CVWRF ADMIN BUILDING
AHU UPGRADES

ADMINISTRATION BUILDING

PROFESSIONAL ENGINEER
11/19/25
BRADLEY D. LASH
No. 8681468

WHW ENGINEERING LLC
MECHANICAL & PLUMBING ENGINEERING
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Project Address: 800 Central Valley Rd, South Salt Lake, UT 84119

DRAWING INDEX:

GENERAL:

MECHANICAL:

G001

MECHANICAL LEGEND

SYMBOL	ABR,	DESCRIPTION
GENERAL TERMINOLOGY		
A / ME101		SECTION LETTER DESIGNATION / SECTION DRAWN ON THIS SHEET
A2		DETAIL NUMBER DESIGNATION CORRESPONDING WITH GRID LOCATION
AH / 1		MECHANICAL EQUIPMENT DESIGNATION / EQUIPMENT ITEM DESIGNATION
D-1 / CFM		REGISTER, GRILLE OR DIFFUSER DESIGNATION WITH BALANCING CFM LISTED BELOW
R-1		GRILLE OR LOUVER DESIGNATION WHERE BALANCING NOT REQUIRED
1		REVISION DESIGNATOR AND NUMBER
1		KEY NOTE DESIGNATOR AND NUMBER
	POC	POINT OF CONNECTION
	POR	POINT OF REMOVAL
AFF		ABOVE FINISHED FLOOR
AP		ACCESS PANEL
C EL.		CENTERLINE ELEVATION
GC		GENERAL CONTRACTOR
MC		MECHANICAL CONTRACTOR
ATC		CONTROLS CONTRACTOR
EC		ELECTRICAL CONTRACTOR
FPC		FIRE PROTECTION CONTRACTOR
NIC		NOT IN CONTRACT
NTS		NOT TO SCALE
VCP		VITRIFIED CLAY PIPE
C		COMMON
NC		NORMALLY CLOSED
NO		NORMALLY OPEN

SYMBOL	ABR,	DESCRIPTION
AIR SIDE		
		EXISTING AIR DUCT TO BE REMOVED
		EXISTING AIR DUCT TO REMAIN
		NEW AIR DUCT
		RECT TO RECT AIR DUCT TAKE-OFF
		RECT TO RND AIR DUCT TAKE-OFF
		RND TO RND AIR DUCT TAKE-OFF
		MEDIUM PRESSURE TAKE-OFF
		FLEXIBLE AIR DUCT
		LINED DUCT
		RADIUS ELBOW
		ECCENTRIC DUCT TRANSITION
		CONCENTRIC DUCT TRANSITION
		VOLUME DAMPER
		SUPPLY AIR DIFFUSER
		RETURN & TRANSFER AIR GRILLE
		EXHAUST GRILLE OR CEILING EXH. FAN
		RETURN & OUTSIDE AIR DUCT UP/DN
		RETURN & OA ROUND DUCT UP/DN
		SUPPLY AIR DUCT UP/DN
		SUPPLY AIR ROUND DUCT UP/DN
		EXHAUST AIR DUCT UP/DN
		EXHAUST AIR ROUND DUCT UP/DN
	AP	ACCESS PANEL
		EXISTING EQUIPMENT TO BE REMOVED
		EXISTING EQUIPMENT TO REMAIN
		NEW EQUIPMENT
SA		SUPPLY AIR
RA		RETURN AIR
EA		EXHAUST AIR
OA		OUTSIDE AIR
MA		MIXED AIR
RF		RELIEF AIR
FO		FLAT OVAL
M	MVD	MOTORIZED VOLUME DAMPER
BD	BD	BACKDRAFT DAMPER
F	FD	FIRE DAMPER
S	SD	SMOKE DAMPER
FS	FS	FIRE & SMOKE DAMPER
T	T-STAT	WALL MOUNTED THERMOSTAT
S		WALL MOUNTED TEMP. SENSOR
H	H-STAT	WALL MOUNTED HUMIDISTAT
F	F-STAT	WALL MOUNTED FIRESTAT

SYMBOL	ABR,	DESCRIPTION
WET SIDE		
		PUMP
R		REGULATOR
		UNION
		MANUAL ACTUATOR
		PNUEMATIC DIAPHRAM ACTUATOR
M		ELECTRIC MOTOR ACTUATOR
S		SOLENOID ACTUATOR
		BUTTERFLY VALVE
		GATE VALVE
		GLOBE VALVE - STRAIGHT PATTERN
		GLOBE VALVE - ANGLE PATTERN
M		MOTORIZED 2-WAY CONTROL VALVE
M		MOTORIZED 3-WAY CONTROL VALVE
	PRV	PRESSURE REDUCING VALVE
		CHECK VALVE
		CIRCUIT BALANCING VALVE
		BALL VALVE
P		PRESSURE RELIEF VALVE
T		THERMAL RELIEF VALVE
S		SAFETY RELIEF VALVE
		PLUG VALVE
		NEEDLE VALVE
		TRIPLE DUTY VALVE
		AUTOMATIC AIR VENT
		MANUAL AIR VENT
		STRAINER
		STRAINER W/ PLUG BLOW OFF
		VENTURI
		PRESSURE GAUGE W/ COCK - WATER
		PRESSURE GAUGE W/ COCK - STEAM
		THERMOMETER & THERMOWELL
S		WATER TEMP SENSOR & THERMOWELL
F		FLOW SWITCH
PS		PRESSURE SWITCH
		THERMOWELL
T		PRESSURE & TEMP TAP
T IBT		INVERTED BUCKET STEAM TRAP
TT		THERMOSTATIC STEAM TRAP
F&T		FLOAT & THERMOSTATIC STEAM TRAP
		DIRECTION OF FLOW
		BACKFLOW PREVENTING VALVE

SYMBOL	ABR,	DESCRIPTION
WET SIDE		
		PITCH DOWN
		ELBOW UP/DN
		TEE UP/DN
		EXISTING PIPING TO BE REMOVED
		EXISTING PIPING TO REMAIN
		NEW PIPING
		PIPE CAP OR PLUG
		REDUCER - CONCENTRIC / ECCENTRIC
		EXPANSION JOINT
		FLEXIBLE CONNECTION
		ANCHOR POINT
	CD	CONDENSATE DRAIN
	G	NATURAL GAS PIPING
	CF	CHEMICAL FEED LINE
	GF	GLYCOL FILL LINE
	MU	MAKE-UP WATER LINE
	CW	CULINARY COLD WATER
	HW	CULINARY HOT WATER
	HWREC	CULINARY HOT WATER RECIRC
	V	VENT LINE
	SS	SANITARY SEWER
	HWS	HEATING WATER SUPPLY
	HWR	HEATING WATER RETURN
	CHWS	CHILLED WATER SUPPLY
	CHWR	CHILLED WATER RETURN
	HTWS	HIGH TEMP HEATING WATER SUPPLY
	HTWR	HIGH TEMP HEATING WATER RETURN
	LPS	LOW PRESSURE STEAM
	LPR	LOW PRESSURE STEAM RETURN
	HPS	HIGH PRESSURE STEAM
	HPR	HIGH PRESSURE STEAM RETURN
	CS	CONDENSER SUPPLY
	CR	CONDENSER RETURN
	PC	PUMPED CONDENSATE
	L	REFRIGERANT LIQUID
	S	REFRIGERANT SUCTION
	HG	REFRIGERANT HOT GAS
	FOS	FUEL OIL SUPPLY
	FOR	FUEL OIL RETURN
	FOV	FUEL OIL VENT

1. SEISMIC DESIGN:
   a. SEISMIC IMPORTANT FACT, IE: 1.0
   b. MAPPED SPECTRAL RESPONSE ACCELERATIONS: SS = 1.542, S1 = 0.546
   c. SPECTRAL RESPONSE COEFFICIENTS: SDS = 1.234, SD1 = N/A
   d. SEISMIC DESIGN CATEGORY: D

A. NON-STRUCTURAL DELEGATED DESIGNS AND DEFERRED SUBMITTALS.
   1. NON-STRUCTURAL DELEGATED DESIGNS AND SUBSEQUENT DEFERRED SUBMITTALS ARE FOR ITEMS NOT INCLUDED IN THE STRUCTURAL DELEGATED DESIGN SECTION. THESE ARE ITEMS THAT ARE NOT CRITICAL TO THE OVERALL PERFORMANCE OF THE STRUCTURAL SYSTEM BUT THAT IMPART LOADS AND FORCES TO THE STRUCTURAL SYSTEM.
   2. NON-STRUCTURAL DEFERRED SUBMITTALS SHALL BEAR THE STAMP AND SIGNATURE OF THE DESIGN PROFESSIONAL RESPONSIBLE FOR THE DESIGN.
   3. ARW ENGINEERS WILL REVIEW NON-STRUCTURAL DEFERRED SUBMITTALS TO VERIFY DESIGN CRITERIA IS COMPLIANT WITH THE APPROVED CONSTRUCTION DOCUMENTS.
   4. NON-STRUCTURAL DELEGATED DESIGN ITEMS REQUIRING DEFERRED SUBMITTALS SHALL INCLUDE, BUT ARE NOT LIMITED TO:
      A. SEISMIC BRACING OF ALL ARCHITECTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL ITEMS WHERE REQUIRED BY THE MOST RECENT VERSION OF ASCE 7 AND THE PROJECT CONTRACT DOCUMENTS.

GENERAL NOTES

G-1 - MECHANICAL INFORMATION IS NOT LIMITED TO THE MECHANICAL DRAWINGS. CONTRACTOR SHALL BE RESPONSIBLE FOR INFORMATION OF THE EXISTING BUILDING AND SITE CONDITIONS, EXISTING PIPING, EXISTING ELECTRICAL, AND EXISTING SUPPORTS.

A - EACH DRAWING SHEET AND THE SPECIFICATIONS HAVE BEEN PREPARED TO SUPPLEMENT EACH OTHER AND THEY SHALL BE INTERPRETED AS AN INTEGRAL UNIT WITH ITEMS SHOWN AND NOTED ON ONE AND NOT THE OTHER BEING FURNISHED AND INSTALLED AS THOUGH SHOWN AND CALLED OUT IN ALL PLACES. ITEMS IN SPECIFICATIONS OR DRAWINGS LISTED WHICH ARE DIFFERING IN EFFICIENCY OR QUALITY SHALL BE HELD TO THE GREATEST OF: EFFICIENCY, QUALITY OR GOVERNING CODE.

B - THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR THE INSTALLATION OF THE SYSTEMS ACCORDING TO THE TRUE INTENT AND MEANING OF THE CONTRACT DOCUMENTS.

C - THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT WITH PROPER SERVICE ACCESS AND CLEARANCES ACCORDING TO MANUFACTURERS RECOMMENDATIONS. THE CONTRACTOR SHALL REVIEW SUPPLIERS BID PACKAGES FOR COMPLETENESS AND COMPLIANCE TO THE SPECIFICATIONS, SCHEDULES, AND DESIGN INTENT (ALL EQUIPMENT AND METHODS). THE CONTRACTOR SHALL REMOVE AND REINSTALL CORRECTLY AT HIS OWN EXPENSE ANY EQUIPMENT NOT IN COMPLIANCE.

D - THE CONTRACTOR SHALL CONSULT MANUFACTURERS INSTALLATION INSTRUCTIONS FOR SIZES, METHODS, ACCESSORIES, AND CLEARANCES IN SPACE AVAILABLE PRIOR TO BIDDING PROJECT.

E - ANYTHING NOT CLEAR OR IN CONFLICT WILL BE EXPLAINED BY MAKING APPLICATION TO THE ENGINEER IN WRITING.

G-2 - ANY AND ALL ALTERATIONS TO THE SYSTEM SHOWN SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO CHANGES FOR APPROVAL. CONTRACTOR SHALL NOT START ANY CHANGES UNTIL NOTIFIED IN WRITING. IF CHANGES ARE MADE PRIOR TO APPROVAL CONTRACTOR SHALL TAKE ALL RESPONSIBILITY FOR THE CHANGES MADE AND ALL COSTS RELATING TO FAILURE OR REPLACEMENT OF ALTERATIONS.

G-3 - CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND LOCATIONS.

G-4 - THE WORKING DRAWINGS ARE DIAGRAMMATIC. THEY DO NOT SHOW EVERY OFFSET, BEND, OR ELBOW NECESSARY FOR THE COMPLETE INSTALLATION IN THE SPACE PROVIDED. ALL LOCATIONS FOR MECHANICAL EQUIPMENT SHALL BE FIELD VERIFIED AND COORDINATED WITH ALL DRAWINGS. THE CONTRACTOR SHALL PROVIDE OR COORDINATE WITH THE GENERAL CONTRACTOR PROVISIONS FOR BLOCKOUTS OR CORE DRILLS THROUGH STRUCTURE.

G-5 - THE INSTRUCTION TO "PROVIDE" ALSO INCLUDES INSTALLATION.

G-6 - MECHANICAL CONTRACTOR SHALL PROVIDE SMOKE AND FIRE DAMPERS AS REQUIRED BY LOCAL CODES AND AUTHORITIES.

G-7 - SHEET METAL DUCT SIZES SHOWN ON DRAWINGS ARE FREE AREA DIMENSIONS.

G-8 - PROVIDE BALANCING DAMPERS IN ALL SUPPLY AND EXHAUST AIR BRANCH DUCTS. BALANCE TO CFM SHOWN ON PLAN.

G-9 - PROVIDE TURNING VANES IN ALL ELBOWS OF RECTANGULAR DUCT.

G-10 - THE CONTRACTOR SHALL ASSUME ALL RESPONSIBILITY IN HANDLING AND DISPOSING OF REFRIGERANTS, OILS, ETC. ALL SUCH MATERIALS SHALL BE HANDLED, DISPOSED, AND USED IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL LAWS.

G-11 - THE MECHANICAL CONTRACTOR SHALL VERIFY MOTOR VOLTAGES WITH THE ELECTRICAL DRAWING BEFORE ORDERING MOTORIZED EQUIPMENT AND CONTROLS.

G-12 - C.F.M. LISTED IS ACTUAL AIR.

G-13 - SUPPLIERS SHALL REVIEW ALL DRAWINGS AND THE SPECIFICATIONS PRIOR TO SUBMITTING PRICES TO THE CONTRACTOR. ALL QUESTIONS AND DISCREPANCIES SHALL BE BROUGHT TO THE ENGINEERS ATTENTION PRIOR TO BIDDING.

G-14 - CONTRACTOR SHALL THOROUGHLY REVIEW AND SIGN SUBMITTALS FOR COMPLETENESS AND COMPLIANCE TO THE SPECIFICATIONS PRIOR TO ENGINEERS REVIEW. SUPPLIERS SHALL HIGHLIGHT OR MARK ALL INFORMATION REQUIRED TO SHOW COMPLIANCE TO THE SPECIFICATIONS. ALL REQUESTED EXCEPTIONS TO THE SPECIFICATIONS, OR SCHEDULES SHALL BE CLEARLY NOTED AND EXPLAINED. SUBMITTAL REVIEW AND ACCEPTANCE IS FOR DESIGN CONCEPT ONLY, AND DOES NOT AT ANY TIME RELIEVE THE CONTRACTOR OF RESPONSIBILITY TO MEET SPECIFICATIONS, CAPACITIES, OR DESIGN INTENT.

G-15 - ALL MECHANICAL SHALL BE INSTALLED AND CONFORM TO THE 2021 EDITION OF THE IMC AND IPC WITH UTAH ANNOTATIONS AND LOCAL AUTHORITY REQUIREMENTS.

G-16 - THIS CONTRACTOR SHALL BE RESPONSIBLE FOR THE DRAINING DOWN AND RE-FILLING OF ALL SYSTEMS NECESSARY TO COMPLETE THE WORK OUTLINED BY THIS PROJECT. THIS INCLUDES PROVIDING THE REQUIRED CHEMICAL TREATMENT WHEN RE-FILLING THE SYSTEM.

G-17 - THIS CONTRACTOR SHALL CONTRACT WITH A DESIGN BUILD ELECTRICAL CONTRACTOR FOR THE DESIGN AND CONSTRUCTION OF THE ELECTRICAL PORTION OF THIS PROJECT. ELECTRICAL INSTALLATION AND DESIGN SHALL BE PER 2023 NEC.

CVWRF

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CODE REVIEW STAMP

PROJECT NAME & ADDRESS

CVWRF ADMIN BUILDING AHU UPGRADES

800 Central Valley Rd, South Salt Lake, UT 84119

MARK	DATE	REVISION

PROJECT MANAGER: BDL
DRAWN BY: STAFF
CHECKED BY: JB
DATE: 11/19/2025
WHW JOB NO.: 25048

PROFESSIONAL ENGINEER — 11/19/25 — BRADLEY D. LASH — No. 8681468

SHEET TITLE
MECHANICAL GENERAL NOTES AND LEGEND

SHEET NO.
MG001

SHEET NOTES

1 REMOVE THIS SECTION OF RETURN DUCTWORK AND CAP THE OPEN END. SEE NEW PLAN FOR REROUTED DUCTWORK.

2 REMOVE AND REPLACE THE EXISTING COILS AND PIPING CONNECTIONS. SEE THE NEW SHEETS FOR ADDITIONAL INFORMATION. THE INTENT IS TO MINIMIZE DOWNTIME IN AN OCCUPIED BUILDING SO COORDINATE DEMO WITH NEW INSTALL. REMOVE PIPING BACK TO THE ISOLATION VALVES FOR THE COIL.

1 LEVEL 1 MECHANICAL DEMO FLOOR PLAN
1/8" = 1'-0"

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SHEET TITLE
LEVEL 1 MECHANICAL DEMO PLAN

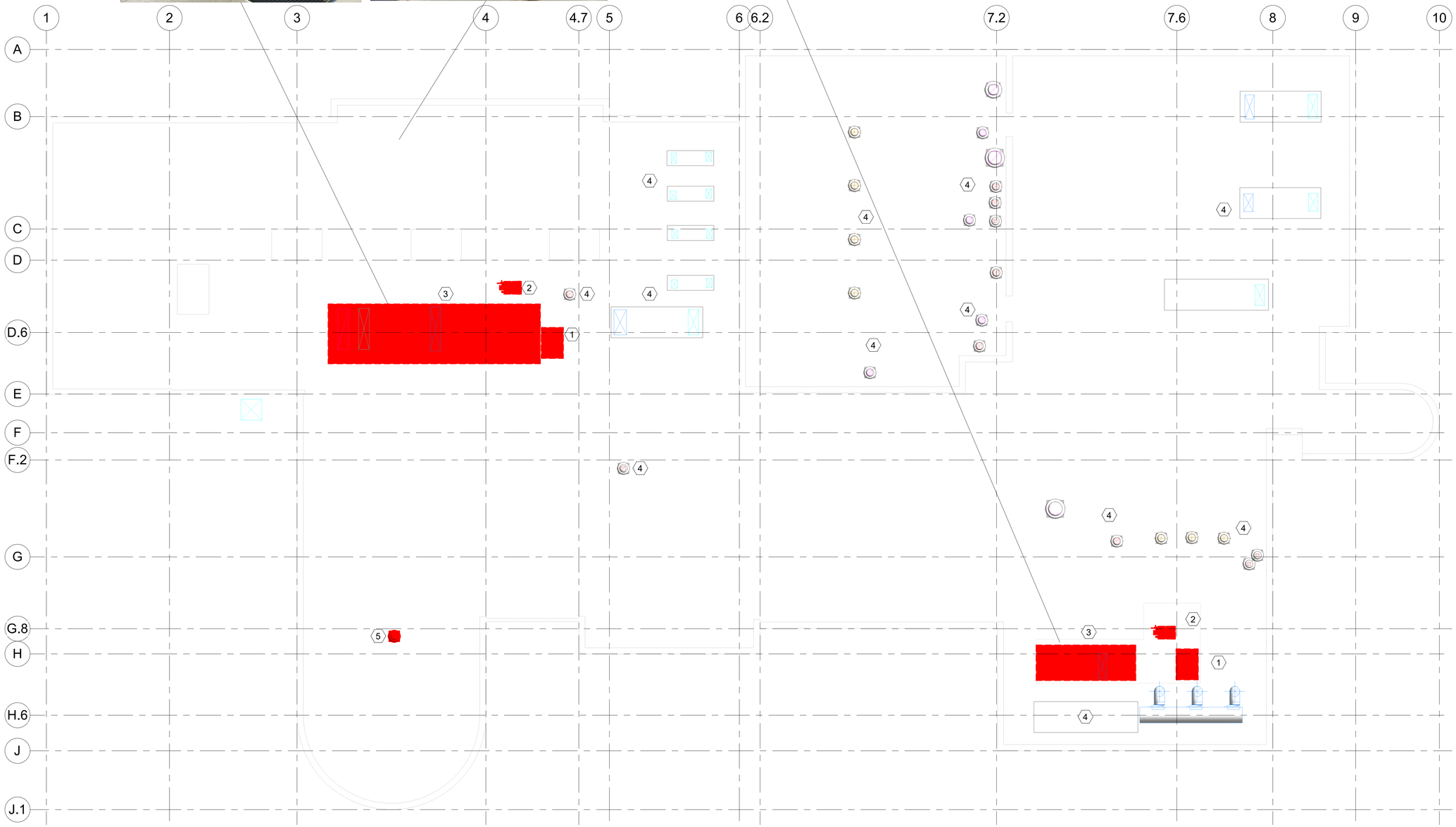
SHEET NO.
MD101

SHEET NOTES

1. REMOVE EXISTING ROOF TOP UNIT AND ASSOCIATED PIPING, DX UNIT, HEATING WATER PIPING IN THE UNIT TO THE MAINS AND CAP, AND OTHER ASSOCIATED ITEMS ABOVE THE ROOM. REMOVE ALL ELECTRICAL CONDUCTORS BACK TO THE ELECTRICAL ROOM. SEE NEW PLAN FOR NEW AHU POWER REQUIREMENTS.
2. REMOVE AND RELOCATE THE EXISTING BOILER TO THE NEW BOILER ENCLOSURE. RELOCATE THE GAS TRAIN AND ASSOCIATED ITEMS. CAP THE GAS LINE IN PLACE. CAP THE HEATING WATER LINES BELOW THE ROOF AND PATCH OPENING WEATHER TIGHT.

SHEET NOTES

3. CAP THE GAS LINE SERVING THE BOILER.
4. EXISTING EQUIPMENT SHALL REMAIN UNLESS OTHERWISE NOTED.
5. REMOVE AND REPLACE THE EXISTING EXHAUST FAN IN THIS APPROXIMATE LOCATION.



1 MECHANICAL DEMO ROOF PLAN
1/8" = 1'-0"

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BRADLEY D. LASH
No. 8681468

SHEET TITLE
MECHANICAL DEMO ROOF PLAN

SHEET NO.
MD102

GENERAL NOTES:

1. PROVIDE COMPLETE CONTROLS UPGRADE FROM THE EXISTING ALERTON CONTROLS TO UTAH YAMAS TO TIE INTO THE REST OF THE CAMPUS. THIS INCLUDES AHU'S, VAV'S, FANS, ETC.

SHEET NOTES (#)

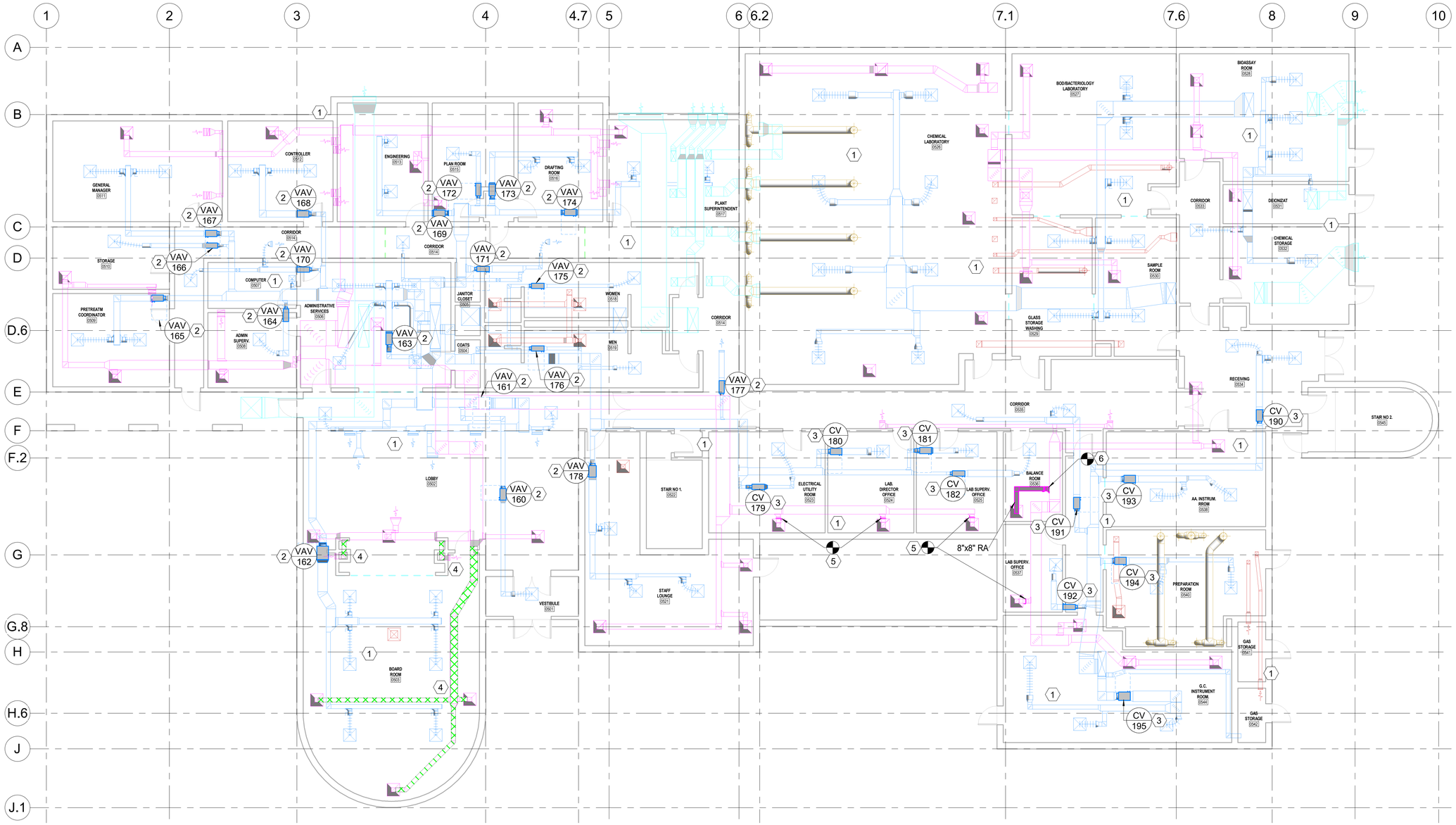
1. EXISTING DUCTWORK, DIFFUSERS, GRILLES, ETC SHALL REMAIN. REBALANCE THE SUPPLY TO THE AIRFLOWS SHOWN.
2. REMOVE THE EXISTING HEATING COIL AND PIPING BACK TO ISOLATION VALVE. FIELD VERIFY. SEE NEW SHEETS FOR NEW VAV BOX AND PIPING REQUIREMENTS.
3. PROVIDE NEW VAV AND PROGRAM AS A CONSTANT VOLUME HEATING COIL. REPLACE THE VALVE TRAIN AND REBALANCE AIRFLOW AND WATER FLOW AS SHOWN IN THE SCHEDULES. TRANSITION AS NEEDED.

SHEET NOTES (#)

4. CLEAN THE EXISTING HATCHED RETURN DUCTWORK IN THE BOARD ROOM AND ENSURE THAT THE EXISTING DUCT LINER IS INTACT AND NOT BLOCKING AIRFLOW. THIS MAY REQUIRE A CAMERA VISUAL CHECK. IF THERE ARE OBSTRUCTIONS THAT CANNOT BE CLEARED NOTIFY THE ENGINEER.
5. PROVIDE MANUAL BALANCING DAMPERS ON THE RETURN BRANCHES IN THESE ROOMS AND ADJUST TO MAINTAIN A POSITIVE PRESSURE IN THESE ROOMS.

SHEET NOTES (#)

6. TIE INTO THE EXISTING GRILLE AND DUCTWORK IN THIS APPROXIMATE LOCATION AND TIE RETURN INTO THE LAB SIDE. PROVIDE BALANCING DAMPER AND ADJUST TO MAINTAIN A POSITIVE PRESSURE IN THE OFFICE OF 10%.



1 LEVEL 1 MECHANICAL FLOOR PLAN
1/8" = 1'-0"

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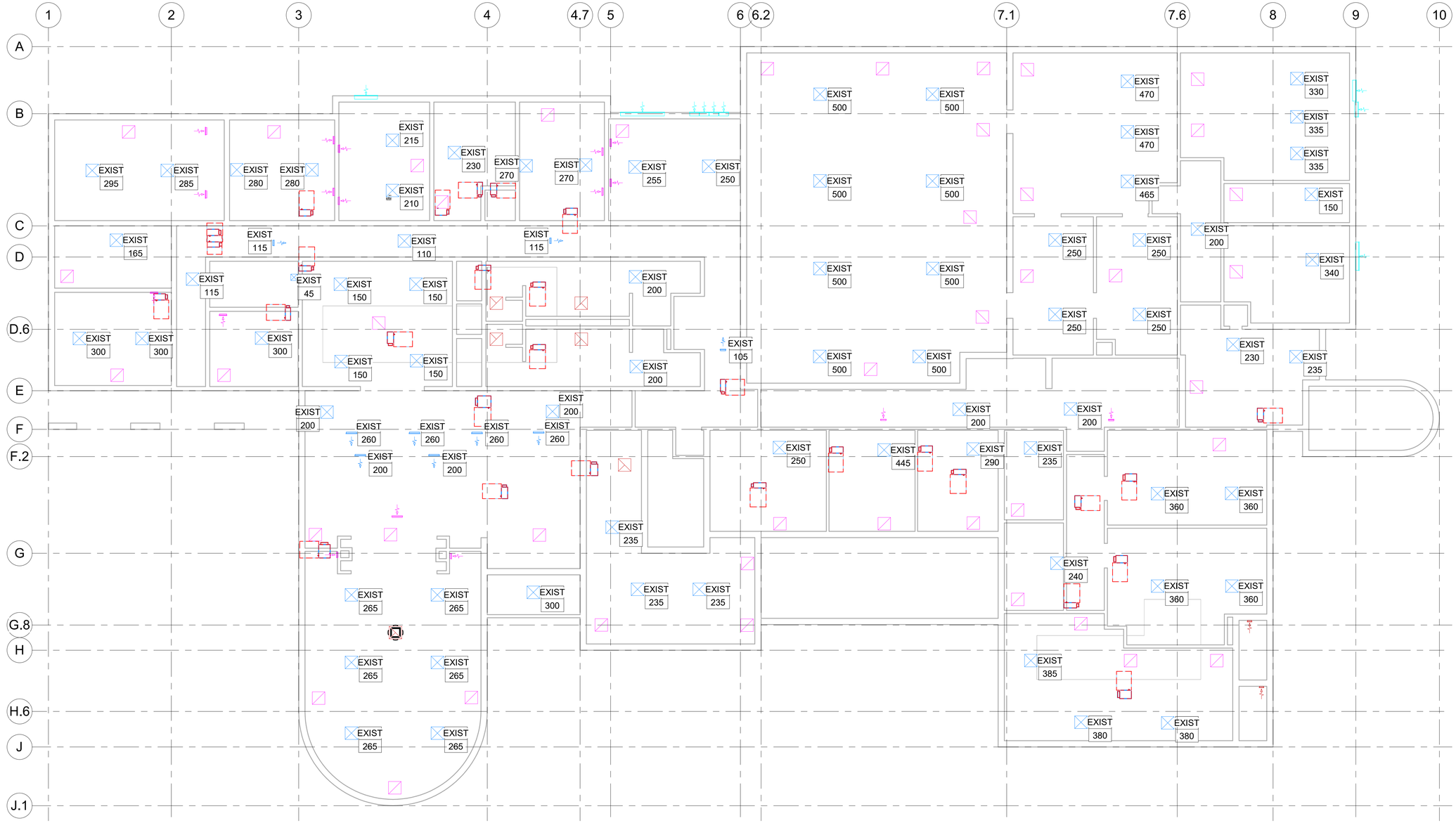
SHEET TITLE
LEVEL 1 MECHANICAL FLOOR PLAN

SHEET NO.
ME101.1

GENERAL NOTES

1. REBALANCE THE AIR SYSTEM FOR BOTH OF THE NEW AHU'S TO THE AIRFLOWS SHOWN. THIS SHALL BE PERFORMED BY A 3RD PARTY CERTIFIED TAB CONTRACTOR PER THE SPECIFICATIONS. SUBMIT REPORT TO THE ENGINEER OF RECORD FOR REVIEW.



1 LEVEL 1 MECHANICAL RCP
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No. 8681468

SHEET TITLE
LEVEL 1 MECHANICAL RCP

SHEET NO.
ME101.2

SHEET NOTES

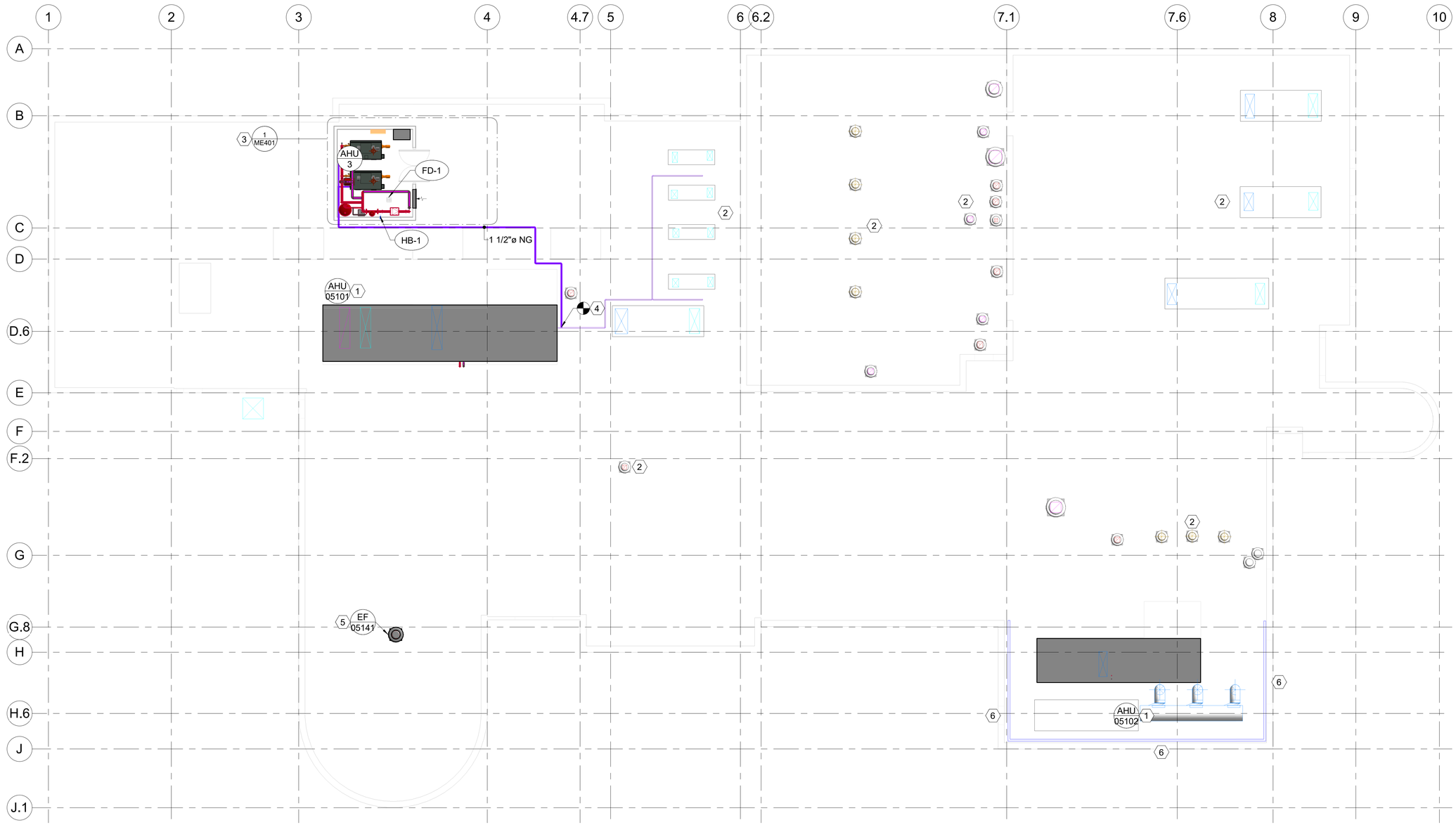
1. PROVIDE NEW PACKAGED ROOF TOP UNIT IN THIS APPROXIMATE LOCATION. PROVIDE TRANSITION CURBS AND TRANSITION DUCTWORK AS NEEDED TO EXISTING DROPS. PROVIDE NEW POWER FOR THE UNIT. ROUTE THROUGH EXISTING RACEWAYS TO THE ELECTRICAL ROOM. REPLACE THE BREAKER IN THE MCC AS NEEDED. FIELD VERIFY ALL DIMENSIONS, EXISTING CONDITIONS, ELECTRICAL, ETC. ELECTRICAL SIZING AND WORK SHALL BE THROUGH DESIGN BUILD ELECTRICAL ENGINEER.
2. EXISTING EQUIPMENT SHALL REMAIN UNLESS OTHERWISE NOTED.

SHEET NOTES

3. PROVIDE NEW PREMANUFACTURERED BOILER ENCLOSUE. SEE DETAILS AND LARGE SCALE PLAN FOR ADDITIONAL INFORMATION.
4. PROVIDE NEW GAS LINE TO EACH BOILER. LOCATE GAS LINE BELOW IN CEILING SPACE AND OFFSET OVER AND UP THROUGH THE ROOF TO MISS THE AHU. REUSE THE EXISTING GAS TRAIN FOR THE BOILERS (BASE BID) OR PROVIDE NEW (BID ALTERNATE #1). INSTALL PER MANUFACTURERS RECOMMENDATIONS.

SHEET NOTES

5. PROVIDE NEW EXHAUST FAN. TIE INTO THE EXISTING SWITCH DOWN BELOW. PROVIDE TRANSITION CURB AS NEEDED. FIELD VERIFY EXISTING DIMENSIONS. ELECTRICAL TO VERIFY POWER AND RECONNECT OR UPSIZE CONDUCTORS AND BREAKERS AS NEEDED.
6. PROVIDE BALLASTED SCREENWALL FOR AROUND THE 3 SIDES OF THE MECHANICAL EQUIPMENT. SHALL BE A MINIMUM OF 6'-6" FALL. COORDINATE FEET SUPPORTS WITH EXISTING CONDITIONS. COLOR SHALL MATCH THE EXISTING BUILDING. PROVIDE ARCHLOUVERS, OR APPROVED EQUAL, WITH V2TH STYLE, PREFAB STRUCTURAL FRAMING SYSTEMS.



1 MECHANICAL ROOF PLAN
1/8" = 1'-0"

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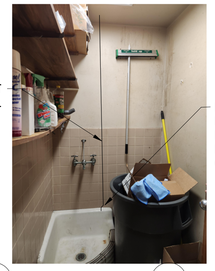
SHEET TITLE
MECHANICAL ROOF PLAN

SHEET NO.
ME102

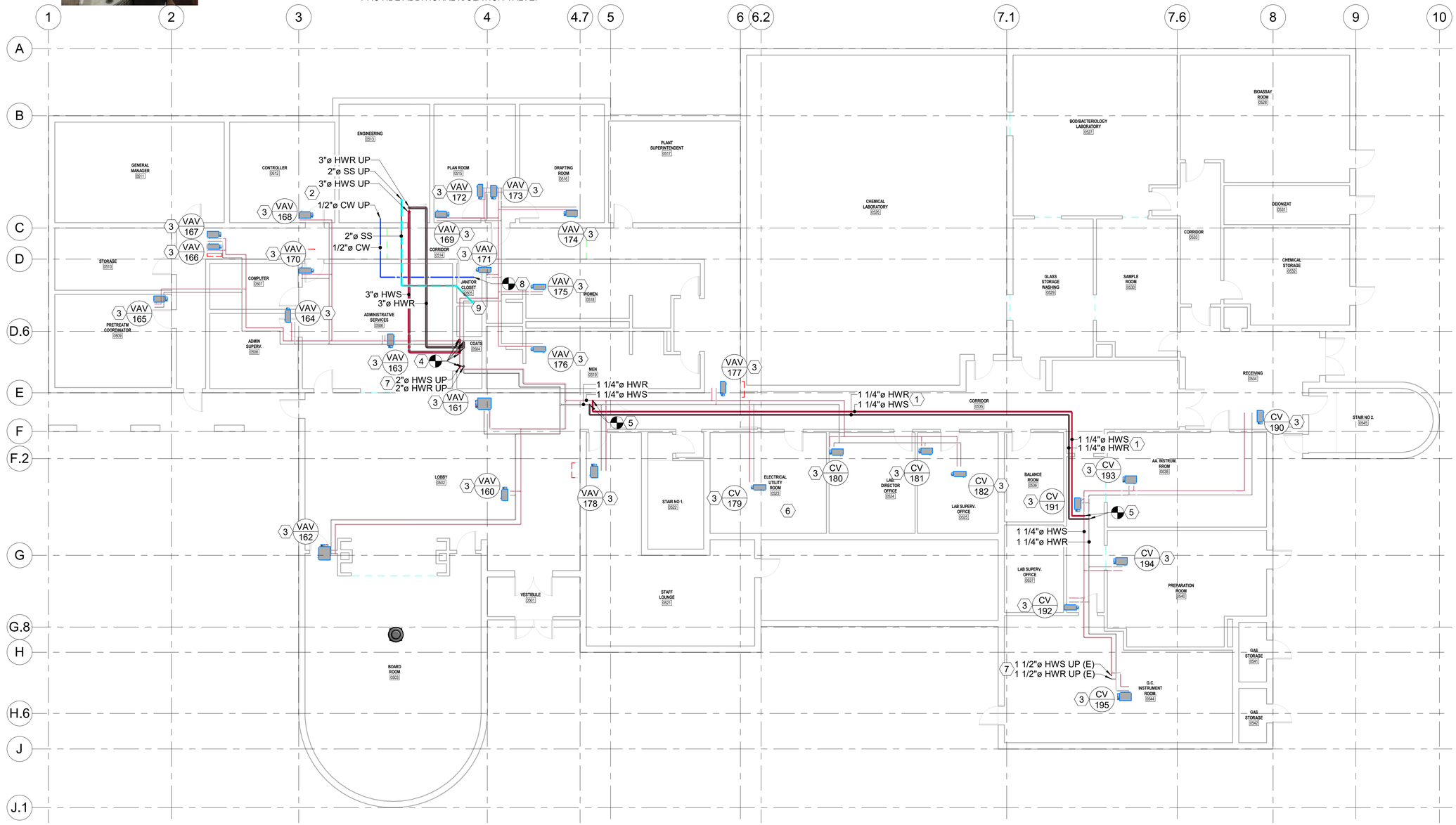


EXPOSED TIGHT TO THE WALL

DAYLIGHT INTO THE MOP SINK WITH 2 ELBOWS TERMINATING DOWN BELOW THE RIM OF THE MOP SINK.

SHEET NOTES

1. ROUTE NEW HEATING WATER SUPPLY AND RETURN TO CONNECT THE 2 SYSTEMS. THE INTENT IS TO HAVE ALL OF THE VAV'S TIED TO ONE BOILER SYSTEM.
2. ROUTE HEATING WATER LINES DOWN FROM THE BOILER ENCLOSURE IN THIS APPROXIMATE LOCATION. ROUTE TO THE EXISTING MAINS AS SHOWN. FIELD VERIFY BEST ROUTING.
3. TIE INTO THE EXISTING HEATING WATER SUPPLY AND RETURN AT THE VAV ISOLATION VALVE AND PROVIDE NEW PIPING PER THE DETAILS. SEE THE SCHEDULE FOR 2 WAY VS 3 WAY LOCATIONS. PROVIDE ADDITIONAL ISOLATION VALVE.
4. TIE INTO THE EXISTING PIPING IN THIS APPROXIMATE LOCATION. THERE ARE UP TO 3 PIPES FROM DIFFERENT DIRECTIONS FOR BOTH SUPPLY AND RETURN PIPES. TIE 3" INTO EACH OF THESE CONNECTIONS OF THE EXISTING. CAP THE EXISTING DROP FROM THE ROOF BELOW THE ROOF. FIELD VERIFY.
5. TIE INTO THE EXISTING MAIN IN THIS APPROXIMATE LOCATION TO ROUTE THE NEW HEATING WATER PIPES TO CONNECT THE 2 SYSTEMS. FIELD VERIFY BEST LOCATION AND ROUTING.
6. THE POWER FOR THE NEW AHU'S AND THE NEW BOILER ENCLOSURE SHALL BE ROUTED TO THE PANELS IN THIS ROOM. FIELD VERIFY. ELECTRICAL TO BE DESIGNED AS DESIGN BUILD.
7. ROUTE PIPING UP TO THE AHU. PROVIDE VALVES AND ACCESSORIES PER DETAIL. COORDINATE EXACT LOCATION TO RISE UP INTO THE COIL.
8. TIE INTO THE EXISTING COLD WATER IN THIS APPROXIMATE LOCATION AND ROUTE UP TO NEW HOSE BIB IN THE NEW BOILER ENCLOSURE. FIELD VERIFY THE BEST ROUTING.
9. ROUTE SEWER FROM FLOOR DRAIN IN THE BOILER ENCLOSURE TO THIS APPROXIMATE LOCATION. ROUTE EXPOSED DOWN THE WALL AND DAYLIGHT INTO THE FLOOR DRAIN. FIELD VERIFY BEST ROUTING. PATCH AND REPAIR CEILING, AS NEEDED TO MATCH EXISTING.



1 LEVEL 1 MECH PIPING FLOOR PLAN
1/8" = 1'-0"

CONSULTANTS

WHW ENGINEERING LLC
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CODE REVIEW STAMP

PROJECT NAME & ADDRESS

CVWRF ADMIN BUILDING AHU UPGRADES

800 Central Valley Rd, South Salt Lake, UT 84119

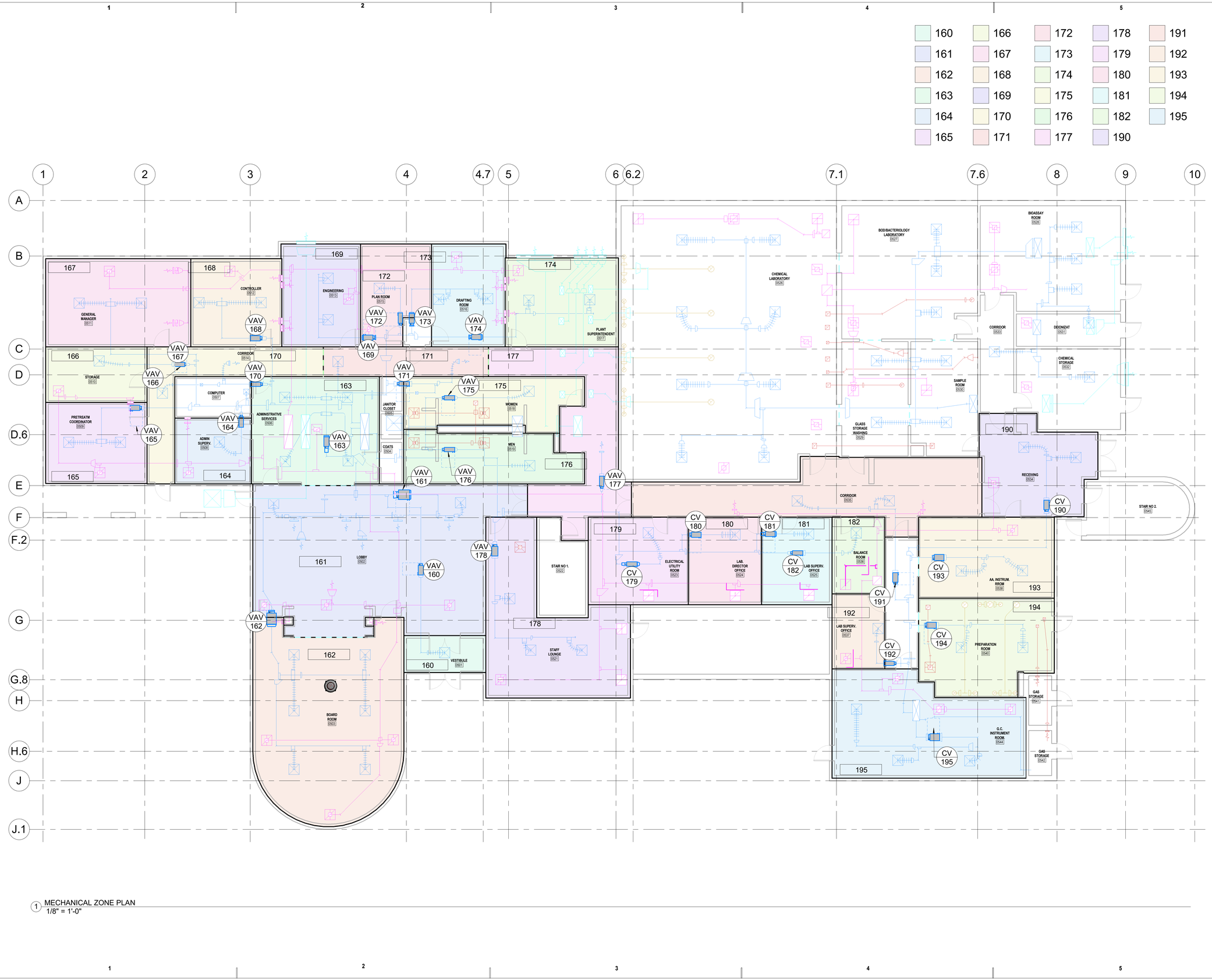
MARK	DATE	REVISION

PROJECT MANAGER: BDL
DRAWN BY: STAFF
CHECKED BY: JB
DATE: 11/19/2025
WHW JOB NO.: 25048

PROFESSIONAL ENGINEER 11/19/25 BRADLEY D. LASH No. 8681468

SHEET TITLE
LEVEL 1 MECH PIPING FLOOR PLAN

SHEET NO.
ME111



1 MECHANICAL ZONE PLAN
1/8" = 1'-0"

CVWRF

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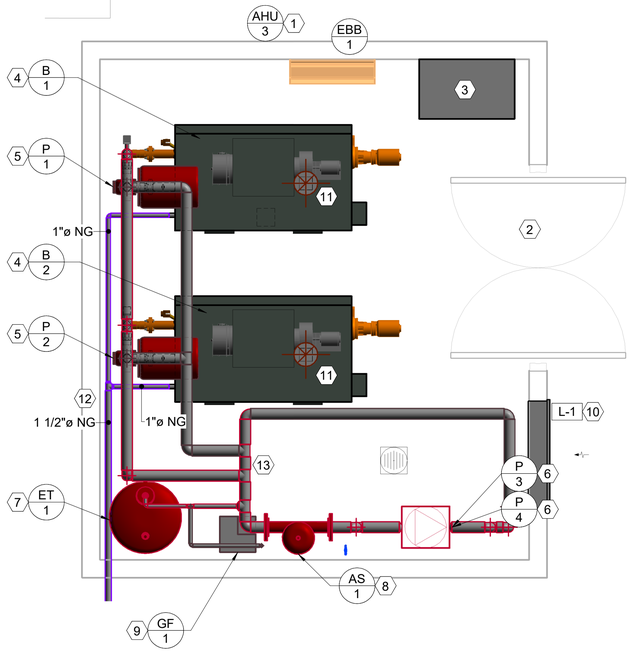
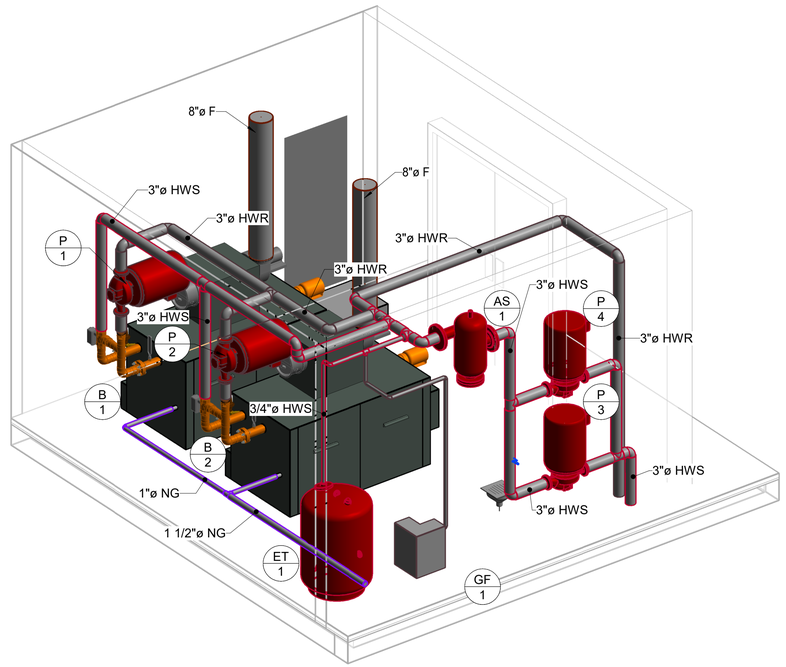
PROFESSIONAL ENGINEER
11/19/25
BRADLEY D. LASH
No. 8681468

SHEET TITLE
MECHANICAL ZONE PLAN

SHEET NO.
MZ101



1 NEW BOILER ROOM PLAN
1/2" = 1'-0"



2 MECHANICAL ROOM ISOMETRIC

SHEET NOTES

1. PROVIDE CUSTOM PREMANUFACTURER BOILER ENCLOSURE. UNITECH OR EQUAL. SHALL BE A MINIMUM OF 12'X14'X9' CLEAR ON THE INSIDE DIMENSIONS. SHALL BE INSULATED TO MEET IECC MINIMUM INSULATION. SHALL HAVE DOUBLE DOORS TO FIT THE BOILERS THROUGH. SHALL COME WITH ELECTRICAL PANEL. ROUTE POWER FROM THE PANEL TO THE MAIN ELECTRICAL. THIS PANEL SHALL MEET ALL NEC AND LOCAL CODES AND REGULATIONS. POWER ALL EQUIPMENT FROM THE PANEL.
2. PROVIDE DOUBLE DOORS ON THE ENCLOSURE THAT LOCK SHUT FROM THE OUTSIDE.
3. PROVIDE 208/3/60 PANEL. DESIGN BUILD ELECTRICAL SHALL MEET ALL NEC AND LOCAL CODES. WIRING SHALL BE ROUTED IN CONDUIT RACEWAYS AND BE COPPER WIRING. add 120 transformer.
4. BASE BID: RELOCATE THE EXISTING BOILERS FROM OUTSIDE TO THIS LOCATION. PROVIDE 4" HOUSEKEEPING CONCRETE PADS. INSTALL PER MANUFACTURERS RECOMMENDATIONS. EXISTING BOILERS ARE RAYPAK H1-1083C.
   ADD ALT #1: PROVIDE NEW BOILERS AS SHOWN IN THE SCHEDULES AND ASSOCIATED ITEMS NOTED IN THE SCHEDULE.
5. PROVIDE NEW PRIMARY PUMPS. SEE DETAILS AND FLOW DIAGRAM FOR ADDITIONAL INFORMATION.
6. PROVIDE NEW SECONDARY PUMPS. SEE DETAILS AND FLOW DIAGRAM FOR ADDITIONAL INFORMATION.
7. PROVIDE EXPANSION TANK IN THIS APPROXIMATE LOCATION. PIPE PER DETAILS AND FLOW DIAGRAM.
8. PROVIDE AIR SEPARATOR IN THIS APPROXIMATE LOCATION. PIPE PER DETAILS AND FLOW DIAGRAM.
9. PROVIDE GLYCOL FEEDER WITH 30% PG SOLUTION. PIPE PER DETAILS AND FLOW DIAGRAM.
10. PROVIDE COMBUSTION AIR LOUVER WITH MOTORIZED DAMPER. PROVIDE RELAYS TO OPEN THE DAMPER WHEN EITHER OF THE BOILERS ARE ENERGIZED AND CLOSE WHEN BOTH ARE OFF.
11. ROUTE NEW AL294C FLUES UP THROUGH THE ROOF OF THE ENCLOSURE. PROVIDE DRAFT HOOD AND TERMINATE WITH VENT CAP PER MANUFACTURERS RECOMMENDATIONS.
12. PROVIDE NEW GAS LINE TO EACH BOILER. LOCATE GAS LINE BELOW IN CEILING SPACE AND OFFSET OVER AND UP THROUGH THE ROOF TO MISS THE AHU. REUSE THE EXISTING GAS TRAIN FOR THE BOILERS (BASE BID) OR PROVIDE NEW (BID ALTERNATE #1). INSTALL PER MANUFACTURERS RECOMMENDATIONS.
13. PROVIDE CROSSOVER BRIDGE WITH 2 TIGHTLY SPACED TEES GOING THE SAME DIRECTION. NO MORE THAN 3-5 PIPE DIAMETERS APART AND NO OBSTRUCTIONS IN THE LINE. THE INTENT IS FOR VIRTUALLY NO PRESSURE DROP IN THAT SECTION OF PIPING TO DECOUPLE THE PUMPS.

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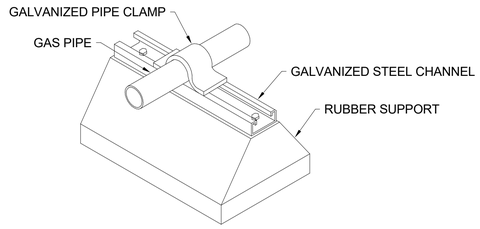
WHW JOB NO.: 25048

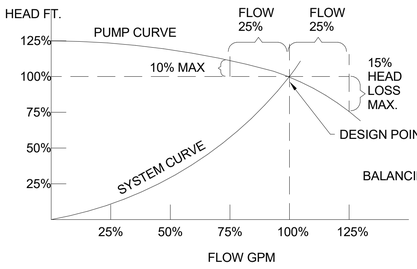
PROFESSIONAL ENGINEER 11/19/25 BRADLEY D. LASH No. 8681468

SHEET TITLE
MECHANICAL LARGE SCALE PLANS

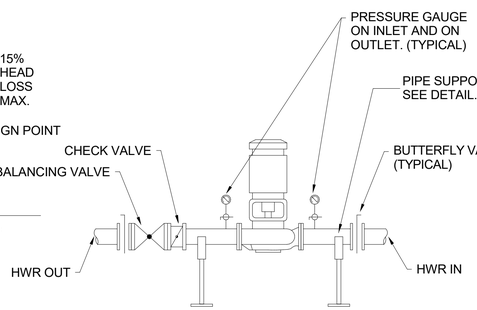
SHEET NO.
ME401



D1 GAS PIPE SUPPORT ON ROOF DETAIL
SCALE: NONE



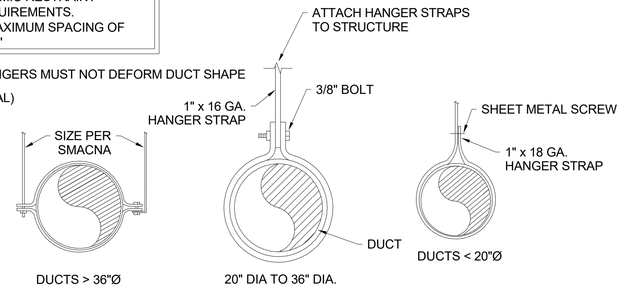
D2 PUMP CURVE DETAIL
SCALE: NONE



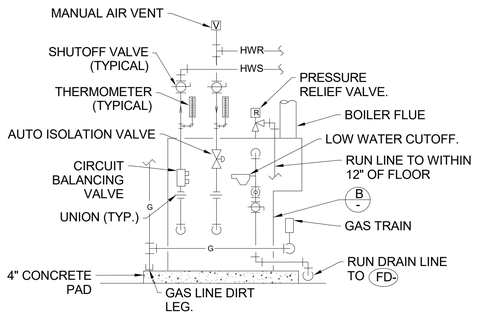
C3 IN-LINE PUMP DETAIL
SCALE: NONE

NOTES:
1. SEE SPECIFICATIONS FOR SEISMIC RESTRAINT REQUIREMENTS.
2. MAXIMUM SPACING OF 10'-0"

HANGERS MUST NOT DEFORM DUCT SHAPE

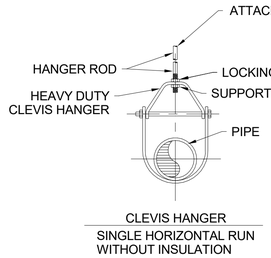


D4 ROUND DUCT SUPPORT DETAIL
SCALE: NONE

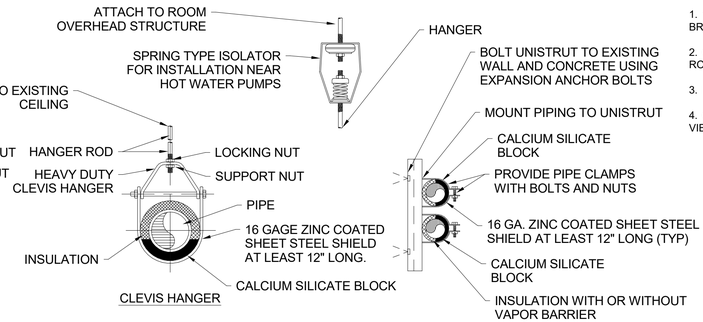


C1 HOT WATER BOILER DETAIL
SCALE: NONE

NOTE:
PROVIDE WITH VAPOR BARRIER ON CHILLED WATER AND DOMESTIC COLD WATER PIPING



CLEVIS HANGER
SINGLE HORIZONTAL RUN WITHOUT INSULATION

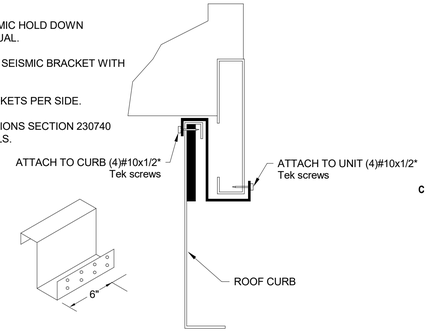


CLEVIS HANGER

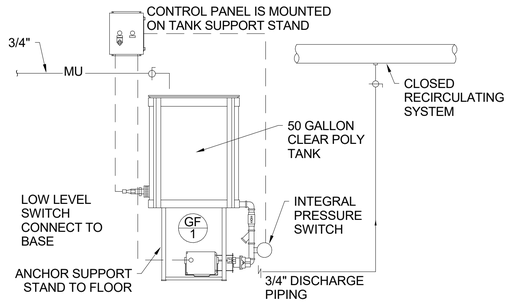
C3 PIPE HANGER DETAIL
SCALE: NONE

GENERAL NOTES:

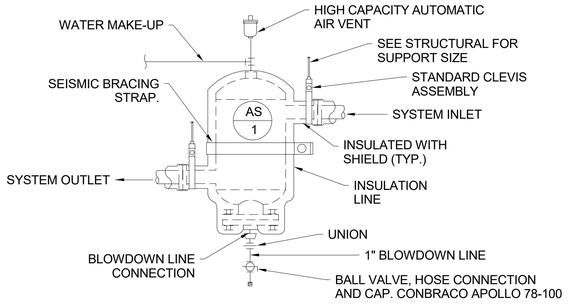
1. 16 GA GALVANIZED STEEL SEISMIC HOLD DOWN BRACKETS BY MICROMETL OR EQUAL.
2. COORDINATE EXACT DEPTH OF SEISMIC BRACKET WITH ROOFTOP MANUFACTURER.
3. PROVIDE A MINIMUM OF 2 BRACKETS PER SIDE.
4. COORDINATE WITH SPECIFICATIONS SECTION 230740 VIBRATION AND SEISMIC CONTROLS.



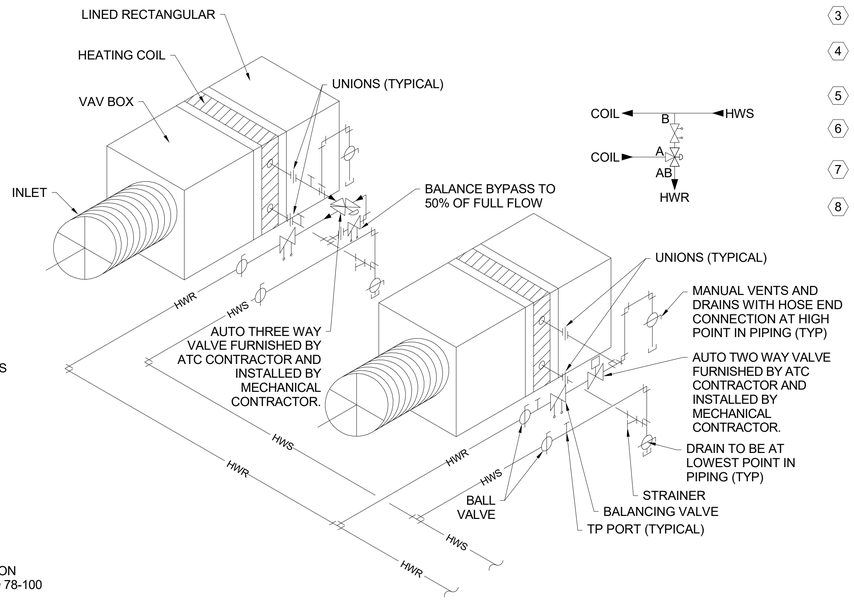
C4 ROOFTOP UNIT SEISMIC BRACKET DETAIL
SCALE: NONE



B1 GLYCOL CHEMICAL FEED SYSTEM
SCALE: NONE



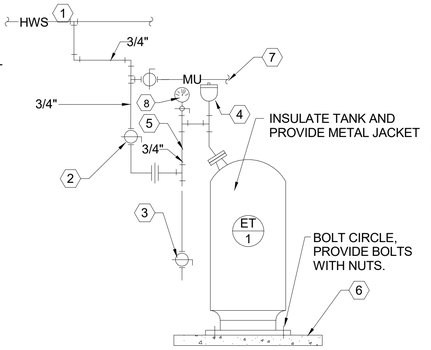
A1 AIR SEPARATOR TANK DETAIL
SCALE: NONE



A2 VAV BOX (W/ RE-HEATING COIL) HOT WATER PIPING DETAIL
SCALE: NONE

DETAIL NOTES:

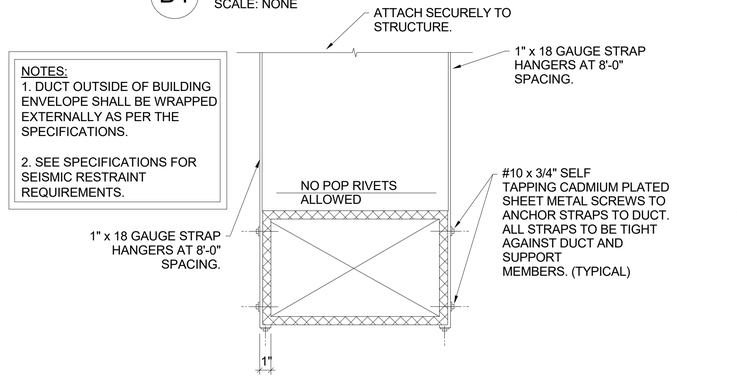
1. CONNECT TO SIDE OF HOT WATER SUPPLY MAIN. AVOID TOP OR BOTTOM CONNECTION TO PREVENT AIR OR DEBRIS FROM ENTERING PIPE TO TANK.
2. SHUT OFF BALL VALVE. REQUIRED TO PROPERLY PRECHARGE TANK.
3. DRAIN VALVE.
4. AUTOMATIC AIR VENT. BELL & GOSSETT MODEL #7 OR #87.
5. ANTI-THERMO-SYPHON LOOP. 12" MINIMUM DROP.
6. NEW HOUSEKEEPING PAD SEE DETAIL A1 THIS SHEET.
7. FROM GLYCOL FEEDER.
8. PRESSURE GAUGE -O- 60 PSIG WITH GAUGE COCK.



B4 EXPANSION TANK DETAIL
SCALE: NONE

NOTES:
1. DUCT OUTSIDE OF BUILDING ENVELOPE SHALL BE WRAPPED EXTERNALLY AS PER THE SPECIFICATIONS.

2. SEE SPECIFICATIONS FOR SEISMIC RESTRAINT REQUIREMENTS.



A4 DUCT STRAP HANGER DETAIL
SCALE: NONE

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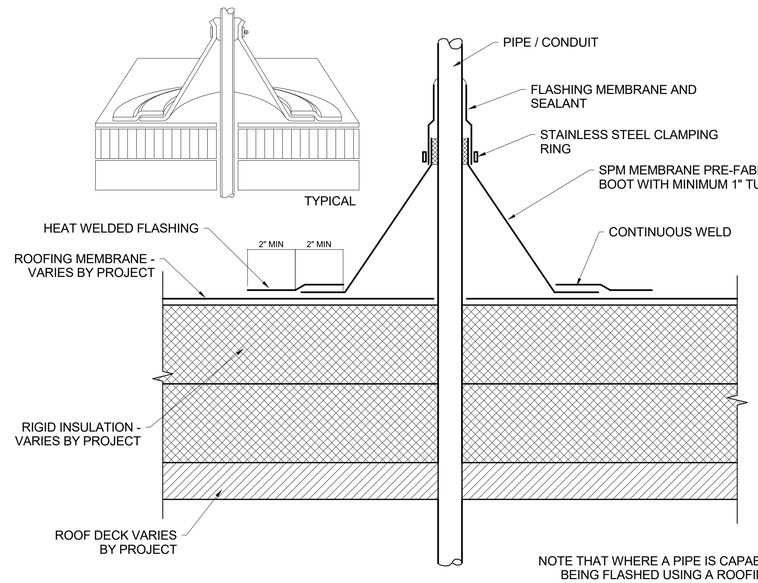
PROFESSIONAL ENGINEER 11/19/25 BRADLEY D. LASH No. 8681468

SHEET TITLE

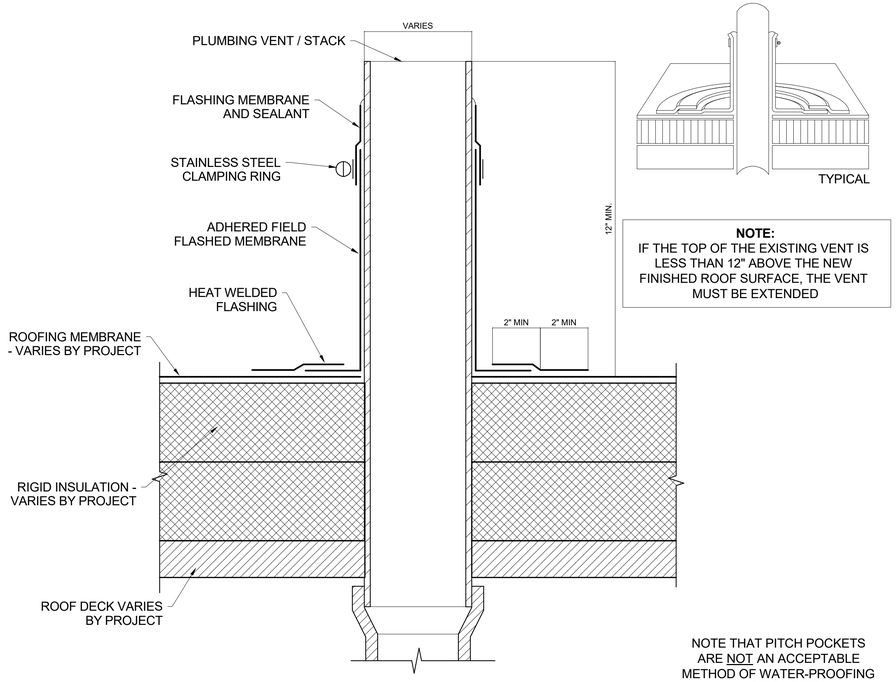
MECHANICAL DETAILS

SHEET NO.

ME501



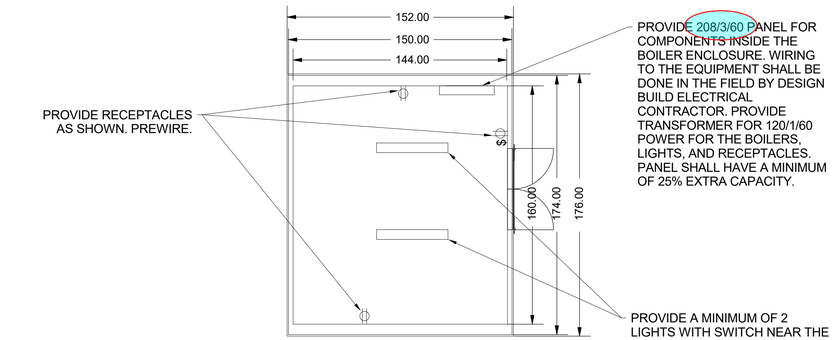
NOTE THAT WHERE A PIPE IS CAPABLE OF BEING FLASHED USING A ROOFING MANUFACTURERS PRE-FABRICATED BOOT (SUCH AS SHOWN ABOVE), THAT OPTION IS REQUIRED AND SHOULD BE USED OVER A FIELD FLASHED DETAIL (SUCH AS SHOWN BELOW)



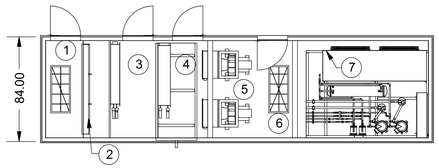
NOTE:
IF THE TOP OF THE EXISTING VENT IS LESS THAN 12" ABOVE THE NEW FINISHED ROOF SURFACE, THE VENT MUST BE EXTENDED

NOTE THAT PITCH POCKETS ARE NOT AN ACCEPTABLE METHOD OF WATER-PROOFING BASE OF PIPES

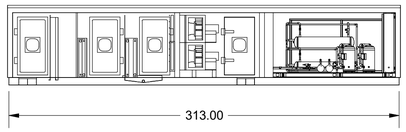
A1 PIPE AND CONDUIT FLASHING DETAIL
SCALE: NONE

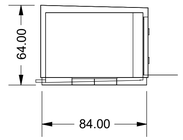


C3 BOILER ENCLOSURE
SCALE: NONE

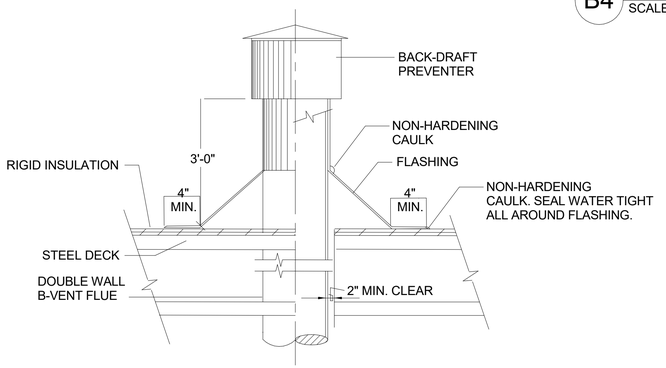


ITEM	QTY	PART NUMBER
1	1	36"X14" RETURN AIR OPENING WITH GRATE
2	1	(6) 24"X24" 12" HEPA FILTERS
3	1	30" FH 48" FL HEATING COIL
4	1	30" FH 48" FL COOLING COIL
5	4	SUPPLY FANS WITH BACKDRAFT DAMPERS
6	1	36"X14" SUPPLY AIR OPENING WITH GRATE
7	1	CONDENSING UNIT





B4 DOAS DETAIL
SCALE: NONE



A3 FLUE THRU ROOF DETAIL
SCALE: NONE

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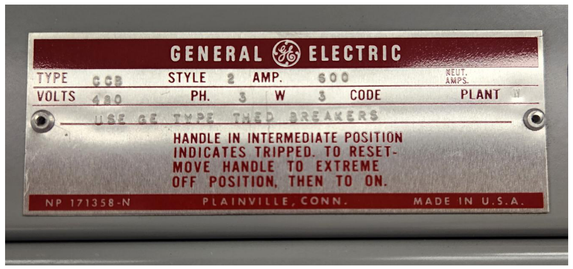
PROFESSIONAL ENGINEER 11/19/25 BRADLEY D. LASH No. 8681468

SHEET TITLE
MECHANICAL DETAILS

SHEET NO.
ME502

EXISTING MCC



SPARE TO BE USED TO FEED THE NEW BOILER ROOM PANEL. THE INTENT IS TO USE THIS SPACE (REPLACE BREAKER AS NEEDED) AND ROUTE UP TO SERVE THE PANEL IN THE BOILER ENCLOSURE.

EXISTING AHU

EXISTING AHU

EXISTING DOAS

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PROFESSIONAL ENGINEER
11/19/25
BRADLEY D. LASH
No. 8681468

SHEET TITLE
MECHANICAL ELECTRICAL DETAILS

SHEET NO.
ME503

AIR HANDLER UNIT SCHEDULE

TAG							ELECTRICAL						COOLING		HEATING								DIMENSIONS					
TYPE	#	AREA SERVED	CFM	CFM (OUTSIDE AIR)	ESP	FAN TYPE	VOLTAGE	PHASE	FREQUENCY	HP	MCA	MOCP	TOTAL CAPACITY	TONS	BTU/HR	GPM	EWT	LWT	EAT DB	EAT WB	LAT DB	AIR TEMP RISE	LENGTH	WIDTH	HEIGHT	OPERATING WEIGHT	MANUF & MODEL	SCHEDULE NOTES
AHU	3	BOILER ENCLOSURE					460 V	3	60 Hz	0 hp	10 A	20 A											150"	174"	114"	9,000 lb	UNITECH	9
AHU	05101	WEST OFFICES	11,000 CFM	2,200 CFM	2.1 in-wg	4 FAN ARRAY	460 V	3	60 Hz	20 hp	94 A	110 A	348,000 Btu/h	30	290,000 Btu/h	16 GPM	180 °F	140 °F	60 °F	53 °F	70 °F	17 °F	290"	94"	88"	6,500 lb	TRANE	1,2,3,4,5,6,7,8
AHU	05102	LAB	4,000 CFM	4,000 CFM	1 in-wg	4 FAN ARRAY	460 V	3	60 Hz	10 hp	47 A	60 A	240,000 Btu/h	20	303,600 Btu/h	15 GPM	180 °F	140 °F	0 °F	-2 °F	70 °F	70 °F	313"	84"	64"	11,000 lb	UNITECH	1,2,3,4,5,6,8

1. ALL UNITS OVER 2,000 CFM MUST BE EQUIPPED WITH SMOKE DETECTORS.
2. WATER VELOCITY SHALL BE BETWEEN 1.5 FPS AND 3.0 FPS.
3. SEE SPECIFICATIONS FOR OTHER APPROVED MANUFACTURERS.
4. PROVIDE WITH INTERNAL LIGHTS AT EACH SECTION, WITH SEPARATE 120V SINGLE POINT POWER CONNECTION
5. PROVIDE WITH HINGED ACCESS DOORS
6. PROVIDE WITH 2" PRE-FILTER RACK AND 12" POST FILTER RACK FOR HEPA FILTERS.
7. PROVIDE WITH MIXING BOX, COMPLETE WITH AUTO OUTSIDE AIR DAMPERS, ECONOMIZER DAMPERS, RETURN AIR DAMPERS AND RELIEF AIR DAMPERS.
8. PROVIDE HERESITE COATING ON ALL COILS AND COMPONENTS WITHIN THE AIRSTREAM OF THE AHU.
9. PROVIDE PREMANUFACTURED AHU SHELL FOR A BOILER ENCLOSURE, COMPLETE WITH ELECTRICAL PANEL, LIGHTING, POWER FOR BOILER AND COMPONENTS, ETC FOR A FULLY FUNCTIONING SYSTEM. SHALL BE INSULATED TO MEET IECC 2021 REQUIREMENTS. SEE PLANS FOR ADDITIONAL INFORMATION. PROVIDE WITH 18" CURB. ATTACHED TO STRUCTURE SIMILAR TO A AHU ROOF CURB. ELECTRICAL SHALL BE DESIGN BUILD. SEE ME602 TO ELECTRICAL LOADS WITHIN THE ENCLOSURE. PROVIDE THE REQUIRED STEP DOWN TRANSFORMER FOR 120 LOADS. PROVIDE A MINIMUM OF 3 RECEPTACLES. WEIGHT INCLUDES INTERNAL BOILER, PUMPS, PIPING, AND OTHER COMPONENTS.

VAV SCHEDULE

TAG			INLET SIZE	MAX CLG CFM	MIN CFM	HEATING							ROWS	VALVE CONFIG	MANUF. & MODEL	SCHEDULE NOTES
TYPE	#	AREA SERVED				EAT	LAT	HTG CFM	HTG BTU/HR	EWT	GPM	PIPE SIZE				
VAV	160	VESTIBULE 0501	8"	300 CFM	100 CFM	65 °F	98 °F	300 CFM	12,400 Btu/h	180 °F	0.5 GPM	1/2"	2	2 WAY	PRICE SDV	1,2,3,4
VAV	161	LOBBY 0502	14"	1,640 CFM	550 CFM	65 °F	102 °F	1,640 CFM	73,600 Btu/h	180 °F	5.5 GPM	1"	2	3-WAY	PRICE SDV	1,2,3,4
VAV	162	BOARD ROOM 0503	14"	1,600 CFM	430 CFM	65 °F	102 °F	1,280 CFM	56,500 Btu/h	180 °F	3 GPM	3/4"	2	3-WAY	PRICE SDV	1,2,3,4
VAV	163	ADMINISTRATIVE SERVICES 0506	8"	600 CFM	200 CFM	65 °F	100 °F	600 CFM	25,500 Btu/h	180 °F	2 GPM	3/4"	2	2-WAY	PRICE SDV	1,2,3,4
VAV	164	ADMIN SUPERVISOR 0508	6"	300 CFM	100 CFM	65 °F	102 °F	300 CFM	13,600 Btu/h	180 °F	0.8 GPM	1/2"	2	2-WAY	PRICE SDV	1,2,3,4
VAV	165	PRETREATMENT COORDINATOR 0509	8"	600 CFM	200 CFM	65 °F	100 °F	600 CFM	25,500 Btu/h	180 °F	2 GPM	3/4"	2	2-WAY	PRICE SDV	1,2,3,4
VAV	166	STORAGE 0510	6"	165 CFM	55 CFM	65 °F	102 °F	165 CFM	7,400 Btu/h	180 °F	0.3 GPM	1/2"	2	3-WAY	PRICE SDV	1,2,3,4
VAV	167	GENERAL MANAGER 0511	8"	575 CFM	195 CFM	65 °F	101 °F	575 CFM	25,000 Btu/h	180 °F	2 GPM	3/4"	2	2-WAY	PRICE SDV	1,2,3,4
VAV	168	CONTROLLER 0512	8"	260 CFM	90 CFM	65 °F	102 °F	260 CFM	11,700 Btu/h	180 °F	0.5 GPM	1/2"	2	3-WAY	PRICE SDV	1,2,3,4
VAV	169	ENGINEERING 0513	8"	425 CFM	145 CFM	65 °F	101 °F	425 CFM	18,400 Btu/h	180 °F	1 GPM	1/2"	2	3-WAY	PRICE SDV	1,2,3,4
VAV	170	CORRIDOR 0514	6"	230 CFM	80 CFM	65 °F	102 °F	230 CFM	10,400 Btu/h	180 °F	0.5 GPM	1/2"	2	3-WAY	PRICE SDV	1,2,3,4
VAV	171	CORRIDOR 0514	6"	225 CFM	75 CFM	65 °F	103 °F	225 CFM	10,300 Btu/h	180 °F	0.5 GPM	1/2"	2	2-WAY	PRICE SDV	1,2,3,4
VAV	172	PLAN ROOM 0515	6"	230 CFM	80 CFM	65 °F	102 °F	230 CFM	10,400 Btu/h	180 °F	0.5 GPM	1/2"	2	3-WAY	PRICE SDV	1,2,3,4
VAV	173	DRAFTING ROOM 0516	8"	540 CFM	180 CFM	65 °F	100 °F	540 CFM	22,900 Btu/h	180 °F	1.5 GPM	1/2"	2	3-WAY	PRICE SDV	1,2,3,4
VAV	174	PLANT SUPERINTENDENT 0517	8"	505 CFM	170 CFM	65 °F	101 °F	505 CFM	22,200 Btu/h	180 °F	1.5 GPM	1/2"	2	3-WAY	PRICE SDV	1,2,3,4
VAV	175	WOMENS RESTROOM 0518	6"	200 CFM	70 CFM	65 °F	102 °F	200 CFM	9,000 Btu/h	180 °F	0.4 GPM	1/2"	2	3-WAY	PRICE SDV	1,2,3,4
VAV	176	MENS RESTROOM 0519	6"	200 CFM	70 CFM	65 °F	102 °F	200 CFM	9,000 Btu/h	180 °F	0.4 GPM	1/2"	2	2-WAY	PRICE SDV	1,2,3,4
VAV	177	CORRIDOR 0514	6"	105 CFM	35 CFM	65 °F	106 °F	105 CFM	5,100 Btu/h	180 °F	0.2 GPM	1/2"	2	2-WAY	PRICE SDV	1,2,3,4
VAV	178	STAFF LOUNGE 0521	10"	710 CFM	240 CFM	65 °F	101 °F	710 CFM	31,300 Btu/h	180 °F	2 GPM	3/4"	2	2-WAY	PRICE SDV	1,2,3,4
VAV	179	ELECTRICAL UTILITY ROOM 0523	6"	250 CFM	85 CFM	65 °F	100 °F	250 CFM	10,800 Btu/h	180 °F	0.5 GPM	1/2"	2	2-WAY	PRICE SDV	1,2,3,4
VAV	180	LAB DIRECTOR OFFICE 0524	8"	445 CFM	150 CFM	65 °F	104 °F	445 CFM	20,900 Btu/h	180 °F	1.5 GPM	1/2"	2	2-WAY	PRICE SDV	1,2,3,4
VAV	181	LAB SUPERVISOR OFFICE 0525	8"	290 CFM	100 CFM	65 °F	103 °F	290 CFM	13,200 Btu/h	180 °F	0.6 GPM	1/2"	2	3-WAY	PRICE SDV	1,2,3,4
VAV	182	BALANCE ROOM 0536	6"	240 CFM	80 CFM	65 °F	104 °F	240 CFM	11,300 Btu/h	180 °F	0.6 GPM	1/2"	2	3-WAY	PRICE SDV	1,2,3,4
CV	190	RECEIVING 0534	8"	465 CFM	465 CFM	65 °F	103 °F	465 CFM	21,400 Btu/h	180 °F	1.5 GPM	1/2"	2	3-WAY	PRICE SDV	1,2,3,4,5
CV	191	CORRIDOR 0535	8"	400 CFM	400 CFM	65 °F	102 °F	400 CFM	18,000 Btu/h	180 °F	1 GPM	1/2"	2	3-WAY	PRICE SDV	1,2,3,4,5
CV	192	LAB DIRECTOR OFFICE 0537	6"	240 CFM	240 CFM	65 °F	101 °F	240 CFM	10,600 Btu/h	180 °F	0.5 GPM	1/2"	2	2-WAY	PRICE SDV	1,2,3,4,5
CV	193	AA INSTRUMENT ROOM 0538	10"	680 CFM	680 CFM	65 °F	102 °F	680 CFM	30,700 Btu/h	180 °F	2 GPM	3/4"	2	3-WAY	PRICE SDV	1,2,3,4,5
CV	194	PREPARATION ROOM 0540	10"	680 CFM	680 CFM	65 °F	102 °F	680 CFM	30,700 Btu/h	180 °F	2 GPM	3/4"	2	3-WAY	PRICE SDV	1,2,3,4,5
CV	195	GC INSTRUMENT ROOM 0544	12"	1,145 CFM	1,145 CFM	65 °F	99 °F	1,145 CFM	47,200 Btu/h	180 °F	3 GPM	3/4"	2	3-WAY	PRICE SDV	1,2,3,4,5

1. SEE SPECIFICATIONS FOR OTHER APPROVED MANUFACTURERS.
2. SOUND PERFORMANCE SELECTED AT 1.0" STATIC PRESSURE DROP ACROSS BOX.
3. SEE VAV PIPING AND VAV SEQUENCE DETAIL.
4. SIZED USING 30% PROPYLENE GLYCOL.
5. VAV SHALL BE PROGRAMMED AS A CONSTANT VOLUME HEATING COIL BOX. TIE INTO THE NEW BMS.

EXHAUST FAN SCHEDULE

TAG		AREA SERVED	CFM	ESP	ELECTRICAL						MAX SONES	OPERATING WEIGHT	MANUF & MODEL	SCHEDULE NOTES
TYPE	#				VOLTAGE	PHASE	FREQUENCY	RPM	HP	BRAKE HP				
EF	05141	BOARD ROOM	850 CFM	0.35 in-wg	120 V	1	60 Hz	890	0.17 hp	0.07 hp	4.8	35 lb	COOK ACED	1,2

1. INTERLOCK FAN WITH SWITCH IN BOARD ROOM.
2. SEE SPECIFICATIONS FOR ADDITIONAL APPROVED MANUFACTURERS.

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PROJECT NAME & ADDRESS

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800 Central Valley Rd, South Salt Lake, UT 84119

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PROJECT MANAGER: BDL
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CHECKED BY: JB
DATE: 11/19/2025
WHW JOB NO.: 25048

PROFESSIONAL ENGINEER — 11/19/25 — BRADLEY D. LASH — No. 8681468

SHEET TITLE: MECHANICAL SCHEDULES

SHEET NO.: ME601

ELECTRICAL NOTES:

THE PANEL(S) FOR THE BOILER ROOM SHALL BE DESIGNED TO HANDLE THE LOADS FOR THE EQUIPMENT ON THIS PAGE IN ADDITION TO LIGHTING AND 3 RECEPTACLES IN THE BOILER ROOM.

BOILER SCHEDULE

TAG			HEATING		WATER TEMP					ELECTRICAL					
TYPE	#	AREA SERVED	INPUT (BTU/HR)	OUTPUT (BTU/HR)	EWT	LWT	GPM	PRESSURE DROP	GLYCOL PERCENTAGE	VOLTAGE	PHASE	FREQUENCY	OPERATING WEIGHT	MANUF & MODEL	SCHEDULE NOTES
B	1	BUILDING	1,083,000 Btu/h	888,000 Btu/h	140 °F	180 °F	45 GPM	10 ftH2O	0.3	120 V	1	60 Hz	920 lb	RAYPAK H1-1083C	1,2,3,4,5
B	1A	BUILDING	999,900 Btu/h	939,900 Btu/h	140 °F	180 °F	45 GPM	5 ftH2O	0.3	120 V	1	60 Hz	750 lb	LOCHINVAR FTX1000N	1,3,4,6
B	2	BUILDING	1,083,000 Btu/h	888,000 Btu/h	140 °F	180 °F	45 GPM	10 ftH2O	0.3	120 V	1	60 Hz	920 lb	RAYPAK H1-1083C	1,2,3,4,5
B	2A	BUILDING	999,900 Btu/h	939,900 Btu/h	140 °F	180 °F	45 GPM	5 ftH2O	0.3	120 V	1	60 Hz	750 lb	LOCHINVAR FTX1000N	1,3,4,6

1. BOILER RATINGS ARE FOR SEA LEVEL.
2. **EXISTING BOILERS TO BE RELOCATED.** PROVIDE NEW PIPING COMPONENTS, FLUE, AND ITEMS SHOWN ON THE FLOW DIAGRAM.
3. PROVIDE AL29-4C FLUES. VERIFY SIZE WITH MANUFACTURER.
4. PROVIDE 120 V CONTROL CIRCUIT.
5. PROVIDE CSD-1 GAS TRAIN OR RELOCATE THE EXISTING GAS TRAIN.
6. **BID ALTERNATE #1:** RATHER THAN RELOCATING THE EXISTING BOILERS PROVIDE NEW HIGH EFFICIENCY BOILERS. PROVIDE NEW GAS TRAIN, CONDENSATE NEUTRALIZATION KIT, AND OTHER COMPONENTS FOR A FULLY FUNCTIONING SYSTEM.

PUMP SCHEDULE

TAG								ELECTRICAL								
TYPE	#	AREA SERVED	PUMP TYPE	GPM	HEAD	SUCTION SIZE	DISCHARGE SIZE	VOLTAGE	PHASE	FREQUENCY	HP	SPEED	GLYCOL TYPE	OPERATING WEIGHT	MANUF & MODEL	SCHEDULE NOTES
P	1	HEATING WATER PRIMARY	INLINE	46 GPM	30 ftH2O	1.5"	1.5"	460 V	3	60 Hz	1 hp	1,800	30% PG	85 lb	TACO KV	1,2,3
P	2	HEATING WATER PRIMARY	INLINE	46 GPM	30 ftH2O	1.5"	1.5"	460 V	3	60 Hz	1 hp	1,800	30% PG	85 lb	TACO KV	1,2,3
P	3	HEATING WATER SECONDARY	INLINE	50 GPM	50 ftH2O	1.5"	1.5"	460 V	3	60 Hz	2 hp	1,800	30% PG	175 lb	TACO KV	1,2,3
P	4	HEATING WATER SECONDARY	INLINE	50 GPM	50 ftH2O	1.5"	1.5"	460 V	3	60 Hz	2 hp	1,800	30% PG	175 lb	TACO KV	1,2,3

1. SEE SPECIFICATIONS FOR OTHER APPROVED MANUFACTURERS.
2. PROVIDE REMOVABLE INSULATION KIT AROUND PUMP SUCTION.
3. ALL PUMPS SHALL BE SIZED IN THE MIDDLE PART OF THE CURVE. SEE DETAIL.

GLYCOL FEEDER SCHEDULE

TAG		SYSTEM SERVED	WATER HEATER STORAGE CAPACITY	GPM	PUMP HEAD	ELECTRICAL				OPERATING WEIGHT	MANUF & MODEL	SCHEDULE NOTES
TYPE	#					VOLTAGE	PHASE	FREQUENCY	HP			
GF	1	HEATING WATER	6.6 gal	1 GPM	4 ftH2O	120 V	1	60 Hz	0.07 hp	12 lb	AXIOM MF200	1,2,3

1. SEE SPECIFICATIONS FOR OTHER APPROVED MANUFACTURERS.
2. PROVIDE WITH PACKAGED CONTROLLER, COMPLETE WITH SINGLE POINT POWER CONNECTION AND ADJUSTABLE PRESSURE SWITCH.
3. FILL WITH 30% PROPYLENE GLYCOL SOLUTION.

AIR SEPARATOR SCHEDULE

TAG		AREA SERVED	GPM	MAX PRESSURE DROP	INLET SIZE	OPERATING WEIGHT	MANUF & MODEL	SCHEDULE NOTES
TYPE	#							
AS	1	HEATING WATER	150 GPM	1.0 ftH2O	3"	190 lb	TACO ACT03-125	1

1. SEE SPECIFICATIONS FOR OTHER APPROVED MANUFACTURERS.

EXPANSION TANK SCHEDULE

TAG		AREA SERVED	ACCEPTANCE VOLUME	LENGTH	DIAMETER	OPERATING WEIGHT	MANUF & MODEL	SCHEDULE NOTES
TYPE	#							
ET	1	HEATING WATER	106 gal	65"	24"	1,200 lb	TACO CA450-125	1,2

1. SEE SPECIFICATION FOR OTHER APPROVED MANUFACTURERS.
2. FIELD VERIFY CHARGE TO MATCH FILL PRESSURE PRIOR TO OPENING TO SYSTEM

ELECTRIC BASEBOARD HEATER SCHEDULE

TAG		AREA SERVED	LENGTH	HEATING INPUT (WATTS)	ELECTRICAL			OPERATING WEIGHT	MANUF & MODEL	SCHEDULE NOTES
TYPE	#				VOLTAGE	PHASE	FREQUENCY			
EBB	1	BOILER ENCLOSURE	2' - 4"	750 W	120 V	1	60 Hz	10 lb	QMARK QBD750	1,2,3

1. SEE SPECIFICATIONS FOR OTHER APPROVED MANUFACTURERS.
2. PROVIDE WITH INTEGRAL THERMOSTAT
3. PROVIDE WITH STANDARD BAKED ENAMEL FINISH.

LOUVER SCHEDULE

TAG	AREA SERVED	FACE SIZE		MIN FREE AREA	MAX NC	MANUF & MODEL	SCHEDULE NOTES
		HEIGHT	WIDTH				
L-1	BOILER PENTHOUSE	36"	48"	4.9 ft²	25	RUSKIN ELF811	1,2,3,4

1. SHALL BE RUSKIN811 OR APPROVED EQUAL.
2. MOTORIZED DAMPER REQUIRED. DAMPER SHALL OPEN WHEN EITHER BOILER IS ENERGIZED.
3. SEE SPECIFICATIONS FOR OTHER APPROVED MANUFACTURERS.
4. FINISH SHALL MATCH BOILER ENCLOSURE.
5. ADDITIVE ALTERNATE #1: THIS LOUVER AND ASSOCIATED ITEMS ARE NOT NEEDED IF ADD ALTERNATE 1 IS SELECTED AND THE COMBUSTION AIR WILL BE DIRECTLY PIPED TO THE OUTSIDE.

PLUMBING FIXTURE SCHEDULE

EQUIPMENT NUMBER	FIXTURE	PLUMBING PIPE SIZES					REMARKS
		TRAP	WASTE	VENT	COLD WATER	HOT WATER	
FD-1	FLOOR DRAIN	2"	2"	1 1/2"	0"	0"	FLOOR DRAIN WITH TRAP GUARD. WATTS FD-100-A OR EQUAL.
HB-1	HOSE BIBB	0"	0"	0"	1/2"	0"	HOSE BIBB. KEYED HOSE BIBB WITH ANTI-SYPHON DEVICE. WOODFORD 24 OR EQUAL.

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PROFESSIONAL ENGINEER'S STAMP
11/19/25
BRADLEY D. LASH
No. 8681468

SHEET TITLE

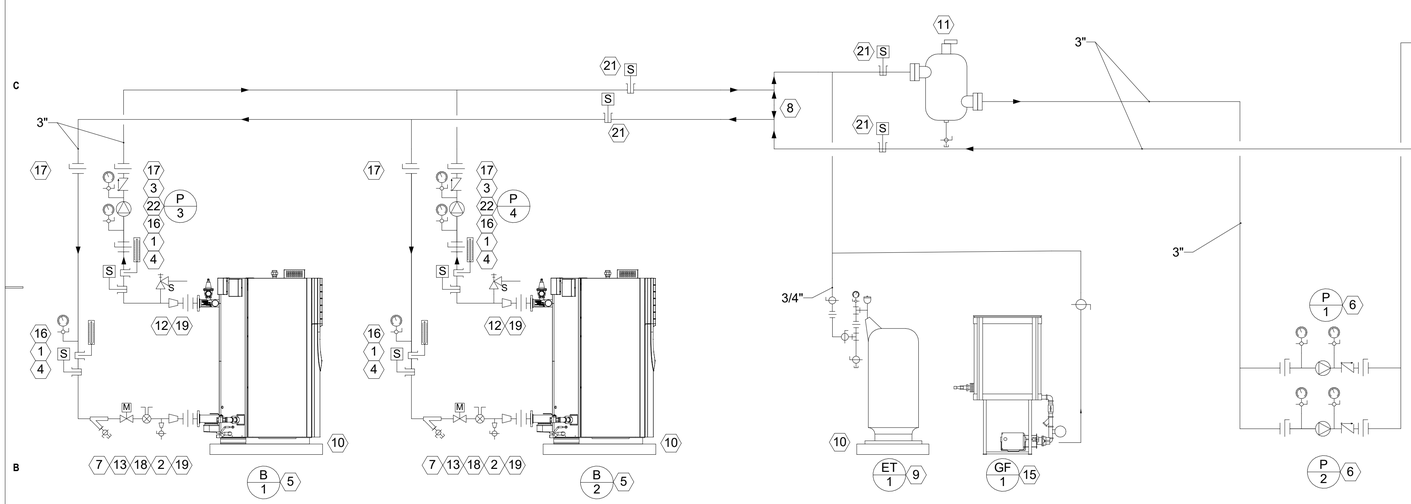
MECHANICAL SCHEDULES

SHEET NO.

ME602

PRIMARY/SECONDARY- MULTIPLE BOILERS

GLYCOL SYSTEM



FLOW SHEET NOTES:

1. PROVIDE THERMOMETER 9" LONG 0° TO 250°. TYPICAL.
2. PROVIDE VALVE WITH THREADED HOSE END CONNECTION WITH CAP EQUAL TO CONBRACO AT THE LOW POINT FOR DRAINING THE SYSTEM.
3. PROVIDE CHECK VALVE.
4. PROVIDE BOILER WATER TEMPERATURE SENSOR.
5. BASE BID: RELOCATED THE EXISTING BOILERS. INSTALL PER MANUFACTURERS RECOMMENDATIONS.
   BID ALTERNATE 1: PROVIDE CONDENSING BOILERS. INSTALL PER MANUFACTURERS RECOMMENDATIONS. PROVIDE CONDENSATE NEUTRALIZATION KIT AND ROUTE CONDENSATE TO THE NEAREST FLOOR DRAIN.
6. PROVIDE INLINE PUMPS ON UNISTRUT STAND, SEE PUMP DETAIL FOR PIPING. SEE SCHEDULES FOR MEANS OF CONTROL.
7. PROVIDE STRAINER.
8. PROVIDE PRIMARY/SECONDARY CROSSOVER BRIDGE WITH 2 TEES SPACES 3-5 PIPE DIAMETERS APART WITHOUT ANY FITTINGS IN BETWEEN.
9. PROVIDE EXPANSION TANK. SEE DETAIL FOR PIPING.
10. PROVIDE HOUSEKEEPING PAD.
11. PROVIDE AIR SEPARATOR. SEE DETAIL.
12. PROVIDE SAFETY RELIEF VALVES AS REQUIRED BY BOILER MANUFACTURER FOR EACH BOILER.
13. PROVIDE AUTOMATIC ISOLATION VALVE. NORMALLY OPEN. TIE INTO BOILER CONTROLS. BOILER CONTROLS PACKAGE SHALL SEQUENCE BOILERS, CONTROL ISOLATION VALVES, AND COMMUNICATE VIA BACNET TO BUILDING AUTOMATION SYSTEM.
14. HEATING WATER SUPPLY AND RETURN TO BUILDING. SEE MP SHEETS.
15. PROVIDE GLYCOL FEEDER. SEE DETAILS AND SCHEDULES FOR ADDITIONAL REQUIREMENTS.
16. PROVIDE PRESSURE GAUGES - 4-1/2" DIAMETER WITH GAUGE COCK. TYP.
17. PROVIDE BUTTERFLY VALVE.
18. PROVIDE BALANCING VALVE.
19. PROVIDE UNION.
20. PROVIDE DP SENSOR APPROXIMATELY 2/3 OF THE WAY DOWN THE SYSTEM, UNLESS OTHERWISE NOTED IN THE PLANS. INSTALL IN AN ACCESSIBLE LOCATION. MARK LOCATION ON CONTRACTOR REDLINES.
21. PROVIDE TEMP SENSOR. TIE INTO BMS.
22. PROVIDE PRIMARY LOOP PUMP. SEE DETAIL FOR ADDITIONAL REQUIREMENTS. PROVIDE CHECK VALVE, PRESSURE GAUGES, AND ISOLATION VALVES.

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SHEET TITLE

HYDRONIC FLOW DIAGRAM

SHEET NO.

ME701