

ROOFTOP UNIT SCHEDULE (HEAT PUMP)

MARK	MANUFACTURER	MODEL	NOMINAL TONS	SUPPLY FAN				COOLING CAPACITY (MBH)		HEATING CAPACITY				ELECTRICAL DATA				WEIGHT
				CFM	OSA (CFM)	E.S.P. (IN. WC)	BHP	TOTAL	SENSIBLE	SEER/IEER	TOTAL HEATING CAPACITY	HEATING POWER INPUT	HEATING SUPPLY AIR TEMP.	V/PH	MCA	MCCP	COMPRESSOR (QTY) RLA/LRA	
RTU-1	CARRIER	50HCC008B2M5-SF4C0	7.5	3000	400	0.8"	1.7	89.62	67.43	12.1/12.8	86.03	6.49 KW	87.3 °F	208/3	67	70	(2) 13.1/83	1240
RTU-2	CARRIER	50HCC008B2M5-SF4C0	7.5	3000	400	0.8"	1.7	89.62	67.43	12.1/12.8	86.03	6.49 KW	87.3 °F	208/3	67	70	(2) 13.1/83	1240

NOTES (ALL NEW UNITS):
 A. PROVIDE FILTER WITH EACH UNIT.
 B. PROVIDE WITH FULLY MODULATING ECONOMIZER WITH ENTHALPY CONTROL.
 C. SMOKE DETECTORS TO BE PROVIDED AND INSTALLED BY CARRIER. LOCATE AS SHOWN ON PLAN.
 D. CONDENSATE TRAP SHALL BE PROVIDED AND INSTALLED BY CONTRACTOR. PROVIDE TRAP OF ADEQUATE DEPTH TO PREVENT STATIC FROM OVERCOMING TRAP SEAL. ROUTE TO NEAREST APPROVED RECEPTOR.
 E. SEE 8/A3.0 FOR CURB WITH HURRICANE TIE DOWN REQUIREMENTS.
 F. OUTDOOR AMBIENT DESIGN TEMPERATURE 95 DEG.F.
 G. SET FAN OPERATION TO CONTINUOUS.
 H. TEMPERATURE SET POINTS DURING OCCUPIED HOURS; HEATING MODE: 66F - COOLING MODE: 75F.
 I. PROVIDED BY 7-ELEVEN AND INSTALLED BY CONTRACTOR. FOR ADDITIONAL INFORMATION CONTACT NATIONAL ACCOUNT REPRESENTATIVE BOBBY KIMBRELL (512) 267-3366, BOBBY.KIMBRELL@CARRIER.UTC.COM.
 J. CONTACT AUTOMATED LOGIC (ALC) AT (866) 390-4275 FOR BUILDING ENERGY MANAGEMENT SYSTEM.
 K. PROVIDE WITH 1/0 FLEX CONTROL MODULE.
 L. PROVIDE WITH CONDENSER COIL HAIL GUARD (LOUVERED DESIGN).
 M. PROVIDE WITH PRE-COATED OUTDOOR COILS WITHIN A 5 MILE RADIUS OF ANY SALT OR BRACKISH WATER.

RTU NOTES

- COORDINATE MANUFACTURER'S RECOMMENDED CLEARANCES AROUND UNIT.
- MECHANICAL CONTRACTOR TO INSTALL OVERFLOW SWITCH INSIDE ROOFTOP UNIT DRAIN PAN ON DOWN-FLOW UNITS AND ALL OTHER COILS THAT DO NOT HAVE A SECONDARY DRAIN AND DO NOT HAVE A MEANS TO INSTALL AN AUXILIARY DRAIN PAN. A WATER-LEVEL MONITORING DEVICE SHALL BE INSTALLED INSIDE THE PRIMARY DRAIN PAN. THIS DEVICE SHALL SHUT OFF THE EQUIPMENT SERVED IN THE EVENT THAT THE PRIMARY DRAIN BECOMES RESTRICTED. EXTERNALLY INSTALLED DEVICES AND DEVICES INSTALLED IN THE DRAIN LINE SHALL NOT BE PERMITTED.

FLEX DUCT SIZE

BASED ON WIRE HELIX FLEXIBLE DUCT: TYPE FLEX-MASTER SIZED @ 0.1 FRICTION RATE (F/100) WITH FLEX DUCT DUCTULATOR. NOTE THAT MAXIMUM FLEX DUCT LENGTH AT 6'-0" FOR FINAL CONNECTION TO AIR DEVICES

CFM	FLEX SIZE
0 TO 80	6"
85 TO 170	8"
175 TO 300	10"
305 TO 500	12"
505 TO 740	14"
745 TO 1050	16"
1055 TO 1450	18"
1455 TO 1900	20"

UL LISTING:
 U-181 / ETL CLASS 1 AIR DUCT STANDARD CODE:
 NFPA 90A AND 90B, BOCA, SBBC HUD/FHA, MIN PROPERTY STD. FLAME SPREAD.....LESS THAN 25 SMOKE DEVELOPE.....LESS THAN 50
 MIN R8.0 FOR ATTIC/UNCONDITION SPACE. MIN R8.0 FOR RETURN CONDITIONED SPACE. MANUFACTURER ARE TO BE USED AS A BASIS FOR DESIGN. EQUAL IS APPROVED.

AIR DEVICE SCHEDULE

MARK	SERVICE	MANUFACTURER	MODEL	STYLE	FACE SIZE	NECK SIZE	FRAME TYPE	NOTES
CD1	SUPPLY	METAL*ARE	V4004D-1	ALUMINUM DOUBLE DEFLECTION WALL SUPPLY GRILLE	20 X 8	18 X 6	SURFACE	A, B, C, D
CD2	SUPPLY	METAL*ARE	5700-6 AL	ROUND NECK CEILING DIFFUSER	24 X 24	PER PLAN	LAY-IN	A, B, C, D
CD3	SUPPLY	METAL*ARE	5700-1 AL	ROUND NECK CEILING DIFFUSER	12 X 12	PER PLAN	SURFACE	A, B, C, D
CD4	SUPPLY	METAL*ARE	V4004D-1	ALUMINUM DOUBLE DEFLECTION WALL SUPPLY GRILLE	12 X 6	SURFACE	SURFACE	A, B, C, D
RG1	RETURN	METAL*ARE	CC5-6	EGGCRATE CEILING REGISTER	24 X 24	22 X 22	LAY-IN	A, B, C, D
RG2	RETURN	METAL*ARE	CC5-1	EGGCRATE SURFACE REGISTER	22 X 22	20 X 20	SURFACE	A, B, C, D
RG3	RETURN	METAL*ARE	CC5-1	EGGCRATE SURFACE REGISTER	12 X 12	10 X 10	SURFACE	A, B, C, D

GENERAL INFORMATION (ALL DEVICES):
 1. ALL DIFFUSERS ARE 4-WAY THROW UNLESS NOTED OTHERWISE.
 2. ALL AIR DEVICES SHALL BE PROVIDED BY 7-ELEVEN AND INSTALLED BY THE CONTRACTOR. FOR ADDITIONAL INFORMATION CONTACT CHAD LITERSKY (214) 350-6871 EXT. 2140 WITH BARTOS INDUSTRIES.
 NOTES:
 A. DIFFUSER NECK SIZE SHALL BE SAME AS BRANCH DUCT SIZE UNLESS NOTED OTHERWISE.
 B. DAMPER AT TAKEOFF TO DEVICE.
 C. STANDARD OFF-WHITE FINISH.
 D. PROVIDE NECK FOR DUCT CONNECTION.

EXHAUST FAN SCHEDULE

MARK	QUANTITY	MANUFACTURER	MODEL	CFM	E.S.P. (IN. WC)	V/PH	WATTS	CONTROL
EF-1,2,3,4	4	GREENHECK	SP-B150	75	0.25	120/1	129	LIGHT SWITCH

NOTES:
 A. PROVIDE GRAVITY BACKDRIFT DAMPER.
 B. PROVIDE SPRING VIBRATION ISOLATORS FOR HANGER ROD SUPPORTS.
 C. TO BE PROVIDED BY 7-ELEVEN AND INSTALLED BY CONTRACTOR. FOR ADDITIONAL INFORMATION CONTACT CHAD LITERSKY (214) 350-6871 EXT. 2140 WITH BARTOS INDUSTRIES.

OUTSIDE AIR CALCULATIONS SCHEDULE

CLASSIFICATION	AREA FT2 (A _z)	CFM PER AREA FT2 (R _a)	PEOPLE PERSONS (P _z)	CFM PER PERSON (R _p)	ZONE EFFECTIVENESS (E _z)
SUPERMARKET	4668	0.06	38	7.5	0.8

$V = R_p P_z + R_a A_z$ $V_{oz} = V_z / E_z$

$7.5 * 38 + 0.06 * 4668 = 565$ $565 / 0.8 = 706.25$

TOTAL REQUIRED: 706
 TOTAL SUPPLIED: 800

HVAC DESIGN REQUIREMENTS

HVAC DESIGN REQUIRES	YES	NO
DUCT SMOKE DETECTOR		X
FIRE DAMPER(S)		X
SMOKE DAMPER(S)		X
FIRE RATED CLOSURE		X
FIRE RATED ROOF/FLOOR CEILING ASSEMBLY		X
FIRE STOPPING		X
SMOKE CONTROL		X

AIR BALANCE SCHEDULE

MARK	OUTSIDE AIR CFM	EXHAUST AIR CFM
RTU-1	+400	
RTU-2	+400	
EF-1,2,3		-300
TOTAL	+800	-300
BUILDING BALANCE +500		

RELIEF VENTILATOR SCHEDULE

MARK	VR-1,2
MANUFACTURER	GREENHECK
MODEL No.	FGR
SERVICE	SALES
CFM (MAXIMUM)	3000
THROAT SIZE (SQ.FT.)	5.83
THROAT VELOCITY (FT./MIN)	514
DIMENSIONS (LxWxH")	20x42x16
PRESSURE DROP ("WC)	0.064
WEIGHT (LBS)	-
REMARKS	A,B

NOTES:
 A. PROVIDE WITH SLEEVE AND BR-10 BAROMETRIC RELIEF DAMPER.
 B. TO BE PROVIDED BY 7-ELEVEN AND INSTALLED BY CONTRACTOR. FOR ADDITIONAL INFORMATION CONTACT CHAD LITERSKY (214) 350-6871 EXT. 2140 WITH BARTOS INDUSTRIES.

HVAC GENERAL NOTES

- CONTRACTOR SHALL SECURE AND PAY FOR ALL REQUIRED PERMITS AND INSPECTIONS AND PERFORM ALL TESTS CALLED FOR OR REQUIRED AS A PART OF HIS WORK. FURNISHED APPROVED CERTIFICATE OF FINAL INSPECTION, AND TURN OVER TO OWNER AT COMPLETION OF PROJECT.
- ALL INSTALLATION OF THE MECHANICAL EQUIPMENT SHALL COMPLY WITH THE MANUFACTURER'S SPECIFICATION AND CLEARANCE REQUIREMENTS.
- ALL HVAC WORK SHALL BE IN ACCORDANCE WITH NFPA 90A, 90B, 96, 54 AND NEC 101, LIFE SAFETY CODE.
- ALL WORK SHALL BE IN STRICT ACCORDANCE WITH THE FOLLOWING CODES:
 2014 FLORIDA BUILDING CODE - BUILDING
 2014 FLORIDA BUILDING CODE - PLUMBING
 2014 FLORIDA BUILDING CODE - MECHANICAL
- INSTALLATION SHALL COMPLY WITH ALL LOCAL, STATE AND NATIONAL CODES, AND WITH LATEST ASHRAE PUBLICATIONS. WORK SHALL BE NEAT AND WORKMANSHIP SHALL BE ACCEPTABLE TO BUILDING STANDARDS.
- CONTRACTOR SHALL INSTALL A COMPLETE TEMPERATURE CONTROL SYSTEM PROVIDE BY TENANT TO INCLUDE: PANELS, MODULES, RELAYS, WIRING, THERMOSTATS, SENSORS, DAMPERS, ACTUATORS AND ALL MISCELLANEOUS ITEMS AS REQUIRED TO FULFILL THE DESIGN INTENT AS INDICATED ON THE PLANS AND IN THE CODED NOTES. THERMOSTATS SHALL BE LOCATED GENERALLY AS SHOWN BUT THEIR EXACT LOCATION SHALL BE FIELD COORDINATED TO AVOID INTERFERENCE WITH WALL MOUNTED WORK.
- ALL LOW VOLTAGE WIRING AND CONDUIT REQUIRED FOR MECHANICAL EQUIPMENT SHALL BE FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR.
- SMOKE DETECTORS WIRED BY DIVISION 16.
- IN THE EVENT OF FAN SHUT DOWN, ALL DUCT MOUNTED DETECTORS SHALL REMAIN IN OPERATION.
- ALL WORK SHALL BE IN STRICT ACCORDANCE WITH STATE AND LOCAL CODES AND ORDINANCES AND THE NATIONAL ELECTRIC CODE.
- CONDENSATE DRAINAGE PIPING FROM RTU'S SHALL BE TRAPPED, SUPPORTED AND RUN AS SHOWN ON DRAWINGS.
- PROVIDE VIBRATION ISOLATION DEVICES AND FLEXIBLE CONNECTIONS TO ALL MOVING MACHINERY.
- DUCT DIMENSIONS SHOWN ARE INSIDE NET DIMENSIONS, ADD TO SHEET METAL SIZE FOR INSULATION THICKNESS. HOLD DUCTWORK TIGHT TO UNDERSIDE OF STRUCTURE UNLESS OTHERWISE NOTED OR REQUIRED BY FIELD CONDITIONS. IT IS REQUIRED TO COORDINATE EXACT MOUNTING HEIGHT IN FIELD WITH SITE INVESTIGATION. SUPPLY, RETURN, OUTSIDE AIR AND RELIEF AIR DUCTS SHALL BE EXTERNALLY INSULATED WITH 1" THICK, 1.5 LBS. DENSITY FOIL FACED FIBERGLASS INSULATION. INSULATION WRAP SHALL BE SEALED WITH FAB AND MASTIC.
- ALL DUCTWORK SHALL MAINTAIN SYSTEM PRESSURE. THE AIR DISTRIBUTION COMPONENTS SHALL BE SEALED IN ACCORDANCE WITH SMACNA REQUIREMENTS. TWO INCH PRESSURE CLASS.
- ALL EXHAUST AIR DUCTWORK SHALL BE A MINIMUM 1/4 GALV. SHEET METAL DUCTWORK. DUCTWORK IS NOT PERMITTED.
- DUCT INSULATION CLOSURE SYSTEM SHALL CONSIST OF GLASS FABRIC AND NON MIGRATING MASTIC. SEALING TIGHT.
- ALL SUPPLY DUCT BENDS FROM THE VERTICAL TO HORIZONTAL AND 90 DEGREE TURNS OF DUCTWORK SHALL HAVE TURNING VANES INSTALLED.

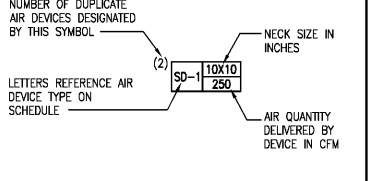
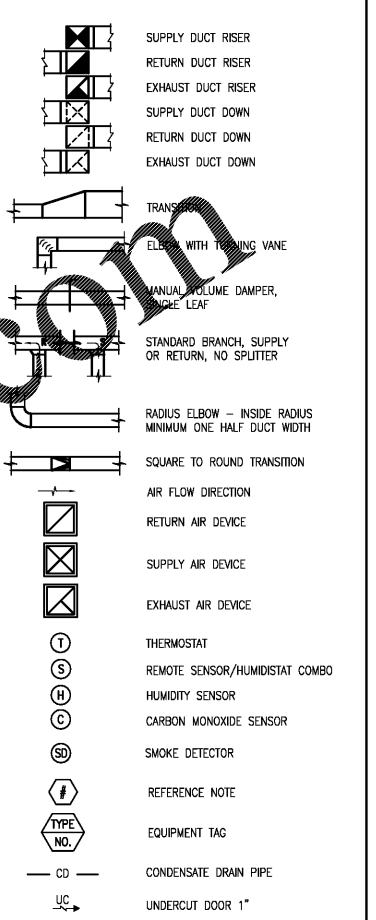
CONTROL SEQUENCE OF OPERATIONS: RTU (ELECTRIC/ELEC)

- ELECTRICAL HEATING/ELECTRIC COOLING RTU SEQUENCE OF OPERATION
- DAY CYCLE - COOLING
- SUPPLY AIR FAN SHALL RUN CONTINUOUSLY.
 - OUTSIDE AIR DAMPER SHALL BE IN MINIMUM POSITION.
 - THERMOSTAT SHALL CALL COMPRESSOR(S) TO MAINTAIN ROOM SET TEMPERATURE.
- DAY CYCLE - HEATING
- SUPPLY AIR FAN SHALL RUN CONTINUOUSLY.
 - OUTSIDE AIR DAMPER SHALL BE IN MINIMUM POSITION.
 - THERMOSTAT SHALL CALL ELECTRICAL HEATER TO ACHIEVE ROOM SET TEMPERATURE.
- ECONOMIZER
- SUPPLY AIR FAN SHALL RUN CONTINUOUSLY.
 - OUTSIDE AIR DAMPER SHALL MODULATE FROM MINIMUM TO 100% OUTSIDE AIR TO MAINTAIN ROOM SET TEMPERATURE.
- SMOKE DETECTOR
- WHEN SMOKE DETECTOR IS ACTIVATED SUPPLY AIR FAN SHALL SHUTDOWN.
 - SUPPLY AIR FAN SHALL BE MANUALLY RESET.

HVAC ABBREVIATIONS

A	AMPS
AFF	ABOVE FINISHED FLOOR
AMB	AMBIENT
BTU	BRITISH THERMAL UNIT
CFM	CUBIC FEET PER MINUTE
EF	EXHAUST FAN
ESP	EXTERNAL STATIC PRESSURE
F	DEGREE FAHRENHEIT
FFM	FEET PER MINUTE
FT	FOOT OR FEET
HZ	HERTZ
IN	INCH
MAX	MAXIMUM
MBH	1,000 BTU'S PER HOUR
MCA	MAXIMUM CIRCUIT AMPACITY
MIN	MINIMUM
MCCP	MAXIMUM OVERCURRENT PROTECTION
NTS	NOT TO SCALE
OA	OUTSIDE AIR
PH	PHASE
RA	RETURN AIR
RPM	REVOLUTIONS PER MINUTE
RTU	NEW ROOF TOP UNIT
SA	SUPPLY AIR

HVAC SYMBOLS LEGEND



FIELD VERIFY ALL CONDITIONS

NOTE! AS NOTED IN THE SPECIFICATIONS, ALL WIRING LAYOUTS, PIPING LAYOUTS AND DUCT LAYOUTS ARE SCHEMATIC. EXACT LOCATIONS SHALL BE DETERMINED BY THE CONSTRUCTION AND STRUCTURE OF THE BUILDING AND SHALL BE VERIFIED AND COORDINATED IN THE FIELD. EACH TRADE CONTRACTOR SHALL VERIFY WITH THE GENERAL CONTRACTOR THAT HE HAS THOROUGHLY REVIEWED AND COORDINATED ALL LOCATIONS AND ROUTINGS WITH ALL OTHER TRADES PRIOR TO FABRICATION OF CONDUITS, DUCTS, OR PIPING, AND START OF INSTALLATION OF SAME (INCLUDING SPRINKLER PIPING WHEN PRESENT ON JOB). ANY INSTALLATION OR CONSTRUCTION CONFLICTS WHICH OCCUR IN THE FIELD SHALL BE RESOLVED BY THE TRADE CONTRACTOR TO THE SATISFACTION OF THE OWNER AND ARCHITECT AND AT NO EXPENSE TO THE OWNER, ARCHITECT AND/OR GENERAL CONTRACTOR.

THE CONTRACTOR SHALL CONTACT THE ARCHITECT, ENGINEER OR OWNER PRIOR TO BIDDING FOR INTERPRETATIONS AND CLARIFICATIONS OF THE DESIGN AND INCLUDE IN HIS BID ALL COSTS TO MEET THE DESIGN INTENT. CLARIFICATIONS MADE BY THE ARCHITECT, ENGINEER OR OWNER AFTER BIDDING WILL BE FINAL AND SHALL BE IMPLEMENTED AT CONTRACTORS COST.

BIDDING CONTRACTORS SHALL HAVE A WORKING KNOWLEDGE OF LOCAL CODES AND ORDINANCES AND SHALL INCLUDE IN THEIR BIDS THE COSTS FOR ALL WORK INSTALLED IN STRICT ACCORDANCE WITH GOVERNING CODES. THE PLANS AND SPECIFICATIONS NOT WITHSTANDING, THE CONTRACTOR SHALL ALERT ARCHITECT, ENGINEER OR OWNER OF ANY APPARENT DISCREPANCIES BETWEEN GOVERNING CODES AND DESIGN INTENT.

SEAL:

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