

Project Information

For: 359 SW Heathridge
359 SW Heathridge, Lake City, FL 32025

Notes:

Design Information

Weather: Gainesville, 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 43 gr/lb

Heating Summary

Structure 24320 Btuh
Ducts 3946 Btuh
Central vent (0 cfm)
(none) 0 Btuh
Humidification 0 Btuh
Piping 0 Btuh
Equipment load 28266 Btuh

Sensible Cooling Equipment Load Sizing

Structure 19350 Btuh
Ducts 5972 Btuh
Central vent (0 cfm)
(none) 0 Btuh
Blower 0 Btuh
Use manufacturer's data n
Rate/swing multiplier 0.97
Equipment sensible load 24663 Btuh

Infiltration

Method Simplified
Construction quality Average
Fireplaces 0

Latent Cooling Equipment Load Sizing

Structure 2352 Btuh
Ducts 1248 Btuh
Central vent (0 cfm)
(none) 0 Btuh
Equipment latent load 3599 Btuh

	Heating	Cooling
Area (ft²)	1702	1702
Volume (ft³)	15817	15817
Air changes/hour	0.38	0.20
Equiv. AVF (cfm)	100	53

Equipment Total Load (Sen+Lat) 28263 Btuh
Req. total capacity at 0.80 SHR 2.6 ton

Heating Equipment Summary

Make Goodman Mfg.
Trade GOODMAN
Model GSZB403610A
AHRI ref 210318839
Efficiency 7.5 HSPF2
Heating input 33600 Btuh @ 47°F
Heating output 27 °F
Temperature rise 1120 cfm
Actual air flow 0.040 cfm/Btuh
Air flow factor 0.53 in H2O
Static pressure
Space thermostat
Capacity balance point = 29 °F
Backup:
Input = 8 kW, Output = 27318 Btuh, 100 AFUE

Cooling Equipment Summary

Make Goodman Mfg.
Trade GOODMAN
Cond GSZB403610A
Coil AMST36BU1400A
AHRI ref 210318839
Efficiency 12.0 EER2, 14.3 SEER2
Sensible cooling 26880 Btuh
Latent cooling 6720 Btuh
Total cooling 33600 Btuh
Actual air flow 1120 cfm
Air flow factor 0.044 cfm/Btuh
Static pressure 0.53 in H2O
Load sensible heat ratio 0.88

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



Duct System Summary

Entire House

Job: J-9820 - C-1304
Date: May 15, 2023
By: LaTisha Furmon

Project Information

For: 359 SW Heathridge
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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	0.323 / 0.207 in H2O	0.323 / 0.207 in H2O
Lowest friction rate	0.255 in/100ft	0.255 in/100ft
Actual air flow	1120 cfm	1120 cfm
Total effective length (TEL)	208 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 2	h 691	27	15	0.273	4.0	0x0	VIFx	28.3	90.0	st2
BED 2	h 3678	146	106	0.262	7.0	0x0	VIFx	33.5	90.0	st2
BED 3	h 3931	156	105	0.262	7.0	0x0	VIFx	33.5	90.0	st2
CLST	h 914	36	30	0.326	4.0	0x0	VIFx	9.3	90.0	st3
DINING	h 2452	97	84	0.286	6.0	0x0	VIFx	23.3	90.0	st3
FOYER	c 1074	42	47	0.300	5.0	0x0	VIFx	17.9	90.0	st3
GREAT RM	c 2370	55	105	0.295	6.0	0x0	VIFx	19.7	90.0	st3
GREAT RM-A	c 2370	55	105	0.318	6.0	0x0	VIFx	11.7	90.0	st3
KITCHEN	c 2862	32	127	0.312	7.0	0x0	VIFx	13.8	90.0	st3
LNDY	c 1009	35	45	0.287	4.0	0x0	VIFx	22.7	90.0	st1
M BATH	h 2328	92	46	0.261	6.0	0x0	VIFx	33.7	90.0	st1
M BED	h 2891	115	103	0.283	6.0	0x0	VIFx	24.4	90.0	st1
M PWD	h 596	24	10	0.255	4.0	0x0	VIFx	37.1	90.0	st1
M WIC	h 2033	81	33	0.265	6.0	0x0	VIFx	32.1	90.0	st1
PAN	h 1010	40	34	0.327	4.0	0x0	VIFx	8.9	90.0	st3
STUDY	c 2807	88	124	0.317	7.0	0x0	VIFx	12.1	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
st2	Peak AVF	329	226	0.262	419	12.0	0 x 0	VinIFlx	
st3	Peak AVF	445	656	0.286	470	16.0	0 x 0	VinIFlx	
st1	Peak AVF	346	237	0.255	440	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
rb5	0x 0	125	154	80.5	0.257	578	7.0	0x 0		VIFx	rt1
rb4	0x 0	146	106	76.6	0.270	545	7.0	0x 0		VIFx	rt1
rb3	0x 0	156	105	81.1	0.255	583	7.0	0x 0		VIFx	rt1
rb1	0x 0	383	562	43.2	0.478	525	14.0	0x 0		VIFx	
rb2	0x 0	311	193	0	0	0	0	0x 0		VIFx	

Return Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
rt1	Peak AVF	426	366	0.255	542	12.0	0 x 0	VinIFlx	



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Cooling Equipment

Design Conditions

Outdoor design DB:	92.4°F	Sensible gain:	25322	Btuh	Entering coil DB:	77.9°F
Outdoor design WB:	75.8°F	Latent gain:	3599	Btuh	Entering coil WB:	63.9°F
Indoor design DB:	75.0°F	Total gain:	28921	Btuh		
Indoor RH:	50%	Estimated airflow:	1120	cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP				
Manufacturer:	Goodman Mfg.	Model:	GSZB403610A+AMST36BU1400A		
Actual airflow:	1120	cfm			
Sensible capacity:	28154	Btuh	111%	of load	
Latent capacity:	4770	Btuh	133%	of load	
Total capacity:	32924	Btuh	114%	of load	SHR: 86%

Heating Equipment

Design Conditions

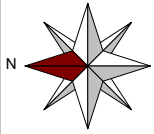
Outdoor design DB:	33.3°F	Heat loss:	28266	Btuh	Entering coil DB:	68.6°F
Indoor design DB:	70.0°F					

Manufacturer's Performance Data at Actual Design Conditions

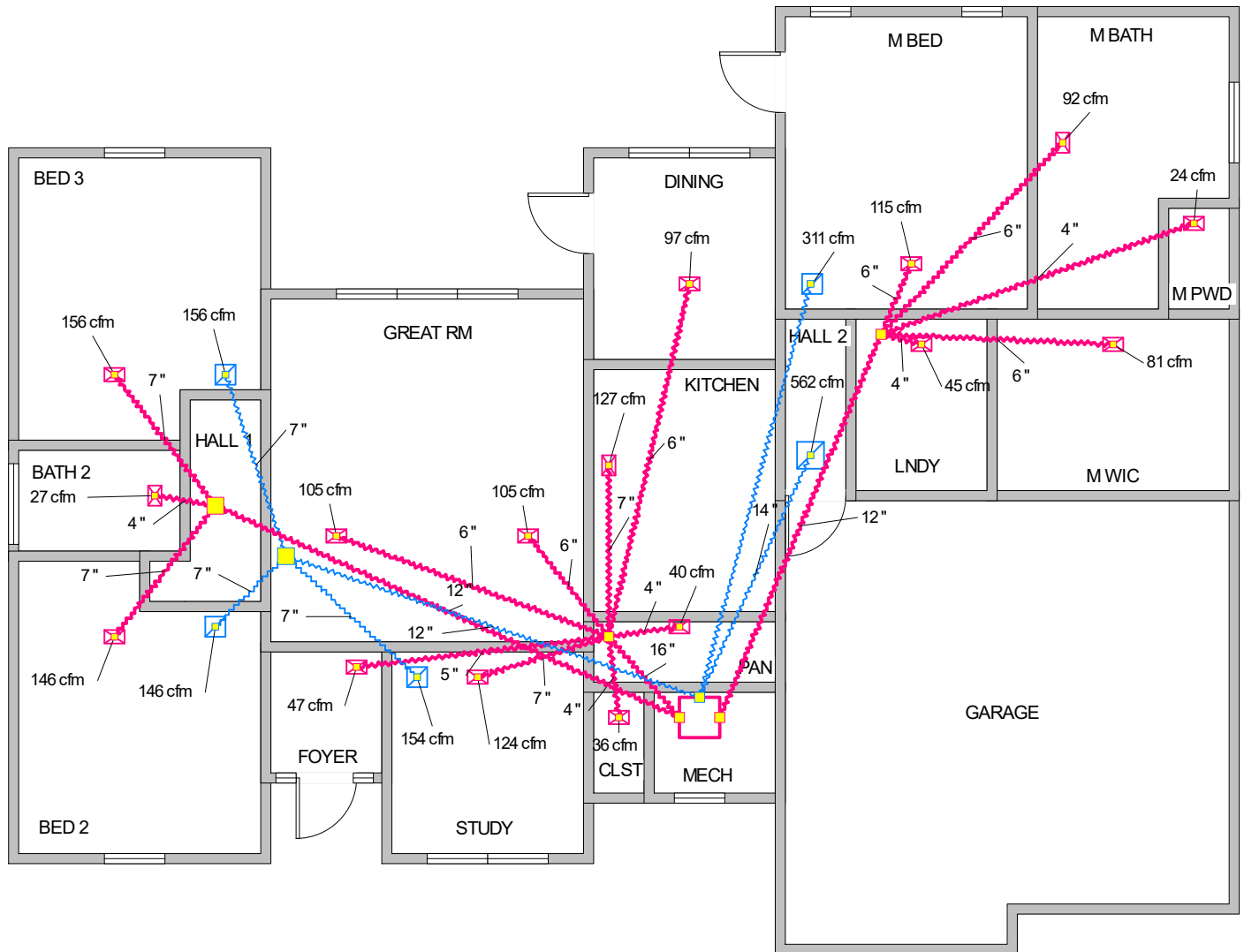
Equipment type:	Split ASHP				
Manufacturer:	Goodman Mfg.	Model:	GSZB403610A+AMST36BU1400A		
Actual airflow:	1120	cfm			
Output capacity:	33600	Btuh	119%	of load	Capacity balance: 29 °F
Supplemental heat required:	0	Btuh			Economic balance: -99 °F

Backup equipment type:	Elec strip				
Manufacturer:		Model:			
Actual airflow:	1120	cfm			
Output capacity:	8.0	kW	97%	of load	Temp. rise: 50 °F

Meets all requirements of ACCA Manual S.



DUCT DESIGN



Job #: J-9820 - C-1304
Performed by LaTisha Furmon for:
359 SW Heathridge
359 SW Heathridge
Lake City, FL 32025

Scale: 1 : 101

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