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BOILER PLANT AND HVAC UPGRADES

INDEX OF DRAWINGS:

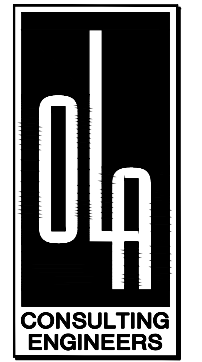
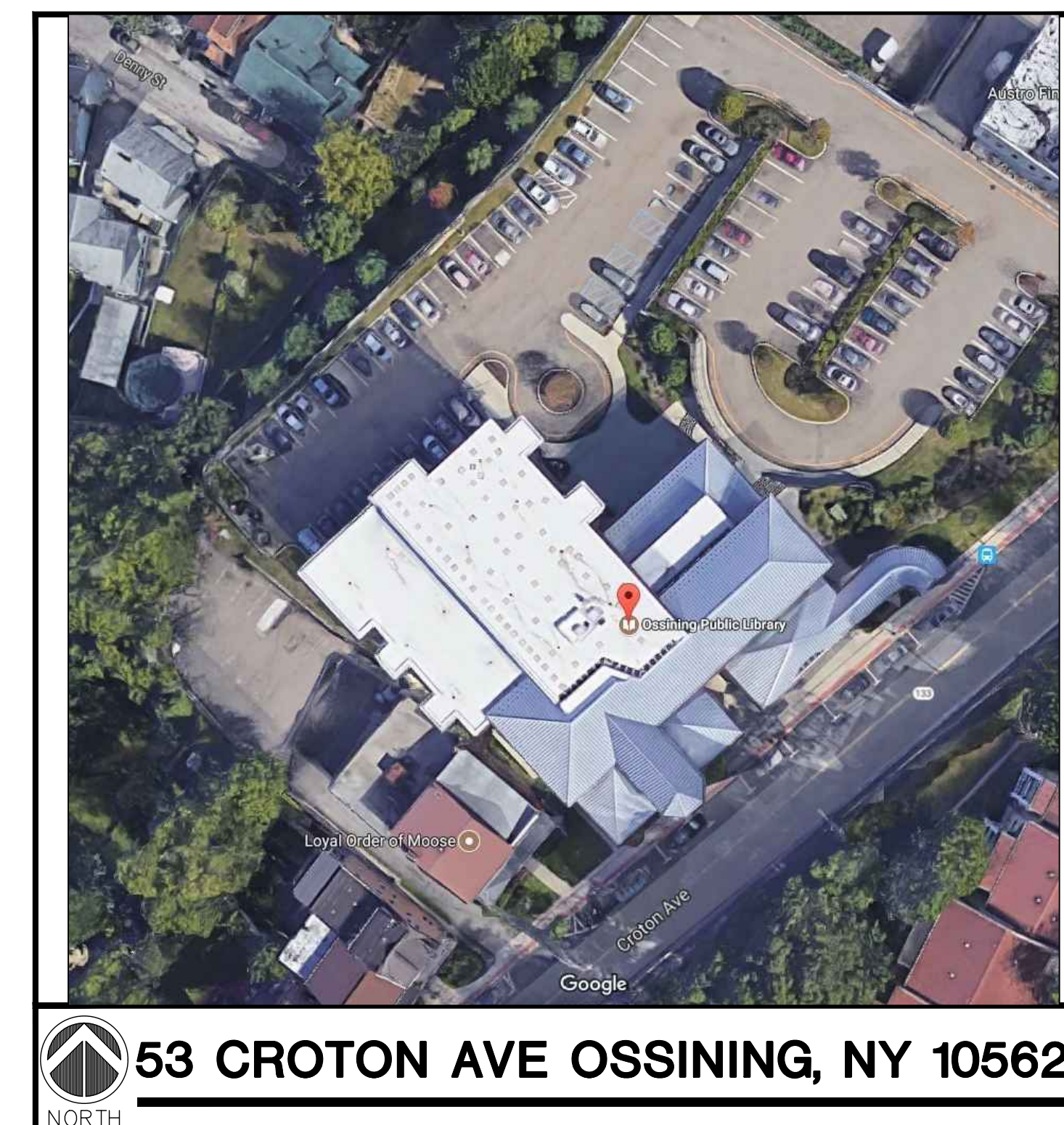
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ELECTRICAL

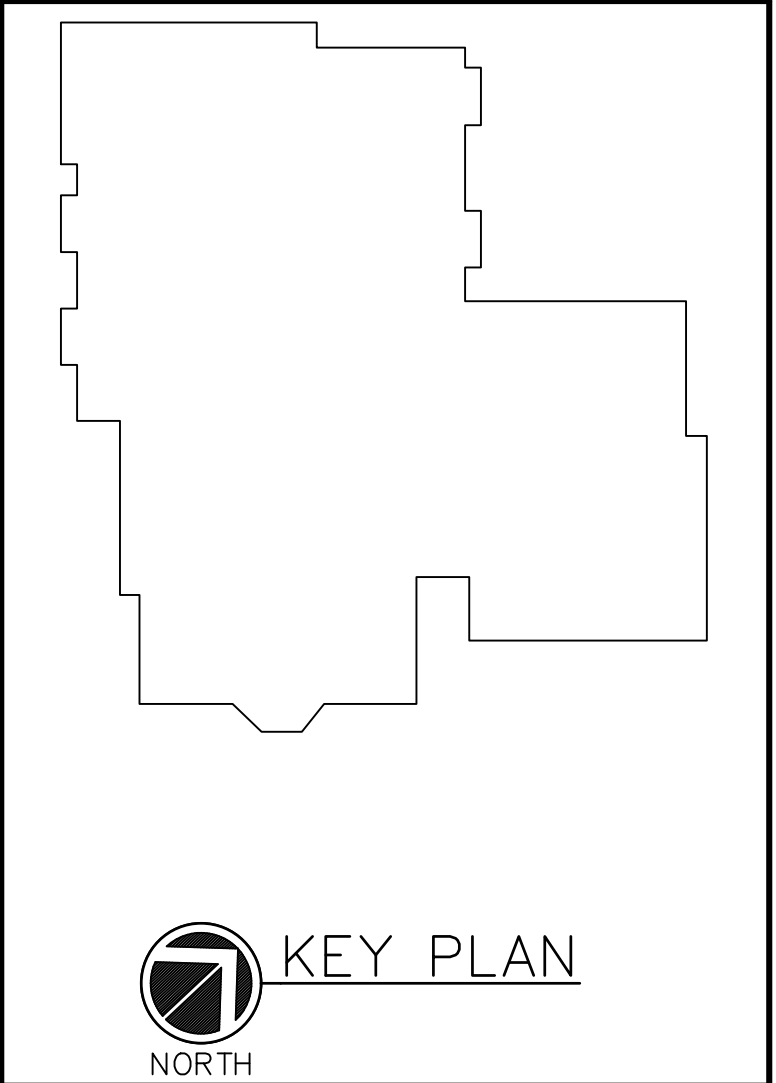
- E0.1 ELECTRICAL SYMBOLS, ABBREVIATIONS, AND GENERAL NOTES
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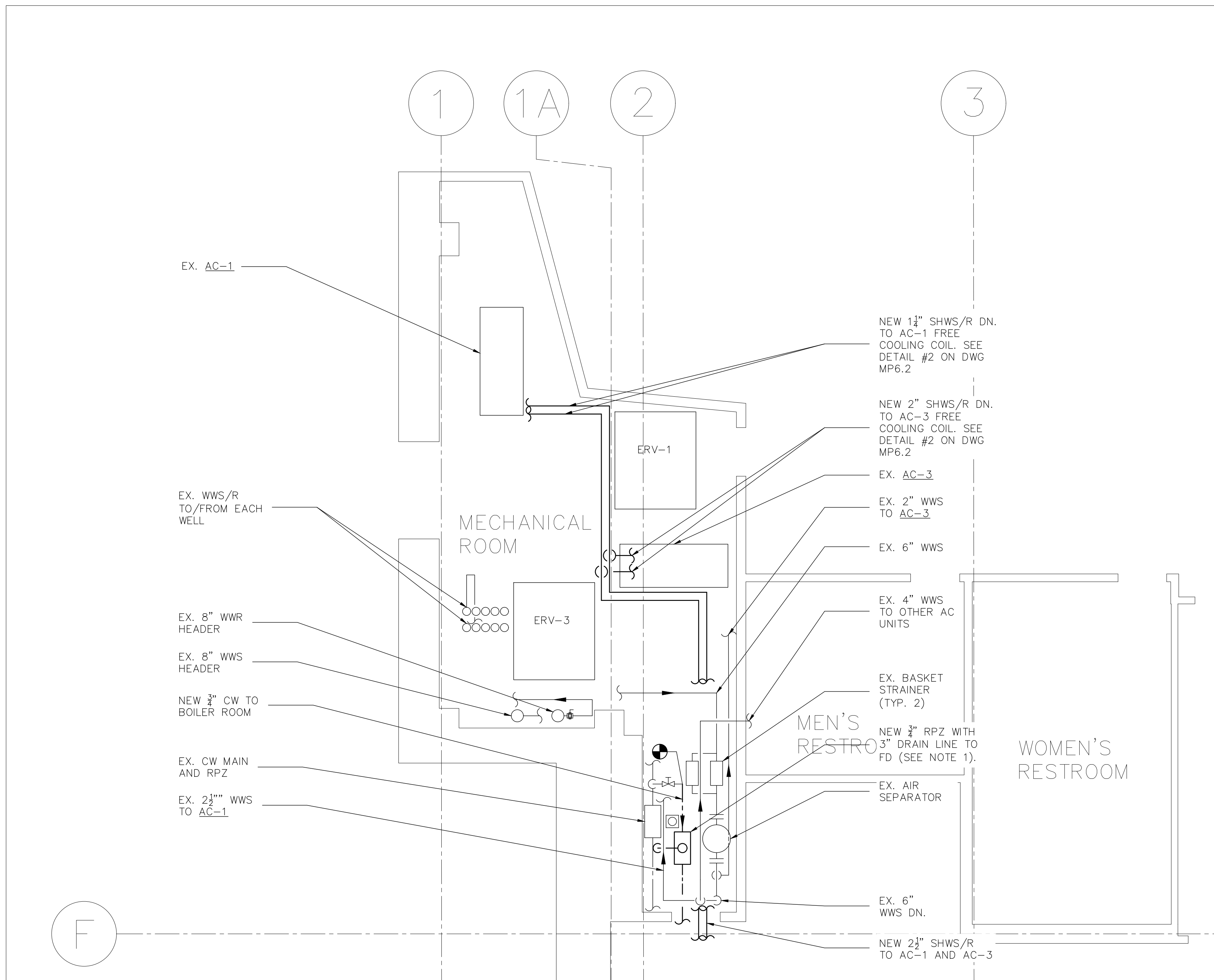
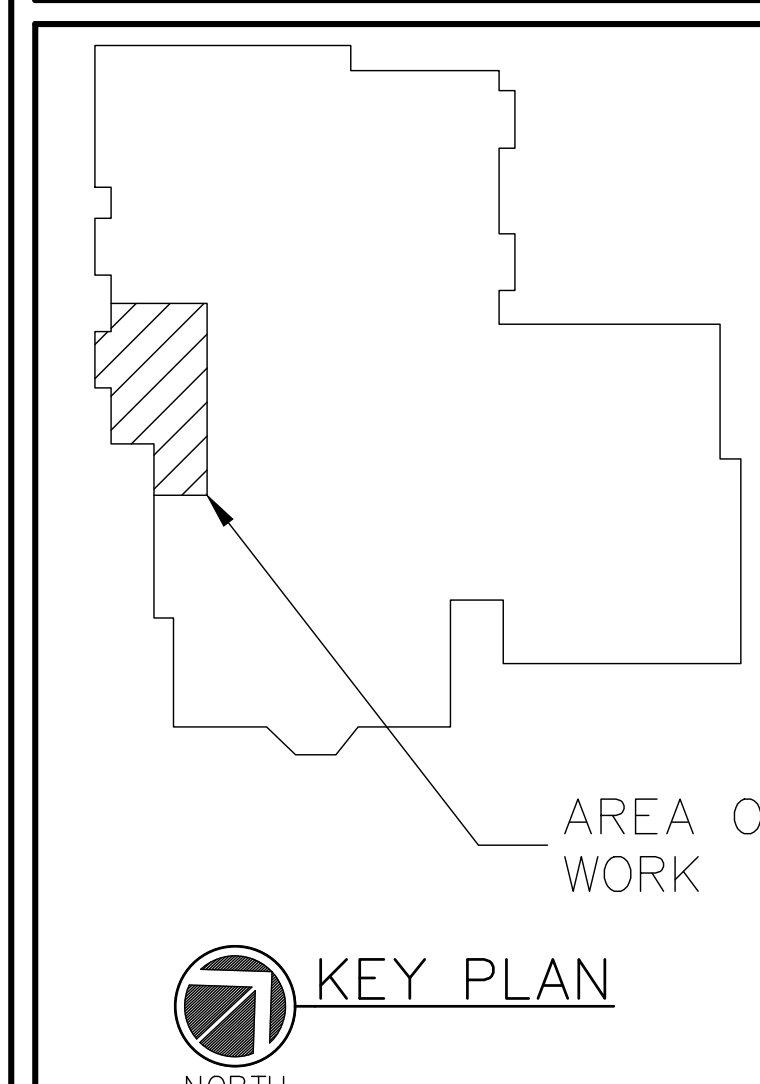
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1 MECHANICAL LOWER LEVEL M.E.R. PARTIAL NEW WORK PIPING PLAN
 SCALE: 1/4" = 1'-0"

NOTES
 1. PROVIDE NEW RPZ WATTS MODEL 909 OR EQUAL. PROVIDE AIR GAP FITTING. PROVIDE 3" PVC DRAIN LINE ROUTED TO FLOOR DRAIN.

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**MECHANICAL LOWER LEVEL
 M.E.R. PARTIAL NEW WORK
 PIPING PLAN**

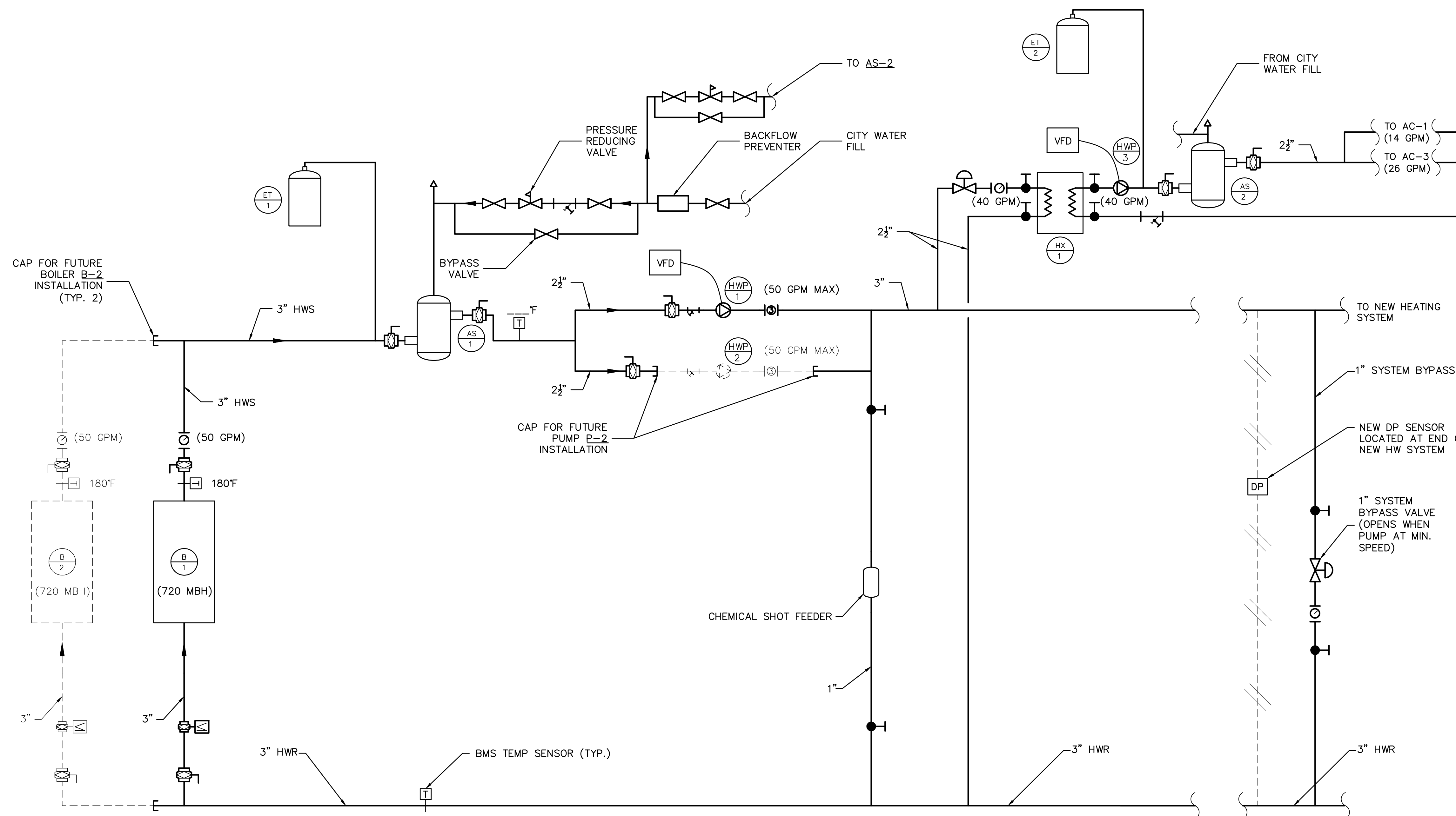
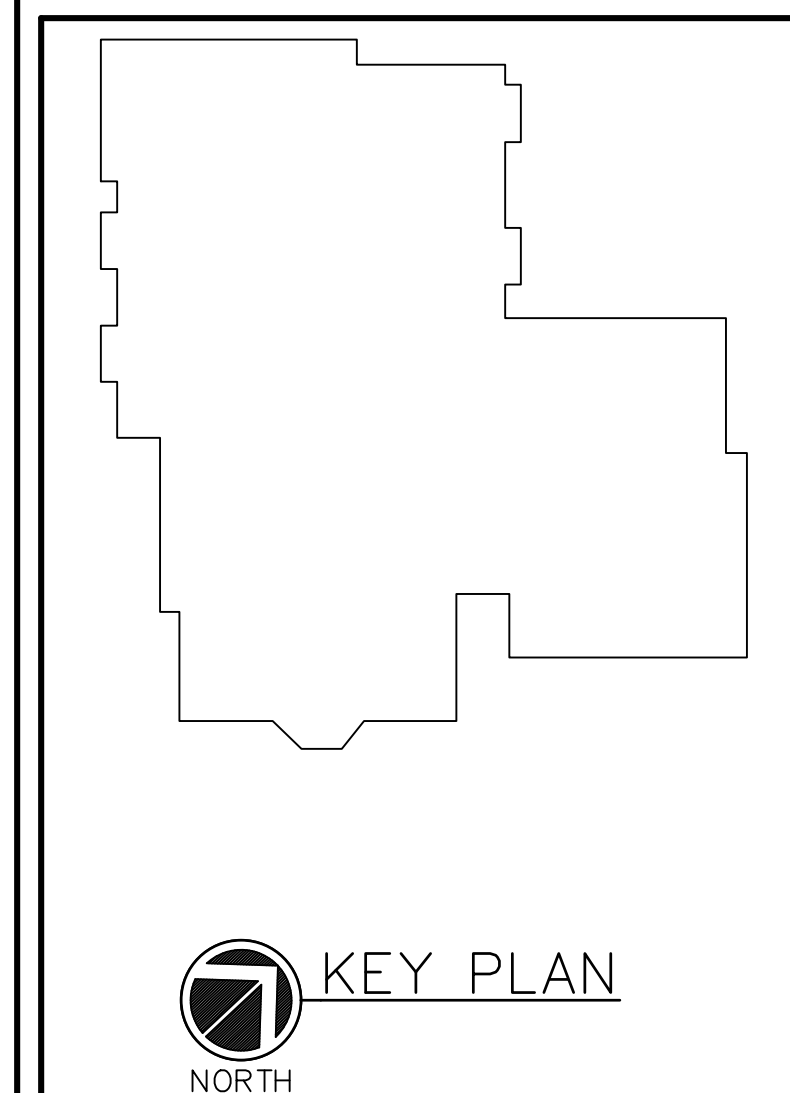
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1 HOT WATER SYSTEM PARTIAL FLOW SCHEMATIC
 SCALE: NONE

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DRAWING TITLE
**MECHANICAL
 SCHEMATICS**

SEAL	SCALE AS NOTED	PROJECT NO.
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	CHECKED BY JK	M5.1
	DATE 7/16/19	

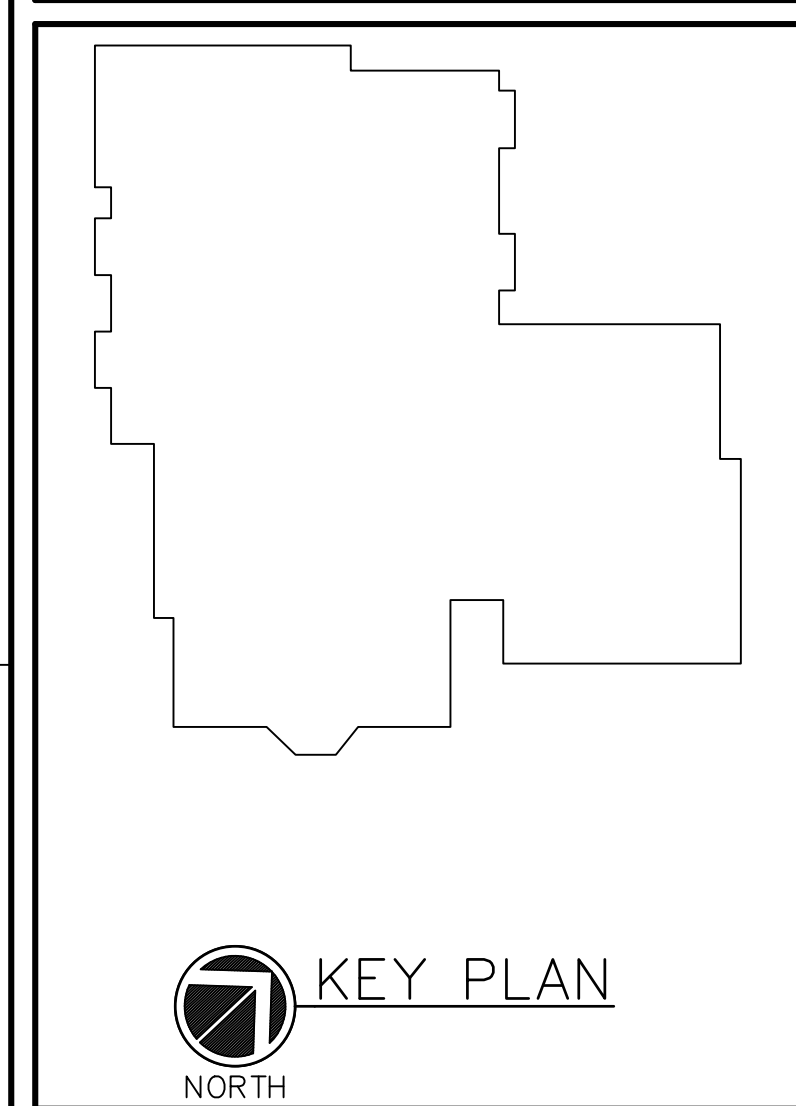
PLUMBING FIXTURE SCHEDULE								
TAG	SYMBOLS		FIXTURES	PLUMBING CONNECTIONS				DESCRIPTION
	PLAN	ELEVATION		WASTE	VENT	COLD WATER	HOT WATER	
FD			FLOOR DRAIN	2"	-	-	-	ZURN MODEL Z461, MODULAR NON-ADJUSTABLE FLOOR DRAIN WITH CLAMPING FRAME. DURA-COATED CAST IRON LOW-PROFILE BODY WITH 2" BOTTOM OUTLET, COMBINATION NICKEL BRONZE MEMBRANE CLAMP AND FRAME WITH SEEPAGE SLOTS, AND SQUARE HEEL-PROOF, SLOTTED LIGHT-DUTY SECURED STRAINER. TRAP PRIMERS, TP: PROVIDE TRAP PRIMER ASSEMBLY BASED ON PRECISION PLUMBING PRODUCTS (PPP INC.) MINI-PRIME ELECTRONIC TRAP PRIMING MANIFOLD, MODEL MPB-500-115V. TRAP PRIMER ASSEMBLY INCLUDES NEMA 1 12x12x4 RECESSED MOUNTING BOX, DISTRIBUTION UNIT (-DU), CIRCUIT BREAKER, TEST SWITCH, TIMER SOLENOID VALVE, AND ACCESS DOOR (D-814SS). PROVIDE ONE (1) TP ASSEMBLY TO SERVE FLOOR DRAINS.
EW			HAND OPERATED EMERGENCY EYEWASH, WALL MOUNTED	-	-	1/2"	1/2"	BRADLEY MODEL S19-220B, WALL-MOUNT EYEWASH WITH STAINLESS STEEL BOWL. HEAVY-GAUGE SAND CAST ALUMINUM WALL BRACKET, CHROME-PLATED BRASS 1/2" BALL VALVE, HAND OPERATED BY SAFETY YELLOW PVC HANDLE. PROVIDE NAVIGATOR S19-2000 EFX8 EMERGENCY THERMOSTATIC MIXING VALVE.

DUPLIX SUMP-PUMP SCHEDULE	
DESIGNATION	SP-1/2
LOCATION	BOILER ROOM
SYSTEM SERVED	HOT WATER
MODEL	SE-50
QUANTITY	2
TYPE	SUBMERSIBLE
GPM	50
TOTAL DYNAMIC HEAD (FT H ₂ O)	19
RPM	3,450
MOTOR:	
BHP/HP	-/0.5
VOLTAGE/φ/Hz	115/1/60
NOTES: 1. PUMP BASED ON STANCOR. 2. REFER TO SPECIFICATION FOR PUMP CONSTRUCTION. 3. PROVIDE DUPLIX PUMP CONTROL PANEL STANCOR MODEL CB1002 OR EQUAL.	

SUMP-PUMP BASIN SCHEDULE	
DESIGNATION	SPB-1
LOCATION	BOILER ROOM
SYSTEM SERVED	HOT WATER
MODEL	GB-24-100
BASIN DIAMETER (ID)	24"
BASIN DEPTH	48"
DISCHARGE SIZE	2"
INLET SIZE	2"
NOTES: 1. BASIN BASED ON AK INDUSTRIES. 2. PROVIDE STEEL COVER. 3. PROVIDE BASIN WITH ANTI-FLOATATION FLANGE. 4. REFER TO SPECIFICATION FOR BASIN CONSTRUCTION.	

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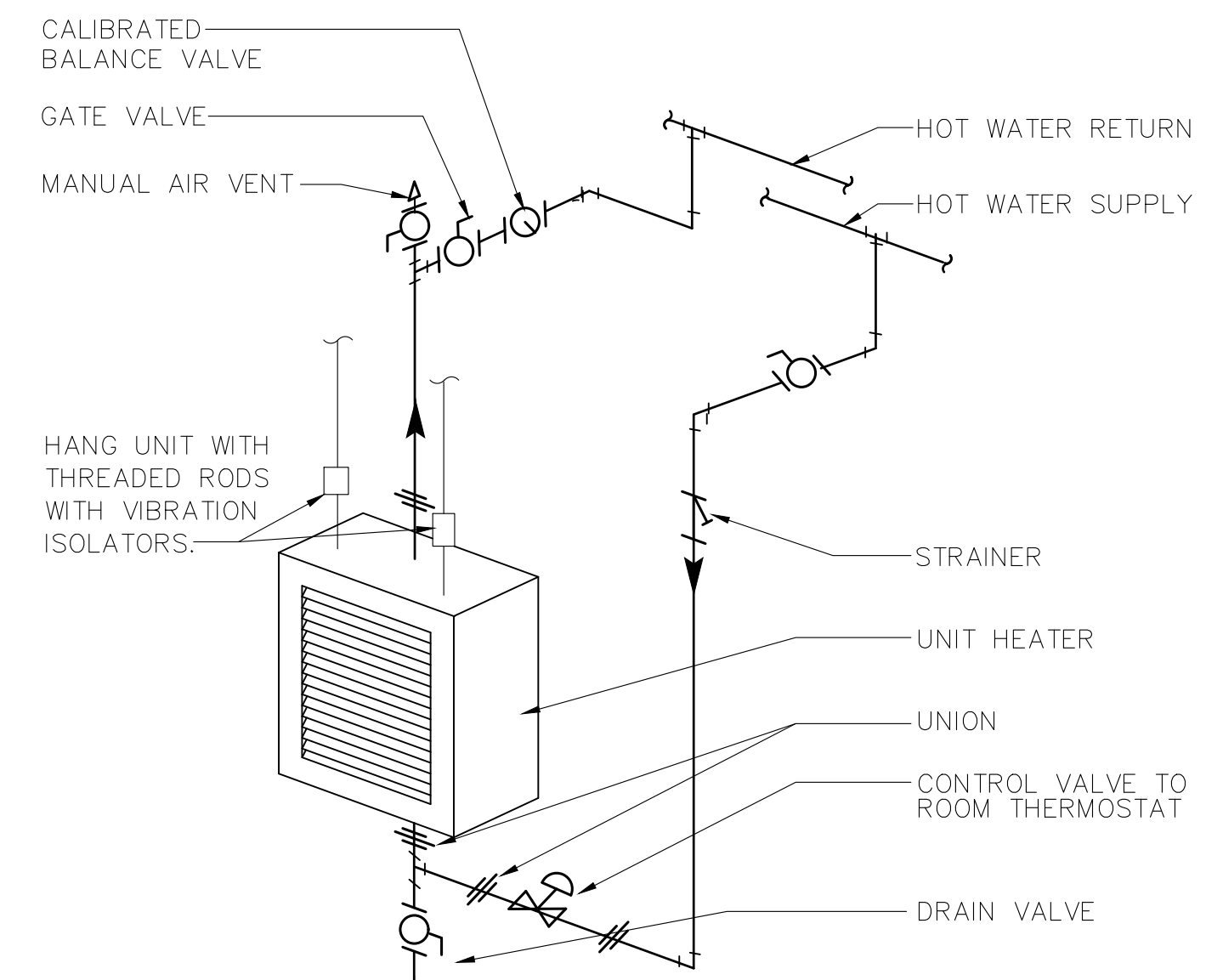
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DRAWING TITLE
MECHANICAL/PLUMBING SCHEDULES AND DETAILS

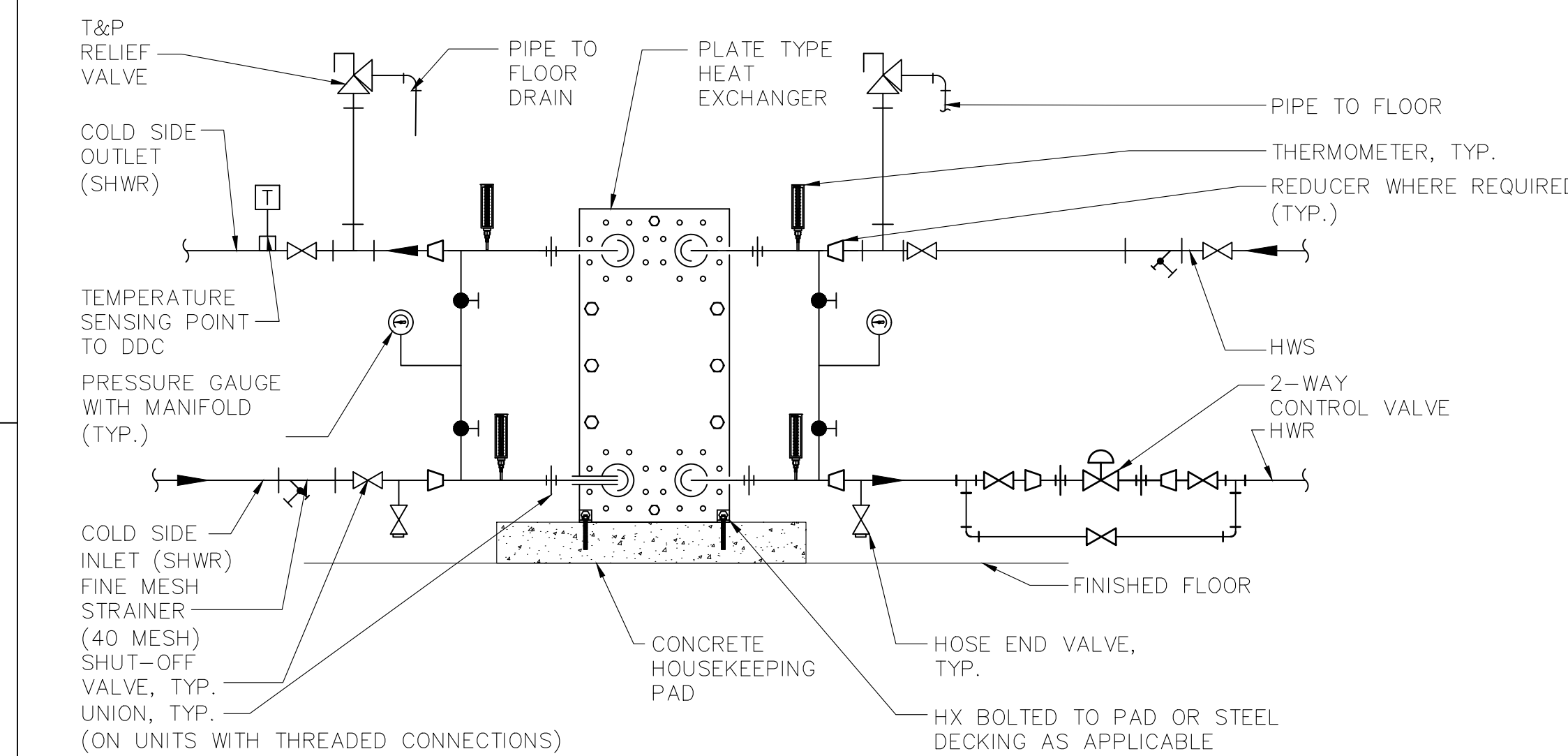
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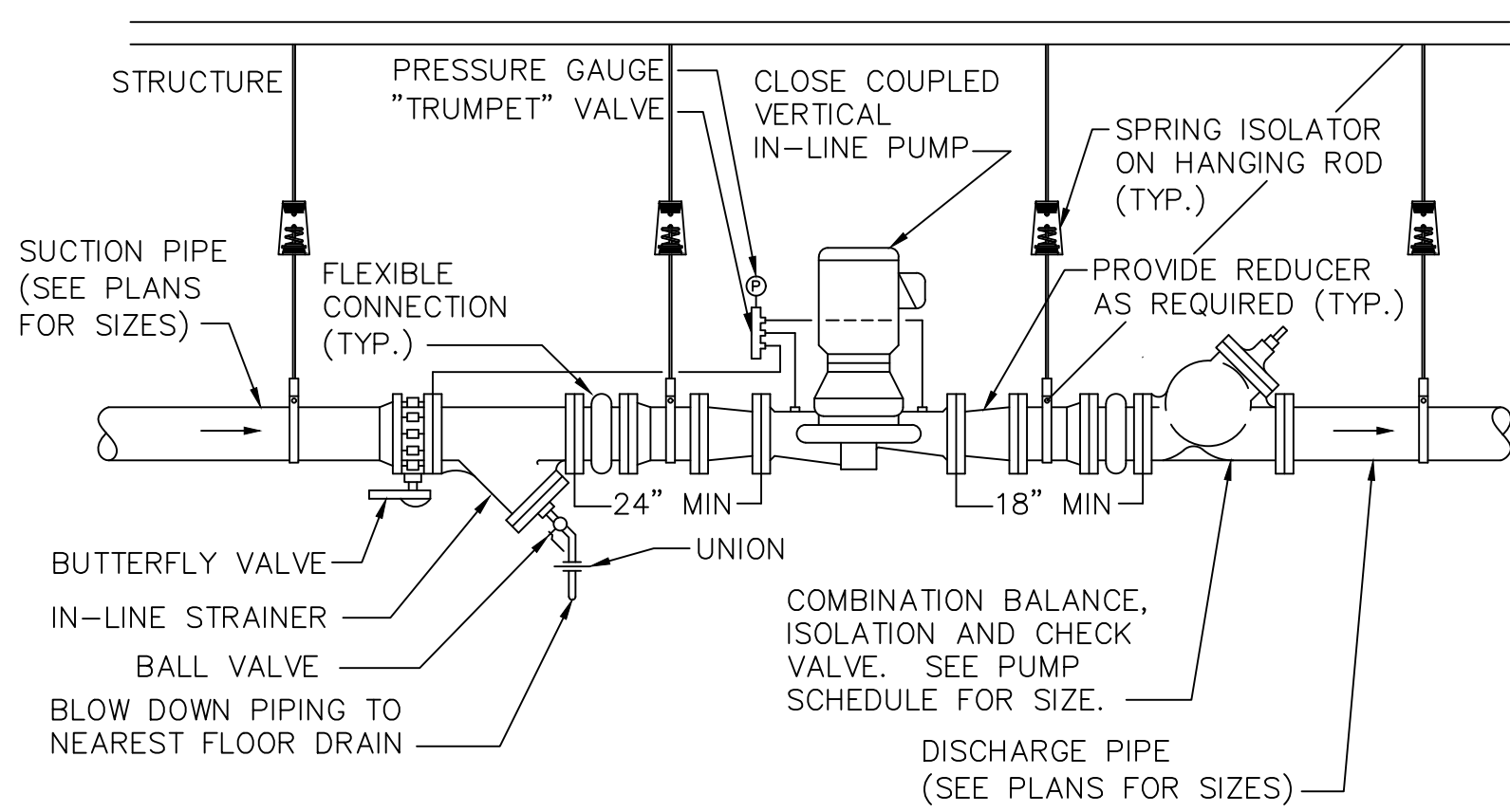
- NOTES:
 1. HANG UNIT WITH THREADED RODS AND SPRING TYPE VIBRATION ISOLATORS.
 2. SUSPEND UNIT HEATERS SECURELY WITH PROVISIONS FOR EASY REMOVAL.
 3. MAKE CERTAIN UNITS HANG LEVEL VERTICALLY AND HORIZONTALLY.
 4. PROVIDE FOR EXPANSION IN SUPPLY LINES.
 5. PROVIDE UNIONS ADJACENT TO UNIT HEATERS IN BOTH SUPPLY AND RETURN LATERALS. PROVIDE SHUT-OFF VALVES IN ALL SUPPLY LATERALS.
 6. USE 45° ANGLE RUN-OFFS FROM SUPPLY AND RETURN MAINS.

MAX. GPM	1	3.5	7	20	43	75
PIPE SIZE	1/2	3/4	1	1-1/2	2	2-1/2

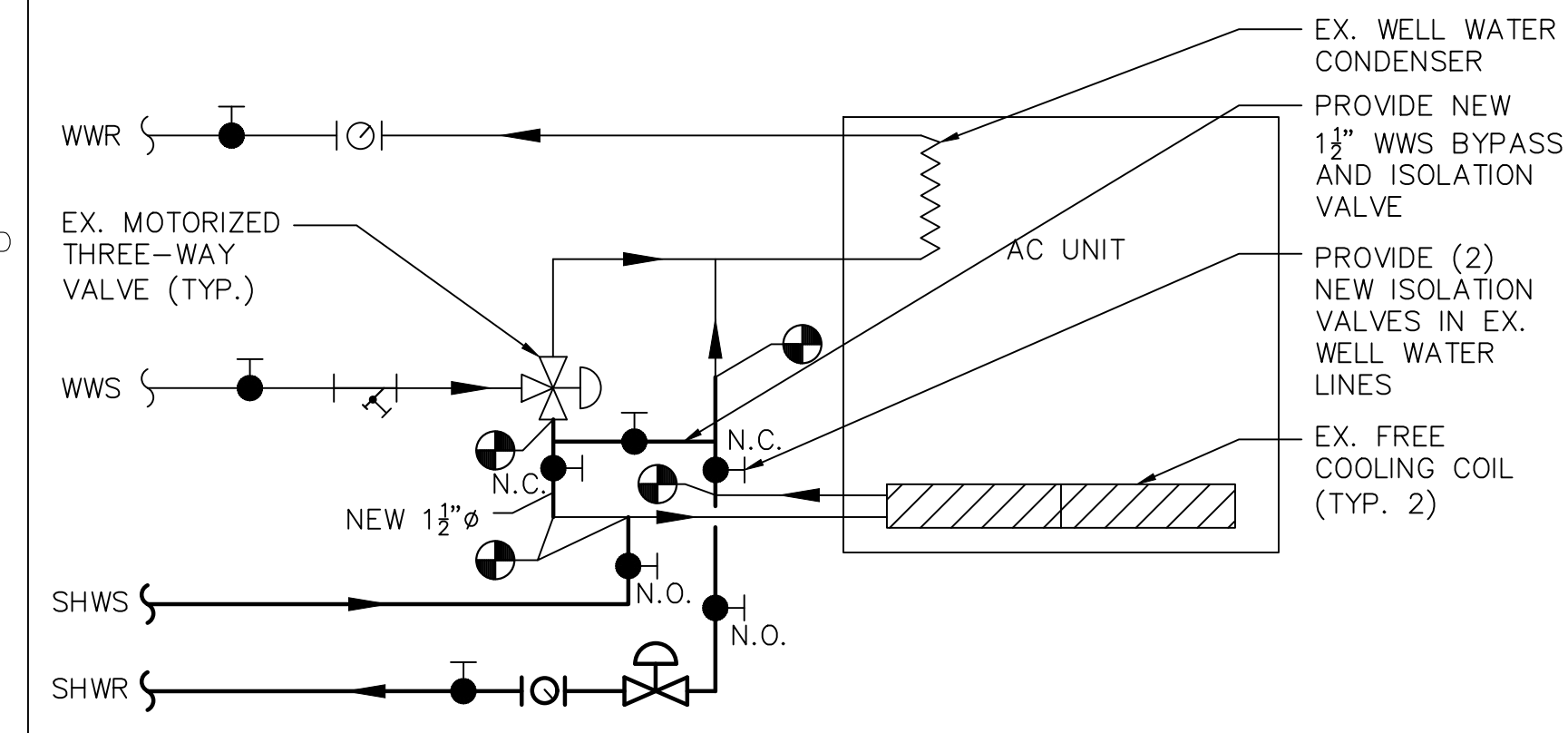
5 UNIT HEATER PIPING SCHEMATIC
 SCALE: NONE



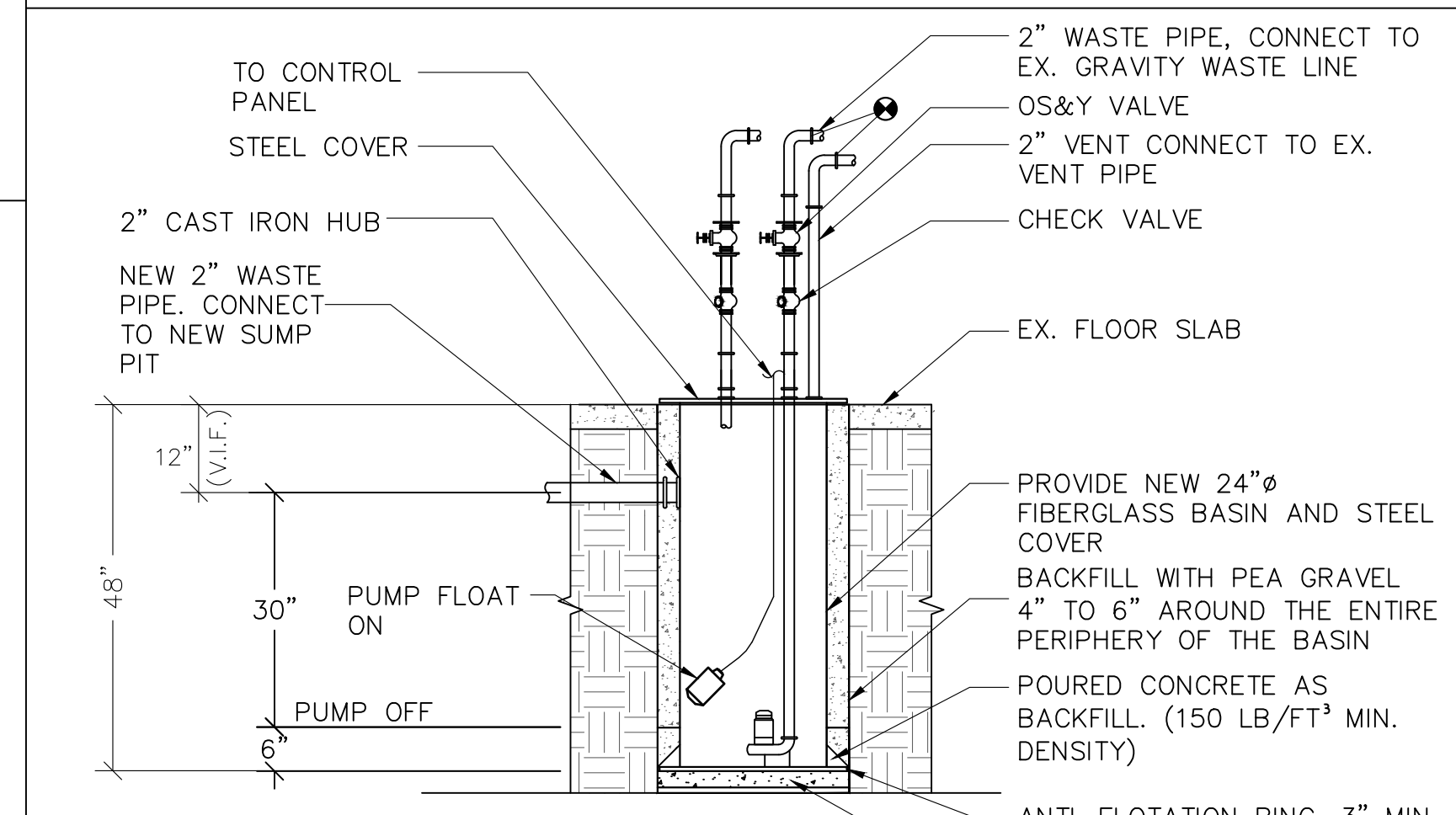
4 PLATE TYPE HX PIPING DETAIL
 SCALE: NONE



3 VERTICAL IN-LINE PUMP PIPING DIAGRAM CONSTANT SPEED, STRUCTURE SUPPORTED
 SCALE: NONE

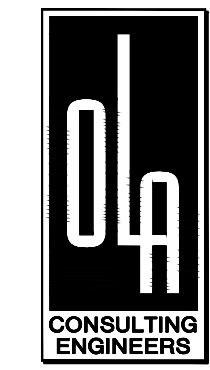


2 AC-1/AC-3 PIPING DETAIL
 SCALE: NONE



- NOTES:
 1. NEW BASIN SHALL BE ONE PIECE, SEAM FREE FIBERGLASS CONSTRUCTION. REFER TO SPECS FOR ADDITIONAL REQUIREMENTS.
 2. NEW STEEL COVER SHALL INCLUDE ONE PUMP PLATE AND ONE INSPECTION PLATE.
 3. CONTRACTOR SHALL VERIFY IN FIELD ALL DIMENSIONS AND INLET SIZES AND LOCATIONS/ELEVATIONS.
 4. SUPPORT ALL PIPING AND ACCESSORIES SEPARATELY FROM BASIN. BASIN SHALL NOT BE USED TO SUPPORT PIPING OR EQUIPMENT.

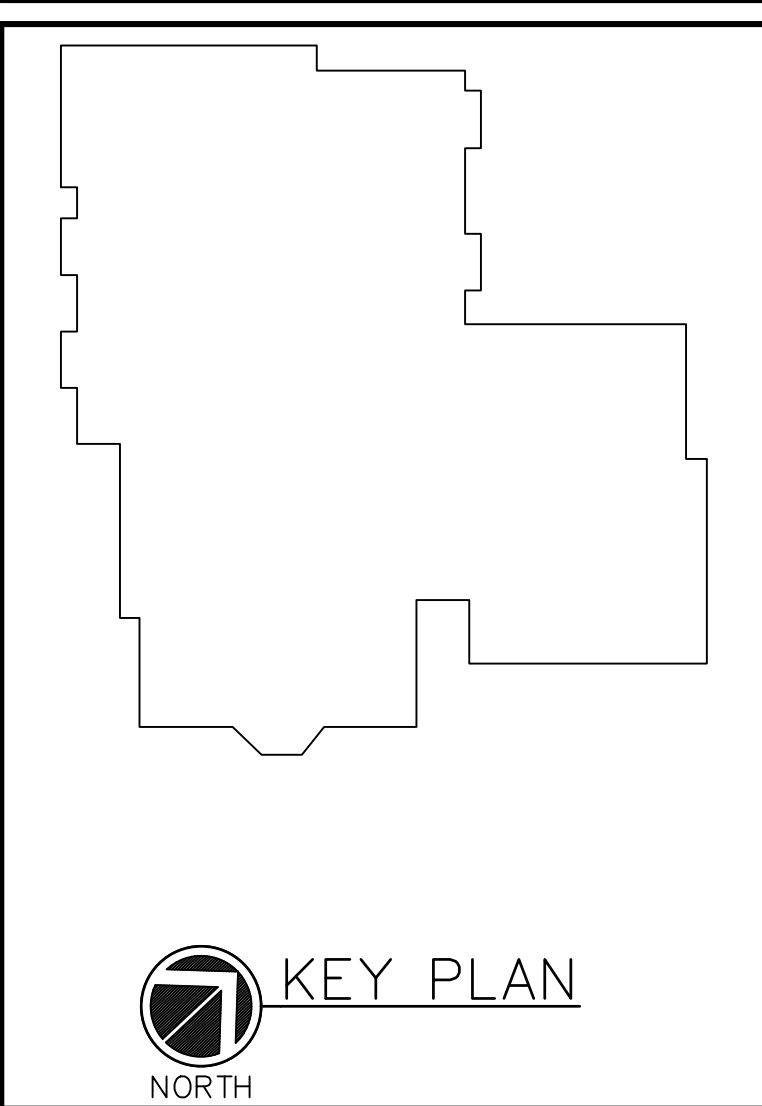
1 SUMP PIT DETAIL
 SCALE: NONE



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KEY PLAN
 NORTH

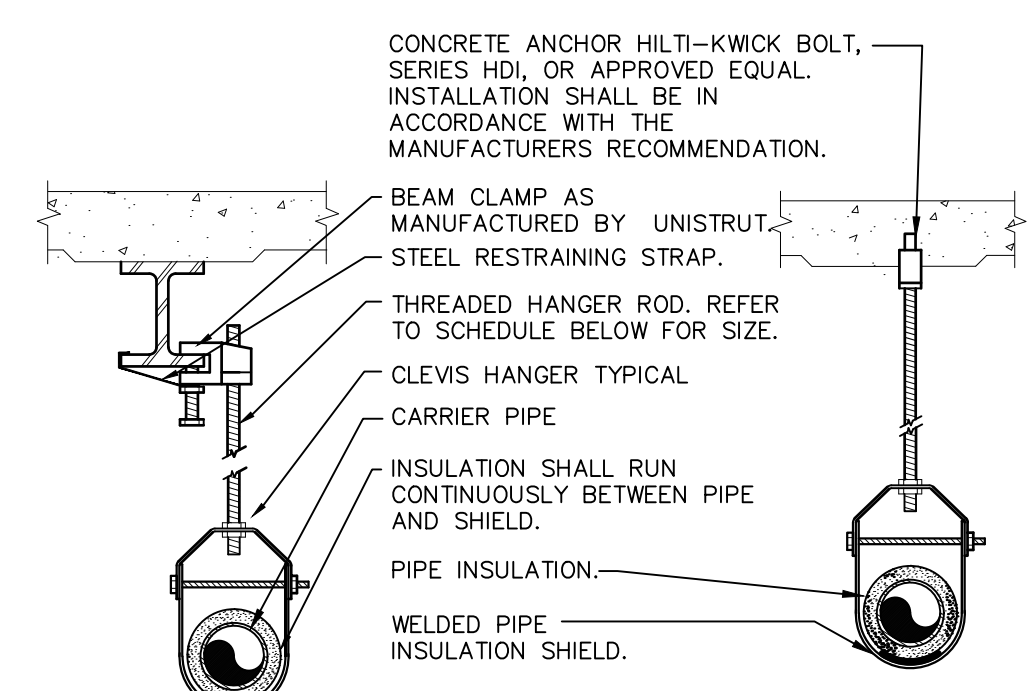
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**MECHANICAL
 DETAILS**

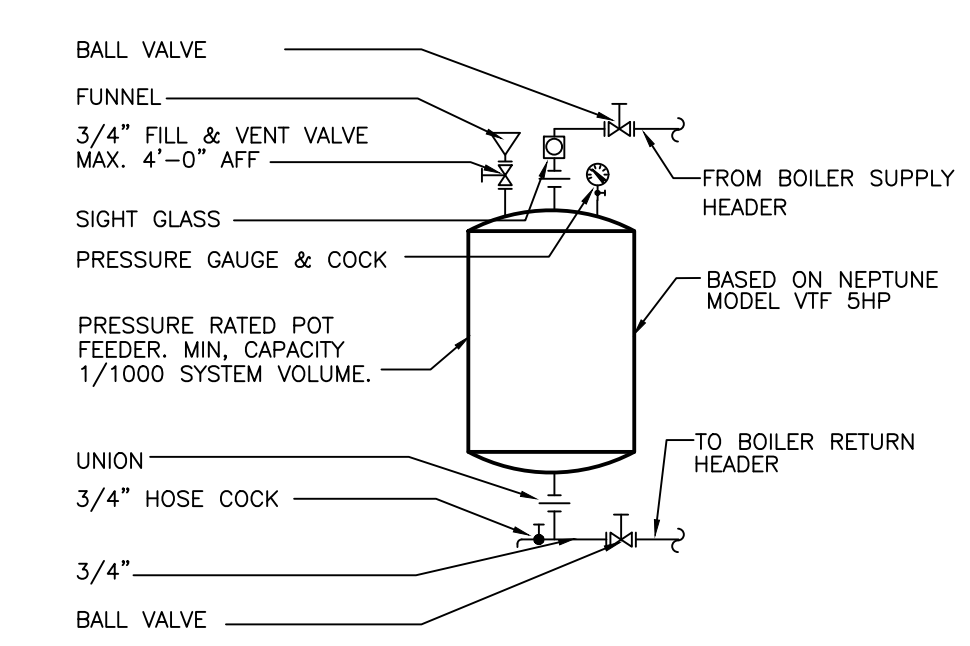
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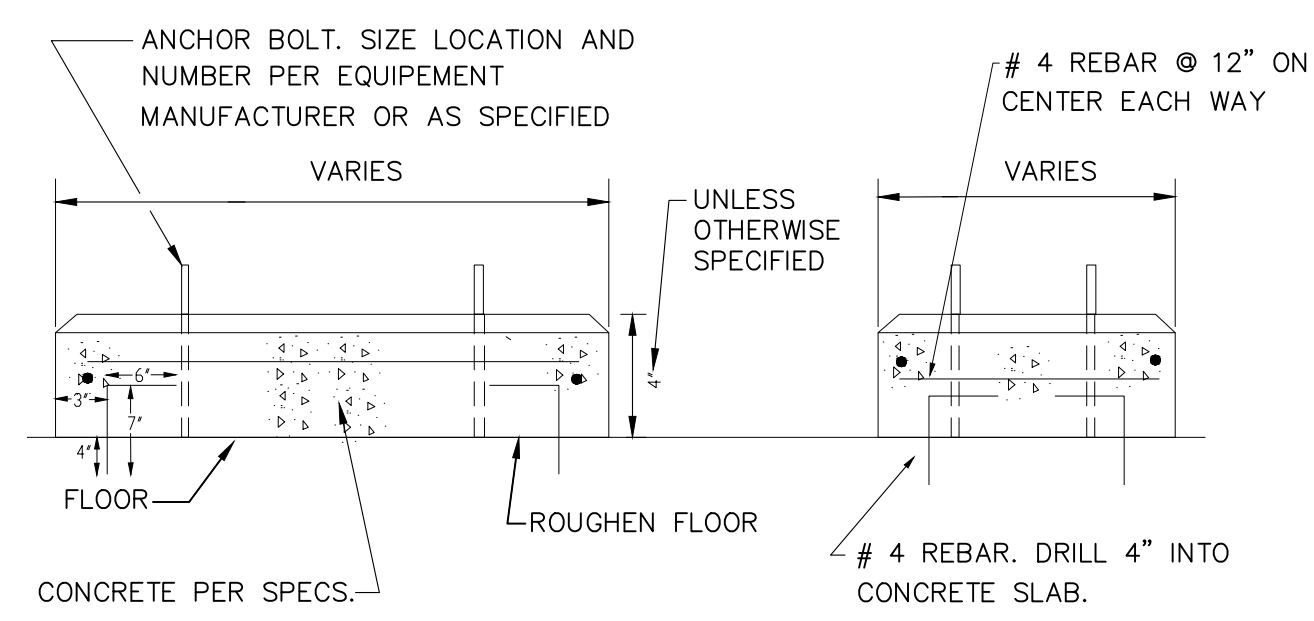
PIPE HANGER SCHEDULE	
PIPE DIA.	3/4"-2" 2 1/2"-3" 4"-5" 6" 8"-12"
HANGER DIA.	3/8" 1/2" 5/8" 3/4" 7/8"

- NOTES:**
- CLEVIS HANGERS WITH WELDED INSULATION SHIELDS SIMILAR TO RAUCH FIG. 1005H ON ALL PIPES LARGER THAN 1".
 - FOR PIPES 1" OR SMALLER, A BAND HANGER WITH INSULATION SHIELD MAY BE USED SIMILAR TO RAUCH FIG. NO. 1A5H.
 - FOR NONINSULATED PIPE, INSULATION SHIELDS MAY BE OMITTED.
 - ALL PIPE HANGERS SHALL BE GALVANIZED STEEL OR FACTORY PAINTED BLACK WITH ENAMEL.
 - FOR NON FERROUS PIPING WITHOUT INSULATION, ALL HANGERS SHALL BE COPPER PLATED OR FURNISHED WITH A DI-ELECTRIC BETWEEN PIPE AND HANGERS.

6 PIPE HANGER DETAIL
 SCALE: NONE

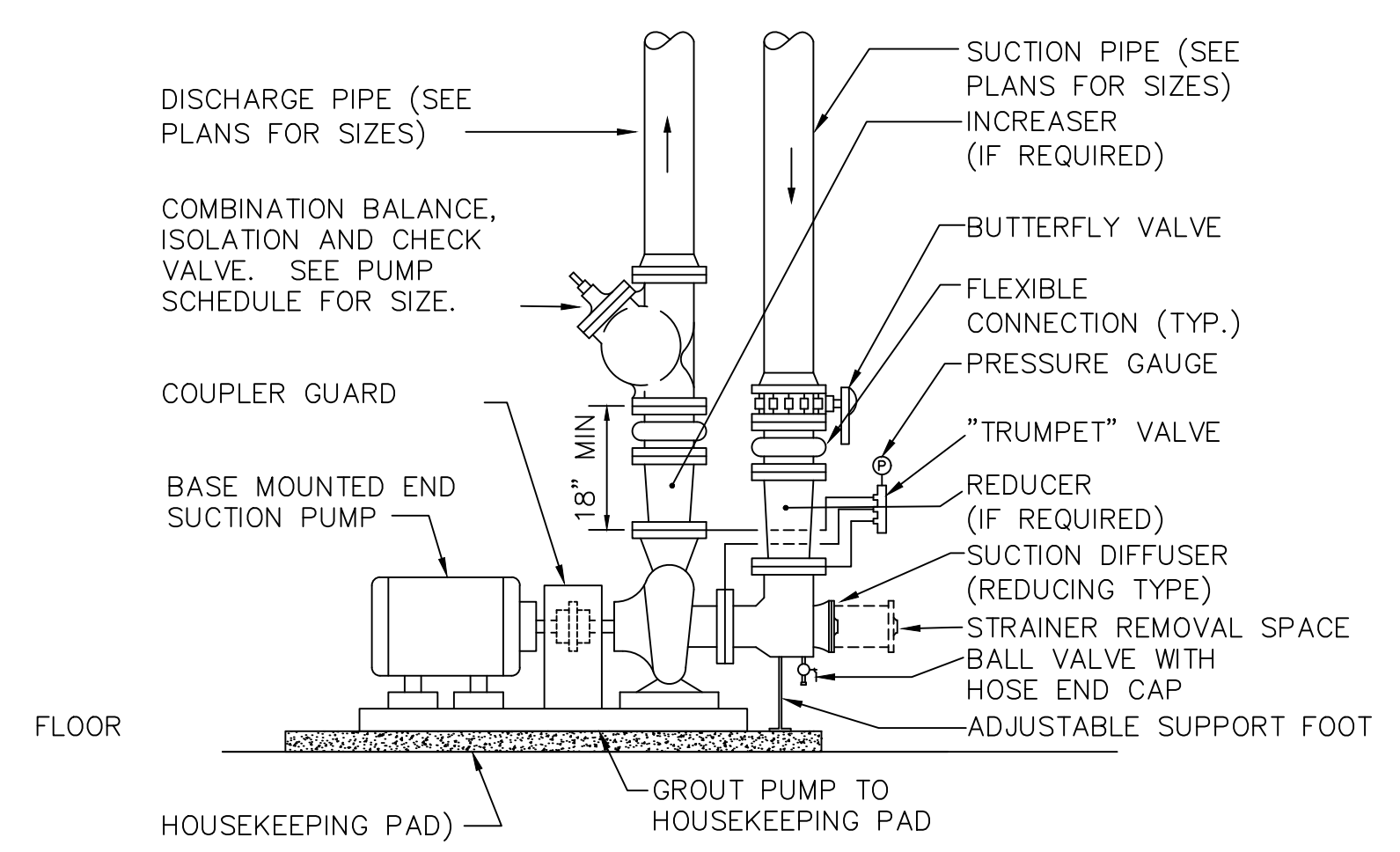


3 CHEMICAL SHOT FEEDER PIPING SCHEMATIC
 SCALE: NONE



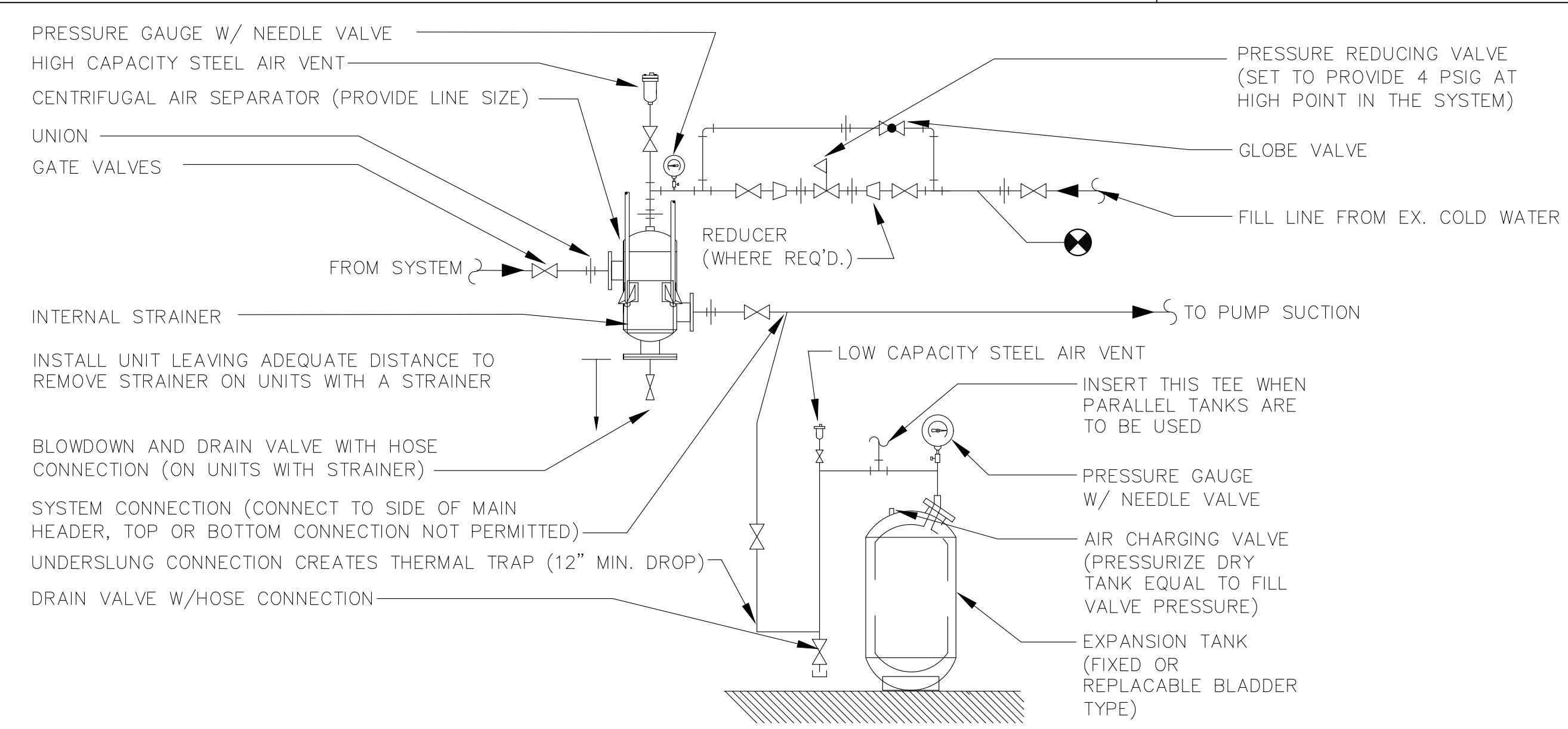
NOTE: FOUNDATION TO BE AT LEAST 6" LONGER AND WIDER THAN EQUIPMENT BASE

5 INTERIOR EQUIPMENT FOUNDATION DETAIL
 SCALE: NONE

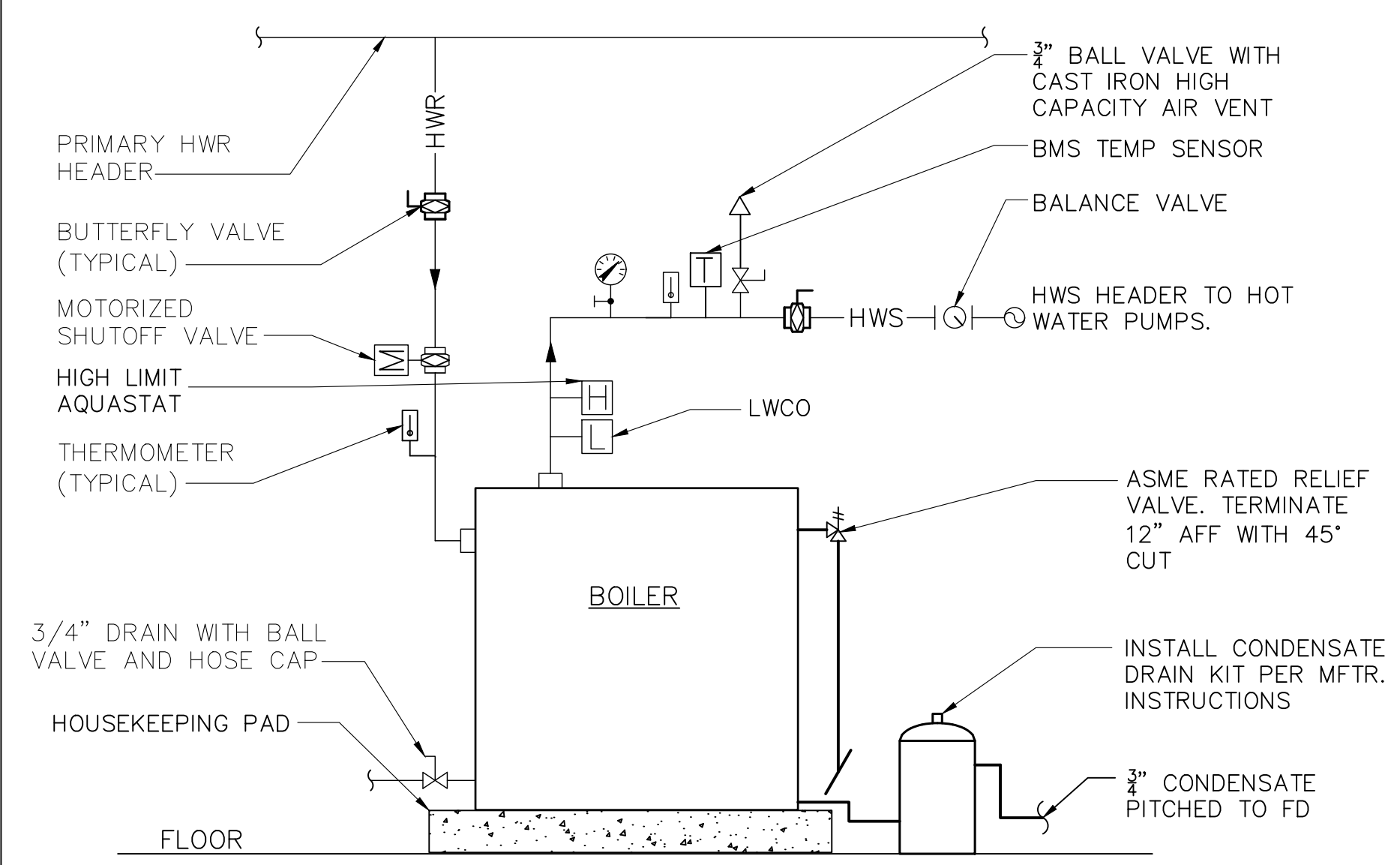


NOTE: SUPPORT SUCTION AND DISCHARGE PIPES SO THAT NO LOAD IS IMPOSED ON PUMP CASING.

2 END SUCTION PUMP PIPING DETAIL SOLID BASE
 SCALE: NONE

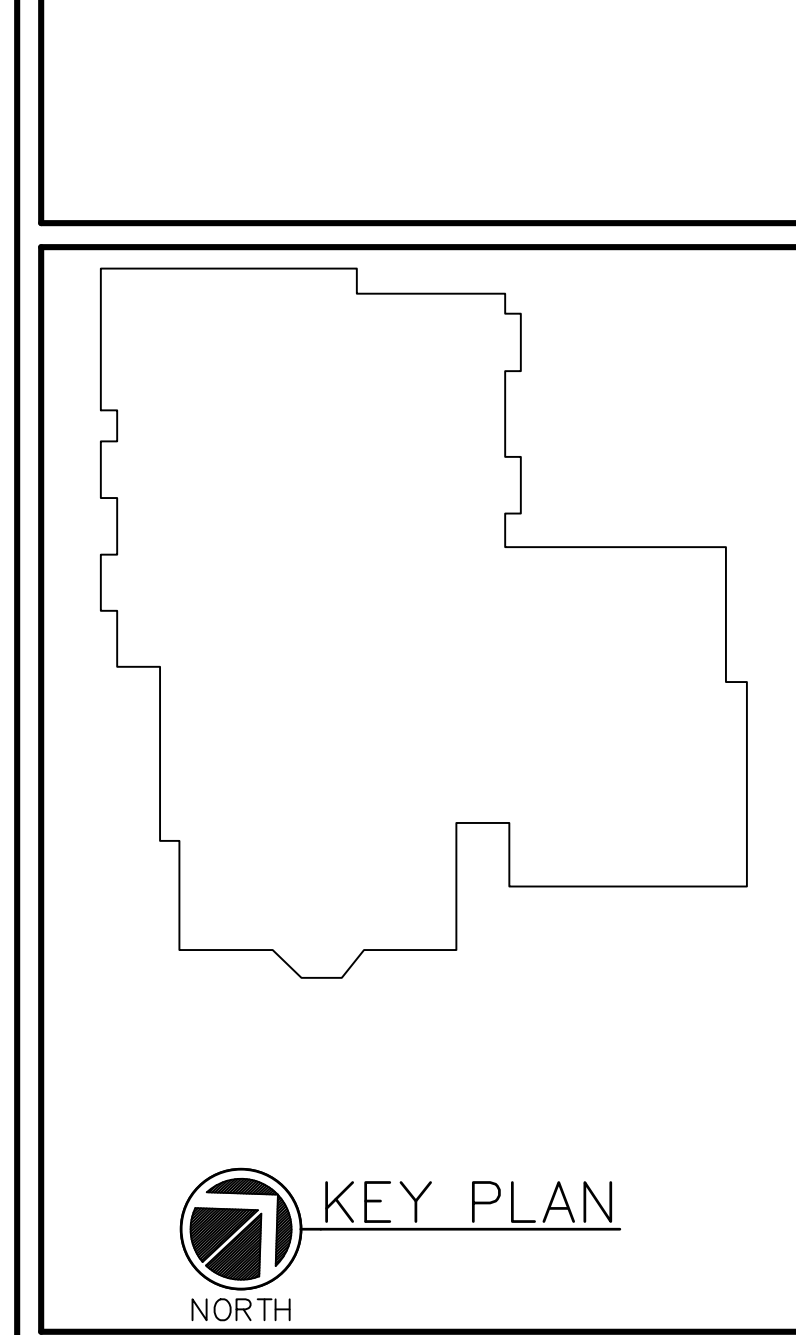


4 AIR SEPARATOR AND EXPANSION TANK DETAIL
 (VERTICAL FLOOR MOUNTED - REPLACEABLE BLADDER)
 SCALE: NTS



1 HOT WATER BOILER PIPING DETAIL
 SCALE: NTS

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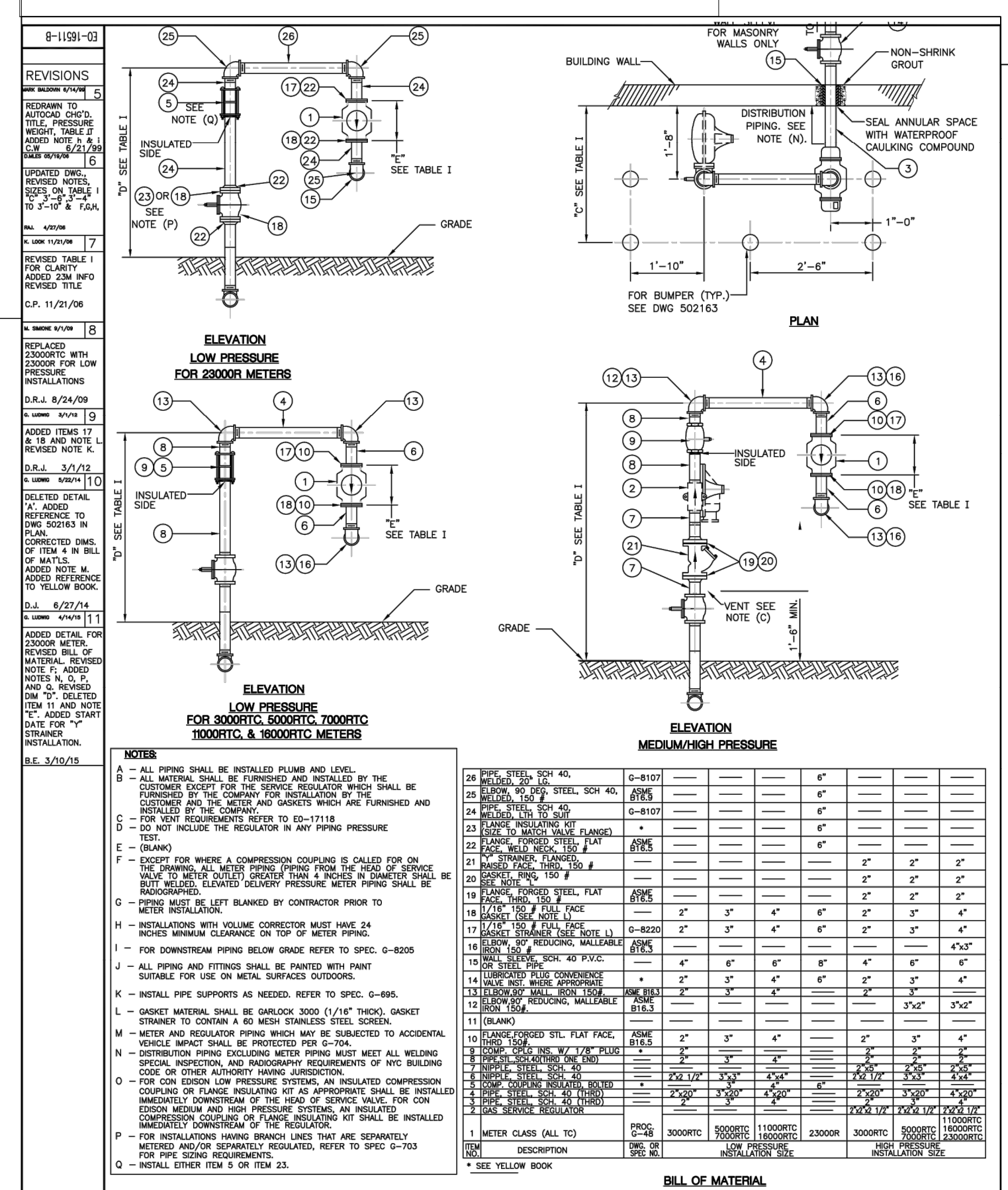
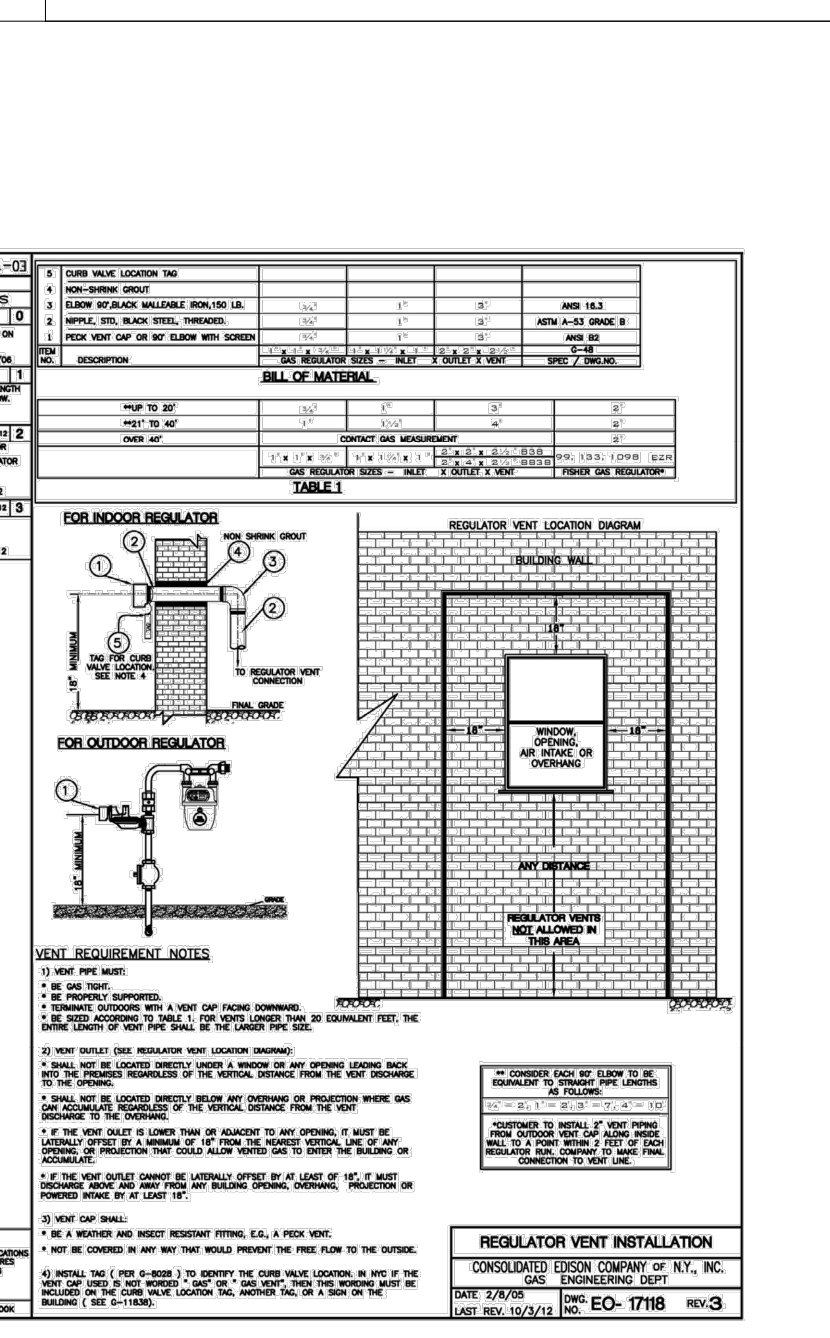
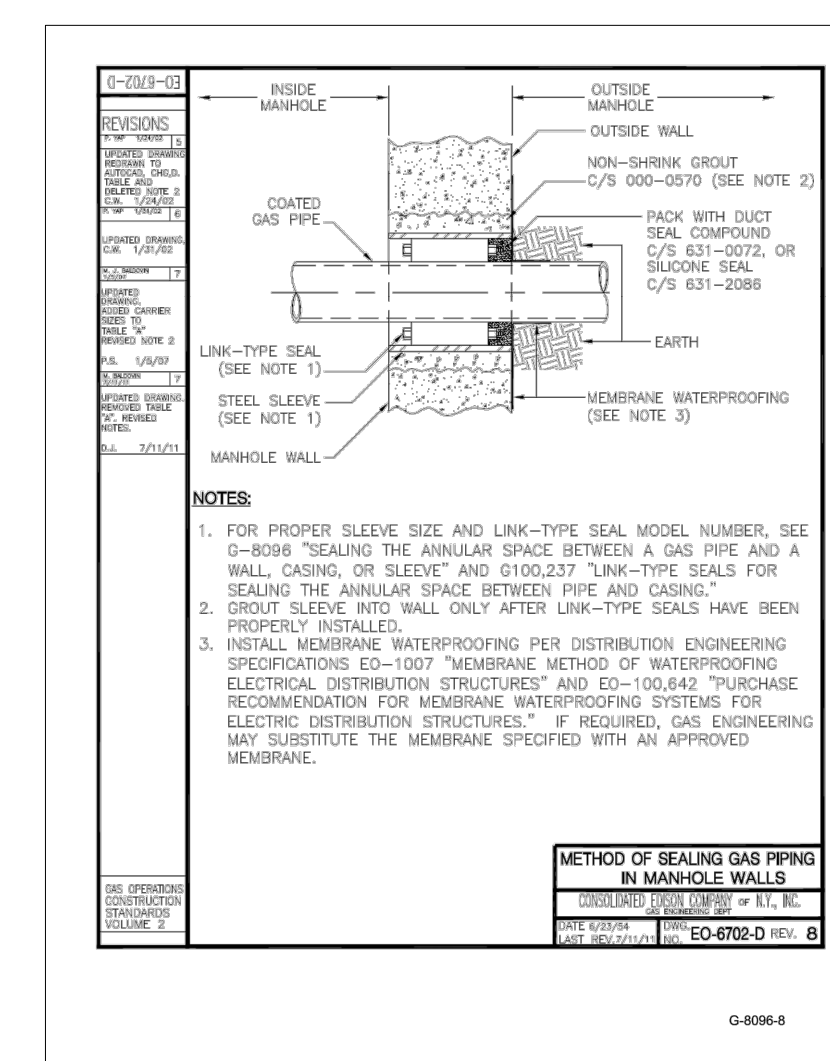
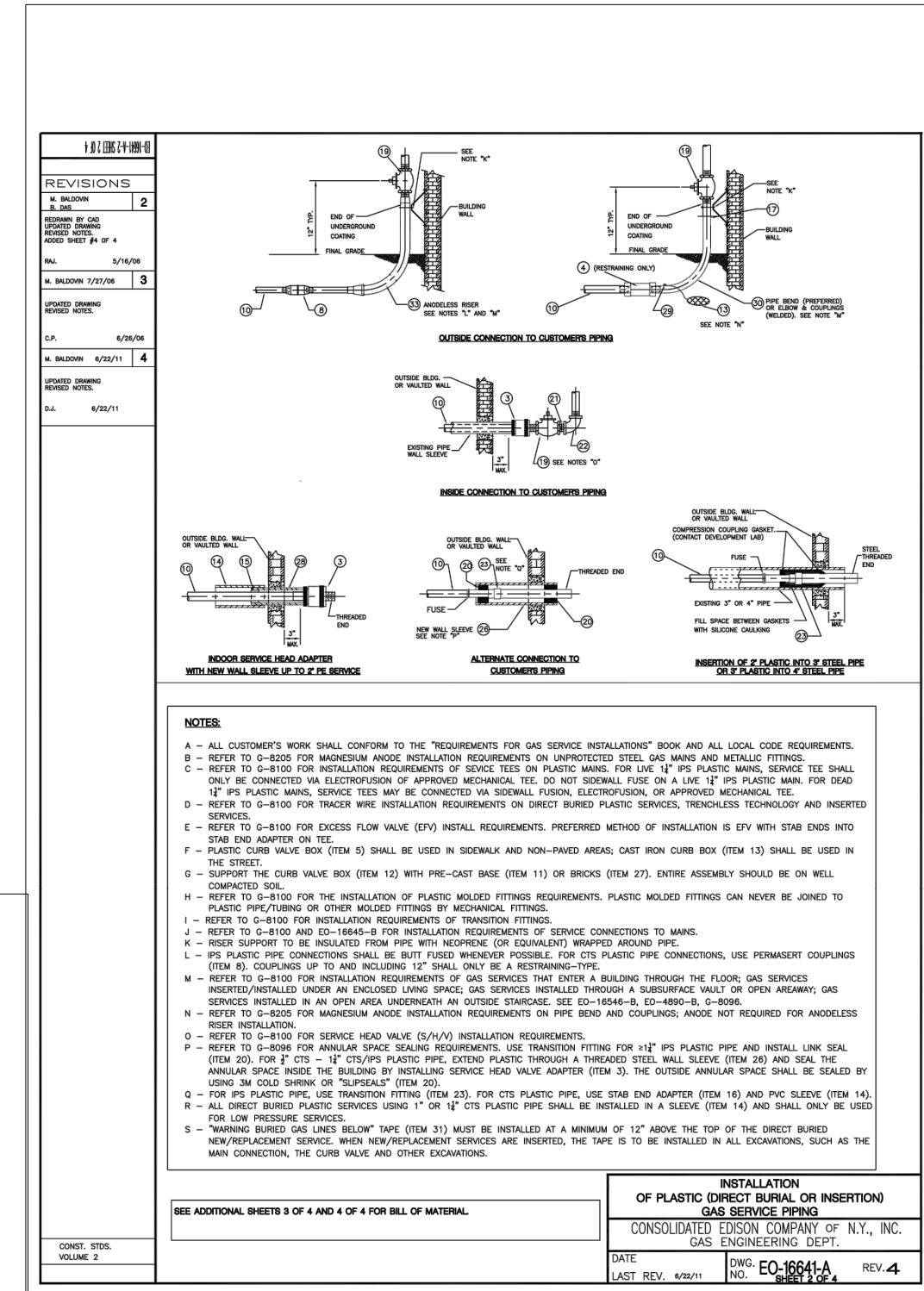
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NOTE: "Y" STRAINER REQUIRED AFTER JULY 1, 2015.

INSTALLATION OF METER PIPING FOR CLASS 3000R-TC TO CLASS 2000R-TC ROTARY METERS - OUTDOOR

CONSOLIDATED EDISON COMPANY OF N.Y., INC.
 GAS ENGINEERING DEPT.

DATE: 10/20/18 DWG NO: **EO-16511-B** REV: **11**
 LAST REV: 4/14/19

96+606

REVISIONS
 0 8/20/09 7/21/08
 1 M. BALDWIN 2/02/04
 2 M. BALDWIN 4/24/04
 3 M. BALDWIN 3/12/08
 4 P.L.S. 1/28/08

TRENCH WIDTH SEE TABLE 1
 TRENCH DEPTH SEE TABLE 1

STEEL MAIN OR SERVICE (DISTRIBUTION)

PLASTIC MAIN OR SERVICE (DISTRIBUTION)

STEEL MAIN (TRANSMISSION)

SIZE OF MAIN / SERVICE	TRENCH WIDTH	TRENCH DEPTH (MIN)	TRENCH DEPTH (SERVICES)
1"	6'-0"	3'-6"	2'-6"
1 1/2"	6'-0"	3'-6"	2'-6"
2"	6'-0"	3'-6"	2'-6"
2 1/2"	6'-0"	3'-6"	2'-6"
3"	6'-0"	3'-6"	2'-6"
4"	6'-0"	3'-6"	2'-6"
6"	6'-0"	3'-6"	2'-6"
8"	6'-0"	3'-6"	2'-6"
10"	6'-0"	3'-6"	2'-6"
12"	6'-0"	3'-6"	2'-6"
14"	6'-0"	3'-6"	2'-6"
16"	6'-0"	3'-6"	2'-6"
18"	6'-0"	3'-6"	2'-6"
20"	6'-0"	3'-6"	2'-6"
24"	6'-0"	3'-6"	2'-6"
30"	6'-0"	3'-6"	2'-6"

BILL OF MATERIAL

ITEM NO.	DESCRIPTION	SPEC OR DWG NO.	CLASS E
1	3" SAND CLEAN FILL / RECYCLED MATERIAL	EO-8985	-
2	ESTIMABLE BACKFILL	EO-118	-
3	LANDFILL	ASTM C331	EO-8975
4	LINE RELOC. TAPE	G-8555	EO-8660
5	STEEL PROTECTIVE COVER	EO-4994-C	-

NOTES:

- DISTRIBUTION MAINS SHOULD BE INSTALLED WITH A MINIMUM 3'-0" COVER SO AS TO ALLOW A MINIMUM COVER OF 2'-0" ON THE SERVICE PIPING.
- FOR DISTRIBUTION MAINS OR SERVICES, STEEL PROTECTIVE PLATES ARE REQUIRED WHEN THE COVER IS LESS THAN 2'-0". (SEE SPECS. G-8006, G-9100, AND DWG. EO-4789-C).
- FOR TRANSMISSION MAINS, STEEL PROTECTIVE PLATES ARE REQUIRED FOR ALL NEW INSTALLATIONS REGARDLESS OF COVER AND IF FEASIBLE, WHENEVER AN EXISTING TRANSMISSION MAIN IS EXPOSED. (SEE SPECS. G-8051, G-11663, AND DWG. EO-4789-C).
- ENSURE PROPER CLEARANCES ARE MAINTAINED BETWEEN GAS FACILITIES AND OTHER FACILITIES OR STRUCTURES. (SEE CI-820-1 AND DWG. EO-6571-C).
- WHEN SHEETING IS USED, THE "TRENCH WIDTH" DIMENSION IN TABLE 1 SHALL BE MEASURED FROM THE INSIDE OF THE SHEETING.
- FOR STEEL MAINS AND SERVICES, INSTALL SANDBAGS AT 10' INTERVALS.
- ALL REPLACEMENT DIRECT BURIED COPPER TUBING AND PLASTIC TUBING SERVICES IN 1" OR 1 1/2" CTS SIZES SHALL HAVE A PROTECTIVE SLEEVE INSTALLED. (SEE G-8100).
- SEE G-8200 FOR MINIMUM SIZES OF NEW DIRECT BURIED PLASTIC, STEEL, AND COPPER SERVICES OF VARIOUS PRESSURES.

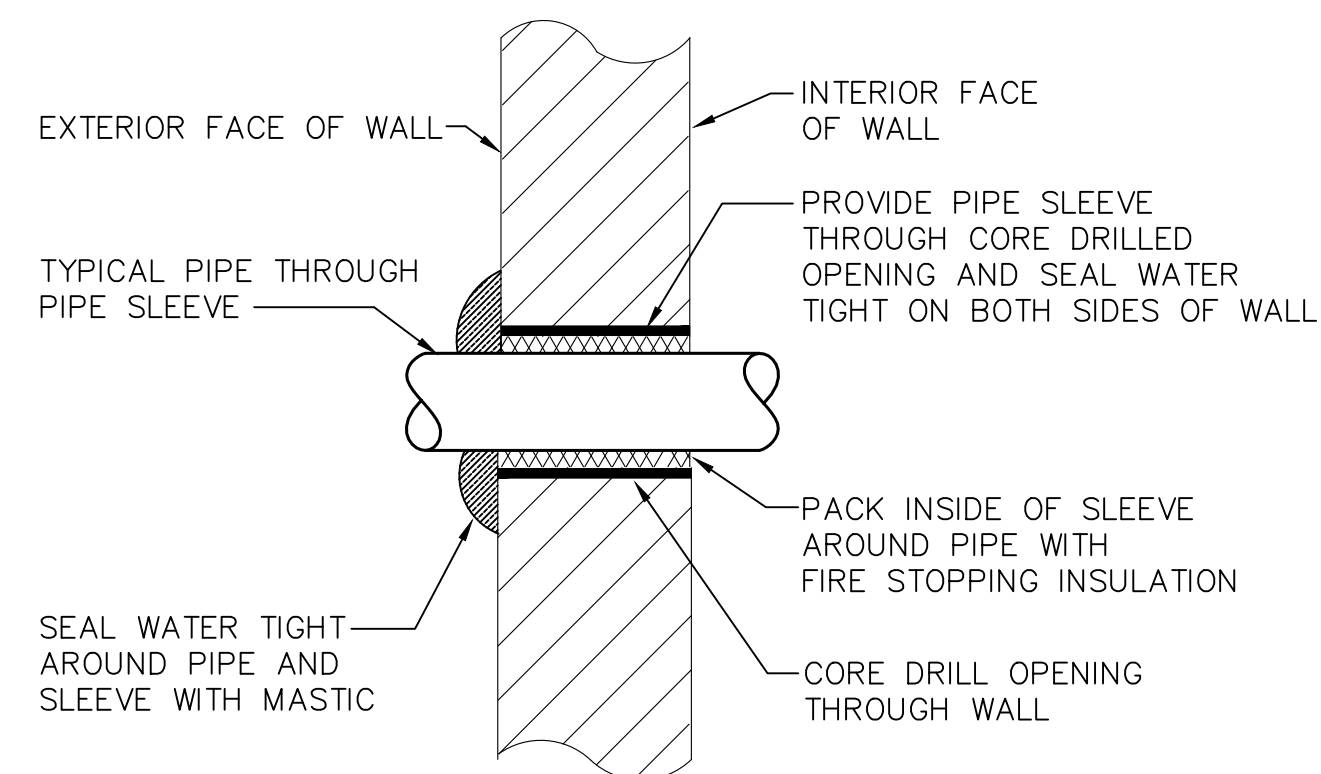
REVISIONS & DWGS:
 GAS MAIN INSTALLATION G-8005
 GAS SERVICE INSTALLATION G-8100
 GAS SERVICE SIZING G-8200
 STEEL PROTECTIVE PLATES EO-4789-C, G-8051, G-11663
 PROPER CLEARANCES G-8055, G-11663, EO-4789-C
 SHEETING EO-1184-B, EO-16465-B
 BACKFILL EO-1181, EO-8085

TRENCH EXCAVATION FOR GAS MAINS & SERVICES UP TO 350 PSIG

CONSOLIDATED EDISON COMPANY OF N.Y., INC.
 GAS OPERATIONS DEPT.

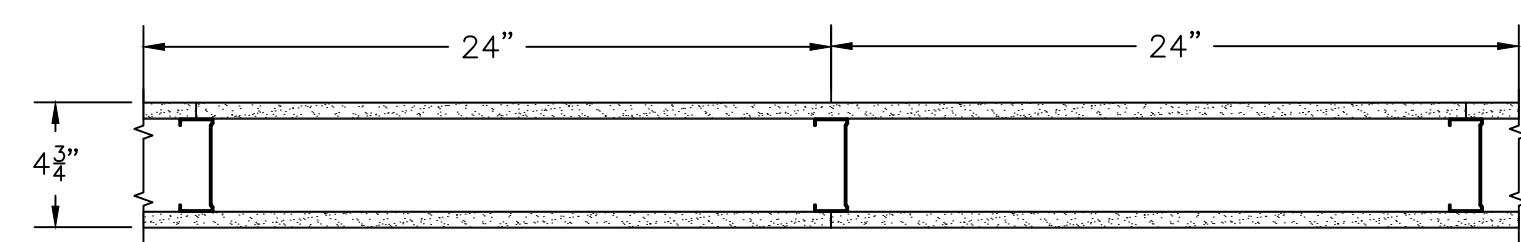
DATE: 7/21/08 DWG. NO. **309495** REV. **4**
 LAST REV: 04/29/13

THIS DWG. SUPERSEDES - - - - - EO-7922



NOTE:
FOR PIPE SIZES THROUGH 1 1/2", PROVIDE SEPARATE SLEEVE FOR EACH PIPE. FOR PIPE SIZES UNDER 1 1/2", MULTIPLE PIPES MAY PENETRATE WALL THROUGH A COMMON SLEEVE - SEAL SPACE BETWEEN MULTIPLE PIPES WATER TIGHT WITH MASTIC AND PACK SPACE BETWEEN PIPES WITH FIRE STOPPING INSULATION.

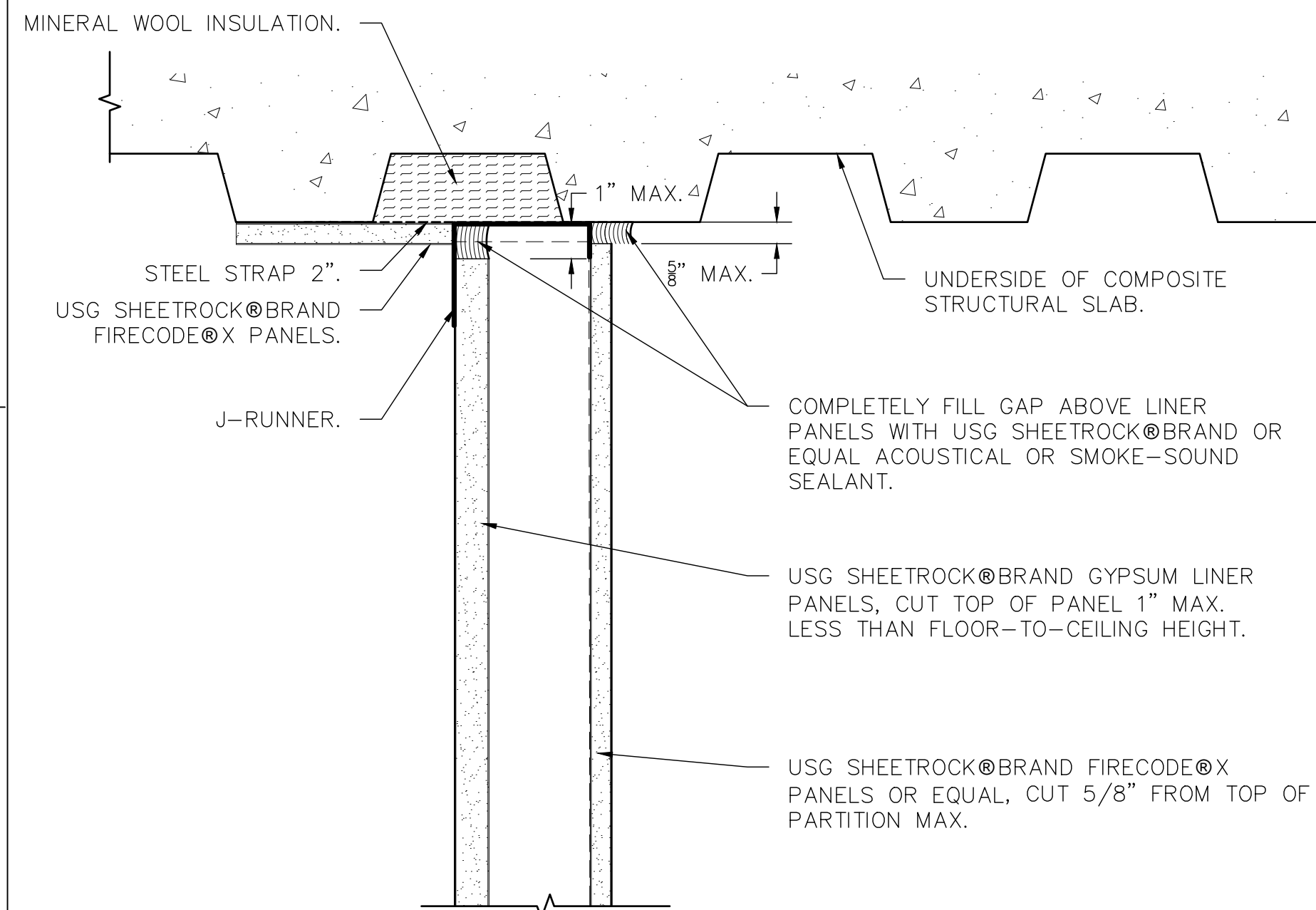
7 PIPE PENETRATION DETAIL
SCALE: NONE



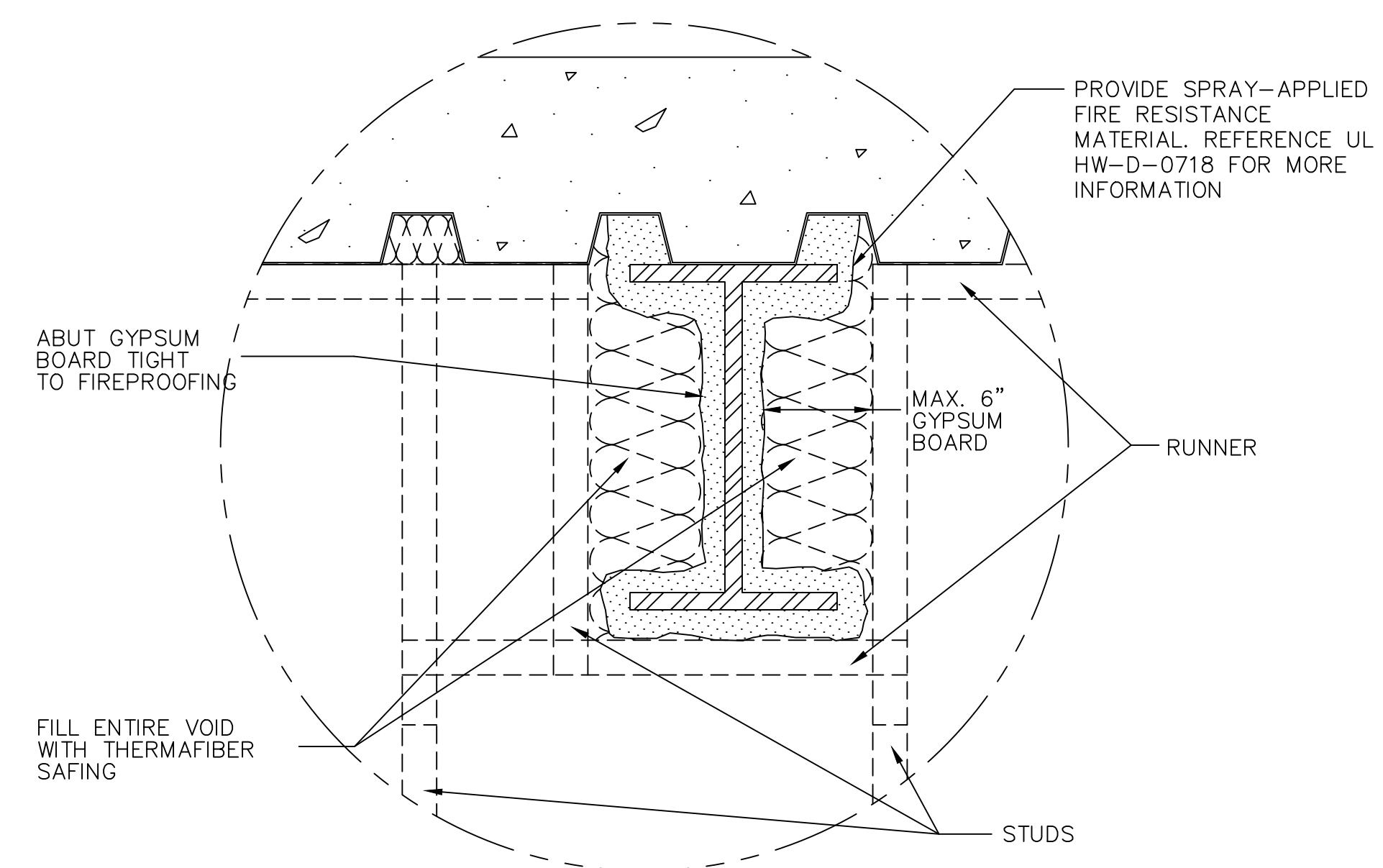
EXTERIOR PARTITIONS: STEEL STUD (NON-LOAD-BEARING)
FIRE RATING: 1 HOUR
STC: N/A
SOUND TEST: N/A
SYSTEM THICKNESS: 4-3/4"

ASSEMBLY OPTIONS:
GYPSUM BOARD: 5/8 IN. THICK GYPSUM BOARD APPLIED HORIZONTALLY OR VERTICALLY.
STEEL STUDS: 3-1/2 IN. DEEP, 25 GA. SPACED 24 IN. O.C.
GYPSUM BOARD: 5/8 IN. THICK EXTERIOR REGULAR GYPSUM SHEATHING APPLIED HORIZONTALLY OR VERTICALLY.

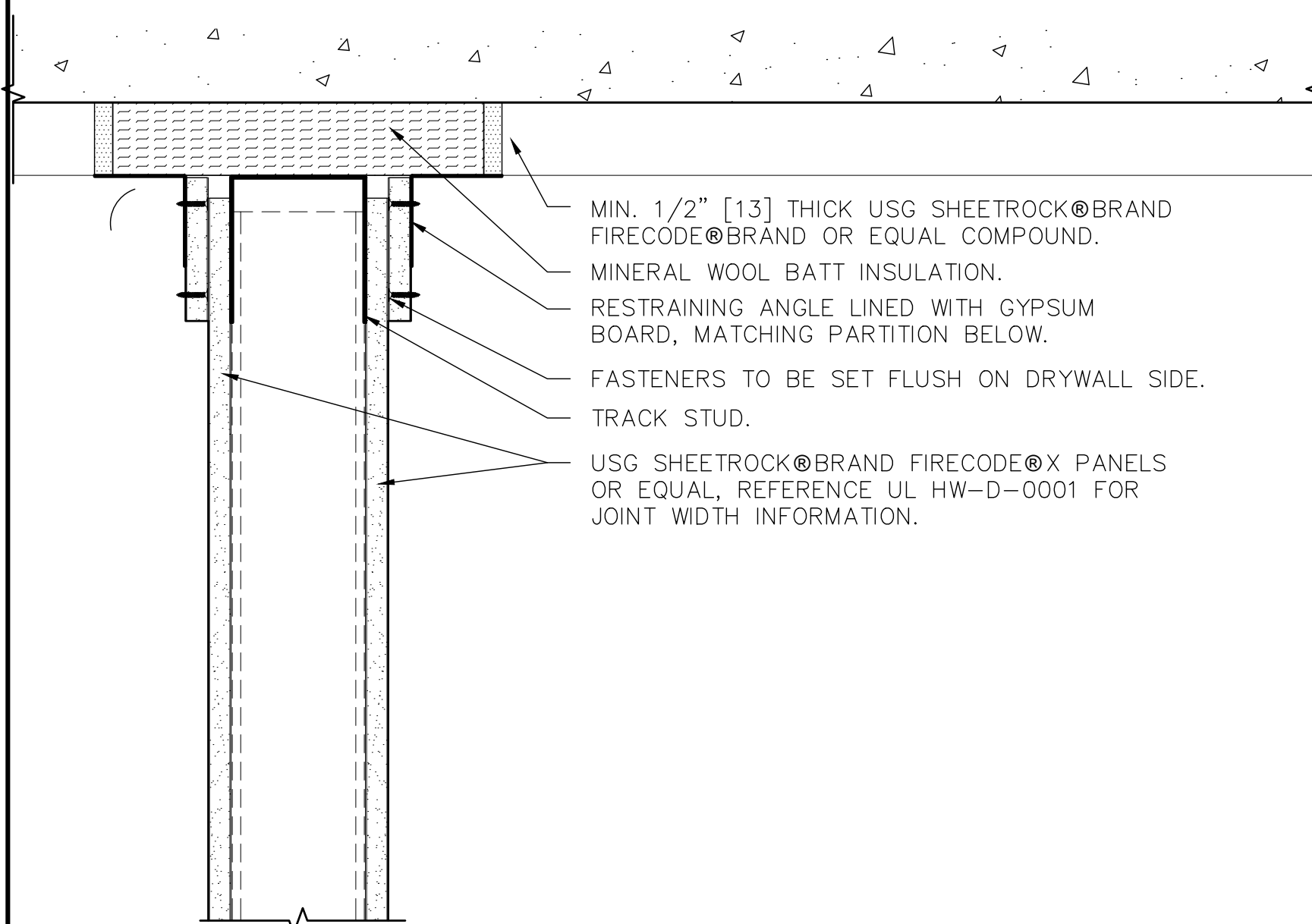
6 UL U419 1-HOUR PARTITION DETAIL
SCALE: NONE



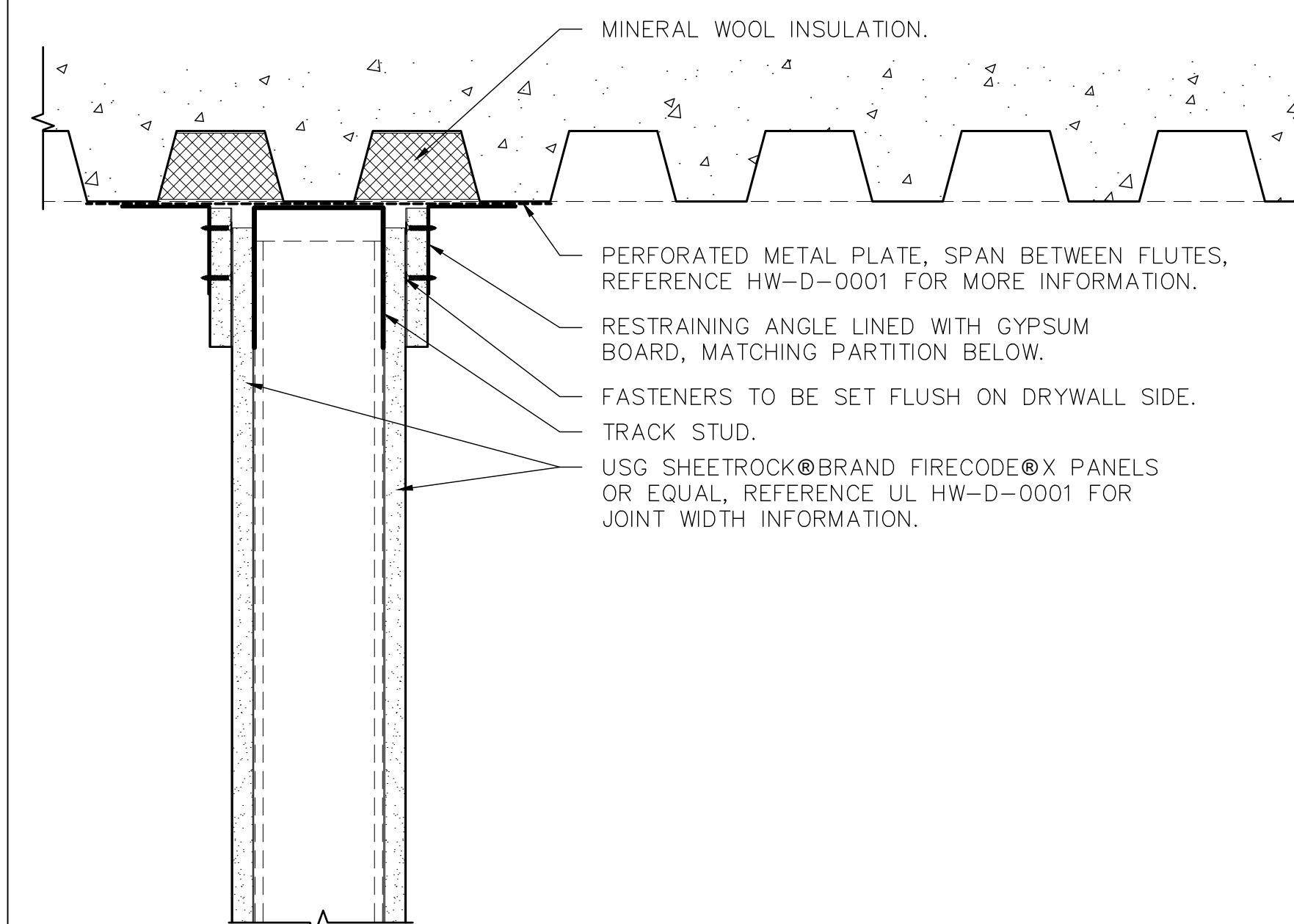
4 1-HOUR HEAD OF WALL UL HW-D-0613 DETAIL
SCALE: NONE



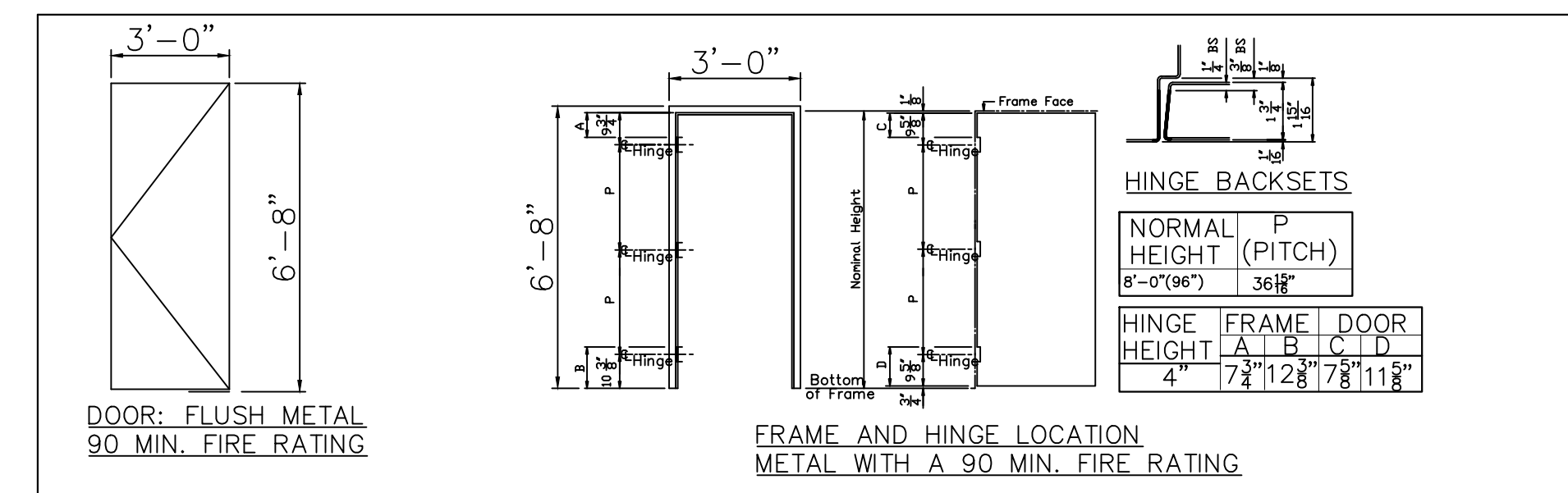
2 WALL PERPENDICULAR TO BEAM UL HW-D-0718 DETAIL
SCALE: NONE



5 1-HOUR HEAD OF WALL PERPENDICULAR TO DECK FLUTES UL HW-D-0001 DETAIL
SCALE: NONE



3 1-HOUR HEAD OF WALL PARALLEL TO DECK FLUTES UL HW-D-0001 DETAIL
SCALE: NONE



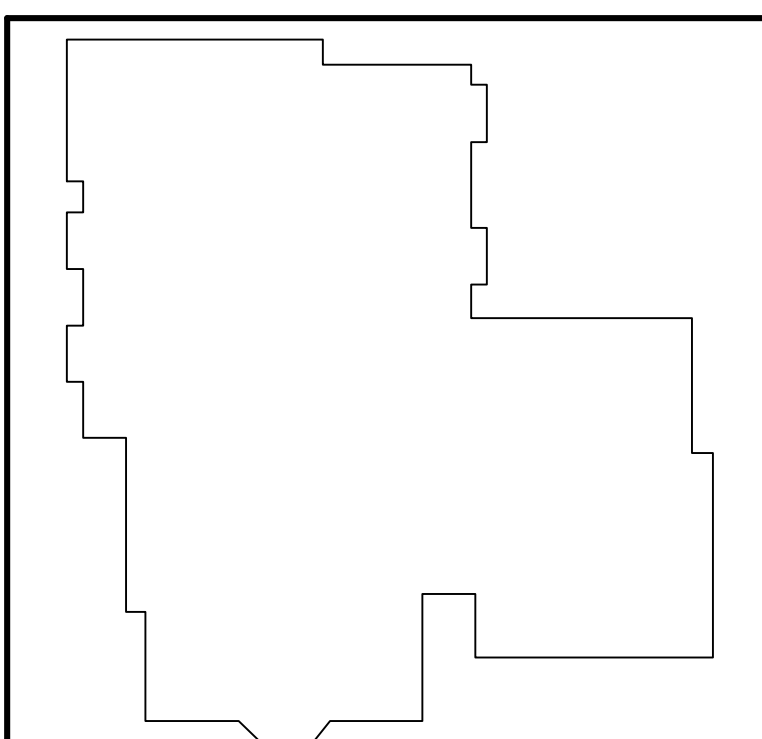
1 DOOR AND HARDWARE DETAIL
SCALE: NONE

HARDWARE SET

SET #	ITEM & QUANTITY	DESCRIPTION	FINISH	MFR	NOTES
1	1 1/2 PAIRS MORTISE HINGES 1 EXIT HARDWARE 1 LATCHSET 1 FLOOR DOOR STOP DOOR SILENCER	FB199 AL10S SC 80 NO. 436 GJ64	SATIN BRONZE (612) SATIN BRONZE BRONZE (US10) SATIN BRONZE GREY	STANLEY SCHLAGE IYES GLYNN-JOHNSON	BALL BEARING HINGES EXIT DEVICE

GENERAL HARDWARE NOTES:
1. ALL EGRESS DOORS TO BE OPERABLE FROM THE DIRECTION OF EXIT TRAVEL WITHOUT THE USE OF A KEY OR SPECIAL KNOWLEDGE OR EFFORT.
2. ALL HAND-ACTIVATED DOOR OPENING HARDWARE SHALL BE INSTALLED AT 36" AFF.
3. LATCHING AND LOCKING DOORS SHALL BE OPERATED WITH A SINGLE EFFORT BY LEVER HARDWARE, PANIC BARS, PUSH-PULL ACTIVATING OR OTHER HARDWARE DESIGNED TO PROVIDE PASSAGE WITHOUT THE ABILITY TO GRASP.
4. MAXIMUM EFFORT TO OPERATE DOORS SHALL NOT EXCEED 5 POUNDS FOR INTERIOR DOORS. SUCH EFFORT SHALL BE APPLIED AT RIGHT ANGLES TO HINGED DOORS AND AT THE CENTER PLANE FOR SLIDING DOORS. COORDINATE FORCE WITH LOCAL OFFICIALS.
5. MATCH BUILDING EXISTING HARDWARE REGARDS TO MANUFACTURER, STYLE, LEVEL OF QUALITY AND FINISH.
6. DOOR STOPS TO BE LOCATED IN FIELD.

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KEY PLAN
NORTH

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**GENERAL CONSTRUCTION
DETAILS**

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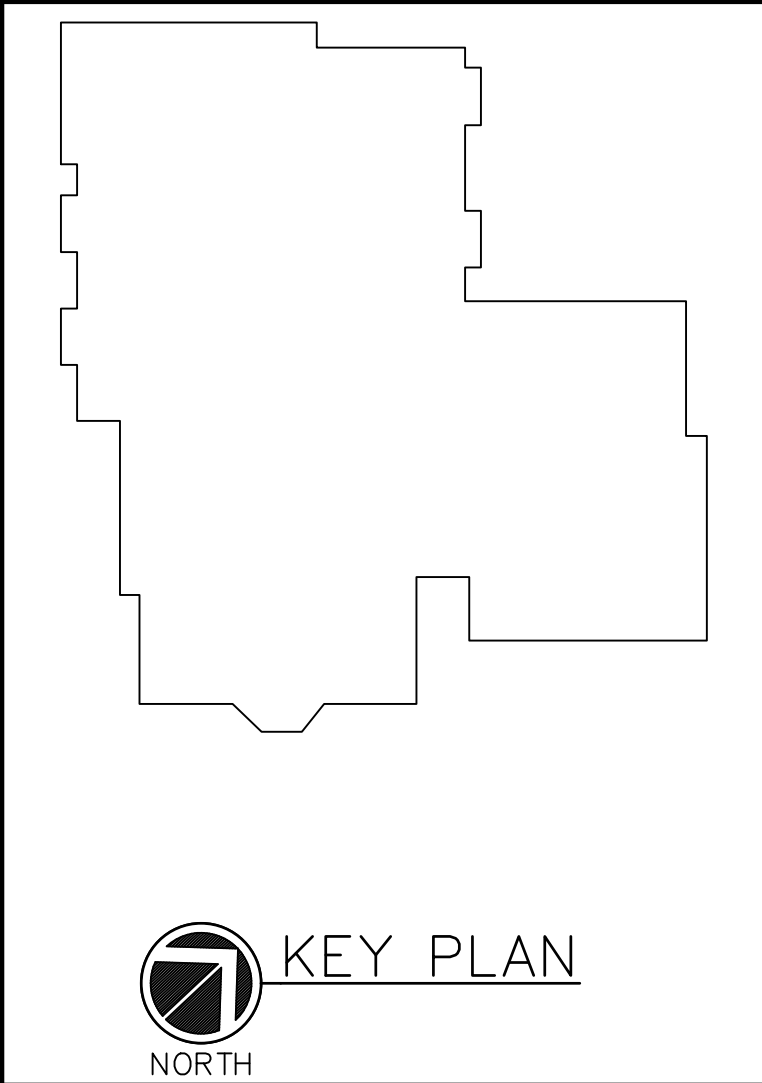
SYMBOLS AND ABBREVIATIONS			DEFINITION OF TERMS		
SYMBOL	ABBREVIATION	DESCRIPTION	SYMBOL	ABBREVIATION	DESCRIPTION
	-	CONDUIT AND WIRING		DEM.	DEMOLISH AND REMOVE
	-	CONDUIT & WIRING TO BE REMOVED UON		DISC	DISCONNECT
	-	BURIED CONDUIT		DWG	DRAWING
	-	OVERHEAD CONDUCTORS		ELEV	ELEVATOR
	-	HOMERUN TO PANEL, ARROWS INDICATE # 1P		EMT	ELECTRICAL METALLIC TUBING
	-	MULTI-POLE HOMERUN		EM	EMERGENCY
	-	ELECTRICAL EQUIPMENT AS INDICATED		EX.	EXISTING TO REMAIN
	-	ELECTRICAL EQUIPMENT TO BE REMOVED UON		FBO	FURNISHED BY OTHERS
	-	JUNCTION BOX		GFI	GROUND FAULT INTERRUPTER
	-	FUSED DISCONNECT SWITCH		HP	HORSEPOWER
	-	UNFUSED DISCONNECT SWITCH		MCB	MAIN CIRCUIT BREAKER
	-	COMBINATION MOTOR STARTER/FUSED DISC.		NIC	NOT IN CONTRACT
	-	MOTOR STARTER		NTS	NOT TO SCALE
	-	MOTOR		PT	PRESSURE TREATED
	-	DUPLEX RECEPTACLE		REL.	REMOVE AND RELOCATE
	-	DOUBLE DUPLEX RECEPTACLE		RGS	RIGID GALVANIZED STEEL
	-	SINGLE POLE LIGHTNG SWITCH		RTU	ROOF TOP UNIT
	-	MOTOR RATED TOGGLE SWITCH		SCH	SCHEDULE
	-	FIRE ALARM COMBINATION AUDIO/VISUAL DEVICE (15/75 CD - STROBE)		SW	SWITCH(ES)
	-	FIRE ALARM STROBE 15/75 CD		TYP	TYPICAL
	-	SMOKE DETECTOR.		UON	UNLESS OTHERWISE NOTED
	-	HEAT DETECTOR		VIF	VERIFY IN FIELD
	-	CARBON MONOXIDE DETECTOR		V	VOLT(S)
	-	NATURAL GAS DETECTOR		VSD	VARIABLE SPEED DRIVE
	-	FIRE ALARM BELL		WP	WEATHERPROOF
	CM	FIRE ALARM CONTROL MODULE	<p>NOTES: 1.) ALL SYMBOLS AND ABBREVIATIONS MAY NOT BE APPLICABLE FOR THIS PROJECT. 2.) SEE LIGHTING FIXTURE SCHEDULE FOR LIGHT FIXTURE SYMBOLS.</p>		
	MM	FIRE ALARM MONITORING MODULE			
	FACP	FIRE ALARM CONTROL PANEL	<p>GENERAL NOTES</p> <p>1.) ALL WORK SHOWN IS NEW UNLESS OTHERWISE NOTED (UON) EXISTING TO REMAIN (EX.).</p> <p>2.) THE DRAWINGS ARE TO BE CONSIDERED SCHEMATIC ONLY AND DO NOT NECESSARILY SHOW THE EXACT LOCATIONS AND DETAILS OF THE WORK TO BE INSTALLED.</p> <p>3.) THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND PAYING ALL FEES ASSOCIATED WITH THIS WORK INCLUDING FILING WITH THE UTILITY COMPANY (AS REQUIRED), AND WITH LOCAL AUTHORITY HAVING JURISDICTION.</p> <p>6.) ALL CONDUCTORS SHALL BE COPPER UON "ON DRAWINGS".</p> <p>8.) CIRCUIT NUMBERS ARE FOR INFORMATION PURPOSES ONLY. ACTUAL CIRCUIT NUMBERS SHALL BE DETERMINED IN THE FIELD.</p> <p>9.) CORE DRILLING OR TRENCHING THROUGH AN EXISTING FLOOR SLAB, WHEN REQUIRED, SHALL BE COORDINATED WITH THE OWNER. FLOOR SLABS SHALL BE RADAR SCANNED PRIOR TO CORE DRILLING OR TRENCHING. ALL WORK, INCLUDING CORE DRILLING, RADAR SCAN, INSTALLATION OF FIRE STOPPING, & CONDUIT/CABLE INSTALLATION SHALL BE PERFORMED DURING NON-BUSINESS HOURS AND INCLUDED IN BASE BID. USE EXTREME CAUTION DURING ANY CUTTING OPERATION TO AVOID DAMAGE TO EXISTING EQUIPMENT/SYSTEMS. ANY ITEMS DAMAGED AS A RESULT OF CORE DRILLING SHALL BE REPAIRED AT NO COST TO THE CLIENT. ALL CORES SHALL BE FIRE SEALED.</p> <p>14.) CEILING MOUNTED RECEPTACLES SHALL BE MOUNTED FLUSH TO CEILING.</p> <p>15.) UNLESS OTHERWISE NOTED, DISCONNECT SWITCHES, STARTERS, HOAS AND MOTOR RATED TOGGLE SWITCHES FOR MECHANICAL PUMPS, CABINET AND UNIT HEATERS, RETURN FANS, ROOF FANS, VAV BOXES, COMPRESSORS, FAN COIL UNITS, AIR HANDLERS AND CONDENSERS SHALL BE FURNISHED BY THE MECHANICAL CONTRACTOR AND INSTALLED BY THE ELECTRICAL CONTRACTOR. COORDINATE ALL WORK WITH THE MECHANICAL CONTRACTOR.</p> <p>21.) ALL CO ALARMS TO BE 120V, MULTI STATION HEADS WITH NON-REMOVABLE, NON-REPLACEABLE, 10 YEAR MINIMUM BATTERY BACKUP, U.O.N. PROVIDE WIRING AS REQUIRED BETWEEN HEADS.</p> <p>24.) THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL CUTTING, PATCHING, PAINTING, AND FINAL RESTORATION REQUIRED TO FACILITATE THE DEMOLITION AND INSTALLATION OF ALL ELECTRICAL EQUIPMENT, INCLUDING BUT NOT LIMITED TO PANELBOARDS, CONDUITS, WIRING, DEVICES, FIXTURES, ETC. INCLUDING ABOVE CEILINGS. CONTRACTOR TO REMOVE AND REPLACE CEILINGS, AND OPEN AND PATCH WALLS, AS REQUIRED TO EXECUTE THE ELECTRICAL WORK.</p>		
	EOL	END OF LINE RESISTOR			
	-	ENCLOSED CIRCUIT BREAKER			
	-	FUSED SWITCH			
	GND	GROUND AS PER LOCAL CODE			
	-	GROUND BAR			
	-	GROUND ROD			
	CT	CURRENT TRANSFORMER			
	-	UTILITY POLE			
	-	BOILER BREAK GLASS STATION			
	NC	NORMALLY CLOSED CONTACTS			
	NO	NORMALLY OPEN CONTACTS			
	MD	MOTORIZED DAMPER			
	SD OR CFSD	SMOKE DAMPER			
	UH	UNIT HEATER			
	A	AMPERE(S)			
	AC	AIR CONDITIONER			
	ACC	AIR CONDITIONER CONDENSER			
	AFF	ABOVE FINISHED FLOOR			
	AF	AMPERAGE OF FUSE			
	AGL	ABOVE GRADE LEVEL			
	AL	ALUMINIUM			
	ARC	ARC FAULT INTERRUPTER			
	AS	AMPERAGE OF SWITCH			
	BCW	BARE COPPER WIRE			
	BLDG	BUILDING			
	C	CONDUIT			
	CKT	CIRCUIT			
	CLG	CEILING			
	CU	COPPER			
	CUH	CABINET UNIT HEATER			

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**ELECTRICAL SYMBOLS,
 ABBREVIATIONS AND
 GENERAL NOTES**

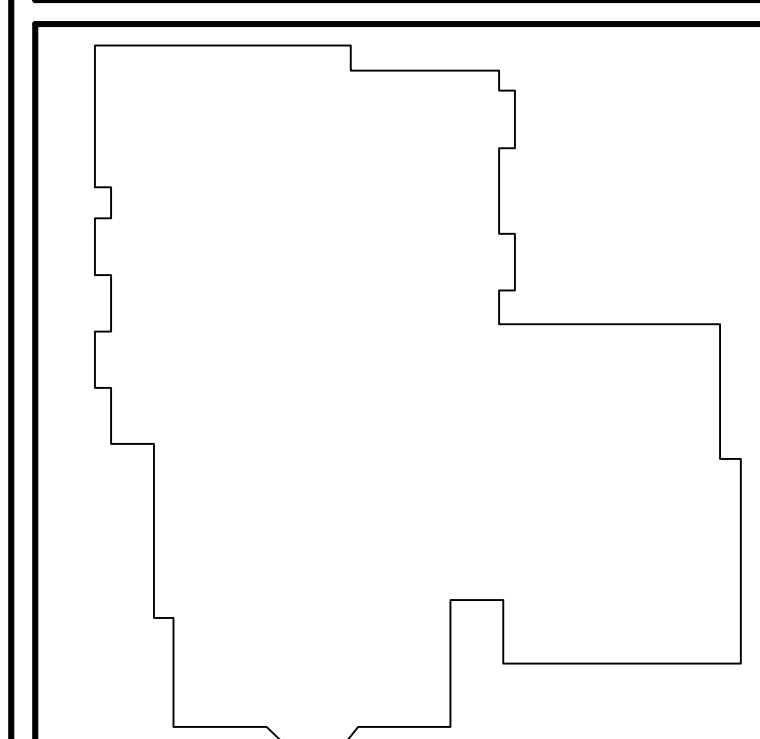
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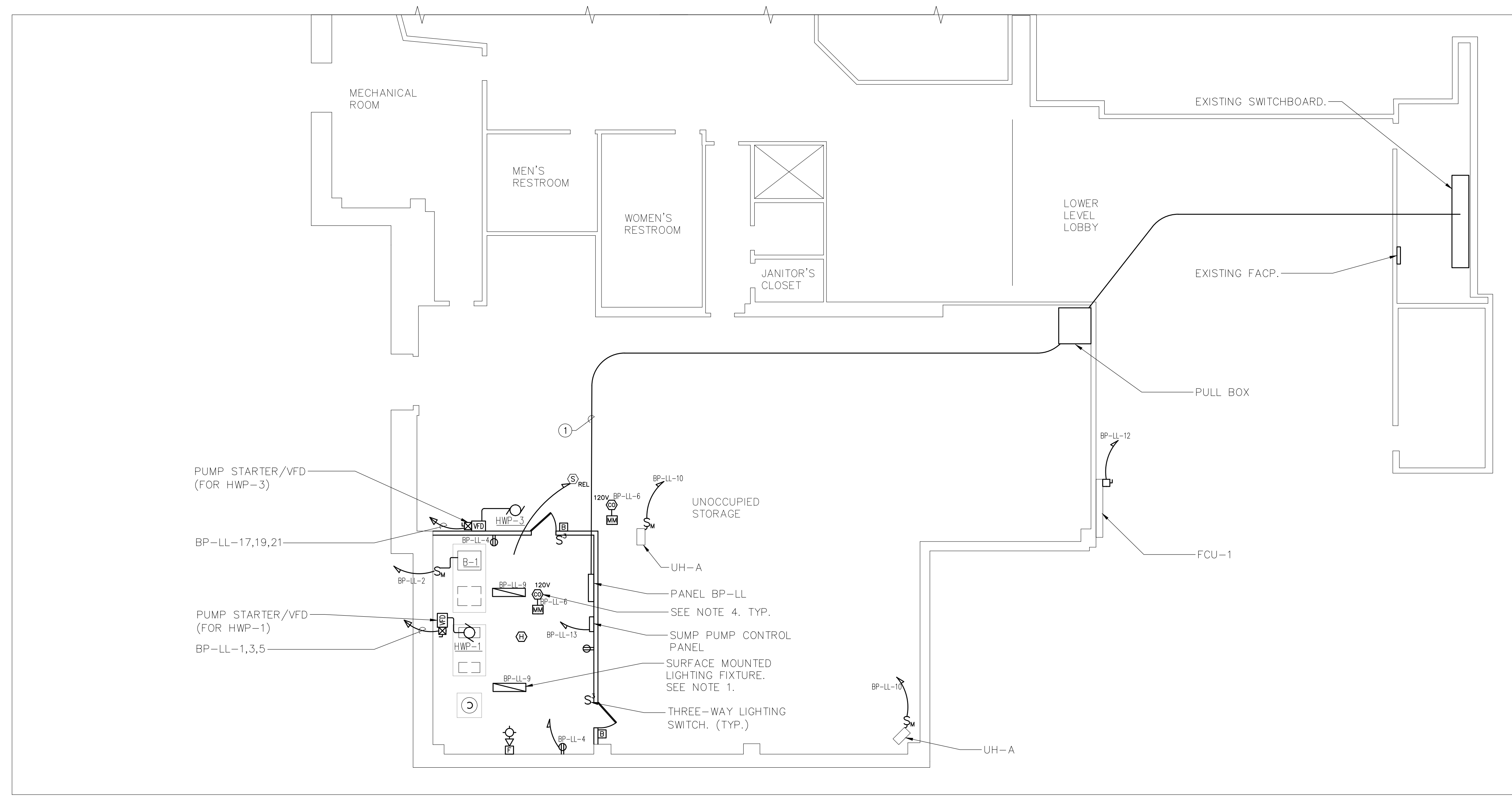
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KEY PLAN
 NORTH



1 **ELECTRICAL LOWER LEVEL PARTIAL NEW WORK PLAN**
 SCALE: 1/8" = 1'-0"

WIRING/CONDUIT LEGEND:

- ① 4-#2/0 & 1-#6 GND IN 2" C.

NOTES:

1. PROVIDE (2) NEW LIGHTING FIXTURES TYPE ECLIPSE LIGHTING 574-OPL-LED/80W-3K-EBU-BK OR APPROVED EQUAL.
2. REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATION
3. EQUIPMENT DENOTED WITH "EX." ARE EXISTING TO REMAIN.
4. CARBON MONOXIDE SHALL BE 120V HARDWIRED. CARBON MONOXIDE ALARM SHALL BE SUPERVISED BY THE FACP VIA MONITOR MODULE. PROVIDE ALL PROGRAMMING AS REQUIRED. COORDINATE FINAL LOCATIONS IN FIELD.
5. REFER TO DWG ES.1 FOR CIRCUIT OF NEW LIGHTING FIXTURES IN BOILER ROOM.
6. COORDINATE EQUIPMENT INSTALLATION WITH THE FIELD CONDITIONS.

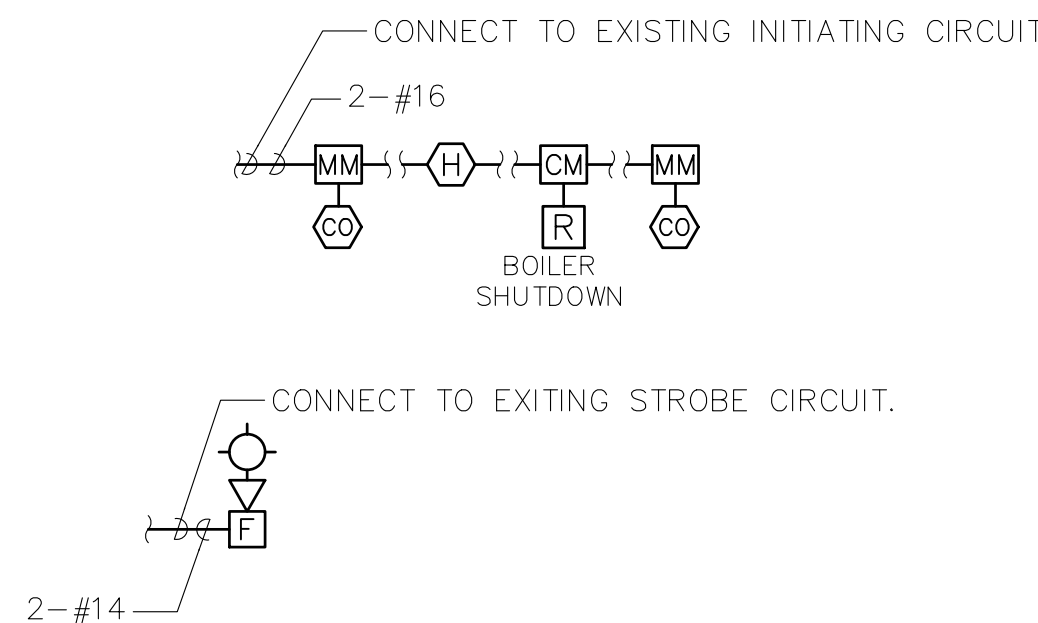
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DRAWING TITLE
**ELECTRICAL
 LOWER LEVEL PARTIAL
 NEW WORK PLAN**

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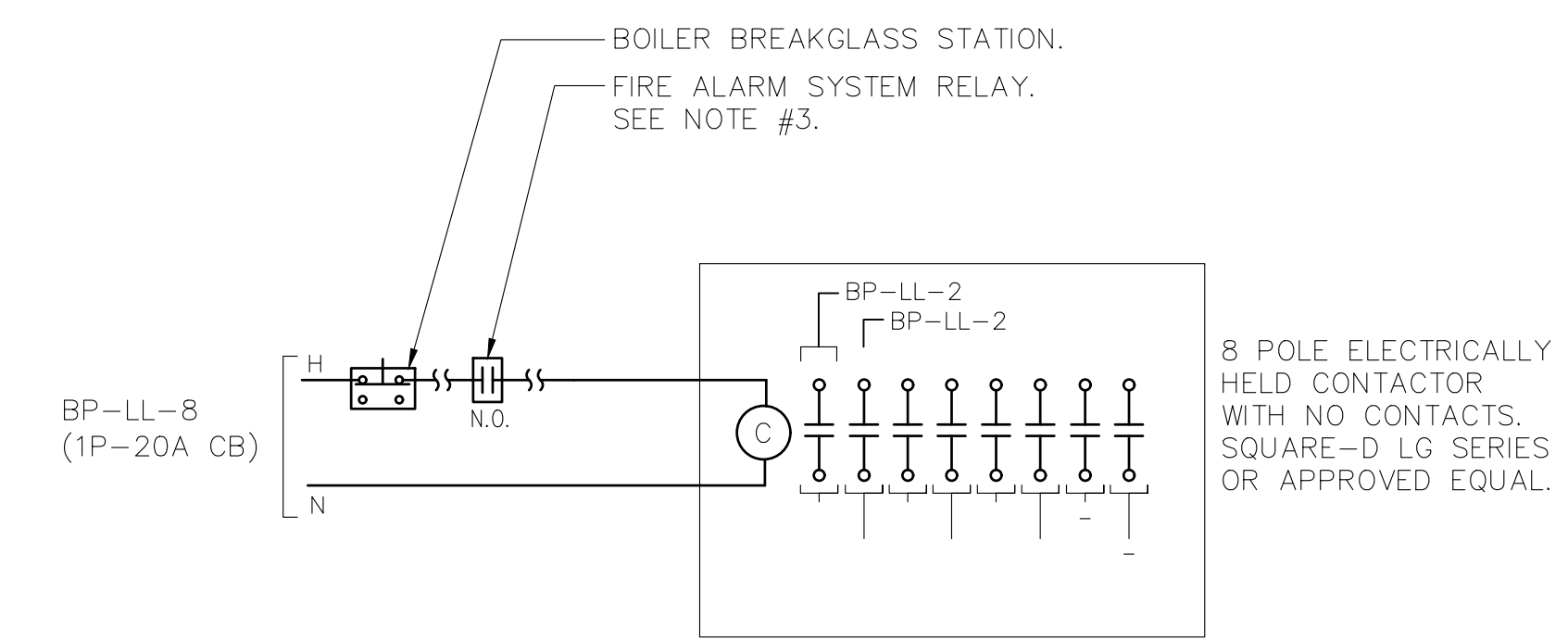
2 FIRE ALARM RISER DIAGRAM
SCALE: NONE

RISER NOTES:

1. THIS IS NOT A POINT-TO-POINT WIRING DIAGRAM. PRIOR TO STARTING ANY WORK, A WORKING POINT-TO-POINT WIRING DIAGRAM SHALL BE OBTAINED FROM FIRE ALARM SYSTEM VENDOR AND PERFORM ALL WORK IN ACCORDANCE WITH THAT DIAGRAM.
2. ELECTRICAL CONTRACTOR SHALL INCLUDE IN THE BASE BID ALL 120V CIRCUITS THAT ARE REQUIRED TO SUPPORT THE OPERATION OF THE FIRE ALARM SYSTEM. COORDINATE REQUIREMENTS WITH THE FIRE ALARM VENDOR.
3. PROVIDE ALL NECESSARY WIRING, MODULES, COMPONENTS AND PROGRAMMING REQUIRED TO CONNECT NEW DEVICES TO EXISTING SYSTEM.
4. DUCT SMOKE DETECTORS SHALL BE FURNISHED AND WIRED BY ELECTRICAL CONTRACTOR AND INSTALLED IN DUCT WORK BY MECHANICAL CONTRACTOR.
5. ALL VISUAL ALARM DEVICES SHALL BE ADA COMPLIANT.

BP-LL PANEL SCHEDULE						
MAIN RATING: 225A		MAIN C.B.: 150A		KAIC RATING: 10KAIC		
VOLTAGE: 208Y/120V		PHASE: 3		WIRE: 4		MOUNTING: SURFACE
CIRC. NO.	LOAD DESCRIPTION	BKR. AMPS	NO. OF POLES	NO. OF POLES	BKR. AMPS	LOAD DESCRIPTION
1				1	20	BOILER B-1
3	HWP-1	20	3	1	20	RECEPTACLE
5				1	20	CO ALARM
7	SPARE	20	1	1	20	CONTACTOR
9	BOILER ROOM LIGHTING	20	1	1	20	UH-A
11	SPARE	20	1	1	20	FCU-1
13	SUMP PUMP	20	1	1	20	SPARE
15	SPARE	20	1	1	20	SPARE
17				1	20	SPARE
19	HWP-3	20	3	1	20	SPARE
21				1	20	SPARE
23	SPARE	20	1	1	20	SPARE
25	SPARE	20	1	1	20	SPARE
27	SPARE	20	1	1	20	SPARE
29	SPARE	20	1	1	20	SPARE
31	SPARE	20	1	1	20	SPARE
33	SPACE	20	1	1	20	SPACE
35	SPACE	20	1	1	20	SPACE
37	SPACE	20	1	1	20	SPACE
39	SPACE	20	1	1	20	SPACE
41	SPACE	20	1	1	20	SPACE

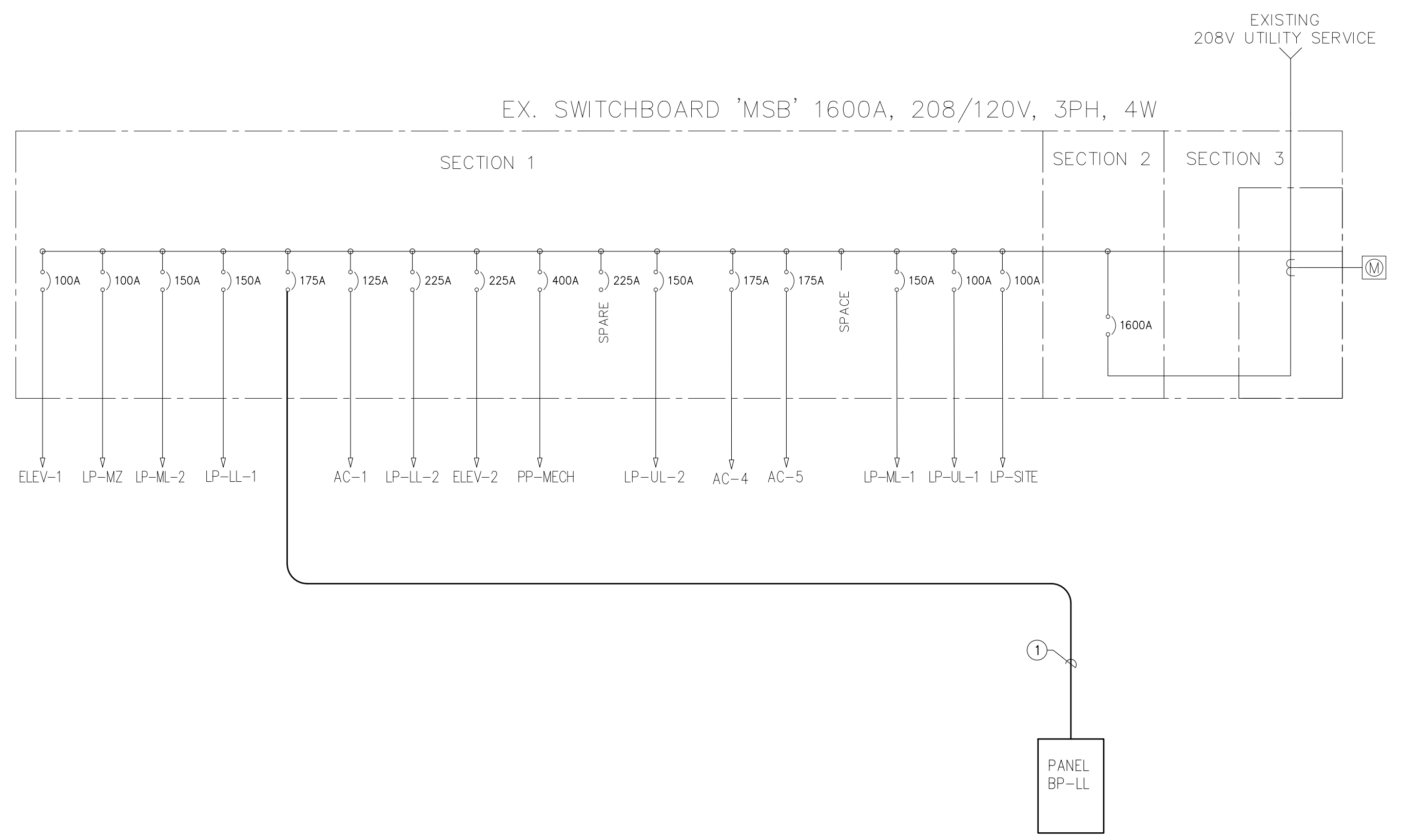
LK - PROVIDE LOCKING TABS ON C.B.; GF - GFI TYPE C.B.; AF - ARC FAULT TYPE C.B.; ST - SHUNT TRIP C.B.



3 BOILER EMERGENCY SHUTDOWN WIRING DIAGRAM
SCALE: NONE

NOTES:

- 1.) ALL EQUIPMENT AND WIRING ASSOCIATED WITH THIS DIAGRAM SHALL BE PROVIDED AND INSTALLED BY THE ELECTRICAL CONTRACTOR UON.
- 2.) SEE ELECTRICAL PLANS FOR BRANCH CIRCUITRY INFORMATION.
- 3.) FIRE ALARM PANEL SHALL BE PROGRAMMED SO THAT ACTIVATION OF ANY BOILER ROOM HEAT DETECTOR OR PULL STATION SHALL OPERATE THE CONTROL RELAY CONTACTS TO SHUTDOWN THE BOILERS.
- 4.) CONTACTOR SHALL BE INSTALLED IN A NEMA-1 ENCLOSURE EQUIPPED WITH A LOCKABLE HINGED COVER.
- 5.) ALL RELAYS TO BE INSTALLED IN NEMA-1 ENCLOSURES.
- 6.) BOILER BREAKGLASS STATIONS SHALL BE AS MANUFACTURED BY SQUARE-D, TYPE KYK117 OR APPROVED EQUAL.
- 7.) INTERCEPT SOURCE OF POWER TO EACH MOTOR CONTROL CIRCUIT AND ROUTE CIRCUIT THRU CONTACTOR. ALL WIRING TO BE 2-#12 UON. COORDINATE WITH MECHANICAL CONTRACTOR.



1 ELECTRICAL ONE-LINE DIAGRAM
NOT TO SCALE

WIRING/CONDUIT LEGEND:

- ① 4-#2/0 & 1-#6 GND IN 2" C.

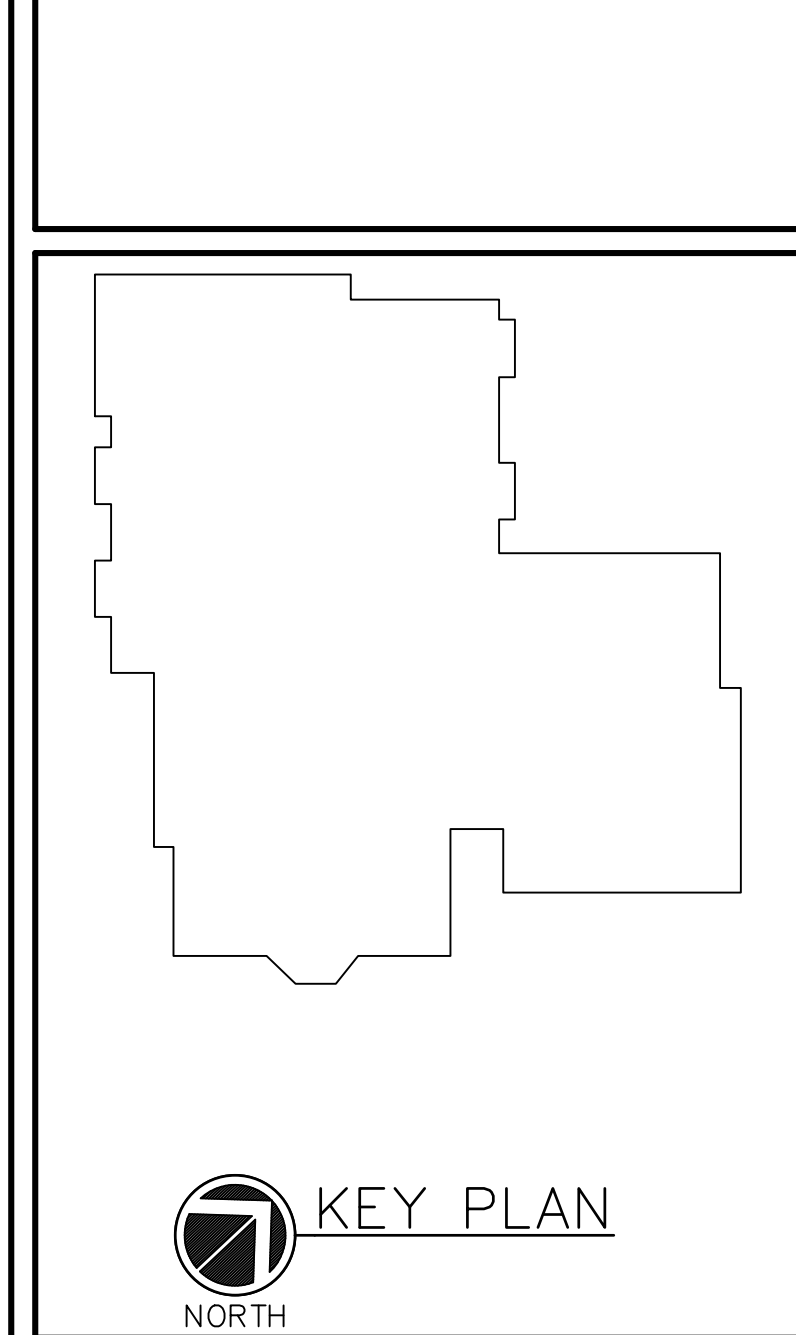
FIRE ALARM SEQUENCE OF OPERATIONS MATRIX:		SYSTEM OUTPUTS INDICATING/ CONTROLLED DEVICES												
		A	B	C	D	E	F	G	H	I	J	K	L	
INITIATING DEVICES SYSTEM INPUTS	1	MANUAL FIRE ALARM BOXES	●	●										
	2	SMOKE DETECTORS	●	●					●	●	●	●		
	3	DUCT SMOKE DETECTORS	●	●					●	●	●	●		
	4	WATERFLOW	●	●					●	●	●	●		
	5	TAMPER SWITCH	●	●					●	●	●	●		
	6	OPEN CIRCUIT					●	●	●	●	●	●		
	7	GROUND FAULT					●	●	●	●	●	●		
	8	NOTIFICATION APPLIANCE CIRCUIT SHORT					●	●	●	●	●	●		
	9	CARBON MONOXIDE			●	●				●	●		●	

MATRIX NOTES:

1. EXISTING FIRE ALARM SYSTEM SEQUENCE OF OPERATIONS SHALL NOT BE ALTERED WITH EXCEPTION OF ADDITIONAL SEQUENCE FOR CARBON MONOXIDE DETECTORS NOTED IN MATRIX.

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ELECTRICAL RISER DIAGRAM AND DETAILS

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