



IFB 22-023 Air Handler Replacements Addendum No. 1

November 3, 2022

PKMR – 21.659D

PROJECT: KCK AHU Replacements
Kansas City, Kansas

Notice to Contractor:

The following described changes, corrections, clarifications, deletions, additions and approvals for the Contract Documents, which comprise of Addendum No. 1, are hereby made a part of the Contract Documents dated August 12, 2022, and shall govern in the performance of the Work. The contractor shall acknowledge receipt of this Addendum.

SPECIFICATION CHANGES

1. SECTION 236200 – CONDENSING UNITS: Add Trane as an approved manufacturer
2. SECTION 237313 – MODULAR AIR HANDLING UNITS: Add Trane as an approved manufacturer

MECHANICAL

Clarification: Units are to be provided with ECM motors and controlled by DDC system. VFD's are not required.

Sheet BME3:

1. Added fan quantities to AHU schedules and notes for clarity.
2. Added controls schematic note for temp sensor replacement – removed from heater schedule.

Sheet MME2:

1. Added fan quantities to AHU schedules and notes for clarity.
2. Added controls schematic note for temp sensor replacement – removed from heater schedule.

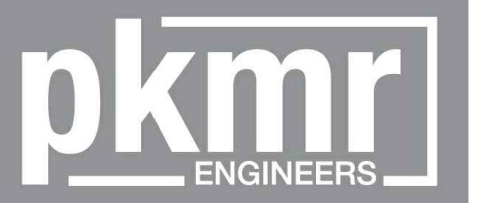
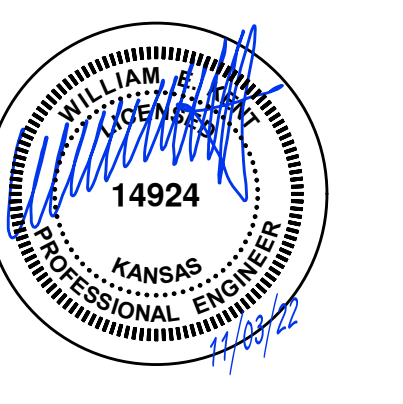
Sheet QME2:

1. Added fan quantities to AHU schedules and notes for clarity.
2. Added controls schematic note for temp sensor replacement – removed from heater schedule.

ELECTRICAL

1. Clarification - Fire alarm systems in buildings are as follows:
 - Quindaro – EST/Keller
 - Banneker – Contractor shall remove and reinstall existing devices as necessary. New devices are not required.
 - ME Pearson – Keller

END OF ADDENDUM



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KANSAS CITY, KANSAS SCHOOL DISTRICT U.S.D. 500 RENOVATIONS

BANNEKER ELEMENTARY SCHOOL
2026 N 4TH ST
KANSAS CITY, KANSAS 66101

AIR HANDLING UNIT SCHEDULE (D/X - ELECTRIC)

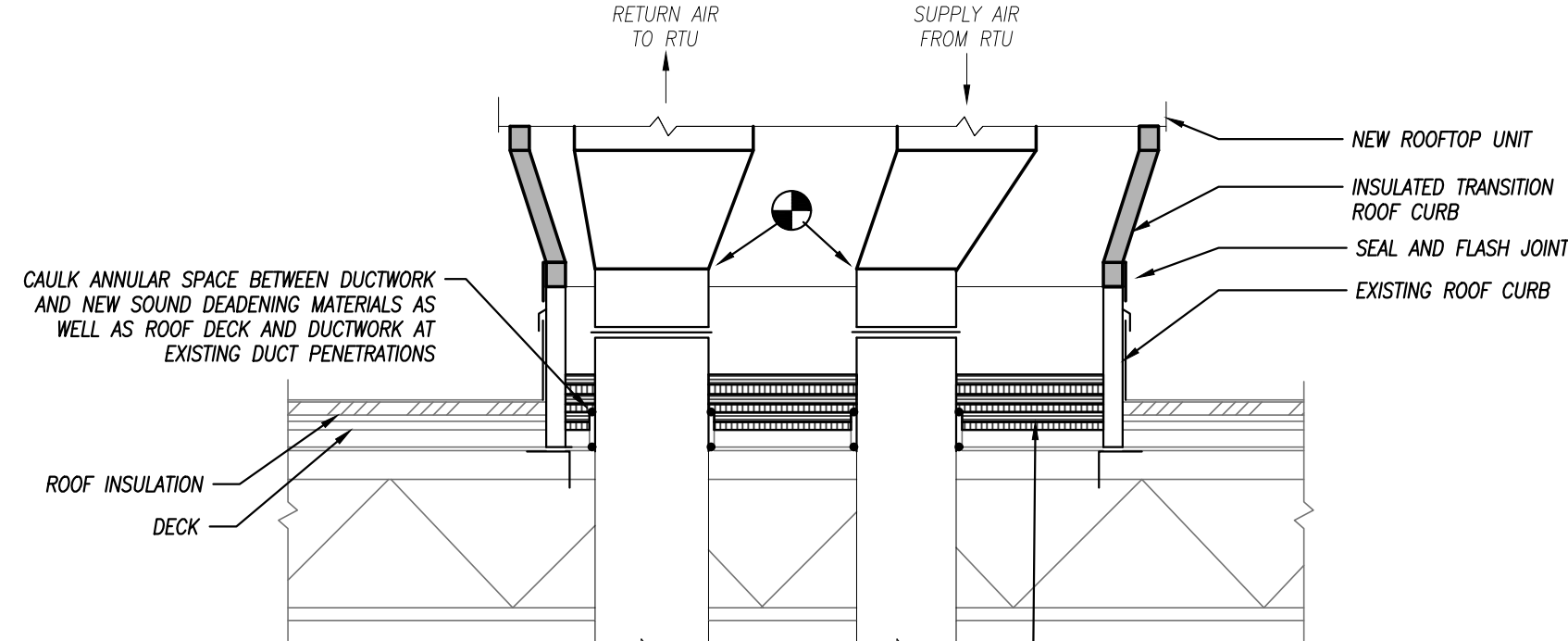
PLAN MARK	MANUFACTURER	MODEL	CFM	O.A. CFM	SUPPLY FAN DATA						RETURN FAN DATA						DIX COOLING COIL						FILTERS		ELECTRICAL (SUPPLY)				ELECTRICAL (RETURN)				NOTES
					E.S.P.	BHP	HP	EAT (DBWB)	T/S CAPACITY	NO.	THICKNESS	VOLTA/PHASE	MCA	MOC.P.	SCCR (A)	WEIGHT (LBS)	REMARKS	NO.	THICKNESS	VOLTA/PHASE	MCA	MOC.P.	SCCR (A)	WEIGHT (LBS)	REMARKS								
A	DAKIN	CAH033GCM	15,605	1,640	1.5	3.31	3.97	6.6	3	4,965	0.5	2.12	4.4	3	8	85.8 / 67.8	53.9 / 51.8	496312 / 356643	0.73	36.40	2	NOTE 5	0.59	480/3	21.9	25	460/3	14.6	15	12.3,4,7,8			
B	DAKIN	CAH033GCM	15,135	1,600	1.5	3.24	3.75	6.6	3	4,535	0.5	1.94	4.4	3	8	85.6 / 67.8	54.1 / 52.0	513603 / 368463	0.69	36.40	2	NOTE 5	0.59	480/3	21.9	25	460/3	14.6	15	12.3,4,7,8			
D	DAKIN	CAH028GCM	13,025	3,300	1.5	3.15	5.08	6.6	2	7,725	0.5	1.19	6.6	2	6	83.0 / 71.4	54.9 / 53.8	483241 / 260104	0.62	30.20	2	NOTE 6	0.59	480/3	15.2	20	460/3	15.2	20	12.3,4,7,8			
E	DAKIN	CAH028GCM	12,510	3,300	1.5	3.02	4.65	6.6	2	4,210	0.5	2.03	4.4	2	6	83.1 / 70.9	55.6 / 54.2	482627 / 246505	0.54	30.20	2	NOTE 6	0.59	480/3	15.2	20	460/3	10.1	15	12.3,4,7,8			

ROOFTOP UNIT SCHEDULE (ELECTRIC HEAT)

PLAN MARK	MANUFACTURER	MODEL	CFM	O.A. CFM	FAN DATA			COOLING COIL			FILTERS		ELECTRICAL				REMARKS	
					E.S.P.	BHP	HP	EAT (DBWB)	T/S CAPACITY	NO.	THICKNESS	VOLTA/PHASE	MCA	MOC.P.	SCCR (A)	WEIGHT (LBS)		
RTU-C	ENGINEERED AIR	FWETB2/D/M/R	5,900	900	0.75	4.23	5	79.0 / 66.0	55.8 / 54.4	208000 / 148000	3	2"	480V / 3PH	49.5	60	5	3,400	1-4

ELECTRIC DUCT HEATER SCHEDULE

PLAN MARK	MANUFACTURER	AIRFLOW (CFM)	CAPACITY (KW)	ΔT (°F)	DUCT SIZE (IN.)	VOL/PH	REMARKS
A-1	INDEECO	2,220	29.7	42	24x14	480/3	1,2,3
A-2	INDEECO	375	5.9	50	24x5	480/3	1,2,3
A-3	INDEECO	1,455	17.8	39	24x11	480/3	1,2,3
A-4	INDEECO	2,960	41.5	44	24x17	480/3	1,2,3
A-5	INDEECO	1,275	17.8	44	24x10	480/3	1,2,3
A-6	INDEECO	2,960	41.5	44	24x17	480/3	1,2,3
A-7	INDEECO	300	5.9	62	24x4	480/3	1,2,3
A-8	INDEECO	345	5.9	54	24x4	480/3	1,2,3
A-9	INDEECO	1,455	16.7	36	24x11	480/3	1,2,3
A-10	INDEECO	2,220	35.6	51	24x14	480/3	1,2,3
B-1	INDEECO	2,220	29.7	42	24x14	480/3	1,2,3
B-2	INDEECO	325	5.9	57	24x4	480/3	1,2,3
B-3	INDEECO	1,395	17.8	40	24x10	480/3	1,2,3
B-4	INDEECO	2,960	41.5	44	24x17	480/3	1,2,3
B-5	INDEECO	1,335	17.8	42	24x10	480/3	1,2,3
B-6	INDEECO	2,960	41.5	44	24x17	480/3	1,2,3
B-7	INDEECO	325	5.9	57	24x4	480/3	1,2,3
B-8	INDEECO	1,395	17.8	40	24x10	480/3	1,2,3
B-9	INDEECO	2,220	29.7	42	24x14	480/3	1,2,3
C-1	INDEECO	1,530	22.3	46	24x10	480/3	1,2,3
C-2	INDEECO	1,240	16.7	43	22x10	480/3	1,2,3
C-3	INDEECO	290	4.4	48	18x4	480/3	1,2,3
C-4	INDEECO	120	2.0	53	18x4	277/1	1,2,3
C-5	INDEECO	135	2.0	47	18x4	277/1	1,2,3
C-6	INDEECO	2,020	31.1	49	24x10	480/3	1,2,3
D-1	INDEECO	1,170	11.9	32	24x9	480/3	1,2,3
D-2	INDEECO	1,345	17.8	42	24x10	480/3	1,2,3
D-3	INDEECO	760	11.9	49	24x7	480/3	1,2,3
D-4	INDEECO	700	11.9	54	24x7	480/3	1,2,3
D-5	INDEECO	345	5.9	54	24x4	480/3	1,2,3
D-6	INDEECO	930	13.3	45	24x8	480/3	1,2,3
D-7	INDEECO	1,700	29.7	55	24x12	480/3	1,2,3
D-8	INDEECO	910	11.8	41	24x8	480/3	1,2,3
D-9	INDEECO	5,160	66.3	41	24x24	480/3	1,2,3
E-1	INDEECO	3,275	35.6	34	24x19	480/3	1,2,3
E-2	INDEECO	1,400	18.8	42	24x10	480/3	1,2,3
E-3	INDEECO	1,400	17.8	40	24x10	480/3	1,2,3
E-4	INDEECO	965	11.9	39	24x8	480/3	1,2,3
E-5	INDEECO	185	2.2	38	12x5	277/1	1,2,3
E-6	INDEECO	520	6.6	40	24x6	480/3	1,2,3
E-7	INDEECO	155	2.2	46	12x4	277/1	1,2,3
E-8	INDEECO	1,810	29.7	52	24x13	480/3	1,2,3
E-9	INDEECO	655	11.9	57	24x7	480/3	1,2,3
E-10	INDEECO	910	11.9	41	24x8	480/3	1,2,3
E-11	INDEECO	1,240	22.2	57	24x10	480/3	1,2,3



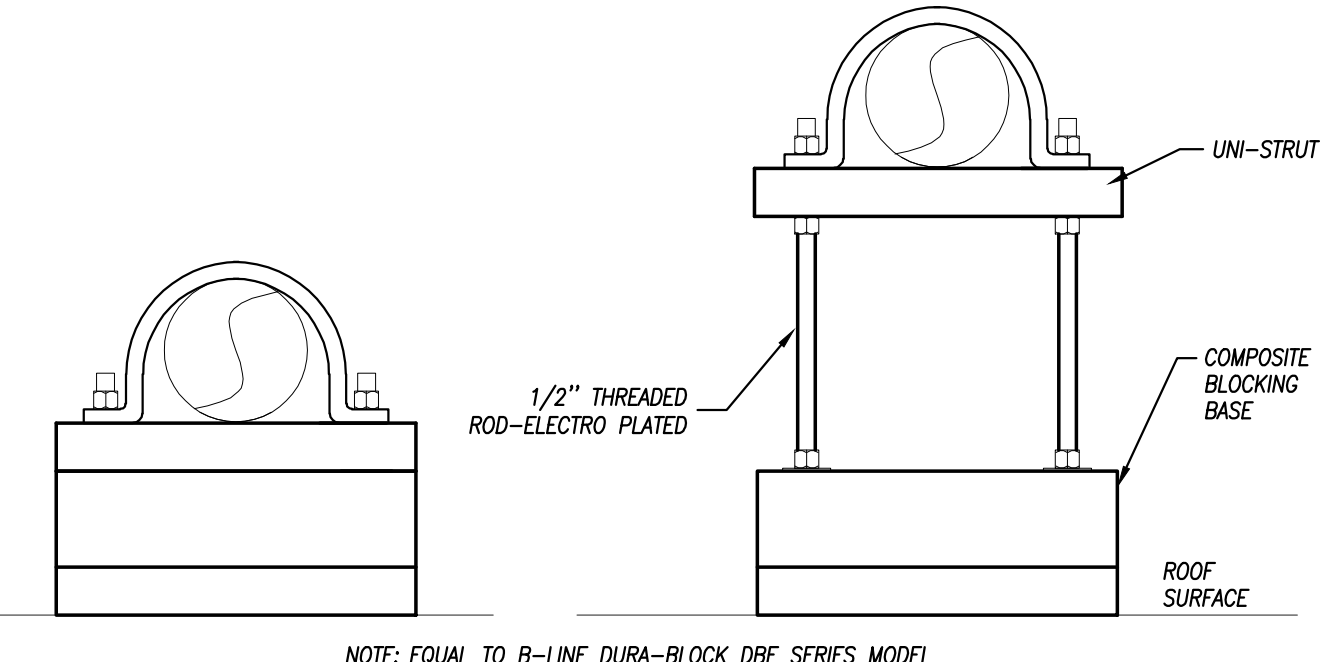
ROOFTOP UNIT TRANSITION CURB DETAIL
NOT TO SCALE

REMARKS:
1. PROVIDE WITH ANGLED FILTER RACK
2. PROVIDE UNIT WITHOUT CONTROLS. BAS CONTRACTOR TO PROVIDE ALL NEW CONTROLS FOR AHUS.
3. PROVIDE WITH 6" TALL LEAK SEAL WITH SPRING ISOLATORS.
4. PROVIDE ACCESS SECTIONS AS NEEDED TO MINIMIZE DUCTWORK MODIFICATIONS.
5. FILTERS: (1) 24"x24"x2", (2) 24"x20"x2", (3) 24"x12"x2"
6. FILTERS: (1) 24"x24"x2", (4) 24"x20"x2", (1) 20"x24"x2", (4) 20"x20"x2"
7. UNIT SHALL BE CAPABLE OF BEING DISASSEMBLED WITH ALL SECTIONS TO FIT THROUGH A 3'6" DOOR IF UNIT DIMENSIONS ARE NOT EQUAL TO OR LESS THAN DIMENSIONS LISTED IN SECTION DRAWINGS. FIELD CONTROL UNIT WILL BE POWER TO SUBSTATION.
8. UNIT SHALL BE PROVIDED WITH ECM FAN ARRAYS WITH DIRECT DRIVE EC MOTORS ON BOTH SUPPLY AND RETURN FAN SECTIONS. (NO) BHP LISTED IS FOR A SINGLE FAN IN THE ARRAY. THE "NO." COLUMN LISTS THE NUMBER OF FANS IN THE ARRAY.

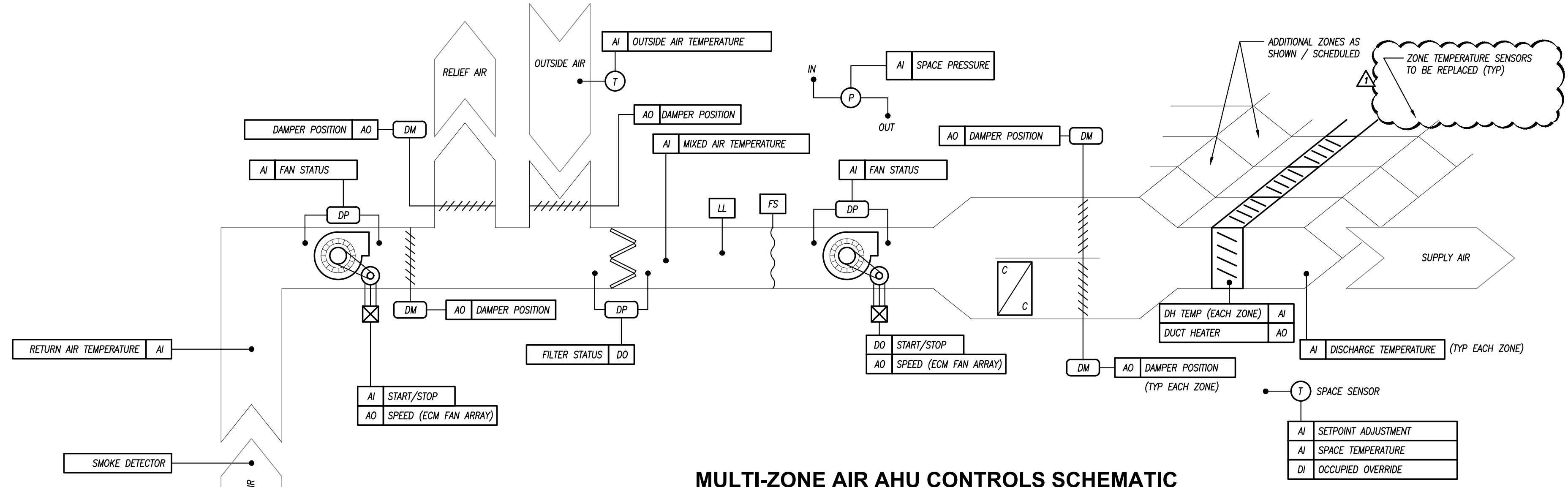
CONDENSING UNIT SCHEDULE

PLAN MARK	MANUFACTURER	MODEL	CAPACITY (MBH)	MINIMUM 'EER	AMBIENT TEMP. (°F)	ELECTRICAL				REMARKS
						VOLTS / PH	M.C.A.	M.O.C.P.	SCCR (A)	
CU-A	DAKIN	RC0550D	506712.0	11.0	105°	460 / 3	91.3	110	10	1,2,3,4
CU-B	DAKIN	RC0550D	506712.0	11.0	105°	460 / 3	91.3	110	10	1,2,3,4
CU-D	DAKIN	RC0550D	506712.0	11.0	105°	460 / 3	91.3	110	10	1,2,3,4
CU-E	EXISTING TO REMAIN	---	458732.0	11.4	105°	460 / 3	91.3	110	10	1,2,3,4

REMARKS:
1. COOLING CAPACITY BASED ON A SUCTION TEMPERATURE OF 48F.
2. PROVIDE FACTORY MOUNTED DISCONNECT.
3. MOUNT ON ROOF - SEE DETAIL.
4. UNITS SHALL HAVE A MINIMUM OF 4 STAGES OF COOLING.



ROOF PIPE CURB PENETRATION
NOT TO SCALE



MULTI-ZONE AIR AHU CONTROLS SCHEMATIC
NOT TO SCALE

SEQUENCE OF OPERATIONS
IN GENERAL, MATCH EXISTING CONTROLS SEQUENCE AS CURRENTLY INSTALLED - PROVIDE ANY NECESSARY MODIFICATIONS TO THE BELOW SEQUENCE TO ACHIEVE.

MULTIZONE AHU/RTU
THE OCCUPIED/UNOCCUPIED MODE OF OPERATION SHALL BE DETERMINED BY THE TIMECLOCK FUNCTION OF THE DDC PANEL.

THE SUPPLY AND RETURN FANS SHALL OPERATE BASED ON DUCT STATIC PRESSURE SETPOINT. THE ECM FAN ARRAY SHALL MODULATE AS NEEDED TO MAINTAIN SA FAN STATIC PRESSURE THROUGH ITS ECM MOTOR TO MAINTAIN THE SA STATIC PRESSURE SETPOINT. THE UNIT STATIC PRESSURE SETPOINT SHALL BE OPTIMIZED BY COMMUNICATING WITH ALL MULTIZONE DAMPERS ASSOCIATED WITH THE UNIT AND MONITORING THE DAMPER POSITION TO MAINTAIN THE LOWEST STATIC PRESSURE THAT PROVIDES ADEQUATE PRESSURE TO MAINTAIN THE LOCAL AIRFLOW SETPOINT WHILE STILL ABOVE THE LOWEST OPERATING LIMIT OF THE ECM MOTOR.

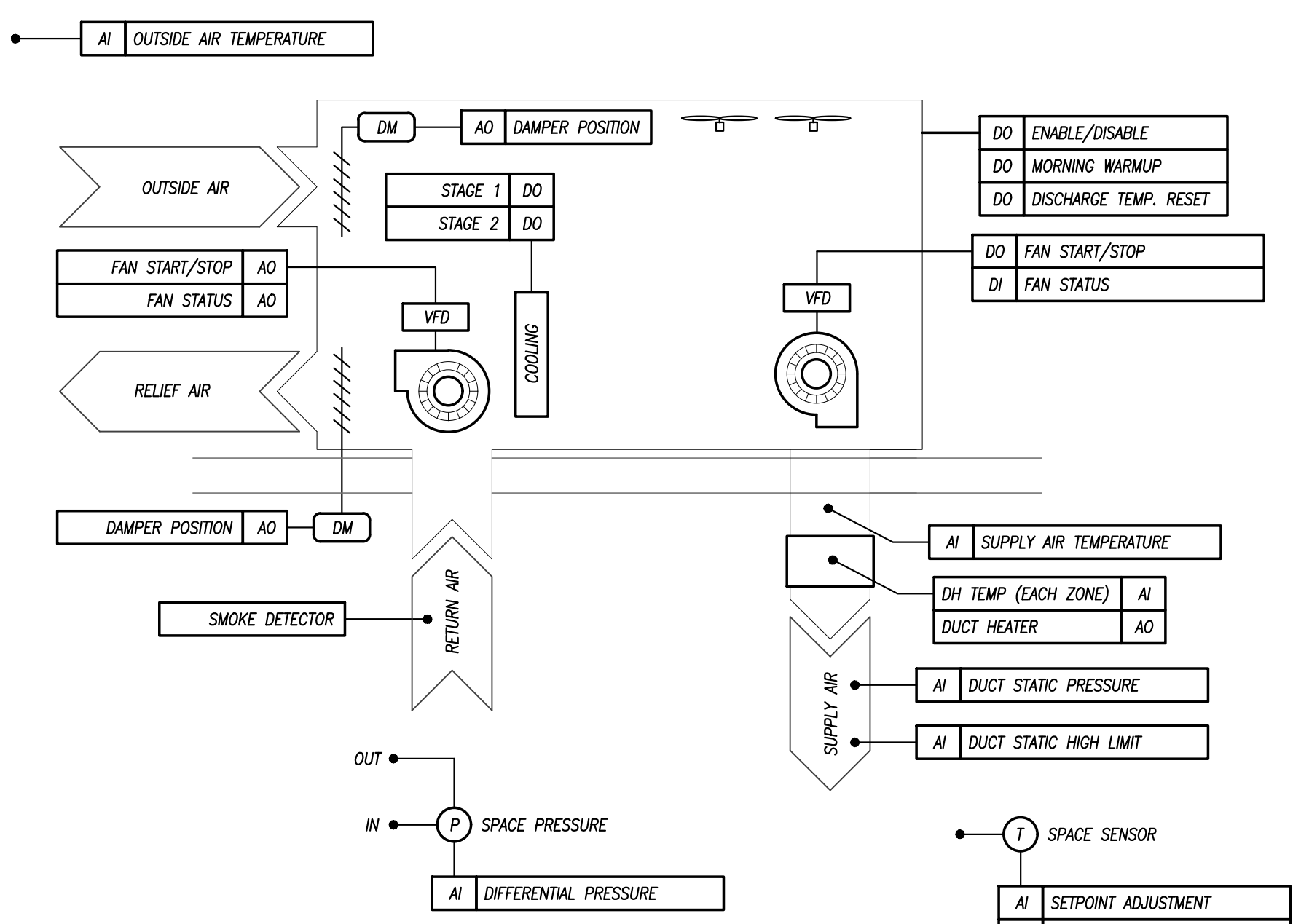
THE COOLING COIL SHALL MODULATE IN COOLING MODE TO MAINTAIN DISCHARGE AIR TEMPERATURE OF 55 DEGREES F (ADJ). THE ELECTRO ZONE HEATING COILS SHALL BE USED TO SATISFY ANY SPECIFIC SPACE SETPOINTS REQUIRING HEATING.

ELECTRIC ZONE HEATING COILS SHALL MAINTAIN THE HEATING MODE SUPPLY AIR TEMPERATURE SETPOINT 100 DEGREES F (ADJ). A MORNING WARMUP SEQUENCE SHALL BE INCLUDED TO CLOSE THE OA DAMPER, OPEN THE RA DAMPER, AND ENABLE THE HEATING COILS TO MODULATE AS NEEDED TO ACHIEVE SPACE TEMPERATURES. ECONOMIZER OPERATION SHALL OCCUR WHEN THE OUTSIDE AIR TEMPERATURE IS BELOW 62 DEGREES (ADJ), OR DURING THE WINTER WHEN THE CONDENSING UNIT IS DISABLED.

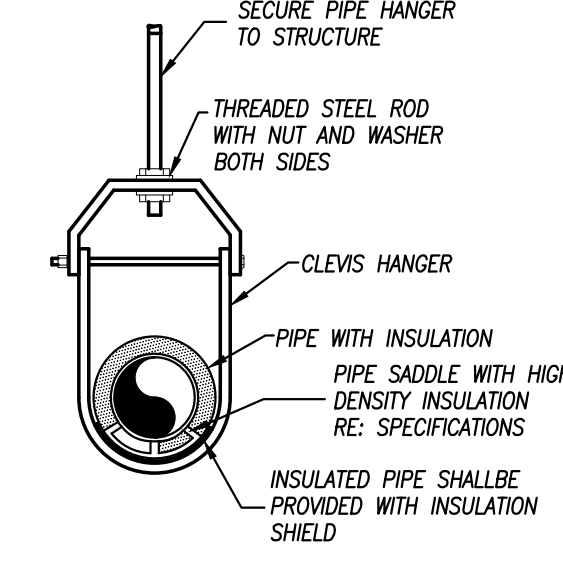
DURING THE UNOCCUPIED MODE OF OPERATION, OUTSIDE AIR DAMPERS SHALL BE CLOSED AND RETURN AIR DAMPERS SHALL BE OPEN.

FIRE ALARM INTERFACE:
THE UNIT SHALL SHUTDOWN UPON ALARM OF UNIT/DUCT SYSTEM SMOKE DETECTORS.

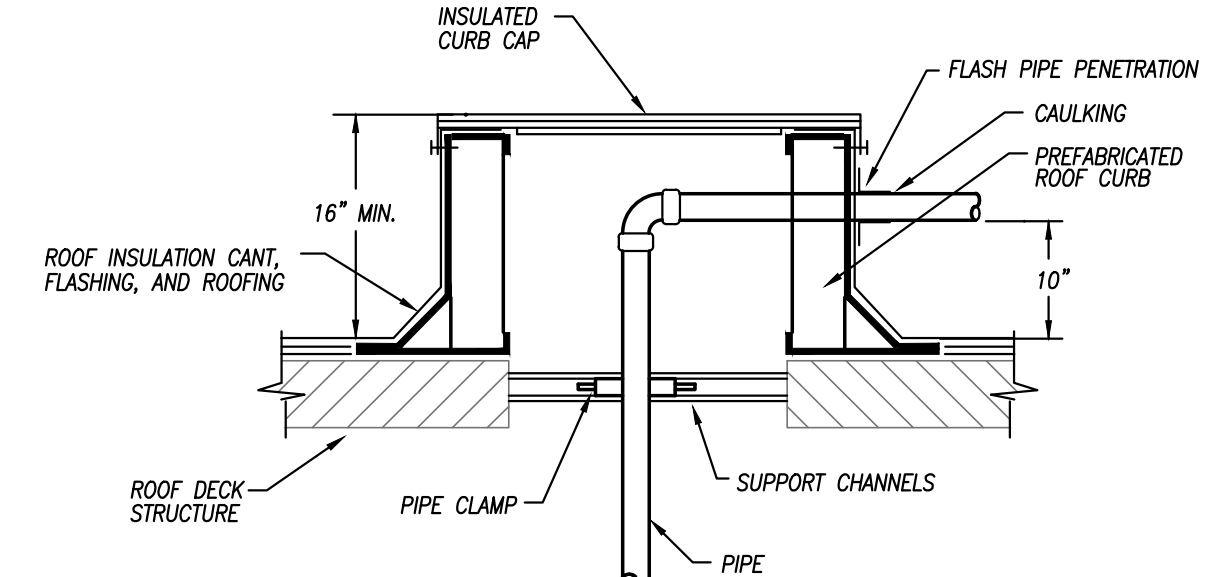
CARBON DIOXIDE DETECTOR:
UPON ALARM OF CARBON DIOXIDE DETECTOR, OUTSIDE AIR DAMPER SHALL OPEN AND RETURN AIR DAMPERS SHALL CLOSE UNTIL ALARM IS CLEARED.



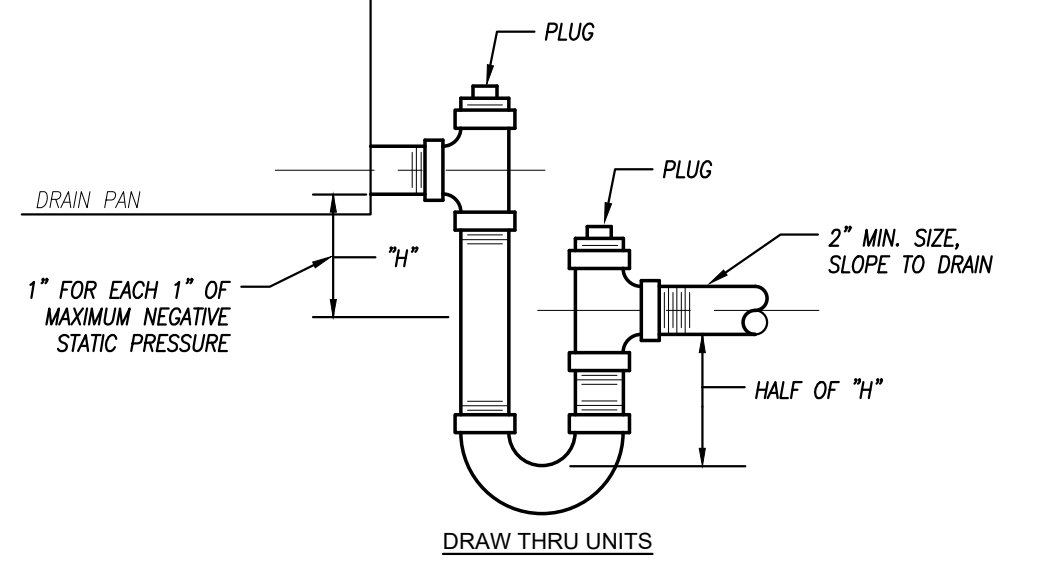
MULTIZONE ROOFTOP UNIT CONTROLS SCHEMATIC
NOT TO SCALE



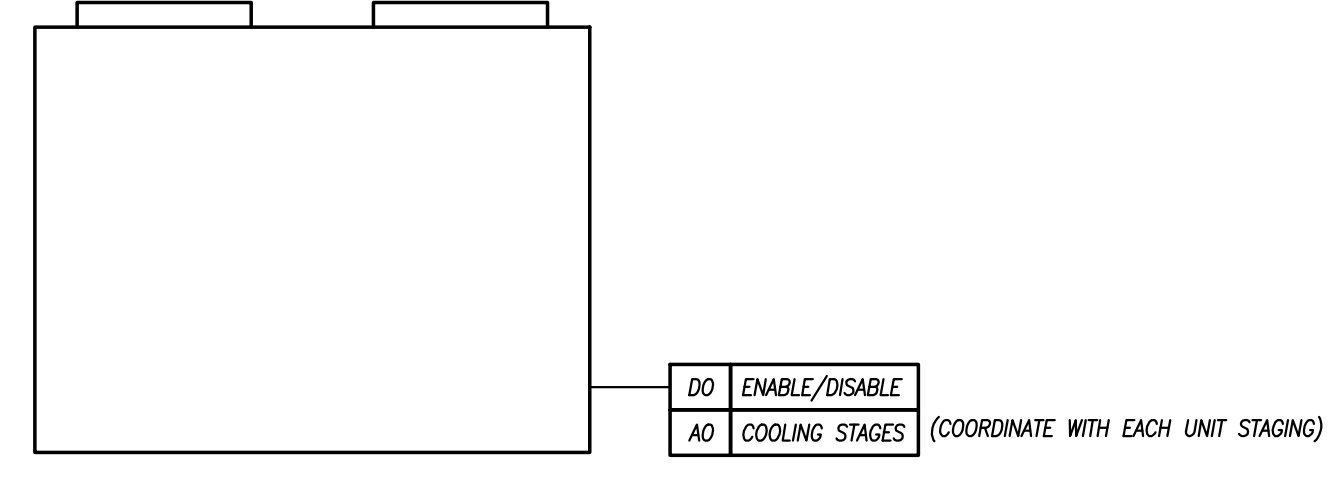
PIPE HANGER DETAIL
NOT TO SCALE



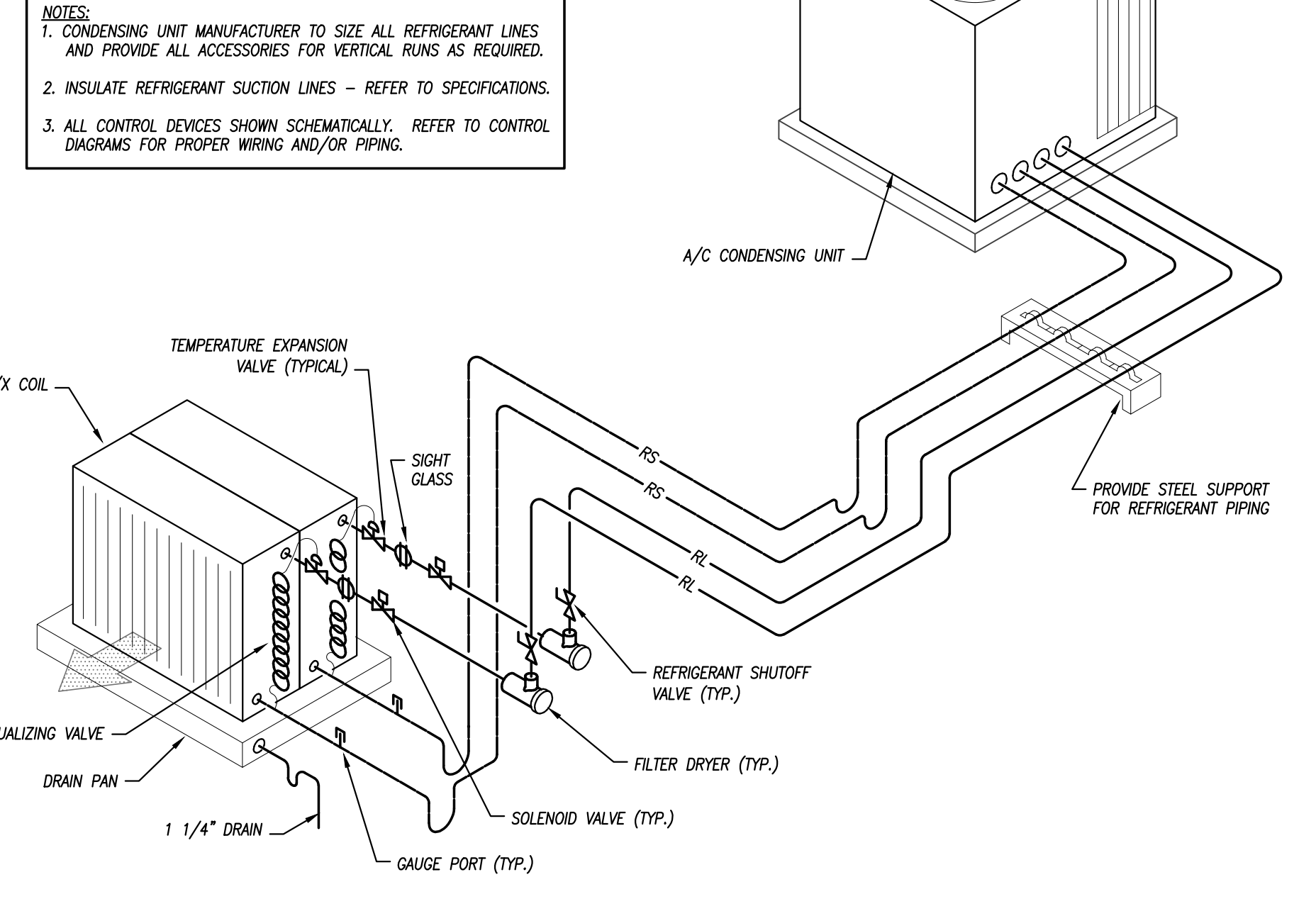
ROOF PIPE CURB PENETRATION
NOT TO SCALE



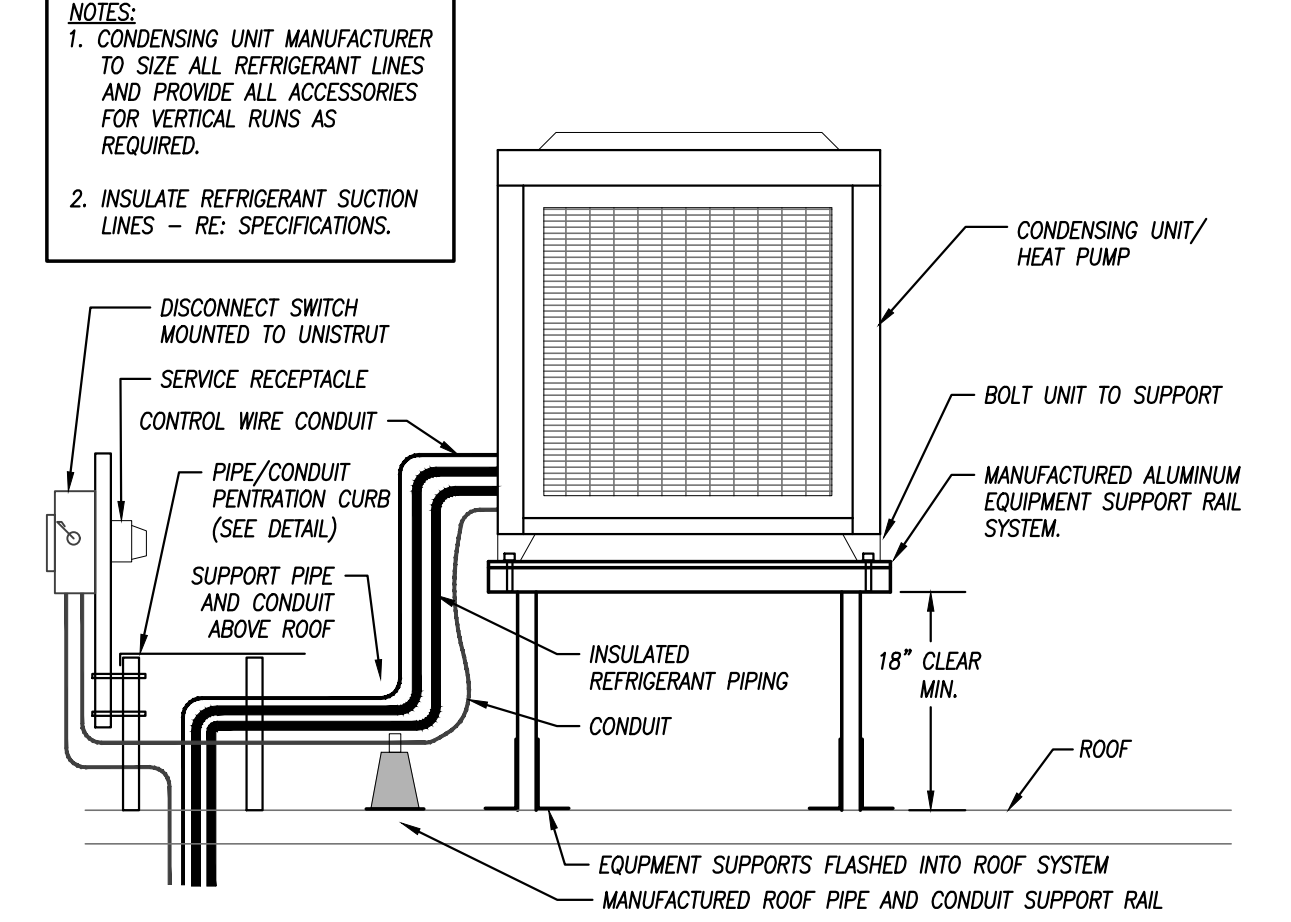
CONDENSATE TRAP DETAIL
NOT TO SCALE



CONDENSING UNIT CONTROLS SCHEMATIC
NOT TO SCALE



AHU DIX COIL & AIR-COOLED CONDENSING UNIT DETAIL
NOT TO SCALE



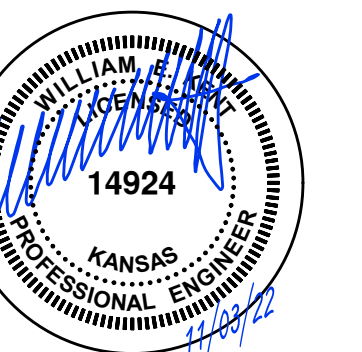
CONDENSING UNIT / HEAT PUMP DETAIL
NOT TO SCALE

ISSUED FOR:	DESCRIPTION	DATE
1	ADDENDUM #1	11/03/2022
2		
3		

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DRAWN BY: MKR
CHECKED BY: WK

SHEET TITLE: **MECH DETAILS & SCHEDULES**

DATE: 08/12/22 PKMR PROJECT: 21.659
SHEET NUMBER: **BME3**

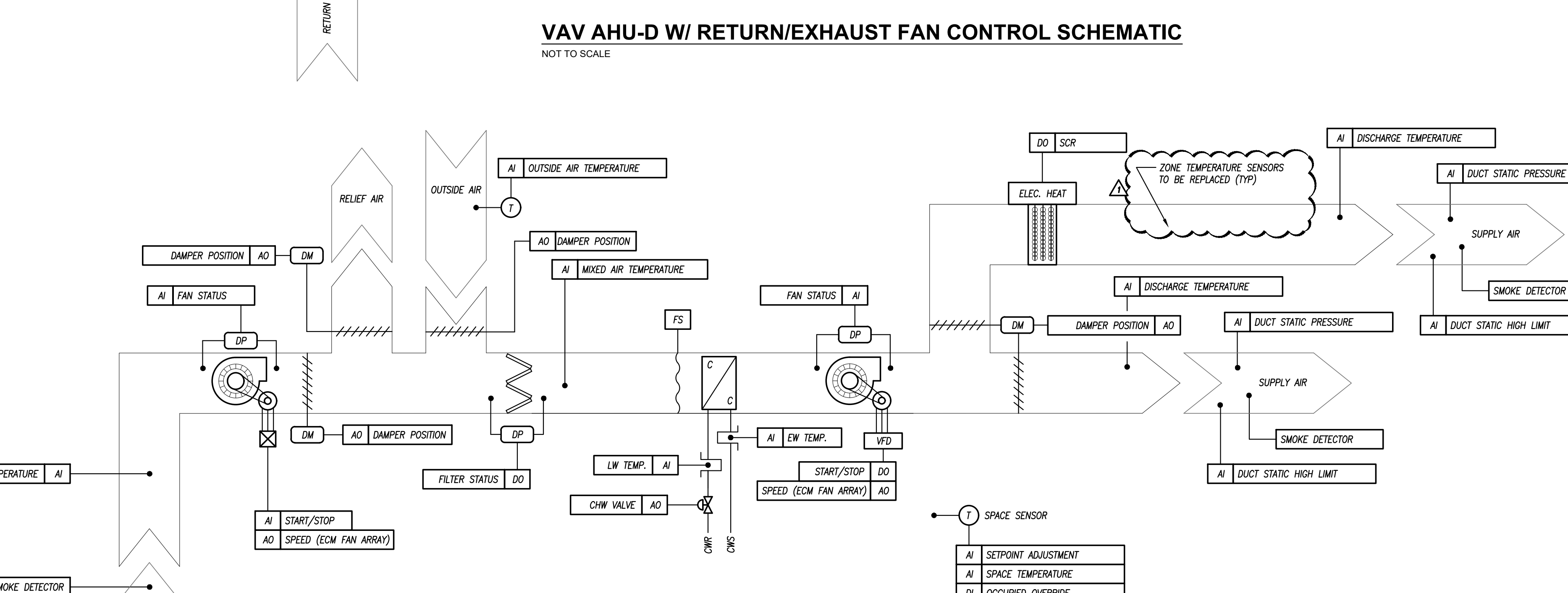
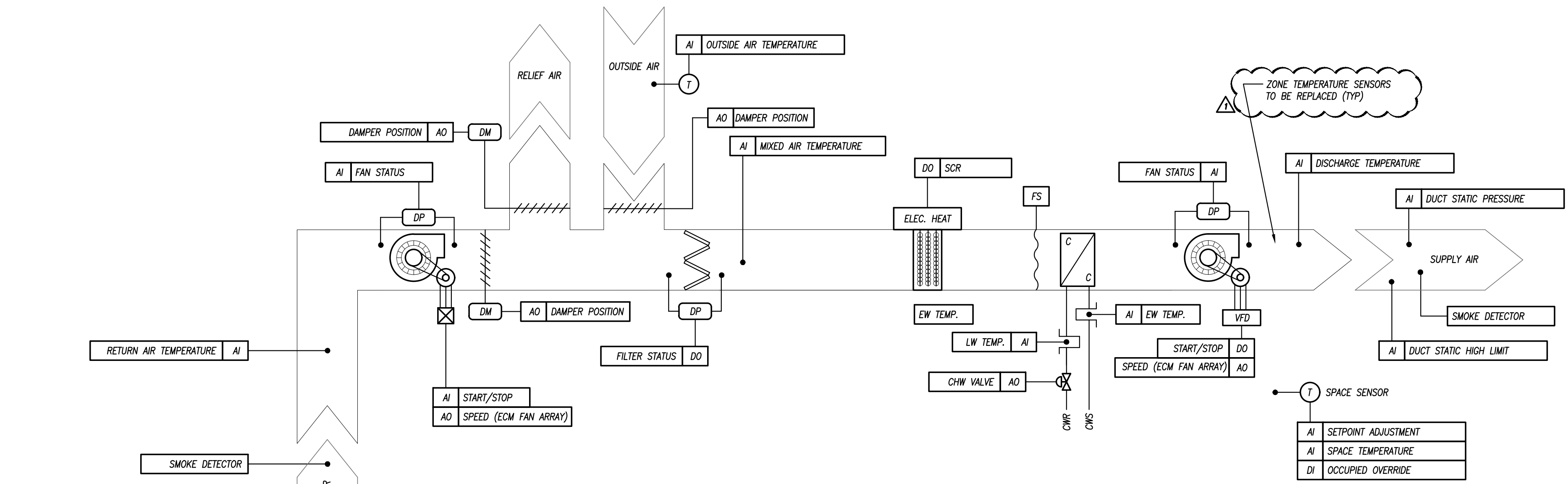
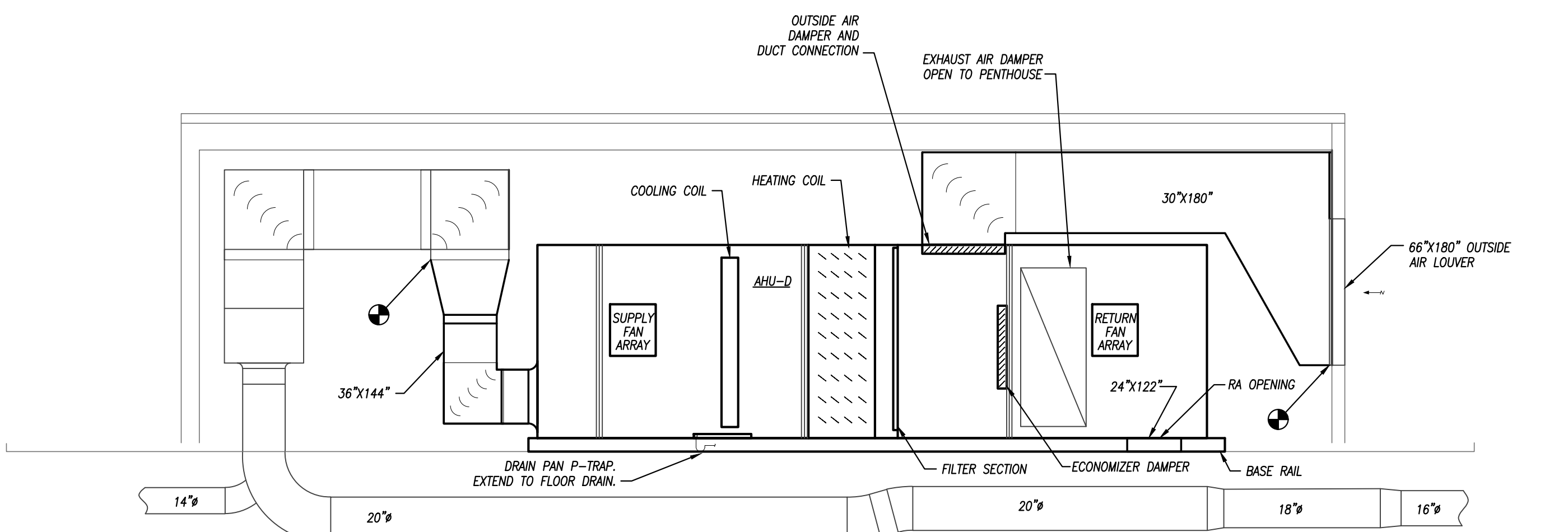
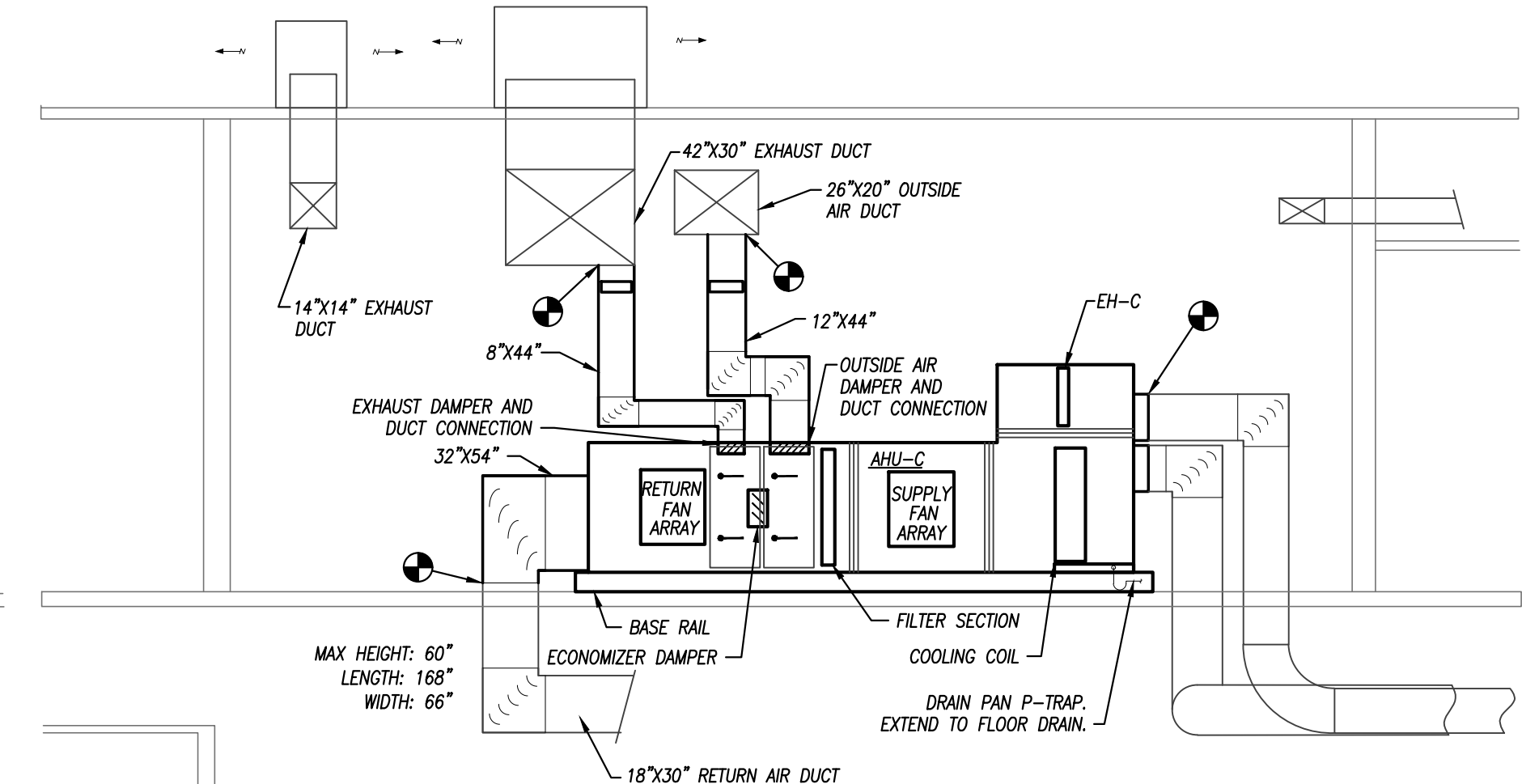
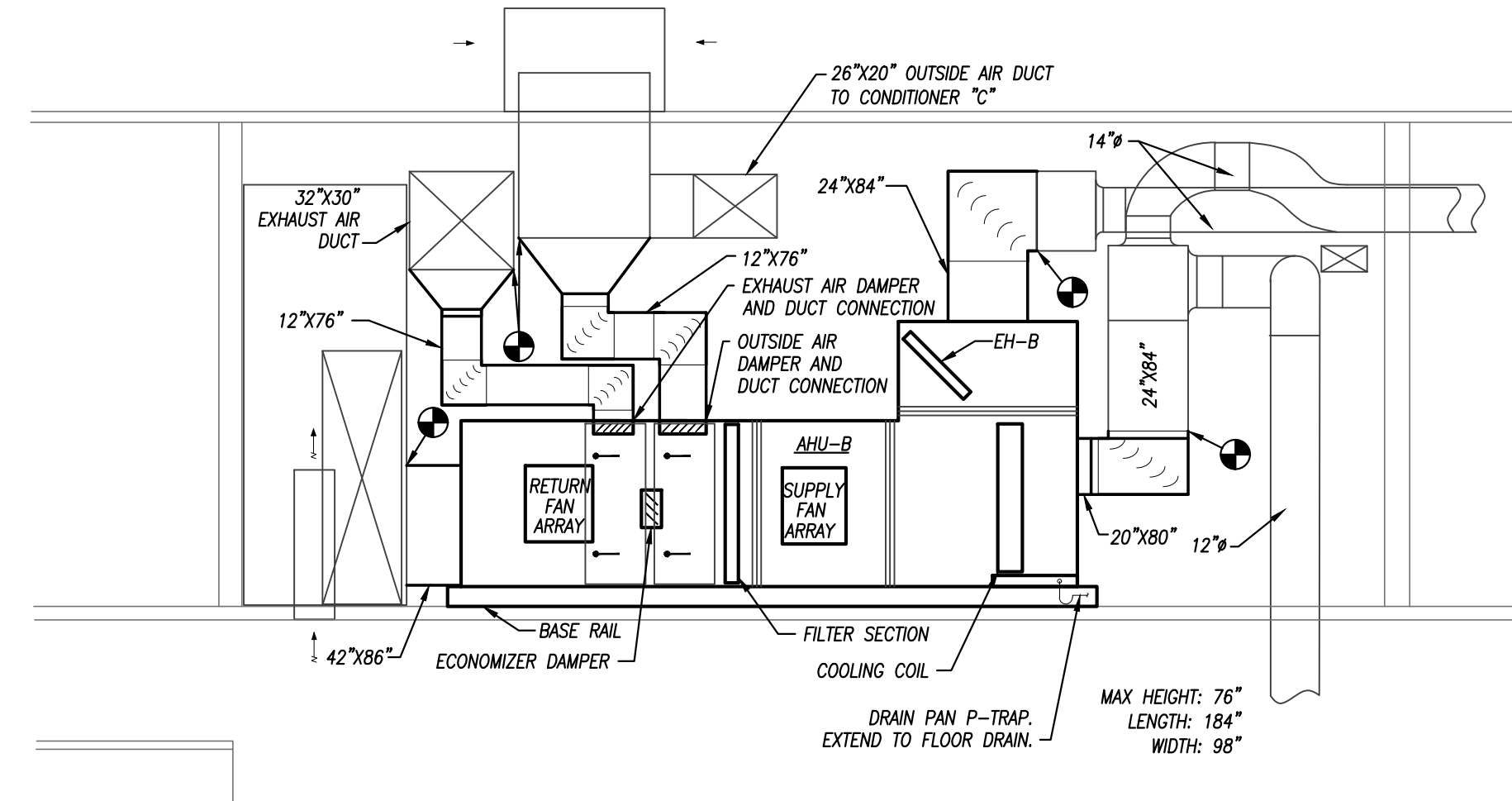
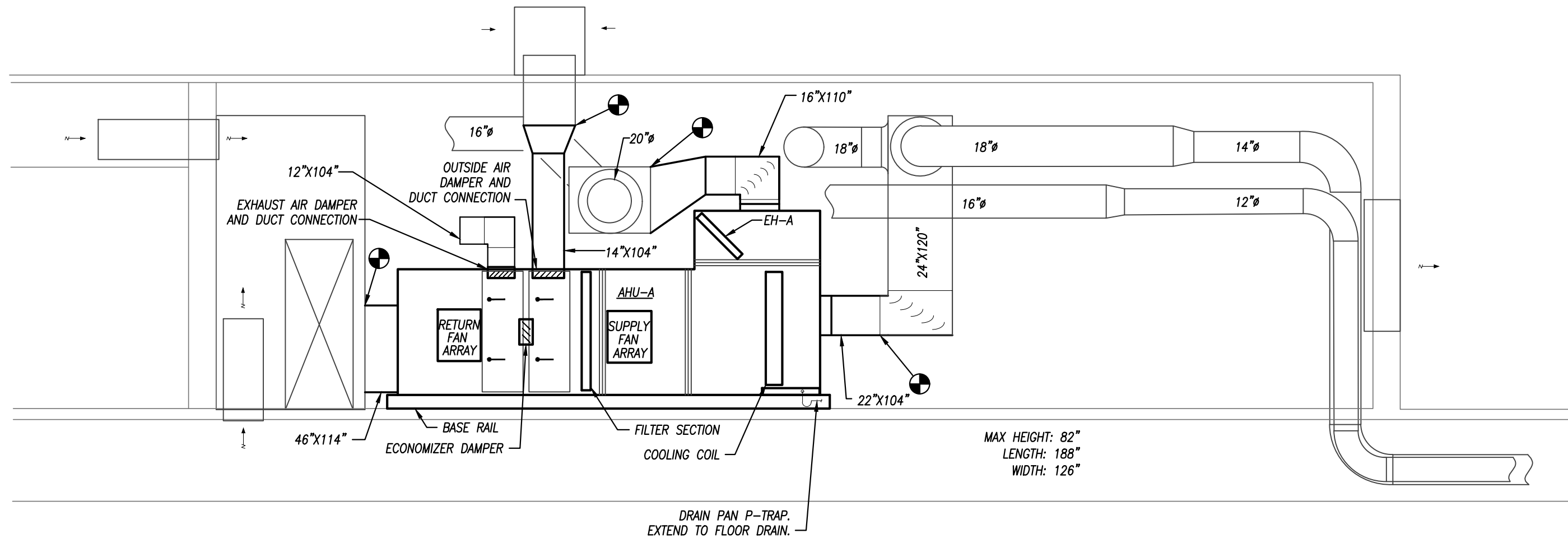


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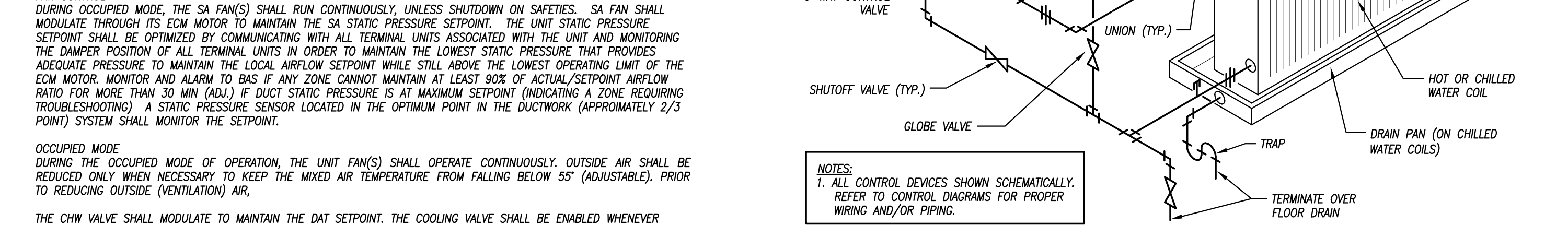
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13300 W 98TH STREET
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KANSAS CITY, KANSAS SCHOOL DISTRICT U.S.D. 500 RENOVATIONS

M.E. Pearson
310 North 11th Street
KANSAS CITY, KANSAS 66102



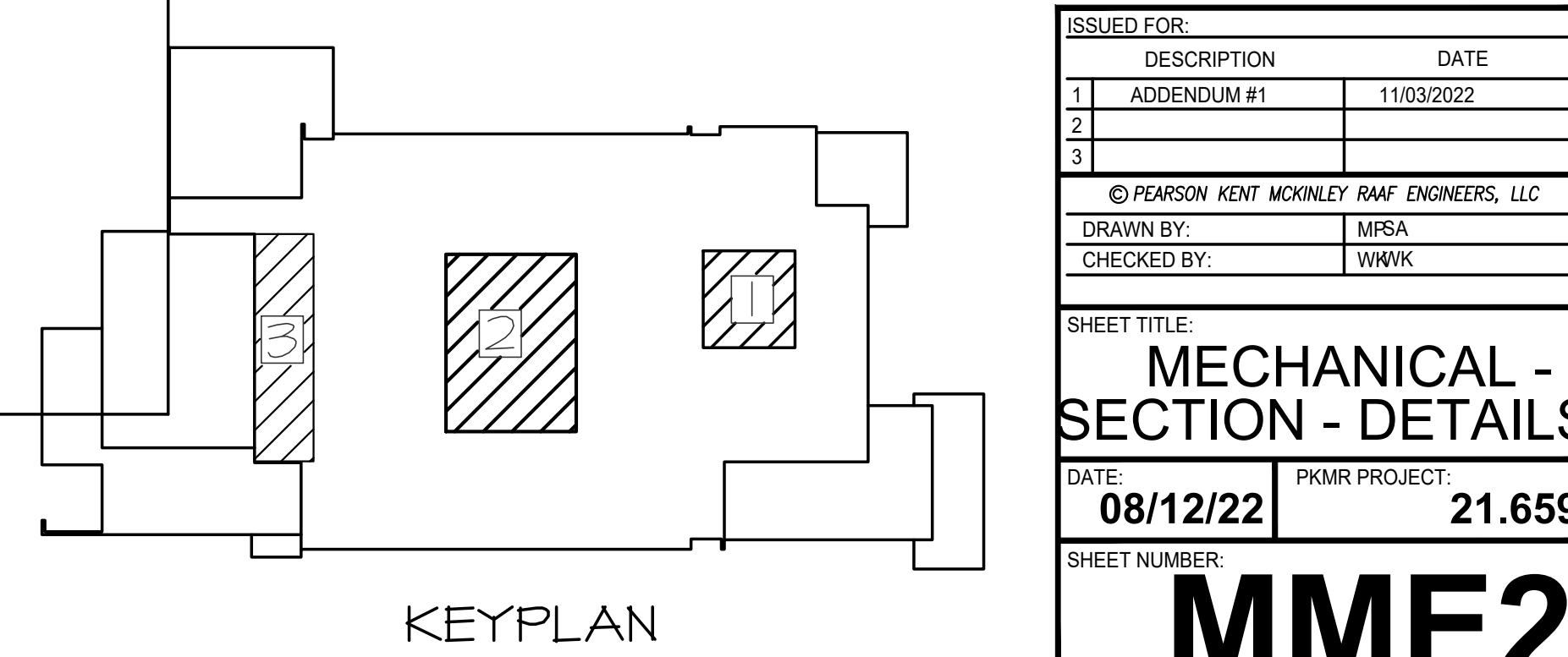
SEQUENCE OF OPERATIONS: AHU-D SCHEDULED OCCUPANCY... UNIT SHALL HAVE OCCUPIED/UNOCCUPIED MODE OF OPERATION... AHU OPTIMAL START: THE UNIT SHALL START PRIOR TO SCHEDULED OCCUPANCY... WARM UP CYCLE FOR EACH SYSTEM SHALL CONSIST OF USING THE TERMINAL UNITS AND HEATING COILS TO RAISE SPACE UP TO SETPOINT... WHEN THE UNIT IS STOPPED FOR ANY REASON THE FANS SHALL BE DE-ENERGIZED... FREEZE PROTECTION: THE UNIT SHALL SHUT DOWN AS DESCRIBED ABOVE... HIGH STATIC SHUTDOWNS: THE UNIT SHALL SHUT DOWN AND GENERATE AN ALARM... SMOKE DETECTION: THE UNIT SHALL SHUT DOWN AND GENERATE AN ALARM... FAN CONTROL: DURING OCCUPIED MODE THE SA FAN(S) SHALL RUN CONTINUOUSLY... CHW VALVE SHALL MODULATE TO MAINTAIN THE DAT SETPOINT... ENTHALPY ECONOMIZER CONTROLS SHALL MODULATE THE RETURN AND OUTSIDE AIR DAMPERS... THE OUTSIDE AIR DAMPER CONTROL SHALL BE CONTROLLED BY CO2 SENSORS... THE GRAVITY RELIEF DAMPERS AT SHALL MODULATE TO MAINTAIN SPACE STATIC PRESSURE... UNOCCUPIED OPERATION: UNIT FANS SHALL BE OFF... SETBACK OPERATION: THE UNIT SHALL BE ENERGIZED INTO THE OCCUPIED MODE... MISCELLANEOUS ALARMS: FILTER DIFFERENTIAL PRESSURE MONITOR ALARM... SEQUENCES OF OPERATIONS: IN GENERAL MATCH EXISTING CONTROLS SEQUENCE... DUAL DUCT AHU (AHU-A,B,C): THE OCCUPIED/UNOCCUPIED MODE OF OPERATION... THE SUPPLY AND RETURN FANS SHALL OPERATE BASED ON DUCT STATIC PRESSURE... THE CHILLED WATER COOLING COIL SHALL MODULATE IN COOLING MODE... THE FANS SHALL OPERATE BASED ON DUCT STATIC PRESSURE... FIRE ALARM INTERFACE: THE UNIT SHALL SHUTDOWN UNIT UPON ALARM... CARBON DIOXIDE DETECTOR: UPON ALARM OF CARBON DIOXIDE DETECTOR... FREEZE PROTECTION: WHEN THE LOW LIMIT THERMOSTAT SENSES 40 DEGREES ON ANY 1 FOOT PORTION OF THE ELEMENT...



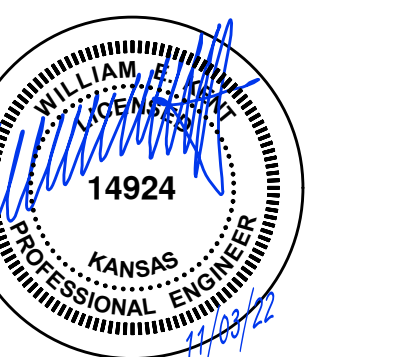
ELECTRIC HEATING COILS table with columns: PLAN MARK, MANUFACTURER, HEATER SIZE (IN.), KW, STEPS, EAT/LAT (F), VOLT/PH, REMARKS. Includes rows for AHU-A, B, C, D.

AIR HANDLING UNIT SCHEDULE (D/X - ELECTRIC) table with columns: PLAN MARK, MANUFACTURER, MODEL, CFM, O.A. CFM, SUPPLY FAN DATA, RETURN FAN DATA, DIX COOLING COIL, ELECTRIC HEATING COIL, FILTERS, ELECTRICAL (SUPPLY), ELECTRICAL (RETURN), NOTES.

REMARKS: 1. PROVIDE WITH ANGLED FILTER RACK... 2. PROVIDE UNIT WITHOUT CONTROLS... 3. PROVIDE WITH 6" TALL LEAST RAIL... 4. PROVIDE ACCESS SECTIONS AS NEEDED... 5. FILTERS: (4) 24"x24"x2", (1) 24"x20"x2", (4) 20"x20"x2", (1) 20"x20"x2"... 6. FILTERS: (4) 20"x24"x2", (4) 20"x20"x2"... 7. FILTERS: (1) 24"x24"x2", (1) 24"x20"x2"... 8. FILTERS: (4) 20"x24"x2", (20) 20"x20"x2"... 9. ELECTRIC COILS FOR "A", "B" & "C" TO BE FURNISHED AND INSTALLED IN UNIT BY MANUFACTURER... 10. ELECTRIC HEATING COIL PROVIDED BY DIFFERENT MANUFACTURER... 11. UNIT SHALL BE CAPABLE OF BEING DISASSEMBLED WITH ALL SECTIONS TO FIT THROUGH A 3/8" DOOR... 12. UNIT SHALL BE PROVIDED WITH ECM FAN ARRAYS WITH DIRECT DRIVE EC MOTORS...



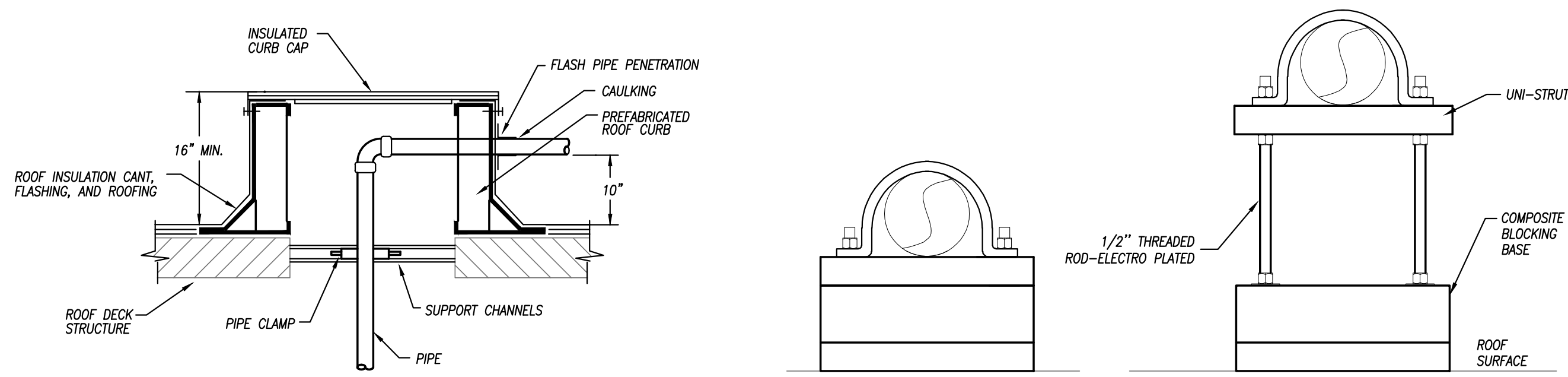
ISSUED FOR: MECHANICAL - SECTION - DETAILS
DATE: 08/12/22
SHEET NUMBER: MME2



AIR HANDLING UNIT SCHEDULE (D/X - ELECTRIC)

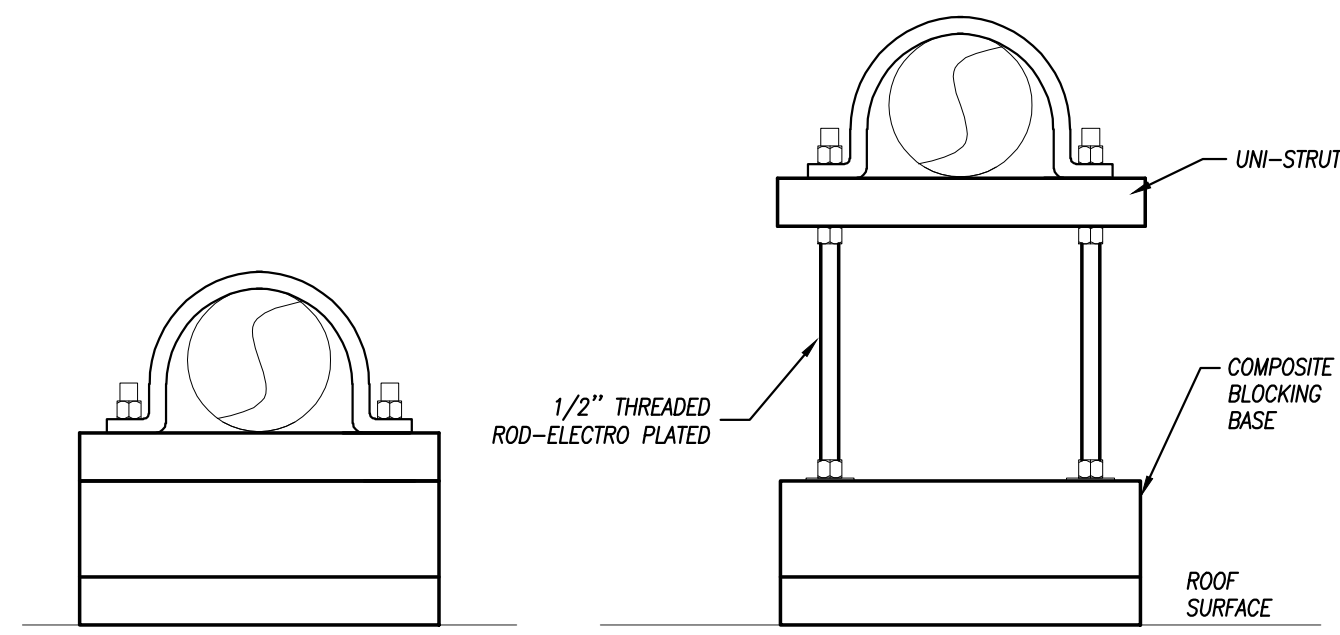
PLAN MARK	MANUFACTURER	MODEL	CFM	OA CFM	SUPPLY FAN DATA					RETURN FAN DATA					D/X COOLING COIL			FILTERS			ELECTRICAL (SUPPLY)			ELECTRICAL (RETURN)			NOTES			
					E.S.P.	T.S.P.	BHP	HP	NO.	CFM	E.S.P.	T.S.P.	BHP	HP	NO.	ROWS	EAT (DBWB)	LAT (DBWB)	TIS CAPACITY	APD (IN WC)	SO. FT.	THICKNESS	NO.	APD (IN WC)	VOLTAGE/PHASE	M.C.A.		M.O.C.P.	VOLTAGE/PHASE	M.C.A.
A	DAIKIN	CAH17GMCM	6310	700	2	3.9	2.82	4.4	2	3510	0.5	0.65	2.5	2	6	82.8 / 67.2	54.1 / 52.4	181449 / 128144	1.02	11.9	2	NOTE 5	0.69	460/3	10.1	15	460/3	8.8	15	1, 2, 3, 4, 10, 11
B	DAIKIN	CAH17GMCM	8255	700	2	3.88	3.63	4.0	2	3595	0.5	1.28	2.5	2	6	82.7 / 68.2	54.2 / 52.7	186623 / 128797	1.0	15.2	2	NOTE 6	0.70	460/3	9.2	15	460/3	8.8	15	1, 2, 3, 4, 10, 11
C	DAIKIN	CAH17GMCM	6130	700	2	3.82	2.68	4.4	2	3430	0.5	0.61	2.5	2	6	83.5 / 66.9	54.4 / 52.7	183828 / 128374	0.96	11.9	2	NOTE 7	0.68	460/3	10.1	15	460/3	8.8	15	1, 2, 3, 4, 10, 11
D	DAIKIN	CAH22GMCM	14455	3975	1.5	3.82	4.16	6.6	3	7480	0.5	1.02	2.5	3	8	84.3 / 69.3	54.2 / 53.0	178376 / 128376	1.42	28.4	2	NOTE 8	0.67	460/3	21.9	25	460/3	12.6	15	1, 2, 3, 4, 10, 11
E	DAIKIN	CAH17GMCM	8710	700	2	3.96	3.89	6.6	2	8010	0.5	1.45	2.5	2	6	83.0 / 66.5	54.2 / 52.5	186586 / 128193	1.05	15.2	2	NOTE 9	0.71	460/3	15.2	20	460/3	8.8	15	1, 2, 3, 4, 10, 11
F	DAIKIN	CAH17GMCM	7405	700	2	3.77	3.16	4.0	2	6735	0.5	0.96	2.5	2	6	83.2 / 66.5	54.4 / 52.8	186850 / 123372	0.90	13.9	2	NOTE 9	0.69	460/3	9.2	15	460/3	8.8	15	1, 2, 3, 4, 10, 11
G	DAIKIN	CAH17GMCM	8670	700	2	3.98	3.89	6.6	2	7970	0.5	1.45	2.5	2	6	83.6 / 66.7	54.1 / 52.3	176399 / 128256	1.07	15.2	2	NOTE 6	0.71	460/3	15.2	20	460/3	8.8	15	1, 2, 3, 4, 10, 11
H	DAIKIN	CAH17GMCM	8105	1060	2	3.82	3.49	4.0	2	7045	0.5	1.11	2.5	2	6	82.7 / 66.4	54.2 / 52.5	183837 / 128383	0.89	15.2	2	NOTE 6	0.69	460/3	9.2	15	460/3	8.8	15	1, 2, 3, 4, 10, 11

- REMARKS:**
- PROVIDE WITH ANGLED FILTER RACK
 - PROVIDE UNIT WITHOUT CONTROLS. BAS CONTRACTOR TO PROVIDE ALL NEW CONTROLS FOR AHU.
 - PROVIDE WITH 6" TALL LEASE RAIL WITH SPRING ISOLATION.
 - PROVIDE ACCESS SECTIONS AS NEEDED TO MINIMIZE DUCTWORK MODIFICATIONS
 - FILTERS: (1) 24"x24"x2"; (2) 24"x20"x2"; (1) 24"x12"x2"
 - FILTERS: (1) 24"x24"x2"; (2) 24"x20"x2"; (1) 24"x12"x2"
 - FILTERS: (1) 24"x24"x2"; (2) 24"x20"x2"; (1) 24"x12"x2"
 - FILTERS: (2) 24"x24"x2"; (4) 24"x20"x2"; (5) 12"x24"x2"
 - FILTERS: (2) 24"x24"x2"; (4) 24"x20"x2"
 - PROVIDE SOUND ATTENUATORS ON RETURN DUCT CONNECTION TO UNIT.
 - UNIT SHALL BE CAPABLE OF BEING DISASSEMBLED WITH ALL SECTIONS TO FIT THROUGH 56"x43" DOOR. IF UNIT DIMENSIONS ARE NOT EQUAL OR LESS THAN DIMENSIONS LISTED ON DRAWINGS, FIELD CONTRACTOR WILL BE RESPONSIBLE FOR SUBMISSION.
 - UNIT SHALL BE PROVIDED WITH ECM FAN ARRAYS WITH DIRECT DRIVE EC MOTORS ON BOTH SUPPLY AND RETURN FAN SECTIONS. HP/BHP LISTED IS FOR A SINGLE FAN IN THE ARRAY. SEE "NO." COLUMN FOR TOTAL NUMBER OF FANS IN ARRAY.



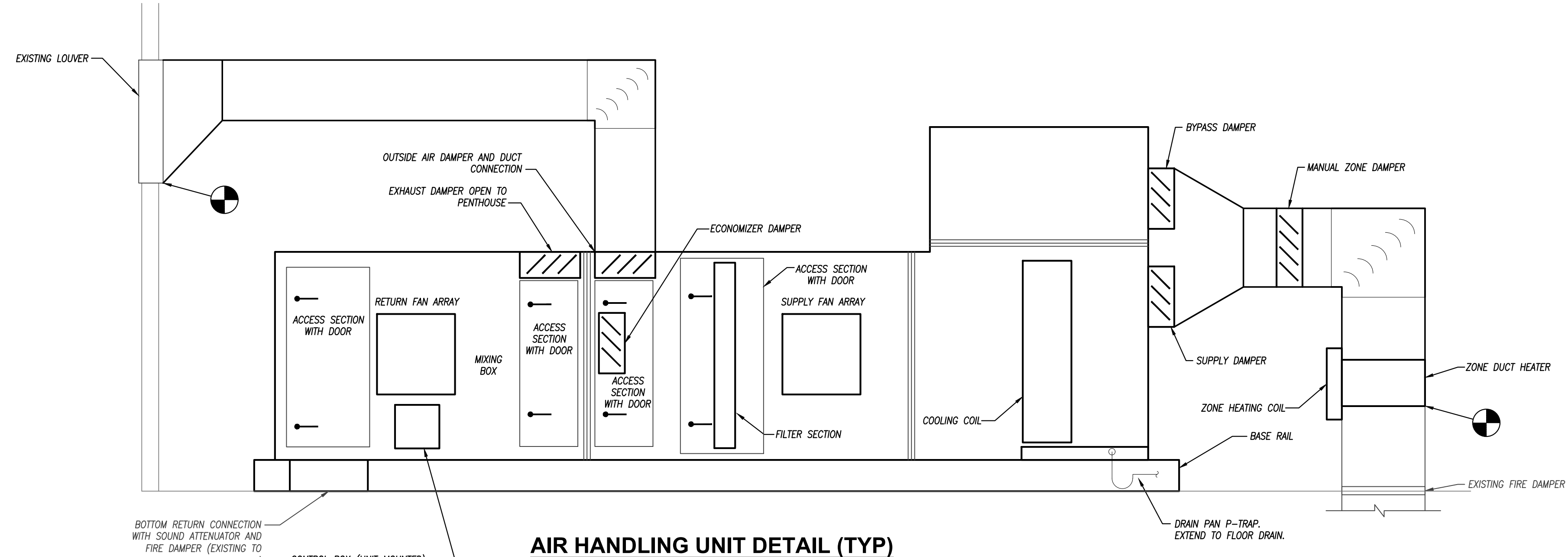
ROOF PIPE CURB PENETRATION

NOT TO SCALE



ROOF PIPE SUPPORT DETAILS

NOTE: EQUAL TO B-LINE DURA-BLOCK DRE SERIES MODEL
NOT TO SCALE



AIR HANDLING UNIT DETAIL (TYP)

NOT TO SCALE

- AIR HANDLING UNIT NOTES:**
- FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS OF EXISTING UNITS.
 - COORDINATE UNIT DIMENSIONS WITH MANUFACTURER TO MINIMIZE DUCTWORK MODIFICATIONS.
 - ADD / REMOVE ACCESS SECTIONS AS NEEDED.
 - MAINTAIN ALL MAINTENANCE AND FILTER CHANGE ACCESS.

CONDENSING UNIT SCHEDULE

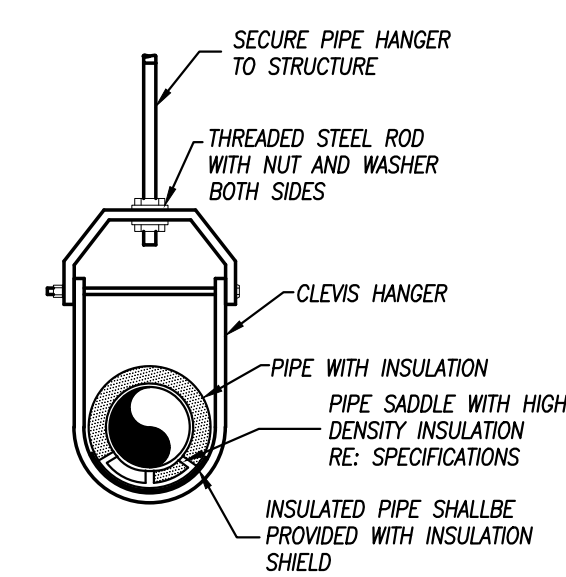
PLAN MARK	MANUFACTURER	MODEL	CAPACITY (MBH)	MINIMUM EER	AMBIENT TEMP. (°F)	ELECTRICAL			REMARKS	
						VOLTS / PH	M.C.A.	M.O.C.P.		
CU-A	DAIKIN	RC3030D	309196.0	11.8	100°	480 / 3	60.3	80	10	1, 2, 3, 4
CU-B	DAIKIN	RC3040D	415690.0	11.3	100°	480 / 3	80.6	90	10	1, 2, 3, 4
CU-C	DAIKIN	RC3250D	264966.0	11.0	100°	480 / 3	50.0	60	10	1, 2, 3, 4
CU-D	DAIKIN	RC3080D	788682.0	10.7	100°	480 / 3	133.9	150	10	1, 2, 3, 4
CU-E	DAIKIN	RC3035D	359652.0	11.3	100°	480 / 3	72.1	80	10	1, 2, 3, 4
CU-F	DAIKIN	RC3030D	309196.0	11.8	100°	480 / 3	60.3	80	10	1, 2, 3, 4
CU-G	DAIKIN	RC3040D	415690.0	11.3	100°	480 / 3	80.6	90	10	1, 2, 3, 4
CU-H	DAIKIN	RC3035D	359652.0	11.3	100°	480 / 3	72.1	80	10	1, 2, 3, 4

- REMARKS:**
- COOLING CAPACITY BASED ON A SUCTION TEMPERATURE OF 49°F.
 - UNITS SHALL HAVE A MINIMUM OF 4 STAGES OF COOLING.
 - PROVIDE FACTORY MOUNTED DISCONNECT.
 - MOUNT ON ROOF - SEE DETAIL.

ELECTRIC DUCT HEATER SCHEDULE

PLAN MARK	MANUFACTURER	AIRFLOW (CFM)	CAPACITY (KW)	ΔT (°F)	DUCT SIZE (IN.)	VOLT/PH	REMARKS
A-2	INDECO	525	5.0	30	15x8	277/1	1, 2, 3
A-3	INDECO	525	5.0	30	15x8	277/1	1, 2, 3
A-4	INDECO	1,200	20.0	53	15x12	480/3	1, 2, 3
A-5	INDECO	1,005	10.0	31	15x10	480/3	1, 2, 3
A-6	INDECO	930	15.0	51	15x10	480/3	1, 2, 3
A-7	INDECO	1,385	20.0	48	15x13	480/3	1, 2, 3
B-1	INDECO	2,940	28.6	28	15x26	480/3	1, 2, 3
B-2	INDECO	350	4.4	36	15x5	480/3	1, 2, 3
B-3	INDECO	485	5.0	33	15x6	480/3	1, 2, 3
B-4	INDECO	620	6.6	34	15x7	480/3	1, 2, 3
B-5	INDECO	1,005	10.0	31	15x10	480/3	1, 2, 3
B-6	INDECO	1,350	20.0	47	15x13	480/3	1, 2, 3
B-7	INDECO	505	8.9	36	15x6	480/3	1, 2, 3
B-8	INDECO	980	15.0	48	15x10	480/3	1, 2, 3
C-1	INDECO	910	13.3	46	15x10	480/3	1, 2, 3
C-2	INDECO	1,140	20.0	55	15x11	480/3	1, 2, 3
C-3	INDECO	1,035	10.0	31	15x10	480/3	1, 2, 3
C-4	INDECO	840	6.7	33	15x8	480/3	1, 2, 3
C-5	INDECO	520	6.6	40	15x7	480/3	1, 2, 3
C-6	INDECO	560	6.6	37	15x7	480/3	1, 2, 3
C-7	INDECO	390	4.4	36	15x5	277/1	1, 2, 3
C-8	INDECO	965	8.9	29	15x10	480/3	1, 2, 3
D-1A	INDECO	2,940	28.6	28	15x26	480/3	1, 2, 3
D-1B	INDECO	4,650	20.0	27	14x46	480/3	1, 2, 3
D-2	INDECO	1,695	17.8	33	14x16	480/3	1, 2, 3
D-3	INDECO	870	8.4	31	12x12	480/3	1, 2, 3
D-4	INDECO	670	6.0	28	13x10	480/3	1, 2, 3
D-5A	INDECO	5,285	24.4	29	14x52	480/3	1, 2, 3
D-5B	INDECO	5,285	24.4	29	14x52	480/3	1, 2, 3
D-6	INDECO	125	1.5	38	6x8	277/1	1, 2, 3
D-7	INDECO	675	13.3	62	13x10	480/3	1, 2, 3
D-8	INDECO	485	6.7	44	12x8	480/3	1, 2, 3
E-1	INDECO	700	6.7	30	15x8	480/3	1, 2, 3
E-2	INDECO	1,195	10.0	26	15x11	480/3	1, 2, 3
E-3	INDECO	1,010	8.9	28	15x10	480/3	1, 2, 3
E-4	INDECO	700	6.7	30	15x8	480/3	1, 2, 3
E-5	INDECO	1,395	22.2	50	15x13	480/3	1, 2, 3
E-6	INDECO	1,470	17.8	38	15x14	480/3	1, 2, 3
E-7	INDECO	1,230	16.7	43	15x12	480/3	1, 2, 3
E-8	INDECO	1,010	13.3	42	15x10	480/3	1, 2, 3
F-1	INDECO	1,270	10.0	25	15x15	480/3	1, 2, 3
F-2	INDECO	715	6.7	30	15x8	480/3	1, 2, 3
F-3	INDECO	645	5.0	24	15x8	277/1	1, 2, 3
F-4	INDECO	565	5.0	28	15x7	277/1	1, 2, 3
F-5	INDECO	1,195	10.0	26	15x11	480/3	1, 2, 3
F-6	INDECO	525	6.6	40	15x7	480/3	1, 2, 3
F-7	INDECO	1,050	13.3	40	15x11	480/3	1, 2, 3
F-8	INDECO	1,440	16.7	37	15x14	480/3	1, 2, 3
G-1	INDECO	980	13.3	43	15x10	480/3	1, 2, 3
G-2	INDECO	1,290	16.7	41	15x12	480/3	1, 2, 3
G-3	INDECO	540	6.6	39	15x7	480/3	1, 2, 3
G-4	INDECO	1,195	10.0	26	15x11	480/3	1, 2, 3
G-5	INDECO	630	4.9	25	15x8	277/1	1, 2, 3
G-6	INDECO	925	7.5	26	15x10	480/3	1, 2, 3
G-7	INDECO	1,230	20.0	51	15x12	480/3	1, 2, 3
G-8	INDECO	680	6.7	31	15x8	480/3	1, 2, 3
G-9	INDECO	1,200	10.0	26	15x12	480/3	1, 2, 3
H-1	INDECO	235	2.0	27	10x6	277/1	1, 2, 3
H-2	INDECO	650	10.0	49	15x8	480/3	1, 2, 3
H-3	INDECO	810	9.2	48	15x8	480/3	1, 2, 3
H-4	INDECO	570	8.9	49	15x7	480/3	1, 2, 3
H-5	INDECO	820	8.9	34	15x9	480/3	1, 2, 3
H-6	INDECO	875	8.9	32	15x10	480/3	1, 2, 3
H-7	INDECO	505	5.0	31	15x6	277/1	1, 2, 3
H-8	INDECO	935	10.0	34	15x10	480/3	1, 2, 3
H-9	INDECO	430	7.5	38	15x6	480/3	1, 2, 3
H-10	INDECO	620	10.0	51	15x8	480/3	1, 2, 3
H-11	INDECO	720	6.7	29	15x8	480/3	1, 2, 3
H-12	INDECO	725	6.7	29	15x8	480/3	1, 2, 3
H-13	INDECO	210	2.0	30	8x6	277/1	1, 2, 3

- REMARKS:**
- PROVIDE WITH INTEGRAL DISCONNECT SWITCH
 - DUCT HEATER TO BE PROVIDED WITH SCR CONTROLLER. BMS TO PROVIDE VARIABLE SIGNAL TO SCR CONTROLLER.



PIPE HANGER DETAIL

NOT TO SCALE

SEQUENCES OF OPERATIONS:
IN GENERAL, MATCH EXISTING CONTROLS SEQUENCE AS CURRENTLY INSTALLED - PROVIDE ANY NECESSARY MODIFICATIONS TO THE BELOW SEQUENCE TO ACHIEVE.

MULTIZONE AHU:
THE OCCUPIED/UNOCCUPIED MODE OF OPERATION SHALL BE DETERMINED BY