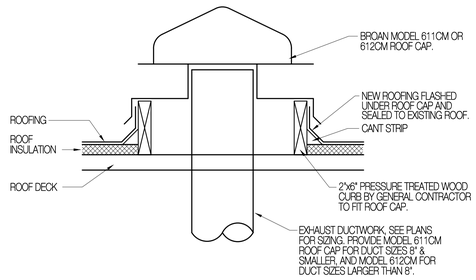
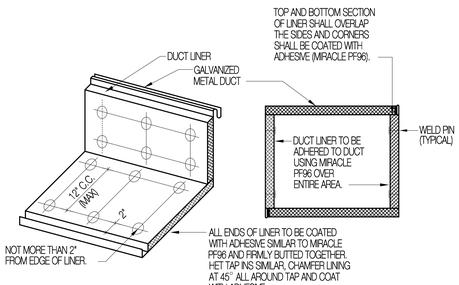
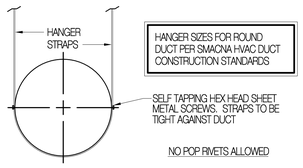


7 M000 EXHAUST ROOF CAP DETAIL
SCALE: NONE



LINING FASTENERS:
DURA DYNE MODEL CP WELD TYPE FASTENERS OR EQUIVALENT. ADHESIVE TYPE STICK CLIPS OR GRIP NAILS NOT ALLOWED.

8 M000 ACOUSTICAL LINER DETAIL
SCALE: NONE



HANGER SIZES FOR ROUND DUCT PER SMACNA HVAC DUCT CONSTRUCTION STANDARDS.

9 M000 RND. DUCT HANGER DETAIL
SCALE: NONE

SYMBOL LEGEND

	SIDEWALL GRILLE		RECTANGULAR SUPPLY AIR DUCT CROSS SECTION	①	THERMOSTAT	HET	HIGH EFFICIENCY TAKEOFF	NK.	NECK
	SUPPLY AIR DIFFUSER		ROUND SUPPLY AIR DUCT CROSS SECTION		SUPPLY AIR DIRECTION	A.L.	ACOUSTICAL LINING	A.D.	ACCESS DOOR
	RETURN OR EXHAUST GRILLE	H.D.	HAND DAMPER, SEE DETAIL 4/M-000		RETURN AIR DIRECTION	O.A.	OUTSIDE AIR		ELBOW IN PIPE
24" x 12"	ACOUSTICALLY LINED DUCTWORK (INSIDE CLEAR DIMENSION)	R.D.	HAND DAMPER WITH REMOTE OPERATOR, SEE DETAIL 5/M-700	A.F.F.	ABOVE FINISHED FLOOR	S.A.	SUPPLY AIR		DROP IN PIPE
SLOPE	SLOPE IN DUCT, SEE SECTIONS FOR SLOPE DIRECTION		RISE OR DROP IN DUCT	CO2	CO2 DETECTOR	R.A.	RETURN AIR		RISE IN PIPE

ENERGY RECOVERY VENTILATOR (ERV)

SYMBOL	OUTSIDE AIR CFM	E.S.P. (IN. WC.)	O.A. FAN RPM	O.A. FAN BHP	O.A. FAN H.P. REQ.	EXHAUST AIR CFM	E.S.P. (IN. WC.)	E.A. FAN RPM	E.A. FAN BHP	E.A. FAN H.P. REQ.	ENERGY CORE SUMMER PERFORMANCE: EAT °F (DB/WB)	LAT °F (DB/WB)	TOTAL CAP. BTUH	ENERGY CORE WINTER PERFORMANCE: EAT °F (DB/WB)	LAT °F (DB/WB)	TOTAL CAP. BTUH	ELECTRICAL REQUIREMENTS: VOLTS	PH.	HZ.	MCA	MOCP	UNIT WEIGHT (#)	RENEW-AIRE MODEL	REMARKS
ERV-1	800	0.75	1,350	0.8	1.0	1,100	0.75	1,450	0.9	1.0	95°F / 62°F	82°F / 59°F	28,926	8°F / 8°F	45°F / 42°F	84,550	208	3	60	22	25	550	HE1.5KRT	WITH INLET AND OUTLET CONTROL DAMPERS

SEE SPECIFICATION SECTION 238700 FOR ADDITIONAL REQUIREMENTS.

CEILING EXHAUST FANS (CEF)

SYMBOL	MINIMUM CFM	TOTAL STATIC PRESSURE IN. WG.	ELECTRICAL REQUIREMENTS: VOLTS	PH.	HZ.	AMPS	BROAN MODEL	SERVICE	REMARKS
CEF-1	250	0.375"	120	1	60	0.4	L300E-MG1	MENS 121	-
CEF-2	250	0.375"	120	1	60	0.4	L300E-MG1	WOMENS 122	-

① CAPACITIES AT JOB SITE ELEVATION. SEE SPECIFICATION SECTION 238700 FOR ADDITIONAL REQUIREMENTS.

GRILLES AND DIFFUSERS

SYMBOL	CFM	NECK SIZE	FACE SIZE	KRUEGER MODEL	REMARKS
S-1	AS NOTED	AS NOTED	AS NOTED	1400A	-
S-2	AS NOTED	AS NOTED	AS NOTED	SH	SURFACE MOUNT FRAME / BLOW DIRECTION AS INDICATED
S-3	AS NOTED	AS NOTED	AS NOTED	RA2	-
S-4	AS NOTED	AS NOTED	AS NOTED	DMGDR	-
S-5	AS NOTED	AS NOTED	AS NOTED	880H	-
R-1	AS NOTED	AS NOTED	AS NOTED	6490	-
R-2	AS NOTED	AS NOTED	AS NOTED	S85H	-
E-1	AS NOTED	AS NOTED	AS NOTED	EGC-5	-

SEE SPECIFICATION SECTION 15940 FOR ADDITIONAL REQUIREMENTS.

OUTSIDE AIR SCHEDULE

ROOM	AREA	CFM /SQ. FT.	PEOPLE / 1,000 SQ. FT.	# PEOPLE	CFM / PEOPLE	CFM	SERVED BY
WEIGHT RM. 107	1,615	0.06	25	40	10	400	RTU-1
STORAGE 108	650	0.12	-	-	-	78	-
OFFICE 109	112	0.06	5	1	5	18	-
OFFICE 110	112	0.06	5	1	5	18	-
OFFICE 111	112	0.06	5	1	5	18	-
						540	TOTAL
WRESTLING 112	2,184	0.06	25	54	10	540	RTU-2
						540	TOTAL
LOBBY 101	2,860	0.12	-	-	-	345	RTU-4
MENS 121	180	0.12	-	-	-	25	-
WOMENS 122	180	0.12	-	-	-	25	-
						400	TOTAL
BAND / ORCHESTRA 102	1,615	0.06	25	40	10	400	RTU-5
						400	TOTAL
STORAGE 103	650	0.12	-	-	-	78	RTU-6
OFFICE 104	112	0.06	5	1	5	18	-
OFFICE 105	112	0.06	5	1	5	18	-
CHOIR 106	1,615	0.06	25	40	10	400	-
						540	TOTAL
GYM 123	5,465	0.30	-	-	-	1,715	RTU-7
						1,715	TOTAL
GYM 123	5,465	0.30	-	-	-	1,715	RTU-8
						1,715	TOTAL

CALCULATIONS BASED ON TABLE 6-1 ASHRAE STANDARD 62.1-2019 AND SECTION 403.3.1.1 OF THE 2024 OHIO MECHANICAL CODE

HEATING/COOLING ROOFTOP UNIT (RTU)

SYMBOL	HEATING SECTION: HEATING INPUT (BTUH)	HEATING OUTPUT (BTUH)	COOLING SECTION: TOTAL CAP. (BTUH)	SENS. CAP. (BTUH)	FAN SECTION: CFM	E.S.P. (IN. WC.)	MOTOR HP	COND. COIL AREA (SQ. FT.)	COND. COIL CFM	AMB. AIR TEMP.	MIN. EER	UNIT ELEC. REQUIREMENTS: VOLTS	PH.	HZ.	MCA	MOCP	CARRIER MODEL	REMARKS
RTU-1	180,000	144,000	90,700	76,400	2,800	1.2	3.0	20.5	8,300	95°F	12.0	460	3	60	23.0	25	48GCRK09	①②③④⑤⑥
RTU-2	180,000	144,000	90,700	76,400	2,800	1.2	3.0	20.5	8,300	95°F	12.0	460	3	60	23.0	25	48GCRK09	①②③④⑤⑥
RTU-3	125,000	100,000	60,500	43,600	1,700	1.2	2.0	11.7	4,200	95°F	10.8	460	3	60	18.5	25	48GCRK04	①②③④
RTU-4	125,000	100,000	35,700	25,600	1,200	1.2	2.0	18.8	7,600	95°F	11.0	460	3	60	11.0	15	48GCRK06	①②③④⑤⑦
RTU-5	180,000	144,000	90,700	76,400	2,800	1.2	3.0	20.5	8,300	95°F	12.0	460	3	60	23.0	25	48GCRK09	①②③④⑤⑦
RTU-6	180,000	144,000	90,700	76,400	2,800	1.2	3.0	20.5	8,300	95°F	12.0	460	3	60	16.0	20	48GCRK09	①②③④⑤⑦
RTU-7	400,000	324,000	305,900	231,800	10,000	1.2	7.5	26.0	8,300	95°F	11.2	460	3	60	61.2	70	48HCFE28	①②③④⑤⑦
RTU-8	400,000	324,000	305,900	231,800	10,000	1.2	7.5	26.0	8,300	95°F	11.2	460	3	60	61.2	70	48HCFE28	①②③④⑤⑦

① CAPACITY REQUIRED AT SITE ELEVATION AND CONDITIONS.
② PROVIDE UNIT WITH 120 V CONVENIENCE OUTLET.
③ FACTORY INSTALLED ECONOMIZER W/ BARO. RELIEF.
④ BELT DRIVE
⑤ PROVIDE UNIT WITH RETURN AIR SMOKE DETECTOR.
⑥ BALANCE OUTSIDE AIR TO 540 CFM.
⑦ BALANCE OUTSIDE AIR TO 400 CFM.
⑧ WITH DEMAND CONTROL VENTILATION SEE SHEET M-700.
⑨ SET MINIMUM DCV OUTSIDE AIR AT 550 CFM.

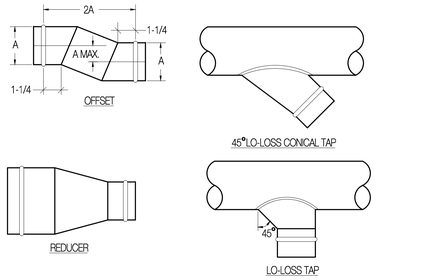
UNIT WEIGHTS:
RTU-1, 2, 5 & 6: 1,050 LBS.
RTU-3: 545 LBS.
RTU-4: 640 LBS.
RTU-7 & 8: 2,400 LBS.

SEE SPECIFICATION SECTION 15620 FOR ADDITIONAL REQUIREMENTS.

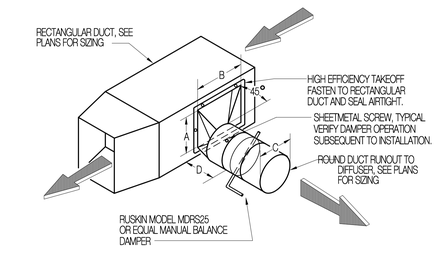
BASEBOARD RADIATION (BR)

SYMBOL	TYPE	LENGTH	ELECTRICAL REQUIREMENTS: VOLTS	PH.	HZ.	WATTS	INDEECO MODEL	SERVICE	REMARKS
BR-1	ELEC.	59"	208	1	60	1000	904U01000C	VESTIBULE	①

① PROVIDE WITH TAMPER PROOF THERMOSTAT AND BUILT IN DISCONNECT SWITCH. SEE SPECIFICATION SECTION 15830 FOR ADDITIONAL REQUIREMENTS.



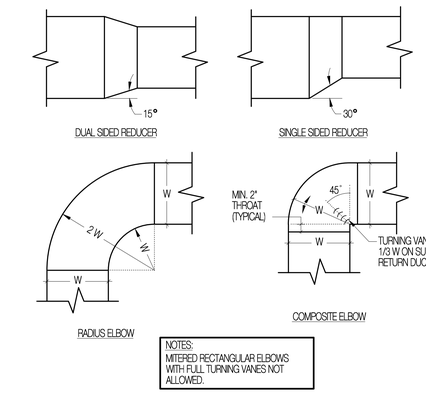
3 M000 ROUND DUCT FITTINGS
SCALE: NONE



4 M000 ROUND DUCT RUNOUT DETAIL
SCALE: NONE

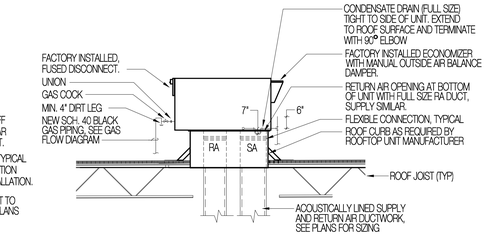
HET DIMENSIONS

BRANCH SIZE (C)	THROAT DIM. A	THROAT DIM. B	MIN. AREA AxB
6"	8-1/4"	12"	3.5 X AREA OF C
8"	10-1/4"	14"	2.8 X AREA OF C
10"	12"	15"	2.3 X AREA OF C
12"	14"	17"	2.1 X AREA OF C
LENGTH D SHALL BE A MINIMUM OF 11"			

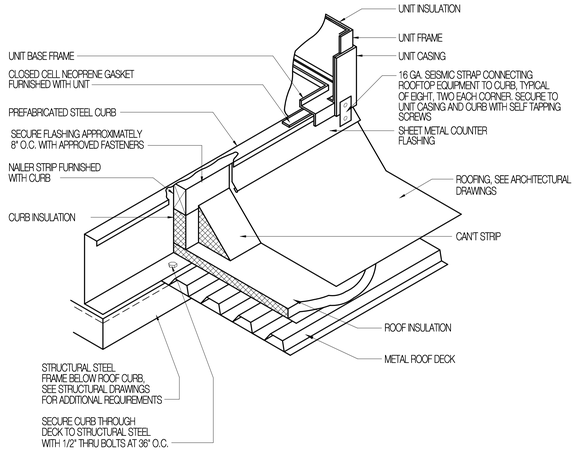


NOTES:
MITERED RECTANGULAR ELBOWS WITH FULL TURNING VANES NOT ALLOWED.

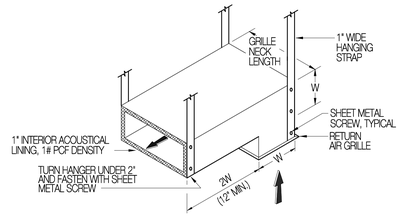
1 M000 RECTANGULAR DUCT FITTINGS
SCALE: NONE



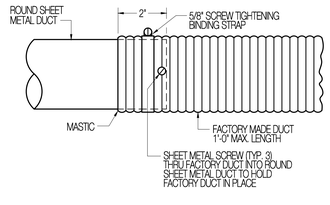
2 M000 RTU INSTALLATION DETAIL
SCALE: NONE



9 M000 ROOFTOP EQUIPMENT FLASHING DETAIL
SCALE: NONE



5 M000 SOUND BOOT DETAIL
SCALE: NONE



6 M000 FACTORY DUCT DETAIL
SCALE: NONE

GENERAL NOTES

1. ALL DRAWINGS SHALL BE CONSIDERED PART OF THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS AND BE RESPONSIBLE FOR THE REVIEW AND COORDINATION OF ALL ASPECTS OF THE CONTRACT DOCUMENTS PRIOR TO SUBMITTING PRICING. ANY AND ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO TO ANY INSTALLATION SUCH THAT CLARIFICATIONS CAN BE ISSUED.
2. ANY WORK PERFORMED OR MATERIAL USED WHICH IS SHOWN TO BE IN CONFLICT WITH THE CONTRACT DRAWINGS, SPECIFICATIONS OR ANY APPLICABLE CODE OR GOVERNING REGULATION SHALL BE REMOVED AND REPLACED OR CORRECTED AT THE CONTRACTOR'S EXPENSE.
3. ALL SYMBOLS AND ABBREVIATIONS USED ON THE CONTRACT DRAWINGS ARE CONSIDERED CONSTRUCTION STANDARDS. IF CLARIFICATION IS REQUIRED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO PROCEEDING WITH ANY WORK.
4. DO NOT SCALE THE DRAWINGS. ALL EXISTING CONDITIONS AND DIMENSIONS SHALL BE VERIFIED BY THE CONTRACTOR AT THE JOB SITE PRIOR TO FABRICATION OF MATERIALS OR ERECTION OF ASSEMBLIES. IF DISCREPANCIES ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED FOR CLARIFICATION.
5. THE CONTRACTOR SHALL FURNISH ALL MATERIALS, LABOR AND EQUIPMENT, TRANSPORTATION AND SERVICES REQUIRED FOR COMPLETION OF THE WORK. ALL WORK PERFORMED AND MATERIALS INSTALLED SHALL BE DONE IN STRICT COMPLIANCE WITH ALL LOCAL CODES AND GOVERNING REGULATIONS.
6. ALL PERMITS AND FEES WHICH ARE REQUIRED FOR THIS WORK SHALL BE SECURED AND PAID FOR BY THE MECHANICAL CONTRACTOR.
7. ALL PLUMBING AND MECHANICAL INSTALLATIONS SHALL ADHERE TO THE 2012 IECC INCLUDING: MINIMUM R-6 INSULATION ON ALL NON-ACOUSTICALLY LINED DUCTWORK; ACOUSTICAL LINER SHALL PROVIDE A MINIMUM OF R-6 INSULATING VALUE.

Revisions	Date
CONST. SET	11/15/24

Seal: STATE OF OHIO — NOGMAN CUNNING — PE. 89976 — 06/28/24 REGISTERED PROFESSIONAL ENGINEER

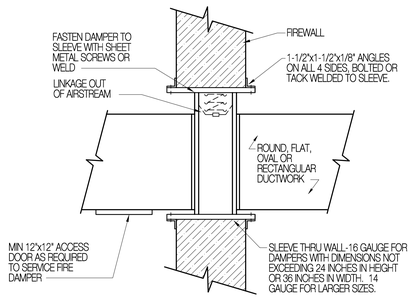
Consultant:
Mechanical Consulting Engineers
Cunning & Associates
6085 W. 116th St. Tremonton, UT 84337
Email: noem@cunning-eng.com
Ph: (801) 726-5047

Project Name: CINCINNATI CLASSICAL ACADEMY
10200 ANDERSON WAY
CINCINNATI OH. 45242

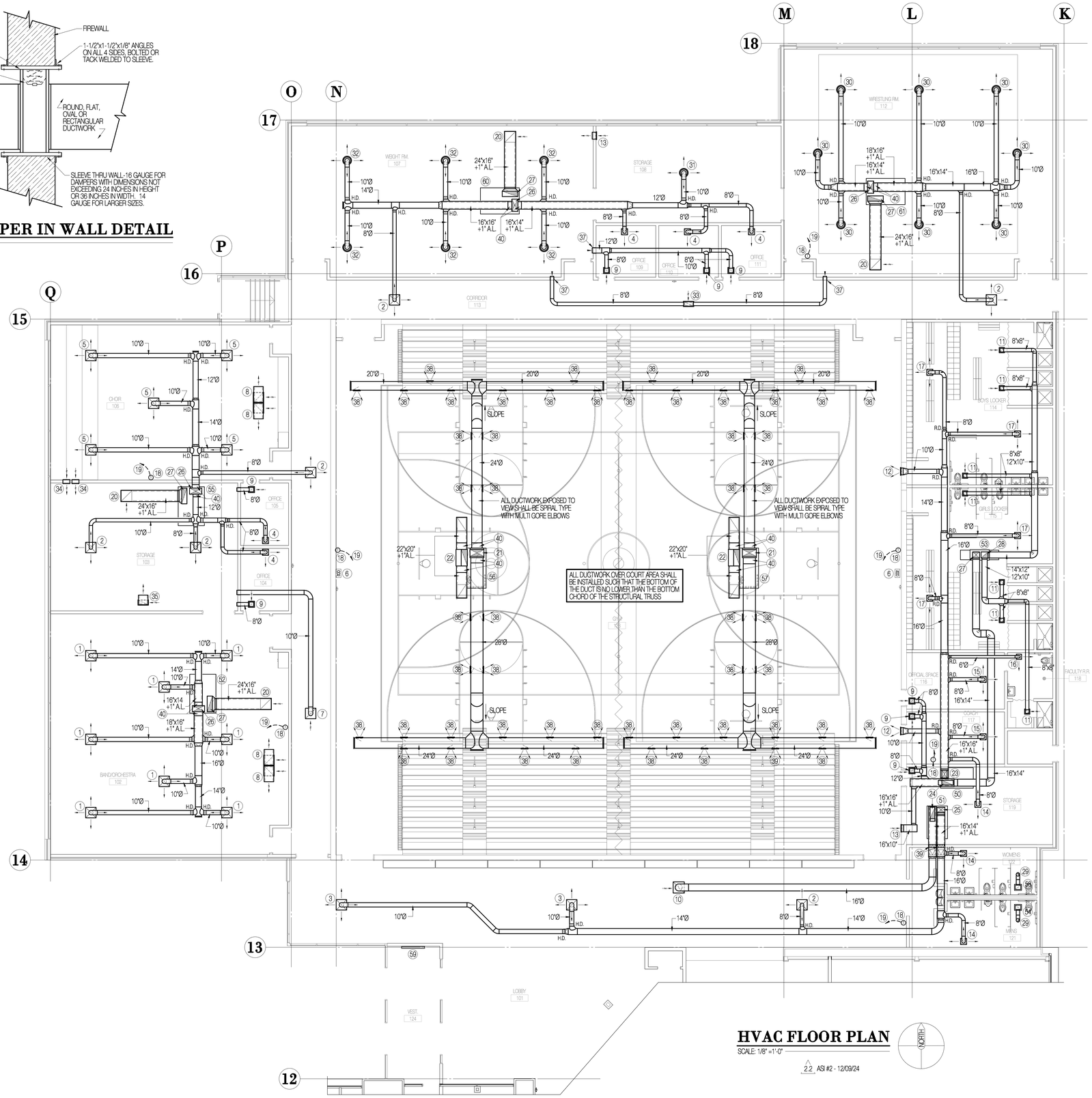
Project Number	Issue Date
2424	11/15/24

Drawing Title: MECH. SYMBOL LEGEND, AND SCHEDULES

Sheet Number: M-000



1 M100 **FIRE DAMPER IN WALL DETAIL**
SCALE: NONE



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

2.2 ASI #2 - 12/09/24

DRAWING NOTES

1. S-1 380 CFM, 10"Ø NK. S.A. DIFFUSER.
2. S-1 200 CFM, 8"Ø NK. S.A. DIFFUSER.
3. S-1 350 CFM, 10"Ø NK. S.A. DIFFUSER.
4. S-2 120 CFM, 8"Ø NK. S.A. DIFFUSER.
5. S-1 380 CFM, 10"Ø NK. S.A. DIFFUSER.
6. PROVIDE AND INSTALL NEW CO2 SENSOR. MOUNT SENSOR AT 48" A.F.F. NEXT TO THERMOSTAT, SEE SHEET M-700 FOR ADDITIONAL INFORMATION.
7. R-1 24"x24" R.A. GRILLE WITH 10"Ø NK.
8. R-1 24"x24" R.A. GRILLE WITH SOUND BOOT. SEE DETAIL 1/M-500.
9. R-2 10"x10" NK. R.A. GRILLE.
10. R-1 24"x24" R.A. GRILLE WITH 16"Ø NK.
11. E-1 8"x8" NK. E.A. GRILLE.
12. S-5 300 CFM, 16"x6" SIDEWALL S.A. GRILLE.
13. R-2 16"x10" NK. SIDEWALL R.A. GRILLE.
14. S-2 150 CFM, 8"Ø NK. S.A. DIFFUSER.
15. S-2 125 CFM, 8"Ø NK. S.A. DIFFUSER.
16. S-2 75 CFM, 6"Ø NK. S.A. DIFFUSER.
17. S-2 175 CFM, 8"Ø NK. S.A. DIFFUSER.
18. PROVIDE AND INSTALL NEW THERMOSTAT, MOUNT THERMOSTAT AT 48" A.F.F. SEE CONTROL DIAGRAMS SHEET M-700 FOR ADDITIONAL INFORMATION.
19. CONTROL WIRING FROM THERMOSTATS TO MECHANICAL EQUIPMENT. SEE CONTROL DRAWINGS SHEET M-700 FOR ADDITIONAL INFORMATION.
20. 24"x24" HOLE IN TOP OF DUCT.
21. 32"x32"+1"A.L. SUPPLY AIR PLENUM RISE TO BOTTOM OF ROOFTOP UNIT. TRANSITION PLENUM TO OUTLET COLLAR SIZE AND CONNECT WITH FLEXIBLE CONNECTION PER DETAIL 2/M-000.
22. 38"x26"+1"A.L. RETURN AIR PLENUM RISE TO BOTTOM OF ROOFTOP UNIT. TRANSITION PLENUM TO OUTLET COLLAR SIZE AND CONNECT WITH FLEXIBLE CONNECTION PER DETAIL 2/M-000.
23. 16"x16"+1"A.L. SUPPLY AIR DUCTWORK RISE TO BOTTOM OF ROOFTOP UNIT. TRANSITION DUCTWORK TO OUTLET COLLAR SIZE AND CONNECT WITH FLEXIBLE CONNECTION PER DETAIL 2/M-000.
24. 26"x12" RETURN AIR PLENUM RISE TO BOTTOM OF ROOFTOP UNIT. TRANSITION PLENUM TO OUTLET COLLAR SIZE AND CONNECT WITH FLEXIBLE CONNECTION PER DETAIL 2/M-000. CONNECT OTHER END OF PLENUM TO DUCT WITH HIGH EFFICENCY TAKEOFF.
25. 16"x14"+1"A.L. SUPPLY AIR DUCTWORK RISE TO BOTTOM OF ROOFTOP UNIT. TRANSITION DUCTWORK TO OUTLET COLLAR SIZE AND CONNECT WITH FLEXIBLE CONNECTION PER DETAIL 2/M-000.
26. 28"x14"+1"A.L. SUPPLY AIR PLENUM RISE TO BOTTOM OF ROOFTOP UNIT. TRANSITION PLENUM TO OUTLET COLLAR SIZE AND CONNECT WITH FLEXIBLE CONNECTION PER DETAIL 2/M-000.
27. 24"x16"+1"A.L. RETURN AIR DUCTWORK RISE TO BOTTOM OF ROOFTOP UNIT. TRANSITION DUCTWORK TO OUTLET COLLAR SIZE AND CONNECT WITH FLEXIBLE CONNECTION PER DETAIL 2/M-000.
27. 16"x14" SUPPLY AIR DUCTWORK RISE TO BOTTOM OF ROOFTOP EQUIPMENT. TRANSITION DUCTWORK TO OUTLET COLLAR SIZE AND CONNECT WITH FLEXIBLE CONNECTION PER DETAIL 2/M-000.
28. 16"x14" EXHAUST AIR PLENUM RISE TO BOTTOM OF ROOFTOP EQUIPMENT. TRANSITION PLENUM TO INLET COLLAR SIZE AND CONNECT WITH FLEXIBLE CONNECTION PER DETAIL 2/M-000.
29. 8"Ø EXHAUST DUCT RISE TO VENT CAP ON ROOF, SEE DETAIL 7/M-000 FOR ADDITIONAL INFORMATION.
30. S-3 325 CFM, 10"Ø NK. S.A. DIFFUSER.
31. S-3 360 CFM, 10"Ø NK. S.A. DIFFUSER.
32. S-3 300 CFM, 10"Ø NK. S.A. DIFFUSER.
33. R-1 10"x22" NK. R.A. GRILLE WITH ACOUSTICALLY LINED PLENUM.
34. 16"x16" TRANSFER AIR OPENING ABOVE CEILING.
35. R-1 10"x22" NK. R.A. GRILLE WITH SOUND BOOT, SEE DETAIL 5/M-000.
36. HIGH EFFICENCY TAKEOFF, TYPICAL OF ALL.
37. EXTEND DUCTWORK THROUGH SHEETROCK PARTITION AND SEAL AIR TIGHT PER DETAIL 3/M-700.
38. S-4 385 CFM, 14"x6" NK. DUCT MOUNTED S.A. GRILLE WITH EXTRACTOR, SEE DETAIL 2/M-700 FOR INSTALLATION REQUIREMENTS.
39. FIRE DAMPER WITH ACCESS DOOR IN 2 HOUR FIRE WALL, SEE DETAIL 1/M-100.

EQUIPMENT NOTES

50. RTU 3 ROOFTOP UNIT
51. RTU 4 ROOFTOP UNIT
52. RTU 5 ROOFTOP UNIT
53. ERV 1 ENERGY RECOVERY VENTILATOR
54. CEF 2 CEILING EXHAUST FAN
55. RTU 6 ROOFTOP UNIT
56. RTU 7 ROOFTOP UNIT
57. RTU 8 ROOFTOP UNIT
58. CEF 1 CEILING EXHAUST FAN
59. BR 1 BASEBOARD RADIATION
60. RTU 1 ROOFTOP UNIT
61. RTU 2 ROOFTOP UNIT

Revisions	Date
CONST. SET	11/15/24

Seal: STATE OF OHIO — NORMAN SPINNING — PE: 89976 — 09/28/24 REGISTERED — PROFESSIONAL ENGINEER

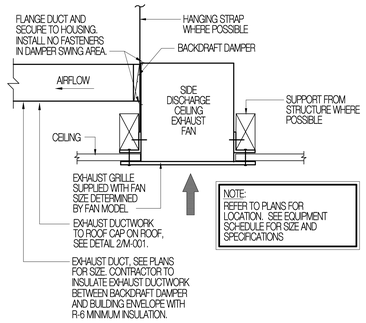
Consultant:
Mechanical Consulting Engineers
Cunning & Associates
6035 W. 11600 N. Tremonton, UT 84337
Email: norm@munning-eng.com
Ph: (801) 726-5047

Project Name: CINCINNATI CLASSICAL ACADEMY
10200 ANDERSON WAY
CINCINNATI OH. 45242

Project Number	Issue Date
2424	11/15/24

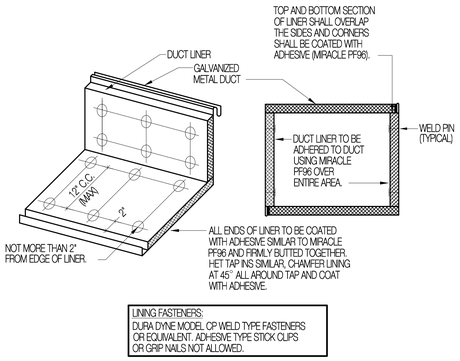
Drawing Title: HVAC FLOOR PLAN

Sheet Number: M-100



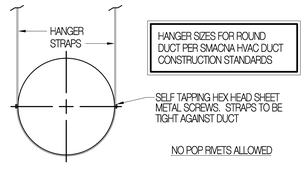
1 M101 CEILING EXHAUST FAN DETAIL

SCALE: NONE



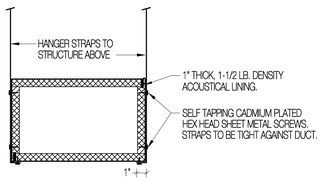
2 M101 ACOUSTICAL LINER DETAIL

SCALE: NONE



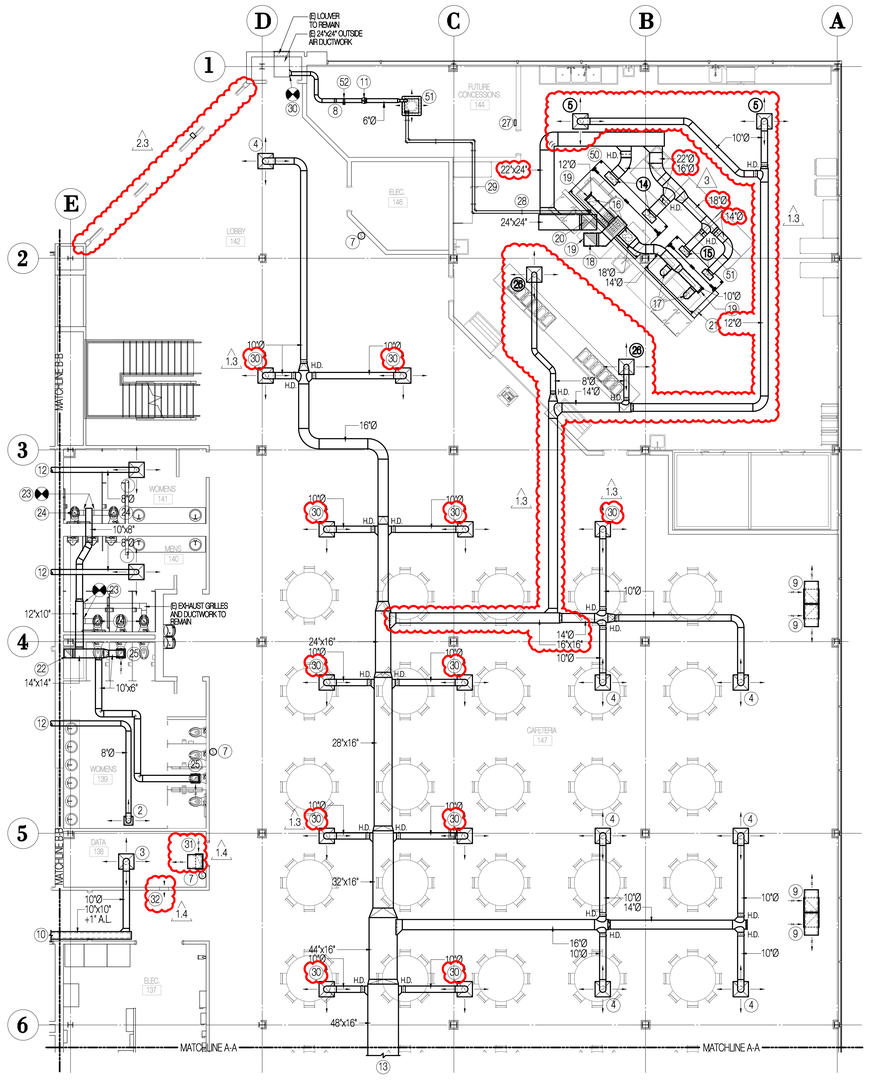
3 M101 RND. DUCT HANGER DETAIL

SCALE: NONE



4 M101 RECT. DUCT HANGER DETAIL

SCALE: NONE



FIRST FLOOR HVAC REMODEL PLAN (AREA B)

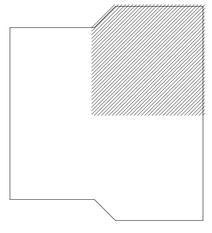
SCALE 1/8" =1'-0"

DRAWING NOTES

1. S-1 135 CFM, 8"Ø NK. S.A. DIFFUSER.
2. S-2 200 CFM, 8"Ø NK. S.A. DIFFUSER.
3. S-1 350 CFM, 10"Ø NK. S.A. DIFFUSER.
4. S-1 325 CFM, 10"Ø NK. S.A. DIFFUSER.
5. S-1 300 CFM, 10"Ø NK. S.A. DIFFUSER.
6. S-1 200 CFM, 8"Ø NK. S.A. DIFFUSER.
7. PROVIDE AND INSTALL NEW SENSOR, MOUNT SENSOR AT 48" A.F.F.
8. BALANCE 6"Ø MANUAL OUTSIDE AIR DAMPER TO 90 CFM.
9. R-1 22"x22" NK. R.A. GRILLE WITH SOUND BOOT, SEE DETAIL 4/M-100.
10. 10"x10"+1" A.L. SUPPLY DUCTWORK, SEE FIRST FLOOR HVAC PLAN (AREA A) SHEET M-100 FOR CONTINUATION.
11. INLINE VENT FAN, SOLER AND PALAU MODEL TD-150, OR EQUAL. ENERGIZE VENT FAN WHEN FAN COIL UNIT IS RUNNING.
12. 8"Ø SUPPLY DUCTWORK, SEE FIRST FLOOR HVAC PLAN (AREA A) SHEET M-100 FOR CONTINUATION.
13. 48"x16" SUPPLY DUCTWORK, SEE FIRST FLOOR HVAC PLAN (AREA D) SHEET M-103 FOR CONTINUATION.
14. 22"x10" SUPPLY DUCT DROP TO EXHAUST HOOD INLET COLLAR. CONNECT DUCTWORK AS REQUIRED BY HOOD MANUFACTURER. BALANCE EACH DUCT DROP TO 1,200 CFM.
15. 18"x8" SUPPLY DUCT DROP TO EXHAUST HOOD INLET COLLAR. CONNECT DUCTWORK AS REQUIRED BY HOOD MANUFACTURER. BALANCE EACH DUCT DROP TO 900 CFM.
16. 12"Ø 16 GA. BLACK IRON EXHAUST DUCT DROP TO CONNECTION AT EXHAUST HOOD. CONNECT DUCTWORK TO HOOD PER MANUFACTURERS REQUIREMENTS. WRAP ALL BLACK IRON EXHAUST DUCTWORK BETWEEN EXHAUST HOOD AND BULDING EXTERIOR WITH A MINIMUM OF 2 WRAPS OF 3M 5A OR EQUIVALENT FIRE WRAP. PROVIDE A MINIMUM OF 1 HOUR PROTECTION ON ALL GREASE DUCTWORK.
17. 10"Ø 16 GA. BLACK IRON EXHAUST DUCT DROP TO CONNECTION AT EXHAUST HOOD. CONNECT DUCTWORK TO HOOD PER MANUFACTURERS REQUIREMENTS. WRAP ALL BLACK IRON EXHAUST DUCTWORK BETWEEN EXHAUST HOOD AND BULDING EXTERIOR WITH A MINIMUM OF 2 WRAPS OF 3M 5A OR EQUIVALENT FIRE WRAP. PROVIDE A MINIMUM OF 1 HOUR PROTECTION ON ALL GREASE DUCTWORK.
18. 22"x22" CONTINUOUSLY WELDED 16 GAUGE BLACK IRON DUCTWORK RISE TO SECOND FLOOR. SEE SECOND FLOOR HVAC PLAN (AREA B) SHEET M-105 FOR CONTINUATION. WRAP DUCTWORK WITH 3M 5A, OR EQUAL, FIRE WRAP.
19. CLEANOUT PLUG ON END OF GREASE DUCTWORK.
20. 26"x26" SUPPLY AIR DUCTWORK RISE TO SECOND FLOOR. SEE SECOND FLOOR HVAC PLAN (AREA B) SHEET M-105 FOR CONTINUATION.
21. HOOD, ROOFTOP EXHAUST FAN, AND DEDICATED OUTDOOR AIR SYSTEM CONTROLS IN CABINET ATTACHED TO END OF HOOD.
22. 14"x14" EXHAUST DUCTWORK RISE TO SECOND FLOOR, SEE SECOND FLOOR HVAC PLAN (AREA B) SHEET M-105 FOR CONTINUATION.
23. FIELD VERIFY EXACT LOCATION OF EXISTING EXHAUST DUCTWORK AND CONNECT NEW TO EXISTING. ROTATE GRILLES AND DUCTWORK AS REQUIRED TO CONNECT NEW TO EXISTING AND SEAL DUCTWORK AIR TIGHT.
24. REBALANCE EXISTING EXHAUST GRILLE TO 150 CFM.
25. E-1 200 CFM, 8"x8" NK. E.A. GRILLE WITH OPPOSED BLADE DAMPER.
26. S-1 175 CFM, 8"Ø NK. S.A. DIFFUSER.
27. FAN COIL UNIT REMOTE SENSOR. MOUNT SENSOR AT 48" A.F.F. UTILIZING RECESSED WALL BOX. HARD WIRE SENSOR TO FAN COIL UNIT WITH COMPATIBLE CONTROL WIRING.
28. REFRIGERATION PIPING SUPPORT, SEE DETAIL 2/M-700.
29. 1/4" LIQUID AND 3/8" SUCTION PIPING FROM FAN COIL UNIT TO HEAT PUMP ON ROOF. SEE SECOND FLOOR HVAC PLAN (AREA B) SHEET M-105 FOR CONTINUATION.
30. S-1 250 CFM, 10"Ø NK. S.A. DIFFUSER.
31. R-1 10"x22" NK. R.A. GRILLE WITH SOUND BOOT, SEE DETAIL 4/M-100.
32. 14"x18" TRANSFER AIR OPENING

EQUIPMENT NOTES

- 50 H 1A HOOD
- 51 H 1B HOOD
- 52 FCU 1 FAN COIL UNIT
- 53 CD 1 CONTROL DAMPER



KEY PLAN

- 1.3 ASI #3 - 02/03/25
- 1.4 ASI #4 - 02/21/25
- 2.3 ASI #2.3 - 04/08/25

Revisions	Date
CONST. SET	11/15/24

Seal: STATE OF OHIO — NORMAN BONNING PE. 89976 — 06/28/24 REGISTERED — PROFESSIONAL ENGINEER

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10200 ANDERSON WAY
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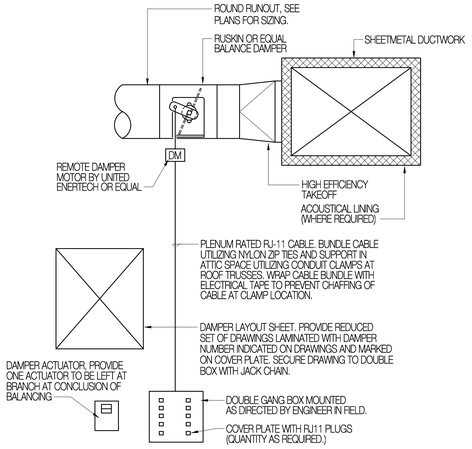
Project Number	Issue Date
2424	11/15/24

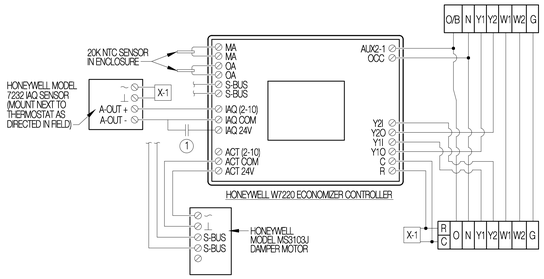
Drawing Title: FIRST FLOOR HVAC PLAN (AREA B)

Sheet Number: M-101



5 M700 REMOTE DAMPER CONTROLLER DETAIL

SCALE: NONE



CONTROL SEQUENCE: THE OUTSIDE AIR DAMPER SHALL BE AT MINIMUM POSITION WHENEVER THE UNIT RUNS. AS THE CO2 LEVEL RISES IN THE ROOM THE CONTROLLER SHALL MODULATE THE OUTSIDE AIR FURTHER OPEN UNTIL THE DAMPER IS FULLY OPEN.

DIAGRAM NOTES

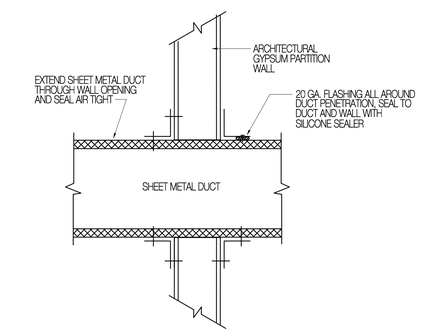
1. THERMOSTAT CABLE- 8 CONDUCTOR- 18 AWG SOLID COPPER WIRE INSULATED WITH HIGH DENSITY POLYETH-YLENE INSULATION. ENCLOSE INSULATED CONDUCTORS IN BROWN PVC JACKET.

CONTROL EQUIPMENT

SYMBOL	DESCRIPTION	HONEYWELL MODEL NO.
X-1	TRANSFORMER	AT140A1000
OS-1	OUTSIDE AIR TEMP. SENSOR	C7041B2013
DS-1	MIXED AIR TEMP. SENSOR	C7041B2013

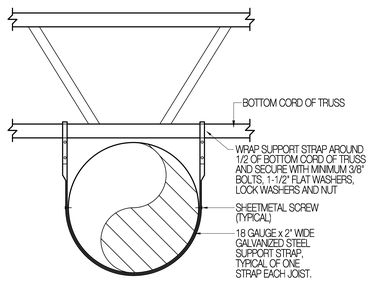
DEMAND CONTROL VENTILATION SCHEMATIC

TYPICAL OF RTU-7 & 8



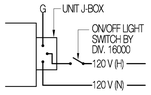
3 M700 DUCT PENETRATION DETAIL

SCALE: NONE



DUCT SUPPORT FROM JOIST DETAIL

4 M700 SCALE: NONE



CEILING EXHAUST FAN CONTROL DIAGRAM

TYPICAL OF CEILING EXHAUST FANS CEF-1 AND 2

GENERAL NOTES FOR MECHANICAL CONTROLS

1. ALL ELECTRICAL INSTALLATIONS INCLUDING POWER DISTRIBUTION AND SPECIAL SYSTEMS ARE INCLUDED IN THE SCOPE OF THE GENERAL CONTRACT, OF SPECIFIC CONCERN ARE THE CONTROL SYSTEMS RELATED TO MECHANICAL EQUIPMENT. RESPONSIBILITY FOR THE CONTROL WORK IS DIVIDED BETWEEN THE PROJECT ELECTRICIAN (DIV. 26000) AND A SPECIALTY CONTROLS CONTRACTOR (DIV 23000).
2. ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH DIVISION 26000 AND TO THE FULLEST EXTENT POSSIBLE, PRODUCTS AND PRACTICES SHALL BE SIMILAR FOR ALL INSTALLATIONS.
3. THE ELECTRICIAN SHALL PROVIDE ALL POWER TO AND THROUGHOUT THE BUILDING, TO INCLUDE MOTOR CONTROL CENTERS, BREAKER PANELS AND ALL OTHER SYSTEMS DESIGNATED TO THE ELECTRICIANS.
4. THE ELECTRICIAN SHALL RUN AND CONNECT ALL WIRING AND DEVICES 120 VOLTS AND ABOVE WHICH POWER MOTORS AND OTHER MECHANICAL DEVICES. WHERE CONTROL DEVICES ARE LOCATED IN POWER CIRCUIT, THE CONTROLS CONTRACTOR SHALL INTERRUPT THE CIRCUIT IN THE MECHANICAL EQUIPMENT JUNCTION BOX, WIRE THROUGH THE CONTROL DEVICE AND BACK TO THE JUNCTION BOX.
5. THE CONTROLS CONTRACTOR SHALL PROVIDE SHOP DRAWINGS FOR CONTROL SYSTEM CIRCUITS.
6. BREAKERS AND DISCONNECTS, AUXILIARY CONTACTS, STANDARD PILOT LIGHTS AND MAGNETIC STARTERS ARE THE RESPONSIBILITY OF DIVISION 26000.
7. AUXILIARY RELAYS, LOW VOLTAGE TRANSFORMERS, CONTROL PANEL SWITCHES & DEVICES, THERMOSTATS, PRESSURE SWITCHES, ELECTRO OPERATED VALVES, ETC., ARE THE RESPONSIBILITY OF DIVISION 23000.
8. ANY QUESTION OF RESPONSIBILITY SHALL BE CLARIFIED BY THE GENERAL CONTRACTOR
9. ALL WIRING SHALL TERMINATE AT LABELED TERMINAL STRIPS.

CONTROL EQUIPMENT

SYMBOL	DESCRIPTION	VENSTAR MODEL NO.
T-1	THERMOSTAT	T2900
WS-1	WIRELESS SENSOR	-
DS-1	DISCHARGE AIR TEMP. SENSOR	ACC0400 (TYP. 13)

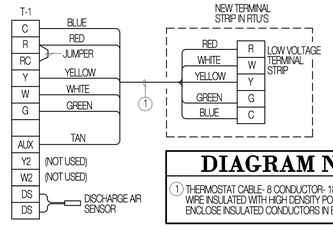
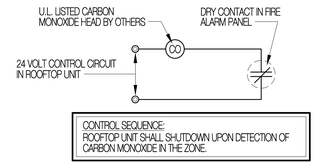


DIAGRAM NOTES

1. THERMOSTAT CABLE- 8 CONDUCTOR- 18 AWG SOLID COPPER WIRE INSULATED WITH HIGH DENSITY POLYETH-YLENE INSULATION. ENCLOSE INSULATED CONDUCTORS IN BROWN PVC JACKET.

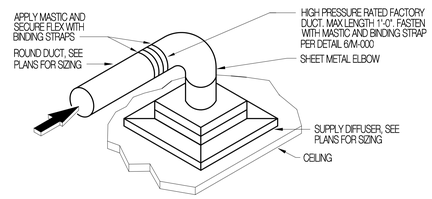
ROOFTOP UNIT CONTROL DIAGRAM

TYPICAL OF RTU-1 THRU 6



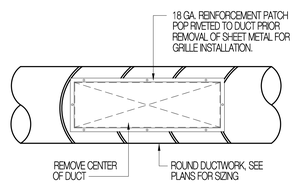
SAFETY CIRCUIT CO DETECTION

TYPICAL OF ALL ROOFTOP UNITS



1 M700 DIFFUSER CONNECTION DETAIL

SCALE: NONE



2 M700 DIFFUSER INSTALLATION DETAIL

SCALE: NONE

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Seal: STATE OF OHIO — NOGMAN CONNING PE: 89597 — 06/28/24 REGISTERED PROFESSIONAL ENGINEER

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Project Number	Issue Date
2424	11/15/24

Drawing Title: MECHANICAL CONTROLS AND DETAILS

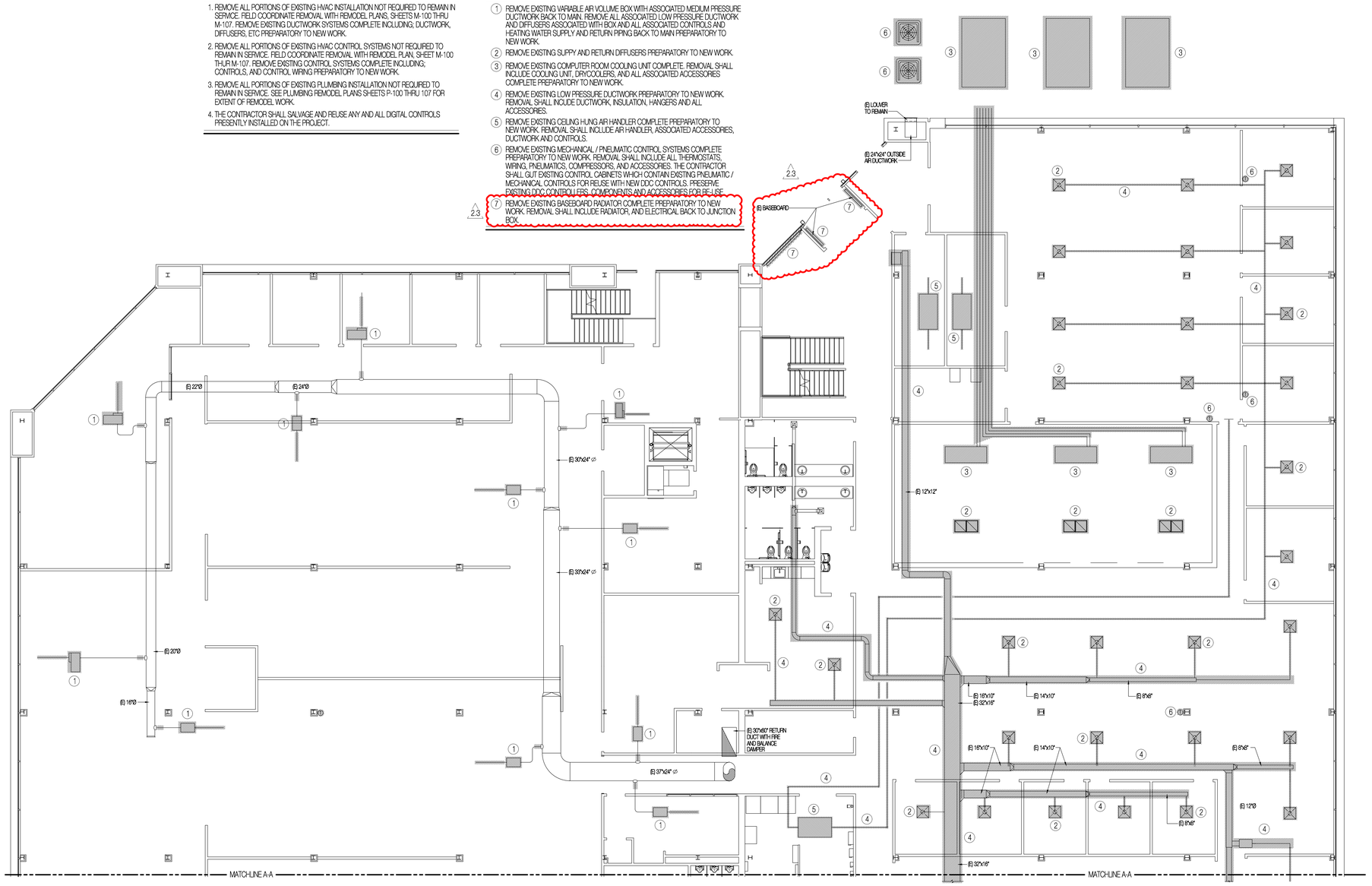
Sheet Number: M-700

GENERAL DEMO. NOTES

1. REMOVE ALL PORTIONS OF EXISTING HVAC INSTALLATION NOT REQUIRED TO REMAIN IN SERVICE. FIELD COORDINATE REMOVAL WITH REMODEL PLANS. SHEETS M-100 THRU M-107. REMOVE EXISTING DUCTWORK SYSTEMS COMPLETE INCLUDING; DUCTWORK, DIFFUSERS, ETC PREPARATORY TO NEW WORK.
2. REMOVE ALL PORTIONS OF EXISTING HVAC CONTROL SYSTEMS NOT REQUIRED TO REMAIN IN SERVICE. FIELD COORDINATE REMOVAL WITH REMODEL PLAN, SHEET M-100 THUR M-107. REMOVE EXISTING CONTROL SYSTEMS COMPLETE INCLUDING; CONTROLS, AND CONTROL WIRING PREPARATORY TO NEW WORK.
3. REMOVE ALL PORTIONS OF EXISTING PLUMBING INSTALLATION NOT REQUIRED TO REMAIN IN SERVICE. SEE PLUMBING REMODEL PLANS SHEETS P-100 THRU 107 FOR EXTENT OF REMODEL WORK.
4. THE CONTRACTOR SHALL SALVAGE AND REUSE ANY AND ALL DIGITAL CONTROLS PRESENTLY INSTALLED ON THE PROJECT.

DRAWING NOTES

1. REMOVE EXISTING VARIABLE AIR VOLUME BOX WITH ASSOCIATED MEDIUM PRESSURE DUCTWORK BACK TO MAIN. REMOVE ALL ASSOCIATED LOW PRESSURE DUCTWORK AND DIFFUSERS ASSOCIATED WITH BOX AND ALL ASSOCIATED CONTROLS AND HEATING WATER SUPPLY AND RETURN PIPING BACK TO MAIN PREPARATORY TO NEW WORK.
2. REMOVE EXISTING SUPPY AND RETURN DIFFUSERS PREPARATORY TO NEW WORK.
3. REMOVE EXISTING COMPUTER ROOM COOLING UNIT COMPLETE. REMOVAL SHALL INCLUDE COOLING UNIT, DRYCOOLERS, AND ALL ASSOCIATED ACCESSORIES COMPLETE PREPARATORY TO NEW WORK.
4. REMOVE EXISTING LOW PRESSURE DUCTWORK PREPARATORY TO NEW WORK. REMOVAL SHALL INCUDE DUCTWORK, INSULATION, HANGERS AND ALL ACCESSORIES.
5. REMOVE EXISTING CEILING HUNG AIR HANDLER COMPLETE PREPARATORY TO NEW WORK. REMOVAL SHALL INCLUDE AIR HANDLER, ASSOCIATED ACCESSORIES, DUCTWORK AND CONTROLS.
6. REMOVE EXISTING MECHANICAL / PNEUMATIC CONTROL SYSTEMS COMPLETE PREPARATORY TO NEW WORK. REMOVAL SHALL INCLUDE ALL THERMOSTATS, WIRING, PNEUMATICS, COMPRESSORS, AND ACCESSORIES. THE CONTRACTOR SHALL GUT EXISTING CONTROL CABINETS WHICH CONTAIN EXISTING PNEUMATIC / MECHANICAL CONTROLS FOR REUSE WITH NEW DDC CONTROLS. PRESERVE EXISTING DDC CONTROLLERS, COMPONENTS AND ACCESSORIES FOR RE-USE.
7. REMOVE EXISTING BASEBOARD RADIATOR COMPLETE PREPARATORY TO NEW WORK. REMOVAL SHALL INCLUDE RADIATOR, AND ELECTRICAL BACK TO JUNCTION BOX.



FIRST FLOOR HVAC DEMOLITION PLAN (AREA A)

SCALE 1/8" =1'-0"

NORTH

Revisions	Date
CONST. SET	11/15/24

Seal

STATE OF OHIO
NICKMAN CONNING
PE: 89976
08/28/24
REGISTERED
PROFESSIONAL ENGINEER

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Project Number	Issue Date
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Drawing Title
FIRST FLOOR HVAC DEMO. PLAN (AREA A)

Sheet Number
MD 100

ROOF DRAIN PIPING CALCS

ROOF LOCATION	ROOF AREA	RAINFALL RATE	ROOF GPM	ROOF DRAIN PIPE SIZE
AREA 1-4	2,735 SQ. FT.	2.9 " / HR.	41 GPM	4"Ø (TO LOWER ROOF)
AREA 5	1,485 SQ. FT.	2.9 " / HR.	45 GPM	3"Ø
AREA 6	2,340 SQ. FT.	2.9 " / HR.	71 GPM	
			+ 41 GPM	
			112 GPM	5"Ø
AREA 7	2,340 SQ. FT.	2.9 " / HR.	45 GPM	
			+ 71 GPM	
			112 GPM	5"Ø
AREA 8	2,690 SQ. FT.	2.9 " / HR.	82 GPM	4"Ø
AREA 9	2,690 SQ. FT.	2.9 " / HR.	82 GPM	4"Ø
AREA 10	1,610 SQ. FT.	2.9 " / HR.	49 GPM	
			+ 41 GPM	
			90 GPM	4"Ø
AREA 11	1,465 SQ. FT.	2.9 " / HR.	45 GPM	3"Ø
AREA 12	2,260 SQ. FT.	2.9 " / HR.	69 GPM	
			+ 41 GPM	
			110 GPM	5"Ø

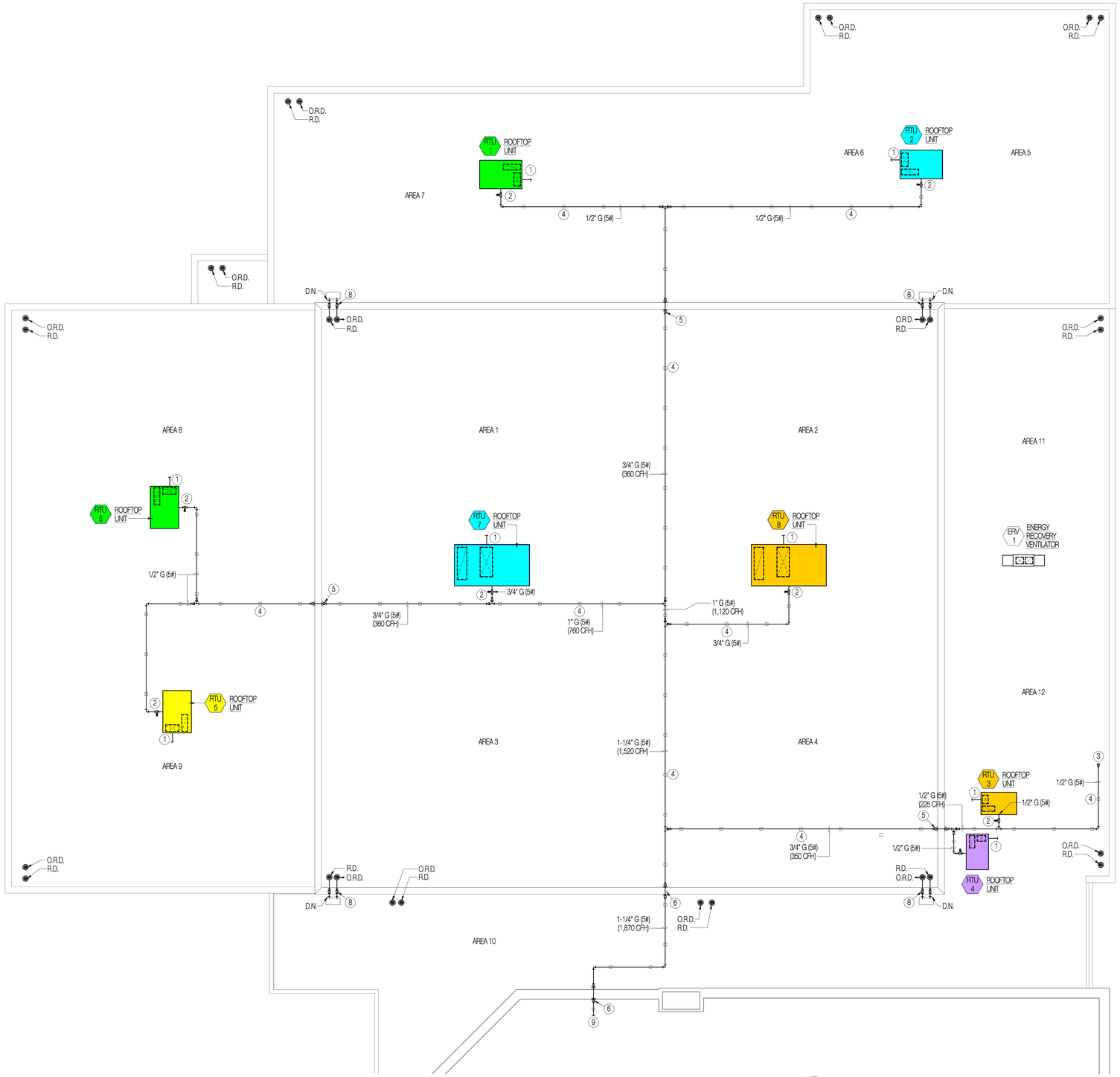
SIZING BASED ON TABLE 1101.8 OF THE 2021 INTERNATIONAL PLUMBING CODE (2024 OHIO PLUMBING CODE)
SLOPE ALL ROOF DRAIN PIPING A MINIMUM OF 1/8" PER 1'-0" (1% SLOPE)

DRAWING NOTES

1. LINE SIZE PVC CONDENSATE DRAIN PIPING, EXTEND TO ROOF SURFACE PER DETAIL 2/M-500.
2. GAS PIPING CONNECTION TO APPLIANCE, SEE GAS FLOW DIAGRAM SHEET P-600 FOR ADDITIONAL INFORMATION. CONNECT EACH APPLIANCE TO BRANCH WITH 6" DIRT LEG, GAS PRESSURE REGULATOR AND CORRUGATED STAINLESS STEEL TUBE FLEXIBLE CONNECTION.
3. 1/2" (5#) GAS PIPING DROP TO WATER HEATER BELOW, SEAL PIPING PENETRATION DROP WATER TIGHT PER DETAIL 10/P-000. SEE MAIN FLOOR PLUMBING PLAN SHEET P-101 FOR CONTINUATION.
4. MIRO MODEL 3-R-2, OR EQUAL PIPE SUPPORT, TYPICAL OF ALL.
5. 3/4" GAS PIPING UP AND OVER ROOF PARAPET TO ROOFTOP UNIT ON HIGHER ROOF, SUPPORT PIPING UP WALL WITH UNISTRUT AS REQUIRED.
6. 1-1/4" GAS PIPING UP AND OVER ROOF PARAPET TO ROOFTOP UNITS ON LOWER ROOF, SUPPORT PIPING UP WALL WITH UNISTRUT AS REQUIRED.
7. 3" ROOF DRAIN AND OVERFLOW ROOF DRAIN PIPING DROPS IN PARAPET WALL TO 6" ABOVE LOWER ROOF SURFACE. TERMINATE PIPING NEAR LOWER ROOF WITH DOWNSPOUT NOZZLE PER DETAIL 5/P-400 AND SPLASH BLOCK.
8. 4" ROOF DRAIN AND OVERFLOW ROOF DRAIN PIPING DROPS IN PARAPET WALL TO 6" ABOVE LOWER ROOF SURFACE. TERMINATE PIPING NEAR LOWER ROOF WITH DOWNSPOUT NOZZLE PER DETAIL 5/P-400 AND SPLASH BLOCK.
9. 1-1/4" (5#) GAS PIPING TO CONNECTION AT MAIN ON ADJACENT BUILDING.

GENERAL NOTES

UTILITY CONNECTION LOCATIONS ARE APPROXIMATE AND ARE BASED ON SCHEDULED EQUIPMENT. PLUMBING AND HVAC CONTRACTORS SHALL FIELD VERIFY FINAL UTILITY CONNECTION LOCATIONS PRIOR TO FABRICATION OF GAS PIPING.



HVAC/PLUMBING ROOF PLAN

SCALE 1/8"=1'-0"

NORTH

Revisions	Date
CONST. SET	11/15/24

Seal: STATE OF OHIO — NORMAN BENNING — PE. 69976 — 08/28/24 REGISTERED — PROFESSIONAL ENGINEER

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Project Number	Issue Date
2424	11/15/24

Drawing Title: HVAC PLUMBING ROOF PLAN

Sheet Number: HP 100