



Project Summary

Entire House

Bounds Heating and Air

Job:
Date: Mar 04, 2025
By:

Email: jlegler@boundshvac.com

Project Information

For: Gainey, RRCH

Notes:

Design Information

Weather: Gainesville Regional, FL, US

Winter Design Conditions

Outside db	33 °F
Inside db	68 °F
Design TD	35 °F

Ventilation Method MJ8

Heating Summary

Structure	35512 Btuh
Ducts (R-6.0)	9006 Btuh
Central vent (0 cfm)	0 Btuh

Humidification	0 Btuh
Piping	0 Btuh
Equipment load	44518 Btuh

Infiltration

Method	Simplified
Construction quality	Average
Fireplaces	1 (Average)

	Heating	Cooling
Area (ft ²)	2658	2658
Volume (ft ³)	30267	30267
Air changes/hour	0.36	0.16
Equiv. AVF (cfm)	181	81

Heating Equipment Summary

Make	Carrier
Trade	15 SEER2 HP
Model	GH5SAN54200AA0
AHRI ref	214101864

Efficiency	7.5 HSPF2
Heating input	
Heating output	39500 Btuh @ 47°F
Temperature rise	26 °F
Actual air flow	1367 cfm
Air flow factor	0.031 cfm/Btuh
Static pressure	0.50 in H2O
Space thermostat	
Capacity balance point = 36 °F	

Backup: n/a n/a
Input = 12 kW, Output = 42556 Btuh, 100 AFUE

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

Sensible Cooling Equipment Load Sizing

Structure	18602 Btuh
Ducts (R-6.0)	11044 Btuh
Central vent (0 cfm)	0 Btuh

Blower 0 Btuh

Use manufacturer's data	n
Rate/swing multiplier	0.97
Equipment sensible load	28816 Btuh

Latent Cooling Equipment Load Sizing

Structure	3193 Btuh
Ducts	2191 Btuh
Central vent (0 cfm)	0 Btuh

Equipment latent load 5384 Btuh

Equipment Total Load (Sen+Lat)	34201 Btuh
Req. total capacity at 0.70 SHR	3.4 ton

Cooling Equipment Summary

Make	Carrier
Trade	15 SEER2 HP
Cond	GH5SAN54200AA0
Coil	FJ5ANBC42L00
AHRI ref	214101864

Efficiency	12.0 EER2, 14.5 SEER2
Sensible cooling	28700 Btuh
Latent cooling	12300 Btuh
Total cooling	41000 Btuh
Actual air flow	1367 cfm
Air flow factor	0.046 cfm/Btuh
Static pressure	0.50 in H2O
Load sensible heat ratio	0.85

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



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Load Short Form

Entire House

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Project Information

For: Gainey, RRCH

Design Information

	Htg	Clg	Infiltration	
Outside db (°F)	33	92	Method	Simplified
Inside db (°F)	68	75	Construction quality	Average
Design TD (°F)	35	17	Fireplaces	1 (Average)
Daily range	-	M		
Inside humidity (%)	50	50		
Moisture difference (gr/lb)	29	44		

HEATING EQUIPMENT

Make Carrier
Trade 15 SEER2 HP
Model GH5SAN54200AA0
AHRI ref 214101864

Efficiency 7.5 HSPF2
Heating input
Heating output 39500 Btuh @ 47°F
Temperature rise 26 °F
Actual air flow 1367 cfm
Air flow factor 0.031 cfm/Btuh
Static pressure 0.50 in H2O
Space thermostat
Capacity balance point = 36 °F

Backup: n/a n/a

Input = 12 kW, Output = 42556 Btuh, 100 AFUE

COOLING EQUIPMENT

Make Carrier
Trade 15 SEER2 HP
Cond GH5SAN54200AA0
Coil FJ5ANBC42L00
AHRI ref 214101864

Efficiency 12.0 EER2, 14.5 SEER2
Sensible cooling 28700 Btuh
Latent cooling 12300 Btuh
Total cooling 41000 Btuh
Actual air flow 1367 cfm
Air flow factor 0.046 cfm/Btuh
Static pressure 0.50 in H2O
Load sensible heat ratio 0.85

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
stairs	96	1960	791	60	36
utility	99	3485	2105	107	97
master bath	165	1948	870	60	40
master bedroom	272	6930	3703	213	171
closet	139	478	444	15	20
wc	20	27	52	1	2
hall 1	67	0	0	0	0
hall 2	19	0	0	0	0
kitchen/living	957	15683	12810	482	591
hall 3	147	0	0	0	0
1/2	38	1920	1102	59	51
bedroom 4	160	3512	1845	108	85
wic 4	22	146	98	4	5
wic 3	25	491	179	15	8

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bedroom 3	160	2321	2760	71	127
bath 2	74	939	640	29	30
bedroom 2	199	4678	2248	144	104
Entire House	2658	44518	29646	1367	1367
Other equip loads		0	0		
Equip. @ 0.97 RSM			28816		
Latent cooling			5384		
TOTALS	2658	44518	34201	1367	1367

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



Manual S Compliance Report

Entire House

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Project Information

For: Gainey, RRCH

Cooling Equipment

Design Conditions

Outdoor design DB:	92.2°F	Sensible gain:	29646 Btuh	Entering coil DB:	77.3°F
Outdoor design WB:	75.8°F	Latent gain:	5384 Btuh	Entering coil WB:	63.6°F
Indoor design DB:	75.0°F	Total gain:	35031 Btuh		
Indoor RH:	50%	Estimated airflow:	1367 cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP		
Manufacturer:	Carrier	Model:	GH5SAN54200AA0+FJ5ANBC42L00
Actual airflow:	1367 cfm		
Sensible capacity:	32821 Btuh	111% of load	
Latent capacity:	6406 Btuh	119% of load	
Total capacity:	39227 Btuh	112% of load	SHR: 84%

Heating Equipment

Design Conditions

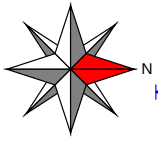
Outdoor design DB:	33.2°F	Heat loss:	44518 Btuh	Entering coil DB:	67.0°F
Indoor design DB:	68.0°F				

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP		
Manufacturer:	Carrier	Model:	GH5SAN54200AA0+FJ5ANBC42L00
Actual airflow:	1367 cfm		
Output capacity:	39500 Btuh	89% of load	Capacity balance: 36 °F
Supplemental heat required:	5018 Btuh		Economic balance: -99 °F

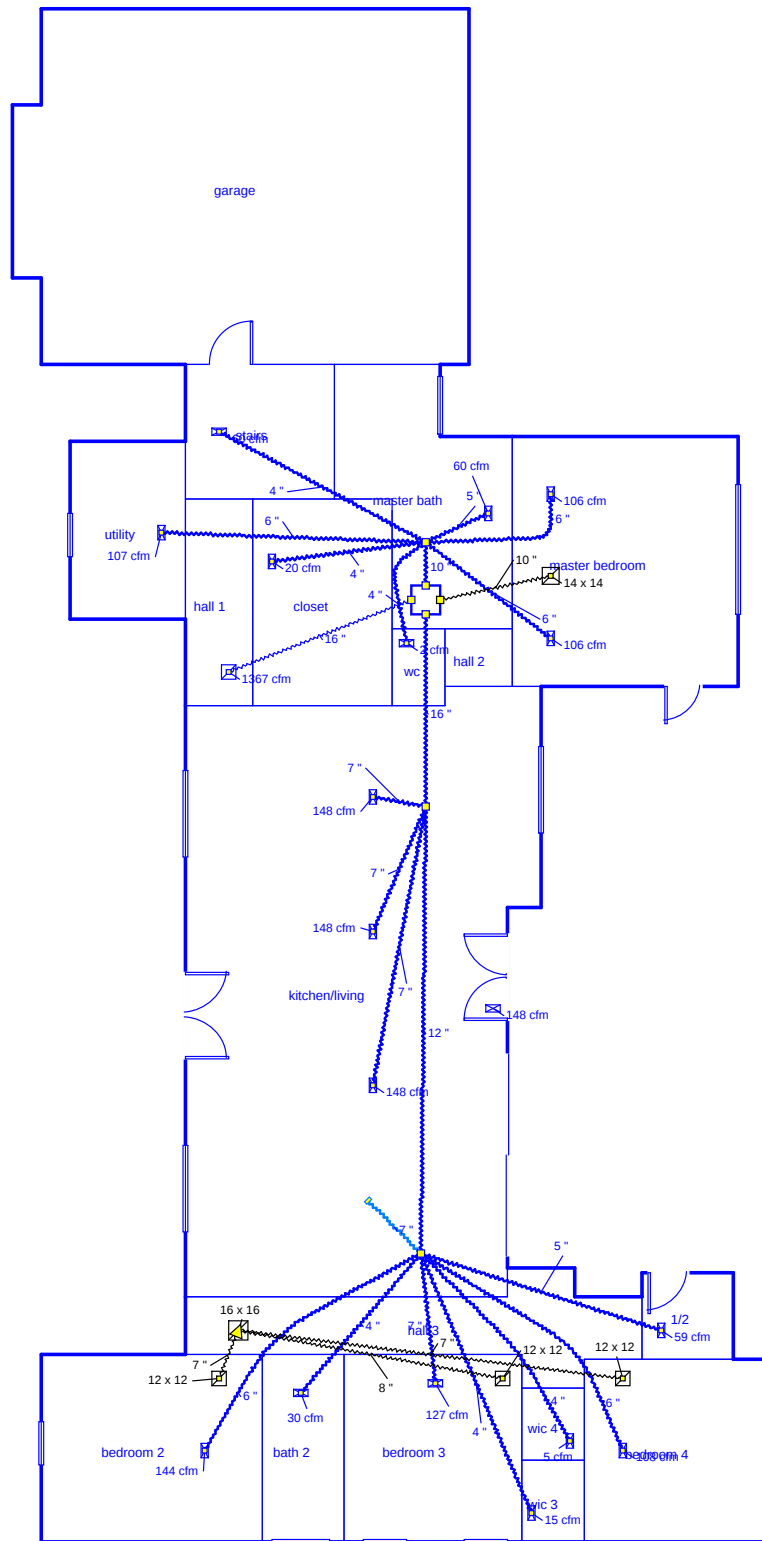
Backup equipment type:	Elec strip		
Manufacturer:	n/a	Model:	n/a+n/a
Actual airflow:	1367 cfm		
Output capacity:	12.5 kW	96% of load	Temp. rise: 48 °F

Meets all requirements of ACCA Manual S.



30'-0"

Level 1



Job #:
Performed for:
Gainey

Bounds Heating and Air

jlegler@boundshvac.com

Scale: 1 : 160

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upstairs

Room19

Job #:
Performed for:
Gainey

Bounds Heating and Air

jlegler@boundshvac.com

Scale: 1 : 160

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Duct System Summary

Entire House

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Job:
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By:

Email: jlegler@boundshvac.com

Project Information

For: Gainey, RRCH

	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	0.403 / 0.097 in H ₂ O	0.403 / 0.097 in H ₂ O
Lowest friction rate	0.223 in/100ft	0.223 in/100ft
Actual air flow	1367 cfm	1367 cfm
Total effective length (TEL)	224 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
1/2	h 1920	59	51	0.234	5.0	0x0	VIFx	61.8	110.0	st3
bath 2	c 640	29	30	0.241	4.0	0x0	VIFx	57.1	110.0	st3
bedroom 2	h 4678	144	104	0.223	6.0	0x0	VIFx	65.4	115.0	st3
bedroom 3	c 2760	71	127	0.246	7.0	0x0	VIFx	53.4	110.0	st3
bedroom 4	h 3512	108	85	0.224	6.0	0x0	VIFx	64.8	115.0	st3
closet	c 444	15	20	0.388	4.0	0x0	VIFx	13.7	90.0	st1
kitchen/living	c 3204	120	148	0.376	7.0	0x0	VIFx	17.1	90.0	st2
kitchen/living-A	c 3202	120	148	0.357	7.0	0x0	VIFx	22.7	90.0	st2
kitchen/living-B	c 3202	120	148	0.327	7.0	0x0	VIFx	33.0	90.0	st2
kitchen/living-C	c 3202	120	148	0	0	0x0	VIFx	0	0	
master bath	h 1948	60	40	0.412	5.0	0x0	VIFx	7.8	90.0	st1
master bedroom	h 3465	106	85	0.367	6.0	0x0	VIFx	14.7	95.0	st1
master bedroom-A	h 3465	106	85	0.387	6.0	0x0	VIFx	13.9	90.0	st1
stairs	h 1960	60	36	0.369	4.0	0x0	VIFx	19.3	90.0	st1
utility	h 3485	107	97	0.362	6.0	0x0	VIFx	21.3	90.0	st1
wc	c 52	1	2	0.379	4.0	0x0	VIFx	11.3	95.0	st1
wic 3	h 491	15	8	0.232	4.0	0x0	VIFx	63.9	110.0	st3
wic 4	c 98	4	5	0.229	4.0	0x0	VIFx	61.1	115.0	st3

Bold/italic values have been manually overridden

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	430	409	0.223	548	12.0	0 x 0	VinIFlx	st2
st2	Peak AVF	791	852	0.223	610	16.0	0 x 0	VinIFlx	
st1	Peak AVF	455	367	0.362	835	10.0	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
rb1	0x 0	1367	1367	43.6	0.223	979	16.0	0x 0		VIFx	

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