

SUBMITTAL

Job Title: **Home2 Suites by Hilton**

Location: Flowood, MS

Contractor: Comfort Designs

Date: December 9, 2016

Submitted By: Rob Thomas

GORHAM/SCHAFFLER, INC.
115A Lone Wolf Drive
Madison, MS 39110

Phone: (601) 405-9775

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RN Series

Estimated lead time for curbs is 3 weeks, and 8 weeks for equipment, from receipt of approved submittals.





Equipment selection based on 208/3 electrical service and natural gas heating source

100% OSA HEATING & COOLING UNITS

Manufacturer: AAON, INC.
Model: Series RN
Tag: MAU-1 & 2
Description:

Unit is designed specifically for 100% outside air rooftop applications with weatherproof cabinet, dual circuit refrigeration system, modulating natural gas heating system, total operating and safety controls. Unit is completely factory assembled, piped, tested, internally wired and shipped as a single package. Unit is certified in accordance with UL Standard UL465, and ANSI Standard Z21.47. Units are ETL labeled.

The hinged access panels have 1/4 turn latches. All airside roof and wall casing shall include 2-inch thick rigid, closed cell polyurethane foam double wall construction with an R-value of 13. Finish of corrosion resistant, two par polyurethane, heat dried paint.

Supply fan shall be direct drive, single width inlet, un-housed airfoil centrifugal plenum fan. Motor bearings shall be rated for 200,000 hours service and shall have external lubrication lines. Fan(s) and motor(s) shall be dynamically balanced, and the entire fan assembly mounted on rubber isolators.

Unit has two independent refrigeration circuits. Compressors are fully hermetic type equipped with internal overload protection, mounted with suitable vibration isolators and carry a 5 year parts warranty. Condenser fans shall be high efficiency electronically commutated motor driven with factory installed head pressure control module. Condenser airflow shall continuously modulate based on head pressure. Propeller fans are top discharge, aluminum blades with zinc plated steel hubs. Refrigeration piping includes thermostatic expansion valve, liquid line filter drier, service ports, manual reset high-pressure switch and low-pressure switch.

Hot gas bypass is provided on all circuits. In addition, heat reclaim coil is provided with a modulating refrigerant control valve for leaving air humidity control.

Coils are aluminum plate rippled fin, mechanically bonded to heavy wall seamless copper rifled tubes. Evaporator coil is interlaced to assure all air is conditioned when only one circuit in operation.

The unit filters are 4" pleated type with 2" pleated pre-filters and easily accessible through removable panels.

Heat exchanger is indirect fired, tubular type with .120 wall stainless steel construction. Combustion system includes induced draft combustion blower with electric pressure switch. Control system is 100% safe with electronic spark ignition with pilot relight and





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flame sensor. Controls include main gas solenoid with manual shutoff valve and integral pressure regulator, combination fan and limit control, and proven airflow switch. Gas furnace system is modulating control and approved for outdoor application. Heat exchanger has 25-year non-prorated warranty.

Outside air hood is bottom inlet with mesh grille eliminating the possibility of rain or large foreign objects from being drawn into the outside air opening.

The unit manufacturer supplies all controls for the complete operation of the rooftop unit.

OPTIONAL ACCESSORIES INCLUDE:

1. 100% OSA hood with birdscreen
2. Programmable controller
3. Stainless steel heat exchanger
4. 10:1 turndown furnace control
5. Hot gas bypass all circuits
6. Heat reclaim coil with modulating valve
7. Stainless steel drain pan
8. Sight glass
9. Double wall construction
10. ECM condenser fans for head pressure control
11. Non-fused disconnect
12. MERV 8 pre-filters
13. MERV 12 unit filters
14. Phase protection

SHIPPED LOOSE

1. OE212 room sensors
2. Plenum roof curbs with vibration isolation rails
3. Programming tool

IMPORTANT NOTES:

1. **Required roof curb height is dependent upon actual roofing insulation thickness and minimum clearance requirements. Supply openings in side of plenum curb to be field cut. Factory openings are available with contractor provided detail of opening locations and sizes. Curb drawings are for dimensional reference only. Curb height will be coordinated with contractor and a formal curb/isolation rails submittal will be provided for approval prior to curb release.**
2. Cut roof curb discharge opening in field as required matching discharge duct. Locate unit so that outside air intake is 10' from nearest exhaust fan. **Exterior of curb at base flange must be mopped in with roofing compound or sealant to form airtight seal.**
3. Check blower RPM and adjust as required to RPM shown in submittal schedule. Additional balancing may be required depending on actual external static pressure.
4. Supply air temperature sensor (located in RTU controls cabinet) must be field installed in supply ductwork a minimum of 12 feet downstream of unit discharge. **Wire must be run in watertight conduit external to the unit/duct.**





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5. **Field install space temperature sensors on top floor using 18 AWG - plenum rated, 3 insulated conductor wire with a shield and drain, for each sensor, to the location specified by others.** All sensor wires run from the RTU should be installed properly. Please keep all control wires at least 18 inches from Light Ballasts, High Voltage wires and conduit to prevent interference.
6. **Contractor to confirm equipment heating source and voltage prior to ordering or submittal is assumed correct.**





Unit Rating

2425 South Yukon Ave - Tulsa, Oklahoma 74107-2728 - Ph. (918) 583-2266 Fax (918) 583-6094
AAONEcat32 Ver. 4.247 (SN: 7126944-6D3F6439)

1A 1B 1C 1D 2 3 4 5A 5B 5C 6A 6B 6C 7 8 9 10 11 12 13 14A 14B 15 16 17 18 19 20 21 22 23
RN-020-8-0-BA02-349:M000-U00-DQQ-AF0-0JKBHBFB-00-0000000AX
Tag: MUA-1,2

(Values do not account for changes described in SPA)

Job Information

Job Name: Flowwood MS Home2 Suites
Job Number: Flowwood MS Home2 Suites
Site Altitude: 0 ft
Refrigerant: R-410A

Unit Information

****WEIGHT AND PERFORMANCE DO NOT INCLUDE SPA**

Approx. Op./Ship Weights: 2672 / 2672 lbs. (±5%)
Supply CFM/ESP: 3200 / 1.5 in. wg.
Pre-Filter FV / Qty: 153.60 fpm / 6
Final Filter FV / Qty: 153.60 fpm / 6
Outside CFM: 3200
Ambient Temperature: 83.5 °F DB / 78.7 °F WB

Static Pressure

External: 1.50 in. wg.
Evaporator: 0.12 in. wg.
Filters Clean: 0.10 in. wg.
Dirt Allowance: 0.35 in. wg.

Economizer: 0.00 in. wg.
Heating: 0.07 in. wg.
Cabinet: 0.01 in. wg.
Re-Heat Coil: 0.01 in. wg.
Total: 2.17 in. wg.

Cooling Section

	Gross	Net
Total Capacity:	255.82	250.61 MBH
Sensible Capacity:	95.66	90.45 MBH
Latent Capacity:	160.16 MBH	
Mixed Air Temp:	83.50 °F DB	78.70 °F WB
Entering Air Temp:	83.50 °F DB	78.70 °F WB
Lv Air Temp (Coil):	55.11 °F DB	54.91 °F WB
Lv Air Temp (Unit):	56.58 °F DB	55.50 °F WB
Supply Air Fan:	1 x 270D60 @ 1.81 BHP	
SA Fan RPM / Width:	1009 / 3.091"	
Evaporator Coil:	19.9 ft ² / 4 Rows / 14 FPI	
Evaporator Face Velocity:	161.1 fpm	

Heating Section

PreHeat Type: Std (No Preheat)
Heating Type: Nat. Gas Heat
Heating CFM: 3200
Total Capacity: 218.7 MBH
OA Temp: 17.1 °F DB / 16.0 °F WB
RA Temp: 75.0 °F DB / 62.0 °F WB
Entering Air Temp: 17.1 °F DB / 16.0 °F WB
Leaving Air Temp: 80.3 °F DB / 51.4 °F WB
Input: 270.0 MBH
Heater Qty: 1
Consumption: 270.0 MBH

Re-Heat Coil:

Capacity: 58 MBH
LA DB / WB: 72.00 °F / 61.30 °F
RH: 55%

Rating Information

Cooling Capacity (MBH): 230.0
Cooling EER: 12
Cooling IEER: 13.8
Rated in accordance with AHRI 340/360

Application EER @ Op. Conditions: 14.2

Electrical Data

Rating: 208/3/60
Unit FLA: 85

Minimum Circuit Amp: 92
Maximum Overcurrent: 110

	Qty	HP	VAC	Phase	RPM	FLA	RLA
Compressor 1:	2		208	3			30.1
Condenser Fans:	2	1.00	208	1	1110	7.0	
Supply Fan:	1	3.00	208	3	1170	10.6	
Combustion:	1	0.25	208	1	3210	1.7	

Cabinet Sound Power Levels*

Octave Bands:	63	125	250	500	1000	2000	4000	8000
Discharge LW(dB):	84	84	84	81	77	82	79	75
Return LW(dB):	74	70	67	62	63	59	47	41

*Sound power levels are given for informational purposes only. The sound levels are not guaranteed.



Unit Submittal

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RN-020-8-0-BA02-349:M000-U00-DQQ-AF0-0JKBHBF-00-0000000AX
Tag: MUA-1,2

Job Name:
Job Number:

Flowood MS Home2 Suites
Flowood MS Home2 Suites

Unit Submittal For:
Unit Submittal Date:

February 16, 2016

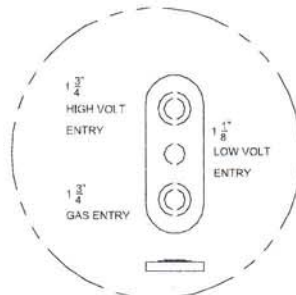
	Base Option	Description
R	Series	Roof Top Unit
N	Generation	Ninth Generation
020	Unit Size	Twenty
8	Voltage	208V/3O/60Hz
0	Interior Protection	Standard
B	Refrigerant Style	R-410A
A	Unit Configuration	Air-Cooled Cond. + Std Evap. Coil
0	Coil Coating	Standard
2	Cooling/Heat Pump Staging	2 Stage
3	Heating Type	Natural Gas Stainless Steel
4	Heating Designation	Heat 4 - 270 MBtuh
9	Heating Staging	Modulating Gas - Temperature Control

	Feature Option	Description
M	1A. RA/OA Section	Motorized 100% Outside Air Dampers - No RA Opening
0	1B. RA/EA Blower Configuration	Standard - None
0	1C. RA/EA Blower	Standard - None
0	1D. RA/EA Blower Motor	Standard - None
U	2. OA Control	2 Position Actuator
0	3. Heat Options	Standard
0	4. Maintenance Options	Standard
D	5A. SA Blower Configuration	1 Blower + Premium Efficiency Motor + 1 VFD
Q	5B. SA Blower	27" Direct Drive Backward Curved Plenum - 60% Width
Q	5C. SA Motor	3.0 hp - 1170 rpm
A	6A. Pre Filter Type	2" Pleated Pre Filter - MERV 8
F	6B. Unit Filter Type	4" Pleated - MERV 12
0	6C. Filter Options	Standard
0	7. Refrigeration Control	Standard - Fixed 55°F Comp. Cooling Lock Out
J	8. Refrigeration Options	HGB Lead + HGB Lag + MHGR
K	9. Refrigeration Accessories	ECM Condenser Fan - Head Pressure Control + Sight Glass
B	10. Power Options	Non-fused Disconnect Power Switch - 150 Amps
H	11. Safety Options	Remote Safety Shutdown Terminals
B	12. Controls	Phase & Brown Out Protection
F	13. Special Controls	Make Up Air Unit Controller - CV Cool + CV Heat
0	14A. Preheat Configuration	Standard - None
0	14B. Preheat Sizing	Standard - None
0	15. Glycol Percent	Water or No WSHP
0	16. Interior Cabinet Options	Standard - Double Wall + R-13 Foam Insulation + Stainless Steel Drain Pan
0	17. Exterior Cabinet Options	Standard
0	18. Customer Code	Standard
0	19. Code Options	Standard - ETL U.S.A. Listing
0	20. Crating	Standard
0	21. Water-Cooled Cond.	Standard - None
A	22. Control Vendors	WattMaster VCM-X Controls
X	23. Type	Special Price Authorization + AAON Gray Paint

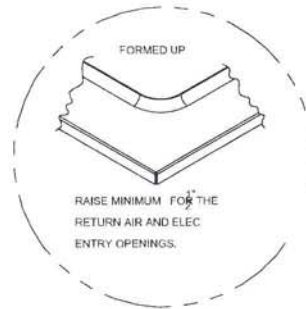
RN SERIES C - CABINET STANDARD ~ 16-30 TON

CLEARANCES

LOCATION	• UNIT SIZE • 16 - 30 TON
OUTSIDE AIR (BACK)	48
CONTROLS SIDE (FRONT)	48
LEFT SIDE	6
RIGHT SIDE	60
TOP	UNOBSTRUCTED



DETAIL A

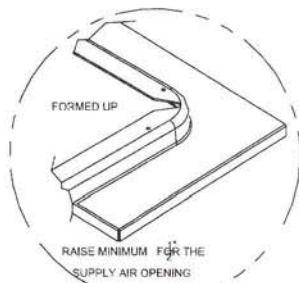


DETAIL B

NUMBER OF CONDENSER FANS

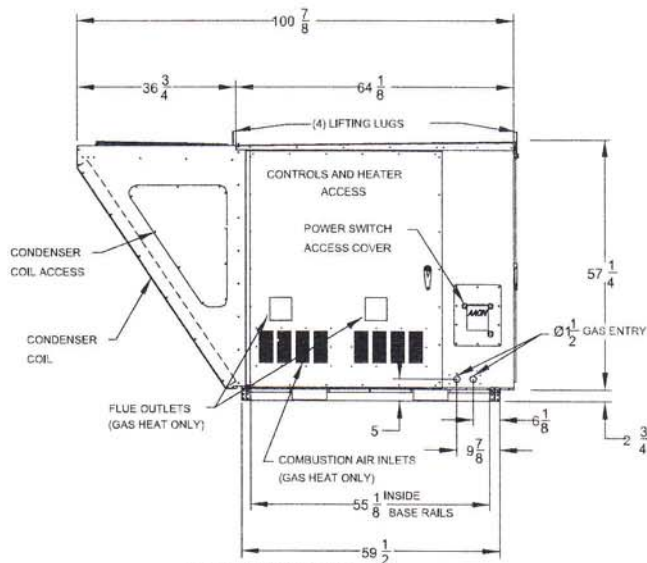
16, 18 & 20 TON - 2 FANS

25 & 30 TON - 3 FANS



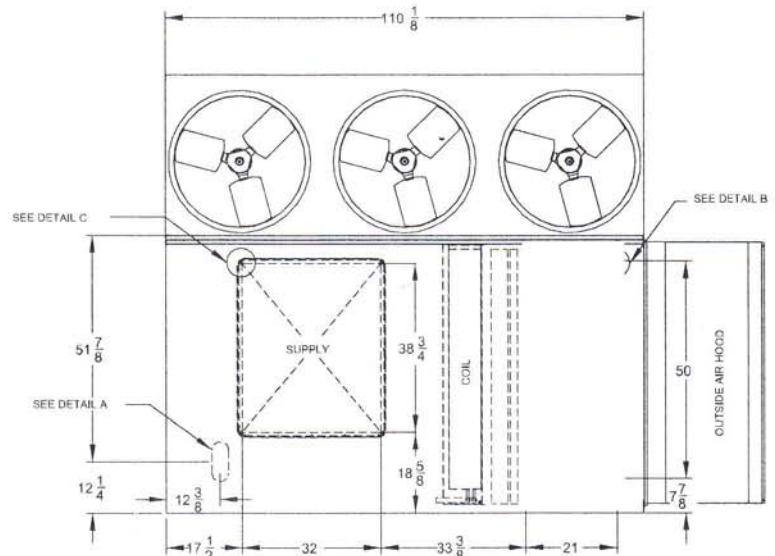
DETAIL C

FRONT VIEW

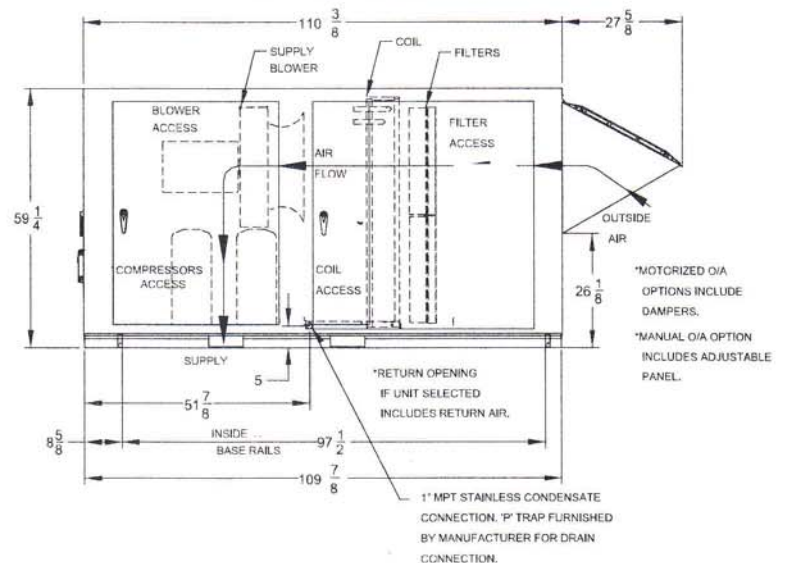


RNC-00001 REV D 08/20/10 JWC
NOTE: ALL DIMENSIONS ARE IN INCHES

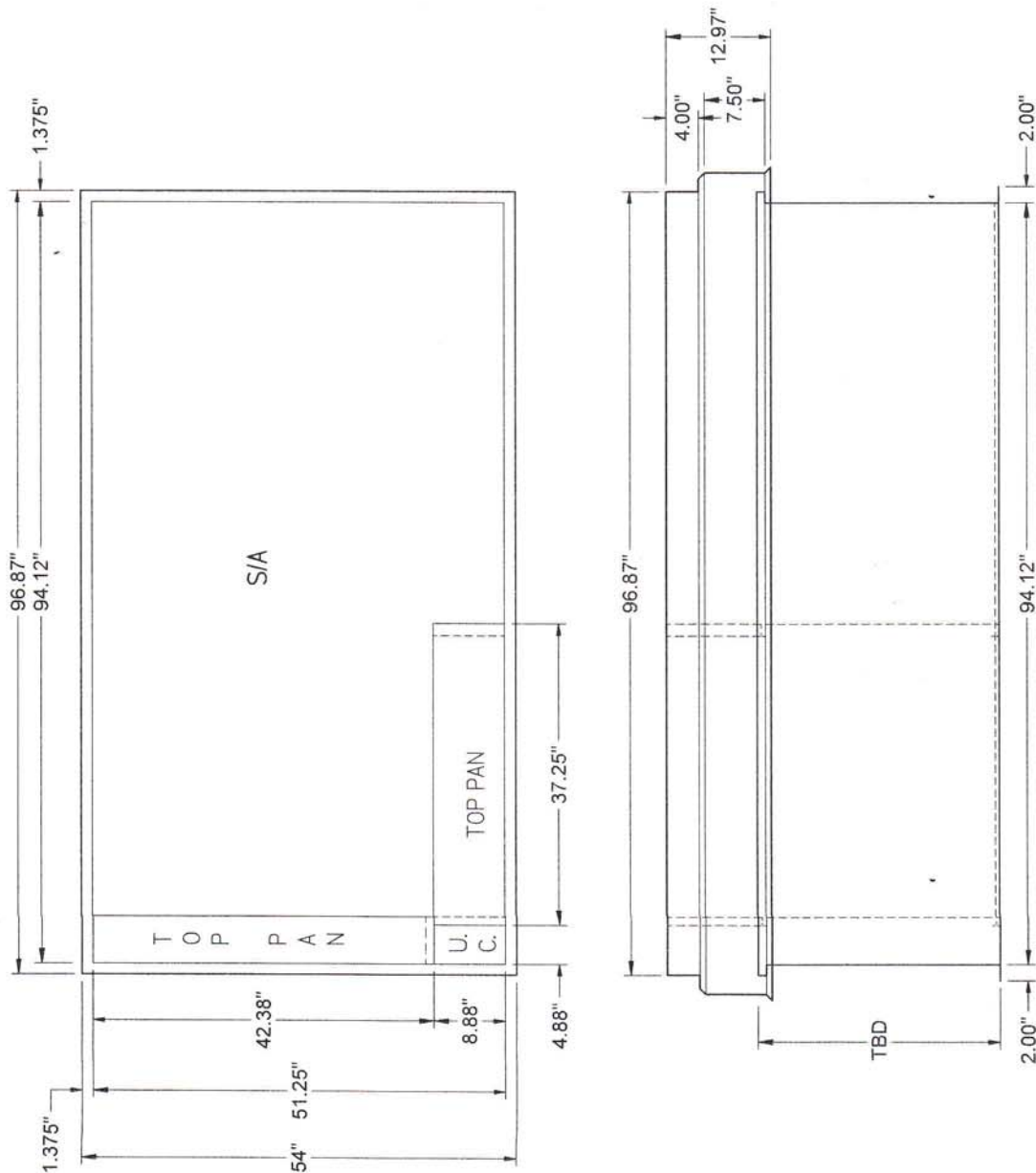
TOP VIEW



RIGHT SIDE VIEW



REV	DESCRIPTION	DATE	APPROVED
1	INITIAL DRAWING	1/7/15	



MGM PRODUCTS, INC.

1080 CULPEPPER DRIVE CONYERS, GA 30094
 PHONE: 770-483-0055 1800-344-3536 FAX: 770-483-0130
 WWW.MGMPRODUCTS.COM

DATE

APPROVED BY

NOTES:

1. TALL FRC
2. GALV STEEL - FULLY WELDED
3. FULLY FOIL FACED INSULATED, 1X4 NAILER
4. NO PARTITION, SOLID BOTTOM
5. FULL DEPTH WALLS

TITLE
 AAON RN "C" STANDARD PLENUM
 1" DEFLECTION ISO

NAME	DATE
DESIGN	1/7/2015
BY	
WEIGHT	
GAUGE	

F.L.E. NAME: AAON RN "C" CABINET STANDARD PLENUM 1.0 TALL 1" DEFLECTION ISO PART 10000