



Project Summary

Entire House

Bounds Heating and Air

Job:
Date: May 15, 2025
By:

Email: jlegler@boundshvac.com

Project Information

For: Lot 8 Forest Cove, Maronda Homes

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	35467 Btuh
Ducts (R-6.0)	9844 Btuh
Central vent (0 cfm)	0 Btuh

Humidification	0 Btuh
Piping	0 Btuh
Equipment load	45311 Btuh

Infiltration

Method	Simplified
Construction quality	Average
Fireplaces	0

	Heating	Cooling
Area (ft ²)	3029	3029
Volume (ft ³)	28451	28451
Air changes/hour	0.28	0.15
Equiv. AVF (cfm)	133	71

Heating Equipment Summary

Make	Trane
Trade	TRANE
Model	5TWR5048A1
AHRI ref	214078977

Efficiency	8.5 HSPF2
Heating input	
Heating output	43500 Btuh @ 47°F
Temperature rise	26 °F
Actual air flow	1500 cfm
Air flow factor	0.033 cfm/Btuh
Static pressure	0.50 in H2O
Space thermostat	
Capacity balance point = 34 °F	

Backup: n/a n/a
Input = 0 kW, Output = 0 Btuh, 100 AFUE

Bold/italic values have been manually overridden

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	24716 Btuh
Ducts (R-6.0)	9477 Btuh
Central vent (0 cfm)	0 Btuh

Blower 0 Btuh

Use manufacturer's data	n
Rate/swing multiplier	0.97
Equipment sensible load	33235 Btuh

Latent Cooling Equipment Load Sizing

Structure	3109 Btuh
Ducts	2252 Btuh
Central vent (0 cfm)	0 Btuh

Equipment latent load 5361 Btuh

Equipment Total Load (Sen+Lat)	38597 Btuh
Req. total capacity at 0.70 SHR	4.0 ton

Cooling Equipment Summary

Make	Trane
Trade	TRANE
Cond	5TWR5048A1
Coil	5TEM6D06AV41++TDR+TSTAT
AHRI ref	214078977

Efficiency	12.0 EER2, 16 SEER2
Sensible cooling	31500 Btuh
Latent cooling	13500 Btuh
Total cooling	45000 Btuh
Actual air flow	1500 cfm
Air flow factor	0.044 cfm/Btuh
Static pressure	0.50 in H2O
Load sensible heat ratio	0.86

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



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Load Short Form

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Project Information

For: Lot 8 Forest Cove, Maronda Homes

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 Trane
Trade TRANE
Model 5TWR5048A1
AHRI ref 214078977

Efficiency 8.5 HSPF2
Heating input
Heating output 43500 Btuh @ 47°F
Temperature rise 26 °F
Actual air flow 1500 cfm
Air flow factor 0.033 cfm/Btuh
Static pressure 0.50 in H2O
Space thermostat
Capacity balance point = 34 °F

Backup: n/a n/a

Input = 0 kW, Output = 0 Btuh, 100 AFUE

COOLING EQUIPMENT

Make Trane
Trade TRANE
Cond 5TWR5048A1
Coil 5TEM6D06AV41++TDR+TSTAT
AHRI ref 214078977

Efficiency 12.0 EER2, 16 SEER2
Sensible cooling 31500 Btuh
Latent cooling 13500 Btuh
Total cooling 45000 Btuh
Actual air flow 1500 cfm
Air flow factor 0.044 cfm/Btuh
Static pressure 0.50 in H2O
Load sensible heat ratio 0.86

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
guest suite	187	4458	2574	148	113
wic 2	39	0	0	0	0
bedroom 3	167	2319	2080	77	91
wic 3	41	0	0	0	0
bedroom 4	173	2597	2175	86	95
wic 4	33	0	0	0	0
wic	113	3760	1672	124	73
master bath	155	2804	1645	93	72
wc	27	0	0	0	0
bath 2	53	128	285	4	13
bath 3	66	306	335	10	15
laundry	99	185	1088	6	48
ah	13	0	0	0	0
hall 1	83	0	0	0	0

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hall 2	43	0	0	0	0
master bedroom	296	6252	3931	207	172
kitchen/living	990	12086	13145	400	577
den	186	5164	2612	171	115
foyer	100	1526	855	51	38
dining	162	3727	1795	123	79
Entire House	3027	45311	34193	1500	1500
Other equip loads		0	0		
Equip. @ 0.97 RSM			33235		
Latent cooling			5361		
TOTALS	3027	45311	38597	1500	1500

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Manual S Compliance Report

Entire House

Bounds Heating and Air

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Date: May 15, 2025
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Project Information

For: Lot 8 Forest Cove, Maronda Homes

Cooling Equipment

Design Conditions

Outdoor design DB:	92.2°F	Sensible gain:	34193 Btuh	Entering coil DB:	75.0°F
Outdoor design WB:	75.8°F	Latent gain:	5361 Btuh	Entering coil WB:	62.5°F
Indoor design DB:	75.0°F	Total gain:	39554 Btuh		
Indoor RH:	50%	Estimated airflow:	1500 cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP		
Manufacturer:	Trane	Model:	5TWR5048A1+5TEM6D06AV41++TDR+TSTAT
Actual airflow:	1500 cfm		
Sensible capacity:	31500 Btuh	92% of load	
Latent capacity:	13500 Btuh	252% of load	
Total capacity:	45000 Btuh	114% of load	SHR: 70%

Heating Equipment

Design Conditions

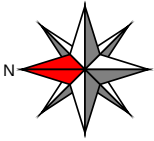
Outdoor design DB:	33.2°F	Heat loss:	45311 Btuh	Entering coil DB:	68.0°F
Indoor design DB:	68.0°F				

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP		
Manufacturer:	Trane	Model:	5TWR5048A1+5TEM6D06AV41++TDR+TSTAT
Actual airflow:	1500 cfm		
Output capacity:	43500 Btuh	96% of load	Capacity balance: 34 °F
Supplemental heat required:	1811 Btuh		Economic balance: -99 °F

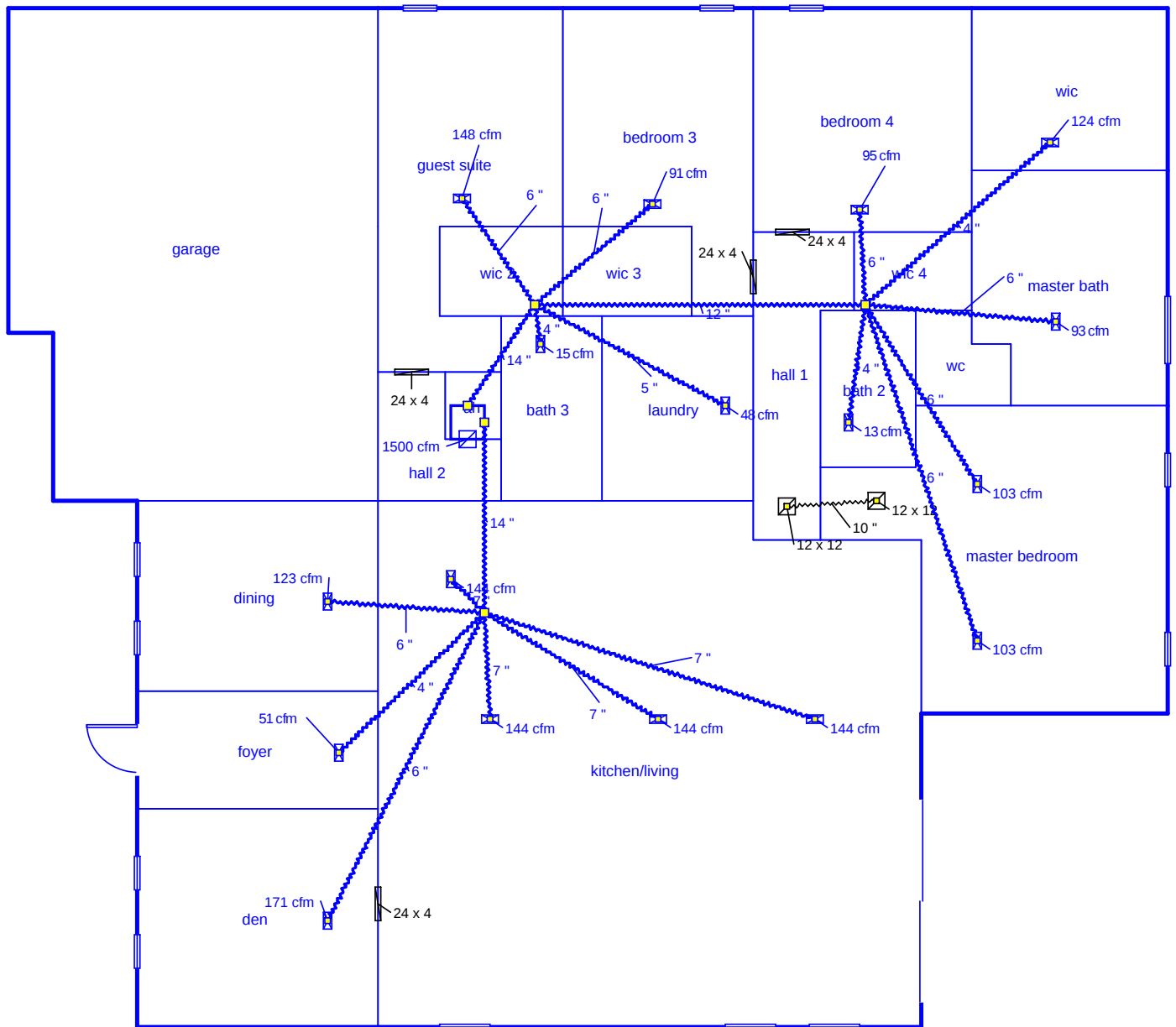
Backup equipment type:	Elec strip		
Manufacturer:	n/a	Model:	n/a+n/a
Actual airflow:	1500 cfm		
Output capacity:	0 kW	0% of load	Temp. rise: 0 °F

Meets all requirements of ACCA Manual S.



11'-0"

Level 1



Job #:
Performed for:
Lot 8 Forest Cove

Bounds Heating and Air

jlegler@boundshvac.com

Scale: 1 : 115
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Duct System Summary

Entire House

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Job:
Date: May 15, 2025
By:

Email: jlegler@boundshvac.com

Project Information

For: Lot 8 Forest Cove, Maronda Homes

	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	0.317 in/100ft	0.317 in/100ft
Actual air flow	1500 cfm	1500 cfm
Total effective length (TEL)	158 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	c 285	4	13	0.347	4.0	0x0	VIFx	33.9	110.0	st3
bath 3	c 335	10	15	0.502	4.0	0x0	VIFx	9.6	90.0	st1
bedroom 3	c 2080	77	91	0.470	6.0	0x0	VIFx	16.4	90.0	st1
bedroom 4	c 2175	86	95	0.351	6.0	0x0	VIFx	32.6	110.0	st3
den	h 5164	171	115	0.410	6.0	0x0	VIFx	31.9	90.0	st2
dining	h 3727	123	79	0.452	6.0	0x0	VIFx	20.7	90.0	st2
foyer	h 1526	51	38	0.441	4.0	0x0	VIFx	23.4	90.0	st2
guest suite	h 4458	148	113	0.477	6.0	0x0	VIFx	14.9	90.0	st1
kitchen/living	c 3286	100	144	0.464	7.0	0x0	VIFx	17.7	90.0	st2
kitchen/living-A	c 3286	100	144	0.441	7.0	0x0	VIFx	23.5	90.0	st2
kitchen/living-B	c 3286	100	144	0.410	7.0	0x0	VIFx	32.0	90.0	st2
kitchen/living-C	c 3286	100	144	0.480	7.0	0x0	VIFx	14.2	90.0	st2
laundry	c 1088	6	48	0.454	5.0	0x0	VIFx	20.0	90.0	st1
master bath	h 2804	93	72	0.337	6.0	0x0	VIFx	38.3	110.0	st3
master bedroom	h 3126	103	86	0.335	6.0	0x0	VIFx	39.5	110.0	st3
master bedroom-A	h 3126	103	86	0.317	6.0	0x0	VIFx	48.0	110.0	st3
wic	h 3760	124	73	0.330	4.0	0x0	VIFx	41.5	110.0	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	745	808	0.410	755	14.0	0 x 0	VinIFlx	st1
st3	Peak AVF	514	426	0.317	655	12.0	0 x 0	VinIFlx	
st1	Peak AVF	755	692	0.317	706	14.0	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	1500	1500	0	0	0	0	0x 0		VIFx	