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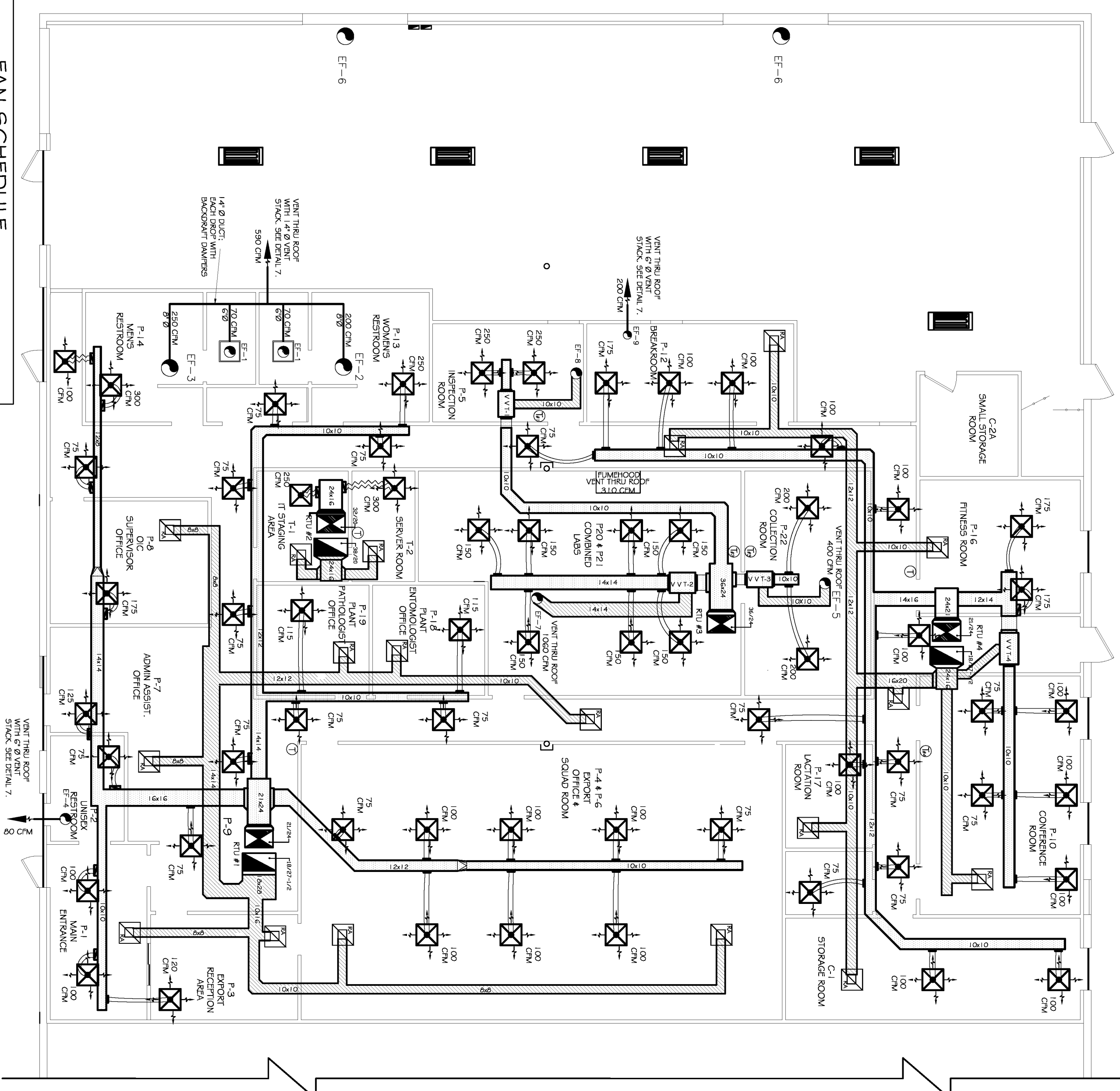
ARCHITECTURE  
 ENGINEERING  
 STUDIES  
 PLANNING  
 INVESTIGATION  
 EXPERT WITNESSES

US DEPARTMENT OF AGRICULTURE

APHIS FACILITY  
 924 KENNER AVE.  
 KENNER  
 LOUISIANA  
 70062

MECHANICAL PLAN

REV: #1-2/24/2012  
 SCALE: AS NOTED  
 JOB#: \_\_\_\_\_  
 DATE: 1/15/2012  
 SHEET M-1



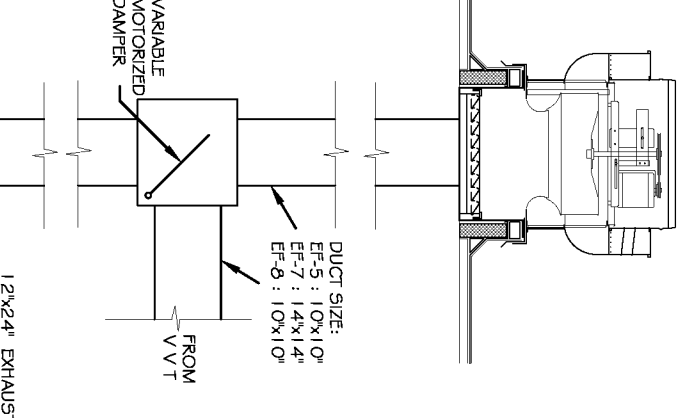
FAN SCHEDULE

MARK	AREA SERVED	CMV	RMV	CONTROLLED BY	BASES OF DESIGN	REMARKS
EF-1	SHOWERS	70	--	MOTION SENSOR	BROWN 657	① ③
EF-2	WOMEN'S RESTROOM	200	--	MOTION SENSOR	BROWN/2800	① ③
EF-3	MEN'S RESTROOM	250	--	MOTION SENSOR	BROWN 1260	① ③
EF-4	UNUS'D COLLECTION ROOM (125)	80	--	MOTION SENSOR	BROWN (1080)	① ③
EF-5	COLLECTION ROOM (125)	400	1050	V V T	ACME RM 110	② ③
EF-6	WAREHOUSE	6000	6000	THERMOSTAT	ACME RM244	② ③
EF-7	F-20 LAB	1060	1050	V V T	ACME RM 135	② ③ ④
EF-8	INSPECTION RM	400	1050	V V T	ACME RM 110	② ③
EF-9	BRKRM RM	200	--	SWITCH	BROWN 06-2	①

MECHANICAL PLAN

SCALE: 1/8" = 1'-0"

FUMEHOOD NOTES:  
 1. FUMEHOOD IN LAB SHALL BE A LABCONCO INL #303000. IT SHALL BE VENTED DIRECTLY OUTSIDE USING 8" THERMOPLASTIC ROUND DUCT. THE USE OF A ZERO PRESSURE WEATHER CAP SHALL BE USED.



V.V.T EXHAUST FAN DETAIL

ROOFTOP AIR CONDITIONING UNIT SCHEDULE

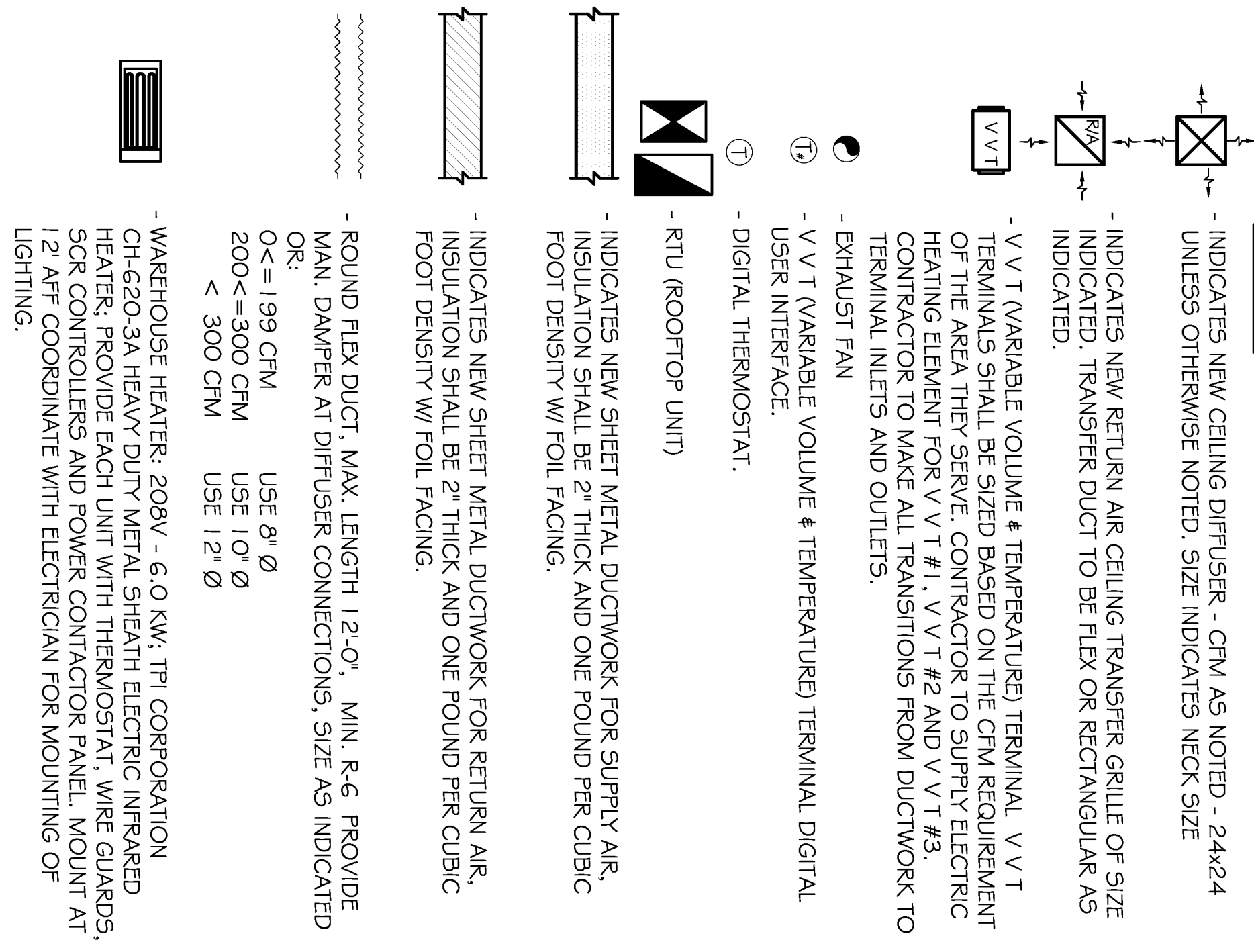
MARK	AREA SERVED	TOTAL SUPPLY AIR	MIN. IN	100% MOTOR RUN IN	COOLING DATA	HEATING DATA	UNIT ELECTRICAL DATA	BASES OF DESIGN	UNIT WEIGHT	REMARKS
MARK	SERVED	CMV	IN	MIN	TONS	TR	WATT	DESIGN	WGT	
RTU-1	FRONT	3000	0.5	1	5.0	2' MERV 13	67	10.5	ELC	1.97 LBS.
RTU-2	SEVERALS	630	0.5	1	2.0	2' MERV 13	26.0	10.6	ELC	353 LBS.
RTU-3	LAB	1950	1.950	0.75	2	1.0	2' MERV 13	92.12	11.3	ELC
RTU-4	REAR	2150	200	0.5	1	3.0	2' MERV 13	75	10.4	ELC

- PROVIDE FAN UNIT(S), BACKDRAFT DAMPERS AND BROSCREENS
- PROVIDE FAN UNIT(S), THERMOSTAT, EXHAUST SHUTTER THAT HAS GRAVITY OPERATED PANEL, BRQ SCREEN, RAIN GUARD, EXHAUST SIDEWALL & MOUNT AT 16 FT AFF INSIDE WAREHOUSE.
- PROVIDE ROOF TOP EXHAUST FAN, ROOF CURB, BACKDRAFT DAMPER, VARIABLE MOTORIZED DAMPER AND 12"x24" EXHAUST GRILLE AT CEILING WITH INSCT FILTER.
- INTERLOCK EF-7 WITH FUME HOOD SO THAT ONLY ONE IS OPERATING AT A TIME.
- ALL EXHAUST FAN PENETRATIONS SHALL BE A MINIMUM OF 10 FT FROM ANY FRESH AIR INTAKES.
- ALL COILING CHARACTERISTICS ARE BASED ON ALL AMBIENT OUTDOOR TEMPERATURES OF 1.5°F.
- CONTRACTOR SHALL VERIFY THAT ALL EXHAUST FANS ARE OPERATING AT THE CORRECT SPEED AND THAT THE FAN CURB, BACKDRAFT DAMPER, VARIABLE MOTORIZED DAMPER AND 12"x24" EXHAUST GRILLE AT CEILING WITH INSCT FILTER.
- PROVIDE LOW AMBIENT COOLING CAPABILITY DOWN TO 20°F.
- PROVIDE ALL COMPRESSORS WITH 5 YEAR WARRANTIES.
- PROVIDE CONDENSATE PANS WITH 1/2" SLOPE TO DRAIN OVER. CONTRACTOR SHALL OPERATE ALL UNITS USING FRESH AIR OUTFLOW AT A SPEED OF 24 HPS.
- PROVIDE CONDENSATE PANS WITH 1/2" SLOPE TO DRAIN OVER. CONTRACTOR SHALL OPERATE ALL UNITS USING FRESH AIR OUTFLOW AT A SPEED OF 24 HPS.
- MOTORIZED OR GRAVITY DAMPERS TO SHUT OFF FRESH AIR WHEN SYSTEM IS NOT RUNNING AND WATCHED ROOF CURBS REMOVED AND INSTALLED BY MECHANICAL CONTRACTOR.
- CONTRACTOR TO VERIFY STRUCTURE AND COORDINATE RTUS WITH LANDLORD.
- INSTALL A RAIN DUCT RE-FRESH HEATER AND STEAM HUMIDIFIER TO STEAM ROOM.

MECHANICAL NOTES:

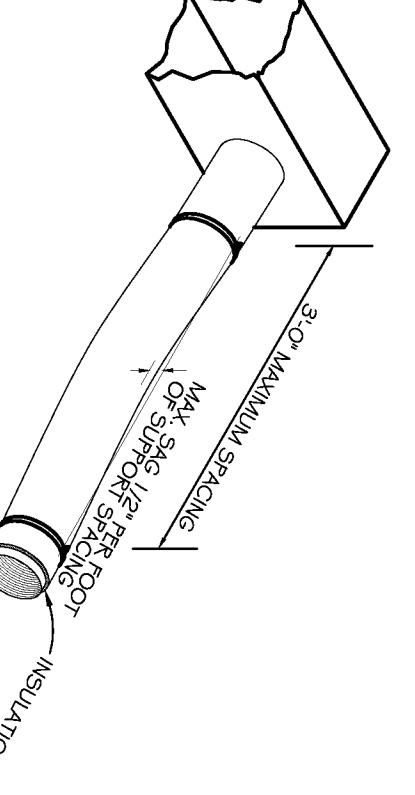
- ALL DUCTWORK SHALL BE CONSTRUCTED IN STRICT ACCORDANCE WITH SMACNA STANDARDS.
- ALL NEW SUPPLY AIR DUCTS, RETURN AIR DUCTS AND PLenums SHALL BE GALVANIZED STEEL, EXTERNALLY INSULATED WITH 2" THICK 1" PCF DENSITY INSULATION WITH FOIL FACING.
- ROUND FLEXIBLE DUCT TO BE UL-181, CLASS 1, AIR DUCT MATERIALS.
- IN ALL SYSTEMS 2000 CFM AND OVER, BUT LESS THAN 15,000 CFM, SMOKE DETECTORS SHALL BE INSTALLED. IN ACCORDANCE WITH NFPA 72E & NFPA 90A, IN THE RETURN DUCT UPSTREAM OF THE AIR HANDLING UNIT AND DOWNSTREAM OF ALL FILTERS TO AUTOMATICALLY STOP THE FAN. IN ADDITION TO SMOKE DETECTOR, PROVIDE FIRESTAT CONTROL WITH FIXED CUTOFF TEMP. OF 125°F IN THE SUPPLY AIR DUCT DOWNSTREAM OF THE AIR HANDLING UNIT.
- IF MORE THAN ONE SYSTEM IS SERVING A SHARED AREA AND THE TOTAL CFM OF THE COMBINED SYSTEMS SERVING THE SHARED AREA ARE GREATER THAN 2,000 CFM, THEN BOTH UNITS SHALL BE EQUIPPED WITH A SMOKE DETECTOR IN THE RETURN DUCT.
- PROVIDE U.L. RATED FIRE DAMPERS WHERE REQUIRED AT ALL DUCT PENETRATIONS OF FIRE-RATED ASSEMBLIES AND WHERE REQUIRED BY CODE, INCLUDING OUTSIDE AIR INTAKES.
- CONDENSATE DRAINS TO BE PVC PIPE RUN TO PLUMBERS P-TAP WITHIN FIVE FEET OF AIR HANDLING UNITS.
- ALL AIR HANDLING SYSTEMS TO BE BALANCED TO ASSURE PROPER AIR FLOWS PER PLANS.
- ALL THERMOSTATS TO BE AUTOMATIC CHANGEOVER WITH HEAT SWITCH.
- ALL EXHAUST FANS (INSIDE OFFICES OR RESTROOMS) SHALL HAVE A BACK DRAFT DAMPER.
- PROVIDE AND INSTALL WATER PROOF GRILLE VENT IN PROPER ROOF LOCATION FOR PLUMBING FIXTURE EXHAUST.
- ALL SUPPLY AIR VENTS SHALL BE EQUIPPED WITH AIR CONTROL DAMPERS.
- REFRIGERANT LINES SHALL BE SIZED BY UNIT MANUFACTURER AND INSTALLED ACCORDING TO MANUFACTURERS' INSTRUCTIONS.
- ALL ELECTRICAL, MECHANICAL, AND PLUMBING PENETRATING FIRE WALLS SHALL BE FIRE CALULKED. PENETRATIONS THROUGH RATED CONSTRUCTION SHALL BE SEALED WITH A MATERIAL CAPABLE OF PREVENTING THE PASSAGE OF FLAMES AND HOT GASES WHEN TESTED IN ACCORDANCE WITH ASTM-E8-14).
- ALL MECHANICAL SYMBOLS ARE DRAWN DIAGRAMMATICALLY. CONTRACTOR TO VERIFY WITH OWNER LOCATIONS OF VENTS, DAMPERS, REGISTERES, ETC.
- REFER TO STRUCTURAL DRAWINGS TO COORDINATE LOCATIONS) & MOUNTING OF MECHANICAL EQUIPMENT.
- FLEXIBLE DUCTWORK LENGTH NOT TO EXCEED 12'-0".
- REFER TO REFLECTED CEILING PLAN FOR FINAL GRILLE AND DIFFUSER LOCATIONS AND COORDINATE AS REQUIRED.
- FINAL LOCATION OF TEMPERATURE CONTROLS TO BE COORDINATED WITH OWNER AT JOB SITE.
- PROVIDE AND INSTALL SMOKE DETECTORS AS APPROVED BY LOCAL AHJ'S.
- FRESH AIR INTAKES ARE REQUIRED TO HAVE MOTORIZED OR GRAVITY DAMPERS TO SHUT OFF WHEN SYSTEM IS NOT RUNNING. ALL THERMOSTATS MUST BE PROGRAMABLE. SEE SECTIONS 502.4.4 OR 503.2.4.3 OF THE 2009 INTERNATIONAL ENERGY CODE.

LEGEND

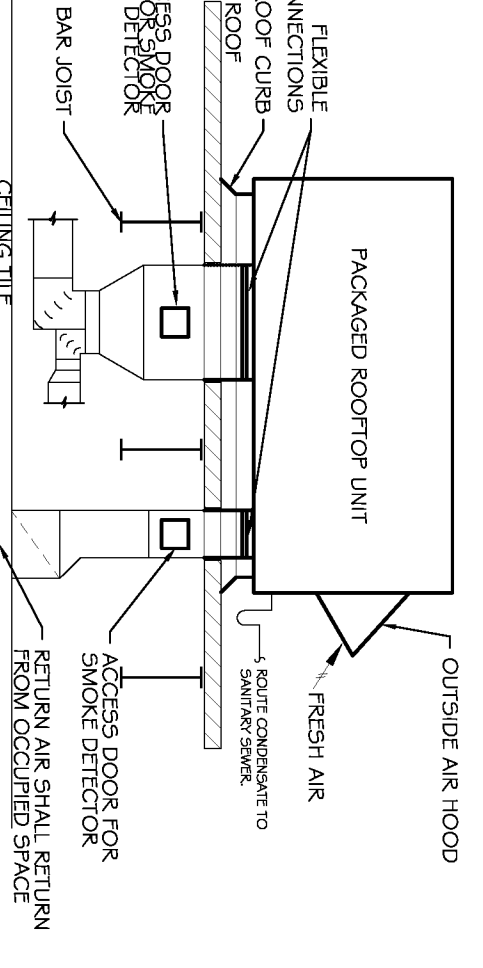


V V T SCHEDULE

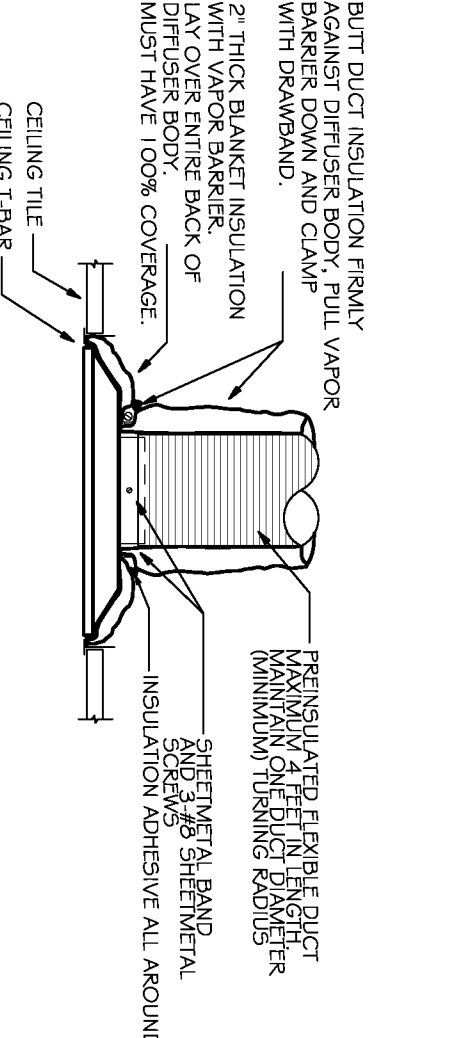
MARK	AREA SERVED	COLLECTED AIR	HEATER	HEAT FROM
VVT#1	F-5	200 LB	2 KW	500 CDM
VVT#2	F-20 F-21	200 LB	5 KW	1000 CDM
VVT#3	F-22	200 LB	2 KW	400 CDM
VVT#4	F-10	200 LB	NO HEAT	400 CDM



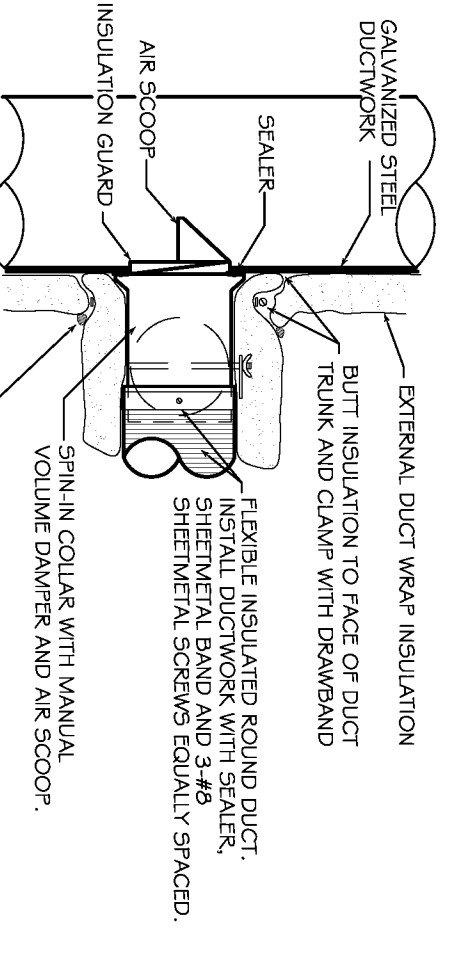
FLEX DUCT SUPPORT DETAIL



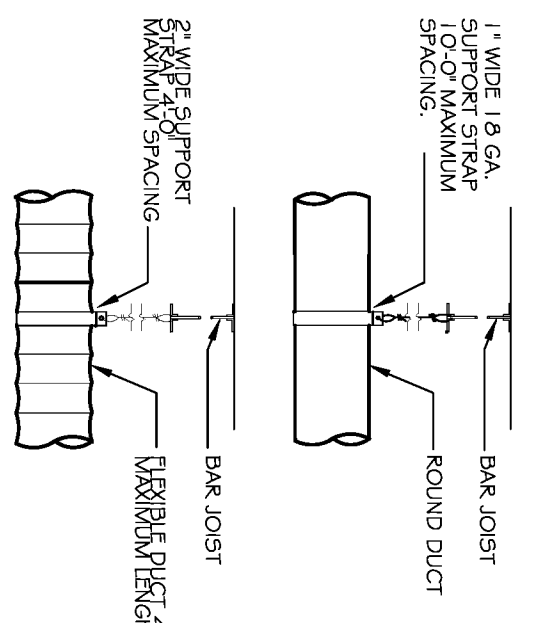
TYPICAL ROOFTOP UNIT DETAIL



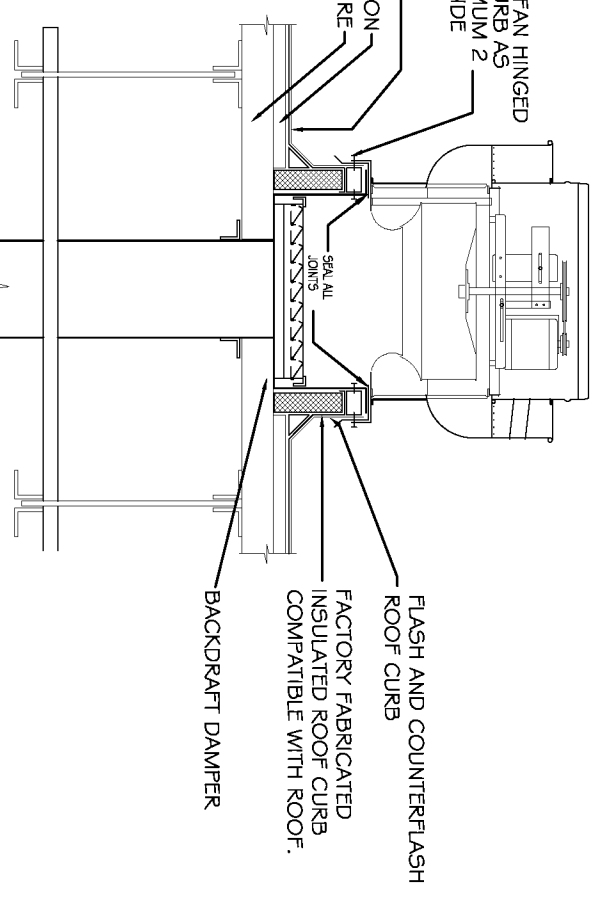
LAY IN DIFFUSER DETAIL



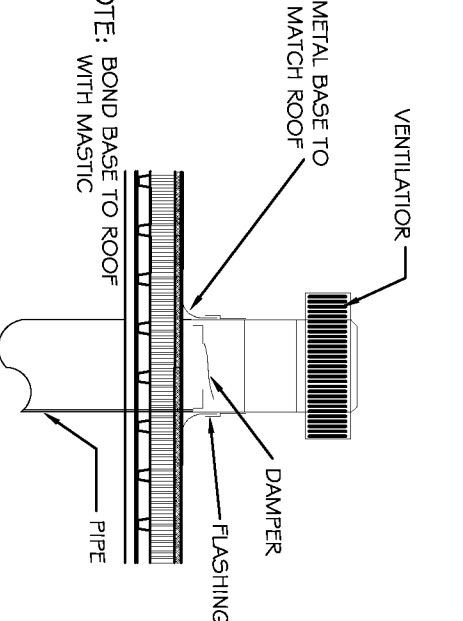
ROUND DUCT SPIN-IN DETAIL



DUCT SUPPORT DETAIL



TYPICAL ROOF TOP EXHAUST FAN



TYPICAL VENT THRU ROOF DETAIL

V V T NOTES:

CONTRACTOR SHALL PROVIDE A WATMASTER UNIT CONTROLLER FOR VVT#1, VVT#2 AND VVT#3. CONTRACTOR SHALL PROVIDE AN OPEN COIL ELECTRIC DUCT HEATER OF THE SIZE, CAPACITY AND PERFORMANCE SHOWN ON THE JOB SCHEDULE. ALL DUCT HEATERS SHALL BE TESTED AND CERTIFIED TO UL STD 198 UL HEATERS SHALL BE TESTED AND CERTIFIED TO UL STD 198 UL COIL TYPE 80% NICKEL 20% CHROMIUM TYPE A RESISTANCE WIRE. OTHER ALLOYS ARE NOT ACCEPTABLE. COILS SHALL BE SUPPORTED BY STAINLESS CERAMIC BUSHINGS SECURELY FASTENED TO THE ELEMENT SUPPORT BRACKETS. THE DUCT HEATER FRAME, CONTROL ENCLOSURE AND ELEMENT SUPPORT BRACKETS SHALL BE OF 20 GAUGE (MINIMUM) GALVANIZED STEEL. THE HEATER SHALL BE INSTALLED IN STRICT ACCORDANCE WITH CONSTRUCTION WITH STANDARD DOOR INTERLOCKING DISCONNECT SWITCH. THE ELECTRIC HEATER FRAME WILL HAVE FLANGED OR SLIP-IN DUCT CONNECTION. ALL HEATERS SHALL BE FURNISHED WITH A DISC TYPE, PRIMARY AUTOMATIC RESET THERMAL CUT-OFF. A SECONDARY MANUAL RESET THERMAL CUT-OFF WILL ALSO BE PROVIDED. ALL HEATERS WILL HAVE AN ELECTRICAL CONTROL BOX WITH A 24 VOLT, CLASS II TERMINAL UNITS ONLY. THE ELECTRIC SUPPLY WIRING SHALL HAVE INSULATION RATING OF 221 1/2" (1.05C). TERMINAL BLOCKS AND GROUND LUGS WILL BE PROVIDED AND MOUNTED INSIDE THE CONTROL ENCLOSURE. ALL HEATERS SHALL HAVE A 24 VOLT HOLDING COIL AS STANDARD.