

DUCTLESS AH HEAT PUMP UNIT SCHEDULE										
PLAN MARK	MODEL NUMBER	UNIT TYPE	FAN DATA		COOLING DATA			HEATING DATA		UNIT WEIGHT (LBS)
			SUPPLY AIR CFM	OUTSIDE AIR CFM	INDOOR ENT. DB	INDOOR ENT. WB	TOTAL MBH	INDOOR ENT. DB	TOTAL MBH	
AH-1	MSZ	WALL	660	0	80.0	67.0	22.5	70.0	20	40
GENERAL NOTES 1. BASIS OF DESIGN: MITSUBISHI ELECTRIC 2. PROVIDE TWO YEAR FULL WARRANTY. 3. PROVIDE MANUFACTURER'S 7 DAY PROGRAMMABLE CONTROLLER (T-STAT). 4. PROVIDE EACH AH WITH A CONDENSATE PUMP (ASPEN PUMPS ASP-MAL-G24, 24 VOLT). 5. PROVIDE COMMUNICATION / POWER WIRING FROM OUTDOOR TO INDOOR UNIT PER MANUFACTURER'S INSTALLATION MANUAL. 6. PROVIDE WITH BACNET INTERFACE FOR INTEGRATION INTO BUILDING AUTOMATION SYSTEM.										

AIR COOLED CONDENSING UNIT SCHEDULE										
PLAN MARK	MODEL NO.	AMB. OPERATING TEMP. (°F) (COOL/HEAT)	REF. TYPE	NO. COMP.	ELECTRICAL DATA			CONNECT TO AH-X	UNIT WEIGHT (LBS)	MIN. SEER
					MCA	MOP	VOLT / PHASE			
CU-1	MUZ	95 / 14	R-410A	1	17.0	20.0	208.0	AH-1	141	17
GENERAL NOTES 1. BASIS OF DESIGN: MITSUBISHI ELECTRIC 2. ALL REFRIGERANT PIPING SHALL BE PROVIDED WITH LONG RADIUS ELBOWS. 3. PROVIDE WITH COMPRESSOR CRANKCASE HEATER. 4. PROVIDE UNIT WITH ANTI-SHORT CYCLE TIME DELAY. 5. PROVIDE UNIT WITH REFRIGERANT LIQUID LINE SIGHT GLASS AND DRYER. 6. PROVIDE SERVICE CONNECTIONS TO EQUIPMENT AS SHOWN ON PLANS, ELEVATIONS, SECTIONS, AND AS REQUIRED BY SPECIFICATIONS. 7. PROVIDE WITH 5 YEAR COMPRESSOR WARRANTY, LUVATA COIL AND CASING CORROSION PROTECTION COATING OR EQUAL AND LOW AMBIENT COOLING DOWN TO 14 DEG. F. 8. PROVIDE ROOF SUPPORTS WITH MINIMUM HEIGHTS PER FC-1509 8.5 AND WITH HURRICANE TIE DOWNS FOR A WINDLOAD OF 180 MPH. CALCULATIONS TO BE STAMPED BY A REGISTERED FLORIDA PROFESSIONAL STRUCTURAL ENGINEER.										

ELECTRIC DUCT HEATER SCHEDULE								
PLAN MARK	HEATER TYPE	AIRFLOW (CFM)	ENTERING DB (°F)	LEAVING DB (°F)	ACTUAL CAPACITY (KW)	NOM. CAPACITY (KW)	STEPS	VOLTPH
EDH-1	SLIP-IN	2770	55	84	25.5	30.0	SCR	480/3
GENERAL NOTES 1. COORDINATE EXACT SIZE OF HEATER WITH UNIT AND DUCTWORK SHOP DRAWINGS. 2. PROVIDE HEATER WITH AUTO RESET PRIMARY TEMPERATURE LIMIT, SECONDARY HIGH LIMITS, AIRFLOW SWITCH, 80/20 NICKEL-CHROMIUM ELEMENTS, FUSING PER UL AND NEC AND CONTROL TRANSFORMER. 3. PROVIDE MANUAL RESET SECONDARY LIMIT. 4. PROVIDE DOOR INTERLOCKING DISCONNECT SWITCH AND MAIN LINE FUSING. 5. DE-RATE ELEMENTS AS REQUIRED BY MANUFACTURER FOR FINAL FACE AREA. 6. PROVIDE SINGLE POINT POWER CONNECTION, UN-EVEN AIR FLOW DUE TO FAN DISCHARGE AND FPM. 7. PROVIDE WITH VAPOR BARRIER APPLIED TO REAR EXTERIOR WALL OF CONTROL CABINET.								

VAV BRANCH DUCT SIZE(S)			
BOX SIZE	IF EXCEEDING 10'	INLET SIZE	OUTLET SIZE
4	6"Ø	4"Ø	10X8
5	8"Ø	5"Ø	10X8
6	8"Ø	6"Ø	10X8
8	10"Ø	8"Ø	
10	12"Ø	10"Ø	14X11
12	16X12	12"Ø	17X14
14	20X14	14"Ø	19X18
16	22X16	16"Ø	23X18

NOTES
 1. BRANCH DUCT SIZES FOR VAV'S SHALL FOLLOW THE SCHEDULE ABOVE.
 2. BRANCH DUCT RUNS EXCEEDING 10' TO THE INLET OF THE UNIT SHALL BE THE SIZE LISTED. REDUCE DUCT TO INLET SIZE OF VAV. FOUR EQUIVALENT DUCT DIAMETERS IN LENGTH PRIOR TO INLET.

EXHAUST FAN SCHEDULE															
PLAN MARK	PRODUCT MANUFACTURER	MODEL	TYPE	CFM	STATIC PRESSURE	FAN RPM	MOTOR			VOLT / PHASE	DRIVE TYPE	INLET SONES	ACCESSORIES	INTERLOCKS	
							RPM	HP	ECM						
EF-1-1	GREENHECK	SQ-163-VG	CENTRIFUGAL INLINE	1,400	1.50	1401	1600	1	YES	120/1	DIRECT	11.0	1.5,12,24,26	AHU-1	
EF-1-2	GREENHECK	SQ-97-VG	CENTRIFUGAL INLINE	260	1.00	2105	2492	1/2	YES	120/1	DIRECT	18.9	1.5,12,24,26	AHU-1	
EF-2-1	GREENHECK	G-143-VG	CENTRIFUGAL INLINE	1,700	1.50	1602	1725	1	YES	120/1	DIRECT	15.3	1.5,12,24,26	AHU-2	
EF-3-1	GREENHECK	G-163-VG	CENTRIFUGAL INLINE	2,305	1.50	1415	1725	2	YES	208/1	DIRECT	16.6	1.5,12,24,26	AHU-3	

GENERAL NOTES
 1. MODEL NUMBERS AND FAN SELECTION ARE BASED ON GREENHECK WITH THE FOLLOWING ACCESSORIES SCHEDULED:
 1) BACKDRAFT DAMPER
 2) THERMOSTAT
 3) BIRDSCREENS
 4) 1" FAN GUARD
 5) DISCONNECT SWITCH
 6) EXPLOSION PROOF DISCONNECT
 7) EQUIPMENT SUPPORTS
 8) MOTORIZED DAMPER
 9) CURB MOUNT ROOF JACK
 10) SPEED CONTROLLER
 11) WALL SHUTTER
 12) VIBRATION ISOLATORS
 13) WALL CAP
 14) WALL SHUTTER - MOTORIZED
 15) WEATHER COVER
 16) 2 SPEED / 1 WINDING
 17) WALL COLLAR
 18) VARIABLE FREQUENCY DRIVE AND CONTROL
 19) FAN GUARDSCREEN
 20) AMCA-A SPARK PROOF CONSTRUCTION
 21) INSULATED HOUSING FOR SOUND CONTROL
 22) HINGED FRAMES
 23) CORROSION PROOF COATING
 24) UL 705
 25) ISOLATION DAMPER
 26) MIAMI DADE RATED CONSTRUCTION, COMPLYING WITH TEST PROTOCOLS, TAS-201, TAS-202, TAS-203. CURB AND UNIT FASTENING DESIGN SHALL BE SIGNED AND SEALED BY A LICENSED FLORIDA STRUCTURAL ENGINEER AND SHALL BE INCLUDED DURING THE SHOP DRAWING SUBMITTAL PROCESS.
 2. INSTALL ALL OUTDOOR FANS PER MANUFACTURER'S DETAILED INSTRUCTIONS FOR MAINTAINING HIGH WIND CERTIFICATIONS.
 3. STATIC PRESSURE EXCLUDES FILTER, BELT, OR OTHER INTERNAL COMPONENT LOSSES.

BUFFER TANK						
PLAN MARK	MODEL	TANK SIZE (GAL.)	MAXIMUM WORKING TEMP. (°F)	WORKING PRESSURE (PSI)	PIPE SIZE (IN.)	SERVICE
BT-1	AET24X72	136	450	125	4.0	PRIMARY CHW
GENERAL NOTES 1. BASIS OF DESIGN: ARMSTRONG 2. PROVIDE GALVANIZED FINISH						

AIR AND DIRT SEPARATOR						
PLAN MARK	MODEL	FLOW (GPM)	MAXIMUM PRESSURE (FT)	SIZE (DIAM)	PIPE SIZE (IN.)	SERVICE
AS-1	VDN400	193	2	14	4.0	PRIMARY CHW
GENERAL NOTES 1. BASIS OF DESIGN SPYROTERM, FLANGED WITH STRAINER.						

AIR DISTRIBUTION SCHEDULE						
SYMBOL/TAG	CFM	DUCT/NECK SIZE	FACE SIZE LENGTH	DESCRIPTION	ENTERING DB (°F)	LEAVING DB (°F)
B (XXX)	000-100 101-210 211-380 381-490 491-600 601-800 801-1000 1001-1500 1501-2000	6x6 or 6Ø 8x8 or 8Ø 10x10 or 10Ø 12x12 or 12Ø 14x14 or 14Ø 16x16 or 16Ø 18x18 or 18Ø 20x20 or 20Ø 22x22 or 22Ø 24x24 or 24Ø	24x24 24x24 24x24 24x24 24x24 24x24 24x24 24x24 24x24 24x24	BASIS OF DESIGN: PRICE 630 COLOR: WHITE MATERIAL: ALUMINUM OPPOSED BLADE DAMPERS: NO SQUARE TO ROUND ADAPTOR 12x12 FACE MAY BE USED IN HARD CEILING FOR AIRFLOWS LESS THAN 150 CFM. DOUBLE DEFLECTION 3/4" SPACING		
C (XXX)	050-220 221-380 381-490 491-600 601-800 801-1000 1001-1500 1501-2000	8x8 10x10 12x12 14x14 16x16 18x18 20x20 22x22 24x24	24x16 24x16 24x16 24x16 24x16 24x16 24x16 24x16 24x16	BASIS OF DESIGN: PRICE 620 COLOR: WHITE MATERIAL: ALUMINUM OPPOSED BLADE DAMPERS: YES DOUBLE DEFLECTION 3/4" SPACING BASIS OF DESIGN: PRICE 620/DAL COLOR: WHITE MATERIAL: ALUMINUM OPPOSED BLADE DAMPERS: YES SINGLE DEFLECTION 3/4" SPACING FIXED LOUVERS		
D (XXX)	990-1015	24X16	24X16	DOUBLE DEFLECTION 3/4" SPACING		
E (XXX)	050-100 101-220 221-380 381-540 541-700 701-960 961-1040 1041-1500	6x6 8x8 10x10 12x12 14x14 16x16 20x16 24x24	6x6 8x8 10x10 12x12 14x14 16x16 20x16 24x24	BASIS OF DESIGN: PRICE 630/DAL COLOR: WHITE MATERIAL: ALUMINUM OPPOSED BLADE DAMPERS: YES SINGLE DEFLECTION 3/4" SPACING FIXED LOUVERS		
F (XXX)	890-890 1700-1700 1701-2305 5445-5445	24X16 54X16 58X14 48X42	24X16 54X16 58X14 48X42	BASIS OF DESIGN: PRICE 630/DAL COLOR: WHITE MATERIAL: ALUMINUM OPPOSED BLADE DAMPERS: YES SINGLE DEFLECTION 3/4" SPACING FIXED LOUVERS		
G (XXX)	050-170 171-300 301-450 451-700 701-950 951-1150 1151-1350 1351-2000	DUCT SIZE 60 80 100 120 140 160 180 200	NOZZLE SIZE 60 80 100 120 140 160 180 200	BASIS OF DESIGN: PRICE ND COLOR: WHITE MATERIAL: ALUMINUM OPPOSED BLADE DAMPERS: NO SWIVEL RANGE OF +/- 30 DEG.		
H (XXX)	4 FT LONG PLENUM WITH 8" R INLET 46 CFM/FT			BASIS OF DESIGN: PRICE ND MODEL "AS" (LINEAR AIR DEVICE) COLOR: BLACK MATERIAL: ALUMINUM OPPOSED BLADE DAMPERS: NO (1) - 1" SLOT WITH PATTERN CONTROLLER. PROVIDE WITH PLENUM AND EXPOSED FRAME FOR SIDEWALL APPLICATION		
NOTES 1. AIR DISTRIBUTION DEVICES LOCATED WITHIN ACOUSTICAL TILE CEILINGS SHALL BE PROVIDED WITH BORDER TYPE FOR LAY-IN MOUNTING. AIR DISTRIBUTION DEVICES LOCATED WITHIN GYPSUM BOARD CEILINGS OR WALLS SHALL BE PROVIDED WITH BORDER TYPE FOR SURFACE MOUNTING. REFER TO ARCHITECTURAL DOCUMENTS FOR CEILING TYPES. PROVIDE TRIM-RING FOR SQUARE CONE DIFFUSERS LOCATED WITHIN GYPSUM BOARD CEILINGS. 2. AIR DISTRIBUTION DEVICES LOCATED IN SMALL ROOMS WHERE FULL 24"x24" GRID ARE NOT AVAILABLE SHALL BE PROVIDED WITH SURFACE MOUNTING BORDERS IN LIEU OF LAY-IN. SECURE EACH DEVICE TO CEILING GRID WITH FIELD-FABRICATED SUPPORTS.						

ROOF MOUNTED GRAVITY VENTILATORS						
PLAN MARK	MODEL TYPE	CFM	Δ P IN. WG.	ROOF OPENING	CURB HEIGHT INCHES	
GRI-2-1	FGI	2110	0.030	30.25 x 30.25	12	
GRI-3-1	FGI	2620	0.030	30.25 x 30.25	12	
GRV-1-1	FGR	900	0.001	49.25 x 49.25	12	
GENERAL NOTES 1. MODEL TYPES AND VENTILATOR SELECTIONS ARE BASED ON GREENHECK 2. SPAN ALUMINUM GRAVITY INTAKE AND RELIEF. SEE SPECIFICATIONS FOR ALTERNATE MANUFACTURER. 3. PROVIDE BACKDRAFT DAMPER. 4. INSTALL PER MANUFACTURER'S DETAILED INSTRUCTIONS FOR MAINTAINING HIGH WIND CERTIFICATIONS. PROVIDE THIRD PARTY DELEGATED FLORIDA REGISTERED STRUCTURAL ENGINEER'S WIND LOAD CALCULATIONS AND ATTACHMENT DETAILS.						

VARIABLE AIR VOLUME TERMINAL UNIT SCHEDULE: AHU-1											
PLAN MARK	INLET SIZE	MAX PRIMARY CFM	MIN PRIMARY CFM	TOTAL SP IN WG	ENTERING DB (°F)	LEAVING DB (°F)	ELECTRIC HEATING COIL				VOLTPH
							ACTUAL CAPACITY (KW)	NOM. CAPACITY (KW)	STEPS		
VAV-1-1	10	1010	560	1.0	55.0	84.0	5.2	6.0	SCR	480/3	
VAV-1-2	10	975	550	1.0	55.0	84.0	5.1	6.0	SCR	480/3	
VAV-1-3	10	970	545	1.0	55.0	84.0	5.0	6.0	SCR	480/3	
VAV-1-4	10	970	545	1.0	55.0	84.0	5.0	6.0	SCR	480/3	
VAV-1-5	8	585	465	1.0	55.0	84.0	4.3	4.5	SCR	277/1	
VAV-1-6	5	210	75	1.0	55.0	84.0	0.7	1.0	SCR	277/1	
VAV-1-7	8	465	190	1.0	55.0	84.0	1.8	2.0	SCR	277/1	
VAV-1-8	6	355	150	1.0	55.0	84.0	1.4	1.5	SCR	277/1	
VAV-1-9	14	2345	885	1.0	55.0	84.0	8.2	9.0	SCR	480/3	
VAV-1-10	5	165	75	1.0	55.0	84.0	0.7	1.0	SCR	277/1	
VAV-1-11	6	315	175	1.0	55.0	84.0	1.6	2.0	SCR	277/1	
VAV-1-12	5	210	125	1.0	55.0	84.0	1.2	1.5	SCR	277/1	
CV-1-13	6	380	380	1.0	55.0	84.0	3.5	4.0	SCR	277/1	
VAV-1-14	8	490	200	1.0	55.0	84.0	1.8	2.0	SCR	277/1	
VAV-1-15	10	835	455	1.0	55.0	84.0	4.2	4.5	SCR	277/1	
VAV-1-16	8	605	370	1.0	55.0	84.0	3.4	3.5	SCR	277/1	
VAV-1-17	5	155	95	1.0	55.0	84.0	0.9	1.0	SCR	277/1	
VAV-1-18	5	285	160	1.0	55.0	84.0	1.5	1.5	SCR	277/1	

NOTES
 1. DDC CONTROLS TO BE PROVIDED TO VAV BOX MANUFACTURER FOR FACTORY MOUNTING.
 2. PROVIDE HEATER WITH AUTO RESET PRIMARY TEMPERATURE LIMIT, SECONDARY HIGH LIMITS, AIRFLOW SWITCH, 80/20 NICKEL-CHROMIUM ELEMENTS, AND FUSING PER UL AND NEC.
 3. PROVIDE MANUAL RESET SECONDARY LIMIT.
 4. PROVIDE DOOR INTERLOCKING DISCONNECT SWITCH.
 5. PROVIDE 3/8 INCH THICK POLYMER CLOSED CELL FOAM INSULATED CASING.
 6. PROVIDE SINGLE POINT POWER CONNECTION.
 7. SUBMIT CALCULATIONS DEMONSTRATING MAX NC30 RATED IN ACCORDANCE WITH ARI STANDARD 885 AT 1.0" STATIC PRESSURE AT TERMINAL INLET WITH NO LINED DUCT.

VARIABLE AIR VOLUME TERMINAL UNIT SCHEDULE: AHU-2											
PLAN MARK	INLET SIZE	MAX PRIMARY CFM	MIN PRIMARY CFM	TOTAL SP IN WG	ENTERING DB (°F)	LEAVING DB (°F)	ELECTRIC HEATING COIL				VOLTPH
							ACTUAL CAPACITY (KW)	NOM. CAPACITY (KW)	STEPS		
VAV-2-1	16	2980	1355	1.0	55.0	84.0	12.5	13.0	SCR	480/3	
VAV-2-2	16	3045	1355	1.0	55.0	84.0	12.5	13.0	SCR	480/3	
VAV-2-3	8	715	290	1.0	55.0	84.0	2.7	3.0	SCR	277/1	
VAV-2-4	5	270	115	1.0	55.0	84.0	1.1	1.5	SCR	277/1	
VAV-2-5	6	440	180	1.0	55.0	84.0	1.7	2.0	SCR	277/1	

NOTES
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 3. PROVIDE MANUAL RESET SECONDARY LIMIT.
 4. PROVIDE DOOR INTERLOCKING DISCONNECT SWITCH.
 5. PROVIDE 3/8 INCH THICK POLYMER CLOSED CELL FOAM INSULATED CASING.
 6. PROVIDE SINGLE POINT POWER CONNECTION.
 7. SUBMIT CALCULATIONS DEMONSTRATING MAX NC30 RATED IN ACCORDANCE WITH ARI STANDARD 885 AT 1.0" STATIC PRESSURE AT TERMINAL INLET WITH NO LINED DUCT.

VOLT AIR
 THESE ITEMS ARE ELECTRICALLY TESTED TO MEET ALL CITY, STATE AND FEDERAL REQUIREMENTS. ALL ELECTRICAL CODES OF THIS DOCUMENT ARE NOT TO BE CONSIDERED AS A REQUIREMENT FOR THIS PROJECT. ANY ELECTRICAL CODES SHALL BE USED AS A REQUIREMENT FOR THIS PROJECT.
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NO.	DATE	NOTES

FGA PROJECT NUMBER
19048

ISSUE DATE
04-15-2020

SHEET NAME
SCHEDULES - HVAC

SHEET NUMBER
M8.2

Order Plans @