Manual S Compliance Report
Entire House
E-Calcs Plus, Inc

Job: SFH - 285 Riverside Ave
Date: Apr 09, 2025
By: E-Calcs Plus, Inc

Serving all of Florida Phone: 833.322.5271 Email: eric@ecalcsplus.com Web: www.ecalcsplus.com License: HERS Rater ID# 0757810

Project Information

For: SFH - 285 Riverside Ave, High Springs Electric & Air
285 Riverside Ave, Fort White, FL 32038

Cooling Equipment

Design Conditions

Outdoor design DB:	91.9°F	Sensible gain:	24809	Btuh	Entering coil DB:	76.3°F
Outdoor design WB:	76.2°F	Latent gain:	5161	Btuh	Entering coil WB:	63.8°F
Indoor design DB:	75.0°F	Total gain:	29970	Btuh		
Indoor RH:	50%	Estimated airflow:	1093	cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type: Split ASHP
Manufacturer: Trane Model: 5TWX5036A1+5TEMCB03AV31++TDR+TSTAT

Actual airflow:	1093	cfm		
Sensible capacity:	25125	Btuh	101% of load	
Latent capacity:	5369	Btuh	104% of load	
Total capacity:	30494	Btuh	102% of load	SHR: 82%

Heating Equipment

Design Conditions

Outdoor design DB:	33.0°F	Heat loss:	25995	Btuh	Entering coil DB:	70.0°F
Indoor design DB:	70.0°F					

Manufacturer's Performance Data at Actual Design Conditions

Equipment type: Split ASHP
Manufacturer: Trane Model: 5TWX5036A1+5TEMCB03AV31++TDR+TSTAT

Actual airflow:	0	cfm			
Output capacity:	32400	Btuh	125% of load	Capacity balance:	27 °F
Supplemental heat required:	0	Btuh		Economic balance:	-95 °F

Backup equipment type: Elec strip
Manufacturer: Trane Model: AFUE 100

Actual airflow:	0	cfm			
Output capacity:	7.5	kW	98% of load	Temp. rise:	21 °F

Meets all requirements of ACCA Manual S.

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Notes:

Design Information

Weather: Gainesville Rgnl, FL, US

Winter Design Conditions

Outside db	33	°F
Inside db	70	°F
Design TD	37	°F
Ventilation Method	ASHRAE 62.2-2010	

Summer Design Conditions

Outside db	92	°F
Inside db	75	°F
Design TD	17	°F
Daily range	M	
Relative humidity	50	%
Moisture difference	47	gr/lb

Heating Summary

Structure	21507	Btuh
Ducts (R-6.0)	2608	Btuh
Central vent (46 cfm)	1880	Btuh
Outside air		
Humidification	0	Btuh
Piping	0	Btuh
Equipment load	25995	Btuh

Sensible Cooling Equipment Load Sizing

Structure	20354	Btuh
Ducts (R-6.0)	3596	Btuh
Central vent (46 cfm)	859	Btuh
Outside air		
Blower	0	Btuh
Use manufacturer's data	y	
Rate/swing multiplier	1.00	
Equipment sensible load	24809	Btuh

Infiltration

Method	Simplified
Construction quality	Semi-tight
Fireplaces	0

	Heating	Cooling
Area (ft²)	1646	1646
Volume (ft³)	16460	16460
Air changes/hour	0.26	0.14
Equiv. AVF (cfm)	71	38

Latent Cooling Equipment Load Sizing

Structure	1818	Btuh
Ducts	1869	Btuh
Central vent (46 cfm)	1473	Btuh
Outside air		
Equipment latent load	5161	Btuh
Equipment Total Load (Sen+Lat)	29970	Btuh
Req. total capacity at 0.75 SHR	2.8	ton

Heating Equipment Summary

Make	Trane
Trade	TRANE
Model	5TWX5036A1
AHRI ref	215863974

Efficiency	8.1 HSPF2	
Heating input		
Heating output	32400	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 = 27 °F

Backup: Trane AFUE 100
Input = 8 kW, Output = 25591 Btuh, 100 AFUE

Cooling Equipment Summary

Make	Trane
Trade	TRANE
Cond	5TWX5036A1
Coil	5TEMCB03AV31++TDR+TSTAT
AHRI ref	215863974

Efficiency	12.0 EER2,15.2 SEER2	
Sensible cooling	24600	Btuh
Latent cooling	8200	Btuh
Total cooling	32800	Btuh
Actual air flow	1093	cfm
Air flow factor	0.046	cfm/Btuh
Static pressure	0.50	in H2O
Load sensible heat ratio	0.83	

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

Load Short Form
Entire House
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Design Information

	Htg	Clg
Outside db (°F)	33	92
Inside db (°F)	70	75
Design TD (°F)	37	17
Daily range	-	M
Inside humidity (%)	50	50
Moisture difference (gr/lb)	33	47

Infiltration

Method	Simplified
Construction quality	Semi-tight
Fireplaces	0

HEATING EQUIPMENT

Make	Trane
Trade	TRANE
Model	5TWX5036A1
AHRI ref	215863974

Efficiency	8.1 HSPF2	
Heating input		
Heating output	32400	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 = 27 °F

Backup: Trane AFUE 100
Input = 8 kW, Output = 25591 Btuh, 100 AFUE

COOLING EQUIPMENT

Make	Trane
Trade	TRANE
Cond	5TWX5036A1
Coil	5TEMCB03AV31++TDR+TSTAT
AHRI ref	215863974

Efficiency	12.0 EER2,15.2 SEER2	
Sensible cooling	24600	Btuh
Latent cooling	8200	Btuh
Total cooling	32800	Btuh
Actual air flow	1093	cfm
Air flow factor	0.046	cfm/Btuh
Static pressure	0.50	in H2O
Load sensible heat ratio	0.83	

ROOM NAME	Area (ft^2)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
MBR	154	2259	2493	0	114
MBA	91	2188	1033	0	47
MWIC	104	971	358	0	16
Utility	117	1238	1071	0	49
Studio	143	3580	4005	0	183
BA2	48	729	336	0	15
Vest	30	0	0	0	0
BR2	169	2946	1662	0	76
Kitchen	247	2318	880	0	40
Liv Din	543	7886	12113	0	553

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

Entire House	p	1646	24115	23951	0	1093
Other equip loads			1880	859		
Equip. @ 1.00	RSM			24809		
Latent cooling				5161		
TOTALS		1646	25995	29970	0	1093

Building Analysis
Entire House
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Design Conditions

Location:
Gainesville Rgnl, FL, US
Elevation: 164 ft
Latitude: 30°N

Outdoor:	**Heating**	**Cooling**
Dry bulb (°F)	33	92
Daily range (°F)	-	18 (M)
Wet bulb (°F)	-	76
Wind speed (mph)	15.0	7.5

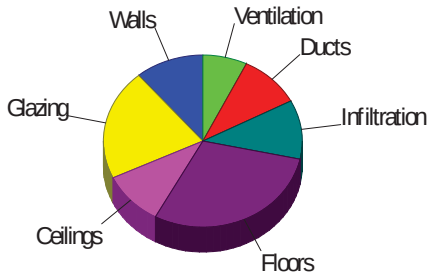
Indoor:	**Heating**	**Cooling**
Indoor temperature (°F)	70	75
Design TD (°F)	37	17
Relative humidity (%)	50	50
Moisture difference (gr/lb)	32.8	46.9

Infiltration:

Method	Simplified
Construction quality	Semi-tight
Fireplaces	0

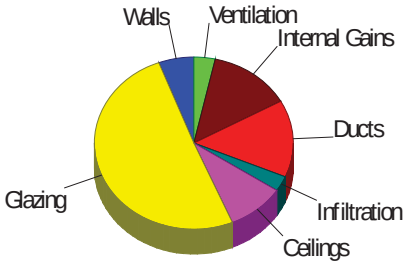
Heating

Component	Btuh/ft²	Btuh	% of load
Walls	2.4	2904	11.2
Glazing	9.8	5414	20.8
Doors	0	0	0
Ceilings	1.6	2619	10.1
Floors	4.7	7684	29.6
Infiltration	1.6	2886	11.1
Ducts		2608	10.0
Piping		0	0
Humidification		0	0
Ventilation		1880	7.2
Adjustments		0	
Total		**25995**	**100.0**



Cooling

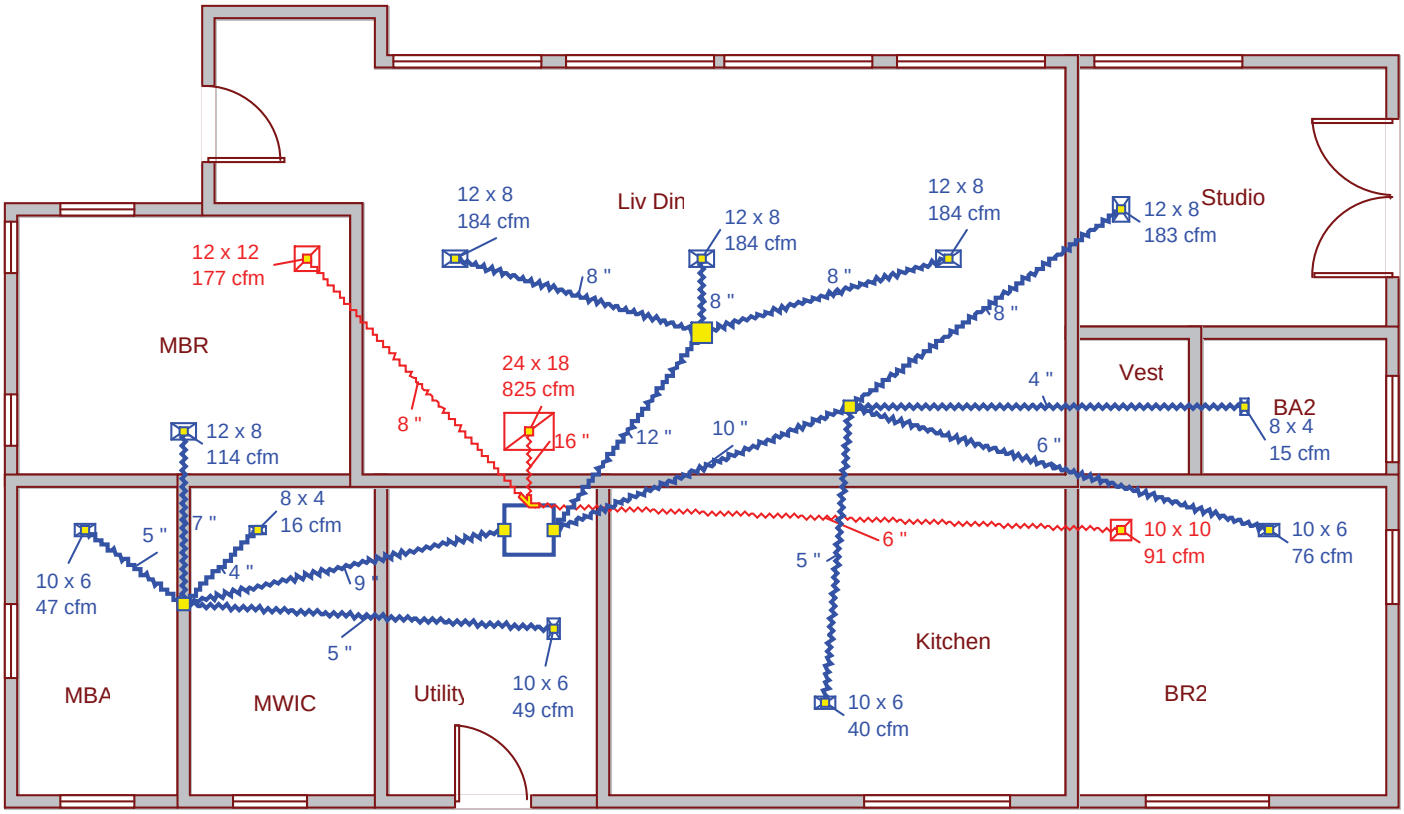
Component	Btuh/ft²	Btuh	% of load
Walls	1.2	1425	5.7
Glazing	22.7	12555	50.6
Doors	0	0	0
Ceilings	1.4	2325	9.4
Floors	0	0	0
Infiltration	0.4	710	2.9
Ducts		3596	14.5
Ventilation		859	3.5
Internal gains		3340	13.5
Blower		0	0
Adjustments		0	
Total		**24809**	**100.0**



Latent Cooling Load = 5161 Btuh
Overall U-value = 0.100 Btuh/ft²-°F, Window / Floor Area = 33.6 %

WARNING: window to floor area ratio = 33.6% - more than 25%.

First Floor



Job #: SFH - 285 Riverside Ave
Performed by E-Calcs Plus, Inc for:
SFH - 285 Riverside Ave
285 Riverside Ave
Fort White, FL 32038

E-Calcs Plus, Inc
Serving all of Florida
Phone: 833.322.5271 License: HERS Rater ID# 075781
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Scale: 1 : 93

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Duct System Summary
Entire House
E-Calcs Plus, Inc

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	Heating	Cooling
External static pressure	0.50 in H2O	0.50 in H2O
Pressure losses	0.16 in H2O	0.16 in H2O
Available static pressure	0.34 in H2O	0.34 in H2O
Supply / return available pressure	0.216 / 0.124 in H2O	0.216 / 0.124 in H2O
Lowest friction rate	0.148 in/100ft	0.148 in/100ft
Actual air flow	0 cfm	1093 cfm
Total effective length (TEL)	230 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
BA2	c 336	0	15	0.150	4.0	0x 0	VlFx	29.0	115.0	st2
BR2	c 1662	0	76	0.148	6.0	0x 0	VlFx	30.7	115.0	st2
Kitchen	c 880	0	40	0.154	5.0	0x 0	VlFx	25.0	115.0	st2
Liv Din	c 4038	0	184	0.159	8.0	0x 0	VlFx	20.4	115.0	st1
Liv Din-A	c 4038	0	184	0.168	8.0	0x 0	VlFx	13.0	115.0	st1
Liv Din-B	c 4038	0	184	0.159	8.0	0x 0	VlFx	20.4	115.0	st1
MBA	c 1033	0	47	0.162	5.0	0x 0	VlFx	18.3	115.0	st3
MBR	c 2493	0	114	0.159	7.0	0x 0	VlFx	20.3	115.0	st3
MWIC	c 358	0	16	0.163	4.0	0x 0	VlFx	17.6	115.0	st3
Studio	c 4005	0	183	0.152	8.0	0x 0	VlFx	26.6	115.0	st2
Utility	c 1071	0	49	0.150	5.0	0x 0	VlFx	28.4	115.0	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
st1	Peak AVF	0	553	0.159	704	12.0	0 x 0	VinlFlx	
st2	Peak AVF	0	314	0.148	576	10.0	0 x 0	VinlFlx	
st3	Peak AVF	0	226	0.150	512	9.0	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
rb2	0x 0	0	177	73.5	0.169	508	8.0	0x 0		VlFx	
rb3	0x 0	0	91	84.0	0.148	464	6.0	0x 0		VlFx	
rb1	0x 0	0	825	63.0	0.197	591	16.0	0x 0		VlFx	

Static Pressure and Friction Rate
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Available Static Pressure

	Heating (in H2O)	Cooling (in H2O)
External static pressure	0.50	0.50
Pressure losses		
Coil	0	0
Heat exchanger	0	0
Supply diffusers	0.03	0.03
Return grilles	0.03	0.03
Filter	0.10	0.10
Humidifier	0	0
Balancing damper	0	0
Other device	0	0
Available static pressure	0.34	0.34

Total Effective Length

	Supply (ft)	Return (ft)
Measured length of run-out	18	24
Measured length of trunk	13	0
Equivalent length of fittings	115	60
Total length	146	84
Total effective length		230

Friction Rate

	Heating (in/100ft)		Cooling (in/100ft)	
Supply Ducts	0.148	OK	0.148	OK
Return Ducts	0.148	OK	0.148	OK

Fitting Equivalent Length Details

Supply 4AD=60, 11A=20, 1A=35: TotalEL=115

Return 6M=20, 5D=40: TotalEL=60