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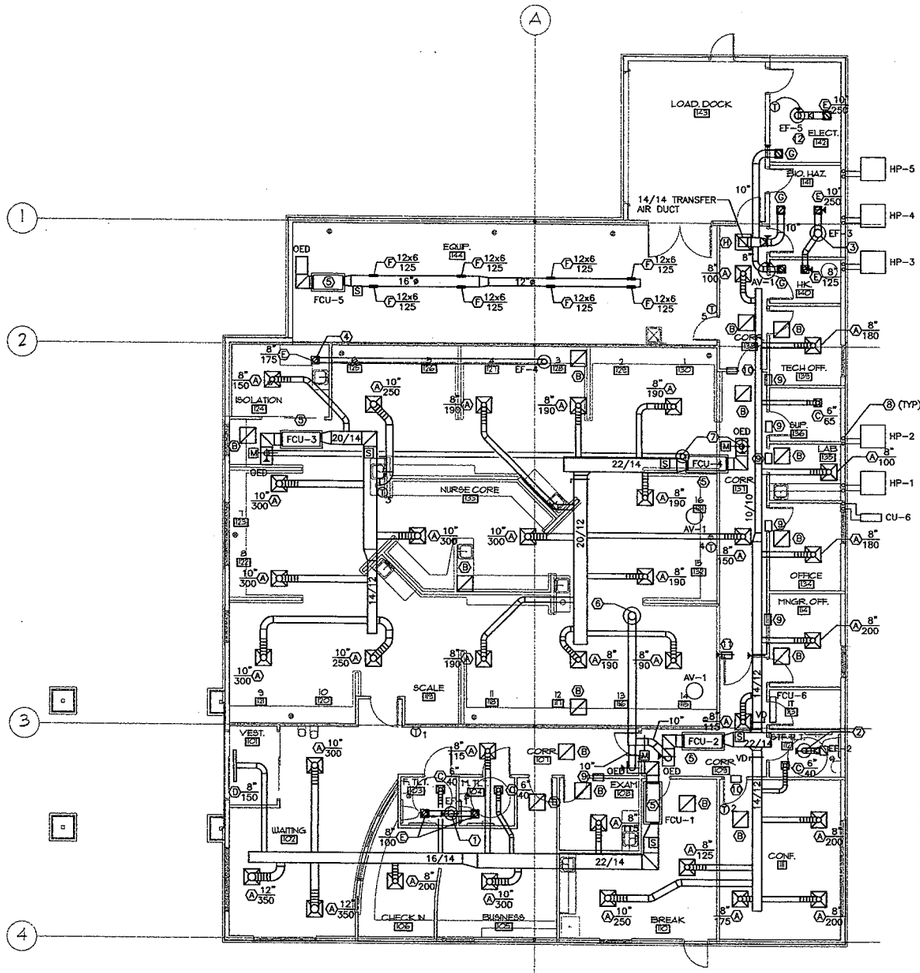

1 M1.10 MECHANICAL PLAN
SCALE: 1/8"=1'-0"

GENERAL NOTES:-

1. TERMINATE ALL EXHAUST OUTLETS AND PLUMBING VENTS AT LEAST 10' AWAY FROM ROOFTOP UNITS OUTDOOR AIR INTAKES. COORDINATE ROOF PENETRATIONS WITH THE ARCHITECT. PAINT ALL ROOF EQUIPMENT TO MATCH THE ROOF.

PLENUM NOTES:

THIS BUILDING USES THE CEILING SPACE AS AN RETURN AIR PLENUM. MATERIALS ABOVE THE CEILING SHALL HAVE A FLAME-SPREAD INDEX OF NOT MORE THAN 25. AND A SMOKED DEVELOPED INDEX OF NOT MORE THAN 50, AS DETERMINED PER ASTM E84.

KEY NOTES:-

1. 10"ø EXHAUST AIR DUCT UP THROUGH ATTIC TO EF-1 ON ROOF.
2. 8"ø EXHAUST AIR DUCT FROM EF-2 UP THROUGH ATTIC TO ROOF CAP.
3. 12"ø EXHAUST AIR DUCT UP THROUGH ATTIC TO EF-3 ON ROOF.
4. 8"ø EXHAUST AIR DUCT UP THROUGH ATTIC TO EF-4 ON ROOF.
5. ROUTE 3/4" COPPER CONDENSATE PIPE FROM EACH FAN COIL UNIT DN THRU WALL TO SPILL ON GRADE AT NEAREST GUTTER SPLASHBLOCK.
6. 12"ø OUTSIDE INTAKE AIR DUCT UP THROUGH ATTIC TO ROOF CAP WITH MOTORIZED VOLUME DAMPER.
7. 8"ø OUTSIDE INTAKE AIR DUCT UP THROUGH ATTIC TO ROOF CAP WITH MOTORIZED VOLUME DAMPER.
8. ROUTE REFRIGERANT PIPES FROM EACH HEAT PUMP UNIT TO CORRESPONDING FAN COIL UNIT.
9. 10/8 TRANSFER AIR OPENING ABOVE CEILING
10. 16/10 TRASFER AIR OPENING ABOVE CEILING
11. 14/16 TRANSFER AIR OPENING ABOVE CEILING
12. 10"ø EXHAUST AIR DUCT UP THROUGH ATTIC TO EF-5 ON ROOF.

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5/18/07

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DRAWING TITLE
FLOOR PLAN - MECHANICAL

M1.10

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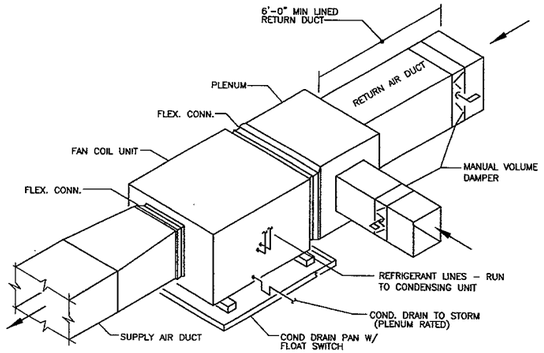
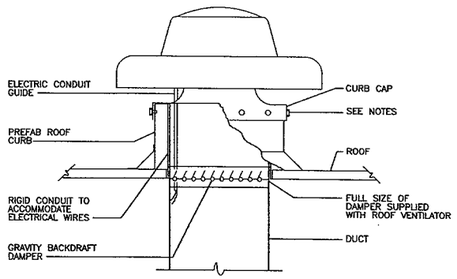


HORIZONTAL FAN COIL UNIT DETAIL

NOT TO SCALE

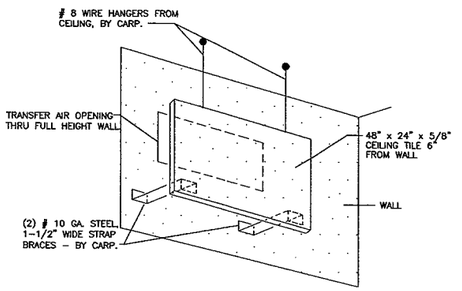


POWER TYPE ROOF VENTILATOR

NOT TO SCALE

NOTES:

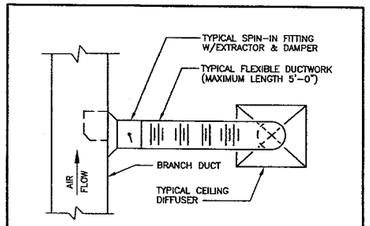
1. USE PREFAB. METAL CURB, SECURE HOOD AND DUCTWORK WITH SHEET METAL SCREWS AS REQUIRED FOR TIGHT JOINTS AND RIGID INSTALLATION.
2. SIZE OF DUCT THROUGH ROOF SHALL NOT BE LARGER THAN CURB SUPPLIED WITH ROOF VENTILATOR.
3. RUN POWER LINE THROUGH CLEARANCE HOLE PROVIDED IN GRAVITY DAMPER, THEN THROUGH VENTILATOR ELECTRICAL CONDUIT GUIDE.



TRANSFER AIR OPENING DETAIL

NOT TO SCALE

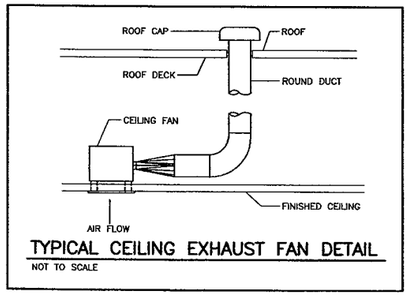
PROVIDE AT ALL FULL HEIGHT WALLS FOR RETURN AIR TRANSFER.



TYPICAL FLEX TAKE-OFF

NOT TO SCALE

NOTE: MINIMUM 2'-0" BETWEEN TAKE OFF'S



TYPICAL CEILING EXHAUST FAN DETAIL

NOT TO SCALE

SPLIT SYSTEM HVAC/HEAT PUMP SCHEDULE

SYS. #	FAN COIL UNIT							HEAT PUMP UNIT UNIT										MFG	MODEL NO.		NOTES
	MARK	CFM (MIN)	O.A. (MIN)	E.S.P.	POWER VOLTS	PH	EL. HTR.	MARK	COOLING CAPACITY (MIN.) TOTAL	SENSIBLE	EAT	LAT	SEER	HEATING HIGH COP	POWER VOLTS	PH		FCU	HP	
A/C-1	FCU-1	1960	300	0.5"	208	3	11.5 KW	HP-1	56.0	40.0	80/67	58/57	13.0	53.0	3.5	208	3	TRANE	2TEC3F60A	2TWA3060A	SEE BELOW
A/C-2	FCU-2	1950	260	0.5"	208	3	11.5 KW	HP-2	56.0	40.0	80/67	58/57	13.0	53.0	3.5	208	3	TRANE	2TEC3F60A	2TWA3060A	SEE BELOW
A/C-3	FCU-3	1850	200	0.5"	208	3	11.5 KW	HP-3	56.0	40.0	80/67	58/57	13.0	53.0	3.5	208	3	TRANE	2TEC3F60A	2TWA3060A	SEE BELOW
A/C-4	FCU-4	1970	200	0.5"	208	3	11.5 KW	HP-4	56.0	40.0	80/67	58/57	13.0	53.0	3.5	208	3	TRANE	2TEC3F60A	2TWA3060A	SEE BELOW
A/C-5	FCU-5	1000	–	0.5"	208	3	7.2 KW	HP-5	28.0	20.4	80/67	58/57	13.0	26.0	3.5	208	3	TRANE	2TEC3F30A	2TWA3030A	SEE BELOW
A/C-6	FCU-6	350	–	–	208	1	–	CU-6	12.0	––	80/67	55/54	13.8	–	–	208	1	MITSUBISHI	PKA-A12GA	PUY-A12NHA	SEE BELOW

CONDENSING UNIT ACCESSORIES

1. ANTI SHORT CYCLE PROTECTION
2. LOW AMBIENT COOOLING TO 30 DEG F
3. SERVICE VALVES
4. CONDENSER MOUNTING CURB

FAN COIL UNIT ACCESSORIES

1. 7-DAY PROGRAMABLE T-STAT W/ AUTO HEAT AND CDOL
2. SUPPLEMENTAL ELECTRIC HEAT AS SCHEDULED ABOVE
3. SINGLE POINT POWER W/ INTEGRAL DISCONNECT
4. INTEGRAL CONDENSATE PUMP ON #6
5. MOTORIZED DAMPER ON OA DUCT. DAMPER TO CLOSE DURING UNOCCUPIED HOURS INTERLOCK WITH EXHAUST FAN TIMECLOCK
6. LOCAL DDC COMPATIBLE THERMOSTAT
7. ALL UNITS TO BE CONNECTED TO THE BUILDING CENTRAL DDC CONTROLS. LOCAL CONTROL OF UNITS IS DESIRED, HOWEVER CENTRAL CONTROLS SHOULD OVER-RIDE LOCAL SETTINGS. PROVIDE INTERCONNECTIVITY WITH HARBIN MAINTENANCE.

GENERAL MECHANICAL NOTES:

1. MOUNT THERMOSTATS 48" ABOVE FINISH FLOOR TO CENTER.
2. DUCTWORK AND EQUIPMENT SHOWN IS DIAGRAMMATIC. COORDINATE AND ROUTE DUCTWORK TO MEET JOB REQUIREMENTS. LOCATION OF EQUIPMENT MUST BE COORDINATED WITH ALL DISCIPLINES BEFORE FINAL LOCATIONS ARE SELECTED. WEIGHTS OF EQUIPMENT MUST BE VERIFIED AND COORDINATED WITH STRUCTURAL SYSTEMS BEFORE EQUIPMENT CAN BE INSTALLED AT JOBSITE.
3. SPACE ALLOCATED FOR MECHANICAL AND OTHER WORK ABOVE THE SUSPENDED CEILINGS IS CRITICAL. LIGHT FIXTURES AND AIR DIFFUSERS HAVE BEEN LOCATED TO ACHIEVE A DEFINITE ARCHITECTURAL EFFECT AND MAY NOT BE CHANGED WITHOUT THE CONSENT OF THE ARCHITECT. BECOME FAMILIAR WITH THE ARCHITECTURAL, STRUCTURAL, MECHANICAL AND ELECTRICAL DRAWINGS PRIOR TO FABRICATING AND INSTALLING ANY MATERIALS. HANG DUCTWORK AS CLOSE AS POSSIBLE TO THE STRUCTURE ABOVE, UNLESS INDICATED OTHERWISE.
4. WHERE THE SPACE ABOVE THE SUSPENDED CEILINGS IS USED AS A RETURN AIR PLENUM, COORDINATE THE WORK OF OTHER TRADES TO PROVIDE ADEQUATE SPACE FOR THE FLOW OF RETURN AIR (250 FPM MAXIMUM VELOCITY). WHERE PARTITIONS ARE EXTENDED TO THE STRUCTURE ABOVE, PROVIDE OPENINGS IN THE PARTITIONS ABOVE THE CEILING.
5. SIZE REFRIGERANT PIPING PER MANUFACTURERS RECOMMENDATIONS FOR ACTUAL LINE LENGTHS AND VERTICAL LIFT REQUIRED.
6. COORDINATE THE LOCATION OF CEILING DIFFUSERS, REGISTERS AND GRILLES WITH THE ARCHITECTURAL REFLECTED CEILING PLANS.
7. FLEXIBLE RUNOUTS TO BE SAME SIZE AS DIFFUSER NECK. REFER TO DIFFUSER SCHEDULE.
8. PASSAGES OF PIPES, CONDUITS, BUS DUCTS, CABLES, WIRES, AIRDUCTS, PNEUMATIC DUCTS, AND SIMILAR BUILDINGS SERVICE EQUIPMENT THROUGH FIRE BARRIERS SHALL BE PROTECTED AS FOLLOWS:

   THE SPACE BETWEEN THE PENETRATING ITEM AND FIRE BARRIER SHALL: BE FILLED WITH A MATERIAL CAPABLE OF MAINTAINING THE FIRE RESISTANCE RATING OF THE FIRE BARRIER PRODUCT. PRODUCT USED MUST MEET TEST METHODS ASTM E814 OR NFPA 251 FOR FIRE RATING.

EXHAUST FAN SCHEDULE

FAN NO.	SERVICE	MANUF. & MODEL		CFM	WATT/HP	S.P.	VOLTS - PH	NOTES
EF-1	M & W TLT-103, 104	PENN	DX10S	200	1/25 HP	0.25"	120 - 1ø	1, 2, 3, 4, 5
EF-2	STAFF TOILET - 112	PENN	ZT	85	48 W	0.25"	120 - 1ø	1, 2, 3, 4, 6
EF-3	HK & BIO. HAZ.-140, 141	PENN	DX10R	375	1/12 HP	0.25"	120 - 1ø	1, 2, 3, 4, 5
EF-4	ISOLATION - 124	PENN	DX08R	175	1/30 HP	0.25"	120 - 1ø	1, 2, 3, 4, 5
EF-5	ELECT. - 142	PENN	DX10S	250	1/25 HP	0.25"	120 - 1ø	1, 2, 3, 4, 7
AV-1	VENTILATOR	CERTAINTEED	4CH65	1500	1/6 HP	–	120 - 1ø	1, 8

1. ROOF CAP/CURB
2. BACKDRAFT DAMPER
3. BIRDSCREEN
4. SPEED CONTROL
5. CONTROL VIA TIME CLOCK
6. CONTROL VIA LIGHT SWITCH
7. CONTROL VIA THERMOSTAT
8. CONTROL VIA THERMOSTAT/HUMIDISTAT

HVAC SYMBOLS AND ABBREVIATIONS

	SUPPLY AIR DUCT UP/DOWN	A/C-*	AIR CONDITIONING SYSTEM
	RETURN/EXHAUST AIR DUCT UP/DOWN	CFM	CUBIC FEET PER MINUTE
	NEW DUCTWORK	CU-*	CONDENSING UNIT
	FLEXIBLE DUCT	DIA.	DIAMETER
	VOLUME DAMPER	EF-*	EXHAUST FAN
	SUPPLY DIFFUSER	FCU-*	FAN COIL UNIT
	RETURN OR EXHAUST GRILLE	HP-*	HEAT PUMP UNIT
	THERMOSTAT	OA	OUTSIDE AIR
	DIFFUSER DESIGNATION	OED	OPEN ENDED DUCT
	REFERENCE NOTE	VD	VOLUME DAMPER
S	SMOKE DETECTER	M	MOTORIZED DAMPER
	PIPE TURNED UP		
	FIRE DAMPER (FD)	OA, OAD	OUTSIDE AIR, OA DUCT

DIFFUSER SCHEDULE

MARK — (A) 8"ø — NECK / 150 — CFM

MARK	TYPE	FACE	BASIS OF DESIGN
A	SUPPLY	24"X24"	TITUS OMNI
B	RETURN	24"X24"	TITUS 50F
C	SUPPLY	12"X12"	TITUS OMNI
D	SUPPLY	48"X4"	TITUS TBDI-80
E	EXHAUST	12"X12"	TITUS 50F
F	SUPPLY	12"X6"	TITUS S300
G	TRANSFER	12"X12"	TITUS 50F
H	TRANSFER	24"X24"	TITUS 50F

1. OFF-WHITE FINISH.
2. PROVIDE ALL FRAMING AND HARDWARE REQUIRED FOR MOUNTING.

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M2.10

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