

1 MECHANICAL PLAN
M101 SCALE: 1/8" = 1'-0"

MECHANICAL NOTES

- THE DRAWINGS SHOW THE GENERAL ARRANGEMENT AND LOCATIONS OF MECHANICAL WORK. THE CONTRACTOR SHALL COORDINATE THE MECHANICAL INSTALLATION WITH THE STRUCTURE AND ALL OTHER TRADES.
- REFER TO THE ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF CEILING MOUNTED DEVICES.
- DUCTWORK SHOWN ON THE PLANS IS SIZED AND ROUTED BASED ON INFORMATION AVAILABLE DURING THE DESIGN PHASE FOR CEILING HEIGHTS, STRUCTURAL MEMBERS, ETC. ALL DUCT SIZES AND ROUTINGS MUST BE CONFIRMED IN THE FIELD BY THE CONTRACTOR PRIOR TO FABRICATION AND INSTALLATION. WHERE CONFLICTS ARISE, REFER TO THE ENGINEER. WHERE APPLICABLE, EQUIVALENT SIZED ROUND DUCT MAY BE USED IN PLACE OF RECTANGULAR DUCT.
- RHP-5 DUCTS SHALL BE ROUTED BELOW THE STORAGE MEZZANINE FLOOR.
- THE EXPOSED ROUND DUCTWORK FROM VU-1 SHOULD BE DOUBLE WALL SPIRAL SEAM AND ROUTED AS HIGH AS POSSIBLE BELOW ROOF. DUCTWORK FROM RHP-5 SHOULD BE STANDARD METAL WITH TYPE 'A' WRAP AND FLEXIBLE DUCT LEADING TO THE DIFFUSERS.
- INSTALL MANUAL BALANCING DAMPERS IN ALL BRANCH DUCTS AS SHOWN IN THE DIFFUSER INSTALLATION DETAIL.
- ROUTE FULL SIZE PVC DRAIN LINES FROM EACH ROOFTOP UNIT TO THE NEAREST ROOF OUTLET. INSTALL A 3" DEEP TRAP AT EACH UNIT. PAINT PVC PIPES WITH WEATHERPROOF COATING TO PROTECT FROM UV RADIATION.

MECHANICAL SPECIFICATIONS

- PERFORM ALL WORK IN ACCORDANCE WITH CURRENT STATE AND LOCAL CODES. SUBMIT SIX COPIES OF EQUIPMENT DATA FOR REVIEW PRIOR TO PURCHASE.
- ROOFTOP HEAT PUMP UNITS SHALL BE THE PACKAGED DOWNFLOW TYPE WITH MATCHING ROOF CURB AND DIGITAL PROGRAMMABLE THERMOSTAT. SET FAN SWITCHES TO 'ON'. PROVIDE HFC REFRIGERANT AND ADDITIONAL CORROSION PROTECTION COATING FOR CABINET AND CONDENSER COILS AND FINS. PROVIDE EXTENDED 4-YEAR COMPRESSOR WARRANTY. UNITS SHALL BE CARRIER, TRANE OR YORK.
- ROOFTOP VENTILATION UNIT SHALL BE A PACKAGED DOWNFLOW TYPE WITH MATCHING ROOF CURB AND INTERNAL CONTROLS. THE VENTILATION UNIT SHALL BE INTERLOCKED TO RUN WHENEVER THE ROOFTOP HEAT PUMP UNITS RUN. PROVIDE DX COOLING, TOTAL ENERGY HEAT WHEEL AND HOT GAS REHEAT TO PROVIDE CONSTANT EXHAUST AND CONSTANT VENTILATION AIR AT NEUTRAL CONDITIONS. COOLING COIL DISCHARGE AIR TEMPERATURE SHALL BE SET AT 55 DEGREES F. PROVIDE HFC REFRIGERANT AND ADDITIONAL CORROSION PROTECTION COATING FOR CABINET AND CONDENSER COILS AND FINS. PROVIDE EXTENDED 4-YEAR COMPRESSOR WARRANTY. VENTILATION UNIT SHALL BE AAGN, ADDISON OR DESERT-AIRE.
- SUPPLY AND RETURN AIR DUCTS SHALL BE GALVANIZED STEEL INSULATED WITH 2" THICK FIBERGLASS DUCT WRAP WITH VAPOR BARRIER. PROVIDE FLEXIBLE CONNECTIONS AT RHP UNITS. ALL DUCTS SHALL BE FABRICATED AND INSTALLED PER SMACNA STANDARDS FOR 2" STATIC PRESSURE RATING.
- CEILING DIFFUSERS AND RETURN AIR GRILLES SHALL BE ALUMINUM WITH WHITE FINISH BY METALAIR, KRUEGER, TYTUS OR PRICE. CEILING DIFFUSERS SHALL BE SQUARE LOUVERED TYPE AND SHALL HAVE OPPOSED BLADE DAMPERS. BALANCE ALL DIFFUSERS WITH A FLOW HOOD TO PROVIDE THE INDICATED AIRFLOWS. SUBMIT A TYPED BALANCING REPORT.
- EXHAUST FANS SHALL BE THE CEILING MOUNTED CENTRIFUGAL TYPE WITH SPEED CONTROLLER AND MATCHING WALL CAP. FANS SHALL BE GREENHECK, PENN. ACME OR COOK.

MECHANICAL LEGEND	
	SUPPLY AIR DUCT
	RETURN AIR DUCT OR EXHAUST DUCT
	DUCT TRANSITION
	X=DIFFUSER TYPE / Y=THROW
	Z=AIRFLOW, CFM
	MD MANUAL DAMPER
	FD FIRE DAMPER
	TV TURNING VANES
	FDC FLEXIBLE DUCT CONNECTION
	TS THERMOSTAT/TEMPERATURE SENSOR
	DD DUCT SMOKE DETECTOR
	RHP ROOFTOP HEAT PUMP
	VU VENTILATION UNIT
	EF EXHAUST FAN
	SF SUPPLY FAN
	DA DIAMETER
	OA OUTSIDE AIR
	W/ WITH
	AFF ABOVE FINISH FLOOR
	D HVAC DRAIN PIPING

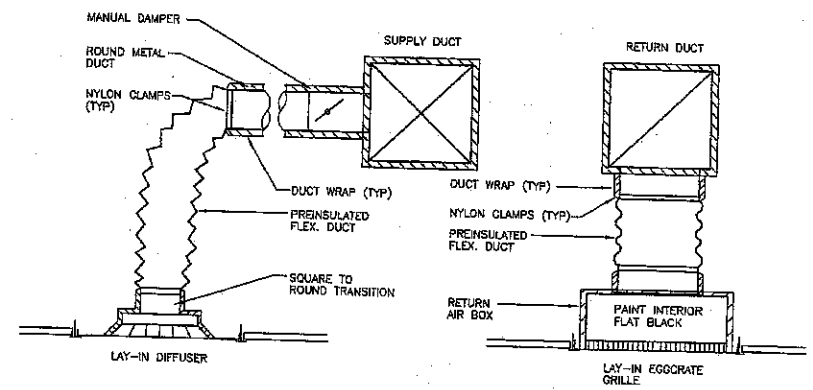
AIR DISTRIBUTION SCHEDULE	
DESIGNATION	DESCRIPTION
A	6"x6" NECK CEILING DIFFUSER, T-BAR, 2'x2' LAY-IN PANEL
B	9"x9" NECK CEILING DIFFUSER, T-BAR, 2'x2' LAY-IN PANEL
C	12"x12" NECK CEILING DIFFUSER, T-BAR, 2'x2' LAY-IN PANEL
D	1'x2' EGGRATE CEILING RETURN AIR GRILLE, T-BAR
E	12"x4" SIDEWALL SUPPLY REGISTER

ROOFTOP HEAT PUMP SCHEDULE									
ITEM	AIR CAPACITY CFM		EXT. STATIC IN. WG	COOLING CAPACITY @ 95°F AMBIENT				ELECTRIC HEATER KW	REMARKS
	TOTAL	O.A.		TOTAL MBH	SENS. MBH	ENTERING AIR			
						DB °F	WB °F		
RHP-1	1800	--	0.25	46.0	32.0	80	67	7.5 kW 208V/3φ	HFC REFRIGERANT DOWNFLOW
RHP-2	1800	--	0.25	46.0	32.0	80	67	7.5 kW 208V/3φ	HFC REFRIGERANT DOWNFLOW
RHP-3	1800	--	0.25	46.0	32.0	80	67	7.5 kW 208V/3φ	HFC REFRIGERANT DOWNFLOW
RHP-4	1800	--	0.25	46.0	32.0	80	67	7.5 kW 208V/3φ	HFC REFRIGERANT DOWNFLOW
RHP-5	1800	200	0.50	46.0	32.0	80	67	7.5 kW 208V/3φ	HFC REFRIGERANT DOWNFLOW

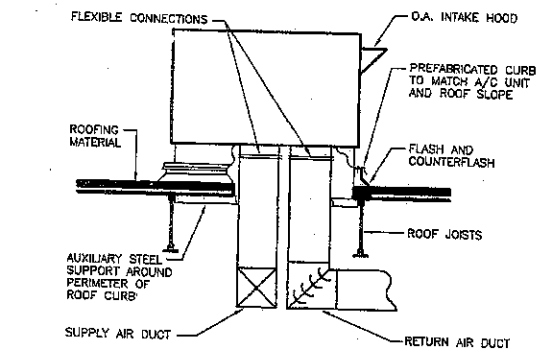
- REFER TO THE ELECTRICAL DRAWINGS FOR VOLTAGE REQUIREMENTS.
- PROVIDE CONCENTRIC SUPPLY/RETURN DIFFUSERS FOR RHP-1 THRU RHP-4.

FAN SCHEDULE						
ITEM	AIRFLOW CFM	EXT. STATIC IN. WG	TYPE	MAXIMUM SONE RATING	MAX. MOTOR W	REMARKS
EF-1 THRU EF-4	75	0.125	CEILING MOUNTED CENTRIFUGAL, DIRECT DRIVE	3.0	60	INTERLOCK WITH LIGHT SWITCH

- REFER TO THE ELECTRICAL DRAWINGS FOR VOLTAGE REQUIREMENTS.



3 TYPICAL DIFFUSER/GRILLE INSTALLATION DETAIL
M101 NOT TO SCALE



2 ROOFTOP HEAT PUMP INSTALLATION DETAIL
M101 NOT TO SCALE

HEAT RECOVERY VENTILATION UNIT SCHEDULE																						
ITEM	AIR CAPACITY CFM		EXTERNAL STATIC IN. WG		COOLING COIL CAPACITY @ 95°F				HEATWHEEL COOLING DESIGN CONDITIONS						ELECTRIC HEATER KW	REMARKS						
	SUPPLY	RETURN	SUPPLY	RETURN	TOTAL MBH	SENS. MBH	ENTERING AIR		OUTSIDE AIR		RETURN AIR		LEAVING AIR									
								DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F			WB °F					
VU-1	1000	800	0.40	0.10	51.9	28.2	80.5	70.7	88.0	79.0	75.0	62.0	80.5	70.7	29.0	25.0	75.0	62.0	35.7	48.4	5 kW @ 208V/3φ	HFC REFRIGERANT DOWNFLOW

- REFER TO THE ELECTRICAL DRAWINGS FOR VOLTAGE REQUIREMENTS.

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