wrightsoft

Project Summary
Entire House

Job: J-9635 - C-1724
Date: Mar 27, 2023
By: LaTisha Furmon

Project Information

For: Solomon Residence
862 SW Bluff Drive, Fort White, FL 32038

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	19240	Btuh
Ducts	3332	Btuh
Central vent (0 cfm) (none)	0	Btuh
Humidification	0	Btuh
Piping	0	Btuh
Equipment load	22572	Btuh

Sensible Cooling Equipment Load Sizing

Structure	23871	Btuh
Ducts	3956	Btuh
Central vent (0 cfm) (none)	0	Btuh
Blower	0	Btuh
Use manufacturer's data	n	
Rate/swing multiplier	0.97	
Equipment sensible load	27049	Btuh

Infiltration

Method	Simplified
Construction quality	Average
Fireplaces	0

	Heating	Cooling
Area (ft²)	2100	2100
Volume (ft³)	16800	16800
Air changes/hour	0.32	0.16
Equiv. AVF (cfm)	90	45

Latent Cooling Equipment Load Sizing

Structure	2128	Btuh
Ducts	745	Btuh
Central vent (0 cfm) (none)	0	Btuh
Equipment latent load	2873	Btuh
Equipment Total Load (Sen+Lat)	29922	Btuh
Req. total capacity at 0.80 SHR	2.8	ton

Heating Equipment Summary

Make	Goodman Mfg.
Trade	GOODMAN
Model	GSZH503610A
AHRI ref	208511690

Efficiency	7.8 HSPF2	
Heating input		
Heating output	34400	Btuh @ 47°F
Temperature rise	28	°F
Actual air flow	1140	cfm
Air flow factor	0.051	cfm/Btuh
Static pressure	0.53	in H2O

Space thermostat
Capacity balance point = 24 °F

Backup:
Input = 7 kW, Output = 23159 Btuh, 100 AFUE

Cooling Equipment Summary

Make	Goodman Mfg.
Trade	GOODMAN
Cond	GSZH503610A
Coil	AMST36CU1400A
AHRI ref	208511690

Efficiency	12.0 EER2,15.2 SEER2	
Sensible cooling	27360	Btuh
Latent cooling	6840	Btuh
Total cooling	34200	Btuh
Actual air flow	1140	cfm
Air flow factor	0.041	cfm/Btuh
Static pressure	0.53	in H2O
Load sensible heat ratio	0.91	

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

Duct System Summary
Entire House

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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	0.375 / 0.155 in H2O	0.375 / 0.155 in H2O
Lowest friction rate	0.286 in/100ft	0.286 in/100ft
Actual air flow	1140 cfm	1140 cfm
Total effective length (TEL)	185 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 1	h 158	8	4	0.342	4.0	0x 0	VlFx	19.7	90.0	st4
BATH 2	h 415	21	9	0.326	4.0	0x 0	VlFx	25.3	90.0	st4
BED 1	h 2150	109	91	0.316	6.0	0x 0	VlFx	28.7	90.0	st4
BED 2	h 1310	66	63	0.336	5.0	0x 0	VlFx	21.8	90.0	st4
DINING	h 2233	113	96	0.301	6.0	0x 0	VlFx	34.5	90.0	st3
HALL 1	h 526	27	19	0.313	4.0	0x 0	VlFx	30.1	90.0	st3
KITCHEN	c 3598	64	147	0.303	7.0	0x 0	VlFx	33.9	90.0	st3
LAUNDRY	h 2122	107	92	0.286	6.0	0x 0	VlFx	41.1	90.0	st3
LIVING	c 2496	91	102	0.320	6.0	0x 0	VlFx	27.2	90.0	st3
LIVING-A	c 2496	91	102	0.326	6.0	0x 0	VlFx	25.3	90.0	st3
M BATH	h 1354	68	39	0.340	5.0	0x 0	VlFx	20.4	90.0	st1
M BED	c 2627	99	108	0.332	6.0	0x 0	VlFx	23.1	90.0	st1
M BED-A	c 2627	99	108	0.352	6.0	0x 0	VlFx	16.5	90.0	st1
M WIC	h 1652	83	35	0.377	6.0	0x 0	VlFx	9.6	90.0	st2
OFFICE	c 2905	80	119	0.381	7.0	0x 0	VlFx	8.5	90.0	st2
PAN	h 262	13	6	0.311	4.0	0x 0	VlFx	30.5	90.0	st4

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	493	559	0.286	523	14.0	0 x 0	VinlFlx	
st4	Peak AVF	217	173	0.311	491	9.0	0 x 0	VinlFlx	
st1	Peak AVF	267	254	0.332	489	10.0	0 x 0	VinlFlx	
st2	Peak AVF	164	154	0.377	469	8.0	0 x 0	VinlFlx	

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
rb1	0x 0	790	851	42.1	0.367	481	18.0	0x 0		VlFx	
rb2	0x 0	350	289	54.0	0.286	446	12.0	0x 0		VlFx	

Manual S Compliance Report
Entire House

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Cooling Equipment

Design Conditions

Outdoor design DB:	92.2°F	Sensible gain:	27828	Btuh	Entering coil DB:	75.9°F
Outdoor design WB:	75.8°F	Latent gain:	2873	Btuh	Entering coil WB:	62.9°F
Indoor design DB:	75.0°F	Total gain:	30701	Btuh		
Indoor RH:	50%	Estimated airflow:	1140	cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP				
Manufacturer:	Goodman Mfg.		Model:	GSZH503610A+AMST36CU1400A	
Actual airflow:	1140	cfm			
Sensible capacity:	30753	Btuh	111% of load		
Latent capacity:	4220	Btuh	147% of load		
Total capacity:	34973	Btuh	114% of load	SHR:	88%

Heating Equipment

Design Conditions

Outdoor design DB:	33.2°F	Heat loss:	22572	Btuh	Entering coil DB:	69.6°F
Indoor design DB:	70.0°F					

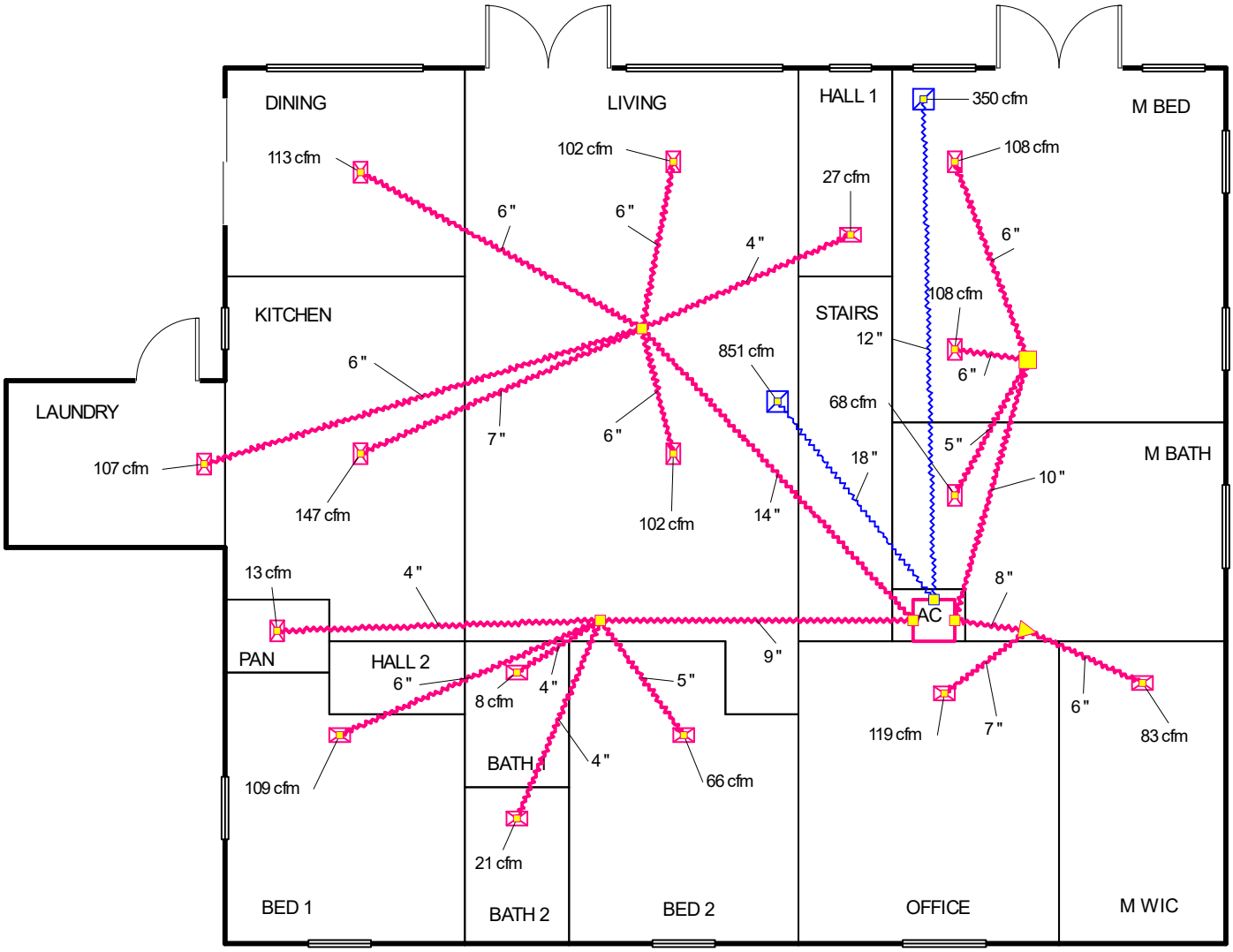
Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP					
Manufacturer:	Goodman Mfg.		Model:	GSZH503610A+AMST36CU1400A		
Actual airflow:	1140	cfm				
Output capacity:	25662	Btuh	114% of load		Capacity balance:	24 °F
Supplemental heat required:	0	Btuh			Economic balance:	-99 °F

Backup equipment type:	Elec strip				
Manufacturer:		Model:			
Actual airflow:	1140	cfm			
Output capacity:	6.8	kW	103% of load	Temp. rise:	50 °F

Meets all requirements of ACCA Manual S.

Solomon Residence



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Performed by LaTisha Furmon for:
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Fort White, FL 32038

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