

WATER PUMP SCHEDULE		
UNIT NUMBER		P-1, P-2
LOCATION		MECHANICAL RM
SYSTEM SERVICE		BOILER B-1, B-2
TYPE		BASE MOUNTED END SUCTION
PUMP DATA	IMPELLER DIA. (IN)	9.5
	SUCTION CONN. (IN)	2.5
	DISCHARGE CONN. (IN)	2
	CAPACITY (GPM)	150
	TOTAL HD (FT.)	70
	WORKING FLUID	WATER - 30% PG
	FLUID TEMP °F	160
MOTOR	TYPE	NEMA PREMIUM, VFD READY
	H.P.	7.5
	RATED R.P.M.	1800
	DUTY POINT R.P.M.	1538
	ENCL. TYPE	ODP
	V/PH/Hz	208/3/60
	DUTY POINT BHP	3.56
	DUTY POINT EFF. (%)	72.8
OPERATING WEIGHT (LB)		350
PUMP BASE DIMENSIONS (L x W) (IN)		35 x 15
BASIS OF DESIGN	MANUFACTURER	BELL & GOSSETT
	MODEL	e-1510-2BD-SS-213T
REMARKS		
1. PROVIDE OPERATIONS AND MAINTENANCE MANUALS.		
2. PROVIDE NEW 6" TALL EQUIPMENT PAD, EXTEND 6" BEYOND EQUIPMENT BASE IN ALL DIRECTIONS.		
3. PROVIDE VIBRATION ISOLATORS.		
4. EXISTING VFD TO REMAIN.		
5. ELECTRICAL MOTORS SHALL MEET THE MINIMUM EFFICIENCY REQUIREMENTS OF TABLES C405.8(1) THOUGH C405.8(4) WHEN TESTED AND RATED IN ACCORDANCE WITH THE DOE 10 CFR 431.		

EXISTING CIRCULATOR PUMP

P-4: TACO, SERIES 1600 IN-LINE, MODEL# 1641C354, APPROX. 150 GPM

WATER PUMP SCHEDULE		
UNIT NUMBER		P-5, P-6
LOCATION		MECHANICAL RM
SYSTEM SERVICE		BOILER B-1, B-2
TYPE		IN-LINE CIRCULATOR
PUMP DATA	IMPELLER DIA. (IN)	N/A
	SUCTION CONN. (IN)	N/A
	DISCHARGE CONN. (IN)	N/A
	CAPACITY (GPM)	150
	TOTAL HD (FT.)	20
	WORKING FLUID	WATER - 30% PG
	FLUID TEMP °F	160
MOTOR	TYPE	NEMA
	H.P.	2
	RATED R.P.M.	N/A
	DUTY POINT R.P.M.	2526
	ENCL. TYPE	ODP
	V/PH/Hz	208/1/60
	DUTY POINT BHP	1.21
	DUTY POINT EFF. (%)	N/A
OPERATING WEIGHT (LB)		50
PUMP BASE DIMENSIONS (L x W) (IN)		NA - SUPPORTED FROM FLOOR
BASIS OF DESIGN	MANUFACTURER	BELL & GOSSETT
	MODEL	ECOCIRC XL 40-275
REMARKS 1. PROVIDE OPERATIONS AND MAINTENANCE MANUALS. 2. ELECTRICAL MOTORS SHALL MEET THE MINIMUM EFFICIENCY REQUIREMENTS OF TABLES C405.8(1) THOUGH C405.8(4) WHEN TESTED AND RATED IN ACCORDANCE WITH THE DOE 10 CFR 431. 3. CIRCULATOR PUMPS SHALL BE CONTROLLED BY BOILER CONTROL PANEL.		

COMBUSTION AIR DAMPER SCHEDULE			
MARK	SERVICE	SIZE (Ø, IN)	BASIS OF DESIGN
D-1	COMBUSTION AIR	20	RUSKIN CD50

BOILER-BURNER UNIT SCHEDULE		
UNIT NO		B-1, B-2
LOCATION		MECHANICAL ROOM
RATING	TYPE	CONDENSING
	GROSS I.B.R. OUTPUT (BTU/HR)	1,900,000
	MIN OVERALL BOILER EFFICIENCY (%)	94.6
	NET I.B.R. OUTPUT (WATER) @ 100% (BTU/H)	NA
	TURNDOWN RATIO	20:1
DESIGN HOT WATER SUPPLY TEMPERATURE (°F)		180
DESIGN HOT WATER RETURN TEMPERATURE (°F)		160
SYSTEM DESIGN PRESSURE (PSI)		12
MAX ALLOWABLE OPERATING PRESSURE (PSIG)		30
FLUE OUTLET / AIR INTAKE SIZE (INCHES)		8 / 8
SUPPLY OUTLET SIZE (INCHES)		4
RETURN INLET SIZE (INCHES)		4
FUEL DATA	GAS CONNECTION, NPT (IN)	2
	GAS FIRING RATE (CFH)	2000
	INLET PRESSURE RANGE (IN. WC)	4.0 - 14
ELECTRICAL DATA	VOLTS/PH/Hz	120/1/60
	POWER, FLA	16
	OPERATING AMPS, MCA	-
OVERALL DIMENSIONS WITHOUT CONTROLS (L X W X H) (INCHES)		58 X 28 X 78
HOUSE KEEPING CONCRETE PAD DIMENSIONS (INCHES)		-
OPERATING WEIGHT (LBS)		1654
BASIS OF DESIGN	BOILER MANUFACTURER & MODEL NO.	AERCO
	BURNER MANUFACTURER & MODEL NO.	BENCHMARK 2000

EXPANSION TANK SCHEDULE											
UNIT #	SERVICE	LOCATION	SYSTEM TEMP RANGE		INITIAL PRESS. IN TANK PSIG	MIN. VOLUME GAL	ACCEPT VOLUME GAL	PIPE SIZE TO TANK	WEIGHT (LBS)	BASIS OF DESIGN	
			MIN °F	MAX °F						MANUFACTURER	MODEL #
ET-1	HOT WATER	BOILER RM	140	190	12	50	34.56	1-1/2	651	BELL & GOSSETT	B-200

AIR SEPARATOR SCHEDULE									
UNIT #	SERVICE	LOCATION	TYPE	AIR SEPARATOR			OPERATING WEIGHT (LBS)	BASIS OF DESIGN	
				SIZE (IN)	FLOW (GPM)	PRESS. DROP (FT H2O)		MANUFACTURER	MODEL #
AS-1	HOT WATER	MECHANICAL RM	COALESCING AIR & DIRT	6	480	0.3	499	BELL & GOSSETT	CRS6F

CHEMICAL SHOT FEEDER SCHEDULE								
UNIT #	SERVICE	LOCATION	TYPE	SIZE (GAL)	MAX. PRESS. (PSIG)	WEIGHT (LBS)	BASIS OF DESIGN	
							MANUFACTURER	MODEL #
CF-1	HOT WATER	BOILER RM	VERTICAL BY-PASS	5	300	38	NEPTUNE	DBF-5HP

DOMESTIC INDIRECT HOT WATER HEATER SCHEDULE							
UNIT #	SERVICE	LOCATION	CAPACITY (GAL)	WATER TEMP RANGE		BASIS OF DESIGN	
				INLET °F	OUTLET °F	MANUFACTURER	MODEL #
IWH-1	HOT WATER	BOILER RM	250	40	140	AO SMTH	HWHV250SBW660

PIPE INSULATION SCHEDULE		
FLUID	THICKNESS	OPERATING TEMP RANGE, °F
MAKE-UP WATER (ALL SIZES)	0.5"	40-60
HWS&R (LESS THAN 1-1/2")	1.5"	141-200
HWS&R (1-1/2" AND GREATER)	2.0"	141-200

PIPE SIZE SCHEDULE	
PIPE SIZE	FLOW RANGE
3/4"	0-4 GPM
1"	5-7.5 GPM
1-1/4"	8-16 GPM
1-1/2"	17-24 GPM
2"	25-48 GPM
2-1/2"	49-77 GPM
3"	78-140 GPM
4"	141-280 GPM
5"	281-500 GPM
6"	501-800 GPM

MINIMUM PIPE SIZE SHALL BE PROVIDED AS SCHEDULED ABOVE. WHERE PIPE SIZES INDICATED ELSEWHERE WITHIN DRAWINGS CONFLICT WITH SCHEDULED FLOW, THE LARGER SIZE PIPE SHALL BE PROVIDED. MINIMUM PIPE SIZE 3/4".

3	07/18/24	ADDENDUM NO. 1
2	06/18/24	REVISIONS
1	05/31/24	BIDDING DOCUMENTS
No.	Date	Revisions

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Scale	AS SHOWN
Date	05/31/2024

Mechanical & Electrical Engineer:	GREENMAN PEDERSEN, INC. 2 KENNEDY BOULEVARD, SUITE 202, SUFFERN, NY 10901
Structural Engineer:	

**NORTH ROCKLAND HIGH
SCHOOL EXTENSION BOILER
REPLACEMENT**

HIGH SCHOOL EXT STD# 05-02-01-06-0-007-016

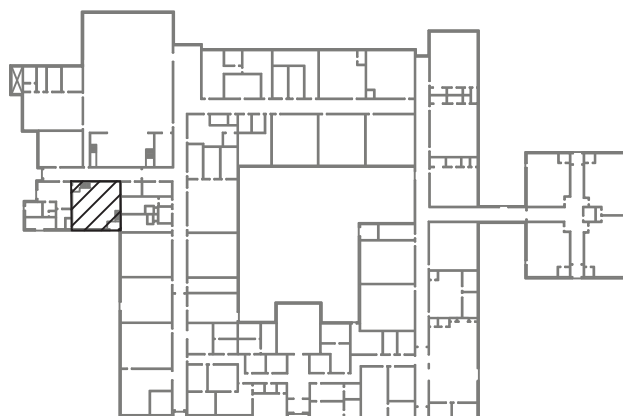
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COUNTY OF ROCKLAND



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Drawing Title MECHANICAL SCHEDULES	Drawing No. M-002
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SCALE: 1/2" = 1'-0"

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Drawing Title
**MECHANICAL BOILER
 ROOM PLAN -
 REMOVAL**

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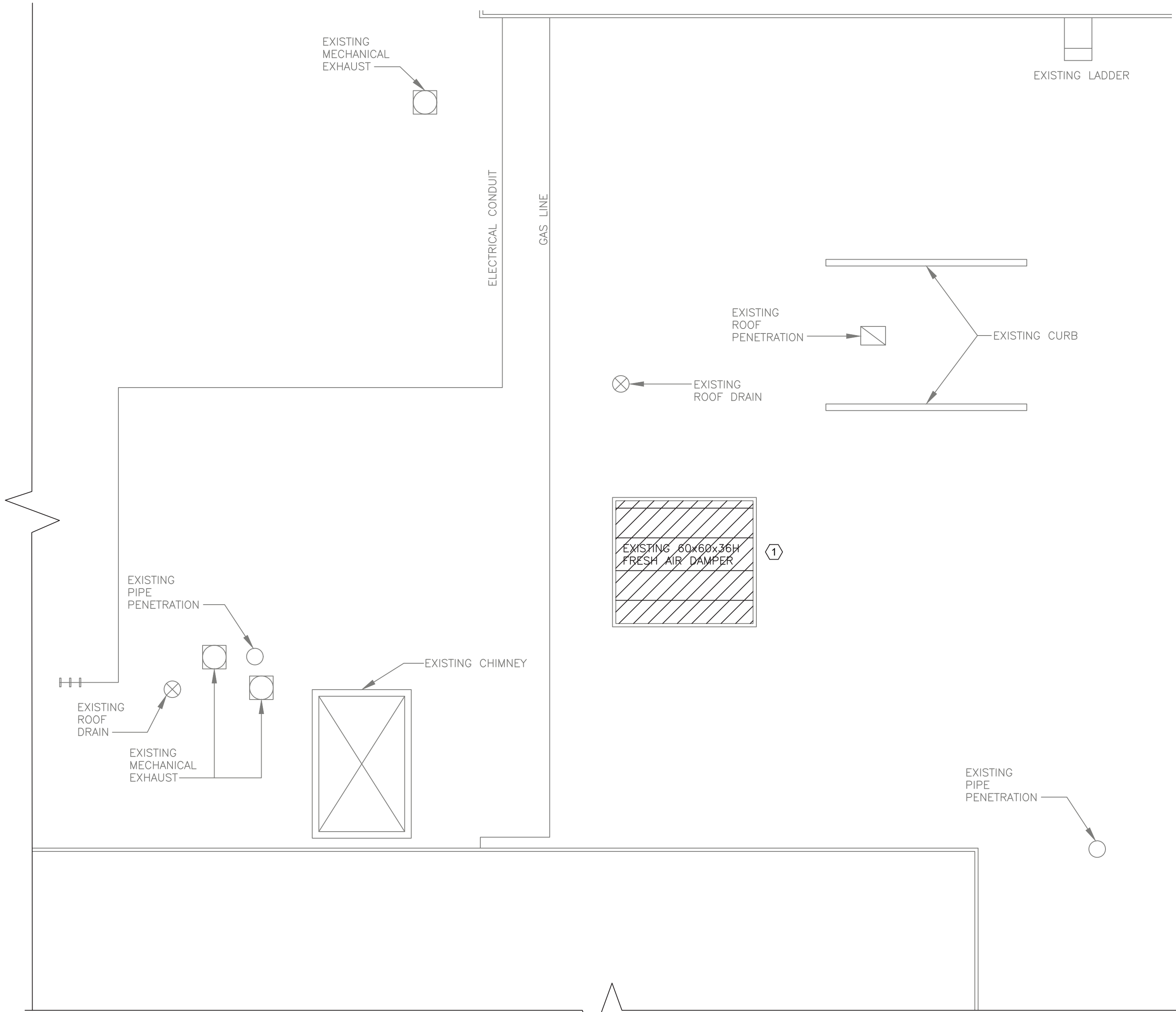
Drawing Title
MECHANICAL BOILER

**ROOM PLAN -
REMOVAL**

Drawing No.

MD-101

1 **ROOF PLAN REMOVAL**
SCALE: 1/4" = 1'-0"



KEYED NOTES

- ① DISCONNECT AND REMOVE AIR HOOD.
EXISTING CURB TO REMAIN. COORDINATE
REMOVALS WITH ARCHITECT.



PLAN NORTH

0 1/2 1
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Drawing Title
**MECHANICAL ROOF
PLAN REMOVAL**

Drawing No.

MD-102



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HIGH SCHOOL EXT SED# 05-02-01-06-0-007-016

65 Chapel Street
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Mechanical
& Electrical
Engineer:

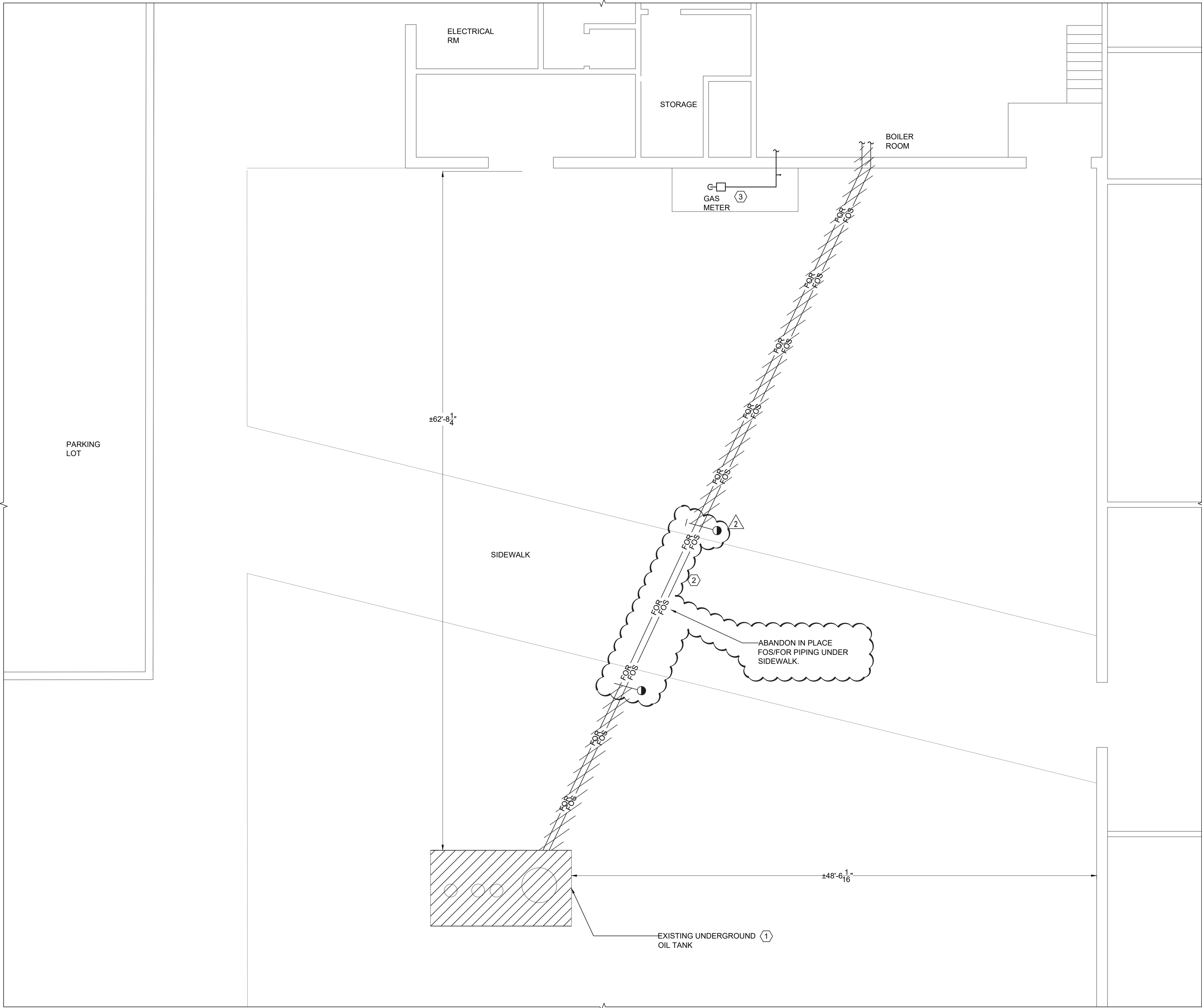
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Structural
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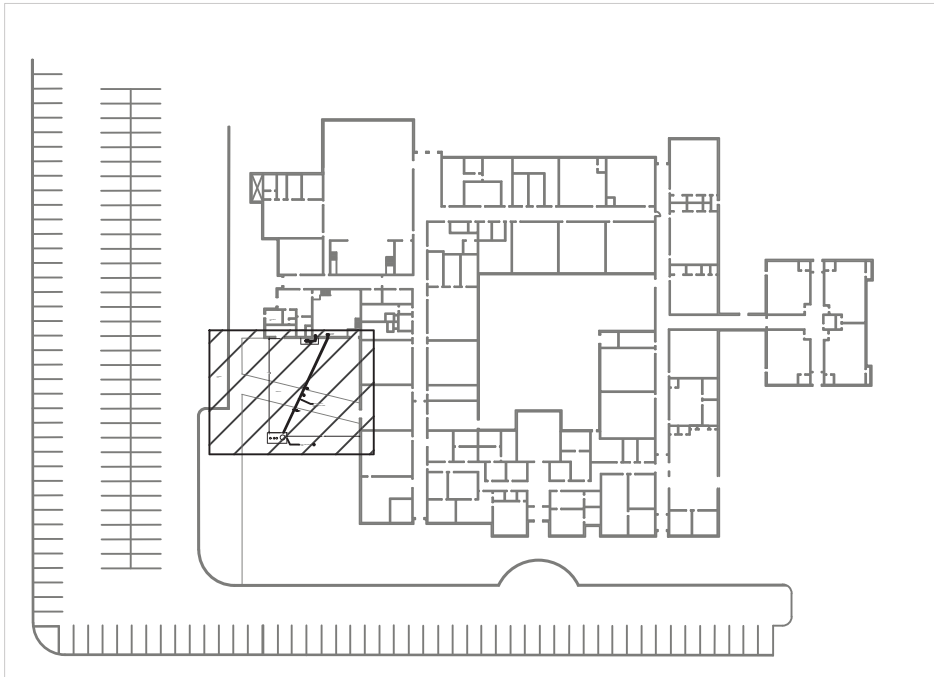
1 MECHANICAL PARTIAL SITE PLAN - REMOVAL
SCALE: 3/32" = 1'-0"

KEYED NOTES:

- ① DISCONNECT AND REMOVE UNDERGROUND FUEL OIL TANK AND ASSOCIATED FILL/VENT PIPING, MANHOLES, ETC. CONTRACTOR TO COORDINATE REMOVAL WITH FACILITIES AND ASSOCIATED UTILITY PROVIDER. SEE GENERAL NOTES ON THIS DRAWING FOR MORE INFO.
- ② DISCONNECT AND REMOVE BURIED FUEL OIL SUPPLY AND RETURN PIPING FROM UNDERGROUND FUEL STORAGE TANK TO BOILER ROOM DAY TANK. COORDINATE REMOVAL WITH FACILITIES. SEE GENERAL NOTES ON THIS DRAWING FOR MORE INFO.
- ③ EXISTING UTILITY GAS METER AND PIPING TO REMAIN.

GENERAL NOTES:

1. PRIOR TO REMOVAL OF FUEL OIL TANK AND FUEL OIL PIPING, CONTRACTOR TO EMPTY TANK FROM ITS CONTENTS AND PROPERLY DISPOSE PER EPA REGULATIONS.
2. CONTRACTOR TO PERFORM TEST OF THE EXCAVATED SOIL FOR ANY CONTAMINATES. UPON COMPLETION OF THE REMOVAL WORK, CONTRACTOR TO BACKFILL EXCAVATED AREA WITH CLEAN FILL.
3. COORDINATE ALL EXCAVATION AND FILL REQUIREMENTS WITH ARCHITECT AND GENERAL CONTRACTOR.



KEY PLAN



PLAN NORTH

0 1/2 1
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Drawing Title
**MECHANICAL PARTIAL
SITE PLAN - REMOVAL**



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Drawing No.

MD-103

Mechanical
& Electrical
Engineer:

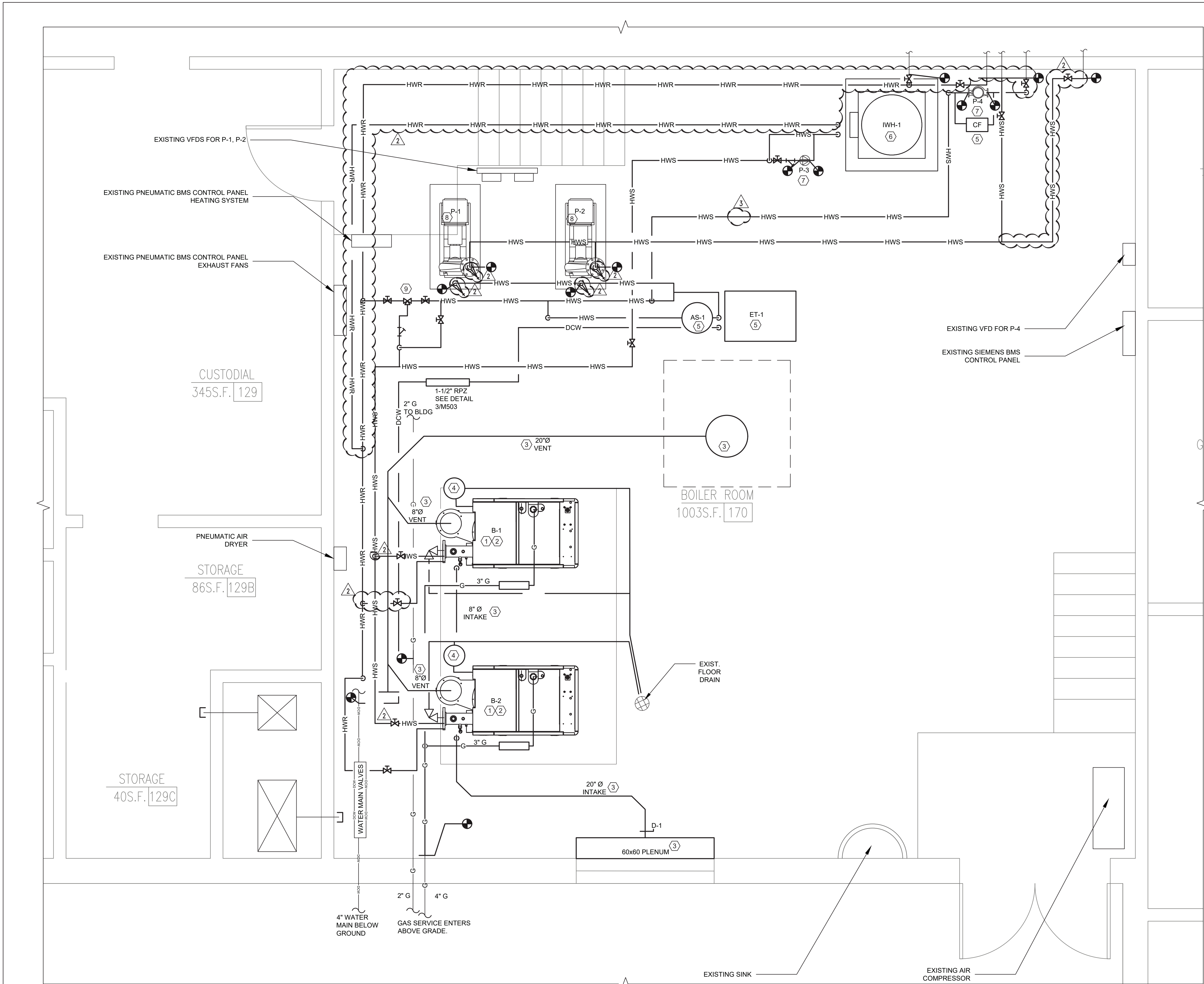
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Structural
Engineer:

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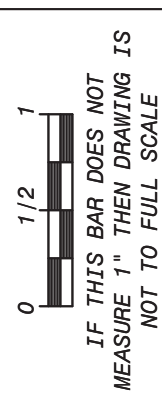
1 MECHANICAL BOILER ROOM PLAN - NEW WORK
SCALE: 1/2" = 1'-0"

KEYED NOTES:

- 1 PROVIDE HOT WATER CONDENSING BOILER. SEE EQUIPMENT SCHEDULE ON DRAWING M002 AND MECHANICAL DETAILS. PROVIDE NEW DDC CONTROLS AND INTERCONNECT TO EXISTING SIEMENS BMS SYSTEM. SEE DRAWING M401 AND SPECIFICATIONS.
- 2 PROVIDE PIPING AND REQUIRED INSULATION AND SUPPORTS FOR BOILER. MAKE ALL REQUIRED CONNECTIONS AS PER MANUFACTURER'S INSTRUCTIONS AND AS PER MECHANICAL DETAILS. FOR PIPE INSULATION, SEE SPECIFICATIONS AND SCHEDULE ON DRAWING M002.
- 3 FURNISH AND INSTALL EXHAUST FLUE AND COMBUSTION AIR INTAKE VENT AND SUPPORTS. SEE DETAILS ON M503 AND FOLLOW MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- 4 FURNISH AND INSTALL CONDENSATE NEUTRALIZER FOR THE CONDENSING BOILERS. SEE DETAIL ON M503.
- 5 FURNISH AND INSTALL ALL ASSOCIATED BOILER APPURTENANCES: AIR SEPARATOR, EXPANSION TANK, CHEMICAL SHOT FEEDER, ETC. SEE EQUIPMENT SCHEDULE ON M002. REFER TO MECHANICAL DETAILS FOR ADDITIONAL INFORMATION.
- 6 FURNISH AND INSTALL INDIRECT HOT WATER HEATER. SEE EQUIPMENT SCHEDULE ON M002. PROVIDE NEW PIPING, INSULATION AND SUPPORTS AND MAKE CONNECTION TO EXISTING MIXING VALVE AT DOMESTIC HOT WATER SYSTEM.
- 7 REINSTALL EXISTING PUMPS, P-3 AND P-4. PROVIDE NEW SUPPORTS. MAKE ALL CONNECTIONS TO EXISTING PIPING.
- 8 BASE BID: EXISTING PUMPS TO REMAIN. ALTERNATE #1: FURNISH AND INSTALL PUMPS, P-1, P-2. SEE WATER PUMP SCHEDULE ON DRAWING M-002 AND MECHANICAL DETAILS.
- 9 PROVIDE 3-WAY CONTROL VALVE. MAKE: SIEMENS ; MODEL: 294-06162

GENERAL NOTES:

1. SEE PIPING DIAGRAM DRAWING M-301 AND DETAILS ON M-501, M-502, AND M-503 FOR ALL VALVING, FITTINGS AND SIZES.
2. LAYOUT IS SHOWN CONCEPTUAL. CONTRACTOR TO SUBMIT SHOP DRAWING FOR APPROVAL, PRIOR TO FABRICATION.



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Mechanical & Electrical Engineer:	Structural Engineer:

NORTH ROCKLAND HIGH SCHOOL EXTENSION BOILER REPLACEMENT	
HIGH SCHOOL EXT SEDA# 05-02-01-06-0-007-016	COUNTY OF ROCKLAND
65 Chapel Street, Garrisonville, NY 10623	

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Drawing Title MECHANICAL BOILER ROOM PLAN - INSTALL	Drawing No. M-101
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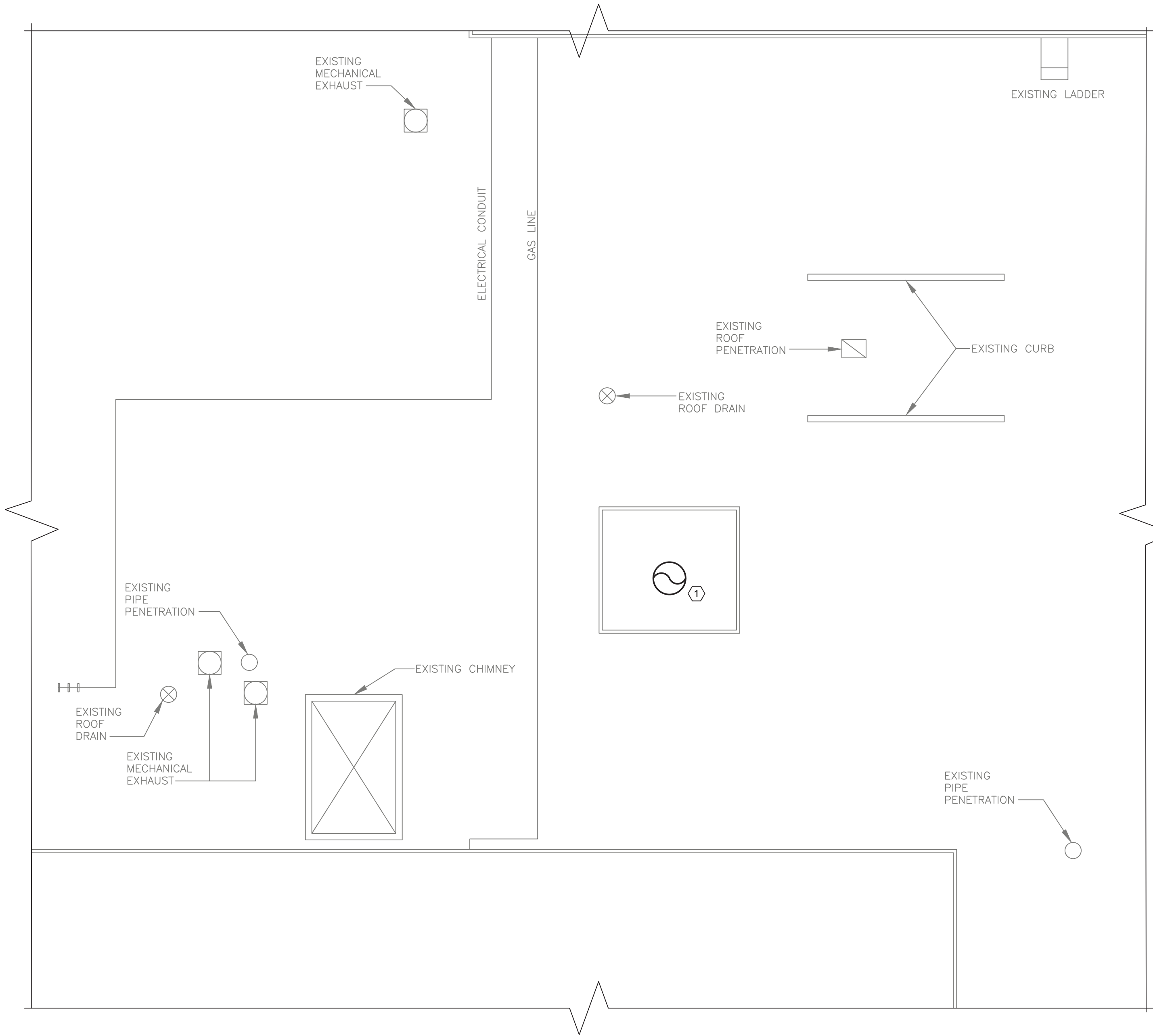
KEY PLAN



PLAN NORTH

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1 PARTIAL ROOF PLAN - NEW WORK
SCALE: 1/4" = 1'-0"



KEYED NOTES

- ① FURNISH AND INSTALL NEW VENT THROUGH EXISTING ROOF OPENING. SEE DETAIL 1/M503 AND REFER TO MANUFACTURER'S INSTALLATION MANUALS. CONTRACTOR TO PROPERLY SEAL PENETRATION. COORDINATE WITH GC AND REFER TO ARCHITECTURAL PLANS FOR ADDITIONAL DETAILS.



KEY PLAN



0 1/2 1
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Drawing Title
**MECHANICAL ROOF
PLAN - INSTALL**

Drawing No.

M-102



**NORTH ROCKLAND HIGH
SCHOOL EXTENSION BOILER
REPLACEMENT**

HIGH SCHOOL EXT SEDA 05-02-01-06-0-007-016

65 Chapel Street
Greenwich, NY 10623

COUNTY OF ROCKLAND

Mechanical
& Electrical
Engineer:

Structural
Engineer:

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REFER TO SPECIFICATION SECTION 230993 FOR SEQUENCE OF OPERATION AND CONTROL OF MECHANICAL EQUIPMENT LISTED AND SHOWN ON DRAWING M003. REFER TO MECHANICAL EQUIPMENT SPECIFICATIONS FOR ADDITIONAL INFORMATION.

1. THE OCCUPANCY MODE (UNOCCUPIED OR OCCUPIED) SHALL BE DETERMINED THROUGH A USER-DEFINABLE TIME SCHEDULE. SUMMERTIME MODE SHALL INCLUDE TIMES DURING WHICH HEATING IS NOT REQUIRED. WINTERTIME MODE SHALL INCLUDE TIMES DURING WHICH HEATING IS REQUIRED.
2. BOILER B-1 SHALL BE THE PRIMARY LEAD BOILER. BOILER B-2 SHALL BE THE LAG BOILER, SEE LEAD-LAG PROGRAMMING CONTROLS BELOW.
3. BOILER B-2 SHALL RUN WHEN MAINTENANCE IS REQUIRED ON BOILER B-1.
4. NEW BRASS GLASS STATION AT EACH BOILER ROOM DOORWAY SHALL SHUT DOWN BOTH BOILER PRIMARY CONTROL CIRCUITS AND CLOSE MAIN FUEL VALVES.

HEATING MODE SHALL BE INITIATED WHEN OUTSIDE TEMPERATURE FALLS BELOW 55°F, (ADJUSTABLE). THE HOT WATER BOILER SHALL BE ENGAGED AND MAINTAIN AT LEAST MINIMUM HOT WATER TEMPERATURE REQUIRED BY THE BOILER.

6. LEAD LAG PROGRAMMING CONTROL:
- A LEAD-LAG PROGRAMMING CONTROL SHALL SEQUENCE AUTOMATICALLY THE FIRING OF MULTIPLE BOILERS WITH CHANGING LOAD CONDITIONS. THE FIRST (LEAD) BOILER STARTS-UP AND REACHES ITS BURNER DELIVERY (HIGH FIRE) RATE. IF THE FIRST BOILER IS UNABLE TO MEET THE REQUIRED WATER TEMPERATURE, THE SECOND (LAG) BOILER SHALL AUTOMATICALLY FIRE. BOILERS SHALL OPERATE IN UNISON, MODULATING TO MEET THE DEMAND. IF THE DEMAND IS LESS THAN THE CAPACITY PROVIDED BY BOTH BOILERS FIRING AT LOW FIRE, THE LAG BOILER SHALL AUTOMATICALLY SHUT DOWN. THE LEAD BOILER SHALL SHUT DOWN WHEN THE DEMAND HAS BEEN EXCEEDED. SELECTION OF THE LEAD BOILER SHALL BE MADE EITHER MANUALLY BY MEANS OF A SELECTOR DIAL ON THE CONTROL CABINET OR AUTOMATICALLY AS A FUNCTION OF RUN TIME.
7. BURNER OPERATING CONTROLS:
- TO MAINTAIN SAFE OPERATING CONDITIONS, THE FOLLOWING BURNER SAFETY CONTROLS LIMIT BURNER OPERATION.
- HIGH TEMPERATURE LIMIT: AUTOMATIC AND MANUAL RESET STOPS BURNER IF OPERATING CONDITIONS RISE ABOVE MAXIMUM BOILER DESIGN TEMPERATURE. LIMIT SWITCH TO BE MANUALLY RESET ON THE CONTROL INTERFACE.
 - LOW-WATER CUTOFF SWITCH: ELECTRONIC PROBE SHALL PREVENT BURNER OPERATION ON LOW WATER. CUTOFF SWITCH SHALL BE MANUALLY RESET ON THE CONTROL INTERFACE.
 - BLOCKED INLET SAFETY SWITCH: MANUAL-RESET PRESSURE SWITCH FIELD MOUNTED ON BOILER COMBUSTION-AIR INLET.
 - HIGH AND LOW GAS PRESSURE SWITCHES: PRESSURE SWITCHES SHALL PREVENT BURNER OPERATION ON LOW OR HIGH GAS PRESSURE. PRESSURE SWITCHES TO BE MANUALLY RESET ON THE CONTROL INTERFACE.
 - BLOCKED DRAIN SWITCH: BLOCKED DRAIN SWITCH SHALL PREVENT BURNER OPERATION WHEN TRIPPED. SWITCH TO BE MANUALLY RESET ON THE CONTROL INTERFACE.
 - LOW AIR PRESSURE SWITCH: PRESSURE SWITCHES SHALL PREVENT BURNER OPERATION ON LOW AIR PRESSURE. SWITCH TO BE MANUALLY RESET ON THE CONTROL INTERFACE.
 - AUDIBLE ALARM: FACTORY MOUNTED ON CONTROL PANEL WITH SILENCE SWITCH; SHALL SOUND ALARM FOR ANY LOCKOUT CONDITIONS.
 - EACH BURNER SHALL BE PROVIDED WITH A FLAME FAILURE (COMBUSTION SAFETY) PROGRAMMING CONTROL WHICH SHALL DE-ENERGIZE ALL ELECTRICALLY OPERATED FUEL VALVES AND BURNER EQUIPMENT WITHIN FOUR SECONDS, AND ACTUATE A VISUAL ALARM MOUNTED ON THE CONTROL PANEL AFTER AN OPERATING FLAME FAILURE HAS OCCURRED. AUTOMATIC START UP AND SHUTDOWN PROGRAMMING SHALL BE A PART OF THIS SAFETY EQUIPMENT.
 - CARBON MONOXIDE SHUT DOWN: BURNER EQUIPMENT SHALL BE SHUT DOWN BY THE STAND ALONE CO SYSTEM ON DETECTION OF HIGH CARBON MONOXIDE LEVELS.
 - LOW FIRE HOLD AQUASTAT: A LOW FIRE HOLD MINIMUM TEMPERATURE AQUASTAT SHALL LIMIT BURNER MODULATION TO PREVENT BOILER FROM MODULATING TO HIGH FIRE UNTIL WATER TEMPERATURE REACHES 180°F.

D. SUMMERTIME MODE: BOILERS B-1 AND B-2 SHALL BE SET TO MAINTAIN DOMESTIC HOT WATER HEATING REQUIREMENTS. THE SUMMER SWING VALVE SWITCH SHALL BE SET TO OFF. PRIMARY LOOP PUMPS SHALL BE OFF. SECONDARY LOOP PUMPS SHALL BE ON.

TT	TEMPERATURE TRANSMITTER
PT	PRESSURE TRANSMITTER
CS	CURRENT TRANSMITTER
HS	HAND SWITCH (HAND-OFF-AUTO SWITCH)
ZC	VALVE OR DAMPER POSITION CONTROLLER
ES	DAMPER END SWITCH

 MOTOR STARTER

(DPS) DIFFERENTIAL PRESSURE SENSOR

(SPD) SPEED COMMAND

(AIA) ANALOG INPUT

(COMM) COMMUNICATION

ADJ ADJUSTABLE

EVA ELECTRIC VALVE ACTUATOR



1. PROVIDE MATERIALS REQUIRED TO EXECUTE THE WORK SHOWN OF THIS CONTRACT AND TO SATISFY THE SEQUENCE OF OPERATIONS WHICH SHALL INCLUDE, BUT NOT BE LIMITED TO: LOW VOLTAGE WIRING, CONDUIT, MATERIALS, PROGRAMMING, SOFTWARE, HARDWARE, AND APPURTENANCES.
2. PROVIDE LOW VOLTAGE WIRING IN EMT CONDUIT THROUGHOUT. PAINT TO MATCH EXISTING FINISHES.
3. SCHEDULE THE WORK WITH THE OWNER AND NOTIFY THE OWNER AT LEAST 48 HOURS IN ADVANCE OF PERFORMING ANY SHUTDOWNS.
4. PERFORM CUTTING AND PATCHING AS REQUIRED TO ACCESS THE EXISTING VENT DAMPERS OR TO OTHERWISE EXECUTE THE WORK. RESTORE FINISHES TO MATCH EXISTING TO THE SATISFACTION OF THE OWNER.

Drawing Title
**MECHANICAL
CONTROL DIAGRAM**

M-401

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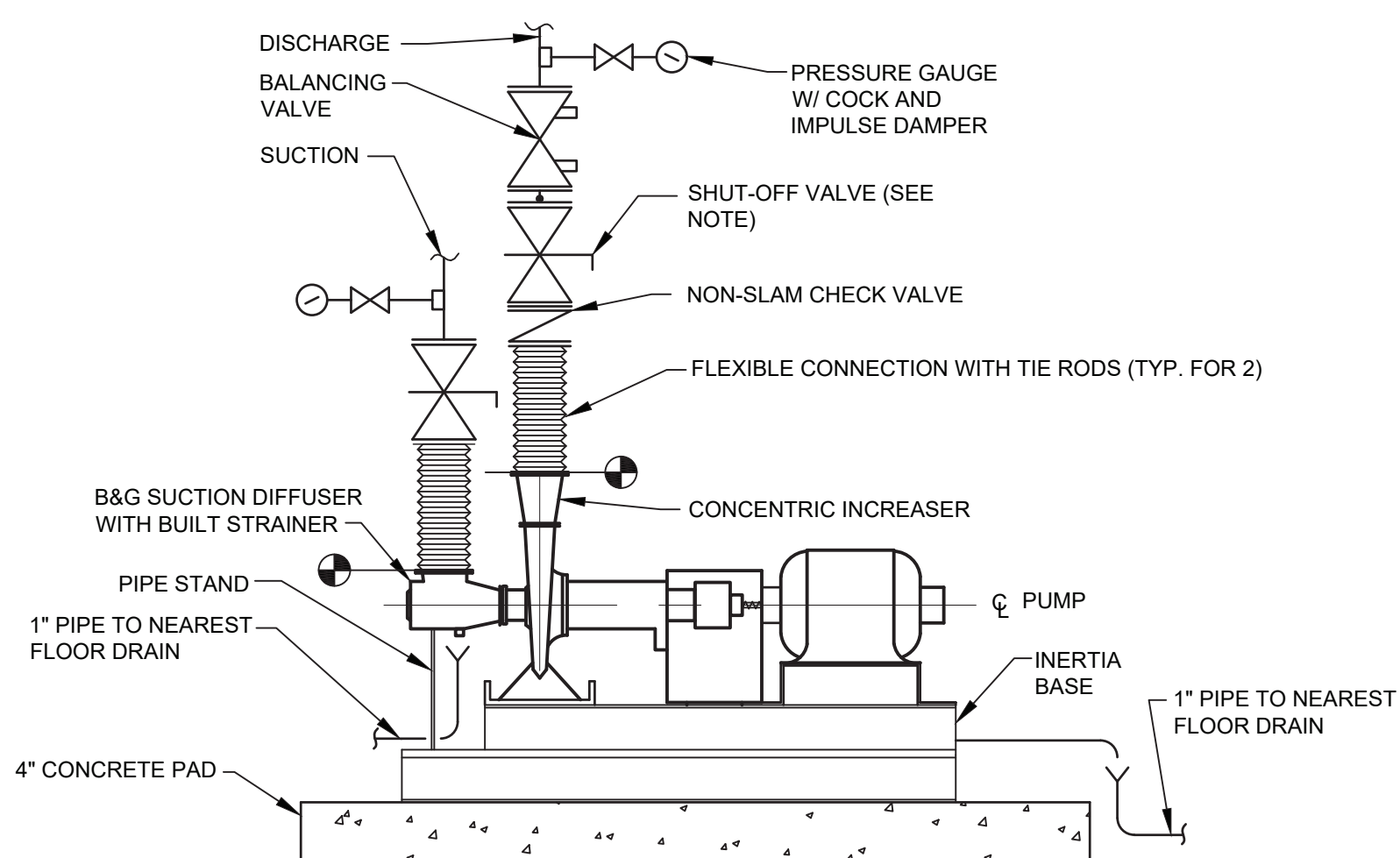
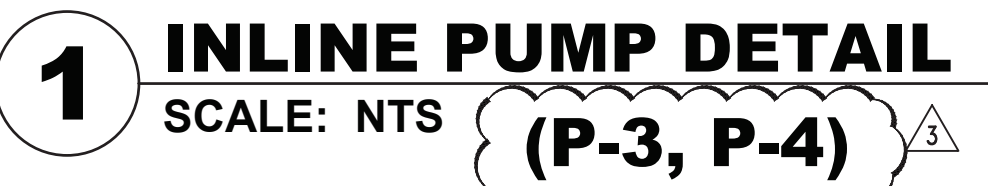
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COUNTY OF ROCKLAND

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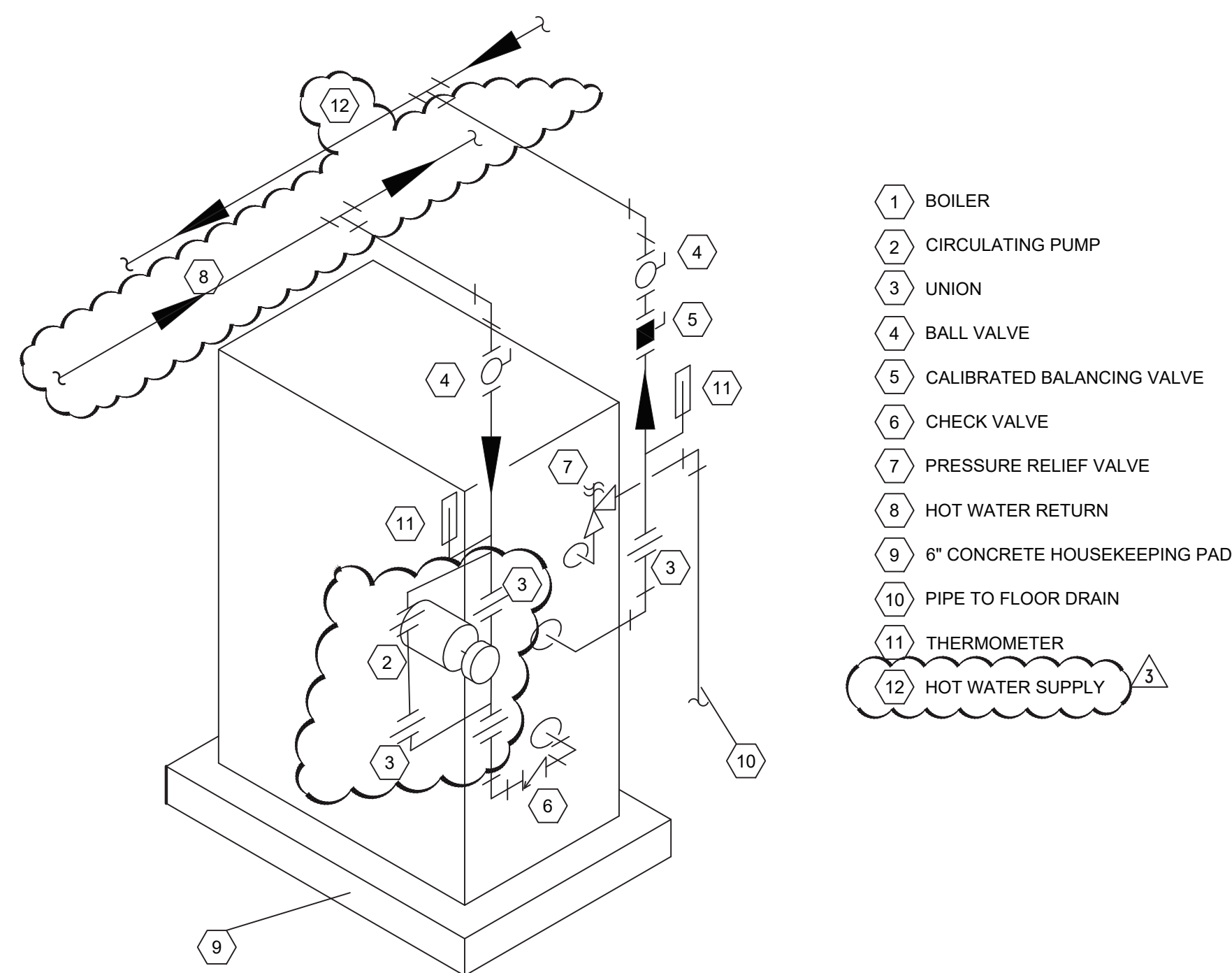
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2 HOT WATER PUMP DETAIL

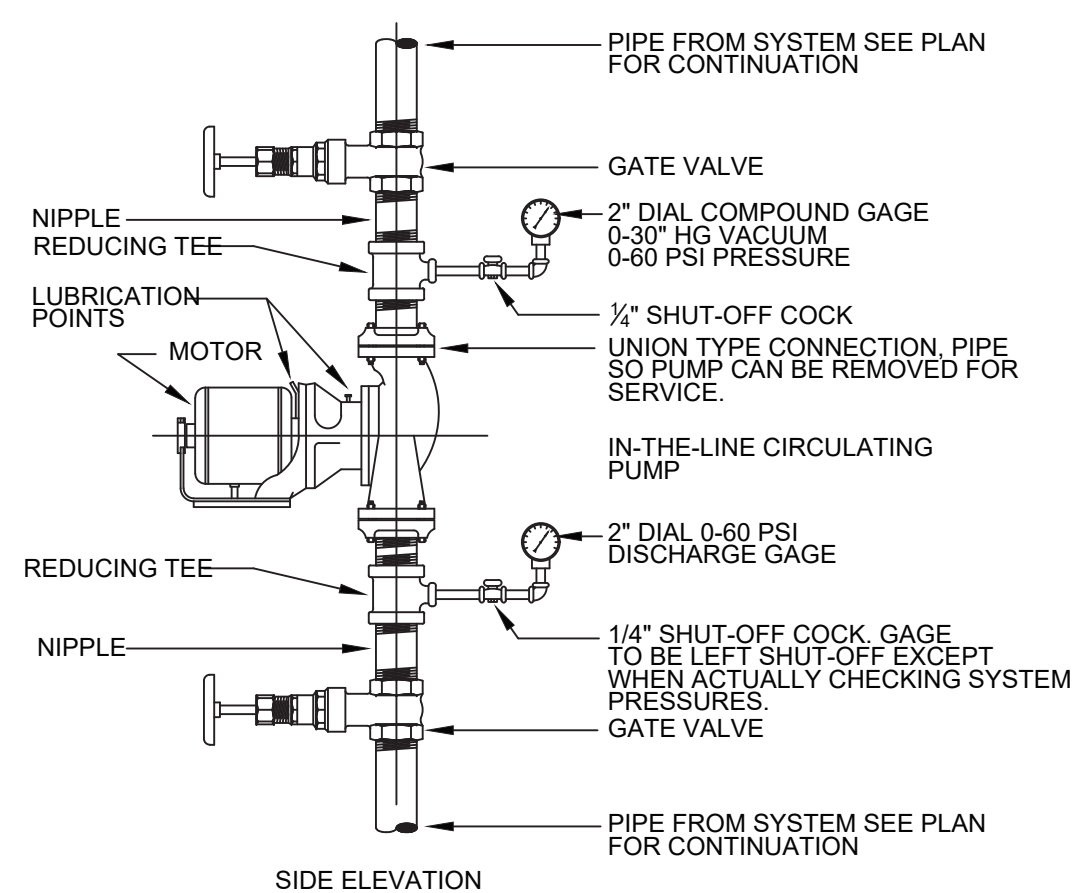
SCALE: NONE (P-1, P-2)

- NOTE:
1. A TRIPLE DUTY VALVE MAY BE PROVIDED IN LIEU OF CHECK, SHUT-OFF, AND BALANCING VALVES.
 2. BASE BID: EXISTING PUMPS AND VFDS TO REMAIN, REPLACE PIPING AND VALVES TO PUMP.
 3. ALTERNATE #1: REPLACE PUMP, P-1 AND P-2. EXISTING VFD TO REMAIN.



3 BOILER PIPING DETAIL

SCALE: NONE

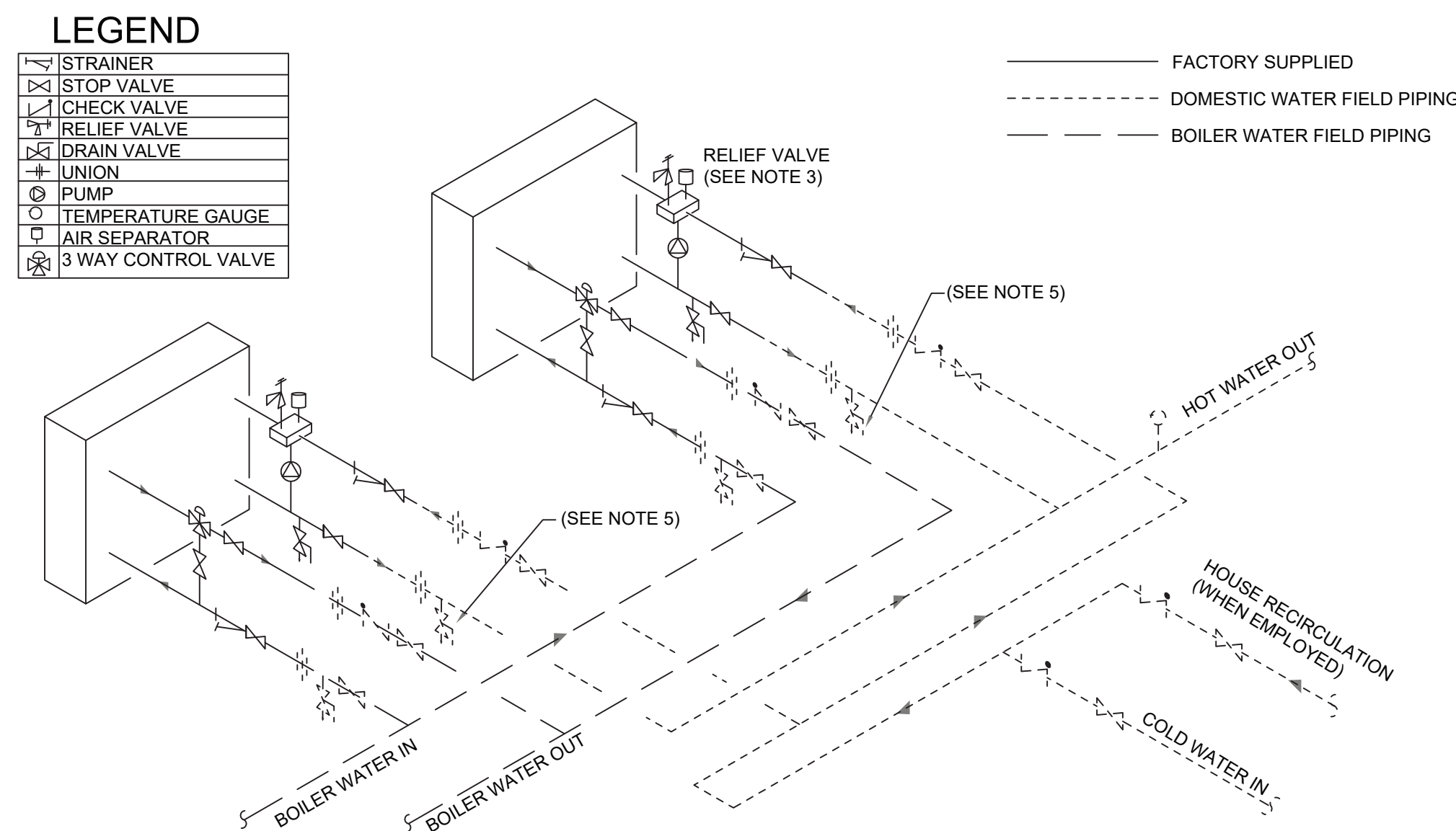


1. THE PUMP SHALL BE INSTALLED DEAD LEVEL, AND SHALL NOT TOUCH OR REST ON ANY PART OF THE BUILDING STRUCTURE.
2. THE ELECTRICAL CONNECTION TO THE PUMP SHALL BE MADE THROUGH THE USE OF FLEXIBLE CONDUIT (GREENFIELD) AT LEAST 18" LONG.
3. THE PUMP SHALL BE INSTALLED SO THAT THE PUMP CAN BE COMPLETELY REMOVED WITHOUT THE DISMANTLING OR REMOVAL OF ANY PIPING OR VALVES.
4. THE MOTOR AND COUPLING SHALL BE CHECKED AND PROPERLY ALIGNED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
5. THE ADJACENT PIPING SHALL BE CAREFULLY FITTED AND ERECTED SO THAT THE PUMP CAN BE INSTALLED OR REMOVED FROM THE PIPE WITHOUT FORCING OR SPRINGING.
6. AFTER THE SYSTEM HAS BEEN COMPLETED AND THE PUMP STARTED THE PUMP AND SYSTEM SHALL BE CHECKED FOR VIBRATION AND EXCESSIVE NOISE AND IMMEDIATELY CORRECTED.

1. AFTER COMPLETION OF THE SYSTEM AND BEFORE START-UP, THE PUMP SHALL BE LUBRICATED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
2. A METAL INSTRUCTION PLATE SHALL BE ATTACHED TO THE PUMP IN A LOCATION WHERE IT IS CLEARLY VISIBLE. THESE INSTRUCTIONS SHALL INDICATE THE RECOMMENDED LUBRICANT, THE POINTS OF LUBRICATION, AND THE RECOMMENDED FREQUENCY OF LUBRICATION.

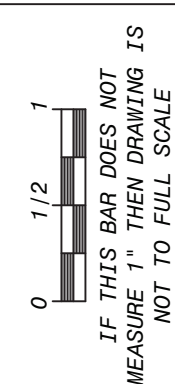
4 **INLINE CIRCULATION PUMP AT BOILER DETAIL**

SCALE: NTS (P-5, P-6) ³



5 DOMESTIC HW HEAT EXCHANGER PIPING DETAIL

1. FOR ACTUAL SIZES AND LOCATIONS OF PIPING AND OTHER CONNECTIONS TO THE HEATER, SEE DIMENSIONAL DRAWING.
2. REDUCERS, ON THE WATER INLET SIDE, SHOULD BE LOCATED ADJACENT TO THE HEATER, EXPANSION FITTINGS, ON THE WATER INLET SIDE, SHOULD BE LOCATED AS FAR AS POSSIBLE FROM THE HEATER.
3. DRAIN VALVE SHOULD BE PIPED DIRECTLY TO A FLOOR DRAIN. RELIEF VALVE SHOULD BE PIPED VERTICALLY TO A HEIGHT 19" ABOVE THE FLOOR.
4. HEATERS SHOULD BE PIPED REVERSE RETURN OR BALANCING DEVICES ON THE OUTLETS SHOULD BE EMPLOYED.
5. INSTALL A HOSE CONNECTION AT THE HOT WATER OUTLET.
6. CONTRACTOR RESPONSIBLE TO REVIEW MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR ALL PIPING INSTALLATION GUIDELINES.



No.	Date	BIDDING DOCUMENTS	ADDENDUM NO. 1	
1	05/31/24	REVISIONS	REVISIONS	
2	06/18/24			
3	07/18/24			

REG. EXP. DATE: 10-31-26

Drawn by	WM
Checked by	PC
Project No.	44023
Scale	AS SHOWN
Date	05/31/2024

Mechanical & Electrical Engineer:	GREENMAN PEDERSEN, INC 2 EXECUTIVE BOULEVARD, SUITE 202, SUFFERN, NY 10901
Structural Engineer:	

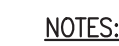
**NORTH ROCKLAND HIGH
SCHOOL EXTENSION BOILER
REPLACEMENT**

The logo for Michael Shilale Architects, LLP features the letters 'MSA' in a large, bold, black, sans-serif font. The letters are stylized with horizontal lines running through them. To the right of the letters, the text 'MICHAEL SHILALE ARCHITECTS, LLP.' is written in a smaller, black, sans-serif font. Below this, the address '140 Park Avenue New City, NY 10956' and the phone number 'Tel 845-708-9200' are listed. At the bottom, the website 'www.shilale.com' is provided.

MSA
MICHAEL SHILALE ARCHITECTS, LLP.
140 Park Avenue New City, NY 10956 Tel 845-708-9200
www.shilale.com

Drawing Title
MECHANICAL DETAILS
- 1

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1. PROVIDE A LISTED, APPROVED, VENTLESS GAS TRAIN ASSEMBLY IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS AND SPECIFICATIONS.
2. SUBMIT BURNER GAS PIPING SHOP DRAWINGS FOR APPROVAL PRIOR TO FABRICATION.



REG. EXP. DATE: 10-31-26

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Structural Engineer:	

**NORTH ROCKLAND HIGH
SCHOOL EXTENSION BOILER
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MSA

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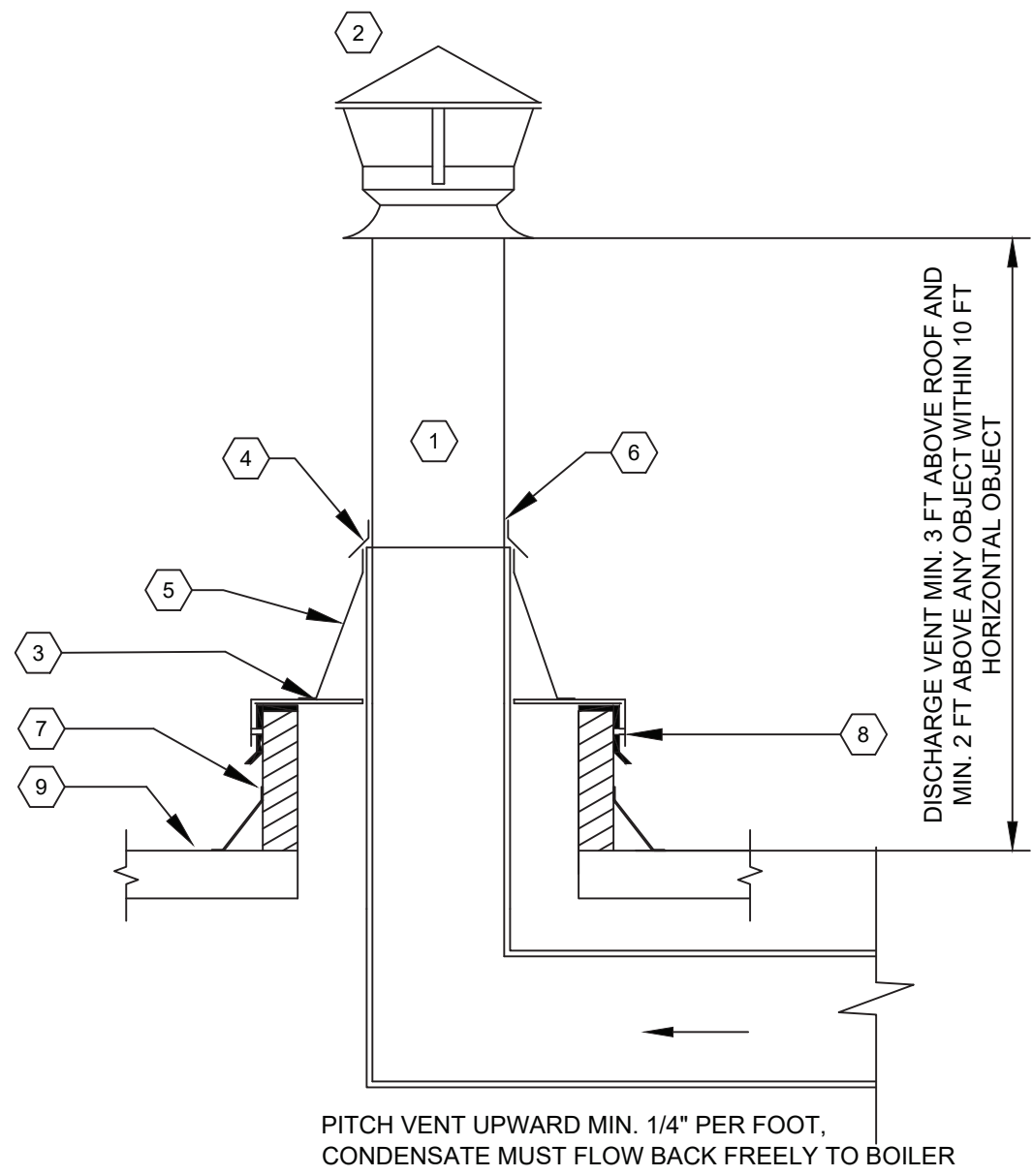
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Drawing Title
MECHANICAL DETAILS

- 2

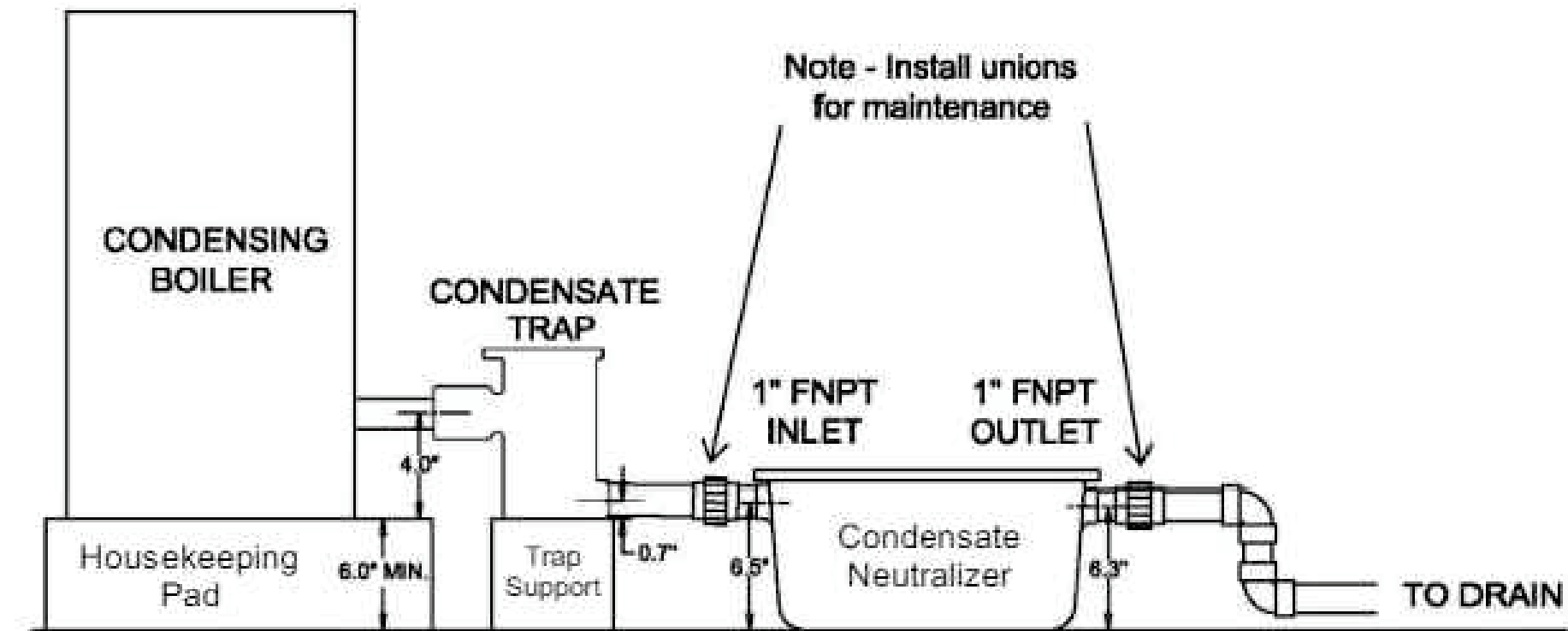
Drawing No.
M-502

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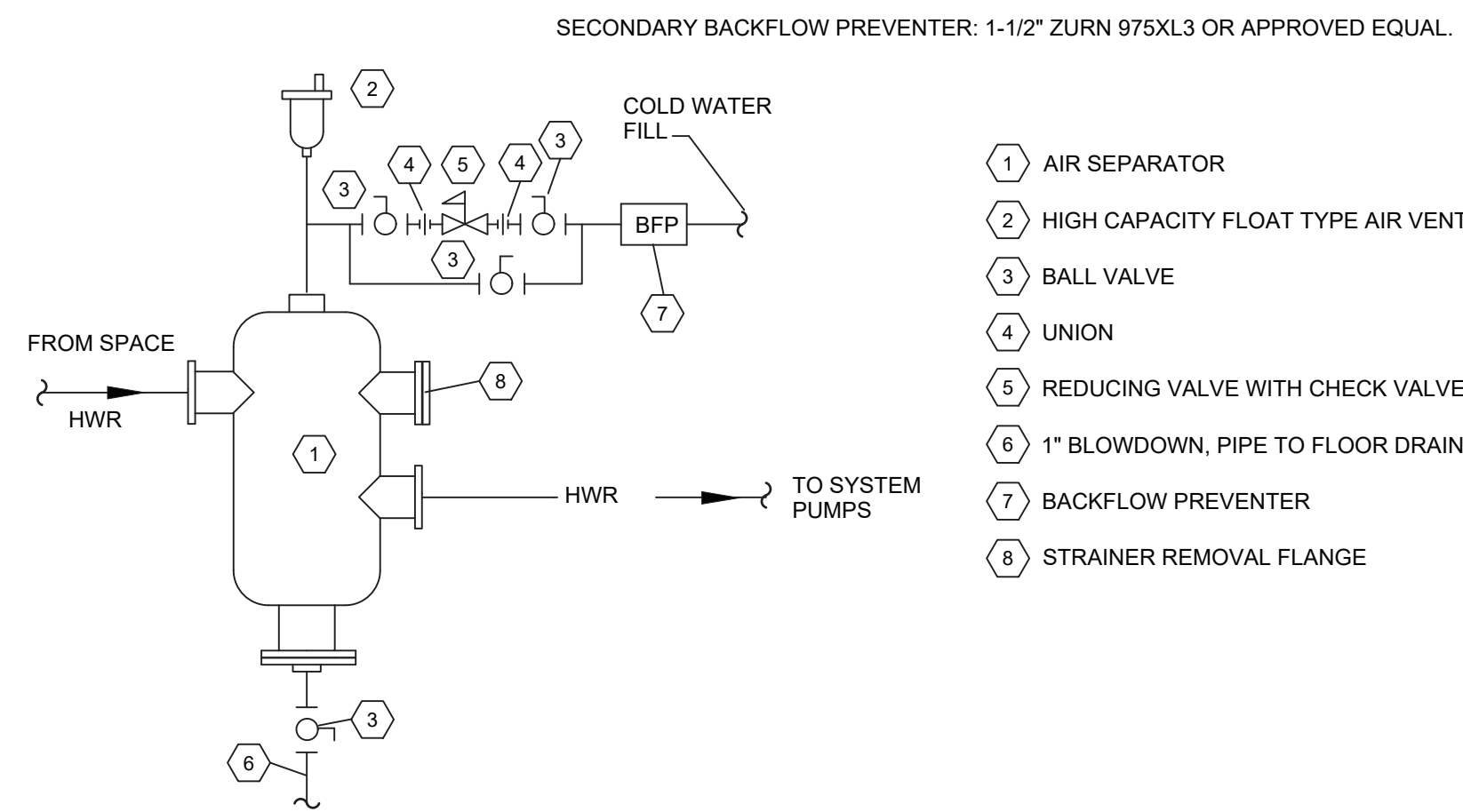
- 1 DOUBLE WALL FLUE PIPE
- 2 STACK CAP
- 3 MODIFIED ENCLOSURE OVER ROOF OPENING. REFER TO ARCH PLANS FOR ADDITIONAL DETAILS
- 4 STORM COLLAR
- 5 TALL CONE FLASHING
- 6 SILICONE SEALANT, AS REQUIRED, COORDINATE SEALING DETAILS WITH ARCHITECT.
- 7 EXISTING ROOF CURB AND FLASHING, COORDINATE ROOFING DETAILS WITH ARCHITECT.
- 8 LAG TO CURB, COORDINATE CURB CONNECTION DETAILS WITH ARCHITECT.
- 9 EXISTING ROOF CONSTRUCTION.

1 DOUBLE WALL FLUE PIPE DETAIL
SCALE: NONE



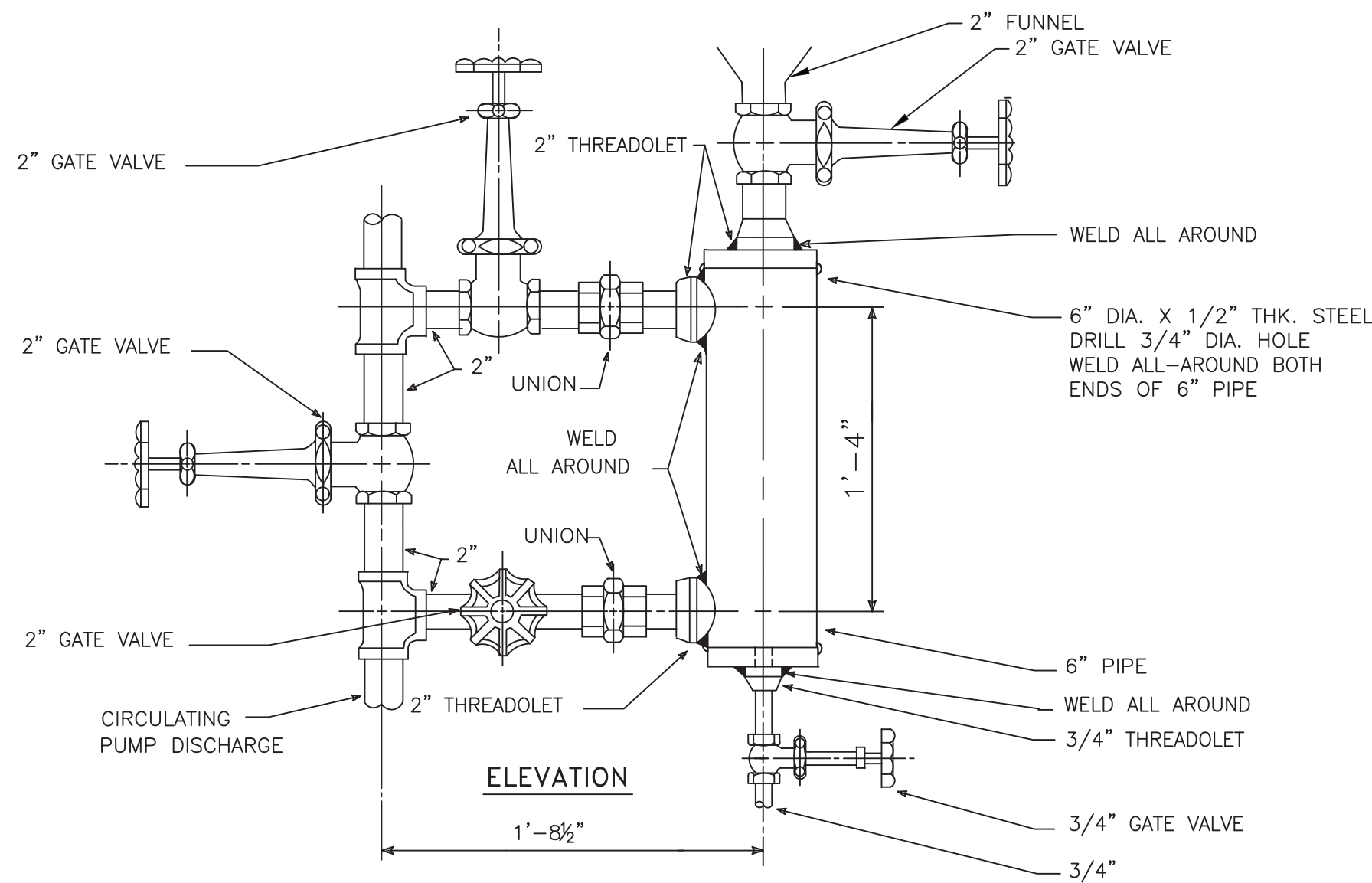
2 CONDENSATE NEUTRALIZER DETAIL
SCALE: NONE

- NOTES:
1. CONDENSATE NEUTRALIZER TANK TO BE BY AERCO, MODEL #89030.
 2. CONDENSATE TRAP ASSEMBLY SHALL BE BY AERCO, MODEL #24441.
 3. INSTALL NEUTRALIZER AND TANK AS PER MANUFACTURER'S INSTRUCTIONS.

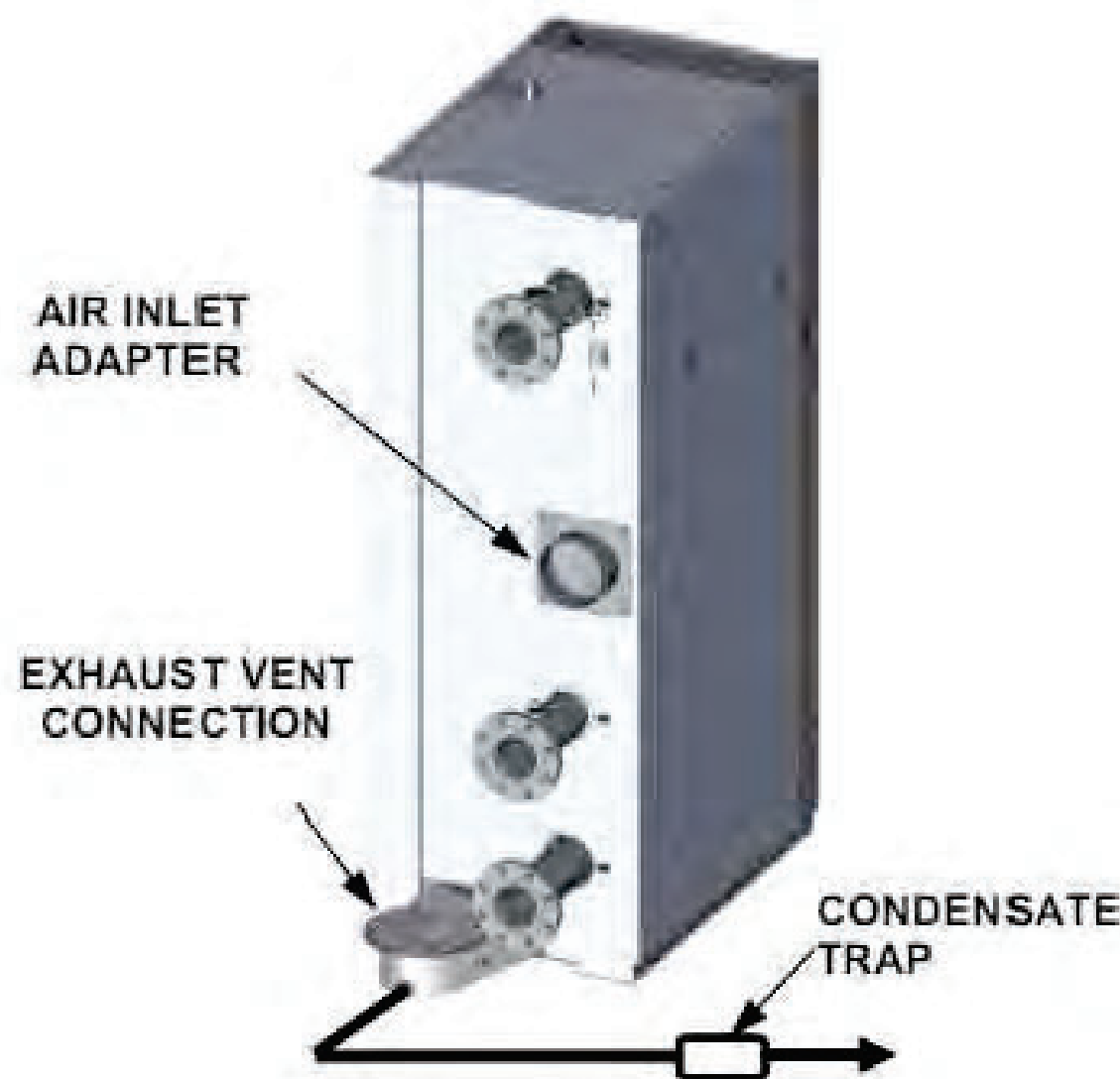


3 AIR SEPARATOR PIPING DETAIL
SCALE: NONE

- NOTES:
1. SEE SPECIFICATION 232006 FOR ADDITIONAL INFORMATION.
 2. SECONDARY BACKFLOW PREVENTER: 1-1/2\"/>



4 WATER TREATMENT SHOT FEEDER
SCALE: NONE



5 BOILER INTAKE AND EXHAUST VENT CONNECTION
SCALE: NONE

No.	Date	Revisions
3	07/18/24	ADDENDUM NO. 1
2	06/18/24	REVISIONS
1	05/31/24	BIDDING DOCUMENTS

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Mechanical & Electrical Engineer:	GREENMAN PEDERSEN, INC 3 EAST 10TH AVE. SUITE 202 SUFFERN, NY 10901
Structural Engineer:	

NORTH ROCKLAND HIGH SCHOOL EXTENSION BOILER REPLACEMENT
HIGH SCHOOL EXT SEDA# 05-02-01-06-0-007-016
65 Chapel Street Greenburgh, NY 10623
COUNTY OF ROCKLAND

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MECHANICAL DETAILS - 3
Drawing No. M-503

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