

UPGRADE HVAC AND BAS COMMUNITY SUPERVISION CENTER MISSOURI DEPARTMENT OF CORRECTIONS ST. JOSEPH, MISSOURI

STATE OF MISSOURI
MICHAEL L. PARSON,
GOVERNOR

BRiC

PARTNERSHIP, LLC
CONSULTING ENGINEERS

NOW PART OF

rtm

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OWNER:

STATE OF MISSOURI
MICHAEL L. PARSON,
GOVERNOR
DEPARTMENT OF CORRECTIONS

PROJECT
MANAGEMENT:

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES MANAGEMENT,
DESIGN AND CONSTRUCTION

BRiC

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DESIGNER:

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3701 S. LINDBERGH,
SUITE 204
ST. LOUIS, MISSOURI 63127

PROJECT
NUMBER:

C2011-01

SITE
NUMBER:

7022

ASSET
NUMBER:

9327022002

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES
MANAGEMENT, DESIGN AND
CONSTRUCTION
DEPARTMENT OF
CORRECTIONS

PROJECT TITLE:
HVAC AND BAS UPGRADE
ST. JOSEPH COMMUNITY
SUPERVISION CENTER
3305 FARAON ST,
ST. JOSEPH, MO 64506

PROJECT # 2011-01
SITE # 7022
ASSET # 9327022002

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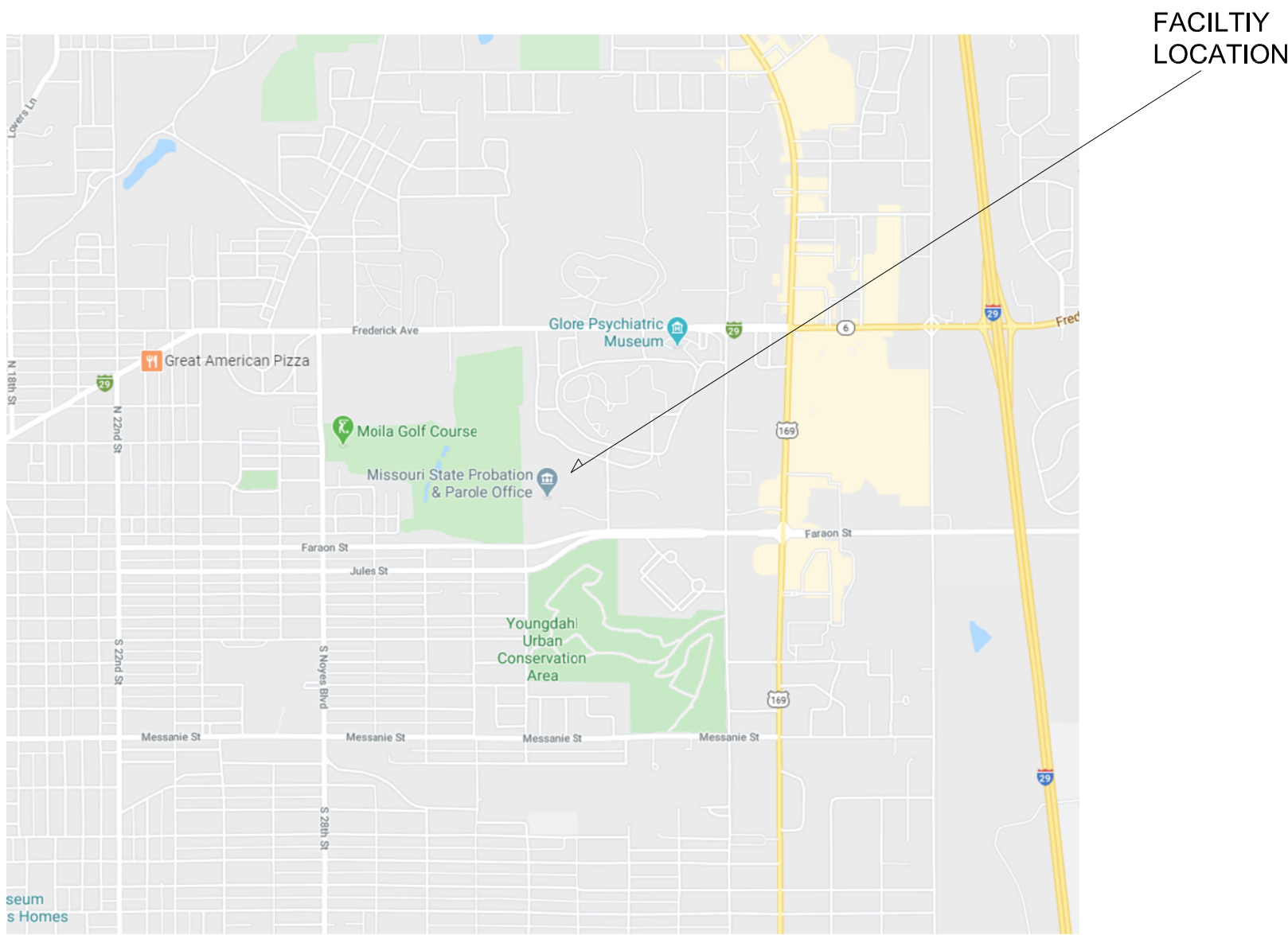
SHEET TITLE:
COVER

SHEET NUMBER:
G-000
SHEET 1 OF 12
10/05/2022

VICINITY MAP



LOCATION MAP



DRAWING INDEX

- GENERAL
- G-000 COVER SHEET
- MECHANICAL
- M-001 MECHANICAL LEGEND AND NOTES
MD101 FIRST FLOOR PLAN - MECHANICAL DEMOLITION
M-201 FIRST FLOOR PLAN - MECHANICAL
M-401 ENLARGED PLAN - MECHANICAL
M-501 MECHANICAL DETAILS
M-502 CHILLED WATER SCHEMATIC
M-601 MECHANICAL SCHEDULES
M-701 MECHANICAL CONTROLS
- ELECTRICAL
- E-001 ELECTRICAL LEGEND AND NOTES
ED-101 ELECTRICAL DEMOLITION
E-201 FIRST FLOOR ELECTRICAL NEW WORK PLAN

GENERAL NOTES (DEMOLITION)


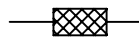
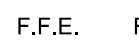
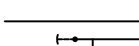


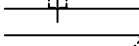

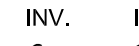
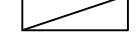

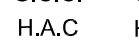
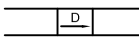
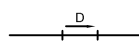
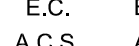


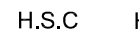
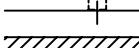
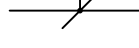

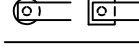
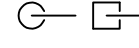



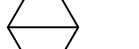























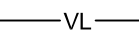


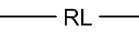


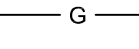


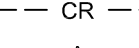


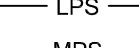


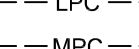


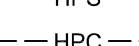


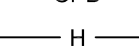








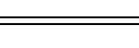
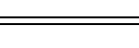
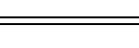



























1. THESE PLANS ARE DIAGRAMMATIC IN NATURE. SINCE THEY REFLECT ONLY THE AVAILABLE INFORMATION OBTAINED FROM EXISTING PLANS, SPECIFICATIONS, AND FIELD SURVEYS, THE EXACT LOCATION OF EXISTING DUCTWORK, PIPING, AND EQUIPMENT MAY DEVIATE FROM THE LOCATION INDICATED ON THESE DRAWINGS. THE CONTRACTOR SHALL BE PREPARED TO MAKE SOME ALTERATIONS TO NEW AND/OR EXISTING SERVICES TO FIT ACTUAL JOB CONDITIONS.
2. ITEMS SHOWN BOLD AND/OR DASHED ON THE DEMOLITION SHEETS INDICATE ITEMS TO BE REMOVED.
3. CROSS HATCHING INDICATES ITEMS TO BE REMOVED.
4. OWNER HAS FIRST RIGHT OF REFUSAL FOR ALL EQUIPMENT BEING REMOVED. CONTRACTOR TO DISPOSE OF EQUIPMENT BEING REMOVED BUT NOT RETAINED BY OWNER.

GENERAL NOTES (HYDRONIC)

1. THE CONTRACTOR SHALL COORDINATE SYSTEM SHUT-DOWNS WITH THE FACILITY. PROVIDE A MINIMUM TWO WORKING DAY NOTICE PRIOR TO ANY SYSTEM SHUT-DOWN.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DRAINING, FILLING, AND VENTING OF ALL HYDRONIC SYSTEMS IMPACTED BY THIS PROJECT.

GENERAL NOTES

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2. ANY HOLES LEFT IN EXISTING WALL CONSTRUCTION DUE TO DEMOLITION OR NEW WORK SHALL BE PATCHED TO MATCH EXISTING CONDITIONS.
3. CONTRACTOR TO FIRESTOP ALL PENETRATIONS THROUGH FIRE-RATED FLOORS AND WALLS CREATED BY DEMOLITION OR NEW WORK WITH "SPECSEAL SSS" OR EQUAL.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF ANY FRAMING REVISIONS, EQUIPMENT LOCATIONS, ADDITION OF CONTROLS, ELECTRICAL CIRCUITING REVISIONS, ETC. THAT RESULT FROM USING EQUIPMENT OTHER THAN INDICATED ON THE DRAWINGS. APPROVAL OF THE SHOP DRAWINGS BY THE ENGINEER WILL NOT WAIVE THE CONTRACTOR OF THIS RESPONSIBILITY.
5. THE CONTRACTOR SHALL HAVE THE FINAL RESPONSIBILITY FOR SYSTEM START UP AND TURN OVER TO THE OWNER.
6. ALL ITEMS INCLUDED ON THESE DRAWINGS AND THE SPECIFICATIONS SHALL BE INCLUDED IN THE CONTRACTOR'S BID. IF THE CONTRACTOR DOES NOT CLEARLY UNDERSTAND THESE PLANS OR IS NOT SURE OF THEIR MEANING, THE CONTRACTOR SHOULD OBTAIN THE ENGINEER'S WRITTEN EXPLANATION AND INTERPRETATION PRIOR TO BID TIME. THE CONTRACTOR WILL BE HELD TO THE INTERPRETATION OF THE ENGINEER.
7. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE ALL TEMPERATURE CONTROL SYSTEM REQUIREMENTS.
8. ROUTE LINE SIZE PVC CONDENSATE DRAIN PIPING FROM AIR HANDLING UNIT TO NEAREST FLOOR DRAIN. PROVIDE TRAP AT CONNECTION TO AIR HANDLING UNIT.
9. ANY DAMAGE TO THE SITE (SIDEWALKS, CURBS, ETC) OR TO THE BUILDING AS A RESULT OF WORK PERFORMED UNDER THIS CONTRACT SHALL BE FIXED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
10. CONTRACTOR WILL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING OF ROOFS/WALLS AND CORE DRILLS REQUIRED TO COMPLETE THEIR RESPECTIVE WORK.
11. THE OWNER SHALL HAVE FIRST SALVAGE RIGHTS OF EQUIPMENT AND MATERIALS REMOVED. ALL EQUIPMENT AND MATERIALS NOT CLAIMED BY THE OWNER SHALL BE REMOVED FROM THE PREMISES BY THE CONTRACTORS.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ANY TEMPORARY FENCING AROUND THE LIFT SITE DURING LIFTS.

HEATING AND AIR CONDITIONING			PIPING SPECIALTIES			ABBREVIATIONS		
	SA	SOUND ATTENUATOR		FC	FLEXIBLE CONNECTION		F.F.E.	FINISH FLOOR ELEVATION
	VD	VOLUME DAMPER		CV	CHECK VALVE		A.F.F.	ABOVE FINISH FLOOR
	TV	TURNING VANES		GLV	GLOBE VALVE		T.E.	TOP ELEVATION
		RETURN, EXHAUST, OR OUTSIDE AIR DUCT		BLV	BALL VALVE		B.E.	BOTTOM ELEVATION
		INCLINED DROP IN THE DIRECTION OF AIR FLOW		STR	STRAINER		F.L.	FLOW LINE
		INCLINED RISE IN THE DIRECTION OF AIR FLOW		U	UNION		INV.	INVERT ELEVATION
		FIRE DAMPER (F) SMOKE DAMPER (S)		BC	BALANCING COCK		CL	CENTER LINE
	MD	MOTORIZED DAMPER (ELECTRIC OR PNEUMATIC)		SOC	SHUT-OFF COCK		G.C.C.	GENERAL CONSTRUCTION CONTRACTOR
	FXD	FLEXIBLE DUCT		SLV	SOLENOID VALVE		H.A.C.	HEATING & AIR CONDITIONING CONTRACTOR
		CEILING AIR DEVICE		BFV	BUTTERFLY VALVE		P.C.	PLUMBING CONTRACTOR
		SIDEWALL AIR DEVICE		FS	FLOW SWITCH		E.C.	ELECTRICAL CONTRACTOR
				FCV	FLOW CONTROL VALVE (GPM INDICATED)		A.C.S.	AUTOMATIC CONTROL SUB-CONTRACTOR
				T&PR	TEMPERATURE AND PRESSURE RELIEF VALVE		F.P.C.	FIRE PROTECTION CONTRACTOR
				PG	PRESSURE GAUGE		H.S.C.	HALON SUB-CONTRACTOR
				TH	THERMOMETER (TUBE OR DIAL AS INDICATED)		K.E.C.	KITCHEN EQUIPMENT CONTRACTOR
	T	THERMOSTAT		PRV	PRESSURE REDUCING VALVE	MISCELLANEOUS		
	TN	THERMOSTAT NITE			DIRECTION OF FLOW			
	CWS	CONDENSING WATER SUPPLY			ANCHORS			EQUIPMENT OR PLUMBING FIXTURE DESIGNATION
	CWR	CONDENSING WATER RETURN			PIPE GUIDES			(RISER INDICATION P=PLUMBING, P=KITCHEN, P=ACID)
	DTS	DUAL TEMPERATURE SUPPLY		MV	MOTORIZED VALVE			(RISER NUMBER)
	DTR	DUAL TEMPERATURE RETURN		DV	DIAPHRAM VALVE			(DETAIL NUMBER)
	FOS	FUEL OIL SUPPLY		LPV	LUBRICATED VALVE			DETAIL DESIGNATION
	FOR	FUEL OIL RETURN		HEV	HOSE END VALVE			(SHEET NUMBER WHERE DETAIL IS FOUND)
	FOV	FUEL OIL VENT		SWV	STOP AND WASTE VALVE			(SECTION NUMBER)
	MWL	MAKE - UP WATER LINE		TWV	3-WAY VALVE			SECTION DESIGNATION
	D	DRAIN LINE (OTHER THAN PLUMBING)			(MIXING OR BY-PASS AS INDICATED)			(SHEET NUMBER WHERE SECTION IS FOUND)
	VL	VENT LINE (OTHER THAN PLUMBING)			PETES PLUG			KEYED NOTES
	RD	REFRIGERANT DISCHARGE		RV	RELIEF VALVE			REVISIONS
	RL	REFRIGERANT LIQUID		FC	FLEXIBLE PIPE CONNECTION		AP	ACCESS PANEL
	RS	REFRIGERANT SUCTION		AVM	AIR VENT (MANUAL)			NEW CONNECTION
	G	GAS		AVA	AIR VENT (AUTOMATIC)			
	C	CHILLED WATER SUPPLY		EX	EXPANSION JOINT			
	CR	CHILLED WATER RETURN		CCR	CONCENTRIC REDUCER			
	A	COMPRESSED AIR		TEE	TEE (SIDE OUTLET UP)			
	LPS	LOW PRESSURE STEAM		TEE	TEE (SIDE OUTLET DOWN)			
	MPS	MEDIUM PRESSURE STEAM			ELBOW (TURNED UP)			
	LPC	LOW PRESSURE CONDENSATE			ELBOW (TURNED DOWN)			
	MPC	MEDIUM PRESSURE CONDENSATE		BMD	COMBINATION BALANCING & MEASURING DEVICE			
	HPS	HIGH PRESSURE STEAM		ECR	ECCENTRIC REDUCER			
	HPC	HIGH PRESSURE CONDENSATE		FMD	FLOW MEASURING DEVICE			
	CPD	CONDENSATE PUMP DISCHARGE			STEAM TRAP			
	H	HOT WATER SUPPLY						
	HR	HOT WATER RETURN						

NOTE: NOT ALL SYMBOLS OR ABBREVIATIONS MAY BE USED.

PHASING NOTE:

THE JOB SHALL BE PHASED SUCH THAT ONLY ONE AIR HANDLING UNIT SHALL BE DOWN AT A TIME

IF IF THE PROJECT IS UNDER CONSTRUCTION IN THE HEATING SEASON, ALL CONDENSING UNITS CAN BE REMOVED AT THE SAME TIME.

IF THE PROJECT IS UNDER CONSTRUCTION IN THE COOLING SEASON, THE CHILLER MUST BE OPERATIONAL BEFORE CONDENSING UNITS ARE REMOVED, AND ONLY ONE HVAC ZONE MAY BE OUT OF SERVICE AT A TIME.

STATE OF MISSOURI
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DRAWN BY: MRH
CHECKED BY: MRH
DESIGNED BY: MRH

SHEET TITLE:

MECHANICAL
LEGEND AND
NOTES

SHEET NUMBER:

M-001

SHEET 2 OF 12
10/05/2022



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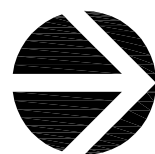
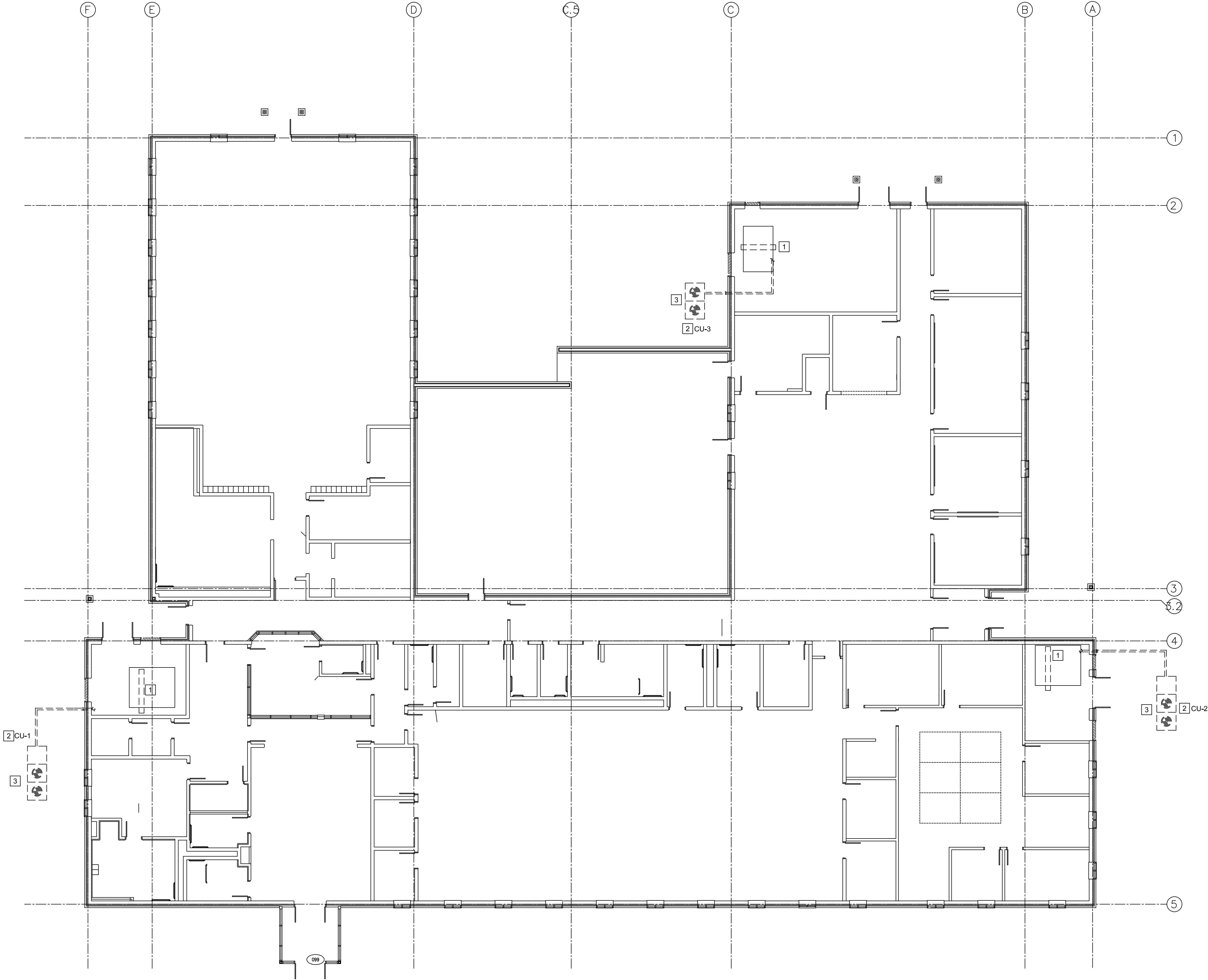
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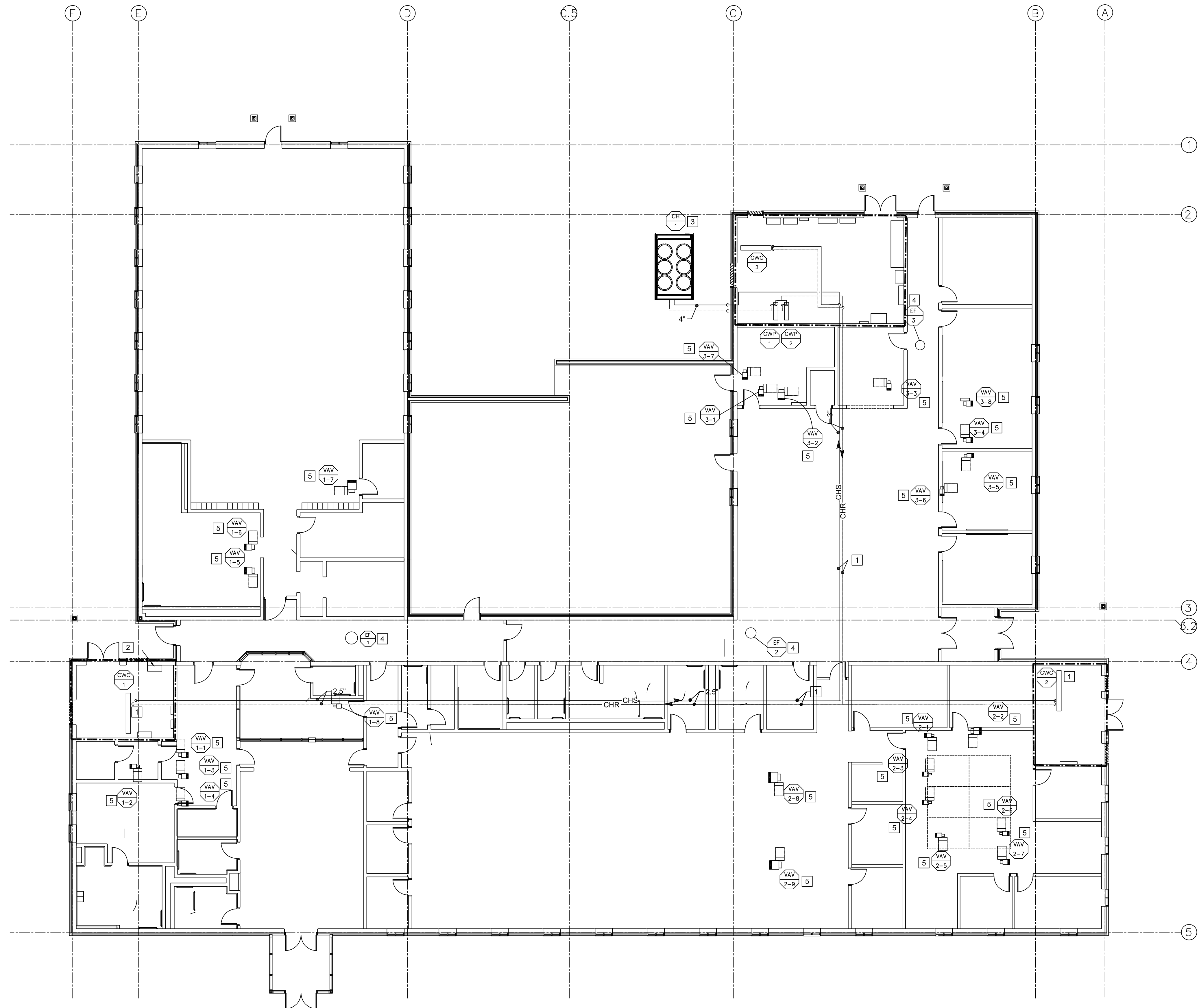
SHEET TITLE:
FIRST FLOOR
MECHANICAL
DEMOLITION

SHEET NUMBER:
MD-101
SHEET 3 OF 12
10/05/2022

- KEYED NOTES
- 1 DISCONNECT AND REMOVE EXISTING DX COOLING COIL IN AIR HANDLING UNIT. A NEW CHILLED WATER COIL WILL BE INSTALLED IN THIS AIR HANDLING UNIT. SEE NEW WORK DRAWINGS.
 - 2 DISCONNECT AND REMOVE EXISTING DX CONDENSING UNIT, AND ALL ASSOCIATED REFRIGERANT PIPING AND CONTROLS. PATCH REMAINING BUILDING OPENINGS TO MATCH EXISTING.
 - 3 REMOVE EXISTING CONCRETE PAD, BACKFILL REMAINING HOLE, COVER WITH GRASS SEED AND STRAW



MECHANICAL FLOOR PLAN
SCALE: 1/8" = 1'-0"



- KEYED NOTES**
- 1 CHILLED WATER PIPING ROUTED THROUGH ATTIC SPACE. SEAL WALL PENETRATIONS THROUGH FIRE WALLS TO MAINTAIN FIRE RATING.
 - 2 SEE MECHANICAL ROOM DETAILS ON M-401
 - 3 NEW CHILLER ON NEW CONCRETE PAD
 - 4 CONNECT EXISTING EXHAUST FAN TO BMS
 - 5 CONNECT EXISTING VAV TO BMS. EXSITING CONTROLLER, WIRING AND TSTAT MAY REMAIN.

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FIRST FLOOR
MECHANICAL
FLOORPLAN

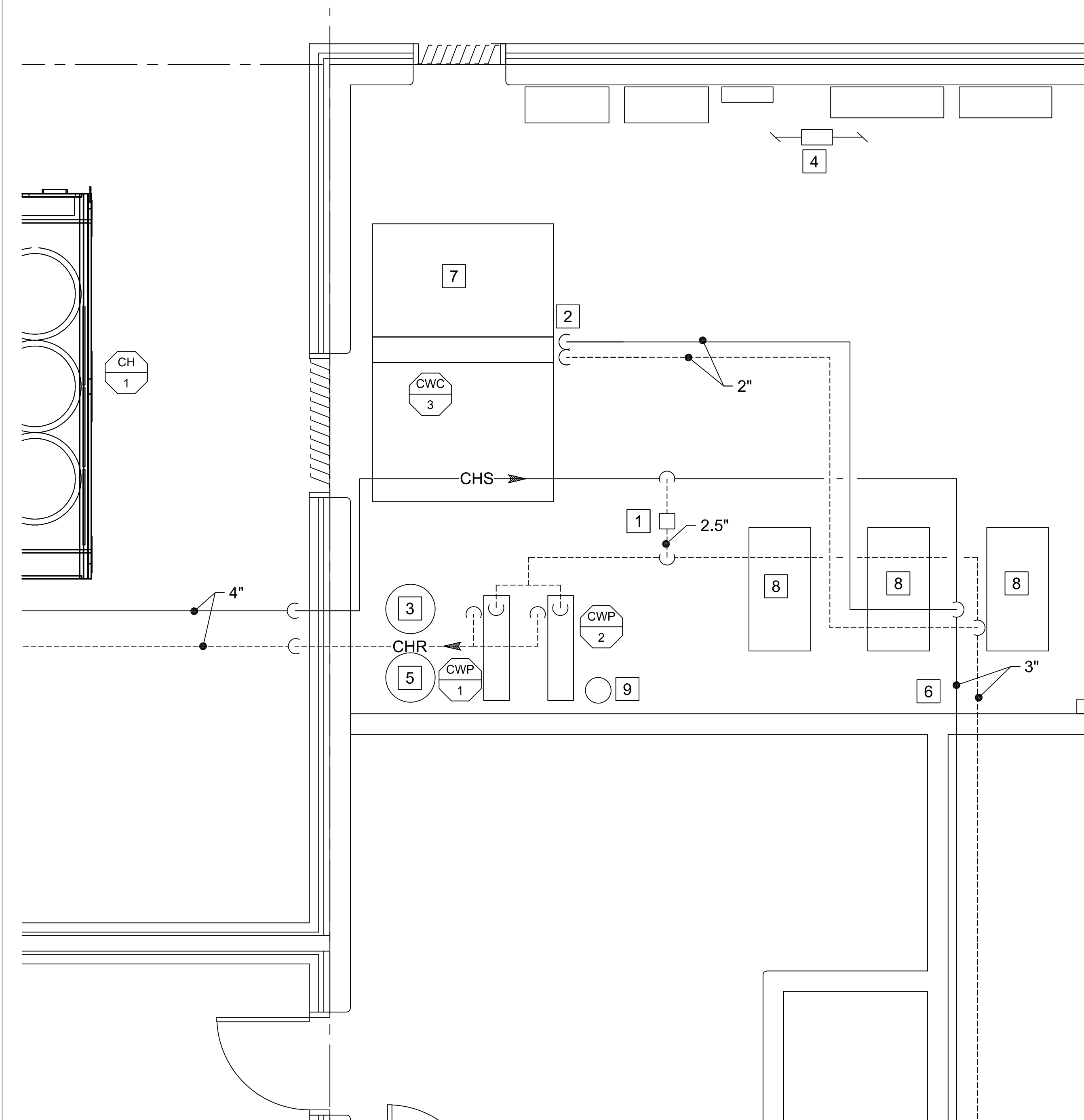
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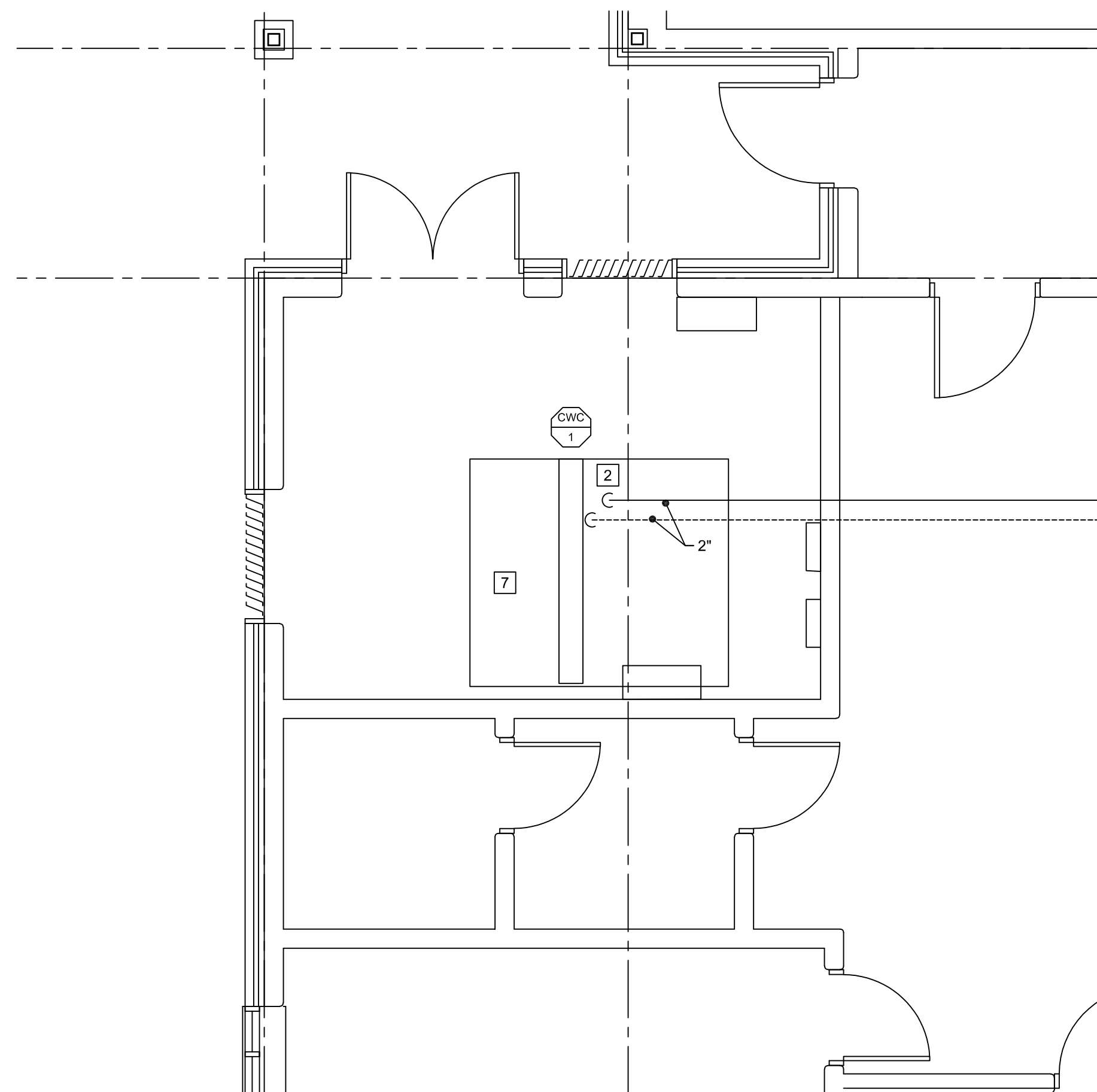
SHEET 4 OF 12
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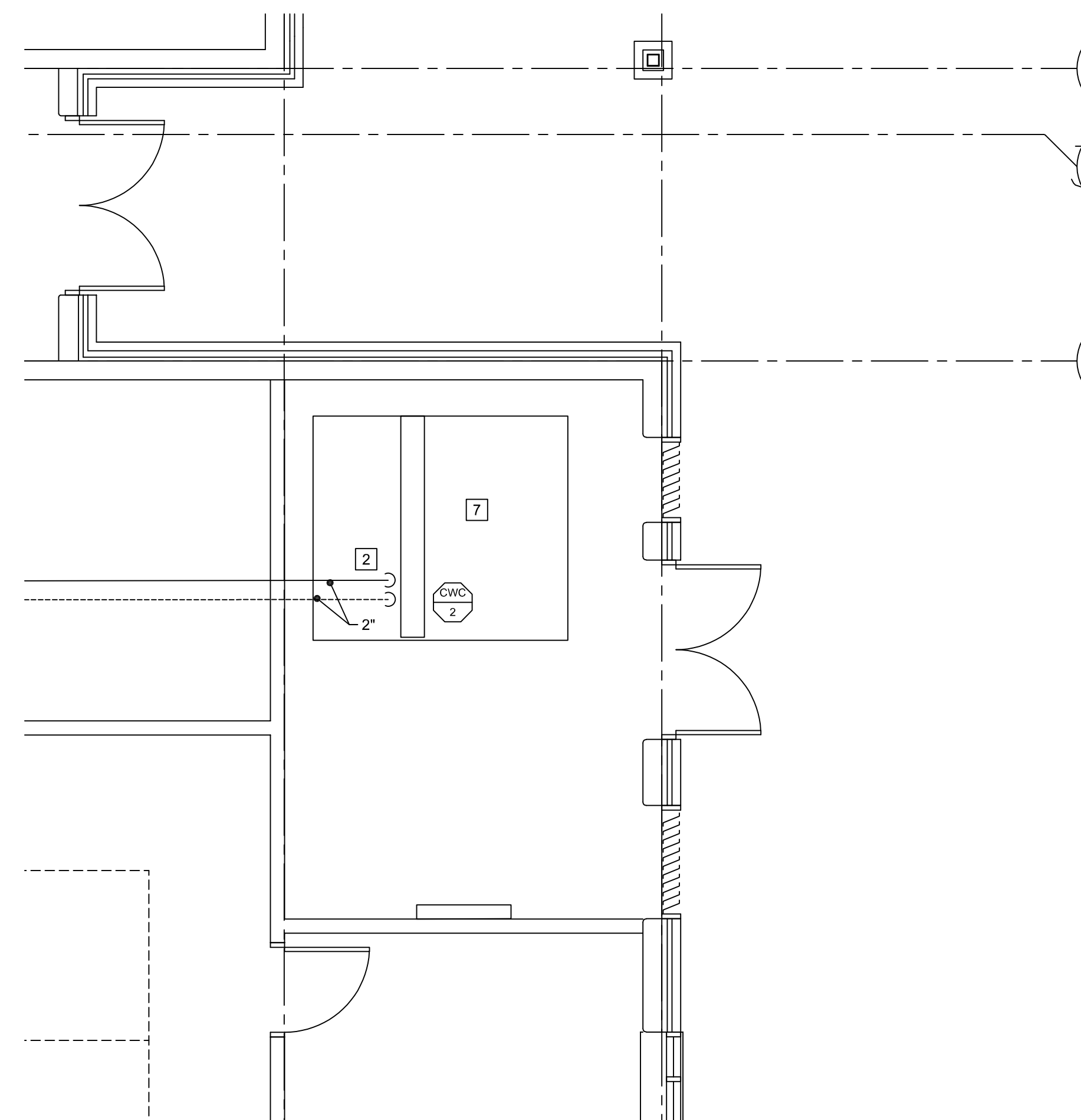
MECHANICAL FLOOR PLAN
SCALE: 3/32" = 1'-0"




 **ENLARGED PLAN - MECHANICAL**
SCALE: 1/4" = 1'-0"



 **ENLARGED PLAN - MECHANICAL**
SCALE: 1/4" = 1'-0"



 **ENLARGED PLAN - MECHANICAL**
SCALE: 1/4" = 1'-0"

KEY NOTES

- 1 CHILLED WATER BYPASS WITH MODULATING CONTROL VALVE.
- 2 NEW CHILLED WATER COIL IN EXISTING AHU. SEE DETAIL.
- 3 EXPANSION TANK XT-1. TACO CA90-125 OR EQUAL.
- 4 PROVIDE DEDICATED 3/4" BACKFLOW PREVENTER FOR MECHANICAL MAKEUP WATER. SHALL INCLUDE A 3/4" SHUT OFF BALL VALVE, A 3/4" PRESSURE REDUCING VALVE, A 3/4" WATTS 909 BACKFLOW PREVENTER (OR EQUAL) AND A PRESSURE GAUGE ON THE MECHANICAL DISCHARGE PIPING. TIE INTO EXITING 3" DOMESTIC WATER LINE.
- 5 CHILLED WATER BUFFER TANK. TANK SHALL BE WESSELS MODEL CBT-200 (OR EQUAL) WITH INTERNAL BAFLE AND TOP AIR VENT CONNECTION. PROVIDE AIR VENT. SECURE TANK TO FLOOR WITH SEISMIC ANCHORS.
- 6 CHILLED WATER PIPING THROUGH WALL INTO ATTIC SPACE.
- 7 EACH AHU WILL REQUIRE NEW BMS CONTROLLER.
- 8 CONNECT EXISTING HW SYSTEM (BOILERS AND PUMPS) TO NEW BMS.
- 9 2 GALLON CHEMICAL POT FEEDER.

STATE OF MISSOURI
MICHAEL L. PARSON,
GOVERNOR



MICHAEL HOFF
LICENSE #: PE2013000576
EXP: 12/31/2023

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PARTNERSHIP, LLC
CONSULTING ENGINEERS

NOW PART OF **rtm**

3701 S. LINDBERGH BOULEVARD
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ST. LOUIS, MO 63127
PHONE: 314.725.5889
MISSOURI CERTIFICATE OF
AUTHORITY #2014035826

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES
MANAGEMENT, DESIGN AND
CONSTRUCTION
DEPARTMENT OF
CORRECTIONS

PROJECT TITLE:
HVAC AND BAS UPGRADE

ST. JOSEPH COMMUNITY
SUPERVISION CENTER

3305 FARAON ST,
ST. JOSEPH, MO 64506

PROJECT # 2011-01
SITE # 7022
ASSET # 9327022002

REVISION: 1
DATE: 10-05-2022
REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
ISSUE DATE: 07-07-2022

CAD DWG FILE: _____
DRAWN BY: MRH
CHECKED BY: MRH
DESIGNED BY: MRH

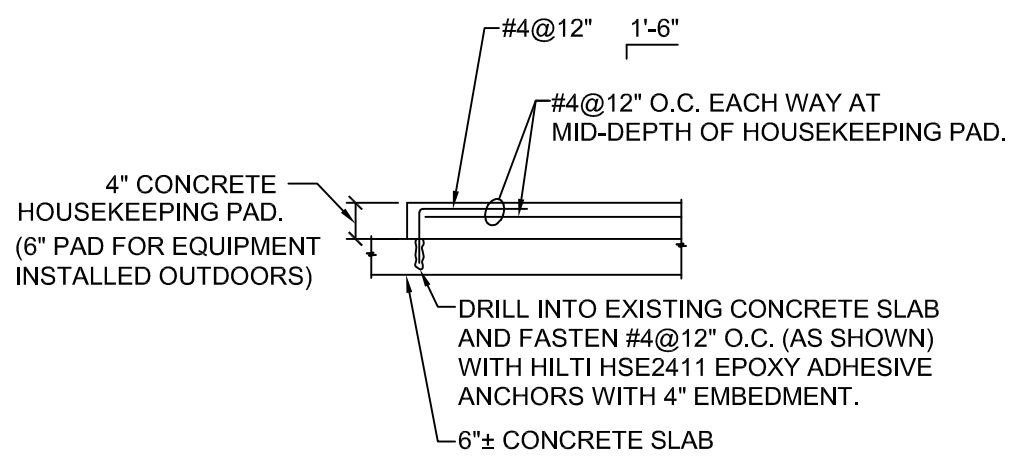
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**ENLARGED
PLANS -
MECHANICAL**

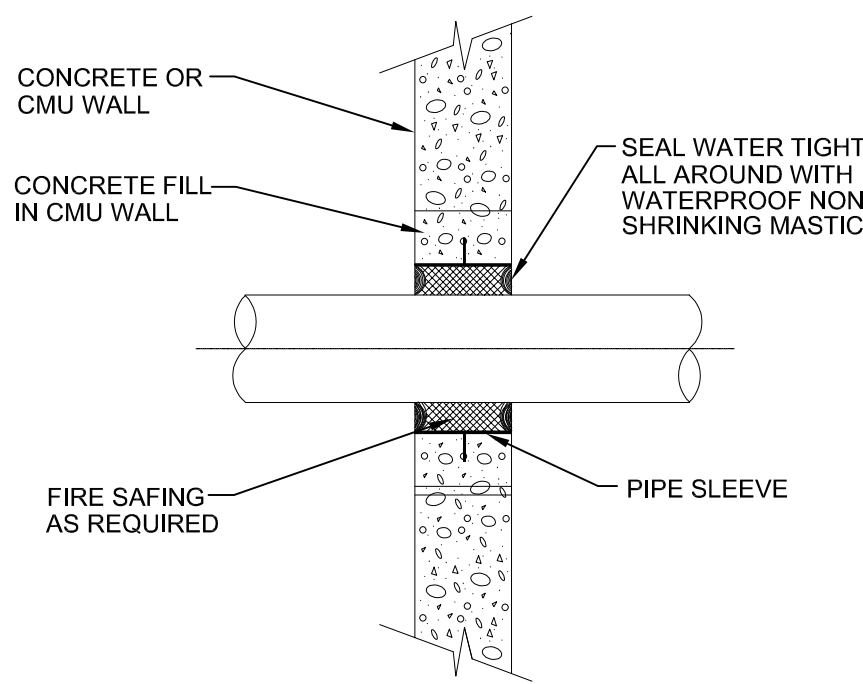
SHEET NUMBER:

M-401

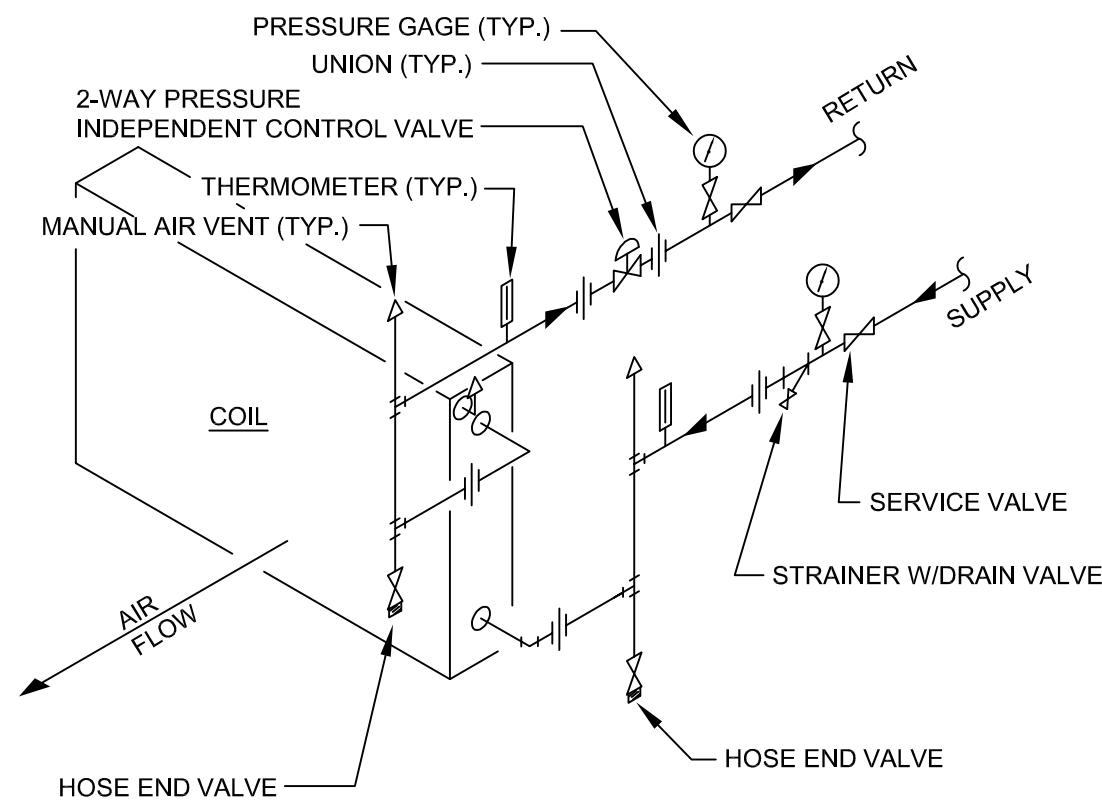
SHEET 5 OF 12
10/05/2022



NEW HOUSEKEEPING PAD
NO SCALE

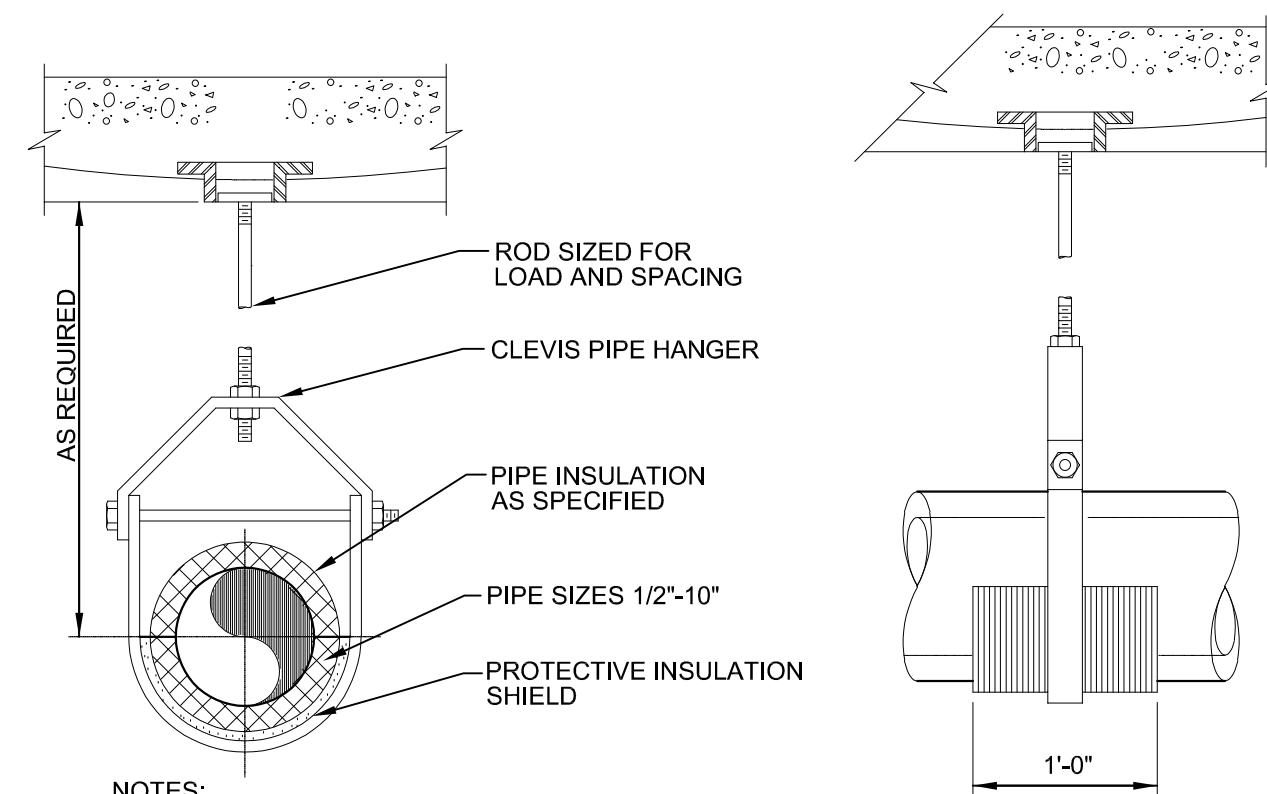


PIPE PENETRATION THRU WALL
NO SCALE



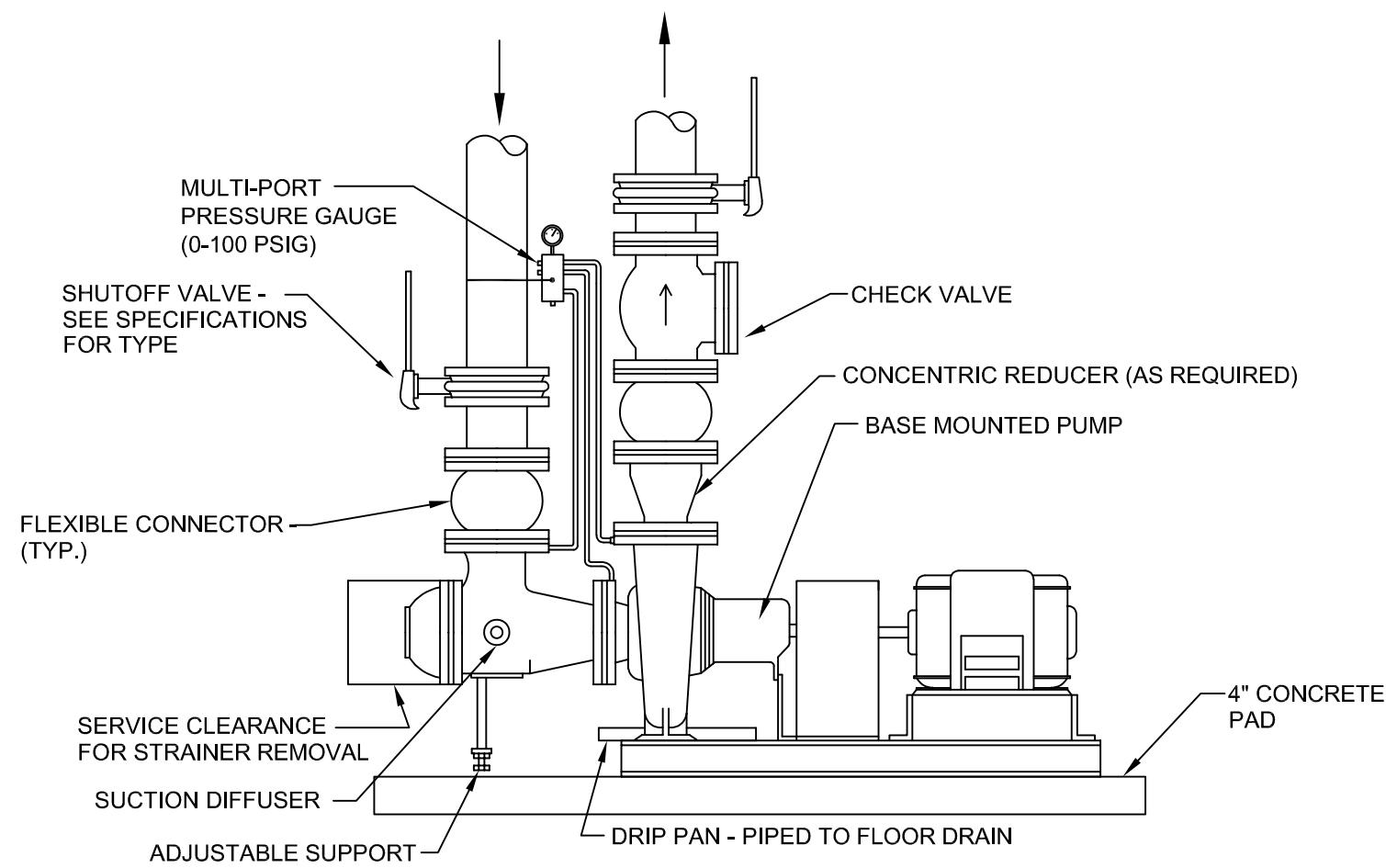
NOTE:
ARRANGE RISERS SUCH THAT COIL MAY BE REMOVED
WITHOUT DISTURBING RISERS.

CHILLED WATER COIL DETAIL
NO SCALE

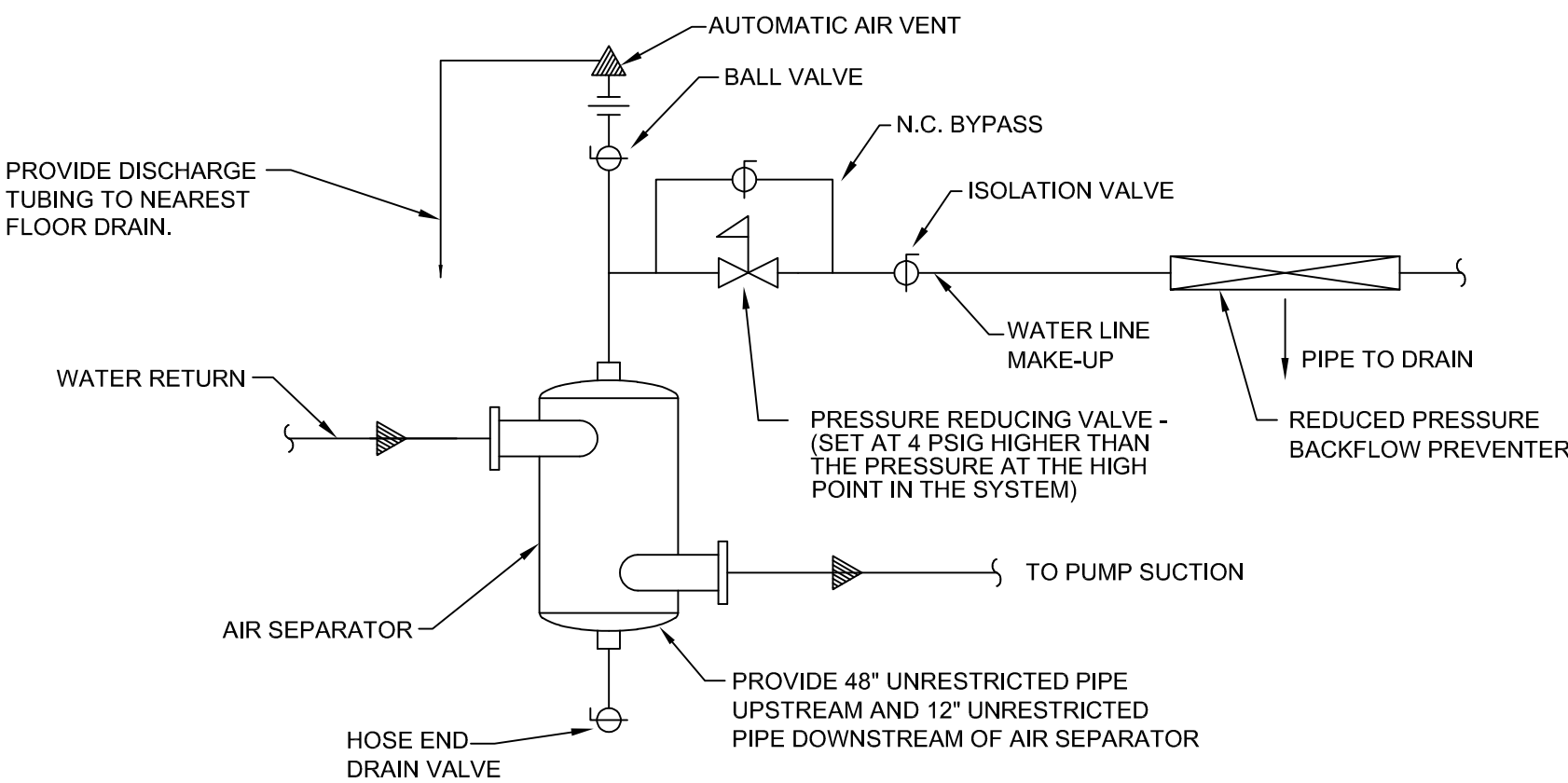


NOTES:
1. PIPE HANGERS SHALL BE OVERSIZED AS REQUIRED TO ACCOMMODATE THICKNESS OF INSULATION SPECIFIED. HANGER SHALL NOT COME INTO CONTACT WITH THE INSULATION DIRECTLY, EITHER AT THE VERTICAL YOKE OR AT THE POINT OF SUPPORT. FOR REQUIREMENTS ON INSULATION SHIELD USED WITH PIPE HANGERS, SEE SPECIFICATIONS.

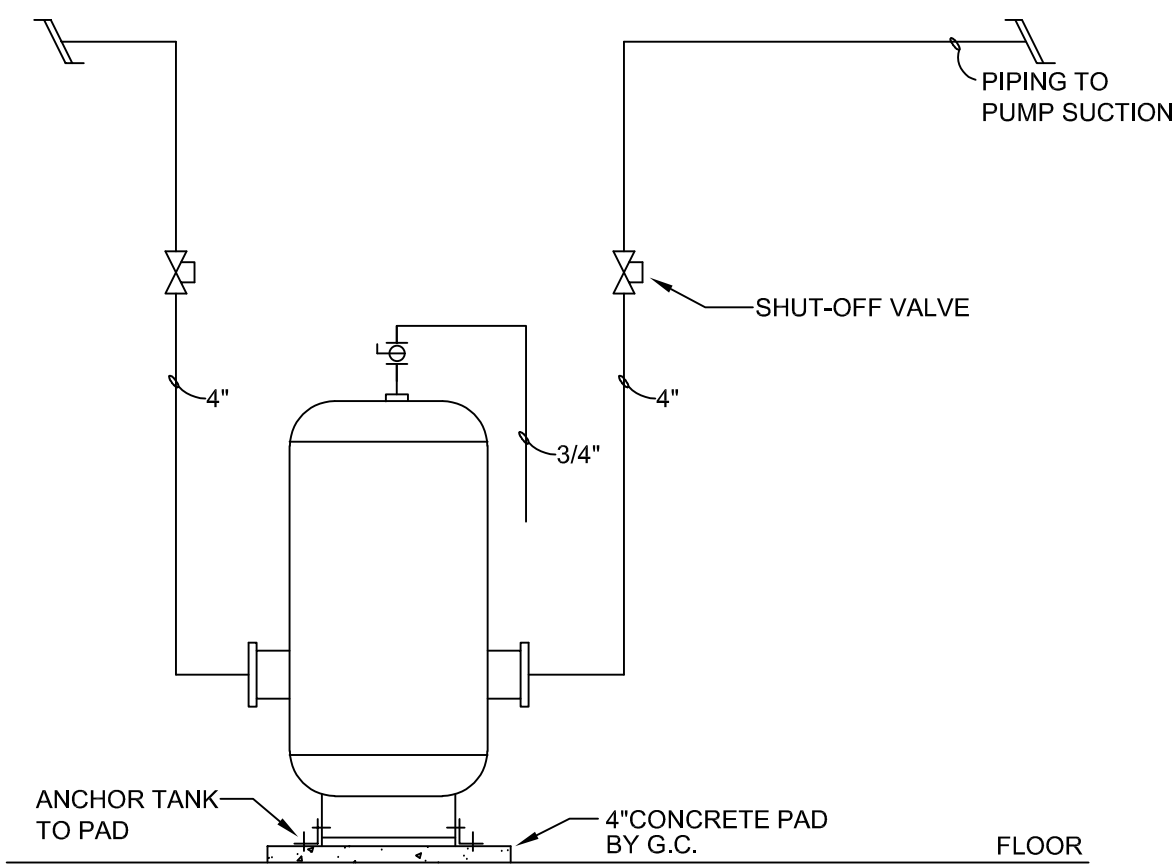
PIPE HANGER DETAIL
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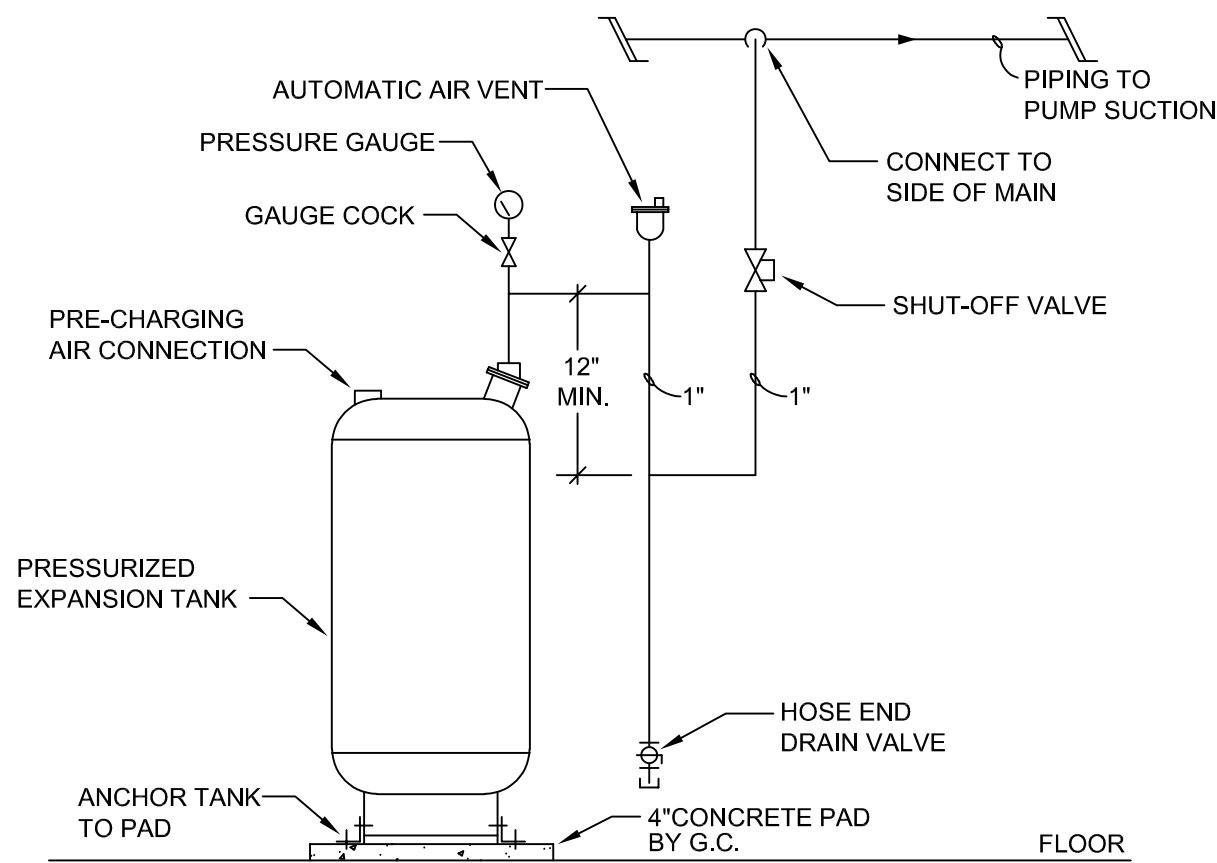
END SUCTION PUMP PIPING DETAIL
NO SCALE



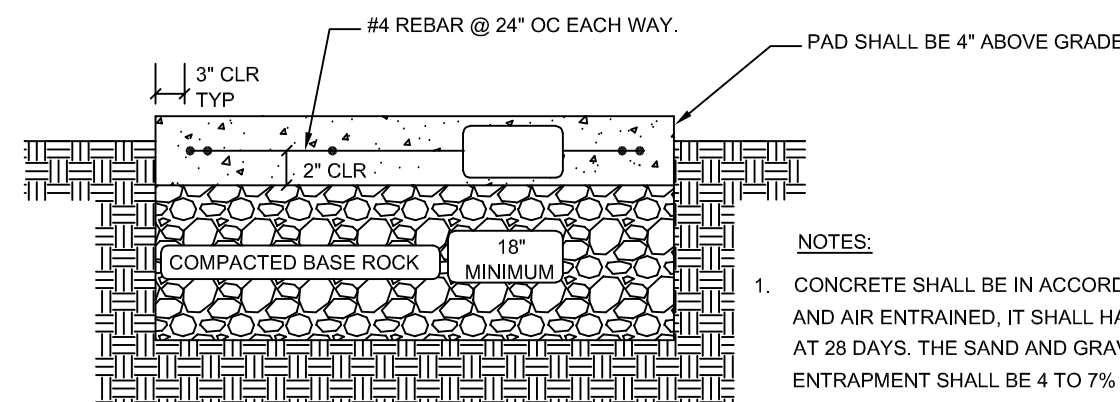
AIR SEPARATOR DETAIL
NO SCALE



BUFFER TANK DETAIL
NO SCALE



EXPANSION TANK DETAIL
NO SCALE



NOTES:
1. CONCRETE SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE ACI CODE AND AIR ENTRAINED, IT SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS. THE SAND AND GRAVEL ARE TO BE CLEAN AND HARD. THE AIR ENTRAPMENT SHALL BE 4 TO 7% BY VOLUME. THE MIX SHALL HAVE 5 BAGS OF PORTLAND CEMENT TYPE-1 PER CUBIC YARD OF CONCRETE.
2. PAD SHALL BE POURED MONOLITHICALLY, WITH NO COLD JOINTS.
3. NO FOOTING IS TO BE EXCAVATED WITHOUT HAVING REINFORCING AND CONCRETE READY TO PLACE WITHIN THAT WORKING DAY.
4. ALL REINFORCING BARS SHALL BE DEFORMED #4 BILLET STEEL CONFORMING TO ASTM A615, GRADE 60. BARS SHALL BE FREE OF ANY GREASE, RUST, OR SCALE AT THE TIME OF PLACEMENT. TIE ALL STEEL AT INTERSECTIONS. SPACING SHALL NOT EXCEED 24" ON CENTERS.
5. TOP SURFACES OF CONCRETE SHALL HAVE A STEEL TROWEL FINISH.

EQUIPMENT PAD DETAIL
NO SCALE

STATE OF MISSOURI
MICHAEL L. PARSON,
GOVERNOR



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ASSET # 9327022002

REVISION: 1
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DATE:
REVISION:
DATE:
ISSUE DATE: 07-07-2022

CAD DWG FILE:
DRAWN BY: MRH
CHECKED BY: MRH
DESIGNED BY: MRH

SHEET TITLE:
**MECHANICAL
DETAILS**

SHEET NUMBER:

M-501
SHEET 6 OF 12
10/05/2022



MICHAEL HOFF
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EXP: 12/31/2023

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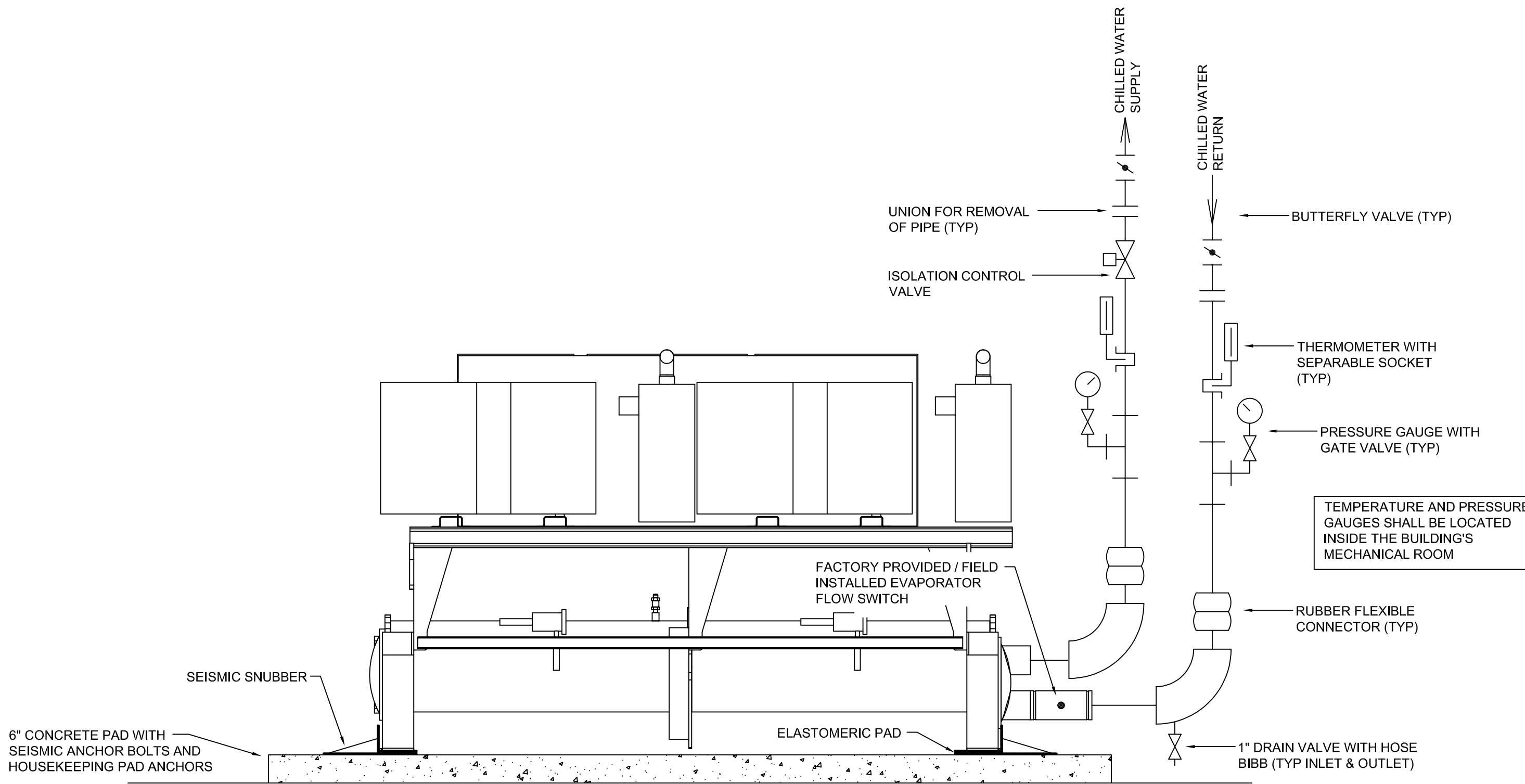
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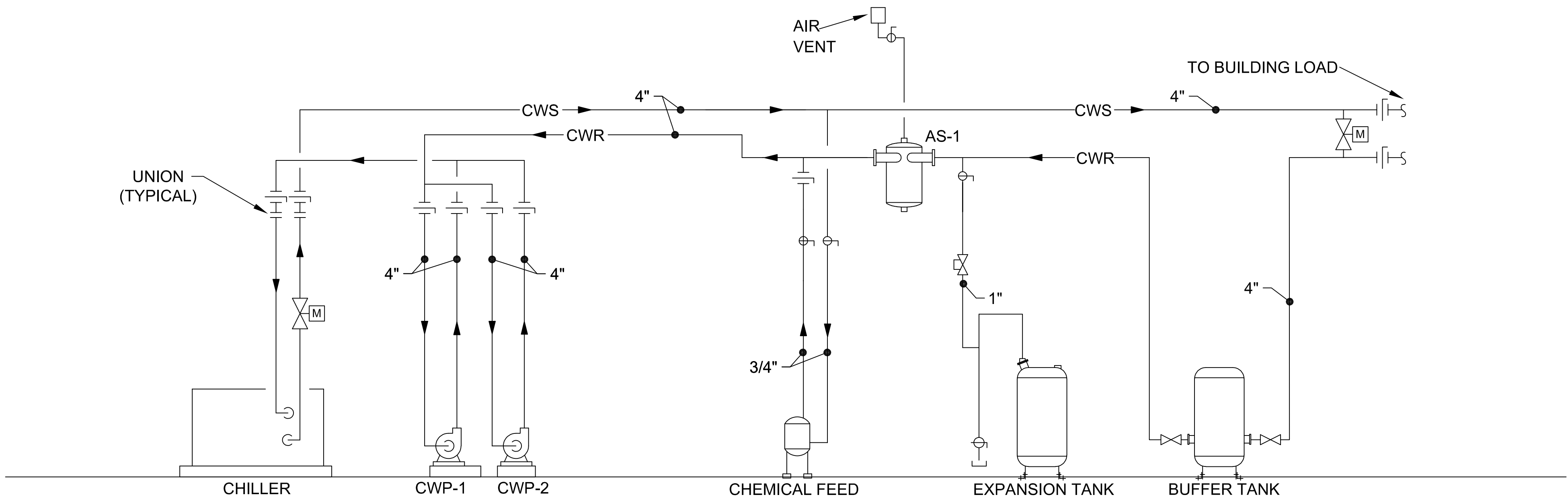
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DRAWN BY: MRH
CHECKED BY: MRH
DESIGNED BY: MRH

SHEET TITLE:
**CHILLED WATER
SCHEMATIC**

SHEET NUMBER:
M-502
SHEET 7 OF 12
10/05/2022



1 CHILLED WATER SCHEMATIC
NO SCALE



CHILLED WATER PIPING SCHEMATIC
NO SCALE


2 CHILLED WATER SCHEMATIC
NO SCALE

CHILLER SCHEDULE																				<div>CH</div>
PLAN MARK	MANUFACTURER	MODEL NO.	CAPACITY			EVAPORATOR					COMPRESSOR			ELECTRICAL			FLUID		NOTES	
			TONS	IPLV KW/TON	EER	WATER FLOW GPM	EWTF	LWTF	P.D. (FT. OF HD.)	MIN. WATER FLOW GPM	QTY	TYPE	RATED-LOAD AMPS	LOCKED-ROTOR AMPS	VOLT/PH	MCA	MOP	PROPYLENE GLYCOL		
CH-1	TRANE	CGAM	60	15.4	10.7	142	54	44	24	67	4	SCROLL	50.2	351	208/3	257	300	30%	ALL	
NOTES:																				
① SINGLE POINT POWER CONNECTION WITH DISCONNECT.							⑨ FAN VFD CONTROL													
② MINIMUM 14 IPLV.							⑩ RATINGS BASED ON 30% POLYPROPYLENE													
③ FACTORY INSTALLED THERMAL DISPERSION FLOW SWITCH ON EVAPORATOR.																				
④ FACTORY CONTROL PANEL WITH TOUCHSCREEN AND BACNET INTERFACE.																				
⑤ FACTORY INSULATION PACKAGE.																				
⑥ HIGH EFFICIENCY/PERFORMANCE.																				
⑦ STANDARD COOLING APPLICATION.																				
⑧ REFRIGERANT SERVICE VALVES																				
SEE SPECIFICATIONS FOR APPROVED MANUFACTURERS																				

PRODUCT LISTED IS BASIS OF DESIGN ONLY

CHILLED WATER COIL																							<div>CWC</div>
PLAN MARK	MANUFACTURER	MODEL	AIRFLOW	TOTAL CAPACITY MBH	SENSIBLE CAPACITY MBH	AIR TEMPERATURE EDB/EWB LDB/LWB		FACE VELOCITY	AIR PD (WG)	H2O TEMPERATURE EWT LWT		GPM	H2O PD (WG)	PROP. GLYCOL	ROWS	FPI	TUBE DIAMETER	TUBE MATERIAL	FIN MATERIAL	WEIGHT	DIMENSIONS	REMARKS	
CWC-1	MARLO	6W22-51-5609F-11.8-H-1.0-R-B	5800	248	213	82.1/69.1	55.0/54.3	490	0.5"	42	52	61	16.6"	30%	6	9	5/8	CU .035	AL .010	335	51"L X 33.4"H	ALL	
CWC-2	MARLO	6W22-51-5609F-11.8-H-1.0-R-B	6500	305	236	82.1/69.1	55.0/54.3	490	0.5"	42	52	57	16.6"	30%	6	9	5/8	CU .035	AL .010	335	51"L X 33.4"H	ALL	
CWC-3	MARLO	8W18-41-5508F-7.8-H-1.33-R-B	3900	166	139	81.8/69.1	55.0/54.3	540	0.5"	42	52	44	16.6"	30%	6	9	5/8	CU .035	AL .010	275	41"L X 28"H	ALL	
NOTES: ① CONTRACTOR TO VERIFY UNIT SIZES FOR COIL FIT. ② ALTERNATE MANUFACTURERS HEATCRAFT AND USA COIL ③ COILS SELECTED BASED ON 30% PROPYLENE GLYCOL ④ CHILLED WATER COIL MEASUREMENTS ARE THE MEASUREMENTS OF THE SPECIFIC COIL SPECIFIED. THE CASE DIMENSIONS ARE LARGER AT ROUGHLY 68 X 44 FOR AHU-1,2 AND 39 X 57 FOR AHU-3 (OUTSIDE DIMENSION), BUT MUST BE VERIFIED BY CONTRACTOR.																							
SEE SPECIFICATIONS FOR APPROVED MANUFACTURERS																							

PRODUCT LISTED IS BASIS OF DESIGN ONLY

PUMP SCHEDULE											
PLAN MARK	MANUFACTURER	MODEL	TYPE	GPM	HEAD IN FT	MOTOR HP	PUMP RPM	ELECTRICAL	WEIGHT (lbs)	REMARKS	
								VOLT/PH			
CWP-1	TACO	FI2509D	BASE MOUNTED END SUCTION	155	52	5	1750	208/3	343	ALL	
CWP-2	TACO	FI2509D	BASE MOUNTED END SUCTION	155	52	5	1750	208/3	343	ALL	

NOTES:

①

VARIABLE SPEED DRIVE.

②

SUCTION DIFFUSER.

③

HEAVY DUTY BASE PLATE.

SEE SPECIFICATIONS FOR APPROVED MANUFACTURERS

PRODUCT LISTED IS BASIS OF DESIGN ONLY

STATE OF MISSOURI
MICHAEL L. PARSON,
GOVERNOR



MICHAEL HOFF
LICENSE #: PE2013000576
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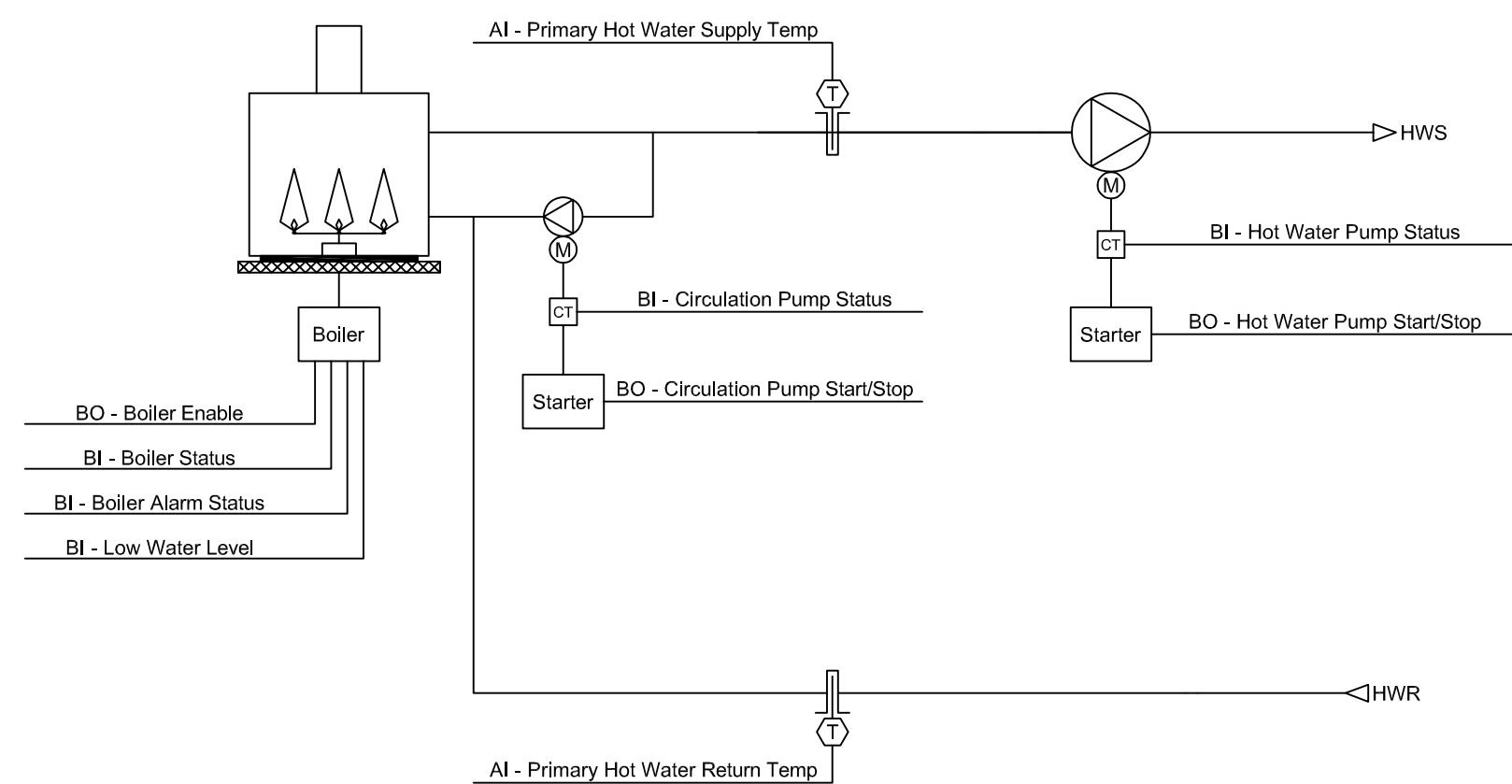
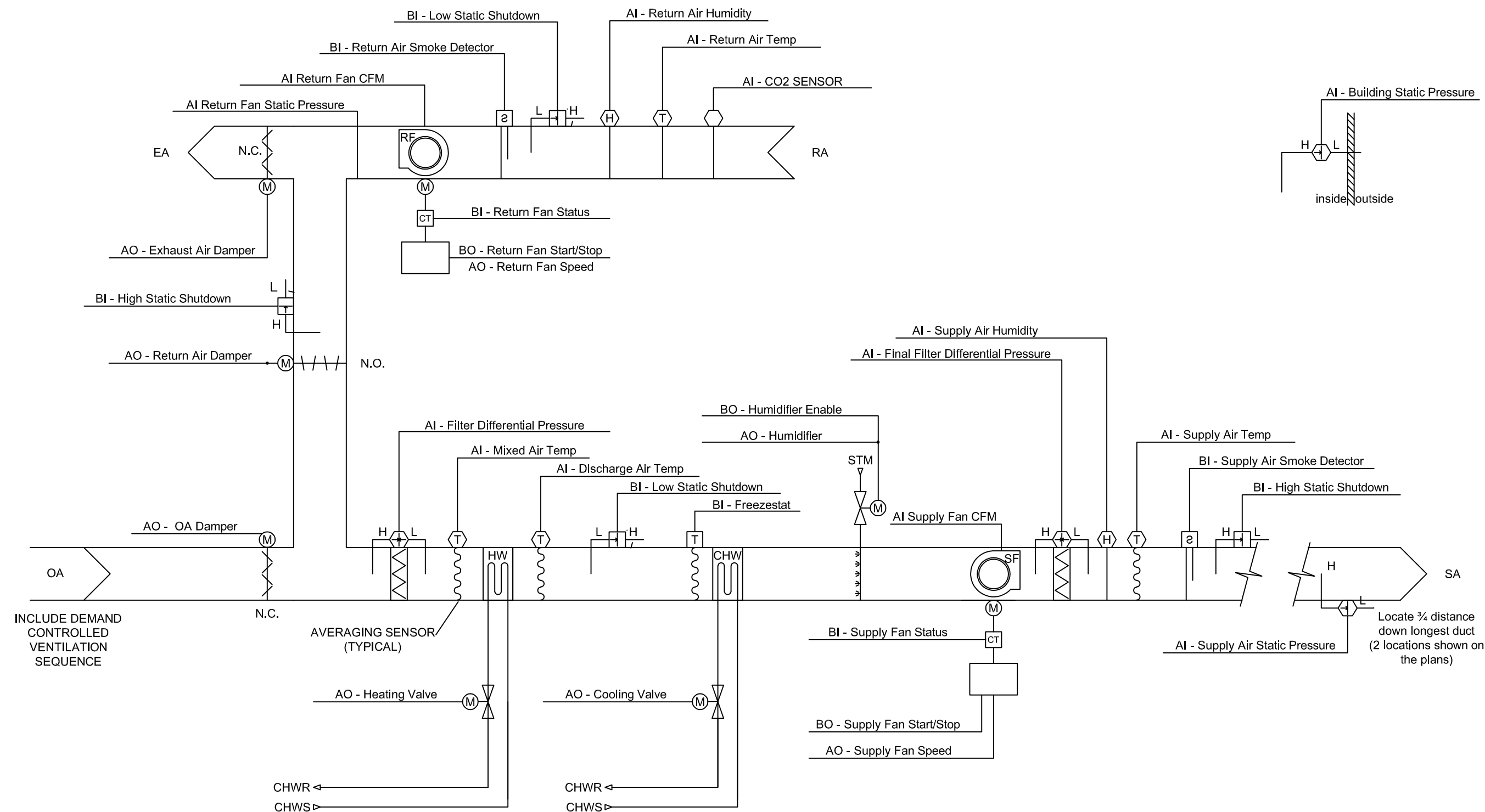
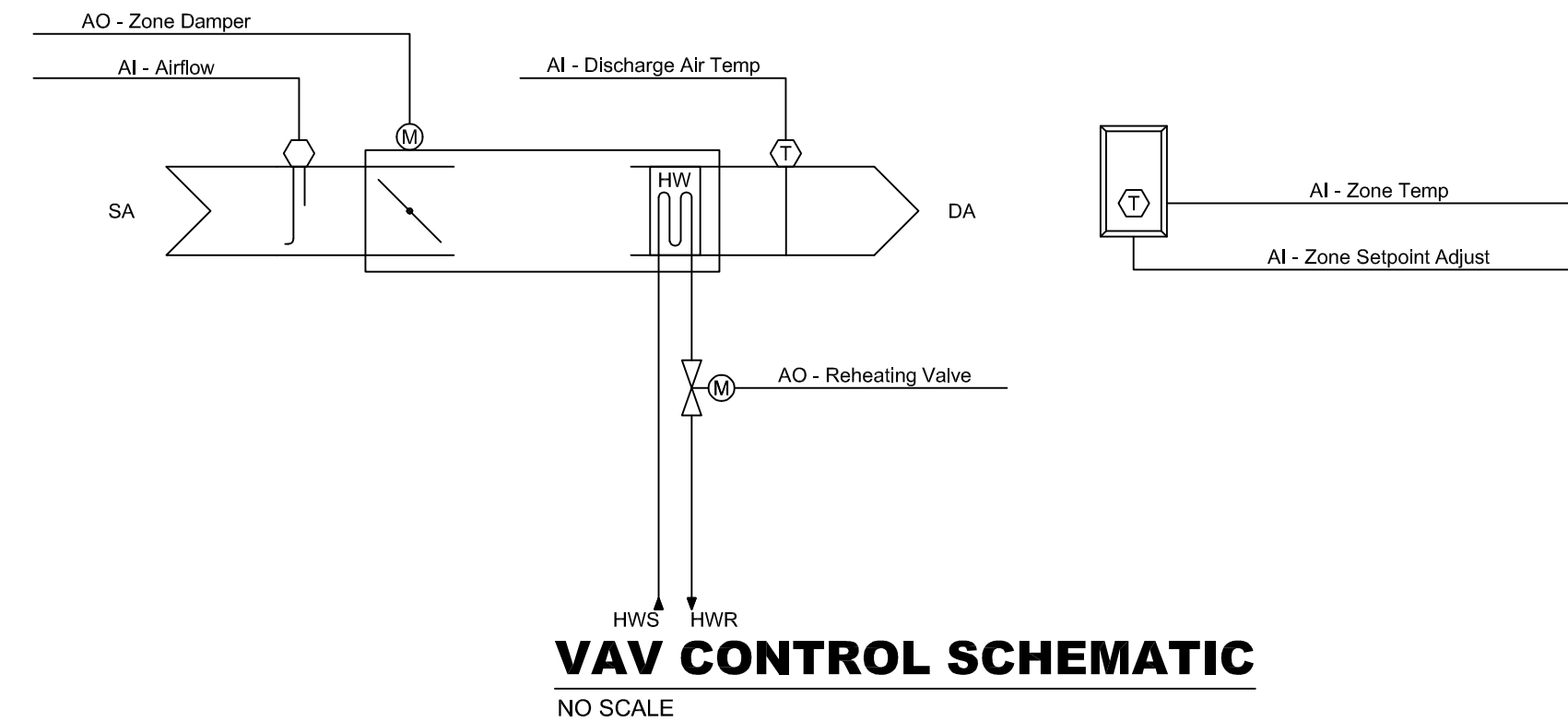
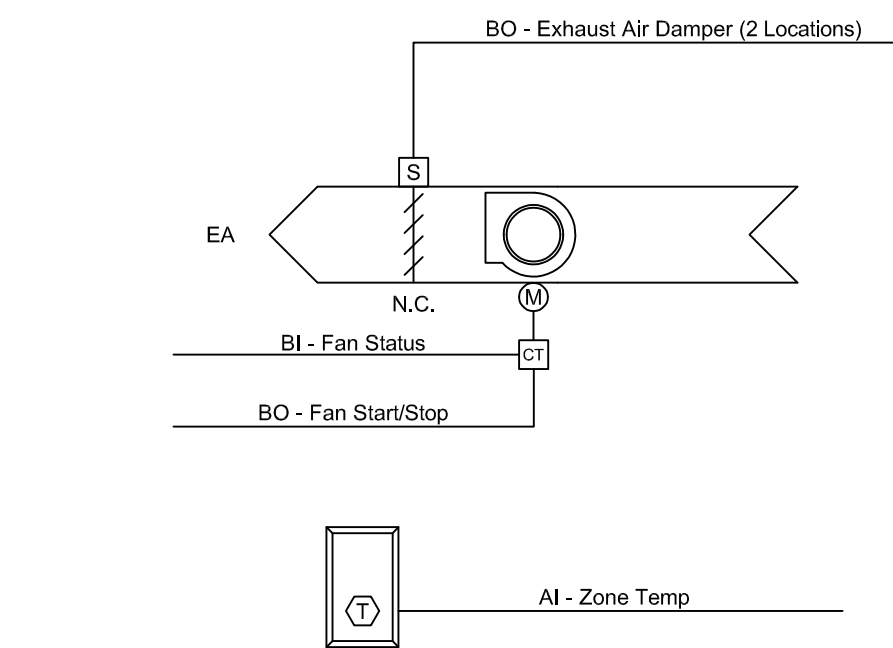
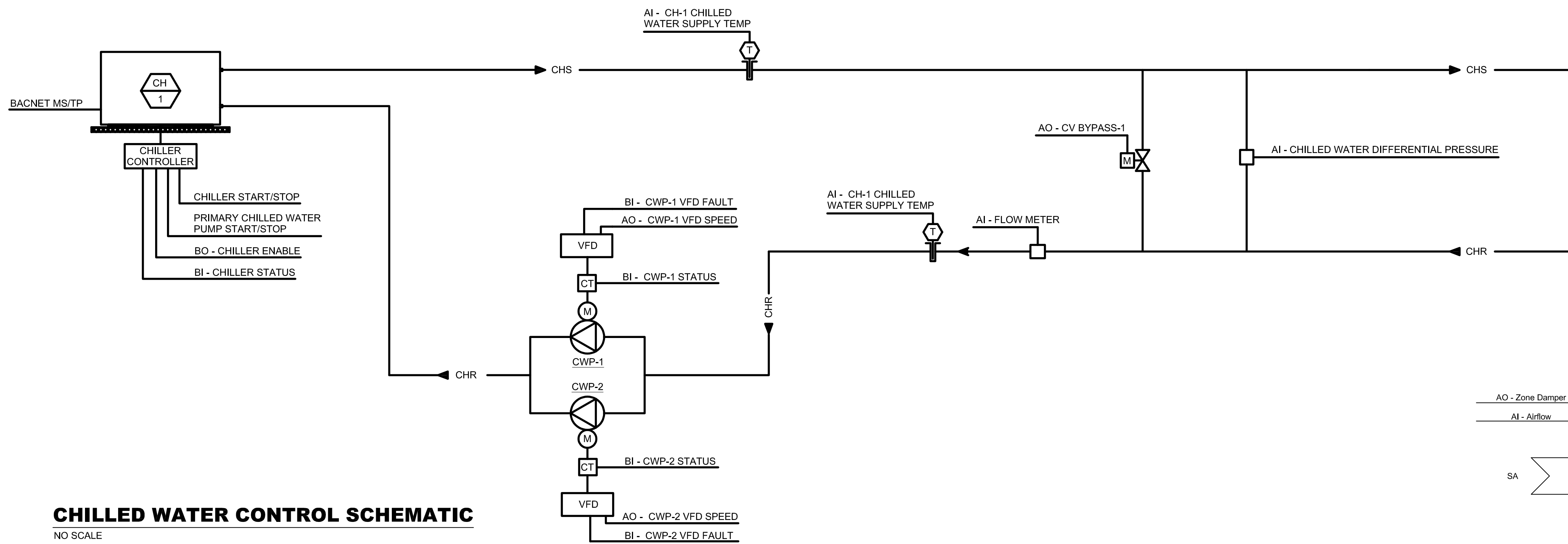
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DRAWN BY: MRH
CHECKED BY: MRH
DESIGNED BY: MRH

SHEET TITLE:

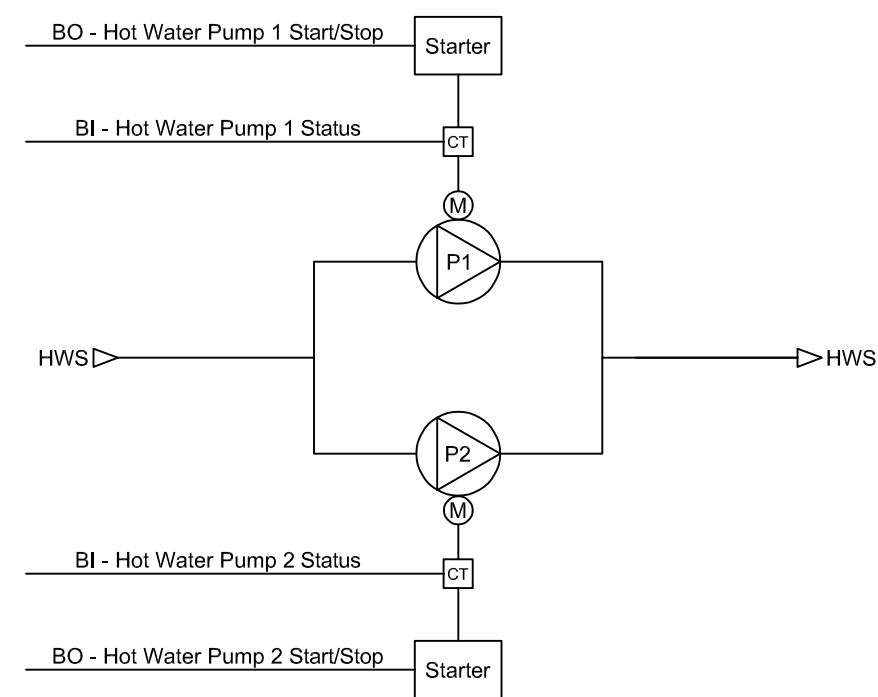
MECHANICAL
SCHEDULES

SHEET NUMBER:

M-601
SHEET 8 OF 12
10/05/2022



BOILER CONTROL SCHEMATIC
NO SCALE



HWP CONTROL SCHEMATIC
NO SCALE

STATE OF MISSOURI
MICHAEL L. PARSON,
GOVERNOR



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DRAWN BY: MRH
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SHEET TITLE:
**MECHANICAL
CONTROLS**

SHEET NUMBER:

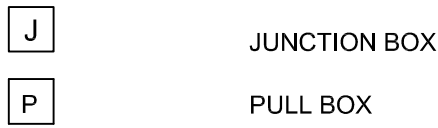
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SHEET 9 OF 12
10/05/2022

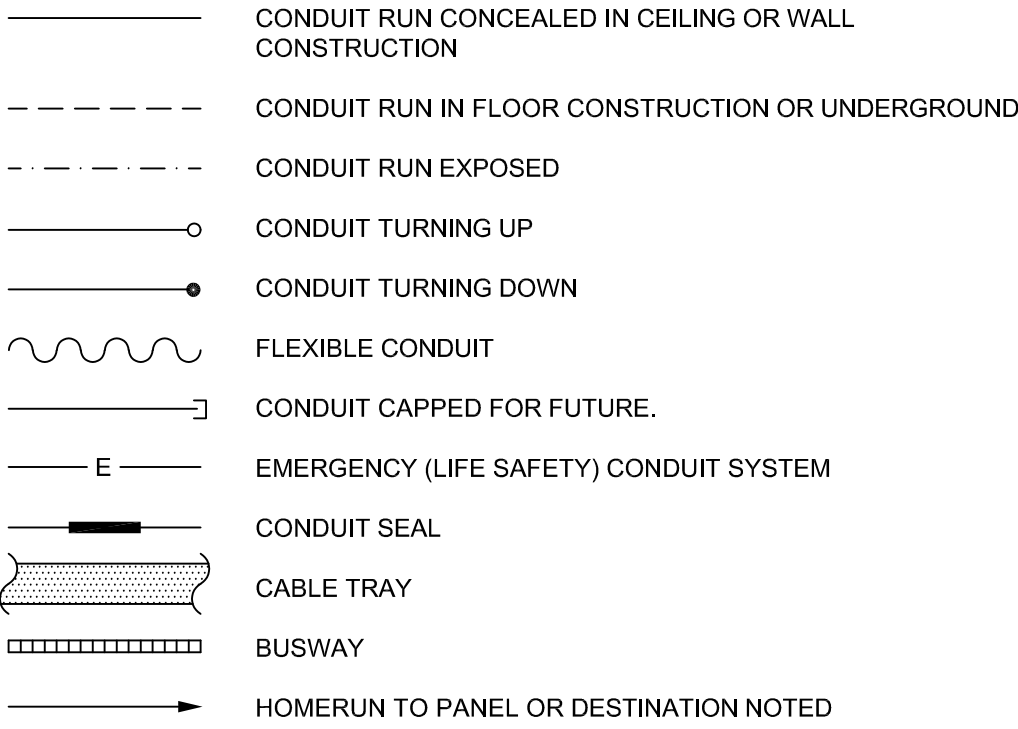
ELECTRICAL LEGEND AND ABBREVIATIONS (SEE SPECIFICATIONS & SCHEDULES)

- NOTES:
- NOT ALL SYMBOLS AND ABBREVIATIONS ARE USED ON THESE PLANS.
 - ALL MOUNTING HEIGHTS ARE TO CENTERLINE OF DEVICES AND EQUIPMENT U.O.N.
 - IN GENERAL, SYMBOLS SHOWN WITH LIGHT LINES DENOTE EXISTING WORK. SYMBOLS SHOWN WITH HEAVY LINES DENOTE PROPOSED WORK.

JUNCTION AND PULL BOXES

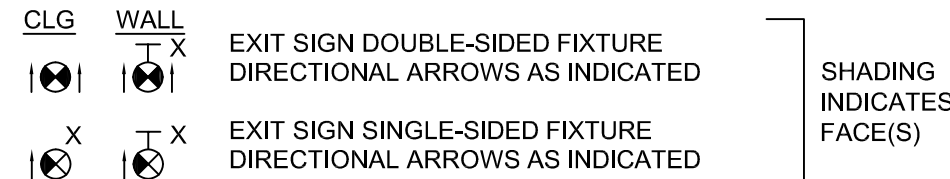
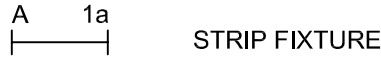
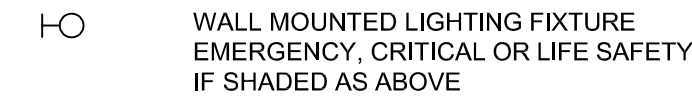
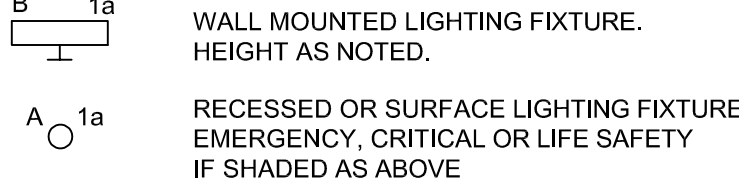


WIRING PLANS

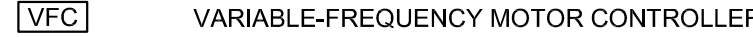
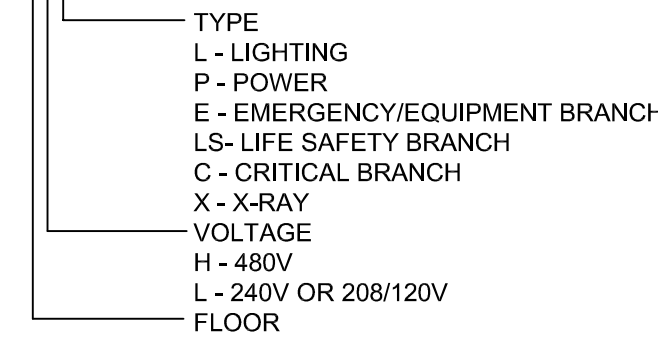
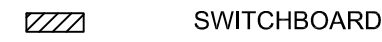
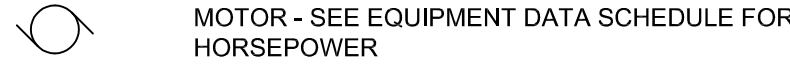


HACHURES INDICATE NUMBER OF CONDUCTORS IN CONDUIT
NOTE: LONG HACHURE - NEUTRAL CONDUCTOR
SHORT HACHURE - HOT OR SWITCHED CONDUCTORS
LONG HACHURE WITH DOT - GROUND CONDUCTOR
LONG HACHURE WITH DOT & RETURN LINE - ISOLATED GROUND CONDUCTOR. WHEN HACHURES ARE NOT SHOWN AND WIRING IS FOR POWER OR LIGHTING CIRCUITS, PROVIDE HOT, NEUTRAL AND GROUND. WHEN FOR MULTIPLE CIRCUITS, PROVIDE NO. OF PHASE CONDUCTORS, NEUTRAL CONDUCTORS AND A GROUND CONDUCTOR. HACHURES ARE SHOWN AS A GUIDE AND MAY NOT BE EXACT COUNTS IN ALL CASES. PROVIDE WIRING REQUIRED BY THE CIRCUITING AND SWITCHING REQUIREMENTS FOR THE PARTICULAR CIRCUITS INVOLVED.

LIGHTING FIXTURES

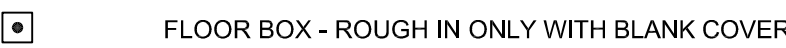
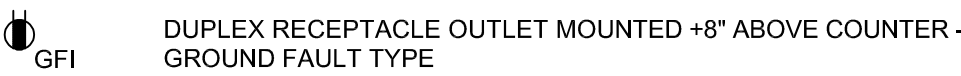
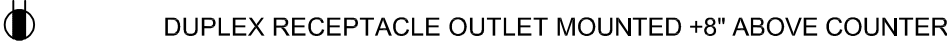


POWER EQUIPMENT



RECEPTACLES

TYPICAL MOUNTING HEIGHT - 18" AFF



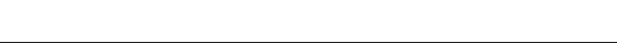
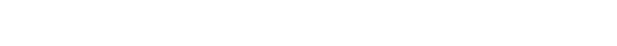
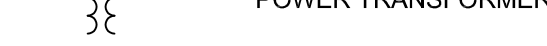
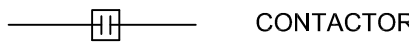
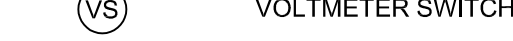
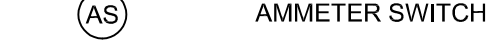
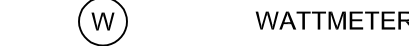
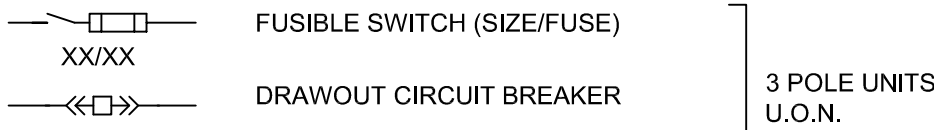
GROUNDING SYMBOLS



PHASING NOTES:

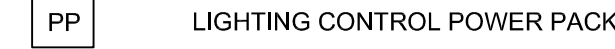
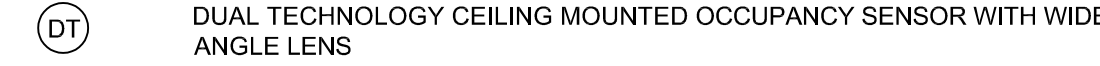
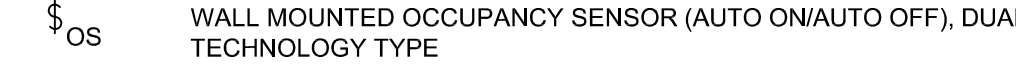
- IF THIS PROJECT IS UNDER CONSTRUCTION IN THE HEATING SEASON, ALL POWER TO CONDENSING UNITS CAN BE REMOVED AT THE SAME TIME. NO TEMPORARY POWER WILL BE REQUIRED.
- IF THIS PROJECT IS UNDER CONSTRUCTION IN THE COOLING SEASON, THE NEW CHILLER MUST BE OPERATIONAL BEFORE POWER TO CONDENSING UNITS IS REMOVED, AND ONLY ONE CONDENSING UNIT MAY BE DISCONNECTED AT A TIME. PROVIDE TEMPORARY POWER AS NOTED ON DRAWING E201.

ONE-LINE DIAGRAM SYMBOLS

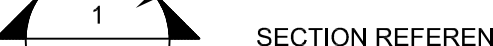
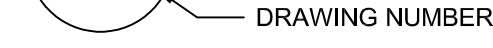


SWITCHES - LIGHTING CONTROL

TYPICAL MOUNTING HEIGHT - 48" AFF



DRAWING REFERENCES



STATE OF MISSOURI
MICHAEL L. PARSON,
GOVERNOR



CARL V. HAUCK, PE
LICENSE #: 016688
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PROJECT TITLE:

HVAC AND BAS UPGRADE

ST. JOSEPH COMMUNITY
SUPERVISION CENTER

3305 FARAON ST,
ST. JOSEPH, MO 64506

PROJECT # 2011-01

SITE # 7022

ASSET # 9327022002

REVISION: 1

DATE: 10-05-2022

REVISION: 1

DATE: 10-05-2022

REVISION: 1

DATE: 10-05-2022

ISSUE DATE: 07-07-2022

CAD DWG FILE:

DRAWN BY: ASK

CHECKED BY: CVH

DESIGNED BY: MRJ

SHEET TITLE:

ELECTRICAL

SYMBOLS

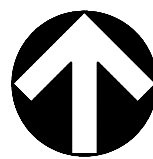
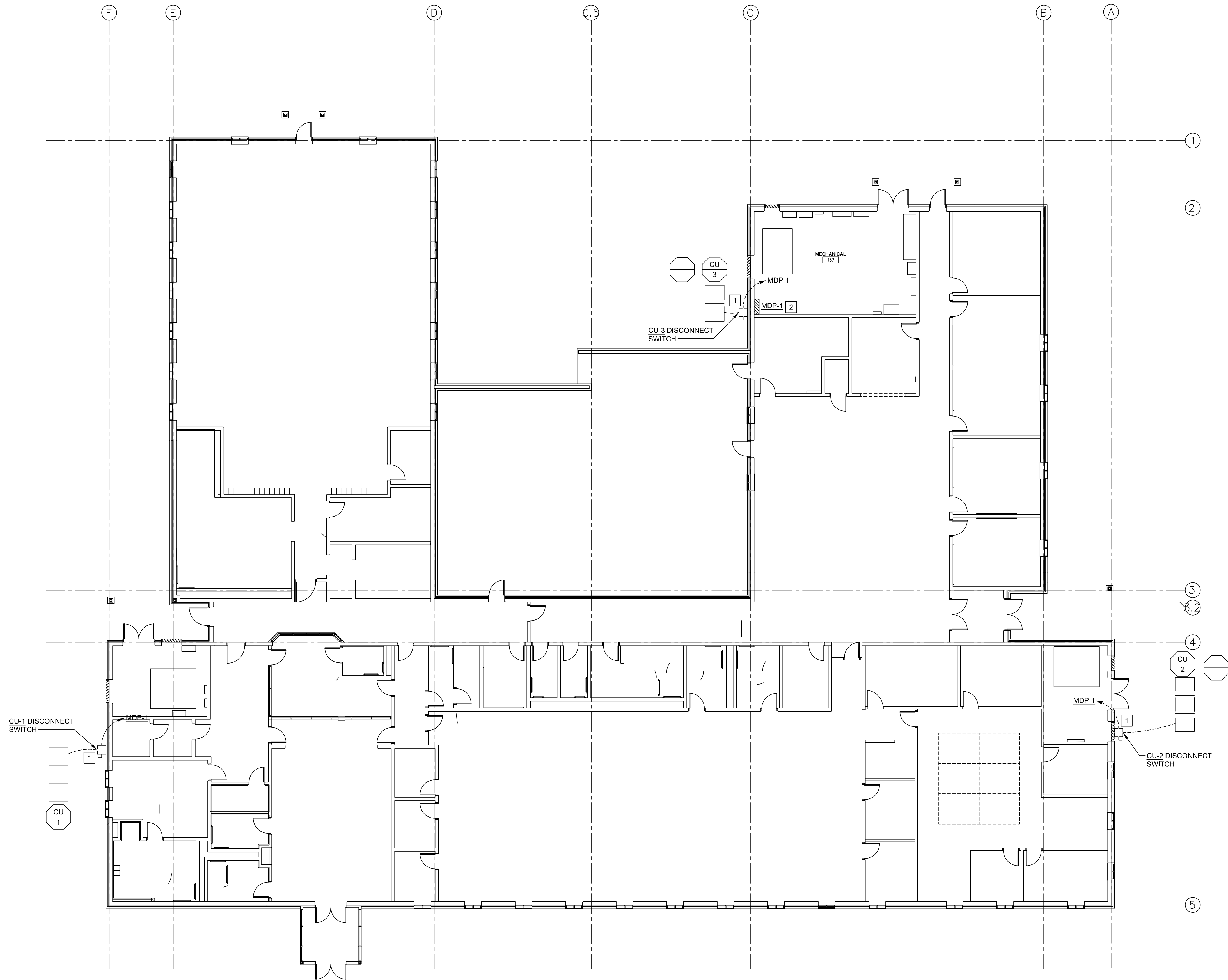
AND LEGEND

SHEET NUMBER:

E-001

SHEET 10 OF 12

10/05/2022



FIRST FLOOR ELECTRICAL DEMOLITION PLAN
SCALE: 3/32" = 1'-0"

GENERAL NOTES:

1. THE ELECTRICAL CONTRACTOR SHALL REMOVE, CAP, AND/OR RELOCATE EQUIPMENT, OUTLETS, CONDUIT, WIRE, ETC. AS MAY BECOME NECESSARY BECAUSE OF EXISTING FIELD CONDITIONS. THE CONTRACTOR SHALL BE HELD TO HAVING VISITED THE SITE AND TAKEN ALL EXISTING CONDITIONS INTO CONSIDERATION.
2. MAINTAIN SERVICES TO AREAS OUTSIDE DEMOLITION LIMITS. WHEN SERVICES MUST BE INTERRUPTED, INSTALL TEMPORARY SERVICES FOR AFFECTED AREAS.
3. IN THE DEMOLITION WORK, REMOVE ALL UNUSED WIRING AND CABLES AND UNUSED CONDUIT THAT IS EXPOSED OR WITHIN ACCESSIBLE CEILINGS WHICH IS AFFECTED BY AND IS IN THE AREA OF THE WORK OF THIS CONTRACT.
4. THE INTENTION OF THE ELECTRICAL DEMOLITION IS TO DISCONNECT AND REMOVE ALL ELECTRICAL WORK MADE VOID BY THE SCOPE OF THE CONSTRUCTION AND ALTERATION. FIELD VERIFY EXACT MATERIAL QUANTITIES REQUIRED TO BE REMOVED.
5. WHERE ELECTRICAL EQUIPMENT, CONDUIT, BOXES, AND SUPPORTING HARDWARE ARE REMOVED, PATCH, AND FINISH THE SURFACE AS REQUIRED TO MATCH THE EXISTING, UNLESS OTHERWISE NOTED.
6. WHERE BURIED CONDUITS EXTENDING OUT OF A CONCRETE SLAB BECOME ABANDONED, CUT AND GRIND THE CONDUITS OFF FLUSH WITH TOP OF SLAB AND PLUG WITH NON-SHRINK WATERPROOF GROUT FILL.
7. OWNER HAS FIRST SALVAGE RIGHTS TO ALL REMOVED MATERIALS AND EQUIPMENT. ALL MATERIAL AND EQUIPMENT NOT CLAIMED BY THE OWNER SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE PROJECT SITE. COORDINATE AT PROJECT COMMENCEMENT.
8. ACCEPTANCE OF CONTRACT MEANS INSTALLER ACCEPTS EXISTING CONDITIONS.
9. CONTRACTOR SHALL COORDINATE ALL DEMOLITION WORK WITH ALL OTHER TRADES.
10. LEGALLY DISPOSE OF HAZARDOUS MATERIALS. COMPLY WITH ALL FEDERAL, STATE, AND LOCAL LAWS.
11. MODIFY EXISTING PANEL DIRECTORIES (OR REPLACE) FOR PANELS WHICH HAVE HAD ALTERATIONS TO THE CIRCUITS ORIGINATING THEREIN. DESCRIBE THE LOAD AND LOCATION.
12. WHERE WORK IS TO BE PERFORMED ABOVE EXISTING ACCESSIBLE CEILINGS, CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING CEILING TILES AND GRID WITHOUT DAMAGE; STORAGE OF EXISTING TILES AND GRID WHILE WORK IS BEING PERFORMED, AND INSTALLATION OF EXISTING GRID AND TILES AFTER DIVISION 26 WORK IS COMPLETED.
13. ALL EXISTING ELECTRICAL WORK AND ASSOCIATED RACEWAY AND WIRING WHICH HAS BEEN MADE OBSOLETE BY THE WORK AND/OR IS SHOWN DASHED ON THE ELECTRICAL DEMOLITION DRAWINGS, SHALL BE DISCONNECTED AND REMOVED, UNLESS OTHERWISE NOTED.
14. PLANS ARE DIAGRAMMATIC IN NATURE. THEY REFLECT THE AVAILABLE INFORMATION OBTAINED FROM FIELD OBSERVATION AND EXISTING DOCUMENTATION. ACTUAL LOCATION OF ELEMENTS AND EQUIPMENT MAY DEVIATE FROM THE LOCATIONS AND QUANTITIES SHOWN.
15. ALL PANELS SHOWN ARE EXISTING TO REMAIN UNLESS NOTED OTHERWISE.

KEYED NOTES:

- 1 REMOVE DISCONNECT, WIRING, AND ACCESSIBLE CONDUIT BACK TO PANEL MDP-1.
- 2 TURN OFF (2) 200 AMP AND (1) 100A FUSED SWITCHES PREVIOUSLY SERVING CU-1, CU-2, AND CU-3 AND LABEL SPARE. SEE PROJECT PHASING NOTE ON SHEET E-001.

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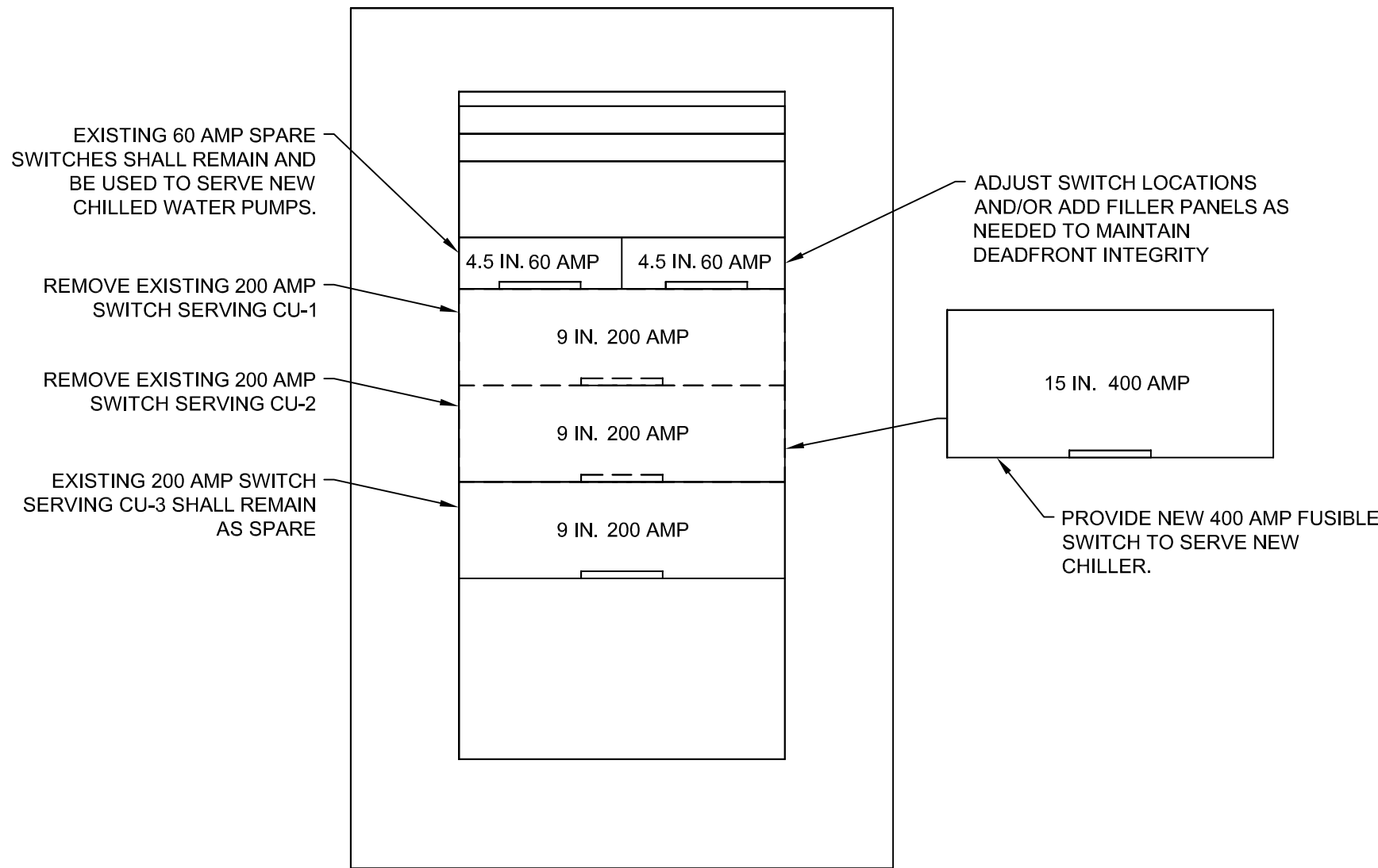
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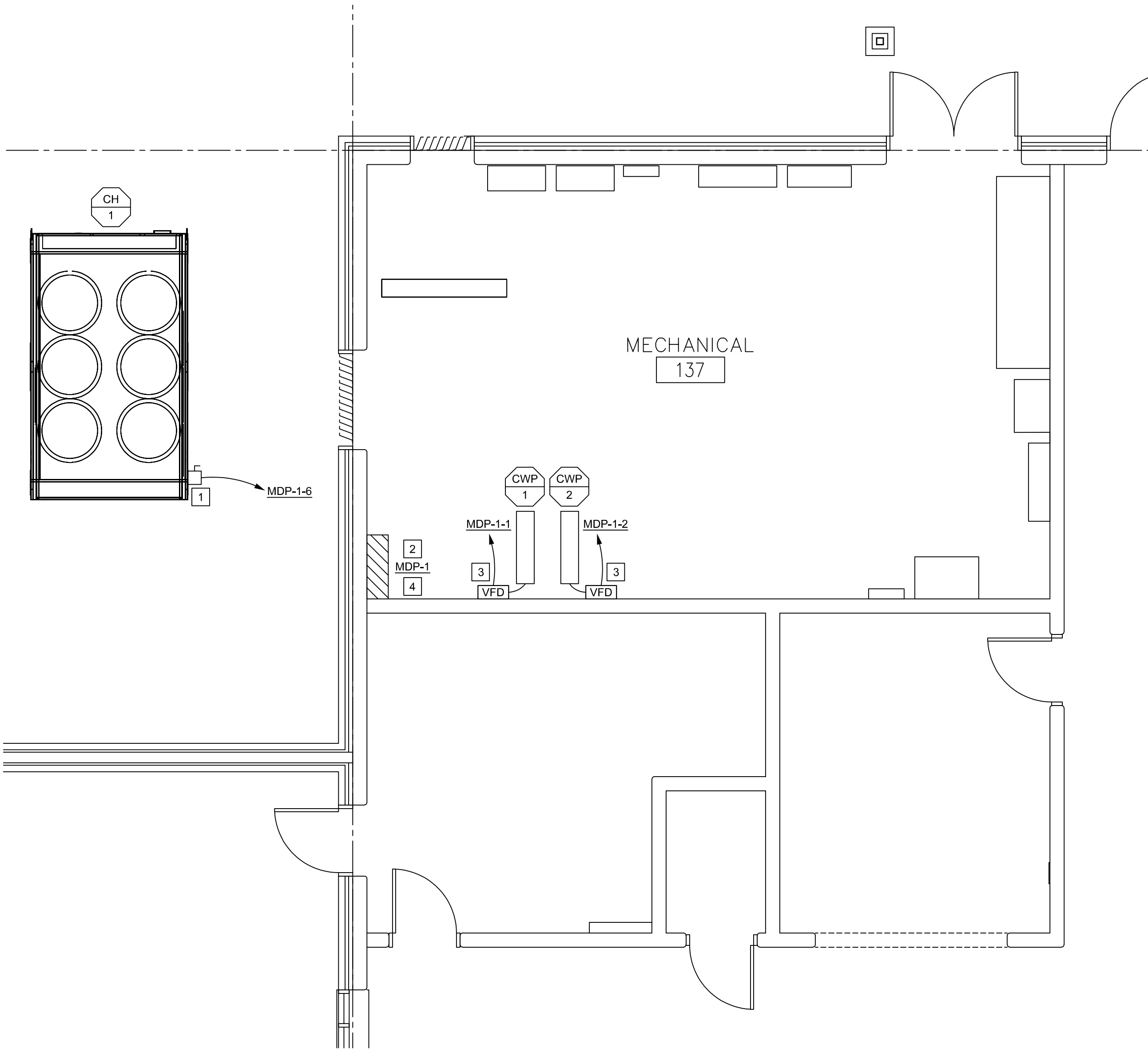
FIRST FLOOR
ELECTRICAL
DEMOLITION PLAN

SHEET NUMBER:

ED-101
SHEET 11 OF 12
10/05/2022



ELECTRICAL PANEL ELEVATION
SCALE: NO SCALE



FIRST FLOOR ELECTRICAL NEW WORK PLAN
SCALE: 1/4" = 1'-0"

- GENERAL NOTES:**
- ALL WORK SHALL BE IN ACCORDANCE WITH THE 2017 NATIONAL ELECTRICAL CODE.
 - THE ELECTRICAL DRAWINGS HAVE BEEN PREPARED UTILIZING EXISTING DRAWINGS AND BUILDING OBSERVATIONS AND MAY NOT SHOW ALL CONDITIONS. CONTRACTOR SHALL VISIT THE BUILDING PRIOR TO BID SUBMISSION AND BECOME FAMILIAR WITH ALL EXISTING CONDITIONS. CONTRACTOR WILL NOT BE ALLOWED ADDITIONAL FUNDS OR TIME DUE TO THE CONTRACTOR'S FAILURE TO BECOME FAMILIAR WITH ALL EXISTING CONDITIONS.
 - ACCEPTANCE OF CONTRACT MEANS INSTALLER ACCEPTS EXISTING CONDITIONS.
 - COORDINATE INSTALLATION WITH EXISTING CONDITIONS. FIELD VERIFY EXISTING CONDITIONS.
 - CONTRACTOR SHALL SCHEDULE ALL ELECTRICAL SYSTEM POWER OUTAGES WITH THE OWNER'S REPRESENTATIVE AT LEAST 7 CALENDAR DAYS IN ADVANCE OF A SHUTDOWN. DOWNTIME ON BRANCH CIRCUIT PANELBOARDS, SWITCHBOARDS, DISTRIBUTION PANELBOARDS, ETC., WHICH SERVE LOADS OUTSIDE OF THE CONSTRUCTION AREAS SHALL BE LIMITED TO A (1) HOUR (MAXIMUM) OUTAGE UNLESS OTHERWISE PERMITTED BY OWNER. MORE THAN (1) SCHEDULED OUTAGE MAY OCCUR ON EACH PIECE OF EQUIPMENT, BUT THE MAXIMUM OUTAGE TIME MUST BE MAINTAINED.
 - ALL PENETRATIONS THROUGH CONCRETE OR MASONRY WALLS AND FLOOR SLABS SHALL BE CORE DRILLED. AFTER CONDUITS HAVE BEEN INSTALLED, SEAL WALL AROUND CONDUIT TO MAINTAIN 2-HOUR FIRE RATING USING UL LISTED METHODS AND MATERIALS. EXTERIOR WALLS SHALL BE SEALED WATERTIGHT.
 - CONTRACTOR SHALL UPDATE EXISTING PANELBOARD CIRCUIT DIRECTORIES TO REFLECT ALL CHANGES MADE TO EXISTING PANELBOARDS DURING THIS PROJECT.
 - WHEN INSTALLING CIRCUIT BREAKERS IN EXISTING PANELBOARDS, MATCH EXISTING CIRCUIT BREAKER TYPES AND INTERRUPTING RATINGS.
 - THIS CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING EXISTING DIVISION 26 RELATED ITEMS TO REMAIN IN PLACE WITH THE INSTALLATION OF GENERAL CONSTRUCTION WORK, DUCTWORK, PIPING, ETC. ALL ATTEMPTS SHALL BE MADE PRIOR TO THE START OF CONSTRUCTION TO AVOID THE REMOVAL AND RELOCATION OF EXISTING DIVISION 26 RELATED ITEMS WHICH ARE NOT AFFECTED BY WORK OF THIS CONTRACT.
 - CONTRACTOR SHALL PROVIDE A SET OF HAND MARKED RECORD DRAWINGS TO THE ENGINEER AT THE COMPLETION OF THE PROJECT INDICATING ACTUAL INSTALLED CONDITIONS. THE HAND MARKING SHALL BE CLEARLY LEGIBLE AND SHALL BE MARKED IN RED. MARKS SHALL INCLUDE ITEMS SUCH AS CIRCUITING CHANGES, DEVICE AND EQUIPMENT LOCATION CHANGES, MAJOR FEEDER AND CABLING ROUTING CHANGES, ETC.
 - ALL PANELS SHOWN ARE EXISTING TO REMAIN UNLESS NOTED OTHERWISE.

- KEYED NOTES:**
- PROVIDE SINGLE POINT CONNECTION TO CH-1. INSTALL (3)#300, 1#4G, 2#2" C FROM PANEL MDP-1 TO CH-1.
 - PROVIDE 3P-400A FUSED SWITCH WITH 300 AMP FUSES IN AVAILABLE SPACE AND INSTALL 25A FUSES IN (2) EXISTING 3P-60A FUSED SWITCHES (PROVIDE FUSE REDUCERS AS REQUIRED) IN EXISTING PANEL MDP-1 FOR CH-1, CWP-1, AND CWP-2.
 - PROVIDE A NEMA 1 VFD WITH INTEGRAL DISCONNECT FOR CWP-1 AND CWP-2. INSTALL (3)#12, 1#12G, 3/4" C FROM PANEL MDP-1 TO VFD AND FROM VFD TO CWP-1 AND CWP-2.
 - IF THIS PROJECT IS UNDER CONSTRUCTION IN THE COOLING SEASON, ELECTRICAL CONTRACTOR SHALL PROVIDE A TEMPORARY MEANS OF MAINTAINING POWER AND CIRCUIT PROTECTION TO THE (3) EXISTING CONDENSING UNITS. THE (2) EXISTING 3P-200A FUSED SWITCHES IN MDP-1 SHALL BE REMOVED IN ORDER TO FACILITATE THE INSTALLATION OF THE NEW 3P-400A FUSED SWITCH IN MDP-1 FOR THE NEW CHILLER CIRCUIT. TEMPORARY POWER MAY COME FROM MDP-1 BY MEANS OF TEMPORARY EXTERNAL 3P-200A FUSED DISCONNECTS. AFTER THE NEW CHILLER BECOMES OPERATIONAL THE TEMPORARY EXTERNAL FUSED DISCONNECTS SHALL BE REMOVED.

EQUIPMENT DATA SCHEDULE																						
MARK	EQUIPMENT	LOCATION	FURNISH. BY ①	MOTOR OR EQUIPMENT DATA			FED FROM	BRANCH CIRCUIT ③	DISCONNECT SWITCH AT EQUIPMENT					STARTER							REMARKS ⑦	
				HP/KW/A ②	VOLTS/ PHASE	INST.BY/ CONN.BY			TYPE ④	NEMA ENCLOS. TYPE	SWITCH/ FUSE SIZE	FURNISH. BY	INST.BY/ CONN.BY	NEMA SIZE	NEMA ENCLOS. TYPE	TYPE ⑤	HORSE POWER	ACCESS. ⑥	FURNISH. BY	CONN.BY		CONTROL WIRING BY
CH-1	CHILLER	EXTERIOR	23	257A	208/3	23/26	MDP-1	1	-	-	-	-	-	-	-	PWCP	-	-	23	26	23	(7)
CWP-1	PUMP	MECHANICAL ROOM 137	23	5	208/3	23/26	MDP-1	2	-	-	-	-	-	-	1	VFC	5HP	-	26	26	23	-
CWP-2	PUMP	MECHANICAL ROOM 137	23	5	208/3	23/26	MDP-1	6	-	-	-	-	-	-	1	VFC	5HP	-	26	26	23	-
<div>① SPECIFICATION DIVISION NUMBER: DIVISION 22 - PLUMBING DIVISION 23 - MECHANICAL DIVISION 26 - ELECTRICAL</div> <div>② HORSEPOWER (HP) IS SHOWN UNLESS AMPS(A) OR KILOWATTS(KW) ARE CALLED OUT.</div> <div>③ REFER TO FEEDER SCHEDULE WHEN THIS COLUMN CONTAINS A FEEDER DESIGNATION INSTEAD OF CONDUCTOR SIZE.</div> <div>④ NF - NON FUSED F - FUSED TOG - TOGGLE</div> <div>⑤ STARTER TYPE: COMB1 - COMBINATION FULL VOLTAGE NON-REVERSING MAGNETIC STARTER WITH FUSED DISCONNECT SWITCH COMB2 - COMBINATION FULL VOLTAGE NON-REVERSING MAGNETIC STARTER WITH UNFUSED DISCONNECT SWITCH COMB3 - COMBINATION FULL VOLTAGE NON-REVERSING MAGNETIC STARTER WITH THERMAL MAGNETIC MOLDED CASE CIRCUIT BREAKER DISCONNECT COMB4 - COMBINATION FULL VOLTAGE NON-REVERSING MAGNETIC STARTER WITH MAGNETIC ONLY MOLDED CASE CIRCUIT BREAKER DISCONNECT</div> <div>FVNR - FULL VOLTAGE NON-REVERSING MAGNETIC STARTER WITHOUT DISCONNECT MAN - MANUAL STARTER WITH PILOT LIGHT SDS - STAR DELTA STARTER PWCP - PREWIRED CONTROL PANEL VFC - VARIABLE-FREQUENCY MOTOR CONTROLLER 2S2W - 2 SPEED 2 WINDING 2S1W - 2 SPEED SINGLE WINDING</div> <div>⑥ ACCESSORIES: HOAP - HOA WITH PILOT LIGHT PB - START/STOP PUSH BUTTON (MOMENTARY CONTACT)</div> <div>⑦ KEY TO REMARKS: (1) FIRE ALARM INTERLOCK (2) INTEGRAL DISCONNECT SWITCH (3) MOUNT DISCONNECT SWITCH ON EQUIPMENT HOUSING (4) INTEGRAL MOTOR STARTER (5) INTEGRAL CONTROLLER (6) VFD PROVIDED BY AHU MANUFACTURER (7) SINGLE POINT CONNECTION</div> <div>ALL MAGNETIC AND SOLID STATE STARTERS ARE TO BE EQUIPPED WITH AUXILIARY CONTACTS, PILOT LIGHTS AND FUSED CONTROL POWER TRANSFORMERS. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.</div>																						

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CHECKED BY: CVH
DESIGNED BY: MRJ

SHEET TITLE:
**FIRST FLOOR
ELECTRICAL
NEW WORK PLAN**

SHEET NUMBER:

E-201
SHEET 12 OF 12
10/05/2022