

REFRIGERANT PIPING NOTES

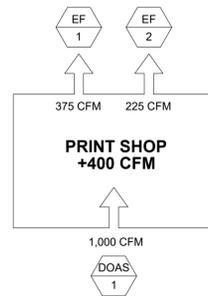
REFRIGERANT PIPE SIZING AND ROUTING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL TAKE INTO ACCOUNT LENGTH OF RUN, ELEVATION CHANGES, AND FIELD CONDITIONS. ALL ACCESSORIES FOR LONG LINE APPLICATIONS (HARD-START KIT, THERMOSTATIC EXPANSION VALVE (TXV), LIQUID LINE SOLENOID AT THE OUTDOOR UNIT, AN INVERTED REFRIGERANT TRAP AT THE INDOOR UNIT, ETC.) SHALL BE PROVIDED AND INSTALLED WHEN THE DEVELOPED LENGTH FALLS IN THE CATEGORY OF A LONG LINE APPLICATION. THE CONTRACTOR SHALL SUBMIT CALCULATIONS IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER. ALL REFRIGERANT ROUTING SHALL BE INSTALLED CONCEALED.

GENERAL NOTES

1. THE CONTRACTOR SHALL VISIT THE SITE TO BECOME FAMILIAR WITH ALL EXISTING CONDITIONS BEFORE SUBMITTING A BID.
2. THE CONTRACTOR SHALL COORDINATE THE LOCATION OF SITE MOBILIZATION WITH THE UNIVERSITY PRIOR TO COMMENCING THE WORK.
3. PROVIDE ALL MATERIALS AND EQUIPMENT AND PERFORM ALL LABOR REQUIRED TO INSTALL COMPLETE AND OPERABLE HEATING, VENTILATION, AND AIR CONDITIONING (HVAC) SYSTEMS.
4. REFER TO TYPICAL DETAILS FOR ADDITIONAL INFORMATION REGARDING THE INSTALLATION OF DUCTWORK, PIPING, AND EQUIPMENT.
5. THE CONTRACTOR IS EXPECTED TO ORDER MATERIALS IN SUFFICIENT TIME TO AVOID DELAYING THE COMPLETION OF THE PROJECT. DELAY IN DELIVERIES WILL NOT BE CONSIDERED A JUSTIFIABLE REASON FOR SUBSTITUTION OF MATERIALS.
6. THE CONTRACTOR SHALL COMPLY WITH THE 2017 FLORIDA BUILDING CODE AND THE CURRENT EDITIONS OF ALL OTHER APPLICABLE CODES AND STANDARDS.
7. ALL REQUESTS FOR INFORMATION (RFIS) SUBMITTED BY THE CONTRACTOR SHALL INCLUDE A PROPOSED SOLUTION.
8. INSTALLATION OF EQUIPMENT SHALL COMPLY WITH EQUIPMENT MANUFACTURER'S INSTALLATION AND CLEARANCE REQUIREMENTS. THE CONTRACTOR SHALL VERIFY INSTALLATION CLEARANCES WILL BE MAINTAINED AND DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER PRIOR TO THE ACQUISITION OF EQUIPMENT.
9. THE GENERAL CONTRACTOR SHALL COORDINATE THE WORK OF THE DIFFERENT TRADES SO THAT INTERFERENCE BETWEEN HVAC, PIPING, EQUIPMENT, STRUCTURAL, AND ELECTRICAL WORK WILL BE AVOIDED. ALL NECESSARY OFFSETS IN DUCTWORK, PIPING, AND FITTINGS REQUIRED TO INSTALL THE WORK PROPERLY SHALL BE PROVIDED COMPLETE IN PLACE AT NO ADDITIONAL COST.
10. THE CONTRACTOR IS RESPONSIBLE TO REPAIR, AT HIS COST, ANY DAMAGED ITEMS DUE TO WORK PERFORMED. DAMAGED ITEMS SHALL BE BROUGHT BACK TO LIKE-NEW CONDITION OR REPLACED WITH NEW.
11. DUCTWORK, PIPING, AND EQUIPMENT LOCATIONS SHOWN ARE SCHEMATIC. PRIOR TO LAYOUT AND CONSTRUCTION OF THE MECHANICAL SYSTEMS, THE CONTRACTOR SHALL SUBMIT LAYOUT AND FABRICATION SHOP DRAWINGS FOR APPROVAL. CONTRACTOR SHALL NOT COMMENCE WORK WITHOUT APPROVED SHOP DRAWINGS ON THE CONSTRUCTION SITE.
12. INSULATE ALL SURFACES SUBJECT TO CONDENSATION.
13. ALL DUCTWORK DIMENSIONS SHOWN ON THE DRAWINGS ARE THE INTERNAL CLEAR DIMENSIONS.
14. THE BUILDING WILL HAVE A FIRE ALARM SYSTEM. THE MECHANICAL CONTRACTOR SHALL INSTALL DUCT-MOUNTED SMOKE DETECTORS AS INDICATED ON THE DRAWINGS AND SCHEDULES. ALL UNITS SHALL SHUT DOWN ON AN ALARM FROM THE FIRE ALARM SYSTEM AND SHALL AUTOMATICALLY RESTART ONCE THE ALARM HAS BEEN CLEARED. THE DUCT-MOUNTED SMOKE DETECTORS SHALL BE PROVIDED, WIRED, AND INTERFACED WITH THE FIRE ALARM SYSTEM BY THE ELECTRICAL AND/OR FIRE ALARM CONTRACTOR.
15. THE MECHANICAL CONTRACTOR SHALL FURNISH AND MOUNT ALL MOTOR STARTERS, RELAYS, AND LOW-VOLTAGE WIRING AND CONDUIT TO ALLOW THE MECHANICAL EQUIPMENT TO PERFORM AS REQUIRED BY THE SEQUENCE OF OPERATIONS.
16. ALL HVAC SENSORS/CONTROLS SHALL LOCATED FOR UNOBSTRUCTED ACCESS AND BE MOUNTED 48" AFF.
17. THE CONTRACTOR SHALL HIRE A THIRD-PARTY TEST AND BALANCE COMPANY TO PERFORM A COMPLETE CERTIFIED TEST AND BALANCE OF EACH MECHANICAL SYSTEM IN ACCORDANCE WITH A NATIONAL STANDARD. REFER TO THE SPECIFICATIONS FOR MORE INFORMATION.

ELECTRICAL COORDINATION NOTES

1. ALL ELECTRICAL WORK SHALL CONFORM TO THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE (NFPA 70). THE EQUIPMENT INDICATED ON THE DRAWINGS HAS BEEN COORDINATED WITH THE ELECTRICAL SYSTEMS. IF THIS CONTRACTOR SELECTS TO USE ALTERNATE EQUIPMENT, HE SHALL BE RESPONSIBLE FOR ALL COORDINATION WITH THE ELECTRICAL ENGINEER AND SHALL BEAR ANY ADDED EXPENSE TO THE ELECTRICAL CONTRACTOR AND CONSULTANTS RESULTING FROM SUCH ALTERNATE SELECTION.



1 PRINT SHOP PRESSURIZATION
M0.1 NOT TO SCALE

VENTILATION CALCULATIONS

MECHANICAL VENTILATION: THE VENTILATION RATE FOR EACH UNIT WAS CALCULATED PER THE 2017 FBC MECHANICAL, SECTION 403.3 OUTDOOR AIR AND LOCAL EXHAUST AIRFLOW RATES.

Vbz = BREATHING ZONE VENTILATION
 Az = ZONE FLOOR AREA (SF)
 Pz = ZONE POPULATION (PEOPLE)
 Rp = PEOPLE OUTDOOR AIR RATE (CFM/PERSON)
 Ra = AREA OUTDOOR AIR RATE (CFM/SF)
 Ez = ZONE AIR DISTRIBUTION EFFECTIVENESS
 Voz = ZONE OUTDOOR AIRFLOW RATE

$$Vbz = RpPz + RaAz \quad (\text{EQUATION 4-1})$$

$$Voz = Vbz/Ez \quad (\text{EQUATION 4-2})$$

UNIT	Az	Pz	Ra	Rp	Vbz	Ez	Voz
AH/HP-1	3,058	16	0.06	5	263	0.8	329
AH/HP-2	1,971	6	0.06	5	148	0.8	185
AH/HP-3	2,088	8	0.06	5	165	0.8	207

NOTES

1. THE MINIMUM VENTILATION RATE REQUIRED FOR THE PRINT SHOP IS 721 CFM.
2. THE VENTILATION WILL PROVIDED BY A 100% DEDICATED OUTDOOR AIR SYSTEM (DOAS)

HVAC ABBREVIATIONS

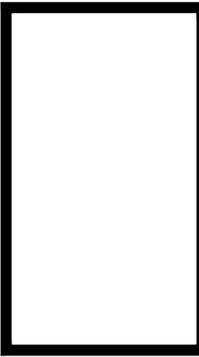
ABBREVIATION	DESCRIPTION
AC	ALTERNATING CURRENT
AFF	ABOVE FINISHED FLOOR
AFMS	AIRFLOW MEASURING STATION
AH	AIR HANDLER
AHU	AIR HANDLING UNIT
AMP	AMPERE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
ASHRAE	AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR CONDITIONING ENGINEERS
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
AV	AUDIBLE/VISUAL
AWG	AMERICAN WIRE GAUGE
BDD	BACKDRAFT DAMPER
BHP	BRAKE HORSEPOWER
BLDG	BUILDING
BMS	BUILDING MANAGEMENT SYSTEM
BTU	BRITISH THERMAL UNITS
CFM	CUBIC FEET PER MINUTE
CU	CONDENSING UNIT
CxA	COMMISSIONING AGENT
D	DEPTH
dB	DECIBEL
DB	DRY BULB
DC	DIRECT CURRENT
DDC	DIRECT DIGITAL CONTROL
DEG F	DEGREE FAHRENHEIT
DIA	DIAMETER
DOAS	DEDICATED OUTDOOR AIR SYSTEM
EA	EXHAUST AIR, EACH
EAT	ENTERING AIR TEMPERATURE
ECM	ELECTRICALLY COMMUTATED MOTOR EFFICIENCY
EFF	EFFICIENCY
EER	ENERGY EFFICIENCY RATIO
EF	EXHAUST FAN
ESP	EXTERNAL, STATIC PRESSURE
ETC	ET CETERA
FBC	FLORIDA BUILDING CODE
FBC-M	FLORIDA BUILDING CODE - MECHANICAL
FD	FIRE DAMPER, FLOOR DRAIN
FLA	FULL LOAD AMPS
PPM	FEET PER MINUTE
PPS	FEET PER SECOND
FRP	FIBERGLASS REINFORCED PLASTIC
FT	FEET
FT-H2O	FEET OF WATER
GA	GAGE
GAL	GALLON
GPM	GALLONS PER MINUTE
H	HEIGHT
HB	HOSE BIBB
HD	HUB DRAIN
H-O-A	HAND-OFF-AUTOMATIC
HP	HORSEPOWER
HR	HOUR
HVAC	HEATING, VENTILATING, AND AIR CONDITIONING
HZ	HERTZ
IN	INCH
IN.W.G.	INCHES OF WATER - GAUGE
IPS	IRON PIPE SIZE
KW	KILOWATT
L	LENGTH
LAT	LEAVING AIR TEMPERATURE
LBS	POUNDS
LF	LINEAR FEET
MAX	MAXIMUM
MBH	THOUSAND BTU PER HOUR
MCA	MINIMUM CURRENT AMPACITY
MIN	MINIMUM
MOCPP	MAXIMUM OVERCURRENT PROTECTION MANUFACTURERS STANDARDIZATION SOCIETY
MSS	MANUAL VOLUME DAMPER
MVD	MANUAL VOLUME DAMPER
N	NORTH
N/A	NOT APPLICABLE/NONE ASSOCIATED/NONE AVAILABLE
NC	NOISE CRITERIA
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
OA	OUTDOOR AIR
PH	PHASE
PRV	PRESSURE RELIEF OR REGULATING VALVE
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
QTY	QUANTITY
RA	RETURN AIR
RH	RELATIVE HUMIDITY
RLA	RUNNING LOAD AMPS
RM	ROOM
RPM	REVOLUTIONS PER MINUTE
RTU	ROOFTOP UNIT
SA	SUPPLY AIR
SD	SMOKE DETECTOR
SEER	SEASONAL ENERGY EFFICIENCY RATIO
SF	SQUARE FEET
SMACNA	SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION
SP	STATIC PRESSURE
STD	STANDARD
T	THERMOSTAT
TSP	TOTAL STATIC PRESSURE
TYP	TYPICAL
UH	UNIT HEATER
UL	UNDERWRITERS LABORATORIES UNLESS NOTED OTHERWISE
UNO	UNLESS NOTED OTHERWISE
V	VOLTAGE
VA	VOLT AMPERE
VAV	VARIABLE AIR VOLUME
VFD	VARIABLE FREQUENCY DRIVE
W	WATT, WIDTH
WB	WET BULB
WWF	WELDED WIRE FABRIC
YR	YEAR

HVAC LEGEND

SYMBOL	DESCRIPTION
DUCTWORK	
	SUPPLY DUCT RISER
	RETURN DUCT RISER
	EXHAUST DUCT RISER
	SUPPLY DUCT DOWN
	RETURN DUCT DOWN
	EXHAUST DUCT DOWN
	DUCT CONTINUES
	MANUAL VOLUME DAMPER
	MOTORIZED DAMPER
	FIRE/SMOKE DAMPER
	FIRE DAMPER
	RADIATION DAMPER
	DUCT SMOKE DETECTOR
	DUCT ACCESS PANEL
	DUCT RISE (R) OR DROP (D) IN DIRECTION OF FLOW
	ROUND/FLEXIBLE DUCT CONNECTION
	ROUND/FLEXIBLE DUCT CONNECTION WITH DAMPER
	SQUARE TO ROUND DUCT TRANSITION
	ROUND DUCT
	SIDEWALL DIFFUSER/GRILLE
	SUPPLY DIFFUSER
	RETURN GRILLE
	EXHAUST GRILLE
	SLOT DIFFUSER
	FLEXIBLE DUCT (DOUBLE LINE)
PIPING	
	PIPING CONTINUES
	PIPE ELBOW DOWN
	PIPE ELBOW UP
	UNION
	BALL VALVE
	CAPPED END
	FLOW DIRECTION
	BUTTERFLY VALVE
	BALL VALVE
SYMBOLS	
	POINT OF DISCONNECTION
	POINT OF CONNECTION
	REFERENCE NOTE
	THERMOSTAT
	SENSOR
	AIR DEVICE TAG TYPE/SIZE (INxIN) AIRFLOW (CFM)
	UNDER CUT DOOR AIR FLOW AMOUNT (CFM)
	DETAIL NUMBER SHEET DETAIL APPEARS
	TYPE OF EQUIPMENT EQUIPMENT NUMBER
	SECTION NUMBER SHEET SECTION APPEARS

HVAC DESIGN DATA

LOCATION	DAYTONA BEACH, FLORIDA			
	SUMMER		WINTER	
OUTDOOR AIR DESIGN CONDITIONS	DB (DEG F)	WB (DEG F)	DB (DEG F)	BUILDING CONSTRUCTION WALL R-VALUE 13+6.5ci
	95	78	36	ROOF R-VALUE 19+11 LS
				WINDOW GLAZING DOUBLE
INDOOR AIR DESIGN CONDITIONS	DB (DEG F)	RELATIVE HUMIDITY (%)	WINTER DB (DEG F)	WINDOW U-FACTOR 0.5
	75	50%	72	WINDOW SHGC 0.25
ALL UNITS				
NOTES ci = CONTINUOUS INSULATION LS = LINEAR SYSTEM				



DATE	REVISION	DRAWN	CHECKED

AIR DEVICE SCHEDULE												
MARK	MANUFACTURER	MODEL	TYPE	BORDER	AIR PATTERN	FACE/NECK	FINISH	MATERIAL	MAX NC LEVEL	MAX PRESS DROP (IN.W.G.)	ACCESS.	NOTES
SUPPLY AIR DEVICES												
CS-A	TITUS	TMS-AA	CEILING SUPPLY	LAY-IN	4-WAY	24x24/SEE TABLE 1	WHITE	ALUMINUM	25	0.08	1	1.2
CS-B	TITUS	TMS-AA	CEILING SUPPLY	LAY-IN PANEL	4-WAY	12x12/SEE TABLE 1	WHITE	ALUMINUM	25	0.08	1-3	1.2
CS/XX	TITUS	250-AA	CEILING SUPPLY	SURFACE	1-WAY	REFER TO DRAWINGS	WHITE	ALUMINUM	25	0.08	1	1.2
SS/XX	TITUS	272FS	CEILING SUPPLY	SURFACE	2-WAY	REFER TO DRAWINGS	WHITE	ALUMINUM	25	0.08	1	1.2
DL/XX	TITUS	DL	CEILING SUPPLY	SURFACE	1-WAY	REFER TO DRAWINGS	WHITE	ALUMINUM	25	0.08	1	1.2
SSS-A	TITUS	US-DL-SV	CEILING SUPPLY	SURFACE	2-WAY	18x6 AIR DEVICE	WHITE	ALUMINUM	25	0.08	1.4	1.2
RETURN AIR DEVICES												
CR-A	TITUS	355FL	CEILING RETURN	LAY-IN	1-WAY	24x24/SEE TABLE 1	WHITE	ALUMINUM	25	0.08	1	1.2
CR-B	TITUS	355FL	CEILING RETURN	LAY-IN PANEL	1-WAY	12x12/SEE TABLE 1	WHITE	ALUMINUM	25	0.08	1.3	1.2
CR/XX	TITUS	355FL	CEILING RETURN	SURFACE	1-WAY	REFER TO DRAWINGS	WHITE	ALUMINUM	25	0.08	1	1.2
SR/XX	TITUS	350FL	CEILING RETURN	SURFACE	1-WAY	REFER TO DRAWINGS	WHITE	ALUMINUM	25	0.08	1	1.2
EXHAUST AIR DEVICES												
CE-A	TITUS	355FL	CEILING EXHAUST	LAY-IN	1-WAY	24x24/SEE TABLE 1	WHITE	ALUMINUM	25	0.08	-	1.2
CE-B	TITUS	355FL	CEILING EXHAUST	LAY-IN PANEL	1-WAY	12x12/SEE TABLE 1	WHITE	ALUMINUM	25	0.08	2	1.2
CE/XX	TITUS	355FL	CEILING EXHAUST	SURFACE	1-WAY	REFER TO DRAWINGS	WHITE	ALUMINUM	25	0.08	-	1.2
SE/XX	TITUS	350FL	CEILING EXHAUST	SURFACE	1-WAY	REFER TO DRAWINGS	WHITE	ALUMINUM	25	0.08	-	1.2
ACCESSORIES (PROVIDE THE FOLLOWING)												
1. INSULATED DUCT BOOT FOR CONNECTION TO ROUND DUCTWORK												
2. OPPOSED BLADE DAMPER ADJUSTABLE FROM FACE OF AIR DEVICE												
3. 12x12 GRILLE IN A 24x24 LAY-IN PANEL												
4. SPIRAL DUCT AIR DEVICE WITH OPPOSED BLADE DAMPER ADJUSTABLE FROM FACE OF AIR DEVICE												
NOTES												
1. USE NECK SIZES LISTED IN TABLE 1 BELOW IF THE SIZE IS NOT INDICATED ON THE PLANS.												
2. PAINT DUCTWORK THAT IS VISIBLE THROUGH FRONT OF AIR DEVICE MATTE BLACK.												
TABLE 1												
AIR DEVICE NECK SIZING TABLE						LEGEND						
CFM RANGE	0-110	111-220	221-420	421-550	551-750	AIR DEVICE TAG	EXAMPLES					
NECK SIZE	6" DIA	8" DIA	10" DIA	12" DIA	14" DIA	MARK - TYPE OR (INxIN)	CS-A	OR	SS/12x6			
						AIRFLOW (CFM)	100 CFM	OR	100 CFM			

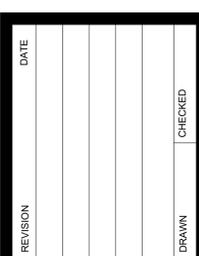
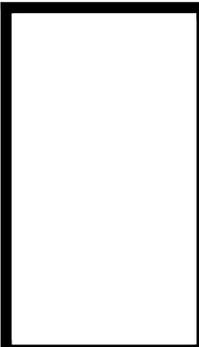
LOUVER SCHEDULE										
MARK	MATERIAL	LOUVER SIZE W(IN)xH(IN)xD(IN)	DESIGN CFM	FREE AREA (SF)	VELOCITY (FPM)	SERVICE	MAX PRESS DROP (IN.W.G.)	ACCESS.	NOTES	MANUFACTURER & MODEL NUMBER
LV-1	ALUMINUM	24x12x5	375	0.52	721	EXHAUST	0.1	1.2	1-4	GREENHECK EHV-550
LV-2	ALUMINUM	24x12x5	225	0.52	433	EXHAUST	0.1	1.2	1-4	GREENHECK EHV-550
LV-3	ALUMINUM	30x24x5	1,000	2.04	490	INTAKE	0.1	1.2	1-4	GREENHECK EHV-550
ACCESSORIES (PROVIDE THE FOLLOWING)										
1. BIRD SCREEN IN REMOVABLE ALUMINUM FRAME										
2. LOUVER SHALL BE FACTORY FINISHED WITH 70% KYNAR 500/HYLAR 5000 FINISH; COLOR: TO BE SELECTED BY ARCHITECT										
NOTES										
1. LOUVER IS A FLORIDA PRODUCT APPROVED WIND-DRIVEN RAIN LOUVER.										
2. LOUVER IS A MIAMI-DADE QUALIFIED LOUVER WITH A PUBLISHED NOTICE OF ACCEPTANCE.										
3. COORDINATE LOUVER ELEVATIONS AND OPENINGS WITH ARCHITECTURAL AND/OR STRUCTURAL DRAWINGS.										
4. PROVIDE COLOR SAMPLES TO THE ARCHITECT FOR COLOR SELECTION BEFORE PROCURING LOUVER.										

FAN SCHEDULE		
MARK	EF-1	EF-2
MANUFACTURER	GREENHECK	GREENHECK
MODEL	CSP-A780	CSP-A410
APPLICATION	EXHAUST	EXHAUST
FAN		
LOCATION	INLINE	INLINE
AIR FLOW (CFM)	375	225
STATIC PRESSURE (IN.W.G.)	0.25	0.15
DRIVE/TYPE	DIRECT	DIRECT
WATTS	95 W	37 W
VOLTAGE/PHASE/HZ	115/1/60	115/1/60
UNIT REQUIREMENTS		
MAXIMUM SONES	0.5	0.5
OPERATING WEIGHT (LBS)	40	40
ACCESSORIES	1	1
NOTES	1	1
ACCESSORIES (PROVIDE THE FOLLOWING)		
1. FAN SPEED CONTROLLER		
NOTES		
1. FAN OPERATION SHALL BE CONTROLLED/MONITORED BY THE BMS.		

DEDICATED OUTSIDE AIR SPLIT SYSTEM SCHEDULE	
INDOOR UNIT	
MARK	DOAS-1
LOCATION	MECH RM
MANUFACTURER	DESERT AIRE
MODEL	QV05
FAN	
TOTAL AIR FLOW (CFM)	1,000
OUTSIDE AIR FLOW (CFM)	1,000
ESP/TSP (IN.W.G.)	1.0 / 1.7
HP	1.0
EVAPORATOR	
NOMINAL TONS	5.0
TOTAL COOLING CAPACITY (MBH)	80.0
SENSIBLE COOLING CAPACITY (MBH)	43.9
ENTERING AIR TEMP (DB/WB)	95.0 / 78.0
LEAVING AIR TEMP (DB/WB)	54.7 / 54.0
PROTECTIVE COIL COATING	ELECTROFIN
ELECTRIC HEATER	
CAPACITY (KW)	10.0
ENTERING/LEAVING AIR TEMPERATURE (DEG F)	37.0 / 69.0
CONTROL	SCR
COMPRESSORS	
QUANTITY	1
TYPE	SCROLL
FILTERS	
EFFICIENCY	MERV 11
TYPE	DISPOSABLE
GENERAL	
WEIGHT	700
ELECTRICAL	
VOLTAGE/PHASE/HZ	208/3/60
COMPRESSOR 1 RLA (AMPS)	22.4
MOTOR RLA (AMPS)	4.2
HEATER DRAW (AMPS)	27.8
UNIT MCA (AMPS)	42
UNIT MOCP (AMPS)	50
OUTDOOR UNIT	
MARK	DC-1
LOCATION	GRADE
MANUFACTURER	DESERT AIRE
MODEL	RCS5024C3K40900
REFRIGERANT	R-410A
OUTDOOR DESIGN TEMPERATURE (DEG F)	95
NUMBER OF FANS	1
TOTAL HEAT REJECTION (MBH)	98.0
PROTECTIVE COIL COATING	ELECTROFIN
UNIT WEIGHT (LBS)	250
ELECTRICAL	
VOLTAGE/PHASE/HZ	208/3/60
MINIMUM CIRCUIT AMPACITY	5
MAXIMUM FUSE SIZE	9
SYSTEM PERFORMANCE	
AHRI 920 RATING	7.7
ACCESSORIES (PROVIDE THE FOLLOWING)	
1. MODULATING HOT GAS REHEAT	
2. HOT GAS BYPASS	
3. 20-GAUGE STAINLESS STEEL DRAIN PAN	
4. LOUVERED CONDENSER COIL GUARD	
5. PROTECTIVE EVAPORATOR AND CONDENSER COIL COATINGS	
6. CONTROLS	
<ul style="list-style-type: none"> MODEL CM3500 CONTROLLER OR EQUAL OUTSIDE AIR SENSOR (FIELD INSTALLED) SUPPLY AIR TEMPERATURE CONTROL SUPPLY AIR DUCT TEMPERATURE SENSOR (FIELD INSTALLED) REMOTE DISPLAY TERMINAL INPUTS FROM BMS TO START AND STOP UNIT OUTPUTS TO BMS FOR ALARMS 	
NOTES	
1. THE REFRIGERANT PIPING DESIGN AND SIZING SHALL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR. THE CONTRACTOR SHALL CONSIDER LENGTH OF RUN AND FIELD CONDITIONS WHEN SIZING PIPING.	

SPLIT SYSTEM AIR HANDLER SCHEDULE			
MARK	AH-1	AH-2	AH-3
LOCATION	MECH RM	MECH RM	MECH RM
MANUFACTURER	TRANE	TRANE	TRANE
MODEL	TWE09043BAA	GAM5B0C48M41	GAM5B0C48M41
FAN			
TOTAL AIR FLOW (CFM)	3,000	1,600	1,600
VENTILATION AIR FLOW (CFM)	400	300	300
EXTERNAL STATIC PRESSURE (IN.W.G.)	0.75	0.6	0.6
DRIVE/SPEED	DIRECT / 1,058	DIRECT / 1,050	DIRECT / 1,050
MOTOR HP	3.0	0.75	0.75
EVAPORATOR COIL			
SENSIBLE CAPACITY (MBH)	71.9	34.2	34.2
TOTAL CAPACITY (MBH)	88.6	44.8	44.8
ENTERING AIR TEMP (DB/WB)	74.3 / 62.2	74.1 / 62.5	74.1 / 62.5
LEAVING AIR TEMP (DB/WB)	53.2 / 52.1	54.2 / 52.5	54.2 / 52.5
HEAT PUMP HEATING CAPACITY			
HEATING CAPACITY (MBH)	48.6	41.5	41.5
AUXILIARY ELECTRIC HEATING COIL			
INPUT (KW @ 208V)	11.25	5.77	5.77
ELECTRICAL (CIRCUIT 1)			
VOLTAGE/PHASE/HZ	208/3/60	208/3/60	208/3/60
MINIMUM CIRCUIT AMPACITY	51.0	8.0	8.0
MAXIMUM FUSE SIZE	60	15	15
ELECTRICAL (CIRCUIT 2)			
VOLTAGE/PHASE/HZ	N/A	208/3/60	208/3/60
MINIMUM CIRCUIT AMPACITY	N/A	42.0	42.0
MAXIMUM FUSE SIZE	N/A	45	45
FILTERS			
TYPE	DISPOSABLE	DISPOSABLE	DISPOSABLE
EFFICIENCY	MERV 8	MERV 8	MERV 8
UNIT REQUIREMENTS			
OPERATING WEIGHT (LBS)	350	175	175
ACCESSORIES	1-3	2,3	2,3
NOTES	-	-	-
ACCESSORIES (PROVIDE THE FOLLOWING)			
1. SINGLE POINT POWER CONNECTION WITH FACTORY-INSTALLED PULL-TYPE DISCONNECT			
2. PROTECTIVE EVAPORATOR COIL COATING			
3. CONDENSATE OVERFLOW SAFETY SWITCH WHICH WILL SHUT DOWN THE AIR HANDLER IF THE PRIMARY CONDENSATE DRAIN LINE CLOGS. DESIGN BASIS: LITTLE GIANT PUMP COMPANY ACS-5			
NOTES			
1. -			

AIR-COOLED HEAT PUMP SCHEDULE			
MARK	HP-1	HP-2	HP-3
LOCATION	GRADE	GRADE	GRADE
MANUFACTURER	TRANE	TRANE	TRANE
MODEL NUMBER	TWA09043DAB	4TWA4048A3	4TWA4048A3
NOMINAL TONS	7.5	4.0	4.0
REFRIGERANT	R-410A	R-410A	R-410A
COMPRESSOR			
OUTDOOR DESIGN TEMPERATURE (DEG F)	95	95	95
NUMBER OF STAGES	2	1	1
NUMBER OF COMPRESSORS	2	1	1
CONDENSER FAN			
NUMBER OF FANS	1	1	1
MOTOR HP	0.5	0.20	0.20
ELECTRICAL			
VOLTAGE/PHASE/HZ	208/3/60	208/3/60	208/3/60
COMPRESSOR RLA EACH	13.1 / 13.1	13.7	13.7
CONDENSER FAN MOTOR FLA EACH	3.1	1.1	1.1
MINIMUM CIRCUIT AMPACITY	33.0	18.0	18.0
MAXIMUM FUSE SIZE	45	30	30
UNIT REQUIREMENTS			
EER/SEER	12.8 EER	14.5 SEER	14.5 SEER
COP/HSPF	3.75 COP	8.20 HSPF	8.20 HSPF
UNIT WEIGHT (LBS)	450	300	300
ACCESSORIES	1-7	1-7	1-7
NOTES	1	1	1
ACCESSORIES (PROVIDE THE FOLLOWING)			
1. LOUVERED COIL GUARD			
2. MANUFACTURER'S ANCHOR BRACKET KIT			
3. ANTI-SHORT CYCLE KIT			
4. FREEZE PROTECTION KIT			
5. HIGH AND LOW PRESSURE SWITCHES			
6. REFRIGERANT CHARGING VALVES			
7. CONDENSER PROTECTIVE COIL COATING			
NOTES			
1. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH THE EQUIPMENT MANUFACTURER FOR THE PROPER REFRIGERANT PIPE SIZING FOR THE APPLICATION.			

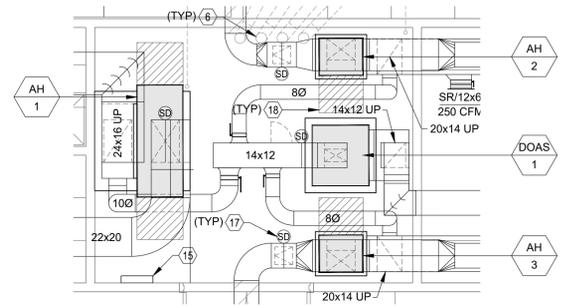


GENERAL NOTES

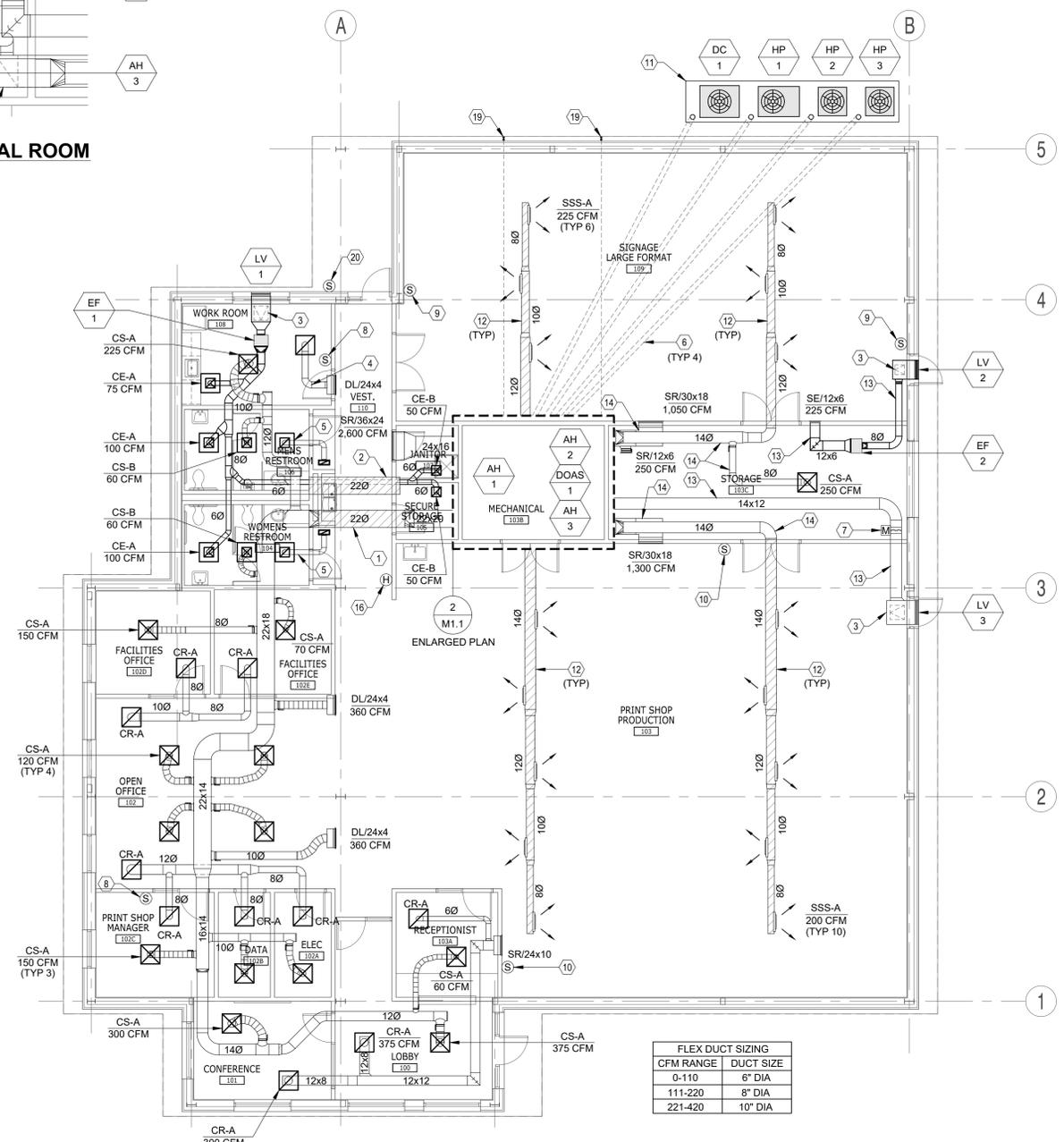
- ALL AIR DEVICES AND ACCESSORIES USED WITH PAINTED DUCTWORK SHALL BE PRIMED AND PAINTED TO MATCH DUCT COLOR.
- SEAL AND FINISH AROUND ALL WALL PENETRATIONS FOR A CLEAN TRANSITION BETWEEN THE PENETRATING ITEM AND THE WALL.
- DUAL WALL DUCT SHALL BE SUSPENDED FROM THE STRUCTURE ABOVE WITH CLEVIS HANGERS AND THREADED ROD PRIMED AND PAINTED TO MATCH DUCT COLOR. ANTI-SWAY SUPPORT SHALL BE PROVIDED BY CLEAR VINYL WRAPPED 1/4" DIAMETER STAINLESS STEEL AIRCRAFT CORD.
- ALL OUTDOOR AIR DUCT AND ACCESSORIES SHALL BE OF ALUMINUM CONSTRUCTION.

REFERENCE NOTES

- PAINTED DUAL WALL EXPOSED SPIRAL DUCTWORK.
- PAINTED DUAL WALL EXPOSED SPIRAL DUCT USED AS A CONDUIT FOR THE EXHAUST DUCT, PLUMBING PIPING, AND ELECTRICAL SYSTEMS.
- DUCT ACCESS DOOR INSTALLED IN THE BOTTOM OF THE PLENUM.
- 8" DIA TRANSFER AIR DUCT WITH CR-A AND DL24x4 AIR DEVICES.
- 6" DIA TRANSFER AIR DUCT WITH CR-B AND CR/12x4 AIR DEVICES.
- 6" DIA PVC PIPE CONDUITS FOR ROUTING REFRIGERANT PIPES FROM MECHANICAL ROOM TO EXTERIOR UNITS.
- MOTORIZED DAMPER INTERLOCKED WITH DOAS-1 OPERATION.
- AVERAGING TEMPERATURE SENSOR FOR AH/HP-1 HARDWIRED BACK TO BMS PANEL.
- AVERAGING TEMPERATURE SENSOR FOR AH/HP-2 HARDWIRED BACK TO BMS PANEL.
- AVERAGING TEMPERATURE SENSOR FOR AH/HP-3 HARDWIRED BACK TO BMS PANEL.
- CONCRETE EQUIPMENT PAD.
- DUAL WALL SPIRAL DUCT WITH PRIMED AND PAINTED OUTER SHELL.
- PRIME AND PAINT UNINSULATED SHEET METAL.
- PRIME AND PAINT INSULATION JACKET.
- BMS CONTROL PANEL.
- HUMIDITY SENSOR.
- SUPPLY AIR DUCT-MOUNTED SMOKE DETECTOR WITH MIN 12x12 ACCESS DOOR FOR INSPECTION.
- EQUIPMENT ACCESS - KEEP THIS AREA CLEAR.
- 2" DIAMETER SCHEDULE 40 PVC CONDENSATE DRAIN LINE TERMINATED OUTSIDE OF BUILDING WITH A GOOSENECK.
- OUTDOOR AIR TEMPERATURE/HUMIDITY SENSOR.

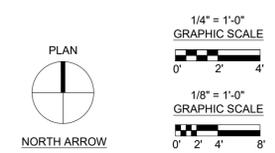


2 ENLARGED MECHANICAL ROOM
M1.1 1/4" = 1'-0"



1 FLOOR PLAN - MECHANICAL
M1.1 1/8" = 1'-0"

FLEX DUCT SIZING	
CFM RANGE	DUCT SIZE
0-110	6" DIA
111-220	8" DIA
221-420	10" DIA



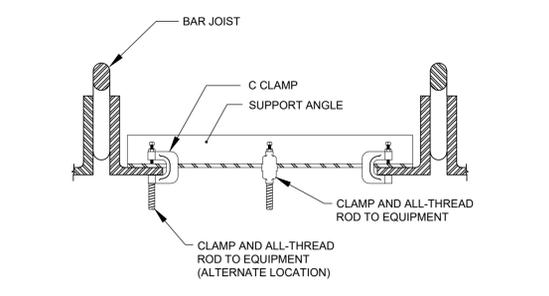
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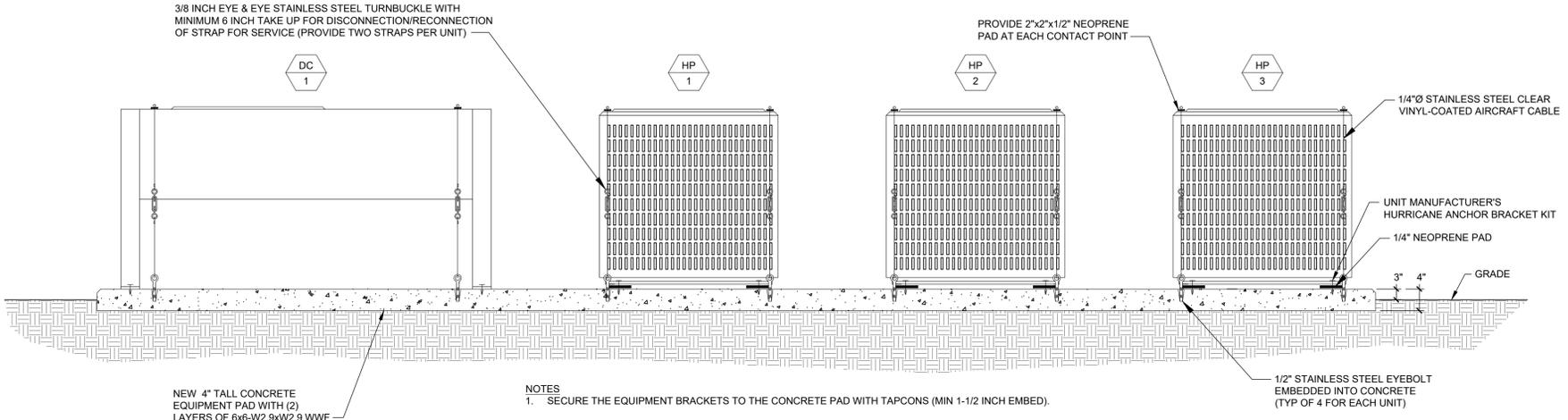
FLOOR PLAN - MECHANICAL

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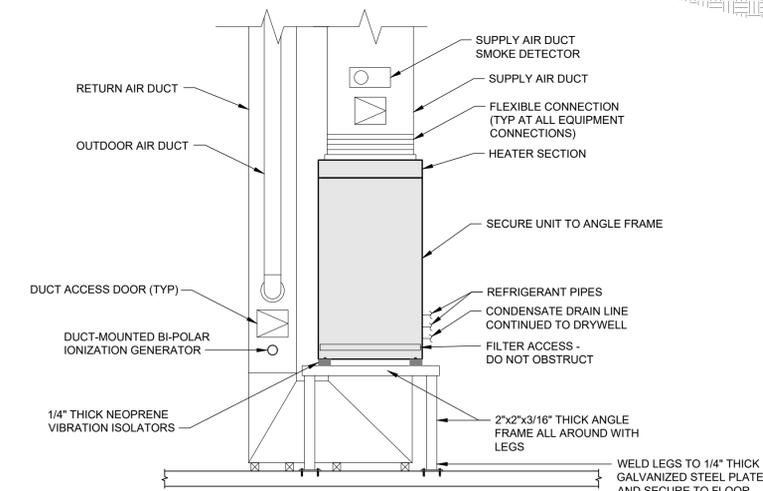
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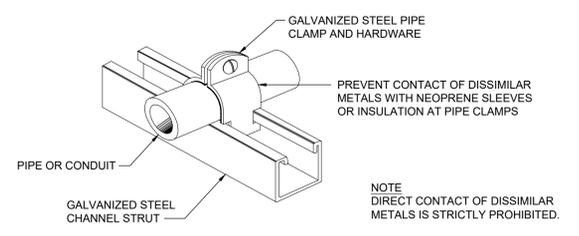
10 EQUIPMENT SUPPORT - JOIST ATTACHMENT
 M5.1 NOT TO SCALE



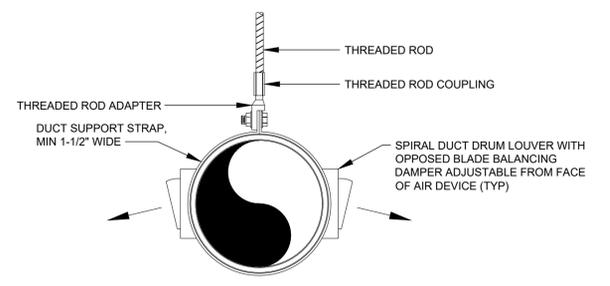
7 TYPICAL OUTDOOR EQUIPMENT INSTALLATION DETAIL
 M5.1 NOT TO SCALE



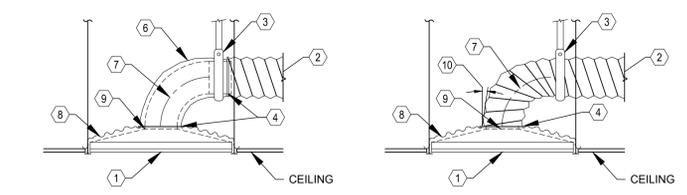
9 AH (< 6 TONS) SUPPORT DETAIL
 M5.1 NOT TO SCALE



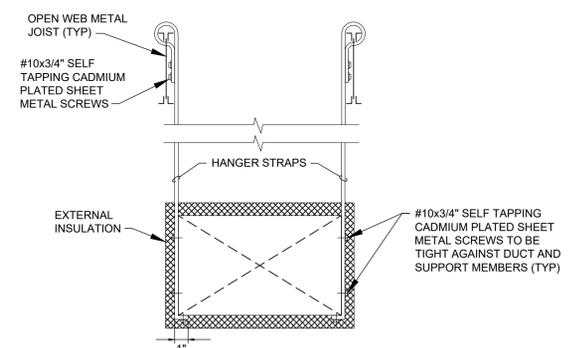
6 TYPICAL PIPE SUPPORT
 M5.1 NOT TO SCALE



3 TYPICAL SPIRAL DUCT SUPPORT
 M5.1 NOT TO SCALE



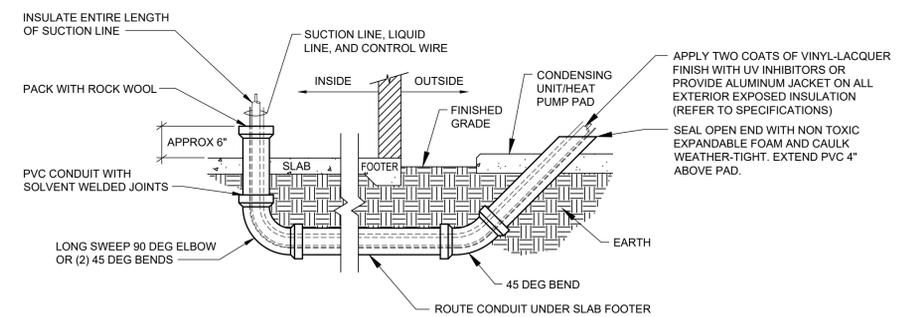
8 TYPICAL AIR DEVICE FLEXIBLE CONNECTIONS
 M5.1 NOT TO SCALE



5 DUCT STRAP HANGERS
 M5.1 NOT TO SCALE

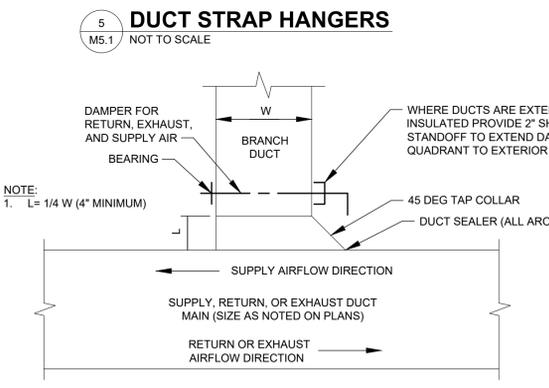
RECTANGULAR DUCT HANGER SIZES			
MAXIMUM SIDE	HANGER	HORIZONTAL SUPPORT MEMBER	MAXIMUM SPACING
30"	1" x 18 GAGE STRAP	NONE REQUIRED	10'-0"
36"	1/4" ALL-THREAD ROD	1-1/2" x 1-1/2" x 1/8"	8'-0"
48"	1/4" ALL-THREAD ROD	2" x 2" x 1/8"	8'-0"

NOTES:
 1. NO POP RIVETS ALLOWED.
 2. DUCTS SHALL BE INSULATED AS REQUIRED BY THE SPECIFICATIONS.

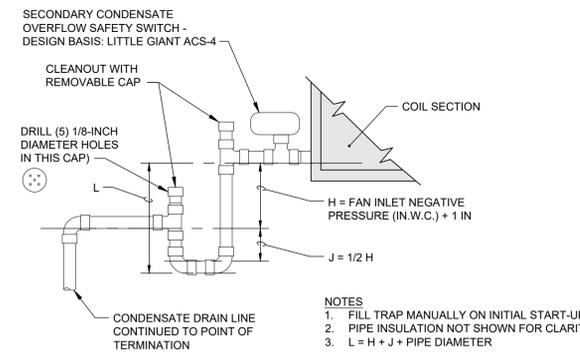


2 BURIED CONDUIT FOR REFRIGERANT LINES AND CONTROLS
 M5.1 NOT TO SCALE

- DETAIL NOTES**
- USE INSULATED FLEXIBLE DUCTWORK ONLY AS INDICATED ON THE CONTRACT DRAWINGS.
 - MAXIMUM FLEXIBLE DUCT SAG BETWEEN SUPPORTS POINTS SHALL BE 1/2" PER FOOT.
 - FLEXIBLE DUCTS SHALL BE ONE-PIECE AND SHALL NOT BE SPLICED TOGETHER.
 - EXTEND FLEXIBLE DUCT INSULATION TO DUCT/AIR DEVICE INSULATION AND SEAL WITH MASTIC.
- DETAIL REFERENCE NOTES**
- AIR DEVICE.
 - INSULATED FLEXIBLE DUCT CONTINUED TO RIGID DUCTWORK.
 - PROVIDE FULL PERIMETER SUPPORT ON OUTSIDE OF INSULATION OF ALL ROUND DUCTWORK. MINIMUM WIDTH OF STRAP SHALL BE 1-1/2 INCHES.
 - DRAW-TIGHT OR SCREW-TIGHT BANDS OF NONCORROSIVE MATERIALS TO ATTACH INNER LINER OF FLEXIBLE DUCT TO RIGID DUCTWORK. INNER LINER OF FLEX DUCT SHALL BE SEALED WITH MASTIC AND MECHANICALLY ATTACHED TO RIGID DUCTWORK. SEAL OUTER SKIN OF DUCT.
 - INSULATED, GALVANIZED STEEL AIR DEVICE BOOT AND TRANSITION TO ROUND DUCT.
 - INSULATED, RIGID METAL ELBOW.
 - MINIMUM 1.5 TIMES THE DUCT DIAMETER.
 - 2 INCH BATT INSULATION OVERLAPPING EDGES OF CEILING DIFFUSERS BY 2 INCHES.
 - AIR DEVICE NECK SIZE TO MATCH FLEXIBLE DUCT SIZE.
 - MAXIMUM OFFSET IS 7 DEG FROM VERTICAL.



4 TYPICAL DUCT BRANCH CONNECTION
 M5.1 NOT TO SCALE



1 TYPICAL CONDENSATE DRAIN
 M5.1 NOT TO SCALE

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CONTROL SYSTEM GENERAL NOTES

- A BUILDING MANAGEMENT SYSTEM (BMS) SHALL BE PROVIDED AS PART OF THIS PROJECT.
- THE WORK SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:
 - MICROPROCESSOR BASED CONTROLLERS
 - SENSORS
 - ROUTERS AND COMMUNICATION
 - PANELS
 - SWITCHES
 - WIRING AND CONDUIT
 - SOFTWARE OPERATING SYSTEMS, PROGRAMMING, AND FULL OPERATOR WORKSTATION SYSTEM GRAPHICS
 - COMMISSIONING, CALIBRATION, ACTIVATION, AND DE-BUGGING
 - DEMONSTRATIONS AND TRAINING
- THE CONTRACTOR IS RESPONSIBLE FOR ALL STARTERS, RELAYS, AND WIRING REQUIRED TO ACCOMPLISH THE SEQUENCES OF OPERATION DEFINED ON THIS SHEET.
- ENSURE THAT THE MEASURED SIGNALS ARE COMMUNICATED QUICKLY TO THE CONTROL LOOPS (AND NOT DELAYED DUE TO NETWORK TIMING).
- ALL SET POINTS SHALL BE USER-ADJUSTABLE.
- SEQUENCES ARE PERFORMANCE-BASED AND GENERALLY DO NOT REFER TO SPECIFIC DEAD-BANDS, RESET RATIOS, DELAYS, AND RANGES REQUIRED FOR STABLE OPERATION. THESE PARAMETERS SHALL BE FULLY ADJUSTABLE AT THE OPERATOR WORKSTATION.
- COORDINATE THE RANGE, SET POINT, DEAD-BAND, CHARACTERISTICS AND MOUNTING LOCATIONS OF SENSORS WITH THE ACTUAL EQUIPMENT FURNISHED. INSTALL SENSORS, TUBING, AND WIRING TO BE ACCESSIBLE AND AS NOT TO IMPEDE OR ENCROACH UPON EQUIPMENT SERVICE AND ACCESS AREAS.
- WHERE PROPOSED SEQUENCES COULD DEFEAT THE EQUIPMENT MANUFACTURER'S EQUIPMENT SAFETIES OR BE DETRIMENTAL TO THE EQUIPMENT CONTROLLED, ALERT THE ENGINEER PRIOR TO PROCEEDING WITH WORK.
- PROVIDE MODIFICATION TO THE SET POINTS, DEAD-BANDS, DELAYS AND RANGES BASED UPON THE ACTUAL PERFORMANCE OF THE CONTROLLED EQUIPMENT IN ORDER TO PROVIDE STABLE OPERATION WITHOUT EXCESSIVE CYCLING OR HYSTERESIS. DO NOT MODIFY THE SEQUENCE WITHOUT SUBMITTING AN ALTERNATE SEQUENCE TO THE ENGINEER FOR REVIEW AND APPROVAL.
- IN ADDITION TO SPECIFIC EQUIPMENT ALARMS NOTED IN THE CONTRACT DOCUMENTS, PROVIDE STANDARD ALARMS FOR ITEMS SUCH AS SENSOR FAILURE, OUT-OF-RANGE (HIGH/LOW LIMITS) AND SIMILAR ITEMS.
- COORDINATE SEQUENCES AND DATA ACQUISITION REQUIREMENTS AND PROVIDE FOR TREND LOGGING, REPORT GENERATION, CALCULATED RUN-HOURS, AND SIMILAR PREVENTATIVE MAINTENANCE FUNCTIONS.
- POWER WIRING SHALL NOT BE RUN IN THE SAME CONDUIT AS LOW VOLTAGE WIRING, SIGNAL, OR COMMUNICATIONS WIRING. FINAL CONNECTION TO SENSORS AND ACTUATORS MAY BE MADE WITH FLEXIBLE CONDUIT NOT TO EXCEED 30 INCHES IN LENGTH. COMMUNICATION CABLING CONCEALED ABOVE CEILINGS SHALL BE PLENUM-RATED AND MAY BE RUN WITHOUT CONDUIT, BUT SHALL BE SUPPORTED IN CABLE TRAY (WHERE AVAILABLE), OR SUPPORTED WITH BRIDAL RINGS. EXPOSED COMMUNICATION CABLING SHALL BE RUN IN CONDUIT, EXCEPT WHERE CABLE TRAY IS AVAILABLE TO BE USED.
- WIRING SHALL BE INSTALLED IN ACCORDANCE WITH THE CURRENT VERSION OF THE NATIONAL ELECTRICAL CODE (NEC). CONDUCTORS SHALL BE COPPER, ONE-PIECE, INSTALLED WITHOUT SPLICES. WIRING SHALL BE COLOR-CODED.
- POWER (120V AND ABOVE) AND CONDUIT TO UNIT CONTROLLERS AND PANELS SHALL BE PROVIDED AND TERMINATED BY THE ELECTRICAL CONTRACTOR. TRANSFORMERS, DC POWER RECTIFIERS, AND EXTENSION OF LOW-VOLTAGE POWER TO ACTUATORS, TRANSMITTERS, AND SIMILAR CONTROL DEVICES AND SENSORS SHALL BE PROVIDED BY THE CONTROLS CONTRACTOR.
- "POWER BY DIV 26" REFERS TO POWER PROVIDED BY THE ELECTRICAL CONTRACTOR REGARDLESS OF THE PROJECT SPECIFICATION NUMBERING.
- ALL AIR-MOVING EQUIPMENT SHALL SHUTDOWN DURING A FIRE ALARM AND SHALL AUTOMATICALLY RETURN TO NORMAL OPERATION AFTER THE FIRE ALARM HAS BEEN CLEARED.

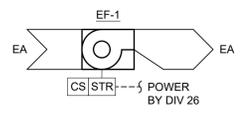
TYPICAL CONTROL POINT LIST

CONTROL POINT	AI	AO	BI	BO
OUTDOOR AIR TEMPERATURE (DEG F)	●	○	○	○
OUTDOOR AIR HUMIDITY (% RH)	●	○	○	○
BUILDING HUMIDITY	○	○	○	○
BUILDING FIRE ALARM	○	○	○	●
EF-1 ON/OFF	○	○	○	●
EF-1 STATUS (CURRENT SWITCH)	○	○	○	●
EF-2 ON/OFF	○	○	○	●
EF-2 STATUS (CURRENT SWITCH)	○	○	○	●
SPLIT SYSTEM CONTROLLER (SEE NOTE 2)	AI	AO	BI	BO
ZONE TEMPERATURE SENSOR 1 (DEG F)	○	○	○	○
ZONE TEMPERATURE SENSOR 2 (DEG F)	○	○	○	○
ZONE TEMPERATURE SET POINT (DEG F)	○	○	○	○
SYSTEM ENABLE/DISABLE	○	○	○	○
FAN	○	○	○	○
COOLING MODE	○	○	○	○
HEATING MODE - HEAT PUMP	○	○	○	○
HEATING MODE - AUX ELECTRIC HEAT	○	○	○	○
DUCT-MOUNTED SA TEMP SENSOR (DEG F)	○	○	○	○
RA NEEDLEPOINT BIPOLAR IONIZATION (ON/OFF)	○	○	○	○
100% OA SPLIT SYSTEM CONTROLLER (SEE NOTE 3)	AI	AO	BI	BO
SYSTEM ENABLE/DISABLE	○	○	○	○
MODE (COOLING/HEATING)	○	○	○	○
OA DAMPER POSITION WITH END SWITCH	○	○	○	○
OA NEEDLEPOINT BIPOLAR IONIZATION (ON/OFF)	○	○	○	○
SA DUCT-MOUNTED TEMP SENSOR (DEG F)	○	○	○	○
ALARM	○	○	○	○

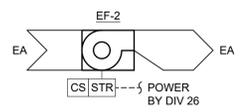
- NOTES**
- THIS SCHEDULE SHOWS THE MINIMUM POINTS REQUIRED. PROVIDE ALL POINTS AS REQUIRED FOR THE MECHANICAL EQUIPMENT TO PERFORM THE SEQUENCE OF OPERATIONS.
 - SPLIT SYSTEM CONTROLLERS SHALL HOUSE ALL OPERATING SEQUENCES FOR STAND-ALONE OPERATION IF COMMUNICATION TO BMS IS TEMPORARILY LOST.
 - 100% OA UNIT SHALL BE CONTROLLED BY THE MANUFACTURER'S CONTROLLER AND SHALL COMMUNICATE TO THE BMS VIA BACNET. THE POINTS LISTED ARE THE MINIMUM POINTS TO BE MONITORED/ADJUSTED THROUGH THE BMS.

CONTROL LEGEND

SYMBOL	DESCRIPTION
CS	CURRENT SWITCH
DM	DAMPER MOTOR - ELECTRIC
DPS	DIFFERENTIAL PRESSURE SWITCH
ES	ENTHALPY SENSOR
HS	HUMIDITY SENSOR
ION	BIPOLAR IONIZATION BAR
RLY	RELAY
SD	SMOKE DETECTOR
STR	MOTOR STARTER WITH RELAYS
THS	TEMPERATURE AND HUMIDITY SENSOR
TS	TEMPERATURE SENSOR
DIV 16	ELECTRICAL CONTRACTOR
F/A	FIRE ALARM SYSTEM
T	THERMOSTAT
[Symbol]	MANUAL DAMPER
[Symbol]	CONTROL DAMPER
[Symbol]	FAN
[Symbol]	COOLING COIL
[Symbol]	HEATING COIL
[Symbol]	AIR FILTERS



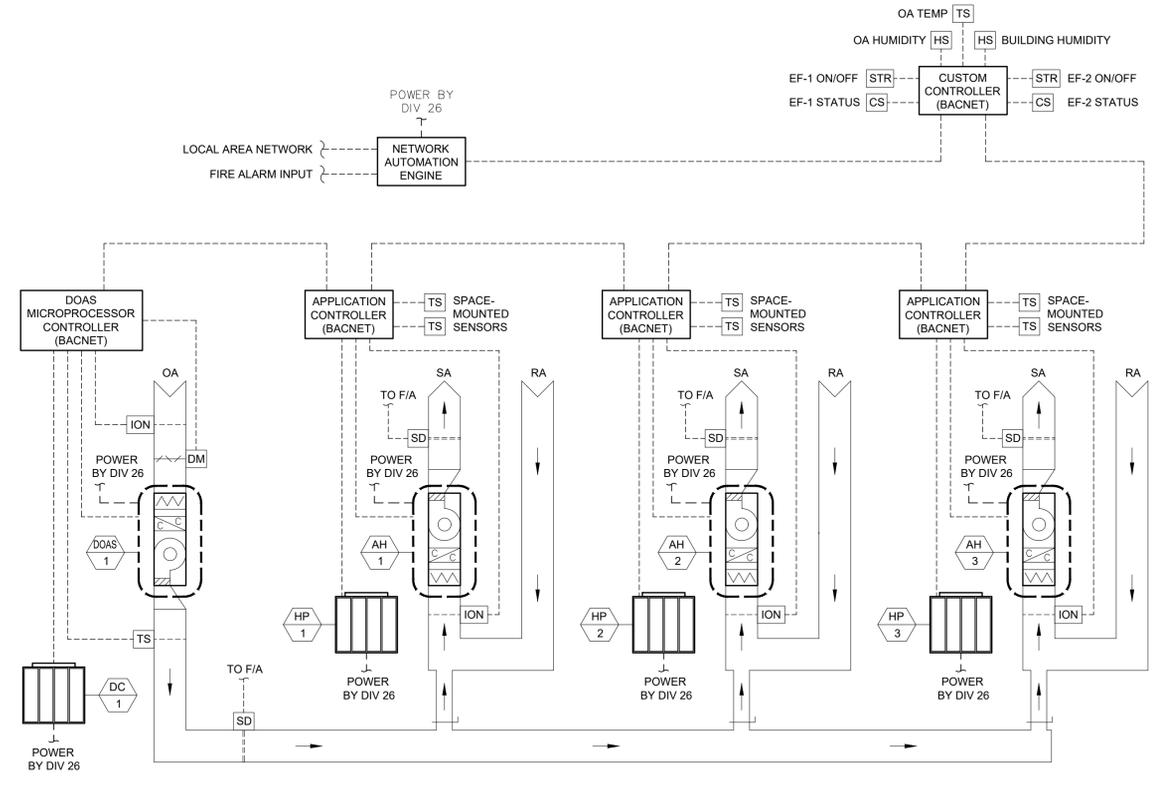
THE INLINE FAN SERVING THE RESTROOMS, WORKROOM, SECURED STORAGE, AND JANITOR CLOSET SHALL BE CONTROLLED BY THE BMS TO OPERATE ON A TIME-OF-DAY SCHEDULE. THE TIME-OF-DAY SCHEDULE SHALL BE COORDINATED TO MATCH THE 100% OUTDOOR AIR SPLIT SYSTEM SCHEDULE. THE EXHAUST FAN STATUS WILL BE MONITORED BY THE BMS.



THE INLINE FAN SERVING THE SIGNAGE LARGE FORMAT ROOM SHALL BE CONTROLLED BY THE BMS TO OPERATE ON A TIME-OF-DAY SCHEDULE. THE TIME-OF-DAY SCHEDULE SHALL BE COORDINATED TO MATCH THE 100% OUTDOOR AIR SPLIT SYSTEM SCHEDULE. THE EXHAUST FAN STATUS WILL BE MONITORED BY THE BMS.

2 EXHAUST FAN SEQUENCES AND SCHEMATICS

M6.1 NOT TO SCALE



- SEQUENCE OF OPERATION - BUILDING HVAC SYSTEM**
- SUPPLY FANS**
- THE SUPPLY FAN SHALL BE STARTED AND STOPPED BY THE BMS BASED ON AN OCCUPANCY SCHEDULE. THE FAN START SHALL BE SUBJECT TO SAFETIES SUCH AS FIRE ALARM, SMOKE DETECTORS, OVERLOADS, ETC.
- OCCUPIED MODE**
- OUTSIDE AIR DAMPER SHALL OPEN
 - DOAS-1 SHALL BE ENABLED TO OPERATE CONTINUOUSLY
 - AH-1, AH-2, AND AH-3 TEMPERATURE SET POINTS SHALL BE SWITCHED TO THE OCCUPIED MODE SET POINTS
 - AH-1, AH-2, AND AH-3 SHALL ENTER FAN-ON MODE AND CYCLE THE COOLING AND HEATING AS NEEDED TO MAINTAIN ZONE TEMPERATURE
- UNOCCUPIED MODE**
- AH-1, AH-2, AND AH-3 TEMPERATURE SET POINTS SHALL BE SWITCHED TO THE UNOCCUPIED MODE SET POINTS
 - AH-1, AH-2, AND AH-3 SHALL SWITCH TO FAN-AUTO MODE AND THE UNITS SHALL CYCLE AS NEEDED TO MAINTAIN THE ZONE TEMPERATURE
 - DOAS-1 SHALL BE DISABLED AND SHALL NOT OPERATE IN THE UNOCCUPIED MODE
 - OUTSIDE AIR DAMPER SHALL CLOSE
- UNOCCUPIED MODE - HUMIDITY CONTROL**
- IF THE BUILDING HUMIDITY RISES ABOVE THE UNOCCUPIED MAXIMUM SPACE RELATIVE HUMIDITY SET POINT THE FOLLOWING SHALL OCCUR:
- DOAS-1 SHALL REMAIN DISABLED AND THE OUTDOOR AIR DAMPER SHALL REMAIN SHUT
 - AH-1, AH-2, AND AH-3 SHALL BE SWITCHED TO FAN-ON MODE AND THE TEMPERATURE SET POINTS WILL BE RESET TO THE DEHUMIDIFICATION SET POINTS
 - AH-1, AH-2, AND AH-3 SHALL REVERT TO THE UNOCCUPIED MODE WHEN THE BUILDING RELATIVE HUMIDITY IS LOWERED 5%RH BELOW THE UNOCCUPIED SET POINT
- SET POINTS (USER ADJUSTABLE)**
- | | |
|---|----------|
| OCCUPIED SPACE COOLING TEMPERATURE SET POINT: | 75 DEG F |
| OCCUPIED SPACE HEATING TEMPERATURE SET POINT: | 72 DEG F |
| UNOCCUPIED SPACE COOLING SET POINT: | 80 DEG F |
| UNOCCUPIED SPACE HEATING SET POINT: | 60 DEG F |
| UNOCCUPIED MAXIMUM SPACE RELATIVE HUMIDITY: | 60% |

1 CONTROL SCHEMATIC BUILDING HVAC CONTROLS

M6.1 NOT TO SCALE

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CONTROLS - MECHANICAL