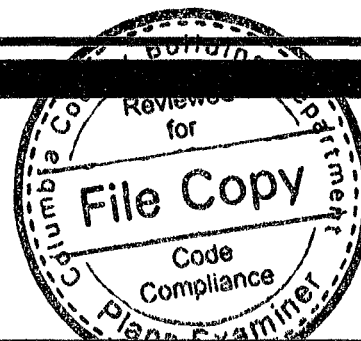


Project Information

For: Aaron Young addition
 819 SW Beaver St, Fort White, FL 32038

Notes.



Design Information

Weather: Gainesville Regional AP, FL, US

Winter Design Conditions

Outside db 33 °F
 Inside db 68 °F
 Design TD 35 °F

Ventilation Method MJ8

Heating Summary

Structure 7748 Btuh
 Ducts (R-6.0) 2103 Btuh
 Central vent (0 cfm) 0 Btuh
 Humidification 0 Btuh
 Piping 0 Btuh
 Equipment load 9851 Btuh

Infiltration

Method Simplified
 Construction quality Average
 Fireplaces 0

	Heating	Cooling
Area (ft²)	528	528
Volume (ft³)	4752	4752
Air changes/hour	0.61	0.32
Equiv. AVF (cfm)	48	25

Heating Equipment Summary

Make Trane
 Trade TRANE
 Model 5TWR5018A1
 AHRI ref 214074329
 Efficiency 7.5 HSPF2
 Heating input 17800 Btuh @ 47°F
 Heating output 27 °F
 Temperature rise 600 cfm
 Actual air flow 0.061 cfm/Btuh
 Air flow factor 0.50 in H2O
 Static pressure
 Space thermostat
 Capacity balance point = 17 °F
 Backup:
 Input = 2 kW, Output = 7843 Btuh, 100 AFUE

Summer Design Conditions

Outside db 92 °F
 Inside db 75 °F
 Design TD 17 °F
 Daily range M
 Relative humidity 50 %
 Moisture difference 45 gr/lb

Sensible Cooling Equipment Load Sizing

Structure 4668 Btuh
 Ducts (R-6.0) 2728 Btuh
 Central vent (0 cfm) 0 Btuh
 Blower 0 Btuh
 Use manufacturer's data n
 Rate/swing multiplier 0.97
 Equipment sensible load 7174 Btuh

Latent Cooling Equipment Load Sizing

Structure 1378 Btuh
 Ducts 537 Btuh
 Central vent (0 cfm) 0 Btuh
 Equipment latent load 1916 Btuh
Equipment Total Load (Sen+Lat) 9090 Btuh
 Req. total capacity at 0.70 SHR 0.9 ton

Cooling Equipment Summary

Make Trane
 Trade TRANE
 Cond 5TWR5018A1
 Coil 5TEM6B03AV21++TDR
 AHRI ref 214074329
 Efficiency 12.0 EER2, 15.2 SEER2
 Sensible cooling 12600 Btuh
 Latent cooling 5400 Btuh
 Total cooling 18000 Btuh
 Actual air flow 600 cfm
 Air flow factor 0.081 cfm/Btuh
 Static pressure 0.50 in H2O
 Load sensible heat ratio 0.79

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

Right-J® Worksheet

Entire House

DL Williams Heating and Cooling LLC

Job:
Date: Jun 09, 2025
By:

PO Box 2156, Lake City, FL 32056 Phone: 1-386-754-1987 Email: office@dlwilliamsheatingandcooling.com

1	Room name					Entire House					living				
2	Exposed wall					70.0 ft					20 0 ft				
3	Room height					9 0 ft					9.0 ft heat/cool				
4	Room dimensions										1 0 x 260 0 ft				
5	Room area					528.0 ft²					260.0 ft²				
	Ty	Construction number	U-value (Btuh/ft²·°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)		
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool	
6	W	12C-0sw	0.091	n	3.18	2.14	198	153	486	327	0	0	0	0	
11	G	4A5-2ov	0.330	n	11.55	8.11	9	0	107	75	0	0	0	0	
	G	4A6-2ov	0.330	n	11.55	8.11	36	0	416	292	0	0	0	0	
	W	12C-0sw	0.091	e	3.18	2.14	216	162	516	346	90	48	153	103	
	G	10D-v	0.330	e	11.55	16.80	42	18	485	706	42	9	485	706	
	G	1D-c2ow	0.330	e	11.55	27.68	12	0	139	332	0	0	0	0	
	R	12C-0sw	0.091	-	3.18	0.00	216	195	621	0	90	69	220	0	
	D	11D0	0.390	n	13.65	11.11	21	21	287	233	21	21	287	233	
	C	16X30-21ad	0.044	-	0.79	0.56	528	528	419	296	260	260	207	146	
	F	22A-tpi	0.989	-	34.62	0 00	528	70	2423	0	260	20	692	0	
6	c) AED excursion									0				-12	
	Envelope loss/gain								5899	2607			2043	1175	
12	a) Infiltration								1849	471			402	102	
	b) Room ventilation								0	0			0	0	
13	Internal gains.					Occupants @	230	3			690	2		460	
						Appliances/other					900			900	
	Subtotal (lines 6 to 13)								7748	4668			2445	2636	
14	Less external load								0	0			0	0	
	Less transfer								0	0			0	0	
	Redistribution								0	0			0	0	
	Subtotal								7748	4668			2445	2636	
15	Duct loads							27%	58%	2103	2728	27%	58%	664	1541
	Total room load									9851	7396			3109	4179
	Air required (cfm)									600	600			189	339

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



Right-J® Worksheet

Entire House

DL Williams Heating and Cooling LLC

Job:
Date: Jun 09, 2025
By:

PO Box 2156, Lake City, FL 32056 Phone: 1-386-754-1987 Email: office@dlwilliamsheatingandcooling.com

1	Room name						office				wlc				
2	Exposed wall						25.0 ft				7 0 ft				
3	Room height						9.0 ft				9.0 ft				
4	Room dimensions						1 0 x 142.0 ft				7 0 x 7 0 ft				
5	Room area						142.0 ft²				49 0 ft²				
	Ty	Construction number	U-value (Btuh/ft²-°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)		
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool	
6	W	12C-0sw	0.091	n	3.18	2.14	99	63	201	135	0	0	0	0	
	G	4A5-2ov	0.330	n	11.55	8.11	0	0	0	0	0	0	0	0	
	G	4A5-2ov	0.330	n	11.55	8.11	36	0	416	292	0	0	0	0	
11	W	12C-0sw	0.091	e	3.18	2.14	0	0	0	0	63	51	162	109	
	G	10D-v	0.330	e	11.55	16.80	0	0	0	0	0	0	0	0	
	G	1D-c2ow	0.330	e	11.55	27.68	0	0	0	0	12	0	139	332	
	F	12C-0sw	0.091	-	3.18	0.00	128	128	401	0	0	0	0	0	
	D	11D0	0.390	n	13.65	11.11	0	0	0	0	0	0	0	0	
	C	16X30-21ad	0.044	-	0.79	0.56	142	142	113	79	49	49	39	27	
	F	22A-tpi	0.989	-	34.62	0.00	142	25	865	0	49	7	242	0	
6	c) AED excursion									-11				32	
	Envelope loss/gain								1996	495			582	500	
12	a) Infiltration								442	113			281	72	
	b) Room ventilation								0	0			0	0	
13	Internal gains. Occupants @ 230 Appliances/other						1			230	0			0	0
	Subtotal (lines 6 to 13)								2438	837			864	572	
	Less external load								0	0			0	0	
	Less transfer								0	0			0	0	
	Redistribution								0	0			0	0	
14	Subtotal								2438	837			864	572	
15	Duct loads						27%	58%	662	489	27%	58%	234	334	
	Total room load								3100	1327			1098	906	
	Air required (cfm)								189	108			87	74	

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



Right-J® Worksheet

Entire House

DL Williams Heating and Cooling LLC

Job:
Date: Jun 09, 2025
By:

PO Box 2156, Lake City, FL 32056 Phone: 1-386-754-1987 Email: office@dlwilliamsheatingandcooling.com

1	Room name					bath								
2	Exposed wall					18.0 ft								
3	Room height					9.0 ft					heat/cool			
4	Room dimensions					11.0 x 7.0 ft								
5	Room area					77.0 ft²								
	Ty	Construction number	U-value (Btuh/ft²·°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area or perimeter		Load	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6	W	12C-0sw	0.091	n	3.18	2.14	99	90	286	192				
	G	4A5-2ov	0.330	n	11.55	8.11	9	0	107	75				
	G	4A5-2ov	0.330	n	11.55	8.11	0	0	0	0				
11	W	12C-0sw	0.091	e	3.18	2.14	63	63	201	135				
	G	10D-v	0.330	e	11.55	16.80	0	0	0	0				
	G	1D-c2ow	0.330	e	11.55	27.68	0	0	0	0				
	R	12C-0sw	0.091	-	3.18	0.00	0	0	0	0				
	D	11D0	0.390	n	13.65	11.11	0	0	0	0				
	C	16X30-21ad	0.044	-	0.79	0.56	77	77	61	43				
	F	22A-tp1	0.989	-	34.62	0.00	77	18	623	0				
6	c) AED excursion									-9				
	Envelope loss/gain								1278	437				
12	a) Infiltration								724	184				
	b) Room ventilation								0	0				
13	Internal gains					Occupants @ 230	0			0				
	Appliances/other									0				
	Subtotal (lines 6 to 13)								2002	621				
	Less external load								0	0				
	Less transfer								0	0				
	Redistribution								0	0				
14	Subtotal								2002	621				
15	Duct loads						27%	58%	543	363				
	Total room load								2545	984				
	Air required (cfm)								155	80				

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





Loads for Multiple Orientations
Entire House
DL Williams Heating and Cooling LLC

Job:
Date: Jun 09, 2025
By:

PO Box 2156, Lake City, FL 32056 Phone: 1-386-754-1987 Email: office@dlwilliamsheatingandcooling.com

Project Information

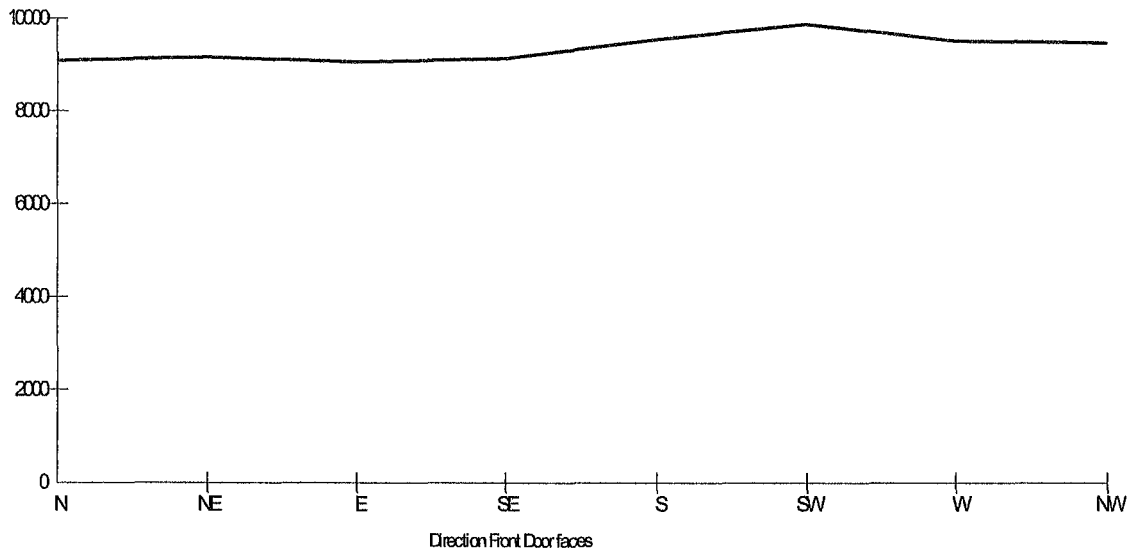
For: Aaron Young addition
819 SW Beaver St, Fort White, FL 32038

Design Conditions

Location:		Indoor:		Heating	Cooling
Gainesville Regional AP, FL, US		Indoor temperature (°F)		68	75
Elevation: 164 ft		Design TD (°F)		35	17
Latitude: 30°N		Relative humidity (%)		50	50
		Moisture difference (gr/lb)		29.0	45.4
Outdoor:	Heating	Cooling	Infiltration:		
Drybulb (°F)	33	92			
Daily range (°F)	-	20 (M)			
Wet bulb (°F)	-	76			
Wind speed (mph)	15.0	7.5			

Front Door	North	Northeast	East	Southeast	South	Southwest	West	Northwest
Sensible Load (Btuh)	7174	7249	7147	7225	7635	7961	7604	7562
Latent Load (Btuh)	1916	1916	1916	1916	1916	1916	1916	1916
Total Load (Btuh)	9090	9165	9062	9141	9551	9877	9519	9478
Heating AVF (cfm)	600	600	600	600	600	600	600	600
Cooling AVF (cfm)	600	600	600	600	600	600	600	600

Building Orientation Cooling Load



Current Orientation: Front Door faces North
Highest Cooling Load: Front Door faces Southwest

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



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.htsoft HVAC\Trane\MT-Young addition Manuals.rup Calc = MJ8 Front Door faces: N



J1 Form - Worksheet A
Entire House
DL Williams Heating and Cooling LLC

Job:
Date: Jun 09, 2025
By:

PO Box 2156, Lake City, FL 32056 Phone: 1-386-754-1987 Email office@dlwilliamsheatingandcooling.com

Supporting Detail

Project Name:	MT-Young addition Manuals	Date:	Jun 09, 2025
Address:	819 SW Beaver St, Fort White, FL 32038		
Phone:	Job ID:		

Worksheet A
Location and Design Conditions

Weather Location:	Gainesville Regional AP, FL, US	Elevation =	164	Latitude =	30
Indoor Conditions, Heating:	DB = 68 °F	RH = 50 %	Indoor Conditions, Cooling:	DB = 75 °F	RH = 50 %
Table 1 Conditions	99% DB = 33 °F	1% DB = 92 °F	Grains Difference =	45 gr/lb	Daily Range = M
Design Temperature Differences			HTD =	35 °F	CTD = 17 °F

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



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.htsoft HVAC\Trane\MT-Young addition Manuals.rup Calc = MJ8 Front Door faces. N

2025-Jun-09 14 17.49

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Right-J8® Form J1
Entire House
DL Williams Heating and Cooling LLC

Job:
 Date: Jun 09, 2025
 By:

PO Box 2156, Lake City, FL 32056 Phone: 1-386-754-1987 Email: office@dlwilliamsheatingandcooling.com

1 Name of Room					Entire House				Living			
2 Running Feet of Exposed Wall					70.0 ft				20.0 ft			
3 Ceiling Ht (Ft) and Gross Wall Area (SqFt)					9.0 ft 1923.0 ft²				9.0 ft 771.0 ft²			
4 Room Dimensions (Ft) and Floor Plan Area (SqFt)					528.0 ft²				1.0 x 260.0 ft 260.0 ft²			
5 Ceiling Slope (Deg) and Gross Ceiling Area (SqFt)					0 ° 528.0 ft²				0 ° 260.0 ft²			
Type of Exposure	Const., Number	Panel Faces	HTM		Area or Length	Btuh			Area or Length	Btuh		
			Htg	Clg		Heating	S-Clg	L-Clg		Heating	S-Clg	L-Clg
6 Wall	12C-0sw	n	3.18	2.14	198	486	327		0	0	0	
Glaz	4A5-2ov	n	11.55	8.11	9	107	75		0	0	0	
Glaz	4A5-2ov	n	11.55	8.11	36	416	292		0	0	0	
11 Wall	12C-0sw	e	3.18	2.14	216	516	346		90	153	103	
Glaz	10D-v	e	11.55	16.80	42	485	706		42	485	706	
Glaz	10D-c2ow	e	11.55	27.68	12	139	332		0	0	0	
Wall	12C-0sw	-	3.18	0.00	216	621	0		90	220	0	
Door	11D0	n	13.65	11.11	21	287	233		21	287	233	
Cell	16X30-21ad	-	0.79	0.56	528	419	296		260	207	146	
Flor	22A-tpf	-	34.62	0.00	528	2423	0		260	692	0	
12 Infiltration	Heating Load (Btuh)		Effect ACH		0.61	1849			WAR 0.22	402		
	Sensible Load (Btuh)				1.00		471			102		
	Latent Load (Btuh)				0.32			778				
13 Internal	a Occupants at 230 and 200 Btuh				3		690	600	2		460	400
	b Scenario number						900				900	
	c Default Adjustments											
	d Custom Appliances						0	0			0	0
	e Plants							0				0
14 Subtotals	Sum lines 6 through 12					7748	4668	1378		2445	2638	
15 Duct Loads	EHLF & ESGF		0.271	0.584		2103	2728			664	1541	
	ELG							537				265
16 Ventilation Loads	Vent Cfm	0	E Cfm	0		0	0	0				
17 Winter Humidification Load	Gal/Day		0			0						
18 Piping Load						0						
19 Blower Heat							0					
20 AED Excursion & Latent Moisture Migration Load							0				-12	
21 Total Load	Sum lines 13 through 19					9851	7396	1916		3109	4179	

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

Right-J8® Form J1

Entire House

DL Williams Heating and Cooling LLC

Job:
Date: Jun 09, 2025
By:

PO Box 2156, Lake City, FL 32056 Phone: 1-386-754-1987 Email: office@dlwilliamsheatingandcooling.com

1 Name of Room						office				wic			
2 Running Feet of Exposed Wall						25.0 ft				7.0 ft			
3 Ceiling Ht (Ft) and Gross Wall Area (SqFt)						9.0 ft 576.0 ft²				9.0 ft 252.0 ft²			
4 Room Dimensions (Ft) and Floor Plan Area (SqFt)						10 x 142.0 ft 142.0 ft²				7.0 x 7.0 ft 49.0 ft²			
5 Ceiling Slope (Deg.) and Gross Ceiling Area (SqFt)						0° 142.0 ft²				0° 49.0 ft²			
Type of Exposure	Const., Number	Panel Faces	HTM		Area or Length	Btuh			Area or Length	Btuh			
			Htg.	Clg		Heating	S-Clg	L-Clg		Heating	S-Clg	L-Clg	
6 Wall	12C-0sw	n	3.18	2.14	99	201	135		0	0	0		
Glaz	4A5-2ov	n	11.55	8.11	0	0	0		0	0	0		
Glaz	4A5-2ov	n	11.55	8.11	36	416	292		0	0	0		
11 Wall	12C-0sw	e	3.18	2.14	0	0	0		63	162	109		
Glaz	10D-v	e	11.55	16.80	0	0	0		0	0	0		
Glaz	1D-c2ow	e	11.55	27.68	0	0	0		12	139	332		
Wall	12C-0sw	-	3.18	0.00	126	401	0		0	0	0		
Door	11D0	n	13.65	11.11	0	0	0		0	0	0		
Cell	16X30-21ad	-	0.79	0.56	142	113	79		49	39	27		
Floor	22A-tpi	-	34.62	0.00	142	865	0		49	242	0		
12 Infiltration	Heating Load (Btuh)		Effect ACH		0.61	442			WAR 0 15	281			
	Sensible Load (Btuh)				0.32		113			72			
	Latent Load (Btuh)												
13 Internal	a Occupants at 230 and 200 Btuh				1	230	200		0	0	0		
	b Scenario number					0				0			
	c Default Adjustments					0	0			0	0		
	d Custom Appliances						0				0		
	e Plants						0				0		
14 Subtotals	Sum lines 6 through 12					2438	837			864	572		
15 Duct Loads	EHLF & ESGF		0.271	0.584		662	489			234	334		
	ELG							144				50	
16 Ventilation Loads	Vent Cfm	0	E Cfm	0									
17 Winter Humidification Load	Gal/Day		0										
18 Piping Load													
19 Blower Heat													
20 AED Excursion & Latent Moisture Migration Load							-11				32		
21 Total Load	Sum lines 13 through 19					3100	1327			1098	906		

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



Right-J8® Form J1

Entire House

DL Williams Heating and Cooling LLC

Job:
Date: Jun 09, 2025
By:

PO Box 2156, Lake City, FL 32056 Phone: 1-386-754-1987 Email: office@dlwilliamsheatingandcooling.com

1 Name of Room 2 Running Feet of Exposed Wall 3 Ceiling Ht (Ft) and Gross Wall Area (SqFt) 4 Room Dimensions (Ft) and Floor Plan Area (SqFt) 5 Ceiling Slope (Deg.) and Gross Ceiling Area (SqFt)						bath 18.0 ft 9.0 ft 11.0 x 7.0 ft 0 °			324.0 ft² 77.0 ft² 77.0 ft²			
Type of Exposure	Const., Number	Panel Faces	HTM		Area or Length	Bluh			Area or Length	Bluh		
			Htg	Ctg		Heating	S-Ctg	L-Ctg		Heating	S-Ctg	L-Ctg
6 Wall	12C-0sw	n	3.18	2.14	99	286	192					
Glaz	4A5-2ov	n	11.55	8.11	9	107	75					
Glaz	4A5-2ov	n	11.55	8.11	0	0	0					
11 Wall	12C-0sw	e	3.18	2.14	63	201	135					
Glaz	10D-v	e	11.55	16.80	0	0	0					
Glaz	1D-c2ow	e	11.55	27.68	0	0	0					
Wall	12C-0sw	-	3.18	0.00	0	0	0					
Door	11D0	n	13.65	11.11	0	0	0					
Ceil	16X30-21ad	-	0.79	0.56	77	61	43					
Flor	22A-tpi	-	34.62	0.00	77	623	0					
12 Infiltration	Heating Load (Btuh)		Effect ACH		0.61	724						
	Sensible Load (Btuh)				0.32		184					
	Latent Load (Btuh)											
13 Internal	a Occupants at 230 and 200 Btuh b Scenario number c Default Adjustments d Custom Appliances e Plants				0	0	0					
14 Subtotals	Sum lines 6 through 12					2002	621					
15 Duct Loads	EHLF & ESGF		0.271	0.584		543	363					
	ELG						78					
16 Ventilation Loads	Vent Cfm	0	E Cfm	0								
17 Winter Humidification Load	Gal/Day		0									
18 Piping Load												
19 Blower Heat												
20 AED Excursion & Latent Moisture Migration Load							-9					
21 Total Load	Sum lines 13 through 19					2545	984					

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



AED Assessment

Entire House

DL Williams Heating and Cooling LLC

Job:

Date: Jun 09, 2025

By:

PO Box 2156, Lake City, FL 32056 Phone: 1-386-754-1987 Email: office@dlwilliamsheatingandcooling.com

Project Information

For: Aaron Young addition
819 SW Beaver St, Fort White, FL 32038

Design Conditions

Location:

Gainesville Regional AP, FL, US
Elevation: 164 ft
Latitude: 30°N

Indoor:

Indoor temperature (°F)
Design TD (°F)
Relative humidity (%)
Moisture difference (gr/lb)

Heating

68
35
50
29.0

Cooling

75
17
50
45.4

Outdoor:

Drybulb (°F)
Daily range (°F)
Wet bulb (°F)
Wind speed (mph)

Heating

33
-
-
15.0

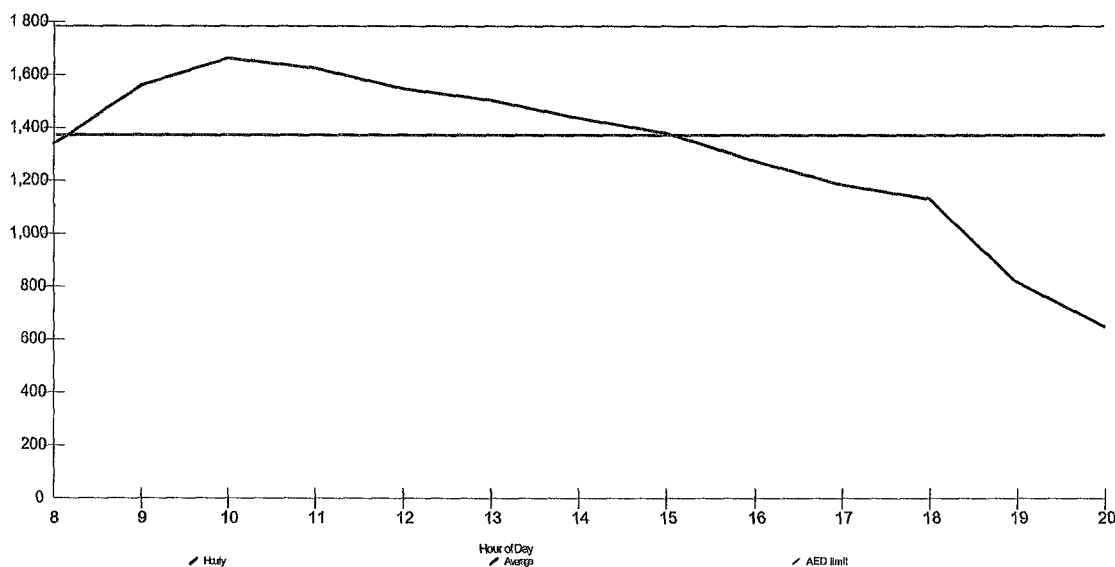
Cooling

92
20 (M)
76
7.5

Infiltration:

Test for Adequate Exposure Diversity

Hourly Glazing Load



Maximum hourly glazing load exceeds average by 21.1%.

House has adequate exposure diversity (AED), based on AED limit of 30%.

AED excursion: 0 Btuh



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htsoft HVAC\Trane\MT-Young addition Manuals.rup Calc = MJ8 Front Door faces: N

2025-Jun-09 14:17:50

Page 1



Component Constructions
Entire House
DL Williams Heating and Cooling LLC

Job:
Date: Jun 09, 2025
By:

PO Box 2156, Lake City, FL 32056 Phone: 1-386-754-1987 Email: office@dlwilliamsheatingandcooling.com

Project Information

For: Aaron Young addition
819 SW Beaver St, Fort White, FL 32038

Design Conditions

Location:		Indoor:		Heating	Cooling
Gainesville Regional AP, FL, US		Indoor temperature (°F)		68	75
Elevation: 164 ft		Design TD (°F)		35	17
Latitude: 30°N		Relative humidity (%)		50	50
		Moisture difference (gr/lb)		29.0	45.4
Outdoor:	Heating	Cooling	Infiltration:		
Drybulb (°F)	33	92	Method		
Daily range (°F)	-	20 (M)	Construction quality		
Wet bulb (°F)	-	76	Simplified		
Wind speed (mph)	15.0	7.5	Average		
				0	

Construction descriptions

	Or	Area ft²	U-value Btuh/ft²·°F	Insul R ft²·°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
Walls								
12C-0sw: Frm wall, stucco ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud	n	153	0.091	13.0	3.18	486	2.14	327
	e	162	0.091	13.0	3.18	516	2.14	346
	all	315	0.091	13.0	3.18	1002	2.14	673
Partitions								
12C-0sw: Frm wall, stucco ext, r-13 cav ins, 2"x4" wood frm, 16" o.c. stud		195	0.091	13.0	3.19	621	0	0
Windows								
4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/8" thk; NFRC rated (SHGC=0.23), 50% blinds 45°, light, 50% outdoor insect screen, 1.6 ft overhang (3 6 ft window ht, 1 ft sep.); 6.67 ft head ht	n	9	0.330	0	11.6	107	8.11	75
4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/8" thk; NFRC rated (SHGC=0.23), 50% blinds 45°, light, 50% outdoor insect screen; 1.6 ft overhang (6 ft window ht, 1 ft sep.), 6.67 ft head ht	n	36	0.330	0	11.6	416	8.11	292
10D-v: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/8" thk; NFRC rated (SHGC=0.23), 3 ft overhang (7 ft window ht, 1 ft sep.); 6.67 ft head ht	e	42	0.330	0	11.6	485	16.8	706
1D-c2ow: 2 glazing, clr outr, air gas, wd frm mat, clr innr, 1/4" gap, 1/8" thk, NFRC rated (SHGC=0.23); 6.67 ft head ht	e	12	0.330	0	11.6	139	27.7	332
Doors								
11D0: Door, wd sc type	n	21	0.390	0	13.6	287	11.1	233
Ceilings								
16X30-21ad: Attic ceiling, asphalt shingles roof mat, r-31 roof ins, r-21 cell ins, 1/2" gypsum board int fnsh		528	0.044	51.0	0.79	419	0.56	296
Floors								
22A-1pl: Bg floor, light dry soil, on grade depth, carp 80% flr fnsh		70	0.989	0	34.6	2423	0	0



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**Component Constructions***living***DL Williams Heating and Cooling LLC**

Job:

Date: Jun 09, 2025

By:

PO Box 2156, Lake City, FL 32056 Phone: 1-386-754-1987 Email office@dlwilliamsheatingandcooling.com

Project InformationFor: Aaron Young addition
819 SW Beaver St, Fort White, FL 32038**Design Conditions**

Location:		Indoor:		Heating	Cooling
Gainesville Regional AP, FL, US		Indoor temperature (°F)		68	75
Elevation: 164 ft		Design TD (°F)		35	17
Latitude: 30°N		Relative humidity (%)		50	50
		Moisture difference (gr/lb)		29.0	45.4
Outdoor:	Heating	Cooling	Infiltration:		
Drybulb (°F)	33	92	Method		
Dailyrange (°F)	-	20 (M)	Construction quality		
Wet bulb (°F)	-	76	Simplified		
Wind speed (mph)	15.0	7.5	Average		
			Fireplaces		
			0		

Construction descriptions

	Or	Area ft²	U-value Btuh/ft²-°F	Insul R ft²-°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
Walls								
12C-0sw Frm wall, stucco ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud	e	48	0.091	13.0	3.19	153	2.14	103
Partitions								
12C-0sw Frm wall, stucco ext, r-13 cav ins, 2"x4" wood frm, 16" o.c. stud		69	0.091	13.0	3.18	220	0	0
Windows								
10D-v. 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/8" thk, NFRC rated (SHGC=0.23), 3 ft overhang (7 ft window ht, 1 ft sep.); 6.67 ft head ht	e	42	0.330	0	11.6	485	16.8	706
Doors								
11D0: Door, wd sc type	n	21	0.390	0	13.6	287	11.1	233
Ceilings								
16X30-21ad Attic ceiling, asphalt shingles roof mat, r-31 roof ins, r-21 cell ins, 1/2" gypsum board int fnsh		260	0.044	51.0	0.79	207	0.56	146
Floors								
22A-tpl Bg floor, light dry soil, on grade depth, carp 80% flr fnsh		20	0.989	0	34.6	692	0	0

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Component Constructions
office
DL Williams Heating and Cooling LLC

Job:
Date: Jun 09, 2025
By:

PO Box 2156, Lake City, FL 32056 Phone: 1-386-754-1987 Email office@dlwilliamsheatingandcooling.com

Project Information

For: Aaron Young addition
819 SW Beaver St, Fort White, FL 32038

Design Conditions

Location:		Indoor:		Heating	Cooling
Gainesville Regional AP, FL, US		Indoor temperature (°F)		68	75
Elevation: 164 ft		Design TD (°F)		35	17
Latitude: 30°N		Relative humidity (%)		50	50
		Moisture difference (gr/lb)		29.0	45.4
Outdoor:	Heating	Cooling	Infiltration:		
Drybulb (°F)	33	92	Method		
Daily range (°F)	-	20 (M)	Construction quality		
Wet bulb (°F)	-	76	Fireplaces		
Wind speed (mph)	15.0	7.5	Simplified Average 0		

Construction descriptions

Construction descriptions	Or	Area ft²	U-value Btuh/ft²·°F	Insul R ft²·°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
Walls								
12C-0sw: Frm wall, stucco ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud	n	63	0.091	13.0	3.18	201	2.14	135
Partitions								
12C-0sw: Frm wall, stucco ext, r-13 cav ins, 2"x4" wood frm, 16" o.c. stud		126	0.091	13.0	3.18	401	0	0
Windows								
4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/8" thk; NFRC rated (SHGC=0.23), 50% blinds 45°, light, 50% outdoor insect screen; 1.6 ft overhang (6 ft window ht, 1 ft sep), 6.67 ft head ht	n	36	0.330	0	11.6	416	8.11	292
Doors (none)								
Ceilings								
16X30-21ad: Attic ceiling, asphalt shingles roof mat, r-31 roof ins, r-21 cell ins, 1/2" gypsum board int fnsh		142	0.044	51.0	0.79	113	0.56	79
Floors								
22A-tpl: Bg floor, light dry soil, on grade depth, carp 80% flr fnsh		25	0.989	0	34.6	865	0	0





Component Constructions

wic

DL Williams Heating and Cooling LLC

Job:

Date: Jun 09, 2025

By:

PO Box 2156, Lake City, FL 32056 Phone: 1-386-754-1987 Email: office@dlwilliamsheatingandcooling.com

Project Information

For: Aaron Young addition
819 SW Beaver St, Fort White, FL 32038

Design Conditions

Location:		Indoor:		Heating	Cooling
Gainesville Regional AP, FL, US		Indoor temperature (°F)		68	75
Elevation: 164 ft		Design TD (°F)		35	17
Latitude: 30°N		Relative humidity (%)		50	50
Outdoor:		Moisture difference (gr/lb)		29.0	45.4
		Heating	Cooling		
Drybulb (°F)		33	92		
Dailyrange (°F)		-	20 (M)		
Wet bulb (°F)		-	76		
Wind speed (mph)		15.0	7.5		
		Infiltration:			
		Method		Simplified	
		Construction quality		Average	
		Fireplaces		0	

Construction descriptions

Construction descriptions	Or	Area ft²	U-value Btuh/ft²-°F	Insul R ft²-°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
Walls 12C-0sw: Frm wall, stucco ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud	e	51	0.091	13.0	3.18	162	2.14	109
Partitions (none)								
Windows 1D-c2ow: 2 glazing, clr outr, air gas, wd frm mat, clr innr, 1/4" gap, 1/8" thk, NFRC rated (SHGC=0.23), 6 67 ft head ht	e	12	0.330	0	11.6	139	27.7	332
Doors (none)								
Ceilings 16X30-21ad Attic ceiling, asphalt shingles roof mat, r-31 roof ins, r-21 ceil ins, 1/2" gypsum board int fnsh		49	0.044	51.0	0.79	39	0.56	27
Floors 22A-tpl Bg floor, light dry soil, on grade depth, carp 80% flr fnsh		7	0.989	0	34.6	242	0	0



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Component Constructions bath

DL Williams Heating and Cooling LLC

Job:
Date: Jun 09, 2025
By:

PO Box 2156, Lake City, FL 32056 Phone: 1-386-754-1987 Email: office@dlwilliamsheatingandcooling.com

Project Information

For: Aaron Young addition
819 SW Beaver St, Fort White, FL 32038

Design Conditions

Location:		Indoor:		Heating	Cooling
Gainesville Regional AP, FL, US		Indoor temperature (°F)		68	75
Elevation: 164 ft		Design TD (°F)		35	17
Latitude: 30°N		Relative humidity (%)		50	50
		Moisture difference (gr/lb)		29.0	45.4
Outdoor:		Heating	Cooling		
Drybulb (°F)	33	92			
Daily range (°F)	-	20 (M)			
Wet bulb (°F)	-	76			
Wind speed (mph)	15.0	7.5			
		Infiltration:			
		Method		Simplified	
		Construction quality		Average	
		Fireplaces		0	

Construction descriptions

	Or	Area ft²	U-value Btuh/ft²·°F	Insul R ft²·°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
Walls								
12C-0sw: Frm wall, stucco ext, 3/8" wood shth, r-13 cav ins, 1/2"	n	90	0.091	13.0	3.18	286	2.14	192
gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud	e	63	0.091	13.0	3.18	201	2.14	135
	all	153	0.091	13.0	3.18	486	2.14	327
Partitions (none)								
Windows								
4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/8" thk; NFRC rated (SHGC=0.23), 50% blinds 45°, light, 50% outdoor insect screen; 1.6 ft overhang (3.6 ft window ht, 1 ft sep.); 6.67 ft head ht	n	9	0.330	0	11.6	107	8.11	75
Doors (none)								
Ceilings								
16X30-21ad: Attic ceiling, asphalt shingles roof mat, r-31 roof ins, r-21 cell ins, 1/2" gypsum board int fnsh		77	0.044	51.0	0.79	61	0.56	43
Floors								
22A-lpl Bg floor, light dry soil, on grade depth, carp 80% flr fnsh		18	0.989	0	34.6	623	0	0



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Load Short Form
Entire House
DL Williams Heating and Cooling LLC

Job:
Date: Jun 09, 2025
By:

PO Box 2156, Lake City, FL 32056 Phone: 1-386-754-1987 Email: office@dlwilliamsheatingandcooling.com

Project Information

For: Aaron Young addition
819 SW Beaver St, Fort White, FL 32038

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	45		

HEATING EQUIPMENT

Make Trane
Trade TRANE
Model 5TWR5018A1
AHRI ref 214074329

Efficiency 7.5 HSPF2
Heating input
Heating output 17800 Btuh @ 47°F
Temperature rise 27 °F
Actual air flow 600 cfm
Air flow factor 0.061 cfm/Btuh
Static pressure 0.50 in H2O
Space thermostat
Capacity balance point = 17 °F

Backup:
Input = 2 kW, Output = 7843 Btuh, 100 AFUE

COOLING EQUIPMENT

Make Trane
Trade TRANE
Cond 5TWR5018A1
Coil 5TEM6B03AV21++TDR
AHRI ref 214074329

Efficiency 12.0 EER2, 15.2 SEER2
Sensible cooling 12600 Btuh
Latent cooling 5400 Btuh
Total cooling 18000 Btuh
Actual air flow 600 cfm
Air flow factor 0.081 cfm/Btuh
Static pressure 0.50 in H2O
Load sensible heat ratio 0.79

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
living	260	3109	4179	189	339
office	142	3100	1327	189	108
wic	49	1098	906	67	74
bath	77	2545	984	155	80
Entire House	528	9851	7396	600	600
Other equip loads		0	0		
Equip. @ 0.97 RSM			7174		
Latent cooling			1916		
TOTALS	528	9851	9090	600	600

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



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Project Information

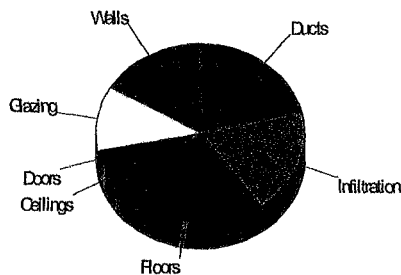
For: Aaron Young addition
819 SW Beaver St, Fort White, FL 32038

Design Conditions

Location:		Indoor:		Heating	Cooling
Gainesville Regional AP, FL, US		Indoor temperature (°F)		68	75
Elevation: 164 ft		Design TD (°F)		35	17
Latitude: 30°N		Relative humidity (%)		50	50
		Moisture difference (gr/lb)		29.0	45.4
Outdoor:		Heating	Cooling		
Drybulb (°F)	33	92			
Daily range (°F)	-	20 (M)			
Wet bulb (°F)	-	76			
Wind speed (mph)	15.0	7.5			
		Infiltration:			
		Method		Simplified	
		Construction quality		Average	
		Fireplaces		0	

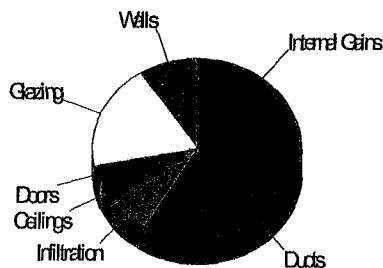
Heating

Component	Btuh/ft²	Btuh	% of load
Walls	3.2	1623	16.5
Glazing	11.6	1147	11.6
Doors	13.6	287	2.9
Ceilings	0.8	419	4.3
Floors	4.6	2423	24.6
Infiltration	4.5	1849	18.8
Ducts		2103	21.3
Piping		0	0
Humidification		0	0
Ventilation		0	0
Adjustments		0	0
Total		9851	100.0



Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	1.3	673	9.1
Glazing	14.2	1405	19.0
Doors	11.1	233	3.2
Ceilings	0.6	296	4.0
Floors	0	0	0
Infiltration	1.1	471	6.4
Ducts		2728	36.9
Ventilation		0	0
Internal gains		1590	21.5
Blower		0	0
Adjustments		0	0
Total		7396	100.0



Latent Cooling Load = 1916 Btuh
Overall U-value = 0.107 Btuh/ft²·°F, Window / Floor Area = 18.8 %

Data entries checked.



Duct system multi orientation report
Entire House
DL Williams Heating and Cooling LLC

Job:
Date: Jun 09, 2025
By:

PO Box 2156, Lake City, FL 32056 Phone: 1-386-754-1987 Email: office@dlwilliamsheatingandcooling.com

Project Information

For: Aaron Young addition
819 SW Beaver St, Fort White, FL 32038

Group 1: (N, NE, E, S, SW, W) Group 2: (SE, NW)

Duct Name	(N)			(NE)			(E)			(SE)		
	Reg CFM	Reg Size	Duct Size	Reg CFM	Reg Size	Duct Size	Reg CFM	Reg Size	Duct Size	Reg CFM	Reg Size	Duct Size
Supply Branches												
bath	155 h	12x12	6	155 h	12x12	6	155 h	12x12	6	155 h	12x12	6
living	170 c	12x12	7	146 c	12x12	7	130 c	12x12	7	155 c	12x12	7
living-A	170 c	12x12	7	146 c	12x12	7	130 c	12x12	7	155 c	12x12	7
office	189 h	12x12	7	189 h	12x12	7	202 c	12x12	7	189 h	12x12	7
wic	74 c	12x12	5	67 h	12x12	5	67 h	12x12	5	67 h	12x12	5
Supply Trunks												
st2	283 h		10	312 c		10	332 c		10	303 c		10
Return Branches												
rb1	600 c	12x12	14	600 c	12x12	14	600 c	12x12	14	600 c	12x12	14
Friction Rates												
Heating FR	0.215			0.215			0.215			0.215		
Cooling FR	0.215			0.215			0.215			0.215		
st2A										189 h		10



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Project Information

For: Aaron Young addition
819 SW Beaver St, Fort White, FL 32038

Duct Name	(S)			(SW)			(W)			(NW)		
	Reg CFM	Reg Size	Duct Size	Reg CFM	Reg Size	Duct Size	Reg CFM	Reg Size	Duct Size	Reg CFM	Reg Size	Duct Size
Supply Branches												
bath	155 h	12x12	6	155 h	12x12	6	155 h	12x12	6	155 h	12x12	6
living	175 c	12x12	7	151 c	12x12	7	137 c	12x12	7	157 c	12x12	7
living-A	175 c	12x12	7	151 c	12x12	7	137 c	12x12	7	157 c	12x12	7
office	189 h	12x12	7	189 h	12x12	7	189 h	12x12	7	189 h	12x12	7
wic	79 c	12x12	5	67 h	12x12	5	67 h	12x12	5	67 h	12x12	5
Supply Trunks												
st2	283 h		10	304 c		10	321 c		10	296 c		10
Return Branches												
rb1	600 c	12x12	14	600 c	12x12	14	600 c	12x12	14	600 c	12x12	14
Friction Rates												
Heating FR	0.215			0.215			0.215			0.215		
Cooling FR	0.215			0.215			0.215			0.215		
st2A										189 h		10



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Project Information

For: Aaron Young addition
819 SW Beaver St, Fort White, FL 32038

Duct Name	Largest			Smallest		
	Reg CFM	Reg Size	Duct Size	Reg CFM	Reg Size	Duct Size
Supply Branches						
bath	155 h	12x12	6	155 h	12x12	6
living	175 c	12x12	7	130 c	12x12	7
living-A	175 c	12x12	7	130 c	12x12	7
office	202 c	12x12	7	189 h	12x12	7
wic	79 c	12x12	5	67 h	12x12	5
Supply Trunks						
st2	332 c		10	283 h		10
Return Branches						
rb1	600 c	12x12	14	600 c	12x12	14
Friction Rates						
Heating FR	0.215			0.215		
Cooling FR	0.215			0.215		
st2A	189 h		10	0 h		0



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Background Color Legend

Yellow background

Duct Size - duct size is smaller than the largest duct size in the row

Reg Size - register size is smaller than the largest register size in the row

Reg CFM - register design cfm is larger than 150 CFM

Friction Rate - friction rate is outside ACCA Manual-D recommended range (0.06 - 0.18)

Pink background column header

Largest cooling load orientation



Duct System Summary

Entire House

DL Williams Heating and Cooling LLC

Job:
Date: Jun 09, 2025
By:

PO Box 2156, Lake City, FL 32056 Phone: 1-386-754-1987 Email: office@dlwilliamsheatingandcooling.com

Project Information

For: Aaron Young addition
819 SW Beaver St, Fort White, FL 32038

	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	0.364 / 0.136 in H2O	0.364 / 0.136 in H2O
Lowest friction rate	0.215 in/100ft	0.215 in/100ft
Actual air flow	600 cfm	600 cfm
Total effective length (TEL)	232 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	h 2545	155	80	0.357	6.0	0x0	VIFx	7.0	95.0	st2
living	c 2090	95	170	0.238	7.0	0x0	VIFx	13.0	140.0	
living-A	c 2090	95	170	0.215	7.0	0x0	VIFx	4.0	165.0	
office	h 3100	189	108	0.306	7.0	0x0	VIFx	14.0	105.0	st2
wlc	c 906	67	74	0.375	5.0	0x0	VIFx	2.0	95.0	

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	283	277	0.238	520	10.0	0 x 0	ShtMetl	

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	0x0	600	600	63.2	0.215	561	14 0	0x 0		VIFx	

Bold/Italic values have been manually overridden



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Static Pressure and Friction Rate
Entire House
DL Williams Heating and Cooling LLC

Job:
Date: Jun 09, 2025
By:

PO Box 2156, Lake City, FL 32056 Phone: 1-386-754-1987 Email: office@dlwilliamsheatingandcooling.com

Project Information

For: Aaron Young addition
819 SW Beaver St, Fort White, FL 32038

Available Static Pressure

	Heating (in H ₂ O)	Cooling (in H ₂ O)
External static pressure	0.50	0.50
Pressure losses		
Coil	0	0
Heat exchanger	0	0
Supply diffusers	0	0
Return grilles	0	0
Filter	0	0
Humidifier	0	0
Balancing damper	0	0
Other device	0	0
Available static pressure	0.50	0.50

Total Effective Length

	Supply (ft)	Return (ft)
Measured length of run-out	4	3
Measured length of trunk	0	0
Equivalent length of fittings	165	60
Total length	169	63
Total effective length		232

Friction Rate

	Heating (in/100ft)	Cooling (in/100ft)
Supply Ducts	0.215 > 0.18	0.215 > 0.18
Return Ducts	0.215 > 0.18	0.215 > 0.18

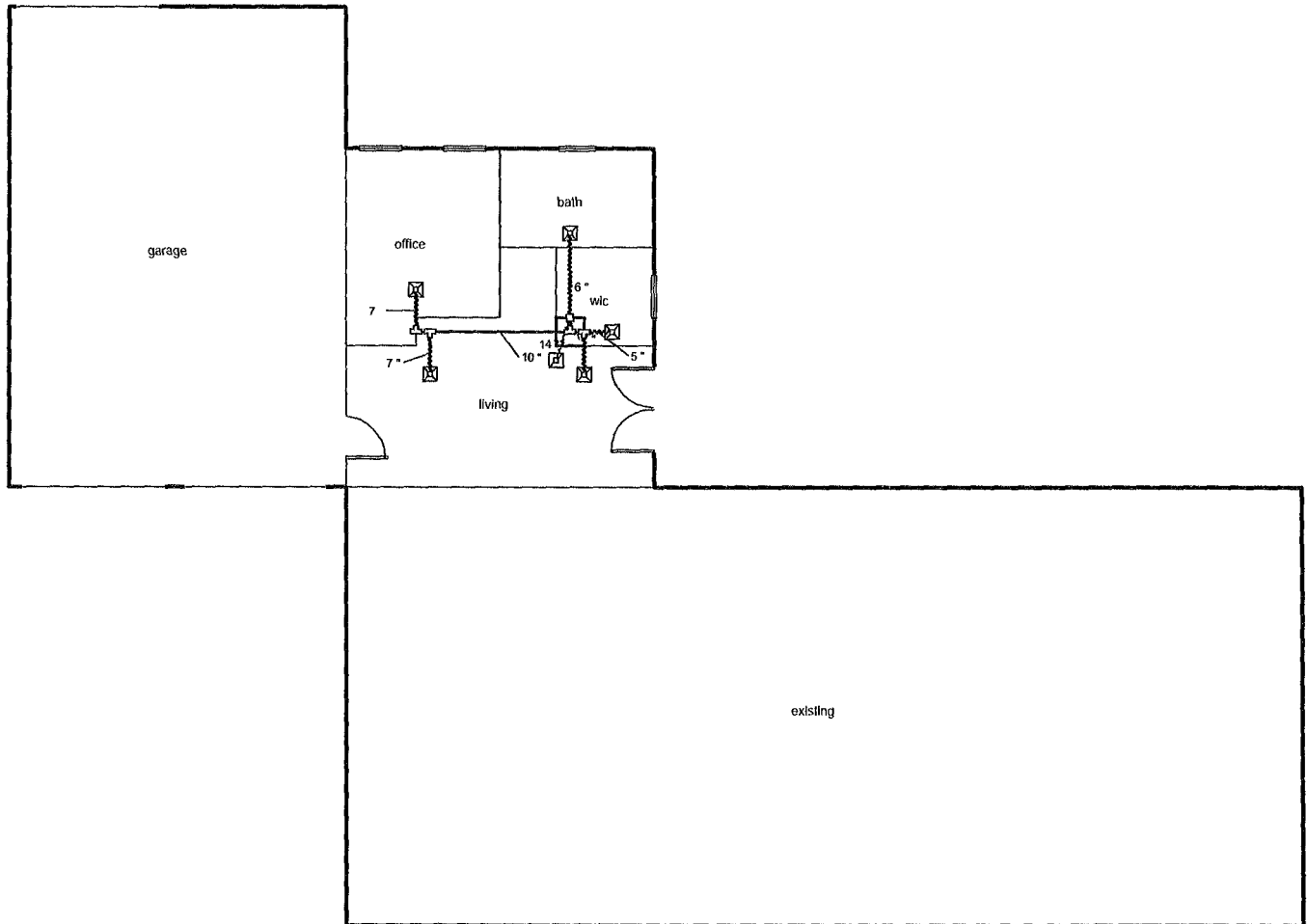
Fitting Equivalent Length Details

Supply 4AD=60, 1A=35, 1A=35, 1A=35 TotalEL=165
Return 6M=20, 5D=40. TotalEL=60





addition



Job #:
Performed for:
Aaron Young addition
819 SW Beaver St
Fort White, FL 32038

DL Williams Heating and Cooling LLC

PO Box 2156
Lake City, FL 32056
Phone: 1-386-754-1987
office@dlwilliamsheatingandcooling.com

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DHW Report
Entire House
DL Williams Heating and Cooling LLC

Job:
Date: Jun 09, 2025
By:

PO Box 2156, Lake City, FL 32056 Phone: 1-386-754-1987 Email: office@dlwilliamsheatingandcooling.com

Project Information

For: Aaron Young addition
819 SW Beaver St, Fort White, FL 32038

Design Criteria

Occupants		Not occupied during the day	
Age	Number		
0-5	0	Dishwasher	
6-13	2	Clothes washer	
14-59	2	Additional use (gpd)	0
60+	0	Setpoint (°F)	120
		Daily use (gpd)	61

Gas conventional (40 gal, 0.60 EF)

Manufacturer	Tank size (gal)	40
Trade name	Energy factor	0.60
Model	Input (MBtuh)	0.0
AHRI ref. number	1st hour (gal)	60
	Recovery eff. (%)	77





Manual S Compliance Report

Entire House

DL Williams Heating and Cooling LLC

Job:
Date: Jun 09, 2025
By:

PO Box 2156, Lake City, FL 32056 Phone: 1-386-754-1987 Email: office@dlwilliamsheatingandcooling.com

Project Information

For: Aaron Young addition
819 SW Beaver St, Fort White, FL 32038

Cooling Equipment

Design Conditions

Outdoor design DB:	92.0°F	Sensible gain:	7396 Btuh	Entering coil DB:	76.7°F
Outdoor design WB:	76.0°F	Latent gain:	1916 Btuh	Entering coil WB:	63.3°F
Indoor design DB:	75.0°F	Total gain:	9312 Btuh		
Indoor RH:	50%	Estimated airflow:	600 cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP		
Manufacturer:	Trane	Model:	5TWR5018A1+5TEM6B03AV21++TDR
Actual airflow:	600 cfm		
Sensible capacity:	12600 Btuh	170% of load	
Latent capacity:	5400 Btuh	282% of load	
Total capacity:	18000 Btuh	193% of load	SHR: 70%

Heating Equipment

Design Conditions

Outdoor design DB:	33.0°F	Heat loss:	9851 Btuh	Entering coil DB:	67.2°F
Indoor design DB:	68.0°F				

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP		
Manufacturer:	Trane	Model:	5TWR5018A1+5TEM6B03AV21++TDR
Actual airflow:	600 cfm		
Output capacity:	17800 Btuh	181% of load	
Supplemental heat required:	0 Btuh		
		Capacity balance:	17 °F
		Economic balance:	-99 °F

Backup equipment type:	Elec strip		
Manufacturer:		Model:	
Actual airflow:	600 cfm		
Output capacity:	2.3 kW	80% of load	Temp. rise: 50 °F

Meets all requirements of ACCA Manual S.



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Residential Plans Examiner Review Form for HVAC System Design (Loads, Equipment, Ducts)

Form
RPER 2.0

Header Information

Contractor DL Williams Heating and Cooling LLC Applicable Attachments
Mechanical license# Derrick Williams Manual J1 Form and Worksheet A: ☐ Yes ☐ No
Building plan # _____ OEM performance data (heating, cooling, blower) ☐ Yes ☐ No
Duct distribution sketch: ☐ Yes ☐ No
IRC Table R301.2 (climate & geographic design criteria) ☐ Yes ☐ No
Home address (Street or Lot#, Block, Subdivision) 819 SW Beaver St, Entire House

HVAC LOAD CALCULATION

(IRC M1401.3)

Manual J Design Criteria and Loads

Location		Summer Design Conditions		Manual J Loads	
Elevation	164 ft	Outdoor Cooling Temp	92 °F	Total Heat Loss	9851 Btuh
Altitude Correction Factor	0.99	Indoor Cooling Temp	75 °F		
Latitude	30 °N	Cooling Temp Diff	17 °F	Sensible Heat Gain	7396 Btuh
		Indoor Summer Design RH	50 %	Latent Heat Gain	1916 Btuh
		Coincident Wet Bulb Temp	76 °F	Total Heat Gain	9312 Btuh
Winter Design Conditions					
Outdoor Winter Temp	33 °F				
Indoor Winter Temp	68 °F				
Heating Temp Diff	35 °F				

The heat loss/gain was calculated in accordance with ACCA Manual J? Y ☒ N ☐

HVAC EQUIPMENT SELECTION

(IRC M1401.3)

Heating Equipment

☐ Furnace ☐ Boiler ☒ Electric Heat
☐ Single Speed ☐ Multi Stage ☐ Modulating

Cooling Equipment

☐ Air Conditioner ☒ Heat Pump
☒ Air-to-Air ☐ Geothermal Open Loop ☐ Geothermal Closed Loop
☒ Single Speed ☐ Multi Stage ☐ Variable Speed

Model _____

Model 5TWR5018A1+5TEM6B03AV21++TDR

Output	17800 Btuh	Sizing Value	9851 Btuh
Supplemental Heat	0 Btuh	Sizing Limit	500.0 %
		Load Capacity	79.6 %

Sensible	12600 Btuh	Sizing Value	9312 Btuh
Latent	5400 Btuh	Sizing Limit	115.0 %
Total	18000 Btuh	Load Capacity	193.3 %

Size Factor is within Manual S Size Limit? Y ☐ N ☒

Size Factor is within Manual S Size Limit? Y ☐ N ☒

HVAC DUCT DISTRIBUTION DESIGN

(IRC M1601.1)

Design airflow	600 cfm	Longest Supply Duct	169 ft	Duct Materials Used
External Static Pressure (ESP)	0.50 in H2O	Longest Return Duct	63.2 ft	Trunk Duct: ☐ Duct Board ☒ Sheet Metal
Component Pressure Loss (CPL)	0 in H2O	Total Effective Length (TEL)	232 ft	☐ Flex ☐ Lined Sheet Metal ☐ Other
Available static pressure (ASP)	0.50 in H2O	Friction Rate	0.22 in/100ft	Branch Duct: ☐ Duct Board ☐ Sheet Metal
ESP - CPL = ASP		(ASP x 100) / TEL = Friction Rate		☒ Flex ☐ Lined Sheet Metal ☐ Other

Ducts are sized per Manual D? Y ☒ N ☐

I declare the load calculation, equipment selection, and duct system design were rigorously performed based on the building plan listed above and understand the claims made on these forms may be subject to review and verification.

Contractor's printed name: _____

Contractor's signature: _____

Date: _____