Project Summary
Entire House

Job: J-11314 - C-2094
Date: Nov 12, 2024
By: LaNiika Stewart

Project Information

For: Red Iron Heritage
143 SW Meadowlands Drive, Lake City, FL 32024

Notes:

Design Information

Weather: Gainesville, FL, US

Winter Design Conditions

Outside db	33	°F
Inside db	70	°F
Design TD	37	°F
Ventilation Method	MJ8	

Summer Design Conditions

Outside db	92	°F
Inside db	75	°F
Design TD	17	°F
Daily range	M	
Relative humidity	50	%
Moisture difference	43	gr/lb

Heating Summary

Structure	22376	Btuh
Ducts (R-6.0)	7317	Btuh
Central vent (0 cfm)	0	Btuh
Humidification	0	Btuh
Piping	0	Btuh
Equipment load	29693	Btuh

Sensible Cooling Equipment Load Sizing

Structure	16896	Btuh
Ducts (R-6.0)	9544	Btuh
Central vent (0 cfm)	0	Btuh
Blower	0	Btuh
Use manufacturer's data	n	
Rate/swing multiplier	0.97	
Equipment sensible load	25753	Btuh

Infiltration

Method	Simplified
Construction quality	Average
Fireplaces	0

	Heating	Cooling
Area (ft²)	1747	1747
Volume (ft³)	16177	16177
Air changes/hour	0.38	0.20
Equiv. AVF (cfm)	102	54

Latent Cooling Equipment Load Sizing

Structure	2187	Btuh
Ducts	1865	Btuh
Central vent (0 cfm)	0	Btuh
Equipment latent load	4051	Btuh
Equipment Total Load (Sen+Lat)	29804	Btuh
Req. total capacity at 0.80 SHR	2.7	ton

Heating Equipment Summary

Make	Goodman
Trade	
Model	GLZS4MA3610A*
AHRI ref	215234621
Efficiency	7.5 HSPF2
Heating input	
Heating output	34600 Btuh @ 47°F
Temperature rise	27 °F
Actual air flow	1167 cfm
Air flow factor	0.039 cfm/Btuh
Static pressure	0.53 in H2O
Space thermostat	

Capacity balance point = 0 °F

Backup:
Input = 9 kW, Output = 32101 Btuh, 100 AFUE

Cooling Equipment Summary

Make	Goodman
Trade	
Cond	GLZS4MA3610A*
Coil	AMST42CU1300A*
AHRI ref	215234621
Efficiency	12.5 EER2, 15 SEER2
Sensible cooling	28000 Btuh
Latent cooling	7000 Btuh
Total cooling	35000 Btuh
Actual air flow	1167 cfm
Air flow factor	0.044 cfm/Btuh
Static pressure	0.53 in H2O
Load sensible heat ratio	0.87

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

Manual S Compliance Report
Entire House

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Cooling Equipment

Design Conditions

Outdoor design DB:	92.4°F	Sensible gain:	26440	Btuh	Entering coil DB:	77.9°F
Outdoor design WB:	75.8°F	Latent gain:	4051	Btuh	Entering coil WB:	63.9°F
Indoor design DB:	75.0°F	Total gain:	30492	Btuh		
Indoor RH:	50%	Estimated airflow:	1167	cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type: Split ASHP
Manufacturer: Goodman Model: GLZS4MA3610A*+AMST42CU1300A*

Actual airflow:	1167	cfm		
Sensible capacity:	28000	Btuh	106% of load	
Latent capacity:	7000	Btuh	173% of load	
Total capacity:	35000	Btuh	115% of load	SHR: 80%

Heating Equipment

Design Conditions

Outdoor design DB:	33.3°F	Heat loss:	29693	Btuh	Entering coil DB:	68.6°F
Indoor design DB:	70.0°F					

Manufacturer's Performance Data at Actual Design Conditions

Equipment type: Split ASHP
Manufacturer: Goodman Model: GLZS4MA3610A*+AMST42CU1300A*

Actual airflow:	1167	cfm			
Output capacity:	34600	Btuh	117% of load	Capacity balance:	0 °F
Supplemental heat required:	0	Btuh		Economic balance:	0 °F

Backup equipment type: Elec strip
Manufacturer: Model:

Actual airflow:	1167	cfm			
Output capacity:	9.4	kW	108% of load	Temp. rise:	0 °F

Meets all requirements of ACCA Manual S.

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	0.368 / 0.162 in H2O	0.368 / 0.162 in H2O
Lowest friction rate	0.206 in/100ft	0.206 in/100ft
Actual air flow	1167 cfm	1167 cfm
Total effective length (TEL)	258 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
B1 WIC	h	2815	111	58	0.206	6.0	0x 0	VlFx	63.8	115.0	st3
B2 Bath	c	2447	95	108	0.206	6.0	0x 0	VlFx	63.8	115.0	st3
B2 WIC	h	659	26	11	0.206	4.0	0x 0	VlFx	63.8	115.0	st1
Bath	c	248	6	11	0.206	4.0	0x 0	VlFx	63.8	115.0	st1
Bed 1	h	2483	98	79	0.206	6.0	0x 0	VlFx	63.8	115.0	st3
Bed 1-A	h	2483	98	79	0.206	6.0	0x 0	VlFx	63.8	115.0	st3
Bed 2	h	3869	152	107	0.206	7.0	0x 0	VlFx	63.8	115.0	st1
Laundry	c	1771	53	78	0.206	6.0	0x 0	VlFx	63.8	115.0	st2
Living/Dine/Kitch	c	2955	98	130	0.206	7.0	0x 0	VlFx	63.8	115.0	st2
Living/Dine/Kitch-A	c	2955	98	130	0.206	7.0	0x 0	VlFx	63.8	115.0	st2
Living/Dine/Kitch-C	c	2955	98	130	0.206	7.0	0x 0	VlFx	63.8	115.0	st2
Living/Dine/Kitch-D	c	2955	98	130	0.206	7.0	0x 0	VlFx	63.8	115.0	st2
Office	h	3516	138	114	0.206	7.0	0x 0	VlFx	63.8	115.0	st2

Supply Trunk Detail Table

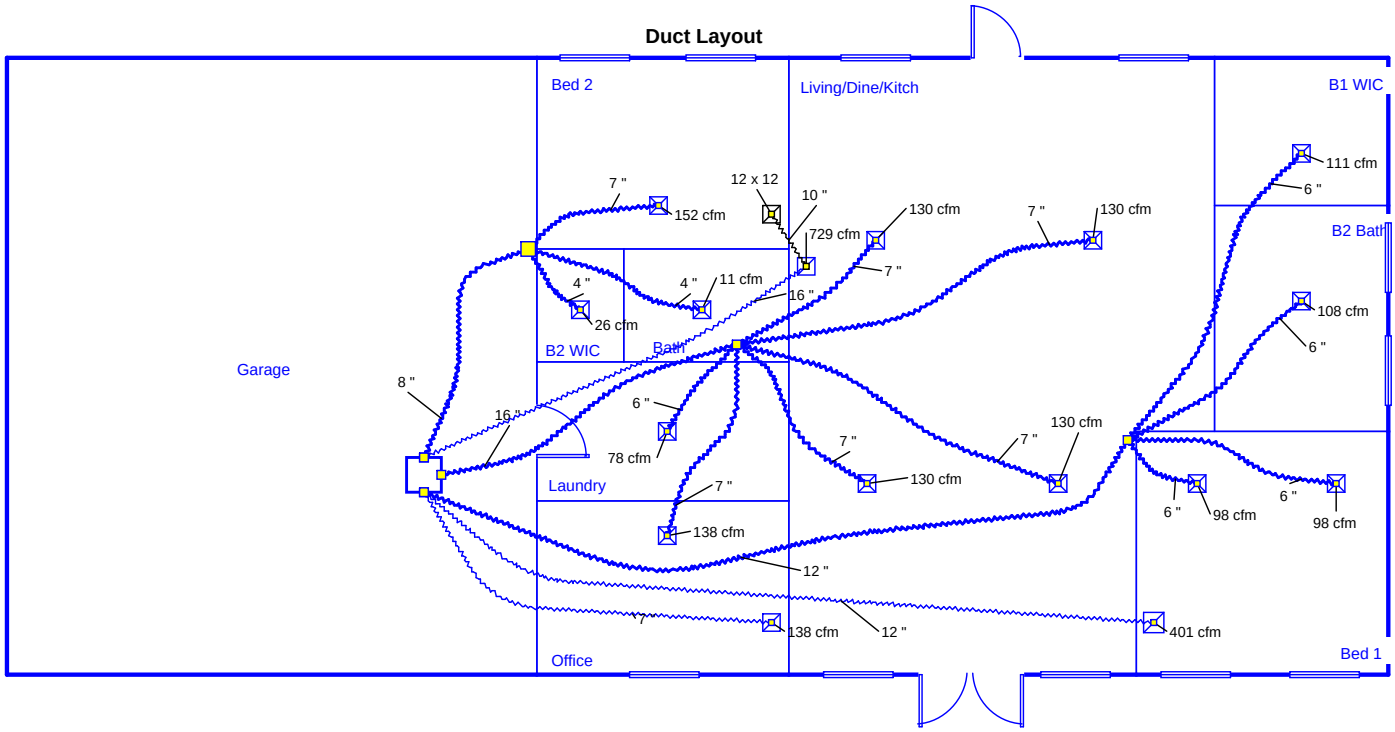
Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
st2	Peak AVF	582	714	0.206	511	16.0	0 x 0	VinlFlx	
st3	Peak AVF	401	324	0.206	510	12.0	0 x 0	VinlFlx	
st1	Peak AVF	184	129	0.206	526	8.0	0 x 0	VinlFlx	

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
rb2	0x 0	401	324	78.9	0.206	510	12.0	0x 0		VlFx	
rb3	0x 0	138	114	78.9	0.206	517	7.0	0x 0		VlFx	
rb1	0x 0	628	729	78.9	0.206	522	16.0	0x 0		VlFx	rst1

Return Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
rst1	Peak AVF	628	729	0.206	522	16.0	0 x 0	VinlFlx	



Job #: J-11314 - C-2094
Performed by LaNiika Stewart for:

Red Iron Heritage
143 SW Meadowlands Drive
Lake City, FL 32024

Scale: 1 : 133

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