPEN CONTROL RELAY CONTACT
	NORMALLY CLOSED CONTROL RELAY CONTACT
	THERMOSTAT – CLOSE ON TEMPERATURE RISE
	SINGLE POLE SWITCH
	"NOT" INPUT LOGIC
	SIGNAL TYPE (AI,AO,DI,DO) FUNCTIONAL DESCRIPTION

NOTE:
NOT ALL SYMBOLS SHOWN IN THIS LEGEND NECESSARILY APPEAR IN THESE DOCUMENTS.
ADDITIONAL SYMBOLS MAY BE DEFINED ELSEWHERE IN SPECIFIC DRAWINGS.

MECHANICAL SYMBOL LEGEND	
SYMBOL	DESCRIPTION
	45 DEGREE OFFSET
	SUCTION DIFFUSER
	PIPE ANCHOR
	PIPE EXPANSION GUIDES
	MANUAL AIR VENT
	AUTOMATIC AIR VENT
	VIBRATION ISOLATOR
	FLOAT TRAP
	FLOAT AND THERMOSTATIC TRAP
	THERMOSTATIC TRAP
	THERMO–DYNAMIC DISC TRAP
	DRYER
	FILTER
	EXPANSION VALVE (THERMOSTATIC)
	SIGHT GLASS
	BALL SHUT–OFF VALVE
	LIQUID CHARGING VALVE
	HOT GAS BYPASS VALVE
	HOT GAS TEE
	LIQUID SHUT–OFF VALVE
	THERMOMETER WITH NEEDLE VALVE
	PRESSURE OR VACUUM GAGE WITH NEEDLE VALVE
	COMPOUND PRESSURE OR VACUUM GAGE WITH NEEDLE VALVE
	LUGGED BUTTERFLY VALVE
	ANGLE GATE VALVE W/ HOSE BIB
	PRESSURE REDUCING VALVE
	3–WAY CONTROL VALVE
	FLOW MONITOR
	2–WAY CONTROL VALVE
	GATE VALVE IN RISE
	FLANGED CONNECTION
	LUGGED BUTTERFLY VALVE IN RISE
	NEEDLE VALVE
	CIRCULATING PUMP
	SHOCK ARRESTOR
	SHUT–OFF VALVE
	GLOBE VALVE
	PIPE UNION
	COMBINATION CALIBRATED BALANCING VALVE WITH MEMORY STOP AND SHUT–OFF VALVE
	TRIPLE DUTY VALVE (CALIBRATED BALANCING, SHUT–OFF AND CHECK)
	PRESSURE /TEMPERATURE PLUG
	SWING CHECK VALVE
	GAS PLUG VALVE
	Y–TYPE STRAINER WITH BLOW DOWN AND VALVE
	SHUT–OFF VALVE IN VALVE BOX
	ASME TEMPERATURE AND PRESSURE RELIEF VALVE
	SPRING CHECK VALVE
	COMBINATION MAGNETIC MOTOR STARTER
	FUSIBLE DISCONNECT SWITCH
	FLOW SWITCH

MECHANICAL SYMBOL LEGEND	
SYMBOL	DESCRIPTION
	SUPPLY AIR DEVICE
	SUPPLY AIR DEVICE W/ 90° SECTORIZED BAFFLES PROVIDED IN SHADED QUADRANTS
	RETURN/EXHAUST AIR DEVICE
	SUPPLY AIR DUCT SECTION
	RETURN/EXHAUST AIR DUCT SECTION
	90 DEGREE SQUARE ELBOW WITH TURNING VANES (DOUBLE LINE)
	90 DEGREE SQUARE ELBOW WITH TURNING VANES (SINGLE LINE)
	RADIUSED ELBOW WITH TURNING VANES (DOUBLE LINE)
	RADIUSED ELBOW WITH TURNING VANES (SINGLE LINE)
	DUCT TEE WITH TURNING VANES AND SPLITTER DAMPER (DOUBLE LINE)
	DUCT TEE WITH TURNING VANES AND SPLITTER DAMPER (SINGLE LINE)
	NESTED SQUARE/RECTANGULAR BRANCH TAKE–OFF (DOUBLE LINE)
	NESTED SQUARE/RECTANGULAR BRANCH TAKE–OFF (SINGLE LINE)
	NESTED RADIUS BRANCH TAKE–OFF (DOUBLE LINE)
	NESTED RADIUS BRANCH TAKE–OFF (SINGLE LINE)
	NESTED RADIUS TEE (DOUBLE LINE)
	NESTED RADIUS TEE (SINGLE LINE)
	BRANCH TAKE OFF WITH SHOE FITTING (DOUBLE LINE)
	BRANCH TAKE OFF WITH SHOE FITTING (SINGLE LINE)
	SPIN–IN FITTING WITH VOLUME DAMPER (DOUBLE LINE)
	SPIN–IN FITTING WITH VOLUME DAMPER (SINGLE LINE)
	CAP ON END OF DUCT (DOUBLE LINE)
	CAP ON END OF DUCT (SINGLE LINE)
	FLEXIBLE DUCT (DOUBLE LINE)
	DUCT TRANSITION (DOUBLE LINE)
	DUCT TRANSITION (SINGLE LINE)
	RECTANGULAR TO ROUND TRANSITION (DOUBLE LINE)
	RECTANGULAR TO ROUND TRANSITION (SINGLE LINE)
	RIGID TO FLEXIBLE DUCT TRANSITION (SINGLE LINE)
	VOLUME DAMPER (DOUBLE LINE)
	VOLUME DAMPER (SINGLE LINE)
	FIRE DAMPER WITH ACCESS DOOR
	SMOKE DAMPER WITH ACCESS DOOR
	COMBINATION FIRE–SMOKE DAMPER WITH ACCESS DOOR
	MOTORIZED DAMPER
	BACKDRAFT DAMPER
	ACCESS DOOR IN DUCT
	ACCESS DOOR IN SIDE OF DUCT (DOUBLE LINE)
	ACCESS DOOR IN BOTTOM OF DUCT
	PIPE DOWN
	PIPE UP
	BRANCH CONNECTION OFF TOP
	BRANCH CONNECTION OFF BOTTOM
	BRANCH CONNECTION OFF SIDE
	CAP ON END OF PIPE
	DIRECTION OF FLOW
	PIPE TRANSITION

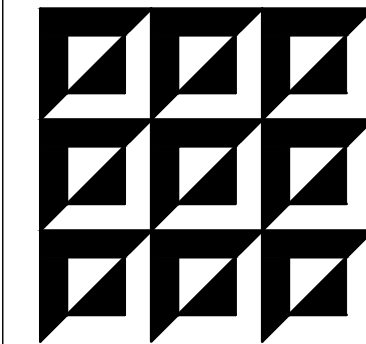
MECHANICAL SYMBOL LEGEND	
SYMBOL	DESCRIPTION
	EXISTING DEVICES OR EQUIPMENT TO REMAIN
	EXISTING DEVICES OR EQUIPMENT TO BE REMOVED
	NEW OR MODIFIED DEVICES OR EQUIPMENT
	SUPPLY/OUTSIDE AIR FLOW
	RETURN/EXHAUST AIR FLOW
	LOUVERED DOOR: LOUVERED DOOR SHALL BE MINIMUM 12" X 12" UNLESS OTHERWISE NOTED ON THE DRAWINGS. CONTRACTOR SHALL COORDINATE ALL DOOR LOUVERS WITH DOOR INSTALLATION CONTRACTOR PRIOR TO BID.
	UNDERCUT DOOR, DOORS SHALL HAVE A ¾ INCH UNDERCUT. CONTRACTOR SHALL COORDINATE ALL DOOR UNDERCUTS WITH DOOR INSTALLATION CONTRACTOR PRIOR TO BID.
	RISE IN DUCT ELEVATION IN DIRECTION OF AIRFLOW
	DROP IN DUCT ELEVATION IN DIRECTION OF AIRFLOW
	SMOKE DETECTOR IN DUCT W/ 6" X 6" ACCESS DOOR
	THERMOSTAT
	TEMPERATURE SENSOR
	HUMIDISTAT
	HUMIDITY SENSOR
	CO2 SENSOR
	BOILER
	BOILER PUMP
	INSERT INDICATES AIR DEVICE TYPE (REFER TO MECHANICAL SCHEDULE)
	INSERT INDICATES DEVICE AIR FLOW RATE
	INSERT INDICATES SECTION NUMBER
	INSERT INDICATES DRAWING NUMBER
	INSERT INDICATES DETAIL NUMBER
	INSERT INDICATES DRAWING NUMBER
	CONNECTION POINT OF NEW TO EXISTING
	KEYED NOTE

MECHANICAL ABBREVIATIONS			
ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
S/S	STAINLESS STEEL	F.C.	FAIL CLOSED
DWG	DRAWING	N.T.S.	NOT TO SCALE
AFF	ABOVE FINISHED FLOOR	(E)	EXISTING EQUIPMENT
AFG	ABOVE FINISHED GRADE	Ø	DIAMETER
W/	WITH	O.B.D.	OPPOSED BLADE DAMPER
W/O	WITHOUT	CHWS	CHILLED WATER SUPPLY
AUTO	AUTOMATIC	CHWR	CHILLED WATER RETURN
APPROX.	APPROXIMATE	HWS	HEATING HOT WATER SUPPLY
N.O.	NORMALLY OPEN	HWR	HEATING HOT WATER RETURN
N.C.	NORMALLY CLOSED	CWS	CONDENSER WATER SUPPLY
C.	COMMON (ALWAYS OPEN)	CWR	CONDENSER WATER RETURN
ET	EXPANSION TANK	CD	CONDENSATE DRAIN
F.O.	FAIL OPEN		

ALTERNATE DEDUCT #1

CONTRACTOR SHALL PROVIDE AN ALTERNATE DEDUCT PRICE FOR THE FOLLOWING SCOPE OF WORK:

- INSTALL ONE 1,999 MBH BOILER, IN LIEU OF TWO BOILERS. ALL WORK ASSOCIATED WITH THE SECOND BOILER, INCLUDING THE HVAC CONTROLS, FLUE AND HOT WATER PIPING CONNECTION WOULD BE ELIMINATED FROM THE SCOPE OF WORK.
- REUSE THE EXISTING BOILER PUMP (E)BP–1
- ELIMINATE SCOPE ASSOCIATED WITH THE NEW BOILER PUMPS BP–1 OR BP–2
- REUSE EXISTING LOUVERS IN THE BOILER ROOM IN LIEU OF REPLACING WITH TWO NEW LOUVERS AS SHOWN.



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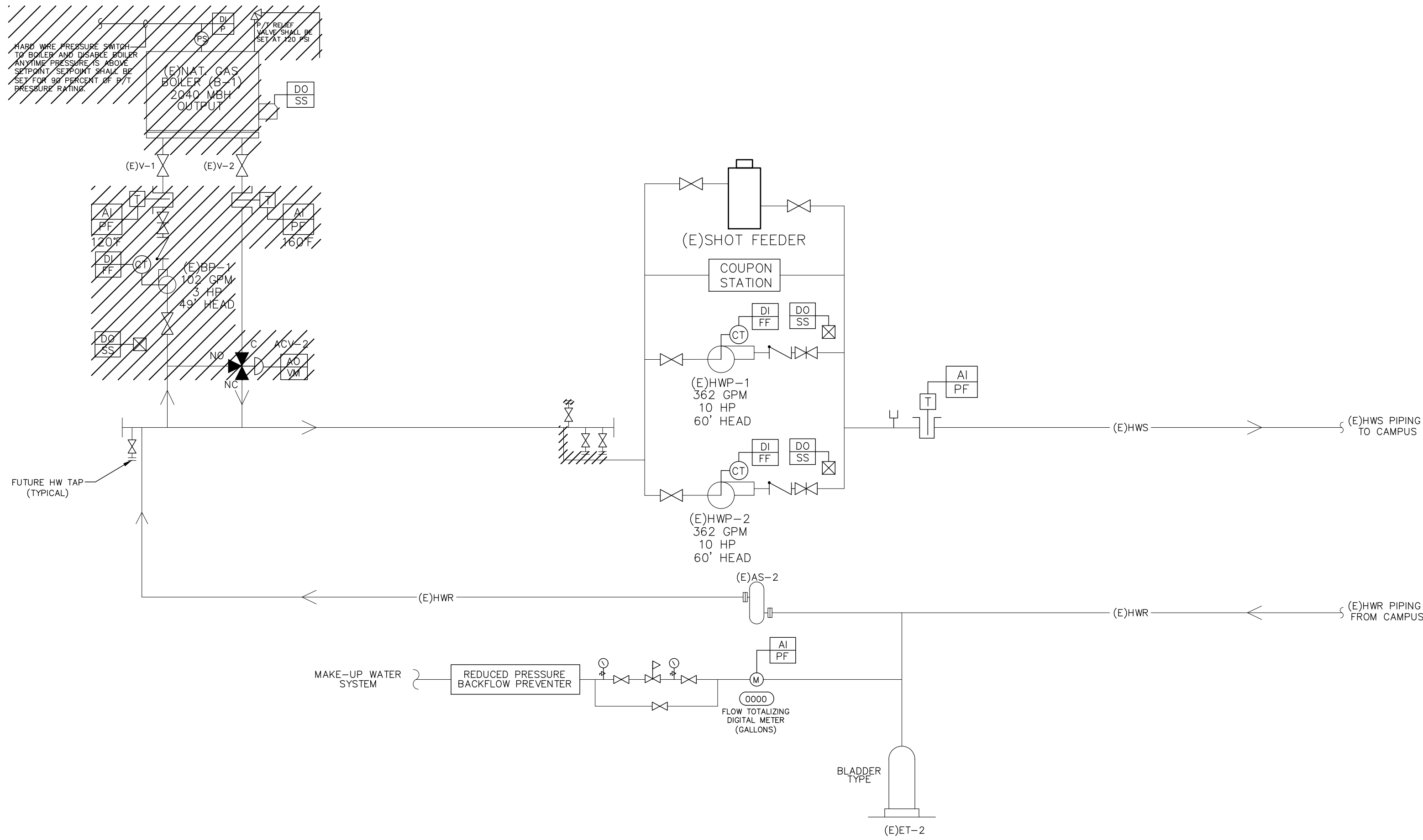
**MECHANICAL
SYMBOLS LEGEND**

SCALE: NORTH:

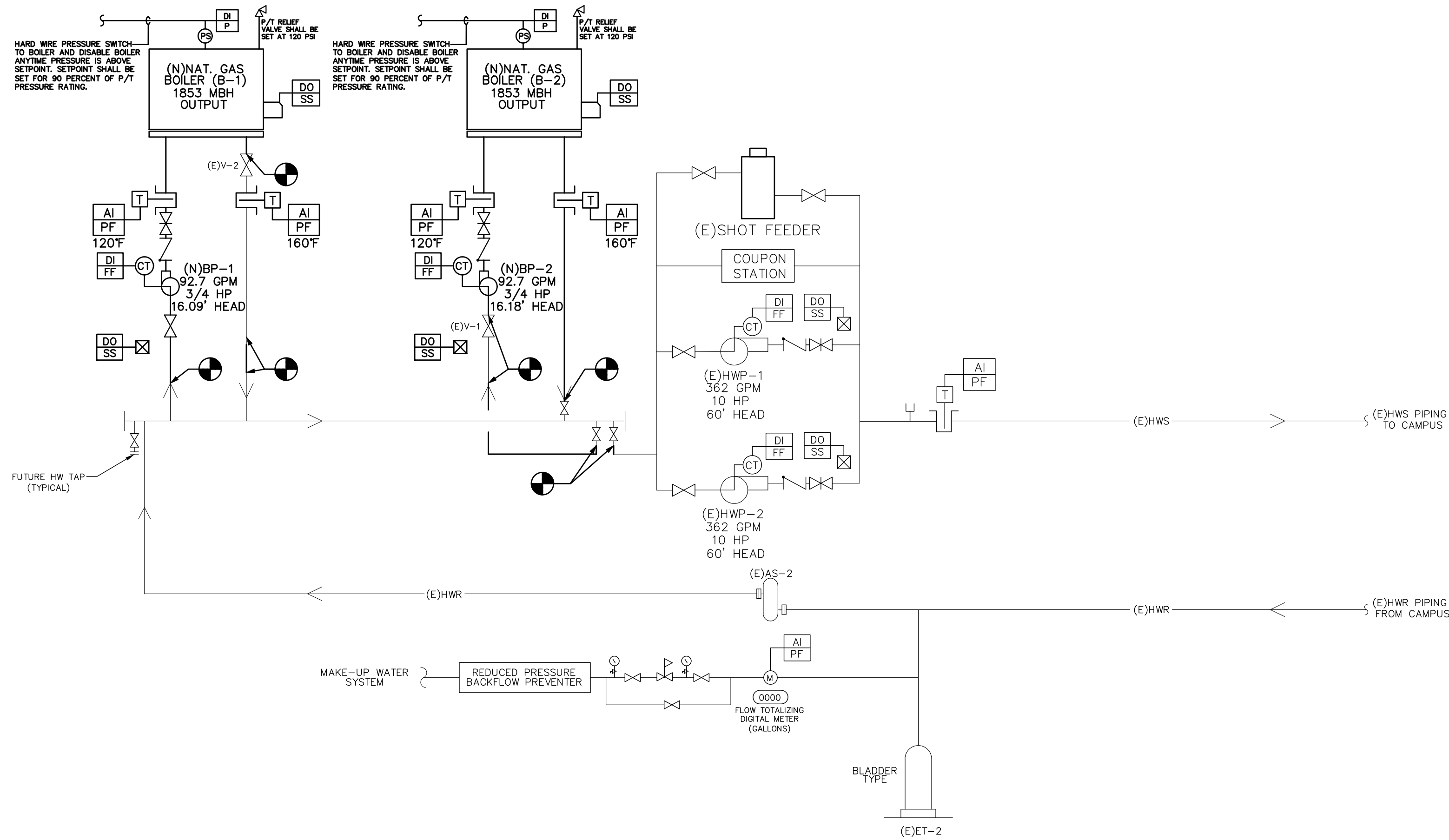
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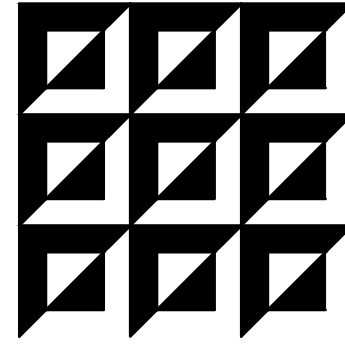
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MECHANICAL FLOW DIAGRAM - DEMOLITION



MECHANICAL FLOW DIAGRAM - NEW



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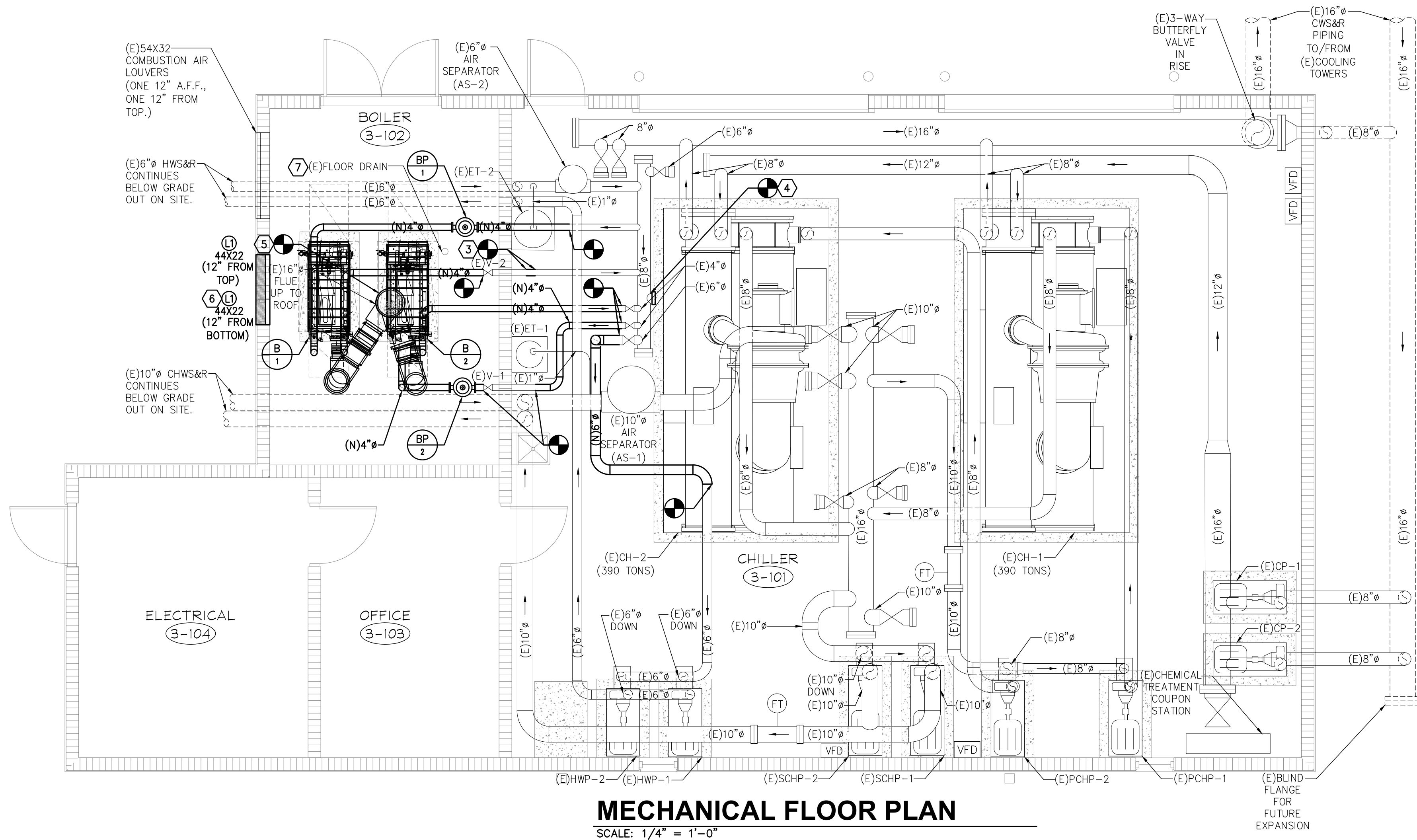
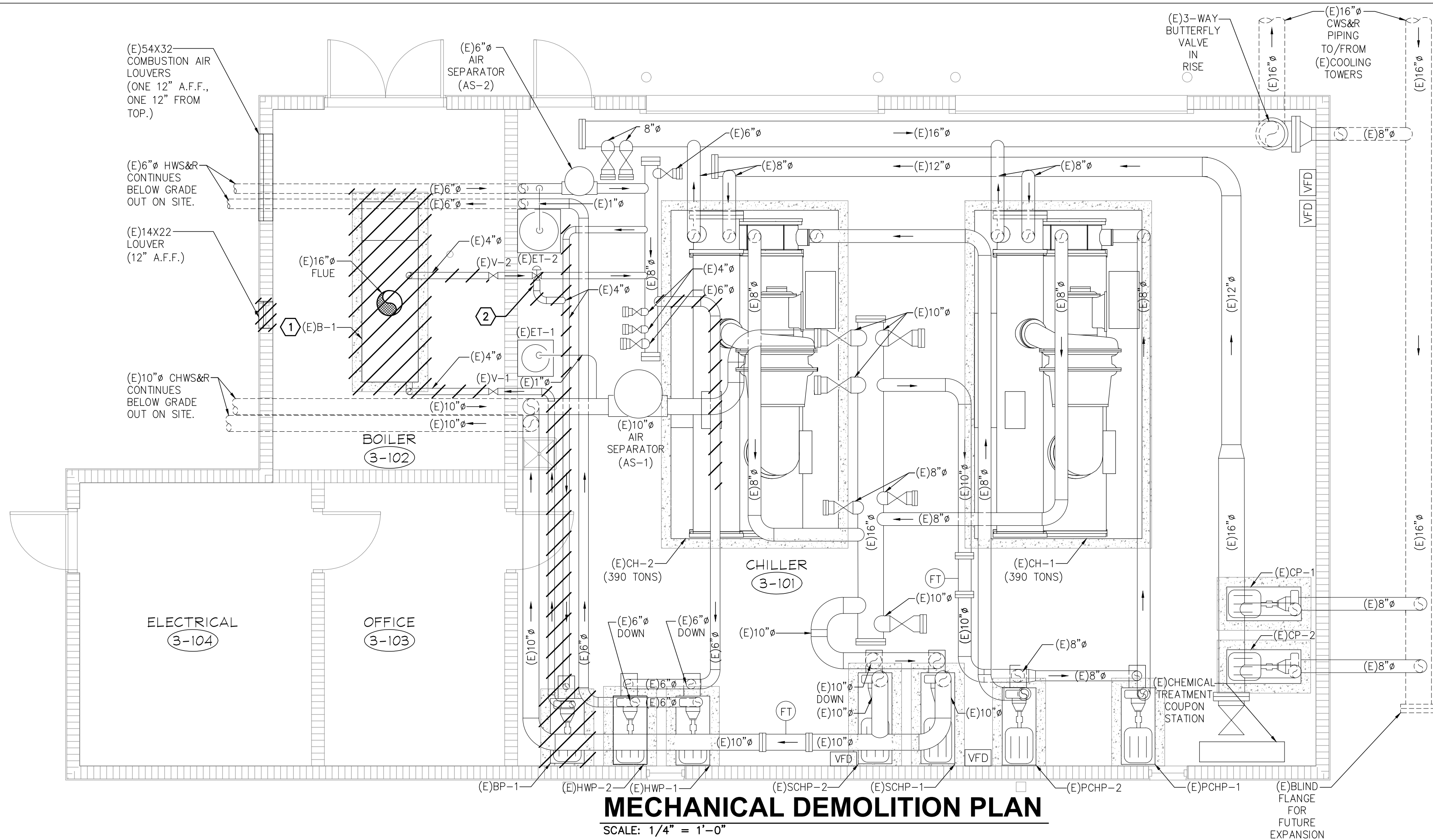
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**MECHANICAL
FLOW
DIAGRAMS**

SCALE: NOT TO SCALE NORTH:

DRAWING NUMBER:

M0.1



GENERAL NOTES

- CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF DEMOLITION WORK WITH OTHER TRADES TO AVOID CONFLICTS.
- ALL EQUIPMENT SCHEDULED FOR DEMOLITION SHALL BE PRESENTED TO OWNER FOR THE FIRST RIGHT OF REFUSAL. SHOULD THE OWNER REFUSE, ALL EQUIPMENT SHALL BE DISPOSED OF IN A PROPER MANNER.
- EXISTING EQUIPMENT, LOCATIONS, AND DATA ARE BASED ON EXISTING DRAWING DATA. CONTRACTOR SHALL FIELD VERIFY EXACT LOCATIONS.
- ANY EXISTING WALL, ROOF, FLOOR, EQUIPMENT, ETC. DAMAGED DURING DEMOLITION SHALL BE REPAIRED OR REPLACED TO MATCH EXISTING. COORDINATE WITH GENERAL CONTRACTOR AND/OR OWNER.
- CONTRACTOR SHALL INSTALL MECHANICAL EQUIPMENT IN ACCORDANCE WITH ALL STATE AND LOCAL CODES.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRANSITIONS, FITTINGS, ELBOWS, DUCTWORK, PIPING, SUPPORTS, ETC. NECESSARY FOR A PROPER INSTALLATION AND OPERATION OF A NEW HVAC SYSTEM.
- CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF INSTALLATION WORK WITH OTHER TRADES TO AVOID CONFLICTS.
- ALL DUCT DIMENSIONS SHOWN ON DRAWINGS ARE CLEAR INSIDE DIMENSIONS.
- SOME VALVES AND OTHER HYDRONIC ACCESSORIES HAVE BEEN OMITTED FROM FLOOR PLAN FOR CLARITY PURPOSES. COORDINATE WITH MECHANICAL DETAILS AND MECHANICAL FLOW DIAGRAM FOR FURTHER EXTENT OF VALVES AND HYDRONIC ACCESSORIES REQUIRED WITH NEW EQUIPMENT SCHEDULED TO BE INSTALLED.

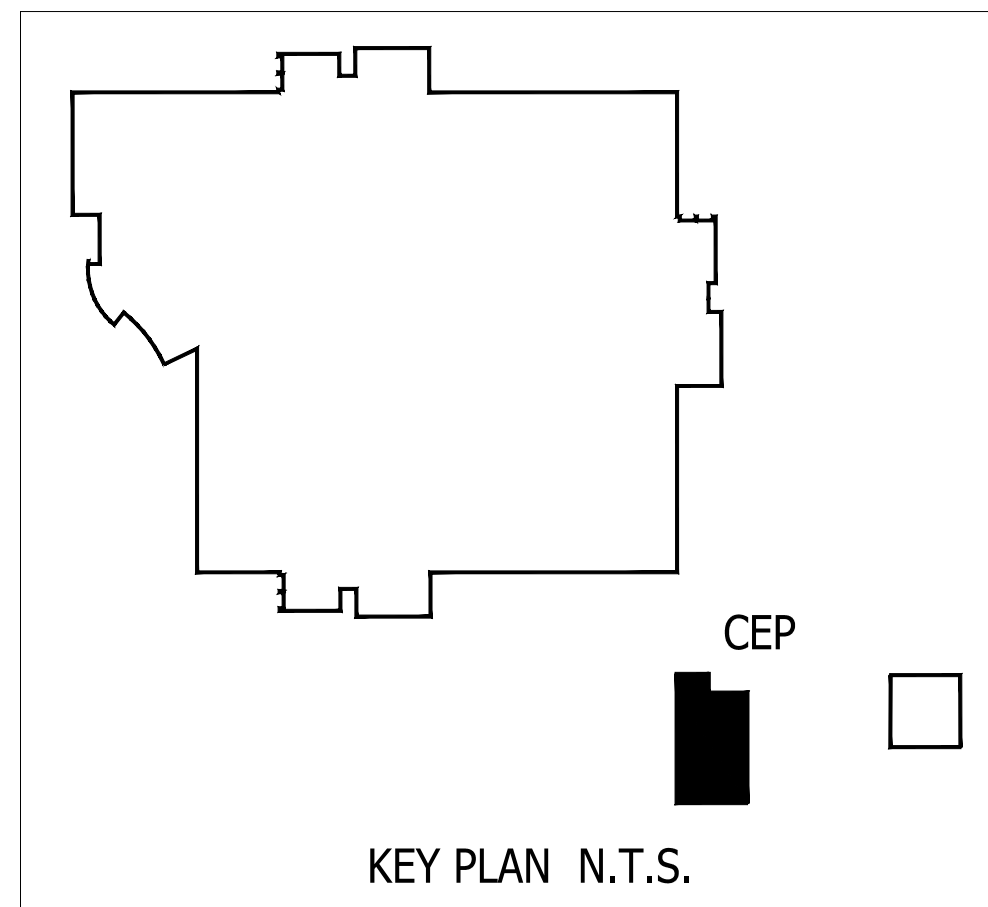
KEYED NOTES

- CONTRACTOR SHALL DEMOLISH AND REMOVE EXISTING GAS FIRED BOILER IN ITS ENTIRETY INCLUDING THE EXISTING CONCRETE HOUSEKEEPING PAD. EXISTING HOT WATER PIPING CONNECTED TO BOILER SHALL BE DEMOLISHED BACK TO POINT OF EXISTING ISOLATION VALVES SHOWN WITHIN BOILER ROOM. EXISTING FLUE DUCT UP TO ROOF AS WELL AS EXISTING GAS LINE SHALL BE TEMPORARILY DISCONNECTED AND MADE SAFE FOR RECONNECTION TO NEW BOILERS INDICATED ON NEW FLOOR PLAN AND SHOWN ON THIS SHEET.
- CONTRACTOR SHALL FIELD LOCATE, DEMOLISH, AND REMOVE EXISTING THREE-WAY HOT WATER CONTROL VALVE AND ALL ASSOCIATED HOT WATER BYPASS PIPING. EXISTING HOT WATER PIPING SHALL BE RE-CONNECTED/CAPPED AS INDICATED ON NEW FLOOR PLAN AND SHOWN ON THIS SHEET.
- CONTRACTOR SHALL PROVIDE SPOOL PIECE OF PIPING, IN ACCORDANCE WITH MECHANICAL SPECIFICATIONS, SUITABLE TO RE-CONNECT EXISTING HOT WATER SUPPLY PIPING BACK TOGETHER. CONFIRM EXISTING PIPE SIZE IN FIELD PRIOR TO ROUGH-IN.
- CONTRACTOR SHALL PROVIDE BLIND FLANGE ON EXISTING HOT WATER PIPING AND SEAL WATER TIGHT. CONFIRM EXISTING PIPE SIZE IN FIELD PRIOR TO ROUGH-IN.
- CONTRACTOR SHALL TIE IN NEW COMMON BOILER VENT DUCTWORK INTO EXISTING BOILER VENT DUCTWORK IN THE RISE. REFER TO SPECIFICATIONS FOR APPROVED DUCT CONSTRUCTION MATERIALS AND ENSURE NEW TO EXISTING CONNECTION IS MADE AIR TIGHT. REFER TO MECHANICAL DETAILS FOR MORE INFORMATION.
- CONTRACTOR SHALL COORDINATE ENLARGING OF EXISTING WALL OPENING DOWN LOW TO FACILITATE INSTALLATION OF NEW COMBUSTION AIR LOUVER. REFER TO MANUFACTURER'S INSTALLATION GUIDELINES FOR RECOMMENDED WALL OPENING PRIOR TO ROUGH-IN.
- CONTRACTOR SHALL COORDINATE WITH LOCATION OF EXISTING FLOOR DRAIN IN THE FIELD PRIOR TO ROUGHING IN NEW CONCRETE HOUSEKEEPING PADS SCHEDULED TO HOUSE NEW GAS-FIRED BOILERS.

ALTERNATE DEDUCT #1

CONTRACTOR SHALL PROVIDE AN ALTERNATE DEDUCT PRICE FOR THE FOLLOWING SCOPE OF WORK:

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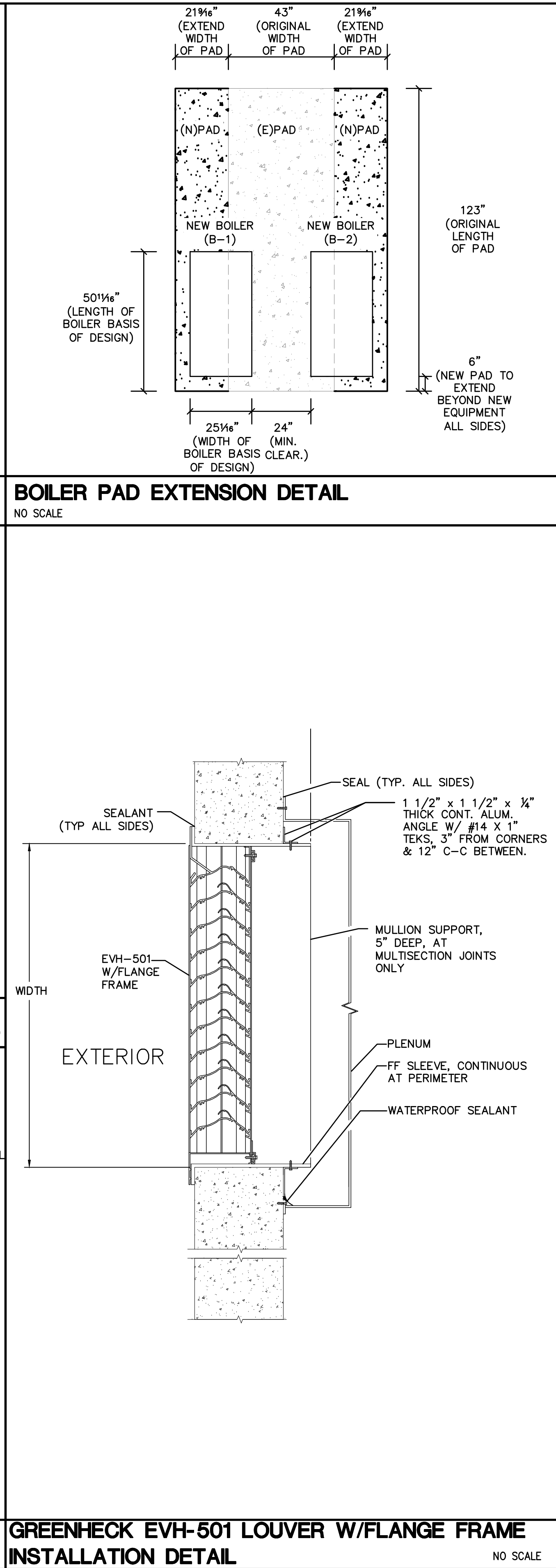
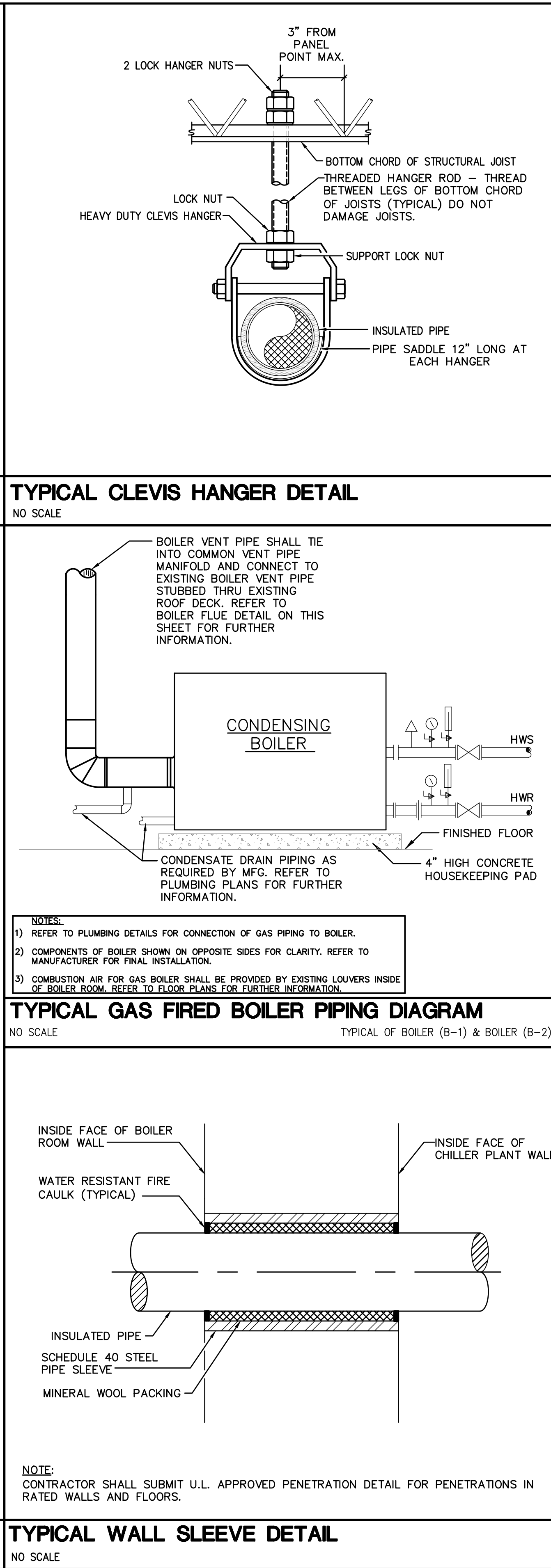
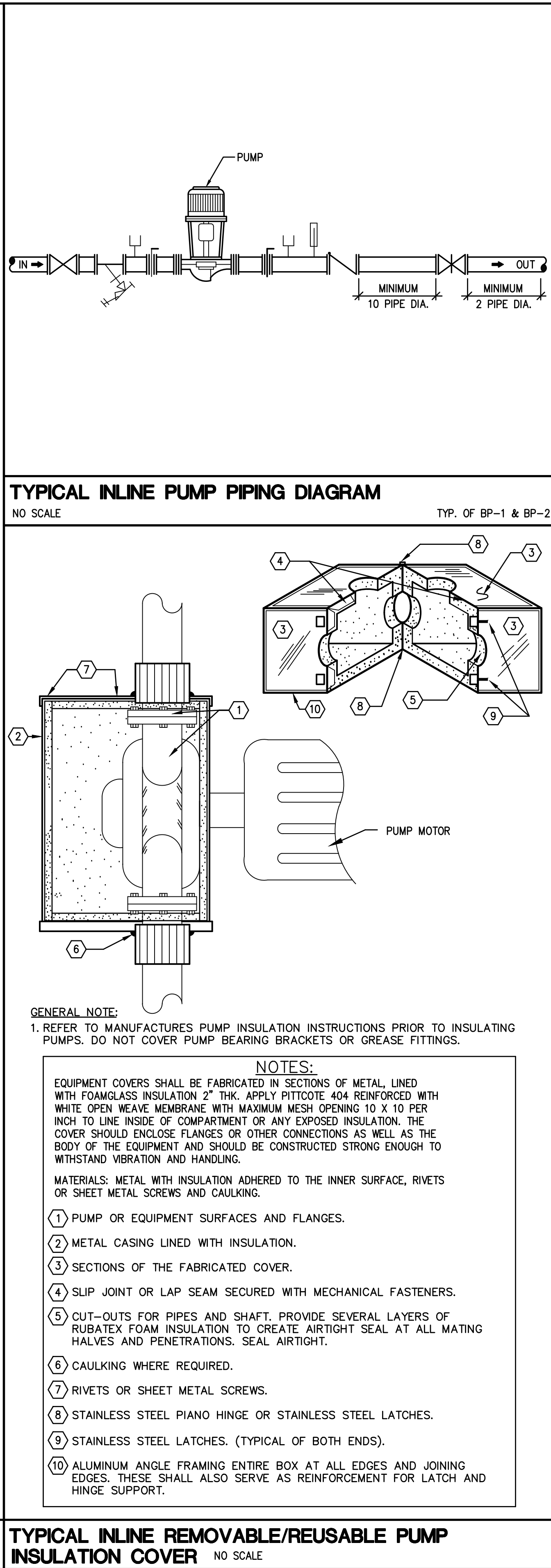
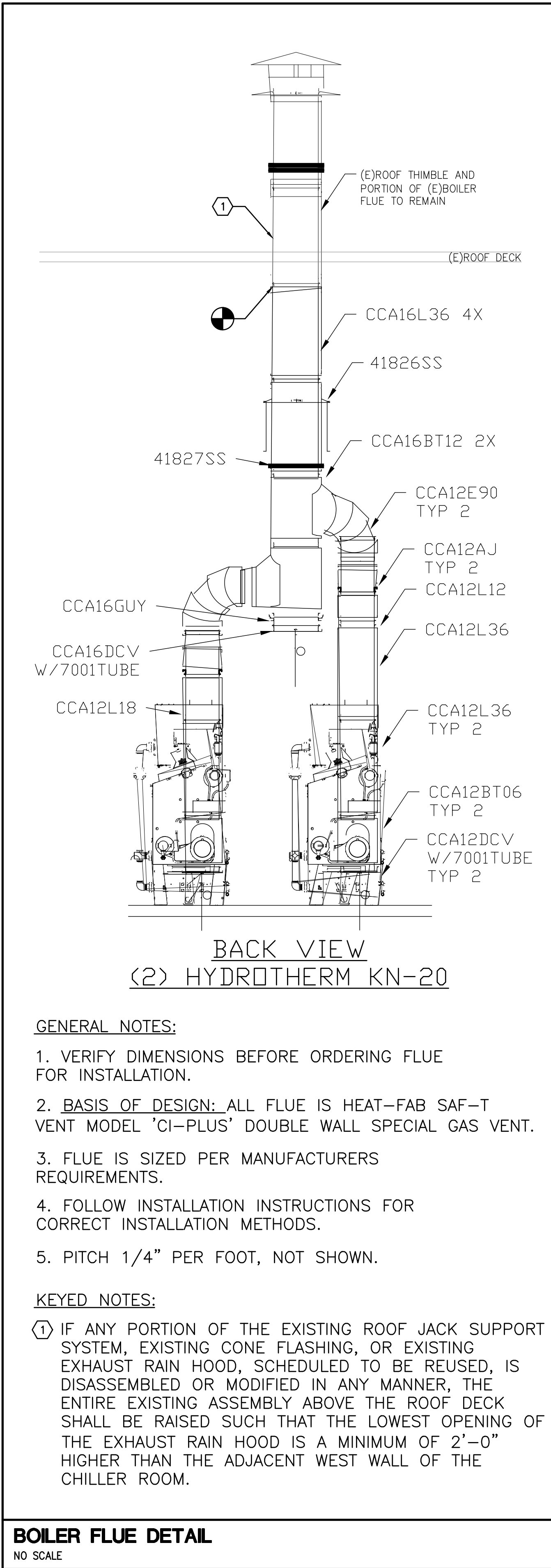
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DRAWING TITLE:
MECHANICAL FLOOR PLANS

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

DRAWING NUMBER:
M1.1



BOILER SCHEDULE			
MARK	—	B-1	B-2
MANUFACTURER	—	ADVANCED THERMAL HYDRONICS	ADVANCED THERMAL HYDRONICS
MODEL NUMBER	—	KN-20	KN-20
TYPE	—	CONDENSING	CONDENSING
LOCATION	—	BOILER ROOM	BOILER ROOM
FUEL	—	NATURAL GAS	NATURAL GAS
INPUT	MBH	1,999	1,999
OUTPUT	MBH	1,853	1,853
FLOW	GPM	92.7	92.7
WATER TEMPERATURE	ENT./LG.	120/160	120/160
PRESS. DROP	FT. H.D.	0.55	0.55
ELECTRICAL CHARACTERISTICS	V/ø/HZ	120/1/60	120/1/60
BOILER FLA	AMPS	7.0	7.0
VENT SIZE (ø")	INCHES	6	6
DIMENSIONS (L X W X H)	IN X IN X IN	69 X 35 X 75	69 X 35 X 75
OPERATING WEIGHT	LBS	2,714	2,714
NOTES	—	SEE BELOW	SEE BELOW

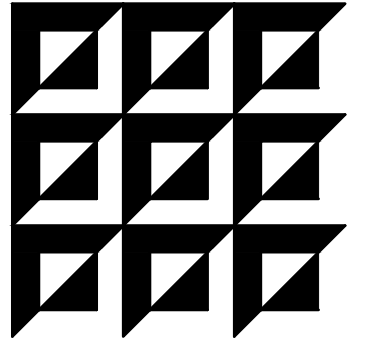
- KEYED NOTES:
- ① BOILERS SHALL BE SINGLE PASS.
- ② BOILERS TO BE FULL MODULATION.
- ③ A BOILER CONTROL SYSTEM, PROVIDED BY THE MANUFACTURER, SHALL MODULATE THE BOILERS BURNER CAPACITY TO MAINTAIN A CONSTANT BOILER LEAVING WATER TEMPERATURE. BOILER CONTROL PANEL SHALL BE MOUNTED INSIDE OF THE BUILDING.
- ④ THE BOILER STARTUP AND PROGRAMMING OF THE BOILERS AND CONTROL PANEL SHALL BE PERFORMED BY A FACTORY CERTIFIED TECHNICIAN.
- ⑤ BOILER CONTROLLER SHALL ACCEPT A 4-20 mA CONTROL SIGNAL TO ESTABLISH THE BOILER LEAVING WATER TEMPERATURE SET POINT.
- ⑥ PROVIDE WITH AUTOMATIC SHUTOFF VALVE. PROVIDE ANCHOR BOLTS INTO PAD AS RECOMMENDED BY MANUFACTURER.
- ⑦ PROVIDE WITH PRESSURE REGULATOR TO REDUCE HIGH PRESSURE GAS FROM MAIN TO MANUFACTURER RECOMMENDED INLET PRESSURE TO BOILER.
- ⑧ BOILER REQUIRES CLASS IV BOILER VENTING.

PUMP SCHEDULE			
MARK	—	BP-1	BP-2
MANUFACTURER	—	BELL & GOSSETT	BELL & GOSSETT
TYPE	—	VERTICAL IN-LINE	VERTICAL IN-LINE
SERIES	—	E-90	E-90
MODEL	—	2AAB	2AAB
TOTAL PUMP SIZE (LXWXH)	IN.XIN.XIN.	11.5X8X17	11.5X8X17
WATER FLOW RATE	GPM	92.7	92.7
TOTAL DYNAMIC HEAD	FT. H2O	16.09	16.18
MOTOR SIZE	HP	3/4 HP	3/4 HP
MOTOR SPEED	RPM	1800	1800
MOTOR TYPE	—	TEFC	TEFC
BASE TYPE	—	SOLID STEEL	SOLID STEEL
MINIMUM PUMP EFFICIENCY	%	69.5	69.6
MINIMUM MOTOR EFFICIENCY	%	REFER TO SPEC. SECT. 23-05-13	REFER TO SPEC. SECT. 23-05-13
SUCTION DIAMETER	IN.	2	2
DISCHARGE DIAMETER	IN.	2	2
IMPELLER	IN.	4.5	4.5
ELECTRICAL CHARACTERISTICS	V/ø/HZ	208/3/60	208/3/60
WEIGHT	LBS.	67	67
LOCATION	—	BOILER ROOM	BOILER ROOM
NOTES	—	①	①

- KEYED NOTES:
- ① CONTRACTOR SHALL PROVIDE PROVISIONS FOR REMOVAL OF PUMP IMPELLER AND RETURNING IMPELLER TO PUMP MANUFACTURER FOR SHAVING PURPOSES. CONTRACTOR SHALL BE RESPONSIBLE FOR REINSTALLATION OF PUMP IMPELLER AND BRINGING PUMP BACK ON LINE.

LOUVER SCHEDULE						
MARK	FACE SIZE	NECK SIZE	MATERIAL	ACCESSORIES	FINISH	MANUFACTURER AND MODEL
L1	44X22	44X22	ALUMINUM	BIRDSCREEN	70% KYNAR (2 COAT)	GREENHECK EVH-501

- LOUVER SCHEDULE GENERAL NOTES:
1. LOUVER SHALL HAVE FLORIDA PRODUCT APPROVAL AND BE AMCA 540 AND AMCA 550 APPROVED. WIND-DRIVEN RAIN APPROVALS SHALL NOT REQUIRE THE USE OF A CONTROL DAMPER.



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DRAWING TITLE:

**MECHANICAL
SCHEDULES**

SCALE: NORTH:

NOT TO SCALE

DRAWING NUMBER:

M3.1

GENERAL NOTES ELECTRICAL

1. DO NOT SCALE FROM THESE DRAWINGS.
2. ALL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE.
3. ELECTRICAL CONTRACTOR SHALL COORDINATE WORK WITH ALL OTHER TRADES TO ASSURE PROPER CLEARANCES FOR EQUIPMENT AND TO KEEP THE JOB PROGRESSING.
4. ALL EMERGENCY SYSTEMS SHALL BE RUN IN SEPARATE RACEWAY/CONDUIT SYSTEM(S).
5. PROVIDE CEILING MOUNTED RED L.E.D. ALARM INDICATOR FOR EACH SMOKE DETECTOR MOUNTED IN PLENUM SPACE(S) OR CONCEALED AREAS.
6. REFER TO MECHANICAL DRAWINGS FOR INTERLOCKING REQUIREMENTS OF MECHANICAL EQUIPMENT (MOTORS, FANS, PUMPS, ETC...). INSTALL ANY ELECTRICAL EQUIPMENT (STARTERS, RELAYS, VFD'S, ETC...) FURNISHED BY MECHANICAL CONTRACTOR.
7. WHERE NON-FUSED DISCONNECT IS NOT PROVIDED "WITHIN SIGHT" OF MOTOR (OR HEATER UNIT). FEEDER (AND/OR BRANCH CIRCUIT) OVER-CURRENT DEVICE SERVING SUCH MOTOR (OR HEATER) SHALL HAVE APPROVED "LOOKED-OFF" PROVISION.
8. REFERENCE MECHANICAL DRAWINGS FOR ALL MECHANICAL EQUIPMENT NEEDING ELECTRICAL CONNECTIONS. MAKE ALL CONNECTIONS AND PROVIDE APPROPRIATE WIRE CONDUIT AND OVERCURRENT PROTECTION FOR ALL EQUIPMENT. COORDINATE EXACT REQUIREMENTS WITH MECHANICAL CONTRACTOR.
9. REFER TO ARCHITECTURAL FLOOR PLANS FOR DIMENSIONAL LOCATIONS OF ALL FLOOR MOUNTED ELECTRICAL DEVICES.
10. CONDUIT RUNS SHOWN ARE DIAGRAMMATIC IN NATURE. CONTRACTOR IS RESPONSIBLE FOR SIZING AND LOCATING PULL BOXES PER NEC AND FOR COORDINATION WITH OTHER DISCIPLINES.
11. COORDINATE ALL LOCATIONS OF RECEPTACLES AND SYSTEMS OUTLETS WITH IN ALL CASEWORK.
12. USE 10 AWG CU. CONDUCTORS FOR 20 AMPERE, 120 VOLT BRANCH CIRCUITS LONGER THAN 75 FEET. USE 10 AWG CU. CONDUCTORS FOR 20 AMPERE, 277 VOLT BRANCH CIRCUITS LONGER THAN 200 FEET.
13. ALL MATERIAL FURNISHED AND ALL WORK INSTALLED SHALL COMPLY WITH THE FOLLOWING CODES AS THEY APPLY TO THIS PROJECT:

a. ANSI/NFPA 70--NATIONAL ELECTRICAL CODE -- 2014

b. FLORIDA FIRE PREVENTION CODE 6TH EDITION.

c. REGULATIONS OF THE FLORIDA INDUSTRIAL COMMISSION CONCERNING SAFETY.

d. APPLICABLE COUNTY, STATE, AND LOCAL BUILDING CODES.

e. LOCAL AND STATE FIRE MARSHAL RULES AND REGULATIONS.

f. OCCUPATIONAL SAFETY AND HEALTH AGENCY STANDARDS (OSHA).

g. FLORIDA BUILDING CODE 6TH EDITION.

h. NFPA 72 NATIONAL FIRE ALARM AND SIGNALING CODE -- 2013

ALTERNATE DEDUCT #1

CONTRACTOR SHALL PROVIDE AN ALTERNATE DEDUCT PRICE FOR THE FOLLOWING SCOPE OF WORK:

- PROVIDE NEW POWER CONNECTION FOR ONE 1,999 MBH BOILER, IN LIEU OF TWO. BREAKER SHALL BE LOCATED IN PANEL 'CPL1'

• MAINTAIN EXISTING CIRCUITRY TO THE EXISTING BOILER PUMP (E)BP-1

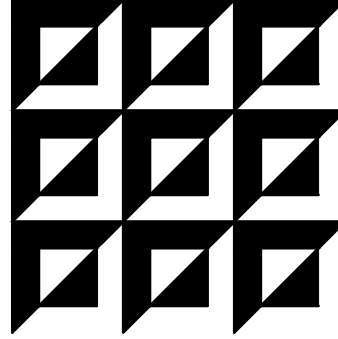
• ELIMINATE POWER FEEDS FOR THE NEW BOILER PUMPS BP-1 OR BP-2

• DO NOT PROVIDE NEW PANEL CPL2

ELECTRICAL SYMBOL LEGEND

SYMBOL	DESCRIPTION	MOUNTING AND NOTES
	TYPICAL LIGHTING SYMBOL NOTES: <div>1. UPPER CASE LETTER DENOTES FIXTURE TYPE, SEE FIXTURE SCHEDULE</div> <div>2. LOWER CASE LETTER DENOTES SWITCHED LEG</div> <div>3. SHADED FIXTURE SYMBOL INDICATES EMERGENCY FIXTURE</div> <div>4. 'NL' DENOTES NIGHT LIGHT CIRCUIT</div>	
S	SINGLE POLE SWITCH	44" AFF TO BOTTOM U.O.N.
Sh	MOTOR RATED SWITCH WITHOUT THERMAL OVERLOADS FOR FRACTIONAL HORSEPOWER MOTORS.	
	TYPICAL RECEPTACLE, OUTLET AND JUNCTION BOX SUFFIX LEGEND: <div>EWC = ELECTRIC WATER COOLERIG = ISOLATED GROUND</div> <div>EWI = ELECTRIC WATER HEATERWP = WEATHERPROOF</div> <div>GFI = GROUND FAULT INTERRUPTERREF = REFRIGERATOR</div> <div>UP = UP (CONDUIT)</div> <div>DN = DOWN (CONDUIT)</div> <div>E = EXISTING</div>	
	DUPLEX RECEPTACLE (20A, 120V).	M.H. 16" TO BOTTOM AFF U.O.N.
	DUPLEX RECEPTACLE (20A, 120V). ABOVE COUNTER.	42" AFF, ABOVE COUNTER BACKSLASH U.O.N.
	JUNCTION OR OUTLET BOX, 4" SQUARE BOX U.O.N.	AS NOTED
30/3	NON-FUSIBLE DISCONNECT SWITCH, 30A, 3 POLE, U.O.N.	SEE SPECIFICATIONS
60/40/3	FUSIBLE DISCONNECT SWITCH, AMPS/FUSE SIZE/NO. POLES AS NOTED.	SEE SPECIFICATIONS
	COMBINATION MAGNETIC MOTOR STARTER	SEE SPECIFICATIONS
	VARIABLE FREQUENCY DRIVE	BY OTHER DIVISION
	MOTOR, NUMERAL INDICATES HORSEPOWER	BY OTHER DIVISION
	DRY TYPE TRANSFORMER, SIZE AS SHOWN ON RISER	FLOOR OR AS NOTED
	PANELBOARD, 120/208V., 3 PH., 4W	6'-6" AFF MIN. TO TOP
	POWER PANELBOARD, 277/480V, 3PH., 4W.	M.H. 6'-6" MIN. TO TOP
	TELEPHONE TERMINAL CABINET	M.H. 6'-6" MIN. TO TOP
	TELEPHONE TERMINAL BOARD, AS NOTED	6'-6" AFF MIN. TO TOP
	RACEWAY RISER, UP OR DOWN AS NOTED.	SEE SPECIFICATIONS
	RACEWAY CONCEALED UNDER FLOOR, IN SLAB OR BELOW GRADE	SEE SPECIFICATIONS
	RACEWAY CONCEALED IN WALL OR CEILING	SEE SPECIFICATIONS
	HOMERUN TO PANEL, LETTERS INDICATE PANEL, NUMBERS INDICATE CIRCUITS.	SEE SPECIFICATIONS
	FIRE ALARM HEAT DETECTOR	CEILING, U.O.N.
	FIRE ALARM MANUAL PULL STATION	48" AFF TO TOP, U.O.N.
	FIRE ALARM SPEAKER/ FLASHING STROBE LIGHT. 75 CANDELA MIN U.O.N.	80" AFF TO BOTTOM

NOTE:
NOT ALL SYMBOLS SHOWN IN THIS LEGEND MAY NECESSARILY APPEAR IN THESE DOCUMENTS. ADDITIONAL SYMBOLS MAY BE DEFINED ELSEWHERE IN SPECIFIC DRAWINGS.



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DRAWING TITLE:

ELECTRICAL
GENERAL

SCALE: NORTH:

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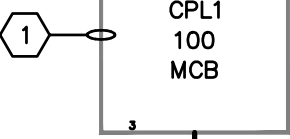
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MAKING REVISIONS:

- ① PROVIDE NEW 30 AMP 3 POLE BREAKER IN AVAILABLE SPACES 25, 27, 29 TO FEED NEW PANEL CPL2.
- ② PROVIDE 4-#10 CU AND 1-#10 CU E.G. IN 3/4" CONDUIT.
- ③ PROVIDE NEW 12 CIRCUIT, 30 AMP LOAD CENTER TO SERVE NEW BOILERS, AND PUMP. REFER TO PANEL SCHEDULES.

CONTRACTOR SHALL PROVIDE AN ALTERNATE DEDUCT
PRICE FOR THE FOLLOWING SCOPE OF WORK:

- PROVIDE NEW POWER CONNECTION FOR ONE 1,999 MBH BOILER, IN LIEU OF TWO. BREAKER SHALL BE LOCATED IN PANEL 'CPL1'
- MAINTAIN EXISTING CIRCUITRY TO THE EXISTING BOILER PUMP (E)BP-1
- ELIMINATE POWER FEEDS FOR THE NEW BOILER PUMPS BP-1 OR BP-2
- DO NOT PROVIDE NEW PANEL CPL2



VOLTAGE DROP
KVAIC

CALCULATIONS						
	CONN. LOAD			DESIGN LOAD		
	KVA	AMPS	FACTOR	KVA	AMPS	
LIGHTING	0.0	0.0	1.25	0.0	0.0	
CONV. OUTLETS	10.4	28.9	-	10.2	28.4	
MOTORS	0.2	0.5	1	0.2	0.5	
MISC.	0.0	0.0	1	0.0	0.0	
WELL	0.0	0.0	1	0.0	0.0	
KITCHEN EQ.	0.0	0.0	0.65	0.0	0.0	
SPACE	0.0	0.0	1	0.0	0.0	
SPACE ONLY	0.0	0.0	0	0.0	0.0	
TOTAL	10.6	29.4		10.4	28.9	

NOTE: ALL CONDUCTORS ARE #12 AWG UNLESS OTHERWISE NOTED HERE IN OR ON RISER DIAGRAM, OR AS NOTED IN THE SPECIFICATIONS FOR VOLTAGE DROP. PROVIDE A DEDICATED NEUTRAL FOR EACH FLOURESCENT LIGHTING CIRCUIT, CONDUCTORS SERVING 20 AMP BRANCH CIRCUITS SHALL BE #10 AWG UNLESS OTHERWISE NOTED. THE CIRCUIT BREAKER FEEDING THE TVSS DEVICE SHALL BE INSTALLED AS CLOSE TO THE INCOMING FEEDERS AS POSSIBLE RELOCATE CIRCUIT BREAKERS AS REQUIRED

	CALCULATIONS					
	CONN. LOAD			DESIGN LOAD		
	KVA	AMPS	FACTOR	KVA	AMPS	
LIGHTING	0.0	0.0	1.25	0.0	0.0	
CONV. OUTLETS	5.6	15.5	--	5.6	15.5	
MOTORS	0.0	0.0	1	0.0	0.0	
MISC.	0.0	0.0	1	0.0	0.0	
EWI	0.0	0.0	1	0.0	0.0	
KITCHEN EQ.	0.0	0.0	0.65	0.0	0.0	
SPACE	0.0	0.0	1	0.0	0.0	
SPACE, ONLY	0.0	0.0	1	0.0	0.0	
TOTAL	5.6	15.5		5.6	15.5	

NOTE: ALL CONDUCTORS ARE #12 AWG UNLESS OTHERWISE NOTED HERE IN OR ON RISER DIAGRAM, OR AS NOTED IN THE SPECIFICATIONS FOR VOLTAGE DROP. PROVIDE A DEDICATED NEUTRAL FOR EACH FLOUORESCENT LIGHTING CIRCUIT, CONDUCTORS SERVING 20 AMP BRANCH CIRCUITS SHALL BE #10 AWG UNLESS OTHERWISE NOTED. THE CIRCUIT BREAKER FEEDING THE TVSS DEVICE SHALL BE INSTALLED AS CLOSE TO THE INCOMING FEEDERS AS POSSIBLE. RELOCATE CIRCUIT BREAKERS AS REQUIRED.

PHASE LOADS	
A	2344
B	1616
C	1616

REMARKS:	
NEW PANEL	
PANEL : CPL2	
MOUNTING:	SURFACE
VOLTS:	120/208, 3PH, 4W
MAIN SIZE:	30 AMP
MAIN TYPE:	MLO
BRACING:	10 KAIC
EMI JOB	17-0720

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EPI - TECH BUILDING
BOILER REPLACEMENT
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SPC
ST. PETERSBURG
COLLEGE

OWN BY: **DRJK** CHECKED BY: CAT

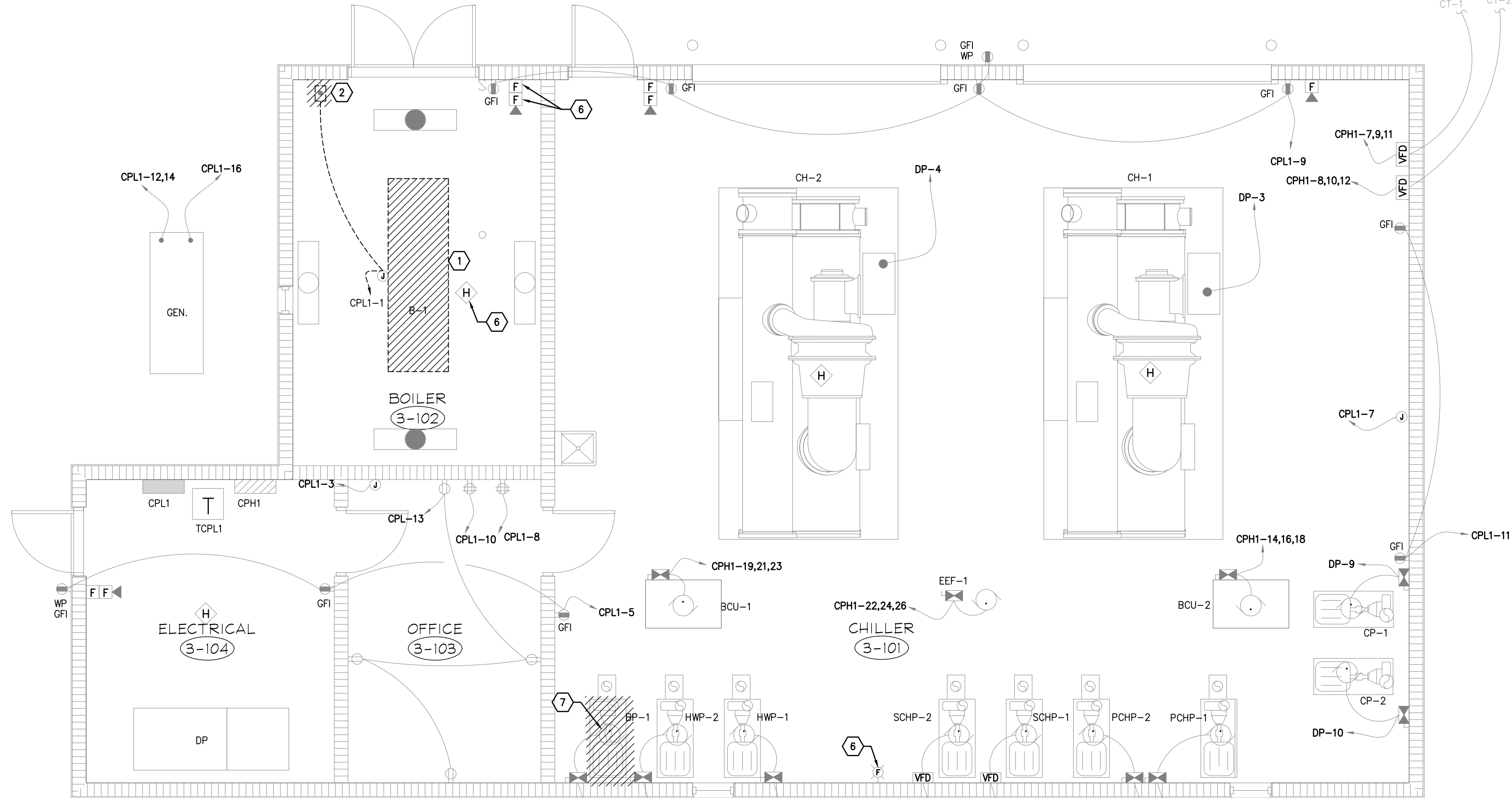
WORKING TITLE

ELECTRICAL RISER & PANEL SCHEDULE

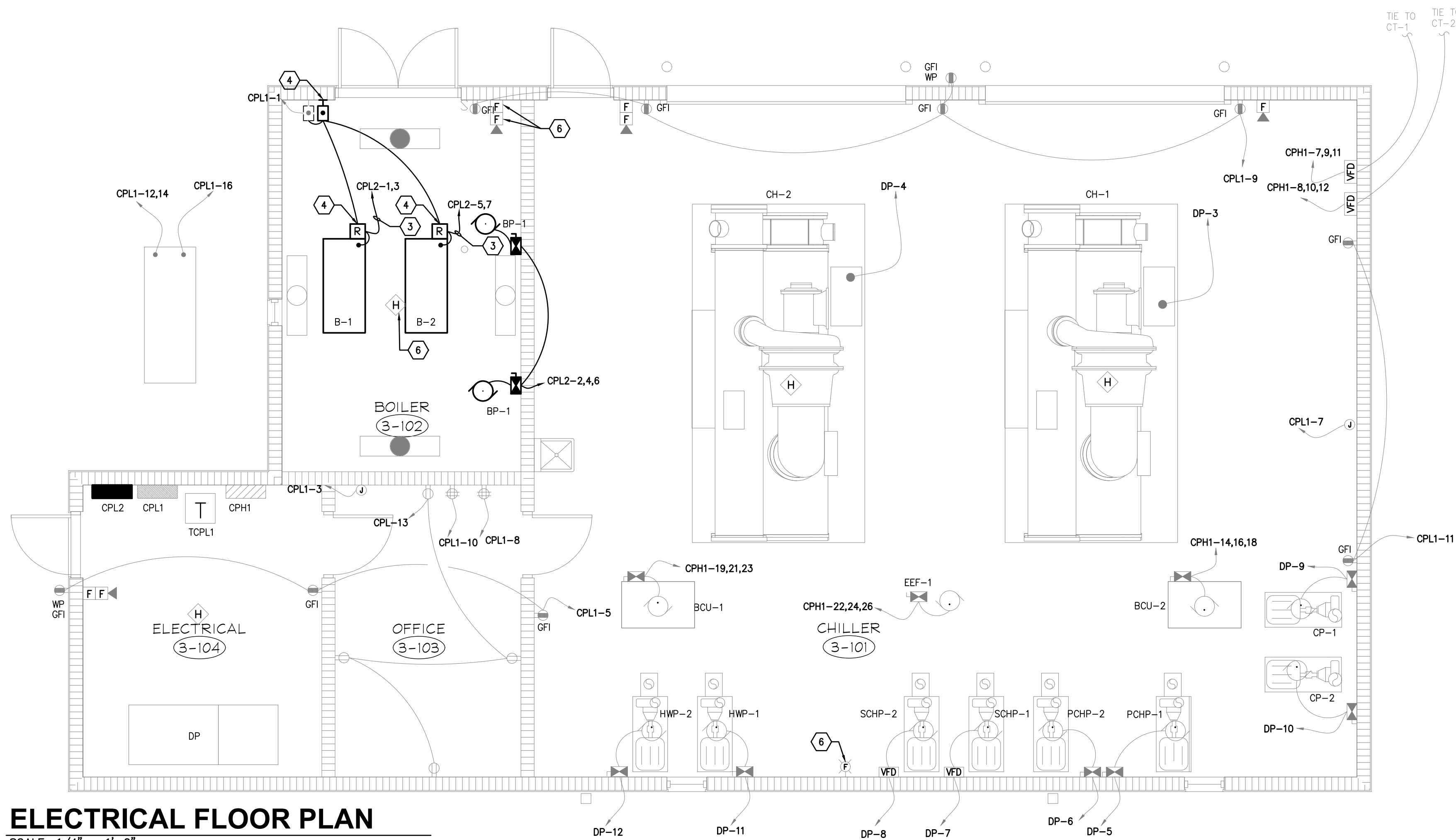
E:	NORTH:
TO SCALE	

WING NUMBER

Ξ0.1



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



ELECTRICAL FLOOR PLAN
SCALE: 1/4" = 1'-0"

GENERAL NOTES

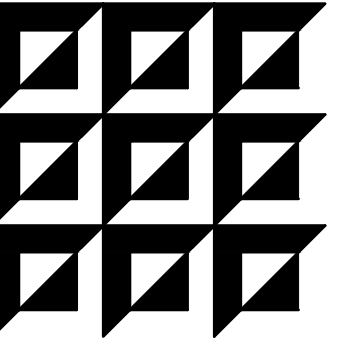
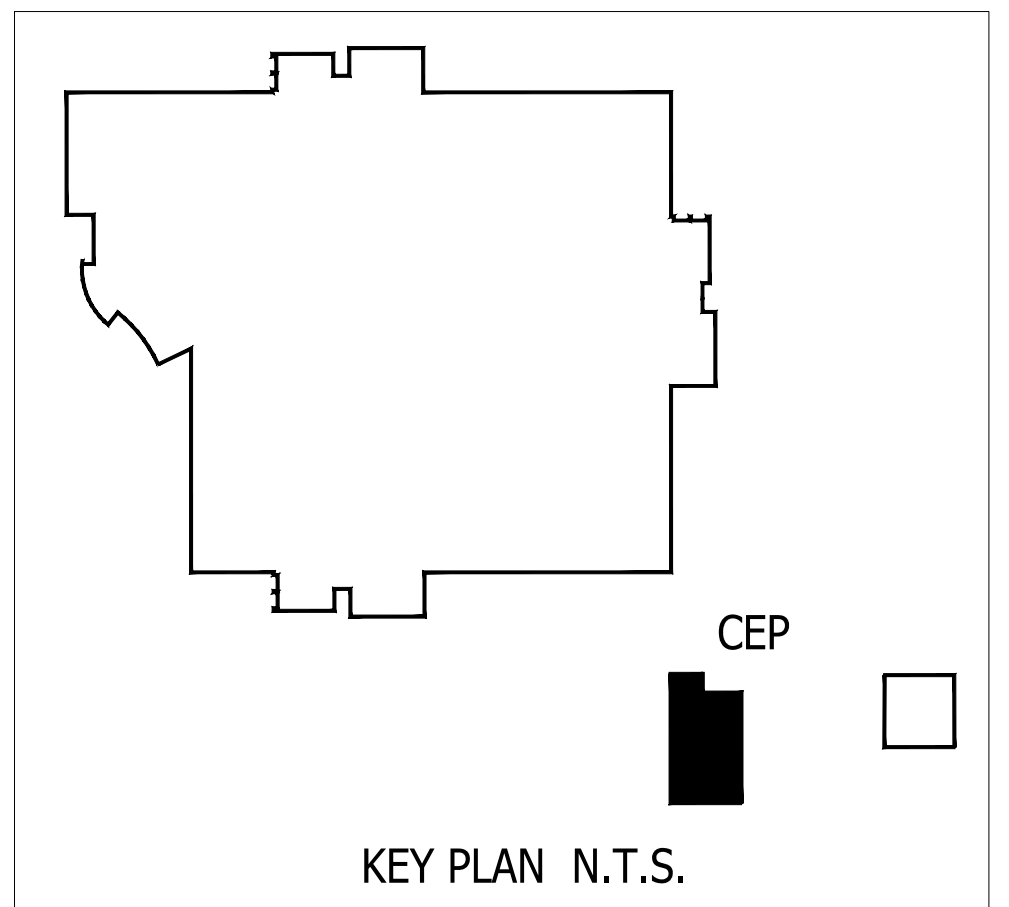
1. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF INSTALLATION AND DEMOLITION WORK WITH OTHER TRADES TO AVOID CONFLICTS. ELECTRICAL EQUIPMENT SCHEDULED FOR DEMOLITION SHALL BE PRESENTED TO OWNER FOR FIRST RIGHT OF REFUSAL. SHOULD OWNER REFUSE, ALL EQUIPMENT SHALL BE DISPOSED OF IN SAFE LEGAL MANNER.
2. ALL UNUSED OR ABANDONED ELECTRICAL COMPONENTS ASSOCIATED WITH NEW CONSTRUCTION SHALL BE REMOVED AND DISPOSED OF IN A SAFE AND LEGAL MANNER.
3. ELECTRICAL CONTRACTOR SHALL DISCONNECT AND "MAKE SAFE" FOR REMOVAL ALL EQUIPMENT (HVAC EQUIPMENT, AND ASSOCIATED COMPONENTS) SCHEDULED TO BE REMOVED. REFER TO MECHANICAL DRAWINGS FOR HVAC EQUIPMENT TO BE REMOVED.
4. DEMOLITION DRAWINGS ARE BASED ON FIELD OBSERVATION AND EXISTING RECORD DOCUMENTS. REPORT DISCREPANCIES TO THE ENGINEER BEFORE DISTURBING EXISTING INSTALLATION.
5. REMOVE ALL CONDUIT AND CONDUCTORS SUPPLYING DEMOLISHED EQUIPMENT TO PANEL OF ORIGIN.
6. ALL EXISTING TO REMAIN CIRCUITRY SHALL BE MAINTAINED AFTER THE DEMOLITION OF EQUIPMENT. PROVIDE CONDUIT, JUNCTION BOXES, CONDUCTORS, ETC. TO MAINTAIN CIRCUITS TO EXISTING TO REMAIN DEVICES AND EQUIPMENT.

KEYED NOTES

- 1 EXISTING BOILER SHALL BE DEMOLISHED. REMOVE CONDUIT AND CONDUCTORS TO PANEL OF ORIGIN.
- 2 EXISTING EPO FOR GAS SHUT DOWN SHALL BE REMAIN. PROTECT CIRCUIT DURING DEMOLITION, AND EXTEND TO NEW EPO IDENTIFIED IN KEYED NOTE 4.
- 3 NEW BOILER, PROVIDE 3-#12 CU AND 1-#12 CU E.G. IN 3/4" CONDUIT HOMERUN TO NEW 15 AMP 2 POLE CIRCUIT BREAKER.
- 4 PROVIDE NEW EPO MUSHROOM STYLE EMERGENCY OFF WITH KEYED RESET SWITCH AT ENTRY DOOR. PROVIDE NORMALLY CLOSED RELAY CONTACT FOR POWER TO BOILER. CONTACT SHALL OPEN TO DISCONNECT BOILER FROM POWER SOURCE IN THE EVENT EPO IS PRESSED. TIE TO EXISTING CIRCUIT SERVING GAS CUT OFF EPO.
- 5 PROVIDE 3-#12 CU AND 1-#12 CU E.G. IN 3/4" CONDUIT HOMERUN TO NEW 15 AMP 3 POLE CIRCUIT BREAKER IN PANEL/SPACE IDENTIFIED.
- 6 TYPICAL FIRE ALARM DEVICE TO REMAIN.
- 7 BASE BID SHALL INCLUDE SCOPE TO REMOVE BP-1. REMOVE CONDUIT AND CONDUCTORS TO PANEL OF ORIGIN.

ALTERNATE DEDUCT #1

- CONTRACTOR SHALL PROVIDE AN ALTERNATE DEDUCT PRICE FOR THE FOLLOWING SCOPE OF WORK:
- PROVIDE NEW POWER CONNECTION FOR ONE 1,999 MBH BOILER, IN LIEU OF TWO. BREAKER SHALL BE LOCATED IN PANEL 'CPL1'
 - MAINTAIN EXISTING CIRCUITRY TO THE EXISTING BOILER PUMP (E)BP-1
 - ELIMINATE POWER FEEDS FOR THE NEW BOILER PUMPS BP-1 OR BP-2
 - DO NOT PROVIDE NEW PANEL CPL2



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ISSUE DATE: EMI JOB NO.

04-13-2018 17-0720

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COLLEGE

DRAWN BY: DRJK CHECKED BY: CAT

DRAWING TITLE:

**ELECTRICAL
FLOOR
PLANS**

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

DRAWING NUMBER:

E1.1