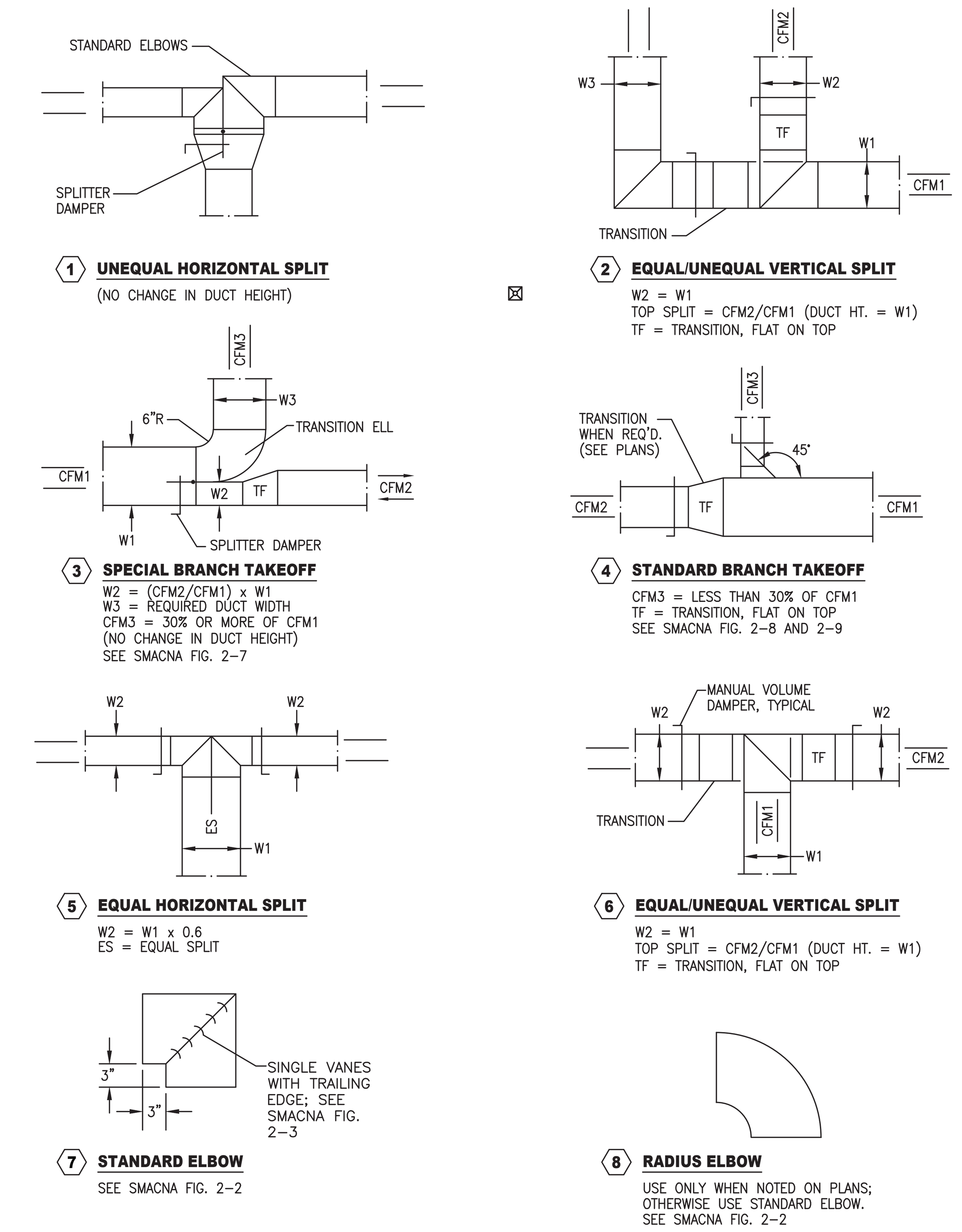
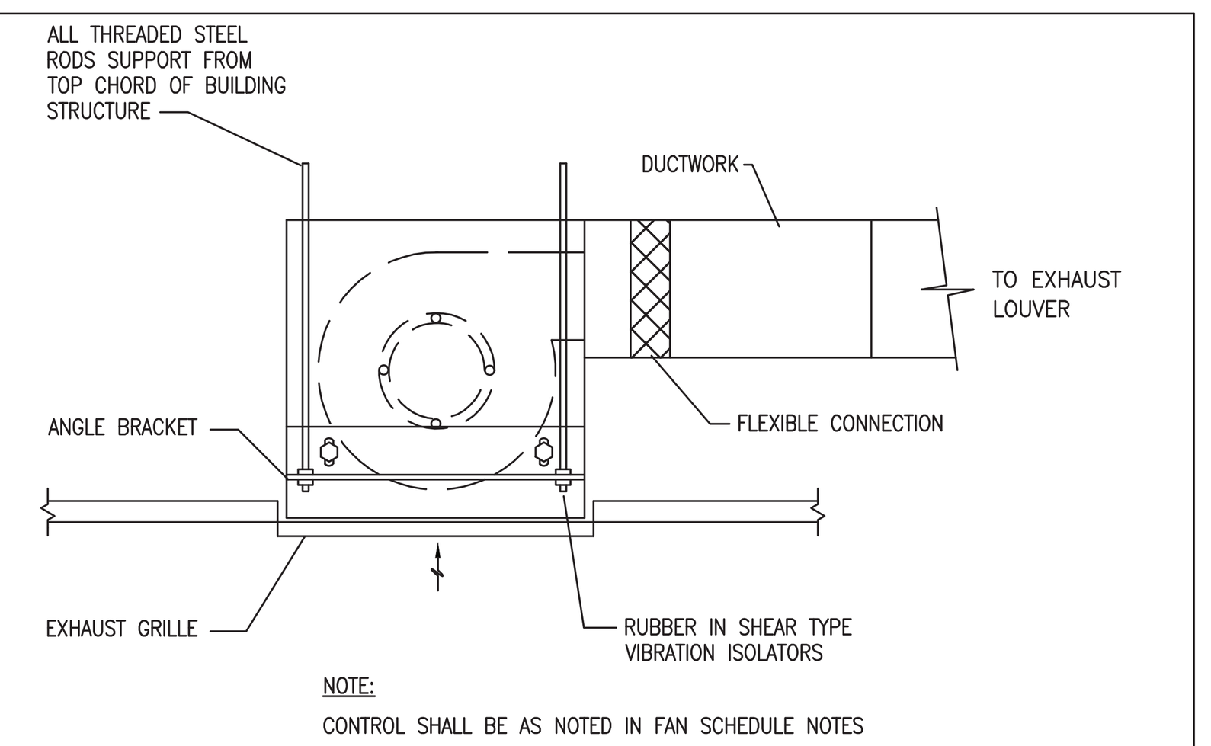


NOTES:

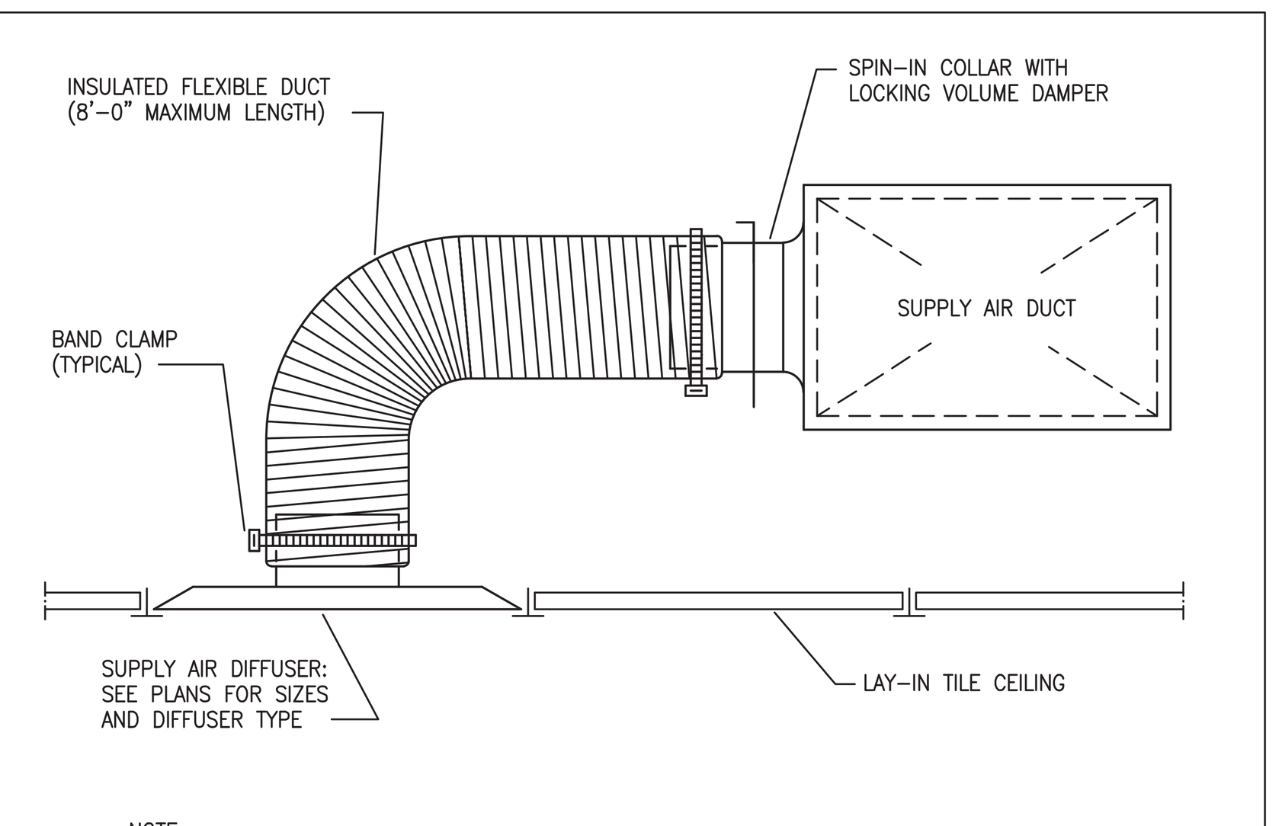
1. REFER TO PLANS FOR SPECIFIC FITTING TYPES.

1 DUCTWORK FITTINGS DETAIL
NOT TO SCALE



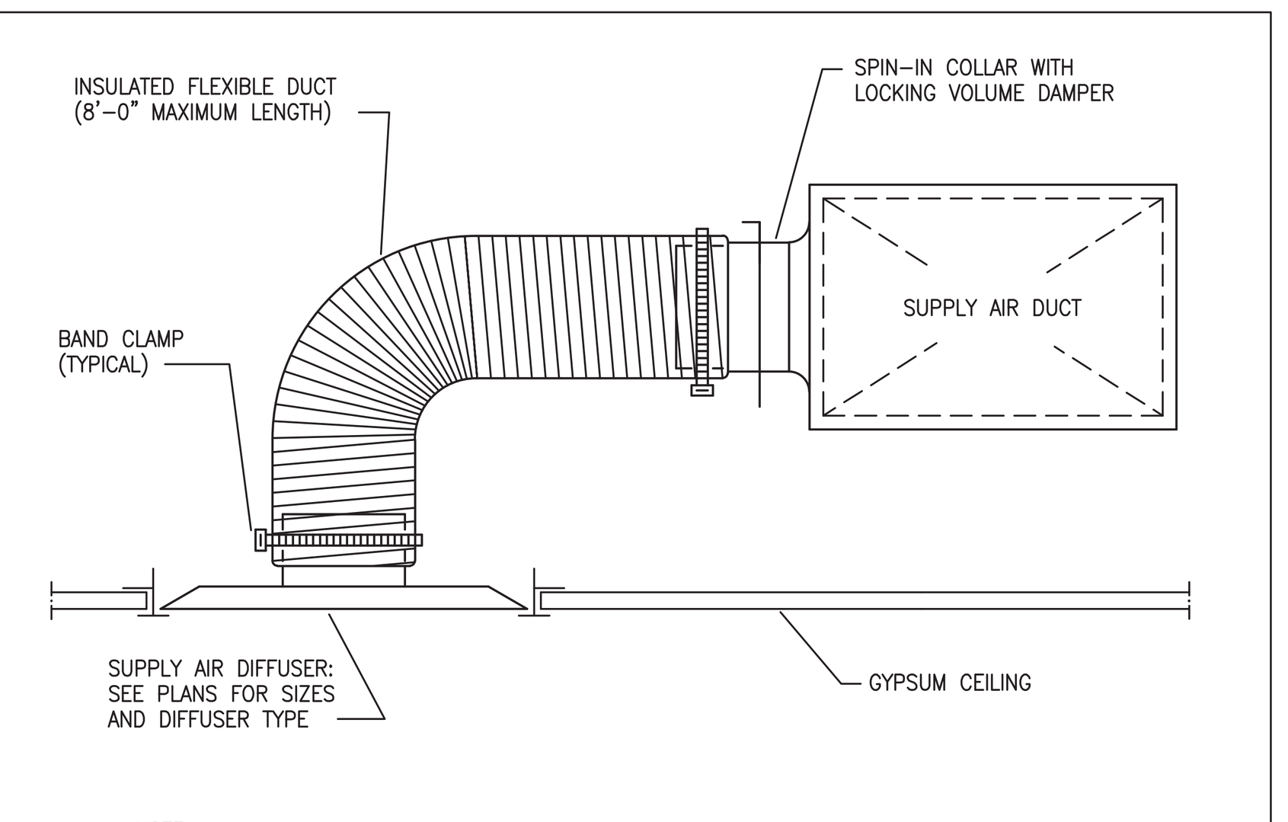
NOTE:
CONTROL SHALL BE AS NOTED IN FAN SCHEDULE NOTES

2 CEILING CABINET EXHAUST FAN DETAIL
NOT TO SCALE



NOTE:
1. FLEXIBLE DUCT SHALL BE SUPPORTED FROM STRUCTURE ABOVE TO PREVENT SAGGING.

3 SUPPLY AIR DIFFUSER IN ACOUSTICAL CEILING
NOT TO SCALE



NOTE:
1. FLEXIBLE DUCT SHALL BE SUPPORTED FROM STRUCTURE ABOVE TO PREVENT SAGGING.

4 SUPPLY AIR DIFFUSER IN GYPSUM CEILING
NOT TO SCALE

GAS PACKAGE ROOFTOP UNIT SCHEDULE

UNIT DESIGNATION	TOTAL CFM	MINIMUM O.A. CFM	NOMINAL TONS	FAN BHP	E.S.P. IN. W.C.	GAS HEATER EFF.	GAS HEATER INPUT(BTUH)	GAS HEATER OUTPUT(BTUH)	TOTAL MBH	SENSIBLE MBH	OA DB (°F)	EER AT ARI	IEER AT ARI	V/PH/HZ	MCA	MOCP	WEIGHT LBS	BASIS OF DESIGN	NOTES
RTU 1	3,000	530	7.5	2.4	1.0	82.0%	224,000	184,000	86.8	54.1	95	12.0	13.8	208/3/60	50	60	1,600	CARRIER 48HCFE08K2AA5DWH	3,4,7,8,9,10,13,14,15,16,17
RTU 2	4,750	600	12.5	3.7	1.0	81.0%	240,000	195,000	141.6	93.4	95	12.2	13.9	208/3/60	68	80	2,200	CARRIER 48HCFE14K2AA5DWH	3,4,7,8,9,10,13,14,15,16,17
RTU 3	4,000	400	10.0	3.7	1.0	80.0%	250,000	205,000	113.6	70.5	95	11.5	12.7	208/3/60	62	70	1,800	CARRIER 48HCFE12K2AA5DWH	3,4,7,8,9,10,13,14,15,16,17
RTU 4	3,000	450	7.5	2.4	1.0	82.0%	224,000	184,000	86.8	54.1	95	12.0	13.8	208/3/60	50	60	1,600	CARRIER 48HCFE08K2AA5DWH	3,4,7,8,9,10,13,14,15,16,17
RTU 5	4,000	ERV 2000	10.0	3.7	1.0	80.0%	250,000	205,000	113.6	70.5	95	11.5	12.7	208/3/60	81	90	2,700	CARRIER 48HCFE12K2AA5DTH	3,4,7,8,9,10,12,14,15,16,17

NOTES:

1. THRU-THE-BASE GAS CONNECTION
2. TWO (2) STAGE COOLING
3. SINGLE (1) STAGE COOLING
4. TWO (2) STAGE GAS HEATING
5. SINGLE (1) STAGE GAS HEATING
6. HIGH STATIC BELT DRIVE BLOWER
7. MEDIUM STATIC BELT DRIVE BLOWER
8. 2-SPEED INDOOR FAN MOTOR CONTROLLED BY VFD
9. PROVIDE LOW AMBIENT COOLING TO 40°F MINIMUM OR 0°F (WHERE AVAILABLE).
10. HINGED ACCESS DOOR & SIDE FILTER ACCESS DOOR KIT.
11. HORIZONTAL AIRFLOW DISCHARGE.
12. ENTHALPY LOW LEAK ECONOMIZER W/ ERV & HOODS.
13. ENTHALPY LOW LEAK ECONOMIZER W/ BAROMETRIC RELIEF & HOODS.
14. PROVIDE DEHUMIDIFICATION OPTION W/ HUMIDITY SENSOR
15. PROVIDE CARRIER 7-DAY PROGRAMMABLE THERMOSTAT OR EQUAL.
16. PROVIDE POWERED CONVENIENCE OUTLET.
17. PROVIDE 14 INCH TALL ROOF CURB.

SCHEDULE NOTES FOR RTU-5 (WITH ERV):

1. BASIS OF DESIGN IS CARRIER 48HCFE12K2AA5DTH W/ ENERGYX ERV W/ ECONOMIZER AND FREEZE PROTECTION. ONLY PREAPPROVED ALTERNATES MEETING ALL THE PROJECT REQUIREMENTS WILL BE CONSIDERED
2. IN ORDER TO BE CONSIDERED AN ACCEPTABLE ALTERNATE, PROPOSED UNIT MUST MEET THE SPECIFIED PERFORMANCE INCLUDING, BUT NOT LIMITED TO, DX COIL LEAVING DEWPOINT (DP<47)
3. PROVIDE UNITS WITH THE FOLLOWING FEATURES:
   - a. 2" DOUBLE WALL FOAM INJECTED R13 INSULATED CASING (INCLUDING R13 INSULATED BASE), ENTIRELY PRE-PAINTED EXTERIOR,
   - b. DIGITAL SCROLL COMPRESSOR, BOTH CIRCUITS (IF APPLICABLE); HOT GAS BYPASS IS NOT ACCEPTABLE
   - c. MODULATING HOT GAS REHEAT WITH ACTIVE HEAD PRESSURE CONTROL VFD DRIVEN CONDENSER FANS TO ENSURE 70 DEG F UNIT LEAVING AIR TEMPERATURE
   - d. UV LIGHTS BETWEEN DX AND HOT GAS REHEAT COIL
   - e. DIRECT DRIVE PLENUM SUPPLY AND POWERED EXHAUST FANS W/VFD AND PIEZO RINGS FOR AIR MEASUREMENT
     - e.a. BOTH FANS SHALL HAVE SLIDE-OUT FEATURE FOR SERVICEABILITY
   - f. MODULATING GAS HEATING (10:1 TURNDOWN)
   - g. COMPARATIVE ENTHALPY ECONOMIZER CONTROL
   - h. ALL ALUMINUM ENERGY RECOVERY WHEEL WITH BYPASS DAMPERS AND SLIDE OUT FOR SERVICEABILITY
     - h.a. WHEEL SHALL HAVE A PURGE RATED FOR NO MORE THAN 0.04% CROSSOVER BETWEEN SUPPLY AND EXHAUST AIR PATH
     - h.b. ALL OUTDOOR AIR SHALL PASS THRU THE WHEEL WHEN UNIT IS NO ECONOMIZING
     - h.c. MERV 8 FILTRATION
   - j. NON-FUSED DISCONNECT SWITCH W/CONVENIENCE OUTLET
   - k. BACNET COMPATIBLE DDC CONTROLLER INCLUDING PROGRAMMING/SEQUENCING AND SENSORS AS REQUIRED FOR CONSTANT VOLUME SPACE CONTROL
     - k.a. AUTO-RESTART AFTER A POWER FAILURE
   - l. STANDARD MANUFACTURER KNOCKDOWN CURB
   - m. STARTUP & 1-YEAR WARRANTY LABOR BY MANUFACTURER; EXTENDED 5 YEAR COMPRESSOR PARTS ONLY WARRANTY

EXHAUST FAN SCHEDULE

	PERFORMANCE DATA			CONSTRUCTION DATA		ELECTRICAL DATA					
MARK	CFM	SP (IN. W.G.)	RPM	TYPE	DRIVE	MOTOR H.P. (WATTS)	VOLT	PH	MAX WEIGHT (LB)	MANUFACTURER OR EQUAL	NOTES
EF 1	70	0.375	838	CEILING MOUNTED	DIRECT	(24.1)	115	1	12	GREENHECK SP-A50-90-VG	1,2,6,7
EF 2	1380	0.500	1385	ROOF MOUNTED	DIRECT	1/2	115	1	65	GREENHECK G-120-VG	4,5,6,7
EF 3	1000	0.500	1650	ROOF MOUNTED	DIRECT	1/4	115	1	56	GREENHECK G-099-VG	3,4,5,6,7
EF 4	220	0.250	1664	INLINE MOUNTED	DIRECT	1/15	115	1	41	GREENHECK SQ-70-VG	4,6,7

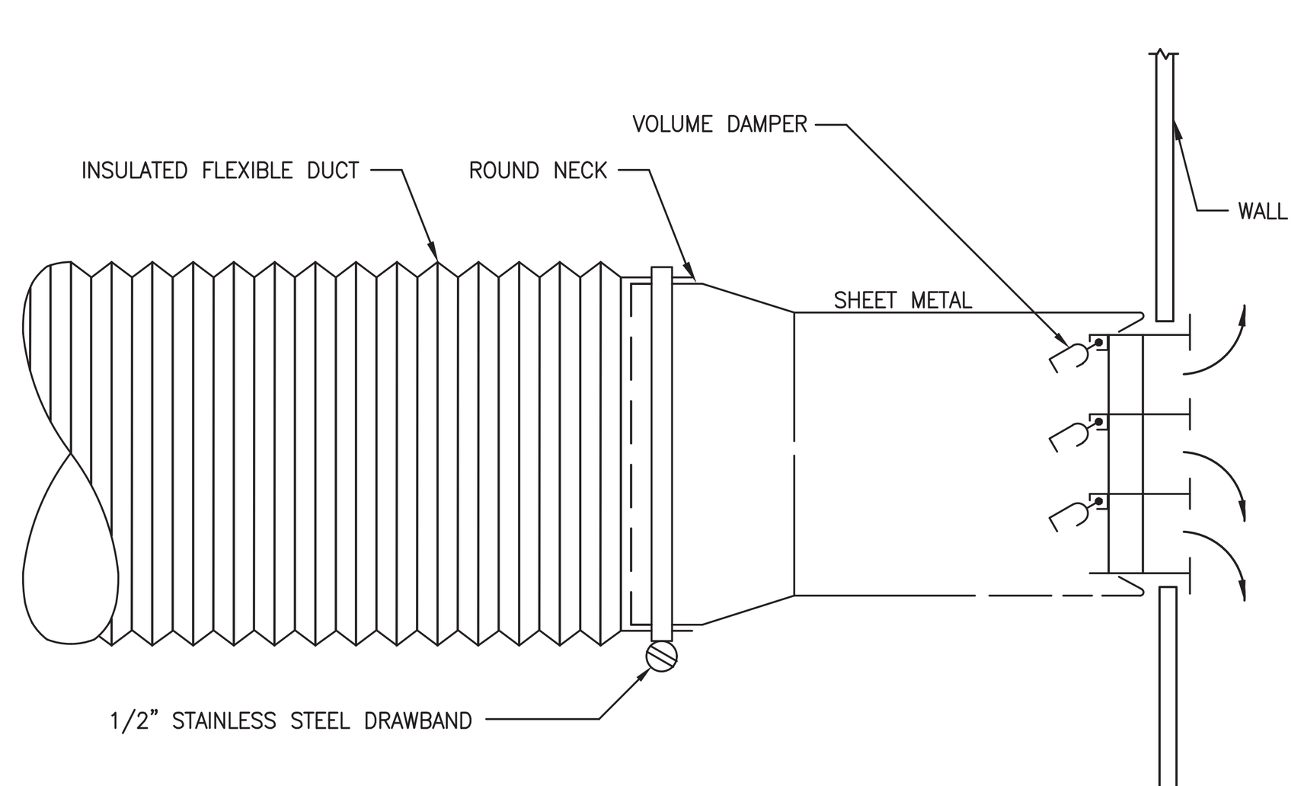
NOTES:

1. FANS IN RESTROOMS SHALL SWITCH WITH LIGHT.
2. FANS IN BATHING, MOP CLOSETS, & EXAM ROOMS SHALL ENERGIZE WITH WALL SWITCH.
3. FANS IN ISOLATION & OXYGEN ROOMS SHALL RUN CONTINUOUSLY.
4. FANS IN HOUSING, RUNS, & WARDS SHALL RUN CONTINUOUSLY.
5. PROVIDE 12" ROOF CURB FOR ALL ROOF EXHAUST CAPS ON FLAT ROOF.
6. STANDARD PREWIRED DISCONNECT SWITCH.
7. VIBRATION ISOLATORS AND BRACKETS.

LOUVER SCHEDULE

TYPE	SERVICE	CFM	DIMENSIONS WxLxH	FREE AREA FT2	FINISH	BASIS OF DESIGN	NOTES
L 1	EXHAUST	220	15"x10"x2"	0.28	ALUMINUM	GREENHECK: ESJ-202	1-2
L 2	EXHAUST	140	13"x10"x2"	0.23	ALUMINUM	GREENHECK: ESJ-202	1-2
L 3	OUTSIDE AIR INTAKE	70	11"x7"x2"	0.10	ALUMINUM	GREENHECK: ESJ-202	1-2

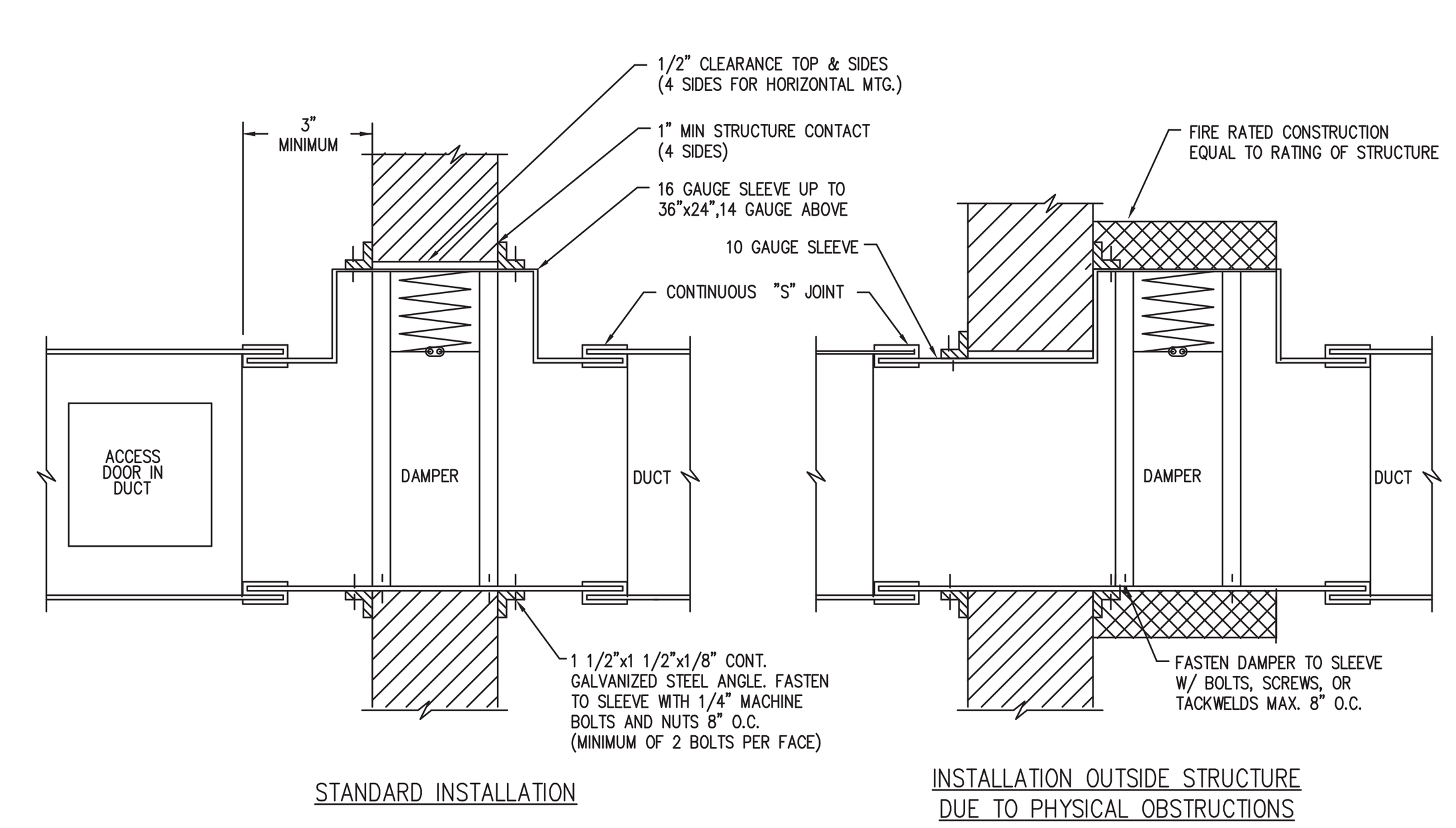
1. COORDINATE WITH OWNER FINAL COLOR & FINISH (IF PAINTED).
2. CONTRACTOR SHALL CONFIRM ACTUAL FINAL DIMENSIONS WITH VENDOR.



NOTES:

1. ADJUST VOLUME DAMPERS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS FOR SPECIFIED AIR FLOW.
2. REFER TO DIFFUSER SCHEDULE FOR QUANTITY AND SIZES.

5 SIDEWALL DIFFUSER/GRILLE DETAIL
NOT TO SCALE



FIRE DAMPER MOUNTING

NO SCALE

NOTE: PROVIDE ACCESS DOOR FOR FINISHED SURFACE

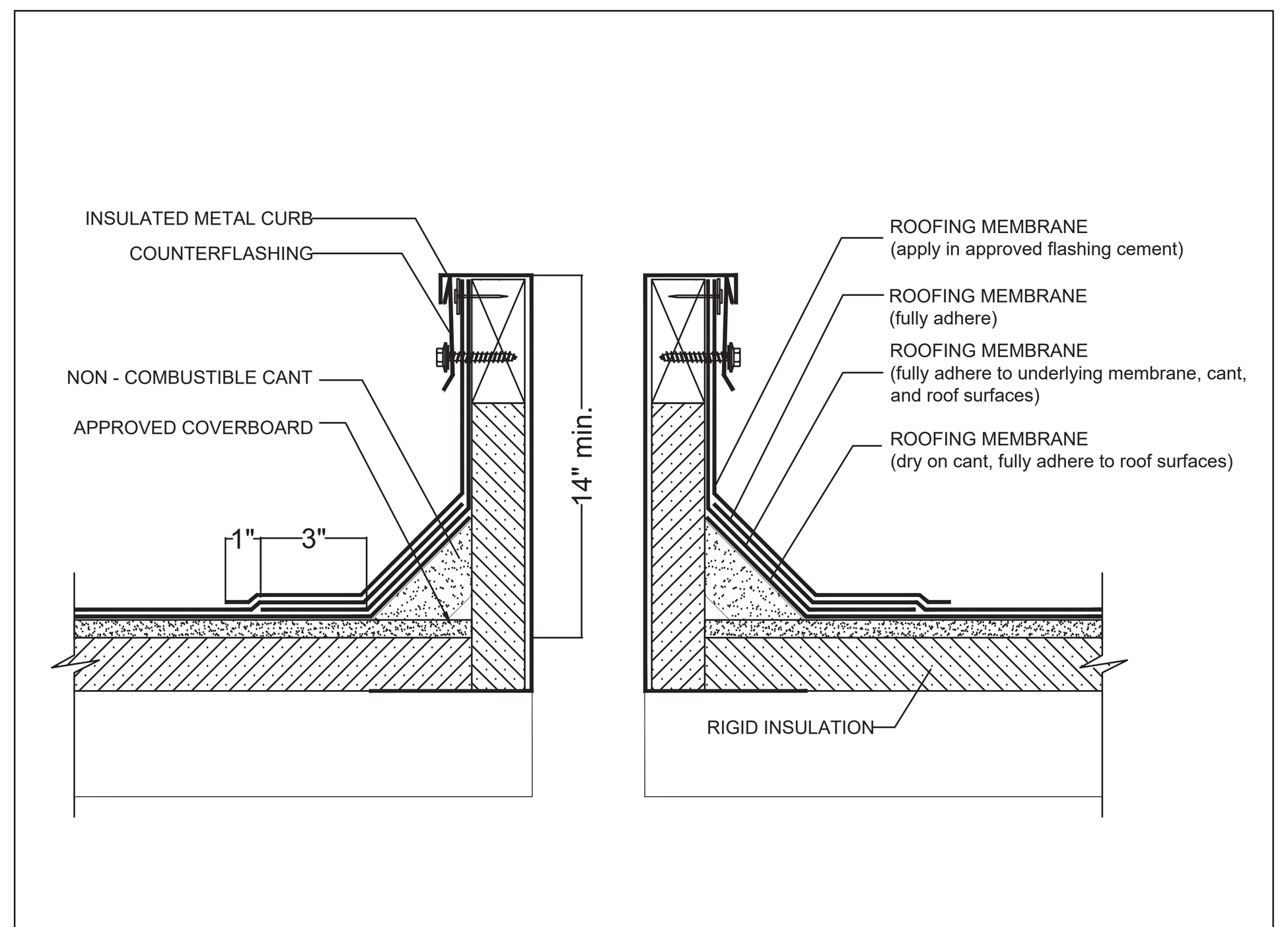
6 RATED WALL OPENING FIRE DAMPER
NOT TO SCALE

DIFFUSER, REGISTER AND GRILLE SCHEDULE

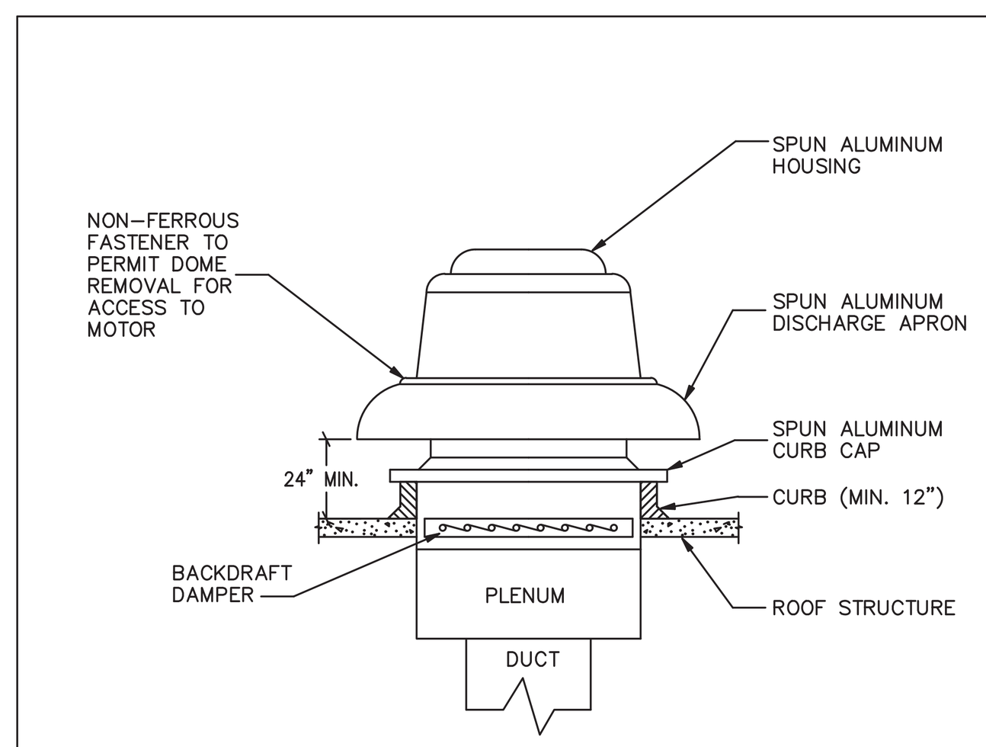
TYPE	SERVICE	CFM RANGE	FACE DIMENSION	NECK DIMENSION	FINISH	BASIS OF DESIGN	NOTES
1 (circle)	SUPPLY AIR DIFFUSER	0 - 125	24"x24"	6"ø	WHITE	TUTTLE & BAILEY: T1100	1,2,3,4,5,7
		126 - 250		8"ø			
		251 - 400		10"ø			
2 (circle)	SUPPLY AIR DIFFUSER	0 - 125	12"x12"	6"ø	WHITE	TUTTLE & BAILEY: T1100	1,2,3,4,5,7
		126 - 250		8"ø			
3 (circle)	SUPPLY AIR DIFFUSER	126 - 250	48"x2.5"	8"ø	WHITE	TUTTLE & BAILEY: 4000	1,2,4,5,7,9
4 (circle)	SUPPLY AIR DIFFUSER	251 - 400	48"x3"	10"ø	WHITE	TUTTLE & BAILEY: 4000	1,2,4,5,7,9
1 (hexagon)	RETURN AIR DIFFUSER	0 - 125	24"x24"	6"ø	WHITE	TUTTLE & BAILEY: PR	1,2,6,7
		126 - 250		8"ø			
		251 - 400		10"ø			
		401 - 600		12"ø			
2 (hexagon)	RETURN AIR DIFFUSER	0 - 125	12"x12"	6"ø	WHITE	TUTTLE & BAILEY: PR	1,2,6,7
		126 - 250		8"ø			
3 (hexagon)	RETURN AIR DIFFUSER	851 - 1000	24"x8"	N/A	WHITE	TUTTLE & BAILEY: 4000	1,2,5,8,9
1 (square)	EXHAUST AIR GRILLE	101 - 250	24"x24"	8"ø	WHITE	TUTTLE & BAILEY: PR	1,2,6,7
		251 - 400		10"ø			
2 (square)	EXHAUST AIR GRILLE	0 - 125	12"x12"	6"ø	WHITE	TUTTLE & BAILEY: PR	1,2,6,7
3 (square)	INTAKE AIR GRILLE	126 - 250	20"x20"	18"x18"	WHITE	TUTTLE & BAILEY: PR	1,2,6,7
4 (square)	DOOR TRANSFER GRILLE	251 - 400	16"x16"	N/A	WHITE	TUTTLE & BAILEY: DXFR	1,2

NOTES:

1. COORDINATE WITH OWNER COLOR & FINISH.
2. CONTRACTOR SHALL CONFIRM ACTUAL FINAL DIFFUSER DIMENSIONS WITH VENDOR, AND COORDINATE W/ CEILING/WALL/DOOR TYPE AS NECESSARY.
3. 4 WAY THROW PATTERN.
4. PROVIDE WITH OPPOSED BLADE DAMPER.
5. PROVIDE INSULATED BACKPANS WHEN INSTALLED ABOVE CEILINGS, UNCONDITIONED, AND/OR PARTIALLY CONDITIONED SPACE.
6. PERFORATED PATTERN
7. CEILING MOUNTED
8. WALL MOUNTED
9. AO CORE, STANDARD UNIT, & 1/2" MARGINS



7 ROOF CURB DETAIL
NOT TO SCALE



8 ROOF EXHAUST FAN DETAIL
NOT TO SCALE

AIR CLEANING UNIT SCHEDULE

MARK	MFR*	MODEL	MAX AIR TEMP (F)	TUBE QTY.	CURRENT AMP	POWER WATTS	VOLTAGE	WEIGHT LBS.
ACU	ATMOS AIR	500EC	200	5	0.6	52	115/1/60	15

1. MANUFACTURER OR APPROVED EQUAL
3. UNITS SHALL BE INSTALLED IN THE SUPPLY DUCT DISCHARGE AIR
4. UNIT SHALL INTERLOCK TO ENERGIZE WITH RTU FAN OR AIR PRESSURE SWITCH
2. PROVIDE NEMA 5-15 PLUG OR 3 WIRE TO JUNCTION BOX
5. COORDINATE WITH ELECTRICAL CONTRACTOR.

ELECTRIC HEATER SCHEDULE

			CONSTRUCTION DATA	ELECTRICAL DATA					
MARK	AREA / SERVICE	CFM	TYPE	KW	VOLT	PH	AMPS	MANUFACTURER	NOTES
EH 1	ENTRY/EXIT	100	WALL MOUNTED	2	208/230	1	8.3	MARKEL F350T2DWB	1,2

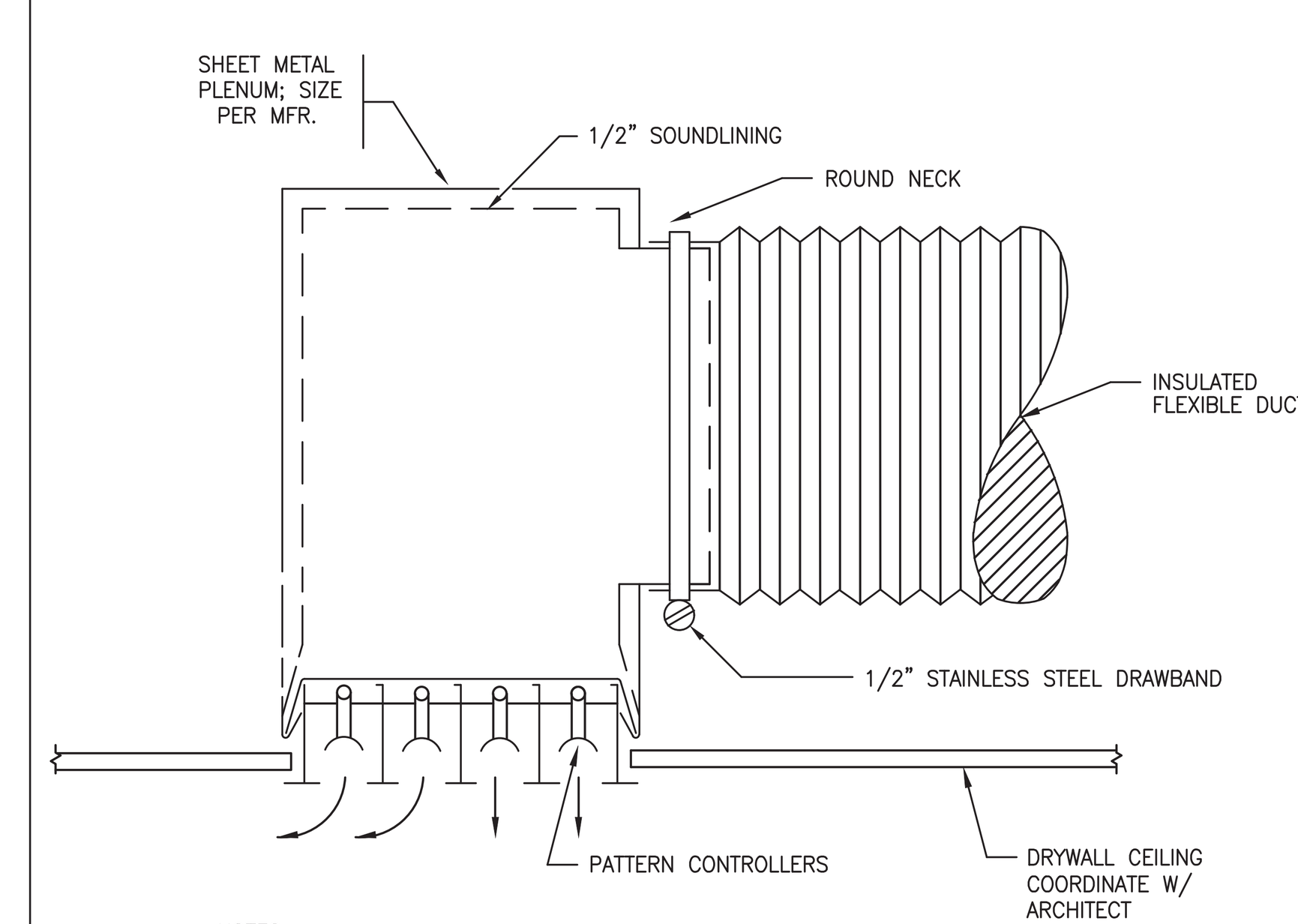
1. ELECTRICAL CORD SHALL BE CONCEALED W/ CASING.
2. BUILT IN CONTROLLABLE THERMOSTAT

GAS UNIT HEATER SCHEDULE

			CONSTRUCTION DATA			ELECTRICAL DATA					
MARK	AREA / SERVICE	CFM	TYPE	GAS INPUT	GAS OUTPUT	VOLT	PH	AMPS	MOTOR HP	MANUFACTURER	NOTES
GH 1	CREMATORY	720	CEILING/WALL MOUNTED	45,000	36,900	115	1	--	1/15	MODINE HD45	1,2,3,4

NOTES:

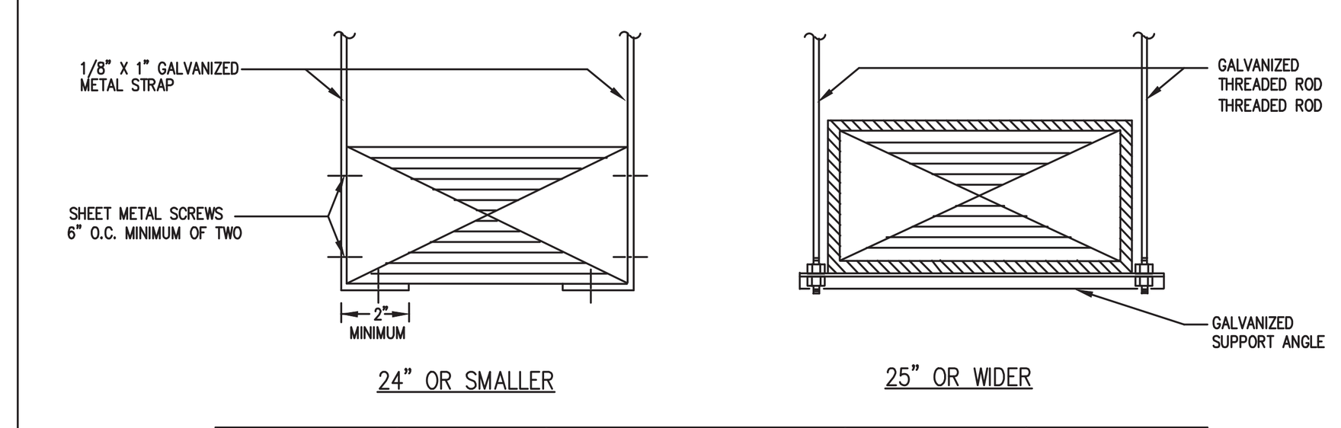
1. MAXIMUM MOUNTING HEIGHT = 10 FT.
2. BUILT IN CONTROLLABLE THERMOSTAT
3 PROVIDE VENT FOR COMBUSTION AIR & EXHAUST VENTING
4. PROVIDE HANGERS AND STRUCTURAL SUPPORT PER MFR.



NOTES:

1. ADJUST VOLUME DAMPERS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS FOR SPECIFIED AIR FLOW.
2. REFER TO DIFFUSER SCHEDULE FOR QUANTITY AND SIZES OF SLOTS.

9 LINEAR SLOT DIFFUSER DETAIL
NOT TO SCALE



DUCT WIDTH	ROD DIA.	SUPPORT ANGLE OR EQUIV. CHANNEL	MAXIMUM SPACING	MAXIMUM AREA *
25" TO 30"	3/8"	1 1/2" X 1 1/2" X 1/8"	8'-0" O.C.	4 SQ. FT.
31" TO 42"	3/8"	1 1/2" X 1 1/2" X 1/8"	6'-0" O.C.	10 SQ. FT.
43" TO 60"	1/2"	1 1/2" X 1 1/2" X 1/8"	6'-0" O.C.	10 SQ. FT.
61" TO 84"	1/2"	2" X 2" X 1/4"	4'-0" O.C.	-------
85" AND UP	1/2"	2" X 2" X 1/4"	4'-0" O.C.	-------

* REDUCE SPACING TO NEXT SMALLER INTERVAL IF DUCT AREA EXCEEDS MAXIMUM

10 DUCT SUPPORT DETAIL
NOT TO SCALE

CDi
620 Pennsylvania Ave
Winchester, VA 22601
Phone 540-665-2846
Fax 540-667-3284

Comfort Design Inc.
Mechanical & Electrical Engineers

Job # E2119

REVISION		
NO.	DESCRIPTION	DATE

ARCHITECTS SEAL:

rauhaus freedenfeld & associates

East Coast Office
97 Broadway
Boston, MA 02116
T: 617.338.0050
F: 617.426.2557

West Coast Office
23101 Moulton Pkwy #106
Laguna Hills, CA 92653
T: 949.716.8899
F: 949.716.9959

CAPITOL PROJECT 1483

CONSTRUCTION OF A NEW ANIMAL SHELTER FACILITY
65 FIREMANS MEMORIAL DRIVE, POMONA, NY 10970

MECHANICAL DETAILS

PROGRESS SET ☐ BID SET ■ PERMIT SET ☐ CONSTRUCTION SET ☐

DRAWN BY:	JLC
CHECKED BY:	CRS
SCALE:	AS NOTED
DATE:	20 OCT. 2021
PROJECT NO:	2019

M1.01