



Load Short Form

Entire House

Bounds Heating and Air

Job:
Date: Aug 26, 2024
By:

Email: jlegler@boundshvac.com

Project Information

For: Rozear, Hartley Brothers

Design Information

	Htg	Clg	Infiltration	Simplified
Outside db (°F)	33	92	Method	Average
Inside db (°F)	68	75	Construction quality	0
Design TD (°F)	35	17	Fireplaces	
Daily range	-	M		
Inside humidity (%)	50	50		
Moisture difference (gr/lb)	29	44		

HEATING EQUIPMENT

Make Carrier
Trade 15 SEER2 HP
Model GH5SAN43000AA0
AHRI ref 210998680

Efficiency 7.5 HSPF2
Heating input
Heating output 28600 Btuh @ 47°F
Temperature rise 28 °F
Actual air flow 947 cfm
Air flow factor 0.035 cfm/Btuh
Static pressure 0.50 in H2O
Space thermostat
Capacity balance point = 32 °F

Backup: n/a n/a
Input = 5 kW, Output = 17061 Btuh, 100 AFUE

COOLING EQUIPMENT

Make Carrier
Trade 15 SEER2 HP
Cond GH5SAN43000AA0
Coil FJ4DNXB30L
AHRI ref 210998680

Efficiency 12.0 EER2, 14.3 SEER2
Sensible cooling 19880 Btuh
Latent cooling 8520 Btuh
Total cooling 28400 Btuh
Actual air flow 947 cfm
Air flow factor 0.048 cfm/Btuh
Static pressure 0.50 in H2O
Load sensible heat ratio 0.83

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
living/dining	507	7387	6149	262	294
pantry	72	872	398	31	19
master bedroom	201	4106	4142	146	198
wic a	39	862	325	31	16
wc	26	1421	631	50	30
wic b	37	859	320	30	15
master bath	99	2044	781	73	37
hall 1	26	0	0	0	0
kitchen	183	2180	2830	77	135
bedroom 3	167	3504	2109	124	101
bath 2	57	349	127	12	6
bedroom 2	167	3090	1987	110	95
hall 2	20	0	0	0	0
garage	650	0	0	0	0

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

Entire House	2250	26673	19799	947	947
Other equip loads		0	0		
Equip. @ 0.97 RSM			19244		
Latent cooling			3996		
TOTALS	2250	26673	23241	947	947

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Project Summary

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Notes:

Design Information

Weather: Gainesville Regional, FL, US

Winter Design Conditions

Outside db	33 °F
Inside db	68 °F
Design TD	35 °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	21060 Btuh
Ducts (R-6.0)	5613 Btuh
Central vent (0 cfm) (none)	0 Btuh
Humidification	0 Btuh
Piping	0 Btuh
Equipment load	26673 Btuh

Sensible Cooling Equipment Load Sizing

Structure	12816 Btuh
Ducts (R-6.0)	6983 Btuh
Central vent (0 cfm) (none)	0 Btuh
Blower	0 Btuh
Use manufacturer's data	n
Rate/swing multiplier	0.97
Equipment sensible load	19244 Btuh

Infiltration

Method	Simplified
Construction quality	Average
Fireplaces	0

Latent Cooling Equipment Load Sizing

Structure	2624 Btuh
Ducts	1373 Btuh
Central vent (0 cfm) (none)	0 Btuh
Equipment latent load	3996 Btuh

	Heating	Cooling
Area (ft ²)	1600	1600
Volume (ft ³)	14404	14404
Air changes/hour	0.38	0.20
Equiv. AVF (cfm)	91	48

Equipment Total Load (Sen+Lat)	23241 Btuh
Req. total capacity at 0.70 SHR	2.3 ton

Heating Equipment Summary

Make	Carrier
Trade	15 SEER2 HP
Model	GH5SAN43000AA0
AHRI ref	210998680
Efficiency	7.5 HSPF2
Heating input	
Heating output	28600 Btuh @ 47°F
Temperature rise	28 °F
Actual air flow	947 cfm
Air flow factor	0.035 cfm/Btuh
Static pressure	0.50 in H2O
Space thermostat	
Capacity balance point = 32 °F	
Backup: n/a n/a	
Input = 5 kW, Output = 17061 Btuh, 100 AFUE	

Cooling Equipment Summary

Make	Carrier
Trade	15 SEER2 HP
Cond	GH5SAN43000AA0
Coil	FJ4DNXB30L
AHRI ref	210998680
Efficiency	12.0 EER2, 14.3 SEER2
Sensible cooling	19880 Btuh
Latent cooling	8520 Btuh
Total cooling	28400 Btuh
Actual air flow	947 cfm
Air flow factor	0.048 cfm/Btuh
Static pressure	0.50 in H2O
Load sensible heat ratio	0.83

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



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Duct System Summary

Entire House

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Project Information

For: Rozear, Hartley Brothers

	Heating	Cooling
External static pressure	0.50 in H ₂ O	0.50 in H ₂ O
Pressure losses	0 in H ₂ O	0 in H ₂ O
Available static pressure	0.50 in H ₂ O	0.50 in H ₂ O
Supply / return available pressure	0.250 / 0.250 in H ₂ O	0.250 / 0.250 in H ₂ O
Lowest friction rate	0.252 in/100ft	0.252 in/100ft
Actual air flow	947 cfm	947 cfm
Total effective length (TEL)	198 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 349	12	6	0.488	4.0	0x0	VIFx	12.5	90.0	st1
bedroom 2	h 3090	110	95	0.499	6.0	0x0	VIFx	10.2	90.0	st1
bedroom 3	h 3504	124	101	0.471	6.0	0x0	VIFx	16.1	90.0	st1
kitchen	c 2830	77	135	0.437	7.0	0x0	VIFx	24.5	90.0	st1
living/dining	c 3075	131	147	0.438	7.0	0x0	VIFx	24.1	90.0	st1
living/dining-A	c 3075	131	147	0.337	7.0	0x0	VIFx	38.4	110.0	st2
master bath	h 2044	73	37	0.256	5.0	0x0	VIFx	65.0	130.0	st3
master bedroom	c 4142	146	198	0.310	8.0	0x0	VIFx	46.2	115.0	st2
pantry	h 872	31	19	0.335	4.0	0x0	VIFx	39.2	110.0	st2
wc	h 1421	50	30	0.252	5.0	0x0	VIFx	68.2	130.0	st3
wic a	h 862	31	16	0.259	4.0	0x0	VIFx	63.2	130.0	st3
wic b	h 859	30	15	0.262	4.0	0x0	VIFx	60.9	130.0	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	184	98	0.252	527	8.0	0 x 0	VinIFlx	st2
st2	Peak AVF	492	462	0.252	626	12.0	0 x 0	VinIFlx	st1
st1	Peak AVF	947	947	0.252	678	16.0	0 x 0	VinIFlx	

Bold/italic values have been manually overridden

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	947	947	0	0	0	0	0x 0		VIFx	



Manual S Compliance Report
Entire House
Bounds Heating and Air

Job:
Date: Aug 26, 2024
By:

Email: jlegler@boundshvac.com

Project Information

For: Rozear, Hartley Brothers

Cooling Equipment

Design Conditions

Outdoor design DB:	92.2°F	Sensible gain:	19799	Btuh	Entering coil DB:	77.2°F
Outdoor design WB:	75.8°F	Latent gain:	3996	Btuh	Entering coil WB:	63.6°F
Indoor design DB:	75.0°F	Total gain:	23795	Btuh		
Indoor RH:	50%	Estimated airflow:	947	cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP			
Manufacturer:	Carrier	Model:	GH5SAN43000AA0+FJ4DNXB30L	
Actual airflow:	947	cfm		
Sensible capacity:	22758	Btuh	115%	of load
Latent capacity:	4462	Btuh	112%	of load
Total capacity:	27220	Btuh	114%	of load SHR: 84%

Heating Equipment

Design Conditions

Outdoor design DB:	33.2°F	Heat loss:	26673	Btuh	Entering coil DB:	67.0°F
Indoor design DB:	68.0°F					

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP			
Manufacturer:	Carrier	Model:	GH5SAN43000AA0+FJ4DNXB30L	
Actual airflow:	947	cfm		
Output capacity:	28600	Btuh	107%	of load
Supplemental heat required:		0	Btuh	
				Capacity balance: 32 °F
				Economic balance: -99 °F

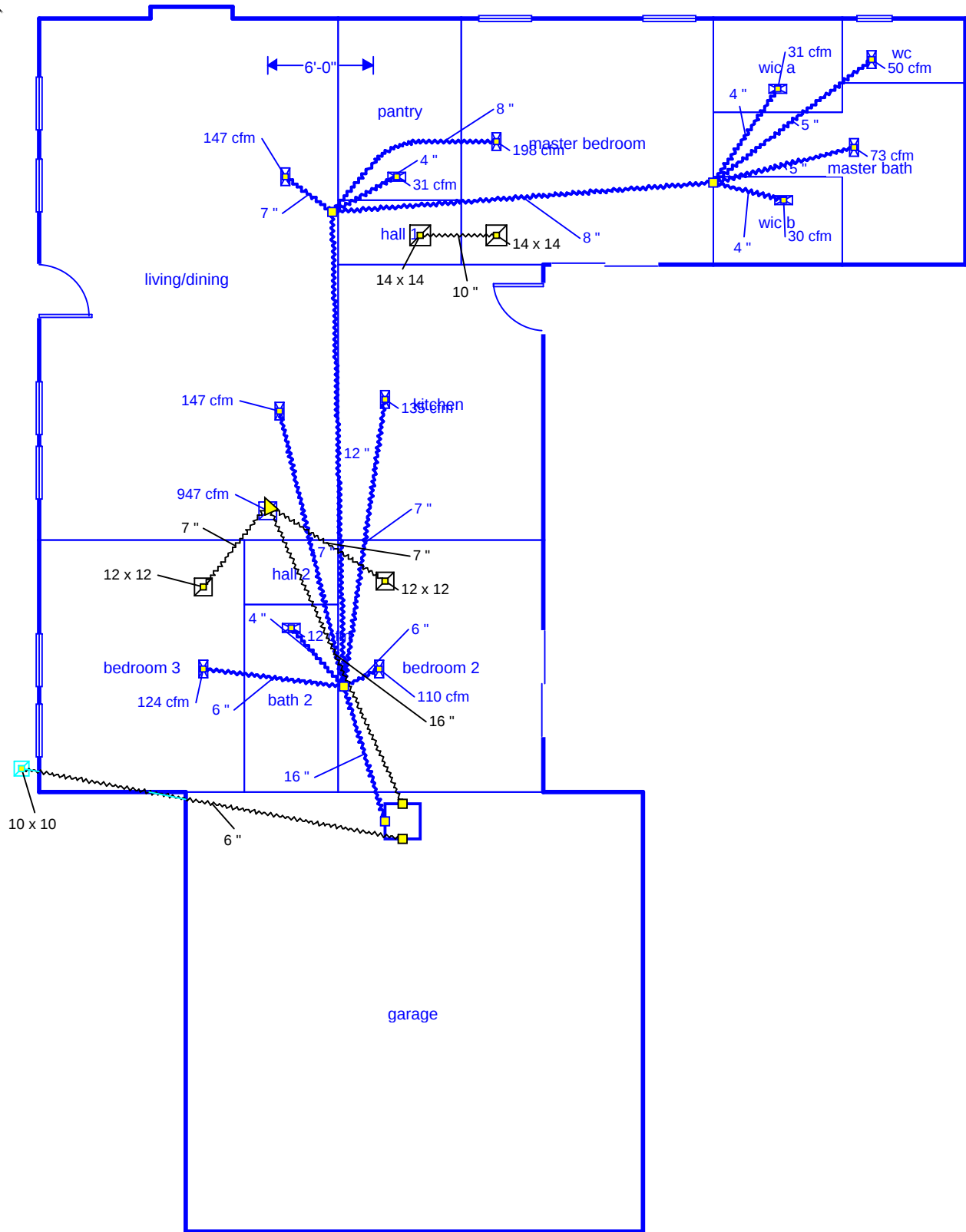
Backup equipment type:	Elec strip			
Manufacturer:	n/a	Model:	n/a+n/a	
Actual airflow:	947	cfm		
Output capacity:	5.0	kW	64%	of load Temp. rise: 16 °F

Meets all requirements of ACCA Manual S.





Level 1



Job #:
Performed for:
Rozear

Bounds Heating and Air

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