

DRAWING LIST:
M-1 HEAT GAIN/LOSS CALCULATIONS
M-2 MECHANICAL FIRST FLOOR PLAN
M-3 MECHANICAL MEZZANINE PLAN
M-4 MECHANICAL ROOF PLAN
M-5 MECHANICAL EQUIPMENT SCHEDULES
M-6 MECHANICAL DETAILS
M-7 MECHANICAL NOTES

SCOPE OF WORK:
THE FOLLOWING ITEMS DESCRIBED ARE IN COMPLIANCE WITH THE 2020 NYSECCC, 2020 IBC AND THE 2020 IMC.
IT SHALL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR TO OBTAIN ALL FILINGS, APPROVALS, PERMITS AND SIGNOFFS FOR THIS PROJECT.

THE MECHANICAL CONTRACTOR SHALL SUPPLY AND INSTALL ALL OF THE FOLLOWING AND ALL SYSTEMS WITHIN THE DRAWINGS AND SPECIFICATIONS:

- (1) SPLIT SYSTEMS COMPOSED OF (1) HEATPUMP AND (1) FAN COIL.
- (1) SPLIT SYSTEMS COMPOSED OF (1) HEATPUMP AND (2) FAN COILS
- ALL EXHAUST SYSTEMS
- AIR PURIFICATION SYSTEM.
- ALL EQUIPMENT ALONG WITH ALL SPECIFIED OPTIONS AND ACCESSORIES, REFRIGERANT PIPING, PIPING INSULATION, CONDENSATE PIPING, DUCTWORK, DUCT INSULATION, DUCT SUPPORTS, HANGERS, DIFFUSERS, GRILLES, DAMPERS, PENETRATIONS, ACCESS DOORS, CONTROL WIRING AND CONTROLS FOR ALL SYSTEMS.
- ALL EXISTING APPROVED MECHANICAL SYSTEMS AND EQUIPMENT ARE TO REMAIN UNLESS NOTED OTHERWISE. REFER TO DEMOLITION PLAN FOR MECHANICAL CONTRACTORS ADDITIONAL SCOPE OF WORK.

ENERGY COMPLIANCE PATH: 2020 NYSECCC PRESCRIPTIVE PATH
ADDITIONAL EFFICIENCY PACKAGE: REDUCED LIGHTING POWER (C406.3) - SEE ELECTRICAL PLANS FOR COMPLIANCE

Rhvac - Residential & Light Commercial HVAC Loads
Frigidyne A/C Co Inc.
Baltimore, NY 11710-5641



Elite Software Development, Inc.
Tappan - Western Highway
Page 16

System 1 Room Load Summary

Room No	Room Name	Area SF	Htg Sens Btuh	Htg Nom CFM	Run Duct Size	Run Duct Vel	Clg Sens Btuh	Clg Lat Btuh	Clg Nom CFM	Zone Adj Fact	Clg Adj CFM	Air Sys CFM
---Zone 1---												
1	App Bay	3,735	190,687	2,477	0-0	0	13,406	0	610	1.00	610	2,477
System 1 total		3,735	190,687	2,477			13,406	0	610		610	2,477

Cooling System Summary

	Cooling Tons	Sensible/Latent Split	Sensible Btuh	Latent Btuh	Total Btuh
Net Required:	1.12	100% / 0%	13,406	0	13,406
Recommended:	1.49	75% / 25%	13,406	4,469	17,875

System 2 Room Load Summary

Room No	Room Name	Area SF	Htg Sens Btuh	Htg Nom CFM	Run Duct Size	Run Duct Vel	Clg Sens Btuh	Clg Lat Btuh	Clg Nom CFM	Zone Adj Fact	Clg Adj CFM	Air Sys CFM
---Zone 1---												
2	Engineer's Room	176	12,360	161	0-0	0	5,740	487	261	1.00	261	261
	Ventilation		1,473				352	467				
System 2 total		176	13,833	161			6,092	954	261		261	261

Cooling System Summary

	Cooling Tons	Sensible/Latent Split	Sensible Btuh	Latent Btuh	Total Btuh
Net Required:	0.59	86% / 14%	6,092	954	7,046
Recommended:	0.68	75% / 25%	6,092	2,031	8,123

System 3 Room Load Summary

Room No	Room Name	Area SF	Htg Sens Btuh	Htg Nom CFM	Run Duct Size	Run Duct Vel	Clg Sens Btuh	Clg Lat Btuh	Clg Nom CFM	Zone Adj Fact	Clg Adj CFM	Air Sys CFM
---Zone 1---												
3	Bath 1	108	8,773	114	0-0	0	2,681	158	122	1.00	122	122
System 3 total		108	8,773	114			2,681	158	122		122	122

Cooling System Summary

	Cooling Tons	Sensible/Latent Split	Sensible Btuh	Latent Btuh	Total Btuh
Net Required:	0.24	94% / 6%	2,681	158	2,839
Recommended:	0.30	75% / 25%	2,681	894	3,574

System 4 Room Load Summary

Room No	Room Name	Area SF	Htg Sens Btuh	Htg Nom CFM	Run Duct Size	Run Duct Vel	Clg Sens Btuh	Clg Lat Btuh	Clg Nom CFM	Zone Adj Fact	Clg Adj CFM	Air Sys CFM
---Zone 1---												
4	Utility	104	7,952	103	0-0	0	423	0	19	1.00	19	103
System 4 total		104	7,952	103			423	0	19		19	103

Cooling System Summary

	Cooling Tons	Sensible/Latent Split	Sensible Btuh	Latent Btuh	Total Btuh
Net Required:	0.04	100% / 0%	423	0	423
Recommended:	0.05	75% / 25%	423	141	564

System 5 Room Load Summary

Room No	Room Name	Area SF	Htg Sens Btuh	Htg Nom CFM	Run Duct Size	Run Duct Vel	Clg Sens Btuh	Clg Lat Btuh	Clg Nom CFM	Zone Adj Fact	Clg Adj CFM	Air Sys CFM
---Zone 1---												
5	Elec/Radio Rm	187	12,835	167	0-0	0	15,164	5,158	690	1.00	690	690
	Ventilation		1,031				246	327				
System 5 total		187	13,866	167			15,410	5,485	690		690	690

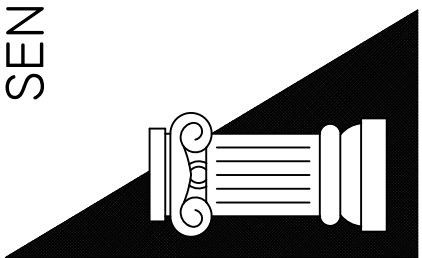
Cooling System Summary

	Cooling Tons	Sensible/Latent Split	Sensible Btuh	Latent Btuh	Total Btuh
Net Required:	1.74	74% / 26%	15,410	5,485	20,895
Recommended:	1.83	75% / 25%	16,456	5,485	21,941

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TAPPAN FIRE DISTRICT
300 WESTERN HWY S,
TAPPAN NY, 10983

SCOPE OF WORK
HEAT GAIN/LOSS CALCULATIONS

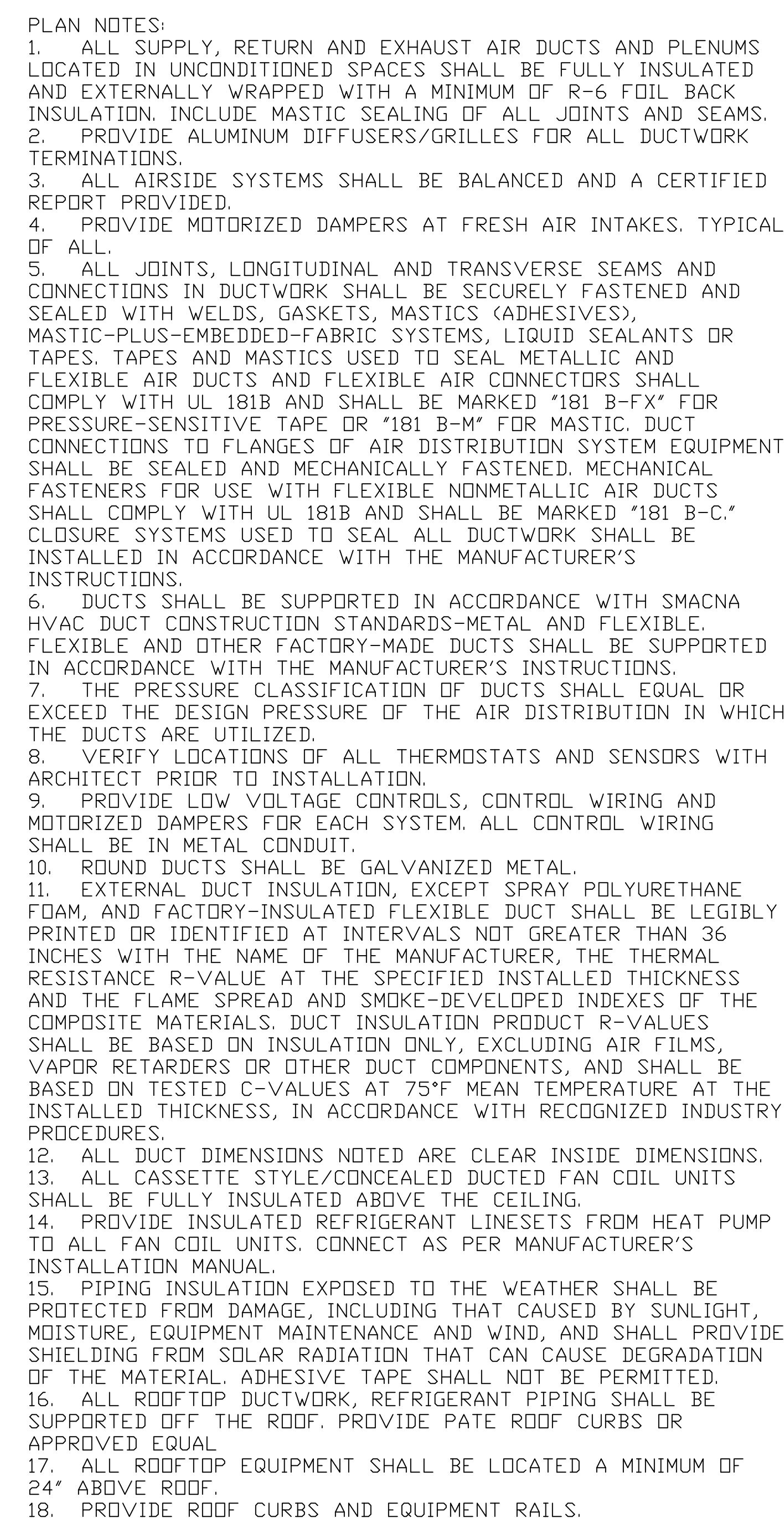
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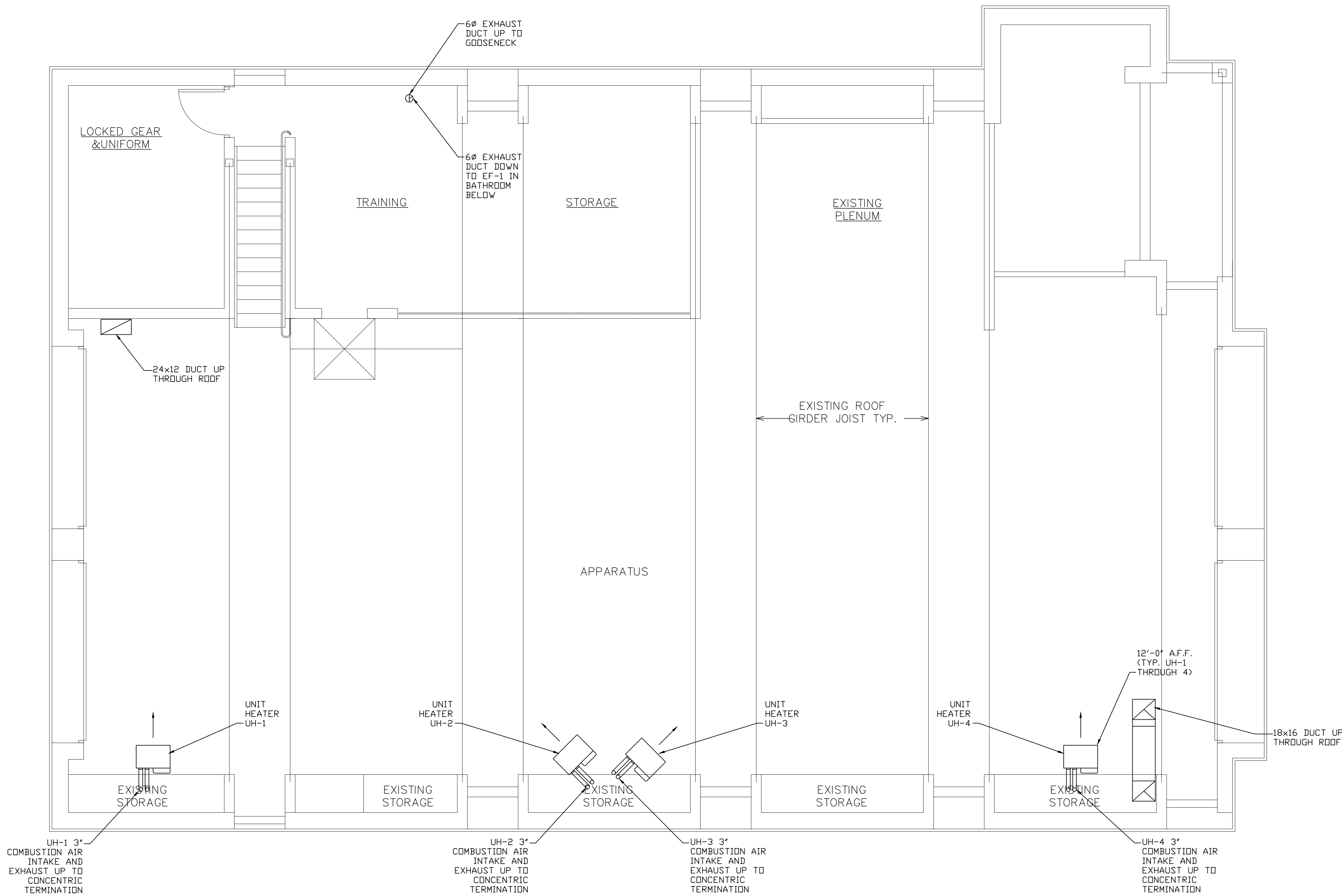
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M-1



M-2

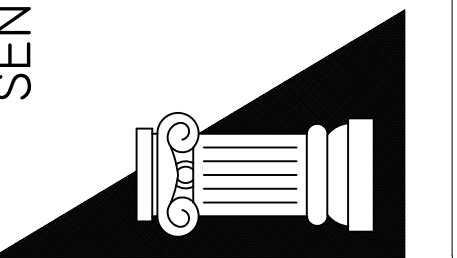
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SECOND FLOOR
MECHANICAL PLAN

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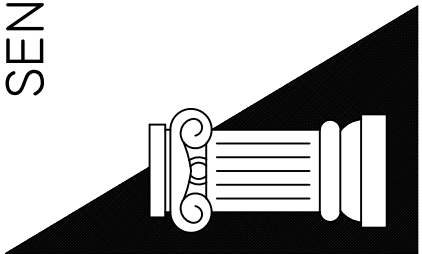
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ROOF
MECHANICAL PLAN

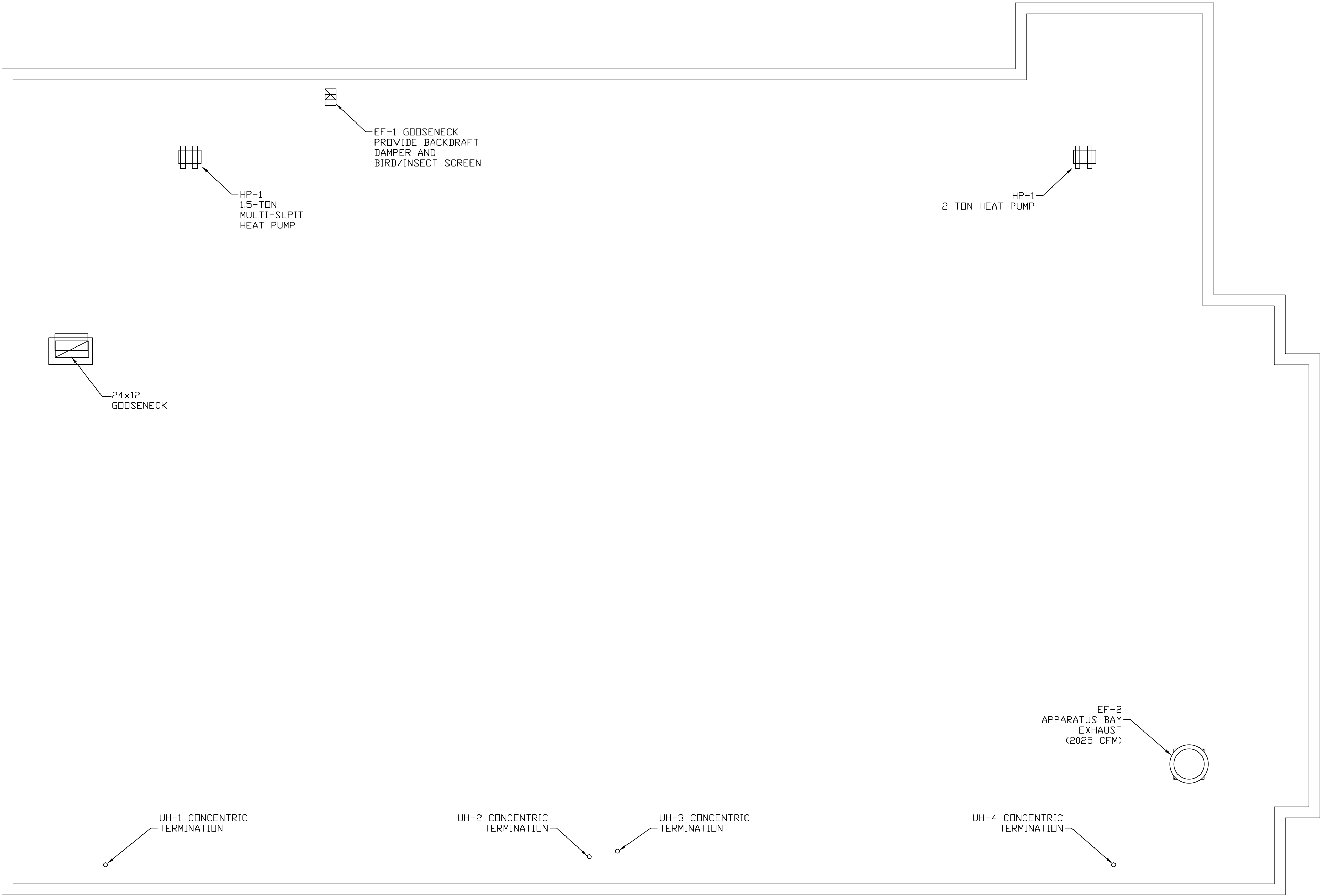
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M-4



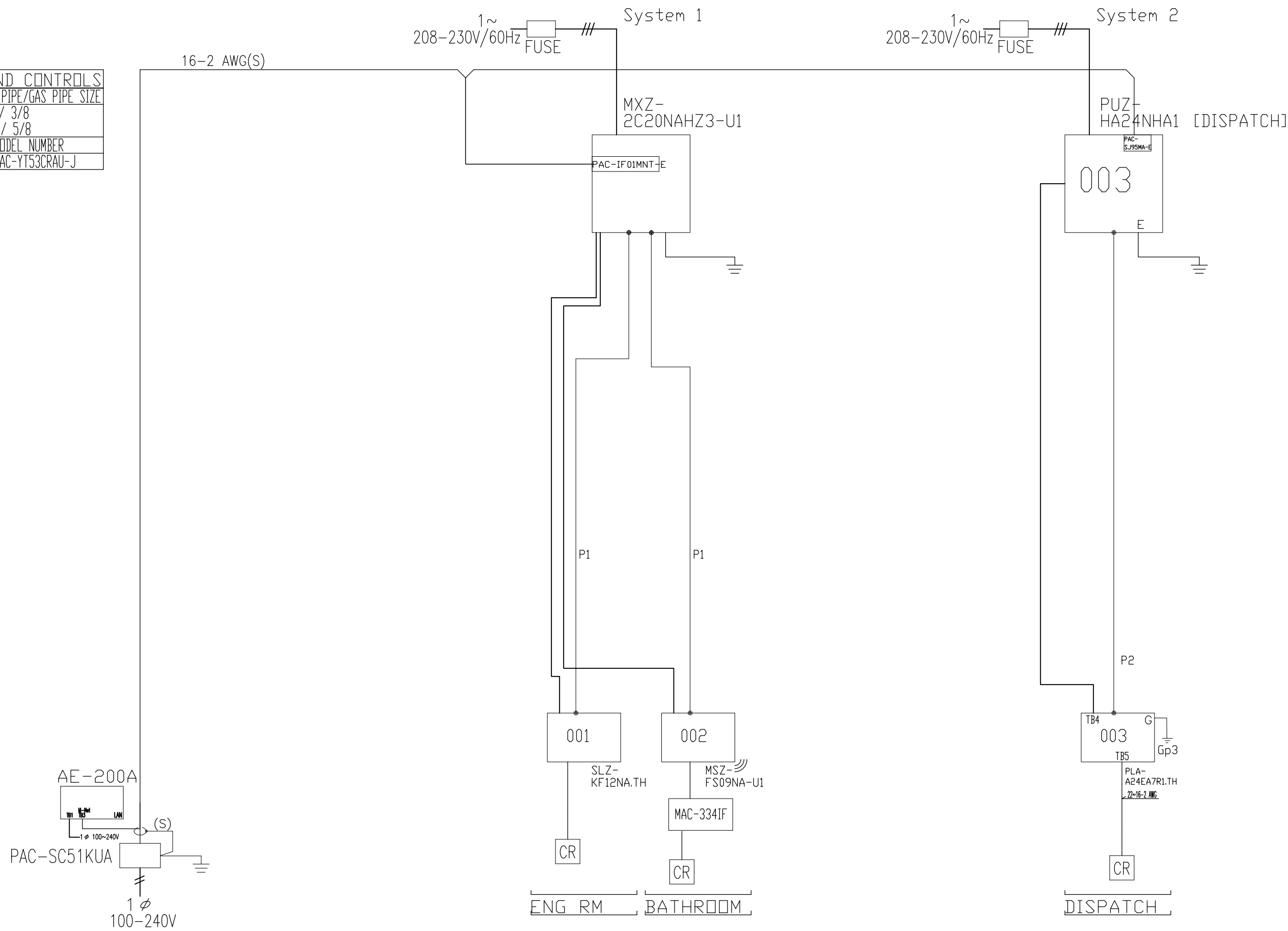
- PLAN NOTES:
1. PROVIDE INSULATED REFRIGERANT LINESETS FROM HEAT PUMP TO COIL UNITS. CONNECT AS PER MANUFACTURER'S INSTALLATION MANUAL.
 2. PIPING INSULATION EXPOSED TO THE WEATHER SHALL BE PROTEC DAMAGE, INCLUDING THAT CAUSED BY SUNLIGHT, MOISTURE, EQUIPMENT MAINTENANCE AND WIND, AND SHALL PROVIDE SHIELDING FROM SOLAR THAT CAN CAUSE DEGRADATION OF THE MATERIAL. ADHESIVE TAPE SH. PERMITTED.
 3. ALL ROOFTOP DUCTWORK, REFRIGERANT PIPING SHALL BE SUPPOR THE ROOF. PROVIDE PATE ROOF CURBS OR APPROVED EQUAL
 4. ALL ROOFTOP EQUIPMENT SHALL BE LOCATED A MINIMUM OF 24" .
 5. PROVIDE ROOF CURBS AND EQUIPMENT RAILS FOR ALL SPLIT SYS

MECHANICAL ROOF PLAN

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

DIAGRAM SYMBOL LEGEND		CONT.No	PAGE
DISPLAY	DESCRIPTION		
///	POWER WIRE		
---	CONTROL WIRE		
---	REF. PIPE		

PIPING AND CONTROLS	
SYMBOL	LIQUID PIPE / GAS PIPE SIZE
P1	1/4" / 3/8"
P2	3/8" / 5/8"
SYMBOL	MODEL NUMBER
CR	PAC-YT530RAU-J



Coded Notes:
NOTE 1: Install twinning Y's within 15 degrees of level and with 20 inches of straight pipe on converging connection - reference installation manual for additional details including but not limited to special trapping requirements when twinning, and pipe slope requirements

This drawing is schematic in nature. Final routing of piping & wiring shall be determined by the installing contractor and/or designer of record
Additional refrigerant charge is needed depending on the size and length of extended piping. Please refer the amount of pre-charge and the formula of calculation which is mentioned on the data book.
1.25mm²(16 AWG) : 1.25mm²(16 AWG) or more, 0.75mm²(20 AWG) : between 0.5mm²(24 AWG) and 0.75mm²(20 AWG).

CARBON MONOXIDE CONTROLLER								
DESIGNATION	MANUF.	MODEL#	ELEC	AMPS	RELAY RATING	SENSORS	SHIPPING WEIGHT	REMARKS
CD/ND-1	MACURCO	CX-12	120/1	1.0	5 AMPS	CSID2A	15 lbs	APP/WET BAYS

INCLUDE: HORN STROBE, CALIBRATION KIT, CONTROL PANEL FAN RELAYS.

APPROVALS: UL			EXHAUST FAN SCHEDULE											
TAG	SERVICE	TYPE	FAN DATA							DAMPER SIZE	ROOF OPENING	WEIGHT (LBS)	GREENHECK MODEL NO	NOTES
			CFM	S.P	WATT	VOLT	PH	H.P.	RPM					
EF-1	BATHROOMS	INLINE	120	0.35	35	115	1	-	1,400	-	-	26	SP-A190	-

PROVIDE: MOUNTING, HANGING/SPRING VIBRATION ISOLATION, FLASHING OF TERMINATION, FLEXIBLE CONNECTORS, BACKDRAFT DAMPER, DISCONNECT, GRILLE MOUNTED MOTION DETECTOR, ROUND DUCT CONNECTOR, ENERGY STAR.

APPROVALS: UL			EXHAUST FAN SCHEDULE											
TAG	SERVICE	TYPE	FAN DATA							DAMPER SIZE	ROOF OPENING	WEIGHT (LBS)	GREENHECK MODEL NO	NOTES
			CFM	S.P	AMPS	VOLT	PH	H.P.	RPM					
EF-2	APPARATUS BAYS	ROOF	2025	0.75	7.0	208	1	1.0	1,066	-	-	91	G-160-VG	-

PROVIDE: MOUNTING, VARIGREEN MOTOR, FLASHING OF TERMINATION, FLEXIBLE CONNECTORS, BACKDRAFT DAMPER, DISCONNECT, 24" HIGH CURB.

UNIT HEATER SCHEDULE (GAS FIRED)													
MARK	MANUFACTURER TYPE & MODEL	HEATING / BTU		TEMP. RISE	F.I.A.	MOTOR DATA					WEIGHT	LOCATION(S)	
		INPUT	OUTPUT			CFM	HP	VOLTS	PHASE	AMPS			
UH-1	MODINE HDS-60	60,000	49,200	45°F	3.3	990	1/12	115	1	3.3	80 LBS.	APPARATUS BAY	
UH-2	MODINE HDS-60	60,000	49,200	45°F	3.3	990	1/12	115	1	3.3	80 LBS.	APPARATUS BAY	
UH-3	MODINE HDS-60	60,000	49,200	45°F	3.3	990	1/12	115	1	3.3	80 LBS.	APPARATUS BAY	
UH-4	MODINE HDS-60	60,000	49,200	45°F	3.3	990	1/12	115	1	3.3	80 LBS.	APPARATUS BAY	

1. PROVIDE AND INSTALL WALL MOUNTED THERMOSTAT WITH SUB-BASE.
2. PROVIDE AND INSTALL INTAKE AND EXHAUST PIPING, CONCENTRIC ROOF TERMINATION KIT WITH FLASHING.
3. PROVIDE LOCKING THERMOSTAT GUARD.

AIR PURIFIER SCHEDULE								
DESIGNATION	MAKE	MODEL	POWER SUPPLY			QTY	H.P	LISTINGS
			VOLTAGE	PHASE	AMPS			
AP-1	MAGNEGRIIP	AIRHAWK 1000 XL	230	1	9	1	1.0	UL507/ETL

PROVIDE: PROGRAMMABLE TIMECLOCK AND ALL CONTROL WIRING BY MECHANICAL CONTRACTOR.

UNIT HEATER SCHEDULE (ELECTRIC)												
APPROVALS: UL LISTED												
MARK	MANUFACTURER TYPE & MODEL	COILS	WATTS	ENTERING AIR (°F)	BTU/HR.	ELECTRICAL DATA					REMARKS	LOCATION(S)
						CFM	HP	VOLTS	PHASE	AMPS		
EUH-1	QMARK CWH3404F	1	3,000	40	10,236	100	-	208	1	14.5	-	UTILITY RM

PROVIDE: DISCONNECT, WALL MOUNT

APPROVALS: ARI 210/240, ETL, UL LISTED.						HEATPUMP UNIT SCHEDULE					(HEAT OR COOL)			
DESIGNATION	RATING (TONS)	NO. OF MODULES	REFRIG CHARGE	COOLING CAPACITY (BTU'S)	HEATING CAPACITY (BTU'S)	POWER SUPPLY				MAKE	MODEL	SEER/HSPF	LOCATION	SERVICE
						VOLTAGE	PHASE	MCA	MOCP					
HP-1	2	1	R-410A	24,000	28,000	208/230	1	30	40	mitsubishi	MXZ-2C20NAHZ3-U1	19.5/10.6	ROOF	FC-1 & 2
HP-1	2	1	R-410A	24,000	28,000	208/230	1	18	25	mitsubishi	PUZ-HA24NHA1	21.5/11.3	ROOF	FC-3

INCLUDE: EQUIPMENT RAILS, REFRIGERANT LINE SETS, INSULATION, DISCONNECT, FUSES, WHIP, REMOTE MOUNTED THERMOSTAT.

FAN COIL SCHEDULE													
LISTINGS: ETL, ISO 9001													
DESIGNATION	POWER SUPPLY				TONS	COOLING MBH	HEATING MBH	CFM	HP	MAKE	MODEL	LOCATION	WEIGHT
	VOLTAGE	PHASE	MCA	MAX FUSE									
FC-1	208	1	.36	OUTDOOR	2	24.0	24.0	700	-	mitsubishi	SLZ-KF12NA.TH	ENGINEER ROOM	46 LBS.
FC-2	208	1	.36	OUTDOOR	2	24.0	24.0	700	-	mitsubishi	MSZFS09NA-U1	BATHROOM	46 LBS.
FC-3	208	1	.36	OUTDOOR	2	24.0	24.0	700	-	mitsubishi	PLAEA7R1.TH	READY ROOM	56 LBS.

NOTES: PROVIDE DISCONNECT SWITCH, FILTERS, CONDENSATE DRAIN PIPING, REFRIG. PIPING & INSULATION, 7 DAY PROGRAMMABLE THERMOSTAT, CONTROLS, CONTROL WIRING, CONDENSATE PUMP.

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300 WESTERN HWY S,
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MECHANICAL EQUIPMENT
SCHEDULES & RISER DIAGRAM

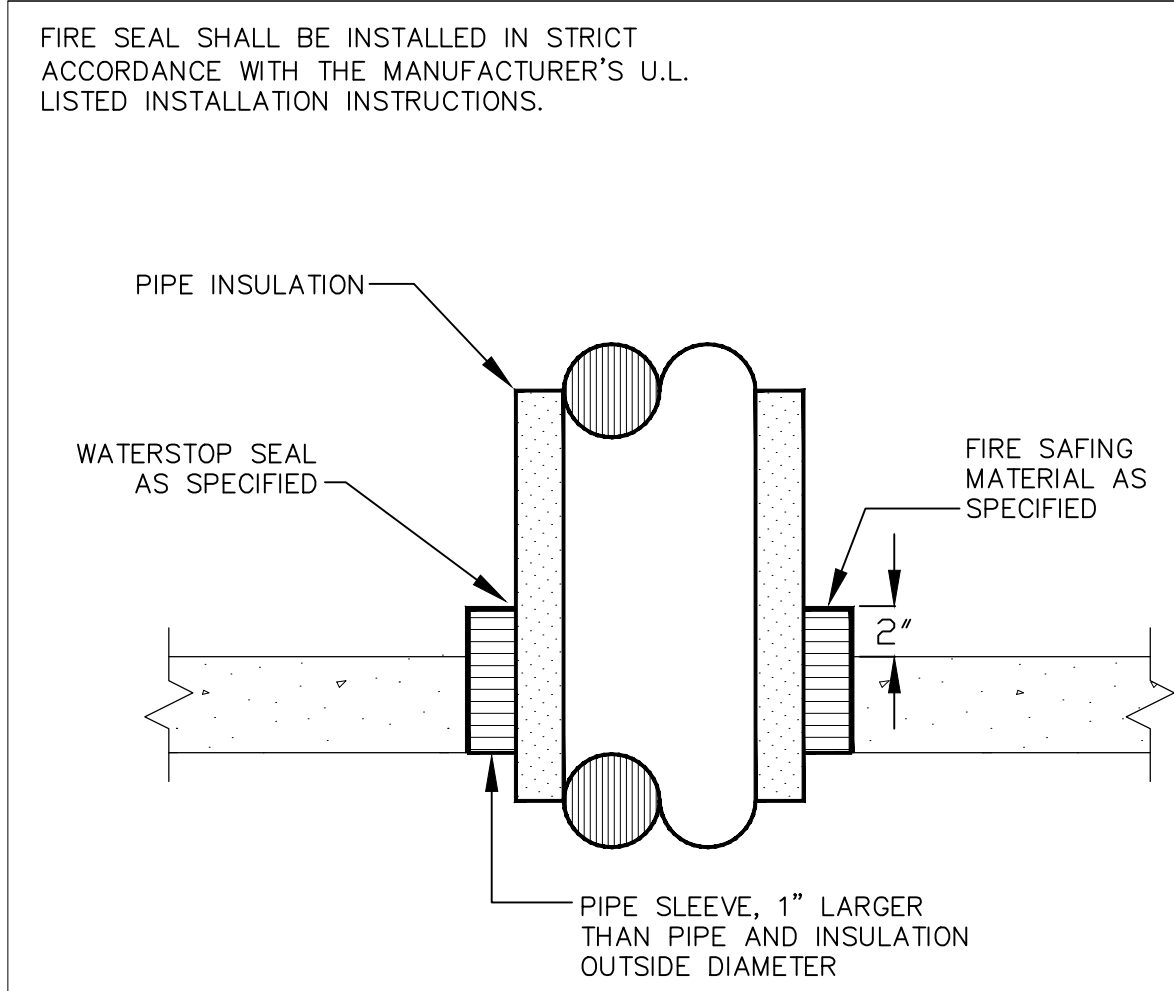
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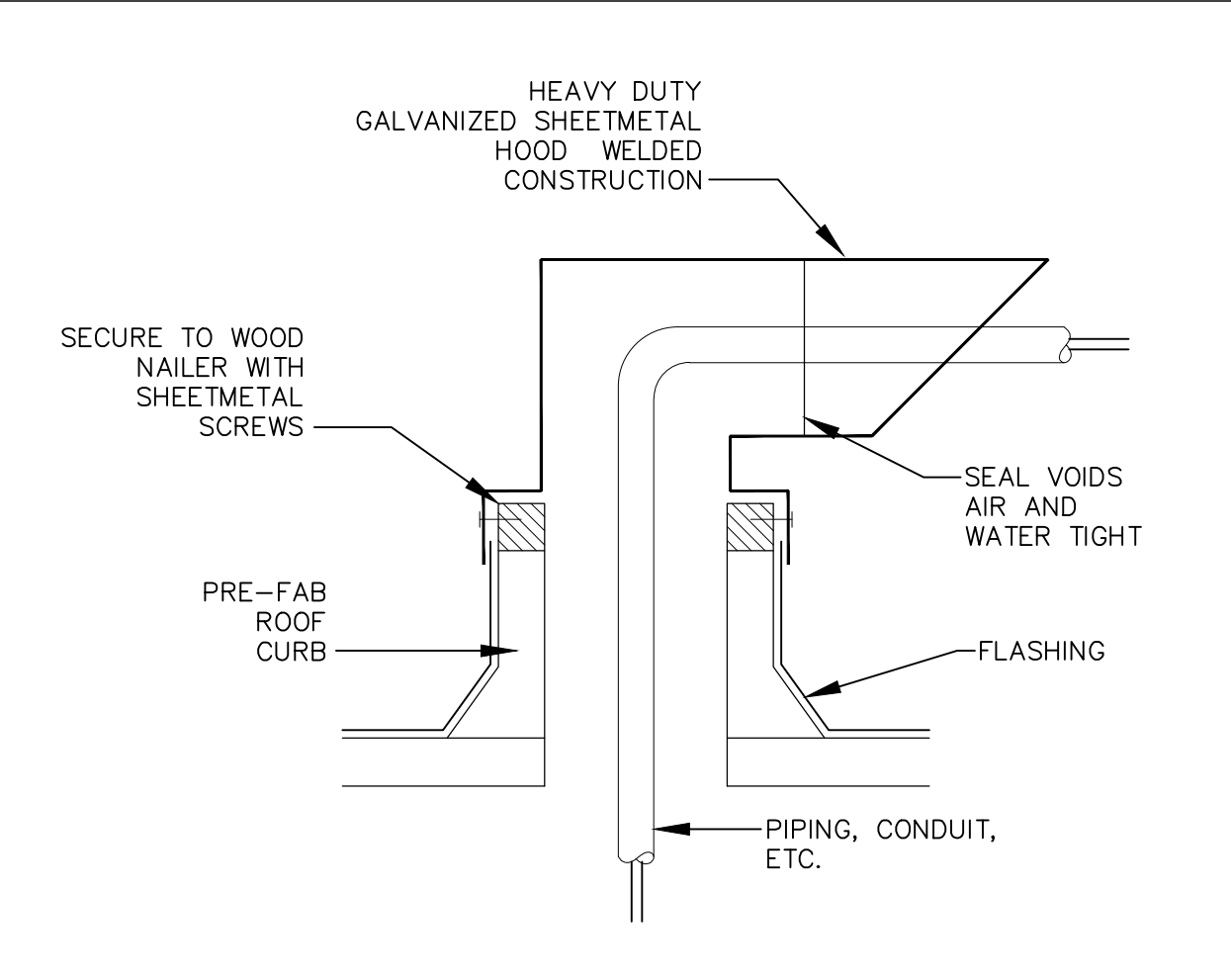
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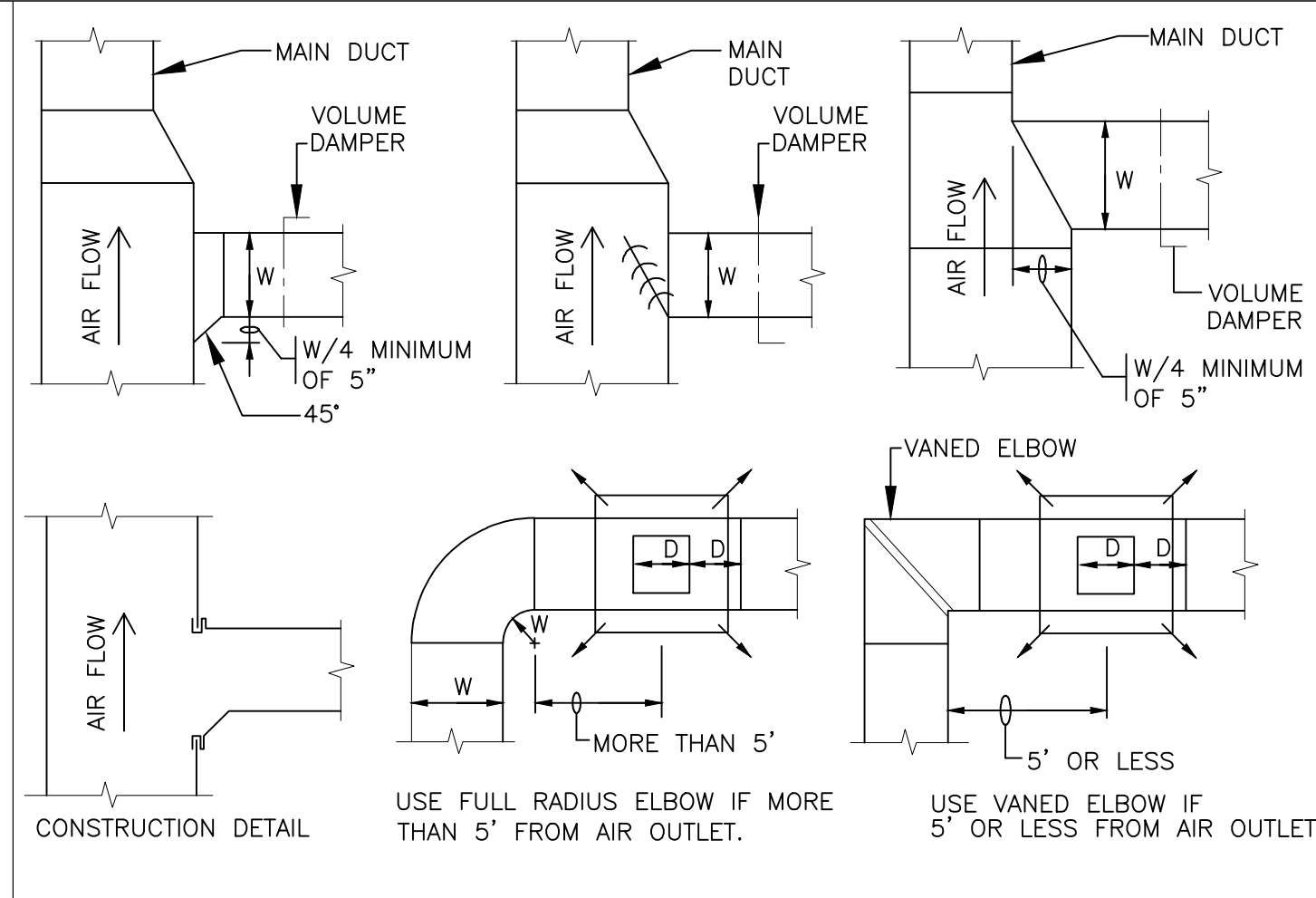
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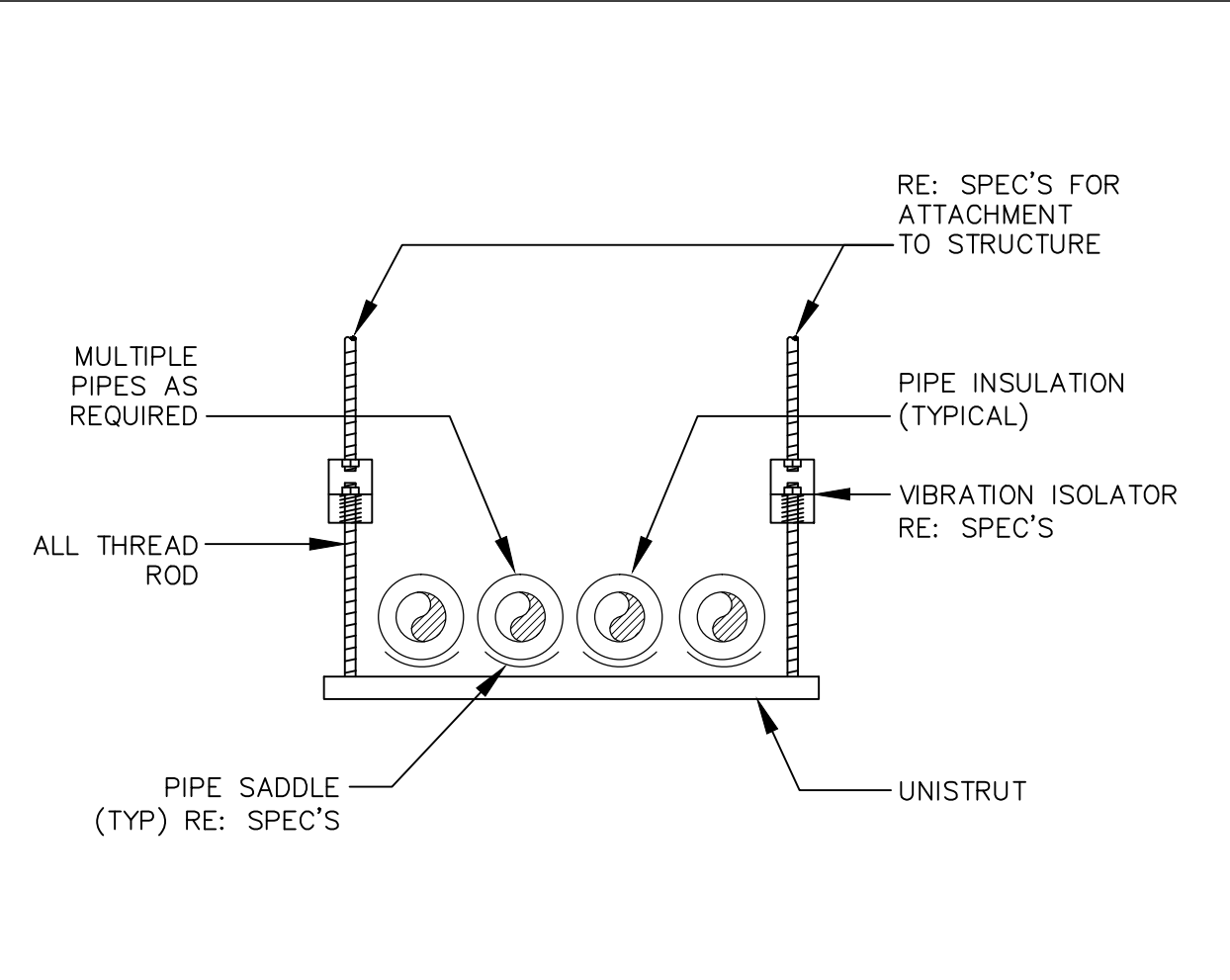
5 TYPICAL PIPE SLEEVE
NOT TO SCALE



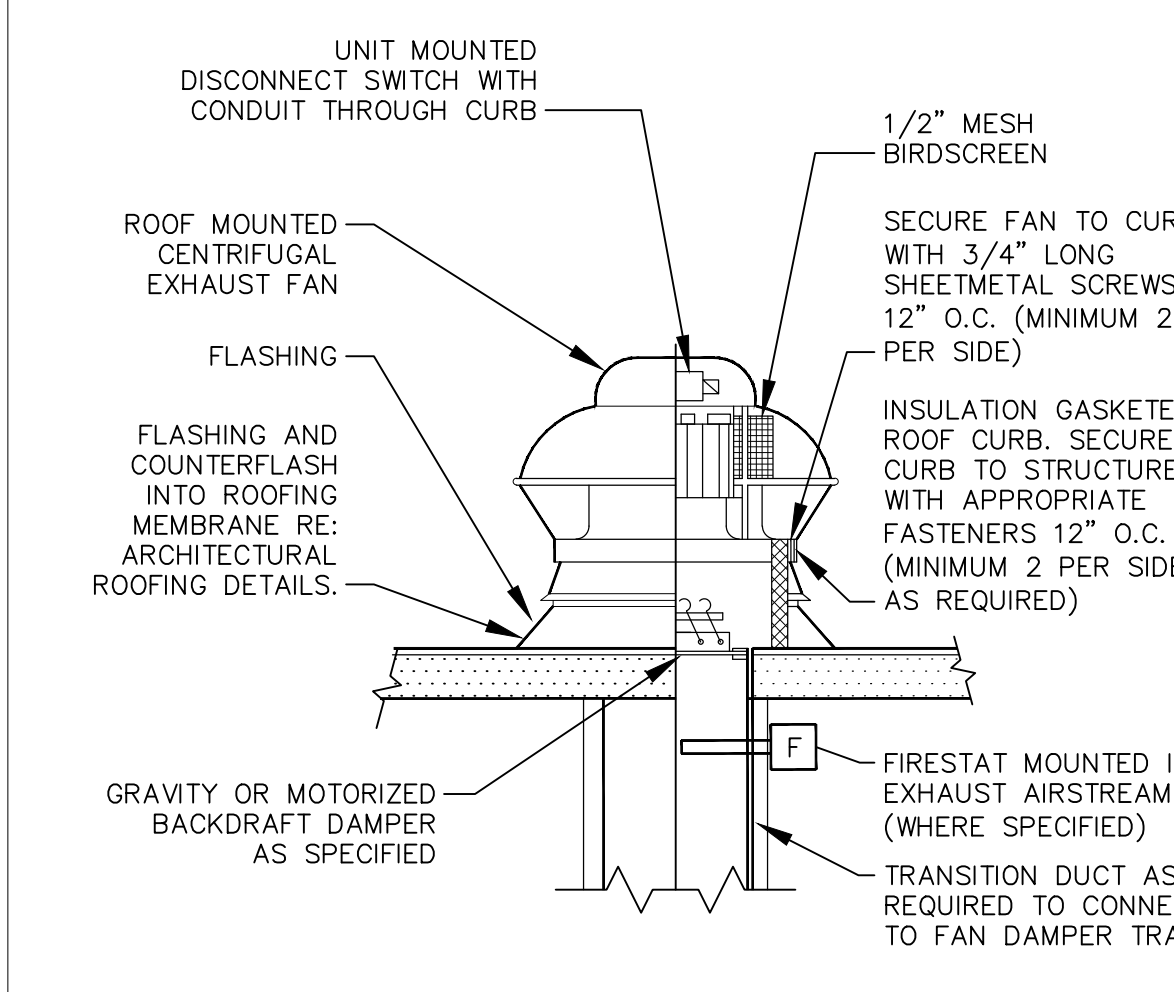
6 PIPE PENETRATION
NOT TO SCALE



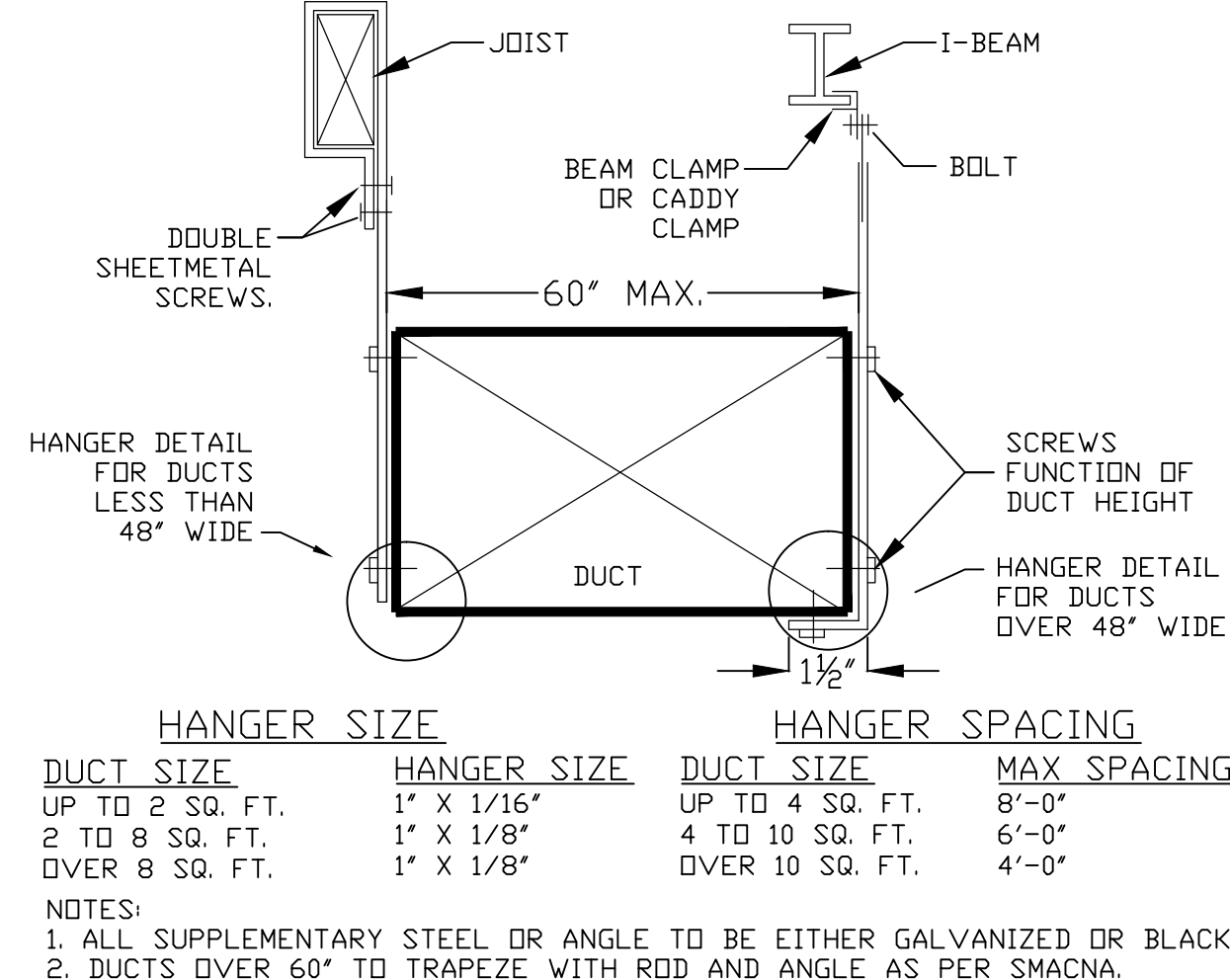
11 BRANCH DUCT CONNECTIONS
NOT TO SCALE



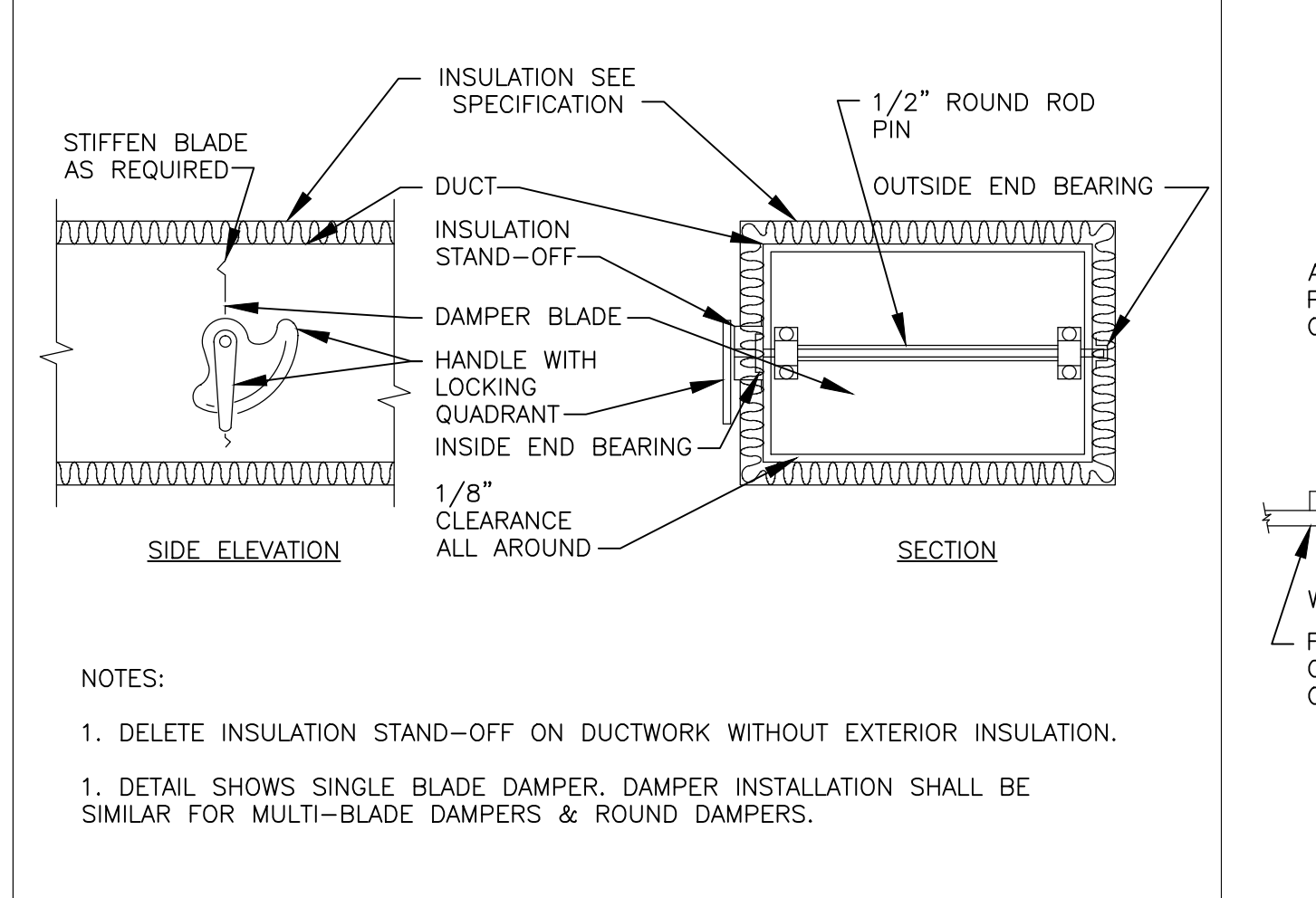
4 TYPICAL MULTIPLE PIPE HANGER
NOT TO SCALE



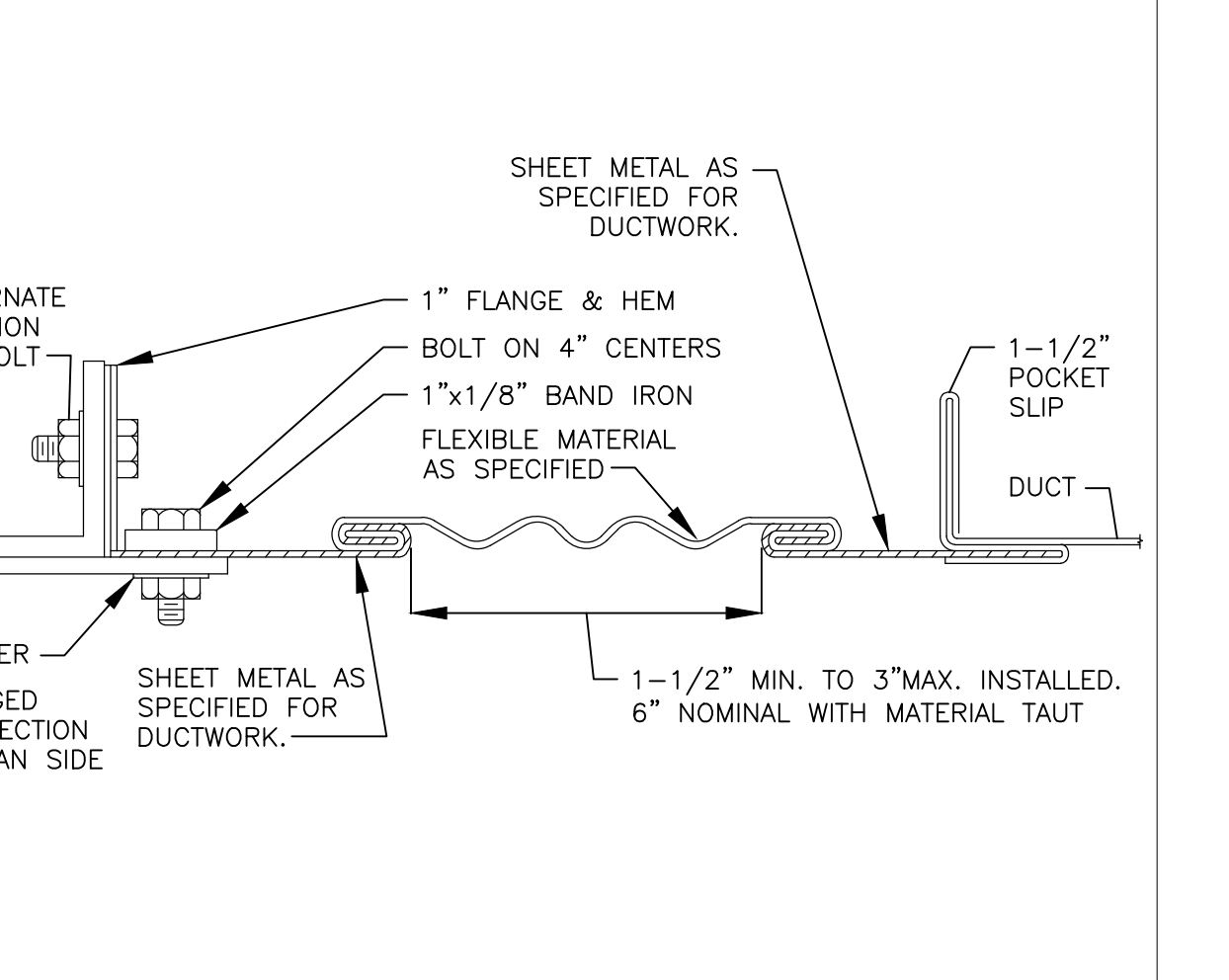
1 TYPICAL ROOF EXHAUST FAN
NOT TO SCALE



10 TYPICAL DUCT HANGING
NOT TO SCALE



15 VOLUME DAMPER
NOT TO SCALE



18 FLEXIBLE DUCT CONNECTIONS
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MECHANICAL DETAILS

PROJECT #: 21-08

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M-6

2020 MECHANICAL CODE AND BUILDING CODE OF NEW YORK STATE:

1. Heating, ventilating and air-conditioning systems of all structures shall be designed and installed for efficient utilization of energy in accordance with the International Energy Conservation Code of New York State.

2. The approval and installation of fuel gas distribution piping and equipment, fuel gas-fired appliance venting systems shall be in accordance with the International Fuel Gas Code. As per Section 301.6 Fuel gas appliances and equipment.

3. All appliances regulated by this code shall be listed and labeled for the application in which they are installed and used, unless otherwise approved in accordance with section 105. As per section 301.7 of the 2020 International Mechanical Code of New York State. Exception: Listing and labeling of equipment and appliances used for refrigeration shall be in accordance with section 1101.2.

4. The building or structure shall not be weakened by the installation of mechanical systems. Where floors, walls, ceilings or any other portion of the building or structure are required to be altered or replaced in the process of installing or repairing any system, the building or structure shall be left in a safe structural condition in accordance with the 2020 International Building Code of New York State.

5. Penetrations of floor/ceiling assemblies and assemblies required to have a fire-resistance rating shall be protected in accordance with Chapter 7 of the 2020 International Building Code of New York State.

6. Where sleeves are used, they shall be securely fastened to the assembly penetrated. The space between the item contained in the sleeve and the sleeve itself and any space between the sleeve and the assembly penetrated shall be protected in accordance with this section. Insulation and coverings on or in the penetrating item shall not penetrate the assembly unless the specific material used has been tested as part of the assembly in accordance with this section. As per Section 714.3 Installation details of the 2020 International Building Code of New York State.

7. Penetrations into or through fire walls, fire barriers, smoke barrier walls, and fire partitions shall comply with Sections 714.4.1–714.4.3 of the International Building Code (IBC). Penetrations in smoke barrier walls shall also comply with Section 714.5.4 of the 2020 IBCNYS.

8. Through penetrations of fire-resistance-rated walls shall comply with Section 714.4.1.1 or 714.4.1.2 of the 2020 IBCNYS.
Exceptions: Where the penetrating items are steel, ferrous or copper pipes, tubes or conduits, the annular space between the penetrating item and the fire-resistance-rated wall shall be permitted to be protected by either of the following measures:
1. In concrete or masonry walls where the penetrating item is a maximum 6-inch (152 mm) nominal diameter and the opening is a maximum 144 square inches (0.0929 m2), concrete, grout or mortar shall be permitted where installed the full thickness of the wall or the thickness required to maintain the fire-resistance rating.
2. The material used to fill the annular space shall prevent the passage of flame and hot gases sufficient to ignite cotton waste where subjected to ASTM E 119 or UL 263 time-temperature fire conditions under a minimum positive pressure differential of 0.01 inch (2.49 Pa) of water at the location of the penetration for the time period equivalent to the fire-resistance rating of the construction penetrated. As per Section 714.4.1 Through penetrations of the 2020 IBCNYS.

9. Through penetrations shall be protected using systems installed as tested in the approved fire-resistance-rated assembly. As per Section 714.4.1.1 Fire-resistance-rated assemblies of the 2020 IBCNYS.

10. Through penetrations shall be protected by an approved penetration firestop system installed as tested in accordance with ASTM E814 or UL 1479, with a minimum positive pressure differential of 0.01 inch (2.49 Pa) of water and shall have an F rating of not less than the required fire-resistance rating of the wall penetrated. As per Section 714.4.1.2 Through-penetration firestop system of the 2020 IBCNYS.

11. Penetrations of fire-resistance-rated walls by ducts that are not protected with dampers shall comply with this Sections 714.3–714.4.3 of the IBC. Penetrations of horizontal assemblies not protected with a shaft and not required to be protected with fire dampers by other sections of this code, shall comply with Sections 714.5–714.6.2 of the 2020 IBCNYS. Ducts and air transfer openings that are protected with dampers shall comply with Section 717. As per Section 714.1.1 Ducts and air transfer openings of the 2020 IBCNYS.

12. Noncombustible penetrating items shall not connect combustible items beyond the point of firestopping unless it can be demonstrated that the fire-resistance integrity of the wall is maintained. As per Section 714.4.3 Dissimilar materials of the 2020 IBCNYS.

13. Penetrations of a fire-resistance-rated floor, floor/ceiling assembly or the ceiling membrane of a roof/ceiling assembly not required to be enclosed in a shaft by Section 712.1 shall be protected in accordance with Sections 714.5.1 through 714.5.4. of the 2020 IBCNYS.

14. Through penetrations of fire-resistance-rated horizontal assemblies shall comply with Section 714.5.1.1 or 714.5.1.2 of the 2020 IBCNYS.
Exceptions:
1. Penetrations by steel, ferrous or copper conduits, pipes, tubes or vents or concrete or masonry items through a single fire-resistance-rated floor assembly where the annular space is protected with materials that prevent the passage of flame and hot gases sufficient to ignite cotton waste when subjected to ASTM E119 or UL 263 time-temperature fire conditions under a minimum positive pressure differential of 0.01 inch (2.49 Pa) of water at the location of the penetration for the time period equivalent to the fire-resistance rating of the construction penetrated. Penetrating items with a maximum 6-inch (152 mm) nominal diameter shall not be limited to the penetration of a single fire-resistance-rated floor assembly, provided that the aggregate area of the openings through the assembly does not exceed 144 square inches (92 900 mm2) in any 100 square feet (9.3 m2) of floor area.
2. Penetrations in a single concrete floor by steel, ferrous or copper conduits, pipes, tubes or vents with a maximum 6-inch (152 mm) nominal diameter, provided that the concrete, grout or mortar is installed the full thickness of the floor or the thickness required to maintain the fire-resistance rating. The penetrating items shall not be limited to the penetration of a single concrete floor, provided that the area of the opening through each floor does not exceed 144 square inches (92 900 mm2).
3. Penetrations by listed electrical boxes of any material, provided that such boxes have been tested for use in fire-resistance-rated assemblies and installed in accordance with the instructions included in the listing.
As per Section 714.5.1 Through penetration of the 2020 IBCNYS.

15. Through penetrations shall be protected using systems installed as tested in the approved fire-resistance-rated assembly. As per Section 714.5.1.1 of the 2020 IBCNYS.

16. Through penetrations shall be protected by an approved through-penetration firestop system installed and tested in accordance with ASTM E814 or UL 1479, with a minimum positive pressure differential of 0.01 inch of water (2.49 Pa). The system shall have an F rating/T rating of not less than 1 hour but not less than the required rating of the floor penetrated.
Exceptions:
1. Floor penetrations contained and located within the cavity of a wall above the floor or below the floor do not require a T rating..
2. Floor penetrations by floor drains, tub drains or shower drains contained and located within the concealed space of a horizontal assembly do not require a T rating.
3. Floor penetrations of maximum 4-inch (102 mm) nominal diameter metal conduit or tubing penetrating directly into metal-enclosed electrical power switchgear do not require a T rating.
As per Section 714.5.1.2 Through-penetration firestop system of the 2020 IBCNYS.

17. Penetrations of horizontal assemblies without a required fire-resistance rating shall meet the requirements of Section 707 of the 2020 IBCNYS or shall comply with Sections 302.2.3.2.1 through 302.2.3.2.2. As per Section 302.2.3.2 Nonfire-resistance-rated assemblies.

2020 MECHANICAL CODE AND BUILDING CODE OF NEW YORK STATE:

18. Noncombustible penetrating items that connect not more than five stories are permitted, provided that the annular space is filled to resist the free passage of flame and the products of combustion with an approved noncombustible material or with a fill, void or cavity material that is tested and classified for use in through-penetration firestop systems. As per Section 714.6.1 Noncombustible penetrating items of the 2020 IBCNYS.

19. Penetrating items that connect not more than two stories are permitted, provided that the annular space is filled with an approved material to resist the free passage of flame and the products of combustion. As per Section 714.6.2 Penetrating items of the 2020 IBCNYS.

20. Hangers and anchors shall be attached to the building construction in an approved manner. As per Section 305.3 Structural attachment.

21. Piping shall be supported at distances not exceeding the spacing specified in Table 305.4, or in accordance with ANSI/MSS SP–69. As per Section 305.4 Interval of support.

22. Truss members and components shall not be cut, drilled, notched, spliced or otherwise altered in any way without written concurrence and approval of a registered design professional. Alterations resulting in the addition of loads to any member, such as HVAC equipment and water heaters, shall not be permitted without verification that the truss is capable of supporting such additional loading. As per Section 302.4 of the 2020 IMCNYS Alteration to trusses.

23. The cutting, notching and boring of steel framing members shall comply with Sections 302.5.1 through 302.5.3. As per Section 302.5 of the 2020 IMCNYS Cutting, notching and boring in steel framing.

24. The cutting, notching and boring of holes in structural steel framing members shall be as prescribed by the registered design professional. As per Section 302.5.1 of the 2020 IMCNYS Cutting, notching and boring holes in structural steel framing.

25. Flanges and lips of load-bearing cold-formed steel framing members shall not be cut or notched. Holes in webs of load-bearing cold-formed steel framing members shall be permitted along the centerline of the web of the framing member and shall not exceed the dimensional limitations, penetration spacing or minimum hole edge distance as prescribed by the registered design professional. Cutting, notching and boring holes in steel floor/roof decking shall be as prescribed by the registered design professional. As per Section 302.5.2 of the 2020 IMCNYS Cutting, notching and boring holes in cold-formed steel framing.

26. Flanges and lips of nonstructural cold-formed steel wall studs shall not be cut or notched. Holes in webs of nonstructural cold-formed steel wall studs shall be permitted along the centerline of the web of the framing member, shall not exceed 1–1/2 inches (38 mm) in width or 4 inches (102 mm) in length, and shall not be spaced less than 24 inches (610 mm) center to center from another hole or less than 10 inches (254 mm) from the bearing end. As per Section 302.5.3 of the 2020 IMCNYS Cutting, notching and boring holes in non-structural cold-formed steel wall framing.

TABLE 305.4 – PIPING SUPPORT SPACING (a)		
PIPING MATERIAL	MAXIMUM HORIZONTAL SPACING (FEET)	MAXIMUM VERTICAL SPACING (FEET)
ABS PIPE	4	10 (c)
ALUMINUM PIPE AND TUBING	10	15
CAST-IRON PIPE (b)	5	15
COPPER OR COPPER-ALLOY PIPE	12	10
COPPER OR COPPER-ALLOY TUBING	8	10
CPVC PIPE OR TUBING, 1 INCH AND SMALLER	3	10 (c)
CPVC PIPE OR TUBING, 1½ INCHES AND LARGER	4	10 (c)
LEAD PIPE	CONTINUOUS	4
PB PIPE OR TUBING	2½ (32 INCHES)	4
PE-RT 1 INCH AND SMALLER	2½ (32 INCHES)	10 (c)
PE-RT 1½ INCHES AND LARGER	4	10 (c)
PEX TUBING 1 INCH AND SMALLER	2½ (32 INCHES)	10 (c)
PEX TUBING 1½ INCHES AND LARGER	4	10 (c)
POLYPROPYLENE (PP) PIPE OR TUBING, 1 INCH AND SMALLER	2½ (32 INCHES)	10 (c)
POLYPROPYLENE (PP) PIPE OR TUBING, 1½ INCHES AND LARGER	4	10 (c)
PVC PIPE	4	10 (c)
STEEL TUBING	8	10
STEEL PIPE	12	15

a. See Section 301.18.
b. The maximum horizontal spacing of cast-iron pipe hangers shall be increased to 10 feet where 10-foot lengths of pipe are installed.
c. Mid-story guide.

29. Liquid combustion by-products of condensing appliances shall be collected and discharged to an approved plumbing fixture or disposal area in accordance with the manufacturer's installation instructions. Condensate piping shall be of approved corrosion-resistant material and shall not be smaller than the drain connection on the appliance. Such piping shall maintain a minimum horizontal slope in the direction of discharge of not less than one-eighth unit vertical in 12 units horizontal (1-percent slope). As per Section 307.1 of the 2020 IMCNYS Fuel-burning appliances.

30. Heating and cooling system design loads for the purpose of sizing systems, appliances and equipment shall be determined in accordance with the procedures described in the ASHRAE/ACCA Standard 183. Alternatively, design loads shall be determined by an approved equivalent computation procedure, using the design parameters specified in Chapter 3 [CE] of the Energy Conservation Construction Code of New York State. As per Section 312.1 of the 2020 IMCNYS Load Calculations.

31. Ventilation systems shall be designed to have the capacity to supply the minimum outdoor airflow rate determined in accordance with Table 403.3.1.1 based on the occupancy of the space and the occupant load or other parameter as stated therein. The occupant load utilized for design of the ventilation system shall not be less than the number determined from the estimated maximum occupant load rate indicated in Table 403.3.1.1. Ventilation rates for occupancies not represented in Table 403.3.1.1 shall be determined by an approved engineering analysis. The ventilation system shall be designed to supply the required rate of ventilation air continuously during the period the building is occupied, except as otherwise stated in other provisions of the code. Exception: The occupant load is not required to be determined based on the estimated maximum occupant load rate indicated in Table 403.3.1.1 where approved statistical data document the accuracy of an alternate anticipated occupant density. As per Section 403.3.1.1 of the 2020 IMCNYS Ventilation rate.

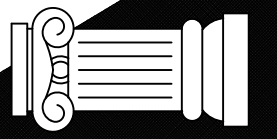
2020 MECHANICAL CODE AND BUILDING CODE OF NEW YORK STATE:

32. Ducts and air transfer openings that penetrate fire barriers shall be protected with listed fire dampers installed in accordance with their listing. Ducts and air transfer openings shall not penetrate enclosures for interior exit stairways and ramps and exit passageways except as permitted by Sections 1023.5 and 1024.6, respectively, of the 2020 International Building Code of NYS. Exception: Fire dampers are not required at penetrations of fire barriers where any of the following apply.
1. Penetrations are tested in accordance with ASTM E 119 or UL 263 as part of the fire-resistancerated assembly.
2. Ducts are used as part of an approved smoke control system in accordance with Section 513 and where the fire damper would interfere with the operation of the smoke control system.
3. Such walls are penetrated by ducted HVAC systems, have a requiredfire-resistance rating of 1 hour or less, are in areas of other then Group H and are in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.1.1 or 903.1.2 of the 2020 International Building Code of NYS. For the purposes of this exception, a ducted HVAC system shall be a duct system for the structure's HVAC system. Such a duct system shall be constructed of sheet steel not less than 26 gage [0.017 inch (0.55mm)] thickness and shall be continuous from the air-handling appliance or equipment to the air outlet and inlet terminals.

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