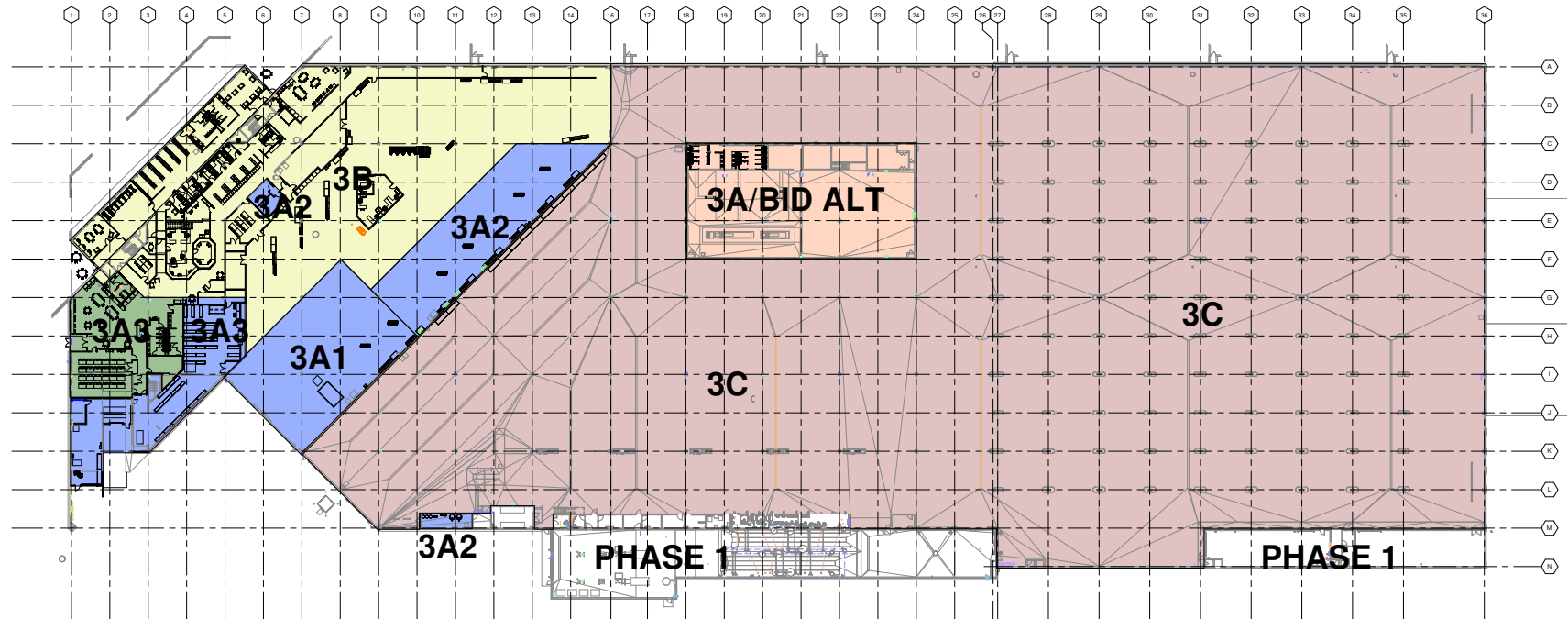
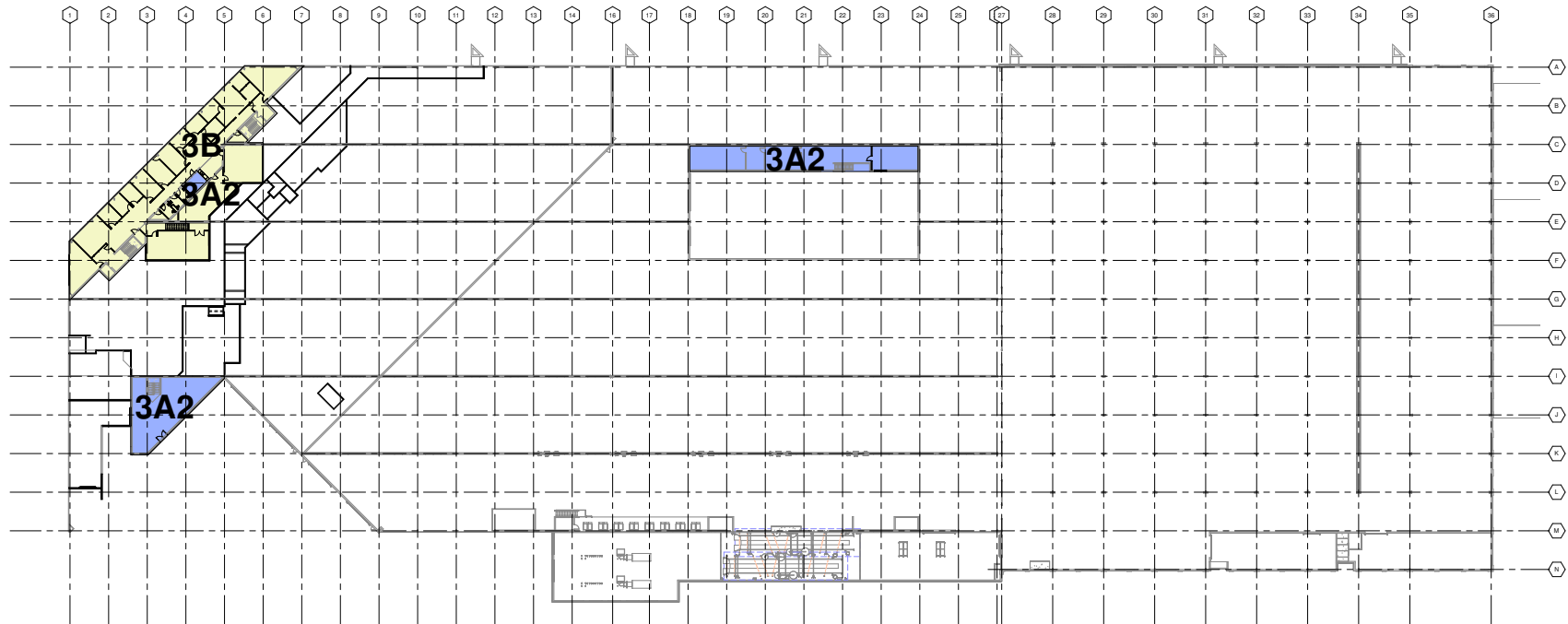


3A Spaces are Complete
3B and 3C Spaces are In Scope for Cx



1 OVERALL FIRST FLOOR PLAN - PHASING NEW
1" = 32'-0"



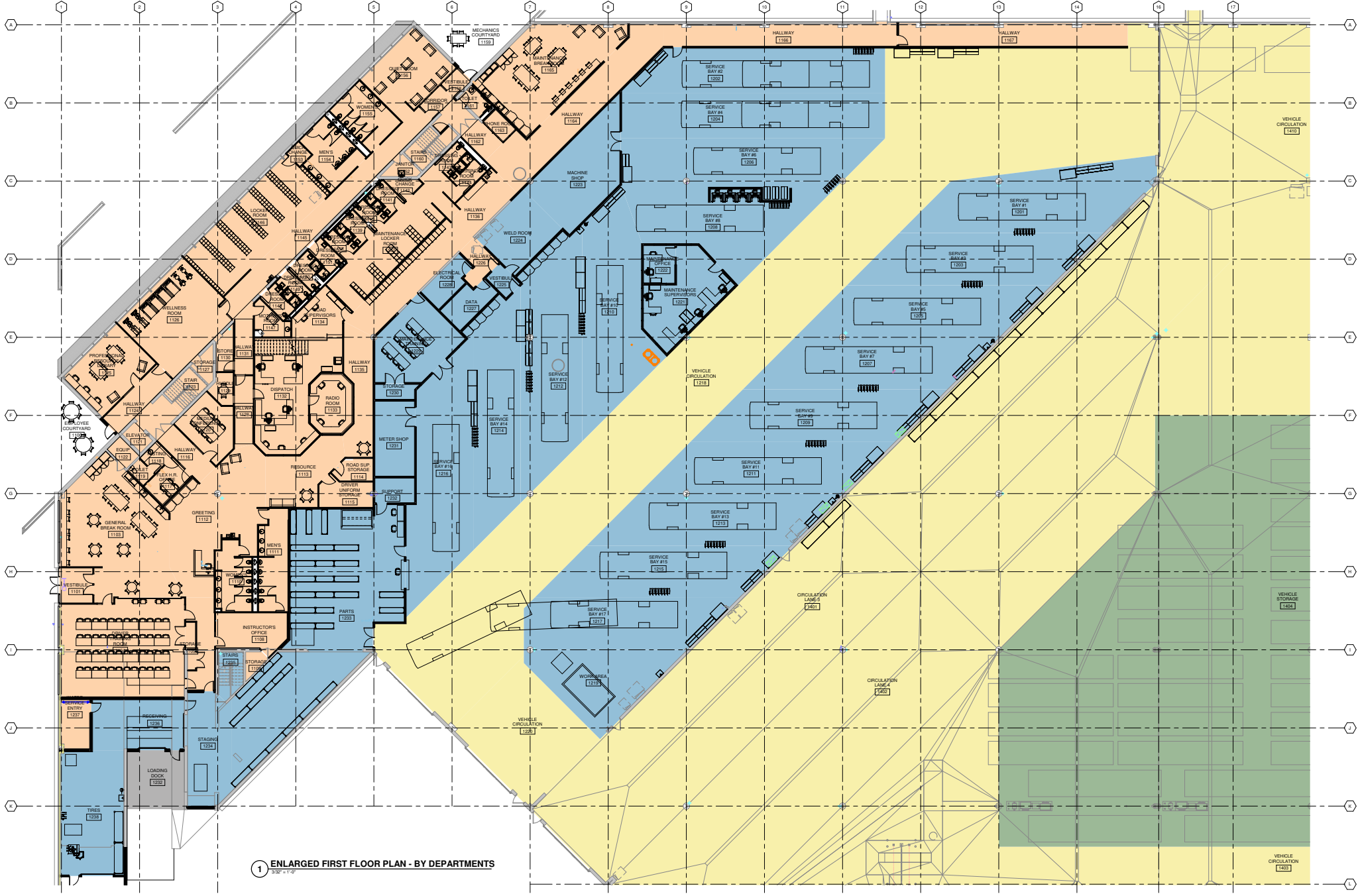


1 OVERALL SECOND FLOOR PLAN - PHASING NEW
1" = 32'-0"



CITY OF MADISON
METRO TRANSIT - PHASE 3 CONSOLIDATED SD
 OVERALL SECOND FLOOR PLAN - PHASING NEW
 09/04/20

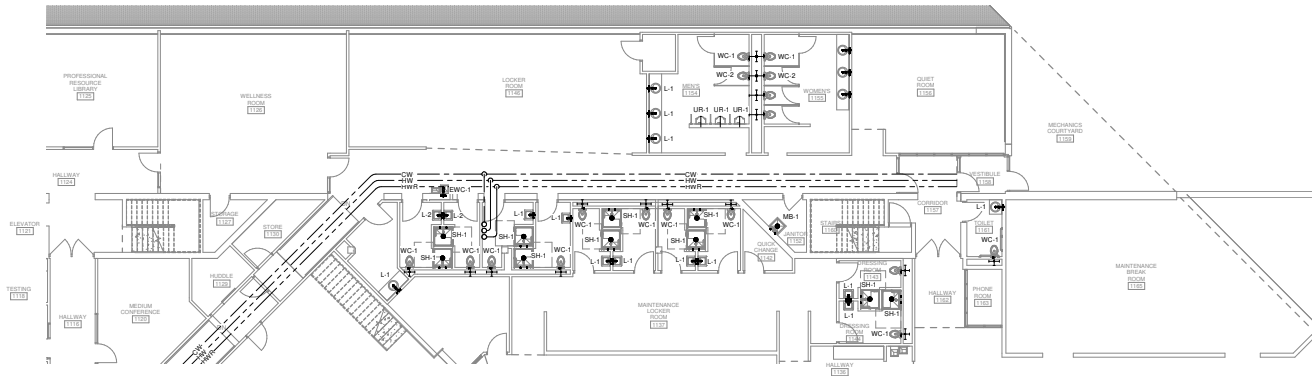




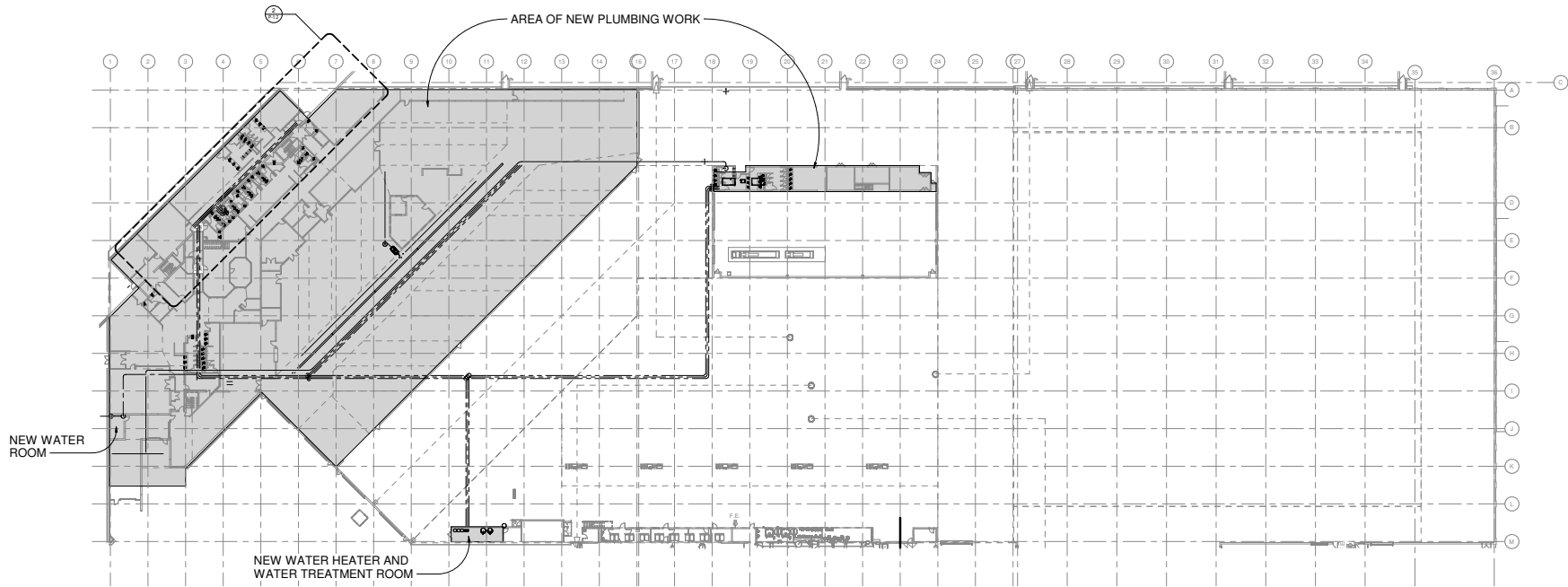
1 ENLARGED FIRST FLOOR PLAN - BY DEPARTMENTS



CITY OF MADISON
METRO TRANSIT - PHASE 3 CONSOLIDATED SD
 ENLARGED FIRST FLOOR PLAN - BY DEPARTMENTS
 09/04/20

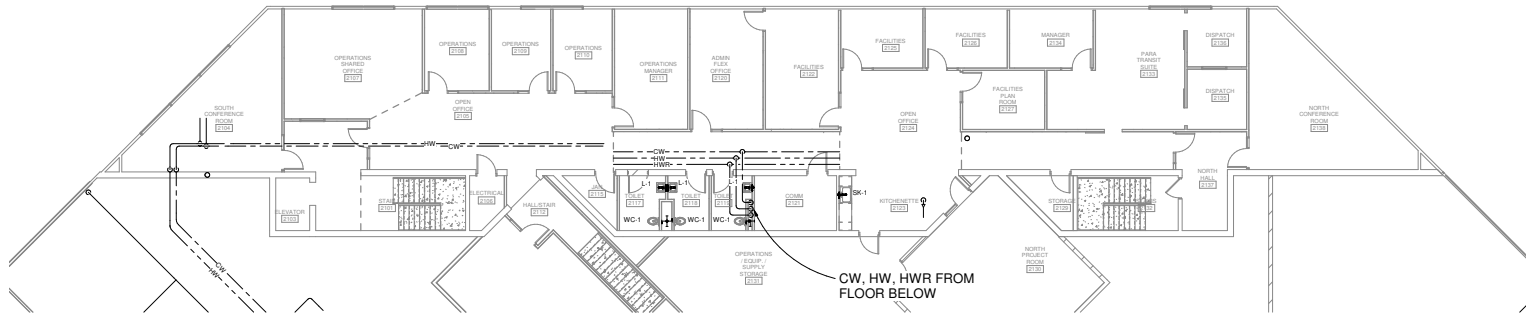


2 ENLARGED ADMINISTRATION, SHOWERS, AND BATHROOMS
1/8" = 1'-0"

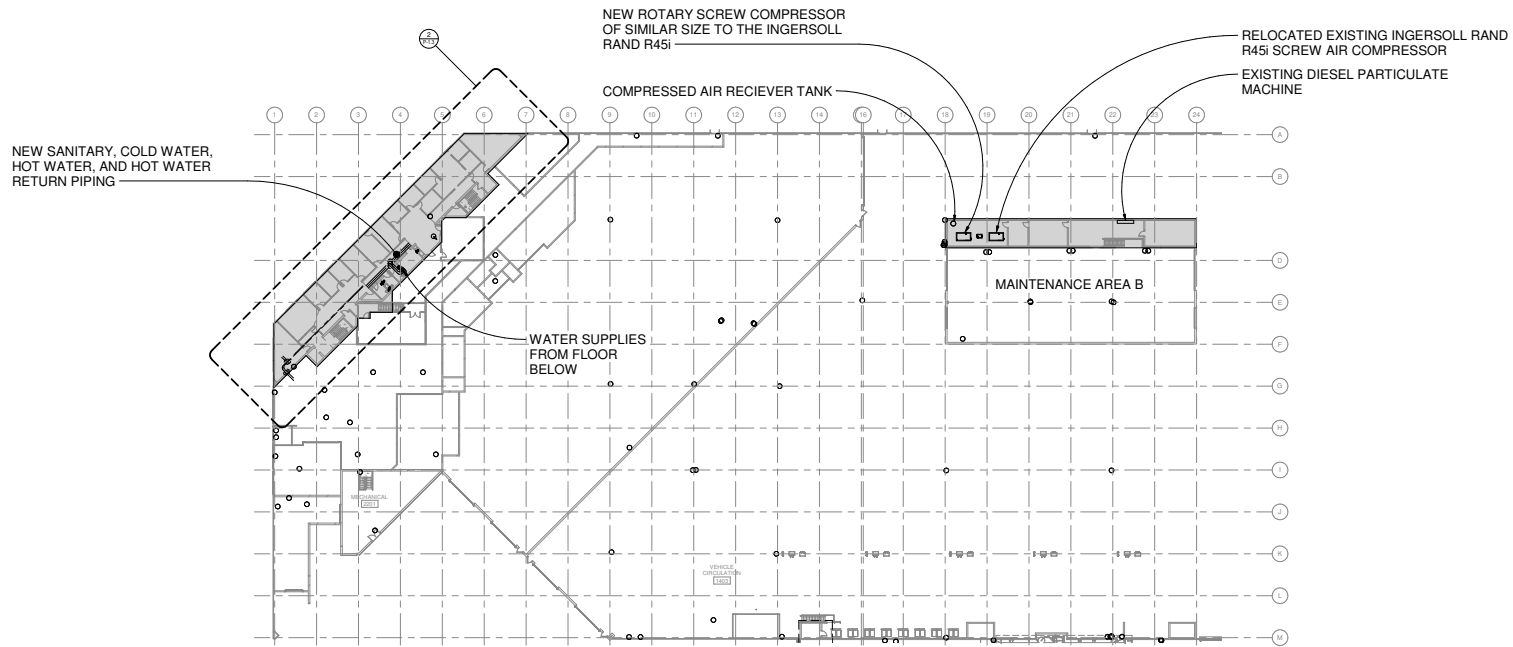


1 OVERALL FIRST FLOOR - NEW PLUMBING PLAN
1" = 30'





2 ENLARGED SECOND FLOOR PLUMBING PLAN
 1/8" = 1'-0"



1 P-1.3 OVERALL SECOND FLOOR NEW PLUMBING PLAN
 1/4" = 30'-0"



SOUND ATTENUATING DEVICE (SAD) SCHEDULE																																																
MARK	MANUFACTURER, MODEL NUMBER	SUPPLY AIR FLOW (CFM)	MAX. PD (IN WC)	DUCT SHAPE	INLET SIZE (IN)				ATTEN. LENGTH (FT)	TARGET ROOM NC LEVEL	DYNAMIC INSERTION LOSS (DB)						SELF NOISE POWER LOSS (DB)						WEIGHT (LB)	LOCATION	REMARKS																							
					WIDTH	DEPTH	WIDTH	DEPTH			OCTAVE BAND CENTER FREQUENCY (HZ)						OCTAVE BAND CENTER FREQUENCY (HZ)																															
					63	125	250	500	1000	2000	4000	63	125	250	500	1000	2000	4000	63	125	250	500	1000	2000	4000																							
SAD-1																																																
DUCT SHAPE																																																
RND ROUND																				OVAL	OVAL																											
REC RECTANGULAR																				ELB	ELBOW																											

REMARKS:
 (1) DUCT SIZES MAY VARY DEPENDENT ON FIELD CONDITIONS AND SHALL BE VERIFIED BY CONTRACTOR.

ROTARY AIR-TO-AIR EXCHANGERS (HRW) SCHEDULE																								
MARK	MANUFACTURER, MODEL NUMBER	SYSTEM	SUPPLY AIR		EXHAUST AIR		SUMMER CONDITIONS						WINTER CONDITIONS						MOTOR	LEAKAGE	PURGE (CFM)	SEAL (CFM)	LOCATION	REMARKS
			FLOW RATE (CFM)	PD (IN WC)	FLOW RATE (CFM)	PD (IN WC)	EAT		LAT		DB		EAT		LAT		DB							
			DB (°F)	WB (°F)	DB (°F)	WB (°F)	DB (°F)	WB (°F)	DB (°F)	WB (°F)	DB (°F)	WB (°F)	DB (°F)	WB (°F)	DB (°F)	WB (°F)	DB (°F)	WB (°F)						
HRW-1		AHU-1	1,050	3.200	1,050	3.200	89.0	75.0	78.7	66.3	85.3	71.9	-15.0	-16.0	48.9	38.4	6.1	4.8	0.08	4600			AHU-1	
HRW-2		AHU-2	3,200	3.200			89.0	75.0	78.8	66.3	85.3	71.9	-15.0	-16.0	48.9	38.4	6.1	4.8	0.25	4600			AHU-2	

REMARKS:
 (1)

AIR OUTLET AND INLET SCHEDULE																				
MARK	MANUFACTURER, MODEL NUMBER	APPLICATION	(1) MAX AIRFLOW (CFM)	OUTLET / INLET	TYPE	MOUNTING SYSTEM	(2) DAMPER	(3) FACE SIZE (IN)	NECK SIZE (IN)	(4) MAX NOISE LEVEL (NC)	PATTERN	MAX SP (IN)	FINISH	MATERIAL	(5) MOUNTING HEIGHT (IN)	ACCESSORIES	LOCATION	REMARKS		
																			(6) FACE SIZE (IN)	(7) FACE SIZE (IN)
CD-1	TTUS, OMMN	SUPPLY	110	1	7	1	NONE	24x24	6	24	4-WAY	0.1	W	STEEL	CEILING	24x24 LAY-IN PANEL		(9)		
CD-2	TTUS, OMMN	SUPPLY	225	1	7	1	NONE	24x24	8	24	4-WAY	0.1	W	STEEL	CEILING	24x24 LAY-IN PANEL		(9)		
CD-3	TTUS, OMMN	SUPPLY	400	1	7	1	NONE	24x24	10	24	4-WAY	0.1	W	STEEL	CEILING	24x24 LAY-IN PANEL		(9)		
CD-4	TTUS, OMMN	SUPPLY	575	1	7	1	NONE	24x24	12	24	4-WAY	0.1	W	STEEL	CEILING	24x24 LAY-IN PANEL		(9)		
CD-5	TTUS, OMMN	SUPPLY	750	1	7	1	NONE	24x24	14	24	4-WAY	0.1	W	STEEL	CEILING	24x24 LAY-IN PANEL		(9)		
SG-1	TTUS, 272RS	SUPPLY	155	3	2		NONE	9x9	6x6	20	-	0.1	W	STEEL				(6)		
SG-2	TTUS, 272RS	SUPPLY	255	3	2		NONE	13x6	10x6	20	-	0.1	W	STEEL				(6)		
SG-3	TTUS, 272RS	SUPPLY	355	3	2		NONE	15x6	12x6	20	-	0.1	W	STEEL				(6)		
SG-4	TTUS, 272RS	SUPPLY	450	3	2		NONE	15x11	12x11	20	-	0.1	W	STEEL				(6)		
SG-5	TTUS, 272RS	SUPPLY	415	3	2		NONE	15x13	10x10	20	-	0.1	W	STEEL				(6)		
SG-6	TTUS, 272RS	SUPPLY	440	3	2		NONE	21x9	18x6	20	-	0.1	W	STEEL				(6)		
SG-7	TTUS, 272RS	SUPPLY	500	3	2		NONE	15x13	12x10	20	-	0.1	W	STEEL				(6)		
SG-8	TTUS, 272RS	SUPPLY	580	3	2		NONE	15x15	12x12	20	-	0.1	W	STEEL				(6)		
SG-9	TTUS, 272RS	SUPPLY	710	3	2		NONE	21x13	18x10	20	-	0.1	W	STEEL				(6)		
SG-10	TTUS, 272RS	SUPPLY	800	3	2		NONE	21x17	18x14	20	-	0.1	W	STEEL				(6)		
SG-11	TTUS, 272RS	SUPPLY	845	3	2		NONE	21x15	18x12	20	-	0.1	W	STEEL				(6)		
SD-1	TTUS, TBD-30	SUPPLY	60	3	6	1	NONE	24	6	25	1-WAY	0.1	W	STEEL	CEILING	1-3/4" SLOTS		(7)		
SD-2	TTUS, TBD-30	SUPPLY	90	3	6	1	NONE	24	6	25	2-WAY	0.1	W	STEEL	CEILING	2-3/4" SLOTS		(7)		
SD-3	TTUS, TBD-30	SUPPLY	110	3	6	1	NONE	48	6	25	2-WAY	0.1	W	STEEL	CEILING	2-3/4" SLOTS		(7)		
SD-4	TTUS, TBD-30	SUPPLY	170	3	6	1	NONE	48	8	25	2-WAY	0.1	W	STEEL	CEILING	2-3/4" SLOTS		(7)		
SD-5	TTUS, TBD-30	SUPPLY	215	3	6	1	NONE	48	8	25	2-WAY	0.1	W	STEEL	CEILING	3-3/4" SLOTS		(7)		
SD-6	TTUS, TBD-30	SUPPLY	190	3	6	1	NONE	48	10	25	2-WAY	0.1	W	STEEL	CEILING	2-3/4" SLOTS		(7)		
SD-7	TTUS, TBD-30	SUPPLY	250	3	6	1	NONE	48	10	25	2-WAY	0.1	W	STEEL	CEILING	3-3/4" SLOTS		(7)		
SD-8	TTUS, TBD-30	SUPPLY	300	3	6	1	NONE	48	10	25	2-WAY	0.1	W	STEEL	CEILING	4-3/4" SLOTS		(7)		
SD-9	TTUS, TBD-30	SUPPLY	350	3	6	1	NONE	48	12	25	2-WAY	0.1	W	STEEL	CEILING	4-3/4" SLOTS		(7)		
DD-1	TTUS, DL	SUPPLY	500	3	15		NONE	21x6	18x6	25	-	0.15		ALUMINUM						
DD-2	TTUS, DL	SUPPLY	850	3	15		NONE	23x13	20x10	25	-	0.15		ALUMINUM						
RGEG-1	TTUS, Z3RL	RETURN/EXHAUST	75	3	3		NONE	8x8	6x6	20	-	0.1	W	STEEL				(8)		
RGEG-2	TTUS, Z3RL	RETURN/EXHAUST	135	3	3		NONE	12x6	10x6	20	-	0.1	W	STEEL				(8)		
RGEG-3	TTUS, Z3RL	RETURN/EXHAUST	155	3	3		NONE	14x6	12x6	20	-	0.1	W	STEEL				(8)		
RGEG-4	TTUS, Z3RL	RETURN/EXHAUST	200	3	3		NONE	14x10	12x8	20	-	0.1	W	STEEL				(8)		
RGEG-5	TTUS, Z3RL	RETURN/EXHAUST	210	3	3		NONE	15x12	10x10	20	-	0.1	W	STEEL				(8)		
RGEG-6	TTUS, Z3RL	RETURN/EXHAUST	225	3	3		NONE	20x6	18x6	20	-	0.1	W	STEEL				(8)		
RGEG-7	TTUS, Z3RL	RETURN/EXHAUST	250	3	3		NONE	14x12	12x10	20	-	0.1	W	STEEL				(8)		
RGEG-8	TTUS, Z3RL	RETURN/EXHAUST	355	3	3		NONE	15x16	14x14	20	-	0.1	W	STEEL				(8)		
RGEG-9	TTUS, Z3RL	RETURN/EXHAUST	410	3	3		NONE	24x12	22x10	20	-	0.1	W	STEEL				(8)		
RGEG-10	TTUS, Z3RL	RETURN/EXHAUST	470	3	3		NONE	20x16	18x14	20	-	0.1	W	STEEL				(8)		
RGEG-11	TTUS, Z3RL	RETURN/EXHAUST	570	3	3		NONE	20x20	18x16	20	-	0.1	W	STEEL				(8)		
RGEG-12	TTUS, Z3RL	RETURN/EXHAUST	650	3	3		NONE	25x15	24x10	20	-	0.1	W	STEEL				(8)		
RGEG-13	TTUS, Z3RL	RETURN/EXHAUST	800	3	3		NONE	26x22	24x20	20	-	0.1	W	STEEL				(8)		
TG-1	TTUS, Z3RL	TRANSFER	175	3	3		NONE	12x12	10x10	15	-	0.05	W	STEEL				(8)		
TG-2	TTUS, Z3RL	TRANSFER	250	3	3		NONE	14x12	12x10	15	-	0.05	W	STEEL				(8)		
TG-3	TTUS, Z3RL	TRANSFER	390	3	3		NONE	20x16	18x14	15	-	0.05	W	STEEL				(8)		
TG-4	TTUS, Z3RL	TRANSFER	435	3	3		NONE	25x14	24x12	15	-	0.05	W	STEEL				(8)		
TG-5	TTUS, Z3RL	TRANSFER	550	3	3		NONE	22x22	20x20	15	-	0.05	W	STEEL				(8)		
OUTLET/INLET	TYPE				MOUNTING SYSTEM								DAMPER				FINISH			
1	DIFFUSER	1	SINGLE DEFLECTION	9	LOUVERED	1	T-BAR CEILING	N	NONE	M	MILL									
2	REGISTER	2	DOUBLE DEFLECTION	10	HOODED	2	PLASTER/CONCRETE CEILING	BF	BUTTERFLY	W	MFL	STANDARD WHITE								
3	GRILLE	3	FIXED BLADE	11	DOOR TRANSFER	3	PLASTER/MASONRY WALL	G	GRAVITY	S	MFL	SPECIAL COLOR								
4	LOUVER	4	PERFORATED	12	BRICK	4	EXPOSED DUCTWORK	MP	MOTORIZED PNEUMATIC	A	ANGORED ALUMINUM									
5	PENTHOUSE	5	LINEAR	13	PUNKAH	5	METAL PANEL WALL	ME	MOTORIZED ELECTRIC	P	PRIME COAT (FINAL COAT BY GC)									
6	VENT	6	PLENUM SLOT	14	LAMNAR	6	FLOOR	OB	OPPOSED BLADE	O	OTHER (SEE SPECIFICATIONS)									
7		7	FLAQUE	15	DRUM	7	ROOF	PB	PARALLEL BLADE											
8		8	EGGCRATE			8	EXTERIOR STUD WALL	LL	LOW LEAKAGE, INSUL											

REMARKS:
 (1) SEE PLANS FOR ACTUAL INDIVIDUAL AIR QUANTITIES OF EACH DEVICE.
 (2) IF DAMPER IS SCHEDULED NONE, EACH SUPPLY, RETURN, AND EXHAUST DEVICE TO HAVE A BALANCE DAMPER IN THE DUCT BRANCH TAKE-OFF UNLESS AN ASSOCIATED VAV BOX SERVES A SINGLE DEVICE.
 (3) BORDER TYPES SHALL BE COMPATIBLE WITH CEILING OR WALL TYPES WHERE AIR DEVICE IS LOCATED. REFER TO ARCHITECTURAL PLANS AND ALL OTHER TRADES.
 (4) ALL GRILLES AND DIFFUSERS SHALL NOT EXCEED NOISE CRITERIA LISTED (BASED ON 10 DB ROOM ATTENUATION) AND AT THE SCHEDULED MAXIMUM STATIC PRESSURE DROP.
 (5) MOUNTING HEIGHT SHALL BE FROM FINISHED FLOOR TO BOTTOM OF DRIVING.
 (6) INDIVIDUALLY ADJUSTABLE AIRFOIL BLADE WITH 3/4" SPACING. FRONT BLADES PARALLEL TO THE SHORT DIMENSION. INITIALLY SET BLADES FOR APPROXIMATELY 30 DEGREE THROW.
 (7) EXTERNALLY INSULATE PLENUM SLOT DIFFUSERS.
 (8) AIRFOIL BLADES PARALLEL TO THE LONG DIMENSION WITH FIXED 45 DEGREE DEFLECTION AND 3/4" SPACING.
 (9) INSULATE THE TOP OF THE DIFFUSER WHEN THE SUPPLY AIR TEMPERATURE IS 50 DEGREES OR LESS.



CITY OF MADISON
 METRO TRANSIT - PHASE 3 CONSOLIDATED SD
 HVAC SCHEDULES
 09/04/20



DOOR AIR CURTAIN (DAC) SCHEDULE																						
MARK	MANUFACTURER, MODEL NUMBER	DOOR SIZE (FT)		UNIT DIMENSIONS (IN)			ELECTRICAL				STEAM HEATER				HOT WATER HEATER				ACCESSORIES	WEIGHT (LB)	LOCATION	REMARKS
		WIDTH	HEIGHT	LENGTH	WIDTH	HEIGHT	NOZZLE VELOCITY (FT/MIN)	VOLTS/PH	QTY.	EACH (HP)	ELECTRIC HEAT (KW)	GAS INPUT (MBH)	HEATER OUTPUT (MBH)	PRESS. (PSI)	FLOW (LB/H)	EWI (F)	LWT (F)	CAP. (MBH)				
DAC-1																						
ACCESSORIES																						
1	DOOR SWITCH																					
2	FILTER																					
3	THERMOSTAT																					
REMARKS:																						
(1) BOTTOM OF UNIT SHALL BE MOUNTED AT TOP OF DOOR UNLESS NOTED OTHERWISE.																						

HVAC DUCT SCHEDULE									
SYSTEM	DUCT MATERIAL	TYPE	REFERENCE STANDARD	FINISH	PRESS. CLASS (IN WC)	SEAL CLASS	LEAKAGE CLASS		COMMENTS
							RECT.	ROUND	
SUPPLY AIR	DUCT CONNECTED TO FAN COIL UNITS AND TERMINAL UNITS	G90 GALV.	ASTM A 653	MLL PHOSPHATIZED	3	A	12	6	
	DUCT CONNECTED TO CONSTANT VOLUME ROOFTOP UNITS	G90 GALV.	ASTM A 653	MLL PHOSPHATIZED	3	A	12	6	
	DUCT CONNECTED TO VARIABLE AIR VOLUME ROOFTOP UNITS	G90 GALV.	ASTM A 653	MLL PHOSPHATIZED	3	A	12	6	
	DUCT CONNECTED TO OTHER FAN POWERED EQUIPMENT	G90 GALV.	ASTM A 653	MLL PHOSPHATIZED	3	A	12	6	
	FIRST 10 FEET FROM UNIT	FIBROUS GLASS DUCT LINER	ASTM C 1070	ANTIMICROBIAL					2" THICK, PROVIDE EROSION RESISTANT COATING (7)
RETURN AIR	DUCT CONNECTED TO FAN COIL UNITS AND TERMINAL UNITS	G90 GALV.	ASTM A 653	MLL PHOSPHATIZED	3	A	12	6	
	DUCT CONNECTED TO ROOFTOP UNITS	G90 GALV.	ASTM A 653	MLL PHOSPHATIZED	3	A	12	6	
	DUCT CONNECTED TO OTHER FAN POWERED EQUIPMENT	G90 GALV.	ASTM A 653	MLL PHOSPHATIZED	3	A	12	6	
	FIRST 10 FEET FROM UNIT	FIBROUS GLASS DUCT LINER	ASTM C 1070	ANTIMICROBIAL					2" THICK, PROVIDE EROSION RESISTANT COATING (7)
EXHAUST AIR	DUCT CONNECTED TO EXHAUST FANS	G90 GALV.	ASTM A 653	MLL PHOSPHATIZED	3	A	12	6	
	DUCT CONNECTED TO ROOFTOP UNITS	G90 GALV.	ASTM A 653	MLL PHOSPHATIZED	3	A	12	6	
	DUCT CONNECTED TO OTHER FAN POWERED EQUIPMENT	G90 GALV.	ASTM A 653	MLL PHOSPHATIZED	3	A	12	6	
	DUCT CONNECTED TO FANS EXHAUSTING HIGH HUMIDITY AIR - EXPOSED TO VIEW	ALUMINUM ALLOY 3003H-14	ASTM B 209	BRIGHT	3	A	12	6	SEAL LIQUID-TIGHT, SLOPE TOWARD GRILLE.
	DUCT CONNECTED TO FANS EXHAUSTING HIGH HUMIDITY AIR - CONCEALED	ALUMINUM ALLOY 3003H-14	ASTM B 209	MILL	3	A	12	6	SEAL LIQUID-TIGHT, SLOPE TOWARD GRILLE.
OUTSIDE AIR	EXPLOSION-PROOF FAN SYSTEM - EXPOSED TO VIEW	ALUMINUM ALLOY 3003H-14	ASTM B 209	BRIGHT	3	A	12	6	
	EXPLOSION-PROOF FAN SYSTEM - CONCEALED	ALUMINUM ALLOY 3003H-14	ASTM B 209	MILL	3	A	12	6	
	DUCT CONNECTED TO FAN COIL UNITS AND TERMINAL UNITS	G90 GALV.	ASTM A 653	MLL PHOSPHATIZED	3	A	12	6	
	DUCT CONNECTED TO AIR HANDLING UNITS	G90 GALV.	ASTM A 653	MLL PHOSPHATIZED	3	A	12	6	
TRANSFER DUCTS	DUCT CONNECTED TO OTHER FAN POWERED EQUIPMENT	PVC-COATED GALV.	ASTM A 653	4 MILL PVC	3	A	12	6	SEAL LIQUID-TIGHT, SLOPE TOWARD LOUVER
	FIRST 3 FEET FROM LOUVERHOOD								
FITTINGS									
RECTANGULAR DUCT ELBOWS (COMPLY WITH SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE," FIGURE 2-2, "RECTANGULAR ELBOWS.")									
RADIUS TYPE RE 1 WITH MINIMUM 1.5 RADIUS-TO-DIAMETER RATIO.									
RADIUS TYPE RE 3 WITH MINIMUM 1.0 RADIUS-TO-DIAMETER RATIO AND TWO VANES.									
MITERED TYPE RE 2 WITH VANES COMPLYING WITH SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE," FIGURE 2-3, "VANES AND VANE RUNNERS," AND FIGURE 2-4, "VANE SUPPORT IN ELBOWS."									
ROUND DUCT ELBOWS (COMPLY WITH SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE," FIGURE 3-3, "ROUND DUCT ELBOWS.")									
RADIUS TO DIAMETER RATIO: 1.5									
ROUND ELBOWS, 12 INCHES AND SMALLER IN DIAMETER: STAMPED OR PLEATED									
ROUND ELBOWS, 14 INCHES AND LARGER IN DIAMETER: WELDED									
RECTANGULAR BRANCH DUCT CONFIGURATION (COMPLY WITH SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE," FIGURE 2-6, "BRANCH CONNECTIONS.")									
RECTANGULAR MAIN TO RECTANGULAR BRANCH: 45° ENTRY									
RECTANGULAR MAIN TO ROUND BRANCH: SPIN IN									
ROUND BRANCH DUCT CONFIGURATION (COMPLY WITH SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE," FIGURE 3-4, "90 DEGREE TEES AND LATERALS," AND FIGURE 3-5, "CONICAL TEES." SADDLE TAPS ARE PERMITTED IN EXISTING DUCT)									
VELOCITY 500 FT/MIN AND LOWER: CONICAL TAP									
VELOCITY GREATER THAN 500 FT/MIN: 45° LATERAL									

REMARKS:

- PROVIDE PAINT GRIP TYPE DUCT WHERE DUCT IS EXPOSED AND INDICATED TO BE PAINTED.
- INSTALL DUCT ACCORDING TO SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE" UNLESS OTHERWISE INDICATED.
- INTERMEDIATE REINFORCEMENT MATERIAL SHALL MATCH DUCT MATERIAL.
- SUPPLY AIR DUCTS PASSING THROUGH UNOCCUPIED OR OUTDOOR SPACES SHALL BE SEAL CLASS A (ASHRAE 90.1 - 2007).
- RETURN AIR DUCTS PASSING THROUGH OUTDOOR SPACES SHALL BE SEAL CLASS A (ASHRAE 90.1 - 2007).
- SHEET METAL MATERIALS SHALL BE FREE OF PITTING, SEAM MARKS, ROLLER MARKS, STAINS, DISCOLORATIONS, AND OTHER IMPERFECTIONS.
- LINED DUCTWORK MUST STILL BE WRAPPED TO MEET TOTAL INSULATING VALUE PER INSULATION SPECIFICATION AND SCHEDULE.

VEHICLE EXHAUST REEL (VER) SCHEDULE																			
MARK	MANUFACTURER, MODEL NUMBER	MODEL NUMBER			FAN				REEL			TUBING		(1) INTERLOCK FAN WITH	(2) / (3) MTS. HEIGHT (FT)	WEIGHT (LB)	LOCATION	REMARKS	
		FAN	REEL	TUBING	TYPE	AR FLOW (CFM)	ESP (IN WC)	MOTOR (HP)	SPEED (RPM)	ELECTRICAL (VOLTS/PH)	DRUM OPER.	DRUM MFG.	DRIVE MOTOR (VOLTS/PH)						HP
VER-1																			
TYPE		REEL OPERATOR			DRUM MOUNTING				ACCESSORIES										
1	FLANGE MOUNTED, DIRECT DRIVE	MD	MOTOR DRIVEN	WM	WALL MOUNTED	1	PNEUMATIC EXHAUST PIPE GRABBER	4	EXHAUST NOZZLE WITH DAMPER	7	PENDANT REEL DRIVE REMOTE								
2	UTILITY SET, BELT DRIVE	MCW	MANUAL CABLE WINCH	CM	CEILING MOUNTED	2	MAGNETIC EXHAUST PIPE GRABBER	5	WALL MOUNTED REEL DRIVE SWITCH	8	STARTER								
		SLL	SPRING LOADED LATCH	BM	BOOM MOUNTED	3	MECHANICAL EXHAUST PIPE GRABBER	6	WIRELESS REEL DRIVE REMOTE										
REMARKS:																			
(1) SEE SEQUENCE OF OPERATION SPECIFICATION SECTION 230993.																			
(2) MOUNTING HEIGHT IS FROM FINISHED FLOOR LEVEL TO BOTTOM OF REEL.																			
(3) CONTRACTOR SHALL PROVIDE SHOP DRAWING TO ENGINEER SHOWING PROPOSED STRUCTURAL MOUNTING ARRANGEMENT PRIOR TO INSTALLATION.																			

SYSTEM MARK	SERVICE	ROOM TYPE	PIPING SIZE (IN)	PIPING										VALVE										VALVE EQUAL TO (MANUFACTURER MODEL)	REMARKS																												
				MATERIAL TYPE	WALL THICKNESS	ASME PIPING				FITTING TYPE	ENDS	JOINT TYPE	TYPE	CHECK VALVES	PRESS. CLASS	CONNECTION TYPE	BODY MATERIAL	TRIM MATERIAL																																			
						STD	GRADE	TYPE	PRESS. CLASS										PLAIN	TH	TH	TH	TH																														
G	NATURAL GAS	OUTDOORS	1/2 TO 2	BS	SCH 40	A.53	B	E or S	150#	M	PLAIN	TH	2BV	-	125#	THREADED	BRONZE	BRONZE	APOLLO 77-100	PAINT PIPE																																	
-	-	INDOORS	1/2 TO 2	BS	SCH 40	A.53	B	E or S	150#	M	PLAIN	TH	2BV	-	125#	THREADED	BRONZE	BRONZE	APOLLO 77-100	PAINT PIPE																																	
-	-	INDOORS	1/2 TO 2	BS	SCH 40	A.53	B	E or S	150#	WS	BEVELED	BW, FL	PV	-	125#	FLANGED	IRON	IRON	XOMOX TUFFLINE	PAINT PIPE																																	
-	-	INDOORS	1/2 TO 2	BS	SCH 40	A.53	B	E or S	150#	WS	PLAIN	SW	2BV	-	125#	THREADED	BRONZE	BRONZE	APOLLO 77-100	PAINT PIPE																																	
-	-	INDOORS	1/2 TO 2	BS	SCH 40	A.53	B	E or S	150#	WS	BEVELED	BW, FL	PV	-	125#	FLANGED	IRON	IRON	XOMOX TUFFLINE	PAINT PIPE																																	
-	-	INDOORS	1/2 TO 2	BS	SCH 40	A.53	B	E or S	150#	WS	PLAIN	SW	2BV	-	125#	THREADED	BRONZE	BRONZE	APOLLO 77-100	PAINT PIPE																																	
-	-	INDOORS	1/2 TO 2	BS	SCH 40	A.53	B	E or S	150#	WS	BEVELED	BW, FL	PV	-	125#	FLANGED	IRON	IRON	XOMOX TUFFLINE	PAINT PIPE																																	
HWSR	HEATING WATER SUPPLY/RETURN	ALL AREAS	3/4 TO 2	BS	SCH 40	A.53	A or B	E or S	150#	M	PLAIN	TH	2BV	SWING	125#	THREADED	BRONZE	SS	APOLLO 75-100/200 SERIES	-																																	
-	- (RHVC)	ALL AREAS	3/4 TO 2	Cu	L	B 88	-	-	-	WCU	PLAIN	SD	2BV	SWING	125#	THREADED	BRONZE	SS	APOLLO 75-100/200 SERIES	-																																	
RWSR	RADIANT HEATING WATER SUPPLY/RETURN	ALL AREAS	3/4 TO 2	Cu	L	B 88	-	-	-	WCU	PLAIN	SD	2BV	SWING	125#	THREADED	BRONZE	SS	APOLLO 75-100/200 SERIES	-																																	
MWS	MAKE UP WATER	ALL AREAS	3/4 TO 2	Cu	L	B 88	-	-	-	WCU	PLAIN	SD	2BV	SWING	125#	THREADED	BRONZE	SS	APOLLO 75-100/200 SERIES	-																																	
CD	CONDENSATE DRAIN	ALL AREAS	3/4 TO 2	Cu	L	B 88	-	-	-	WCU	PLAIN	SD	2BV	SWING	125#	THREADED	BRONZE	SS	APOLLO 75-100/200 SERIES	-																																	
RLRS	REFRIGERANT	ALL AREAS	ALL SIZES	Cu	ACR	B 280	-	-	-	WCU	PLAIN	SD	-	-	-	-	-	-	-	-																																	
				MATERIAL TYPE										JOINT TYPE										FITTING TYPE										ASME PIPING TYPE										VALVE TYPE									
BS	BLACK STEEL	BW	BUTT WELD	CI	CAST IRON (THREADED) (ASME B16.4 FOR IRON, ASME A 351 FOR SS) (FLANGED) (ASME B16.1)	WC	WROUGHT CAST (FLANGES, ASME B16.5)	S	SEAMLESS											1BV	ONE PIECE FULL PORT BALL VALVE																																
SS	STAINLESS STEEL	SW	SOCKET WELD	MI	MALLEABLE IRON (THREADED) (ASME B16.3)	FS	FORGED STEEL FLANGES, ASME B16.5	E	ERW FURNACE RESISTANCE WELDED											2BV	TWO PIECE FULL PORT BALL VALVE																																
GS	GALVANIZED STEEL	TH	THREADED	WS	WROUGHT STEEL (ASTM A 234 FOR STEEL, ASTM A 403 FOR SS)	PS	PVC SOCKET	F	FRIC BURR BUTT WELDED											3BV	THREE PIECE FULL PORT BALL VALVE																																
PE	POLYETHYLENE	FL	FLANGED	WW	WELDED WROUGHT STEEL (ASTM A 774 FOR SS)	WCU	WROUGHT COPPER (ASME B 16.22)													SBV	STEEL BODY BALL VALVE																																
CU	COPPER	SF	SOCKET FUSION																	NOV	NON-RISING STEM GATE VALVE																																
PVC	PVC	BF	BUTT FUSION																	ROV	RISING STEM GATE VALVE																																
		SD	SOLDERED																	GOV	GATE VALVE																																
		BZ	BRAZED																	BFV	BUTTERFLY VALVE																																
		SV	SOLVENT WELD																	PV	PLUG VALVE																																

1. PIPE-FLANGE GASKET MATERIALS: SUITABLE FOR CHEMICAL AND THERMAL CONDITIONS OF PIPING SYSTEM CONTENTS.
2. PIPE FLANGE GASKETS: ASME B16.21, NONMETALLIC FLAT, ASBESTOS-FREE, 1/8IN MAXIMUM THICKNESS UNLESS SPECIFIED OTHERWISE.
- A. FULL-FACE TYPE: FOR FLAT-FACE, CLASS 125, CAST-IRON AND CAST-BRONZE FLANGES.
- B. NARROW-FACE TYPE: FOR RAISED-FACE, CLASS 250, CAST-IRON AND STEEL FLANGES.
3. FLANGE BOLTS AND NUTS: ASME B18.2.1, CARBON STEEL UNLESS OTHERWISE INDICATED.
4. PLASTIC PIPE-FLANGE GASKET, BOLTS, AND NUTS: TYPE AND MATERIAL RECOMMENDED BY PIPING SYSTEM MANUFACTURER, UNLESS OTHERWISE INDICATED.
5. SOLDER FILLER METALS: ASTM B 31; LEAD-FREE ALLOYS. INCLUDE WATER-FUSIBLE FLUX ACCORDING TO ASTM B 813.
6. GENERAL DUTY BRAZING FILLER METALS: AWS A5.8, BCUP SERIES, COPPER-PHOSPHORUS ALLOYS UNLESS OTHERWISE INDICATED.
7. REFRIGERANT PIPING BRAZING FILLER METALS: AWS A5.6, BA61, SILVER ALLOY UNLESS OTHERWISE INDICATED.
8. WELDING FILLER METALS: AWS D10.1 FOR WELDING MATERIALS APPROPRIATE FOR WALL THICKNESS AND CHEMICAL ANALYSIS OF STEEL PIPE.

- (1) FITTING MATERIAL SHALL MATCH PIPING MATERIAL (EXCEPTION: MI FITTINGS SHALL BE USED FOR BS PIPING WHERE INDICATED).
- (2) PRESS. CLASS LISTED IS MIN. REQUIRED. PROVIDE GREATER PRESS. CLASS VALVE AND PIPE SYSTEM IF PRESS. CLASS INDICATED IS NOT AVAILABLE FOR GIVEN VALVE AND PIPE TYPE.
- (3) FLANGES SHALL BE RAISED FACE WITH SPOT FACED BOLT HOLES.

MARK	MANUFACTURER	MODEL NUMBER	TYPE	CAPACITY (MBH)	AIR FLOW (CFM)	AIR FLOW (CFM) HOR. OR VERT.	AIR THROW (FT)	MOTOR (HP)	ELECTRICAL (VOLTS/PH)	EAT (°F)	LAT (°F)	PRESS. (PSI)	COND. (LBH)	FLOW (GPM)	PD (FT)	EWT (°F)	LWT (°F)	FUEL TYPE	INPUT (MBH)	OUTPUT (MBH)	VENT TYPE	ACCESSORIES	(1) MFG. HEIGHT (FT)	WEIGHT (LB)	LOCATION	REMARKS							
																											UNIT HEATER (UH) SCHEDULE						
				TYPE										VENT TYPE										ACCESSORIES									
HYD	HYDRONIC	XPL	EXPLOSION PROOF	GV	GRAVITY VENT	1	CONCENTRIC VENT ASSEMBLY	5	MANUFACTURER SUPPLIED MOUNTING HARDWARE																								
STM	STEAM	WD	WASH DOWN	PV	POWER VENT	2	DOWN TURN AIR NOZZLE	6	INTEGRAL THERMOSTAT																								
GF	GAS-FIRED	SC	SEPARATED COMBUSTION	3	STAINLESS STEEL HEAT EXCHANGER	7	REMOTE THERMOSTAT	8	DISCONNECT SWITCH																								
EL	ELECTRIC			4	STAINLESS STEEL BURNER	8																											

- (1) MOUNTING HEIGHT SHALL BE FROM FINISHED FLOOR TO BOTTOM OF UNIT.

MARK	MANUFACTURER	MODEL NUMBER	AIR FLOW (CFM)	EAT (°F)	LAT (°F)	MEDIA TYPE	CAPACITY (MBH)	FLOW RATE (GPM)	EWT (°F)	LWT (°F)	ELECTRICAL (VOLTS/PH)	FAN MOTOR			CABINET SIZE (IN)			(1) MOUNTING		INLET LOCATION	OUTLET LOCATION	LOCATION	REMARKS
												RPM	RPM	D	L	H	HEIGHT (FT)	ORIENT.	TYPE				
CABINET UNIT HEATER (CUH) SCHEDULE																							
MOUNTING TYPE																							
C	CEILING	(1) MOUNTING HEIGHT IS FROM BOTTOM OF UNIT TO FINISHED FLOOR.																					
SR	SEMI-RECESSED																						
R	RECESSED																						
FS	FLOOR STANDING																						
W	WALL																						

MARK	MANUFACTURER	MODEL NUMBER		DUTY TYPE	SERVICE FLUID	OPERATING		REEL		TUBING		END CONN.	ACCESSORIES	(2) MFG. HEIGHT (FT)	WEIGHT (LB)
		REEL	TUBING			TEMP. (°F)	PRESS. (PSI)	OPER.	(1) MFG. HEIGHT (FT)	MATERIAL	ID (IN)				
HOSE REEL (HR) SCHEDULE															
				SERVICE FLUID				REEL OPERATOR				REEL MOUNTING			
STD	STANDARD DUTY	CA	COMPRESSED AIR	MD	MOTOR DRIVEN	WM	WALL MOUNTED	ANY ANY SUITABLE FOR INDICATED FLUID							
HVY	HEAVY DUTY	GR	GREASE	MCW	MANUAL CABLE WINCH	RLB	SYNTHETIC RUBBER								
		OL	OIL	SL	SPRING LOADED LATCH	BM	BOOM MOUNTED	PVC	POLYVINYL CHLORIDE						
		WTR	WATER	RIT	S.A.E. 100 R1T ONE-WIRE BRAIDED										
		STM	STEAM	R2T	S.A.E. 100 R2T TWO-WIRE BRAIDED										
				ACCESSORIES											
GO	QUICK DISCONNECT	1	WALL MOUNTED REEL DRIVE SWITCH												
SN	SPRAY NOZZLE	2	WIRELESS REEL DRIVE REMOTE												
THD	THREADED	3	PENDANT REEL DRIVE REMOTE												

- (1) CONTRACTOR SHALL PROVIDE SHOP DRAWING TO ENGINEER SHOWING PROPOSED STRUCTURAL MOUNTING ARRANGEMENT PRIOR TO INSTALLATION.
- (2) MOUNTING HEIGHT IS FROM FINISHED FLOOR LEVEL TO BOTTOM OF REEL.

MARK	MANUFACTURER	MODEL NUMBER	NOM. CAP (TON)	MIN. BEER	MIN. SEER	REF. TYPE	SET (°F)	HOT GAS	NO. OF BYPASS STAGES	AMB. AIR TEMP. (°F)	COMPRESSORS		ELECTRICAL		(2) MAX. SOUND (DB)	MATCHING EQUIPMENT	WEIGHT (LB)	LOCATION	REMARKS			
											MINIMUM	MAXIMUM	QTY.	TYPE						VOLTS	PHASE	MCA
AIR COOLED CONDENSING UNIT (ACCU) SCHEDULE																						
ACCU-4	LG	LS120HSVS	1	8.5	17.0	R-410A	-	NO	1	66	115	1	RCF	208	1	7.7	15.0	48	ACU-4	57	ROOF (1)	
ACCU-5	LG	LS120HSVS	1	8.5	17.0	R-410A	-	NO	1	66	115	1	RCF	208	1	7.7	15.0	48	ACU-5	57	ROOF (1)	
ACCU-6	LG	LS180HSVS	1	12	10.5	17.0	R-410A	-	NO	1	66	112	1	RCF	208	1	13.2	20.0	53	ACU-6	82	ROOF (1)
ACCU-7	LG	LS120HSVS	1	8.5	17.0	R-410A	-	NO	1	66	115	1	RCF	208	1	7.7	15.0	48	ACU-7	57	ROOF (1)	
COMPRESSOR TYPE																						
RCF	RECIPROCATING																					
SCR	SCREW																					
SCW	SCREW																					

- (1) MANUFACTURER SHALL SIZE REFRIGERANT PIPING, VALVES, AND ACCESSORIES FOR PROPER OPERATION OF SYSTEM.
- (2) PER ARI STANDARD 300 SOUND RATING OF LARGE OUTDOOR REFRIGERATING AND AIR-CONDITIONING EQUIPMENT.

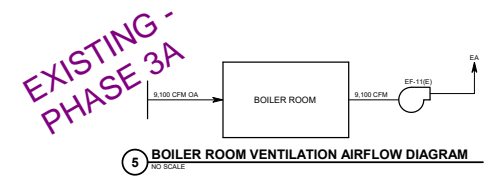
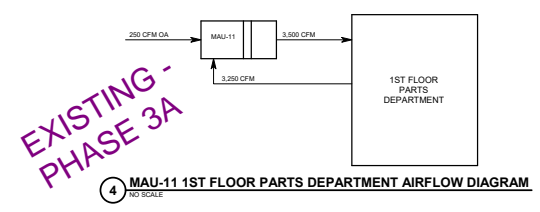
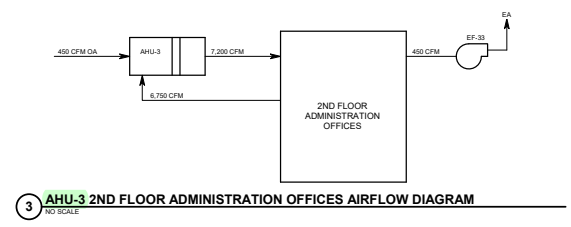
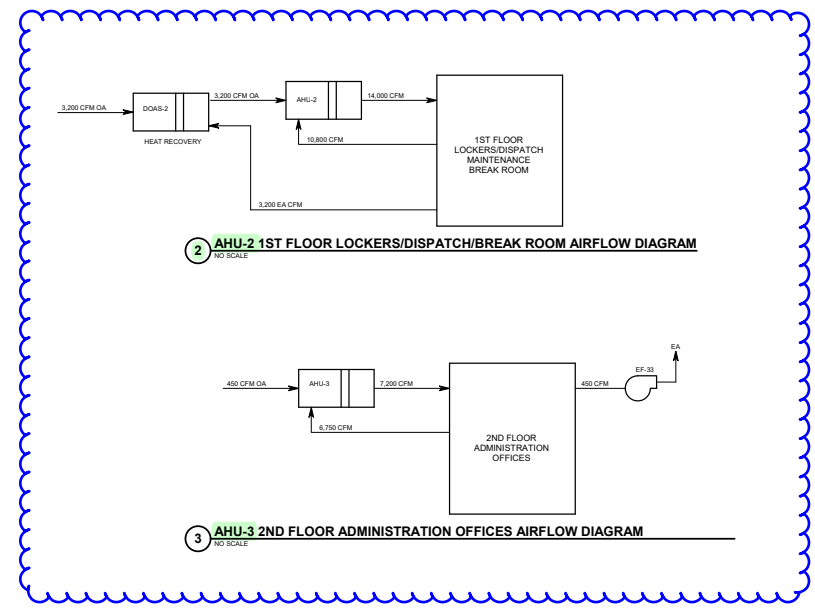
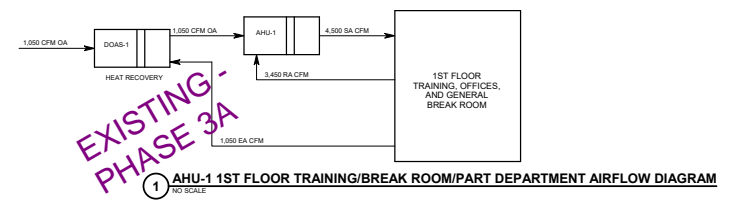
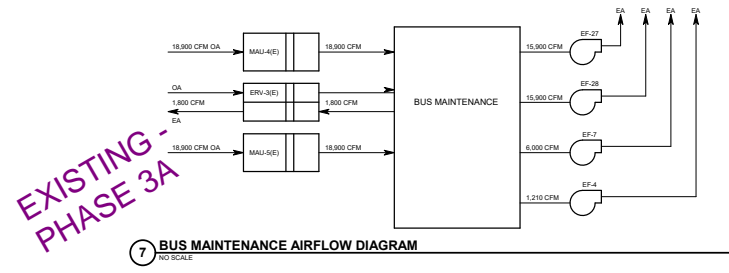
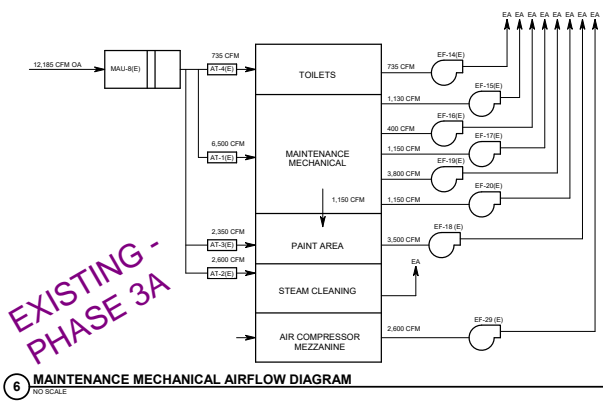
MARK	MANUFACTURER	MODEL NUMBER	TOTAL CAP (RTU/FT)	EAT (°F)	MEDIA TYPE	EWT (°F)	LWT (°F)	MEDIA FLOW RATE (GPM)	MAX. PD (FT)	SIZE (IN)	NO. OF FINS/FT	LENGTH (IN)	DEPTH (IN)	CABINET SIZE (IN)		MFG. TYPE	(1) MFG. HEIGHT (IN)	LOCATION	REMARKS
														HEIGHT	WIDTH				
FINNED TUBE CONVECTOR (FTC) SCHEDULE																			
MOUNTING TYPE																			
W	WALL	FA	FLAT																
F	FLOOR	SL	SLOPED																

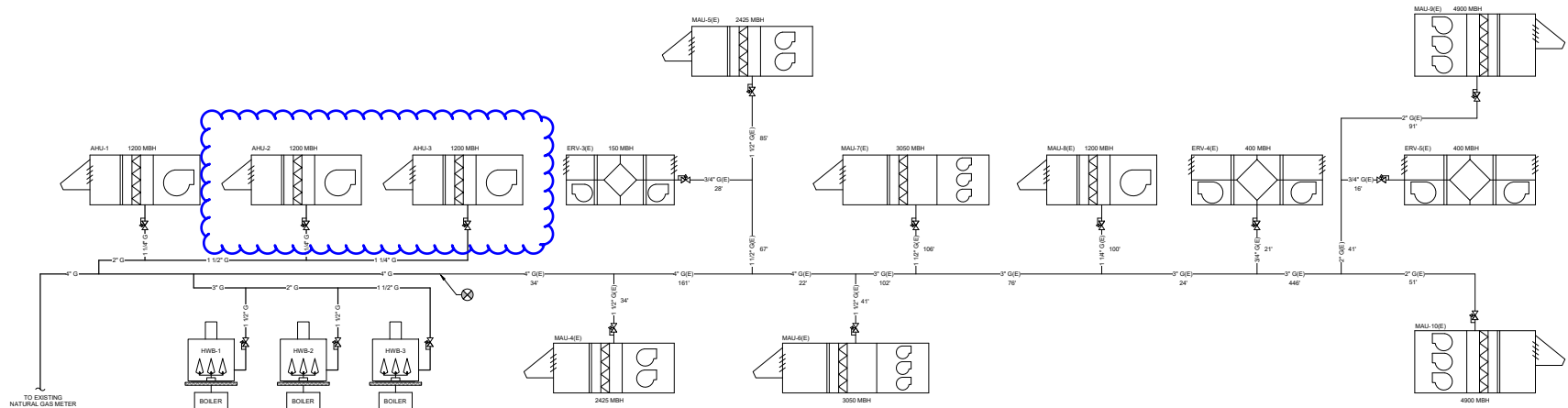
- (1) MOUNTING HEIGHT IS TO BOTTOM OF CONVECTOR CABINET.
- (2) CABINET LENGTH AS SHOWN ON PLANS. PROVIDE ALL REQUIRED ACCESSORIES FOR CONTINUOUS APPEARANCE.



CITY OF MADISON
METRO TRANSIT - PHASE 3 CONSOLIDATED SD
PIPING SCHEDULES
09/04/20



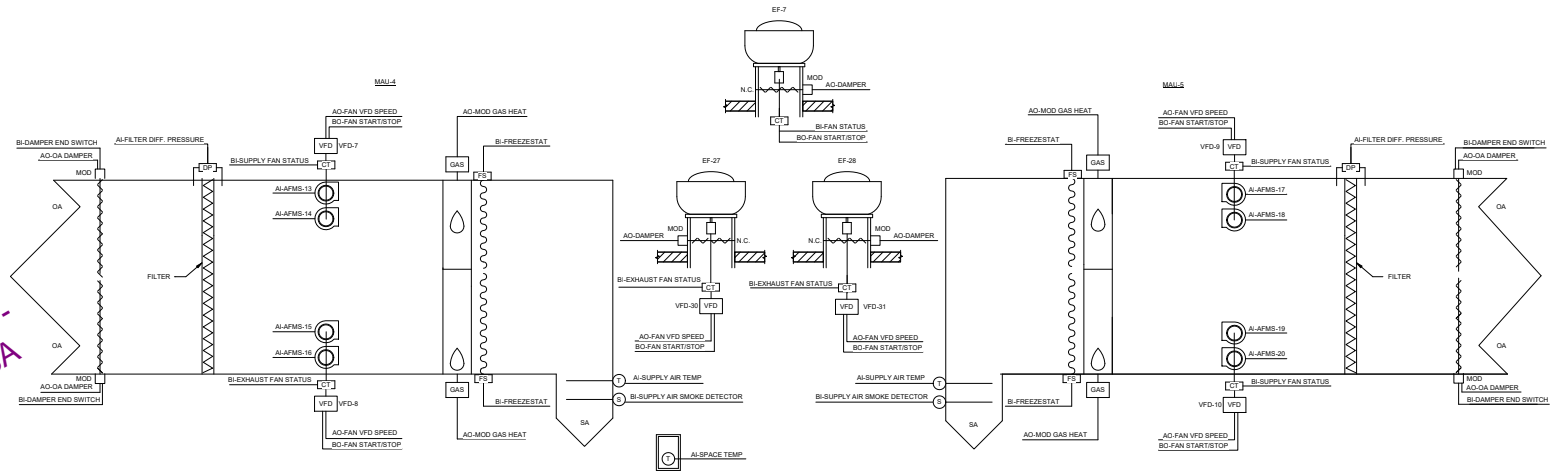




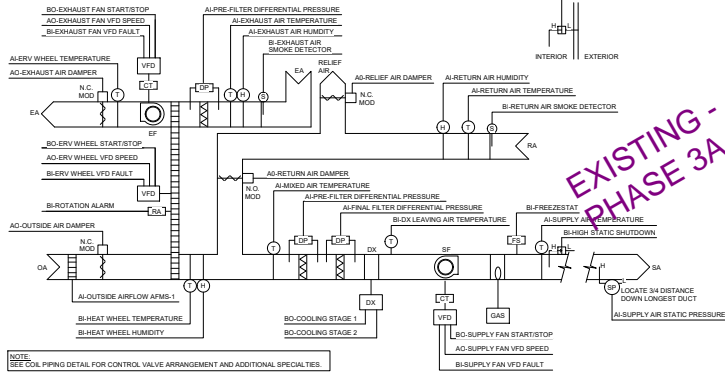
1 NATURAL GAS FLOW METER SCHEMATIC
NO SCALE



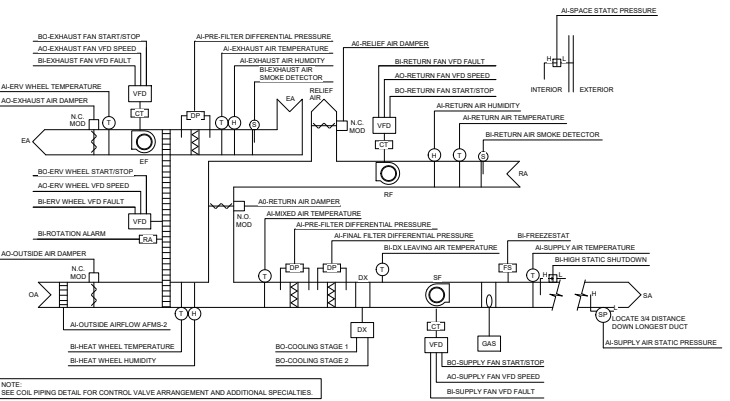
EXISTING -
PHASE 3A



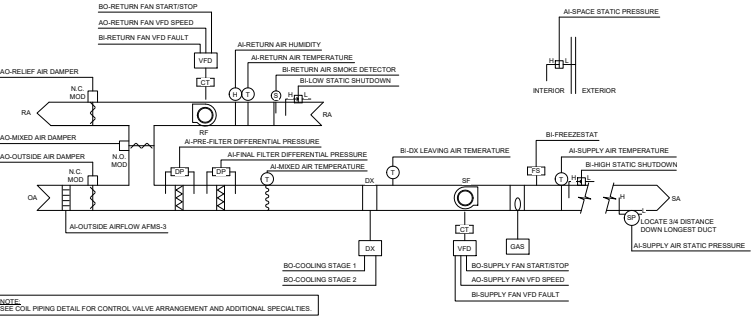
1 EXISTING MAKE-UP AIR UNITS / EXHAUST FANS - MAU-4 & MAU-5 / EF-7, 27 & 28
NO SCALE



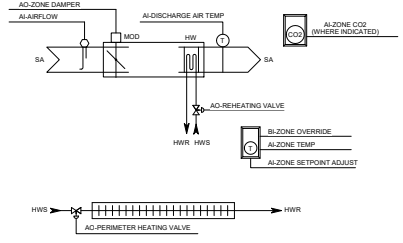
13 VARIABLE AIR VOLUME AHU-1 SUPPLY FAN WITH DX AND ERV
NO SCALE



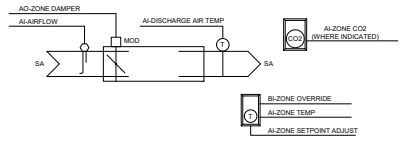
14 VARIABLE AIR VOLUME AHU-2 - SUPPLY/RETURN FANS WITH DX AND ERV
NO SCALE



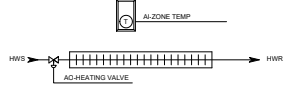
15 VARIABLE AIR VOLUME AHU-3 SUPPLY/RETURN FANS WITH DX
NO SCALE



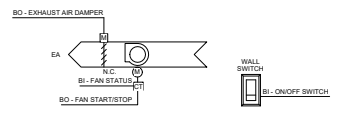
7 VARIABLE AIR VOLUME AIR TERMINAL - HOT WATER REHEAT WITH HOT WATER SUPPLEMENTAL HEAT
NO SCALE



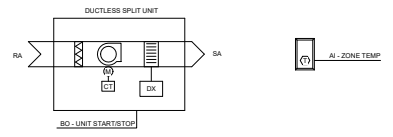
8 COOLING ONLY VARIABLE AIR VOLUME AIR TERMINAL
NO SCALE



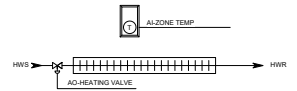
9 FLAT PANEL RADIATOR
NO SCALE



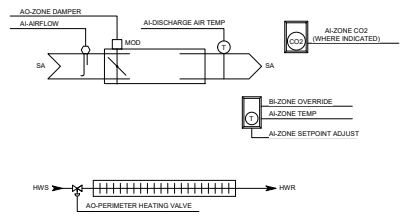
10 EXHAUST FAN - SWITCHED
NO SCALE



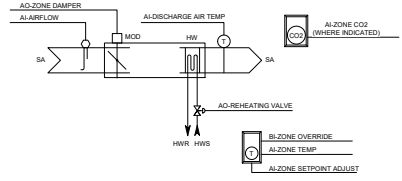
11 DUCTLESS SPLIT AIR CONDITIONER
NO SCALE



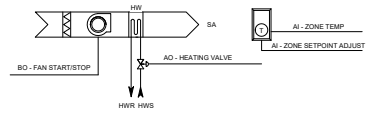
12 HOT WATER CONVECTOR
NO SCALE



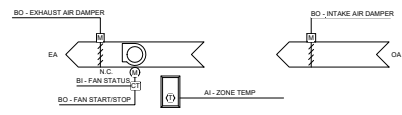
1 COOLING ONLY VARIABLE AIR VOLUME AIR TERMINAL WITH HOT WATER SUPPLEMENTAL HEAT
NO SCALE



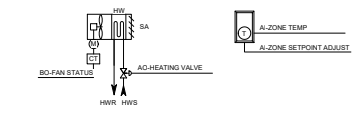
2 VARIABLE AIR VOLUME AIR TERMINAL - HOT WATER REHEAT
NO SCALE



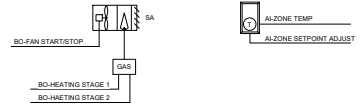
3 HOT WATER CABINET UNIT HEATER
NO SCALE



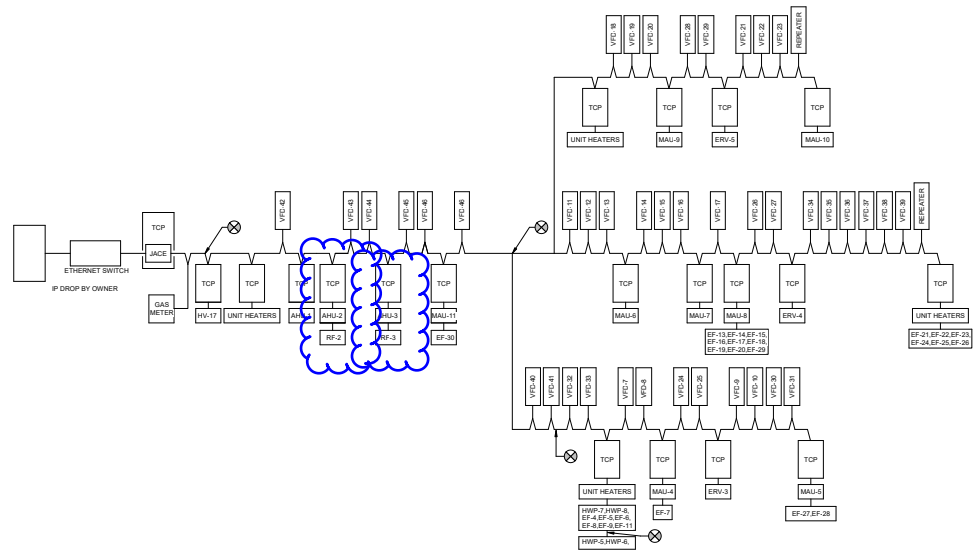
4 EXHAUST FAN - COOLING
NO SCALE



5 HOT WATER UNIT HEATER
NO SCALE

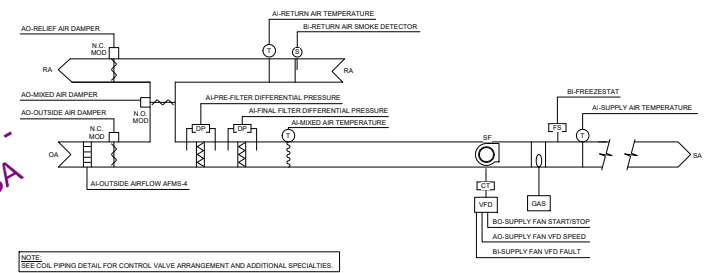


6 GAS FIRED UNIT HEATER
NO SCALE



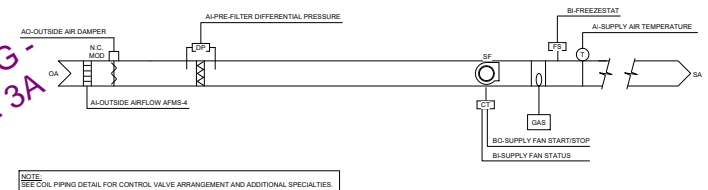
1 BAS SYSTEM ARCHITECTURE NETWORK
NO SCALE

EXISTING -
PHASE 3A



2 VARIABLE AIR VOLUME MAU-11 SUPPLY FAN
NO SCALE

EXISTING -
PHASE 3A



3 CONSTANT VOLUME HV-17 SUPPLY FAN
1/2" = 1'-0"