

GENERAL NOTES (APPLIES TO ALL SHEETS):

- ALL WORK SHALL BE PROVIDED IN ACCORDANCE WITH 2021 INTERNATIONAL BUILDING CODES AND ALL APPLICABLE NATIONAL AND STATE CODES, AND SAFETY STANDARDS, INCLUDING ANY LOCAL AMENDMENTS ADOPTED BY THE STATE OF UTAH.
- CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING ALL REQUIRED PERMITS PRIOR TO EXECUTION OF ANY WORK ON THE PROJECT.
- ALL MECHANICAL EQUIPMENT SCHEDULED/SHOWN ON PLANS HAS BEEN SIZED IN ACCORDANCE WITH ASHRAE STANDARD 183, "PEAK COOLING AND HEATING LOAD CALCULATIONS IN BUILDINGS EXCEPT LOW-RISE RESIDENTIAL BUILDINGS," USING INDUSTRY STANDARD SOFTWARE, I.E. ELITE SOFTWARE CHVAC, TRANE TRACE, ETC.
- PROJECT/BUILDING(S) MINIMUM VENTILATION RATES HAVE BEEN CALCULATED IN ACCORDANCE WITH INTERNATIONAL MECHANICAL CODE (IMC) TABLE 403.3.1.1.
- WORK INCLUDED: FURNISH MATERIAL, LABOR AND SERVICES NECESSARY FOR AND INCIDENTAL TO THE INSTALLATION OF THE FOLLOWING SYSTEMS WHERE SHOWN ON THE PLANS AND AS HEREAFTER SPECIFIED. INCLUDE ALL NECESSARY WORK, MATERIALS, AND EQUIPMENT TO PERFORM WORK COMPLETELY.
 - COOLING SYSTEM INCLUDING, BUT NOT LIMITED TO, CHILLER(S), COOLING TOWER(S)/AIR-COOLED CONDENSER(S), HEAT EXCHANGERS, PUMPS), AIR SEPARATORS, EXPANSION TANKS, CHEMICAL POT FEEDERS, AND CONTROL VALVES.
 - HEATING SYSTEM INCLUDING, BUT NOT LIMITED TO, BOILER(S), HEAT EXCHANGERS, PUMPS), CONDENSATE PUMPS, UNIT HEATERS, CONNECTORS, FIN TUBE, TERMINAL HEATING COILS, STEAM REDUCING STATIONS, AIR SEPARATORS, EXPANSION TANKS, CHEMICAL POT FEEDERS, AND CONTROL VALVES.
 - INSTALLATION OF ALL REFRIGERANT SYSTEMS INCLUDING, BUT NOT LIMITED TO, PIPING, PIPING SPECIALTIES, REFRIGERANT MONITOR(S), SELF CONTAINED BREATHING APPARATUS, REFRIGERANT PUMP OUT UNIT, AND STORAGE VESSELS.
 - CHARGING AND LEAK TESTING OF ALL FIELD PIPED REFRIGERANT SYSTEMS.
 - CLEANING AND PRESSURE TESTING OF ALL EQUIPMENT, PIPING, AND ACCESSORIES IN ACCORDANCE WITH MANUFACTURERS REQUIREMENTS AS WELL AS INDUSTRY STANDARDS/PRACTICES.
 - MECHANICAL CONTRACTOR (M.C.) SHALL COORDINATE WITH THE PLUMBING CONTRACTOR (P.C.) REGARDING EQUIPMENT SUPPLIED BY M.C. TO BE INSTALLED BY THE P.C.
 - CONTRACTOR SHALL COORDINATE HIS WORK WITH THE WORK OF OTHER TRADES, AND WITH THE ARCHITECTURAL AND STRUCTURAL DRAWINGS.
- MECHANICAL CONTRACTOR (M.C.) SHALL BE RESPONSIBLE FOR PERFORMING A FIELD REVIEW OF ALL EXISTING CONDITIONS IN COORDINATION WITH ALL DEMOLITION AND NEW WORK IDENTIFIED WITHIN THE CONTRACT DOCUMENTS PRIOR TO THE COMMENCEMENT OF ANY WORK. M.C. SHALL BE RESPONSIBLE FOR VERIFYING ALL EXISTING CONDITIONS INCLUDING BUT NOT LIMITED TO: DUCTWORK LOCATIONS AND SIZES, PIPE SIZES, ELEVATIONS, LENGTHS, LOCATION, EXISTING STRUCTURAL CONDITIONS, ETC. M.C. SHALL ALSO IDENTIFY FINAL ROUTING OF ALL PIPING IN COORDINATION WITH ALL OTHER SYSTEMS PRESENT WITHIN SCOPE OF WORK AREAS.)
- M.C. SHALL BE RESPONSIBLE FOR COORDINATING WITH THE OWNER ON REMOVAL OF ALL DEMOLISHED EQUIPMENT. CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND DISPOSAL OF ALL DEMOLISHED EQUIPMENT FROM THE SITE IN ACCORDANCE WITH SAFE DISPOSAL REQUIREMENTS. THE BUILDING OWNER HAS THE FIRST RIGHT-OF-REFUSAL ON ALL EQUIPMENT REMOVED FROM THE SPACE. M.C. SHALL COORDINATE WITH OWNER OR OWNERS REPRESENTATIVE PRIOR TO THE DISPOSAL OF ANY EQUIPMENT.
- ALL PENETRATIONS THROUGH FIRE/SMOKE RATED ASSEMBLIES SHALL BE SEALED AND PROTECTED IN ACCORDANCE WITH ALL NATIONAL, STATE, AND MUNICIPAL ADOPTED CODES INCLUDING AMENDMENTS. CONTRACTOR SHALL REFER TO ARCHITECTURAL DRAWINGS FOR ASSEMBLY LOCATIONS AND RATINGS. FIRE/SMOKE RATED ASSEMBLIES INCLUDE, BUT NOT LIMITED TO STAIRWAYS, SHAFTS, CORRIDORS, FLOORS, ROOFS, AND REQUIRED EXITS. CONTRACTOR SHALL INSTALL PER MANUFACTURER'S UL LISTED INSTALLATION INSTRUCTIONS.
- A FULL TEST AND BALANCE OF THE COMPLETE MECHANICAL SYSTEMS (AIRSIDE, REFRIGERANT, ETC.) SHALL BE REQUIRED FOLLOWING THE COMPLETION OF ALL WORK OUTLINED WITHIN THE CONTRACT DOCUMENTS. THE TEST AND BALANCE CONTRACTOR SHALL BE A THIRD PARTY AND SHALL BE NEBB AND/OR TAB CERTIFIED. A COMPLETE TEST AND BALANCE REPORT SHALL BE SUBMITTED TO OWNER AND ENGINEER FOR REVIEW AND APPROVAL. ENGINEER SHALL PROVIDE FINAL APPROVAL OF THE TEST AND BALANCE WORK.
- M.C. SHALL REFER TO THE SCHEDULES ON THE MS SERIES SHEETS FOR ALL SPECIFIED HVAC PIPING, EQUIPMENT, AND ASSOCIATED COMPONENTS/MATERIALS.
- M.C. SHALL PROVIDE SEISMIC RESTRAINT FOR ALL EQUIPMENT AS REQUIRED BY CODE. M.C. SHALL DESIGN ALL SUPPORTS TO WITHSTAND SEISMIC LOADS AS SPECIFIED IN THE IBC. PROVIDE REQUIRED SHOP DRAWINGS TO BUILDING AUTHORITY PRIOR TO INSTALLATION.
- TEMPERATURE CONTROLS (T.C.)/WORK REQUIRED SHALL FALL UNDER THE PURVIEW OF THE MECHANICAL CONTRACTOR. ADDITIONAL INFORMATION FOR THE M.C. AND CONTROLS CONTRACTOR (C.C.):
 - TEMPERATURE SENSOR LOCATIONS: M.C./P.C. SHALL PROVIDE AND INSTALL 3/4" WELD-O-LET, AND INSTALL THERMOWELL PROVIDED BY C.C.
 - C.C. SHALL PROVIDE CONTROLS VALVES (CV), P.C. SHALL INSTALL.
- CONTROLS CONTRACTOR (C.C.) SHALL PROVIDE ALL VFD'S, M.C. SHALL COORDINATE WITH C.C. ON INSTALLATION.
- EXISTING EQUIPMENT AND PIPING LOCATIONS ARE BASED ON INFORMATION PROVIDED BY THE LANDLORD. CONTRACTOR SHALL FIELD VERIFY EXACT LOCATION AND SIZE OF ALL EXISTING EQUIPMENT, PIPING AND STRUCTURE. M.C. AND/OR P.C. SHALL NOTIFY TENANTS CONSTRUCTION COORDINATOR IN CASE OF DIFFERENCES CREATING CONFLICT.

MECHANICAL CALLOUTS
NOTE: ALL SYMBOLS AND ABBREVIATIONS MAY NOT BE USED.

SYMBOL	ABBREVIATION
(X-R)	EQUIPMENT DESIGNATION TYPE NUMBER
(XX)	AIR DEVICE DESIGNATION TYPE CFM
(SEC-SHT)	SECTION DESIGNATION SECTION REFERENCE SHEET NUMBER
(SEC-SHT)	ENLARGED PLAN CALL OUT
(E)	CONNECT TO EXISTING EQUIPMENT
(D)	POINT OF DEMOLITION
(R)	KEYED NOTE DESIGNATION
(DELTA)	REVISION DELTA
(RD)	ROUND DUCT WORK
(OD)	OVVAL DUCT WORK
(T/XX", B/XXX")	DUCT ELEVATION TAG
(T)	THERMOSTAT
(EQ)	EQUIPMENT-NUMBER
(TH)	THERMOSTAT AND HUMIDISTAT
(TH)	EQUIPMENT-NUMBER
(TS)	TEMPERATURE SENSOR
(HS)	HUMIDITY SENSOR
(THS)	TEMPERATURE AND HUMIDITY SENSOR
(PS)	PRESSURE SENSOR
(CO)	CO SENSOR

MECHANICAL PIPE FITTING SYMBOLS
NOTE: ALL SYMBOLS AND ABBREVIATIONS MAY NOT BE USED.

SYMBOL	ABBREVIATION	EXPLANATION
UP	UP	PIPE, TURNED UP
DN	DN	PIPE, TURNED DOWN
TDN	TDN	PIPE, TEE DOWN
SV	SV	SERVICE VALVE
BV	BV	BALANCE VALVE
CV	CV	2 WAY CONTROL VALVE
3CV	3CV	3 WAY CONTROL VALVE
CHV	CHV	CHECK VALVE
DV	DV	DRAIN VALVE
F	F	FLANGE CONNECTION
GA	GA	GAUGE
GC	GC	GAUGE COCK
MC	MC	MECHANICAL COUPLING
P	P	PETE'S PLUG
PFC	PFC	PIPE FLEXIBLE CONNECTOR
PR	PR	PRESSURE REGULATOR
PRV	PRV	PRESSURE REDUCING VALVE
RV	RV	RELIEF VALVE
STR	STR	STRAINER
TH	TH	THERMOMETER
TW	TW	THERMOMETER WELL
U	U	UNION
METER	METER	METER
CAP	CAP	CONCENTRIC REDUCER
ECENTRIC REDUCER (BOTTOM & TOP LEVEL)	ECENTRIC REDUCER (BOTTOM & TOP LEVEL)	ECENTRIC REDUCER (BOTTOM & TOP LEVEL)
PA	PA	PIPE ANCHOR
PG	PG	PIPE GUIDE
MAV	MAV	MANUAL AIR VENT
AAV	AAV	AUTOMATIC AIR VENT

MECHANICAL PIPE SYMBOLS
NOTE: ALL SYMBOLS AND ABBREVIATIONS MAY NOT BE USED.

SYMBOL	EXPLANATION
CD	CONDENSATE DRAIN
PC	PUMPED CONDENSATE
CHS	CHILLED WATER SUPPLY
CHR	CHILLED WATER RETURN
HWS	HEATING WATER SUPPLY
HWR	HEATING WATER RETURN

MECHANICAL ABBREVIATIONS INDEX
NOTE: ALL ABBREVIATIONS MAY NOT BE USED.

AD	ACCESS DOOR
A.F.F.	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AP	ACCESS PANEL
APRX	APPROXIMATE
AV	AIR VENT
AWG	AMERICAN WIRE GAUGE
BAP	BUILDING ACCESS PANEL
BOS	BOTTOM OF STEEL
BT	BOTTOM
BY	BALANCE VALVE
CD	CONDENSATE DRAIN
CDB	CONDENSATE DRAIN BOX
CFM	CUBIC FEET PER MINUTE
CHV	CHECK VALVE
CL	CENTER LINE
COM	COMMON
CWS	CONDENSER WATER SUPPLY
CWR	CONDENSER WATER RETURN
CHW	CHILLED WATER SUPPLY
CHS	CHILLED WATER SUPPLY
CHR	CHILLED WATER RETURN
CWL	CHILLED WATER LOOP
CT	COOLING TOWER
CU	CONDENSING UNIT
D	DAMPER
DCU	DUST COLLECTION UNIT
DISCH	DISCHARGE
DN	DOWN
DP	DIFFERENTIAL PRESSURE
DR	DRAIN LINE
DV	DRAIN VALVE
EA	EXHAUST AIR
EF	EXHAUST FAN
EMT	ELECTRICAL METALLIC TUBING
ET	EXPANSION TANK
EQ	EQUAL / EQUALS
EQ APPRX	EQUAL APPROXIMATE
EX	EXISTING
EXH	EXHAUST
F	FLANGE CONNECTION
FC	FLEXIBLE CONNECTION
FCU	FAN COIL UNIT
FOS	FUEL OIL SUPPLY
FOR	FUEL OIL RETURN
FPT	FAN POWERED TERMINAL UNIT
FRD	FIRE RATED DAMPER
FT	FIBER RADIATION
G	GAUGE
GA	GAUGE
GC	GAUGE COCK
GYS	GLYCOL SUPPLY WATER
GWR	GLYCOL RETURN WATER
HVAC	HEATING, VENTILATION, AND AIR CONDITIONING
H	HUMIDIFIER
HWS	HEATING WATER SUPPLY
HWR	HEATING WATER RETURN
HX	HEAT EXCHANGER
LBS	POUNDS
MA	MAKE-UP AIR
MC	MECHANICAL COUPLING
MDU	MOTOR DRIVE UNIT
MXA	MIXED AIR
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NP	NON-POTABLE COLD WATER
NTS	NOT TO SCALE
OA	OUTSIDE AIR
P	PETE'S PLUG
PC	PUMPED CONDENSATE
PD	PUMPED DISCHARGE
PR	PRESSURE REGULATOR
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
PWS	POOL WATER SUPPLY
PWR	POOL WATER RETURN
RA	RETURN AIR
RF	RETURN FAN
RLA	RELIEF AIR
RF	RELIEF FAN
RTU	ROOF TOP UNIT
RV	RELIEF VALVE
SA	SUPPLY AIR
SD	SMOKE DAMPER
SF	SUPPLY FAN
STR	STRAINER
SUC	SUCTION
SUD	SUCTION DIFFUSER
SV	SERVICE VALVE
TH	THERMOMETER
TRA	TRANSFER AIR
TW	THERMOMETER WELL
TYP	TYPICAL
U	UNION
UH	UNIT HEATER
CUH	CABINET UNIT HEATER
U.N.O.	UNLESS NOTED OTHERWISE
U.O.N.	UNLESS OTHERWISE NOTED
UV	UNIT VENTILATOR
VAC	VACUUM

DESIGN CONTACTS

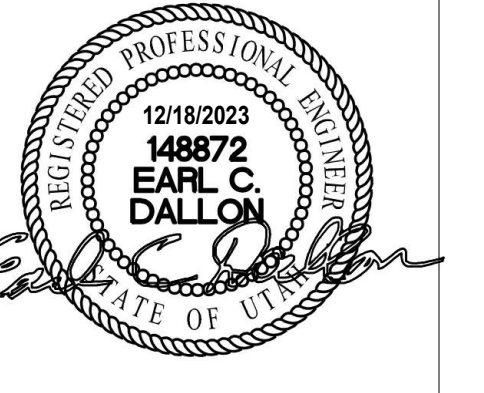
MECHANICAL DESIGNER: JEREMY CARTER
MECHANICAL ENGINEER: BILLY LEWIS

MECHANICAL SHEET LIST

- MP0.1 MECHANICAL PIPING NOTES, SYMBOLS & ABBREVIATIONS
- MP1.1 MECHANICAL PIPING FLOOR PLANS - DEMO
- MP2.1 MECHANICAL PIPING FLOOR PLANS
- MP3.1 MECHANICAL PIPING ISOMETRIC VIEWS
- MP4.1 MECHANICAL PIPING SCHEMATIC
- MP5.1 MECHANICAL SCHEDULES & DETAILS

MECHANICAL DUCT SYMBOLS
NOTE: ALL SYMBOLS AND ABBREVIATIONS MAY NOT BE USED.

SYMBOL	EXPLANATION
(D)	ACCESS DOOR/PANEL
(D)	BACK DRAFT DAMPER
(BDD)	MANUAL BALANCE DAMPER
(FRD)	MOTORIZED DAMPER
(FRD)	FIRE RATED DAMPER
(FRD)	FIRE SMOKE DAMPER
(D)	DIRECTION OF FLOW
(D)	DROP IN DIRECTION OF ARROW
(D)	DUCT 45° TAKE-OFF CONNECTION WITH DAMPER
(D)	INTERNALLY INSULATED DUCT WORK, (EXTERIOR DIMENSION)
(D)	RECTANGULAR SHEET METAL DUCT, (EXTERIOR DIMENSION)
(D)	K-27 DOUBLE WALL ROUND DUCT WORK, (EXTERIOR DIMENSION)
(D)	FLEXIBLE DUCT WORK
(D)	TURNING VANES (RECTANGULAR)
(D)	TURNING VANES (RECTANGULAR), SMOOTH RADIUS
(D)	SUPPLY AIR DUCT, DOWN
(D)	SUPPLY AIR DUCT, UP
(D)	SUPPLY AIR DUCT, ROUND, DOWN
(D)	SUPPLY AIR DUCT, ROUND, UP
(D)	RETURN AIR DUCT, DOWN
(D)	RETURN AIR DUCT, UP
(D)	RETURN AIR DUCT, ROUND, DOWN
(D)	RETURN AIR DUCT, ROUND, UP
(D)	EXHAUST AIR DUCT, DOWN
(D)	EXHAUST AIR DUCT, UP
(D)	EXHAUST AIR DUCT, ROUND, DOWN
(D)	EXHAUST AIR DUCT, ROUND, UP
(D)	DEMO DUCTWORK
(D)	EXISTING DUCTWORK
(D)	SQUARE SUPPLY DIFFUSER ROUND CONNECTION
(D)	SQUARE RETURN GRILLE ROUND CONNECTION
(D)	SQUARE EXHAUST GRILLE ROUND CONNECTION
(D)	PLENUM RETURN WITH SOUND BOOT
(D)	PLENUM RETURN
(D)	SQUARE SUPPLY DIFFUSER SQUARE CONNECTION
(D)	SQUARE RETURN GRILLE SQUARE CONNECTION
(D)	SQUARE EXHAUST GRILLE SQUARE CONNECTION
(D)	ROUND DIFFUSER
(D)	LINEAR SLOT DIFFUSER
(D)	LOUVER GRILLE
(D)	DUCT MOUNTED DIFFUSER (SEE PLANS FOR DIFFUSER INSTALLATION ANGLE.)



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SHEET NO.

MP0.1

GENERAL NOTES (SHEET MP1.1)

1. REFER TO ALL NOTES ON SHEET MP0.1 AND ALL SCHEDULES & DETAILS WITHIN MP0.1 SERIES SHEETS.

KEYED NOTES (SHEET M1.1)

- 1 DEMOLISH EXISTING STEAM HEAT EXCHANGER AND ASSOCIATED PIPING.
- 2 DEMOLISH EXISTING STEAM AND CONDENSATE PIPING.
- 3 DEMOLISH EXISTING STEAM CONDENSATE RECEIVER PUMP AND ASSOCIATED PIPING.
- 4 DEMOLISH EXISTING HEATING WATER BUILDING LOOP PUMPS AND TRIPLE DUTY VALVES AND ASSOCIATED PIPING. PREPARE PIPING FOR FUTURE CONNECTION TO NEW HEATING WATER RETURN PUMPS.
- 5 DEMOLISH EXISTING CHILLED WATER RETURN PUMP INCLUDING TRIPLE DUTY VALVE AND ASSOCIATED PIPING. PREPARE REMAINING PIPE TO CONNECT TO NEW CHILLED WATER RETURN PUMPS.
- 6 DEMOLISH AND REMOVE EXISTING ROOF TOP CHILLER EXISTING SUPPORT STRUCTURE TO REMAIN.
- 7 DEMOLISH AND REMOVE CHILLER PIPING FROM CHILLER TO CHILLER ISOLATION VALVE. NOT INCLUDING VALVE.
- 8 STORAGE TANK SHALL BE RELOCATED AND REUSED.
- 9 EXISTING BOILER TO REMAIN AND CONVERTED FROM STEAM TO HOT WATER.
- 10 DEMO AS...
- 11 REMOVE ALL CONDENSER OVERFLOW PIPING FROM THIS LOCATION TO POINT OF DISCHARGE.



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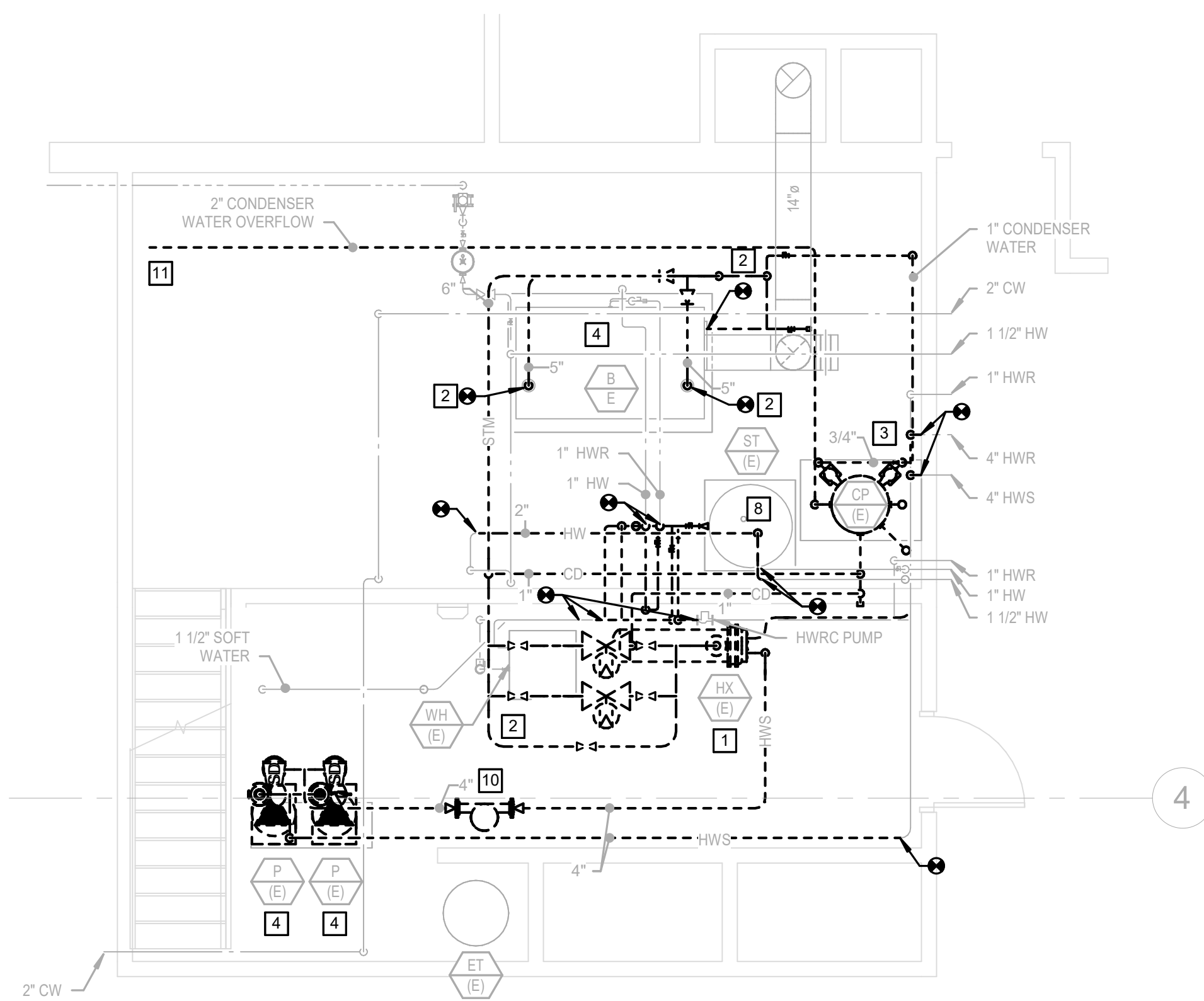
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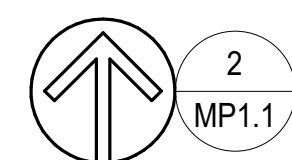
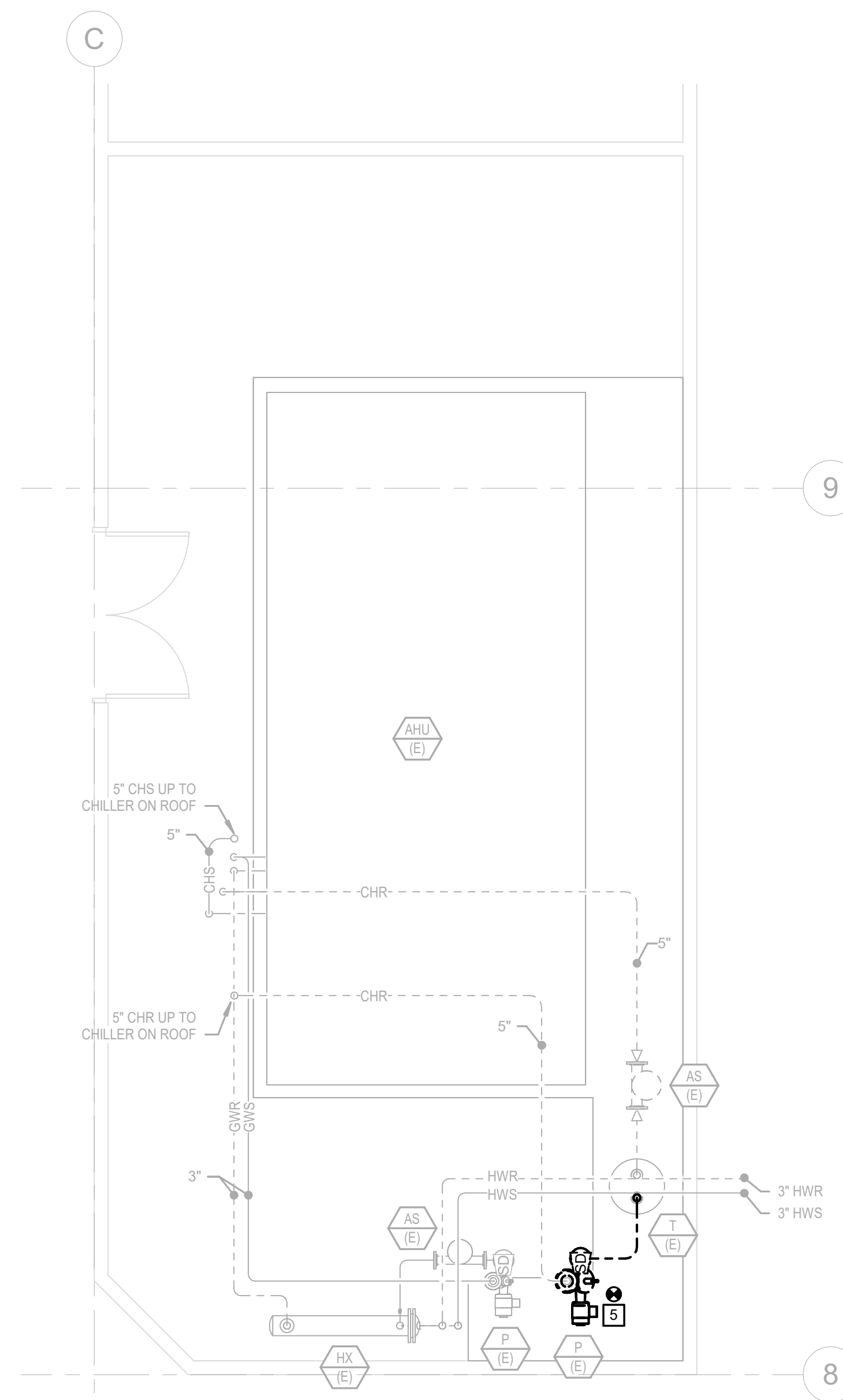
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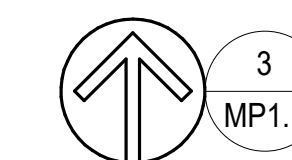
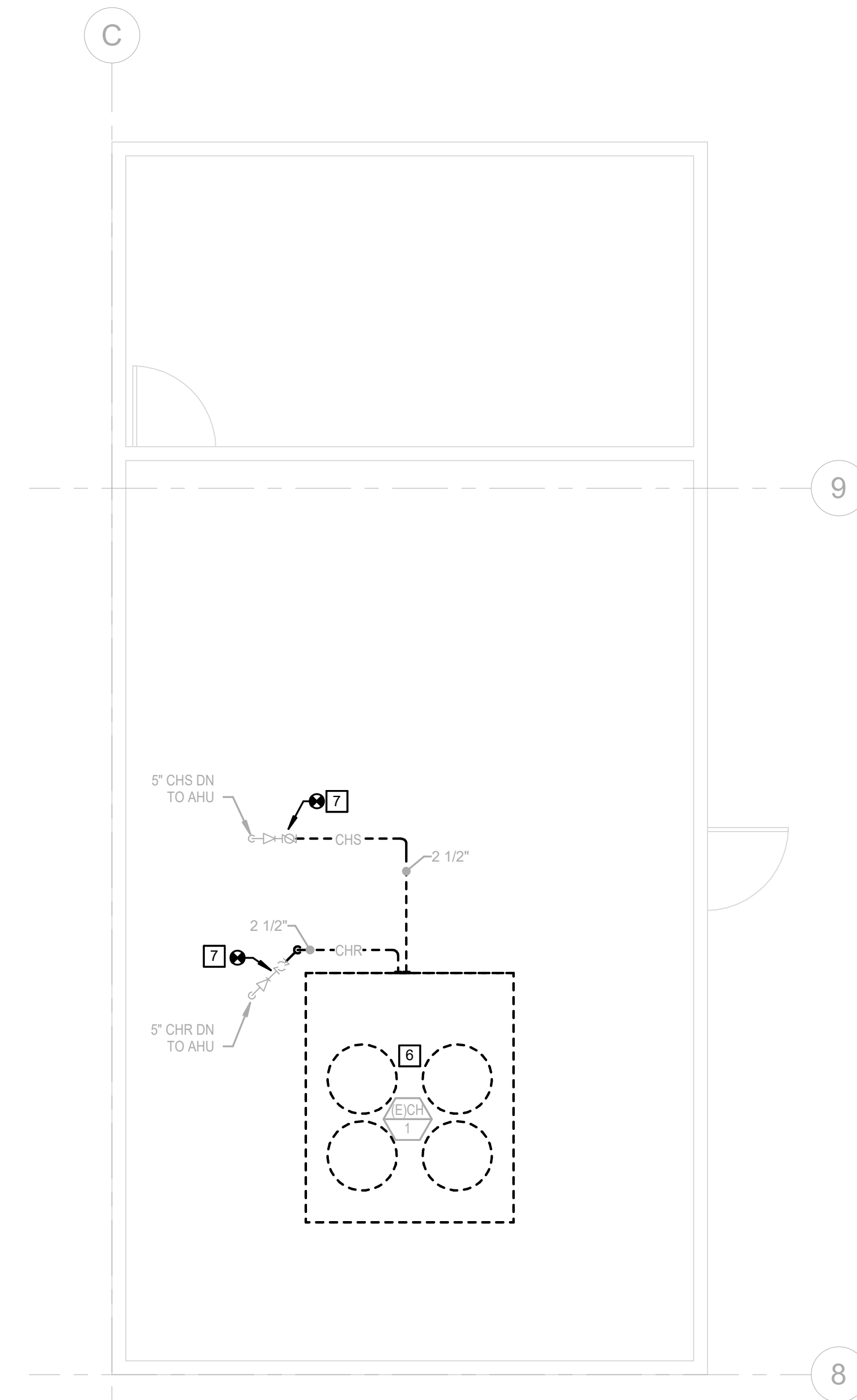
MP1.1



1 MAIN LEVEL MECHANICAL FLOOR PLAN - BOILER ROOM - DEMO
SCALE: 1/4" = 1'-0"



2 MAIN LEVEL MECH FLOOR PLAN - AHU ROOM - DEMO
SCALE: 1/4" = 1'-0"



3 MECHANICAL ROOF PLAN - DEMO
SCALE: 1/4" = 1'-0"

GENERAL NOTES (SHEET MP1.2)

1. REFER TO ALL NOTES ON SHEET MP0.1 AND ALL SCHEDULES & DETAILS WITHIN MP5 SERIES SHEETS.

KEYED NOTES (SHEET M2.1)

- 1 CONVERT STEAM BOILER TO HOT WATER BOILER. CONVERSION KIT REQUIRED.
- 2 CONNECT NEW HEATING WATER RETURN PIPE TO CONVERTED STEAM BOILER AND NEW ADDITIONAL SHOULDER SEASON BOILER.
- 3 CONNECT NEW HEATING WATER SUPPLY PIPE TO CONVERTED HOT WATER BOILER.
- 4 CONNECT NEW HEATING WATER SUPPLY PIPE TO EXISTING HOT WATER SUPPLY LINE.
- 5 ADD NEW CONVERTED BOILER HEATING WATER RECIRCULATOR PUMP. CHECK VALVE ON DISCHARGE SIDE OF PUMP, AND ASSOCIATED PIPING AS REQUIRED.
- 6 LOCATE NEW CONVERTED BOILER HEATING WATER RECIRCULATOR PUMP VFD APPROXIMATELY AT THIS LOCATION UNDER STAIRS.
- 7 ADD NEW SECONDARY BOILER HEATING WATER RECIRCULATOR PUMP. CHECK VALVE ON DISCHARGE SIDE OF PUMP, HOUSEKEEPING PAD, AND ASSOCIATED PIPING AS REQUIRED.
- 8 LOCATE NEW SECONDARY BOILER HEATING WATER RECIRCULATOR PUMP VFD APPROXIMATELY AT THIS LOCATION.
- 9 ADD NEW HEATING WATER PRIMARY PUMP. CHECK VALVE ON DISCHARGE SIDE OF PUMP, AND ASSOCIATED PIPING AS REQUIRED.
- 10 LOCATE NEW HEATING WATER PRIMARY PUMP VFD APPROXIMATELY AT THIS LOCATION.
- 11 ADD NEW CHILLED RETURN WATER PUMP. CHECK VALVE ON DISCHARGE SIDE OF PUMP, AND ASSOCIATED PIPING AS REQUIRED.
- 12 LOCATE NEW CHILLED RETURN WATER PUMP VFD APPROXIMATELY AT THIS LOCATION.
- 13 INSTALL NEW CHILLER ON EXISTING SUPPORT STRUCTURE. PROVIDE ADDITIONAL MEMBERS AS REQUIRED. CONNECT NEW PIPING TO EXISTING 2-1/2" ISOLATION VALVES. LOCATE NEW MANUAL AIR VENT AT HIGH POINT OF CHILLED WATER RETURN.



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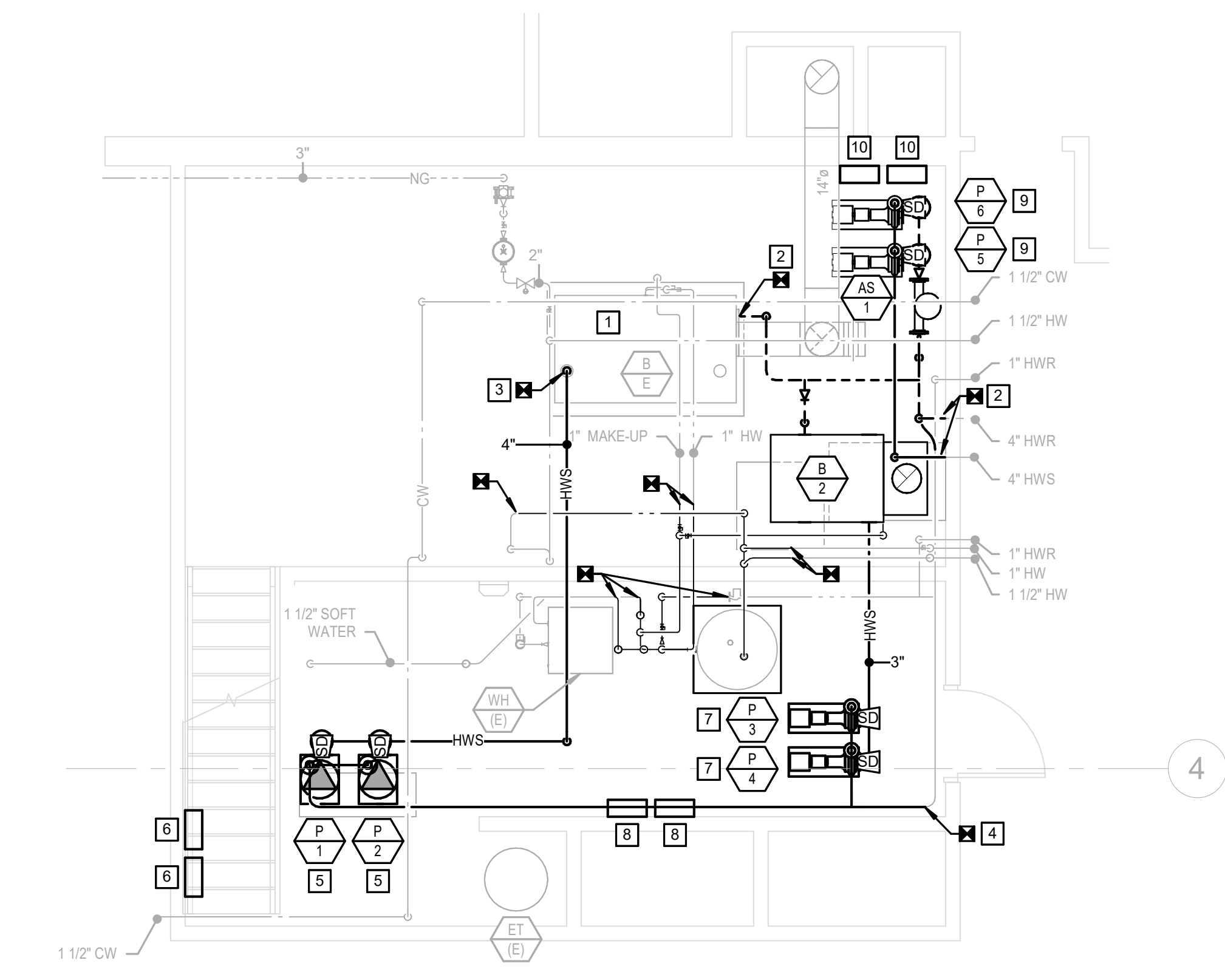
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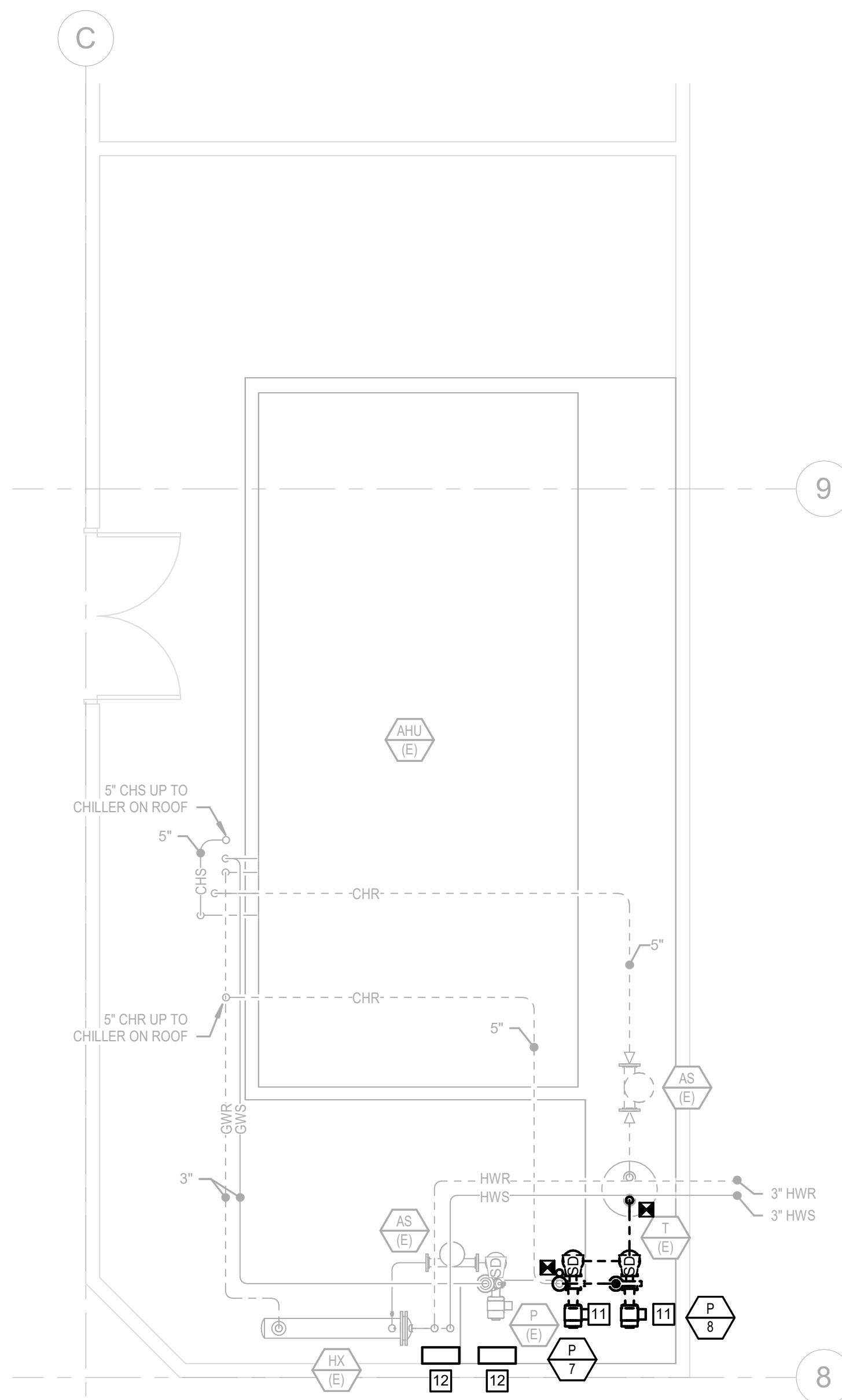
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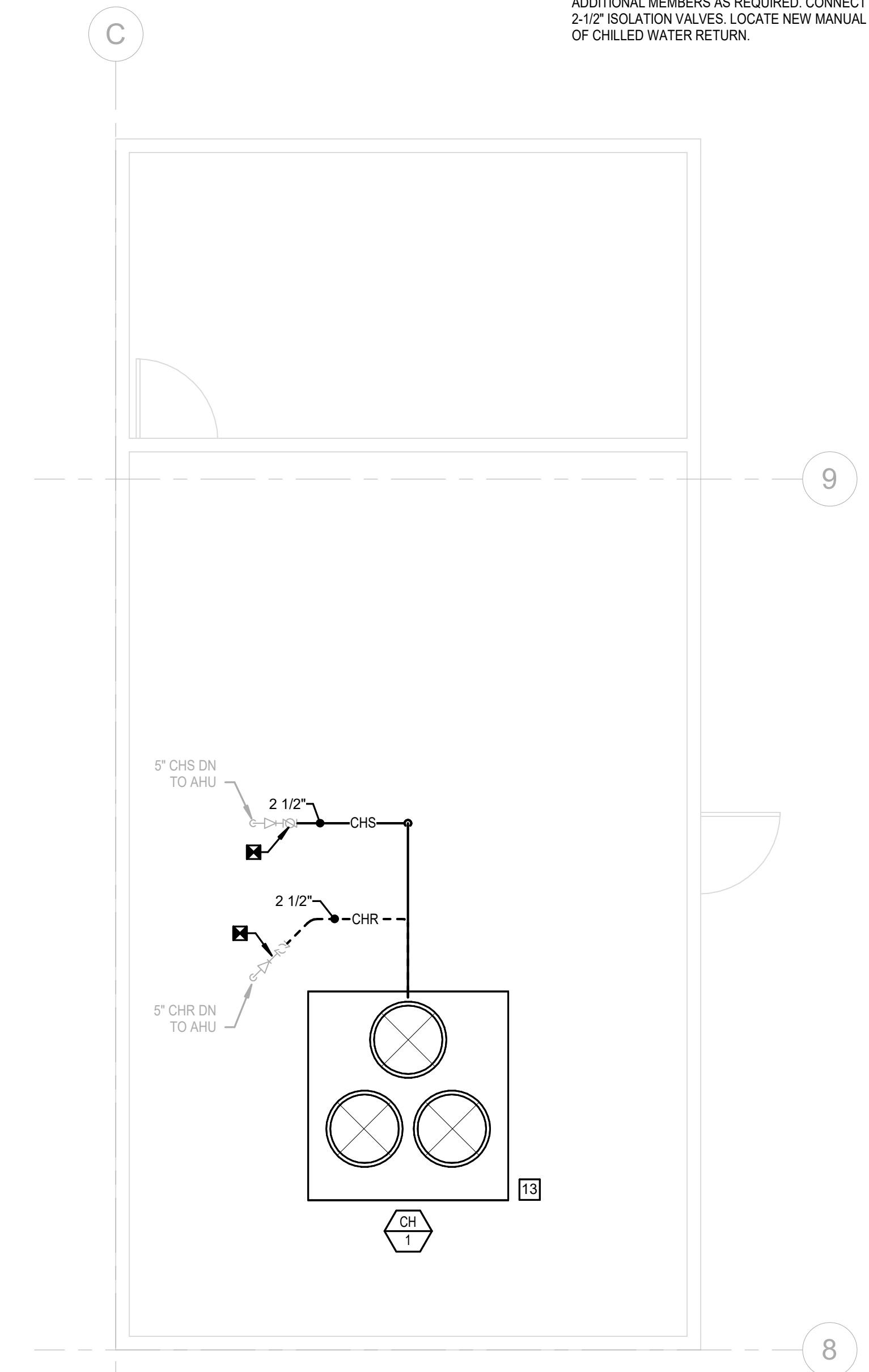
MP2.1



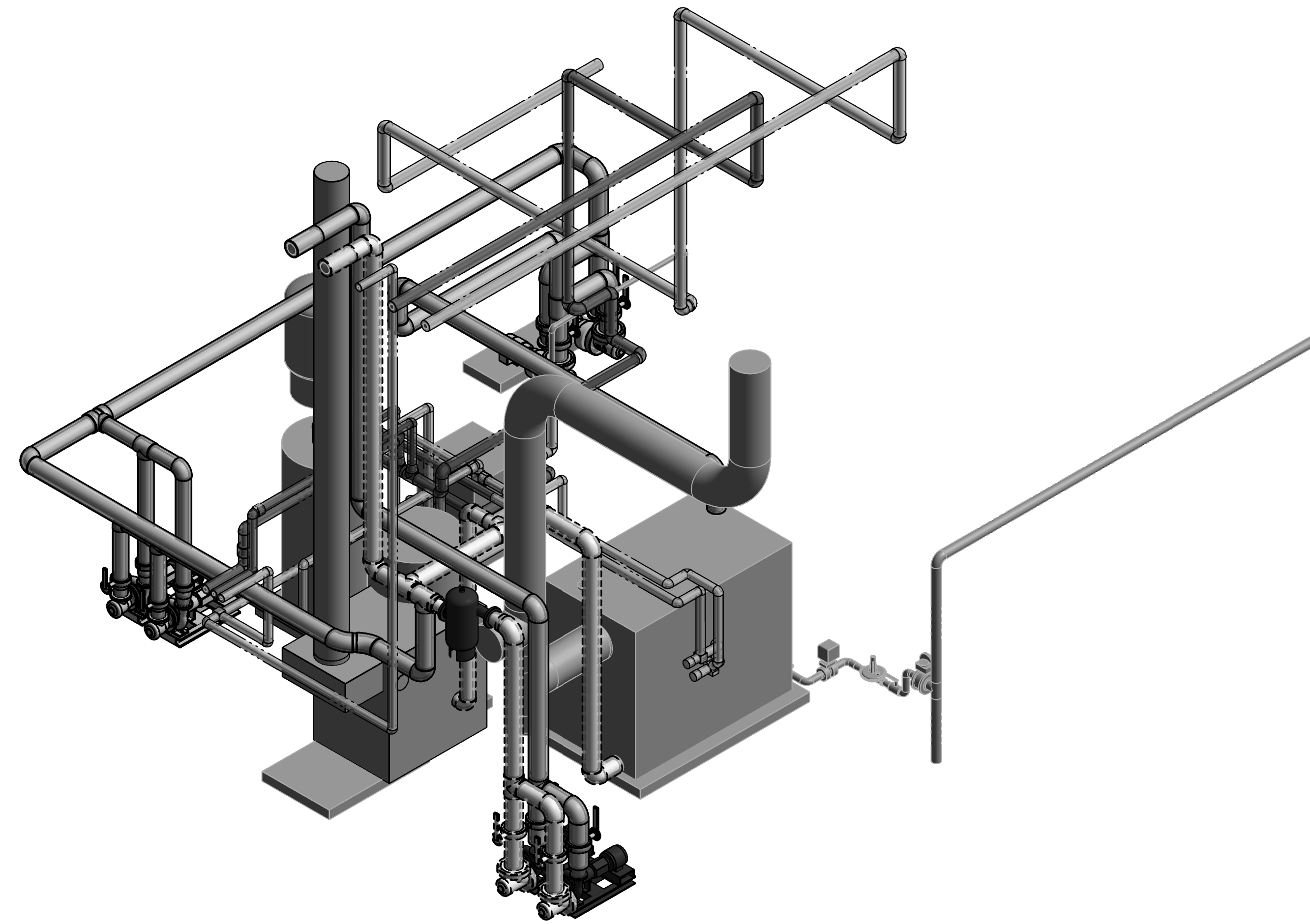
2 MAIN LEVEL MECH FLOOR PLAN - BOILER ROOM
MP2.1 SCALE: 1/4" = 1'-0"



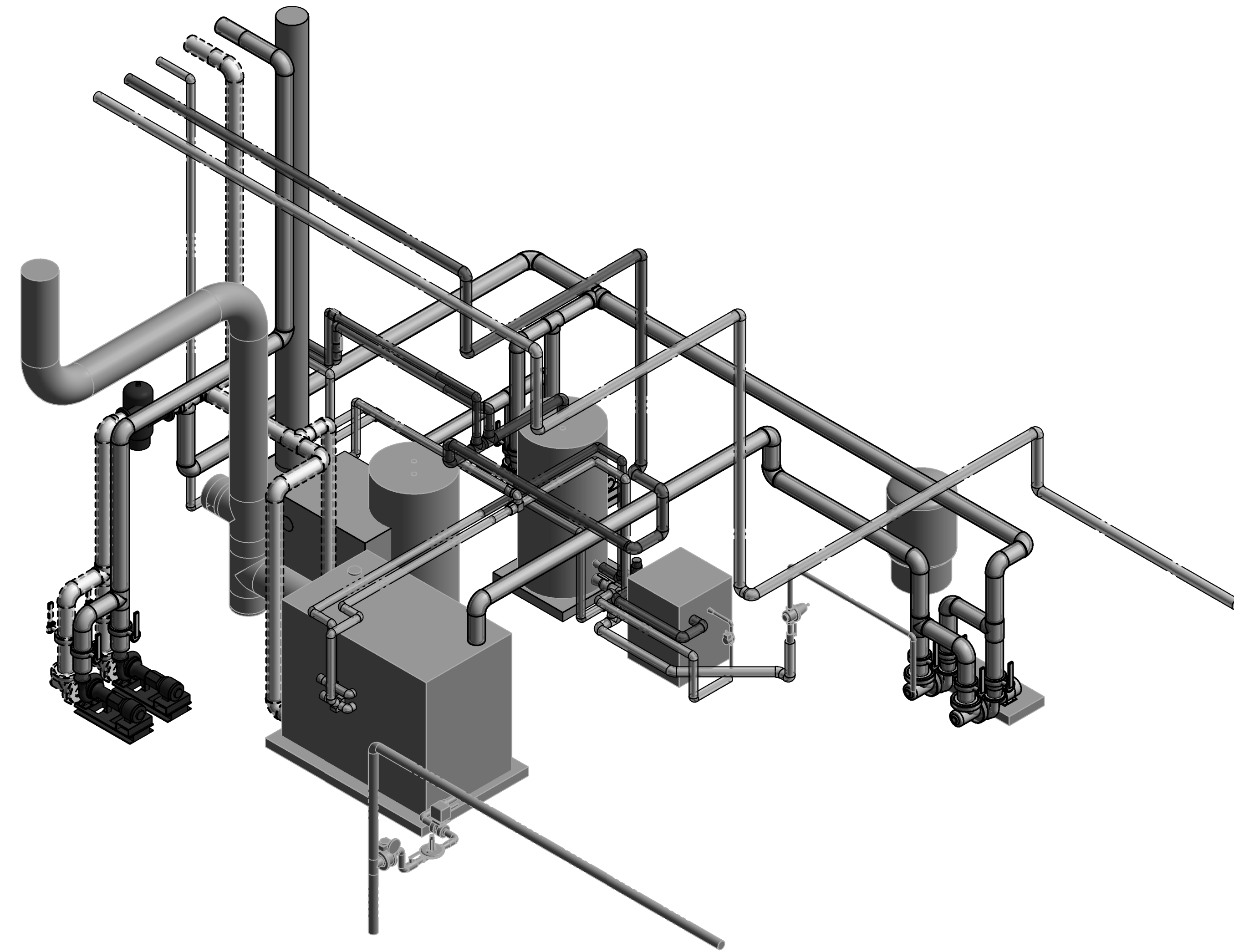
3 MAIN LEVEL MECH FLOOR PLAN - AHU ROOM
MP2.1 SCALE: 1/4" = 1'-0"



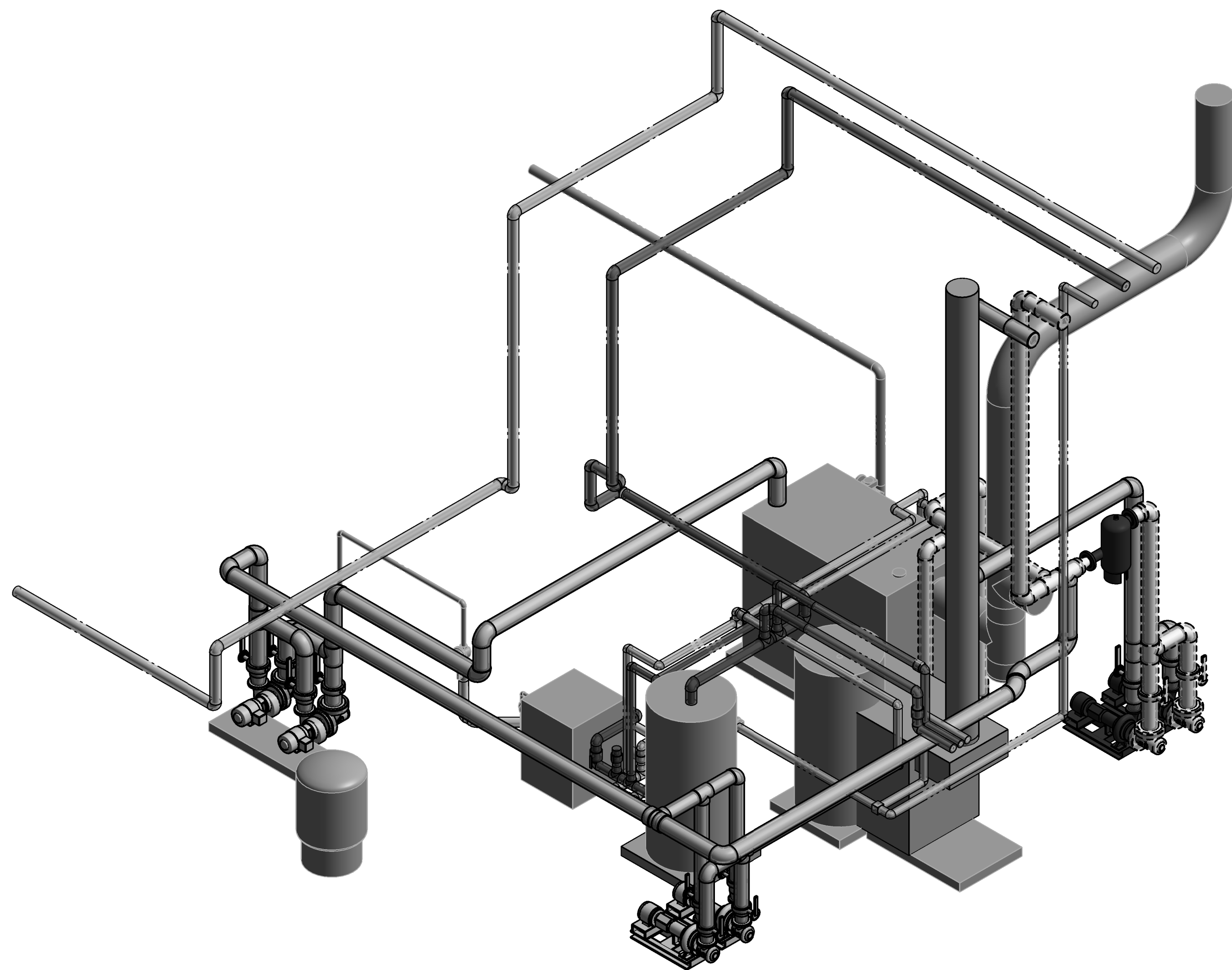
1 MECHANICAL AND PLUMBING ROOF PLAN
MP2.1 SCALE: 1/4" = 1'-0"



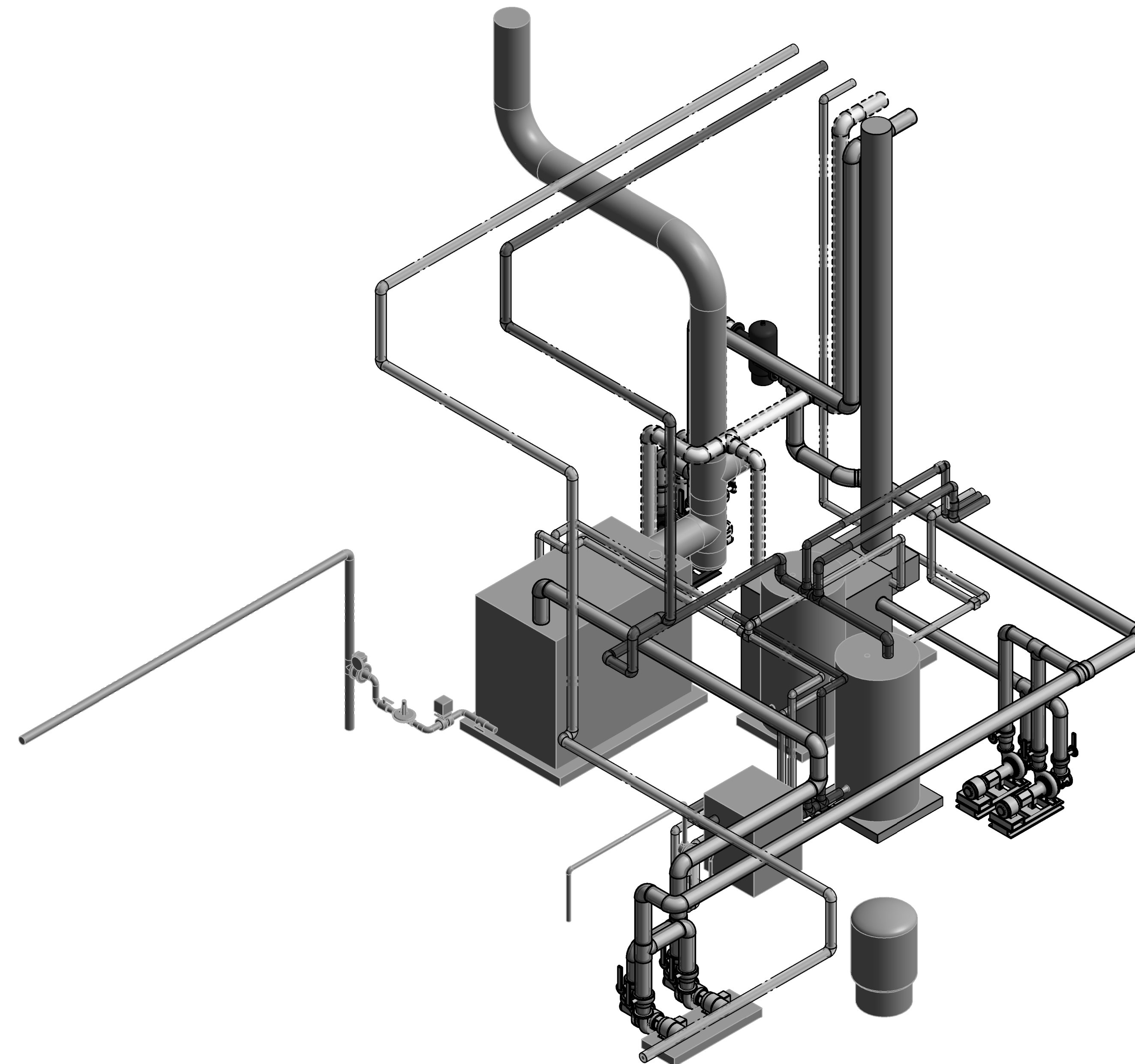
1 ISOMETRIC - NE
MP3.1 SCALE:



2 ISOMETRIC - NW
MP3.1 SCALE:



3 ISOMETRIC - SE
MP3.1 SCALE:



4 ISOMETRIC - SW
MP3.1 SCALE:



EARL C DALLON
LICENSE #148872

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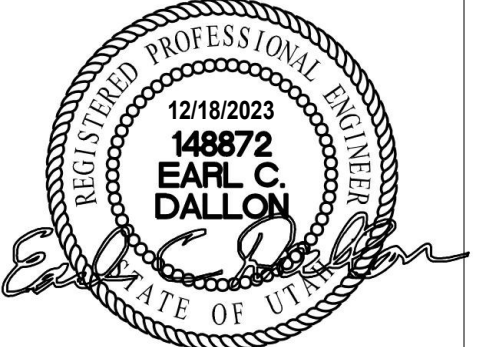
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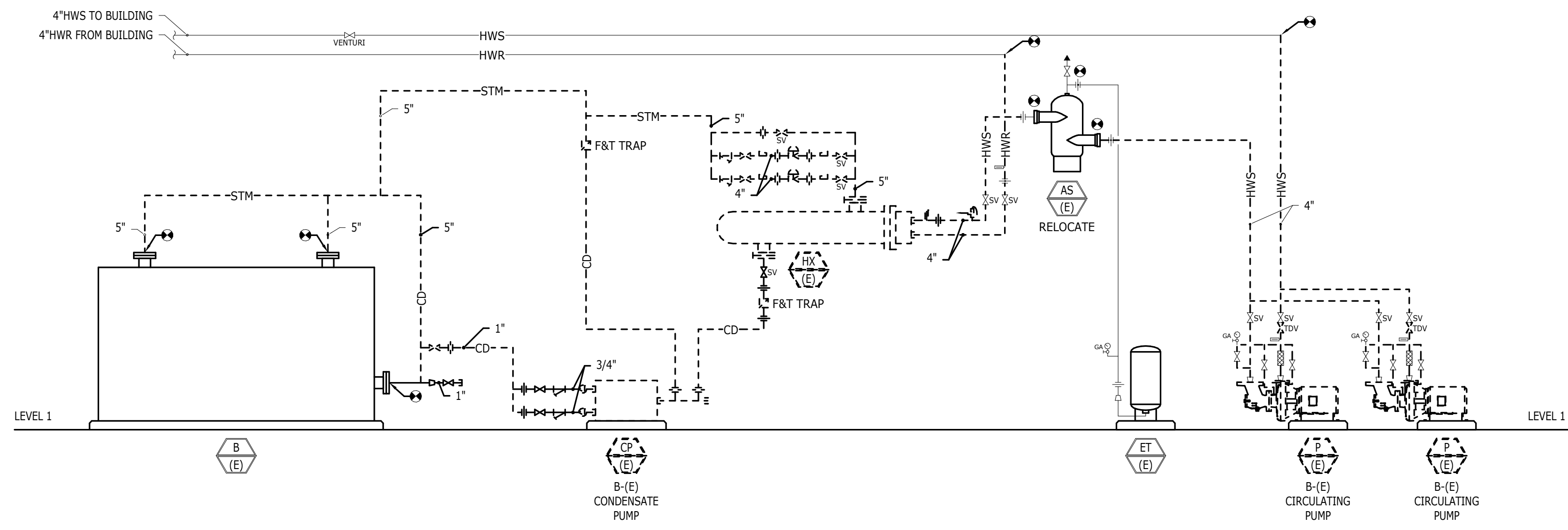
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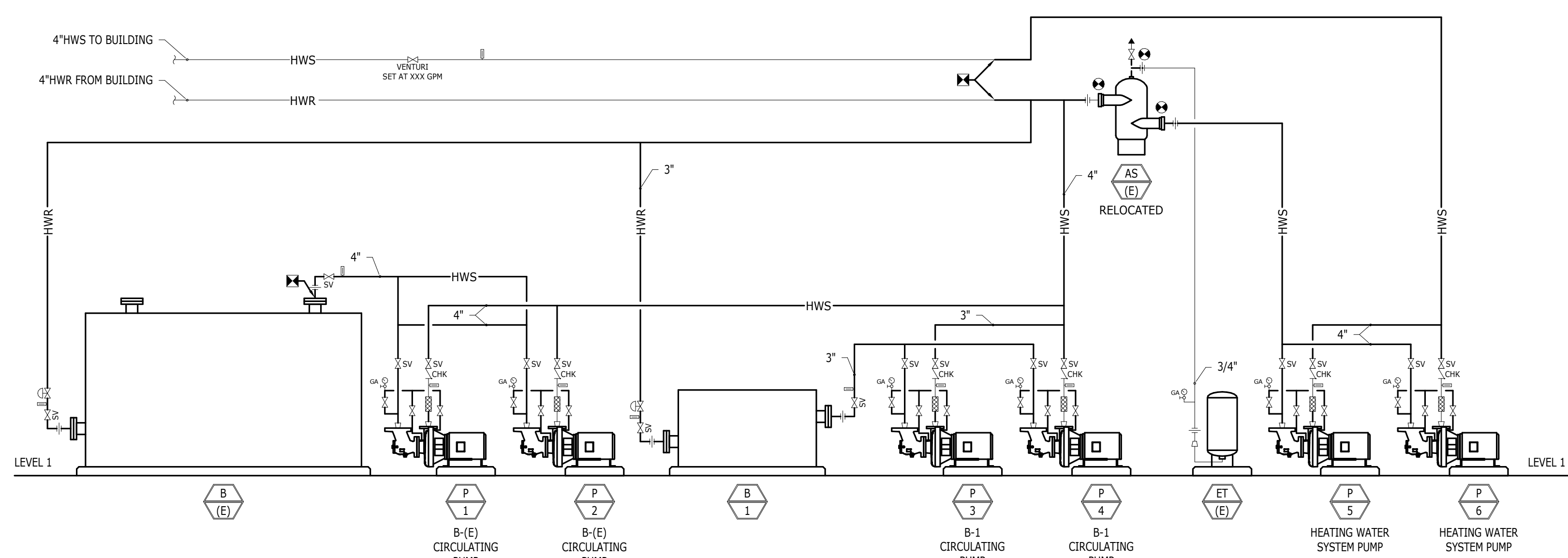
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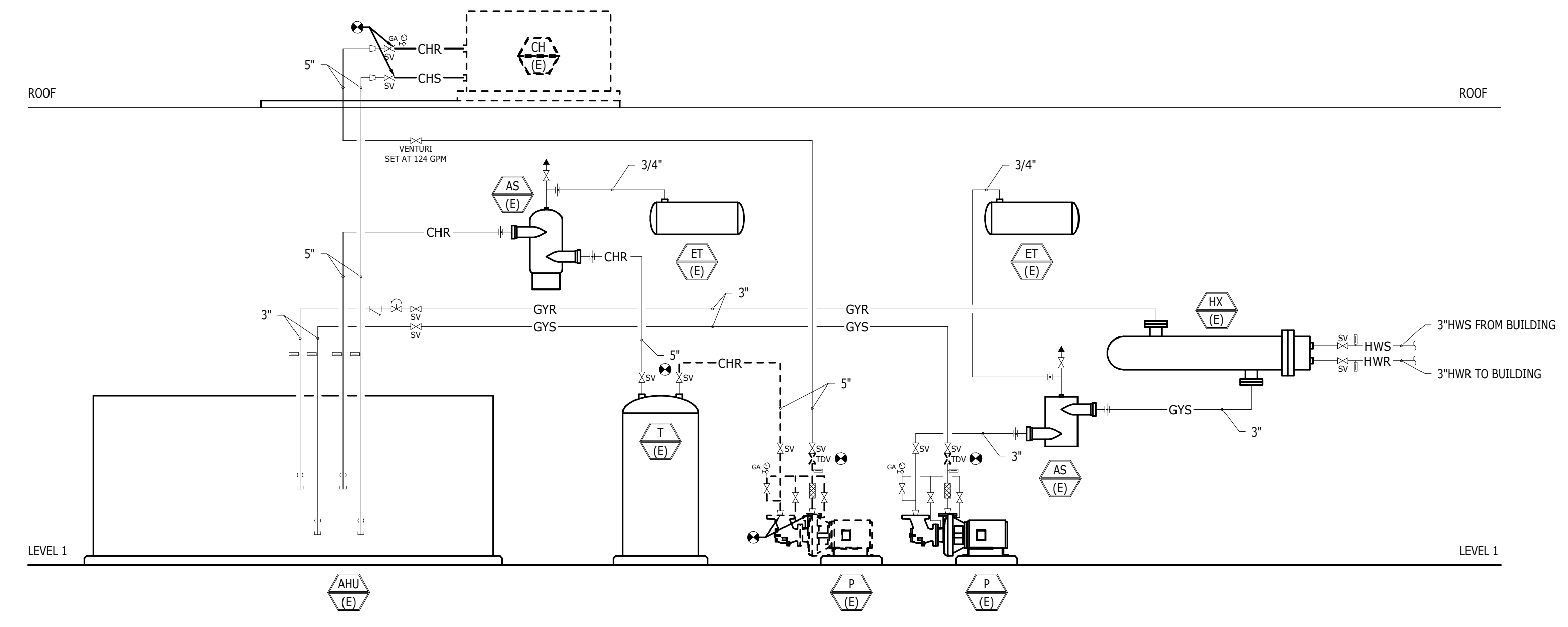
MP4.1



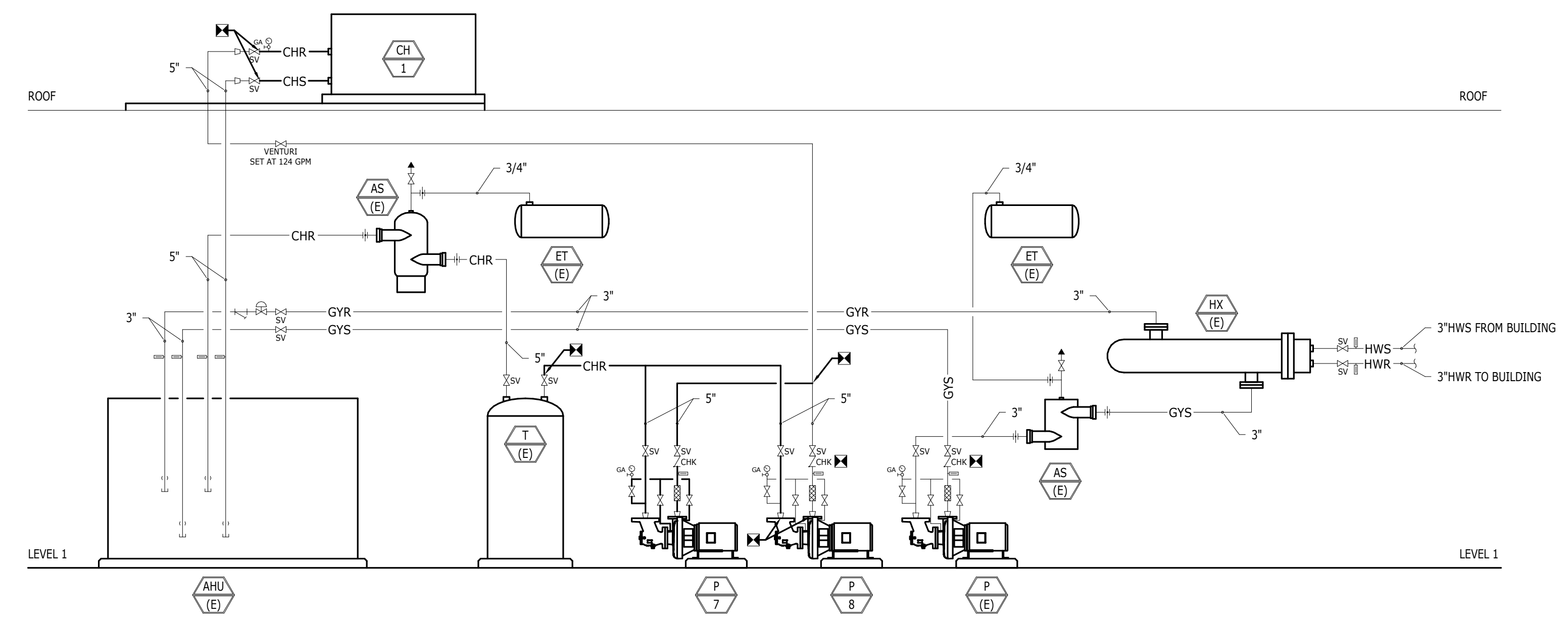
1 HEATING WATER SCHEMATIC DIAGRAM - DEMO
MP4.1 SCALE: NONE



1 HEATING WATER SCHEMATIC DIAGRAM
MP4.2 SCALE: NONE



2 CHILLER WATER SYSTEM SCHEMATIC DIAGRAM - DEMO
MP4.1 SCALE: NONE



2 CHILLER WATER SYSTEM SCHEMATIC DIAGRAM
MP4.2 SCALE: NONE

MECHANICAL PIPING SCHEDULE

SERVICE DESIG.	SERVICE	MATERIAL	LOCATION	INSULATION	FITTINGS	NOTES
CHS&R	CHILLED WATER	BLACK CARBON STEEL SCH 40	INTERIOR & EXTERIOR - ABOVE GRADE	FIBERGLASS (SEE NOTES)	WROUGHT COPPER - SOLDER ENDS OR GROOVED FOR B.C.	1
CW	DOMESTIC COLD WATER	COPPER TYPE "L" - HARD	INTERIOR - ABOVE GRADE	SEE NOTES	WROUGHT COPPER - SOLDER ENDS	2,9
SCW	DOMESTIC COLD WATER - SOFT	COPPER TYPE "L" - HARD	INTERIOR - ABOVE GRADE	SEE NOTES	WROUGHT COPPER - SOLDER ENDS	2,9
HW	DOMESTIC HOT WATER	COPPER TYPE "L" - HARD	INTERIOR - ABOVE GRADE	SEE NOTES	WROUGHT COPPER - SOLDER ENDS	3,9
HWR	DOMESTIC HOT WATER RECIRC	COPPER TYPE "L" - HARD	INTERIOR - ABOVE GRADE	SEE NOTES	WROUGHT COPPER - SOLDER ENDS	3,9
HWS&R	HEATING WATER	BLACK CARBON STEEL SCH 40	INTERIOR - ABOVE GRADE	FIBERGLASS (SEE NOTES)	WROUGHT COPPER - SOLDER ENDS OR GROOVED FOR B.C.	4,5,6
NG	GAS - NATURAL	BLACK CARBON STEEL SCH 40	INTERIOR - ABOVE GRADE	NONE	THREADED	8
MUW	MAKE-UP WATER	COPPER TYPE "L" - HARD	INTERIOR - ABOVE GRADE	SEE NOTES	WROUGHT COPPER - SOLDER ENDS	2,9
CD	CONDENSATE DRAIN	COPPER TYPE "L" - HARD	INTERIOR - ABOVE GRADE	NONE	WROUGHT COPPER - SOLDER ENDS	7

NOTES:
1. INSULATION SIZING PER 2018 IECC TABLE C403.11.3 (<40°F) - PIPE < 0.5" = 0.5" INSUL., PIPE 1" TO <8" = 1.0" INSUL.
2. INSULATION SIZING PER 2018 IECC TABLE C403.11.3 (40°F - 60°F) - PIPE < 1.5" = 0.5" INSUL., PIPE 1.5" TO <8" = 1.0" INSUL.
3. INSULATION SIZING PER 2018 IECC TABLE C403.11.3 (60°F - 140°F) - PIPE < 1.5" = 1" INSUL., PIPE 1.5" TO <8" = 1.5" INSUL.
4. INSULATION SIZING PER 2018 IECC TABLE C403.11.3 (141°F - 200°F) - PIPE < 1.5" = 1.5" INSUL., PIPE 1.5" TO <8" = 2" INSUL.
5. PRIOR APPROVED PRESS FITTINGS CAN BE USED AT CONTRACTORS OPTION.
6. PROVIDE DIELECTRIC UNIONS A CONNECTIONS OF DISSIMILAR PIPING.
7. SLOPE CONDENSATE PIPE 1/8" PER 1'-0" TOWARDS DRAIN.
8. NATURAL GAS PIPING SHALL BE INSTALLED PER THE CURRENT ADOPTED IFGC.
9. ALL VALVES SHALL BE LEAD FREE.

AIR-COOLED CHILLER SCHEDULE

UNIT DESIG.	LOCATION	MANUFACTURER & MODEL NO.	CAPACITY (TONS)	COMPRESSOR		REFRIGERANT TYPE	EVAPORATOR				AMBIENT AIR TEMP. (°F)	ELECTRICAL DATA		WEIGHT (LBS)	NOTES			
				QUANTITY	TYPE		FLUID	EWT (°F)	LWT (°F)	FLOW (GPM)		MAX PRESSURE DROP (FT.)	FOULING FACTOR			FEEDER 1	VOLTS/PH	
CH-1	ROOF	CARRIER - 30RAP055SL-0G9C4	55	4	SCROLL	R-410A	30% PROPYLENE GLYCOL	54	44	124	15	0.0001	95	252.2	300	208/3	3,235	1

NOTES:
1. PROVIDE FOR LOW AMBIENT OPERATION DOWN TO 30°F

BOILER SCHEDULE

UNIT DESIG.	LOCATION	SERVICE	MANUFACTURER & MODEL NO.	BOILER TYPE	BURNER TYPE	FUEL TYPE	INPUT (MBH)	MIN. OUTPUT (MBH)	MIN. AFUE (%)	WORKING FLUID	EWT (°F)	LWT (°F)	DESIGN FLOW (GPM)	MIN. FLOW (GPM)	MAX PD (FT.)	RELIEF VALVE (PSIG)	VENT TYPE	STACK DIAM. (IN.)	STACK HEIGHT (FT.)	NOTES
B-E	BOILER ROOM	HEATING WATER	WEIL-MCLAIN - 988R	WT	FD	NG	2,737	2,274	83.1	WATER	140	160	207	143	0.25	30	FI	14	15	1,2,3
B-1	BOILER ROOM	HEATING WATER	WEIL-MCLAIN - LGB-7-W	WT	FD	NG	780	628	85.1	WATER	140	160	63	-	-	30	FI	12	-	1

NOTES:
1. BOILER COMBUSTION AIR WILL BE DIRECT DUCTED FROM THE OUTSIDE.
2. EXISTING BOILER REQUIRES STEAM TO WATER CONVERSION KIT:
WATER TRIM PART # 386-400-056, CSD-1 TRIM, AND MOD CONTROL #99000

BOILER TYPE:
C1 SECTIONAL CAST IRON
CT COPPER FIN TUBE
WT WATER TUBE
FT FIRE TUBE

BURNER TYPE:
FD FORCED DRAFT
ND NATURAL DRAFT

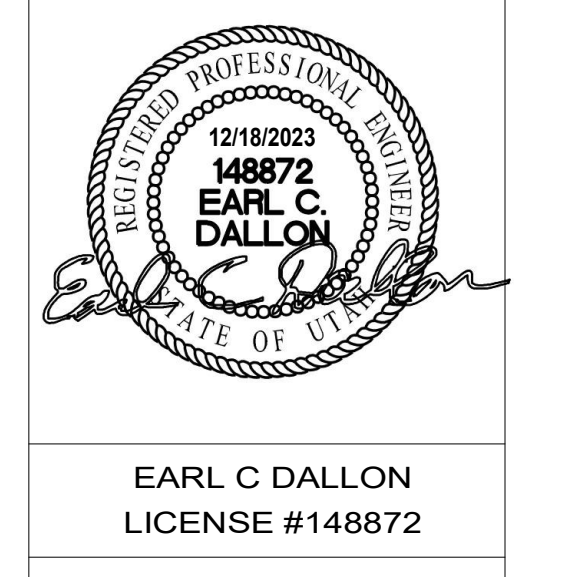
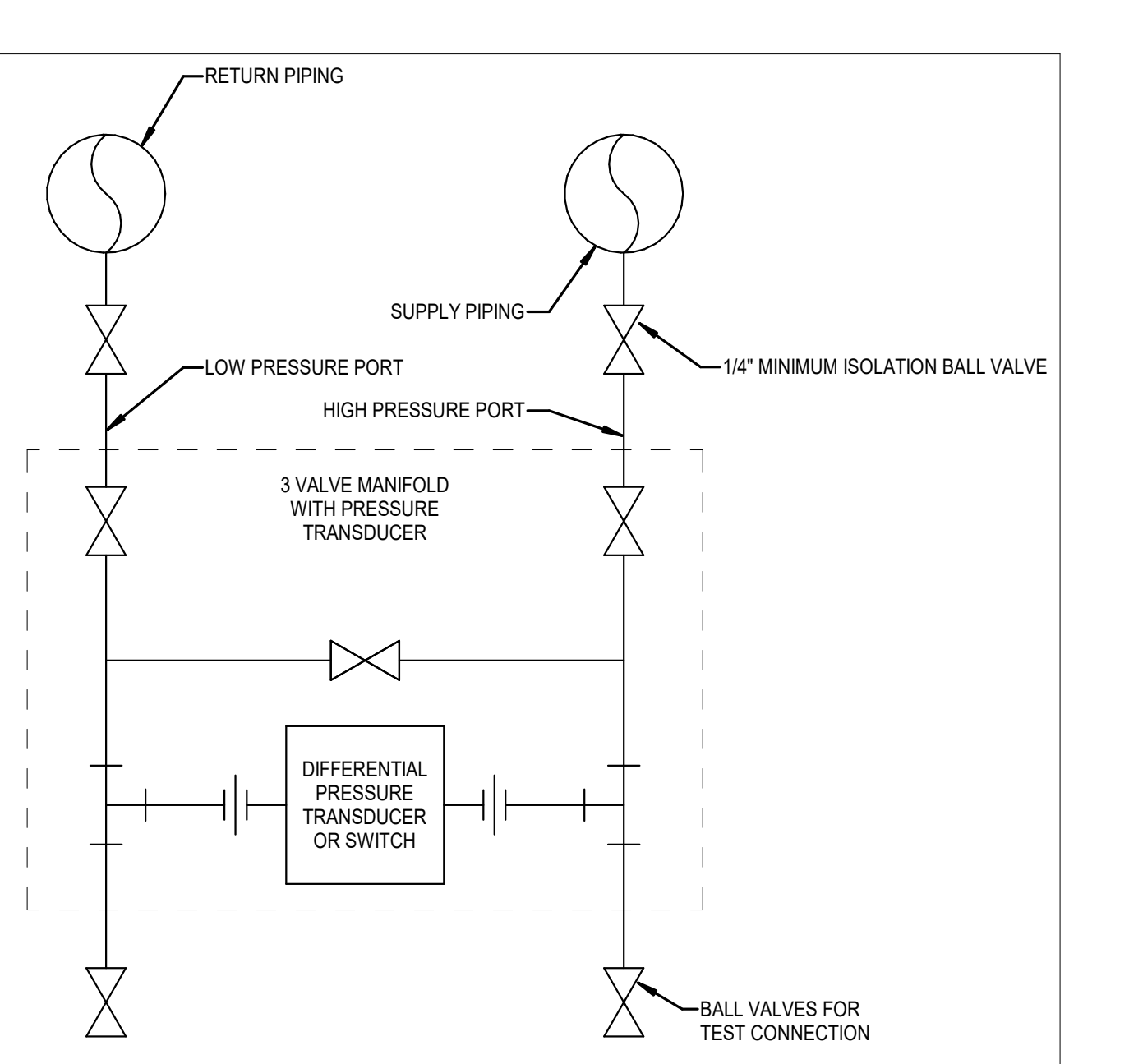
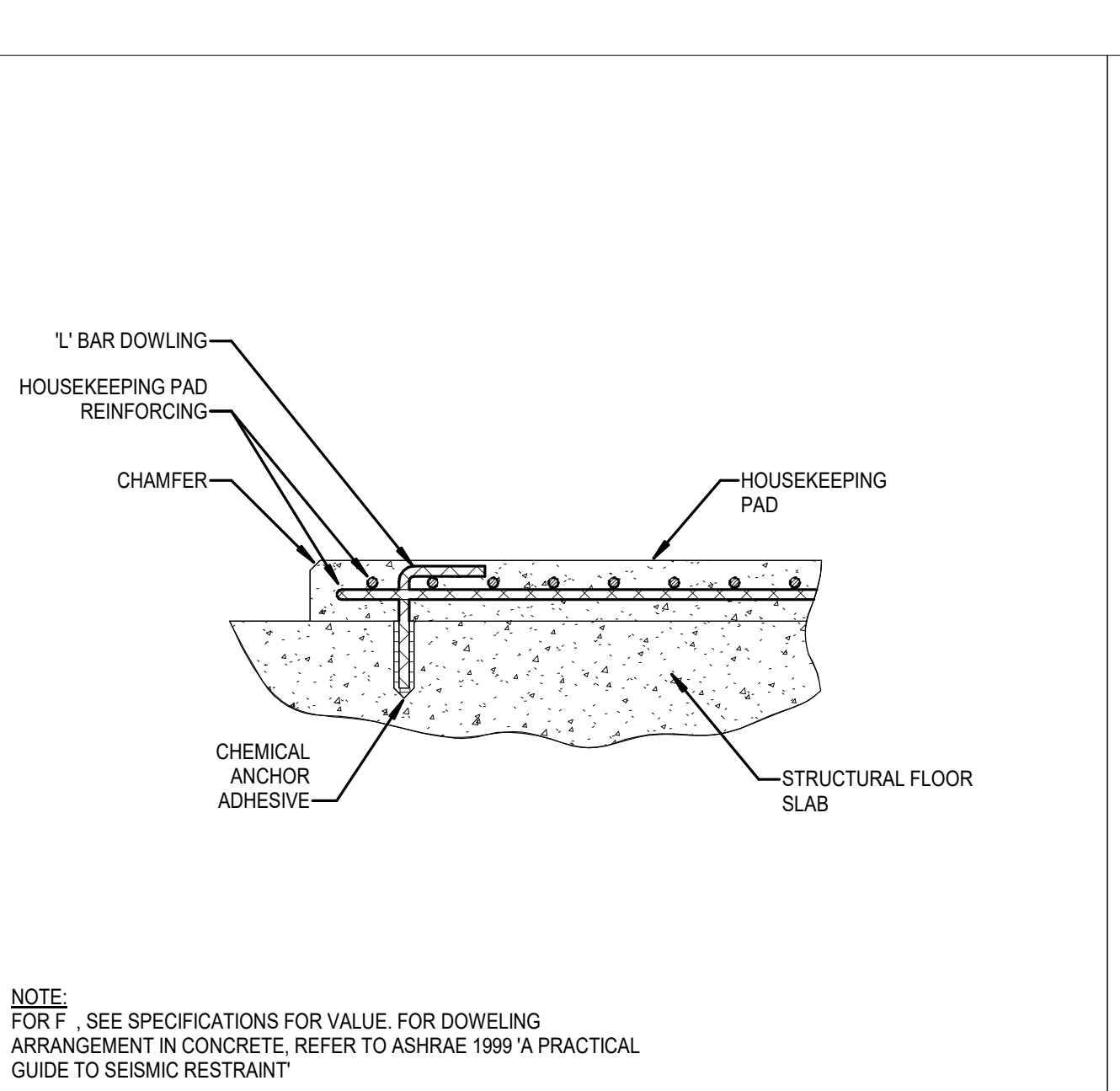
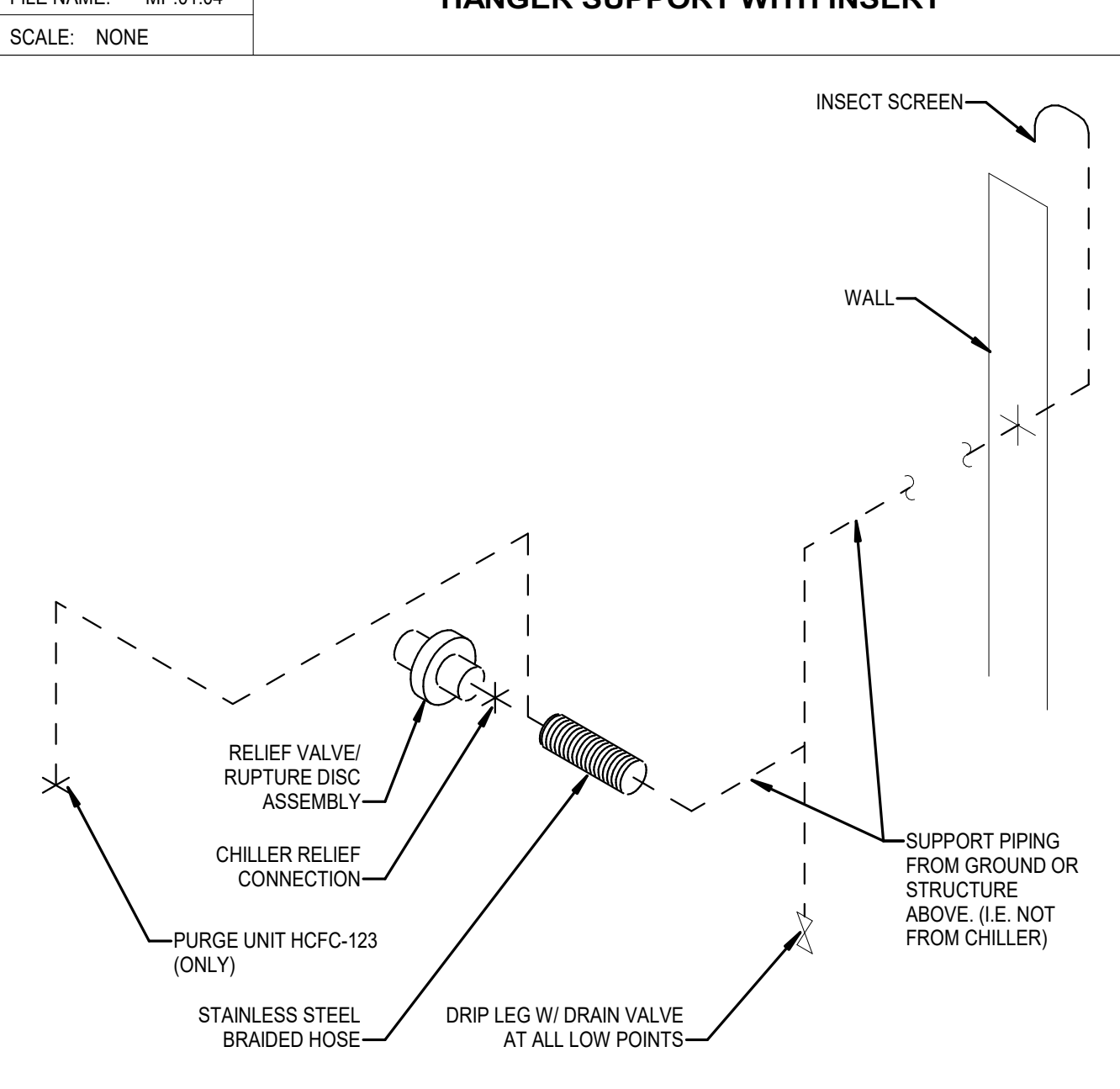
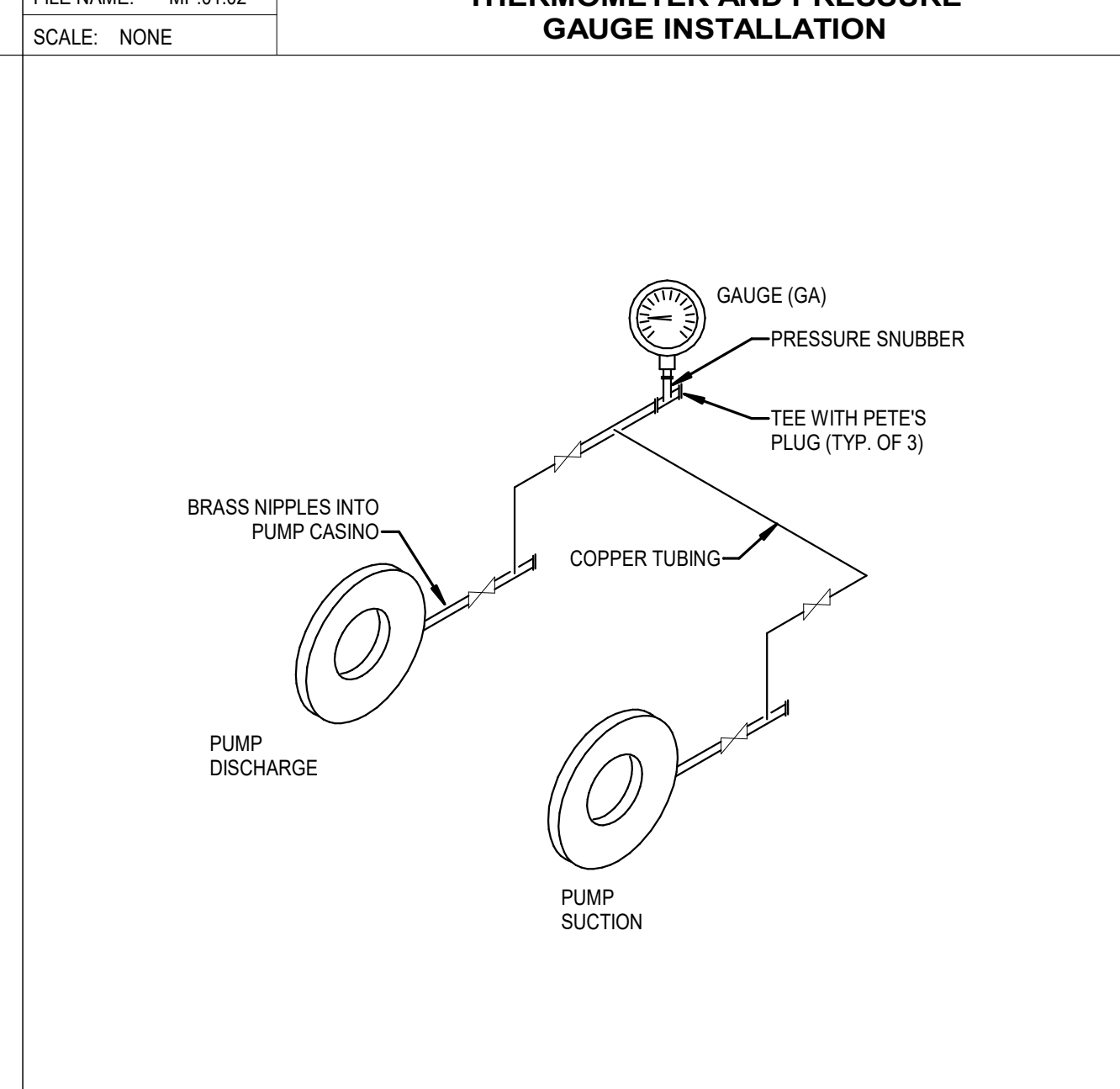
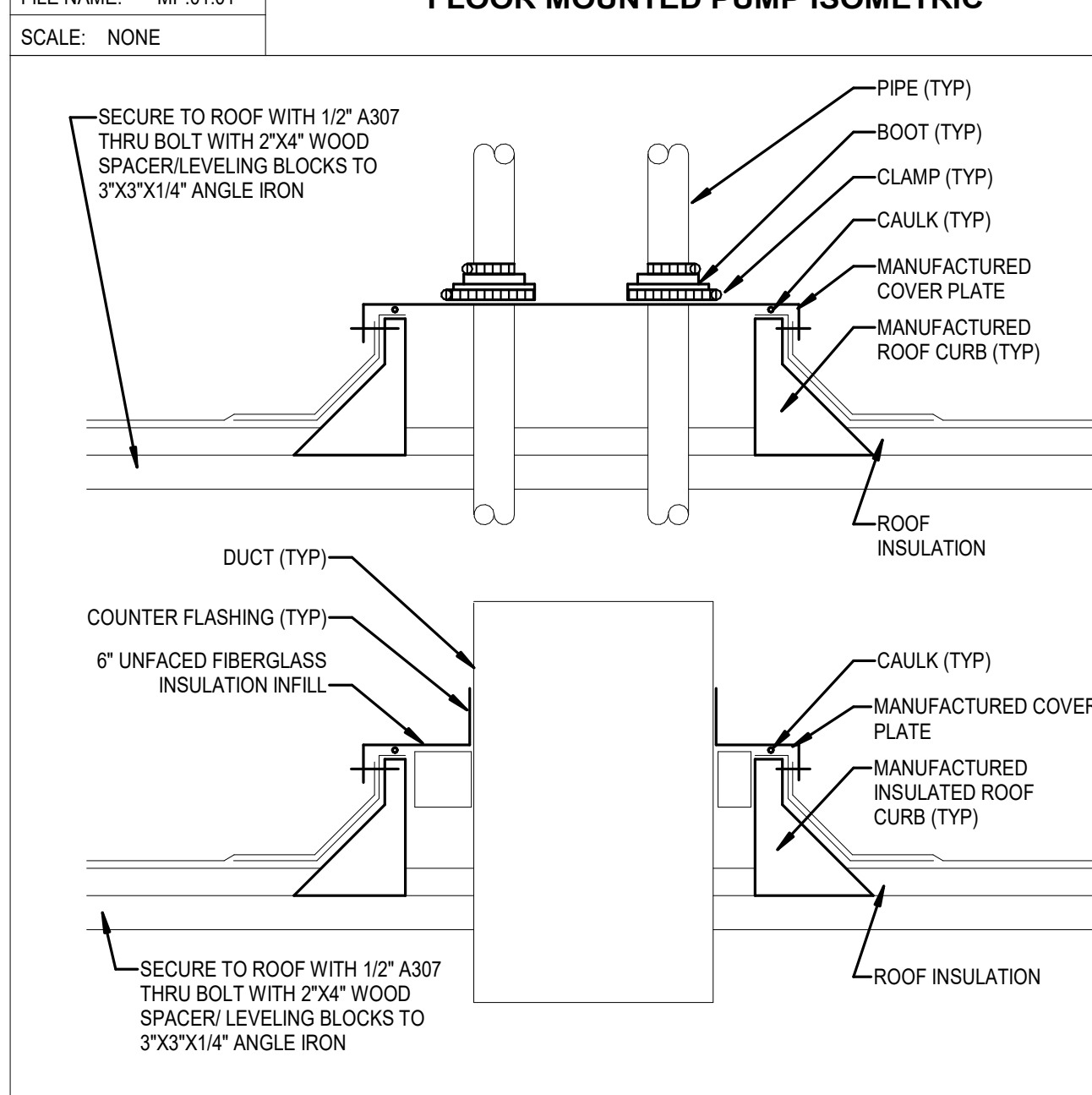
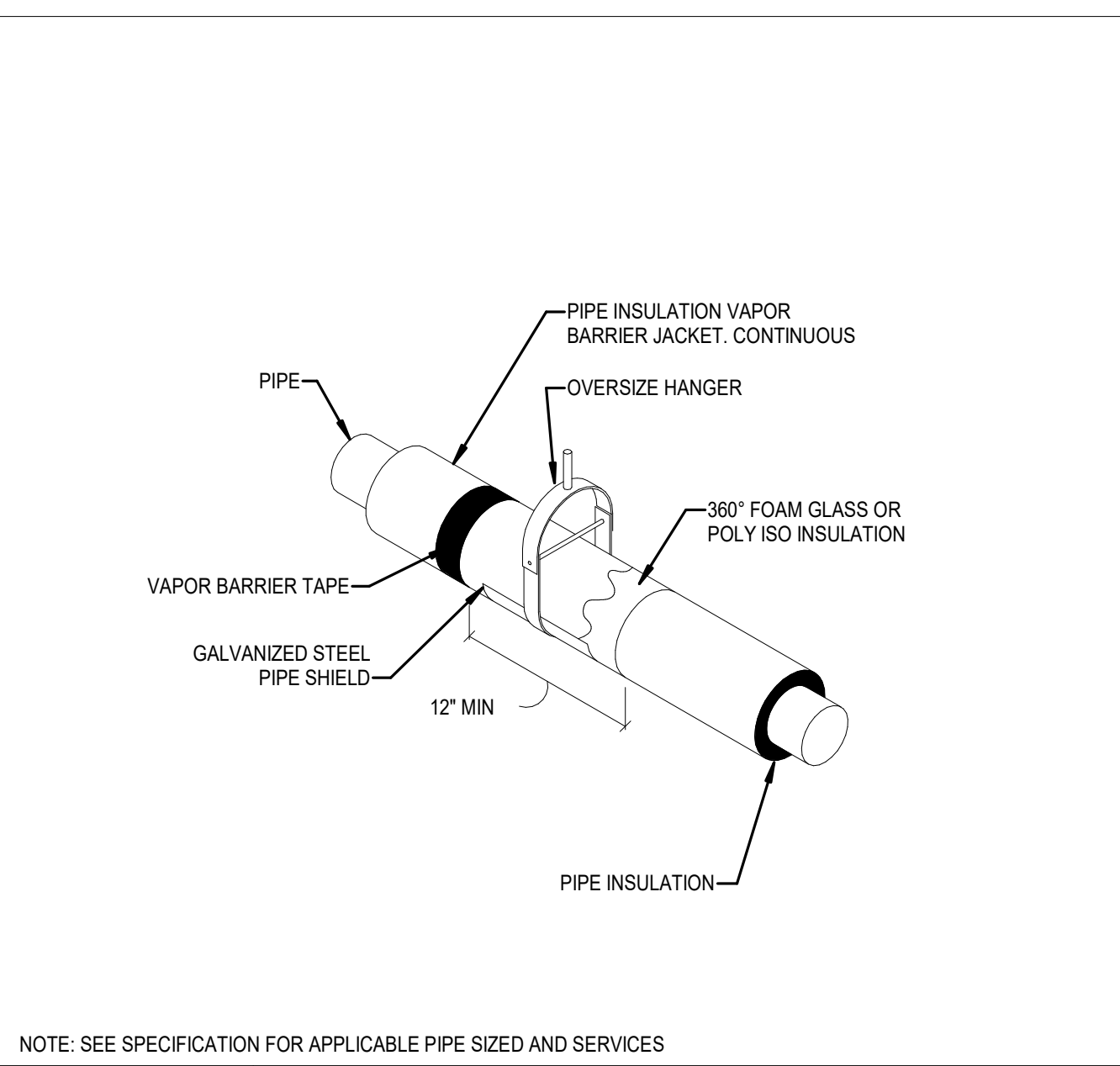
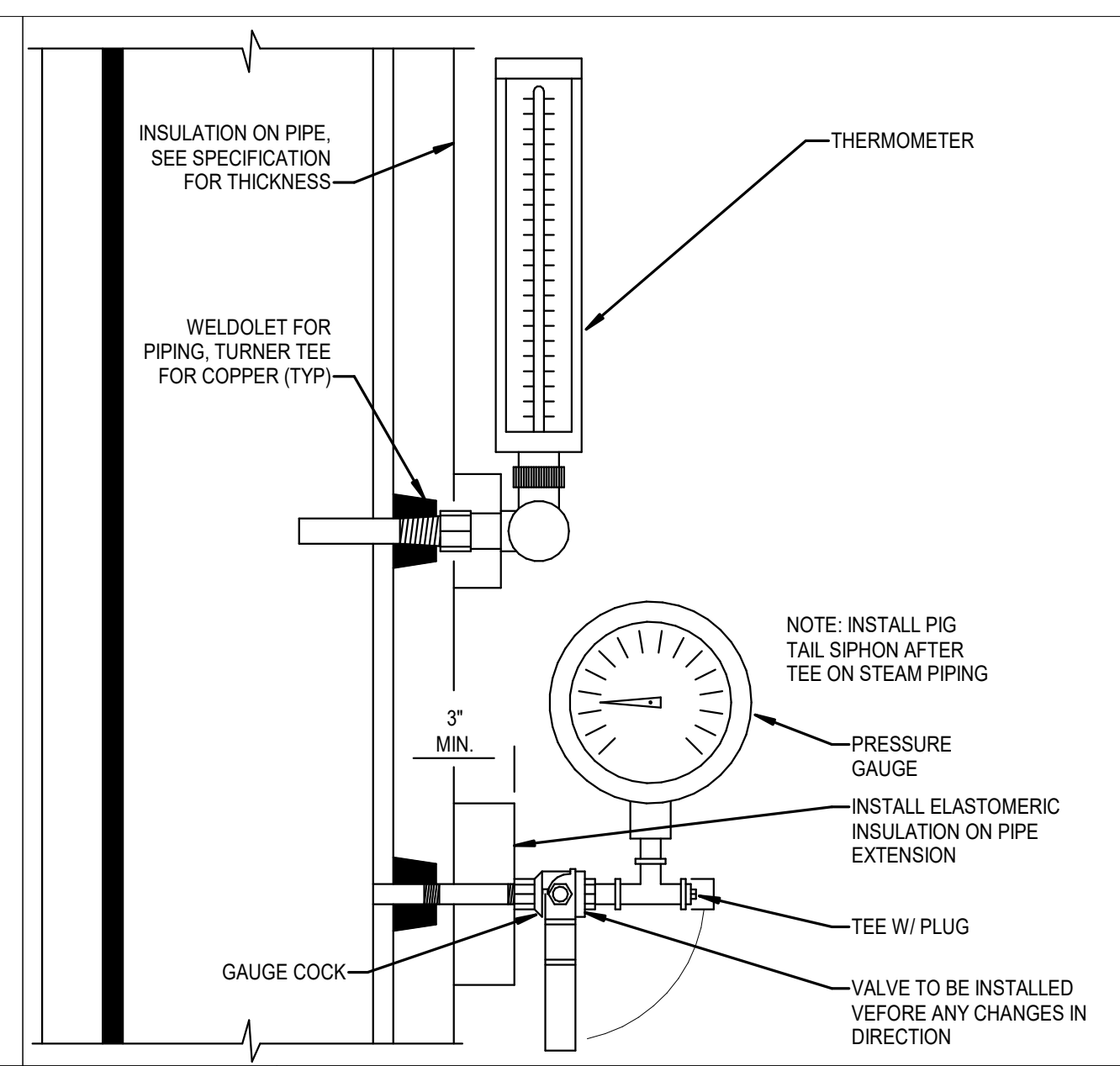
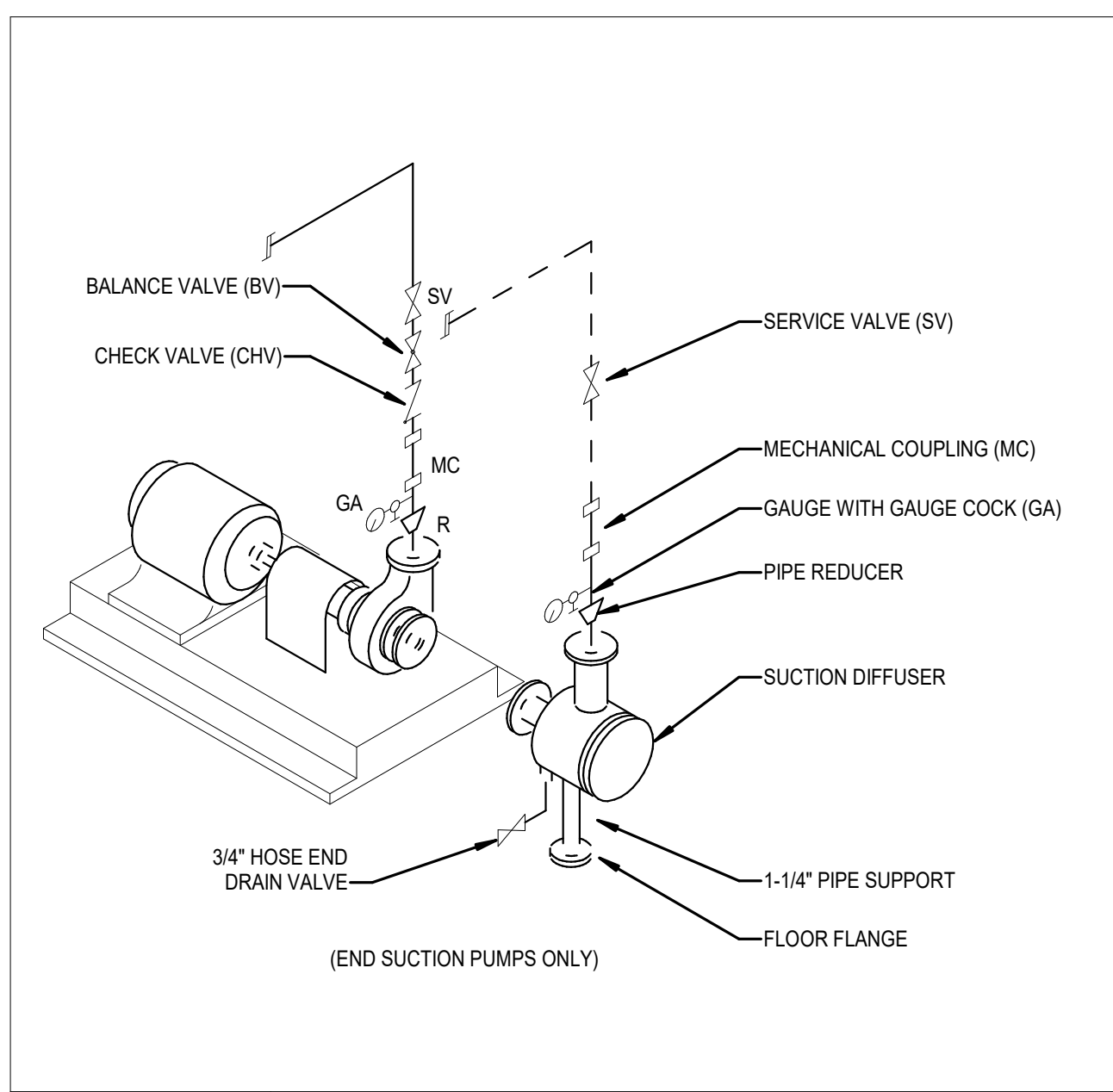
FUEL TYPE:
NG NATURAL GAS
OIG COMB. OIL/GAS
O OIL

VENT TYPE:
BD B VENT, DOUBLE WALL
BS B VENT, SINGLE WALL
FA FORCED DRAFT, AIR GAP
FI FORCED DRAFT, INSULATED

PUMP SCHEDULE

UNIT DESIG.	LOCATION	SERVICE	MANUFACTURER & MODEL NO.	TYPE	PUMP DATA			MOTOR DATA			IMPELLER DIA. (IN.)	NOTES	
					FLOW (GPM)	HEAD (FT.)	BHP	HP	RPM	VOLTS/PH			VFD
P-1	BOILER ROOM	B-E CIRCULATOR PUMP	BELL & GOSSETT E-1531 3AD	END SUCTION	103	10	0.354	0.75	1200	230/3	YES	6.125	1,2,3
P-2	BOILER ROOM	B-E CIRCULATOR PUMP	BELL & GOSSETT E-1531 3AD	END SUCTION	103	10	0.354	0.75	1200	230/3	YES	6.125	1,2,3
P-3	BOILER ROOM	B-1 CIRCULATOR PUMP	BELL & GOSSETT E-1510 2AD	END SUCTION	63	10	0.224	0.5	1200	230/3	YES	6.375	1,2,4
P-4	BOILER ROOM	B-1 CIRCULATOR PUMP	BELL & GOSSETT E-1510 2AD	END SUCTION	63	10	0.224	0.5	1200	230/3	YES	6.375	1,2,4
P-5	BOILER ROOM	HEATING WATER SUPPLY	BELL & GOSSETT E-1510 2AD-ES	END SUCTION	130	36	1.4	2	1800	230/3	YES	7	1,2,4
P-6	BOILER ROOM	HEATING WATER SUPPLY	BELL & GOSSETT E-1510 2AD-ES	END SUCTION	130	36	1.4	2	1800	230/3	YES	7	1,2,4
P-7	AHU ROOM	CHILLED WATER PUMP	BELL & GOSSETT E-1531 2.5AC	END SUCTION	135	80	4.65	10	3600	230/3	YES	5.25	1,2,3
P-8	AHU ROOM	CHILLED WATER PUMP	BELL & GOSSETT E-1531 2.5AC	END SUCTION	135	80	4.65	10	3600	230/3	YES	5.25	1,2,3

NOTES:
1. SUCTION DIFFUSER REQUIRED.
2. BASE MOUNT REQUIRED.
3. UTILIZE EXISTING HOUSEKEEPING PAD.
4. MIN 4" THICK HOUSEKEEPING PAD REQUIRED.



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LICENSE #148872

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PROVO, UT 84601

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ELECTRICAL GENERAL NOTES

GENERAL NOTES:	INSTALLED EXPOSED:																		
<p>1. THE ELECTRICAL SYSTEMS DEFINED BY THESE PLANS AND THE SPECIFICATIONS ARE TO BE CONSTRUCTED AS COMPLETE AND OPERABLE SYSTEMS AND SHALL BE BID WITH THIS INTENT. THE CONTRACTOR SHALL VISIT THE SITE, READ ALL THE RELEVANT DOCUMENTS, AND BECOME FAMILIAR WITH THE TYPE OF CONSTRUCTION AND WORK TO BE ACCOMPLISHED. SHOULD ANY ERROR, OMISSION, OR CONFLICT EXIST IN EITHER THE PLANS OR SPECIFICATIONS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING BEFORE SUBMITTING THEIR BID PRICE SO A CHANGE CAN BE ISSUED IN A PRE-BID ADDENDUM. OTHERWISE, THE CONTRACTOR AND/OR EQUIPMENT SUPPLIERS SHALL SUPPLY THE PROPER MATERIALS AND LABOR TO INSTALL COMPLETE AND OPERABLE SYSTEMS INCLUSIVE OF THE ORIGINAL BID. WHEN EACH ELECTRICAL SYSTEM IS COMPLETE, THE CONTRACTOR SHALL TEST AND CONFIRM ITS PROPER OPERATION. ANY INCOMPLETE SYSTEM SHALL BE MADE COMPLETE AND OPERABLE PRIOR TO PROJECT CLOSEOUT.</p> <p>2. THE ARCHITECTURAL AND MECHANICAL PLANS ARE CONSIDERED A PART OF THE ELECTRICAL DOCUMENTS SO FAR AS ANY ELECTRICAL ITEMS THEY MAY CONTAIN. THE ELECTRICAL CONTRACTOR SHALL REFER TO AND COORDINATE WITH THEM. NO EXTRA COST SHALL BE ALLOWED FOR FAILURE TO COORDINATE THE CONTRACT DOCUMENTS WITH OTHER TRADES AND/OR IF EQUIPMENT DIMENSIONS ARE GREATER THAN SPECIFIED AND/OR DIMENSIONED ON THE PLANS.</p> <p>3. THE ELECTRICAL CONTRACTOR SHALL PROVIDE EQUIPMENT, MATERIALS, AND LABOR FOR THE CONNECTIONS OF ALL EQUIPMENT SHOWN ON THE PLANS - ARCHITECTURAL, MECHANICAL, ETC.</p> <p>4. THIS PROJECT IS TO BE INSTALLED IN STRICT ACCORDANCE WITH THE MOST RECENT LOCAL, STATE, AND NATIONAL CODES. IF AT ANY TIME DURING OR AFTER CONSTRUCTION SOMETHING IS FOUND TO BE INSTALLED IN VIOLATION OF THESE CODES LISTED ABOVE, IT SHALL BE CORRECTED BY THE CONTRACTOR.</p> <p>5. WHERE A RACEWAY ENTERS A BUILDING OR STRUCTURE FROM THE OUTSIDE, IT SHALL BE SEALED AS PER NEC 225.27.</p> <p>6. ALL ELECTRICAL EQUIPMENT THAT IS LIKELY TO REQUIRE EXAMINATION, ADJUSTMENT, SERVICING OR MAINTENANCE WHILE ENERGIZED SHALL BE FIELD OR FACTORY LABELED TO WARN QUALIFIED PERSONS OF POTENTIAL ELECTRIC ARC FLASH HAZARDS PER NEC 110.16. THE LABEL SHALL ALSO CONTAIN THE MAXIMUM AVAILABLE FAULT CURRENT AND THE DATE THE FAULT CURRENT CALCULATIONS WERE PERFORMED AS PER NEC 110.24.</p> <p>7. EACH DISCONNECTING MEANS SHALL BE LEGIBLY MARKED TO INDICATE ITS PURPOSE AND TO IDENTIFY THE CIRCUIT SOURCE THAT SUPPLIES THE DISCONNECTING MEANS PER NEC 110.22.</p> <p>8. ALL PANELBOARDS AND SWITCHBOARDS SHALL BE PERMANENTLY MARKED TO INDICATE EACH DEVICE OR EQUIPMENT WHERE THEIR POWER ORIGINATES AS PER NEC 408.45.</p> <p>9. ALL EQUIPMENT PROVIDED BY THE EC SHALL BE LISTED AND LABELED BY A NATIONALLY RECOGNIZED TESTING AGENCY, ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION, AND BE PROPERLY INSTALLED FOR THE CONDITIONS AND SPACE THAT EQUIPMENT IS BEING INSTALLED WITHIN.</p> <p>10. THE EC SHALL INSTALL A SEPARATE EQUIPMENT GROUNDING CONDUCTOR IN EACH CONDUIT RUN. CONDUIT SHALL NOT BE USED AS AN EQUIPMENT GROUNDING CONDUCTOR. THE EC SHALL GROUND THE ELECTRICAL SYSTEM IN ACCORDANCE WITH LOCAL AND NATIONAL CODES.</p> <p>11. CONDUIT LAYOUTS SHOWN ON THE PLANS ARE DIAGRAMMATIC, NOT INDICATING THE ROUTING REQUIRED. THE EC SHALL ROUTE THE CONDUITS AS REQUIRED BY THE CONDITIONS OF THE INSTALLATION AND SHALL COORDINATE WITH DUCTWORK, PIPING, EQUIPMENT, BUILDING STRUCTURE, AND OTHER POTENTIAL OBSTRUCTIONS.</p> <p>12. THE CONTRACTOR SHALL ALLOW THE MOVEMENT, BEFORE ROUGH-IN, OF ANY ELECTRICAL PANEL, DEVICE, LUMINAIRE, ETC. A DISTANCE OF 10 FEET WITHOUT REQUIRING ADDITIONAL COST TO THE PROJECT.</p> <p>13. THE EC SHALL SECURE ALL CONDUIT TO THE STRUCTURE AS IT IS SET IN PLACE USING INDUSTRY STANDARD METHODS AND PRACTICES. TO ASSURE ALL DEVICES ARE RIGIDLY SET, THE ELECTRICAL CONTRACTOR SHALL SECURE ALL DEVICE BOXES WITH BRACKETS, HANGERS, ETC. DESIGNED FOR THE APPLICATION.</p> <p>14. MINIMUM SIZE CONDUIT SHALL BE 3/4" UNO. CONDUIT INSTALLED WITHIN THE BUILDING IN DRY LOCATIONS WITHIN WALL, CEILING, OR EXPOSED NOT SUBJECT TO PHYSICAL DAMAGE SHALL BE EMT WITH STEEL SET SCREW FITTINGS, IN EXTERIOR LOCATIONS (EXCEPT FOR THE SERVICE ENTRANCE) THE CONDUIT SHALL BE EMT WITH COMPRESSION GLAND TYPE FITTINGS. UNDERGROUND CONDUIT SHALL BE FVC (SCH. 40) WITH GRC ELBOWS AND RISERS WRAPPED IN CORROSION RESISTANT MATERIALS WHERE IN DIRECT CONTACT WITH THE SOIL.</p> <p>15. FLEXIBLE CONDUIT SHALL BE LIMITED TO CONNECTIONS TO LIGHT FIXTURES AND FINAL CONNECTIONS TO MOTORS OR OTHER EQUIPMENT SUBJECT TO VIBRATION. LENGTHS OF FLEXIBLE OR SEAL-TITE CONDUIT SHALL NOT BE GREATER THAN 72 INCHES.</p> <p>16. ELECTRICAL CONTRACTOR SHALL PROVIDE ALL EMPTY CONDUITS WITH 200LB RATED NYLON PULL CORD.</p> <p>17. BEFORE ANY ELECTRICAL CONDUIT, BOXES, ETC. ARE COVERED (FLOOR, CEILING, WALLS, ETC.), THEY SHALL BE APPROVED BY THE INSPECTING OFFICER (INSPECTOR).</p> <p>18. WHERE WIRE SIZE IS NOT SHOWN ON THE DRAWINGS FOR 20A, 120VAC BRANCH CIRCUITS, THE CIRCUIT SHALL CONSIST OF 2#12 (CU, THHN) + #12 (CU, THHN) GND IN 3/4" EMT CONDUIT. THIS WIRE SIZE SHALL BE INCREASED TO #10 (CU, THHN) FOR BRANCH CIRCUITS WITH OVERALL LENGTHS EXCEEDING 120' TO ACCOMMODATE FOR VOLTAGE DROP. REFER TO EQUIPMENT SCHEDULES, FEEDER SCHEDULES, AND NOTES ON DRAWINGS FOR ALL OTHER BRANCH CIRCUIT AND FEEDER WIRE/CONDUIT SIZING.</p> <p>19. CONDUCTORS SHALL BE COPPER, 60VAC RATED, TYPE THHN/THWN-2 UNO. CONDUCTORS UP TO #10AWG SHALL BE SOLID AND CONDUCTORS #8AWG OR LARGER SHALL BE STRANDED.</p> <p>20. METAL CLAD CABLING MAY BE USED BETWEEN DEVICES SUCH AS LIGHTING, RECEPTACLES, SWITCHES, ETC. UNLESS OTHERWISE REQUIRED BY THE NEC. HOME RUNS SHALL BE INSTALLED IN CONDUIT. MC CABLE SHALL NOT BE</p>	<p>21. EC SHALL CLEAN THE ENTIRE ELECTRICAL SYSTEM AFTER COMPLETION OF THE INSTALLATION. REMOVE ALL FINGER PRINTS, FOREIGN MATTER, PAINT, DIRT, GREASE, AND UN-NEEDED LABELS OR STICKERS FROM FIXTURES AND EQUIPMENT. REMOVE ALL RUBBISH AND DEBRIS ACCUMULATED DURING INSTALLATION FROM THE PREMISES.</p> <p>22. IT IS THE INTENT OF THE CONSTRUCTION DOCUMENTS FOR ALL DEVICES TO BE FLUSH MOUNTED AND CONDUIT/CABLING INSTALLED CONCEALED WITHIN WALLS/CEILING. IN AREAS WHERE CONDUIT MUST BE INSTALLED EXPOSED IT SHALL BE COORDINATED WITH THE ARCHITECT AND/OR ENGINEER. ALL EFFORTS SHALL BE MADE TO CONCEAL WIRING METHODS.</p> <p>23. ALL PENETRATIONS THROUGH FIRE RATED ASSEMBLIES SHALL BE SEALED WITH FIRE STOPPING, IE. 3M BRAND CAULK, PUTTY, STRIP AND SHEET FORMS, DOW CORNING 3-6548 SILICONE RTV FOAM.</p> <p>24. COORDINATE LOCATION OF WALL MOUNTED DEVICES WITH CABINETRY AND OTHER WALL OBSTRUCTIONS. COORDINATE CEILING MOUNTED DEVICES WITH CEILING OBSTRUCTIONS. ANY DEVICES THAT NEED TO BE RELOCATED MUST BE BROUGHT TO THE ATTENTION OF THE ELECTRICAL ENGINEER PRIOR TO ROUGH-IN FOR NEW LOCATION.</p> <p>25. IT IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO COORDINATE PLACEMENT OF ALL DEVICES INSTALLED WITHIN THE CEILING SUCH AS LIGHTING, SPEAKERS, FIRE SPRINKLERS, SMOKE/HEAT DETECTORS, ETC. ANY EXISTING DEVICES THAT NEED TO BE RELOCATED IN ORDER TO ACCOMMODATE NEW CONSTRUCTION/REMODEL MUST BE BROUGHT TO THE ATTENTION OF THE ELECTRICAL ENGINEER PRIOR TO ROUGH-IN FOR RESOLUTION AND FURTHER DIRECTION.</p> <p>26. WHERE THE PREMISES WIRING SYSTEM HAS BRANCH CIRCUITS SUPPLIED FROM MORE THAN ONE NOMINAL VOLTAGE, EACH UNGROUNDED CONDUCTOR OF A BRANCH CIRCUIT SHALL BE IDENTIFIED BY PHASE OR LINE AND BY SYSTEM VOLTAGE CLASS AT ALL TERMINATION, CONNECTION, AND SPLICE POINTS. IDENTIFICATION MEANS SHALL BE POSTED AT EACH BRANCH CIRCUIT PANELBOARD.</p> <p>ALL CONDUCTORS SHALL BE COLOR CODED AS FOLLOWS:</p> <table border="1"> <thead> <tr> <th>PHASE</th> <th>208/120</th> <th>277/480</th> </tr> </thead> <tbody> <tr> <td>PHASE A</td> <td>BLACK</td> <td>BROWN</td> </tr> <tr> <td>PHASE B</td> <td>RED</td> <td>ORANGE</td> </tr> <tr> <td>PHASE C</td> <td>BLUE</td> <td>YELLOW</td> </tr> <tr> <td>NEUTRAL</td> <td>WHITE</td> <td>WHITE</td> </tr> <tr> <td>GROUND</td> <td>GREEN</td> <td>GREEN</td> </tr> </tbody> </table> <p>REMODEL NOTES:</p> <p>27. THE EC SHALL COORDINATE AND CONFIRM THE EXACT LOCATION OF THE EXISTING POWER PANELS FROM WHICH NEW CIRCUITS ARE BEING FED. VERIFY EXISTING BRANCH CIRCUIT BREAKERS AND PROVIDE NEW BRANCH CIRCUIT BREAKERS AS NECESSARY FOR A COMPLETE AND OPERABLE SYSTEM.</p> <p>28. THE EC SHALL COORDINATE AND CONFIRM THE EXACT LOCATION OF THE TELECOM ROOM FROM WHICH NEW TEL/DATA OUTLETS WILL BE FED. VERIFY EXISTING PATCH PANEL SPACES AND PROVIDE NEW PATCH PANELS AS NECESSARY TO LAND/TERMINATE NEW TELECOM CABLING.</p> <p>29. ALL DEVICES NOT SHOWN ON PLANS ARE EXISTING TO REMAIN IN PLACE AND FUNCTIONAL. IN THE EVENT THAT WIRING TO AN EXISTING DEVICE IS DAMAGED, WIRING MUST BE REPLACED AND DEVICE BROUGHT BACK TO FULL OPERATION.</p> <p>POWER NOTES:</p> <p>29. ELECTRICAL CONTRACTOR SHALL CONFIRM MINIMUM CODE (NEC) WORKING CLEARANCE BEFORE INSTALLING ANY ELECTRICAL PANELS OR CABINETS AND SHALL MOVE THE PANELS IF REJECTED BY AN INSPECTOR. IF CLEARANCE IS NOT POSSIBLE, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY IN WRITING.</p> <p>30. WIRING DEVICES SHALL HAVE A NYLON COVER PLATE. COLOR SHALL BE COORDINATED WITH ARCHITECT. EXTERIOR OUTLETS SHALL HAVE CAST COVERS WITH FLIP TYPE LIDS UNO.</p> <p>31. THE EC SHALL MAINTAIN ELECTRICAL CONTINUITY TO REMAINING EQUIPMENT WHEN ANY EXISTING ELECTRICAL EQUIPMENT IS REMOVED.</p> <p>32. EC SHALL COORDINATE WITH EQUIPMENT SUPPLIERS ON THE EXACT LOCATIONS OF ALL EQUIPMENT AND ELECTRICAL CONNECTIONS PRIOR TO ROUGH-IN. THE EC SHALL MAKE THE FINAL CONNECTION TO ALL EQUIPMENT UNLESS OTHERWISE DIRECTED BY THE EQUIPMENT SUPPLIER. OBTAIN FROM SUPPLIERS ALL WIRING DIAGRAMS FOR EQUIPMENT PRIOR TO ANY ROUGH-IN. TO ASSURE THAT PROPER CHARACTERISTICS ARE PROVIDED, ANY INCORRECT WIRING OR DEVICES INSTALLED BY THE EC WITHOUT THE WIRING DIAGRAM SHALL BE CORRECTED AT THE EC'S EXPENSE. PROVIDE COPIES OF WIRING DIAGRAMS WITHIN EACH PIECE OF EQUIPMENT AND ADDITIONAL COPIES WITH THE OPERATION AND MAINTENANCE MANUALS.</p> <p>33. EC SHALL COORDINATE WITH THE MECHANICAL CONTRACTOR TO PROVIDE CONDUIT AND DEVICE MOUNTING BOXES FOR THERMOSTATS AND OTHER MECHANICAL CONTROLS. REFER TO MECHANICAL DRAWINGS FOR THE LOCATION OF THERMOSTATS.</p> <p>34. PROVIDE A 20AMP, 120VAC RECEPTACLE INSTALLED AT AN ACCESSIBLE LOCATION FOR THE SERVICING OF HEATING, AIR CONDITIONING, AND REFRIGERATION EQUIPMENT PER NEC 210.63. RECEPTACLE SHALL BE OF THE GROUND FAULT CIRCUIT INTERRUPTING TYPE, INSTALLED WITHIN A CAST METAL BOX, AND WITHIN 25' OF ALL REQUIRED EQUIPMENT.</p>	PHASE	208/120	277/480	PHASE A	BLACK	BROWN	PHASE B	RED	ORANGE	PHASE C	BLUE	YELLOW	NEUTRAL	WHITE	WHITE	GROUND	GREEN	GREEN
PHASE	208/120	277/480																	
PHASE A	BLACK	BROWN																	
PHASE B	RED	ORANGE																	
PHASE C	BLUE	YELLOW																	
NEUTRAL	WHITE	WHITE																	
GROUND	GREEN	GREEN																	

ELECTRICAL SYMBOL SCHEDULE

SYMBOL	DESCRIPTION	MOUNTING	NOTES
	LIGHT FIXTURE - SURFACE OR RECESSED	SEE DRAWINGS	1
	EMERGENCY LIGHT FIXTURE - SURFACE OR RECESSED	SEE DRAWINGS	1, 2
	LIGHT FIXTURE - OPEN STRIP	SEE DRAWINGS	1
	EMERGENCY LIGHT FIXTURE - OPEN STRIP	SEE DRAWINGS	1, 2
	LIGHT FIXTURE - WALL MOUNTED	WALL	1
	EMERGENCY LIGHT FIXTURE - WALL MOUNTED	WALL	1, 2
	LIGHT FIXTURE - DOWNLIGHT	CEILING	1
	EMERGENCY LIGHT FIXTURE - DOWNLIGHT	CEILING	1, 2
	LIGHT FIXTURE - WALL WASH DOWNLIGHT	CEILING	1
	LIGHT FIXTURE - CEILING MOUNTED	CEILING	1
	LIGHT FIXTURE - PENDANT/CHANDELIER	CEILING	1
	LIGHT FIXTURE - WALL BRACKET	WALL	1
	EMERGENCY LIGHT FIXTURE - WALL BRACKET	WALL	1, 2
	LIGHT TRACK WITH FIXTURES	SURFACE	1
	EXIT FIXTURE - WALL MOUNT	WALL	1, 2, 3
	EXIT FIXTURE - CEILING MOUNT	CEILING	1, 2, 3
	EXIT FIXTURE W/ EMERGENCY HEADS - WALL MOUNT	WALL	1, 2, 3
	EXIT FIXTURE W/ EMERGENCY HEADS - CEILING MOUNT	CEILING	1, 2, 3
	DUAL HEAD EMERGENCY LIGHT FIXTURE	WALL	1, 2
	AREA LIGHT FIXTURE - POLE MOUNTED	POLE	1
	OCCUPANCY SENSOR - CEILING MOUNT	CEILING	1
	PHOTO-ELECTRIC CELL WITH RELAY	SURFACE	1
	LIGHTING RELAY/POWER PACK	SURFACE	1
	TIME CLOCK - 7 DAY	5' - 0"	
	WALL OCCUPANCY SENSOR SWITCH	4' - 0"	
	SINGLE POLE SWITCH	4' - 0"	
	DOUBLE POLE SWITCH	4' - 0"	
	THREE WAY SWITCH	4' - 0"	
	FOUR WAY SWITCH	4' - 0"	
	DIMMER SWITCH	4' - 0"	
	LOW VOLTAGE SWITCH	4' - 0"	
	THERMAL OVERLOAD SWITCH	4' - 0" UNO	
	PILOT LIGHT SWITCH	4' - 0"	
	DUPLEX OUTLET, 20A, 120VAC	1' - 6" UNO	
	DUPLEX OUTLET, 20A, 120VAC - GFCI	1' - 6" UNO	
	DUPLEX OUTLET - SPLIT WIRED	1' - 6" UNO	
	DUPLEX OUTLET - ISOLATED GROUND	1' - 6" UNO	
	DUPLEX OUTLET WITH USB PORTS	1' - 6" UNO	
	DUPLEX OUTLET - OCCUPANCY SENSOR CONTROLLED	1' - 6" UNO	
	DUPLEX OUTLET, 20A, 120VAC - CEILING	CEILING	
	DUPLEX OUTLET, 20A, 120VAC - FLOOR	FLOOR	
	FOURPLEX OUTLET, 20A, 120VAC	1' - 6" UNO	
	FOURPLEX OUTLET, 20A, 120VAC - GFCI	1' - 6" UNO	
	FOURPLEX OUTLET - ISOLATED GROUND	1' - 6" UNO	
	FOURPLEX OUTLET, 20A, 120VAC - CEILING	CEILING	
	FOURPLEX OUTLET, 20A, 120VAC - FLOOR	FLOOR	
	APPLIANCE OUTLET - 208/240V SINGLE PHASE	18" OR 48"	
	APPLIANCE OUTLET - 208/480V 3-PHASE	18" OR 48"	
	DATA OUTLET	1' - 6" UNO	
	TELEPHONE OUTLET	1' - 6" UNO	
	DUAL TELEPHONE/DATA OUTLET	1' - 6" UNO	
	DATA OUTLET - FLOOR	FLOOR	
	DUAL TELEPHONE/DATA OUTLET - FLOOR	FLOOR	
	CEILING DATA OUTLET/WIRELESS ACCESS POINT	CEILING	
	CABLE TELEVISION OUTLET	1' - 6" UNO	
	JUNCTION BOX	SURFACE	
	WALL JUNCTION BOX	1' - 6" UNO	
	FLOOR JUNCTION BOX	FLOOR	
	DISCONNECT SWITCH - NON-FUSED	5' - 0" UNO	4
	DISCONNECT SWITCH - FUSED	5' - 0" UNO	4
	DISCONNECT SWITCH - SHUNT TRIP	5' - 0" UNO	4
	COMBINATION MAGNETIC STARTER/DISCONNECT	5' - 0" UNO	
	MOTOR STARTER	5' - 0" UNO	
	CONTACTOR	5' - 0" UNO	
	MOTOR	SURFACE	
	METER - PLAN VIEW	WALL	
	PUSH BUTTON SWITCH	4' - 0"	
	EMERGENCY POWER SHUTOFF SWITCH	4' - 0"	
	PANELBOARD - SURFACE MOUNTED	6' - 6" TO TOP	
	PANELBOARD - RECESSED	6' - 6" TO TOP	
	TRANSFORMER - PLAN VIEW	PAD/FLOOR	
	TELEPHONE TERMINAL BOARD	WALL	

ELECTRICAL SHEET INDEX

E000	ELECTRICAL GENERAL SHEET
E201	POWER PLAN
E601	ELECTRICAL SCHEDULES

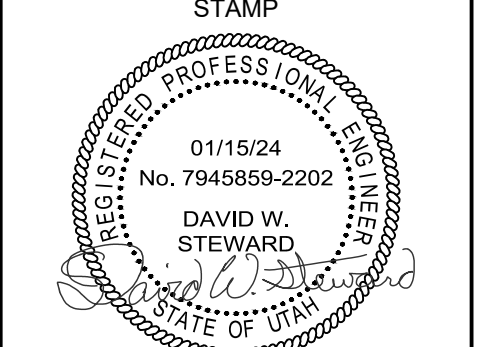
	FIRE ALARM HORN	7' - 6"	
	FIRE ALARM STROBE	7' - 6"	
	FIRE ALARM HORN STROBE	7' - 6"	
	WATERFLOW GONG	7' - 6"	
	FIRE ALARM DUAL ACTION MANUAL PULL STATION	4' - 0"	
	FIRE ALARM ADDRESSABLE CONTROL RELAY		
	FIRE ALARM MONITOR MODULE		
	FIRE ALARM CONTROL PANEL	6' - 6" TO TOP	
	FIRE ALARM ANNUNCIATOR PANEL	4' - 0"	
	PHOTOELECTRIC SMOKE DETECTOR	SURFACE	
	RATE OF RISE/HEAT DETECTOR	SURFACE	
	CARBON MONOXIDE DETECTOR	SURFACE	
	DUCT SMOKE DETECTOR	DUCT	6
	FIRE SMOKE DAMPER		
	FIRE RISER TAMPER SWITCH		
	FIRE RISER FLOW SWITCH		
	ELECTROMAGNETIC DOOR HOLDER	2' - 0"	
	SECURITY CARD READER	4' - 0"	
	SECURITY KEYPAD	4' - 0"	
	ELECTRIC STRIKE		
	SECURITY CCTV CAMERA		
	SPEAKER - CEILING		
	SPEAKER - WALL		
	MICROPHONE CONNECTION		
	VOLUME CONTROL SWITCH	4' - 0"	
	CIRCUIT BREAKER	METER - ONE-LINE	
	MLO PANEL - ONE-LINE	TRANSFORMER - ONE-LINE	
	MCB PANEL - ONE-LINE	PAD MOUNT XFMR - ONE-LINE	
	AUTOMATIC TRANSFER SWITCH	GROUND SLEEVE - ONE-LINE	
	CT ENCLOSURE - ONE-LINE	FUSED DISCONNECT - ONE-LINE	
	CURRENT TRANSFORMER	FUSED SWITCH	
	OH RISER	GROUND	
	KEYED NOTE TAG	CABLE/WIRE SIZE TAG	
	MECH/ELEC EQUIPMENT TAG	DETAIL/VIEW NUMBER	
	OTHER EQUIPMENT TAG	DETAIL/VIEW REFERENCE TAG	
	WIRING / CONDUIT	SHEET NUMBER	
	CONDUIT TURNED UP	UNDERGROUND/FLOOR WIRING	
	CONDUIT TURNED DOWN	CONDUIT TURNED DOWN	
	CIRCUIT HOME RUN TO PANEL: # OF ARROWHEADS INDICATE # OF CIRCUITS (SEPARATE NEUTRAL PER CIRCUIT). BOTH EX. INCLUDE AN EQUIP. GROUND.		

NOTES	
1.	SEE LIGHT FIXTURE SCHEDULE FOR TYPE, MOUNTING, AND OTHER SPECIFICS.
2.	CONNECT EMERGENCY AND/OR EXIT LIGHTS TO THE UNSWITCHED SIDE OF THE AREA LIGHTING BRANCH CIRCUIT.
3.	ARROW DENOTES EXIT DIRECTION.
4.	USE HEAVY DUTY FOR 480 VOLT.
5.	MOUNT SWITCH AT DOOR JAM PER MANUFACTURER'S INSTRUCTIONS.
6.	PROVIDE UL LISTED DEVICE TO BE USED WITH THE FIRE ALARM PANEL/SYSTEM OR PROVIDE A MONITOR MODULE TO CONNECT INTO FIRE ALARM SYSTEM.
7.	PROVIDE RACEWAY WITH OUTLETS 12" ON CENTER UNO.

ABBREVIATIONS	
AFCI - ARC FAULT CKT INTERRUPTER	MCC - MOTOR CONTROL CENTER
AFF - ABOVE FINISHED FLOOR	MDP - MAIN DISTRIBUTION PANEL
AFG - ABOVE FINISHED GRADE	MLO - MAIN LUGS ONLY
AIC - AMPS INTERRUPTING CAPACITY	MOP - MAX. OVERCURRENT PROTECTION (N) - NEW
AL - ALUMINUM	NIC - NOT IN CONTRACT
ATS - AUTOMATIC TRANSFER SWITCH	NEC - NATIONAL ELECTRICAL CODE
BC - BARE COPPER	NFPA - NATIONAL FIRE PROT. ASSN.
BFC - BELOW FINISHED CEILING	NFPA - NATIONAL FIRE PROT. ASSN.
BFG - BELOW FINISHED GRADE	NL - NIGHT LIGHT
CKT - CIRCUIT	NR - NOT REQUIRED
CND. OR C - CONDUIT	NTS - NOT TO SCALE
CLG - INSTALLED IN CEILING	PC - PLUMBING CONTRACTOR
C.R. - CORD REEL	PH - PHASE
CT - CURRENT TRANSducer	PNL - PANEL
CU - COPPER	POC - POINT OF CONNECTION
(E) - EXISTING TO REMAIN	POS - POINT OF SALE
EC - ELECTRICAL CONTRACTOR	(R) - RELOCATED
EM - EMERGENCY	REC - RECEPTACLES
(F) - FUTURE	RMC - RIGID METAL CONDUIT
FACP - FIRE ALARM CONTROL PANEL	SCA - SHORT CIRCUIT AMPERES
FLA - FULL LOAD AMPS	SES - SERVICE ENTRANCE SWITCHGEAR
FNVR - FULL VOLTAGE NON REVERSING	SPD - SURGE PROTECTIVE DEVICE
GC - GENERAL CONTRACTOR	TL - TWIST LOCK
GFCI - GROUND FAULT CKT INTERRUPTER	TTB - TELEPHONE TERMINAL BOARD
GND - GROUND	TR - TAMPER RESISTANT
HP - HORSHPPOWER	TYP - TYPICAL
IG - ISOLATED GROUND	UNO - UNLESS NOTED OTHERWISE
KW - KILOWATTS	VA - VOLT/AMPS
LCP - LIGHTING CONTROL PANEL	VF - VERIFY IN FIELD
LTG - LIGHTING	VR - VANDAL RESISTANT
LV - LOW VOLTAGE	WP - WEATHERPROOF/NEMA 3R
MC - MECHANICAL CONTRACTOR	WU - FURNISHED WITH UNIT
MCA - MINIMUM CIRCUIT AMPS	XFMR - TRANSFORMER
MCB - MAIN CIRCUIT BREAKER	

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REVISIONS		
NO.	DATE	DESCRIPTION

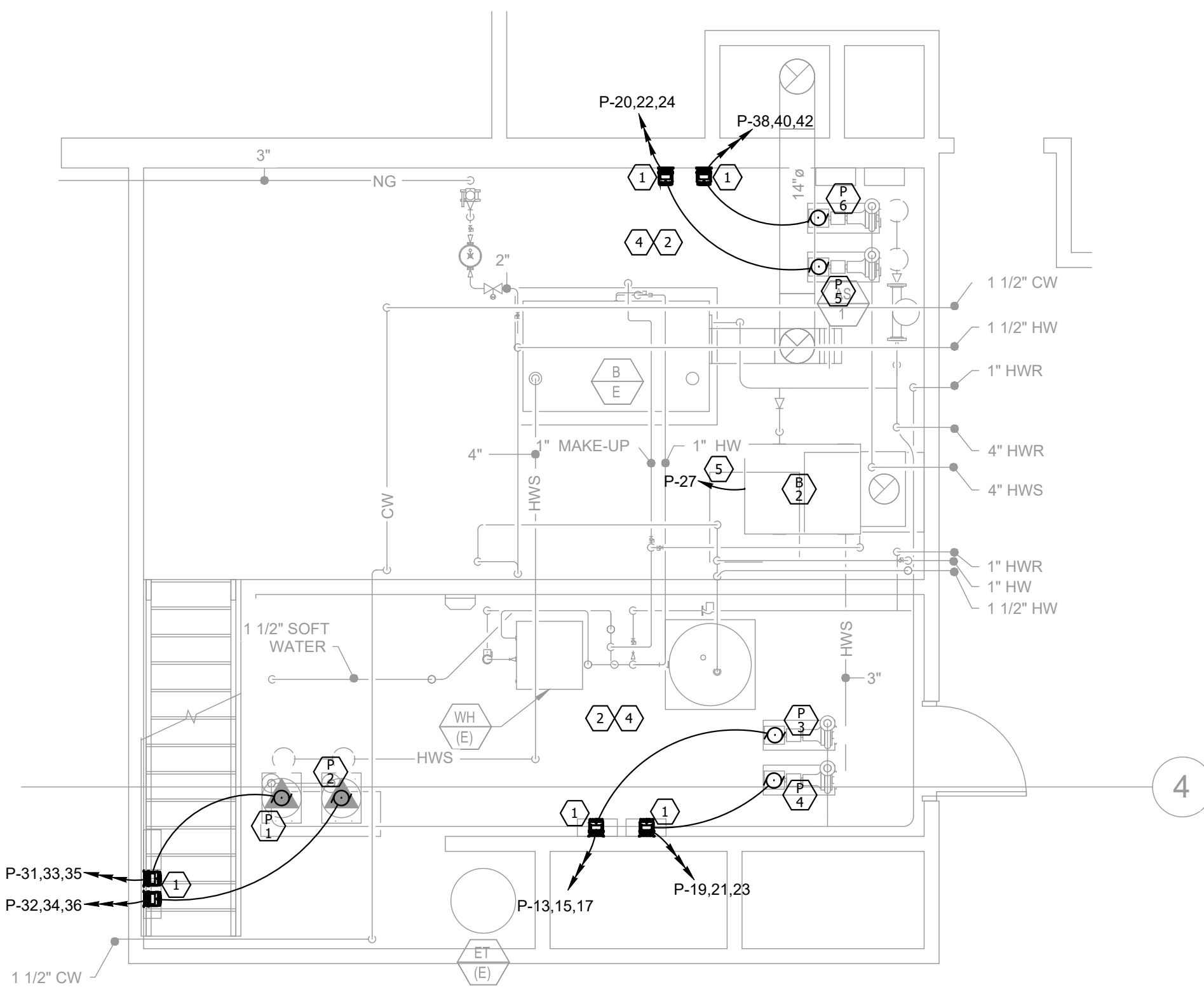
PROJECT #:	22905
DRAWN BY:	RB
CHECKED BY:	AP
DATE:	2/10/2023

ELECTRICAL GENERAL SHEET

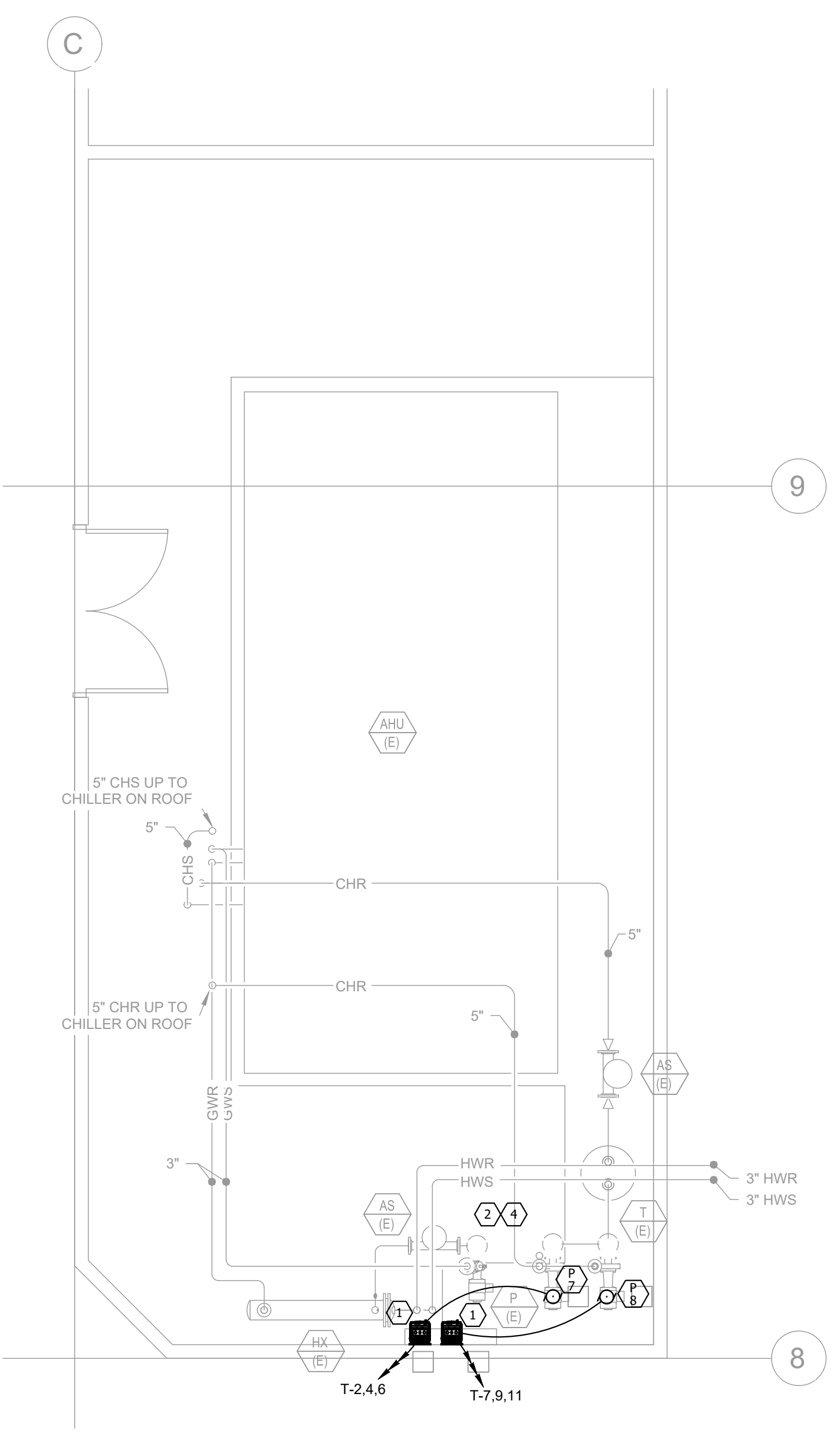
E000

- KEYED NOTES**
- COORDINATE EXACT MOUNTING HEIGHT AND LOCATION OF CONTROLS WITH MC PRIOR TO ROUGH IN.
 - ALL OTHER EXISTING ELECTRICAL FOR OTHER SYSTEMS TO REMAIN.
 - PROVIDE A NEMA 3R RATED FUSED DISCONNECT. VERIFY EXISTING FEEDER LOCATION PRIOR TO ROUGH-IN. ASSUMPTION IS CHILLER IS FEED FROM MDP-3.
 - REMOVE ALL EXISTING CIRCUITRY & STARTERS/DISCONNECT EQUIPMENT THAT IS BEING REPLACED 1:1. ALL CIRCUITS SHOWN TO BE PROVIDED AS NEW.
 - PROVIDE CONTROL POWER TO BOILER. COORDINATE EXACT REQUIREMENTS WITH MC.
- GENERAL NOTES**
- COORDINATE MOUNTING HEIGHTS OF ALL EQUIPMENT WITH ARCHITECTURAL DRAWINGS AND MILL WORK CONTRACTOR PRIOR TO ROUGH IN.
 - VERIFY AND COORDINATE EXACT ELECTRICAL REQUIREMENTS OF ALL EQUIPMENT WITH MANUFACTURER'S RECOMMENDATIONS PRIOR TO INSTALLATION OF EQUIPMENT.

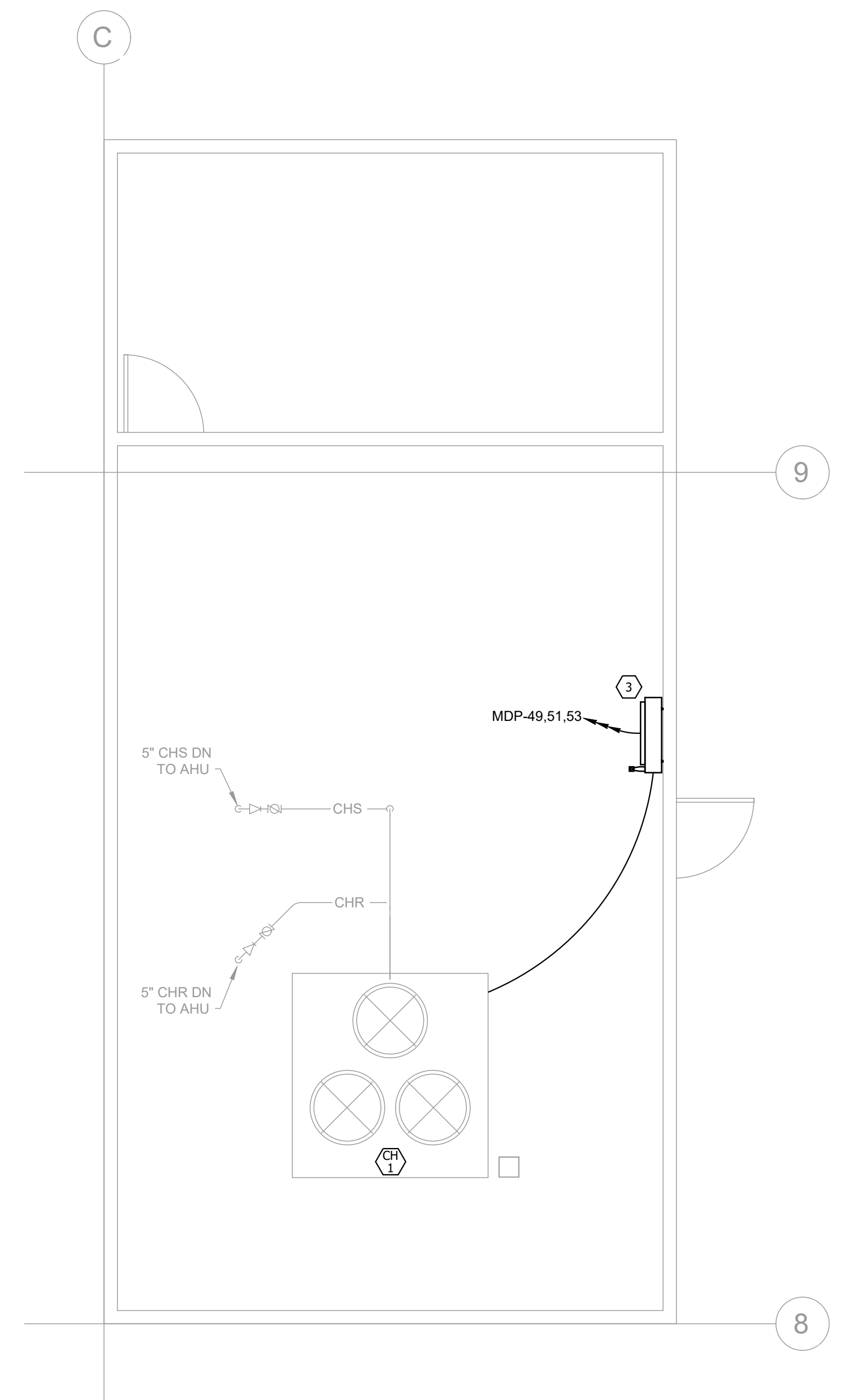
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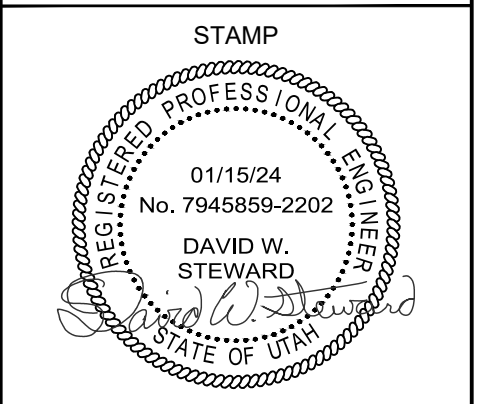
1 MAIN LEVEL MECH ROOM POWER PLAN - BOILER ROOM
SCALE: 1/4" = 1'-0"



2 MAIN LEVEL MECH ROOM POWER PLAN - AHU ROOM
SCALE: 1/4" = 1'-0"



3 POWER PLAN - ROOF
SCALE: 1/4" = 1'-0"



REVISIONS

NO.	DESCRIPTION

ROCKY MOUNTAIN CONSULTING ENGINEERS, INC.
2335 West 12600 South, Suite F1, Riverton, UT 84065
(801) 565-0503 www.rmceut.com

PROJECT #: 22905
DRAWN BY: RB
CHECKED BY: AP
DATE: 2/10/2023

(C) ROCKY MOUNTAIN CONSULTING ENGINEERS, INC. - 2023

SHEET TITLE:
POWER PLAN
E201

ET

D

C

B

A

PANEL SCHEDULE T (EXISTING) Table with columns for panel description, load, and demand factor calculations. Includes a total demand load of 64,313 VA.

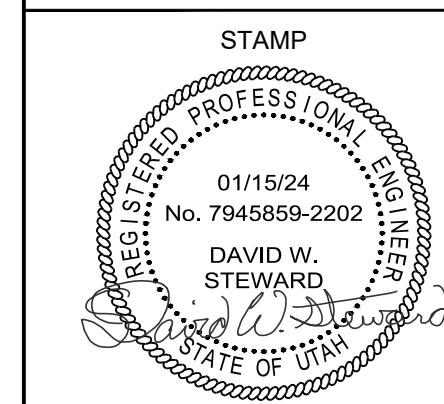
PANEL SCHEDULE MDP (EXISTING IN UPSTAIRS ELECTRICAL ROOM) Table with columns for panel description, load, and demand factor calculations. Includes a total demand load of 1,899 VA.

PANEL SCHEDULE P (EXISTING) Table with columns for panel description, load, and demand factor calculations. Includes a total demand load of 103 A.

EQUIPMENT SCHEDULE Table with columns for equipment description, voltage, phase, kW, HP, MCA, FLA, MOC, conduit size, wire size, gnd. size, and breaker size.

- REMARKS: *PROVIDE SQRUE D SEIRES 2 TYPE BREAKER. 1. FUSED DISCONNECT SWITCH. 2. NON-FUSED DISCONNECT SWITCH.

FRANKLIN ELEMENTARY
350 S. 800 W. PROVO, UT 84001



REVISIONS Table with columns for revision number, date, and description.

ROCKY MOUNTAIN CONSULTING ENGINEERS, INC.
PROJECT #: 22595
DRAWN BY: RB
CHECKED BY: AP
DATE: 2/10/2023

ELECTRICAL SCHEDULES

E601