



Load Short Form
Entire House
High Springs Electric

Job:
Date: May 27, 2024
By: Donna Brackeen

Project Information

For: Gaskins Residence, G Buzbee
588 SW Weatherby PL, Lake City, FL 32024

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	0
Daily range	-	M		
Inside humidity (%)	50	50		
Moisture difference (gr/lb)	29	43		

HEATING EQUIPMENT

Make Trane
Trade TRANE
Model 4TWR4042N1
AHRI ref 211293171
Efficiency 7.5 HSPF2
Heating input
Heating output 39500 Btuh @ 47°F
Temperature rise 0 °F
Actual air flow 0 cfm
Air flow factor 0 cfm/Btuh
Static pressure 0 in H2O
Space thermostat
Capacity balance point = 27 °F

COOLING EQUIPMENT

Make Trane
Trade TRANE
Cond 4TWR4042N1
Coil TEM4A0C42S41++TDR
AHRI ref 211293171
Efficiency 11.7 EER2, 14.3 SEER2
Sensible cooling 28350 Btuh
Latent cooling 12150 Btuh
Total cooling 40500 Btuh
Actual air flow 1350 cfm
Air flow factor 0.041 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)
(Rest of House)	2188	30437	35483	0	1456
(Unconditioned)	689	0	0	0	0
Entire House	2877	30437	32910	0	1350
Other equip loads		0	0		
Equip. @ 0.97 RSM			32055		
Latent cooling			5269		
TOTALS	2877	30437	37324	0	1350

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

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Inside db (°F)	68	75	Construction quality	Average
Design TD (°F)	35	17	Fireplaces	0
Daily range	-	M		
Inside humidity (%)	50	50		
Moisture difference (gr/lb)	29	43		

HEATING EQUIPMENT

Make	n/a
Trade	n/a
Model	n/a
AHRI ref	n/a
Efficiency	n/a
Heating input	
Heating output	0 Btuh
Temperature rise	0 °F
Actual air flow	0 cfm
Air flow factor	0 cfm/Btuh
Static pressure	0 in H2O
Space thermostat	n/a

COOLING EQUIPMENT

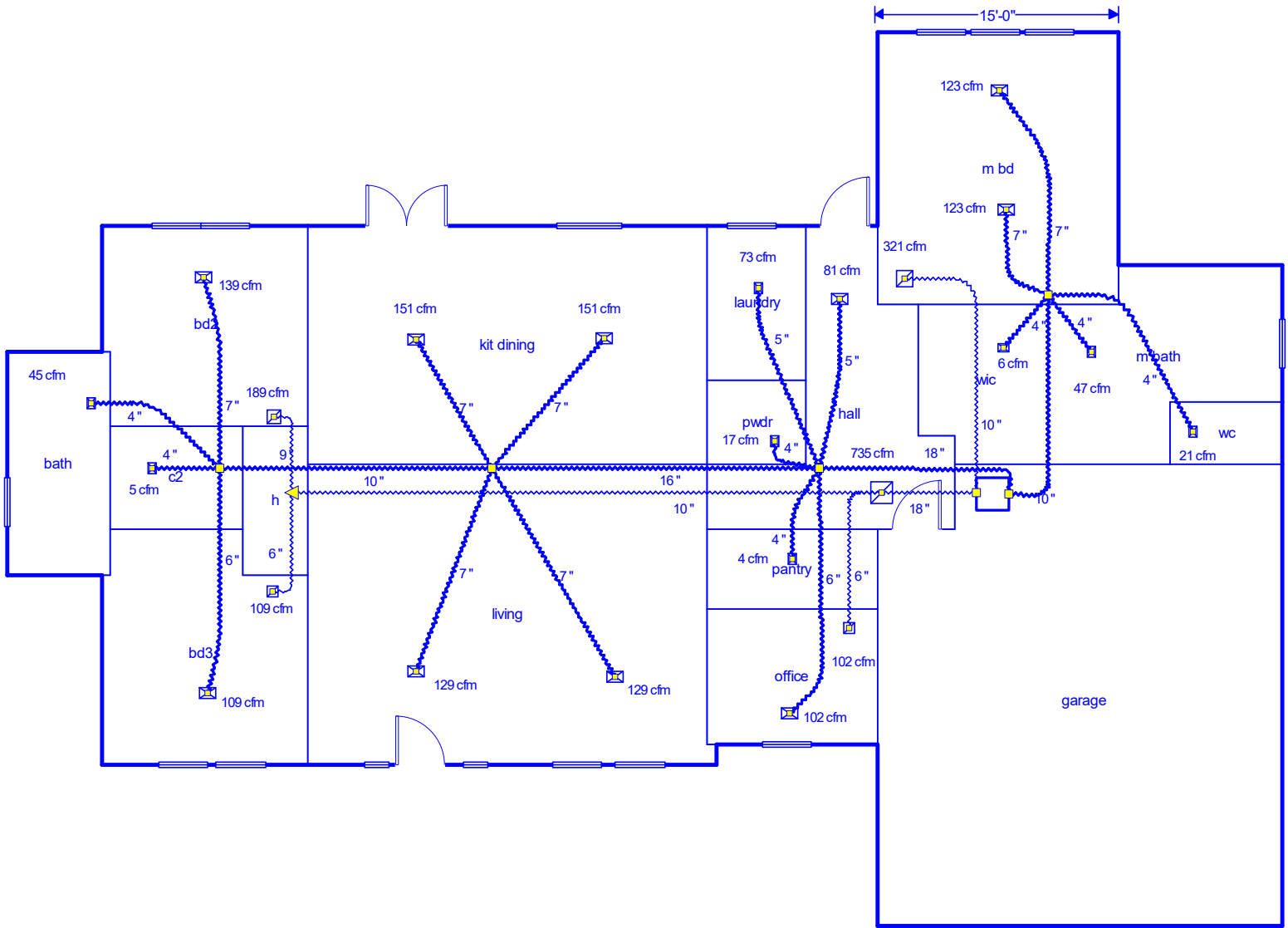
Make	n/a
Trade	n/a
Cond	n/a
Coil	n/a
AHRI ref	n/a
Efficiency	n/a
Sensible cooling	0 Btuh
Latent cooling	0 Btuh
Total cooling	0 Btuh
Actual air flow	0 cfm
Air flow factor	0 cfm/Btuh
Static pressure	0 in H2O
Load sensible heat ratio	0

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
bd2	154	2656	3390	0	139
c2	52	66	126	0	5
bath	87	2726	1091	0	45
bd3	171	3159	2661	0	109
h	37	0	0	0	0
living	456	4976	6276	0	257
office	87	1762	2475	0	102
pantry	52	301	107	0	4
hall	154	1674	1976	0	81
kit dining	361	3529	7369	0	302
laundry	58	802	1773	0	73
pwdr	31	34	409	0	17
wic	75	368	155	0	6
m bath	140	2594	1158	0	47

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m bd	248	5033	6017	0	247
wc	27	757	501	0	21
(Rest of House)	2188	30437	35483	0	1456
Other equip loads		0	0		
Equip. @ 0.97 RSM			34561		
Latent cooling			5269		
TOTALS	2188	30437	39830	0	1456

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Manual S Compliance Report

Entire House

High Springs Electric

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Cooling Equipment

Design Conditions

Outdoor design DB:	92.4°F	Sensible gain:	32910	Btuh	Entering coil DB:	77.4°F
Outdoor design WB:	75.8°F	Latent gain:	5269	Btuh	Entering coil WB:	63.7°F
Indoor design DB:	75.0°F	Total gain:	38179	Btuh		
Indoor RH:	50%	Estimated airflow:	1350	cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP		
Manufacturer:	Trane	Model:	4TWR4042N1+TEM4A0C42S41++TDR
Actual airflow:	1350	cfm	
Sensible capacity:	28350	Btuh	86% of load
Latent capacity:	12150	Btuh	231% of load
Total capacity:	40500	Btuh	106% of load SHR: 70%

Heating Equipment

Design Conditions

Outdoor design DB:	33.3°F	Heat loss:	30437	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:	4TWR4042N1+TEM4A0C42S41++TDR
Actual airflow:	0	cfm	
Output capacity:	39500	Btuh	130% of load
Supplemental heat required:	0	Btuh	
Capacity balance:	27	°F	
Economic balance:	-99	°F	

Meets all requirements of ACCA Manual S.



Duct System Summary

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	Heating	Cooling
External static pressure	0 in H ₂ O	0.50 in H ₂ O
Pressure losses	0.18 in H ₂ O	0.18 in H ₂ O
Available static pressure	-0.2 in H ₂ O	0.32 in H ₂ O
Supply / return available pressure	-0.119 / -0.061 in H ₂ O	0.212 / 0.108 in H ₂ O
Lowest friction rate	-0.06 in/100ft	0.104 in/100ft
Actual air flow	0 cfm	1350 cfm
Total effective length (TEL)	309 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	c 1091	0	45	0.106	4.0	0x 0	VIFx	59.8	140.0	st4
bd2	c 3390	0	139	0.105	7.0	0x 0	VIFx	62.1	140.0	st4
bd3	c 2661	0	109	0.104	6.0	0x 0	VIFx	64.2	140.0	st4
c2	c 126	0	5	0.112	4.0	0x 0	VIFx	54.4	135.0	st4
hall	c 1976	0	81	0.171	5.0	0x 0	VIFx	23.9	100.0	st1
kit dining	c 3684	0	151	0.134	7.0	0x 0	VIFx	42.7	115.0	st3
kit dining-A	c 3684	0	151	0.133	7.0	0x 0	VIFx	44.1	115.0	st3
laundry	c 1773	0	73	0.169	5.0	0x 0	VIFx	25.2	100.0	st1
living	c 3138	0	129	0.131	7.0	0x 0	VIFx	46.9	115.0	st3
living-A	c 3138	0	129	0.130	7.0	0x 0	VIFx	48.4	115.0	st3
m bath	c 1158	0	47	0.185	4.0	0x 0	VIFx	19.2	95.0	st2
m bd	c 3009	0	123	0.165	7.0	0x 0	VIFx	28.4	100.0	st2
m bd-A	c 3009	0	123	0.174	7.0	0x 0	VIFx	21.7	100.0	st2
office	c 2475	0	102	0.164	6.0	0x 0	VIFx	29.3	100.0	st1
pantry	c 107	0	4	0.177	4.0	0x 0	VIFx	19.4	100.0	st1
pwrdr	c 409	0	17	0.180	4.0	0x 0	VIFx	17.3	100.0	st1
wc	c 501	0	21	0.164	4.0	0x 0	VIFx	28.7	100.0	st2
wic	c 155	0	6	0.186	4.0	0x 0	VIFx	19.0	95.0	st2

Supply Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
st4	Peak AVF	0	298	0.104	547	10.0	0 x 0	VinIFlx	st3 st1
st3	Peak AVF	0	858	0.104	614	16.0	0 x 0	VinIFlx	
st1	Peak AVF	0	1134	0.104	642	18.0	0 x 0	VinIFlx	
st2	Peak AVF	0	321	0.164	589	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
rb2	8x 11	0	189	102.9	0.105	428	9.0	0x 0		VIFx	rt2
rb3	8x 6	0	109	104.4	0.104	556	6.0	0x 0		VIFx	rt2
rb4	8x 6	0	102	51.2	0.212	517	6.0	0x 0		VIFx	rt1
rb5	12x 12	0	321	52.6	0.206	589	10.0	0x 0		VIFx	rt1
rb1	0x 0	0	735	45.8	0.236	526	16.0	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
rt2	Peak AVF	0	298	0.104	547	10.0	0 x 0	VinIFlx	rt1
rt1	Peak AVF	0	1134	0.104	642	18.0	0 x 0	VinIFlx	