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	

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	35512	Btuh
Ducts (R-6.0)	9006	Btuh
Central vent (0 cfm)	0	Btuh
Humidification	0	Btuh
Piping	0	Btuh
Equipment load	44518	Btuh

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

Infiltration

Method	Simplified
Construction quality	Average
Fireplaces	1 (Average)

	Heating	Cooling
Area (ft²)	2658	2658
Volume (ft³)	30267	30267
Air changes/hour	0.36	0.16
Equiv. AVF (cfm)	181	81

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

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

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.

Load Short Form

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Design Information

	Htg	Clg
Outside db (°F)	33	92
Inside db (°F)	68	75
Design TD (°F)	35	17
Daily range	-	M
Inside humidity (%)	50	50
Moisture difference (gr/lb)	29	44

Infiltration

Method	Simplified
Construction quality	Average
Fireplaces	1 (Average)

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
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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

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

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

Bounds Heating and Air

Job:
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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

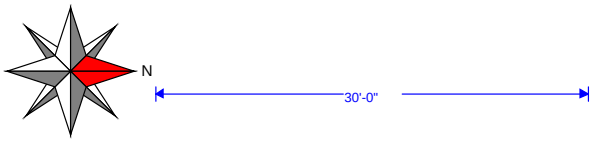
Outdoor design DB:	33.2°F	Heat loss:	44518	Btuh	Entering coil DB:	67.0°F
Indoor design DB:	68.0°F					

Manufacturer's Performance Data at Actual Design Conditions

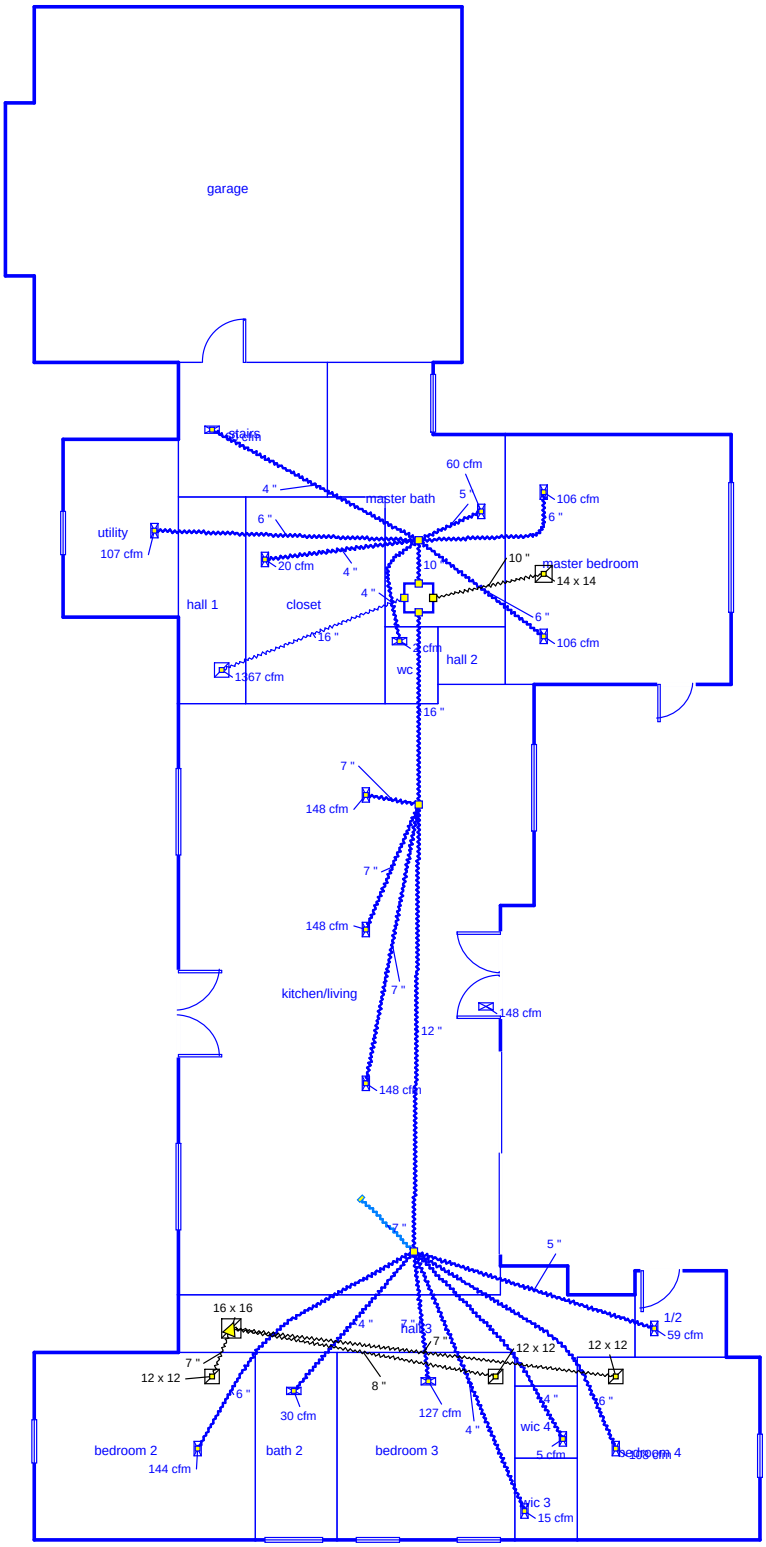
Equipment type:	Split ASHP					
Manufacturer:	Carrier		Model:	GH5SAN54200AA0+FJ5ANBC42L00		
Actual airflow:	1367	cfm				
Output capacity:	39500	Btuh	89% of load		Capacity balance:	36 °F
Supplemental heat required:	5018	Btuh			Economic balance:	-99 °F

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.



Level 1



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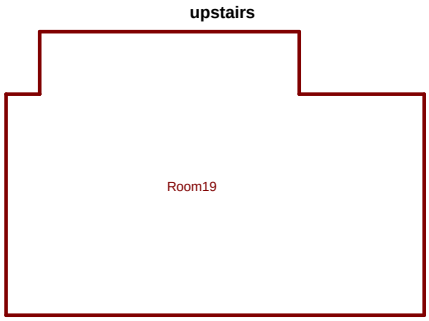

Job #:
Performed for:
Gainey

Bounds Heating and Air

jlegler@boundshvac.com

Scale: 1 : 160

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Duct System Summary

Entire House

Bounds Heating and Air

Job:
Date: **Mar 04, 2025**
By:

Email: jlegler@boundshvac.com

Project Information

For: Gainey, RRCH

	Heating	Cooling
External static pressure	0.50 in H2O	0.50 in H2O
Pressure losses	0 in H2O	0 in H2O
Available static pressure	0.50 in H2O	0.50 in H2O
Supply / return available pressure	0.403 / 0.097 in H2O	0.403 / 0.097 in H2O
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*	*0x 0*	VlFx	61.8	110.0	st3
bath 2	c	640	29	30	0.241	*4.0*	*0x 0*	VlFx	57.1	110.0	st3
bedroom 2	h	4678	144	104	0.223	*6.0*	*0x 0*	VlFx	65.4	115.0	st3
bedroom 3	c	2760	71	127	0.246	*7.0*	*0x 0*	VlFx	53.4	110.0	st3
bedroom 4	h	3512	108	85	0.224	*6.0*	*0x 0*	VlFx	64.8	115.0	st3
closet	c	444	15	20	0.388	*4.0*	*0x 0*	VlFx	13.7	90.0	st1
kitchen/living	c	3204	120	148	0.376	*7.0*	*0x 0*	VlFx	17.1	90.0	st2
kitchen/living-A	c	3202	120	148	0.357	*7.0*	*0x 0*	VlFx	22.7	90.0	st2
kitchen/living-B	c	3202	120	148	0.327	*7.0*	*0x 0*	VlFx	33.0	90.0	st2
kitchen/living-C	c	3202	120	148	0	0	0x 0	VlFx	0	0	
master bath	h	1948	60	40	0.412	*5.0*	*0x 0*	VlFx	7.8	90.0	st1
master bedroom	h	3465	106	85	0.367	*6.0*	*0x 0*	VlFx	14.7	95.0	st1
master bedroom-A	h	3465	106	85	0.387	*6.0*	*0x 0*	VlFx	13.9	90.0	st1
stairs	h	1960	60	36	0.369	*4.0*	*0x 0*	VlFx	19.3	90.0	st1
utility	h	3485	107	97	0.362	*6.0*	*0x 0*	VlFx	21.3	90.0	st1
wc	c	52	1	2	0.379	4.0	0x 0	VlFx	11.3	95.0	st1
wic 3	h	491	15	8	0.232	*4.0*	*0x 0*	VlFx	63.9	110.0	st3
wic 4	c	98	4	5	0.229	*4.0*	*0x 0*	VlFx	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*	VinlFlx	st2
st2	Peak AVF	791	852	0.223	610	*16.0*	*0* x *0*	VinlFlx	
st1	Peak AVF	455	367	0.362	835	*10.0*	*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	1367	1367	43.6	0.223	979	*16.0*	*0*x *0*		VlFx	

Bold/italic values have been manually overridden