

Project Information

For: Banner Addition
530 SE SHADOW WOOD DRIVE, Lake City, FL 32024

Notes:

Design Information

Weather: Gainesville Regional, FL, US

Winter Design Conditions

Outside db	33 °F
Inside db	70 °F
Design TD	37 °F

Summer Design Conditions

Outside db	92 °F
Inside db	75 °F
Design TD	17 °F
Daily range	M
Relative humidity	50 %
Moisture difference	44 gr/lb

Heating Summary

Structure	18099 Btuh
Ducts	3249 Btuh
Central vent (0 cfm) (none)	0 Btuh
Humidification	0 Btuh
Piping	0 Btuh
Equipment load	21348 Btuh

Sensible Cooling Equipment Load Sizing

Structure	17334 Btuh
Ducts	4927 Btuh
Central vent (0 cfm) (none)	0 Btuh
Blower	0 Btuh
Use manufacturer's data	n
Rate/swing multiplier	0.97
Equipment sensible load	21638 Btuh

Infiltration

Method	Simplified
Construction quality	Average
Fireplaces	0

Latent Cooling Equipment Load Sizing

Structure	2097 Btuh
Ducts	1036 Btuh
Central vent (0 cfm) (none)	0 Btuh
Equipment latent load	3133 Btuh

	Heating	Cooling
Area (ft ²)	1639	1639
Volume (ft ³)	13124	13124
Air changes/hour	0.38	0.20
Equiv. AVF (cfm)	83	44

Equipment Total Load (Sen+Lat)	24770 Btuh
Req. total capacity at 0.80 SHR	2.3 ton

Heating Equipment Summary

Make	Goodman Mfg.
Trade	GOODMAN
Model	GSZH503010A
AHRI ref	208510836
Efficiency	7.8 HSPF2
Heating input	
Heating output	28400 Btuh @ 47°F
Temperature rise	27 °F
Actual air flow	947 cfm
Air flow factor	0.044 cfm/Btuh
Static pressure	0.53 in H2O
Space thermostat	
Capacity balance point = 27 °F	

Cooling Equipment Summary

Make	Goodman Mfg.
Trade	GOODMAN
Cond	GSZH503010A
Coil	AMST36CU1400A
AHRI ref	208510836
Efficiency	12.0 EER2, 15.2 SEER2
Sensible cooling	22720 Btuh
Latent cooling	5680 Btuh
Total cooling	28400 Btuh
Actual air flow	947 cfm
Air flow factor	0.043 cfm/Btuh
Static pressure	0.53 in H2O
Load sensible heat ratio	0.88

Backup:
Input = 6 kW, Output = 20680 Btuh, 100 AFUE

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.

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	Heating	Cooling
External static pressure	0.53 in H2O	0.53 in H2O
Pressure losses	0 in H2O	0 in H2O
Available static pressure	0.53 in H2O	0.53 in H2O
Supply / return available pressure	0.356 / 0.174 in H2O	0.356 / 0.174 in H2O
Lowest friction rate	0.237 in/100ft	0.237 in/100ft
Actual air flow	947 cfm	947 cfm
Total effective length (TEL)	223 ft	

Supply Branch Detail Table

Name	Design (Btuh)	Htg (cfm)	Clg (cfm)	Design FR	Diam (in)	H x W (in)	Duct Matl	Actual Ln (ft)	Ftg.Eqv Ln (ft)	Trunk
BATH	h 660	29	12	0.321	4.0	0x0	VIFx	20.8	90.0	st3
BED 2	h 2900	129	102	0.328	7.0	0x0	VIFx	18.6	90.0	st3
BED 3	h 3107	138	109	0.342	7.0	0x0	VIFx	14.0	90.0	st3
KITCHEN	c 2791	57	119	0.326	7.0	0x0	VIFx	19.0	90.0	st2
LAUNDRY	c 1442	39	61	0.318	5.0	0x0	VIFx	21.8	90.0	st2
LIVING RM	c 2909	73	124	0.325	7.0	0x0	VIFx	19.3	90.0	st2
LIVING RM-A	c 2909	73	124	0.314	7.0	0x0	VIFx	23.3	90.0	st2
MBATH	h 1461	65	32	0.247	5.0	0x0	VIFx	38.9	105.0	st1
MBED	h 3850	171	141	0.253	8.0	0x0	VIFx	35.5	105.0	st1
MLAV	h 588	26	12	0.238	4.0	0x0	VIFx	44.5	105.0	st1
M WIC	h 871	39	13	0.237	4.0	0x0	VIFx	44.9	105.0	st1
NOOK	c 2138	88	91	0.256	6.0	0x0	VIFx	33.7	105.0	st1
PWD	h 469	21	8	0.356	4.0	0x0	VIFx	10.0	90.0	st3

Supply Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
st3	Peak AVF	316	231	0.321	580	10.0	0 x 0	VinIFlx	
st1	Peak AVF	388	288	0.237	494	12.0	0 x 0	VinIFlx	
st2	Peak AVF	242	427	0.314	544	12.0	0 x 0	VinIFlx	

Return Branch Detail Table

Name	Grille Size (in)	Htg (cfm)	Clg (cfm)	TEL (ft)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Stud/Joist Opening (in)	Duct Matl	Trunk
rb2	0x0	300	197	73.4	0.237	551	10.0	0x 0		VIFx	
rb1	0x0	646	749	34.2	0.509	537	16.0	0x 0		VIFx	

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Cooling Equipment

Design Conditions

Outdoor design DB:	92.2°F	Sensible gain:	22261 Btuh	Entering coil DB:	77.8°F
Outdoor design WB:	75.8°F	Latent gain:	3133 Btuh	Entering coil WB:	63.9°F
Indoor design DB:	75.0°F	Total gain:	25394 Btuh		
Indoor RH:	50%	Estimated airflow:	947 cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP				
Manufacturer:	Goodman Mfg.	Model:	GSZH503010A+AMST36CU1400A		
Actual airflow:	947 cfm				
Sensible capacity:	22720 Btuh	102% of load			
Latent capacity:	5680 Btuh	181% of load			
Total capacity:	28400 Btuh	112% of load	SHR:	80%	

Heating Equipment

Design Conditions

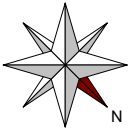
Outdoor design DB:	33.2°F	Heat loss:	21348 Btuh	Entering coil DB:	68.7°F
Indoor design DB:	70.0°F				

Manufacturer's Performance Data at Actual Design Conditions

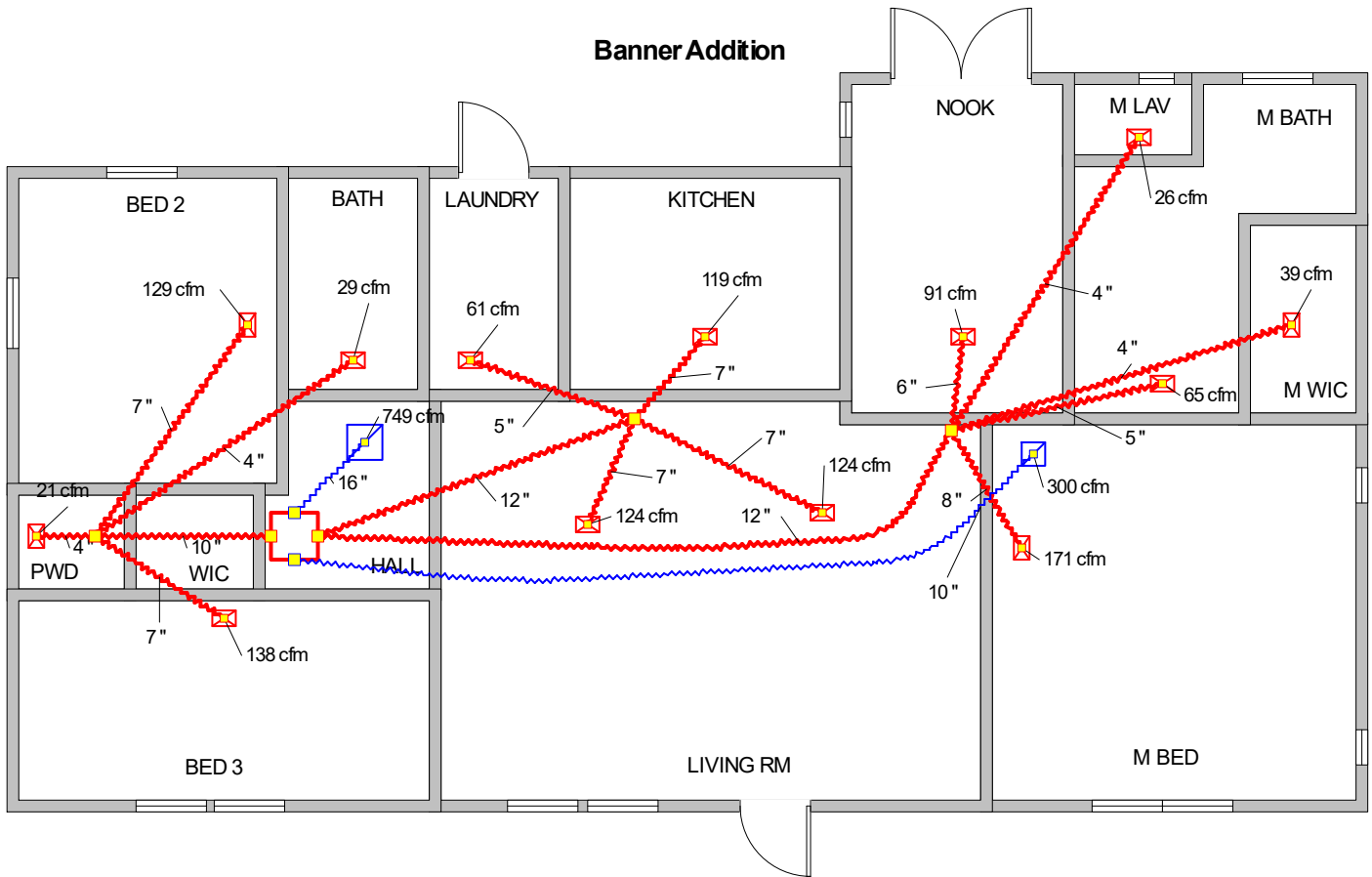
Equipment type:	Split ASHP				
Manufacturer:	Goodman Mfg.	Model:	GSZH503010A+AMST36CU1400A		
Actual airflow:	947 cfm				
Output capacity:	28400 Btuh	133% of load		Capacity balance:	27 °F
Supplemental heat required:	0 Btuh			Economic balance:	-99 °F

Backup equipment type:	Elec strip				
Manufacturer:		Model:			
Actual airflow:	947 cfm				
Output capacity:	6.1 kW	97% of load	Temp. rise:	50 °F	

Meets all requirements of ACCA Manual S.



Banner Addition



Job #: J-9435 - C-1724
Performed by David Brown for:
Banner Addition
530 SE SHADOW WOOD DRIVE
Lake City, FL 32024

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