BOILER REPLACEMENT PROJECT FOR:

NEWBURGH HISTORIC COURTHOUSE

123-125 GRAND STREET

CITY OF NEWBURGH, NY

DRAWING LIST

MECHANICAL:

M-1	DEMOLITION FLOOR PLANS
M-2	FLOOR PLANS
M-3	DETAILS
M-4	DETAILS
M-5	EQUIPMENT SCHEDULES & NOTES

ELECTRICAL:

E-1	FLOOR PLANS

OWNER:

CITY OF NEWBURGH

CITY MANAGER:

TODD VENNING

DEPARTMENT OF PUBLIC WORKS SUPERINTENDENT:

GEORGE GARRISON

COMMISIONER OF PUBLIC WORKS / CITY ENGINEER / PROJECT CONTACT:

JASON C. MORRIS, P.E.

DEPARTMENT OF ENGINEERING

83 BROADWAY, NEWBURGH NY 12550

KEY MAP

NORTH

REVISION	DATE	DESCRIPTION

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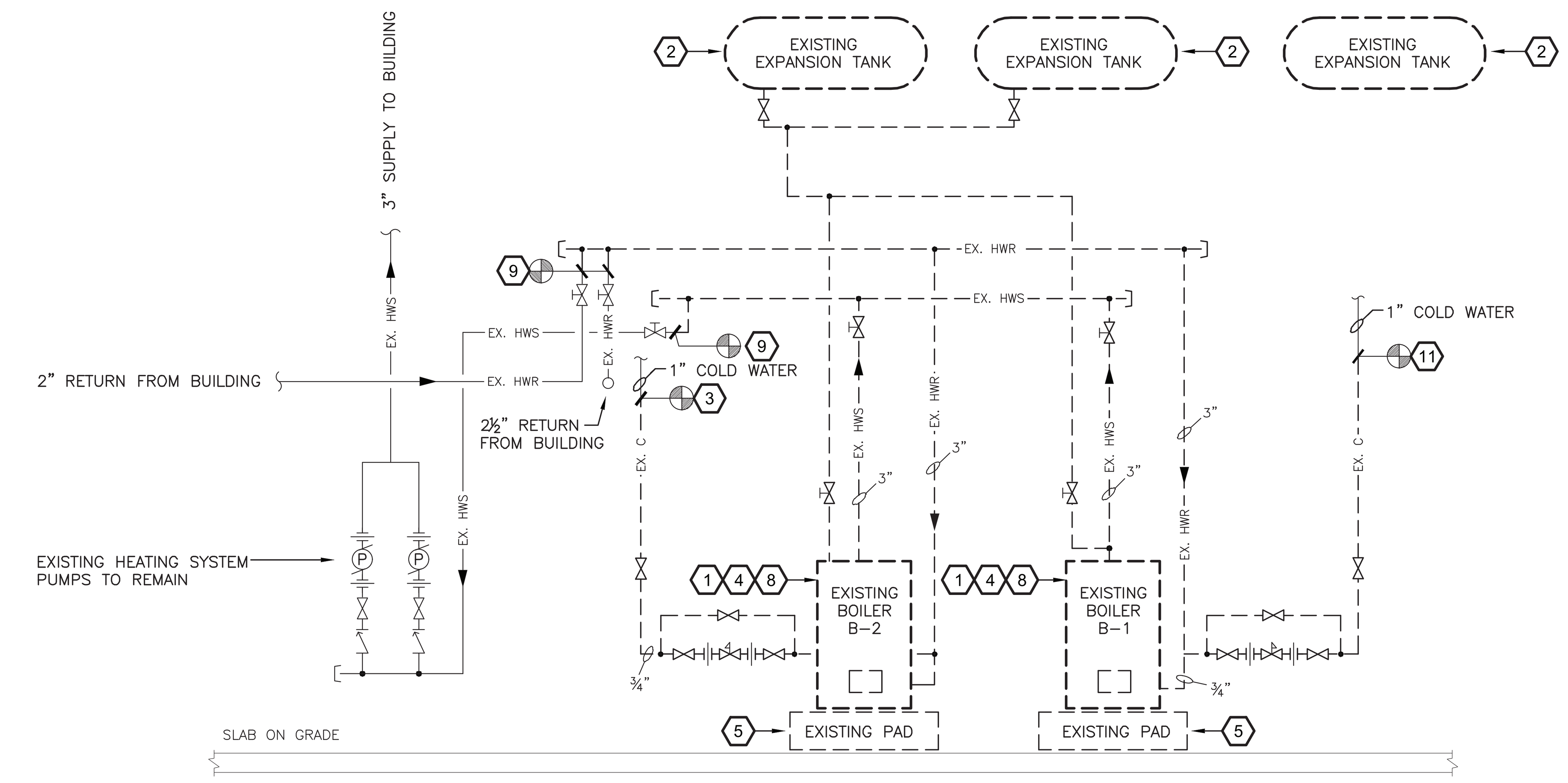
ISSUE: **BID 6.22**
BOILER REPLACEMENT AT
123-125 GRAND STREET

DATE: MARCH 31, 2022

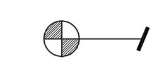
PROJECT NO: GA21023



3 MECHANICAL: BOILER DEMO SCHEMATIC

NOT TO SCALE

SYMBOL

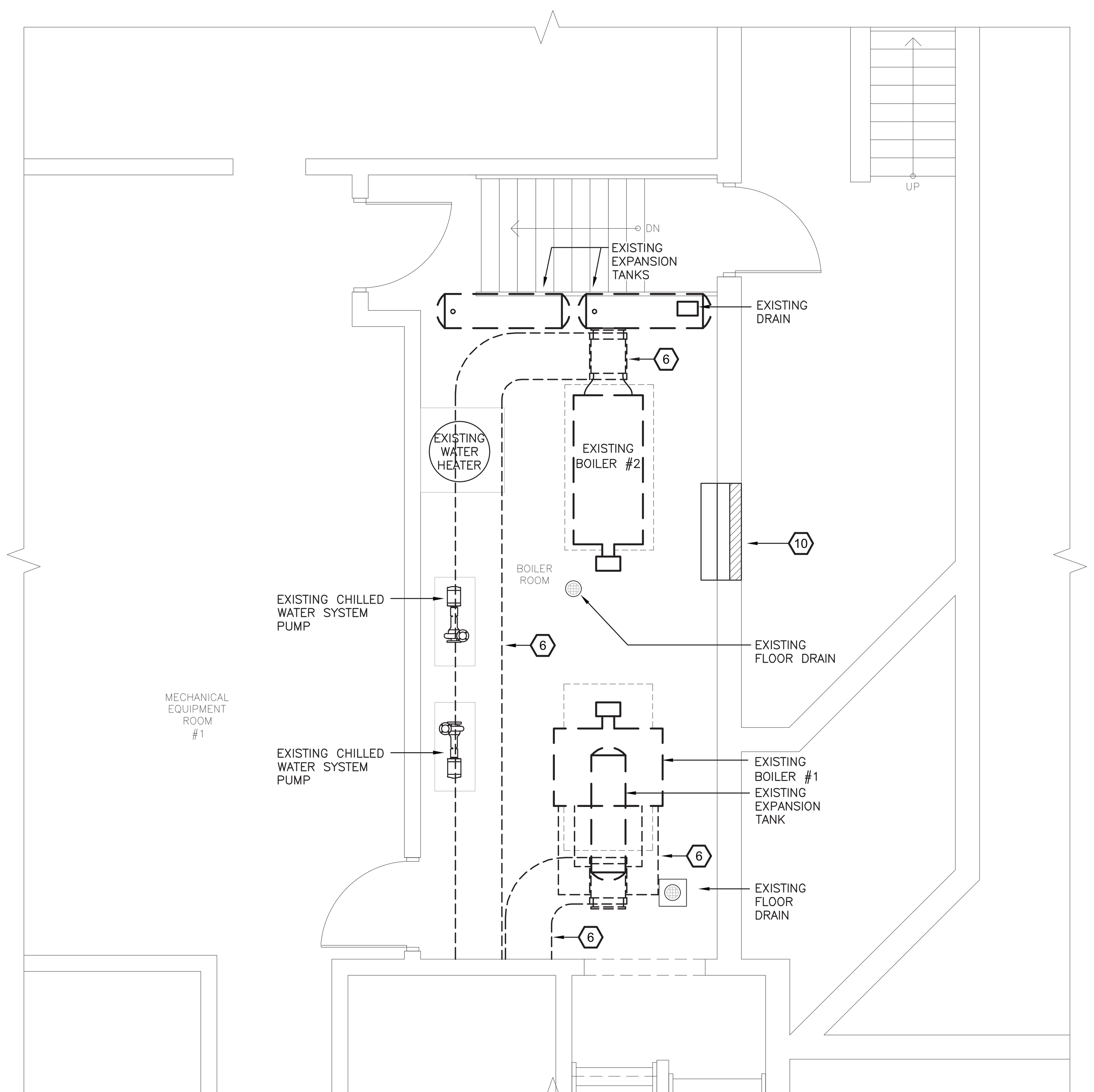


CONNECTION/DISCONNECTION POINT

MECHANICAL KEYED DEMOLITION NOTES

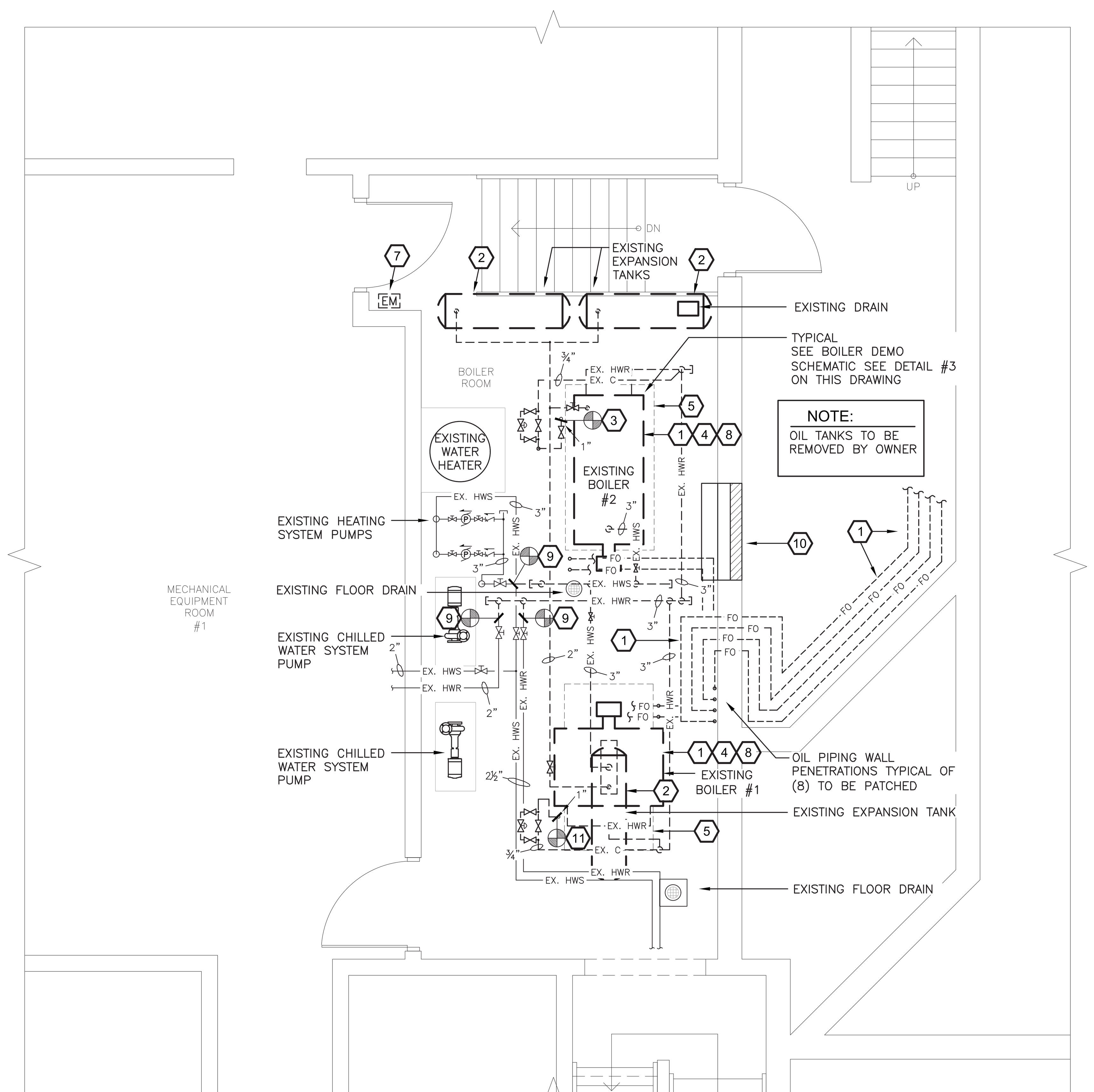
(APPLIES TO THIS SHEET ONLY)

1. CONTRACTOR SHALL REMOVE EXISTING OIL FIRED BOILER, BURNER, OIL PIPING BACK TO OIL TANKS, CONTROLS, CONTROL WIRING AND ALL ASSOCIATED APPURTENANCES (COMPLETE). CAP SUPPLY AND RETURN OPENINGS IN OIL TANKS. OIL TANKS TO BE REMOVED BY OWNER. PATCH WALL OPENINGS WITH SIMILAR MASONRY MATERIALS TO MATCH EXISTING FINISHES.
2. CONTRACTOR SHALL REMOVE HYDRONIC COMPRESSION TANKS, PIPING, HANGERS AND ALL ASSOCIATED APPURTENANCES (COMPLETE).
3. CONTRACTOR SHALL REMOVE EXISTING ¾" HEATING SYSTEM WATER FEED, PRV, PIPING AND ALL ASSOCIATED APPURTENANCES (COMPLETE). PREPARE 1" SUPPLY PIPING FOR CONNECTION TO NEW HEATING SYSTEM. SEE DETAIL #1 ON DRAWING (M-4).
4. CONTRACTOR SHALL CLEAN AND DISPOSE OF REMOVED OIL BURNERS AND PIPING IN ACCORDANCE WITH NYS DEC REGULATIONS.
5. CONTRACTOR SHALL REMOVE EXISTING CONCRETE PAD. PREPARE FLOOR FOR INSTALLATION OF NEW EQUIPMENT CONCRETE PAD PINNED TO EXISTING FLOOR. PORTIONS OF FLOOR NOT COVERED BY NEW PAD SHALL BE PATCHED WITH SIMILAR MATERIALS TO MATCH EXISTING FLOOR.
6. CONTRACTOR SHALL REMOVE EXISTING BOILER BREECHING, FAN INDUCER, CONNECTOR PIPING AND ALL ASSOCIATED APPURTENANCES FROM BOILERS TO EXISTING CHIMNEY (COMPLETE). CAP FLUE PIPING AT CHIMNEY WALL AND SEAL AIR TIGHT FOR FUTURE USE.
7. CONTRACTOR SHALL REMOVE EXISTING BOILER EMERGENCY SHUTDOWN SWITCH, WIRING, RELAYS AND ALL ASSOCIATED APPURTENANCES (COMPLETE). FURNISH AND INSTALL NEW EMERGENCY SHUTDOWN SWITCHES. SEE DRAWING (M-2).
8. CONTRACTOR SHALL REMOVE EXISTING BOILER OPERATING CONTROL SYSTEM INCLUDING PNEUMATIC PIPING, CONTROLS VALVES AND ALL ASSOCIATED APPURTENANCES (COMPLETE). PROPERLY TERMINATE PNEUMATIC PIPING AT NEAREST JUNCTION POINT OR BACK AT MAIN IF FED DIRECTLY. MAINTAIN ACTIVATE PNEUMATIC CONTROLS ON EXISTING PIPING NETWORK. CONTRACTOR SHALL HIRE CITY OF NEWBURGH CONTROLS CONTRACTOR TO REMOVE/MODIFY EXISTING PNEUMATIC CONTROL SYSTEM. ANY PNEUMATIC CONTROL SYSTEM WORK SHALL NOT VOID SYSTEM OR MAINTENANCE CONTRACT WARRANTEE'S.
9. CONTRACTOR SHALL REMOVE EXISTING HYDRONIC PIPING, VALVES AND ASSOCIATED APPURTENANCES TO TERMINATION POINTS (COMPLETE). PREPARE PIPING FOR RECONNECTION TO NEW PIPING.
10. CONTRACTOR SHALL REMOVE EXISTING WEATHER LOUVER AND ALL ASSOCIATED APPURTENANCES (COMPLETE). PATCH WALL OPENING WITH SIMILAR MASONRY MATERIALS TO MATCH EXISTING FINISHES.
11. CONTRACTOR SHALL REMOVE EXISTING ¾" HEATING SYSTEM WATER FEED, PRV, PIPING AND ALL ASSOCIATED APPURTENANCES (COMPLETE). CAP 1" SUPPLY PIPING WITH 1" BALL VALVE NEAR CEILING AND LABEL FOR FUTURE USE.



1 MECHANICAL: BOILER ROOM DEMOLITION FLOOR PLAN - FLUE PIPING

SCALE: ¼" = 1'-0"



2 MECHANICAL: BOILER ROOM DEMOLITION FLOOR PLAN - PIPING

SCALE: ¼" = 1'-0"

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MECHANICAL: DEMOLITION FLOOR PLANS

BOILER REPLACEMENT PROJECT FOR:

NEWBURGH HISTORIC COURTHOUSE

123-125 GRAND STREET

CITY OF NEWBURGH, NY

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PROJECT NO.: GA21023

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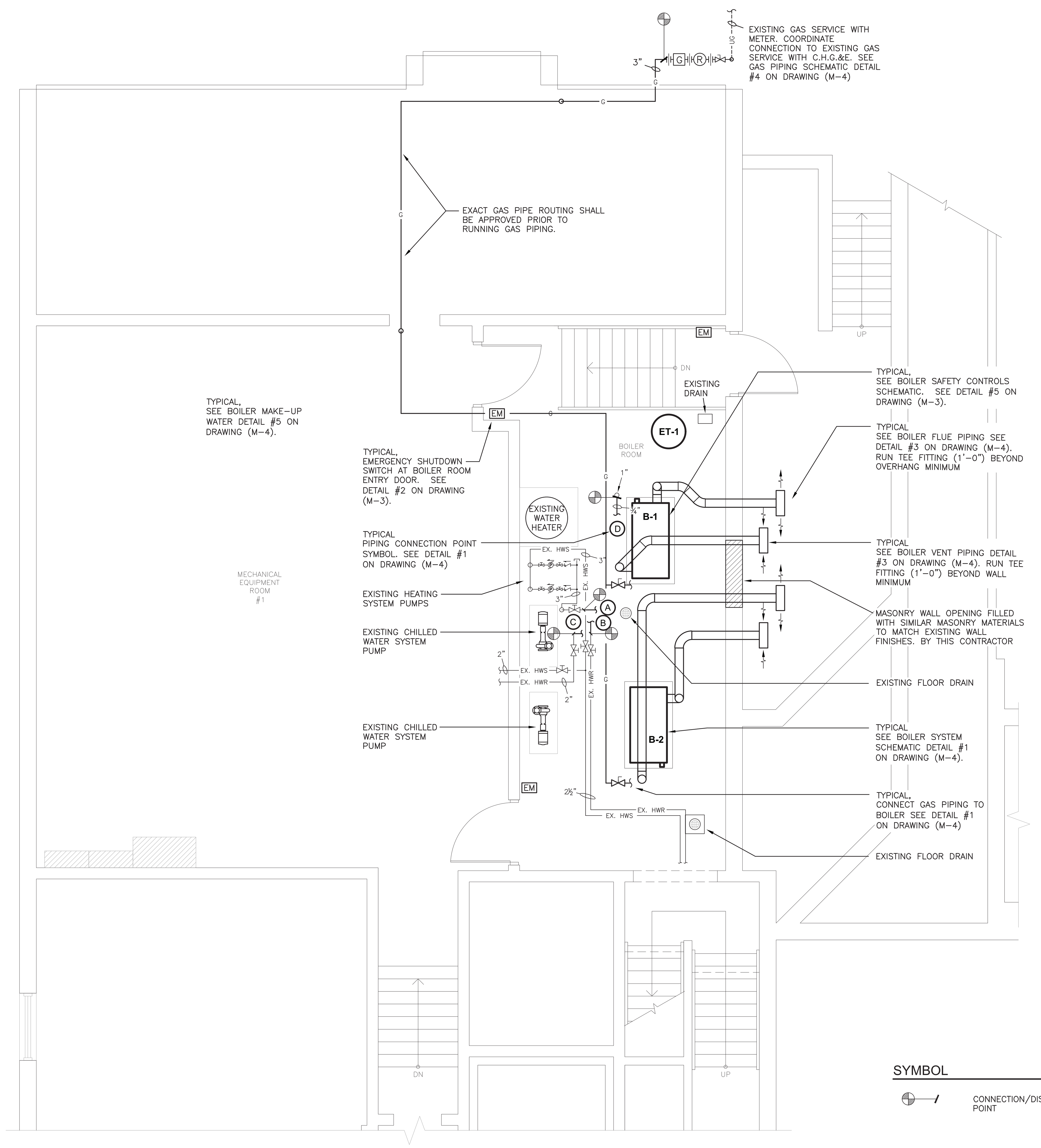
SHEET NO: **M-1**



SYMBOL

CONNECTION/DISCONNECTION POINT

1 MECHANICAL: BOILER ROOM FLOOR PLAN

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

0 1' 5' 10'

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SEAL

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TEL (845) 291-1272

MECHANICAL: FLOOR PLAN

BOILER REPLACEMENT PROJECT FOR:

NEWBURGH HISTORIC COURTHOUSE

123-125 GRAND STREET

CITY OF NEWBURGH, NY

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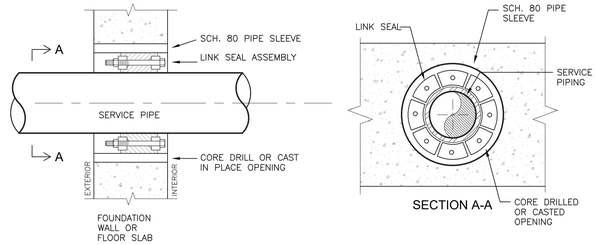
DRAWN BY: RL/KC

CHECKED BY: JT

SHEET NO: **M-2**

2 OF 6

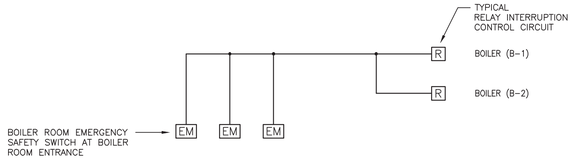


NOTES:

1. SEAL ASSEMBLY BASED ON THUNDERLINE MODEL "C" LINK-SEAL MODULAR SEAL, WITH EPDM SEAL ELEMENT, COMPOSITE PRESSURE PLATES, STEEL WITH 2-PART ZINC DICHROMATE & ORGANIC COATED NUTS AND BOLTS RATED FOR AN OPERATING TEMPERATURE RANGE OF -40°F TO +250°F.
2. USE LINK SEAL AT ALL LOCATIONS WHERE PIPES PENETRATE NEW OR EXISTING FOUNDATION WALLS AND SLABS ON GRADE.

1 LEAK SEAL DETAIL

NOT TO SCALE

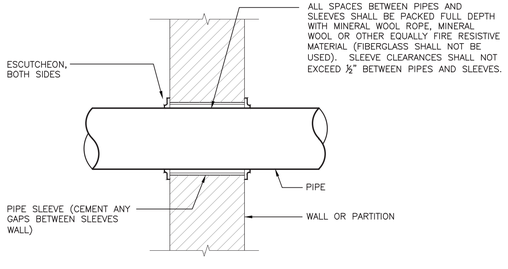


NOTE:

UPON ACTIVATION OF BOILER ROOM EMERGENCY SAFETY SWITCH, POWER TO THE CONTROL CIRCUIT RELAY SHALL BE INTERRUPTED, DE-ENERGIZING THE PRIMARY CONTROL CIRCUIT TO THE BOILERS.

2 BOILER ROOM EMERGENCY SHUTDOWN STATION SCHEMATIC

NOT TO SCALE

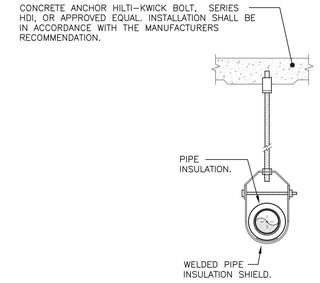


NOTE:

THIS DETAIL ALSO APPLICABLE TO INTERIOR NON-WATER PROOF FLOOR CONSTRUCTION. FOR WATER PROOF FLOOR CONSTRUCTION AND OTHER CONSTRUCTION.

3 FIRESTOP DETAIL

NOT TO SCALE

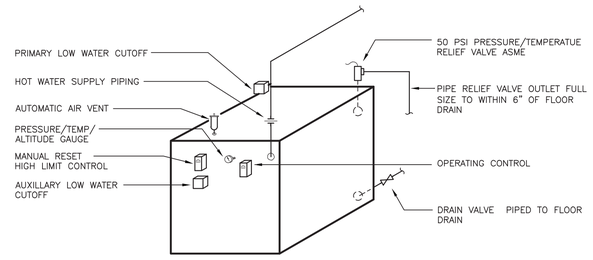


NOTES:

1. CLEVIS HANGERS WITH WELDED INSULATION SHIELDS SIMILAR TO RAUCH FIG. 100SH ON ALL PIPES LARGER THAN 1".
2. FOR PIPES 1" OR SMALLER, A BAND HANGER WITH INSULATION SHIELD MAY BE USED SIMILAR TO RAUCH FIG. NO. 1ASH.
3. FOR NON-INSULATED PIPE, INSULATION SHIELDS MAY BE OMITTED.
4. ALL PIPE HANGERS SHALL BE GALVANIZED STEEL OR FACTORY PAINTED BLACK WITH ENAMEL.
5. FOR NON FERROUS PIPING WITHOUT INSULATION, ALL HANGERS SHALL BE COPPER PLATED OR FURNISHED WITH A DI-ELECTRIC BETWEEN PIPE AND HANGERS.
6. WHERE EXISTING BUILDING STRUCTURAL COMPONENTS HAVE FIREPROOF MATERIAL, ANY AREA THAT IS DISTURBED OR DAMAGED AS A RESULT OF HANGER INSTALLATION SHALL BE PATCHED WITH UL AND FM APPROVED FIREPROOFING TO MATCH EXISTING.

4 PIPE HANGER DETAIL

NOT TO SCALE



NOTE:

LOCATE ALL SAFETY LIMITS AND LOW WATER CUTOFFS IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS. PROVIDE ALL DRAINS IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS.

5 BOILER CONTROL SCHEMATIC

NOT TO SCALE

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MECHANICAL: DETAILS

BOILER REPLACEMENT PROJECT FOR:
NEWBURGH HISTORIC COURTHOUSE
123-125 GRAND STREET
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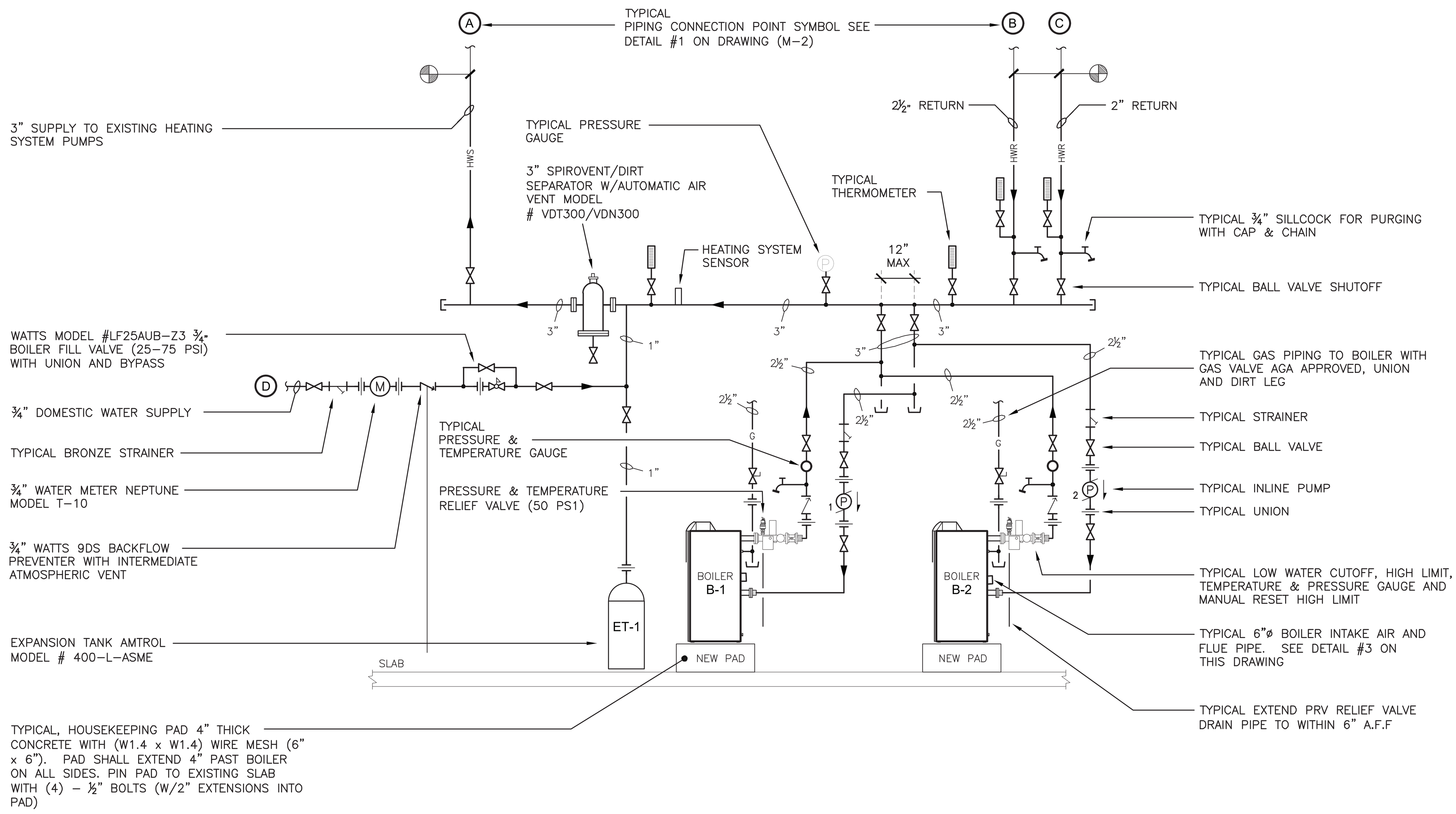
SHEET NO:

M-3

3 OF 6



1 BOILER SYSTEM SCHEMATIC

NOT TO SCALE

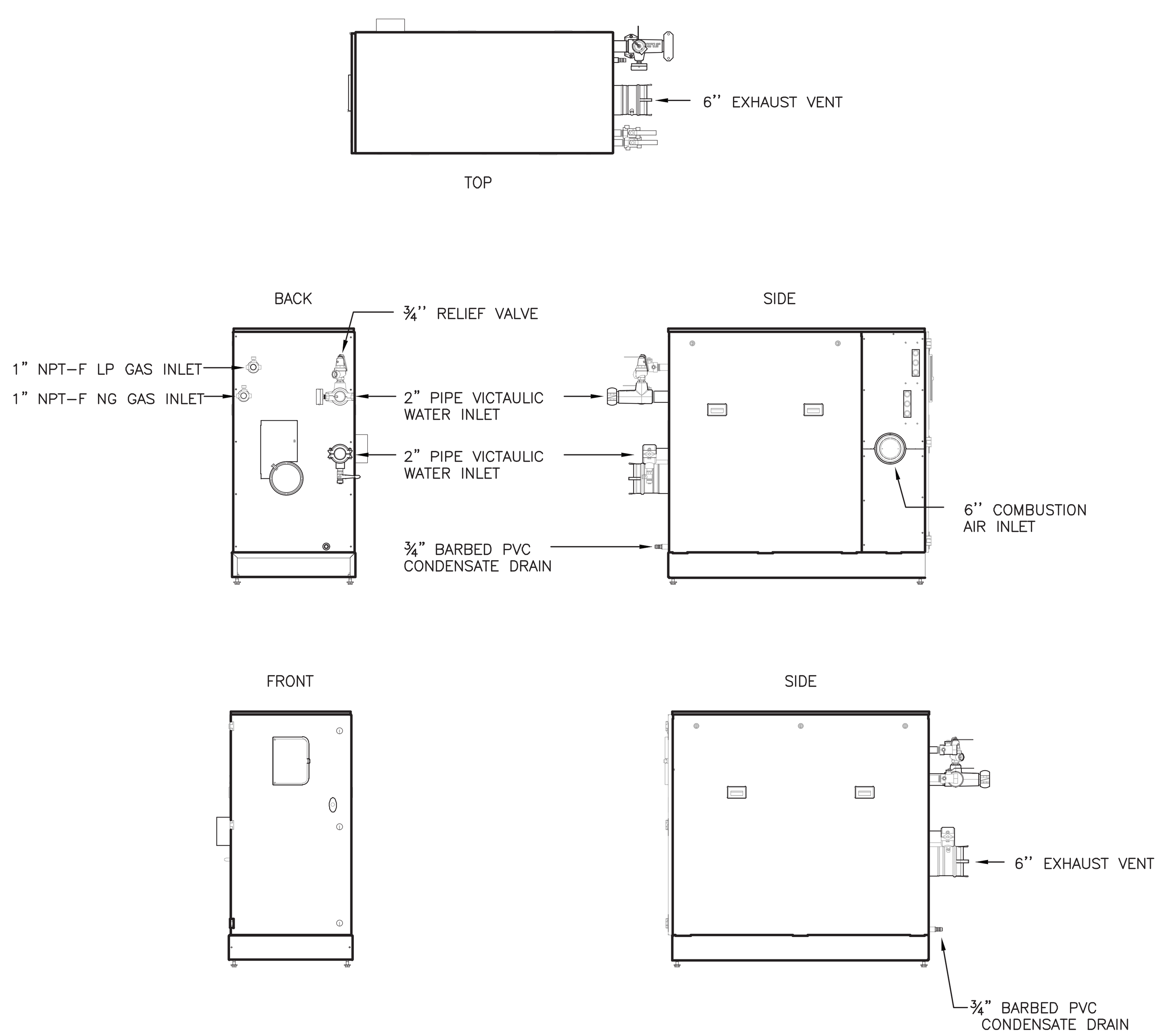
NEW YORK STATE DEPARTMENT OF LABOR - PART 4 - CONSTRUCTION INSTALLATION INSPECTION

4-6.4 CLEARANCE FOR BOILERS INSTALLED AFTER MARCH 31, 1965 IN A SPACE OR ROOM NOT PREVIOUSLY USED TO HOUSE A BOILER.

1. BUILDING WALL OR PARTITION CLEARANCE. THE CLEARANCE BETWEEN ANY COMPONENT ON THE SIDE OR REAR OF A BOILER AND ANY WALL OR PARTITION OF THE BUILDING IN WHICH IT IS INSTALLED SHALL BE NOT LESS THAN 24 INCHES WHERE THE RATED GROSS CAPACITY IS LESS THAN 5,000,000 BTU PER HOUR. WHERE THE RATED GROSS CAPACITY EXCEEDS 5,000,000 BTU PER HOUR, THE CLEARANCE TO ANY PROTECTED COMBUSTIBLE CONSTRUCTION SHALL BE NOT LESS THAN 36 INCHES.
2. CLEARANCE FROM OTHER BOILERS OR EQUIPMENT. THE CLEARANCE BETWEEN ANY COMPONENT OF THE BOILER ANY OTHER BOILER OR EQUIPMENT SHALL BE NOT LESS THAN 24 INCHES.
3. FRONT OPERATING CLEARANCE. THE CLEARANCE FROM THE FRONT WALL OR HEAD OR HEAT GENERATING APPARATUS OF THE BOILER, WHICHEVER IS CLOSER TO THE BUILDING WALL PARTITION OR OTHER EQUIPMENT, SHALL BE NOT LESS THAN FOUR FEET WHERE THE RATED GROSS CAPACITY IS LESS THAN 5,000,000 BTU PER HOUR. WHERE THE RATED GROSS CAPACITY EXCEEDS 5,000,000 BTU PER HOUR, SUCH CLEARANCE SHALL BE NOT LESS THAN SIX FEET.
4. WORKING PLATFORM -- VERTICAL CLEARANCE. WHEN WORKING PLATFORMS, REQUIRED FOR BOILERS WHERE THE DISTANCE FROM THE FLOOR TO THE TOP OF THE BOILER OR BOILER SETTING EXCEEDS EIGHT FEET, ARE INSTALLED ON TOP OF A BOILER FOR OPERATING OR MAINTENANCE PURPOSES, THE CLEARANCE FROM THE WORKING SURFACE OF SUCH PLATFORM TO THE LOWEST POINT OF ANY OVERHEAD STRUCTURE SHALL BE NOT LESS THAN SEVEN FEET.

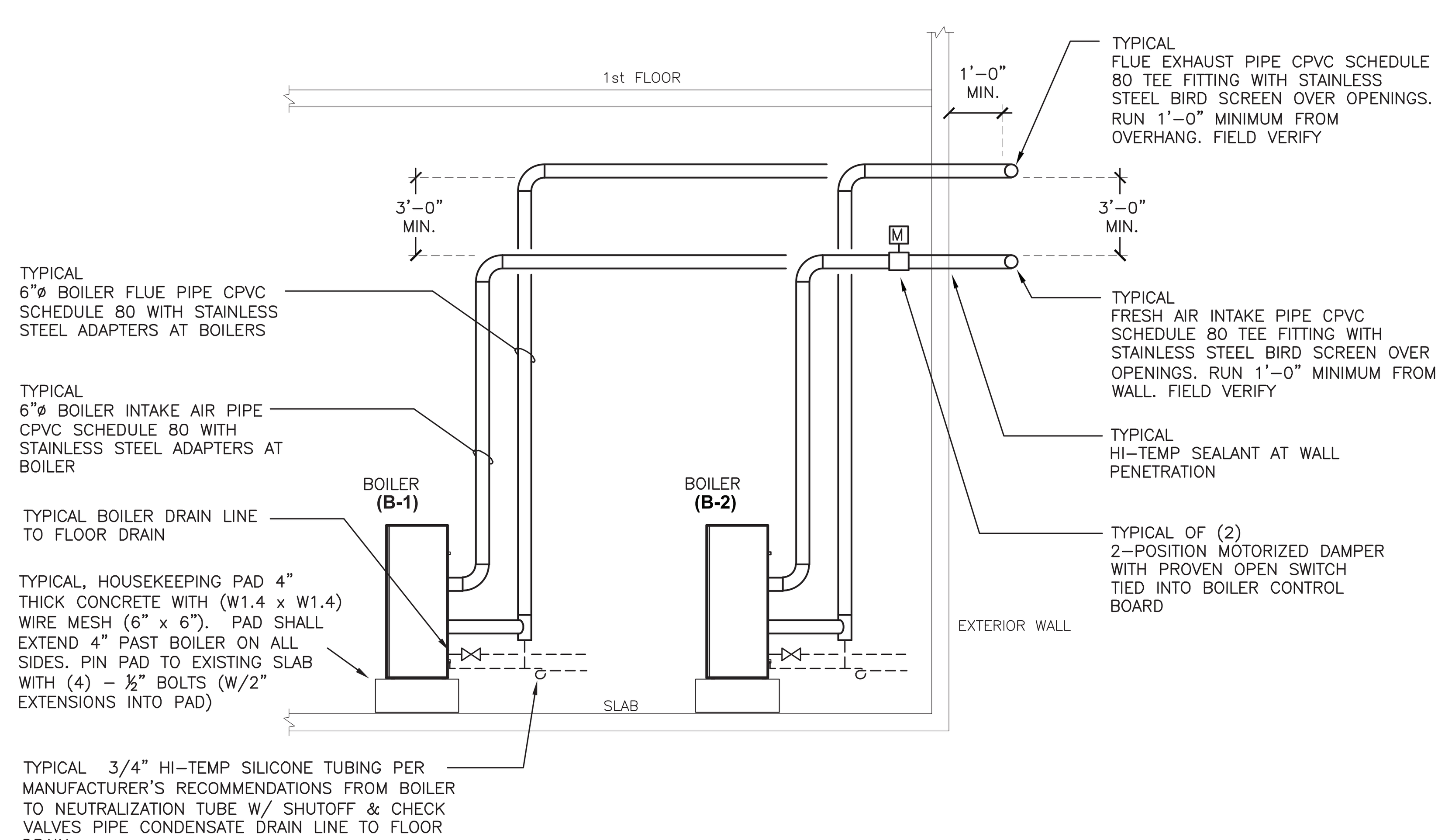
NOTES:

1. FURNISH AND INSTALL BOILER APPURTENANCES AS RECOMMENDED BY MANUFACTURER AND SERVICE SILLCOCKS TO FACILITATE BOILER DRAINING AND HYDRONIC SYSTEM PURGING.
2. PROVIDE BOILER SAFETY SHUTDOWN SWITCH AT BOILER ROOM ENTRANCE TO SHUTDOWN ALL GAS FIRED EQUIPMENT UPON ACTIVATION. SEE DETAIL #2 ON DRAWING (M-3).
3. USE BRASS UNION OR BALL VALVE BETWEEN DISSIMILAR METALS SUCH AS, BUT NOT LIMITED TO, STEEL AND COPPER CONNECTIONS.
4. CONTRACTOR SHALL FURNISH AND INSTALL MANUAL RESET HIGH LIMIT AND LOW WATER CUTOFF ON EACH BOILER.
5. CONTRACTOR SHALL HIRE MANUFACTURERS REPRESENTATIVE TO STARTUP BOILERS, SETUP CONTROLS AND PERFORM OPERATION AND COMBUSTION TESTS AS REQUIRED BY MANUFACTURER. SUBMIT REPORT OF STARTUP AND TESTS RESULTS TO ENGINEER FOR APPROVAL.



2 BOILER SCHEMATIC

NOT TO SCALE

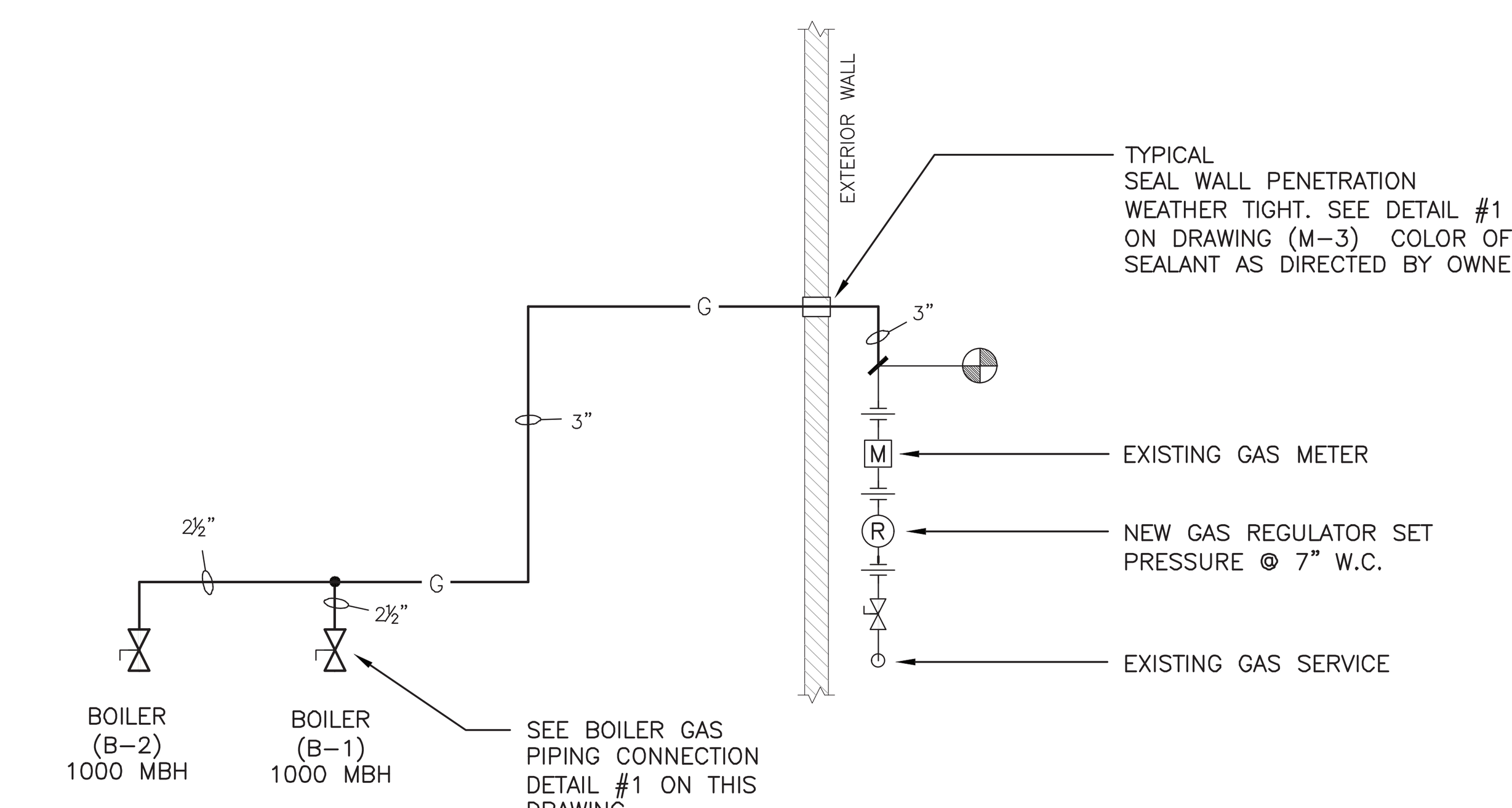


NOTES:

1. BOILER INTAKE AIR AND EXHAUST OUTLETS FROM BOILERS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, 2020 MECHANICAL CODE, FUEL GAS CODE OF NEW YORK STATE, ALL LOCAL CODES AND GENERALLY ACCEPTED STANDARDS..
2. EXACT LOCATION OF WALL PENETRATIONS SHALL BE APPROVED BY ENGINEER PRIOR TO INSTALLATION.

3 BOILER FLUE PIPING DETAIL

NOT TO SCALE



GAS PIPING SCHEMATICS NOTES:

1. ALL GAS PIPING SHALL BE INSTALLED IN ACCORDANCE WITH 2020 MECHANICAL, BUILDING, FIRE, PLUMBING, FUEL GAS AND ENERGY CONSERVATION CODE OF THE STATE OF NEW YORK, NFPA 54, ALL LOCAL CODES AND GENERALLY ACCEPTED STANDARDS. CENTRAL HUDSON GAS & ELECTRIC STANDARDS (C.H.G.&E.).
2. CONTRACTOR SHALL PAINT ALL GAS PIPING. CLEAN PIPING AND APPLY (1) COAT RUST INHIBITING PRIMER AND (2) COATS EXTERIOR PAINT. COLOR AS DIRECTED BY OWNER.
3. CONTRACTOR SHALL COORDINATE CONNECTION TO EXISTING GAS SERVICE WITH CENTRAL HUDSON GAS & ELECTRIC STANDARDS (C.H.G.&E.). CONNECTED GAS SERVICE TO BE SET @ 7" W.C. TO SERVE BUILDING. GAS METER BY CENTRAL HUDSON GAS & ELECTRIC STANDARDS (C.H.G.&E.).
4. CONTRACTOR SHALL PAY ALL FEES ASSOCIATED WITH CONNECTION TO EXISTING GAS SERVICE. OWNERS REPRESENTATIVE SHALL APPLY FOR GAS SERVICE AND SCHEDULE INSTALLATION.
5. CONTRACTOR SHALL PAY FOR ALL GAS PIPING AND EQUIPMENT.
6. GAS PIPE TESTING:
   A. TEST MEDIUM SHALL BE AIR, NITROGEN, CARBON DIOXIDE, OR AN INERT GAS. OXYGEN SHALL NOT BE USED.
   B. ABOVE GROUND PIPING SYSTEMS WITH A WORKING PRESSURE OF 2 PSIG SHALL BE TESTED AT A PRESSURE OF 5 PSIG FOR A DURATION OF ½ HOUR FOR EACH 500 CUBIC FEET OF PIPE VOLUME BUT SHALL NOT BE LESS THAN 30 MINUTES.

4 GAS PIPING SCHEMATIC

NOT TO SCALE

REVISION	DATE	DESCRIPTION

SEAL

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CONSULTING ENGINEERS, P.C.

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SHEET NO: **M-4**

PIPE HANGER SCHEDULE

PIPE SIZE (INCHES)	MAXIMUM HORIZONTAL SPACING (FEET)				SINGLE STEEL ROD HANGER SIZE (INCHES)		HANGER TYPE STEEL	MAXIMUM VERTICAL SPACING (FEET)			
	COPPER TUBE	CAST IRON	STEEL PIPE	CPVC PIPE	TUBING	PIPING		COPPER TUBE	CAST IRON	STEEL PIPE	CPVC PIPE
½"	6	5	8 (5)	3	¼"	⅜"	BAND	10	15	15	10
¾"	6	5	8 (5)	3	¼"	⅜"	BAND	10	15	15	10
1"	6	5	8 (5)	3	¼"	⅜"	BAND	10	15	15	10
1¼"	6	5	9 (5)	4	¼"	⅜"	CLEVIS	10	15	15	10
1½"	6	5	9 (5)	4	¼"	⅜"	CLEVIS	10	15	15	10
2"	10	5	10(5)	4	¼"	⅜"	CLEVIS	10	15	15	10
2½"	10	5	12(5)	4	⅜"	½"	CLEVIS	10	15	15	10
3"	10	5	12(5)	4	⅜"	½"	CLEVIS	10	15	15	10
4"	10	5	12(5)	4	½"	⅝"	CLEVIS	10	15	15	10
5"	10	5	12(5)	4	½"	⅝"	CLEVIS	10	15	15	10
6"	10	5	12(5)	4	½"	¾"	CLEVIS	10	15	15	10
8"	10	5	12(5)	4	⅝"	⅞"	CLEVIS	10	15	15	10
10"	10	5	12(5)	4	⅝"	⅞"	CLEVIS	10	15	15	10
12"	10	5	12(5)	4	⅝"	⅞"	CLEVIS	10	15	15	10

NOTES:

1. MAXIMUM HORIZONTAL SPACING OF CAST–IRON PIPE HANGERS SHALL BE INCREASED TO 10 FEET WHERE 10 FOOT LENGTHS OF PIPE ARE INSTALLED.
2. INSTALL HANGER OR SUPPORT CLOSE TO THE POINT OF CHANGE OF DIRECTION IN ALL PIPE RUNS.
3. INSTALL ADDITIONAL HANGERS ON SUPPORTS AT CONCENTRATED LOADS.
4. SUPPORT ALL BRANCH PIPING OVER 5'–0" IN LENGTH.
5. ½" GAS PIPING SHALL BE SUPPORTED EVERY 6'–0". ¾" AND 1" GAS PIPING SHALL BE SUPPORTED EVERY 8'–0". 1¼" AND LARGER GAS PIPING SHALL BE SUPPORTED EVERY 10'–0".
6. SUPPORT VERTICAL PIPING AT EVERY FLOOR.

HEATING AND COOLING MINIMUM PIPE INSULATION[a] COMMERCIAL

(THICKNESS IN INCHES)

FLUID	NOMINAL PIPE DIAMETER			
	< 1.5"	1.5" < 4.0"	4.0" to < 8.0"	≤ 8.0"
HOT WATER (141 – 200 °F)	1.5	2.0	2.0	2.0
CHILLED WATER OR REFRIGERANT	1.5	1.5	1.5	1.5
CONDENSATE	1.0	1.0	1.0	1.5

FOR SI:
1 INCH = 25.4mm, BTU PER INCH/H x Ft^2 x °F = W PER 25mm/K x M^2

[a] BASED IN INSULATION HAVING A CONDUCTIVITY NOT EXCEEDING 0.27 BTU PER INCH/H x FT^2 X °F

PLUMBING PIPE INSULATION SCHEDULE

SERVICE	INSULATION THICKNESS (INCHES)	
	PIPE SIZE (INCHES)	
	BELOW 1½"	1½" AND OVER
COLD WATER	½"	½"
HOT WATER	1"	1½"
HOT WATER RECIRCULATION	1"	1½"
HORIZONTAL / VERTICAL STORM PIPING	1"	1"

NOTES:

1. PIPE COVERING SHALL BE FIBERGLASS PIPE INSULATION WITH: FIRE RETARDANT VAPOR BARRIER JACKET, 0.23 K–FACTOR AT 75°F MEAN TEMPERATURE, FLAME SPREAD = 25, SMOKE DEVELOPED = 50.
2. FITTINGS AND VALVES SHALL BE PROVIDED WITH PREMOLDED FITTING COVERS WITH PVC JACKETING OVAL IN THICKNESS AND MATERIAL TO ADJOINING PIPE INSULATION.

MINIMUM HANGER SIZES FOR ROUND DUCT

DIAMETER	MAXIMUM SPACING	WIRE DIAMETER	ROD	STRAP
10" DN.	12'	–	¼"	1" x 22ga.
11" – 18"	12'	–	¼"	1" x 22ga.
19" – 24"	12'	–	¼"	1" x 22ga.
25" – 36"	12'	–	⅜"	1" x 22ga.
37" – 50"	12'	–	TWO ⅜"	TWO 1" x 20ga.
51" – 60"	12'	–	TWO ⅜"	TWO 1" x 18ga.
61" – 84"	12'	–	TWO ⅜"	TWO 1" x 16GA.

NOTES:

1. STRAPS AND RODS ARE GALVANIZED STEEL.
2. TABLE ALLOWS FOR CONVENTIONAL WALL THICKNESS, AND JOINT SYSTEMS PLUS ONE LB/SF OF INSULATION WEIGHT. IF HEAVIER DUCTS ARE TO BE INSTALLED, ADJUST HANGER SIZES.

BOILER SCHEDULE

DESIGNATION	B-1	B-2
LOCATION	BOILER ROOM	BOILER ROOM
SERVICE	HOT WATER	HOT WATER
MANUFACTURER	HARSCO P–K SONIC	HARSCO P–K SONIC
MODEL NUMBER	SC–1000	SC–1000
OPERATING WEIGHT (LBS)	810	810
WATER CONTENT	10.0 GAL	10.0 GAL
GROSS OUTPUT (MBH)	923	923
FUEL SOURCE	NATURAL GAS	NATURAL GAS
INPUT (MBH)	1000	1000
BOILER HP	28	28
MIN./MAX. INLET GAS PRESSURE (IN W.C.)	3.5/14	3.5/14
LWT/EWT (°F)	180/160	180/160
FLOW RATE (GPM)	80	80
WATER P.D. (FT.)	22.0	22.0
COMBUSTION EFFICIENCY	92.3%	92.3%
BOILER DESIGN PRESSURE (PSI)	80	80
ELECTRICAL REQUIREMENTS		
VOLTAGE/ ø / Hz.	120 / 1 / 60	120 / 1 / 60
TOTAL OPERATING AMPS	10 AMPS	10 AMPS

NOTES:

1. ASME CODE, SECTION IV, MAX PRESSURE= 125 PSIG, MAX TEMP 220°F.
2. ASME CSD–1 BOILER CONTROLS.
3. FULL INDEPENDENT CAST SECTIONAL HEAT EXCHANGER.
4. FULL MODULATION, 5:1 TURNDOWN WITH EXCESS AIR NO HIGHER THAN 30% ACROSS THE FIRING RANGE.
5. VARIABLE SPEED COMBUSTION AIR BLOWER.
6. COMBUSTION EFFICIENCY TO BE CSA CERTIFIED BASED ON OPERATING CONDITIONS FOR TESTING UNDER ANSI Z21.13/CSA4.9.
7. PROVIDE NURO TOUCH SCREEN CONTROL SYSTEM FOR EACH BOILER.
8. PROVIDE MODBUS OR BACNET MSTP (MASTER SLAVE TOKEN PASSING) GATEWAY/INTERFACE AND FULL INTEGRATION OF ALL BOILER CONTROL AND ALARM POINTS TO THE BUILDING MANAGEMENT SYSTEM.
9. PROVIDE CONDENSATE TRAP AND ACID NEUTRALIZATION SYSTEM.
10. BOILERS FURNISHED FOR NATURAL GAS. ALL GAS TRAINS AND CONTROLS FURNISHED WITH BOILERS ARE TO BE VENTLESS.
11. BOILERS SHALL BE FURNISHED WITH ADAPTORS FOR CPVC VENTING.
12. ASME LABELED

MECHANICAL EQUIPMENT SCHEDULE

SYMBOL	MANUFACTURER	CATALOG #	DESCRIPTION
—CD—	———	———	CONDENSATE DRAIN PIPING. SCHEDULE 40 PVC
—HWS— —HWR—	———	———	HYDRONIC PIPING, COPPER TYPE "L" UP TO 2". ABOVE 2" USE SCHEDULE 40 STEEL WITH SCREWED JOINTS. BOILER HEADER SHALL BE PIPED WITH SCHEDULE 40 STEEL. INSULATE WITH FIBERGLASS PIPE INSULATION WITH VAPOR PROOF JACKET AND PVC FITTING COVERS. TAPE ALL JOINTS FOR VAPOR TIGHT SEAL. EXPOSED PIPING SHALL BE COVERED WITH PVC PIPE COVER AND PAINTED. SEE THIS DRAWING FOR INSULATION THICKNESS SCHEDULE.
—C—	———	———	DOMESTIC COLD WATER PIPING, COPPER TYPE 'L' WITH LEAD FREE SOLDER JOINTS. INSULATE PIPE WITH ½" THICK FIBERGLASS INSULATION WITH VAPOR PROOF JACKET AND PVC FITTING COVERS. TAPE ALL JOINTS FOR VAPOR TIGHT SEAL.
—G—	———	———	NATURAL GAS PIPING, SCHEDULE 40 STEEL WITH SCREWED JOINTS UP TO 3" DIAMETER. WELDED JOINTS ON ALL PIPE SIZES ABOVE 3" DIAMETER.
---FO---	———	———	FUEL OIL PIPING SCHEDULED FOR REMOVAL
	———	———	GAS VALVE FULL PORT, AGA APPROVED.
	NIBCO	———	BALL VALVE, BRONZE BODY, FULL PORT.
	NIBCO	———	CHECK VALVE, BRONZE BODY SWING.
	———	———	GAS VALVE FULL PORT, AGA APPROVED.
P-1, 2	GRUNDFOS	UPS 40–160/2	INLINE VERSAFLO 1–1/2 BOOSTER PUMP, IRON BODY, THREE SPEED MOTOR, MAX. WORKING PRESSURE 145 PSI, MAX. OPERATING TEMPERATURE 230°F, SET MOTOR SPEED ON (3)–THREE. 80 GPM @ 22 FT. HEAD, .75 HP, RPM, MOTOR STARTER H–O–A W/OVERLOADS – 120V/1
ET-1	AMTROL	400–L–ASME	EXTROL BLADDER TYPE EXPANSION TANK, TANK VOLUME 106 GALLON, ASME

GENERAL MECHANICAL NOTES

1. ALL MECHANICAL WORK SHALL BE INSTALLED IN ACCORDANCE WITH 2020 MECHANICAL CODE, FIRE CODE, PLUMBING CODE, FUEL GAS CODE, BUILDING CODE, AND ENERGY CONSERVATION CONSTRUCTION CODE OF NEW YORK STATE, ALL LOCAL CODES AND GENERALLY ACCEPTED STANDARDS.
2. MECHANICAL CONTRACTOR SHALL PROVIDE ALL EQUIPMENT, PIPING, VALVES, ACCESS DOORS, HANGERS, FITTINGS AND MISCELLANEOUS COMPONENTS NOT NECESSARILY DETAILED ON THESE DRAWINGS TO RENDER THE MECHANICAL SYSTEMS COMPLETE, OPERABLE, AND IN ACCORDANCE WITH APPLICABLE CODES AND GENERALLY ACCEPTED INDUSTRY STANDARDS.
3. MECHANICAL CONTRACTOR SHALL SUBMIT SHOP DRAWINGS ON ALL EQUIPMENT TO ENGINEER FOR APPROVAL.
4. MECHANICAL CONTRACTOR SHALL SEAL AROUND ALL PIPE AND DUCT PENETRATIONS THROUGH FIRE RATED WALLS, FLOORS AND CEILINGS WITH HILTI INTUMESCENT FIRE STOP MATERIALS TO MAINTAIN FIRE AND SMOKE RATINGS. DUCTS PENETRATING FIRE RATED WALLS, FLOORS AND CEILINGS SHALL BE INSTALLED WITH FIRE DAMPER AND ACCESS DOORS WHETHER SPECIFICALLY SHOWN ON THE DRAWINGS OR NOT.
5. MECHANICAL CONTRACTOR SHALL NOT DRILL OR CUT ANY STRUCTURAL MEMBERS WITHOUT PERMISSION OF ENGINEER.
6. ALL EQUIPMENT SHALL BE INSTALLED PER MANUFACTURERS RECOMMENDATIONS.
7. MECHANICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL CONTROL WIRING (24V) FOR SYSTEMS SHOWN ON MECHANICAL DRAWINGS AND DESCRIBED IN MECHANICAL SPECIFICATIONS, INCLUDING ALL RELAYS, TRANSFORMERS, CONDUIT, JUNCTION BOXES, CONDUCTORS, THERMOSTATS, APPURTENANCES AND ALL NECESSARY EQUIPMENT TO MAKE SYSTEMS COMPLETE AND OPERABLE.
8. ALL PERMITS AND INSPECTION FEES REQUIRED BY LOCAL AUTHORITY HAVING JURISDICTION WILL BE WAIVED BY CITY OF NEWBURGH.
9. MECHANICAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL CUTTING, PATCHING, AND PAINTING ASSOCIATED WITH MECHANICAL WORK. ALL FLOORS AND WALLS WHERE A PIPE HAS BEEN REMOVED AND NOT REPLACED SHALL BE PATCHED BY THE MECHANICAL CONTRACTOR.
10. ALL CONTROL WIRING SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (N.E.C.) AND ALL LOCAL CODES. ALL CONDUCTORS SHALL BE COPPER WITH THHN INSULATION IN EMT CONDUIT. 120V/1 – MINIMUM CONDUCTOR SIZE #12. 24V – MINIMUM CONDUCTOR SIZE #18. MINIMUM CONDUIT SIZE SHALL BE ¾". CONDUIT INSTALLED OUTDOORS SHALL BE GALVANIZED.
11. MECHANICAL CONTRACTOR SHALL PROVIDE ACCESS DOORS FOR ALL VALVES AND DUCT ACCESSORIES CONCEALED IN WALLS/CEILINGS. ACCESS DOORS SHALL HAVE APPROPRIATE FIRE RATING TO MAINTAIN INTEGRITY OF WALL/CEILING.
12. MECHANICAL CONTRACTOR SHALL FURNISH AND INSTALL VALVE TAGS, PIPE LABELS, DUCT LABELS AND EQUIPMENT LABELS. LOG ALL TAGS AND LABELS IN A 3–RING BINDER WITH LOCATION, DESCRIPTION AND FUNCTION. SEE SPECIFICATIONS FOR MORE INFORMATION.
13. MECHANICAL CONTRACTOR SHALL PROVIDE ALL HYDRONIC BALANCING FOR ALL NEW MECHANICAL SYSTEMS. SEE SPECIFICATIONS FOR BALANCE PROCEDURES AND ADDITIONAL REQUIREMENTS. SUBMIT BALANCE REPORT TO ENGINEER. SEE MECHANICAL SPECIFICATIONS BALANCE REPORT REQUIREMENTS.
14. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SUPPLEMENTAL STRUCTURAL STEEL SUPPORT ASSOCIATED WITH NEW MECHANICAL EQUIPMENT HUNG OR SUPPORTED FROM OR ON THE BUILDING STRUCTURE. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO ENGINEER FOR APPROVAL PRIOR TO STEEL FABRICATION AND INSTALLATION OF EQUIPMENT.
15. MECHANICAL CONTRACTOR SHALL SUBMIT PIPING AND DUCTWORK FULLY COORDINATED SHOP DRAWINGS FOR ENGINEERS REVIEW. SEE GENERAL CONDITIONS FOR NUMBER OF SHOP DRAWINGS.
16. MECHANICAL CONTRACTOR SHALL INSTRUCT BUILDING OWNER AND CITY OF NEWBURGH KEY PERSONNEL ON OPERATION OF ALL MECHANICAL SYSTEMS. SET ALL BOILER CONTROLS, SENSORS, OPERATING TEMPERATURES AND SCHEDULES AS DIRECTED BY BUILDING OWNER OR KEY PERSONNEL.
17. MECHANICAL CONTRACTOR SHALL INCLUDE IN BID ALL MATERIALS, RIGGING AND LABOR REQUIRED FOR THE COMPLETE AND PROPER INSTALLATION OF THE MECHANICAL SYSTEM.
18. MECHANICAL CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO THE BEGINNING OF WORK, AND COORDINATE WORK ALL OTHER TRADES.
19. PROVIDE ALL PIPE OPENINGS THROUGH WALLS WITH PIPE SLEEVES.
20. ALL MOTOR STARTERS AND DISCONNECT SWITCHES FOR MECHANICAL EQUIPMENT SHALL BE FURNISHED BY THE MECHANICAL CONTRACTOR. DISCONNECT SWITCHES FURNISHED BY THE MECHANICAL CONTRACTOR FOR MECHANICAL EQUIPMENT SHALL BE HEAVY DUTY TYPE AND SHALL BE NEMA 3R WHEN LOCATED OUTSIDE.
21. MECHANICAL CONTRACTOR SHALL GUARANTEE ALL WORKMANSHIP AND MATERIAL INSTALLED UNDER THIS CONTRACT FREE FROM DEFECTS FOR A PERIOD OF ONE (1) YEAR FROM DATE OF SUBSTANTIAL COMPLETION AND ACCEPTANCE BY THE OWNER AND AGREES TO REPLACE DEFECTIVE WORK (INCLUDING ALL REQUIRED LABOR AND MATERIAL) AT NO ADDITIONAL COST TO OWNER DURING THE GUARANTEE PERIOD.
22. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING START–UP OF ALL NEW EQUIPMENT, CONTROLS, AND ETC. TO ENSURE CORRECT OPERATION OF INSTALLED DEVICES.
23. MECHANICAL CONTRACTOR SHALL PROVIDE OWNER WITH CATALOG DATA, OPERATING INSTRUCTIONS, MAINTENANCE INSTRUCTIONS, AND RECORD (AS–BUILT) DRAWINGS OF ALL COMPLETED WORK.
24. ALL NEW HOLES IN WALLS AND FLOORS SHALL BE CORE DRILLED BY MECHANICAL CONTRACTOR. PRIOR TO CORE DRILLING FLOORS, RADAR SCAN FLOOR SLABS. USE CAUTION WHEN CORE DRILLING TO AVOID DAMAGE TO EQUIPMENT, SYSTEMS, STRUCTURE AND ETC. ANY ITEMS DAMAGED AS A RESULT OF CORE DRILLING SHALL BE REPAIRED BY MECHANICAL CONTRACTOR AT NO ADDITIONAL COST TO OWNER.
25. HEALTH, SAFETY AND CRITICAL OPERATING EQUIPMENT SHALL NOT BE COMPROMISED WITHOUT CITY OF NEWBURGH NOTIFICATION AND SCHEDULED SHUTDOWN DURING OFF HOURS AS TEMPORARY OPERATIONAL PLAN IS IMPLEMENTED AND MAINTAINED.
26. ALL PIPING SUPPORTS AND HANGERS EXPOSED TO OUTDOOR ELEMENTS SHALL BE GALVANIZED STEEL.
27. NEWBURGH HISTORIC COURTHOUSE SHALL REMAIN IN OPERATION THROUGHOUT THE CONSTRUCTION PERIOD. ANY INTERRUPTIONS IN BUILDING SERVICES SHALL BE APPROVED BY THE CITY OF NEWBURGH PRIOR TO INTERRUPTING SERVICES. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH APPROVED INTERRUPTION TIMES.
28. CONTRACTOR SHALL BE RESPONSIBLE FOR DRAINING AND REFILLING EXISTING HYDRONIC AND DOMESTIC WATER SYSTEMS AS REQUIRED FOR COMPLETION OF WORK.

REVISION	DATE	DESCRIPTION

SEAL

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MECHANICAL: EQUIPMENT SCHEDULES & NOTES

BOILER REPLACEMENT PROJECT FOR:
NEWBURGH HISTORIC COURTHOUSE
123-125 GRAND STREET
CITY OF NEWBURGH, NY

ISSUE: BID 6.22
DATE: MAR 31, 2022
PROJECT NO.: GA21023
DRAWN BY: RL/KC
CHECKED BY: JT

SHEET NO: **M-5**