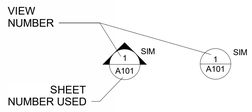
MECHANICAL GENERAL NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING A COMPLETE & OPERATIONAL MECHANICAL SYSTEM IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. PROVIDE ALL ITEMS NECESSARY FOR A COMPLETE SYSTEM, EVEN IF NOT SPECIFICALLY MENTIONED.
2. ALL WORK SHALL COMPLY WITH THE REQUIREMENTS OF THE INTERNATIONAL MECHANICAL CODE (IMC), INTERNATIONAL BUILDING CODE (IBC), AND ALL OTHER ADOPTED CODES.
3. MECHANICAL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS AND RECOMMENDATIONS.
4. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS. DRAWINGS SHALL NOT BE SCALED.
5. THE CONTRACTOR SHALL ROUTE DUCTWORK AND PIPING TO AVOID CONFLICTS AND INTERFERENCES WITH LIGHTING FIXTURES, PIPING, LARGER CONDUIT, AND OTHER CRAFT WORK. FINAL COORDINATION WITH OTHER TRADES IS THE RESPONSIBILITY OF THE CONTRACTOR. CONTRACTOR TO CONDUCT BIM COORDINATION AND CLASH DETECTION PRIOR TO INSTALLATION.
6. DO NOT ROUTE ANY PIPING OR DUCTWORK DIRECTLY OVER ELECTRICAL PANELS AND EQUIPMENT, ELEVATOR EQUIPMENT AND CONTROLS, OR TELECOMMUNICATIONS EQUIPMENT. SEE ELECTRICAL AND TELECOMMUNICATION DRAWINGS FOR EXACT EQUIPMENT LOCATIONS.
7. LOCATIONS OF AIR DISTRIBUTION DEVICES (DIFFUSERS, GRILLES, REGISTERS) ARE APPROXIMATE ONLY. SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF ALL AIR DISTRIBUTION DEVICES (WALL AND CEILING).
8. ALL DUCTWORK SHOWN SHALL BE ROUTED ABOVE CEILING UNLESS NOTED OTHERWISE.
9. DUCTWORK SHALL BE ROUTED WITH SIZES AS SHOWN ON THE PLANS UNLESS AN EQUIVALENT SIZE IS APPROVED BY THE ENGINEER.
10. DUCT DIMENSIONS SHOWN ON DRAWINGS INDICATE INSIDE CLEAR DIMENSIONS. MAKE ALLOWANCES IN SHEET METAL SIZE FOR DUCT REQUIRING INTERNAL DUCT LINER TO PROVIDE "INSIDE CLEAR" DIMENSIONS.
11. DUCT RUNOUT SIZES TO DIFFUSERS, GRILLES, AND REGISTERS TO BE AS SCHEDULED UNLESS NOTED OTHERWISE ON THE PLANS. CONTRACTOR TO PROVIDE A TRANSITION AT NECK OF EACH AIR DISTRIBUTION DEVICE AS REQUIRED.
12. ALL AIR DISTRIBUTION SYSTEM(S) SHALL BE TESTED AND BALANCED IN ACCORDANCE WITH A.A.B.C. OR N.E.B.B. REQUIREMENTS. A CERTIFIED AIR BALANCE REPORT SHALL BE PREPARED PRIOR TO PROJECT CLOSEOUT.
13. ALL DUCTWORK SHALL BE EXTERNALLY INSULATED UNLESS NOTED OTHERWISE. SEE SPECIFICATIONS FOR REQUIREMENTS.
14. ALL TRANSFER AIR DUCTS SHALL BE INTERNALLY INSULATED WITH 1" THICK (3 LB. DENSITY) DUCT LINER EQUAL TO CERTAINEED TOUGHGUARD.
15. PROVIDE FIRE DAMPERS AT ALL DUCT PENETRATIONS THROUGH FLOOR SLABS AND FIRE RATED WALLS. PROVIDE COMBINATION FIRE/SMOKE DAMPERS AT ALL DUCT PENETRATIONS THROUGH SHAFT ENCLOSURES. REFER TO THE IBC AND NFPA FOR CAULKING REQUIREMENTS AROUND FIRE AND FIRE/SMOKE DAMPERS.
16. FIRESTOP ALL PIPING PENETRATIONS THROUGH RATED WALLS AND FLOORS.
17. UNLESS OTHERWISE INDICATED ON DRAWINGS PROVIDE 4" HIGH CONCRETE PAD FOR ALL FLOOR MOUNTED AND GRADE MOUNTED EQUIPMENT.
18. MANUAL VOLUME DAMPERS SHALL BE PROVIDED AT ALL RUNOUTS TO SUPPLY AIR DIFFUSERS, RETURN AIR REGISTERS, EXHAUST AIR REGISTERS, DIVISIONS IN DUCTWORK (SUPPLY, RETURN AND EXHAUST), AND ELSEWHERE NOTED ON PLANS AND IN SPECIFICATIONS FOR BALANCING SYSTEM. DAMPERS IN REGISTERS, GRILLES, AND DIFFUSERS ARE PROVIDED FOR FINAL ADJUSTMENTS DURING TEST AND BALANCING. DO NOT RELY ON DISTRIBUTION DEVICE DAMPERS FOR SYSTEM BALANCING.
19. PROVIDE REMOTE, CABLE-OPERATED VOLUME REGULATORS FOR ALL DAMPERS LOCATED ABOVE INACCESSIBLE CEILINGS (GYP CEILINGS, WOOD CEILINGS, ETC.). REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPES. CONFIRM THAT ANY REMOTE DEVICE IS CLEARLY LABELED, LOCATABLE AND ACCESSIBLE FOR TAB AND FUTURE MAINTENANCE.
20. THE CONTRACTOR SHALL FURNISH AND INSTALL ACCESS PANELS IN WALLS AND NON-ACCESSIBLE CEILINGS WHERE SERVICE OR ADJUSTMENT TO MECHANICAL, PLUMBING OR ELECTRICAL EQUIPMENT IS REQUIRED. PANELS SHALL HAVE THE SAME FIRE RATING AS THE WALL OR CEILING IN WHICH THEY ARE INSTALLED.
21. PROVIDE DUCT ACCESS DOORS FOR ALL LIFE SAFETY DAMPERS (FIRE, SMOKE, COMBO, ETC.), REHEAT COILS, DUCT MOUNTED SMOKE DETECTORS, AND ELSEWHERE WHERE SERVICE OR ADJUSTMENT TO MECHANICAL, PLUMBING OR ELECTRICAL EQUIPMENT IS REQUIRED. THE CONTRACTOR SHALL FURNISH AND INSTALL ACCESS PANELS IN WALLS AND NON-ACCESSIBLE CEILINGS TO ENSURE DUCT ACCESS DOORS ARE ACCESSIBLE. COORDINATE ACCESS PANEL LOCATION AND CLEARANCES WITH OTHER TRADES TO AVOID OBSTRUCTIONS.
22. PROVIDE CANVAS, FLAME RETARDANT FLEXIBLE DUCT CONNECTORS AT ALL CONNECTIONS OF FANS TO DUCTWORK.
23. PROVIDE A MINIMUM SEPARATION OF 10'-0" BETWEEN FRESH AIR INTAKES AND ANY MECHANICAL EXHAUST, PLUMBING VENTS, OR OTHER VENT OUTLETS.
24. ALL OUTSIDE AIR INTAKES ON ROOF SHALL HAVE A MINIMUM VERTICAL CLEARANCE OF 1'-0" FROM THE ROOF SURFACE. PROVIDE DUCTWORK OR CURB EXTENSIONS AS NECESSARY TO PROVIDE CLEARANCE.
25. ROOFTOP MECHANICAL EQUIPMENT SHALL BE LOCATED A MINIMUM DISTANCE OF 10'-0" FROM THE EDGE OF THE ROOF.
26. MECHANICAL EQUIPMENT AND PIPING INSTALLED ON ROOF SHALL BE SECURED TO MEET IBC WIND LOADING REQUIREMENTS.
27. FOR AIR HANDLERS WITH DESIGN AIRFLOWS ABOVE 2,000 CFM, INSTALL SMOKE DETECTORS IN RETURN AIR DUCTWORK AND SUPPLY AIR DUCTWORK. DUCT MOUNTED SMOKE DETECTORS TO BE FURNISHED AND WIRED BY ELECTRICAL CONTRACTOR AND INSTALLED BY THE MECHANICAL CONTRACTOR.
28. PROVIDE LOCKABLE COVERS FOR THERMOSTATS LOCATED IN PUBLIC SPACES.
29. WALL MOUNTED DEVICES SHALL NOT BE LOCATED IN ARCHITECTURAL FEATURE WALLS (WOOD, STONE, OR OTHER HIGH END FINISHES).
30. PROVIDE SEALED ROOF CURBS FOR ALL DUCTWORK AND PIPING PENETRATIONS THROUGH THE ROOF.
31. DUCT CONNECTIONS TO LOUVERS SHALL BE SLOPED TOWARD THE EXTERIOR.
32. MECHANICAL EQUIPMENT SHALL NOT BE INSTALLED IN LOCATIONS WHERE SUBJECT TO MECHANICAL DAMAGE UNLESS PROTECTED BY APPROVED BARRIERS.
33. ALL SUSPENDED EQUIPMENT, PIPING, MATERIALS, ETC. SHALL BE INDIVIDUALLY SUPPORTED FROM THE BUILDING STRUCTURE. DO NOT SUSPEND ITEMS FROM THE CEILING OR THE CEILING SUPPORT SYSTEM.
34. EXPOSED OVERHEAD PIPING SHALL BE INSTALLED AS HIGH AS POSSIBLE ABOVE THE FLOOR AND TIGHT TO THE STRUCTURE. EXPOSED PIPE DROPS TO EQUIPMENT, OUTLETS, ETC. SHALL BE INSTALLED TIGHT AGAINST THE WALL.
35. ALL LOUVERS, DIFFUSERS/GRILLES/REGISTERS, EXPOSED PIPING AND DUCTWORK, ETC. SHALL BE PAINTED TO MATCH SURROUNDING COLORS AND TEXTURES AS REQUIRED BY THE ARCHITECT. THE CONTRACTOR SHALL VERIFY PAINT COLORS AND TEXTURES WITH THE ARCHITECT PRIOR TO INSTALLATION.

LEGEND

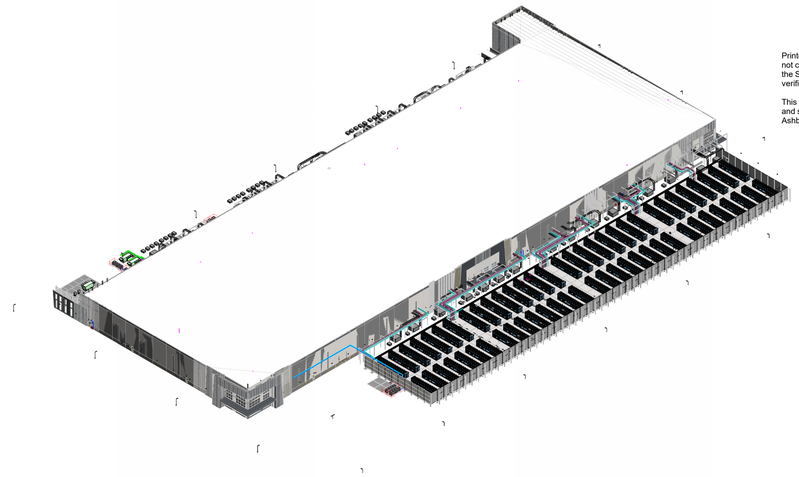
MEDIUM PRESSURE TEE	DUCT TERMINATION
RECTANGULAR DUCT TURNING DOWN	45º FULL RADIUS TURN
ROUND DUCT TURNING DOWN	SQUARE ELBOW W/TURNING VANES
DUCT TURNING DOWN TO SIDEWALL REGISTER	FULL RADIUS TURN
DOUBLE LINE TO DUCTWORK	CO2 SENSOR
DUCT LINER IN LOW PRESSURE DUCT OR DOUBLE WALL INSULATED MEDIUM PRESSURE DUCT	THERMOSTAT
BRANCH TAP OFF MAIN W/45º BOOT FITTING OR SPIN-IN FITTING W/DAMPER (LOW PRESSURE)	MVD MANUAL VOLUME DAMPER
TRANSITION IN DUCT (NOT DIRECTION OF AIRFLOW)	VAV VARIABLE VOLUME BOX
REGISTER TAPPING INTO BOTTOM OF DUCT	EA 100 INDICATES A SIZE "A" EXHAUST REGISTER SET FOR 100 CFM
FD FIRE DAMPER	RB 200 INDICATES A SIZE "B" RETURN REGISTER SET FOR 200 CFM
FSD FIRE/SMOKE DAMPER	SB 200 INDICATES A SIZE "B" SUPPLY DIFFUSER SET FOR 200 CFM
SD SMOKE DETECTOR	SUPPLY DIFFUSER (1-WAY)
DSD DUCT SMOKE DETECTOR	SUPPLY DIFFUSER (2-WAY)
AD ACCESS DOOR	SUPPLY DIFFUSER (3-WAY)
AFF ABOVE FINISHED FLOOR	SUPPLY DIFFUSER (4-WAY)
BFC BELOW FINISHED FLOOR	EXHAUST GRILLE
VFD VARIABLE FREQUENCY DRIVE	RETURN GRILLE
TAD TRANSFER AIR DUCT	DG DOOR GRILLE
TAO TRANSFER AIR OPENING	UNDERCUT DOOR 3/4" UNLESS OTHERWISE NOTED
BAS BUILDING AUTOMATION CONTROL SYSTEM	
P PRESSURE SENSOR	
MOTORIZED DAMPER	

VIEW NAME LEGEND



PIPING LEGEND

CHWS CHILLED WATER SUPPLY	DIRECTION OF WATER FLOW
CHWR CHILLED WATER RETURN	TEE
HWS HOT WATER SUPPLY	PIPE TURNING DOWN
HWR HOT WATER RETURN	PIPE TURNING UP
GC GRAVITY CONDENSATE	PIPE SHUT OFF VALVE
RLL REFRIGERANT LIQUID SUPPLY	PIPE ANCHOR
RGL REFRIGERANT HOT GAS LINE	PIPE GUIDE



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This item has been digitally signed and sealed by Christopher S. Ashburn, PE, on 9/21/26

MECHANICAL SHEET LIST

Sheet Number	Sheet Name	Drawn By	Checked By
01 - GENERAL			
M001	MECHANICAL LEGENDS	TKP	DHW
M002	MECHANICAL DESIGN CRITERIA	TKP	DHW
M003	MECHANICAL DIAGRAMS	TKP	DHW
M101-A	HVAC ZONING PLAN	NSG	DHW
M501	MECHANICAL DETAILS	TKP	DHW
M502	MECHANICAL DETAILS	TKP	DHW
M503	MECHANICAL DETAILS	TKP	DHW
M504	MECHANICAL DETAILS	TKP	DHW
M505	MECHANICAL DETAILS	TKP	DHW
M601	MECHANICAL SCHEDULES	TKP	DHW
M602	MECHANICAL SCHEDULES	TKP	DHW
M603	MECHANICAL SCHEDULES	TKP	DHW
M604	MECHANICAL SCHEDULES	TKP	DHW
M605	MECHANICAL SCHEDULES	TKP	DHW
M606	MECHANICAL SCHEDULES	TKP	DHW
M607	MECHANICAL SCHEDULES	TKP	DHW
M700	CONTROLS NOTES AND LEGENDS	TKP	DHW
M701	MECHANICAL DIAGRAMS	TKP	DHW
M702	MECHANICAL DIAGRAMS	TKP	DHW
M703	MECHANICAL DIAGRAMS	TKP	DHW
M704	MECHANICAL DIAGRAMS	TKP	DHW
M705	MECHANICAL DIAGRAMS	TKP	DHW
M706	MECHANICAL DIAGRAMS	TKP	DHW
M707	MECHANICAL DIAGRAMS	TKP	DHW
M708	MECHANICAL CONTROLS	TKP	DHW
M709	MECHANICAL CONTROLS	TKP	DHW
M710	MECHANICAL CONTROLS	TKP	DHW
M711	MECHANICAL CONTROLS	TKP	DHW
02 - HVAC			
MH101-A	BLDG 1 SITE EQUIPMENT PLAN - MECHANICAL	TKP	DHW
MH102-A	BLDG 1 EQUIPMENT PLAN - NORTH	TKP	DHW
MH103-A	BLDG 1 EQUIPMENT PLAN - SOUTH	TKP	DHW
MH104-A	BLDG 1 OVERALL FLOOR PLAN - HVAC	TKP	DHW
MH105-A	ENLARGED HVAC PLANS - SUITE A	TKP	DHW
MH106-A	ENLARGED HVAC PLANS - SUITE B	TKP	DHW
MH107-A	ENLARGED HVAC PLANS - SUITE C	TKP	DHW
MH108-A	ENLARGED HVAC PLANS - SUITE D	TKP	DHW
MH109-A	ENLARGED HVAC PLANS - OFFICE AREA	TKP	DHW
MS101	PHASE 1 SITE PLAN - MECHANICAL	TKP	DHW
MS102	ENLARGED MECHANICAL PLAN - FIRE PUMP ROOM	TKP	DHW
03 - PIPING			
MP101-A	BLDG 1 FLOOR PLAN - OVERALL PIPING	TKP	DHW
MP102-A	ENLARGED PLANS - NORTH CHILLER YARD	TKP	DHW
MP103-A	ENLARGED PLANS - SOUTH CHILLER YARD	TKP	DHW
MP104-A	ENLARGED PIPING PLANS - SUITE A	TKP	DHW
MP105-A	ENLARGED PIPING PLANS - SUITE B	TKP	DHW
MP106-A	ENLARGED PIPING PLANS - SUITE C	TKP	DHW
MP107-A	ENLARGED PIPING PLANS - SUITE D	NSG	DHW
MP108-A	ENLARGED PIPING PLANS - OFFICE AREA	NSG	DHW

APPLICABLE CODES:

2023 FLORIDA BUILDING CODE: BUILDING
2023 FLORIDA BUILDING CODE: MECHANICAL
2023 FLORIDA BUILDING CODE: PLUMBING
2023 FLORIDA BUILDING CODE: FUEL GAS
2023 FLORIDA BUILDING CODE: ENERGY CONSERVATION

ASHRAE 90.4-2016 ENERGY STANDARD FOR DATA CENTERS
NFPA 75 FIRE PROTECTION FOR INFORMATION TECHNOLOGY EQUIPMENT

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FIRM CERTIFICATE OF AUTHORIZATION: CA-1276

PROFESSIONAL SEAL

CHRISTOPHER S. ASHBURN LICENSE No. 76102 STATE OF FLORIDA PROFESSIONAL ENGINEER

NUCLEI

PROJECT SUNSHINE

BUILDING 1

810 PACE RD.
AUBURNDALE, FL 33823

ISSUE DATE	DESCRIPTION
09/21/2026	REVISED FIT-UP IFP

Δ	DESCRIPTION	DATE

ISSUE:

PROJ NO
2540-01309

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SHEET TITLE

MECHANICAL LEGENDS

SHEET NUMBER
BLDG1-M001

PROCESSING EQUIPMENT DESIGN CONDITIONS

Location	ROW Qty	Max Load (kW)	Max Water Cooled Load (MBH)	Cooling Fluid	Cooling Water Supply Temp (F)	Cooling Water Return Temp(F)	Calculated Cooling Water GPM	CDU DP (PSI)	Max Air Cooled Load (MBH)	CRAH Supply Water Temp (F)	CRAH WATER ReturnTemp (F)	Calculated Air Cooled (GPM)	CRAH DP (psi)	Rack Flow (GPM)	CDU total Flow (GPM)	CRAH total Flow (GPM)	Total Flow WITH DIVERSITY (GPM)	Total Load (kW)	Tonnage
NH	12	2000	0.00	WATER	70	97	0.00	0	6826.00	70	97	505.63	10.0	505.6	0.0	6067.6	6067.6	24000	6826
DHA	16	2000	6826.00	WATER	70	97	505.63	10	2389.10	70	97	176.97	10.0	682.6	8090.1	2831.5	8089.6	32000	9101
DHB	16	2000	6826.00	WATER	70	97	505.63	10	2389.10	70	97	176.97	10.0	682.6	8090.1	2831.5	8089.6	32000	9101
DHC	16	2000	6826.00	WATER	70	97	505.63	10	2389.10	70	97	176.97	10.0	682.6	8090.1	2831.5	8089.6	32000	9101
															16180	**11731**	**30336**	**120000**	**34130**

MAJOR SUPPORT ROOM COOLING DEMAND

ROOM NAME AND NUMBER	EQUIPMENT TYPE	QUANTITY	HEAT LOAD PER UNIT (BTUs)	HEAT LOAD TOTAL (BTUs)	KW	SERVED BY	COMMENTS
ELECTRICAL GALLERY 01.F.04						NH CHILLED WATER SYSTEM	
	5000 A LV SWITCHBOARD	6	8,513	51,078	15.0		-
	2500 A CURRENT LIMITING REACTOR	12	27,300	327,600	96.0		-
	ENVELOPE LOADS	1	18,400	18,400	5.4		1
			TOTAL	**397,078**	116.4		
ELECTRICAL GALLERY 01.F.05						DHA CHILLED WATER SYSTEM	
	5000 A LV SWITCHBOARD	8	8,513	68,104	20.0		-
	2500 A CURRENT LIMITING REACTOR	16	27,300	436,800	128.0		-
	ENVELOPE LOADS	1	20,600	20,600	6.0		1
			TOTAL	**525,504**	154.0		
ELECTRICAL GALLERY 01.F.09						DHB CHILLED WATER SYSTEM	
	5000 A LV SWITCHBOARD	8	8,513	68,104	20.0		-
	2500 A CURRENT LIMITING REACTOR	16	27,300	436,800	128.0		-
	ENVELOPE LOADS	1	24,820	24,820	7.3		1
			TOTAL	**529,724**	155.3		
ELECTRICAL GALLERY 01.F.10						DHC CHILLED WATER SYSTEM	
	5000 A LV SWITCHBOARD	8	8,513	68,104	20.0		-
	2500 A CURRENT LIMITING REACTOR	16	27,300	436,800	128.0		-
	ENVELOPE LOADS	1	15,150	15,150	4.4		1
			TOTAL	**520,054**	152.4		
MECHANICAL GALLERY 01.F.34						NHA CHILLED WATER SYSTEM	
	75 HP PUMP MOTOR	4	11,454	45,816	13.4		-
	75 HP VFD	4	9,545	38,180	11.2		-
	5000A LV SWITCHGEAR	6	5,118	30,708	9.0		-
	500KW UPS SYSTEM	6	45,480	272,880	80.0		3
	ENVELOPE LOADS	1	2,319	2,319	0.7		1
			TOTAL	**389,903**	114.3		
MECHANICAL GALLERY 01.F.39						DHA,B,C CHILLED WATER...	
	75 HP PUMP MOTOR	15	11,454	171,810	50.4		-
	75 HP VFD	15	9,545	143,175	42.0		-
	5000A LV SWITCHGEAR	10	5,118	51,180	15.0		-
	500KW UPS SYSTEM	18	45,480	818,640	239.9		3
	ENVELOPE LOADS	1	62,300	62,300	18.3		1
			TOTAL	**1,247,105**	365.5		
GS-MD 01.F.31 & 01.F.33						DX CRAC SPLIT SYSTEM	
	RACKS	1	307,080	307,080	90.0		2
	ENVELOPE LOADS	1	3,740	3,740	1.1		1
			TOTAL	**307,080**	90.0		
UPS 01.F.24						DX CRAC SPLIT SYSTEM	
	500KW UPS SYSTEM	4	45,480	181,920	53.3		3
	ENVELOPE LOADS	1	200	200	0.1		1
			TOTAL	**181,920**	53.3		
CMDF 01.E.05 & 01.F.41						DX CRAC SPLIT SYSTEM	
	RACKS	4	20,472	81,888	24.0		4
	ENVELOPE LOADS	1	3,000	3,000	0.9		1
			TOTAL	**84,888**	24.9		
MMR 01.F.03						DX CRAC SPLIT SYSTEM	
	RACKS	8	20,472	163,776	48.0		4
	ENVELOPE LOADS	1	3,740	3,740	1.1		1
			TOTAL	**167,516**	49.1		

NOTES:
1. BUILDING ENVELOPE LOADS CALCULATED WITH TRACE 3D COMPUTIONAL SOFTWARE IN ACCORDANCE WITH ASHRAE STANDARD 183
2. LOADS DEFINED BY CLIENT REQUIREMENTS. CLIENT FURNISHED EQUIPMENT TO BE PROVIDED IN TENANT "FIT-OUT" PHASE.
3 HEAT DISSIPATION OF UPS SYSTEM ASSUMED AT 90% LOADED CAPACITY.
4. LOADS REPRESENT INITIAL ESTIMATES OF LAND-LORD AND LEESEE EQUIPMENT. FINAL LOAD CALCULATIONS TO BE COMPLETED IN TENANT "FIT-OUT" PHASE.

CHILLER PLANT SIZING CRITERIA

SYSTEM	TONNAGE	SUPPORT ROOM LOADS	EQUIPMENT HEAT GAIN LOSSES	FLOW (GPM)	CHILLER SIZE (TONS) (1)	CHILLER REQUIRED
NH	6826	66	487	6559	685	10.8
DHA	9,101	49	285	8090	662	14.3
DHB	9101	49	285	8090	655	14.4
DHC	9101	49	285	8090	652	14.5
TOTAL	**34130**		37543	**30828**		**53.9**

NOTES:
1. CHILLER TONNAGE IS OBTAINED FROM FACTORY DATA FOR A SINGULAR CHILLER AT 99.5°F AMBIENT TEMPERATURE. CHILLER TONNAGE INCLUDES LOSSES IN EFFICIENCY DUE TO CONDENSER AIR RE-ENTRAINMENT.

MECHANICAL DESIGN CRITERIA

WEATHER DATA:	WINTER HAVEN, FL, USA	
SITE ELEVATION:	143	FEET
SITE AIR PRESSURE	14.62	PSI
OUTDOOR DRY BULB MAX (ASHRAE N=5 TEMPERATURE)	99.5	°F DB
OUTDOOR DRY BULB MIN (ASHRAE N=5 TEMPERATURE)	30.2	°F DB
OUTDOOR WET BULB MAX (ASHRAE N=5 TEMPERATURE)	81.0	°F WB
STANDARD AIR DENSITY	0.07	LB/FT³
SITE AIR DENSITY	0.0765	LB/FT³
INDOOR DRY BULB DESIGN SETPOINT (DATAHALL)	82	°F DB
INDOOR WET BULB DESIGN SETPOINT (DATAHALL)	65	°F WB
INDOOR DRY BULB DESIGN SETPOINT (ELEC/MECH)	85	°F DB
INDOOR DRY BULB DESIGN SETPOINT (ELEC/MECH)	64.4	°F WB
INDOOR DRY BULB DESIGN SETPOINT (OFFICES)	75	°F DB
INDOOR WET BULB DESIGN SETPOINT (OFFICES)	63	°F WB

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SHEET TITLE

MECHANICAL DESIGN CRITERIA

SHEET NUMBER

BLDG1-M002

VENTILATION CALCULATIONS

ROOM NAME & NUMBER	ROOM TYPE	AREA (FT^2)	Occupancy Count	REQUIRED CFM/ PERSON	REQUIRED CFM/FT^2	UNCORRECTED MIN 62.1 OA (CFM)	EZ Coefficient	Corrected MIN 62.1 OA (CFM)	PROVIDED (CFM)	EXHAUSTED AIR (CFM)	PRESSURE RELATIONSHIP	NOTES
MMR - 01.F.03	COMPUTER	785.17	0	5	0.06	47	1	47	120	0	+	1
ELEC. GALLERY - 01.F.04	ELECTRICAL/MECHANICAL	5596.49	0	5	0.06	336	1	336	620	250	+	1
ELEC. GALLERY - 01.F.07	ELECTRICAL/MECHANICAL	6397.43	0	5	0.06	384	1	384	700	250	+	1
HOUSE ELECTRICAL - 01.F.10	COMPUTER	1228.34	0	5	0.06	74	1	74	60	0	+	1
ELEC. GALLERY - 01.F.13	ELECTRICAL/MECHANICAL	7479.05	0	5	0.06	449	1	449	500	400	+	1
ELEC. GALLERY - 01.F.14	ELECTRICAL/MECHANICAL	7458.14	0	5	0.06	447	1	447	500	400	+	1
UPS - 01.F.24	COMPUTER	956.72	0	5	0.06	57	1	57	350	250	+	1
MDF - 01.F.31	COMPUTER	1825.59	0	5	0.06	110	1	110	150	100	+	1
MDF - 01.F.33	COMPUTER	1823.05	0	5	0.06	109	1	109	150	100	+	1
CMDF - 01.F.41	COMPUTER	413.26	0	5	0.06	25	1	25	40	0	+	1
SUITE A - 01.F.25	COMPUTER ROOM	32557.09	0	5	0.06	1,953	1	1953	2000	1600	+	1
SUITE B - 01.F.26	COMPUTER ROOM	35762.42	0	5	0.06	2,146	1	2146	2200	1800	+	1
SUITE C - 01.F.27	COMPUTER ROOM	32752.71	0	5	0.06	1,965	1	1965	2000	1600	+	1
SUITE D - 01.F.28	COMPUTER ROOM	31601.94	0	5	0.06	1,896	1	1896	2000	1600	+	1
MECH. GALLERY - 01.F.34	ELECTRICAL/MECHANICAL	7122.6	0	5	0.06	427	1	427	1800	1600	+	1
MECH. GALLERY - 01.F.39	ELECTRICAL/MECHANICAL	18004.18	0	5	0.06	1,080	1	1080	900	800	+	1
MV ROOM - 01.F.05	COMPUTER	960	0	5	0.06	58	1	58	60	0	+	1
MV ROOM - 01.F.06	COMPUTER	960	0	5	0.06	58	1	58	60	0	+	1
MV ROOM - 01.F.11	COMPUTER	1040	0	5	0.06	62	1	62	60	0	+	1
MV ROOM - 01.F.12	COMPUTER	880	0	5	0.06	53	1	53	60	0	+	1
MV ROOM - 01.F.15	COMPUTER	920	0	5	0.06	55	1	55	60	0	+	1
MV ROOM - 01.F.16	COMPUTER	956.67	0	5	0.06	57	1	57	60	0	+	1
CMDF - 01.E.05	COMPUTER	515.77	0	5	0.06	31	1	31	40	0	+	1
M&E SUPPORT - 01.F.29	ELECTRICAL/MECHANICAL	292.5	0	5	0.06	18	1	18	60	0	+	1
M&E SUPPORT - 01.F.42	ELECTRICAL/MECHANICAL	387.46	0	5	0.06	23	1	23	60	0	+	1
CORE CIRCULATION - 01.F.45	CORRIDOR	27952.81	N/R	N/R	0.06	1,677	1	1677	2250	1100	+	1
WC - 01.F.36	TOILETS	95.94	N/R	N/R	N/R	0	N/R	0	0	50	-	1
WC - 01.F.37	TOILETS	95.72	N/R	N/R	N/R	0	N/R	0	0	50	-	1
JAN - 01.F.38	JANITOR CLOSET	81.74	N/R	N/R	N/R	0	N/R	0	0	80	-	1
JAN - 01.F.20	JANITOR CLOSET	60.47	N/R	N/R	N/R	0	N/R	0	0	60	-	1
WC - 01.F.21	CORRIDOR	96.77	N/R	N/R	N/R	0	N/R	0	0	50	-	1
WC - 01.F.22	CORRIDOR	96.41	N/R	N/R	N/R	0	N/R	0	0	50	-	1

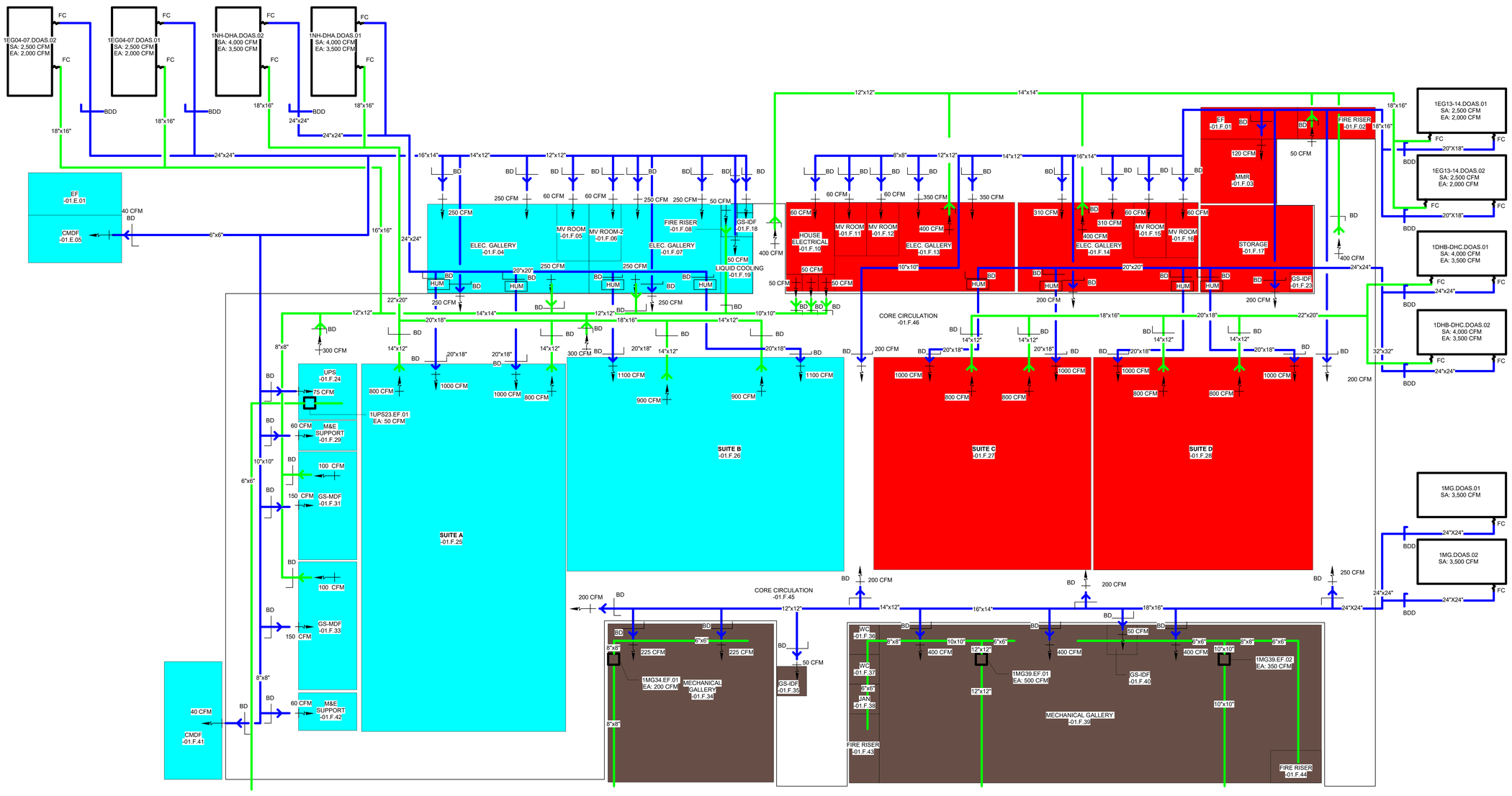
NOTES:

1.OCCUPANCY VALUES WERE DETERMINED FROM BY SUMMING CHAIRS FROM FLOOR PLANS. OCCUPANCY VALUES THAT COULD NOT BE DETERMINED BY FLOOR PLANS UTILIZED FLORIDA BUILDING CODE 2023 TABLE 403.3.1.1 DEFAULT OCCUPANCY DENSITY.

2. REQUIRED VENTILATION TO BE PROVIDED BY MEANS OF TRANSFER AIR IN COMPLIANCE WITH FLORIDA MECHANICAL CODE SECTION 403.2.2.

LEGEND

	SUPPLY AIR DUCTWORK
	RETURN AIR DUCTWORK
	EXHAUST AIR DUCTWORK
	TRANSFER AIR DUCTWORK
SA	SUPPLY AIR
RA	RETURN AIR
EA	EXHAUST AIR
FA	FRESH AIR
TA	TRANSFER AIR
DOAS	DEDICATED OUTDOOR AIR SYSTEM
EF	EXHAUST FAN
HUM	HUMIDIFIER
FC	FLEXIBLE CONNECTION
BD	BALANCING DAMPER
BDD	BACKDRAFT DAMPER
FD	FIRE DAMPER
MD	MOTORIZED DAMPER
CFM	AIRFLOW RATE
	AIRFLOW DIRECTION
	FAN



1 AIRFLOW DIAGRAM - WHITE SPACE AND SUPPORT SPACES

SCALE: 12" = 1'-0"

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FIRM CERTIFICATE OF AUTHORIZATION: CA-1276

PROFESSIONAL SEAL

CHRISTOPHER S. ANDERSON LICENSE No. 70102 STATE OF FLORIDA PROFESSIONAL ENGINEER

NUCLEI

PROJECT SUNSHINE

BUILDING 1

810 PACE RD.
AUBURNDALE, FL 33823

ISSUE DATE	DESCRIPTION
09/21/2026	REVISED FIT-UP IFP

Δ	DESCRIPTION	DATE

ISSUE:

PROJ NO
2540-01309

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SHEET TITLE

MECHANICAL DIAGRAMS

SHEET NUMBER
BLDG1-M003

ZONE COLOR LEGEND	
	SUITE ZONE: RACK COOLING: LIQUID COOLING (CDU) AND AIR COOLED CRAH UNITS. UNITS SERVED BY CHILLED 70°F CHILLED WATER. CHILLED WATER: 750 TON AIR COOLED CHILLER UNITS WITH N+XX PER SUITE. PRESSURIZATION, VENTILATION AND HUMIDIFICATION: PACKAGED DX DOAS UNITS WITH DUCT MOUNTED STEAM HUMIDIFIERS IN SERIES, EQUIPMENT N+1
	OFFICE / ADMIN SPACES: VARIABLE REFRIGERANT FLOW (VRF) SYSTEM. DEDICATED OUTDOOR AIR (DOAS) FOR FRESH AIR. AREA FOR FUTURE TENANT FIT OUT.
	MV SWITCHGEAR ROOMS / IT ROOMS: COOLING: N+1 WALL MOUNTED AIR CONDITIONERS WITH OUTDOOR AIR COOLED CONDENSERS. VENTILATION: N+1 DOAS FOR VENTILATION AND PRESSURIZATION.
	ELECTRICAL/MECHANICAL ROOMS: CRITICAL COOLING: N+1 IN-ROOM WATER SOURCE CRACS PER ROOM VENTILATION: N+1 DOAS FOR VENTILATION AND PRESSURIZATION.
	CIRCULATORY/EQUIPMENT/SUPPORT SPACES: HVAC: N COOLING AND HEATING UNITS TO SATISFY MINIMUM CODE REQUIREMENTS AND COMFORT CONDITIONS. EXHAUST FANS FOR RESTROOMS AND JANITOR CLOSETS.
	MMR/MDF/UPS: COOLING: N+1 AIR CONDITIONERS WITH OUTDOOR AIR COOLED CONDENSERS. VENTILATION: N+1 DOAS FOR VENTILATION AND PRESSURIZATION.



1 BLDG 1 FLOOR PLAN - HVAC ZONING PLAN TENANT FIT UP

SCALE: 1/32" = 1'-0"

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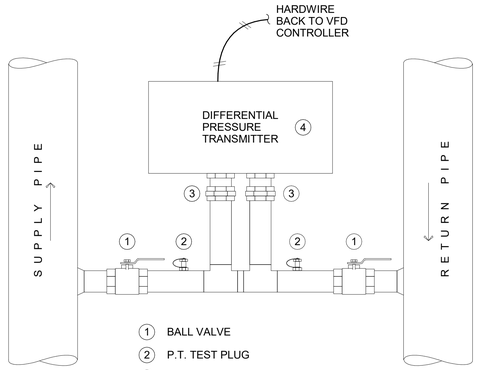
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SHEET TITLE

HVAC ZONING PLAN

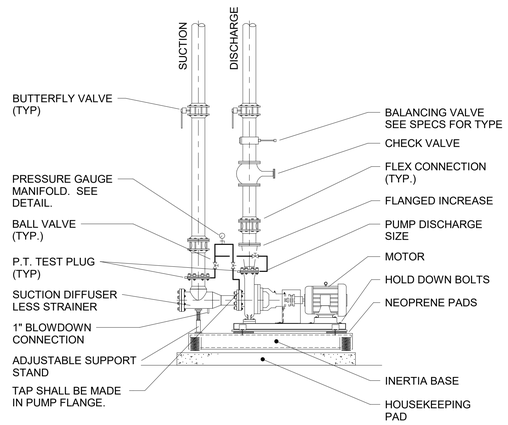
SHEET NUMBER
BLDG1-M101-A



DIFFERENTIAL PRESSURE SENSOR DETAIL

No Scale

1

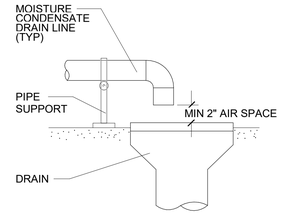


ANCHOR TO CONCRETE PAD PER SEISMIC DESIGN DETAILS, PAD MIN HEIGHT AND SIZE TO BE AS REQUIRED BY CONCRETE ANCHOR. REFER TO PROJECT SPECIFICATIONS AND MANUFACTURER'S RECOMMENDATIONS FOR INSTALLATION REQUIREMENTS.

CHILLED WATER PUMP ON INERTIA BASE DETAIL

No Scale

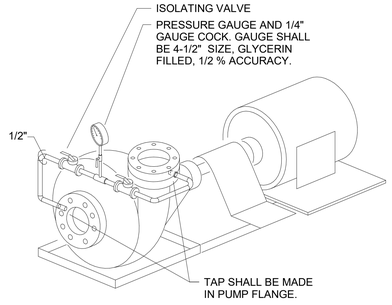
2



TERMINATION DETAIL OF MOISTURE CONDENSATE LINE

No Scale

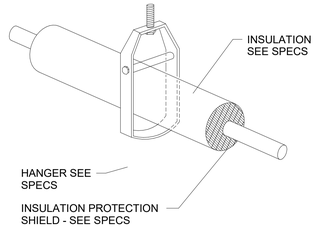
3



PRESSURE GAUGE MANIFOLD DETAIL

No Scale

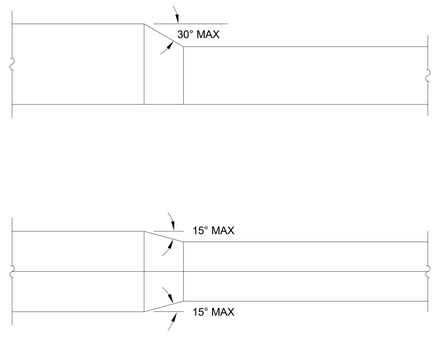
4



PIPE HANGER DETAIL

No Scale

5



NOTE:

UNLESS OTHERWISE INDICATED ON PLANS, MAXIMUM ANGLES SHOWN ABOVE SHALL APPLY.

DUCT TRANSITION DETAIL

No Scale

6

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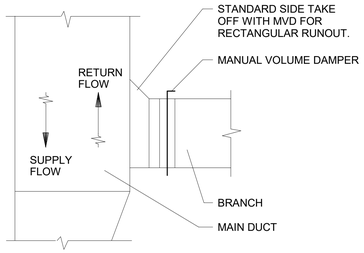
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SHEET TITLE

MECHANICAL
DETAILS

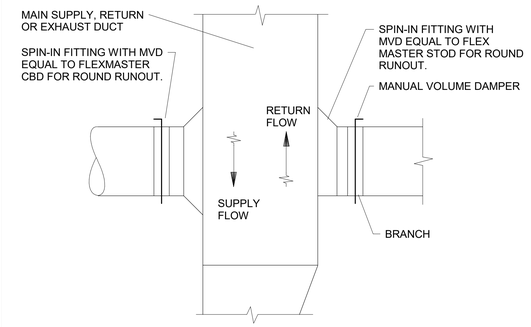
SHEET NUMBER

BLDG1-M501



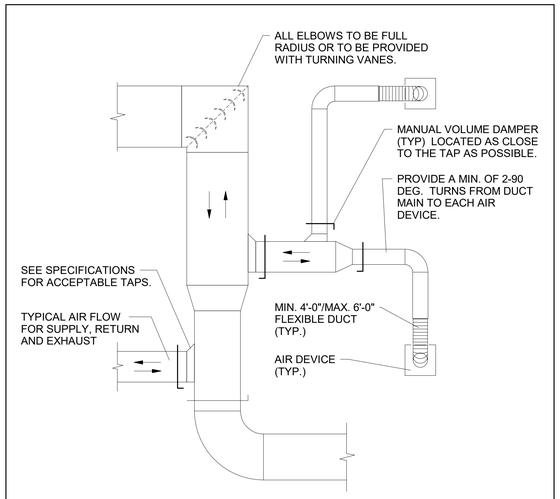
LOW PRESSURE RECTANGULAR BRANCH DUCT RUNOUT
No Scale

1



LOW PRESSURE ROUND BRANCH DUCT RUNOUT
No Scale

2



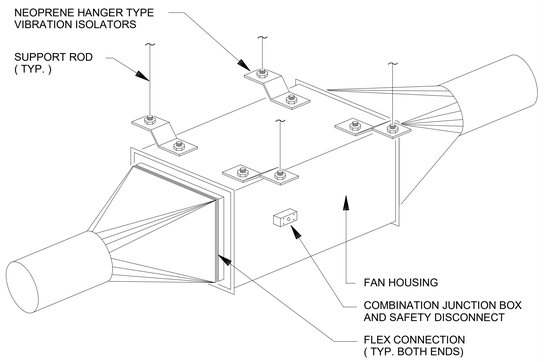
TYPICAL LOW PRESSURE SUPPLY, RETURN AND EXHAUST DUCT DETAIL
No Scale

3

NOTES:

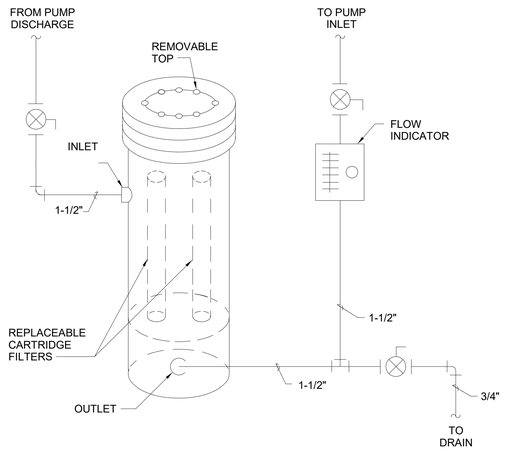
1. ALL ABOVE CEILING EQUIPMENT MUST MAINTAIN OEM REQUIRED CLEARANCES FOR SERVICE.

2. ALL ACCESS PANELS MUST REMAIN CLEAR OF OBSTRUCTION.



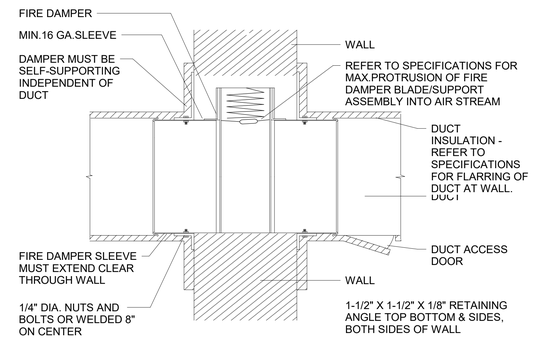
IN-LINE EXHAUST FAN ABOVE CEILING MOUNTING DETAIL
No Scale

4



FILTER FEEDER DETAIL
No Scale

5



TYPICAL FIRE DAMPER DETAIL
No Scale

6

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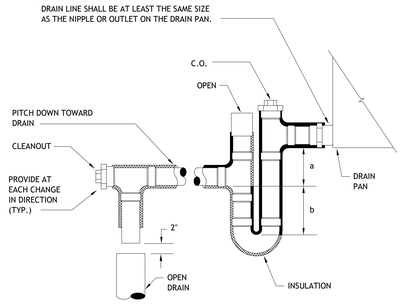
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SHEET TITLE

MECHANICAL DETAILS

SHEET NUMBER
BLDG1-M502



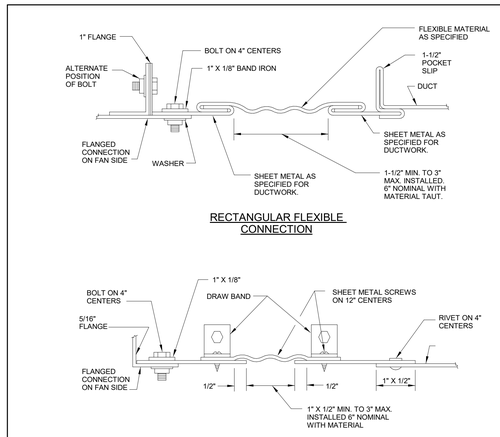
UNIT STATIC PRESS.	a	b
0" - 1"	1"	2"
1" - 2"	2"	3"
2" - 3"	3"	4"
3" - 4"	4"	5"
4" - 5"	5"	6"
5" - 6"	6"	7"

NOTES:

1. FOR DEPTH OF SEAL, SEE SCHEDULE BELOW.
2. LOCATE TRAP SO AS TO BE ACCESSIBLE FOR CLEANING.

TYPICAL DRAIN TRAP DETAIL
No Scale

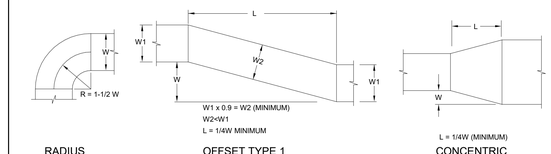
1



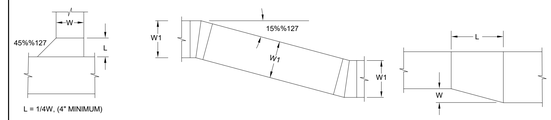
RECTANGULAR FLEXIBLE CONNECTION

DUCT FLEXIBLE CONNECTION DETAILS
No Scale

2



RADIUS ELBOW | OFFSET TYPE 1 (ANGLED) | CONCENTRIC TRANSITION



RECTANGLAR TAP 45 DEGREE ENTRY | OFFSET TYPE 2 (MITERED) | ECCENTRIC TRANSITION

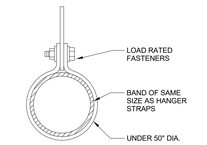
STANDARD DUCT CONSTRUCTION DETAILS
No Scale

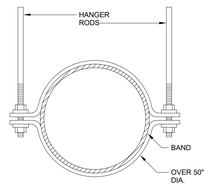
3

HANGER SIZING AND SPACING SCHEDULE					
MAX. DUCT DIA.	WIRE (DIA.)	ROD	STRAP	MAX. LOAD LBS.	MAX. SPACING FT.
10"	ONE 12 GA.	ONE 1/4"	ONE 1" x 22 GA.	260	12"
18"	TWO 12 GA.	ONE 1/4"	ONE 1" x 22 GA.	260	12"
24"	TWO 10 GA.	ONE 1/4"	ONE 1" x 22 GA.	260	12"
36"	TWO 8 GA.	ONE 3/8"	ONE 1" x 22 GA.	320	12"
50"	N/A	TWO 3/8"	TWO 1" x 20 GA.	700	12"
60"	N/A	TWO 3/8"	TWO 1" x 18 GA.	1320	12"
84"	N/A	TWO 1/2"	TWO 1" x 16 GA.	2500	12"

NOTE:

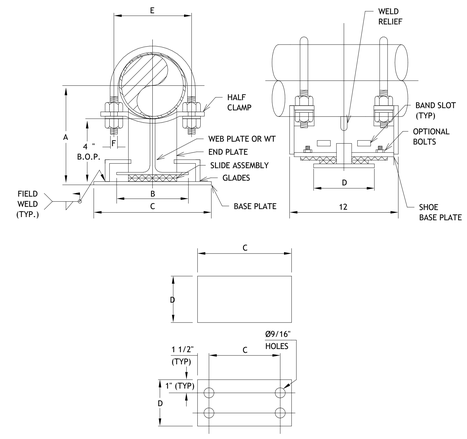
1. TABULATED DATA FROM SMACNA ALLOWS FOR DUCT REINFORCING AND INSULATION, BUT NO EXTERNAL LOAD.
2. STRAPS SHALL NOT BE USED ON EXPOSED DUCTWORK.





ROUND DUCT HANGERS DETAIL
No Scale

4



PIPE SIZE	A	B	C	D	E	F	APPROX. WEIGHT (lb. per each)
2	5 3/16	4	1	5	2 7/8	3/8	14.0
3	5 3/4	4	12	5	4 1/8	1/2	14.0
4	6 1/4	4	12	5	5 1/8	1/2	15.0
6	7 5/16	4	12	5	7 3/8	5/8	22.0
8	8 5/16	4	12	5	9 3/8	5/8	25.0
10	9 3/8	4	12	5	11 5/8	3/4	31.0
12	10 3/8	4	12	5	13 3/4	7/8	39.0
14	11	4	12	5	15	7/8	46.0
16	12	4	12	5	17	7/8	49.0
18	13	7	15	5 1/2	19 1/8	1	66.0

NOTES:

1. PROVIDE PTP FIG. 800 OR APPROVED EQUAL.
2. PROVIDE PTFE GLASS FILLED BEARING PLATE TO BE USED ON STEEL SURFACES.
3. OUTDOOR PIPE SADDLES TO BE HOT DIP GALVANIZED. BOLT HARDWARE TO BE STAINLESS STEEL OR ZINC PLATED.

U-BOLT CRADLE SUPPORT WITH BONDED/BOLTED SLIDE PLATE
No Scale

5

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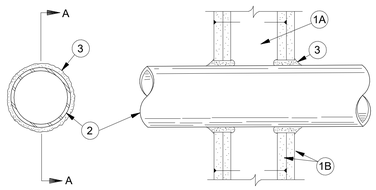
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SHEET TITLE

MECHANICAL DETAILS

SHEET NUMBER
BLDG1-M503

SYSTEM NO. W-L-1001
JUNE 15, 2005
F RATINGS - 1, 2, 3 AND 4 HR (SEE ITEMS 2 AND 3)
T RATINGS - 0, 1, 2, 3, AND 4 HR (SEE ITEM 3)
L RATING AT AMBIENT - LESS THAN 1 CFM/SQ FT
L RATING AT 400 F - LESS THAN 1 CFM/SQ FT



SECTION A-A

1. WALL ASSEMBLY - THE 1, 2, 3 OR 4 HR FIRE-RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER DESCRIBED IN THE INDIVIDUAL U300 OR U400 SERIES WALL OR PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:

   A. STUDS - WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS (MAX 2 H FIRE RATED ASSEMBLIES) OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOM 2
   BY 4 IN. (51 BY 102 MM) LUMBER SPACED 16 IN. (406 MM) OC WITH NOM 2 BY 4 IN. (51 BY 102 MM) LUMBER END PLATES AND CROSS BRACES. STEEL STUDS TO BE MIN 3-5/8 IN. (92 MM) WIDE BY 1-3/8 IN. (35 MM) DEEP CHANNELS SPACED MAX 24 IN. (610 MM) OC.

   B. GYPSUM BOARD* - NOM OR†IN. (13 OR 16 MM) THICK, 4 FT. (122 H 1/20CM) WIDE WITH SQUARE OR TAPERED EDGES. THE GYPSUM WALLBOARD TYPE, THICKNESS, NUMBER OF LAYERS, FASTENER TYPE AND SHEET ORIENTATION SHALL BE AS SPECIFIED IN THE INDIVIDUAL U300 OR U400 SERIES DESIGN IN THE UL FIRE RESISTANCE DIRECTORY. MAX DIAM OF OPENING IS 26 IN. (660 MM).

2. THROUGH-PENETRANT - ONE METALLIC PIPE, CONDUIT OR TUBING INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. THE ANNULAR SPACE BETWEEN PIPE, CONDUIT OR TUBING AND PERIPHERY OF OPENING SHALL BE MIN OF 0 IN / (0 MM). (POINT CONTACT) TO MAX 2 IN. (51 MM) PIPE, CONDUIT OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES, CONDUITS OR TUBING MAY BE USED:

   A. STEEL PIPE - NOM 24 IN. (610 MM) DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.

   B. IRON PIPE - NOM 24 IN. (610 MM) DIAM (OR SMALLER) SERVICE WEIGHT (OR HEAVIER) CAST IRON SOIL PIPE, NOM 12 IN (305 MM) DIAM (OR SMALLER) OR CLASS 50 (OR HEAVIER) DUCTILE IRON PRESSURE PIPE.

   C. CONDUIT - NOM 6 IN. (152 MM) DIAM (OR SMALLER) STEEL CONDUIT OR NOM 4 IN (102 MM) DIAM (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING

   D. COPPER TUBING - NOM 6 IN. (152 MM) DIAM (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING

   E. COPPER PIPE - NOM 6 IN. (152 MM) DIAM (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.

   F. THROUGH PENETRATING PRODUCT* - FLEXIBLE METAL PIPING THE FOLLOWING TYPES OF STEEL FLEXIBLE METAL GAS PIPING MAY BE USED:

   1. NOM 2 IN. (51 MM) DIAM (OR SMALLER) STEEL FLEXIBLE METAL GAS PIPING. PLASTIC COVERING ON PIPING MAY OR MAY NOT BE REMOVED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY. OMEGA FLEX INC

   2. NOM 1 IN. (25 MM) DIAM (OR SMALLER) STEEL FLEXIBLE METAL GAS PIPING. PLASTIC COVERING ON PIPING MAY OR MAY NOT BE REMOVED ON BOTH SIDES OFFLOOR OR WALL ASSEMBLY. GASTITE, DIV OF TITEFLEX

   3. NOM 1 IN. (25 MM) DIAM (OR SMALLER) STEEL FLEXIBLE METAL GAS PIPING. PLASTIC COVERING ON PIPING MAY OR MAY NOT BE REMOVED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY. WARD MFG INC

3. FILL, VOID OR CAVITY MATERIAL* - CAULK OR SEALANT - MIN 5/8. , 1-1/4,1-7/8 AND 2-1/2 IN. (16, 32, 48 AND 64 MM) THICKNESS OF CAULK FOR 1, 2, 3 AND 4 HR RATED ASSEMBLIES, RESPECTIVELY, APPLIED WITHIN ANNULUS, FLUSH ¼ IN. (6 MM) DIAM BEAD OF CAULK APPLIED TO GYPSUM BOARD/PENETRANT INTERFACE AT POINT CONTACT LOCATION ON BOTH SIDES OFWALL. THE HOURLY F RATING OF THE FIRESTOP SYSTEM IS DEPENDENT UPON THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED, AS SHOWN IN THE FOLLOWING TABLE. THE HOURLY T RATING OF THE FIRESTOP SYSTEM IS DEPENDENT UPON THE TYPE OR SIZE OF THE PIPE OR CONDUIT AND THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED, AS TABULATED BELOW:

Maximum Pipe or Conduit Diameter Inches	F Rating Hours	F Rating Hours
1 (25)	1 or 2	0+, 1 or 2
1 (25)	3 or 4	3 or 4
4 (102)	1 or 2	0
6 (152)	3 or 4	0
12 (305)	1 or 2	0

+WHEN COPPER PIPE IS USED, T RATING IS 0
H.3M COMPANY - CP 25WB+ OR FB-3000 WT.

*BEARING THE UL CLASSIFICATION MARK LAST UPDATED ON 2005-06-15

UL LISTED AND CLASSIFIED PRODUCTS UL RECOGNIZED COMPONENTS PRODUCTS CERTIFIED FOR CANADA

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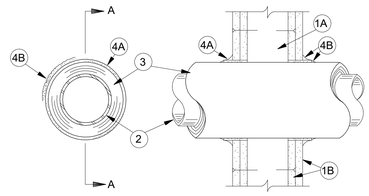
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THROUGH-PENETRATION FIRESTOP SYSTEMS
W-L-1001
No Scale

1

SYSTEM NO. W-L-5001
MAY 19, 2005
F RATINGS - 1 AND 2 HR (SEE ITEM 1)
T RATINGS - 3/4 , 1 AND 1 1/2 HR (SEE ITEM 3)
L RATING AT AMBIENT - 2 CFM/SQ FT
L RATING AT 400 F - LESS THAN 1 CFM/SQ FT



SECTION A-A

1. WALL ASSEMBLY - THE 1 OR 2 HR FIRE-RATED GYPSUM BOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER DESCRIBED IN THE INDIVIDUAL U300, U400 OR V400 SERIES WALL OR PARTITION DESIGN IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:

   A. STUDS - WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOM 2 BY 4 IN. (51 BY 102 MM) LUMBER SPACED 16 IN. (406 MM) OC WITH NOM 2 BY 4 IN. (51 BY 102 MM) LUMBER END PLATES AND CROSS BRACES. STEEL STUDS TO BE MIN 3-5/8 IN. (92 MM) WIDE BY 1-3/8 IN. (35 MM) DEEP CHANNELS SPACED MAX 24 IN. (610 MM) OC.

   B. GYPSUM BOARD* - NOM 5/8 IN. (16 MM) THICK, 4 FT (122 CM) WIDE WITH SQUARE OR TAPERED EDGES. THE GYPSUM BOARD TYPE, THICKNESS, NUMBER OF LAYERS, FASTENER TYPE AND SHEET ORIENTATION SHALL BE AS SPECIFIED IN THE INDIVIDUAL DESIGN IN THE UL FIRE RESISTANCE DIRECTORY. MAX DIAM OF OPENING IS 14-1/2 (368MM) IN FOR WOOD STUD WALLS AND 18 IN. (457 MM) FOR STEEL STUD WALLS.
   THE HOURLY F RATING OF THE FIRESTOP SYSTEM IS 1 HR WHEN INSTALLED IN A 1 HR FIRE RATED WALL AND 2 HR WHEN INSTALLED IN A 2 HR FIRE RATED WALL.

2. THROUGH PENETRANTS - ONE METALLIC PIPE OR TUBING TO BE CENTERED WITHIN THE FIRESTOP SYSTEM. PIPE OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES OR TUBING MAY BE USED:

   A. STEEL PIPE - NOM 12 IN. (305 MM) DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.

   B. COPPER TUBING - NOM 6 IN. (152 MM) DIAM (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING.

   C. COPPER PIPE - NOM 6 IN. (152 MM) DIAM (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.

3. PIPE COVERING* - NOM 1 OR 2 IN. (25 OR 51 MM) THICK HOLLOW CYLINDRICAL HEAVY DENSITY (MIN 3.5 PCF OR 56 KG/M3) GLASS FIBER UNITS JACKETED ON THE OUTSIDE WITH AN ALL SERVICE JACKET. LONGITUDINAL JOINTS SEALED WITH METAL FASTENERS OR FACTORY-APPLIED SELF-SEALING LAP TAPE. TRANSVERSE JOINTS SEALED WITH METAL FASTENERS OR WITH BUTT STRIP TAPE SUPPLIED WITH THE PRODUCT. WHEN NOM 1 IN. (25 MM) THICK PIPE COVERING IS USED, THE ANNULAR SPACE BETWEEN THE PIPE COVERING AND THE CIRCULAR CUTOUT IN THE GYPSUM WALLBOARD LAYERS ON EACH SIDE OF THE WALL SHALL BE MIN 1/4 IN. (6 MM) TO MAX 3/8 IN. (10 MM) WHEN NOM 2 IN. (51 MM) THICK PIPE COVERING IS USED, THE ANNULAR SPACE BETWEEN THE PIPE COVERING AND THE CIRCULAR CUTOUT IN THE GYPSUM BOARD LAYERS ON EACH SIDE OF THE WALL SHALL BE MIN 1/2 IN. (13 MM) TO MAX 3/4 IN. (19 MM)
   SEE PIPE AND EQUIPMENT COVERING MATERIALS (BRGU) CATEGORY IN BUILDING MATERIALS DIRECTORY FOR NAMES OF MANUFACTURERS. ANY PIPE COVERING MATERIAL MEETING THE ABOVE SPECIFICATIONS AND BEARING THE UL CLASSIFICATION MARKING WITH A FLAME SPREAD INDEX OF 25 OR LESS AND A SMOKE DEVELOPED INDEX OF 50 OR LESS MAY BE USED.
   THE HOURLY T RATING OF THE FIRESTOP SYSTEM IS 3/4 HR WHEN NOM 1 IN. (25 MM) THICK PIPE COVERING IS USED. THE HOURLY T RATING OF THE FIRESTOP SYSTEM IS 1 HR AND 1-1/2 HR WHEN NOM 2 IN. (52 MM) THICK PIPE COVERING IS USED WITH 1 HR AND 2 HR FIRE RATED WALLS, RESPECTIVELY.

4. FIRESTOP SYSTEM - INSTALLED SYMMETRICALLY ON BOTH SIDES OF WALL ASSEMBLY. THE DETAILS OF THE FIRESTOP SYSTEM SHALL BE AS FOLLOWS:

   A. FILL, VOID OR CAVITY MATERIALS* - WRAP STRIP - NOM 1/4 IN. (6 MM) THICK INTUMESCENT ELASTOMERIC MATERIAL FACED ON ONE SIDE WITH ALUMINUM FOIL, SUPPLIED IN 2 IN. (51 MM) WIDE STRIPS. NOM 2 IN. (51 MM) WIDE STRIP TIGHTLY WRAPPED AROUND PIPE COVERING (FOIL SIDE OUT) WITH SEAM BUTTED. WRAP STRIP LAYER SECURELY BOUND WITH STEEL WIRE OR ALUMINUM FOIL TAPE AND SLID INTO ANNULAR SPACE APPROX 1-1/4 IN. (32 MM) SUCH THAT APPROX 3/4 IN. (19 MM) OF THE WRAP STRIP WIDTH PROTRUDES FROM THE WALL SURFACE. ONE LAYER OF WRAP STRIP IS REQUIRED WHEN NOM 1 IN. (25 MM) THICK PIPE COVERING IS USED. TWO LAYERS OF WRAP STRIP ARE REQUIRED WHEN NOM 2 IN. (51 MM) THICK PIPE COVERING IS USED.

   3M COMPANY - FS-195+

   B. FILL, VOID OR CAVITY MATERIALS* - CAULK OR SEALANT 15/32 MIN 1/4 IN. (6 MM) DIAM CONTINUOUS BEAD APPLIED TO THE WRAP STRIP/WALL INTERFACE AND TO THE EXPOSED EDGE OF THE WRAP STRIP LAYER APPROX 3/4 IN. (19 MM) FROM THE WALL SURFACE.
   3M COMPANY - CP 25WB+, IC 15WB+, FIREDAM 150+ CAULK OR FB-3000 WT SEALANT

*BEARING THE UL CLASSIFICATION MARK LAST UPDATED ON 2005-05-19

UL LISTED AND CLASSIFIED PRODUCTS UL RECOGNIZED COMPONENTS PRODUCTS CERTIFIED FOR CANADA

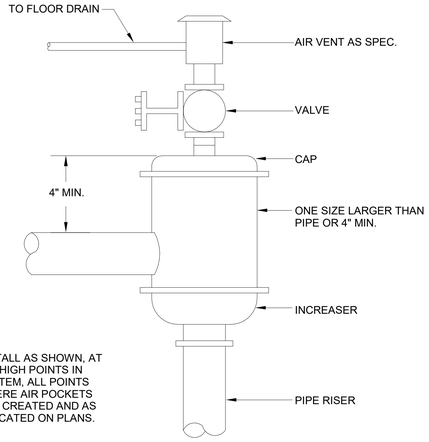
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THROUGH-PENETRATION FIRESTOP SYSTEMS
W-L-5001
No Scale

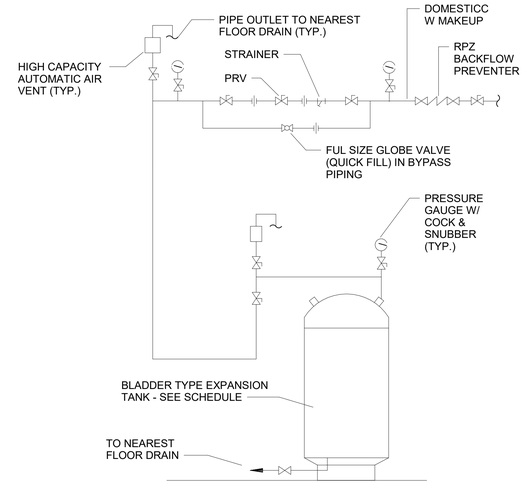
2



INSTALL AS SHOWN, AT ALL HIGH POINTS IN SYSTEM, ALL POINTS WHERE AIR POCKETS ARE CREATED AND AS INDICATED ON PLANS.

AIR VENT DETAIL
No Scale

3



EXPANSION TANK PIPING DETAIL
No Scale

4

Salas O'Brien
salasobrien.com 615.346.3400
Nashville
2950 Kraft Drive
Nashville, TN 37204
FIRM CERTIFICATE OF AUTHORIZATION: CA-1276

PROFESSIONAL SEAL



NUCLEI

PROJECT SUNSHINE

BUILDING 1

810 PACE RD,
AUBURNDALE, FL 33823

ISSUE DATE	DESCRIPTION
09/21/2026	REVISED FIT-UP IFP

Δ	DESCRIPTION	DATE

ISSUE:

PROJ NO
2540-01309

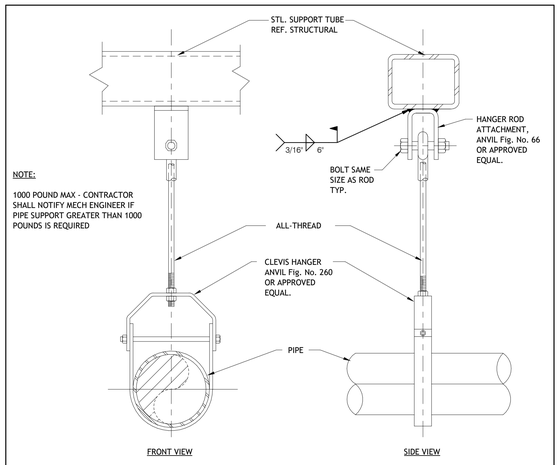
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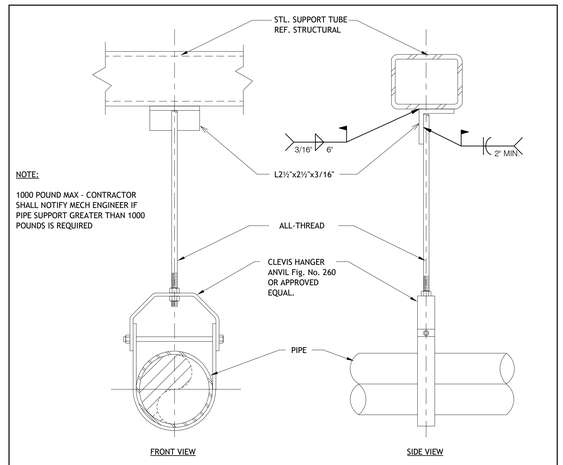
MECHANICAL DETAILS

SHEET NUMBER
BLDG1-M504



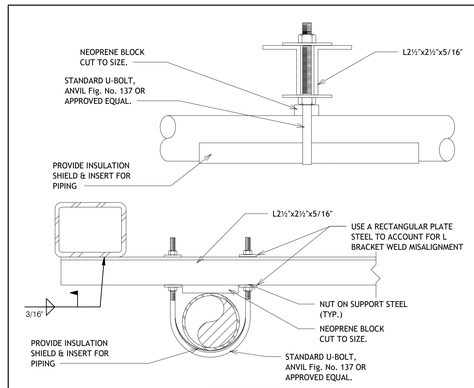
WELDED ATTACHMENT HANGER PIPE SUPPORT
No Scale

1



WELDED ANGLE HANGER PIPE SUPPORT
No Scale

2



U-BOLT SPECIFICATIONS	
PIPE SIZE	ROD SIZE
6" Ø	5/8"
8" Ø	5/8"
10" Ø	3/4"

PIPING SUPPORT UNDER CHILLER DETAIL
No Scale

3

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Nashville
2950 Kraft Drive
Nashville, TN 37204
FIRM CERTIFICATE OF AUTHORIZATION: CA-1276

PROFESSIONAL SEAL

CHRISTOPHER S. ALLEN LICENSE No. 70102 STATE OF FLORIDA PROFESSIONAL ENGINEER

NUCLEI

PROJECT SUNSHINE

BUILDING 1

810 PACE RD.
AUBURNDALE, FL 33823

ISSUE DATE	DESCRIPTION
09/21/2026	REVISED FIT-UP IFP

Δ	DESCRIPTION	DATE

ISSUE:

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SHEET TITLE

MECHANICAL
DETAILS

SHEET NUMBER
BLDG1-M505

AIR-COOLED CHILLER SCHEDULE

Mark	BASED ON MANUFACTURER MODEL	UNIT NOMINAL TONS	MIN CAPACITY TONS	FULL LOAD EER	REFRIGERANT TYPE	# OF REFRIGERANT CIRCUITS	DIMENSIONS				A-WEIGHTED SOUND PRESSURE (DBA)	EVAPORATOR						COMPRESSORS		CONDENSER	ELECTRICAL						COMMENTS
							Length	Width	Height	WEIGHT (LBS)		FLUID TYPE	DESIGN GPM	ENTERING WATER TEMP (°F)	LEAVING WATER TEMP (°F)	FOULING FACTOR	WATER P.D. (FT H20)	COMPRESSOR TYPE	QUANTITY	QTY	AMBIENT AIR TEMP (°F)	VOLTAGE (V)	HZ	PHASE	MCA	MOCP	COMPRESSOR RLA (AMPS)	
1DHA.CH.01	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1DHA.CH.02	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1DHA.CH.03	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1DHA.CH.04	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1DHA.CH.05	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1DHA.CH.06	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1DHA.CH.07	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1DHA.CH.08	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1DHA.CH.09	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1DHA.CH.10	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1DHA.CH.11	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1DHA.CH.12	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1DHA.CH.13	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1DHA.CH.14	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1DHA.CH.15	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1DHA.CH.16	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1DHB.CH.01	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1DHB.CH.02	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1DHB.CH.03	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1DHB.CH.04	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1DHB.CH.05	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1DHB.CH.06	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1DHB.CH.07	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1DHB.CH.08	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1DHB.CH.09	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1DHB.CH.10	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1DHB.CH.11	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1DHB.CH.12	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1DHB.CH.13	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1DHB.CH.14	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1DHB.CH.15	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1DHB.CH.16	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1DHC.CH.01	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1DHC.CH.02	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1DHC.CH.03	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1DHC.CH.04	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1DHC.CH.05	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1DHC.CH.06	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1DHC.CH.07	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1DHC.CH.08	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1DHC.CH.09	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1DHC.CH.10	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1DHC.CH.11	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1DHC.CH.12	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1DHC.CH.13	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1DHC.CH.15	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1DHC.CH.16	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1NH.CH.01	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1NH.CH.02	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1NH.CH.03	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1NH.CH.04	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1NH.CH.05	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1NH.CH.06	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1NH.CH.07	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1NH.CH.08	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1NH.CH.09	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1NH.CH.10	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1NH.CH.11	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1NH.CH.12	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1NH.CH.13	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL
1NH.CH.14	MUNTERS	750	52	16.7	R513A	2	50' - 2"	6' - 10"	8' - 7"	28360	69.8	WATER	670	97	70	0.001	37	TURBOCOR	4	28	102.2	460	60	3	877	1000	167	ALL

NOTES:
1. PRIMARY UNIT CAPABLE OF LOW AMBIENT OPERATION DOWN TO 0 DEG F.
2. PROVIDE FACTORY MOUNTED DDC CONTROL INTERFACE AND INTEGRATE INTO BAS.
3. HEAT TRACE ALL OUTDOOR BRANCH PIPING AT CHILLER CONNECTIONS.

PRIMARY CHILLED WATER PUMP SCHEDULE

Mark	BASED ON MANUFACTURER	SERIES	PUMP TYPE	DESIGN FLOWRATE (GPM)	TOTAL DYNAMIC HEAD (FT H2O)	IMPELLER DIA (IN)	MAX WORKING PRESSURE (PSI)	FLUID TEMP(°F)	PUMP EFFICIENCY	Rated Speed (RPM)	ELECTRICAL DATA					VFD (Y/N)	WEIGHT(LBS)	COMMENTS
											MOTOR HP	Voltage	PH	HZ				
1DHA.PPMP.01	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1DHA.PPMP.02	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1DHA.PPMP.03	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1DHA.PPMP.04	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1DHA.PPMP.05	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1DHA.PPMP.06	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1DHA.PPMP.07	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1DHA.PPMP.08	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1DHA.PPMP.09	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1DHA.PPMP.10	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1DHA.PPMP.11	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1DHA.PPMP.12	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1DHA.PPMP.13	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1DHA.PPMP.14	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1DHA.PPMP.15	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1DHA.PPMP.16	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1DHB.PPMP.01	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1DHB.PPMP.02	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1DHB.PPMP.03	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1DHB.PPMP.04	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1DHB.PPMP.05	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1DHB.PPMP.06	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1DHB.PPMP.07	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1DHB.PPMP.08	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1DHB.PPMP.09	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1DHB.PPMP.10	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1DHB.PPMP.11	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1DHB.PPMP.12	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1DHB.PPMP.13	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1DHB.PPMP.14	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1DHB.PPMP.15	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1DHB.PPMP.16	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1DHC.PPMP.01	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1DHC.PPMP.02	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1DHC.PPMP.03	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1DHC.PPMP.04	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1DHC.PPMP.05	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1DHC.PPMP.06	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1DHC.PPMP.07	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1DHC.PPMP.08	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1DHC.PPMP.09	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1DHC.PPMP.10	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1DHC.PPMP.11	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1DHC.PPMP.12	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1DHC.PPMP.13	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1DHC.PPMP.14	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1DHC.PPMP.15	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1DHC.PPMP.16	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1NH.PPMP.01	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1NH.PPMP.02	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1NH.PPMP.03	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1NH.PPMP.04	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1NH.PPMP.05	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1NH.PPMP.06	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1NH.PPMP.07	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1NH.PPMP.08	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1NH.PPMP.09	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1NH.PPMP.10	Taco	CI	CLOSED COUPLED PUMP	670	105	13.05	175	68	75	1760	40	460	3	60		YES	745	ALL
1NH.PPMP.11	Taco	CI	CLOSED COUPLED PUMP

SELF-CONTAINED WATER COOLED UNIT

MARK	SWUD-ELECTRICAL GALLERIES 01.F.04	SWUD-ELECTRICAL GALLERIES 01.F.07, 01.F.13, & 01.F.14	SWUD- MECHANICAL GALLERIES 01.F.34	SWUD- MECHANICAL GALLERIES 01.F.39
MANUFACTURER	TRANE	TRANE	TRANE	TRANE
MODEL	SWUD	SWUD	SWUD	SWUD
QUANTITY	2	6	2	3
APPROX. SIZE (LxWxH) (IN.)	95x80x92	95x80x92	95x80x92	95x80x92
MAX WEIGHT (LBS)				
UNIT CONFIG.(SUPPLY	VERTICAL	VERTICAL	VERTICAL	VERTICAL
FAN				
CFM	12,000	15,000	12,000	15,000
EXTERNAL S.P. (IN W.C)	0.75	0.75	0.75	0.75
FANS	2	3	2	3
COOLING				
NOMINAL CAPACITY (TONS)	40.00	50.00	40.00	50.00
TOTAL CAPACITY (MBH)	458.82	610.08	458.82	610.08
SENSIBLE CAPACITY (MBH)	396.45	508.57	396.45	508.57
EAT DB/ WB(DEG F)	85/67	85/67	85/67	85/67
LAT DB/WB (DEG F)	55/54.5	55/54.5	55/54.5	55/54.5
REFRIGERANT	R-454B	R-454B	R-454B	R-454B
REFRIG. CHARGE (LBS)	40.0	50.0	40.0	50.0
MIN EFFICIENCY (EER/IEER)	18.2/21.9	18.8/22.8	18.2/21.9	18.8/22.8
ELECTRICAL				
FLA				
MCA	74	95	74	95
MOCP	80	110	80	110
VOLTAGE	460/60/3	460/60/3	460/60/3	460/60/3
FLUID				
TYPE	WATER	WATER	WATER	WATER
CLG EWT (DEG F)	70	70	70	70
MAX PRESSURE DROP (FT...	1.63	2.78	1.63	2.78
FLOW (GPM)	71	95	71	95
NOTES	ALL	ALL	ALL	ALL

REMARKS:

1. PROVIDE WITH VARIABLE AIR VOLUME SUPPLY FAN CONTROL.
2. HIGH EFFICIENCY ECM FAN MOTOR
3. INCLUDE FILTER RACK AND 2" MERV 8 FILTER.
4. MODULATING CONTROL VALVE WITH HEAD PRESSURE CONTROL . VALVE TO SHUTDOWN WATER FLOW WHEN UNIT IS NOT COOLING.
5. LINE SIZE STAINLESS STEEL FLEXIBLE HOSE KIT WITH BALL TYPE SHUTOFF VALVES, AUTOMATIC FLOW BALANCING VALVE, INLET STRAINER & PT TEST PORTS. PROVIDE REDUCER AS REQUIRED TO UNIT CONNECTION.
6. 5 YEAR COMPRESSOR WARRANTY.
7. PROVIDE STAINLESS STEEL DRAIN PAN & CONDENSATE OVERFLOW SWITCH.
8. PROVIDE INTEGRAL DISCONNECT.
9. PROVIDE INTEGRAL DUCT SMOKE DETECTOR IN RETURN DUCT.

AIR SEPARATOR SCHEDULE

DESIGNATION	MANUFACTURER	MODEL	SERVICE	TYPE	FLOW RATE	MAX WATER PRESSURE DROP	APPROX. SIZE (DIA. x H)	CONNECTION SIZE	APPROX. FILLED WEIGHT	NOTES
					GPM	FT WC	IN.	IN.	LBS.	
1NH.AS.01	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1NH.AS.02	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1NH.AS.03	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1NH.AS.04	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1NH.AS.05	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1NH.AS.06	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1NH.AS.07	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1NH.AS.08	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1NH.AS.09	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1NH.AS.10	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1NH.AS.11	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1NH.AS.12	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1NH.AS.13	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1NH.AS.14	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1DHA.AS.01	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1DHA.AS.02	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1DHA.AS.03	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1DHA.AS.04	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1DHA.AS.05	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1DHA.AS.06	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1DHA.AS.07	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1DHA.AS.08	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1DHA.AS.09	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1DHA.AS.10	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1DHA.AS.11	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1DHA.AS.12	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1DHA.AS.13	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1DHA.AS.14	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1DHA.AS.15	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1DHA.AS.16	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1DHB.AS.01	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1DHB.AS.02	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1DHB.AS.03	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1DHB.AS.04	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1DHB.AS.05	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1DHB.AS.06	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1DHB.AS.07	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1DHB.AS.08	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1DHB.AS.09	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1DHB.AS.10	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1DHB.AS.11	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1DHB.AS.12	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1DHB.AS.13	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1DHB.AS.14	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1DHB.AS.15	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1DHB.AS.16	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1DHC.AS.01	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1DHC.AS.02	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1DHC.AS.03	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1DHC.AS.04	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1DHC.AS.05	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1DHC.AS.06	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1DHC.AS.07	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1DHC.AS.08	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1DHC.AS.09	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1DHC.AS.10	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1DHC.AS.11	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1DHC.AS.12	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1DHC.AS.13	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1DHC.AS.14	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1DHC.AS.15	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL
1DHC.AS.16	AMTROL	AS-6	CHILLED WATER	TANGENTIAL	650	3.00	26"x39"	6"	250	ALL

NOTES:

1. PROVIDE AIR AND DIRT SEPARATOR WITH REMOVABLE COVER AND STRAINER
2. INLINE MOUNTING
3. PROVIDE FLANGED CONNECTIONS
4. PROVIDE AUTOMATIC AIR VENT AND BLOW DOWN VALVE.
5. PROVIDE FULL LINE SIZE BYPASS AROUND AIR SEPARATOR.

SECONDARY CHILLED WATER PUMP SCHEDULE

Mark	BASED ON MANUFACTURER	SERIES	Model	PUMP TYPE	DESIGN FLOWRATE (GPM)	TOTAL DYNAMIC HEAD (FT H2O)	IMPELLER DIA (IN.)	MAX WORKING PRESSURE (PSI)	FLUID TEMP(°F)	MIN PUMP EFFICIENCY	Rated Speed (RPM)	ELECTRICAL DATA				VFD (Y/N)	WEIGHT (LBS)	COMMENTS
												MOTOR HP	Voltage	PH	HZ			
1DHA.SPMP.01	Taco	FI	6013D	FI Base-Mounted End Suction Pump	2050	100	12.1	175	68	84	1760	75	460	3	60	Y	2010	ALL
1DHA.SPMP.02	Taco	FI	6013D	FI Base-Mounted End Suction Pump	2050	100	12.1	175	68	84	1760	75	460	3	60	Y	2010	ALL
1DHA.SPMP.03	Taco	FI	6013D	FI Base-Mounted End Suction Pump	2050	100	12.1	175	68	84	1760	75	460	3	60	Y	2010	ALL
1DHA.SPMP.04	Taco	FI	6013D	FI Base-Mounted End Suction Pump	2050	100	12.1	175	68	84	1760	75	460	3	60	Y	2010	ALL
1DHA.SPMP.05	Taco	FI	6013D	FI Base-Mounted End Suction Pump	2050	100	12.1	175	68	84	1760	75	460	3	60	Y	2010	ALL
1DHA.SPMP.06	Taco	FI	6013D	FI Base-Mounted End Suction Pump	2050	100	12.1	175	68	84	1760	75	460	3	60	Y	2010	ALL
1DHB.SPMP.01	Taco	FI	6013D	FI Base-Mounted End Suction Pump	2050	100	12.1	175	68	84	1760	75	460	3	60	Y	2010	ALL
1DHB.SPMP.02	Taco	FI	6013D	FI Base-Mounted End Suction Pump	2050	100	12.1	175	68	84	1760	75	460	3	60	Y	2010	ALL
1DHB.SPMP.03	Taco	FI	6013D	FI Base-Mounted End Suction Pump	2050	100	12.1	175	68	84	1760	75	460	3	60	Y	2010	ALL
1DHB.SPMP.04	Taco	FI	6013D	FI Base-Mounted End Suction Pump	2050	100	12.1	175	68	84	1760	75	460	3	60	Y	2010	ALL
1DHB.SPMP.05	Taco	FI	6013D	FI Base-Mounted End Suction Pump	2050	100	12.1	175	68	84	1760	75	460	3	60	Y	2010	ALL
1DHB.SPMP.06	Taco	FI	6013D	FI Base-Mounted End Suction Pump	2050	100	12.1	175	68	84	1760	75	460	3	60	Y	2010	ALL
1DHC.SPMP.01	Taco	FI	6013D	FI Base-Mounted End Suction Pump	2050	100	12.1	175	68	84	1760	75	460	3	60	Y	2010	ALL
1DHC.SPMP.02	Taco	FI	6013D	FI Base-Mounted End Suction Pump	2050	100	12.1	175	68	84	1760	75	460	3	60	Y	2010	ALL
1DHC.SPMP.03	Taco	FI	6013D	FI Base-Mounted End Suction Pump	2050	100	12.1	175	68	84	1760	75	460	3	60	Y	2010	ALL
1DHC.SPMP.04	Taco	FI	6013D	FI Base-Mounted End Suction Pump	2050	100	12.1	175	68	84	1760	75	460	3	60	Y	2010	ALL
1DHC.SPMP.05	Taco	FI	6013D	FI Base-Mounted End Suction Pump	2050	100	12.1	175	68	84	1760	75	460	3	60	Y	2010	ALL
1DHC.SPMP.06	Taco	FI	6013D	FI Base-Mounted End Suction Pump	2050	100	12.1	175	68	84	1760	75	460	3	60	Y	2010	ALL
1NH.SPMP.01	Taco	FI	6013D	FI Base-Mounted End Suction Pump	2050	100	12.1	175	68	84	1760	75	460	3	60	Y	2010	ALL
1NH.SPMP.02	Taco	FI	6013D	FI Base-Mounted End Suction Pump	2050	100	12.1	175	68	84	1760	75	460	3	60	Y	2010	ALL
1NH.SPMP.03	Taco	FI	6013D	FI Base-Mounted End Suction Pump	2050	100	12.1	175	68	84	1760	75	460	3	60	Y	2010	ALL
1NH.SPMP.04	Taco	FI	6013D	FI Base-Mounted End Suction Pump	2050	100	12.1	175	68	84	1760	75	460	3	60	Y	2010	ALL
1NH.SPMP.05	Taco	FI	6013D	FI Base-Mounted End Suction Pump	2050	100	12.1	175	68	84	1760	75	460	3	60	Y	2010	ALL

NOTES:

1. PROVIDE AND FIELD MOUNT VARIABLE FREQUENCY DRIVE WITH INTEGRAL DISCONNECT. INTEGRAL VFD DRIVE TO BAS INTERFACE.
2. PROVIDE STAINLESS STEEL BRAID FLEXIBLE CONNECTORS.
3. PROVIDE INERTIA BASE MOUNTING.
4. PROVIDE WITH SUCTION DIFFUSER.
5. PROVIDE WITH PREMIUM EFFICIENCY/INVERTER DUTY MOTOR AND SHAFT GROUNDING RING.

Salas O'Brien

salasobrien.com 615.346.3400

Nashville
2950 Kraft Drive
Nashville, TN 37204

FIRM CERTIFICATE OF AUTHORIZATION: CA-1276

PROFESSIONAL SEAL

CHRISTOPHER S. ANDERSON LICENSE No. 70102 STATE OF FLORIDA PROFESSIONAL ENGINEER

NUCLEI

PROJECT SUNSHINE

BUILDING 1

810 PACE RD.
AUBURNDALE, FL 33823

ISSUE DATE	DESCRIPTION
09/21/2026	REVISED FIT-UP IFP

Δ	DESCRIPTION	DATE

ISSUE:

PROJ NO
2540-01309

CHECKED BY DHW

DRAWN BY TKP

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SHEET TITLE

MECHANICAL SCHEDULES

SHEET NUMBER

BLDG1-M602

COMPUTER ROOM AIR CONDITIONER SCHEDULE

TAG	MANUFACTURER	MODEL	CONFIGURATION	SERVES	AIRFLOW (CFM)	FAN ESP (IN. W.G.)	FAN QTY	FAN TYPE	EDB (F)	EWB (F)	LDB (F)	LWB (F)	DP TEMP (F)	TOTAL CAP. (KW)	TOTAL CAP. (MBH)	SENS. CAP. (MBH)	REFRIGERANT TYPE	FILTERS TYPE	VOLT	PHASE	HZ	MCA (A)	MOCP (A)	FLA (A)	WEIGHT (LBS)	COMMENTS
1MDF30.CRAC.01	VERTIV	DA125	DOWNFLOW FRONT DISCHARGE	01.F.30 MDF	13,000	0.25	3	EC	85	64.6	62.6	56.5	52	90	308	308	R-454B	4" MERV-8	460	3	60	71.9	80	68.3	3465	ALL
1MDF30.CRAC.02	VERTIV	DA125	DOWNFLOW FRONT DISCHARGE	01.F.30 MDF	13,000	0.25	3	EC	85	64.6	62.6	56.5	52	90	308	308	R-454B	4" MERV-8	460	3	60	71.9	80	68.3	3465	ALL
1MDF32.CRAC.01	VERTIV	DA125	DOWNFLOW FRONT DISCHARGE	01.F.32 MDF	13,000	0.25	3	EC	85	64.6	62.6	56.5	52	90	308	308	R-454B	4" MERV-8	460	3	60	71.9	80	68.3	3465	ALL
1MDF32.CRAC.01	VERTIV	DA125	DOWNFLOW FRONT DISCHARGE	01.F.32 MDF	13,000	0.25	3	EC	85	64.6	62.6	56.5	52	90	308	308	R-454B	4" MERV-8	460	3	60	71.9	80	68.3	3465	ALL
1MMR03.CRAC.01	VERTIV	DA050	DOWNFLOW BOTTOM DISCHARGE	01.F.03 MMR	6,600	0.25	3	EC	85	64.6	62.6	56.5	52	48.9	167	170	R-454B	4" MERV-8	460	3	29.8	36	60	43	2250	1-8
1MMR03.CRAC.02	VERTIV	DA050	DOWNFLOW BOTTOM DISCHARGE	01.F.03 MMR	6,600	0.25	3	EC	85	64.6	62.6	56.5	52	48.9	167	170	R-454B	4" MERV-8	460	3	29.8	36	60	43	2250	1-8
1CMDF05.CRAC.01	VERTIV	PX029	UPFLOW FRONT	01.E.05 CMDF	4,300	0.25	3	EC	85	64.6	62.6	56.5	52	29	99	99	R-454B	4" MERV-8	460	3	60	52.5	70	43	1200	1-8
1CMDF05.CRAC.02	VERTIV	PX029	UPFLOW FRONT	01.E.05 CMDF	4,300	0.25	3	EC	85	64.6	62.6	56.5	52	29	99	99	R-454B	4" MERV-8	460	3	60	52.5	70	43	1200	1-8
1CMDF41.CRAC.01	VERTIV	PX029	UPFLOW FRONT	01.F.41 CMDF	4,300	0.25	3	EC	85	64.6	62.6	56.5	52	29	99	99	R-454B	4" MERV-8	460	3	60	52.5	70	43	1200	1-8
1CMDF41.CRAC.02	VERTIV	PX029	UPFLOW FRONT	01.F.41 CMDF	4,300	0.25	3	EC	85	64.6	62.6	56.5	52	29	99	99	R-454B	4" MERV-8	460	3	60	52.5	70	43	1200	1-8
1UPS23.CRAC.01	VERTIV	DA085	DOWNFLOW BOTTOM DISCHARGE	01.F.23 UPS	12,000	0.25	3	EC	85	64.6	62.6	56.5	52	85	290	290	R-454B	4" MERV-8	460	3	60	57.7	70	52.2	2250	1-8
1UPS23.CRAC.02	VERTIV	DA085	DOWNFLOW BOTTOM DISCHARGE	01.F.23 UPS	12,000	0.25	3	EC	85	64.6	62.6	56.5	52	85	290	290	R-454B	4" MERV-8	460	3	60	57.7	70	52.2	2250	1-8

NOTES:
1. PROVIDE DOWNFLOW UNIT WITH TOP RETURN DUCT CONNECTION.
2. PROVIDE COOLING COIL WITH STAINLESS STEEL DRAIN PANS AND CONDENSATE PUMP.
3. PROVIDE WITH INTEGRAL RETURN AIR SMOKE DETECTOR FOR UNIT SHUT DOWN.
4. PROVIDE WITH FUSED DISCONNECT WITH 65 KAIC RATING.
5. PROVIDE WITH LIEBERT ICOM CONTROLLER WITH LCD DISPLAY OR APPROVED EQUIVALENT. REFER TO SPECIFICATIONS FOR CONTROLLER REQUIREMENTS.
8. PROVIDE REFRIGERANT PIPING, LINE SIZING, AUXILLARY DEVICES, AND WIRING PER MANUFACTURER'S RECOMMENDATIONS.
9. UNIT TO BE INSTALLED IN FUTURE TENANT "FIT-OUT" PHASE.

COMPUTER CONDENSER UNIT SCHEDULE

TAG	MANUFACTURER	MODEL	SERVES	FAN QTY	FAN TYPE	TOTAL HEAT REJECT (MBH)	COMP. TYPE	REFRIGERANT TYPE	AMBIENT TEMP (F)	CONDENSER VOLT	CONDENSER PHASE	CONDENSER HZ	RERFRIG. PUMP VOLT	REFRIG. PUMP PHASE	REFRIG. PUMP HZ	MCA (A)	MOCP (A)	FLA (A)	WEIGHT (LBS)	COMMENTS
1MDF30.CU.01	VERTIV	MCV330	1MDF30.CRAC.01	6	EC	385	TANDEM DIGITAL	R-454B	105	460	3	60	460	3	60	24.7	25	23.8	4980	ALL
1MDF30.CU.02	VERTIV	MCV330	1MDF30.CRAC.02	6	EC	385	TANDEM DIGITAL	R-454B	105	460	3	60	460	3	60	24.7	25	23.8	4980	ALL
1MDF32.CU.01	VERTIV	MCV330	1MDF32.CRAC.01	6	EC	385	TANDEM DIGITAL	R-454B	105	460	3	60	460	3	60	24.7	25	23.8	4980	ALL
1MDF32.CU.02	VERTIV	MCV330	1MDF32.CRAC.01	6	EC	385	TANDEM DIGITAL	R-454B	105	460	3	60	460	3	60	24.7	25	23.8	4980	ALL
1MMR03.CU.01	VERTIV	MCL160	1MMR03.CRAC.01	6	EC	205	DIGITAL SCROLL	R-454B	105	460	3	60	460	3	60	6	15	5.6	1365	2,3
1MMR03.CU.02	VERTIV	MCL160	1MMR03.CRAC.02	6	EC	205	DIGITAL SCROLL	R-454B	105	460	3	60	460	3	60	6	15	5.6	1365	2,3
1CMDF05.CU.01	VERTIV	MCM040	1CMDF05.CRAC.01	6	EC	124	DIGITAL SCROLL	R-454B	105	460	3	60	460	3	60	6	15	5.6	280	2
1CMDF05.CU.02	VERTIV	MCM040	1CMDF05.CRAC.02	6	EC	124	DIGITAL SCROLL	R-454B	105	460	3	60	460	3	60	6	15	5.6	280	2
1CMDF41.CU.01	VERTIV	MCM040	1CMDF41.CRAC.01	6	EC	124	DIGITAL SCROLL	R-454B	105	460	3	60	460	3	60	6	15	5.6	280	2
1CMDF41.CU.02	VERTIV	MCM040	1CMDF41.CRAC.02	6	EC	124	DIGITAL SCROLL	R-454B	105	460	3	60	460	3	60	6	15	5.6	280	2
1UPS23.CU.01	VERTIV	MCL220	1UPS23.CRAC.01	6	EC	348	DIGITAL SCROLL	R-454B	105	460	3	60	460	3	60	11.9	15	11.2	1840	2,3
1UPS23.CU.02	VERTIV	MCL220	1UPS23.CRAC.02	6	EC	348	DIGITAL SCROLL	R-454B	105	460	3	60	460	3	60	11.9	15	11.2	1840	2,3

NOTES:
1. UNIT TO BE INSTALLED IN FUTURE TENANT "FIT-OUT" PHASE.
2. PROVIDE WITH ECONOPHASE REFIRGERANT PUMP SYSTEM PER CIRCUIT. PUMPS TO BE VARIABLE SPEED WITH INDIVIDUAL VFDS. MASTER CONTROLLER TO COORDINATE OUTDOOR UNIT OPERATION MODE BETWEEN COMPRESSOR, PARTIAL ECONOMIZER, AND FULL ECONOMIZER.
3. ECONOMIZER PACKAGE TO BE INSTALLED ON OUTDOOR UNIT SKID. UNIT TO BE FACTORY WIRED, PIPED, AND PRESSURE TESTED. PROVIDE IN NEMA 3R ENCLOSURE. ECONOMIZER POWERED BY THE OUTDOOR UNIT CIRCUIT. PROVIDE SINGLE POINT POWER

EXHAUST FAN SCHEDULE

MARK	1MG33.EF.01	1MG39.EF.01	1MG39.EF.02	1UPS23.EF.01
MANUFACTURER	GREENHECK	GREENHECK	GREENHECK	GREENHECK
MODEL	SQ-90-VG	SQ-90-VG	SQ-90-VG	SQ-70-VG
TYPE	INLINE	INLINE	INLINE	INLINE
AIRFLOW (CFM)	200	500	350	50
ESP (IN WG)	0.25	0.25	0.25	0.25
FAN SPEED (RPM)	1,088	1,452	1,236	1,262
HP	1/2	1/6	1/6	1/15
POWER (BHP)	0.02	0.05	0.03	0.01
DRIVE TYPE	DIRECT	DIRECT	DIRECT	DIRECT
SOUND (dBA)	46	52	48	38
ELECTRICAL				
VOLTAGE/PHASE/FREQUENCY	115/1/60	115/1/60	115/1/60	115/60/1
FLA	2.8	2.8	2.8	1.3
MCA	3.5	3.5	3.5	1.5
MOP	15	15	15	15
WEIGHT (LBS)	34	34	34	27
DIMENSIONS (LxWxH) (IN)	16x15x15	16x15x15	16x15x15	13x12x12
STARTER OR VFD	STARTER	STARTER	STARTER	STARTER
REMARKS	1,3,4,5	1,3,4,5	1,3,4,5	1,3,4,5
REMARKS:				
1. PROVIDE INTEGRAL DISCONNECT.				
2. FAN SHALL RUN CONTINOUSLY.				
3. PROVIDE MANUFACTURER AND MODEL SPECIFIED OR APPROVED EQUAL.				
4. PROVIDE WITH BACKDRAFT DAMPER.				
5. PROVIDE ON EMERGENCY POWER. REFER TO CONTROLS DRAWINGS FOR OPERATION.				

LOUVERED FACE CEILING DIFFUSER SCHEDULE

MARK	MANUFACTURER	MODEL	ADAPTER/ NECK SIZE	FACE SIZE	MAX CFM	MAX NC	MAX SP	THROW	RUN-OUT SIZE
SA	TITUS	TDCAA	6"Ø / 6"x6"	12"x12"	100	25	0.1	4-WAY	6"Ø / 8"x6"
SB	TITUS	TDCAA	8"Ø / 9"x9"	15"x15"	200	25	0.1	4-WAY	8"Ø / 10"x6"
SC	TITUS	TDCAA	10"Ø / 12"x12"	15"x15"	400	25	0.1	4-WAY	10"Ø / 12"x8"
SD	TITUS	TDCAA	12"Ø / 15"x15"	24"x24"	600	25	0.1	4-WAY	12"Ø / 14"x8"
SE	TITUS	TDCAA	6"Ø / 6"x6"	12"x12"	100	25	0.1	3-WAY	6"Ø / 8"x6"
SF	TITUS	TDCAA	8"Ø / 9"x9"	15"x15"	200	25	0.1	3-WAY	8"Ø / 10"x6"
SG	TITUS	TDCAA	10"Ø / 12"x12"	15"x15"	400	25	0.1	3-WAY	10"Ø / 12"x8"
SH	TITUS	TDCAA	12"Ø / 15"x15"	24"x24"	600	25	0.1	3-WAY	12"Ø / 14"x8"
SI	TITUS	TDCAA	6"Ø / 6"x6"	12"x12"	100	25	0.1	2-WAY	6"Ø / 8"x6"
SJ	TITUS	TDCAA	8"Ø / 9"x9"	15"x15"	200	25	0.1	2-WAY	8"Ø / 10"x6"
SK	TITUS	TDCAA	10"Ø / 12"x12"	15"x15"	400	25	0.1	2-WAY	10"Ø / 12"x8"
SL	TITUS	TDCAA	12"Ø / 15"x15"	24"x24"	600	25	0.1	2-WAY	12"Ø / 14"x8"
SM	TITUS	TDCAA	6"Ø / 6"x6"	12"x12"	100	25	0.1	1-WAY	6"Ø / 8"x6"
SN	TITUS	TDCAA	8"Ø / 9"x9"	15"x15"	200	25	0.1	1-WAY	8"Ø / 10"x6"
SO	TITUS	TDCAA	10"Ø / 12"x12"	15"x15"	400	25	0.1	1-WAY	10"Ø / 12"x8"
SP	TITUS	TDCAA	12"Ø / 15"x15"	24"x24"	600	25	0.1	1-WAY	12"Ø / 14"x8"
SQ	TITUS	TDCAA	6"Ø / 6"x6"	12"x12"	100	25	0.1	2-W CORNER	6"Ø / 8"x6"
SR	TITUS	TDCAA	8"Ø / 9"x9"	15"x15"	200	25	0.1	2-W CORNER	8"Ø / 10"x6"
SS	TITUS	TDCAA	10"Ø / 12"x12"	15"x15"	400	25	0.1	2-W CORNER	10"Ø / 12"x8"
ST	TITUS	TDCAA	12"Ø / 15"x15"	24"x24"	600	25	0.1	2-W CORNER	12"Ø / 14"x8"

COMMENTS:
1. CONTRACTOR HAS OPTION OF USING 24" X 24" FACE FOR MOUNTING IN ACOUSTICAL TILE CEILING.
2. USE DUCT SPIN-IN FITTING AND MANUAL VOLUME DAMPER EQUAL TO GENFLEX MODEL SM-2DEL. PROVIDE OPPOSED BLADE DAMPER CONTROL AT FACE OF REGISTER WHERE DAMPER IS NOT ACCESSIBLE.
3. ANY THROW PATTERN INDICATED ON HVAC DRAWINGS SHALL TAKE PRECEDENCE OVER CONTRADICTIONS THAT MAY EXIST ON THIS SCHEDULE.

SIDEWALL SCHEDULE

SYMBOL	FACE SIZE	MAX CFM	MAX TP	MAX NC	THROW
SAR	6"x6"	100	0.07	20	10-14-20
SBR	12"x12"	530	0.05	30	21-30-42
SCR	16"x16"	1200	0.07	30	38-47-66
SDR	24"x14"	1498	0.05	25	39-50-71
SER	24"x24"	3750	0.1	38	65-80-114
SFR	28"x28"	4128	0.8	33	68-84-119
EAR	6"x6"	100	0.07	20	10-14-20
EBR	12"x12"	530	0.05	30	21-30-42
ECR	14"x14"	900	0.1	30	33-41-57

PERFORMANCE BASIS:
1. ALL SHALL BE TITUS MODEL '272L' SIDEWALL DIFFUSERS WITH DOUBLE DEFLECTION BLADES. SEE PLANS FOR SIZES
2. EAR SHALL BE RETURN TITUS MODEL 350RF OR APPROVED EQUAL WITH 1/2" BLADE SPACING.

*ALL SUPPLY SIDEWALL DIFFUSERS SHALL HAVE OPPOSED BLADE DAMPERS (OBD).

*DUCT RUNOUTS ARE TO BE SAME SIZE AS DIFFUSER NECK UNLESS OTHERWISE NOTED ON DRAWINGS.RUNOUTS ARE DUCTS SERVING ONLY ONE DIFFUSER.

EGG GRATE RETURN AND EXHAUST REGISTERS

MARK	MANUFACTURER	MODEL	ADAPTER/ NECK SIZE	FACE SIZE	MAX CFM	MAX SP	MAX NC	RUN-OUT SIZE
RA / EA	TITUS	50F	6" SQ	8" x 8"	75	0.03	20	6"Ø / 8"x6"
RB / EB	TITUS	50F	8" SQ	10" x 10"	200	0.03	20	8"Ø / 10"x6"
RC / EC	TITUS	50F	10" SQ	12" x 12"	300	0.03	20	10"Ø / 12"x8"
RD / ED	TITUS	50F	12" SQ	14" x 14"	500	0.03	20	12"Ø / 14"x8"
RE / EE	TITUS	50F	14" SQ	18" x 18"	700	0.03	20	14"Ø / 16"x8"
RF / EF	TITUS	50F	18" SQ	20" x 20"	1200	0.03	20	16"Ø / 24"x10"
RG / EG	TITUS	50F	22" SQ	24" x 24"	1800	0.03	20	18"Ø / 24"x12"

COMMENTS:
1. CONTRACTOR HAS OPTION OF USING 24" X 24" PANEL FOR MOUNTING IN ACOUSTICAL TILE CEILING.
2. USE DUCT SPIN-IN FITTING AND MANUAL VOLUME DAMPER EQUAL TO GENFLEX MODEL SM-2DEL FOR ROUND DUCT AND STANDARD SIDE TAKE OFF WITH MANUAL VOLUME DAMPER FOR RECTANGULAR RUN-OUTS.
3. PROVIDE OPPOSED BLADE CONTROL AT FACE OF REGISTER WHERE DAMPER IS NOT ACCESSIBLE.

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Nashville, TN 37204
FIRM CERTIFICATE OF AUTHORIZATION: CA-1276

PROFESSIONAL SEAL

CHRISTOPHER S. ANDERSON LICENSE No. 70102 STATE OF FLORIDA PROFESSIONAL ENGINEER

NUCLEI

PROJECT SUNSHINE

BUILDING 1

810 PACE RD.
AUBURNDALE, FL 33823

ISSUE DATE	DESCRIPTION
09/21/2026	REVISED FIT-UP IFP

Δ	DESCRIPTION	DATE

ISSUE:

PROJ NO
2540-01309

CHECKED BY: DHW
DRAWN BY: TKP

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SHEET TITLE

MECHANICAL SCHEDULES

SHEET NUMBER
BLDG1-M603

PACKAGED DX DEDICATED OUTDOOR AIR SYSTEM SCHEDULE

TAG	MANUFACTURER	MODEL	SUPPLY AIR (CFM)	SUPPLY ESP (IN.W.C.)	EXHAUST AIR (CFM)	EXHAUST ESP (IN.W.C.)	FILTER MERV RATING (PRE / FINAL)	MIN EFFICIENCY		COOLING/DEHUMIDIFICATION									HEATING CAPACITY					ELECTRICAL DATA						WEIGHT (LBS)	NOTES
								EER/IEER	COP	EDB (F)	EWB (F)	LDB (F)	LWB (F)	TOTAL COOLING CAPACITY (MBH)	SENSIBLE COOLING CAPACITY (MBH)	REHEAT TYPE	MIN REHEAT CAPACITY (MBH)	REHEAT EDB (°F)	REHEAT LDB (°F)	HEATING CAPACITY (MBH)	EDB (°F)	LDB (°F)	HEATING TYPE	REFRIGERANT TYPE	VOLTAGE	PHASE	FREQUENCY	MCA (A)	MOP (A)	FLA (A)		
1NH-DHA.DOAS.01	AAON	RNA-031-D	4,000	1.5	3,500	1	8 / 13	9.5/ 12.3	3.2	99.5	80.3	55.1	54.9	343	184.7	MODULATING HGR	86.4	55	75	259.4	30.2	78.9	AIR SOURCE HEAT PUMP	R-454B	460	3	60	70	90	65	6,815	1-13, 15
1NH-DHA.DOAS.02	AAON	RNA-031-D	4,000	1.5	3,500	1	8 / 13	9.5/ 12.3	3.2	99.5	80.3	55.1	54.9	343	184.7	MODULATING HGR	86.4	55	75	259.4	30.2	78.9	AIR SOURCE HEAT PUMP	R-454B	460	3	60	70	90	65	6,815	1-13, 15
1EG04-07.DOAS.01	AAON	RNA-025-C	2,500	1.5	2,000	1	8 / 13	9.5/ 12.3	3.2	99.5	80.3	48	48	256	133.0	MODULATING HGR	69.0	49	75	185.6	30.2	103.9	AIR SOURCE HEAT PUMP	R-454B	460	3	60	56	80	49	3,570	1-13, 15
1EG04-07.DOAS.02	AAON	RNA-025-C	2,500	1.5	2,000	1	8 / 13	9.5/ 12.3	3.2	99.5	80.3	48	48	256	133.0	MODULATING HGR	69.0	49	75	185.6	30.2	103.9	AIR SOURCE HEAT PUMP	R-454B	460	3	60	56	80	49	3,570	1-13, 15
1DHB-DHC.DOAS.01	AAON	RNA-031-D	4,000	1.5	3,500	1	8 / 13	9.5/ 12.3	3.2	99.5	80.3	55.1	54.9	343	184.7	MODULATING HGR	86.4	55	75	259.4	30.2	78.9	AIR SOURCE HEAT PUMP	R-454B	460	3	60	70	90	65	6,815	1-13, 15
1DHB-DHC.DOAS.02	AAON	RNA-031-D	4,000	1.5	3,500	1	8 / 13	9.5/ 12.3	3.2	99.5	80.3	55.1	54.9	343	184.7	MODULATING HGR	86.4	55	75	259.4	30.2	78.9	AIR SOURCE HEAT PUMP	R-454B	460	3	60	70	90	65	6,815	1-13, 15
1EG13-14.DOAS.01	AAON	RNA-025-C	2,500	1.5	2,000	1	8 / 13	9.5/ 12.3	3.2	99.5	80.3	48	48	256	133.0	MODULATING HGR	69.0	49	75	185.6	30.2	103.9	AIR SOURCE HEAT PUMP	R-454B	460	3	60	56	80	49	3,570	1-13, 15
1EG13-14.DOAS.02	AAON	RNA-025-C	2,500	1.5	2,000	1	8 / 13	9.5/ 12.3	3.2	99.5	80.3	48	48	256	133.0	MODULATING HGR	69.0	49	75	185.6	30.2	103.9	AIR SOURCE HEAT PUMP	R-454B	460	3	60	56	80	49	3,570	1-13, 15
1ADM.DOAS.01	AAON	RNA-16-C	3,250	1.65	2,600	1.4	8 / 13	10.6/13.5	3.3	82.1	69	49.4	49.4	176.5	105.2	MODULATING HGR	88.3	50	75	117.6	57.9	90.6	AIR SOURCE HEAT PUMP	R-454B	460	3	60	43	50	40	4,552	1-14
1MG.DOAS.01	AAON	RNA-30-C	3,500	1.5	N/R	N/R	8 / 13	9.5/ 12.3	3.2	99.5	80.3	53.8	53.7	310.7	165.7	MODULATING HGR	76.3	53.8	75	229.9	30.2	79.6	AIR SOURCE HEAT PUMP	R-454B	460	3	60	62	80	57	4,850	1-13
1MG.DOAS.02	AAON	RNA-30-C	3,500	1.5	N/R	N/R	8 / 13	9.5/ 12.3	3.2	99.5	80.3	53.8	53.7	310.7	165.7	MODULATING HGR	76.3	53.8	75	229.9	30.2	79.6	AIR SOURCE HEAT PUMP	R-454B	460	3	60	62	80	57	4,850	1-13

NOTES:
1. PROVIDE DOUBLE WALL INSULATED CABINET. UNIT SHALL BE A 100% OUTDOOR AIR SELECTED AT THE SCHEDULED AIRFLOW AND EXTERNAL STATIC PRESSURE.
2. UNIT SHALL BE PROVIDED WITH MODULATING CAPACITY CONTROL.
3. PROVIDE UNIT WITH HOT GAS REHEAT COIL TO MAINTAIN SUPPLY AIR TEMPERATURE.
4. PROVIDE PUMPED CONDENSATE, RUN TO NEAREST DRAIN. REFER TO PLUMBING.
5. PROVIDE UNIT WITH DOUBLE WALL LINER, HINGED AND GASKETED ACCESS DOORS FOR FILTERS, COILS, FANS, COMPRESSORS AND CONTROLS.
6. PROVIDE UNIT WITH DIRTY FILTER INDICATION ACROSS FILTER BANK. INCLUDE FILTER PRESSURE DROP IN EXTERNAL STATIC PRESSURE.
7. PROVIDE UNIT WITH AIRFLOW MONITOR STATION, SUPPLY AND RETURN SMOKE DETECTORS.
8. PROVIDE UNIT WITH DIRECT-DRIVE SUPPLY FAN WITH VFD OR ECM CONTROL
9. PROVIDE LOW LEAK OUTDOOR AIR DAMPER WITH FACTORY ACTUATOR
10. PROVIDE CONDENSER COIL COATING WITH 10,000 HOUR SALT SPRAY RATING PER ASTM B117.
11. PROVIDE UNIT WITH BACNET INTEGRATION. CONTROLS SHALL BE CAPABLE OF TREND, OUTDOOR AIR DB AND DP, LEAVING AIR DB, DP, FILTER DP, COMPRESSOR STATUS AND ALARMS, FAN STATUS AND SPACE DB TEMPERATURE AND DEW POINT.
12. UNIT SHALL BE CAPABLE OF MAINTAINING SCHEDULED LEAVING AIR TEMPERATURE AT THE SPECIFIED WINTER DESIGN USING PRIMARY HEATING SYSTEM.
13. PROVIDE AUTOMATIC LOW AMBIENT LOCKOUT FOR HEAT PUMP OPERATION.
14.PROVIDE WITH ENERGY RECOVERY WHEEL. WHEEL PERFORMANCE TO BE MINIMUM 60% TOTAL ENTHALPY RECOVERY RATIO AT COOLING DESIGN CONDITIONS.
15. DOAS EXHAUST AIRFLOW SHALL FUNCTION AS RELIEF AND SHALL MODULATE TO MAINTAIN SPACE POSITIVE PRESSURE.

SPLIT SYSTEM CONDENSING UNIT SCHEDULE

TAG	MANUFACTURER	OUTDOOR MODEL	INDOOR TAG	TYPE	COOLING				ELECTRICAL					WEIGHT (LBS)	COMMENTS
					AMBIENT TEMP. (F)	TOT. CAP. (Kw)	EFFICIENCY EER2/SEER2	REFRIGERANT TYPE	VOLTAGE (V)	PHASE	FREQUENCY (Hz)	SYSTEM MCA (A)	SYSTEM MOCP (A)		
1MV05.SSOU.01	MITSUBISHI ELECTRIC	PUY-AK36NL	1MV05.SSIU.01	COOLING ONLY	95	10.55	12/20.3	R-454B	208	1	60	34	56	224	1-4
1MV05.SSOU.02	MITSUBISHI ELECTRIC	PUY-AK36NL	1MV05.SSIU.02	COOLING ONLY	95	10.55	12/20.3	R-454B	208	1	60	34	56	224	1-4
1MV06.SSOU.01	MITSUBISHI ELECTRIC	PUY-AK36NL	1MV06.SSIU.01	COOLING ONLY	95	10.55	12/20.3	R-454B	208	1	60	34	56	224	1-4
1MV06.SSOU.02	MITSUBISHI ELECTRIC	PUY-AK36NL	1MV06.SSIU.02	COOLING ONLY	95	10.55	12/20.3	R-454B	208	1	60	34	56	224	1-4
1MV11.SSOU.01	MITSUBISHI ELECTRIC	PUY-AK36NL	1MV11.SSIU.01	COOLING ONLY	95	10.55	12/20.3	R-454B	208	1	60	34	56	224	1-4
1MV11.SSOU.02	MITSUBISHI ELECTRIC	PUY-AK36NL	1MV11.SSIU.02	COOLING ONLY	95	10.55	12/20.3	R-454B	208	1	60	34	56	224	1-4
1MV12.SSOU.01	MITSUBISHI ELECTRIC	PUY-AK36NL	1MV12.SSIU.01	COOLING ONLY	95	10.55	12/20.3	R-454B	208	1	60	34	56	224	1-4
1MV12.SSOU.02	MITSUBISHI ELECTRIC	PUY-AK36NL	1MV12.SSIU.02	COOLING ONLY	95	10.55	12/20.3	R-454B	208	1	60	34	56	224	1-4
1MV15.SSOU.01	MITSUBISHI ELECTRIC	PUY-AK36NL	1MV15.SSIU.01	COOLING ONLY	95	10.55	12/20.3	R-454B	208	1	60	34	56	224	1-4
1MV15.SSOU.02	MITSUBISHI ELECTRIC	PUY-AK36NL	1MV15.SSIU.02	COOLING ONLY	95	10.55	12/20.3	R-454B	208	1	60	34	56	224	1-4
1MV16.SSOU.01	MITSUBISHI ELECTRIC	PUY-AK36NL	1MV16.SSIU.01	COOLING ONLY	95	10.55	12/20.3	R-454B	208	1	60	34	56	224	1-4
1MV16.SSOU.02	MITSUBISHI ELECTRIC	PUY-AK36NL	1MV16.SSIU.02	COOLING ONLY	95	10.55	12/20.3	R-454B	208	1	60	34	56	224	1-4
1HE10.SSOU.01	MITSUBISHI ELECTRIC	PUY-AK36NL	1HE10.SSIU.01	COOLING ONLY	95	10.55	12/20.3	R-454B	208	1	60	34	56	224	1-4
1HE10.SSOU.02	MITSUBISHI ELECTRIC	PUY-AK36NL	1HE10.SSIU.02	COOLING ONLY	95	10.55	12/20.3	R-454B	208	1	60	34	56	224	1-4
1LC19.SSOU.01	MITSUBISHI ELECTRIC	PUY-AK36NL	1LC19.SSIU.01	COOLING ONLY	95	10.55	12/20.3	R-454B	208	1	60	34	56	224	1-4
1GSIDF18.SSOU.01	MITSUBISHI ELECTRIC	PUY-AK36NL	1GSIDF18.SSIU.01	COOLING ONLY	95	10.55	12/20.3	R-454B	208	1	60	34	56	224	1-4
1GSIDF18.SSOU.02	MITSUBISHI ELECTRIC	PUY-AK36NL	1GSIDF18.SSIU.02	COOLING ONLY	95	10.55	12/20.3	R-454B	208	1	60	34	56	224	1-4
1GSIDF23.SSOU.01	MITSUBISHI ELECTRIC	PUY-AK36NL	1GSIDF23.SSIU.01	COOLING ONLY	95	10.55	12/20.3	R-454B	208	1	60	34	56	224	1-4
1GSIDF23.SSOU.02	MITSUBISHI ELECTRIC	PUY-AK36NL	1GSIDF23.SSIU.02	COOLING ONLY	95	10.55	12/20.3	R-454B	208	1	60	34	56	224	1-4
1GSIDF35.SSOU.01	MITSUBISHI ELECTRIC	PUY-AK36NL	1GSIDF35.SSIU.01	COOLING ONLY	95	10.55	12/20.3	R-454B	208	1	60	34	56	224	1-4
1GSIDF35.SSOU.02	MITSUBISHI ELECTRIC	PUY-AK36NL	1GSIDF35.SSIU.02	COOLING ONLY	95	10.55	12/20.3	R-454B	208	1	60	34	56	224	1-4
1GSIDF40.SSOU.01	MITSUBISHI ELECTRIC	PUY-AK36NL	1GSIDF40.SSIU.01	COOLING ONLY	95	10.55	12/20.3	R-454B	208	1	60	34	56	224	1-4
1GSIDF40.SSOU.02	MITSUBISHI ELECTRIC	PUY-AK36NL	1GSIDF40.SSIU.02	COOLING ONLY	95	10.55	12/20.3	R-454B	208	1	60	34	56	224	1-4
1EFE01.SSOU.01	MITSUBISHI ELECTRIC	PUY-AK36NL	1EFE01.SSIU.01	COOLING ONLY	95	10.55	12/20.3	R-454B	208	1	60	34	56	224	1-4
1EFF01.SSOU.01	MITSUBISHI ELECTRIC	PUY-AK36NL	1EFF01.SSIU.01	COOLING ONLY	95	10.55	12/20.3	R-454B	208	1	60	34	56	224	1-4
FP.SSOU.01	MITSUBISHI ELECTRIC	PUY-AK36NL	FP.SSIU.01	HEAT PUMP	95	10.55	12/20.3	R-454B	208	1	60	34	56	224	1-4
FP.SSOU.02	MITSUBISHI ELECTRIC	PUY-AK36NL	FP.SSIU.02	HEAT PUMP	95	10.55	12/20.3	R-454B	208	1	60	34	56	224	1-4

COMMENTS:
1.- 5 YEAR COMPRESSOR WARRANTY.
2.- 0 DEGREE LOW AMBIENT COOLING. PROVIDE & INSTALL ALL NECESSARY HOODS & WIND BAFFLES AS REQUIRED.
3.- CONTRACTOR SHALL REVIEW REFRIGERANT PIPE LENGHTS & SIZING PRIOR TO SUBMITTING A BID.
4.- PROVIDE POSITIVE MEANS OF DISCONNECT ADJACENT TO AND IN SIGHT OF EQUIPMENT.
5.- UNIT EFFICIENCY FOR MULTI-POSITION UNIT MEASURED IN SCOP.

SPLIT SYSTEM AIR CONDITIONING UNIT SCHEDULE

TAG	MANUFACTURER	INDOOR MODEL	OUTDOOR TAG	TYPE	AIR FLOW (CFM)	FAN SPEED	COOLING				HEATING		ELECTRICAL			WEIGHT (LBS)	COMMENTS
							EDB (F)	EWB (F)	TOT. CAP. (MBH)	REFRIGERANT TYPE	TOTAL CAP (MBH)	TYPE	VOLTAGE (V)	PHASE	FREQUENCY (Hz)		
1MV05.SSIU.01	MITSUBISHI ELECTRIC	PKA-AK36NL	1MV05.SSOU.01	WALL MOUNT	705-920	VARIABLE	80	67	36	R-454B	-	-	208	1	60	51	1-5
1MV05.SSIU.02	MITSUBISHI ELECTRIC	PKA-AK36NL	1MV05.SSOU.02	WALL MOUNT	705-920	VARIABLE	80	67	36	R-454B	-	-	208	1	60	51	1-5
1MV06.SSIU.01	MITSUBISHI ELECTRIC	PKA-AK36NL	1MV06.SSOU.01	WALL MOUNT	705-920	VARIABLE	80	67	36	R-454B	-	-	208	1	60	51	1-5
1MV06.SSIU.02	MITSUBISHI ELECTRIC	PKA-AK36NL	1MV06.SSOU.02	WALL MOUNT	705-920	VARIABLE	80	67	36	R-454B	-	-	208	1	60	51	1-5
1MV11.SSIU.01	MITSUBISHI ELECTRIC	PKA-AK36NL	1MV11.SSOU.01	WALL MOUNT	705-920	VARIABLE	80	67	36	R-454B	-	-	208	1	60	51	1-5
1MV11.SSIU.02	MITSUBISHI ELECTRIC	PKA-AK36NL	1MV11.SSOU.02	WALL MOUNT	705-920	VARIABLE	80	67	36	R-454B	-	-	208	1	60	51	1-5
1MV12.SSIU.01	MITSUBISHI ELECTRIC	PKA-AK36NL	1MV12.SSOU.01	WALL MOUNT	705-920	VARIABLE	80	67	36	R-454B	-	-	208	1	60	51	1-5
1MV12.SSIU.02	MITSUBISHI ELECTRIC	PKA-AK36NL	1MV12.SSOU.02	WALL MOUNT	705-920	VARIABLE	80	67	36	R-454B	-	-	208	1	60	51	1-5
1MV15.SSIU.01	MITSUBISHI ELECTRIC	PKA-AK36NL	1MV15.SSOU.01	WALL MOUNT	705-920	VARIABLE	80	67	36	R-454B	-	-	208	1	60	51	1-5
1MV15.SSIU.02	MITSUBISHI ELECTRIC	PKA-AK36NL	1MV15.SSOU.02	WALL MOUNT	705-920	VARIABLE	80	67	36	R-454B	-	-	208	1	60	51	1-5
1MV16.SSIU.01	MITSUBISHI ELECTRIC	PKA-AK36NL	1MV16.SSOU.01	WALL MOUNT	705-920	VARIABLE	80	67	36	R-454B	-	-	208	1	60	51	1-5
1MV16.SSIU.02	MITSUBISHI ELECTRIC	PKA-AK36NL	1MV16.SSOU.02	WALL MOUNT	705-920	VARIABLE	80	67	36	R-454B	-	-	208	1	60	51	1-5
1HE10.SSIU.01	MITSUBISHI ELECTRIC	PKA-AK36NL	1HE10.SSOU.01	WALL MOUNT	705-920	VARIABLE	80	67	36	R-454B	-	-	208	1	60	51	1-5
1HE10.SSIU.02	MITSUBISHI ELECTRIC	PKA-AK36NL	1HE10.SSOU.02	WALL MOUNT	705-920	VARIABLE	80	67	36	R-454B	-	-	208	1	60	51	1-5
1LC19.SSIU.01	MITSUBISHI ELECTRIC	PKA-AK36NL	1LC19.SSOU.01	WALL MOUNT	705-920	VARIABLE	80	67	36	R-454B	-	-	208	1	60	51	1-5
1GSIDF18.SSIU.01	MITSUBISHI ELECTRIC	PKA-AK36NL	1GSIDF18.SSOU.01	WALL MOUNT	705-920	VARIABLE	80	67	36	R-454B	-	-	208	1	60	51	1-5
1GSIDF18.SSIU.02	MITSUBISHI ELECTRIC	PKA-AK36NL	1GSIDF18.SSOU.02	WALL MOUNT	705-920	VARIABLE	80	67	36	R-454B	-	-	208	1	60	51	1-5
1GSIDF23.SSIU.01	MITSUBISHI ELECTRIC	PKA-AK36NL	1GSIDF23.SSOU.01	WALL MOUNT	705-920	VARIABLE	80	67	36	R-454B	-	-	208	1	60	51	1-5
1GSIDF23.SSIU.02	MITSUBISHI ELECTRIC	PKA-AK36NL	1GSIDF23.SSOU.02	WALL MOUNT	705-920	VARIABLE	80	67	36	R-454B	-	-	208	1	60	51	1-5
1GSIDF35.SSIU.01	MITSUBISHI ELECTRIC	PKA-AK36NL	1GSIDF35.SSOU.01	WALL MOUNT	705-920	VARIABLE	80	67	36	R-454B	-	-	208	1	60	51	1-5
1GSIDF35.SSIU.02	MITSUBISHI ELECTRIC	PKA-AK36NL	1GSIDF35.SSOU.02	WALL MOUNT	705-920	VARIABLE	80	67	36	R-454B	-	-	208	1	60	51	1-5
1GSIDF40.SSIU.01	MITSUBISHI ELECTRIC	PKA-AK36NL	1GSIDF40.SSOU.01	WALL MOUNT	705-920	VARIABLE	80	67	36	R-454B	-	-	208	1	60	51	1-5
1GSIDF40.SSIU.02	MITSUBISHI ELECTRIC	PKA-AK36NL	1GSIDF40.SSOU.02	WALL MOUNT	705-920	VARIABLE	80	67	36	R-454B	-	-	208	1	60	51	1-5
1EFE01.SSIU.01	MITSUBISHI ELECTRIC	PKA-AK36NL	1EFE01.SSOU.01	WALL MOUNT	705-920	VARIABLE	80	67	36	R-454B	-	-	208	1	60	51	1-5
1EFF01.SSIU.01	MITSUBISHI ELECTRIC	PKA-AK36NL	1EFF01.SSOU.01	WALL MOUNT	705-920	VARIABLE	80	67	36	R-454B	-	-	208	1	60	51	1-5
FP.SSIU.01	MITSUBISHI ELECTRIC	PKA-AK36NL	FP.SSOU.01	WALL MOUNT	705-920	VARIABLE	80	67	36	R-454B	41.4	HEAT PUMP	208	1	60	51	1-5
FP.SSIU.02	MITSUBISHI ELECTRIC	PKA-AK36NL	FP.SSOU.02	WALL MOUNT	705-920	VARIABLE	80	67	36	R-454B	41.4	HEAT PUMP	208	1	60	51	1-5

NOTES:
1.- WALL MOUNTED WIRED CONTROLLER/THERMOSTAT (BATTERY POWERED THERMOSTAT OR REMOTE IS UNACCEPTABLE). UNIT PROGRAMS TO INCLUDE COOL / HEAT / AND DRY.
2.- INDOOR UNIT POWER FED FROM OUTDOOR UNIT. WIRE PER MANUFACTURER INSTRUCTIONS.
3.- CONDENSATE OVERFLOW SWITCH.
4.- PROVIDE SEPARATE CONDENSATE PUMP TO DISPOSE OF CONDENSATE & PROVIDE CONDENSATE TERMINATION.
5.- PROVIDE POSITIVE MEANS OF DISCONNECT ADJACENT TO AND IN SIGHT OF EQUIPMENT.

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FIRM CERTIFICATE OF AUTHORIZATION: CA-1276

PROFESSIONAL SEAL

CHRISTOPHER S. ANTHONY LICENSE No. 70102 STATE OF FLORIDA PROFESSIONAL ENGINEER

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PROJECT SUNSHINE

BUILDING 1
810 PACE RD.
AUBURNDALE, FL 33823

ISSUE DATE	DESCRIPTION
09/21/2026	REVISED FIT-UP IFP

Δ	DESCRIPTION	DATE

ISSUE:

PROJ NO
2540-01309

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SHEET TITLE
MECHANICAL SCHEDULES

SHEET NUMBER
BLDG1-M604

VRF HEAT RECOVERY OUTDOOR UNIT SCHEDULE

MARK	MANUFACTURER	Model	AMBIENT TEMP (°F)	REFRIGERANT	COOLING CAPACITY (BTUH)	HEATING CAPACITY (BTUH) @ 47°F	COMPRESSOR TYPE	VOLT	PH	HZ	UNIT 1 MCA	UNIT 1 MOCP	UNIT 2 MCA	UNIT 2 MOCP	DEPTH (IN)	HEIGHT (IN)	WIDTH (IN)	WEIGHT (LBS)	COOLING EER		HEATING COP		COMMENTS
																			UNIT 1	UNIT 2	UNIT-1	UNIT-2	
1ADM.SSOU.01	TRANE / MITSUBISHI ELEC	TURYG2404AMM0AN	95	R32	240000	260000	VARIABLE SPEED SCROLL	460	3	60	54	70	54	70	30	80	77	1380	11.9	12	3.33	3.33	1, 2, 3
1ADM.SSOU.02	TRANE / MITSUBISHI ELEC	TURYG2164AMM0AN	95	R32	216000	243000	VARIABLE SPEED SCROLL	460	3	60	49	70	49	70	30	80	77	1380	12.4	12.8	3.59	3.82	1, 2, 3

COMMENTS:
1. PROVIDE LOW AMBIENT KIT.
2. PROVIDE TWINNING KIT.
3. TENANT FIT-UP PHASE.

VRF HEAT RECOVERY INDOOR UNIT SCHEDULE

MARK	MANUFACTURER	UNIT TYPE	MODEL	NOMINAL COOLING CAPACITY (BTUH)	NOMINAL HEATING CAPACITY (BTUH)	AIR FLOW @ HIGH SPEED (CFM)	AIRFLOW @ LOW SPEED (CFM)	VOLT	PH	HZ	MCA	MOCP	WIDTH (IN)	DEPTH (IN)	HEIGHT (IN)	UNIT WEIGHT (LBS)	COMMENTS
1ADM.SSIU.01-01	TRANE / MITSUBISHI ELEC	DUCTED	TPEFYP054MA1M0A	54000	60000	1413	989	208	1	60	3.38	15	63	28	10	93	1, 2, 3
1ADM.SSIU.01-02	TRANE / MITSUBISHI ELEC	DUCTED	TPEFYP018MA1M0A	18000	20000	883	618	208	1	60	2.50	15	44	28	10	66	1, 2, 3
1ADM.SSIU.01-03	TRANE / MITSUBISHI ELEC	DUCTED	TPEFYP024MA1M0A	24000	27000	883	618	208	1	60	2.50	15	44	28	10	66	1, 2, 4
1ADM.SSIU.01-04	TRANE / MITSUBISHI ELEC	DUCTED	TPEFYP018MA1M0A	18000	20000	883	618	208	1	60	2.50	15	44	28	10	66	1, 2, 4
1ADM.SSIU.01-05	TRANE / MITSUBISHI ELEC	CEILING CASSETTE	TPLFYP008EM1M0A	8000	9000	600	494	208	1	60	0.39	15	33	33	10	46	1, 2, 4
1ADM.SSIU.01-06	TRANE / MITSUBISHI ELEC	CEILING CASSETTE	TPLFYP012EM1M0A	12000	13500	600	494	208	1	60	0.39	15	33	33	10	46	1, 2, 4
1ADM.SSIU.01-07	TRANE / MITSUBISHI ELEC	DUCTED	TPEFYP018MA1M0A	18000	20000	883	618	208	1	60	2.50	15	44	28	10	66	1, 2, 4
1ADM.SSIU.01-08	TRANE / MITSUBISHI ELEC	DUCTED	TPEFYP018MA1M0A	18000	20000	883	618	208	1	60	2.50	15	44	28	10	66	1, 2, 3
1ADM.SSIU.01-09	TRANE / MITSUBISHI ELEC	DUCTED	TPEFYP012MA1M0A	12000	13500	371	265	208	1	60	1.88	15	28	28	10	47	1, 2, 3
1ADM.SSIU.01-10	TRANE / MITSUBISHI ELEC	CEILING CASSETTE	TPLFYP008EM1M0A	8000	9000	600	494	208	1	60	0.39	15	33	33	10	46	1, 2, 4
1ADM.SSIU.01-11	TRANE / MITSUBISHI ELEC	CEILING CASSETTE	TPLFY006EM1M0A	6000	6700	494	300	208	1	60	0.19	15	33	33	10	46	1, 2, 4
1ADM.SSIU.01-12	TRANE / MITSUBISHI ELEC	DUCTED	TPEFYP027MA1M0A	27000	30000	883	618	208	1	60	2.50	15	44	28	10	66	1, 2, 4
1ADM.SSIU.01-13	TRANE / MITSUBISHI ELEC	DUCTED	TPEFYP018MA1M0A	18000	20000	883	618	208	1	60	2.50	15	44	28	10	66	1, 2, 4
1ADM.SSIU.01-14	TRANE / MITSUBISHI ELEC	DUCTED	TPEFYP018MA1M0A	18000	20000	883	618	208	1	60	2.50	15	44	28	10	66	1, 2, 4
1ADM.SSIU.01-15	TRANE / MITSUBISHI ELEC	DUCTED	TPEFYP030MA1M0A	30000	34000	1271	883	208	1	60	3.13	15	55	28	10	84	1, 2, 3
1ADM.SSIU.02-01	TRANE / MITSUBISHI ELEC	DUCTED	TPEFYP018MA1M0A	18000	20000	883	618	208	1	60	2.50	15	44	28	10	66	1, 2, 4
1ADM.SSIU.02-02	TRANE / MITSUBISHI ELEC	DUCTED	TPEFYP006MA1M0A	6000	6700	300	212	208	1	60	0.42	15	28	28	10	47	1, 2, 4
1ADM.SSIU.02-03	TRANE / MITSUBISHI ELEC	DUCTED	TPEFYP012MA1M0A	12000	13500	371	265	208	1	60	0.56	15	28	28	10	66	1, 2, 4
1ADM.SSIU.02-04	TRANE / MITSUBISHI ELEC	DUCTED	TPEFYP027MA1M0A	27000	30000	883	618	208	1	60	2.50	15	44	28	10	66	1, 2, 4
1ADM.SSIU.02-05	TRANE / MITSUBISHI ELEC	DUCTED	TPEFYP006MA1M0A	6000	6700	300	210	208	1	60	1.75	15	28	28	10	50	1, 2, 3
1ADM.SSIU.02-06	TRANE / MITSUBISHI ELEC	DUCTED	TPEFYP015MA1M0A	15000	17000	484	353	208	1	60	2.50	15	36	28	10	57	1, 2, 4
1ADM.SSIU.02-07	TRANE / MITSUBISHI ELEC	DUCTED	TPEFYP030MA1M0A	30000	34000	1271	883	208	1	60	3.13	15	55	28	10	84	1, 2, 3
1ADM.SSIU.02-08	TRANE / MITSUBISHI ELEC	DUCTED	TPEFYP030MA1M0A	30000	34000	1271	883	208	1	60	3.13	15	55	28	10	84	1, 2, 3
1ADM.SSIU.02-09	TRANE / MITSUBISHI ELEC	DUCTED	TPEFYP030MA1M0A	30000	34000	1271	883	208	1	60	3.13	15	55	28	10	84	1, 2, 3
1ADM.SSIU.02-10	TRANE / MITSUBISHI ELEC	CEILING CASSETTE	TPLFYP008EM1M0A	8000	9000	600	494	208	1	60	0.39	15	33	33	10	46	1, 2, 3

COMMENTS:
1. PROVIDE CONDENSATE PUMP.
2. PROVIDE WIRED REMOTE CONTOLLER.
3. TENANT FIT-UP PHASE.
4. TENANT FIT-OUT PHASE.

VRF HEAT RECOVERY BRANCH SELECTOR SCHEDULE

MARK	MANUFACTURER	MODEL	NUMBER OF BRANCHES	REFRIGERANT	ELECTRICAL SERVICE					WEIGHT (LBS)	COMMENTS
					VOLT	PH	HZ	MCA	MOCP		
1ADM.BRCH.01-01	TRANE / MITSUBISHI ELEC	TCMBM0108MA11MM	8	R32	208	1	60	0.13	15	140	1, 2, 3
1ADM.BRCH.01-02	TRANE / MITSUBISHI ELEC	TCMBS0108MB11MM	8	R32	208	1	60	0.08	15	120	1, 2, 3
1ADM.BRCH.02-01	TRANE / MITSUBISHI ELEC	TCMBM0108MA11MM	8	R32	208	1	60	0.13	15	140	1, 2, 3
1ADM.BRCH.02-02	TRANE / MITSUBISHI ELEC	TCMBS0104MB11MM	4	R32	208	1	60	0.05	15	100	1, 2, 3

COMMENTS:
1. PROVIDE CONDENSATE PUMP
2. PROVIDE BALL VALVES AT REFRIGERANT PIPING CONNECTIONS.
3. TENANT FIT-OUT PHASE.

HUMIDIFIER SCHEDULE

TAG	MFG	MODEL	AIRFLOW (CFM)	SERVES	CAPACITY (LB/HR)	DUCTWORK AIR DRY-BULB TEMPERATURE (F)	DUCTWORK AIR HUMIDITY RATIO (GRAINS)...	ROOM DESIGN DRY-BULB...	ROOM DESIGN RELATIVE HUMIDITY (%)	DUCT WIDTH X HEIGH (INCHES)	CONTROL	ELECTRICAL DATA						NOTES
												VOLTAGE	PHASE	FREQUENCY	POWER (KW)	MOCP	MCA	
1NH.HUM.01	COND AIR	EL 050	2,000	SUITE A	40	77.5	14.6	80	35	20 X 18	MODULATING	480	3	60	18.7	30	22.5	ALL
1NH.HUM.02	COND AIR	EL 050	2,000	SUITE A	40	77.5	14.6	80	35	20 X 18	MODULATING	480	3	60	18.7	30	22.5	ALL
1DHA.HUM.01	COND AIR	EL 050	2,000	SUITE B	40	77.5	14.6	80	35	20 X 18	MODULATING	480	3	60	18.7	30	22.5	ALL
1DHA.HUM.02	COND AIR	EL 050	2,000	SUITE B	40	77.5	14.6	80	35	20 X 18	MODULATING	480	3	60	18.7	30	22.5	ALL
1DHB.HUM.01	COND AIR	EL 051	2,000	SUITE C	40	77.5	14.6	80	35	20 X 18	MODULATING	480	3	60	18.7	30	22.5	ALL
1DHB.HUM.02	COND AIR	EL 050	2,000	SUITE C	40	77.5	14.6	80	35	20 X 18	MODULATING	480	3	60	18.7	30	22.5	ALL
1DHC.HUM.01	COND AIR	EL 050	2,000	SUITE D	40	77.5	14.6	80	35	20 X 18	MODULATING	480	3	60	18.7	30	22.5	ALL
1DHC.HUM.02	COND AIR	EL 050	2,000	SUITE D	40	77.5	14.6	80	35	20 X 18	MODULATING	480	3	60	18.7	30	22.5	ALL

NOTES
1. PROVIDE ELECTRODE STEAM HUMIDIFIER AS INDICATED ON PLANS.
2. HUMIDIFIER SHALL BE COMPLETE WITH STEAM GENERATING UNIT, STEAM DISPERSION MANIFOLD, CONTROLS PACKAGE, CYLINDER, VALVES AND ACCESSORIES REQUIRED FOR A COMPLETE OPERATING SYSTEM.
3. HUMIDIFIER CAPACITY IS BASED ON WINTER DESIGN CONDITION AND SHALL MAINTAIN A MAX TEMPERATURE OF 80F DB AND 35%RH AT FULL DESIGN AIRFLOW.
4. UNIT SHALL BE FULLY MODULATING AND COMPATIBLE WITH BAS VIA BACNET OR APPROVED PROTOCOL.
5. PROVIDE SERVICE CLEARANCE PER MANUFACTURER REQUIREMENTS FOR CYLINDER REPLACEMENT AND MAINTENANCE.
6. PROVIDE STEAM DISPERSION MANIFOLD, FILL AND DRAIN VALVES AND ALL INTERNAL CONTROLS REQUIRED FOR OPERATION.
7. UNIT SHALL OPERATE ON POTABLE WATER WITHOUT NEED FOR EXTERNAL WATER TREATMENT UNLESS REQUIRED BY MANUFACTURER.
8. CONTRACTOR SHALL SUBMIT CAPACITY VERIFICATION, ELECTRICAL REQUIREMENTS, ABSORPTION DISTANCE DATE AND INSTALLATION REQUIREMENTS.
9. HUMIDIFIERS SHALL BE PROVIDED IN REDUNDANT PARALLEL ARRANGEMENT PER SUITE SUPPLY BRANCH. EACH SHALL BE SIZED FOR 100% HUMIDIFICATION LOAD.
10. UPON FAILURE OF ONE OF ONE HUMIDIFIER, REMAINING UNIT SHALL MAINTAIN SPACE RH ABOVE 20%. BOTH UNITS SHALL OPERATE IN UNDER NORMAL DESIGN CONDITIONS AND SHALL BE BAS INTEGRATED FOR ENABLE, STATUS, CAPACTY COMMAND AND ALARM.

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FIRM CERTIFICATE OF AUTHORIZATION: CA-1276

PROFESSIONAL SEAL

CHRISTOPHER S. ANTUNEZ LICENSE No. 70102 STATE OF FLORIDA PROFESSIONAL ENGINEER

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PROJECT SUNSHINE

BUILDING 1

810 PACE RD,
AUBURNDALE, FL 33823

ISSUE DATE	DESCRIPTION
09/21/2026	REVISED FIT-UP IFP

Δ	DESCRIPTION	DATE

ISSUE:

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SHEET TITLE

MECHANICAL SCHEDULES

SHEET NUMBER
BLDG1-M605

COMPUTER ROOM AIR HANDLING UNIT SUITE A

MARK	MANUFACTURER	UNIT PERFORMANCE					UNIT ELECTRICAL DATA						SUPPLY FAN			CHILLED WATER COIL							FLUID	COMMENTS
		RETURN ACFM	SUPPLY ACFM	RETURN TEMP (db, °F)	SUPPLY TEMP (db, °F)	HEAT REJ. (KW NET)	VOLT	HZ	PHASE	FLA	MCA	MOP	ESP (IN WG)	QUANTITY	OPERATING HP (PER FAN)	EAT (°F)	LAT (°F)	EWT (°F)	LWT (°F)	CAPACITY (MBH)	GPM	WPD (FT WG)		
CRAH-NH-0101	Daedex	72500	72500	104	81.2	509	460	60	3	49	52	65	0.25	5	8.73	104	79.7	70	96	1950.7	150	15	WATER	ALL
CRAH-NH-0102	Daedex	72500	72500	104	81.2	509	460	60	3	49	52	65	0.25	5	8.73	104	79.7	70	96	1950.7	150	15	WATER	ALL
CRAH-NH-0103	Daedex	72500	72500	104	81.2	509	460	60	3	49	52	65	0.25	5	8.73	104	79.7	70	96	1950.7	150	15	WATER	ALL
CRAH-NH-0104	Daedex	72500	72500	104	81.2	509	460	60	3	49	52	65	0.25	5	8.73	104	79.7	70	96	1950.7	150	15	WATER	ALL
CRAH-NH-0105	Daedex	72500	72500	104	81.2	509	460	60	3	49	52	65	0.25	5	8.73	104	79.7	70	96	1950.7	150	15	WATER	ALL
CRAH-NH-0106	Daedex	72500	72500	104	81.2	509	460	60	3	49	52	65	0.25	5	8.73	104	79.7	70	96	1950.7	150	15	WATER	ALL
CRAH-NH-0107	Daedex	72500	72500	104	81.2	509	460	60	3	49	52	65	0.25	5	8.73	104	79.7	70	96	1950.7	150	15	WATER	ALL
CRAH-NH-0108	Daedex	72500	72500	104	81.2	509	460	60	3	49	52	65	0.25	5	8.73	104	79.7	70	96	1950.7	150	15	WATER	ALL
CRAH-NH-0109	Daedex	72500	72500	104	81.2	509	460	60	3	49	52	65	0.25	5	8.73	104	79.7	70	96	1950.7	150	15	WATER	ALL
CRAH-NH-0110	Daedex	72500	72500	104	81.2	509	460	60	3	49	52	65	0.25	5	8.73	104	79.7	70	96	1950.7	150	15	WATER	ALL
CRAH-NH-0111	Daedex	72500	72500	104	81.2	509	460	60	3	49	52	65	0.25	5	8.73	104	79.7	70	96	1950.7	150	15	WATER	ALL
CRAH-NH-0112	Daedex	72500	72500	104	81.2	509	460	60	3	49	52	65	0.25	5	8.73	104	79.7	70	96	1950.7	150	15	WATER	ALL
CRAH-NH-0113	Daedex	72500	72500	104	81.2	509	460	60	3	49	52	65	0.25	5	8.73	104	79.7	70	96	1950.7	150	15	WATER	ALL
CRAH-NH-0114	Daedex	72500	72500	104	81.2	509	460	60	3	49	52	65	0.25	5	8.73	104	79.7	70	96	1950.7	150	15	WATER	ALL
CRAH-NH-0115	Daedex	72500	72500	104	81.2	509	460	60	3	49	52	65	0.25	5	8.73	104	79.7	70	96	1950.7	150	15	WATER	ALL
CRAH-NH-0116	Daedex	72500	72500	104	81.2	509	460	60	3	49	52	65	0.25	5	8.73	104	79.7	70	96	1950.7	150	15	WATER	ALL
CRAH-NH-0117	Daedex	72500	72500	104	81.2	509	460	60	3	49	52	65	0.25	5	8.73	104	79.7	70	96	1950.7	150	15	WATER	ALL
CRAH-NH-0118	Daedex	72500	72500	104	81.2	509	460	60	3	49	52	65	0.25	5	8.73	104	79.7	70	96	1950.7	150	15	WATER	ALL
CRAH-NH-0119	Daedex	72500	72500	104	81.2	509	460	60	3	49	52	65	0.25	5	8.73	104	79.7	70	96	1950.7	150	15	WATER	ALL
CRAH-NH-0120	Daedex	72500	72500	104	81.2	509	460	60	3	49	52	65	0.25	5	8.73	104	79.7	70	96	1950.7	150	15	WATER	ALL
CRAH-NH-0121	Daedex	72500	72500	104	81.2	509	460	60	3	49	52	65	0.25	5	8.73	104	79.7	70	96	1950.7	150	15	WATER	ALL
CRAH-NH-0122	Daedex	72500	72500	104	81.2	509	460	60	3	49	52	65	0.25	5	8.73	104	79.7	70	96	1950.7	150	15	WATER	ALL
CRAH-NH-0123	Daedex	72500	72500	104	81.2	509	460	60	3	49	52	65	0.25	5	8.73	104	79.7	70	96	1950.7	150	15	WATER	ALL
CRAH-NH-0124	Daedex	72500	72500	104	81.2	509	460	60	3	49	52	65	0.25	5	8.73	104	79.7	70	96	1950.7	150	15	WATER	ALL
CRAH-NH-0125	Daedex	72500	72500	104	81.2	509	460	60	3	49	52	65	0.25	5	8.73	104	79.7	70	96	1950.7	150	15	WATER	ALL
CRAH-NH-0126	Daedex	72500	72500	104	81.2	509	460	60	3	49	52	65	0.25	5	8.73	104	79.7	70	96	1950.7	150	15	WATER	ALL
CRAH-NH-0127	Daedex	72500	72500	104	81.2	509	460	60	3	49	52	65	0.25	5	8.73	104	79.7	70	96	1950.7	150	15	WATER	ALL
CRAH-NH-0128	Daedex	72500	72500	104	81.2	509	460	60	3	49	52	65	0.25	5	8.73	104	79.7	70	96	1950.7	150	15	WATER	ALL
CRAH-NH-0129	Daedex	72500	72500	104	81.2	509	460	60	3	49	52	65	0.25	5	8.73	104	79.7	70	96	1950.7	150	15	WATER	ALL
CRAH-NH-0130	Daedex	72500	72500	104	81.2	509	460	60	3	49	52	65	0.25	5	8.73	104	79.7	70	96	1950.7	150	15	WATER	ALL
CRAH-NH-0131	Daedex	72500	72500	104	81.2	509	460	60	3	49	52	65	0.25	5	8.73	104	79.7	70	96	1950.7	150	15	WATER	ALL
CRAH-NH-0132	Daedex	72500	72500	104	81.2	509	460	60	3	49	52	65	0.25	5	8.73	104	79.7	70	96	1950.7	150	15	WATER	ALL
CRAH-NH-0133	Daedex	72500	72500	104	81.2	509	460	60	3	49	52	65	0.25	5	8.73	104	79.7	70	96	1950.7	150	15	WATER	ALL
CRAH-NH-0134	Daedex	72500	72500	104	81.2	509	460	60	3	49	52	65	0.25	5	8.73	104	79.7	70	96	1950.7	150	15	WATER	ALL
CRAH-NH-0135	Daedex	72500	72500	104	81.2	509	460	60	3	49	52	65	0.25	5	8.73	104	79.7	70	96	1950.7	150	15	WATER	ALL
CRAH-NH-0136	Daedex	72500	72500	104	81.2	509	460	60	3	49	52	65	0.25	5	8.73	104	79.7	70	96	1950.7	150	15	WATER	ALL
CRAH-NH-0137	Daedex	72500	72500	104	81.2	509	460	60	3	49	52	65	0.25	5	8.73	104	79.7	70	96	1950.7	150	15	WATER	ALL
CRAH-NH-0138	Daedex	72500	72500	104	81.2	509	460	60	3	49	52	65	0.25	5	8.73	104	79.7	70	96	1950.7	150	15	WATER	ALL
CRAH-NH-0139	Daedex	72500	72500	104	81.2	509	460	60	3	49	52	65	0.25	5	8.73	104	79.7	70	96	1950.7	150	15	WATER	ALL
CRAH-NH-0140	Daedex	72500	72500	104	81.2	509	460	60	3	49	52	65	0.25	5	8.73	104	79.7	70	96	1950.7	150	15	WATER	ALL
CRAH-NH-0141	Daedex	72500	72500	104	81.2	509	460	60	3	49	52	65	0.25	5	8.73	104	79.7	70	96	1950.7	150	15	WATER	ALL
CRAH-NH-0142	Daedex	72500	72500	104	81.2	509	460	60	3	49	52	65	0.25	5	8.73	104	79.7	70	96	1950.7	150	15	WATER	ALL
CRAH-NH-0143	Daedex	72500	72500	104	81.2	509	460	60	3	49	52	65	0.25	5	8.73	104	79.7	70	96	1950.7	150	15	WATER	ALL
CRAH-NH-0144	Daedex	72500	72500	104	81.2	509	460	60	3	49	52	65	0.25	5	8.73	104	79.7	70	96	1950.7	150	15	WATER	ALL
CRAH-NH-0145	Daedex	72500	72500	104	81.2	509	460	60	3	49	52	65	0.25	5	8.73	104	79.7	70	96	1950.7	150	15	WATER	ALL
CRAH-NH-0146	Daedex	72500	72500	104	81.2	509	460	60	3	49	52	65	0.25	5	8.73	104	79.7	70	96	1950.7	150	15	WATER	ALL
CRAH-NH-0147	Daedex	72500	72500	104	81.2	509	460	60	3	49	52	65	0.25	5	8.73	104	79.7	70	96	1950.7	150	15	WATER	ALL
CRAH-NH-0148	Daedex	72500	72500	104	81.2	509	460	60	3	49	52	65	0.25	5	8.73	104	79.7	70	96	1950.7	150	15	WATER	ALL
CRAH-NH-0149	Daedex	72500	72500	104	81.2	509	460	60	3	49	52	65	0.25	5	8.73	104	79.7	70	96	1950.7	150	15	WATER	ALL
CRAH-NH-0150	Daedex	72500	72500	104	81.2	509	460	60	3	49	52	65	0.25	5	8.73	104	79.7	70	96	1950.7	150	15	WATER	ALL
CRAH-NH-0151	Daedex	72500	72500	104	81.2	509	460	60	3	49	52	65	0.25	5	8.73	104	79.7	70	96	1950.7	150	15	WATER	ALL
CRAH-NH-0152	Daedex	72500	72500	104	81.2	509	460	60	3	49	52	65	0.25	5	8.73	104	79.7	70	96	1950.7	150	15	WATER	ALL
CRAH-NH-0153	Daedex	72500	72500	104	81.2	509	460	60	3	49	52	65	0.25	5	8.73	104	79.7	70	96	1950.7	150	15	WATER	ALL
CRAH-NH-0154	Daedex	72500	72500	104	81.2	509	460	60	3	49	52	65	0.25	5	8.73	104	79.7	70	96	1950.7	150	15	WATER	ALL

NOTES:
1. PROVIDE WITH ECM FANS, CONSTANT VOLUME CONTROL WITH MODULATING PICV.
2. PROVIDE UNIT WITH SINGLE POINT POWER WITH FACTORY LOCKABLE DISCONNECT.
3. INTEGRATE FACTORY MOUNTED CONTROLLER WITH INTO BAS.
4. PROVIDE SPRING ISOLATOR HANGERS.
5. PROVIDE MERV 8, SIDE LOADING FILTERS.
6. CONTROL PANEL SHOULD BE LOCATED ON THE SHORT END, PERPENDICULAR TO THE AISLE TO ENSURE PROPER CLEARANCE.
7. UNITS SHOULD BE MANUFACTURED SO THAT COILS AND FAN MOTOR REPLACEMENT IS POSSIBLE FROM THE BASE OF THE UNIT.

COMPUTER ROOM AIR HANDLING UNIT SUITE B

MARK	MANUFACTURER	UNIT PERFORMANCE					UNIT ELECTRICAL DATA						SUPPLY FAN			CHILLED WATER COIL							FLUID	COMMENTS
		RETURN ACFM	SUPPLY ACFM	RETURN TEMP (db, °F)	SUPPLY TEMP (db, °F)	HEAT REJ. (KW NET)	VOLT	HZ	PHASE	FLA	MCA	MOP	ESP (IN WG)	QUANTITY	OPERATING HP (PER FAN)	EAT (°F)	LAT (°F)	EWT (°F)	LWT (°F)	CAPACITY (MBH)	GPM	WPD (FT WG)		
CRAH-DHA-0101	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHA-0102	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHA-0103	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHA-0104	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHA-0105	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHA-0106	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHA-0107	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHA-0108	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHA-0109	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHA-0110	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHA-0111	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHA-0112	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHA-0113	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHA-0114	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHA-0115	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHA-0116	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHA-0117	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHA-0118	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHA-0119	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHA-0120	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHA-0121	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHA-0122	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHA-0123	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHA-0124	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHA-0125	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHA-0126	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHA-0127	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHA-0128	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHA-0129	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHA-0130	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHA-0131	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHA-0132	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHA-0133	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHA-0134	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHA-0135	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHA-0136	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHA-0137	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHA-0138	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHA-0139	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHA-0140	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHA-0141	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHA-0142	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHA-0143	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHA-0144	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHA-0145	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHA-0146	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHA-0147	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHA-0148	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL

NOTES:
1. PROVIDE WITH ECM FANS, CONSTANT VOLUME CONTROL WITH MODULATING PICV.
2. PROVIDE UNIT WITH SINGLE POINT POWER WITH FACTORY LOCKABLE DISCONNECT.
3. INTEGRATE FACTORY MOUNTED CONTROLLER WITH INTO BAS.
4. PROVIDE SPRING ISOLATOR HANGERS.
5. PROVIDE MERV 8, SIDE LOADING FILTERS.
6. CONTROL PANEL SHOULD BE LOCATED ON THE SHORT END, PERPENDICULAR TO THE AISLE TO ENSURE PROPER CLEARANCE.
7. UNITS SHOULD BE MANUFACTURED SO THAT COILS AND FAN MOTOR REPLACEMENT IS POSSIBLE FROM THE BASE OF THE UNIT.

NOTE:

EQUIPMENT ON THIS SHEET PROGRAMMED FOR FUTURE TENANT FIT OUT

Salas O'Brien

salasobrien.com 615.346.3400

Nashville
2950 Kraft Drive
Nashville, TN 37204

FIRM CERTIFICATE OF AUTHORIZATION: CA-1276

PROFESSIONAL SEAL

CHRISTOPHER S. ASHURST LICENSE No. 70102 STATE OF FLORIDA PROFESSIONAL ENGINEER

NUCLEI

PROJECT SUNSHINE

BUILDING 1

810 PACE RD.
AUBURNDALE, FL 33823

ISSUE DATE	DESCRIPTION
09/21/2026	REVISED FIT-UP IFP

Δ	DESCRIPTION	DATE

ISSUE:

PROJ NO
2540-01309

CHECKED BY: DHW
DRAWN BY: TKP

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SHEET TITLE

MECHANICAL SCHEDULES

SHEET NUMBER

BLDG1-M606

TYPICAL CDU

MANUFACTURER	VERTIV
MODEL	XDU2300
QUANTITY	192
APPROX SIZE (W X L X H) (IN.)	48 X 49 X 91
MAX WEIGHT	
CONFIGURATION	TOP CONNECTIONS
NET COOLING CAPACITY	1.1 MW
PRIMARY SIDE	
FLUID	WATER
EWT/ LWT (°F)	70 / 97
GPM	280
MAX DP PSI	10
SECONDARY SIDE	
FLUID	PG25
EWT/ LWT (°F)	104/86
FLOW (LPM/KW)	1.5
MIN REQUIRED ESP (PSI)	45
PUMP SPEED	100
TOTAL PUMP POWER	26

NOTES:
1. PROVIDE 25 µm 95% EFFECTIVE FILTRATION ON SECONDARY SIDE.
2. PROVIDE PUMPS ON VARIABLE SPEED DRIVES
3. ALL SECONDARY SIDE WETTED COMPONENTS TO BE COMPATIBLE WITH DOWFROST LC 25
4. SECONDARY LOOP PIPING TO BE STAINLESS STEEL.

COMPUTER ROOM AIR HANDLING UNIT SUITE C

		UNIT PERFORMANCE					UNIT ELECTRICAL DATA						SUPPLY FAN			CHILLED WATER COIL								
MARK	MANUFACTURER	RETURN ACFM	SUPPLY ACFM	RETURN TEMP (db, °F)	SUPPLY TEMP (db, °F)	HEAT REJ. (KW NET)	VOLT	HZ	PHASE	FLA	MCA	MOP	ESP (IN WG)	QUANTITY	OPERATING HP (PER FAN)	EAT (°F)	LAT (°F)	EWT (°F)	LWT (°F)	CAPACITY (MBH)	GPM	WPD (FT WG)	FLUID	COMMENTS
CRAH-DHB-0101	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHB-0102	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHB-0103	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHB-0104	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHB-0105	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHB-0106	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHB-0107	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHB-0108	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHB-0109	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHB-0110	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHB-0111	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHB-0112	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHB-0113	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHB-0114	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHB-0115	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHB-0116	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHB-0117	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHB-0118	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHB-0119	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHB-0120	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHB-0121	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHB-0122	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHB-0123	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHB-0124	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHB-0125	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHB-0126	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHB-0127	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHB-0128	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHB-0129	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHB-0130	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHB-0131	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHB-0132	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHB-0133	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHB-0134	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHB-0135	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHB-0136	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHB-0137	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHB-0138	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHB-0139	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHB-0140	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHB-0141	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHB-0142	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHB-0143	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHB-0144	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHB-0145	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHB-0146	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHB-0147	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHB-0148	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL

NOTES:
1. PROVIDE WITH ECM FANS, CONSTANT VOLUME CONTROL WITH MODULATING PICV.
2. PROVIDE UNIT WITH SINGLE POINT POWER WITH FACTORY LOCKABLE DISCONNECT.
3. INTEGRATE FACTORY MOUNTED CONTROLLER WITH INTO BAS.
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5. PROVIDE MERV 8, SIDE LOADING FILTERS.
6. CONTROL PANEL SHOULD BE LOCATED ON THE SHORT END, PERPENDICULAR TO THE AISLE TO ENSURE PROPER CLEARANCE.
7. UNITS SHOULD BE MANUFACTURED SO THAT COILS AND FAN MOTOR REPLACEMENT IS POSSIBLE FROM THE BASE OF THE UNIT.

COMPUTER ROOM AIR HANDLING UNIT SUITE D

		UNIT PERFORMANCE					UNIT ELECTRICAL DATA						SUPPLY FAN			CHILLED WATER COIL								
MARK	MANUFACTURER	RETURN ACFM	SUPPLY ACFM	RETURN TEMP (db, °F)	SUPPLY TEMP (db, °F)	HEAT REJ. (KW NET)	VOLT	HZ	PHASE	FLA	MCA	MOP	ESP (IN WG)	QUANTITY	OPERATING HP (PER FAN)	EAT (°F)	LAT (°F)	EWT (°F)	LWT (°F)	CAPACITY (MBH)	GPM	WPD (FT WG)	FLUID	COMMENTS
CRAH-DHC-0101	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHC-0102	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHC-0103	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHC-0104	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHC-0105	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHC-0106	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHC-0107	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHC-0108	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHC-0109	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHC-0110	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHC-0111	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHC-0112	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHC-0113	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHC-0114	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHC-0115	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHC-0116	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHC-0117	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHC-0118	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHC-0119	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHC-0120	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHC-0121	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHC-0122	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHC-0123	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHC-0124	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHC-0125	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHC-0126	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHC-0127	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHC-0128	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHC-0129	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHC-0130	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHC-0131	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHC-0132	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHC-0133	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHC-0134	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHC-0135	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHC-0136	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHC-0137	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHC-0138	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHC-0139	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHC-0140	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHC-0141	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHC-0142	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHC-0143	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHC-0144	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHC-0145	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHC-0146	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHC-0147	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL
CRAH-DHC-0148	Daedex	55000	55000	104	81.6	380.1	460	60	3	34.8	37	50	0.25	4	7.65	104	80.6	70	96.2	1425	110	15	WATER	ALL

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NOTE:
EQUIPMENT ON THIS SHEET PROGRAMMED FOR FUTURE TENANT FIT OUT

Salas O'Brien
salasobrien.com 615.346.3400
Nashville
2950 Kraft Drive
Nashville, TN 37204
FIRM CERTIFICATE OF AUTHORIZATION: CA-1276

PROFESSIONAL SEAL

CHRISTOPHER S. ANDERSON LICENSE No. 70102 STATE OF FLORIDA PROFESSIONAL ENGINEER

NUCLEI

PROJECT SUNSHINE

BUILDING 1
810 PACE RD.
AUBURNDALE, FL 33823

ISSUE DATE	DESCRIPTION
09/21/2026	REVISED FIT-UP IFP

Δ	DESCRIPTION	DATE

ISSUE:

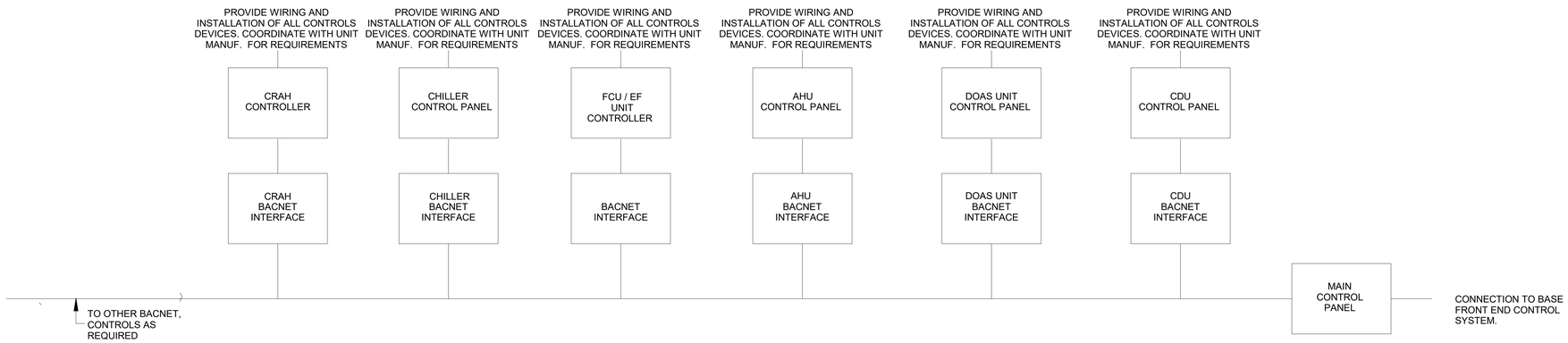
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SHEET TITLE
MECHANICAL SCHEDULES

SHEET NUMBER
BLDG1-M607



SYSTEM RISER DIAGRAM

PROVIDE MULTIPLE CONTROL PANELS AND DEVICES AS REQUIRED FOR SYSTEM OPERATION AND FUNCTIONING. DIAGRAM IS INTENDED ONLY AS GENERAL CONCEPT OF MAJOR SYSTEM LAYOUT

HVAC CONTROLS GENERAL NOTES:

1. ALL HVAC CONTROLS SHALL COMMUNICATE BACK TO BUILDING AUTOMATION SYSTEM CONTROL PANEL AND BASE FRONT END LOCATED AS INDICATED IN THE RFP. CONTROL CONTRACTOR SHALL CONFIRM ALL REQUIRED WIRING, COMMUNICATIONS, CONTROLLERS AND DEVICES REQUIRED FOR THIS INTERFACE.
2. CONTROLS CONTRACTOR SHALL REVIEW ALL REQUIRED CONTROLS. CONTRACTOR WILL BE EXPECTED TO COMPLY WITH ALL POINTS, CONTROL SEQUENCES AND DEVICES SHOWN IN THE RFP, DRAWINGS, AND SPECIFICATIONS AND DEMONSTRATE ALL POINTS AND SEQUENCES DURING THE COMMISSIONING PROCESS.
3. DRAWINGS DO NOT SHOW AND DO NOT INTEND TO SHOW ALL CONTROL DEVICES REQUIRED. CONTROLS CONTRACTOR SHALL PROVIDE ALL ADDITIONAL GATEWAYS, SENSORS, WIRING, RELAYS, ETC. TO ACCOMPLISH CONTROL SEQUENCES INDICATED IN THE RFP, DRAWINGS, SPECIFICATIONS, AND DESIGN ANALYSIS AND COMMUNICATION WITH BUILDING AUTOMATION SYSTEM.
4. WIRING AND CONTROLS SHALL BE DONE IN STRICT ADHERENCE TO MANUFACTURER REQUIREMENTS.
5. CONTROLS CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING SURE ALL SYSTEMS INCLUDING SPECIFIC DEVICES & CONTROLS ARE PROPERLY INSTALLED AND COMMUNICATING WITH BUILDING AUTOMATION SYSTEM CONTROL PANEL AND CAMPUS FRONT END SYSTEMS.
6. ONE 120V & ONE DATA CONNECTION HAS BEEN PROVIDED AT MAIN CONTROL PANEL. CONTROLS CONTRACTOR SHALL EXTEND 24V & DATA CONNECTION AS REQUIRED AND SHALL COORDINATED ANY NECESSARY 120V WITH THE ELECTRICAL CONTRACTOR.
7. ALL CONTROL PARAMETERS & SETPOINTS SHALL BE FULLY ADJUSTABLE THROUGH THE BUILDING AUTOMATION SYSTEM CONTROL PANEL.
8. SEE ALL PLANS SCHEDULES AND NOTES IN OTHER SECTIONS OF THE DRAWINGS FOR OTHER ADDITIONAL ITEMS NOT REFLECTED ON CONTROL DRAWINGS

INSTRUMENT ABBREVIATIONS & PIPING SYMBOL LEGEND

PRV	PRESSURE REGULATING VALVE		CHECK VALVE
NC	NORMALLY CLOSED		ISOLATION VALVE
DDC	DIGITAL CONTROL SYSTEM		AUTO CONTROL VALVE
TT	TEMPERATURE TRANSMITTER		SOLENOID VALVE
DPT	DIFFERENTIAL PRESSURE TRANSMITTER		FLANGED CONNECTION
			FLOW METER
PI	PRESSURE INDICATOR		PRESSURE RELIEF VALVE
			PRESSURE REGULATING VALVE
FS	FLOW SWITCH		INSTRUMENTELECTRICAL DIGITAL SIGNAL
FM	FLOW METER		PUMP
FT	FLOW TRANSMITTER	VFD	VARIABLE FREQENCY DRIVE
TI	TEMPERATURE INDICATOR	M	ELECTRIC MOTOR
	DRAIN VALVE		FLEX CONNECTION
	AUTOMATIC AIR VENT		AIR SEPARATOR

CONTROLS LEGEND

AI	ANALOG INPUT
AO	ANALOG OUTPUT
BI	BINARY INPUT
BO	BINARY OUTPUT
AF	AIRFLOW SENSOR
VC	AIR VALVE CONTROL
ECM	ELECTRONICALLY COMMUTATED MOTOR
VFD	VARIABLE FREQUENCY DRIVE
TE	TEMPERATURE SENSOR
TEH	TEMPERATURE/HUMIDITY SENSOR
CO2	CARBON DIOXIDE SENSOR
CHWS	CHILLED WATER SUPPLY
CHWR	CHILLED WATER RETURN

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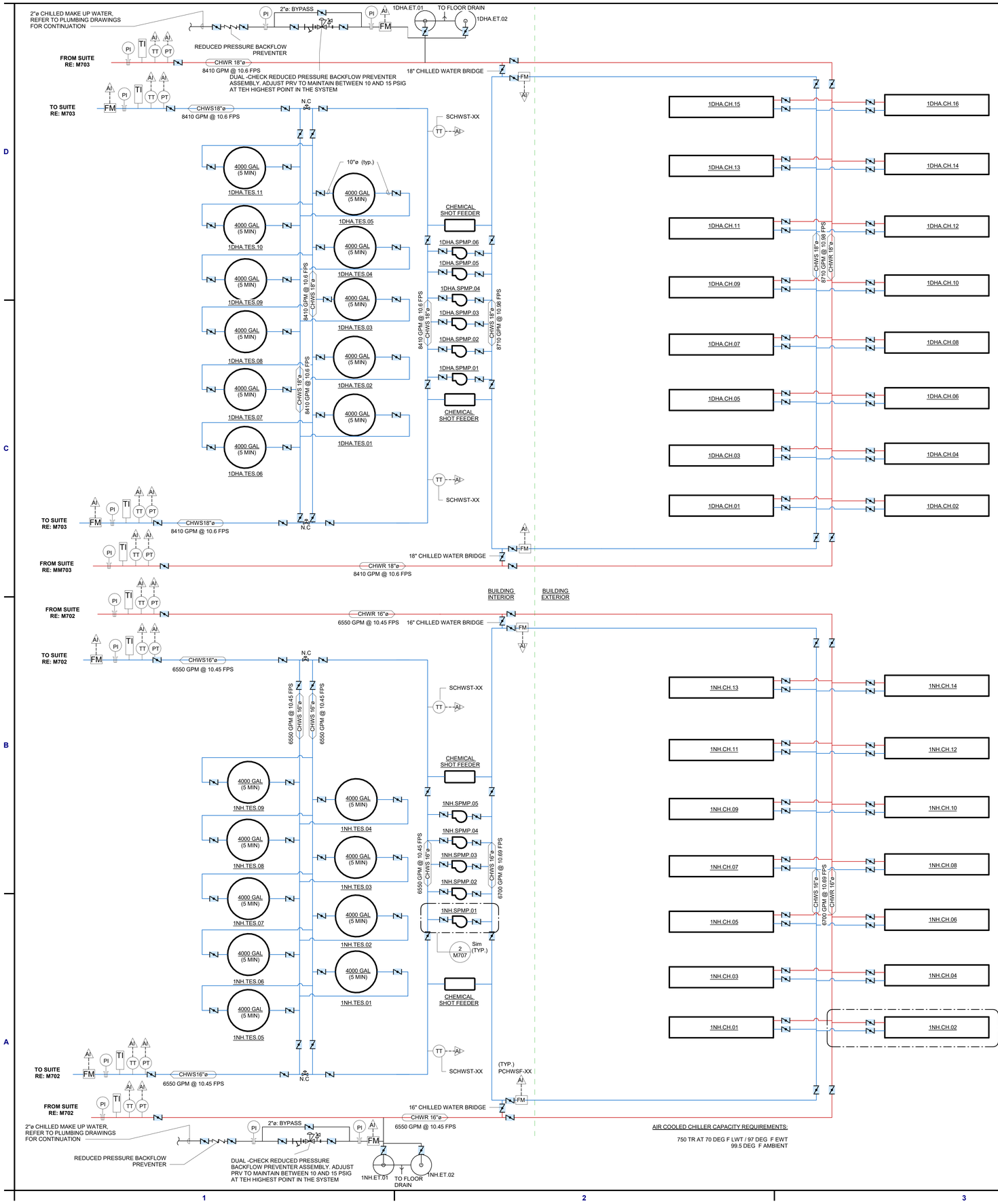
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SHEET TITLE

CONTROLS NOTES AND LEGENDS

SHEET NUMBER
BLDG1-M700



AIR COOLED CHILLER CAPACITY REQUIREMENTS:

750 TR AT 70 DEG F LWT / 97 DEG F EWT
99.5 DEG F AMBIENT

1 PHASE 1 CENTRAL PLANT

SCALE: 1 1/2" = 1'-0"

SYMBOLS & ABBREVIATIONS

	BUTTERFLY VALVE
	RELIEF VALVE
	3-WAY VALVE
CHWS	CHILLED WATER SUPPLY
CHWR	CHILLED WATER RETURN
ET	EXPANSION TANK
ACC	AIR COOLED CHILLER
TES	THERMAL ENERGY STORAGE TANK
PCWP	PRIMARY CHILLED WATER PUMP
SCWP	SECONDARY CHILLED WATER PUMP
HDS	HYDRAULIC BRIDGE / SEPARATOR
ZV	AUTO CONTROL VALVE
	DRAIN VALVE
	AUTOMATIC AIR VENT

CONTROLS LEGEND

AI	ANALOG INPUT
AO	ANALOG OUTPUT
BI	BINARY INPUT
BO	BINARY OUTPUT
AF	AIRFLOW SENSOR
VC	AIR VALVE CONTROL
ECM	ELECTRONICALLY COMMUTATED MOTOR
VFD	VARIABLE FREQUENCY DRIVE
TE	TEMPERATURE SENSOR
TEH	TEMPERATURE/HUMIDITY SENSOR
CO2	CARBON DIOXIDE SENSOR
ET	EXPANSION TANK

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SHEET TITLE

MECHANICAL DIAGRAMS

SHEET NUMBER
BLDG1-M701



1 24 MW SUITE A FLOW DIAGRAM - FUTURE TENANT FIT OUT

SCALE: 1 1/2" = 1'-0"

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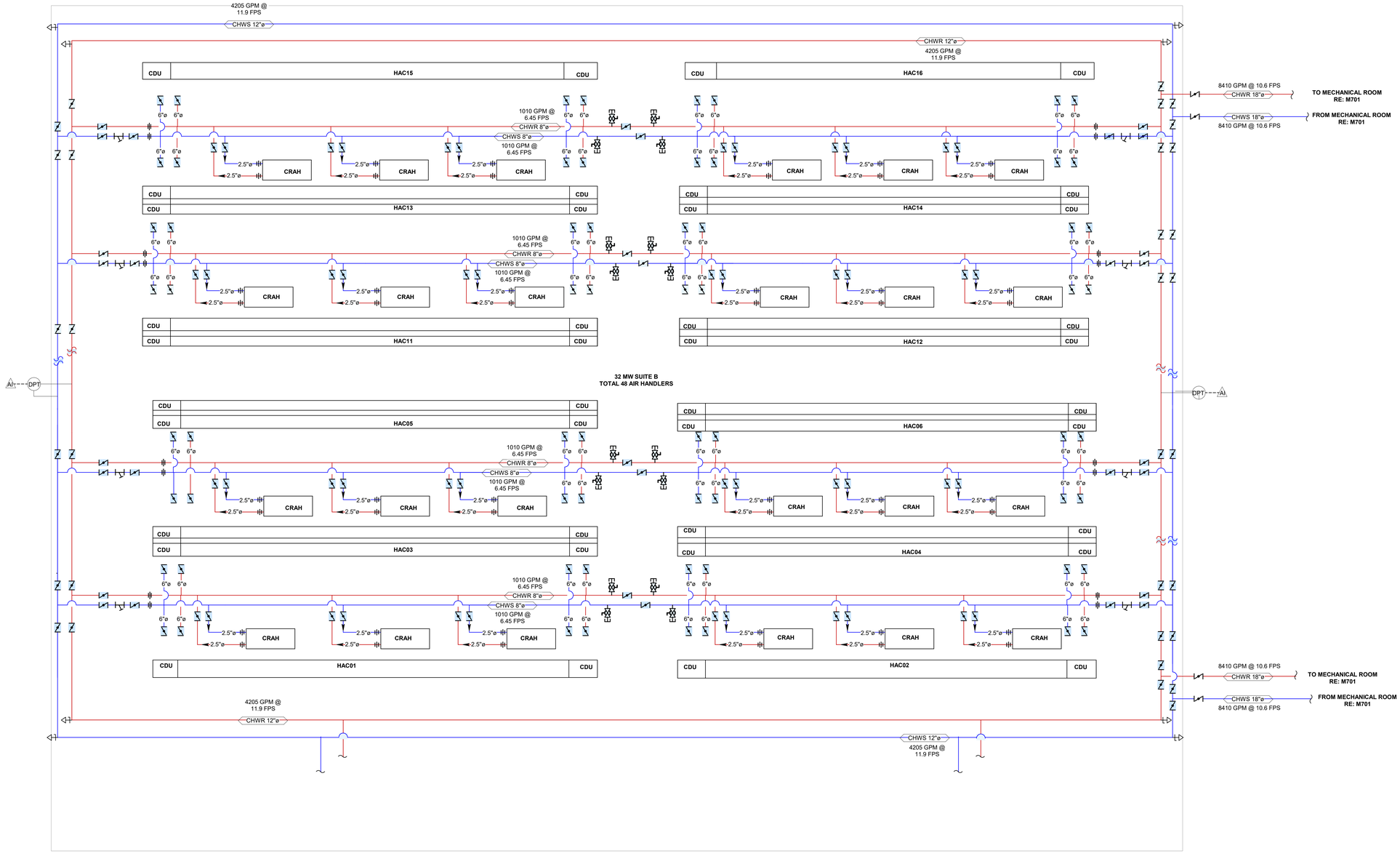
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SHEET TITLE

MECHANICAL DIAGRAMS

SHEET NUMBER

BLDG1-M702



1 32 MW SUITE B FLOW DIAGRAM - FUTURE TENANT FIT OUT

SCALE: 1 1/2" = 1'-0"

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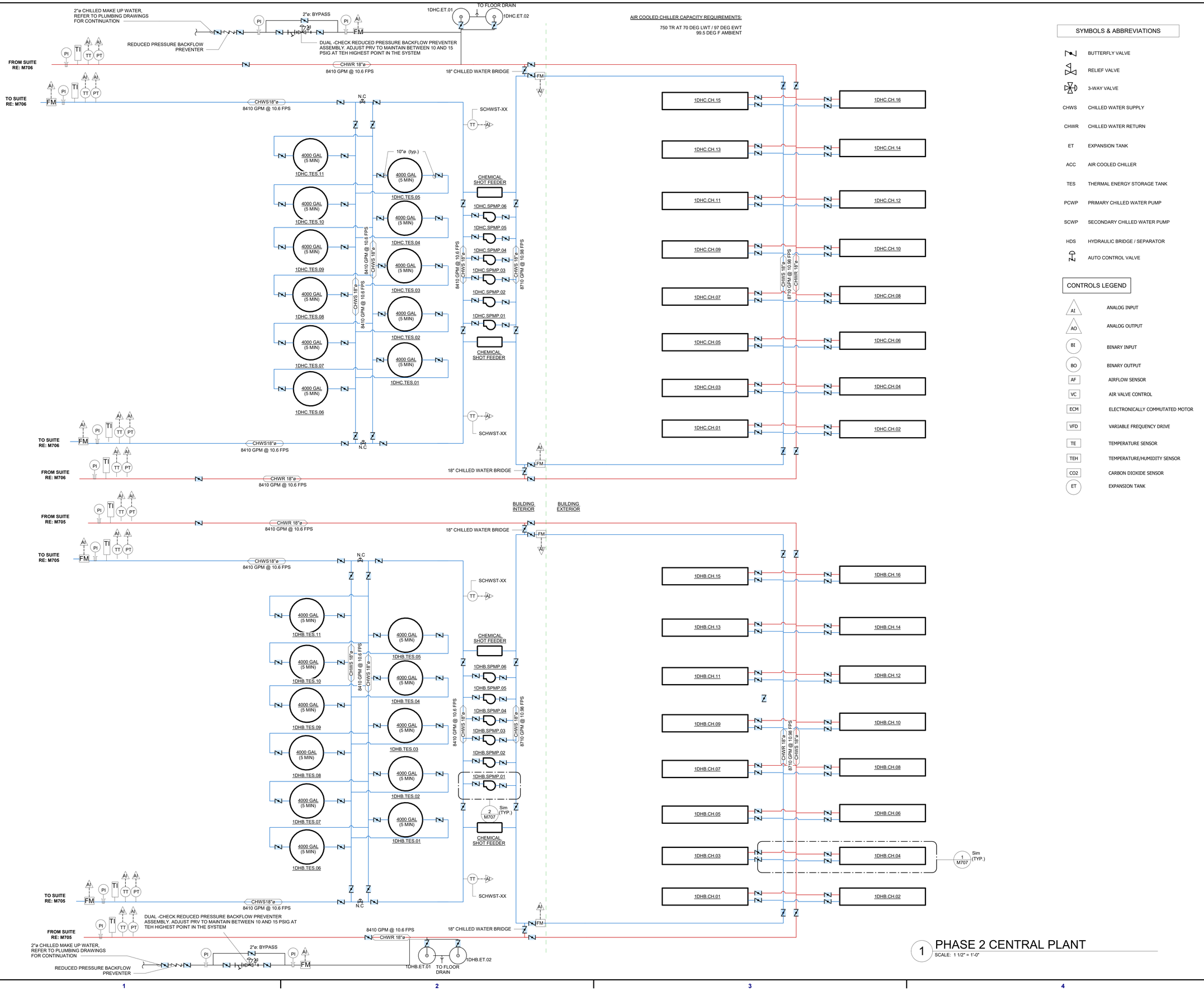
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SHEET TITLE

MECHANICAL DIAGRAMS

SHEET NUMBER

BLDG1-M703



1 PHASE 2 CENTRAL PLANT

SCALE: 1 1/2" = 1'-0"

SYMBOLS & ABBREVIATIONS

	BUTTERFLY VALVE
	RELIEF VALVE
	3-WAY VALVE
CHWS	CHILLED WATER SUPPLY
CHWR	CHILLED WATER RETURN
ET	EXPANSION TANK
ACC	AIR COOLED CHILLER
TES	THERMAL ENERGY STORAGE TANK
PCWP	PRIMARY CHILLED WATER PUMP
SCWP	SECONDARY CHILLED WATER PUMP
HDS	HYDRAULIC BRIDGE / SEPARATOR
	AUTO CONTROL VALVE

CONTROLS LEGEND

AI	ANALOG INPUT
AO	ANALOG OUTPUT
BI	BINARY INPUT
BO	BINARY OUTPUT
AF	AIRFLOW SENSOR
VC	AIR VALVE CONTROL
ECM	ELECTRONICALLY COMMUTATED MOTOR
VFD	VARIABLE FREQUENCY DRIVE
TE	TEMPERATURE SENSOR
TEH	TEMPERATURE/HUMIDITY SENSOR
CO2	CARBON DIOXIDE SENSOR
ET	EXPANSION TANK

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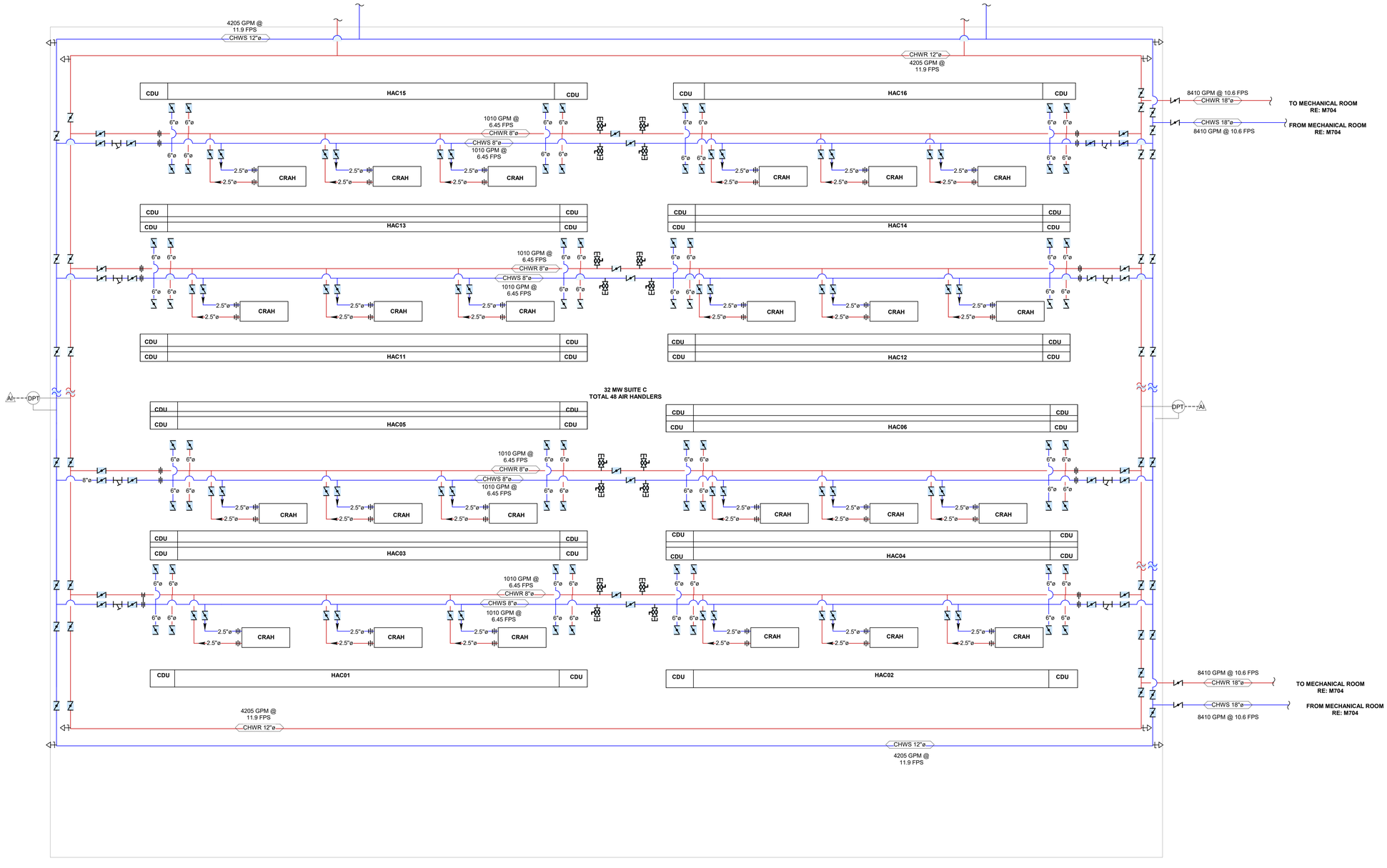
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SHEET TITLE

MECHANICAL DIAGRAMS

SHEET NUMBER

BLDG1-M704



1 32 MW SUITE C FLOW DIAGRAM - FUTURE TENANT FIT OUT

SCALE: 1 1/2" = 1'-0"

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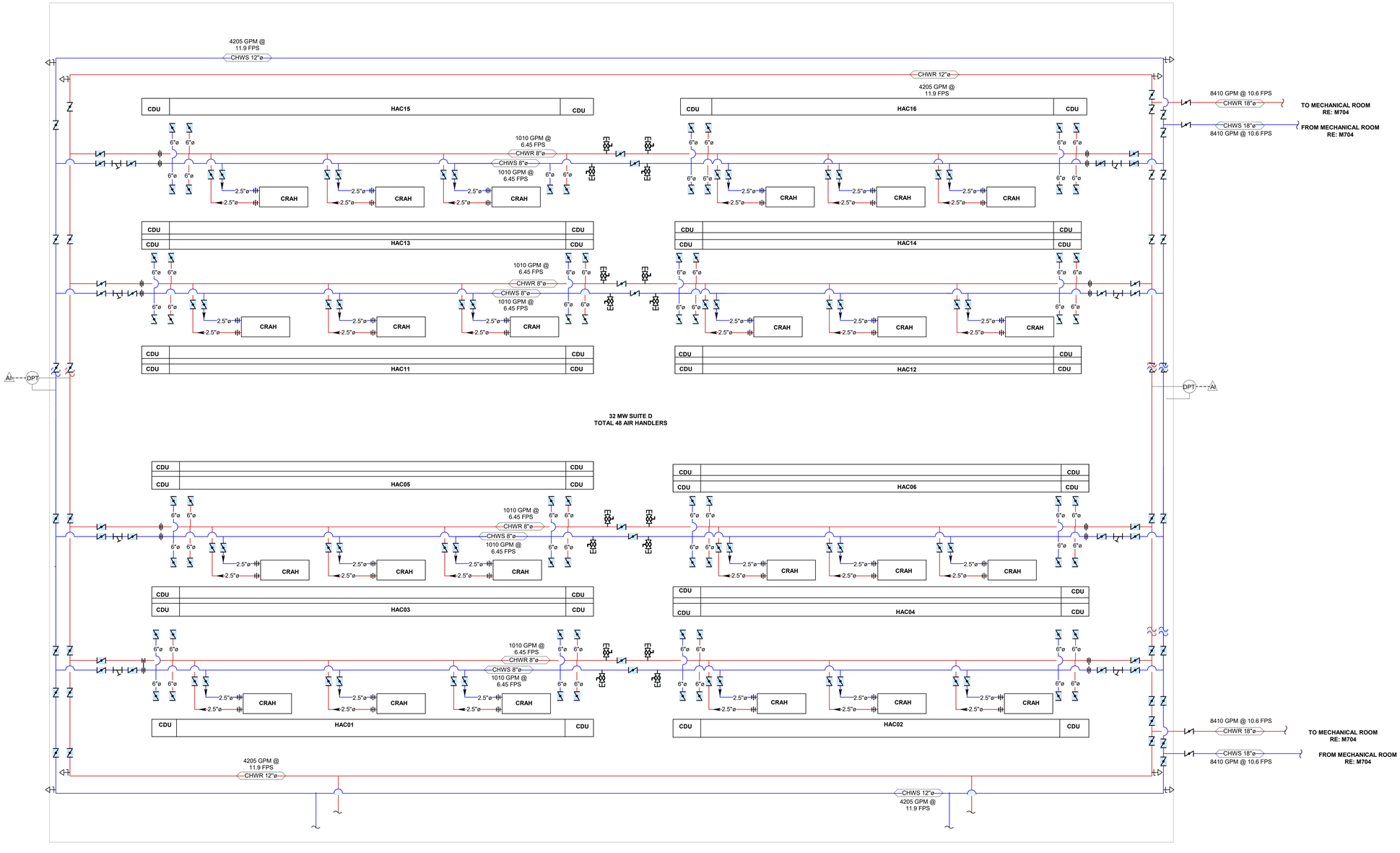
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SHEET TITLE

MECHANICAL
DIAGRAMS

SHEET NUMBER

BLDG1-M705



1 32 MW SUITE D FLOW DIAGRAM - FUTURE TENANT FIT OUT

SCALE: 1 1/2" = 1'-0"

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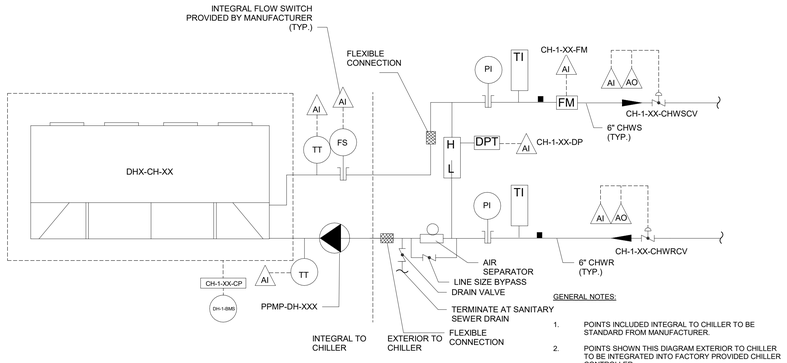
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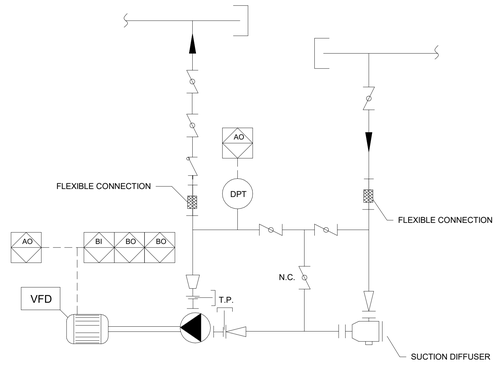
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BLDG1-M706



1 ENLARGED CHILLER PROCESS FLOW DIAGRAM

SCALE: 1/8" = 1'-0"



SPMP-DH-XX

2 SECONDARY CHILLED WATER PUMP PROCESS FLOW DIAGRAM

SCALE: 1/8" = 1'-0"

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SHEET TITLE

MECHANICAL DIAGRAMS

SHEET NUMBER

BLDG1-M707

AIR COOLED CHILLER SEQUENCE OF OPERATIONS:

THE LEAD CHILLER GROUP SHALL BE ENABLED ANYTIME A CALL FOR COOLING SIGNAL IS RECEIVED FROM THE BUILDING AUTOMATION SYSTEM. THIS SIGNAL WILL BE GENERATED ANYTIME A CHILLED WATER CONTROL VALVE OR OTHER SIMILAR UNIT ON CHILLED WATER LOOP CALLS FOR COOLING. TO PREVENT SHORT CYCLING, EACH CHILLER SHALL RUN FOR AND BE OFF FOR MINIMUM INTERVALS AS RECOMMENDED BY THE MANUFACTURER (ADJ.). CHILLER OPERATION SHALL BE MANAGED BY THE CONTROL SYSTEM INTEGRAL TO THE CHILLED WATER PLANT. THIS SHALL BE FIELD PROVIDED BY THE CONTROLS INTEGRATOR. EACH CHILLER SHALL HAVE ITS OWN CONTROL SYSTEM AND APPLICATION SPECIFIC CONTROLLER (ASC) FACTORY PROVIDED. UPON RECEIPT OF SIGNAL TO ENABLE CHILLER OPERATION OR TO STAGE ADDITIONAL CHILLERS ON, THE DDC SYSTEM SHALL INITIATE THE FOLLOWING SEQUENCE. THE CHILLER PLANT CONTROLLER SHALL TREND NUMBER OF ACTIVE CHILLERS.

1. FOLLOWING A COMMAND TO START THE COOLING SEQUENCE OR STAGE ADDITIONAL CHILLERS ON, THE CHILLER PLANT CONTROLLER SHALL DESIGNATE THE ORDER IN WHICH ALL INACTIVE CHILLERS SHALL BE STARTED BASED ON UNIT RUNTIMES. THE CHILLER WITH THE MOST OPERATING HOURS SHALL BE THE LAST STAGED CHILLER AND THE CHILLER WITH THE LEAST OPERATING HOURS SHALL BE THE FIRST STAGED CHILLER. THE CHILLER PLANT CONTROLLER SHALL ALSO DESIGNATE THE ORDER IN WHICH ALL ACTIVE CHILLERS SHALL BE DISABLED BASED ON UNIT RUNTIMES FOLLOWING A COMMAND TO DISABLE CHILLERS. THE CHILLER WITH THE MOST OPERATING HOURS SHALL BE THE FIRST STAGED CHILLER AND THE CHILLER WITH THE LEAST OPERATING HOURS SHALL BE THE LAST STAGED CHILLER. AT MINIMUM, A GROUP OF 3 LEAD CHILLERS SHALL BE ACTIVE AT ANY TIME.

2. FOLLOWING A COMMAND TO ENABLE A CHILLER, THE ENABLED CHILLERS CONTROL VALVES (CH-1-XX-CHWRCV & CH-1-XX-CHWSCV) SHALL OPEN AND ENERGIZE THE INTEGRAL CHILLER PRIMARY PUMP. THE CHILLERS FACTORY PROVIDED FLOW SWITCH (CH-1-XX-FS) SHALL PROVE CHILLER FLOW. THE CHILLER SHALL ENERGIZE UPON THE CHILLERS SUPPLY TEMPERATURE (CH-1-XX-TT-2) MEASURING ABOVE THE DIFFERENTIAL TO ON. INITIAL DIFFERENTIAL TO ON SHALL BE 2°F (ADJ.) ABOVE ACTIVE CHILLED WATER SUPPLY SETPOINT PENDING MANUFACTURER'S RECOMMENDATIONS.

3. AFTER ENERGIZING, CHILLERS SHALL THEN RUN AND MODULATE CAPACITY BY COMPRESSOR STAGING ACCORDING TO FACTORY PROVIDED CONTROLS TO MAINTAIN THE CHILLED WATER SUPPLY TEMPERATURE SET POINT OF 70 °F (ADJ.).

4. THE CHILLER PLANT CONTROLLER SHALL CONTINUOUSLY MONITOR CHILLED SUPPLY TEMPERATURE IN THE SUPPLY MAINS (SCHWST-XX) AND CONTROL ACTIVE AND INACTIVE CHILLER STAGING BASED ON TEMPERATURE READING. THE CHILLER PLANT CONTROLLER SHALL ENABLE NEXT CHILLER WHEN THE CHILLED WATER SUPPLY TEMPERATURE EXCEEDS 2°F (ADJ.) OVER THE CHILLED WATER SETPOINT WHILE ACTIVE CHILLERS ARE RUNNING AT 90% CAPACITY AND AFTER THE MANUFACTURER PROVIDED LAG TIME HAS ELAPSED. NEXT CHILLER SHALL BE ENERGIZED ACCORDING TO SEQUENCE #2 ABOVE. THE CHILLER PLANT CONTROLLER SHALL DISABLE NEXT CHILLER WHEN THE CHILLED WATER SUPPLY TEMPERATURE EXCEEDS 3°F (ADJ.) BELOW THE CHILLED WATER SETPOINT WHILE ACTIVE CHILLERS ARE RUNNING AT MINIMUM CAPACITY AND AFTER THE MANUFACTURER PROVIDED LAG TIME HAS ELAPSED, NEXT CHILLER SHALL BE DE-ENERGIZED ACCORDING TO SEQUENCE #2 ABOVE.

5. FOLLOWING A COMMAND TO DISABLE A CHILLER, THE CHILLER SHALL DE-ENERGIZE UPON THE CHILLERS SUPPLY TEMPERATURE (CH-1-XX-TT-2) MEASURING BELOW THE DIFFERENTIAL TO OFF INITIAL DIFFERENTIAL TO OFF SHALL BE 3°F (ADJ.) BELOW ACTIVE CHILLED WATER SUPPLY SETPOINT PENDING MANUFACTURER'S RECOMMENDATIONS. UPON CHILLER DE-ENERGIZING, THE CHILLER CONTROL VALVES (CH-1-XX-CHWRCV & CH-1-XX-CHWSCV) SHALL CLOSE AFTER 1 MINUTE AND DE-ENERGIZE THE PUMP.

6. WITH ANY CHILLERS RUNNING, THE CHILLER PLANT CONTROLLER SHALL BE RESPONSIBLE FOR CALCULATING TOTAL ACTIVE CAPACITY. THE CHILLER PLANT SHALL USE THE PRIMARY CHILLED WATER FLOW METERS (PCHWRF-XX) AND ALL CHILLED WATER LOOP TEMPERATURE SENSORS (SCHWRT-XX & SCHWST-XX) TO CALCULATE.

ALL CHILLERS SHALL BE PROVIDED WITH A MANUFACTURER RECOMMENDED MINIMUM RUNTIME.

ALL EQUIPMENT SHALL BE CONTROLLED BY INDEPENDENT TEMPERATURE OR PRESSURE SENSORS LOCATED IN APPROPRIATE BRANCH LINES. ADDITIONAL TEMPERATURE SENSORS SHALL BE LOCATED AS OUTLINED IN THE POINTS LIST AND FLOW DIAGRAMS.

A DIFFERENTIAL PRESSURE TRANSMITTER SHALL BE LOCATED AT EACH CHILLER ACCORDING THE FLOW SENSOR SHALL MEASURE FLOW THROUGH THE LOOP AND SHALL SEND AN ALARM IF FLOW FALLS BELOW MINIMUM FLOW.

IN THE EVENT OF A TOTAL COMMUNICATION OR CONTROL SYSTEM FAILURE, THE CHILLER SHALL BE PROGRAMMED TO DEFAULT TO 'ENABLED' TO PROVIDE A PRESET LEAVING WATER TEMPERATURE.

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- CHILLER FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- RUNNING IN HAND: COMMANDED OFF, BUT STATUS IS ON.
- VFD FAULT
- HIGH CHILLER WATER SUPPLY TEMPERATURE: IF THE CHILLER SUPPLY TEMPERATURE IS GREATER THAN 5°F (ADJ.) OVER THE ACTIVE SUPPLY TEMPERATURE SETPOINT
- LOW CHILLER WATER SUPPLY TEMPERATURE: IF THE CHILLED WATER SUPPLY TEMPERATURE IS LESS THAN 5°F (ADJ.) UNDER THE ACTIVE SUPPLY TEMPERATURE SETPOINT
- HIGH MAIN CHILLED WATER SUPPLY TEMPERATURE: IF THE MAIN CHILLED WATER SUPPLY TEMPERATURE IS GREATER THAN 5°F (ADJ.) OVER THE ACTIVE SUPPLY TEMPERATURE SETPOINT
- LOW MAIN CHILLED WATER SUPPLY TEMPERATURE: IF THE MAIN CHILLED WATER SUPPLY TEMPERATURE IS LESS THAN 5°F (ADJ.) UNDER THE ACTIVE SUPPLY TEMPERATURE SETPOINT
- HIGH CHILLER DIFFERENTIAL PRESSURE: IF THE CHILLER DIFFERENTIAL PRESSURE SETPOINT IS GREATER THAN THE MAXIMUM DIFFERENTIAL PRESSURE BASED ON MANUFACTURER'S RECOMMENDATIONS
- ALL MANUFACTURER CONTROLLER PROVIDED ALARMS

INTEGRAL PRIMARY PUMP SEQUENCE OF OPERATION:
PCHWP

THE DDC CONTROLLER SHALL ENABLE/DISABLE THE PRIMARY HOT WATER PUMPS AND ASSOCIATED VFDS.

THE PUMPS SHALL BE COUPLED WITH EACH CHILLER IN A ONE TO ONE FORMAT. THE PRIMARY PUMPS WILL BE DESIGNATED AS LEAD AND LAG IN THE SAME FORMAT AS THE CHILLER IT SERVES. PRIMARY PUMPS SHALL BE ENABLED WITH THEIR ASSOCIATED CHILLER AND MAINTAIN A CONSTANT GPM.

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- PUMP FAILURE: IF A PUMP IS COMMANDED TO ENABLE AND REMAINS DISABLED.
- RUNNING IN HAND: COMMANDED OFF, BUT STATUS IS ON.
- VFD FAULT

SECONDARY LOOP PUMP SEQUENCE OF OPERATION:
SCHWP

THE CHILLER PLANT CONTROLLER SHALL ENABLE/DISABLE VARIABLE SPEED WATER PUMPS AND ASSOCIATED VFDS.

THE PUMPS WILL OPERATE IN A LEAD/LAG/STANDBY CONFIGURATION. MINIMUM 2 PUMPS WILL OPERATE AS THE LEAD PUMPS. THE SUBSEQUENT PUMPS SHALL OPERATE IN LAG FUNCTION WITH THE FINAL PUMP OPERATING AS STANDBY. ALL PUMPS CAN OPERATE IN THE LEAD POSITION. ALTERNATE WHICH PUMP IS LEAD TO KEEP RUNTIMES SIMILAR ACCORDING TO MANUFACTURER'S RECOMMENDATIONS. THE PUMP WITH THE MOST OPERATING HOURS SHALL BE THE LAST STAGED PUMP AND THE PUMP WITH THE LEAST OPERATING HOURS SHALL BE THE FIRST STAGED PUMP. THE CHILLER PLANT CONTROLLER SHALL ALSO DESIGNATE THE ORDER IN WHICH ALL ACTIVE PUMPS SHALL BE DISABLED BASED ON UNIT RUNTIMES FOLLOWING A COMMAND TO DISABLE PUMPS. THE PUMP WITH THE MOST OPERATING HOURS SHALL BE THE FIRST STAGED PUMP AND THE PUMP WITH THE LEAST OPERATING HOURS SHALL BE THE LAST STAGED PUMP.

DIFFERENTIAL PRESSURE SENSORS SHALL BE LOCATED WITHIN THE SUITE PERIMETER LOOP ON THE WATER MAIN SUPPLYING AND RETURNING FROM THE PUMP ROOM MECHANICAL GALLERY AS SHOWN ON THE CHILLED WATER PROCESS FLOW DIAGRAM. INITIAL DIFFERENTIAL PRESSURE SETPOINT SHALL BE DETERMINED DURING THE TEST AND BALANCE (TAB) PROCESS AND SHALL BE ADJUSTABLE.

CRITICAL VALVE RESET FOR PUMP PRESSURE SETPOINT:
THE DDC CONTROLLER SHALL CONTINUOUSLY MONITOR THE CHILLED WATER CONTROL VALVE POSITION OF ALL VALVES. AT SYSTEM STARTUP, THE PUMP PRESSURE SETPOINT SHALL BE 100 PERCENT OF THE INITIAL PRESSURE SETPOINT. THE INITIAL PUMP PRESSURE SETPOINT SHALL BE SET DURING TAB AND VERIFIED IN THE COMMISSIONING PROCESS AND BE ADJUSTABLE. WHEN ANY CONTROL VALVE IS MORE THAN 95 PERCENT OPEN, THE PUMP PRESSURE SETPOINT SHALL BE RESET UPWARD UNTIL NO VALVE IS MORE THAN 95% OPEN OR THE PUMP PRESSURE SETPOINT HAS RESET UPWARD TO THE SYSTEM MAXIMUM SETTING OR THE PUMP VFD(S) ARE AT THEIR MAXIMUM SETTING. WHEN ALL CONTROL VALVES ARE LESS THAN 85 PERCENT OPEN, THE PUMP PRESSURE SETPOINT SHALL BE RESET DOWNWARD UNTIL AT LEAST ONE VALVE IS MORE THAN 85% OPEN OR THE PUMP VFD(S) ARE AT THEIR MINIMUM SETTING. THE CONTROL BAND, SETPOINT INCREMENTS, SETPOINT DECREMENTS, AND ADJUSTMENT FREQUENCIES SHALL BE ADJUSTED TO MAINTAIN MAXIMUM PUMP PRESSURE OPTIMIZATION WITH STABLE SYSTEM CONTROL. THE INITIAL RESET RATE SHALL BE 0.5 PSI EVERY MINUTE, SHALL BE ADJUSTABLE, AND SHALL BE ADJUSTED TO OPERATING RATE DURING TAB.

THE LEAD PUMP SHALL ENERGIZE WHEN COOLING IS ENABLED.THE INITIAL EACH LAG PUMP SHALL ENERGIZE AND OPERATE IN UNISON WITH THE LEAD PUMP WHEN THE DIFFERENTIAL PRESSURE SETPOINT IS NOT SATISFIED AND THE LEAD PUMPS VFD IS AT 90% OF ITS SPEED SETPOINT. THIS SEQUENCE SHALL REPEAT WHEN ALL ACTIVE PUMPS ARE 90% OF THEIR SPEED SETPOINTS. WHEN ALL ACTIVE PUMP VFDs ARE OPERATING AT 40% OF THEIR SPEED SETPOINTS, LAST PUMP VFD SHALL STAGE OFF AND OTHER ACTIVE VFD(s) SHALL CONTINUE TO RUN TO MAINTAIN SETPOINT.

IF A CALL FOR COOLING IN THE FACILITY HAS DISABLED, ALL PUMPS SHALL SHUTOFF.

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- PUMP FAILURE: IF A PUMP IS COMMANDED TO ENABLE AND REMAINS DISABLED.
- RUNNING IN HAND: COMMANDED OFF, BUT STATUS IS ON.
- VFD FAULT
- HIGH LIMIT: PUMP IS RUNNING AND PRESSURE DIFFERENTIAL IS HIGHER THAN PRESSURE SETPOINT BY 3 PSI (ADJ.).
- LOW LIMIT: PUMP IS RUNNING AND PRESSURE DIFFERENTIAL IS LOWER THAN PRESSURE SETPOINT BY 3 PSI (ADJ.).

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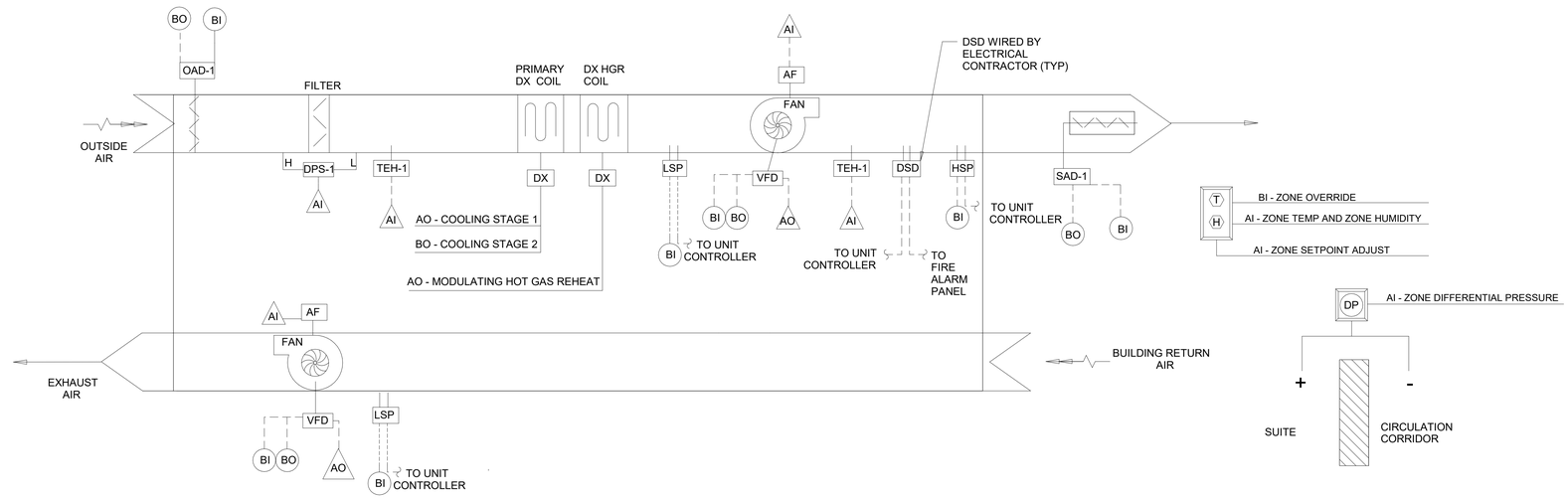
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SHEET TITLE
MECHANICAL CONTROLS

SHEET NUMBER
BLDG1-M708



SUITE DOAS DIAGRAM

NOT TO SCALE

PACKAGED DOAS SEQUENCE OF OPERATIONS:

RUN CONDITIONS - CONTINUOUS:
THE UNIT SHALL RUN CONTINUOUSLY.

UNIT STAGING:
THERE IS ALWAYS ONE STANDBY UNIT AND THE OTHER UNITS ARE CONSIDERED ACTIVE. THE BMS WILL DESIGNATE THE ACTIVE LEAD UNITS AND STANDBY UNITS AND ROTATE UNITS BASED ON RUN TIME. RUN TIME TO BE USER DEFINED AND ADJUSTABLE, INITIALLY SET FOR WEEKLY TURNOVER.

HIGH STATIC SHUTDOWN:
THE UNIT SHALL SHUT DOWN AND GENERATE AN ALARM UPON RECEIVING AN HIGH STATIC SHUTDOWN SIGNAL.

SUPPLY AIR SMOKE DETECTION:
THE UNIT SHALL SHUT DOWN AND GENERATE AN ALARM UPON RECEIVING A SUPPLY AIR SMOKE DETECTOR STATUS.

OUTSIDE AIR DAMPER:
THE OUTSIDE AIR DAMPER SHALL OPEN ANYTIME THE UNIT IS COMMANDED TO RUN AND SHALL CLOSE ANYTIME THE UNIT STOPS. THE OUTSIDE AIR DAMPER SHALL CLOSE 4 SECONDS (ADJ.) AFTER THE SUPPLY FAN STOPS.

EXHAUST AIR DAMPER (AS APPLICABLE):
THE EXHAUST AIR DAMPER SHALL OPEN ANYTIME THE UNIT IS COMMANDED TO RUN AND SHALL CLOSE ANYTIME THE UNIT STOPS. THE EXHAUST AIR DAMPER SHALL CLOSE 4 SECONDS (ADJ.) AFTER THE EXHAUST FAN STOPS.

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- OUTSIDE AIR OR EXHAUST AIR DAMPER FAILURE: COMMANDED OPEN, BUT STATUS IS CLOSED.
- OUTSIDE AIR OR EXHAUST AIR DAMPER IN HAND: COMMANDED CLOSED, BUT STATUS IS OPEN.

SUPPLY FAN:
THE SUPPLY FAN SHALL RUN ANYTIME THE UNIT IS COMMANDED TO RUN, UNLESS SHUTDOWN ON SAFETIES. THE SUPPLY FAN SHALL NOT START UNTIL 2 SEC. (ADJ.) AFTER THE OUTSIDE AIR DAMPERS HAVE PROVEN OPEN. TO PREVENT SHORT CYCLING, THE SUPPLY FAN SHALL HAVE A USER DEFINABLE (ADJ.) MINIMUM RUNTIME - SET INITIALLY TO 5 MINUTES.

SUPPLY FAN SPEED:
SUPPLY FAN SHALL RAMP UP TO 100% DESIGN AIRFLOW. VFD FREQUENCY AND FAN SPEED TO BE DETERMINED BY THE (TEST AND BALANCE) TAB CONTRACTOR.

EXHAUST FAN (AS APPLICABLE):
THE EXHAUST FAN SHALL RUN ANYTIME THE UNIT IS COMMANDED TO RUN, UNLESS SHUTDOWN ON SAFETIES. THE EXHAUST FAN SHALL BE INTERLOCKED TO THE SUPPLY FAN. THE EXHAUST FAN SHALL NOT START UNTIL 2 SEC. (ADJ.) AFTER THE AIR DAMPERS HAVE PROVEN OPEN.

THE BAS CONTROLLER SHALL MONITOR THE ZONE STATIC PRESSURE AND MODULATE THE FAN VFD AS REQUIRED TO ZONE STATIC PRESSURE SETPOINT. INITIAL STATIC PRESSURE SETPOINT TO BE +0.05" W.C (ADJ.). THE BAS CONTROLLER SHALL UTILIZE A SAMPLING OF A 15 SECOND (ADJ.) AVERAGE OF BUILDING STATIC PRESSURE TO AVOID FAN HUNTING. EXHAUST FAN MINIMUM SPEED SHALL BE 20 HZ.

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- SUPPLY FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- SUPPLY FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
- EXHAUST FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- EXHAUST FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.

SUPPLY AIR TEMPERATURE:
THE CONTROLLER SHALL MONITOR THE SUPPLY AIR TEMPERATURE. THE SUPPLY AIR TEMPERATURE SETPOINT SHALL INITIALLY BE 65°F DB.

COOLING STAGES:

THE CONTROLLER SHALL MEASURE THE OUTDOOR AIR TEMPERATURE AND STAGE THE COMPRESSORS TO MAINTAIN THE SUPPLY AIR SETPOINT. THE FIRST COMPRESSOR TO INITIATE SHALL BE THE LEAD INVERTER SCROLL COMPRESSOR. TO PREVENT SHORT CYCLING, THERE SHALL BE A DELAY BETWEEN STAGES, AND EACH STAGE SHALL HAVE A MINIMUM RUNTIME. THE UNIT CONTROLLER SHALL REPORT BACK TO THE BAS THE COMPRESSOR STAGING AS A PERCENTAGE VALUE OF TOTAL COMPRESSOR OUTPUT.

THE COOLING SHALL BE ENABLED WHENEVER:
- OUTSIDE AIR TEMPERATURE IS GREATER THAN 60°F DB (ADJ.)
- AND THE SUPPLY AIR TEMPERATURE IS GREATER THAN THE TEMPERATURE SETPOINT.
- AND THE FAN STATUS IS ON.

DEHUMIDIFICATION:
THE CONTROLLER SHALL CALCULATE THE OUTDOOR AIR DEW POINT WITH THE OUTDOOR AIR TEMPERATURE AND HUMIDITY SENSOR. DEHUMIDIFICATION MODE SHALL BE ACTIVATED WHEN THE OUTDOOR AIR DEW POINT IS ABOVE 55°F (ADJ.). THE CONTROLLER SHALL STAGE THE COMPRESSORS TO MAINTAIN A SUPPLY AIR TEMPERATURE DEW POINT OF 56°F (ADJ.) DB. THE CONTROLLER SHALL MODULATE THE HOT GAS REHEAT VALVE TO MAINTAIN THE DISCHARGE AIR TEMPERATURE TO A NEUTRAL AIR TEMPERATURE SETPOINT OF 65°F (ADJ.).

DEHUMIDIFICATION MODE SHALL TAKE PRIORITY OVER A CALL FOR COOLING, AND SHALL BE DISABLED IF THERE IS A CALL FOR HEATING.

HEATING STAGE:
THE CONTROLLER SHALL MEASURE THE OUTDOOR AIR TEMPERATURE AND STAGE THE COMPRESSORS TO MAINTAIN THE SUPPLY AIR SETPOINT. THE FIRST COMPRESSOR TO INITIATE SHALL BE THE LEAD INVERTER SCROLL COMPRESSOR. TO PREVENT SHORT CYCLING, THERE SHALL BE A DELAY BETWEEN STAGES, AND EACH STAGE SHALL HAVE A MINIMUM RUNTIME. THE UNIT CONTROLLER SHALL REPORT BACK TO THE BAS THE COMPRESSOR STAGING AS A PERCENTAGE VALUE OF TOTAL COMPRESSOR OUTPUT.

THE HEATING SHALL BE ENABLED WHENEVER:
- OUTSIDE AIR TEMPERATURE IS LESS THAN 52°F (ADJ.).
- AND THE FAN STATUS IS ON.
- AND THERE IS NO CALL FOR COOLING
- AND THE ZONE TEMPERATURE IS BELOW HEATING SETPOINT.

VENTILATION MODE (ECONOMIZER):
IF THE OUTDOOR AIR TEMPERATURE OR DEW POINT IS WITHIN THE COOLING, HEATING, OR DEHUMIDIFICATION DEADBAND, THE UNIT CONTROLLER SHALL LOCK OUT THE COMPRESSORS AND CONTINUE OPERATING THE SUPPLY AND EXHAUST FANS PER THEIR CONTROL LOOP. THE COMPRESSORS SHALL BE ENABLED IF THE OUTDOOR TEMPERATURE OR DEWPOINT FALLS WITHIN A CONDITIONING ZONE.

TEMPERATURE CONTROL ALARMS. ALARMS SHALL BE PROVIDED AS FOLLOWS:
- HIGH SUPPLY AIR TEMPERATURE: IF THE SUPPLY AIR DRY BULB TEMPERATURE IS 5°F (ADJ.) GREATER THAN THE SETPOINT FOR 10 MINUTES (ADJ.).
- LOW SUPPLY AIR TEMPERATURE: IF THE SUPPLY AIR DRY BULB TEMPERATURE IS 5°F (ADJ.) LESS THAN THE SETPOINT FOR 10 MINUTES (ADJ.).
- HIGH TEMPERATURE LIMIT (HTL): IF THE SUPPLY AIR DRY BULB TEMPERATURE IS 15°F (ADJ.) GREATER THAN THE SETPOINT FOR 10 MINUTES (ADJ.), ALARM THE BAS AND SHUTDOWN THE UNIT.
- LOW TEMPERATURE LIMIT (LTL): IF THE SUPPLY AIR DRY BULB TEMPERATURE IS 15°F (ADJ.) LESS THAN THE SETPOINT FOR 10 MINUTES (ADJ.), ALARM THE BAS AND SHUTDOWN THE UNIT.
- HIGH SUPPLY AIR HUMIDITY: IF THE SUPPLY AIR WET BULB TEMPERATURE IS 5°F (ADJ.) GREATER THAN THE SETPOINT FOR 10 MINUTES (ADJ.).
- HIGH HUMIDITY LIMIT (HHL): IF THE SUPPLY AIR WET BULB TEMPERATURE IS 15°F (ADJ.) GREATER THAN THE SETPOINT FOR 10 MINUTES (ADJ.), ALARM THE BAS AND SHUTDOWN THE UNIT.

FILTERS:
THE DDC CONTROLLER SHALL MONITOR THE STATUS OF THE FILTER BANK. THE FILTER BANK DP SETPOINTS SHALL BE SET BY THE MANUFACTURER'S RECOMMENDED PRESSURE DROP. IF THE FILTER PRESSURE DROP EXCEEDS THE SETPOINT, THE DDC CONTROLLER SHALL GENERATE AN ALARM.

REFRIGERANT DETECTION:

UPON REFRIGERANT DETECTION IN THE SUPPLY AIR DUCT, THE UNIT CONTROLLER SHALL COMMAND THE SUPPLY FAN AND EXHAUST FAN TO MINIMUM SPEED AND DISABLE THE COMPRESSORS. THE FANS SHALL CONTINUE TO OPERATE UNTIL REFRIGERANT IS NO LONGER DETECTED WITHIN THE SUPPLY AIR DUCT. AN ALARM SHALL BE GENERATED TO THE BMSTO CONTINUE NORMAL OPERATION, THE ALARM WILL REQUIRE A MANUAL RESET AT THE UNIT CONTROLLER.

REFRIGERANT DETECTION PURGE SEQUENCE SHALL TAKE PRIORITY OF ALL OTHER SEQUENCES, UNLESS THE UNIT IS SHUT DOWN ON SMOKE DETECTION. REFRIGERANT DETECTION SHALL BE ENABLED EVEN IF THE UNIT IS OFF. IF THE ALARMED UNIT IS THE ACTIVE DOAS, THE BMS SHALL COMMAND THE STAND BY UNIT TO RESUME NORMAL SEQUENCE OF OPERATIONS.

1 SUITE AND SUPPORT SPACE DOAS SEQUENCE

SCALE: 1/8" = 1'-0"

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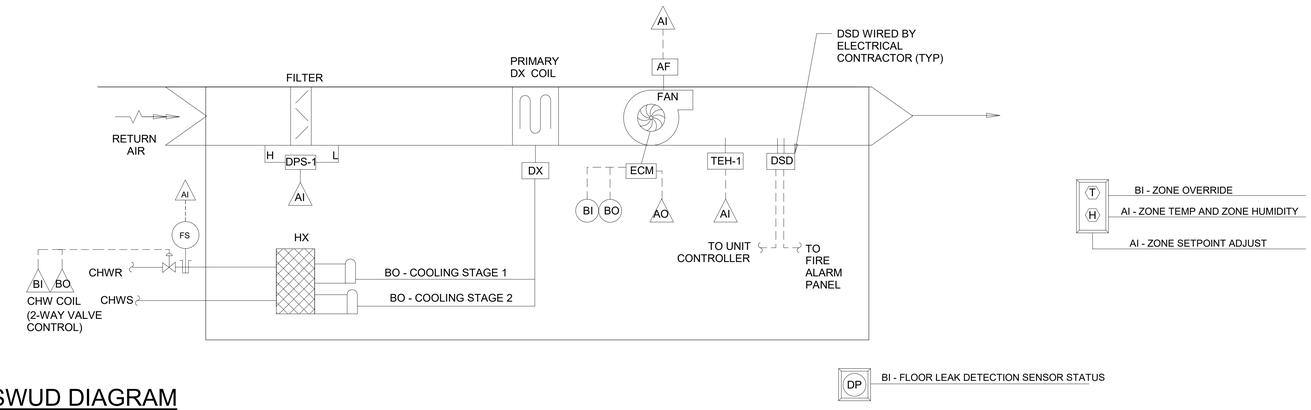
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SHEET TITLE

MECHANICAL CONTROLS

SHEET NUMBER
BLDG1-M709



SWUD DIAGRAM

NOT TO SCALE

PACKAGED DOAS SEQUENCE OF OPERATIONS:

RUN CONDITIONS - CONTINUOUS:
EACH UNIT SHALL RUN CONTINUOUSLY ACCORDING TO ROOM COOLING NEEDS.

ZONE TEMPERATURE CONTROL:
THE CONTROLLER SHALL MEASURE THE ZONE TEMPERATURE AND SHALL MODULATE THE SUPPLY FAN SPEED TO MAINTAIN ZONE TEMPERATURE SETPOINT. THE FAN SHALL RUN ANYTIME THE UNIT IS COMMANDED TO RUN, UNLESS SHUTDOWN ON SAFETIES. UNITS ARE PROVIDED WITH VARIABLE SPEED, ELECTRONICALLY COMMUTATED MOTOR (ECM) FANS TO OPTIMIZE ENERGY EFFICIENCY WHEN COOLING DEMAND DECREASES.

- HIGH ZONE TEMP: IF THE ZONE TEMPERATURE IS 5° F GREATER THAN THE COOLING SETPOINT 15 MINUTES (ADJ.).
- LOW ZONE TEMP: IF THE ZONE TEMPERATURE IS 5° F LESS THAN THE HEATING SETPOINT 15 MINUTES (ADJ.).
- HIGH ZONE HUMIDITY: IF THE ZONE HUMIDITY IS GREATER THAN 65% (ADJ.).
- LOW ZONE HUMIDITY: IF THE ZONE HUMIDITY IS LESS THAN 20% (ADJ.).

FAN SPEED CONTROL:
WHEN A CALL FOR COOLING IS INITIATED, THE FAN SHALL START AND OPERATE AT MINIMUM AIRFLOW. AS COOLING DEMAND INCREASES, THE FAN SPEED SHALL MODULATE UP AS REQUIRED TO MAINTAIN THE ACTIVE ROOM SETPOINT, 85°F (ADJ.). AS COOLING DEMAND DECREASES, THE FAN SPEED SHALL MODULATE DOWN AS REQUIRED TO MAINTAIN THE ACTIVE ROOM SETPOINT. SUPPLY AIR TEMPERATURE RESET SHALL BE USED AFTER FAN SPEED CONTROL HAS TAKEN PLACE, ALLOWING TURNDOWN FOR FAN ENERGY SAVINGS.

FAN STATUS:
THE CONTROLLER SHALL MONITOR THE FAN STATUS.
ALARMS SHALL BE PROVIDED AS FOLLOWS:
- FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.

SUPPLY AIR TEMPERATURE:
THE CONTROLLER SHALL MONITOR THE SUPPLY AIR TEMPERATURE. THE SUPPLY AIR TEMPERATURE SETPOINT SHALL INITIALLY BE 55°F (ADJ.).

THE SUPPLY AIR TEMPERATURE SETPOINT SHALL BE RESET FOR COOLING BASED ON ZONE COOLING DEMAND AS FOLLOWS:
- THE INITIAL SUPPLY AIR TEMPERATURE SETPOINT IS 55°F.
- AS COOLING DEMAND INCREASES, THE COOLING SUPPLY AIR SETPOINT SHALL INCREMENTALLY RESET DOWN TO A MINIMUM OF 52°F (ADJ.).
- THE COOLING SETPOINT SHALL REMAIN AT 52°F (ADJ.) UNTIL ZONE TEMPERATURE FALLS BELOW SETPOINT.
- AS COOLING DEMAND DECREASES, THE SETPOINT SHALL INCREMENTALLY RESET UP TO A MAXIMUM OF 65°F (ADJ.)

COOLING COIL:
THE CONTROLLER SHALL MEASURE THE ZONE TEMPERATURE. UPON A DEMAND FOR COOLING, THE BMS SHALL OPEN THE CHILLED WATER VALVE. ONCE THE CHILLED WATER VALVE IS OPEN AND FLOW IS PROVEN, THE CONTROLLER SHALL MODULATE OR STAGE COMPRESSORS TO MAINTAIN ITS SUPPLY AIR COOLING SETPOINT. THE CONTROLLER SHALL ALTERNATE THE LEAD COMPRESSOR, BASED ON RUN TIME HOURS. THE COOLING COIL VALVE SHALL SHUT WHEN THE LEAK DETECTION SYSTEM PROVIDES AN ALARM.
THE COOLING COIL SHALL BE ENABLED WHENEVER:
- THE ZONE TEMPERATURE IS ABOVE COOLING SETPOINT
- AND THE FAN IS ON

WATER DETECTION:
THE UNIT SHALL HAVE A WATER DETECTION SENSOR ON THE FLOOR AROUND THE UNITS. IF WATER IS DETECTED, THE SENSOR SHALL PROVIDE AN INDICATION
TO THE DDC CONTROLLER AND SHALL GENERATE AN ALARM AND THE UNIT SHALL SHUT DOWN.

REFRIGERANT DETECTION:

UPON REFRIGERANT DETECTION, THE UNIT CONTROLLER SHALL COMMAND THE SUPPLY FAN TO MINIMUM SPEED AND DISABLE THE COMPRESSORS. THE FANS SHALL CONTINUE TO OPERATE UNTIL REFRIGERANT IS NO LONGER DETECTED. AN ALARM SHALL BE GENERATED TO THE BMS. TO CONTINUE NORMAL OPERATION, THE ALARM WILL REQUIRE A MANUAL RESET AT THE UNIT CONTROLLER.

REFRIGERANT DETECTION PURGE SEQUENCE SHALL TAKE PRIORITY OF ALL OTHER SEQUENCES, UNLESS THE UNIT IS SHUT DOWN ON SMOKE DETECTION. REFRIGERANT DETECTION SHALL BE ENABLED EVEN IF THE UNIT IS OFF.

FILTERS:
THE DDC CONTROLLER SHALL SET A SCHEDULE FOR THE FILTERS TO BE REPLACED EVERY 4 MONTHS (ADJ.) AND TO PROVIDE AN ALARM TO THE BAS.

1 SWUD SEQUENCE OF OPERATIONS AND CONTROLS DIAGRAM
SCALE: 1/8" = 1'-0"

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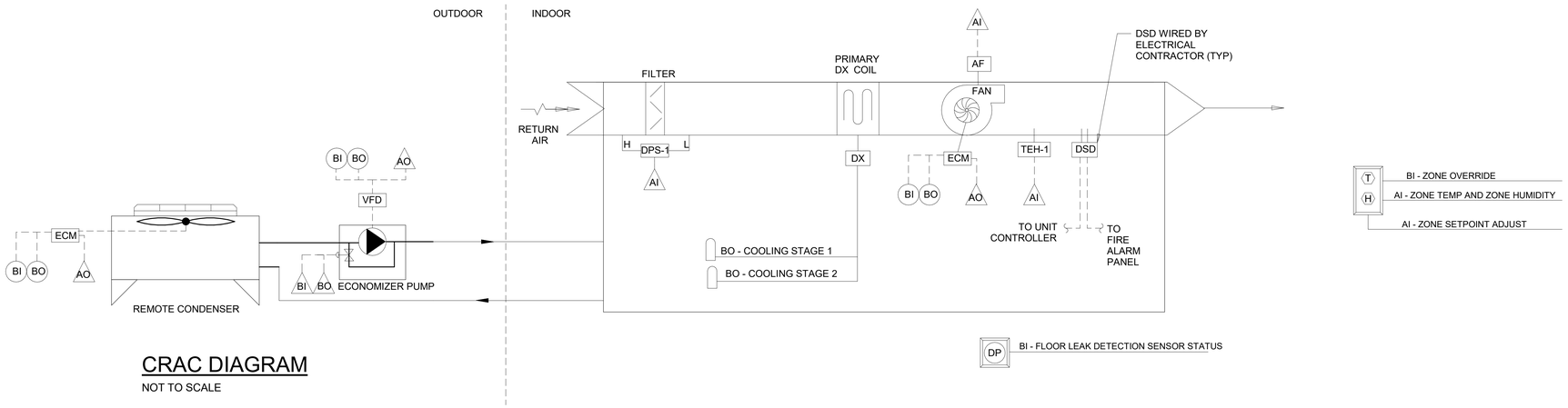
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SHEET TITLE

MECHANICAL CONTROLS

SHEET NUMBER
BLDG1-M710



CRAC DIAGRAM

NOT TO SCALE

PACKAGED DOAS SEQUENCE OF OPERATIONS:

RUN CONDITIONS - CONTINUOUS:
EACH UNIT SHALL RUN CONTINUOUSLY ACCORDING TO ROOM COOLING NEEDS.

ZONE TEMPERATURE CONTROL:
THE CONTROLLER SHALL MEASURE THE ZONE TEMPERATURE AND SHALL MODULATE THE SUPPLY FAN SPEED TO MAINTAIN ZONE TEMPERATURE SETPOINT. THE FAN SHALL RUN ANYTIME THE UNIT IS COMMANDED TO RUN, UNLESS SHUTDOWN ON SAFETIES. UNITS ARE PROVIDED WITH VARIABLE SPEED, ELECTRONICALLY COMMUTATED MOTOR (ECM) FANS TO OPTIMIZE ENERGY EFFICIENCY WHEN COOLING DEMAND DECREASES.

- HIGH ZONE TEMP: IF THE ZONE TEMPERATURE IS 5° F GREATER THAN THE COOLING SETPOINT 15 MINUTES (ADJ.).
- LOW ZONE TEMP: IF THE ZONE TEMPERATURE IS 5° F LESS THAN THE HEATING SETPOINT 15 MINUTES (ADJ.).
- HIGH ZONE HUMIDITY: IF THE ZONE HUMIDITY IS GREATER THAN 65% (ADJ.).
- LOW ZONE HUMIDITY: IF THE ZONE HUMIDITY IS LESS THAN 20% (ADJ.).

FAN SPEED CONTROL:
WHEN A CALL FOR COOLING IS INITIATED, THE FAN SHALL START AND OPERATE AT MINIMUM AIRFLOW. AS COOLING DEMAND INCREASES, THE FAN SPEED SHALL MODULATE UP AS REQUIRED TO MAINTAIN THE ACTIVE ROOM SETPOINT, 85°F (ADJ.). AS COOLING DEMAND DECREASES, THE FAN SPEED SHALL MODULATE DOWN AS REQUIRED TO MAINTAIN THE ACTIVE ROOM SETPOINT. SUPPLY AIR TEMPERATURE RESET SHALL BE USED AFTER FAN SPEED CONTROL HAS TAKEN PLACE, ALLOWING TURNDOWN FOR FAN ENERGY SAVINGS.

FAN STATUS:
THE CONTROLLER SHALL MONITOR THE FAN STATUS.
ALARMS SHALL BE PROVIDED AS FOLLOWS:
- FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.

SUPPLY AIR TEMPERATURE:
THE CONTROLLER SHALL MONITOR THE SUPPLY AIR TEMPERATURE. THE SUPPLY AIR TEMPERATURE SETPOINT SHALL INITIALLY BE 60°F (ADJ.).

THE SUPPLY AIR TEMPERATURE SETPOINT SHALL BE RESET FOR COOLING BASED ON ZONE COOLING DEMAND AS FOLLOWS:
- THE INITIAL SUPPLY AIR TEMPERATURE SETPOINT IS 60°F.
- AS COOLING DEMAND INCREASES, THE COOLING SUPPLY AIR SETPOINT SHALL INCREMENTALLY RESET DOWN TO A MINIMUM OF 55°F (ADJ.).
- THE COOLING SETPOINT SHALL REMAIN AT 55°F (ADJ.) UNTIL ZONE TEMPERATURE FALLS BELOW SETPOINT.
- AS COOLING DEMAND DECREASES, THE SETPOINT SHALL INCREMENTALLY RESET UP TO A MAXIMUM OF 65°F (ADJ.)

COOLING COIL:
THE CONTROLLER SHALL MEASURE THE ZONE TEMPERATURE. THE UNIT CONTROLLER SHALL MODULATE OR STAGE COMPRESSORS TO MAINTAIN ITS SUPPLY AIR COOLING SETPOINT. THE CONTROLLER SHALL ALTERNATE THE LEAD COMPRESSOR, BASED ON RUN TIME HOURS.
COOLING SHALL BE ENABLED WHENEVER:
- THE ZONE TEMPERATURE IS ABOVE COOLING SETPOINT
- AND THE FAN IS ON

REMOTE CONDENSER FAN:
THE UNIT CONTROLLER SHALL MONITOR OUTDOOR AMBIENT CONDITIONS AND INDOOR UNIT LOAD REQUIREMENTS. THE CONTROLLER SHALL STAGE AND/OR MODULATE ECM FAN(S) SPEEDS TO MAINTAIN POSITIVE HEAD PRESSURE CONTROL AT THE INDOOR UNIT.

REFRIGERANT ECONOMIZER:
THE UNIT CONTROLLER SHALL MONITOR OUTDOOR AMBIENT CONDITIONS AND INDOOR UNIT LOAD REQUIREMENTS.
AS OUTDOOR AMBIENT TEMPERATURES DROP, THE UNIT CONTROLLER SHALL ENERGIZE THE REFRIGERANT PUMP OF THE STANDBY REFRIGERANT CIRCUIT. THE COMPRESSOR BYPASS VALVE SHALL OPEN AND BYPASS THE COMPRESSOR, WITH THE COMPRESSOR REMAINING "ON" AT MINIMUM SPEED. THE UNIT CONTROLLER SHALL MODULATE PUMP SPEED TO SUPPLY AIR TEMPERATURE SETPOINT.

AS OUTDOOR AMBIENT CONDITIONS CONTINUE TO DROP, THE CONTROLLER SHALL OPEN THE LEAD COMPRESSOR BYPASS AND OPERATE THE REFRIGERANT PUMP ECONOMIZER SEQUENCE. TO PREVENT SHORT CYCLING, THE COMPRESSORS SHALL HAVE A MINIMUM RUNTIME BETWEEN OPERATING MODES- SET INITIALLY TO 5 MINUTES.

WATER DETECTION:
THE UNIT SHALL HAVE A WATER DETECTION SENSOR ON THE FLOOR AROUND THE UNITS. IF WATER IS DETECTED, THE SENSOR SHALL PROVIDE AN INDICATION
TO THE DDC CONTROLLER AND SHALL GENERATE AN ALARM AND THE UNIT SHALL SHUT DOWN.

REFRIGERANT DETECTION:

UPON REFRIGERANT DETECTION, THE UNIT CONTROLLER SHALL COMMAND THE SUPPLY FAN TO MINIMUM SPEED AND DISABLE THE COMPRESSORS. THE FANS SHALL CONTINUE TO OPERATE UNTIL REFRIGERANT IS NO LONGER DETECTED. AN ALARM SHALL BE GENERATED TO THE BMS. TO CONTINUE NORMAL OPERATION, THE ALARM WILL REQUIRE A MANUAL RESET AT THE UNIT CONTROLLER.

REFRIGERANT DETECTION PURGE SEQUENCE SHALL TAKE PRIORITY OF ALL OTHER SEQUENCES, UNLESS THE UNIT IS SHUT DOWN ON SMOKE DETECTION. REFRIGERANT DETECTION SHALL BE ENABLED EVEN IF THE UNIT IS OFF.

FILTERS:
THE DDC CONTROLLER SHALL SET A SCHEDULE FOR THE FILTERS TO BE REPLACED EVERY 4 MONTHS (ADJ.) AND TO PROVIDE AN ALARM TO THE BAS.

1 CRAC SEQUENCE OF OPERATIONS AND CONTROLS DIAGRAM

SCALE: 1/8" = 1'-0"

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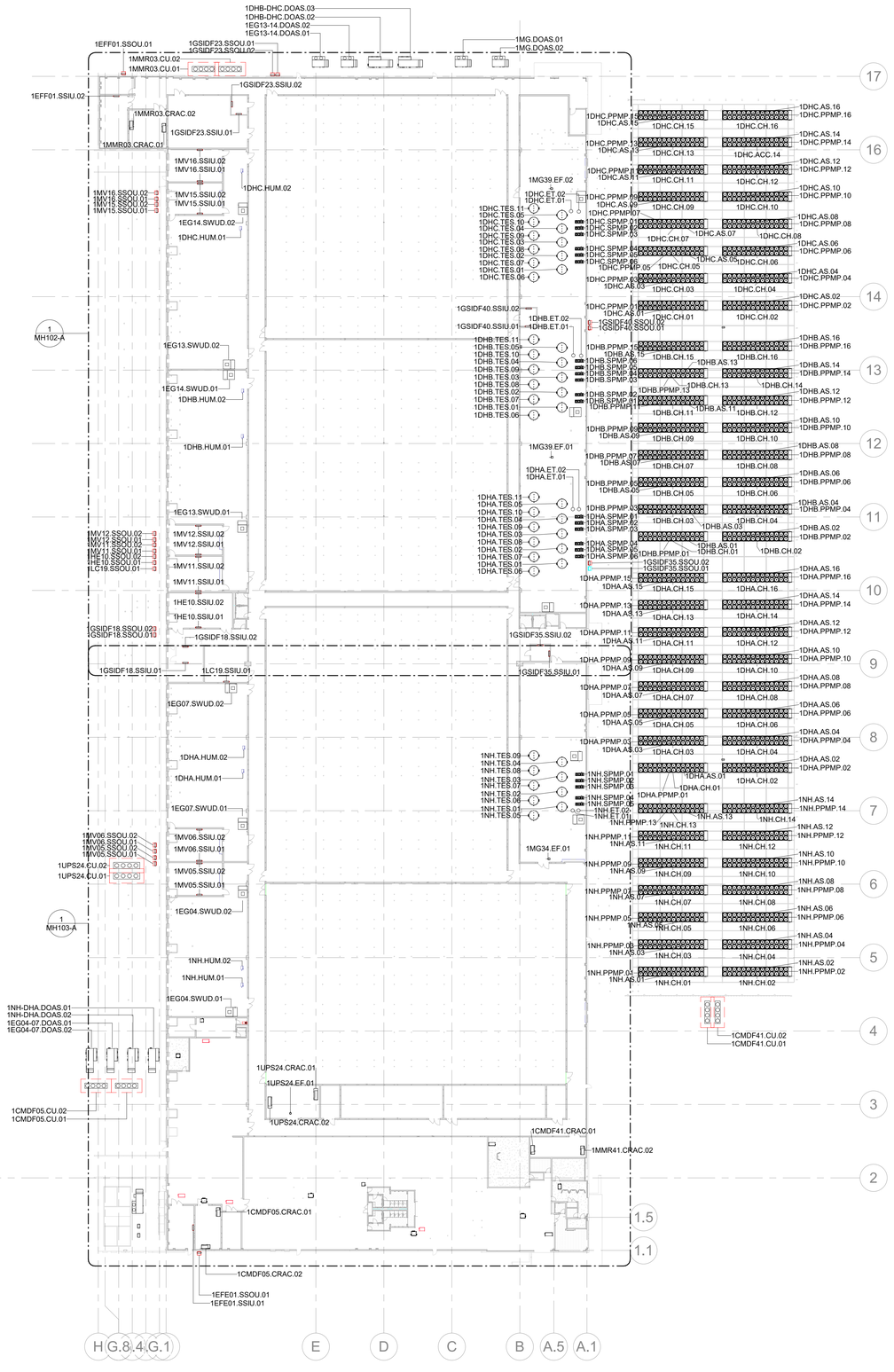
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SHEET TITLE

MECHANICAL CONTROLS

SHEET NUMBER
BLDG1-M711



BLDG 1 SITE EQUIPMENT PLAN TENANT FIT UP - MECHANICAL

SCALE: 1" = 40'-0"

NORTH

EQUIPMENT ABBREVIATIONS

AS	AIR SEPARATOR
CRAH	COMPUTER ROOM AIR HANDLER
CU	CONDENSER UNIT
ET	EXPANSION TANK
PPMP	PRIMARY CHILLED WATER PUMP
SPMP	SECONDARY CHILLED WATER PUMP
TES	THERMAL ENERGY STORAGE TANK

EQUIPMENT LABELING

1DHX.TES.01

- ROOM/AREA SERVED
- SEQUENCE OF EQUIPMENT SERVING ROOM/AREA
- EQUIPMENT ABBREVIATION

HAC CRAH LABELING

1DHX.CRAH.01-01

- ROOM/AREA SERVED
- SEQUENCE OF EQUIPMENT SERVING ROOM/AREA
- HAC SERVED
- EQUIPMENT ABBREVIATION

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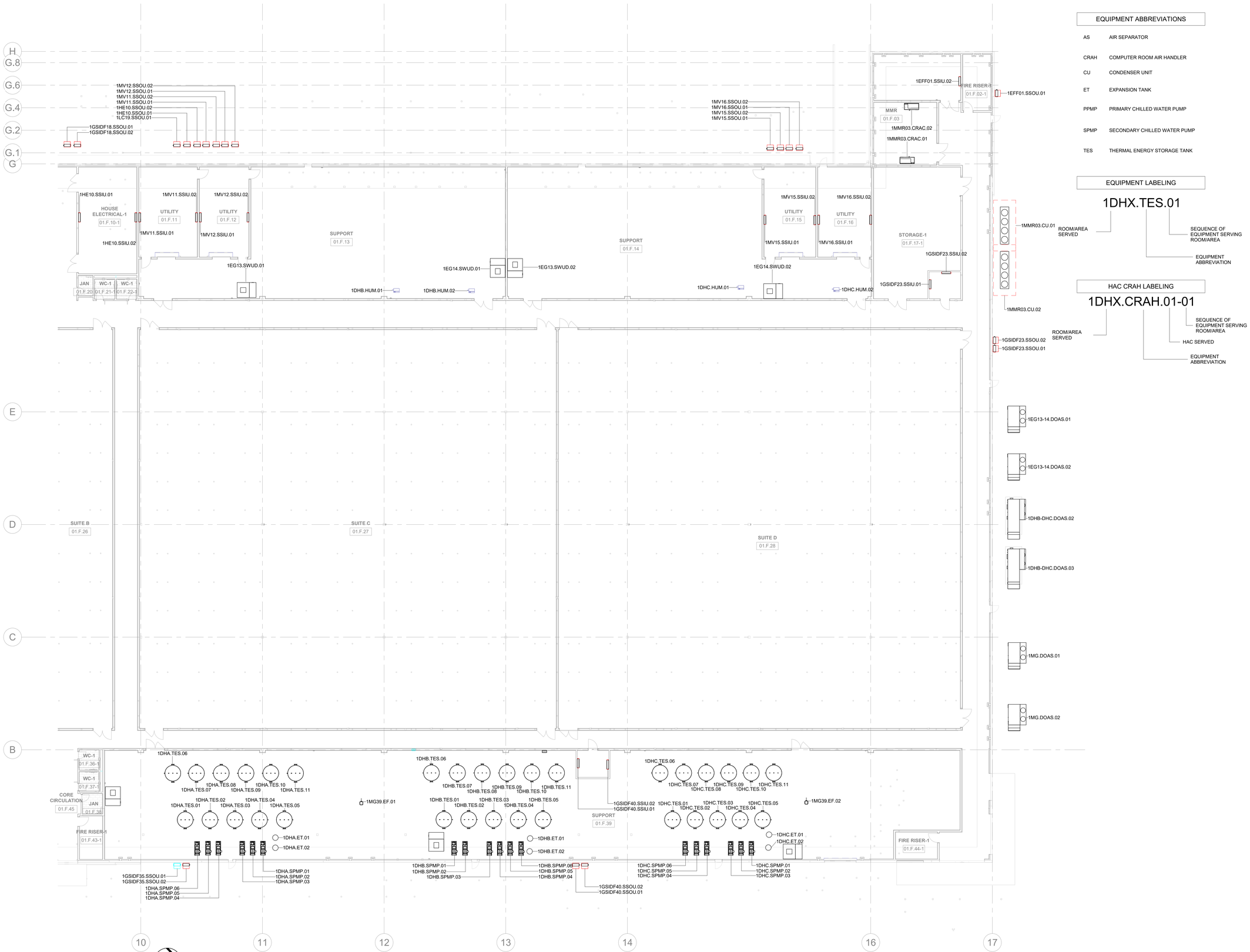
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SHEET TITLE

BLDG 1 SITE EQUIPMENT PLAN - MECHANICAL

PROJECT SUNSHINE

SHEET NUMBER
BLDG1-MH101-A



BLDG 1 EQUIPMENT PLAN TENANT FIT UP - NORTH

SCALE: 1/16" = 1'-0"

NORTH

EQUIPMENT ABBREVIATIONS

AS	AIR SEPARATOR
CRAH	COMPUTER ROOM AIR HANDLER
CU	CONDENSER UNIT
ET	EXPANSION TANK
PPMP	PRIMARY CHILLED WATER PUMP
SPMP	SECONDARY CHILLED WATER PUMP
TES	THERMAL ENERGY STORAGE TANK

EQUIPMENT LABELING

1DHX.TES.01

- ROOM/AREA SERVED
- SEQUENCE OF EQUIPMENT SERVING ROOM/AREA
- EQUIPMENT ABBREVIATION

HAC CRAH LABELING

1DHX.CRAH.01-01

- ROOM/AREA SERVED
- SEQUENCE OF EQUIPMENT SERVING ROOM/AREA
- HAC SERVED
- EQUIPMENT ABBREVIATION

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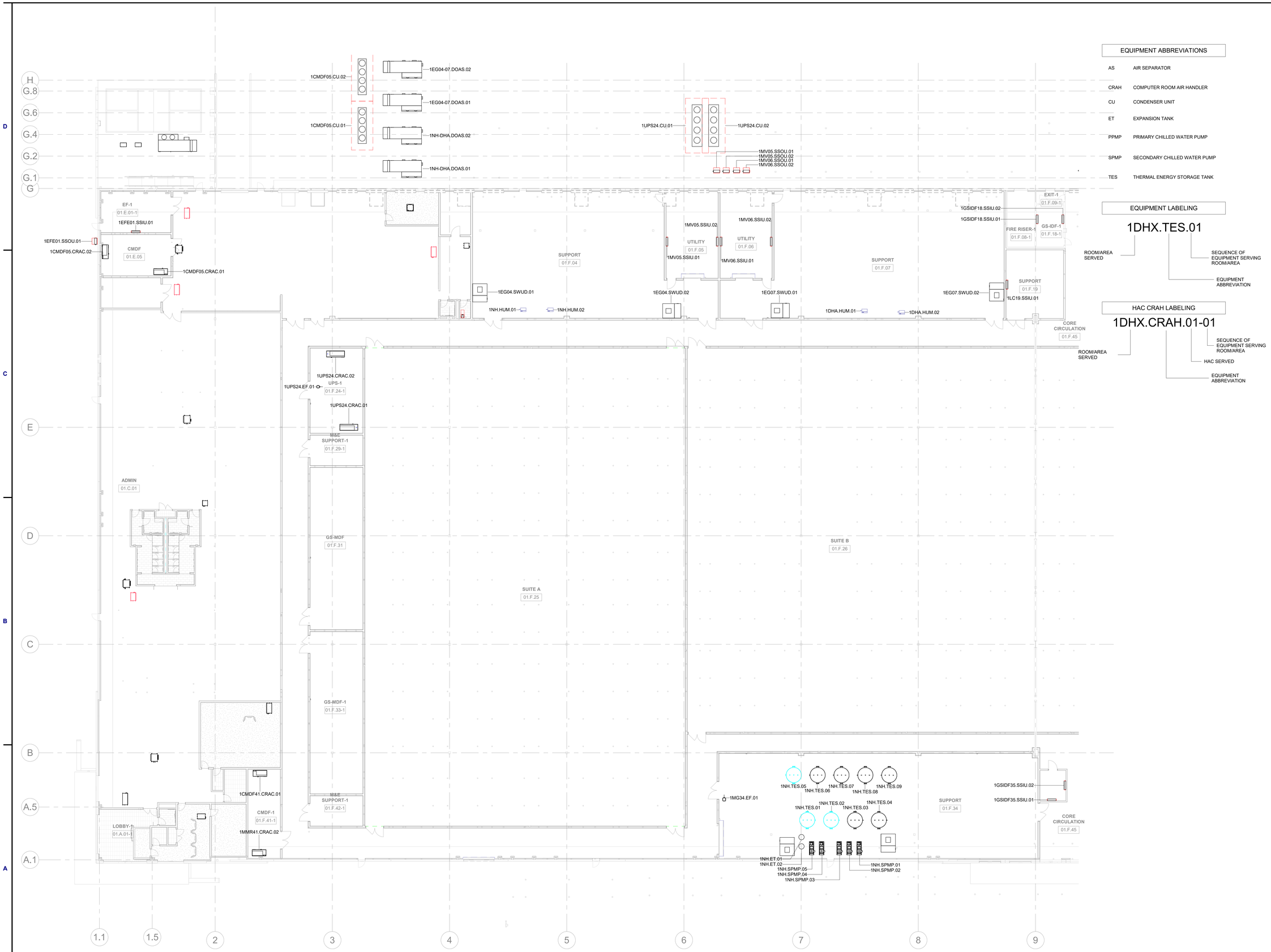
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SHEET TITLE

BLDG 1 EQUIPMENT PLAN - NORTH

SHEET NUMBER

BLDG1-MH102-A



EQUIPMENT ABBREVIATIONS

AS	AIR SEPARATOR
CRAH	COMPUTER ROOM AIR HANDLER
CU	CONDENSER UNIT
ET	EXPANSION TANK
PPMP	PRIMARY CHILLED WATER PUMP
SPMP	SECONDARY CHILLED WATER PUMP
TES	THERMAL ENERGY STORAGE TANK

EQUIPMENT LABELING

1DHX.TES.01

- ROOM/AREA SERVED
- SEQUENCE OF EQUIPMENT SERVING ROOM/AREA
- EQUIPMENT ABBREVIATION

HAC CRAH LABELING

1DHX.CRAH.01-01

- ROOM/AREA SERVED
- SEQUENCE OF EQUIPMENT SERVING ROOM/AREA
- HAC SERVED
- EQUIPMENT ABBREVIATION

BLDG 1 EQUIPMENT PLAN TENANT FIT UP - SOUTH

SCALE: 1/16" = 1'-0"

NORTH

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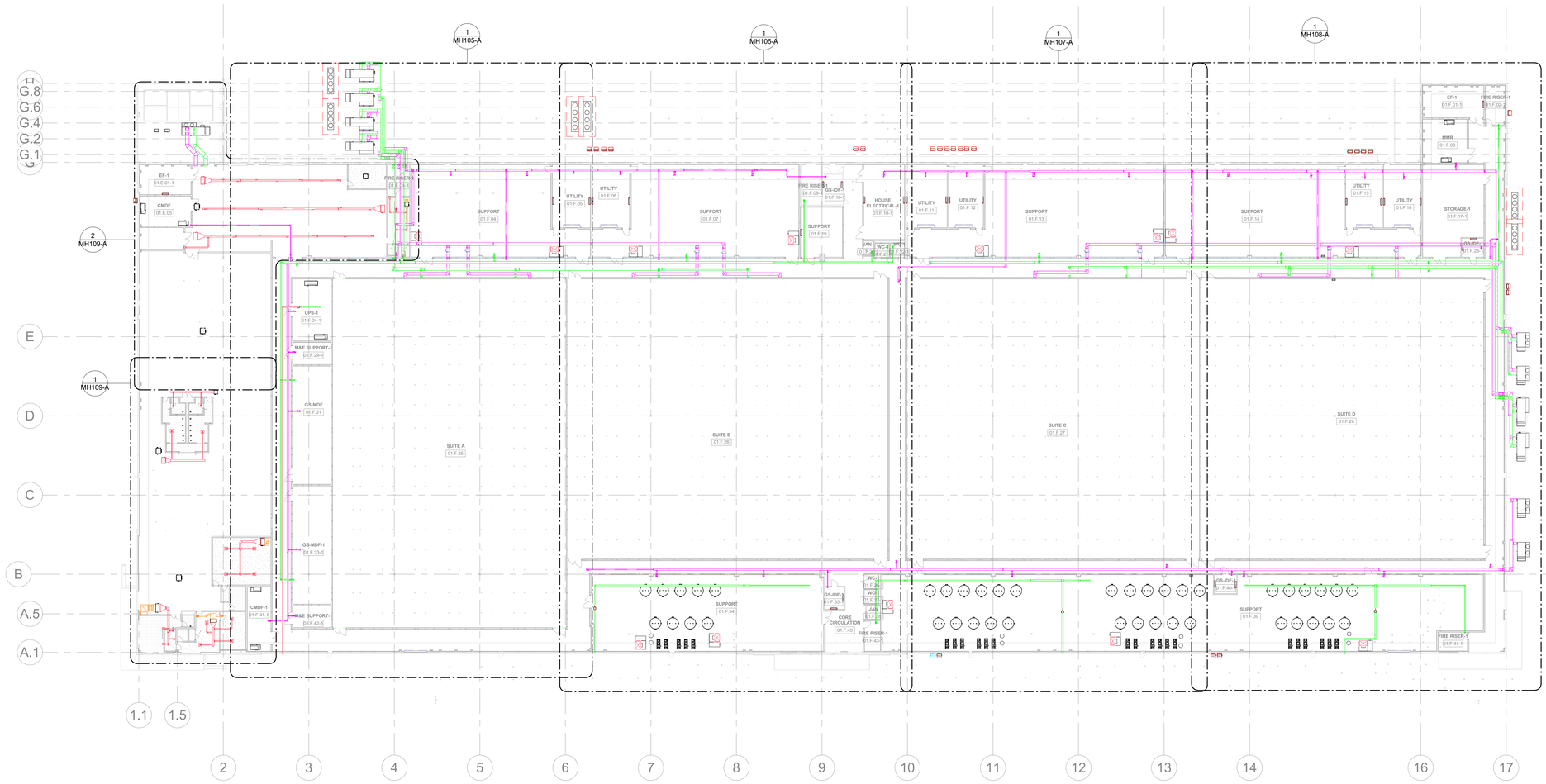
SHEET TITLE

BLDG 1 EQUIPMENT PLAN - SOUTH

SHEET NUMBER

BLDG1-MH103-A

DUCT COLOR LEGEND	
	SUPPLY AIR
	RETURN AIR
	EXHAUST AIR
	OUTDOOR AIR



BLDG 1 OVERALL FLOOR PLAN TENANT FIT UP - HVAC

SCALE: 1/32" = 1'-0"

NORTH

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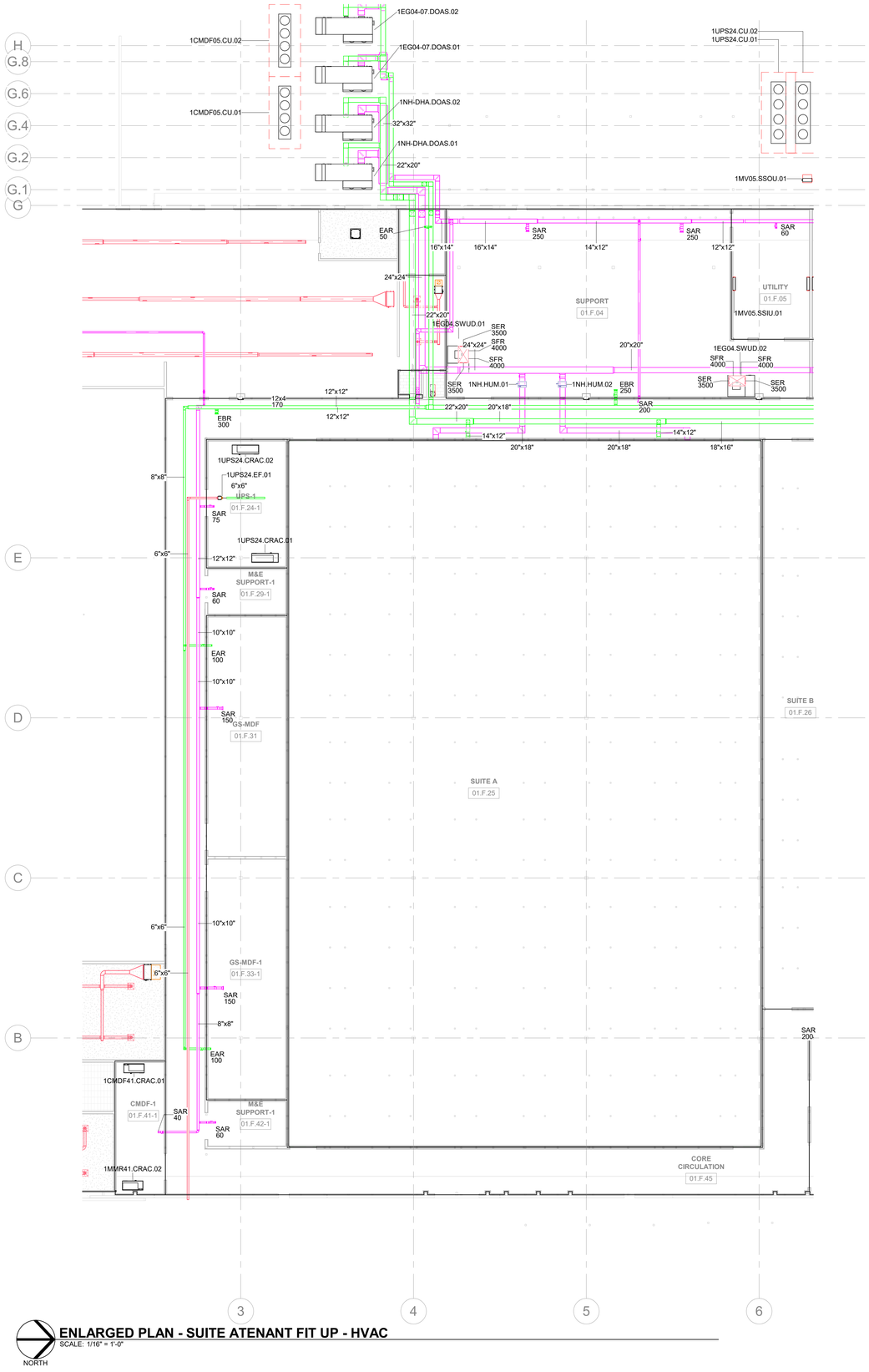
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SHEET TITLE

BLDG 1 OVERALL FLOOR PLAN - HVAC

SHEET NUMBER

BLDG1-MH104-A



ENLARGED PLAN - SUITE ATENANT FIT UP - HVAC

SCALE: 1/16" = 1'-0"

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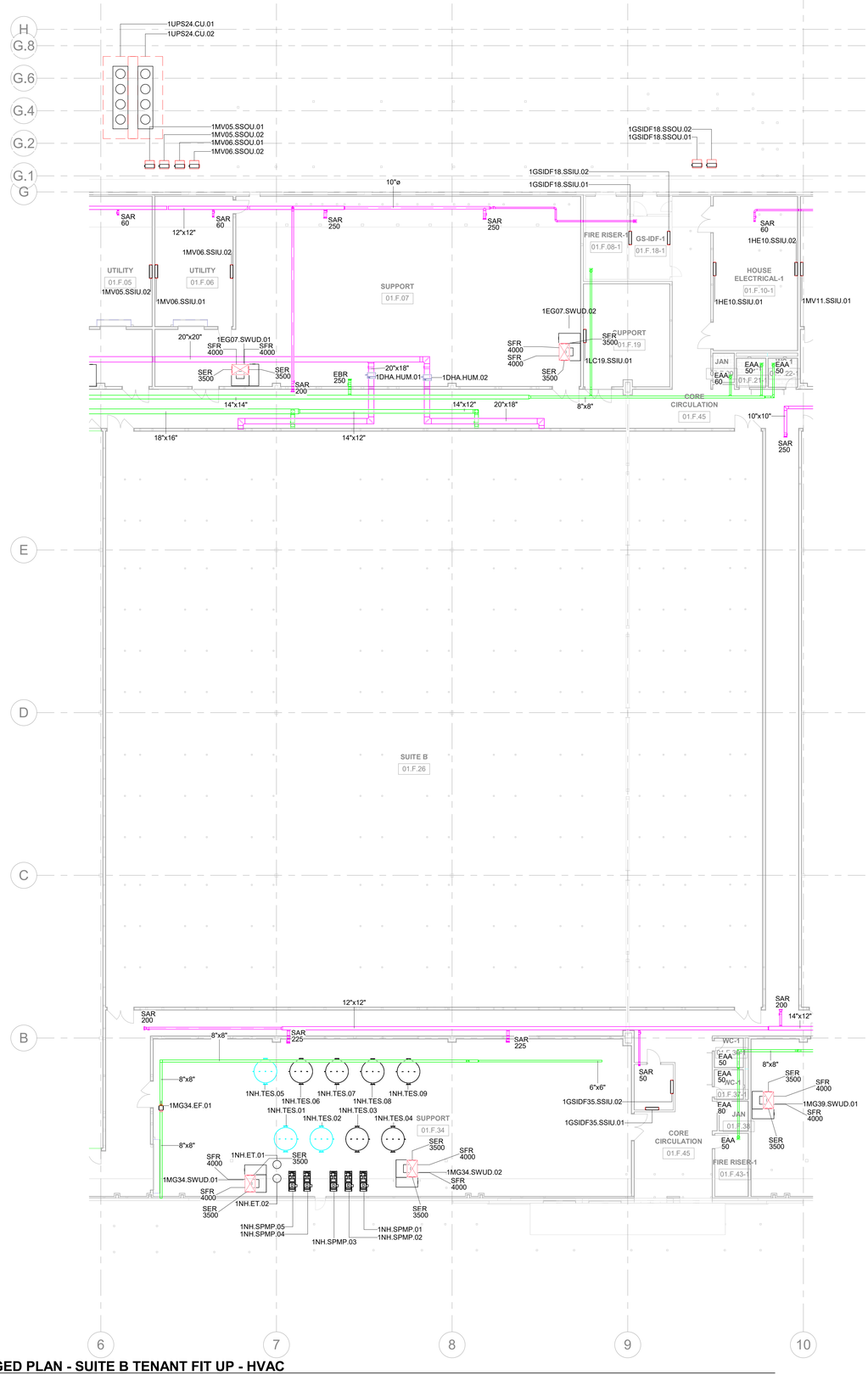
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SHEET TITLE

ENLARGED HVAC PLANS - SUITE A

SHEET NUMBER

BLDG1-MH105-A



ENLARGED PLAN - SUITE B TENANT FIT UP - HVAC

SCALE: 1/16" = 1'-0"

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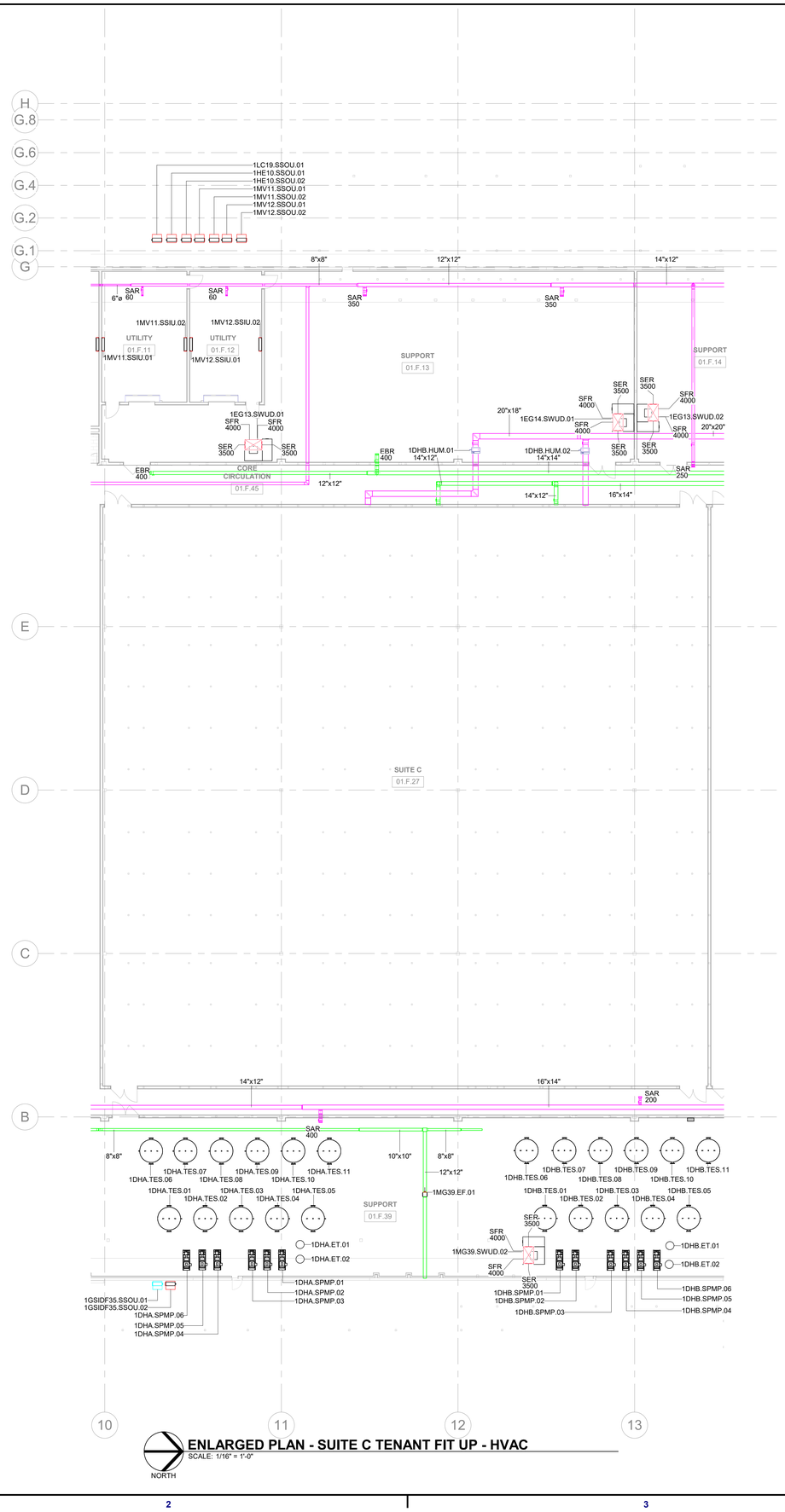
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SHEET TITLE

ENLARGED HVAC PLANS - SUITE B

SHEET NUMBER

BLDG1-MH106-A



ENLARGED PLAN - SUITE C TENANT FIT UP - HVAC

SCALE: 1/16" = 1'-0"

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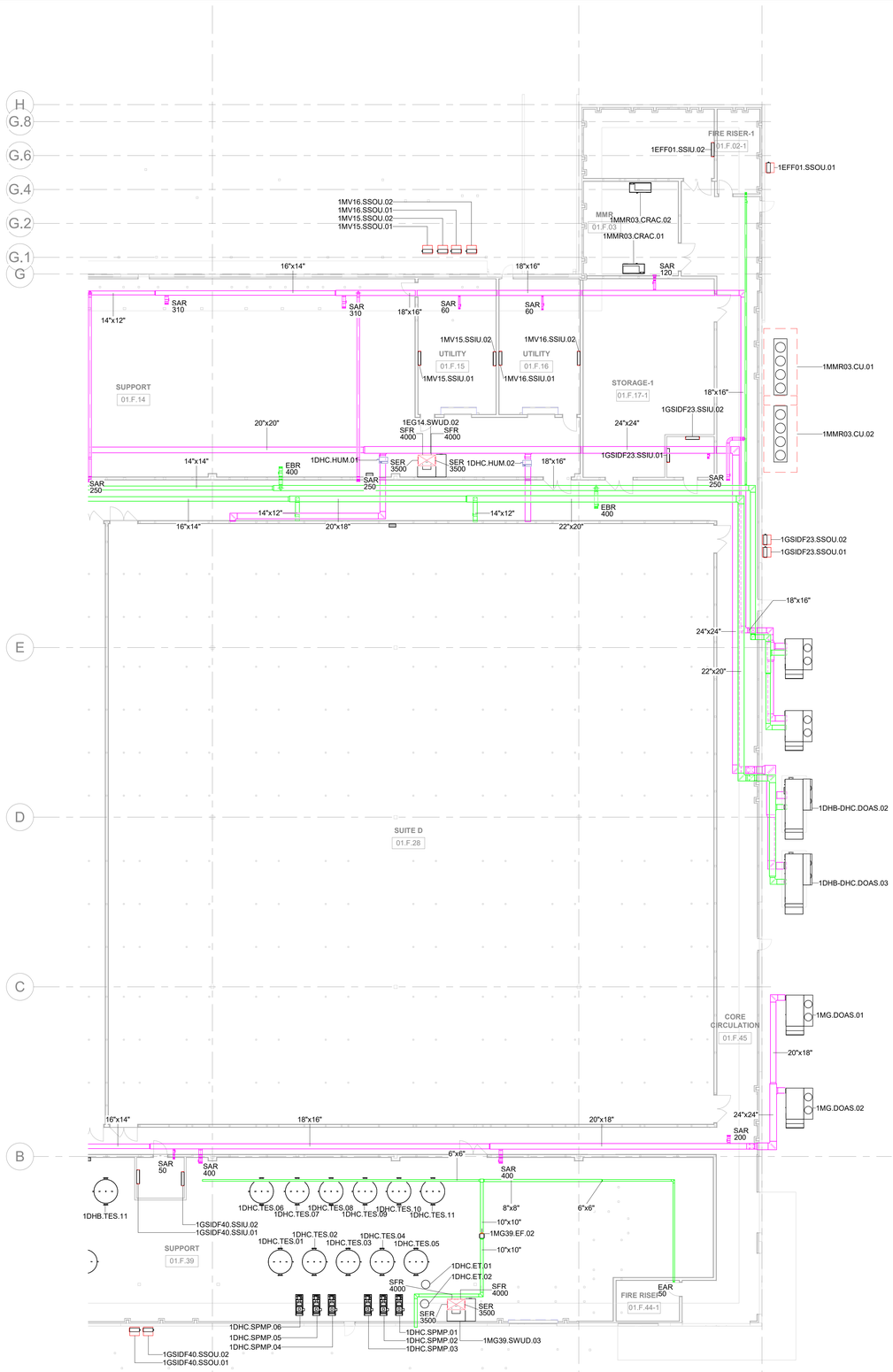
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SHEET TITLE

ENLARGED HVAC PLANS - SUITE C

SHEET NUMBER

BLDG1-MH107-A



ENLARGED PLAN - SUITE D TENANT FIT UP - HVAC

SCALE: 1/16" = 1'-0"

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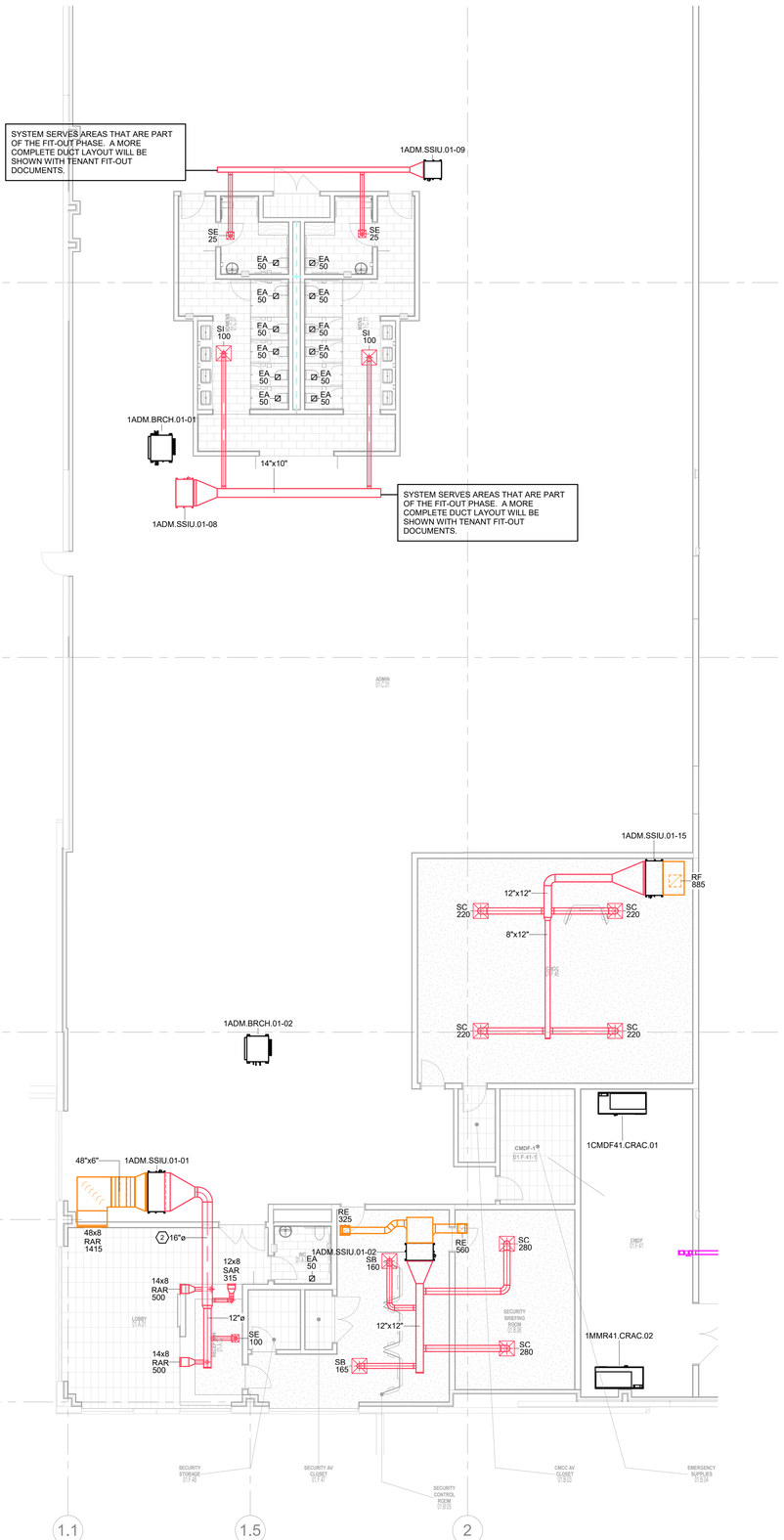
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SHEET TITLE

ENLARGED HVAC PLANS - SUITE D

SHEET NUMBER

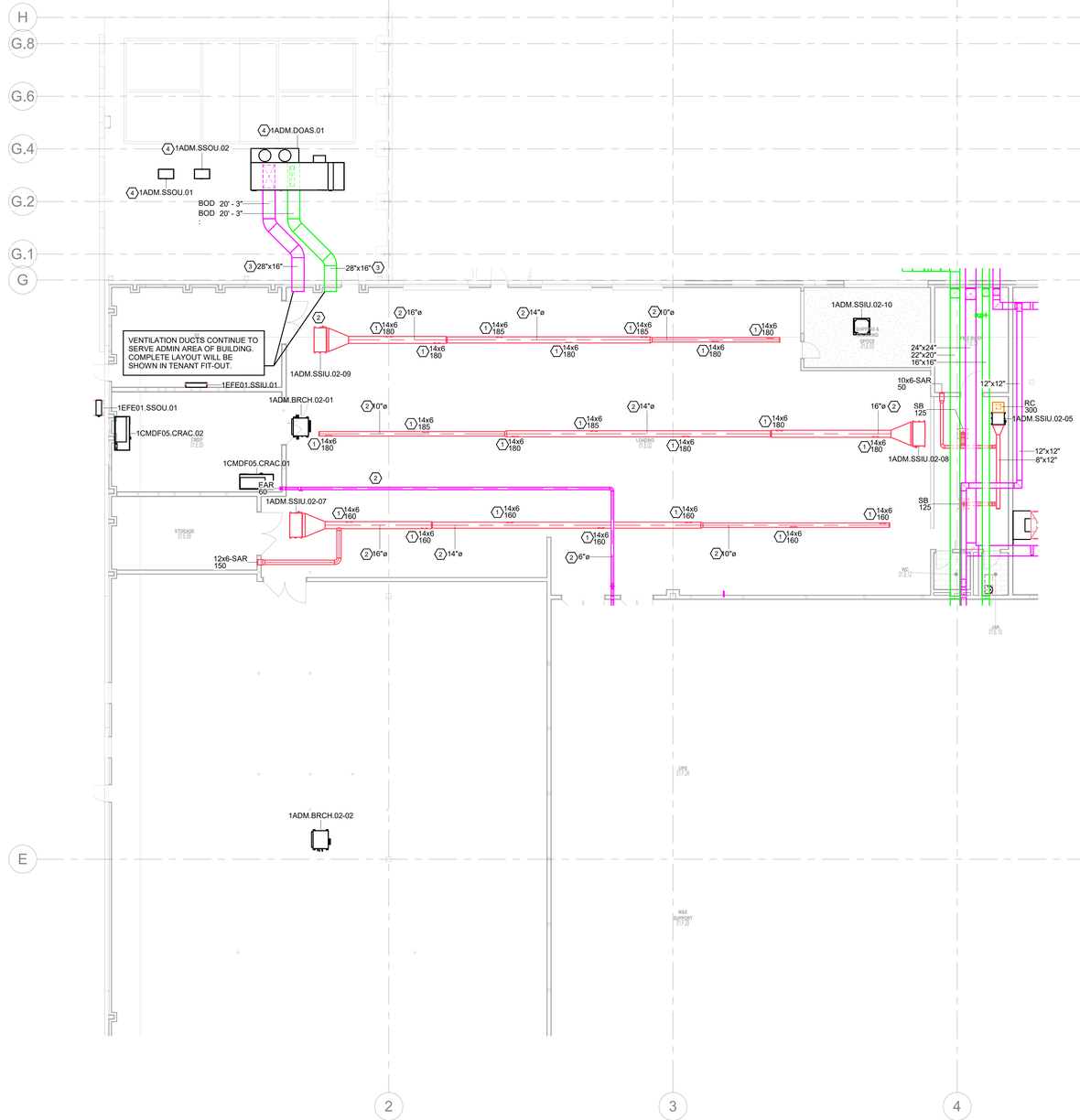
BLDG1-MH108-A



ENLARGED PLAN - OFFICE/ADMIN AREA

SCALE: 1/8" = 1'-0"

NORTH



ENLARGED PLAN - STORAGE AREA

SCALE: 3/32" = 1'-0"

NORTH

SHEET KEYNOTES:

1. PROVIDE DUCT MOUNTED DOUBLE DEFLECTION GRILLE WITH EXTRACTOR. SHALL BE TITUS S300FS OR EQUAL.
2. EXPOSED DUCT SHALL BE DOUBLE WALL SPIRAL WITH PAINT GRIP STEEL CONSTRUCTION. PAINT IN COLOR SELECTED BY OWNER.
3. DUCTWORK ROUTED BELOW STRUCTURAL PLATFORM FOR ENTRY INTO BUILDING FROM EXTERIOR WALL. SEE DETAILS FOR DUCTS EXPOSED TO WEATHER.
4. EQUIPMENT SUPPORTED FROM RAISED STRUCTURAL PLATFORM. SEE STRUCTURAL DRAWINGS FOR MORE INFORMATION ON PLATFORM.

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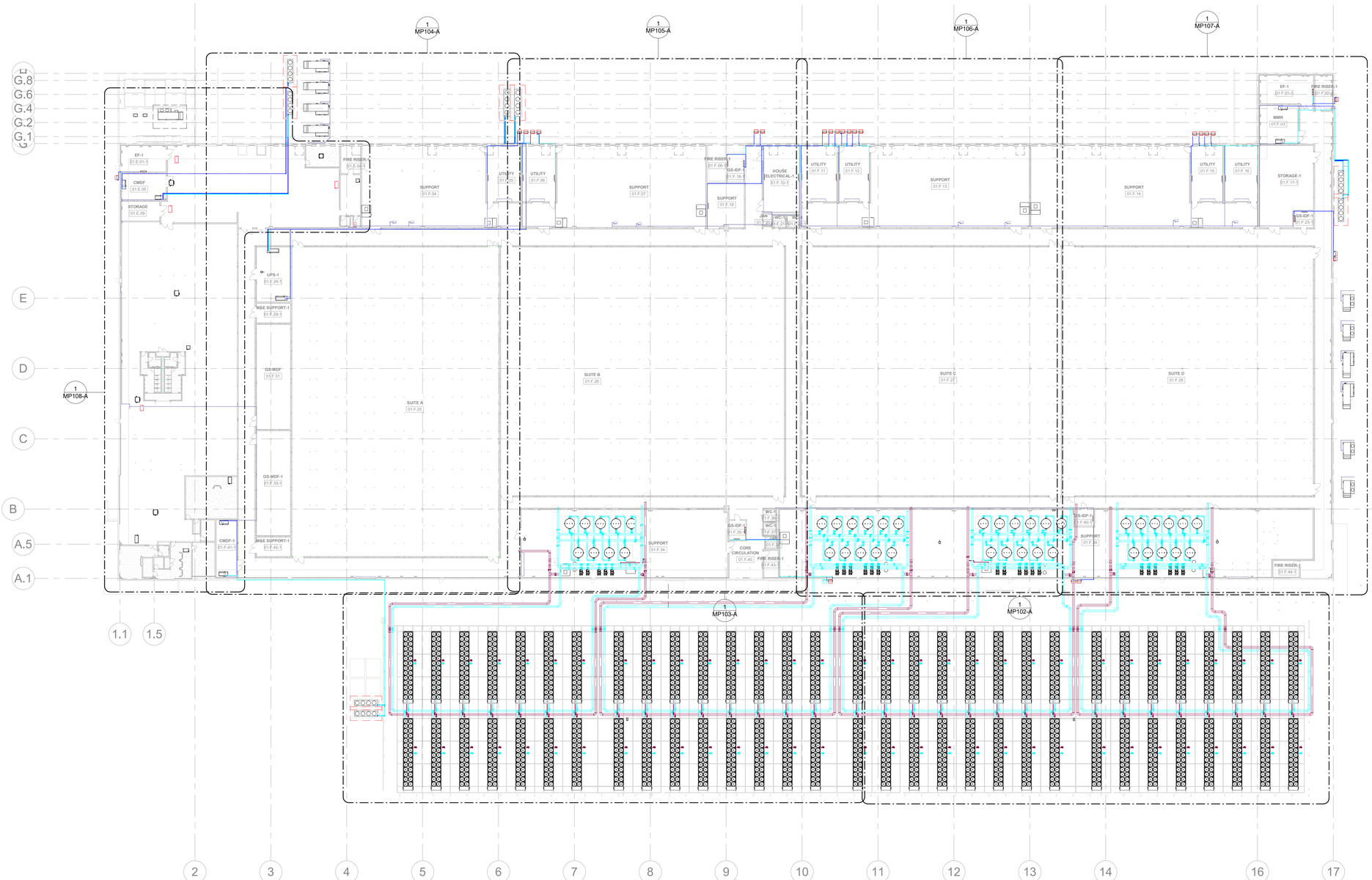
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SHEET TITLE

ENLARGED HVAC PLANS - OFFICE AREA

SHEET NUMBER

BLDG1-MH109-A



NORTH

BLDG 1 OVERALL FLOOR PLAN TENANT FIT UP - PIPING

SCALE: 1/32" = 1'-0"

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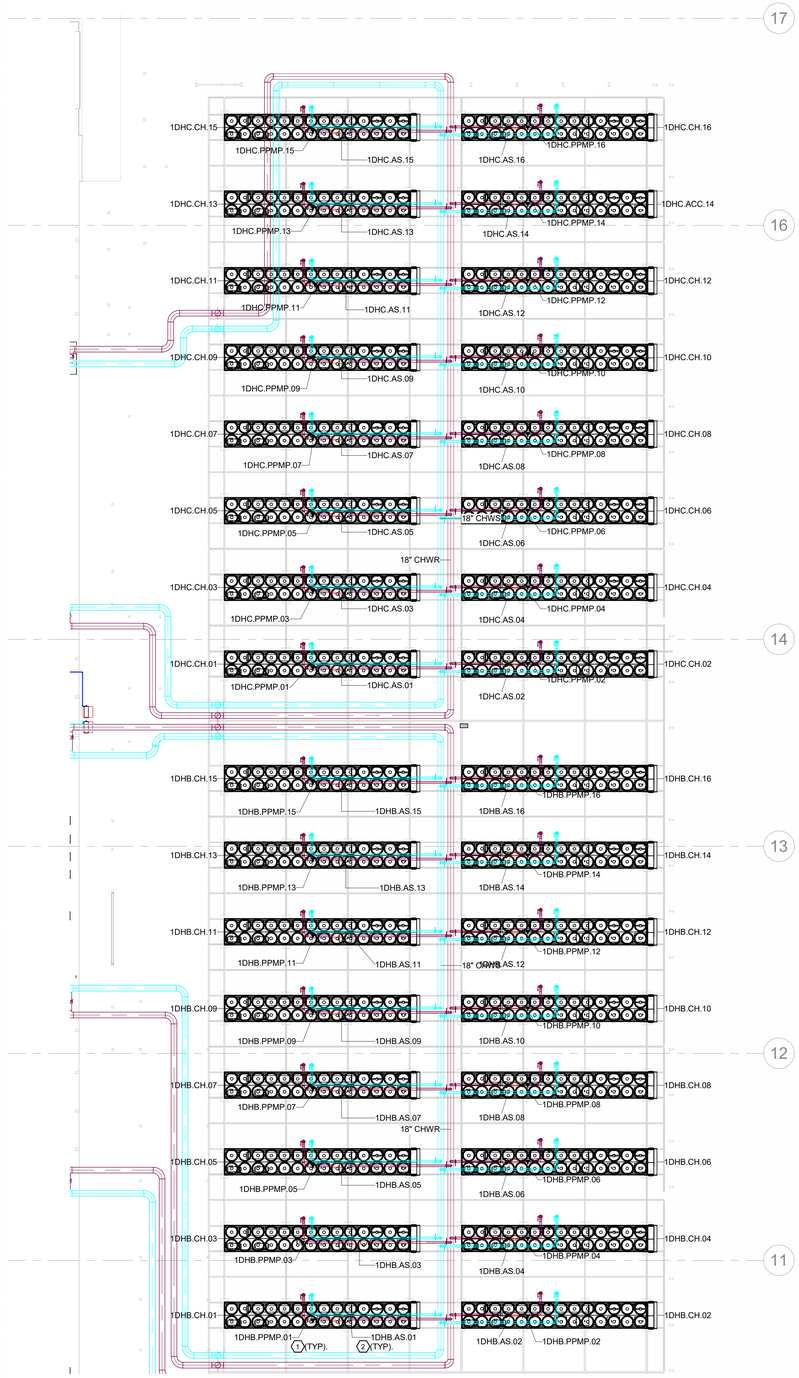
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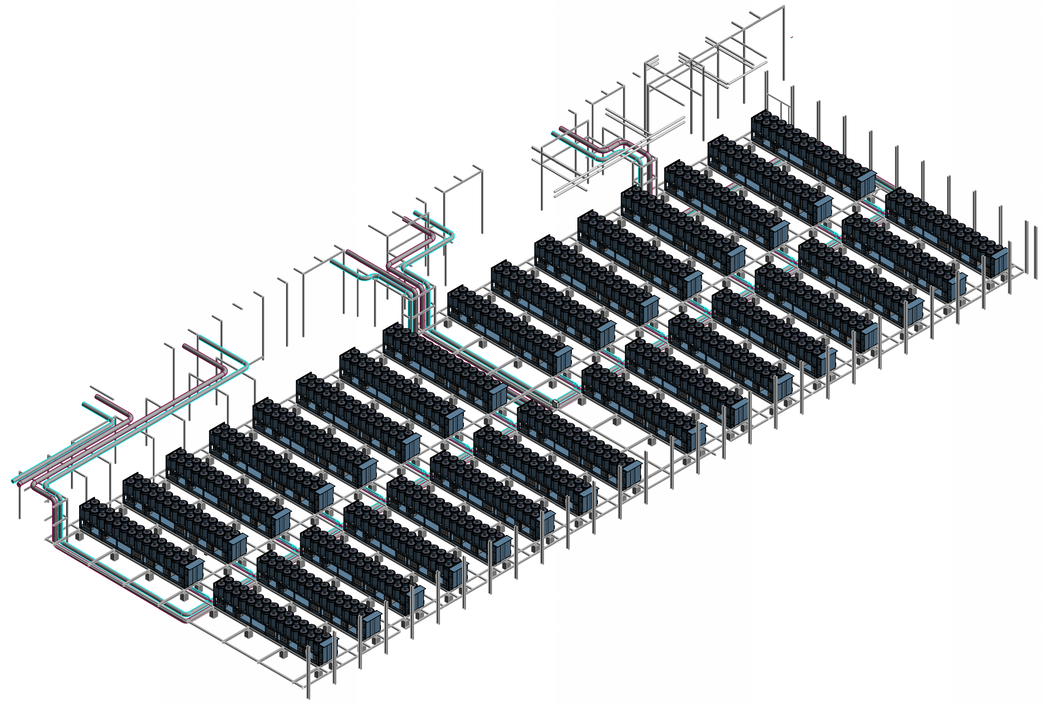
SHEET TITLE

BLDG 1 FLOOR PLAN - OVERALL PIPING

SHEET NUMBER

BLDG1-MP101-A





ENLARGED SITE PLAN TENANT FIT UP - NORTH CHILLER YARD

SCALE: 1/16" = 1'-0"

NORTH

SHEET KEYNOTES:

1. PRIMARY PUMP SERVING CHILLER PROVIDED BY CHILLER MANUFACTURER AND INTEGRAL TO CHILLER UNIT SKID. REFER TO PROCESS FLOW DIAGRAMS FOR PIPING ACCESSORIES.
2. AIR SEPARATOR IS LOCATED UNDERNEATH CHILLER SKID PLATFORM.

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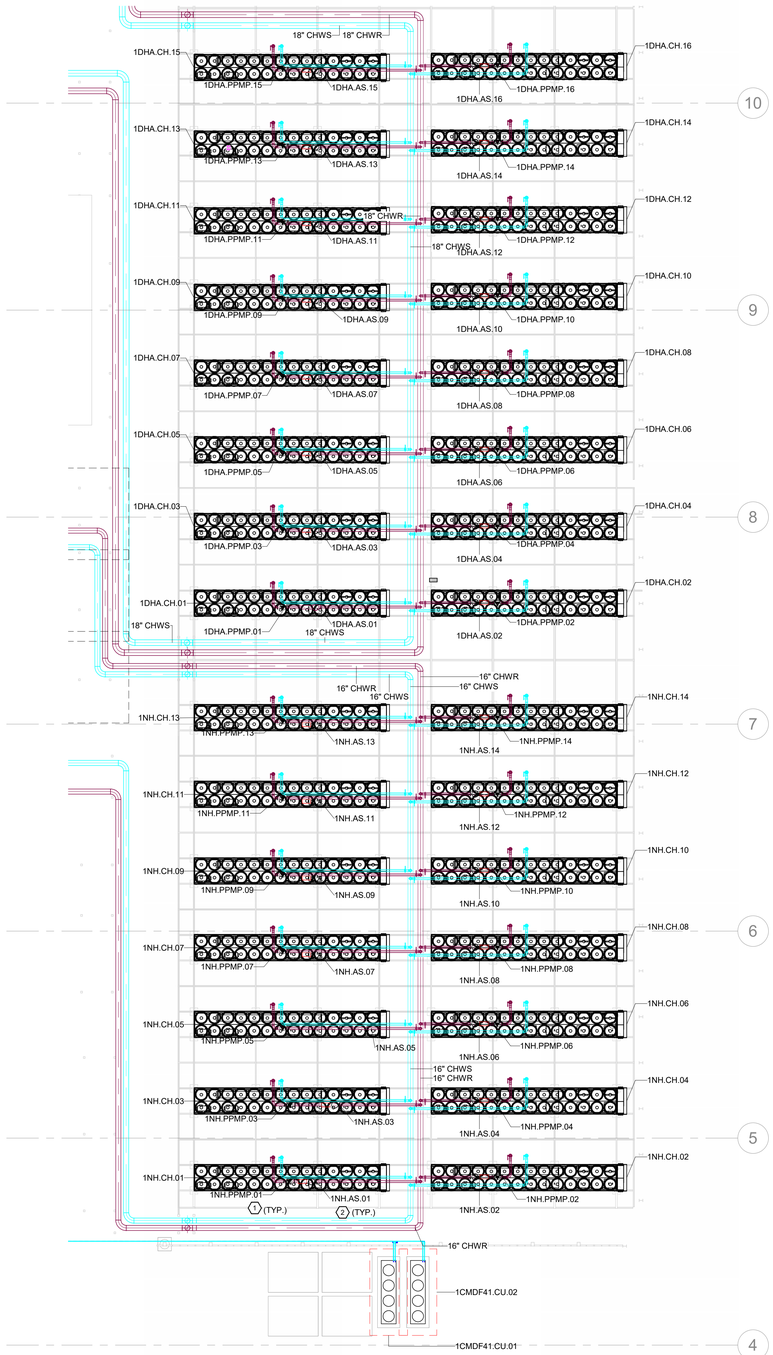
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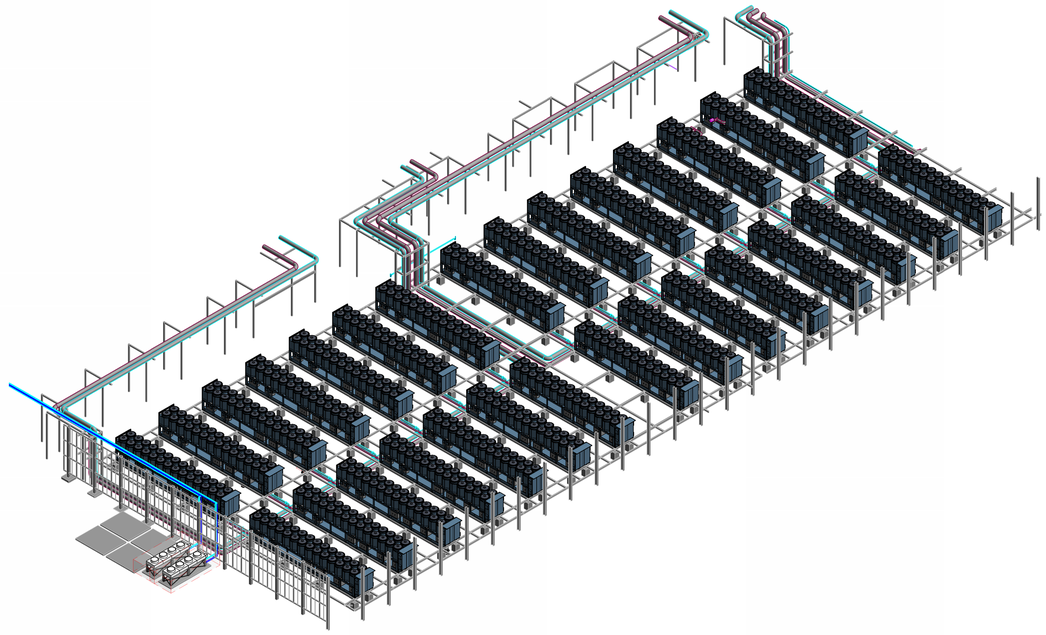
SHEET TITLE

ENLARGED PLANS - NORTH CHILLER YARD

SHEET NUMBER

BLDG1-MP102-A





ENLARGED SITE PLAN TENANT FIT UP - SOUTH CHILLER YARD

SCALE: 1/16" = 1'-0"

NORTH

SHEET KEYNOTES:

1. PRIMARY PUMP SERVING CHILLER PROVIDED BY CHILLER MANUFACTURER AND INTEGRAL TO CHILLER UNIT SKID. REFER TO PROCESS FLOW DIAGRAMS FOR PIPING ACCESSORIES.
2. AIR SEPARATOR IS LOCATED UNDERNEATH CHILLER SKID PLATFORM.

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Nashville, TN 37204

FIRM CERTIFICATE OF AUTHORIZATION: CA-1276

PROFESSIONAL SEAL

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BUILDING 1

810 PACE RD.
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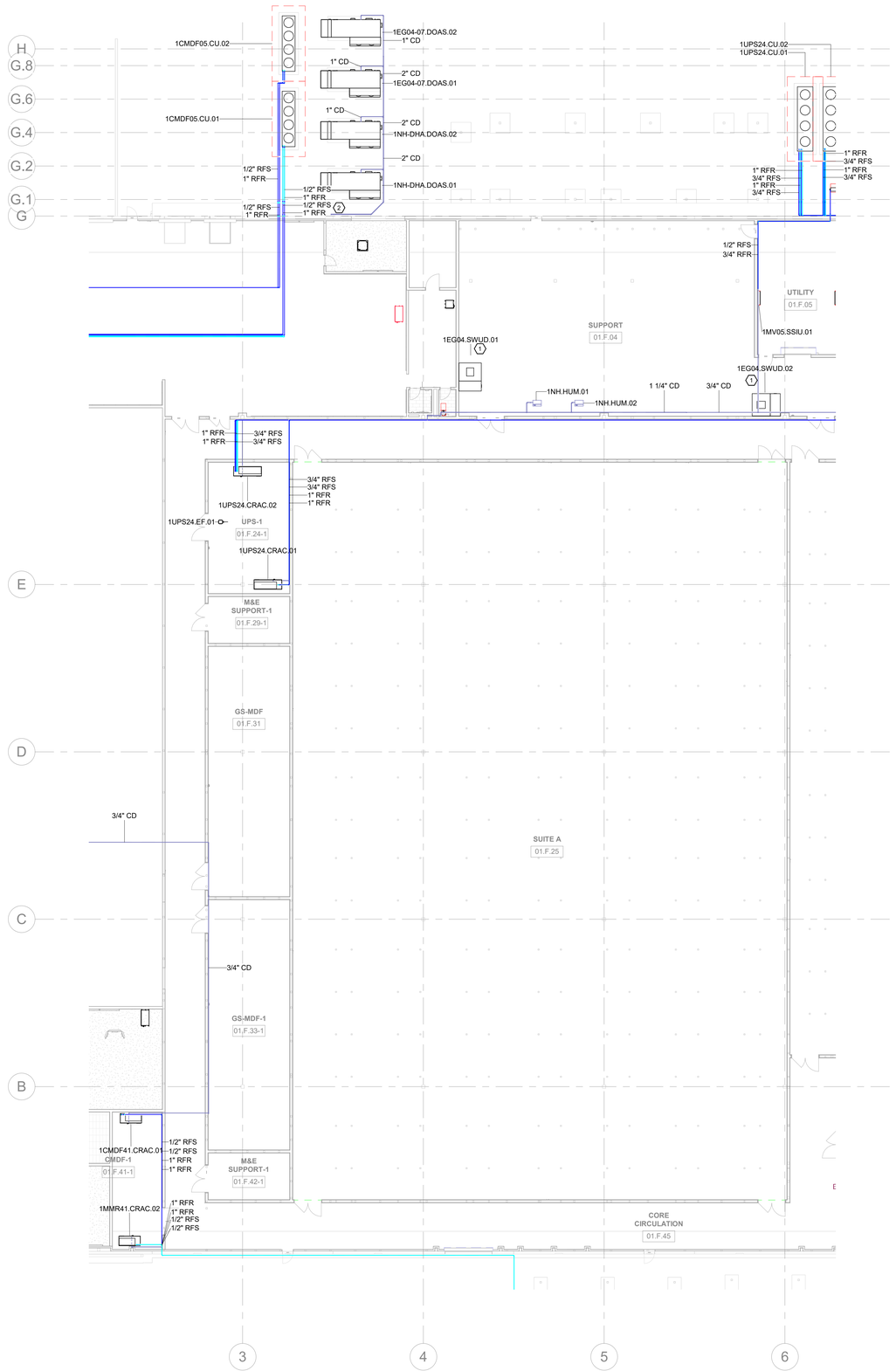
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SHEET TITLE

ENLARGED PLANS - SOUTH CHILLER YARD

SHEET NUMBER

BLDG1-MP103-A



SHEET KEYNOTES:

1. SWUD UNITS INSTALLED IN TENANT FIT UP PHASE, CONNECT TO CHILLED WATER LOOP IN TENANT FIT OUT PHASE.
2. DOAS CONDENSATE TRAIN ROUTED TO STORM DRAIN. TERMINATE ABOVE STORM SEWER AND PROVIDE AIR GAP.

ENLARGED PLAN - SUITE A TENANT FIT UP - PIPING

SCALE: 1/16" = 1'-0"

NORTH

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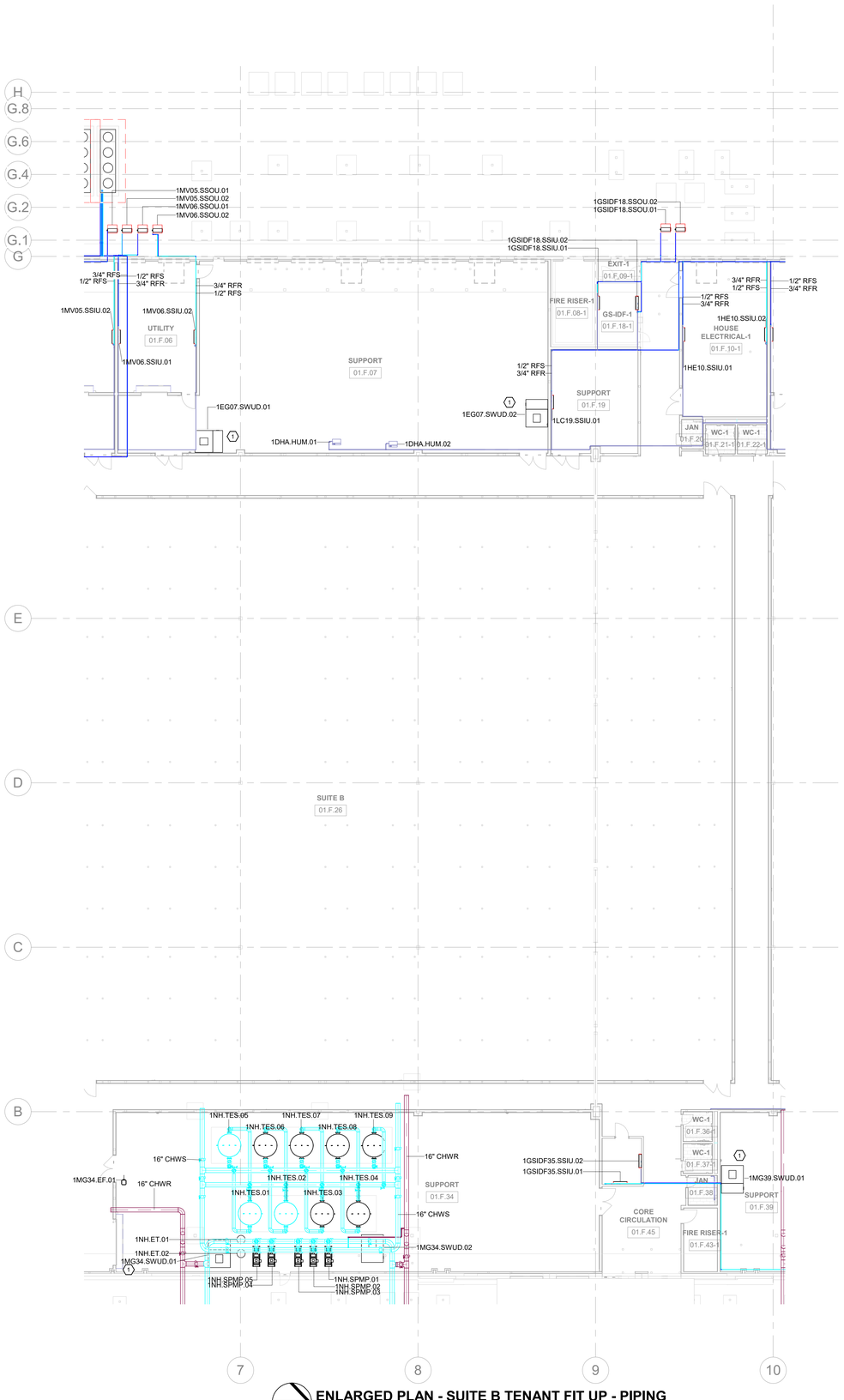
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SHEET TITLE

ENLARGED PIPING PLANS - SUITE A

SHEET NUMBER

BLDG1-MP104-A



ENLARGED PLAN - SUITE B TENANT FIT UP - PIPING

SCALE: 1/16" = 1'-0"

SHEET KEYNOTES:

1. SWUD UNITS INSTALLED IN TENANT FIT UP PHASE. CONNECT TO CHILLED WATER LOOP IN TENANT FIT OUT PHASE.

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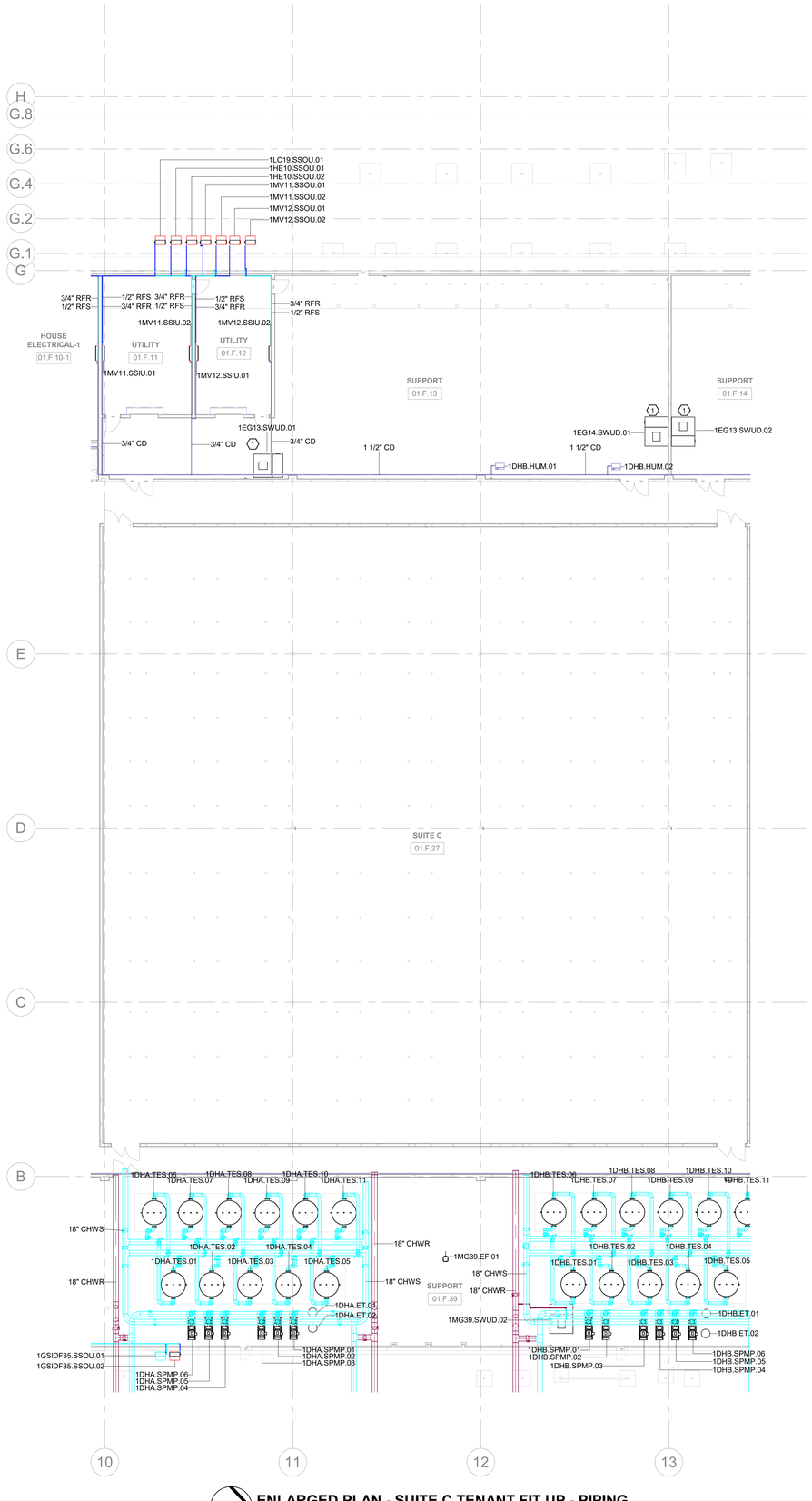
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SHEET TITLE

ENLARGED PIPING PLANS - SUITE B

SHEET NUMBER

BLDG1-MP105-A



NORTH

ENLARGED PLAN - SUITE C TENANT FIT UP - PIPING

SCALE: 1/16" = 1'-0"

SHEET KEYNOTES:

1. SWUD UNITS INSTALLED IN TENANT FIT UP PHASE, CONNECT TO CHILLED WATER LOOP IN TENANT FIT OUT PHASE.

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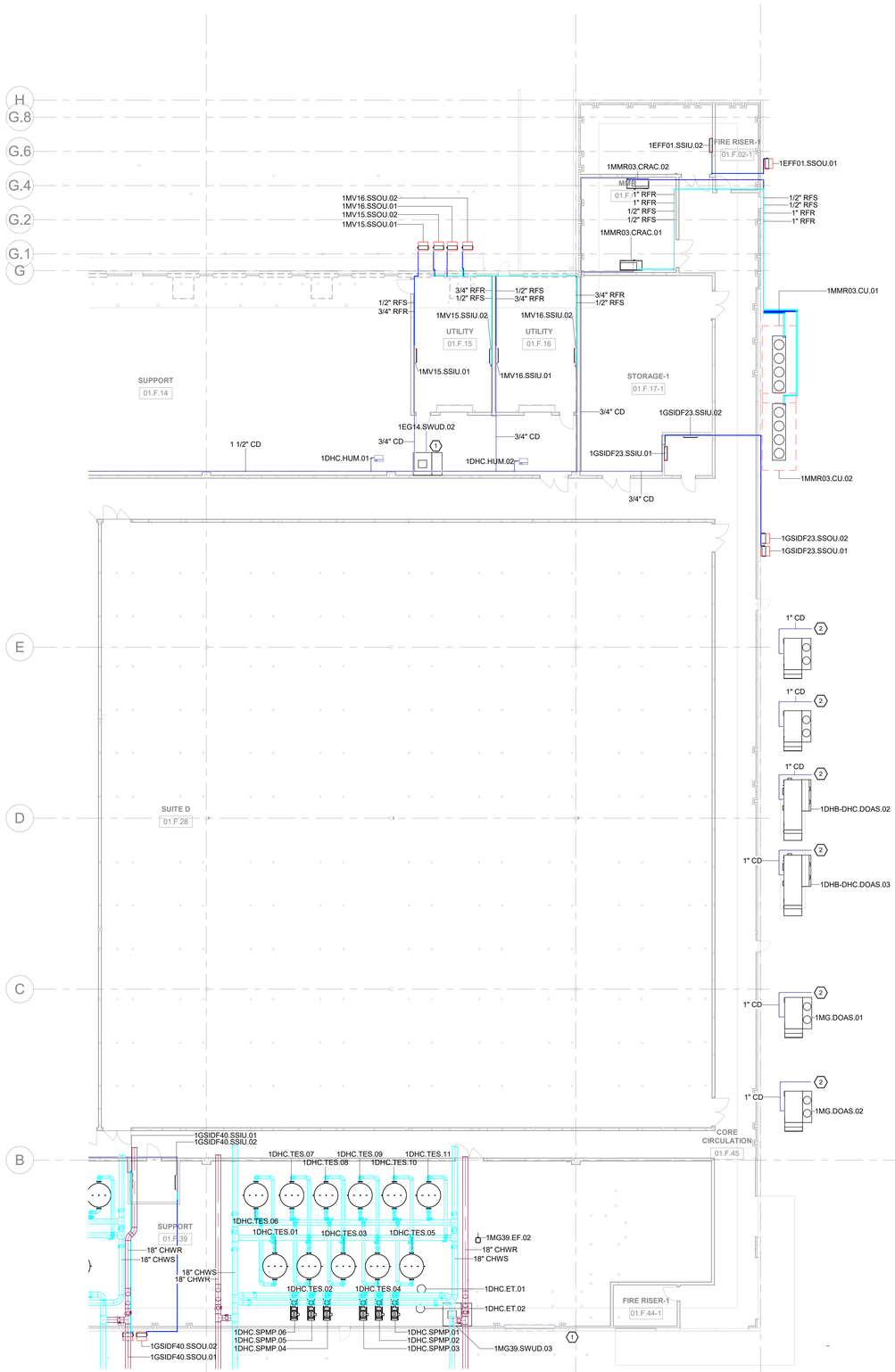
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SHEET TITLE

ENLARGED PIPING PLANS - SUITE C

SHEET NUMBER

BLDG1-MP106-A



ENLARGED PLAN - SUITE D TENANT FIT UP - PIPING

SCALE: 1/16" = 1'-0"

SHEET KEYNOTES:

1. SWUD UNITS INSTALLED IN TENANT FIT UP PHASE, CONNECT TO CHILLED WATER LOOP IN TENANT FIT OUT PHASE.
2. TERMINATE CONDENSATE PIPE ON GRASS TOWARD STREET.

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SHEET TITLE

ENLARGED PIPING PLANS - SUITE D

SHEET NUMBER

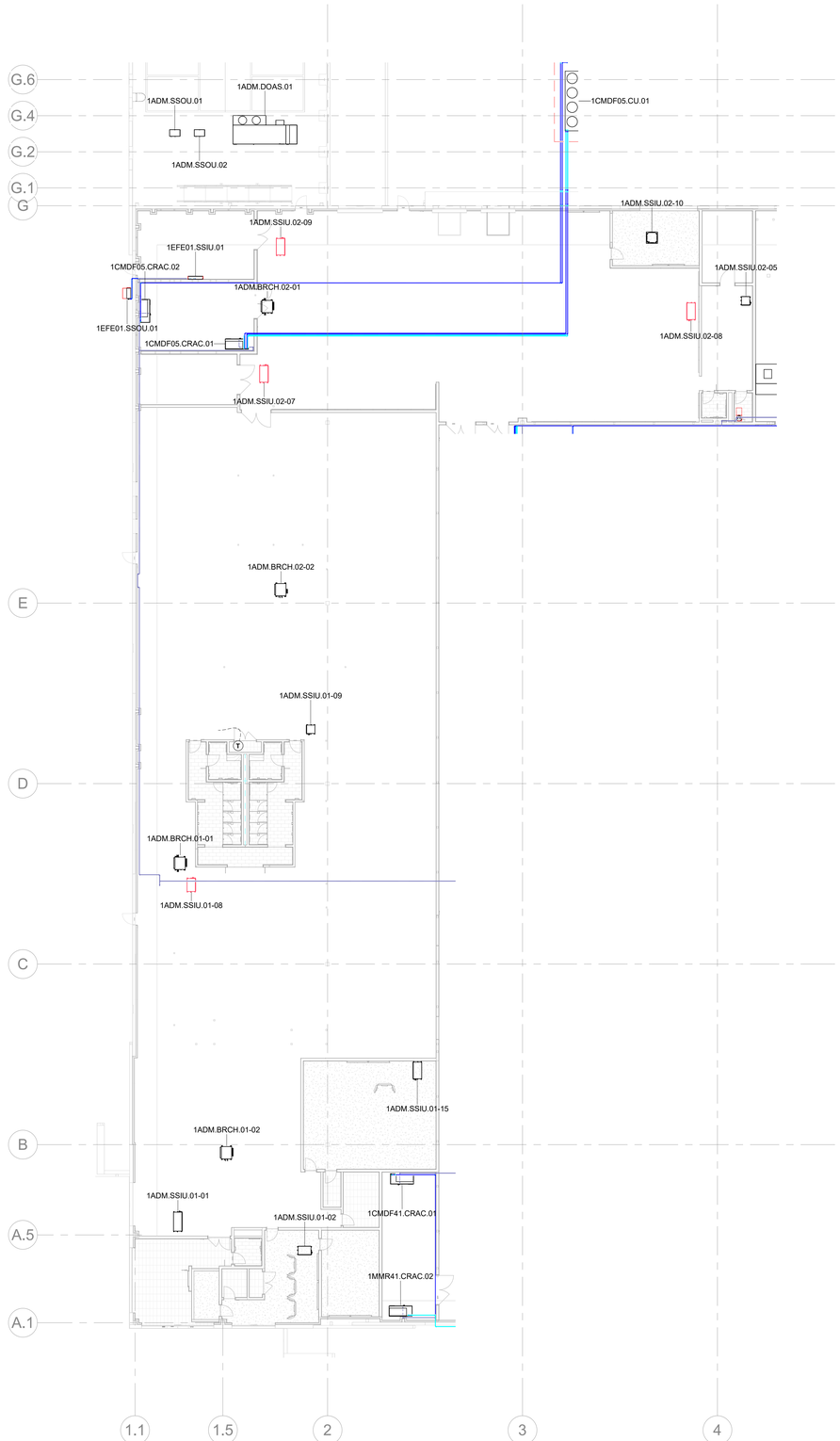
BLDG1-MP107-A

GENERAL NOTES:

A. ALL THERMOSTAT SYMBOLS TIED TO THE VRF SYSTEM REPRESENT THE LOCATION OF THE WIRED REMOTE CONTROLLER.

SHEET KEYNOTES:

1 REFRIGERANT PIPING SHALL BE SIZED AND INSTALLED PER MANUFACTURER RECOMMENDATION.



1 ENLARGED PLAN - OFFICE AREA - PIPING
SCALE: 1/16" = 1'-0"

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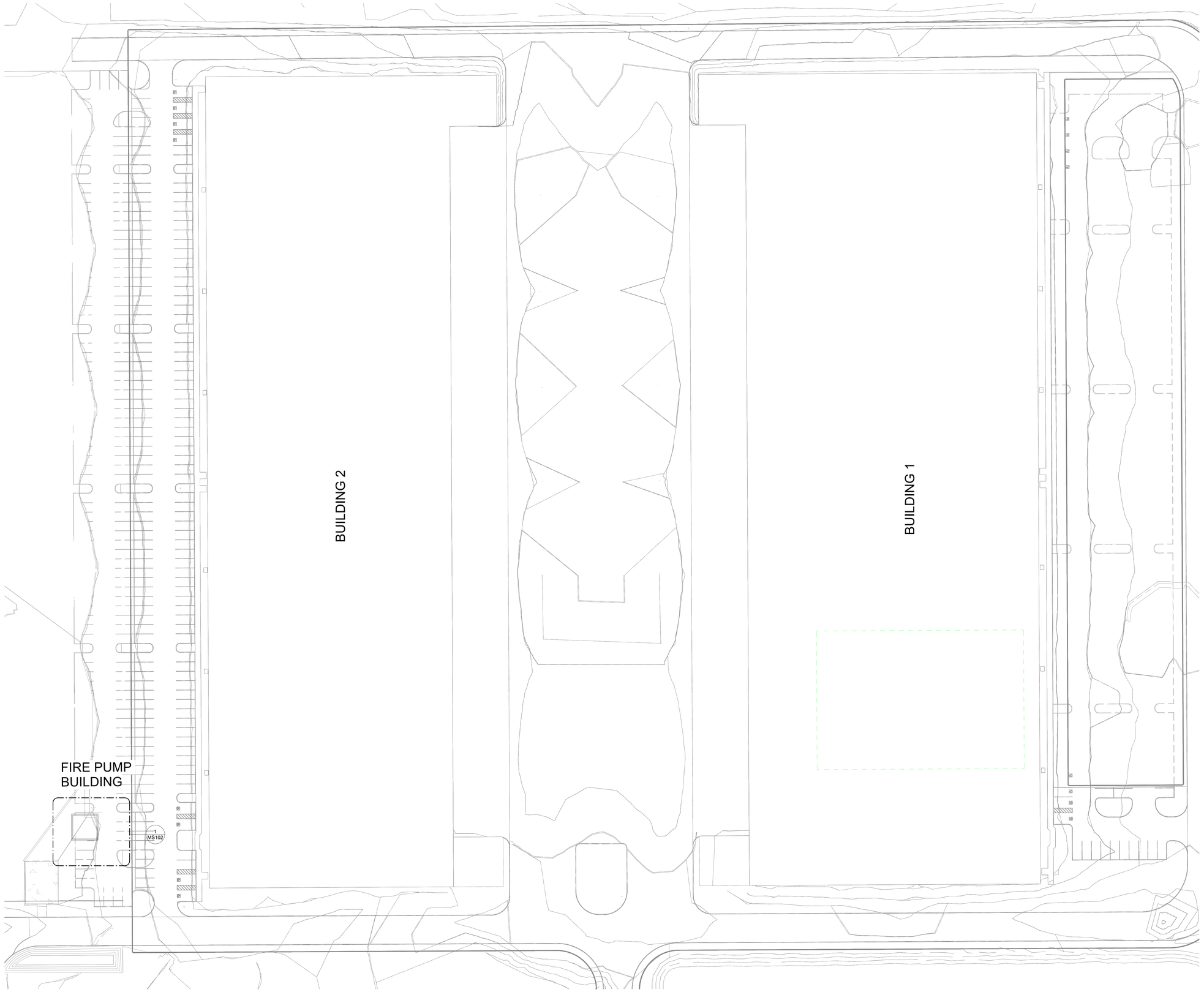
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SHEET TITLE

ENLARGED PIPING PLANS - OFFICE AREA

SHEET NUMBER

BLDG1-MP108-A



1 PHASE 1 SITE PLAN - MECHANICAL
SCALE: 1" = 40'-0"

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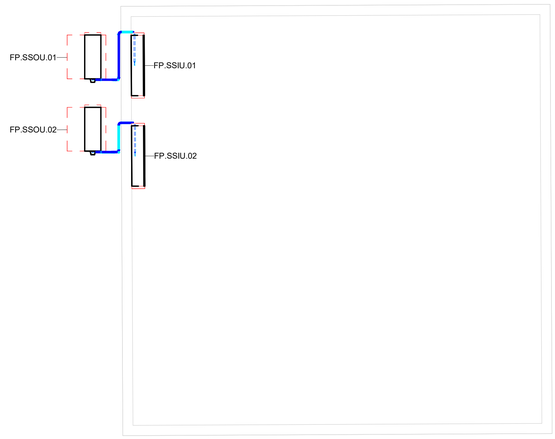
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SHEET TITLE

PHASE 1 SITE PLAN - MECHANICAL

SHEET NUMBER
BLDG1-MS101



NORTH

ENLARGED MECHANICAL PLAN - FIRE PUMP ROOM

SCALE: 1/4" = 1'-0"

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SHEET TITLE

ENLARGED MECHANICAL PLAN - FIRE PUMP ROOM

SHEET NUMBER

BLDG1-MS102