



Load Short Form
Entire House
Hlgh Springs Electric

Job:
Date: Aug 31, 2023
By:

Project Information

For: Chapman Residence, G.Buzbee
SW SR 47, Fort White, FL 32038

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	44		

HEATING EQUIPMENT

Make Trane
Trade TRANE
Model 4TWR4030N1
AHRI ref 209480290
Efficiency 7.5 HSPF2
Heating input
Heating output 26800 Btuh @ 47°F
Temperature rise 0 °F
Actual air flow 0 cfm
Air flow factor 0 cfm/Btuh
Static pressure 0.50 in H2O
Space thermostat
Capacity balance point = 29 °F

COOLING EQUIPMENT

Make Trane
Trade TRANE
Cond 4TWR4030N1
Coil TEM4A0B31M31++TDR
AHRI ref 209480290
Efficiency 11.7 EER2, 14.3 SEER2
Sensible cooling 20160 Btuh
Latent cooling 8640 Btuh
Total cooling 28800 Btuh
Actual air flow 960 cfm
Air flow factor 0.045 cfm/Btuh
Static pressure 0.50 in H2O
Load sensible heat ratio 0.82

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
wic	62	1620	516	0	23
m bd	203	1971	2532	0	113
m bath	85	1093	760	0	34
wc	17	592	430	0	19
laundry	109	1991	1507	0	67
common	716	8285	10995	0	492
h	20	0	0	0	0
hall	30	0	0	0	0
bath	52	638	574	0	26
bd2	171	3214	2291	0	102
bd3	167	2965	1858	0	83

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



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Entire House	1631	22367	21464	0	960
Other equip loads		0	0		
Equip. @ 0.97 RSM			20863		
Latent cooling			4655		
TOTALS	1631	22367	25518	0	960

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

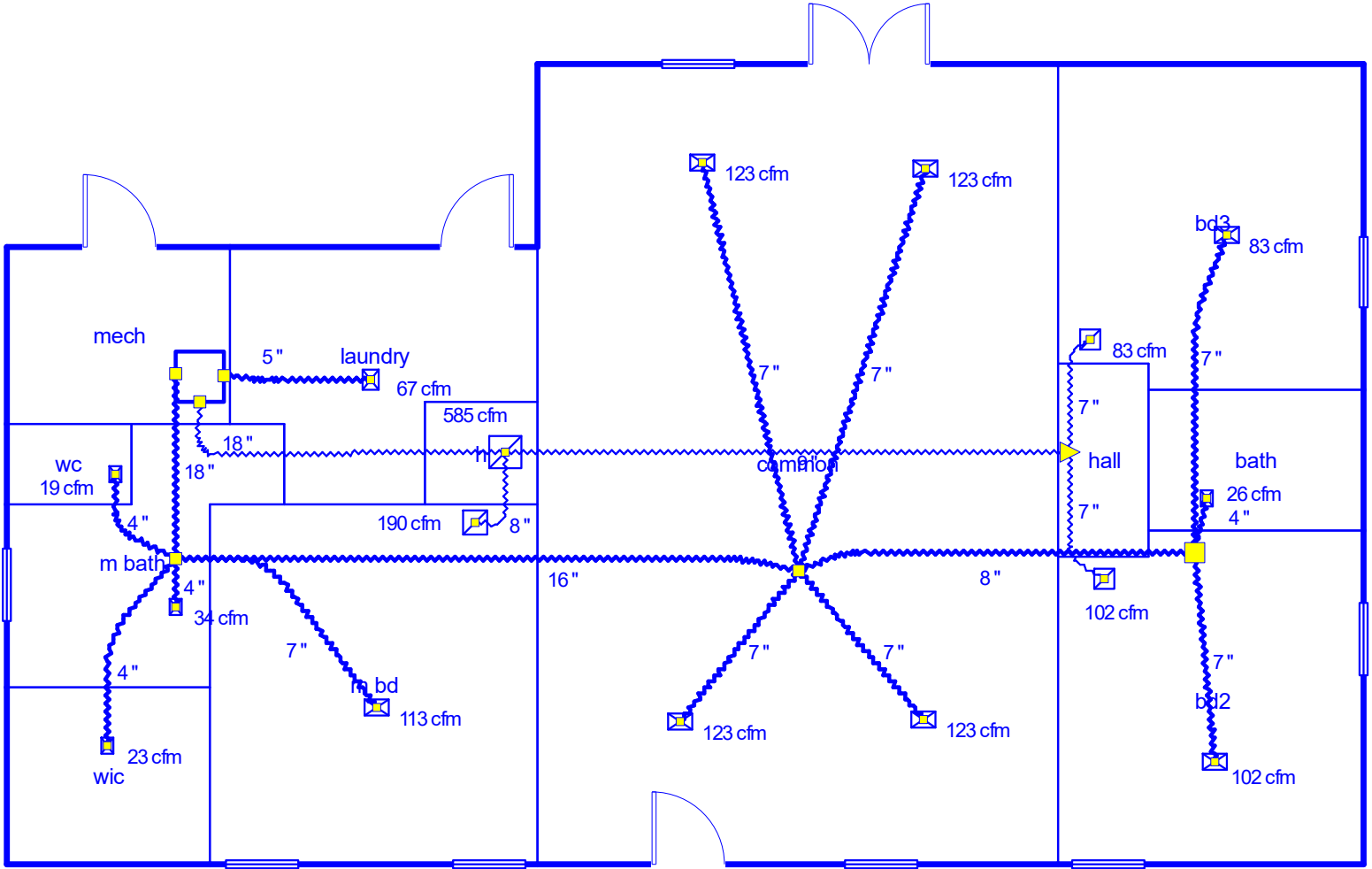


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Manual S Compliance Report

Entire House

High Springs Electric

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Cooling Equipment

Design Conditions

Outdoor design DB:	92.2°F	Sensible gain:	21464	Btuh	Entering coil DB:	77.0°F
Outdoor design WB:	75.8°F	Latent gain:	4655	Btuh	Entering coil WB:	63.4°F
Indoor design DB:	75.0°F	Total gain:	26119	Btuh		
Indoor RH:	50%	Estimated airflow:	960	cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP			
Manufacturer:	Trane	Model:	4TWR4030N1+TEM4A0B31M31++TDR	
Actual airflow:	960	cfm		
Sensible capacity:	20160	Btuh	94% of load	
Latent capacity:	8640	Btuh	186% of load	
Total capacity:	28800	Btuh	110% of load	SHR: 70%

Heating Equipment

Design Conditions

Outdoor design DB:	33.2°F	Heat loss:	22367	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:	4TWR4030N1+TEM4A0B31M31++TDR	
Actual airflow:	0	cfm		
Output capacity:	26800	Btuh	120% of load	Capacity balance: 29 °F
Supplemental heat required:	0	Btuh		Economic balance: -99 °F

Meets all requirements of ACCA Manual S.



Duct System Summary

Entire House

Hlgh Springs Electric

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	Heating	Cooling
External static pressure	0.50 in H2O	0.50 in H2O
Pressure losses	0.18 in H2O	0.18 in H2O
Available static pressure	0.32 in H2O	0.32 in H2O
Supply / return available pressure	0.213 / 0.107 in H2O	0.213 / 0.107 in H2O
Lowest friction rate	0.102 in/100ft	0.102 in/100ft
Actual air flow	0 cfm	960 cfm
Total effective length (TEL)	313 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 574	0	26	0.111	4.0	0x 0	VIFx	52.4	140.0	st3
bd2	c 2291	0	102	0.107	7.0	0x 0	VIFx	58.8	140.0	st3
bd3	c 1858	0	83	0.102	7.0	0x 0	VIFx	63.5	145.0	st3
common	c 2749	0	123	0.129	7.0	0x 0	VIFx	50.9	115.0	st2
common-A	c 2749	0	123	0.128	7.0	0x 0	VIFx	51.0	115.0	st2
common-B	c 2749	0	123	0.136	7.0	0x 0	VIFx	41.5	115.0	st2
common-C	c 2749	0	123	0.136	7.0	0x 0	VIFx	41.6	115.0	st2
laundry	c 1507	0	67	0.263	5.0	0x 0	VIFx	6.1	75.0	
m bath	c 760	0	34	0.214	4.0	0x 0	VIFx	9.7	90.0	st1
m bd	c 2532	0	113	0.187	7.0	0x 0	VIFx	19.1	95.0	st1
wc	c 430	0	19	0.198	4.0	0x 0	VIFx	12.7	95.0	st1
wic	c 516	0	23	0.191	4.0	0x 0	VIFx	16.5	95.0	st1

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	0	211	0.102	605	8.0	0 x 0	VinIFlx	st2
st1	Peak AVF	0	893	0.102	505	18.0	0 x 0	VinIFlx	
st2	Peak AVF	0	703	0.102	503	16.0	0 x 0	VinIFlx	st1



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
rb3	0x 0	0	83	103.5	0.103	311	7.0	0x 0		VIFx	rt2
rb2	0x 0	0	102	104.4	0.102	383	7.0	0x 0		VIFx	rt2
rb4	0x 0	0	190	59.2	0.180	543	8.0	0x 0		VIFx	rt1
rb1	0x 0	0	585	59.9	0.178	547	14.0	0x 0		VIFx	rt1

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	186	0.102	420	9.0	0 x 0	VinIFlx	rt1
rt1	Peak AVF	0	960	0.102	543	18.0	0 x 0	VinIFlx	