



Building Analysis

Entire House

DL Williams Heating & Cooling LLC



Job: 1
Date: Aug/14/2024
By: DL Williams Heating & C...
Plan: 1635

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

Project Information

For: Preserve at Laurel Lake lot 90-1635, Adams Homes
Lake City, FL

Design Conditions

Location:

Gainesville Regional, FL, US
Elevation: 123 ft
Latitude: 30°N

Outdoor:

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

Heating

33
-
-
15.0

Cooling

92
18 (M)
76
7.5

Indoor:

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

Heating

68
35
50
28.8

Cooling

75
17
50
43.8

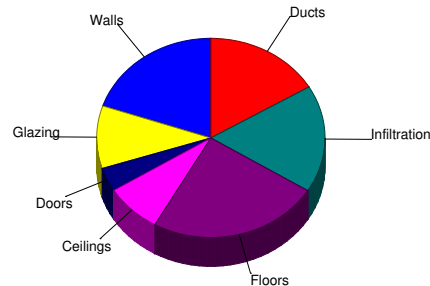
Infiltration:

Method
Construction quality
Fireplaces

Simplified
Average
0

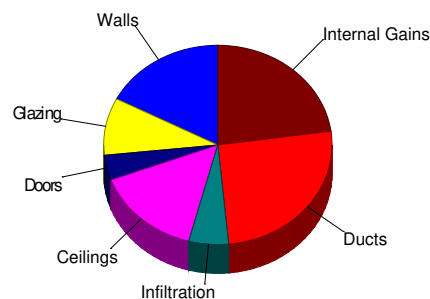
Heating

Component	Btuh/ft²	Btuh	% of load
Walls	3.2	4516	19.8
Glazing	16.4	2323	10.2
Doors	20.9	877	3.8
Ceilings	1.1	1835	8.0
Floors	3.4	5541	24.3
Infiltration	2.5	3978	17.4
Ducts		3754	16.4
Piping		0	0
Humidification		0	0
Ventilation		0	0
Adjustments		0	0
Total		22824	100.0



Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	2.2	3205	17.4
Glazing	12.1	1719	9.3
Doors	17.8	748	4.1
Ceilings	1.7	2806	15.2
Floors	0	0	0
Infiltration	0.6	1035	5.6
Ducts		4749	25.7
Ventilation		0	0
Internal gains		4210	22.8
Blower		0	0
Adjustments		0	0
Total		18473	100.0



Latent Cooling Load = 3941 Btuh

Overall U-value = 0.088 Btuh/ft²-°F, Window / Floor Area = 8.6 %

Data entries checked.



Load Short Form

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Lake City, FL

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 4TWR5024H1
AHRI ref 206661454
Efficiency 7.8 HSPF2
Heating input
Heating output 22600 Btuh @ 47°F
Temperature rise 29 °F
Actual air flow 700 cfm
Air flow factor 0.031 cfm/Btuh
Static pressure 0.50 in H2O
Space thermostat
Capacity balance point = 34 °F

Backup:
Input = 7 kW, Output = 22822 Btuh, 100 AFUE

COOLING EQUIPMENT

Make Trane
Trade TRANE
Cond 4TWR5024H1
Coil TEM6A0C30M31++TDR
AHRI ref 206661454
Efficiency 12.0 EER2, 14.3 SEER2
Sensible cooling 16660 Btuh
Latent cooling 7140 Btuh
Total cooling 23800 Btuh
Actual air flow 700 cfm
Air flow factor 0.038 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)
br4	143	1623	1086	50	41
utility	66	99	774	3	29
AH	18	0	0	0	0
mbath	110	1342	624	41	24
wic	45	1581	595	48	23
mbed	215	2825	2258	87	86
great	234	4599	4812	141	182
kitchen	123	167	2031	5	77
br2	156	1857	986	57	37
bath	48	716	315	22	12
br3	156	4574	2070	140	78
foyer	118	1373	1079	42	41
dining	216	2068	1842	63	70

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



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...es Preserve at Laurel Lake plan 1635 lot 90.rup Calc = MJ8 Front Door faces: N

Entire House	1648	22824	18473	700	700
Other equip loads		0	0		
Equip. @ 0.97 RSM			17955		
Latent cooling			3941		
TOTALS	1648	22824	21896	700	700

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...es Preserve at Laurel Lake plan 1635 lot 90.rup Calc = MJ8 Front Door faces: N



Project Summary

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Project Information

For: Preserve at Laurel Lake lot 90-1635, Adams Homes
Lake City, FL

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	19069 Btuh
Ducts (R-6.0)	3754 Btuh
Central vent (0 cfm)	0 Btuh

Humidification	0 Btuh
Piping	0 Btuh
Equipment load	22824 Btuh

Infiltration

Method	Simplified
Construction quality	Average
Fireplaces	0

	Heating	Cooling
Area (ft ²)	1648	1648
Volume (ft ³)	16480	16480
Air changes/hour	0.38	0.20
Equiv. AVF (cfm)	104	55

Heating Equipment Summary

Make	Trane
Trade	TRANE
Model	4TWR5024H1
AHRI ref	206661454

Efficiency	7.8 HSPF2
Heating input	
Heating output	22600 Btuh @ 47°F
Temperature rise	29 °F
Actual air flow	700 cfm
Air flow factor	0.031 cfm/Btuh
Static pressure	0.50 in H2O
Space thermostat	
Capacity balance point = 34 °F	

Backup:
Input = 7 kW, Output = 22822 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	44 gr/lb

Sensible Cooling Equipment Load Sizing

Structure	13723 Btuh
Ducts (R-6.0)	4749 Btuh
Central vent (0 cfm)	0 Btuh

Blower 0 Btuh

Use manufacturer's data	n
Rate/swing multiplier	0.97
Equipment sensible load	17955 Btuh

Latent Cooling Equipment Load Sizing

Structure	3029 Btuh
Ducts	912 Btuh
Central vent (0 cfm)	0 Btuh

Equipment latent load 3941 Btuh

Equipment Total Load (Sen+Lat)	21896 Btuh
Req. total capacity at 0.70 SHR	2.1 ton

Cooling Equipment Summary

Make	Trane
Trade	TRANE
Cond	4TWR5024H1
Coil	TEM6A0C30M31++TDR
AHRI ref	206661454

Efficiency	12.0 EER2, 14.3 SEER2
Sensible cooling	16660 Btuh
Latent cooling	7140 Btuh
Total cooling	23800 Btuh
Actual air flow	700 cfm
Air flow factor	0.038 cfm/Btuh
Static pressure	0.50 in H2O
Load sensible heat ratio	0.82

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Loads for Multiple Orientations

Entire House

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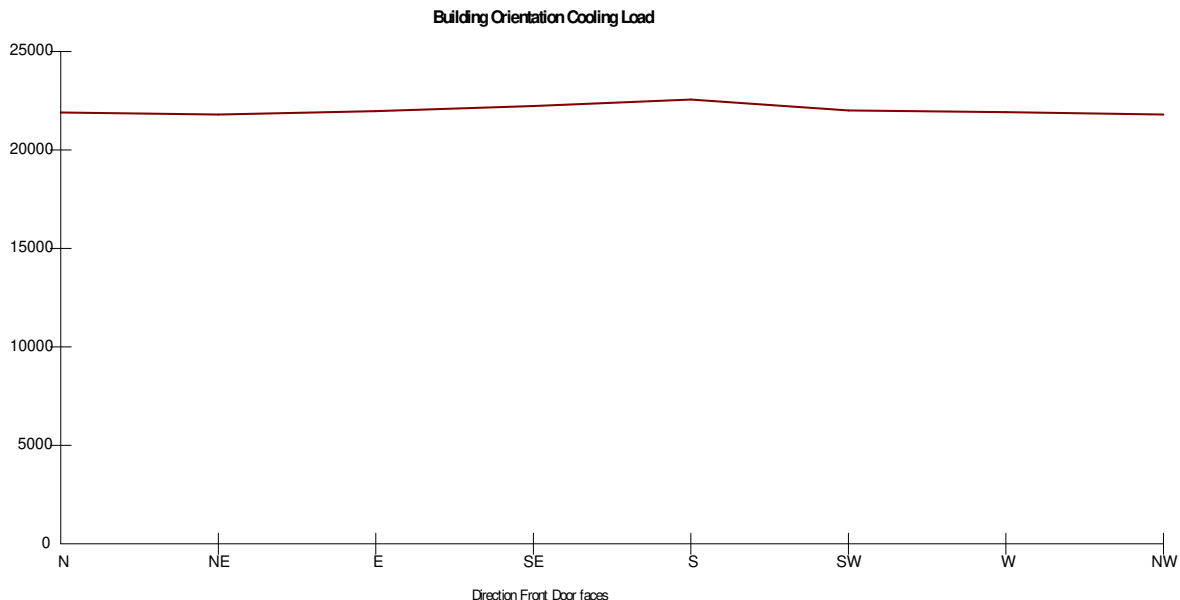
Project Information

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Lake City, FL

Design Conditions

Location:		Indoor:		Heating	Cooling
Gainesville Regional, FL, US		Indoor temperature (°F)		68	75
Elevation: 123 ft		Design TD (°F)		35	17
Latitude: 30°N		Relative humidity (%)		50	50
Outdoor:	Heating	Cooling	Moisture difference (gr/lb)	28.8	43.8
Dry bulb (°F)	33	92	Infiltration:		
Daily range (°F)	-	18 (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)	17955	17859	18031	18286	18613	18060	17979	17859
Latent Load (Btuh)	3941	3941	3941	3941	3941	3941	3941	3941
Total Load (Btuh)	21896	21800	21972	22227	22554	22001	21920	21800
Heating AVF (cfm)	700	700	700	700	700	700	700	700
Cooling AVF (cfm)	700	700	700	700	700	700	700	700



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

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

1	Name of Room					mbath				wic			
2	Running Feet of Exposed Wall					11.0 ft				14.0 ft			
3	Ceiling Ht (Ft) and Gross Wall Area (SqFt)					10.0 ft 420.0 ft²				10.0 ft 280.0 ft²			
4	Room Dimensions (Ft) and Floor Plan Area (SqFt)					10.0 x 11.0 ft 110.0 ft²				5.0 x 9.0 ft 45.0 ft²			
5	Ceiling Slope (Deg.) and Gross Ceiling Area (SqFt)					0 ° 110.0 ft²				0 ° 45.0 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 . . . 11	Wall	12C-0sw	ne	3.17	2.25	0	0	0		0	0	0	
	Glaz	4A5-2ov	ne	16.36	11.41	0	0	0		0	0	0	
	Wall	12C-0sw	se	3.17	2.25	0	0	0		50	158	112	
	Glaz	4A5-2ov	se	16.36	11.41	0	0	0		0	0	0	
	Door	11J0	se	20.88	17.82	0	0	0		0	0	0	
	Wall	12C-0sw	sw	3.17	2.25	110	348	247		90	285	202	
	Glaz	4A5-2ov	sw	16.36	11.41	0	0	0		0	0	0	
	Wall	12C-0sw	nw	3.17	2.25	0	0	0		0	0	0	
	Glaz	4A5-2ov	nw	16.36	11.41	0	0	0		0	0	0	
	Glaz	4A5-2ov	nw	16.36	11.41	0	0	0		0	0	0	
	Door	11J0	nw	20.88	17.82	0	0	0		0	0	0	
	Ceil	16B-30ad	-	1.11	1.70	110	122	187		45	50	77	
	Flor	22A-tpl	-	34.42	0.00	110	379	0		45	482	0	

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

1	Name of Room					mbed 19.0 ft				great 31.0 ft			
2	Running Feet of Exposed Wall					10.0 ft				10.0 ft			
3	Ceiling Ht (Ft) and Gross Wall Area (SqFt)					660.0 ft²				620.0 ft²			
4	Room Dimensions (Ft) and Floor Plan Area (SqFt)					1.0 x 215.0 ft				18.0 x 13.0 ft			
5	Ceiling Slope (Deg.) and Gross Ceiling Area (SqFt)					0 ° 215.0 ft²				0 ° 234.0 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	ne	3.17	2.25	0	0	0		130	412	292	
.	Glaz	4A5-2ov	ne	16.36	11.41	0	0	0		0	0		
.	Wall	12C-0sw	se	3.17	2.25	150	380	270		180	409	290	
.	Glaz	4A5-2ov	se	16.36	11.41	30	491	342		30	491	342	
11	Door	11J0	se	20.88	17.82	0	0	0		21	438	374	
	Wall	12C-0sw	sw	3.17	2.25	40	127	90		0	0	0	
	Glaz	4A5-2ov	sw	16.36	11.41	0	0	0		0	0	0	
	Wall	12C-0sw	nw	3.17	2.25	0	0	0		0	0	0	
	Glaz	4A5-2ov	nw	16.36	11.41	0	0	0		0	0	0	
	Glaz	4A5-2ov	nw	16.36	11.41	0	0	0		0	0	0	
	Door	11J0	nw	20.88	17.82	0	0	0		0	0	0	
	Ceil	16B-30ad	-	1.11	1.70	215	239	366		234	261	398	
	Flor	22A-tpl	-	34.42	0.00	215	654	0		234	1067	0	

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

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By: DL Williams Heating & Cooling
Plan: 1635

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1	Name of Room					foyer 6.0 ft				dining 12.0 ft			
2	Running Feet of Exposed Wall					10.0 ft				10.0 ft			
3	Ceiling Ht (Ft) and Gross Wall Area (SqFt)					580.0 ft²				600.0 ft²			
4	Room Dimensions (Ft) and Floor Plan Area (SqFt)					1.0 x 118.0 ft				18.0 x 12.0 ft			
5	Ceiling Slope (Deg.) and Gross Ceiling Area (SqFt)					0 °				0 °			
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	ne	3.17	2.25	0	0	0		120	285	202	
.	Glaz	4A5-2ov	ne	16.36	11.41	0	0	0		30	491	342	
.	Wall	12C-0sw	se	3.17	2.25	0	0	0		0	0	0	
.	Glaz	4A5-2ov	se	16.36	11.41	0	0	0		0	0	0	
11	Door	11J0	se	20.88	17.82	0	0	0		0	0	0	
	Wall	12C-0sw	sw	3.17	2.25	0	0	0		0	0	0	
	Glaz	4A5-2ov	sw	16.36	11.41	0	0	0		0	0	0	
	Wall	12C-0sw	nw	3.17	2.25	60	101	72		0	0	0	
	Glaz	4A5-2ov	nw	16.36	11.41	0	0	0		0	0	0	
	Glaz	4A5-2ov	nw	16.36	11.41	7	114	80		0	0	0	
	Door	11J0	nw	20.88	17.82	21	438	374		0	0	0	
	Ceil	16B-30ad	-	1.11	1.70	118	131	201		216	241	368	
	Flor	22A-tpl	-	34.42	0.00	118	207	0		216	413	0	

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





Component Constructions
Entire House
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Project Information

For: Preserve at Laurel Lake lot 90-1635, Adams Homes
Lake City, FL

Design Conditions

Location:		Indoor:		Heating	Cooling
Gainesville Regional, FL, US		Indoor temperature (°F)		68	75
Elevation: 123 ft		Design TD (°F)		35	17
Latitude: 30°N		Relative humidity (%)		50	50
		Moisture difference (gr/lb)		28.8	43.8
Outdoor:	Heating	Cooling	Infiltration:		
Dry bulb (°F)	33	92	Method		
Daily range (°F)	-	18 (M)	Construction quality		
Wet bulb (°F)	-	76	Fireplaces		
Wind speed (mph)	15.0	7.5	Simplified 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, vnl ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud	ne	525	0.091	13.0	3.17	1663	2.25	1180
	se	299	0.091	13.0	3.17	947	2.25	672
	sw	465	0.091	13.0	3.17	1473	2.25	1045
	nw	137	0.091	13.0	3.17	434	2.25	308
	all	1426	0.091	13.0	3.17	4516	2.25	3205

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=0.31); 50% blinds 45°, light; 50% outdoor insect screen; 1.6 ft overhang (5 ft window ht, 2 ft sep.); 6.67 ft head ht	ne	45	0.470	0	16.4	736	11.4	513
	se	60	0.470	0	16.4	981	11.4	685
	sw	15	0.470	0	16.4	245	11.4	171
	nw	15	0.470	0	16.4	245	11.4	171
	all	135	0.470	0	16.4	2208	11.4	1540
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=0.31); 50% blinds 45°, light; 50% outdoor insect screen; 8 ft overhang (7 ft window ht, 2 ft sep.); 6.67 ft head ht	nw	7	0.470	0	16.4	114	11.4	80

Doors

11J0: Door, mtl fbrgl type	se	21	0.600	6.3	20.9	438	17.8	374
	nw	21	0.600	6.3	20.9	438	17.8	374
	all	42	0.600	6.3	20.9	877	17.8	748

Ceilings

16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh		1648	0.032	30.0	1.11	1835	1.70	2806
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Floors

22A-tp1: Bg floor, light dry soil, on grade depth, carp 80% flr fnsh		161	0.989	0	34.4	5541	0	0
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Component Constructions

br4

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Location:			Indoor:	Heating	Cooling
Gainesville Regional, FL, US			Indoor temperature (°F)	68	75
Elevation: 123 ft			Design TD (°F)	35	17
Latitude: 30°N			Relative humidity (%)	50	50
Outdoor:			Moisture difference (gr/lb)	28.8	43.8
			Infiltration:		
Heating			Method	Simplified	
Cooling			Construction quality	Average	
			Fireplaces	0	
Drybulb (°F)					
Daily range (°F)					
Wet bulb (°F)					
Wind speed (mph)					

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, vnl ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud	sw	95	0.091	13.0	3.17	301	2.25	214
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=0.31); 50% blinds 45°, light; 50% outdoor insect screen; 1.6 ft overhang (5 ft window ht, 2 ft sep.); 6.67 ft head ht	sw	15	0.470	0	16.4	245	11.4	171
Doors (none)								
Ceilings								
16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh		143	0.032	30.0	1.11	159	1.70	243
Floors								
22A-tp1: Bg floor, light dry soil, on grade depth, carp 80% flr fnsh		11	0.989	0	34.4	379	0	0



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Design Conditions

Location:			Indoor:		Heating	Cooling
Gainesville Regional, FL, US			Indoor temperature (°F)		68	75
Elevation: 123 ft			Design TD (°F)		35	17
Latitude: 30°N			Relative humidity (%)		50	50
			Moisture difference (gr/lb)		28.8	43.8
Outdoor:		Heating	Cooling			
Drybulb (°F)		33	92			
Daily range (°F)		-	18 (M)			
Wet bulb (°F)		-	76			
Wind speed (mph)		15.0	7.5			
				Infiltration:		
				Method	Simplified	
				Construction quality	Average	
				Fireplaces	0	

Construction descriptions

Or

Area

U-value

Insul R

Htg HTM

Loss

Clg HTM

Gain

ft²

Btuh/ft²-°F

ft²-°F/Btuh

Btuh/ft²

Btuh

Btuh/ft²

Btuh

Walls (none)								
Partitions (none)								
Windows (none)								
Doors (none)								
Ceilings 16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh	66	0.032	30.0	1.11	73	1.70	112	
Floors (none)								





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

Project Information

For:

Preserve at Laurel Lake lot 90-1635, Adams Homes
Lake City, FL

Design Conditions

Location:		Indoor:		Heating	Cooling
Gainesville Regional, FL, US		Indoor temperature (°F)		68	75
Elevation: 123 ft		Design TD (°F)		35	17
Latitude: 30°N		Relative humidity (%)		50	50
		Moisture difference (gr/lb)		28.8	43.8
Outdoor:	Heating	Cooling			
Drybulb (°F)	33	92			
Daily range (°F)	-	18 (M)			
Wet bulb (°F)	-	76			
Wind speed (mph)	15.0	7.5			
		Infiltration:			
		Method	Simplified		
		Construction quality	Average		
		Fireplaces	0		

Construction descriptions

Or

Area

U-value

Insul R

Htg HTM

Loss

Clg HTM

Gain

ft²

Btuh/ft²-°F

ft²-°F/Btuh

Btuh/ft²

Btuh

Btuh/ft²

Btuh

Walls (none)								
Partitions (none)								
Windows (none)								
Doors (none)								
Ceilings 16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh	18	0.032	30.0	1.11	20	1.70	31	
Floors (none)								





Component Constructions

wic
DL Williams Heating & Cooling LLC

Job: 1
Date: Aug/14/2024
By: DL Williams Heating & C...
Plan: 1635

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

Project Information

For: Preserve at Laurel Lake lot 90-1635, Adams Homes
Lake City, FL

Design Conditions

Location:			Indoor:	Heating	Cooling
Gainesville Regional, FL, US			Indoor temperature (°F)	68	75
Elevation: 123 ft			Design TD (°F)	35	17
Latitude: 30°N			Relative humidity (%)	50	50
			Moisture difference (gr/lb)	28.8	43.8
Outdoor:	Heating	Cooling	Infiltration:		
Dry bulb (°F)	33	92	Method	Simplified	
Daily range (°F)	-	18 (M)	Construction quality	Average	
Wet bulb (°F)	-	76	Fireplaces	0	
Wind speed (mph)	15.0	7.5			

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, vnl ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud	se	50	0.091	13.0	3.17	158	2.25	112
	sw	90	0.091	13.0	3.17	285	2.25	202
	all	140	0.091	13.0	3.17	443	2.25	315
Partitions (none)								
Windows (none)								
Doors (none)								
Ceilings								
16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh		45	0.032	30.0	1.11	50	1.70	77
Floors								
22A-tp1: Bg floor, light dry soil, on grade depth, carp 80% flr fnsh		14	0.989	0	34.4	482	0	0



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Project Information

For: Preserve at Laurel Lake lot 90-1635, Adams Homes
Lake City, FL

Design Conditions

Location:		Indoor:		Heating	Cooling
Gainesville Regional, FL, US		Indoor temperature (°F)		68	75
Elevation: 123 ft		Design TD (°F)		35	17
Latitude: 30°N		Relative humidity (%)		50	50
		Moisture difference (gr/lb)		28.8	43.8
Outdoor:	Heating	Cooling	Infiltration:		
Dry bulb (°F)	33	92	Method		
Daily range (°F)	-	18 (M)	Construction quality		
Wet bulb (°F)	-	76	Fireplaces		
Wind speed (mph)	15.0	7.5	Simplified		
				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, vnl ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum	se	120	0.091	13.0	3.17	380	2.25	270
board int fnsh, 2"x4" wood frm, 16" o.c. stud	sw	40	0.091	13.0	3.17	127	2.25	90
	all	160	0.091	13.0	3.17	507	2.25	360
Partitions								
(none)								
Windows								
4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr	se	30	0.470	0	16.4	491	11.4	342
innr, 1/4" gap, 1/8" thk; NFRC rated (SHGC=0.31); 50% blinds 45°, light;								
50% outdoor insect screen; 1.6 ft overhang (5 ft window ht, 2 ft sep.);								
6.67 ft head ht								
Doors								
(none)								
Ceilings								
16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2"		215	0.032	30.0	1.11	239	1.70	366
gypsum board int fnsh								
Floors								
22A-tpl: Bg floor, light dry soil, on grade depth, carp 80% flr fnsh		19	0.989	0	34.4	654	0	0





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Project Information

For: Preserve at Laurel Lake lot 90-1635, Adams Homes
Lake City, FL

Design Conditions

Location:		Indoor:		Heating	Cooling
Gainesville Regional, FL, US		Indoor temperature (°F)		68	75
Elevation: 123 ft		Design TD (°F)		35	17
Latitude: 30°N		Relative humidity (%)		50	50
		Moisture difference (gr/lb)		28.8	43.8
Outdoor:	Heating	Cooling	Infiltration:		
Dry bulb (°F)	33	92	Method		
Daily range (°F)	-	18 (M)	Construction quality		
Wet bulb (°F)	-	76	Fireplaces		
Wind speed (mph)	15.0	7.5	Simplified		
			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, vnl ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum	ne	130	0.091	13.0	3.17	412	2.25	292
board int fnsh, 2"x4" wood frm, 16" o.c. stud	se	129	0.091	13.0	3.17	409	2.25	290
	all	259	0.091	13.0	3.17	820	2.25	582

Partitions
(none)

Windows								
4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr	se	30	0.470	0	16.4	491	11.4	342
innr, 1/4" gap, 1/8" thk; NFRC rated (SHGC=0.31); 50% blinds 45°, light;								
50% outdoor insect screen; 1.6 ft overhang (5 ft window ht, 2 ft sep.);								
6.67 ft head ht								

Doors								
11J0: Door, mtl flbrgl type	se	21	0.600	6.3	20.9	438	17.8	374

Ceilings								
16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2"		234	0.032	30.0	1.11	261	1.70	398
gypsum board int fnsh								

Floors								
22A-tpl: Bg floor, light dry soil, on grade depth, carp 80% flr fnsh		31	0.989	0	34.4	1067	0	0





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Project Information

For:

Preserve at Laurel Lake lot 90-1635, Adams Homes
Lake City, FL

Design Conditions

Location:		Indoor:		Heating	Cooling
Gainesville Regional, FL, US		Indoor temperature (°F)		68	75
Elevation: 123 ft		Design TD (°F)		35	17
Latitude: 30°N		Relative humidity (%)		50	50
		Moisture difference (gr/lb)		28.8	43.8
Outdoor:	Heating	Cooling	Infiltration:		
Drybulb (°F)	33	92	Method		Simplified
Daily range (°F)	-	18 (M)	Construction quality		Average
Wet bulb (°F)	-	76	Fireplaces		0
Wind speed (mph)	15.0	7.5			

Construction descriptions

Or

Area

U-value

Insul R

Htg HTM

Loss

Clg HTM

Gain

ft²

Btuh/ft²-°F

ft²-°F/Btuh

Btuh/ft²

Btuh

Btuh/ft²

Btuh

Walls (none)								
Partitions (none)								
Windows (none)								
Doors (none)								
Ceilings 16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh	123	0.032	30.0	1.11	137	1.70	209	
Floors (none)								





Component Constructions
br2
DL Williams Heating & Cooling LLC

Job: 1
Date: Aug/14/2024
By: DL Williams Heating & C...
Plan: 1635

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

Project Information

For: Preserve at Laurel Lake lot 90-1635, Adams Homes
Lake City, FL

Design Conditions

Location:		Indoor:		Heating	Cooling
Gainesville Regional, FL, US		Indoor temperature (°F)		68	75
Elevation: 123 ft		Design TD (°F)		35	17
Latitude: 30°N		Relative humidity (%)		50	50
		Moisture difference (gr/lb)		28.8	43.8
Outdoor:	Heating	Cooling	Infiltration:		
Dry bulb (°F)	33	92	Method		
Daily range (°F)	-	18 (M)	Construction quality		
Wet bulb (°F)	-	76	Fireplaces		
Wind speed (mph)	15.0	7.5	Simplified 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, vnl ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud	ne	115	0.091	13.0	3.17	364	2.25	258
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=0.31); 50% blinds 45°, light; 50% outdoor insect screen; 1.6 ft overhang (5 ft window ht, 2 ft sep.); 6.67 ft head ht	ne	15	0.470	0	16.4	245	11.4	171
Doors (none)								
Ceilings								
16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh		156	0.032	30.0	1.11	174	1.70	266
Floors								
22A-tp1: Bg floor, light dry soil, on grade depth, carp 80% flr fnsh		13	0.989	0	34.4	447	0	0



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Project Information

For: Preserve at Laurel Lake lot 90-1635, Adams Homes
Lake City, FL

Design Conditions

Location:		Indoor:		Heating	Cooling
Gainesville Regional, FL, US		Indoor temperature (°F)		68	75
Elevation: 123 ft		Design TD (°F)		35	17
Latitude: 30°N		Relative humidity (%)		50	50
		Moisture difference (gr/lb)		28.8	43.8
Outdoor:	Heating	Cooling	Infiltration:		
Dry bulb (°F)	33	92	Method		
Daily range (°F)	-	18 (M)	Construction quality		
Wet bulb (°F)	-	76	Fireplaces		
Wind speed (mph)	15.0	7.5	Simplified		
				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, vnl ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud	ne	60	0.091	13.0	3.17	190	2.25	135
Partitions								
(none)								
Windows								
(none)								
Doors								
(none)								
Ceilings								
16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh		48	0.032	30.0	1.11	53	1.70	82
Floors								
22A-tpl: Bg floor, light dry soil, on grade depth, carp 80% flr fnsh		6	0.989	0	34.4	207	0	0





Component Constructions
br3
DL Williams Heating & Cooling LLC

Job: 1
Date: Aug/14/2024
By: DL Williams Heating & C...
Plan: 1635

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

Project Information

For: Preserve at Laurel Lake lot 90-1635, Adams Homes
Lake City, FL

Design Conditions

Location:			Indoor:	Heating	Cooling
Gainesville Regional, FL, US			Indoor temperature (°F)	68	75
Elevation: 123 ft			Design TD (°F)	35	17
Latitude: 30°N			Relative humidity (%)	50	50
Outdoor:			Moisture difference (gr/lb)	28.8	43.8
			Infiltration:		
Heating			Method	Simplified	
Cooling			Construction quality	Average	
			Fireplaces	0	
Dry bulb (°F)					
Daily range (°F)					
Wet bulb (°F)					
Wind speed (mph)					

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, vnl ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum	ne	130	0.091	13.0	3.17	412	2.25	292
board int fnsh, 2"x4" wood frm, 16" o.c. stud	sw	130	0.091	13.0	3.17	412	2.25	292
	nw	105	0.091	13.0	3.17	333	2.25	236
	all	365	0.091	13.0	3.17	1156	2.25	820
Partitions								
(none)								
Windows								
4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr	nw	15	0.470	0	16.4	245	11.4	171
innr, 1/4" gap, 1/8" thk; NFRC rated (SHGC=0.31); 50% blinds 45°, light;								
50% outdoor insect screen; 1.6 ft overhang (5 ft window ht, 2 ft sep.);								
6.67 ft head ht								
Doors								
(none)								
Ceilings								
16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2"		156	0.032	30.0	1.11	174	1.70	266
gypsum board int fnsh								
Floors								
22A-tpl: Bg floor, light dry soil, on grade depth, carp 80% flr fnsh		38	0.989	0	34.4	1308	0	0



Component Constructions
foyer
DL Williams Heating & Cooling LLC

Job: 1
Date: Aug/14/2024
By: DL Williams Heating & C...
Plan: 1635

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

Project Information

For: Preserve at Laurel Lake lot 90-1635, Adams Homes
Lake City, FL

Design Conditions

Location:		Indoor:		Heating	Cooling
Gainesville Regional, FL, US		Indoor temperature (°F)		68	75
Elevation: 123 ft		Design TD (°F)		35	17
Latitude: 30°N		Relative humidity (%)		50	50
		Moisture difference (gr/lb)		28.8	43.8
Outdoor:		Heating	Cooling		
Dry bulb (°F)		33	92		
Daily range (°F)		-	18 (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, vnl ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud	nw	32	0.091	13.0	3.17	101	2.25	72
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=0.31); 50% blinds 45°, light; 50% outdoor insect screen; 8 ft overhang (7 ft window ht, 2 ft sep.); 6.67 ft head ht	nw	7	0.470	0	16.4	114	11.4	80
Doors								
11J0: Door, mtl fbrgl type	nw	21	0.600	6.3	20.9	438	17.8	374
Ceilings								
16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh		118	0.032	30.0	1.11	131	1.70	201
Floors								
22A-tp1: Bg floor, light dry soil, on grade depth, carp 80% flr fnsh		6	0.989	0	34.4	207	0	0



AIA/CES / Building Performance Institute

Right-Suite® Universal 2024 24.0.02 RSU02245

...es Preserve at Laurel Lake plan 1635 lot 90.rup Calc = MJ8 Front Door faces: N

2024-Sep-26 13:44:56

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

Project Information

For: Preserve at Laurel Lake lot 90-1635, Adams Homes
Lake City, FL

Design Conditions

Location:		Indoor:		Heating	Cooling
Gainesville Regional, FL, US		Indoor temperature (°F)		68	75
Elevation: 123 ft		Design TD (°F)		35	17
Latitude: 30°N		Relative humidity (%)		50	50
		Moisture difference (gr/lb)		28.8	43.8
Outdoor:	Heating	Cooling	Infiltration:		
Dry bulb (°F)	33	92	Method		
Daily range (°F)	-	18 (M)	Construction quality		
Wet bulb (°F)	-	76	Fireplaces		
Wind speed (mph)	15.0	7.5	Simplified		
				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, vnl ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud ne 90 0.091 13.0 3.17 285 2.25 202

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=0.31); 50% blinds 45°, light; 50% outdoor insect screen; 1.6 ft overhang (5 ft window ht, 2 ft sep.); 6.67 ft head ht ne 30 0.470 0 16.4 491 11.4 342

Doors
(none)

Ceilings
16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh 216 0.032 30.0 1.11 241 1.70 368

Floors
22A-tpl: Bg floor, light dry soil, on grade depth, carp 80% flr fnsh 12 0.989 0 34.4 413 0 0





AED Assessment
Entire House
DL Williams Heating & Cooling LLC

Job: 1
Date: Aug/14/2024
By: DL Williams Heating & C...
Plan: 1635

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

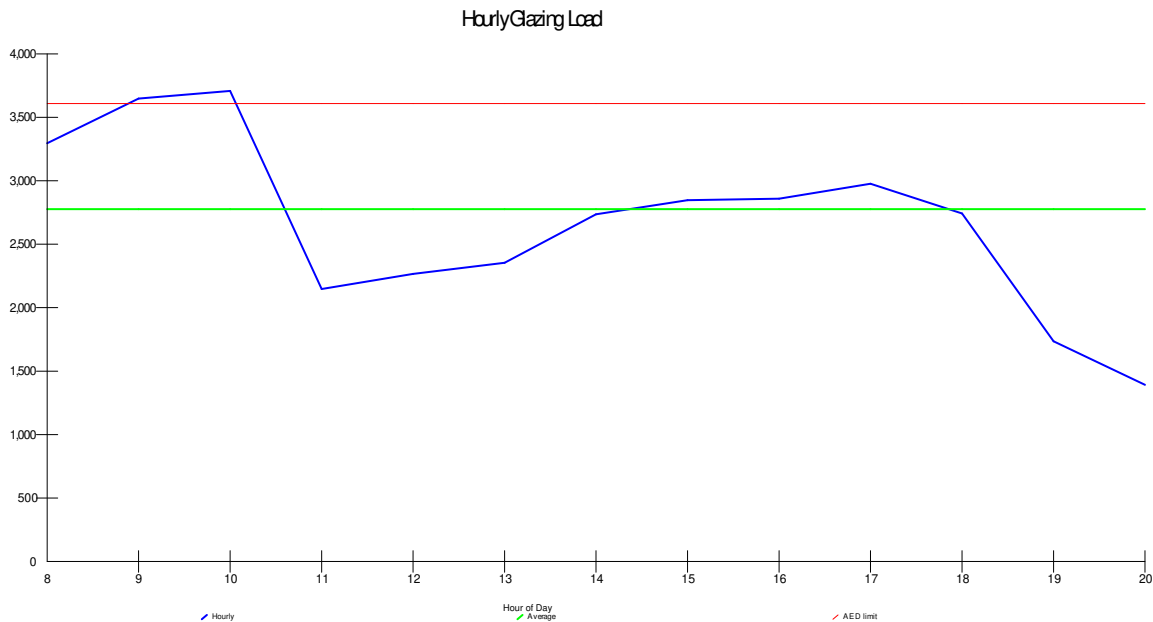
Project Information

For: Preserve at Laurel Lake lot 90-1635, Adams Homes
Lake City, FL

Design Conditions

Location:		Indoor:		Heating	Cooling
Gainesville Regional, FL, US		Indoor temperature (°F)		68	75
Elevation: 123 ft		Design TD (°F)		35	17
Latitude: 30°N		Relative humidity (%)		50	50
Outdoor:		Heating	Cooling	Moisture difference (gr/lb)	
Drybulb (°F)		33	92	28.8	43.8
Daily range (°F)		-	18 (M)	Infiltration:	
Wet bulb (°F)		-	76		
Wind speed (mph)		15.0	7.5		

Test for Adequate Exposure Diversity



Maximum hourly glazing load exceeds average by 33.6%.

House does not have adequate exposure diversity (AED), based on AED limit of 30%.

AED excursion: 99 Btuh (PFG - 1.3*AFG)



Right-J® Worksheet
Entire House
DL Williams Heating & Cooling LLC

Job: 1
Date: Aug/14/2024
By: DL Williams Heating & Cooling
Plan: 1635

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

1	Room name					Entire House					br4			
2	Exposed wall					161.0 ft					11.0 ft			
3	Room height					10.0 ft					10.0 ft			
4	Room dimensions					1648.0 ft²					10.0 ft 13.0 x 11.0 ft			
5	Room area					1648.0 ft²					143.0 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	ne	3.17	2.25	570	525	1663	1180	0	0	0	0
.	G	4A5-2ov	0.470	ne	16.36	11.41	45	0	736	513	0	0	0	0
.	W	12C-0sw	0.091	se	3.17	2.25	380	299	947	672	0	0	0	0
.	G	4A5-2ov	0.470	se	16.36	11.41	60	15	981	685	0	0	0	0
11	D	11J0	0.600	se	20.88	17.82	21	21	438	374	0	0	0	0
.	W	12C-0sw	0.091	sw	3.17	2.25	480	465	1473	1045	110	95	301	214
.	G	4A5-2ov	0.470	sw	16.36	11.41	15	4	245	171	15	2	245	171
.	W	12C-0sw	0.091	nw	3.17	2.25	180	137	434	308	0	0	0	0
.	G	4A5-2ov	0.470	nw	16.36	11.41	15	0	245	171	0	0	0	0
.	G	4A5-2ov	0.470	nw	16.36	11.41	7	0	114	80	0	0	0	0
.	D	11J0	0.600	nw	20.88	17.82	21	21	438	374	0	0	0	0
.	C	16B-30ad	0.032	-	1.11	1.70	1648	1648	1835	2806	143	143	159	243
.	F	22A-tpl	0.989	-	34.42	0.00	1648	161	5541	0	143	11	379	0

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





Right-J® Worksheet
Entire House
DL Williams Heating & Cooling LLC

Job: 1
Date: Aug/14/2024
By: DL Williams Heating & Cooling
Plan: 1635

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

1	Room name					utility					AH				
2	Exposed wall					0 ft					0 ft				
3	Room height					10.0 ft					10.0 ft				
4	Room dimensions					1.0 x 66.0 ft					3.0 x 6.0 ft				
5	Room area					66.0 ft²					18.0 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	ne	3.17	2.25	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.470	ne	16.36	11.41	0	0	0	0	0	0	0	0	
.	W	12C-0sw	0.091	se	3.17	2.25	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.470	se	16.36	11.41	0	0	0	0	0	0	0	0	
11	D	11J0	0.600	se	20.88	17.82	0	0	0	0	0	0	0	0	
.	W	12C-0sw	0.091	sw	3.17	2.25	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.470	sw	16.36	11.41	0	0	0	0	0	0	0	0	
.	W	12C-0sw	0.091	nw	3.17	2.25	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.470	nw	16.36	11.41	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.470	nw	16.36	11.41	0	0	0	0	0	0	0	0	
.	D	11J0	0.600	nw	20.88	17.82	0	0	0	0	0	0	0	0	
.	C	16B-30ad	0.032	-	1.11	1.70	66	66	73	112	18	18	20	31	
.	F	22A-tpl	0.989	-	34.42	0.00	66	0	0	0	18	0	0	0	

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





Right-J® Worksheet
Entire House
DL Williams Heating & Cooling LLC

Job: 1
Date: Aug/14/2024
By: DL Williams Heating & Cooling
Plan: 1635

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

1	Room name					mbath				wic				
2	Exposed wall					11.0 ft				14.0 ft				
3	Room height					10.0 ft				10.0 ft				
4	Room dimensions					10.0 x 11.0 ft				10.0 x 9.0 ft				
5	Room area					110.0 ft²				45.0 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	ne	3.17	2.25	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	ne	16.36	11.41	0	0	0	0	0	0	0	0
.	W	12C-0sw	0.091	se	3.17	2.25	0	0	0	0	50	50	158	112
.	G	4A5-2ov	0.470	se	16.36	11.41	0	0	0	0	0	0	0	0
11	D	11J0	0.600	se	20.88	17.82	0	0	0	0	0	0	0	0
.	W	12C-0sw	0.091	sw	3.17	2.25	110	110	348	247	90	90	285	202
.	G	4A5-2ov	0.470	sw	16.36	11.41	0	0	0	0	0	0	0	0
.	W	12C-0sw	0.091	nw	3.17	2.25	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	nw	16.36	11.41	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	nw	16.36	11.41	0	0	0	0	0	0	0	0
.	D	11J0	0.600	nw	20.88	17.82	0	0	0	0	0	0	0	0
.	C	16B-30ad	0.032	-	1.11	1.70	110	110	122	187	45	45	50	77
.	F	22A-tpl	0.989	-	34.42	0.00	110	11	379	0	45	14	482	0

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



A Wrightsoft® / Wrightsoft® Heating & Cooling Company

Right-Suite® Universal 2024 24.0.02 RSU02245

...es Preserve at Laurel Lake plan 1635 lot 90.rup Calc = MJ8 Front Door faces: N

2024-Sep-26 13:44:56

Page 3



Right-J® Worksheet
Entire House
DL Williams Heating & Cooling LLC

Job: 1
Date: Aug/14/2024
By: DL Williams Heating & Cooling
Plan: 1635

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

1	Room name					mbed 19.0 ft				great 31.0 ft				
2	Exposed wall					10.0 ft				10.0 ft				
3	Room height					1.0				18.0				
4	Room dimensions					215.0 ft				234.0 ft				
5	Room area					215.0 ft²				234.0 ft²				
	Ty	Construction number	U-value (Bt uh/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	ne	3.17	2.25	0	0	0	0	130	130	412	292
.	G	4A5-2ov	0.470	ne	16.36	11.41	0	0	0	0	0	0	0	0
.	W	12C-0sw	0.091	se	3.17	2.25	150	120	380	270	180	129	409	290
.	G	4A5-2ov	0.470	se	16.36	11.41	30	4	491	342	30	4	491	342
11	D	11J0	0.600	se	20.88	17.82	0	0	0	0	21	21	438	374
.	W	12C-0sw	0.091	sw	3.17	2.25	40	40	127	90	0	0	0	0
.	G	4A5-2ov	0.470	sw	16.36	11.41	0	0	0	0	0	0	0	0
.	W	12C-0sw	0.091	nw	3.17	2.25	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	nw	16.36	11.41	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	nw	16.36	11.41	0	0	0	0	0	0	0	0
.	D	11J0	0.600	nw	20.88	17.82	0	0	0	0	0	0	0	0
.	C	16B-30ad	0.032	-	1.11	1.70	215	215	239	366	234	234	261	398
.	F	22A-tpl	0.989	-	34.42	0.00	215	19	654	0	234	31	1067	0
									</					

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





Right-J® Worksheet
Entire House
DL Williams Heating & Cooling LLC

Job: 1
Date: Aug/14/2024
By: DL Williams Heating & Cooling
Plan: 1635

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

1	Room name						kitchen				br2			
2	Exposed wall						0 ft				13.0 ft			
3	Room height						10.0 ft				10.0 ft			
4	Room dimensions						1.0 x 123.0 ft				12.0 x 13.0 ft			
5	Room area						123.0 ft²				156.0 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	ne	3.17	2.25	0	0	0	0	130	115	364	258
.	G	4A5-2ov	0.470	ne	16.36	11.41	0	0	0	0	15	0	245	171
.	W	12C-0sw	0.091	se	3.17	2.25	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	se	16.36	11.41	0	0	0	0	0	0	0	0
11	D	11J0	0.600	se	20.88	17.82	0	0	0	0	0	0	0	0
.	W	12C-0sw	0.091	sw	3.17	2.25	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	sw	16.36	11.41	0	0	0	0	0	0	0	0
.	W	12C-0sw	0.091	nw	3.17	2.25	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	nw	16.36	11.41	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	nw	16.36	11.41	0	0	0	0	0	0	0	0
.	D	11J0	0.600	nw	20.88	17.82	0	0	0	0	0	0	0	0
.	C	16B-30ad	0.032	-	1.11	1.70	123	123	137	209	156	156	174	266
.	F	22A-tpl	0.989	-	34.42	0.00	123	0	0	0	156	13	447	0
6	c) AED excursion									-134				-46
	Envelope loss/gain								137	75			1231	649
12	a) Infiltration								0	0			321	84
	b) Room ventilation								0	0			0	0
13	Internal gains: Occupants @ 230 Appliances/other						1			230 1200	0			0 0
	Subtotal (lines 6 to 13)								137	1505			1552	732
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								2	3			0	0
14	Subtotal								139	1509			1552	732
15	Duct loads						20%	35%	27	522	20%	35%	306	253
	Total room load								167	2031			1857	986
	Air required (cfm)								5	77			57	37

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





Right-J® Worksheet
Entire House
DL Williams Heating & Cooling LLC

Job: 1
Date: Aug/14/2024
By: DL Williams Heating & Cooling
Plan: 1635

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

1	Room name					bath 6.0 ft					br3 38.0 ft				
2	Exposed wall					10.0 ft					10.0 ft				
3	Room height					8.0					12.0				
4	Room dimensions					48.0 ft ²					156.0 ft ²				
5	Room area					heat/cool					heat/cool				
	Ty	Construction number	U-value (Btuh/ft ² ·°F)	Or	HTM (Btuh/ft ²)		Area (ft ²) or perimeter (ft)		Load (Btuh)		Area (ft ²) 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	ne	3.17	2.25	60	60	190	135	130	130	412	292	
	G	4A5-2ov	0.470	ne	16.36	11.41	0	0	0	0	0	0	0	0	
	W	12C-0sw	0.091	se	3.17	2.25	0	0	0	0	0	0	0	0	
	G	4A5-2ov	0.470	se	16.36	11.41	0	0	0	0	0	0	0	0	
11	D	11J0	0.600	se	20.88	17.82	0	0	0	0	0	0	0	0	
	W	12C-0sw	0.091	sw	3.17	2.25	0	0	0	0	130	130	412	292	
	G	4A5-2ov	0.470	sw	16.36	11.41	0	0	0	0	0	0	0	0	
	W	12C-0sw	0.091	nw	3.17	2.25	0	0	0	0	120	105	333	236	
	G	4A5-2ov	0.470	nw	16.36	11.41	0	0	0	0	15	0	245	171	
	G	4A5-2ov	0.470	nw	16.36	11.41	0	0	0	0	0	0	0	0	
	D	11J0	0.600	nw	20.88	17.82	0	0	0	0	0	0	0	0	
	C	16B-30ad	0.032	-	1.11	1.70	48	48	53	82	156	156	174	266	
	F	22A-tpl	0.989	-	34.42	0.00	48	6	207	0	156	38	1308	0	
							</								

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





Right-J® Worksheet
Entire House
DL Williams Heating & Cooling LLC

Job: 1
Date: Aug/14/2024
By: DL Williams Heating & Cooling
Plan: 1635

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

1	Room name					foyer 6.0 ft					dining 12.0 ft				
2	Exposed wall					10.0 ft					10.0 ft				
3	Room height					heat/cool					heat/cool				
4	Room dimensions					1.0 x 118.0 ft					18.0 x 12.0 ft				
5	Room area					118.0 ft²					216.0 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	ne	3.17	2.25	0	0	0	0	120	90	285	202	
.	G	4A5-2ov	0.470	ne	16.36	11.41	0	0	0	0	30	0	491	342	
.	W	12C-0sw	0.091	se	3.17	2.25	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.470	se	16.36	11.41	0	0	0	0	0	0	0	0	
11	D	11J0	0.600	se	20.88	17.82	0	0	0	0	0	0	0	0	
.	W	12C-0sw	0.091	sw	3.17	2.25	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.470	sw	16.36	11.41	0	0	0	0	0	0	0	0	
.	W	12C-0sw	0.091	nw	3.17	2.25	60	32	101	72	0	0	0	0	
.	G	4A5-2ov	0.470	nw	16.36	11.41	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.470	nw	16.36	11.41	7	0	114	80	0	0	0	0	
.	D	11J0	0.600	nw	20.88	17.82	21	21	438	374	0	0	0	0	
.	C	16B-30ad	0.032	-	1.11	1.70	118	118	131	201	216	216	241	368	
.	F	22A-tpl	0.989	-	34.42	0.00	118	6	207	0	216	12	413	0	

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





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

Job: 1
Date: Aug/14/2024
By: DL Williams Heating & C...
Plan: 1635

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

Supporting Detail	
Project Name: Adams Homes Preserve at Laurel Lake plan 1635 lot 90	Date: Aug/14/2024
Address: Lake City, FL	
Phone:	Job ID: 1

Worksheet A Location and Design Conditions	
Weather Location: Gainesville Regional, FL, US	Elevation = 123 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 = 44 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.





Duct system multi orientation report

Entire House

DL Williams Heating & Cooling LLC

Job: 1
Date: Aug/14/2024
By: DL Williams Heating & C...
Plan: 1635

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

Project Information

For: Preserve at Laurel Lake lot 90-1635, Adams Homes
Lake City, FL

Group 1: (N, NE, E, SW, NW) Group 2: (SE) Group 3: (S) Group 4: (W)

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	22 h	12x12	4	22 h	12x12	4	22 h	12x12	4	22 h	12x12	4
br2	57 h	12x12	5	57 h	12x12	5	57 h	12x12	5	57 h	12x12	5
br3	140 h	12x12	7	140 h	12x12	7	140 h	12x12	7	140 h	12x12	7
br4	50 h	12x12	5	50 h	12x12	5	50 h	12x12	5	50 h	12x12	5
dining	85 c	12x12	5	70 c	12x12	5	70 c	12x12	5	86 c	12x12	5
foyer	42 h	12x12	5	42 h	12x12	5	45 c	12x12	5	43 c	12x12	5
great	171 c	12x12	7	182 c	12x12	7	181 c	12x12	7	168 c	12x12	7
kitchen	80 c	12x12	5	77 c	12x12	5	79 c	12x12	5	78 c	12x12	5
mbath	41 h	12x12	4	41 h	12x12	4	41 h	12x12	4	41 h	12x12	4
mbed	87 h	12x12	6	87 h	12x12	6	87 h	12x12	6	87 h	12x12	6
utility	31 c	12x12	4	29 c	12x12	4	30 c	12x12	4	30 c	12x12	4
wic	48 h	12x12	5	48 h	12x12	5	48 h	12x12	5	48 h	12x12	5
Supply Trunks												
st1	455 c		12	461 c		12	458 c		12	447 c		10
st2A	42 h		5	42 h		5	45 c		5	43 c		5
st2	261 h		10	261 h		10	261 h		10	261 h		10
Return Branches												
rb1	700 c	12x12	14	700 c	12x12	14	700 c	12x12	14	700 c	12x12	14
Friction Rates												
Heating FR	0.182			0.182			0.182			0.182		
Cooling FR	0.182			0.182			0.182			0.182		

Project Information

For: Preserve at Laurel Lake lot 90-1635, Adams Homes
Lake City, FL

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	22 h	12x12	4	22 h	12x12	4	22 h	12x12	4	22 h	12x12	4
br2	57 h	12x12	5	57 h	12x12	5	57 h	12x12	5	57 h	12x12	5
br3	140 h	12x12	7	140 h	12x12	7	140 h	12x12	7	140 h	12x12	7
br4	50 h	12x12	5	50 h	12x12	5	50 h	12x12	5	50 h	12x12	5
dining	93 c	12x12	6	84 c	12x12	5	70 c	12x12	5	86 c	12x12	5
foyer	42 h	12x12	5	42 h	12x12	5	42 h	12x12	5	42 h	12x12	5
great	168 c	12x12	7	178 c	12x12	7	188 c	12x12	8	178 c	12x12	7
kitchen	79 c	12x12	5	76 c	12x12	5	78 c	12x12	5	76 c	12x12	5
mbath	41 h	12x12	4	41 h	12x12	4	41 h	12x12	4	41 h	12x12	4
mbed	87 h	12x12	6	87 h	12x12	6	90 c	12x12	6	87 h	12x12	6
utility	30 c	12x12	4	29 c	12x12	4	30 c	12x12	4	29 c	12x12	4
wic	48 h	12x12	5	48 h	12x12	5	48 h	12x12	5	48 h	12x12	5
Supply Trunks												
st1	457 c		12	466 c		12	473 c		12	467 c		12
st2A	42 h		5	42 h		5	42 h		5	42 h		5
st2	261 h		10	261 h		10	261 h		10	261 h		10
Return Branches												
rb1	700 c	12x12	14	700 c	12x12	14	700 c	12x12	14	700 c	12x12	14
Friction Rates												
Heating FR	0.182			0.182			0.182			0.182		
Cooling FR	0.182			0.182			0.182			0.182		



Project Information

For: Preserve at Laurel Lake lot 90-1635, Adams Homes
Lake City, FL

Duct Name	Largest			Smallest		
	Reg CFM	Reg Size	Duct Size	Reg CFM	Reg Size	Duct Size
Supply Branches						
bath	22 h	12x12	4	22 h	12x12	4
br2	57 h	12x12	5	57 h	12x12	5
br3	140 h	12x12	7	140 h	12x12	7
br4	50 h	12x12	5	50 h	12x12	5
dining	93 c	12x12	6	70 c	12x12	5
foyer	45 c	12x12	5	42 h	12x12	5
great	188 c	12x12	8	168 c	12x12	7
kitchen	80 c	12x12	5	76 c	12x12	5
mbath	41 h	12x12	4	41 h	12x12	4
mbed	90 c	12x12	6	87 h	12x12	6
utility	31 c	12x12	4	29 c	12x12	4
wic	48 h	12x12	5	48 h	12x12	5
Supply Trunks						
st1	473 c		12	447 c		10
st2A	45 c		5	42 h		5
st2	261 h		10	261 h		10
Return Branches						
rb1	700 c	12x12	14	700 c	12x12	14
Friction Rates						
Heating FR	0.182			0.182		
Cooling FR	0.182			0.182		



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





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

Job: 1
Date: Aug/14/2024
By: DL Williams Heating & C...
Plan: 1635

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

Project Information

For: Preserve at Laurel Lake lot 90-1635, Adams Homes
Lake City, FL

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	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	3	1
Measured length of trunk	6	0
Equivalent length of fittings	205	60
Total length	214	61
Total effective length		275

Friction Rate

	Heating (in/100ft)	Cooling (in/100ft)
Supply Ducts	0.182 > 0.18	0.182 > 0.18
Return Ducts	0.182 > 0.18	0.182 > 0.18

Fitting Equivalent Length Details

Supply	4AD=60, 11M=20, 11M=20, 12J1=10, 11M=20, 11M=20, 11M=20, 1A=35: TotalEL=205
Return	6M=20, 5D=40: TotalEL=60



Duct System Summary

Entire House

DL Williams Heating & Cooling LLC

Job: 1
Date: Aug/14/2024
By: DL Williams Heating & C...
Plan: 1635

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

Project Information

For: Preserve at Laurel Lake lot 90-1635, Adams Homes
Lake City, FL

	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	0.389 / 0.111 in H ₂ O	0.389 / 0.111 in H ₂ O
Lowest friction rate	0.182 in/100ft	0.182 in/100ft
Actual air flow	700 cfm	700 cfm
Total effective length (TEL)	275 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 716	22	12	0.227	4.0	0x0	VIFx	16.2	155.0	st2
br2	h 1857	57	37	0.270	5.0	0x0	VIFx	9.3	135.0	st2
br3	h 4574	140	78	0.200	7.0	0x0	VIFx	19.9	175.0	st2
br4	h 1623	50	41	0.377	5.0	0x0	VIFx	8.1	95.0	
dining	c 1842	63	70	0.309	5.0	0x0	VIFx	11.1	115.0	st1
foyer	h 1373	42	41	0.182	5.0	0x0	VIFx	8.8	205.0	st2A
great	c 4812	141	182	0.215	7.0	0x0	VIFx	26.1	155.0	st1
kitchen	c 2031	5	77	0.304	5.0	0x0	VIFx	12.8	115.0	st1
mbath	h 1342	41	24	0.291	4.0	0x0	VIFx	18.9	115.0	st1
mbed	h 2825	87	86	0.213	6.0	0x0	VIFx	28.0	155.0	st1
utility	c 774	3	29	0.458	4.0	0x0	VIFx	5.0	80.0	
wic	h 1581	48	23	0.203	5.0	0x0	VIFx	36.4	155.0	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
st1	Peak AVF	386	461	0.203	587	12.0	0 x 0	VinIFlx	st2
st2A	Peak AVF	42	41	0.182	309	5.0	0 x 0	VinIFlx	
st2	Peak AVF	261	169	0.182	479	10.0	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	700	700	61.0	0.182	655	14.0	0x 0		VIFx	



Manual S Compliance Report

Entire House

DL Williams Heating & Cooling LLC

Job: 1
Date: Aug/14/2024
By: DL Williams Heating & C...
Plan: 1635

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

Project Information

For: Preserve at Laurel Lake lot 90-1635, Adams Homes
Lake City, FL

Cooling Equipment

Design Conditions

Outdoor design DB:	92.2°F	Sensible gain:	18473	Btuh	Entering coil DB:	77.2°F
Outdoor design WB:	75.8°F	Latent gain:	3941	Btuh	Entering coil WB:	63.6°F
Indoor design DB:	75.0°F	Total gain:	22414	Btuh		
Indoor RH:	50%	Estimated airflow:	700	cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP			
Manufacturer:	Trane	Model:	4TWR5024H1+TEM6A0C30M31++TDR	
Actual airflow:	700	cfm		
Sensible capacity:	18085	Btuh	98% of load	
Latent capacity:	4275	Btuh	108% of load	
Total capacity:	22361	Btuh	100% of load	SHR: 81%

Heating Equipment

Design Conditions

Outdoor design DB:	33.2°F	Heat loss:	22824	Btuh	Entering coil DB:	67.0°F
Indoor design DB:	68.0°F					

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP			
Manufacturer:	Trane	Model:	4TWR5024H1+TEM6A0C30M31++TDR	
Actual airflow:	700	cfm		
Output capacity:	17054	Btuh	75% of load	Capacity balance: 34 °F
Supplemental heat required:	5770	Btuh		Economic balance: -99 °F

Backup equipment type:	Elec strip			
Manufacturer:		Model:		
Actual airflow:	700	cfm		
Output capacity:	6.7	kW	100% of load	Temp. rise: 26 °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

Columbia Header Information

Contractor DL Williams Heating & Cooling LLC
Derrick Williams

Mechanical license# _____

Building plan # 1635

Home address (Street or Lot#, Block, Subdivision) , Entire House

Applicable Attachments

Manual J1 Form and Worksheet A: ☐ Yes ☐ No
OEM performance data (heating, cooling, blower): ☐ Yes ☐ No
Duct distribution sketch: ☐ Yes ☐ No
IRC Table R301.2 (climate & geographic design criteria) ☐ Yes ☐ No

HVAC LOAD CALCULATION

(IRC M1401.3)

Manual J Design Criteria and Loads

Location

Elevation 123 ft
Altitude Correction Factor 1.00
Latitude 30 °N

Summer Design Conditions

Outdoor Cooling Temp 92 °F
Indoor Cooling Temp 75 °F
Cooling Temp Diff 17 °F
Indoor Summer Design RH 50 %
Coincident Wet Bulb Temp 76 °F

Manual J Loads

Total Heat Loss 22824 Btuh
Sensible Heat Gain 18473 Btuh
Latent Heat Gain 3941 Btuh
Total Heat Gain 22414 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

Model _____

Output 17054 Btuh Sizing Value 22824 Btuh
Supplemental 5770 Btuh Sizing Limit 175.0 %
Heat Load: Capacity 100.0 %

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

Cooling Equipment

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

Model 4TWR5024H1+TEM6A0C30M31++TDR

Sensible 18085 Btuh Sizing Value 22414 Btuh
Latent 4275 Btuh Sizing Limit 115.0 %
Total 22361 Btuh Load: Capacity 99.8 %

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

HVAC DUCT DISTRIBUTION DESIGN

(IRC M1601.1)

Design airflow 700 cfm Longest Supply Duct 214 ft Duct Materials Used
External Static Pressure (ESP) 0.50 in H2O Longest Return Duct 61.0 ft Trunk Duct: ☐ Duct Board ☐ Sheet Metal
Component Pressure Loss (CPL) 0 in H2O Total Effective Length (TEL) 275 ft ☒ Flex ☐ Lined Sheet Metal ☐ Other
Available static pressure (ASP) 0.50 in H2O Friction Rate 0.18 in/100ft Branch Duct: ☐ Duct Board ☐ Sheet Metal
ESP - CPL = ASP (ASP x 100) / TEL = Friction Rate ☒ Flex ☐ Lined Sheet Metal ☐ Other

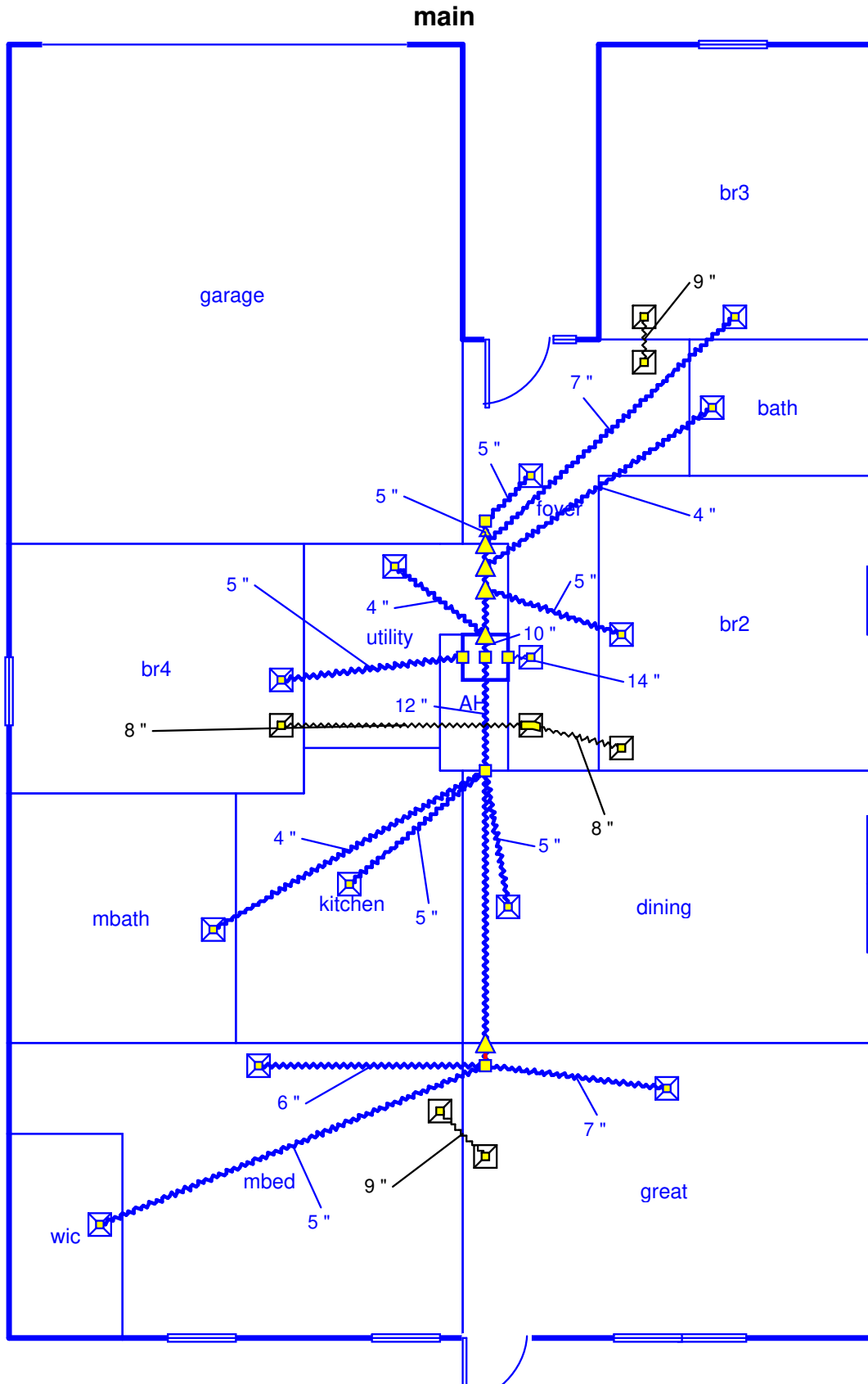
Ducts are sized per Manual D? Y ☒ N ☐

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: _____



Job #: 1
Performed by DL Williams Heating & Cooling
Preserve at Laurel Lake lot 90-1635
Lake City, FL

DL Williams Heating & Cooling LLC
PO Box 2156
Lake City, FL 32056
Phone: 386-754-1987
www.dlwilliamsheatingandcooling.com office@dlwilliamsheati

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ENERGY STAR Single-Family New Homes National HVAC Design Report, Version 3 / 3.1 /3.2 (Rev. 12)

HVAC Designer Responsibilities:

- Complete one National HVAC Design Report for each system design for a house plan, created for either the specific plan configuration (i.e., elevation, option, orientation, & county) of the home to be certified or for a plan that is intended to be built with different configurations (i.e., different elevations, options, and/or orientations). Visit www.energystar.gov/newhomeshvacdesign and see Footnote 2 for more information.
- Obtain efficiency features (e.g., window performance, insulation levels, and infiltration rate) from the builder or Rater. ³
- Provide the completed National HVAC Design Report to the builder or credentialed HVAC contractor and to the Rater.

1. Design Overview

1.1 Designer name: Derrick Williams Designer company: DL Williams Heating & Cooling LLC Date: Aug/14/2024
1.2 Select which party you are providing these design services to: ☒ Builder or ☐ Credentialed HVAC contractor
1.3 Name of company you are providing these design services to (if different than Item 1.1): Adams Homes
1.4 Area that system serves: ☒ Whole-house ☐ Upper-level ☐ Lower-level ☐ Other
1.5 Is cooling system for a temporary occupant load? ☐ Yes ☒ No
1.6 House plan: 1635 Check box to indicate whether the system design is site-specific or part of a group:
☒ Site-specific design. Option(s) & elevation(s) modeled:
☐ Group design. Group #: 0 out of 0 total groups for this house plan. Configuration modeled:

2. Dwelling Unit Mechanical Ventilation System Design ("Vent System") & Inlets in Return Duct

Designer
Verified

Airflow:

2.1 Ventilation airflow design rate & run-time meet the requirements of ASHRAE 62.2-2010 or later ☐
2.2 Ventilation airflow rate required by 62.2 for a continuous system: 0 CFM -
2.3 Design for this system: Vent. airflow rate: CFM Run-time per cycle: 0 minutes Cycle time: 0 minutes -

System Type & Controls:

2.4 Specified system type: ☐ Supply ☐ Exhaust ☒ Balanced -
2.5 Specified control location: (e.g., Master bath, utility room) -
2.6 Specified controls allow the system to operate automatically, without occupant intervention. ☐
2.7 Specified controls include a readily-accessible ventilation override and a label has also been specified if its function is not obvious (e.g., a label is required for a toggle wall switch, but not for a switch that's on the ventilation equipment). ☐
2.8 For any outdoor air inlet designed to connect to a ducted return of the HVAC system, specified controls automatically restrict airflow using a motorized damper during ventilation off-cycle and occupant override. ☐

Sound: 2.9 The fan of the specified system is rated ≤ 3 sones if intermittent and ≤ 1 sone if continuous, or exempted ☐

Efficiency:

2.10 If Vent System controller operates the HVAC fan, then HVAC fan operation is intermittent and either the fan type in Item 4.7 is ECM / ICM or the controls will reduce the run-time by accounting for HVAC system heating or cooling hours. ☐
2.11 If bathroom fans are specified as part of the system, then they are ENERGY STAR certified ☐

Air Inlet Location: (Complete this section if system has a specified air inlet location; otherwise check "N/A") ☐ N/A

2.12 Inlet pulls ventilation air directly from outdoors and not from attic, crawlspace, garage, or adjacent dwelling unit ☐
2.13 Inlet is ≥ 2 ft. above grade or roof deck; ≥ 10 ft. of stretched-string distance from known contamination sources (e.g., stack, vent, exhaust, vehicles) not exiting the roof, and ≥ 3 ft. from known sources exiting the roof ☐

3. Room-by-Room Heating & Cooling Loads

3.1 Room-by-room loads calculated using: ☒ Unabridged ACCA Manual J v8 ☐ 2013 ASHRAE Fundamentals ☐ Other per AHJ -

3.2 Indoor design temperatures used in loads are 70°F for heating and 75°F for cooling ☐

3.3 Outdoor design temperatures used in loads: (See Footnote 17 and energystar.gov/hvacdesigntemps)
County & State, or US Territory, selected: Alachua, FL Cooling season: 92 °F Heating season: 33 °F -

3.4 Number of occupants used in loads: 7 -

3.5 Conditioned floor area used in loads: 1648 Sq. Ft. -

3.6 Window area used in loads: 142 Sq. Ft. -

3.7 Predominant window SHGC used in loads: 0.31 -

3.8 Infiltration rate used in loads: Summer: 0.20 Winter: 0.38 -

3.9 Mechanical ventilation rate used in loads: 0 CFM -

Loads At Design Conditions (kBtuh)

	N	NE	E	SE	S	SW	W	NW
--	---	----	---	----	---	----	---	----

Cooling	3.10 Sensible heat gain (By orientation)	18.0	17.9	18.0	18.3	18.6	18.1	18.0	17.9
	3.11 Latent heat gain (Not by orientation)	3.9							
	3.12 Total heat gain (By orientation)	21.9	21.8	22.0	22.2	22.6	22.0	21.9	21.8
	3.13 Maximum – minimum total heat gain (Item 3.12) across orientations =	0.8 kBtuh Variation is ≤ 6 kBtuh							

Heating	3.14 Total heat loss (Not by orientation)	22.8							
---------	---	------	--	--	--	--	--	--	--



ENERGY STAR Single-Family New Homes National HVAC Design Report, Version 3 / 3.1 / 3.2 (Rev. 12)

4. Heating & Cooling Equipment Selection										Designer Verified	
4.1 Equipment selected per ACCA Manual S (see Footnote 25 & 26).										☐	
Air Conditioner / Heat Pump (Complete if air conditioner or heat pump will be installed; otherwise check "N/A")										☐ N/A	
4.2 Equipment type: ☐ Cooling-only air conditioner or ☒ Cooling & heating heat pump										-	
4.3 Condenser manufacturer & model: Trane 4TWR5024H1										-	
4.4 Evaporator / fan coil manufacturer & model: Trane TEM6A0C30M31++TDR										-	
4.5 AHRI reference #: 206661454										-	
4.6 AHRI listed efficiency: 12 / 14.3 EER / SEER Air-source heat pump: 7.8 HSPF Ground-source heat pump: COP										-	
4.7 Evaporator fan type: ☐ PSC ☐ ECM / ICM ☒ Other:										-	
4.8 Compressor type: ☒ Single-speed ☐ Two-speed ☐ Variable-speed										-	
4.9 Latent capacity at design conditions, from OEM expanded performance data: 4.3 kBtuh										-	
4.10 Sensible capacity at design conditions, from OEM expanded performance data: 18.1 kBtuh										-	
4.11 Total capacity at design conditions, from OEM expanded performance data: 22.4 kBtuh										-	
4.12 Air-source heat pump capacity: At 17°F: 14.4 kBtuh At 47°F: 22.6 kBtuh ☐ N/A										-	
4.13 Cooling sizing % = Total capacity (Item 4.11) divided by maximum total heat gain (Item 3.12): 99 %										-	
4.14 Complete this item if Condition B Climate will be used to select sizing limit in Item 4.15. Otherwise, check "N/A": ☒ N/A										-	
4.14.1 Load sensible heat ratio = Max. sensible heat gain (Item 3.10) / Max. total heat gain (Item 3.12) = 83%										-	
4.14.2 HDD / CDD ratio (Visit energystar.gov/hvacdesigntemps to determine this value for the design location): 0.2										-	
4.15 Check box of applicable cooling sizing limit from chart below:										-	
Equipment Type (Per Item 4.2) & Climate Condition (Per Item 4.14)		Compressor Type (Per Item 4.8)									
		Single-Speed		Two-Speed		Variable-Speed					
For Cooling-Only Equipment or For Cooling Mode of Heat Pump in Condition A Climate		☒ Recommended: 90 – 115% Allowed: 90 – 130%		☐ Recommended: 90 – 120% Allowed: 90 – 140%		☐ Recommended: 90 – 130% Allowed: 90 – 160%					
For Cooling Mode of Heat Pump in Condition B Climate		☐ 90% - 100%, plus 15 kBtuh		☐ 90% - 100%, plus 15 kBtuh		☐ 90% - 100%, plus 15 kBtuh					
4.16 Cooling sizing % (4.13) is within cooling sizing limit (4.15) ☒											
Furnace (Complete if furnace will be installed; otherwise check "N/A") ☒ N/A											
4.17 Furnace manufacturer & model:										-	
4.18 Listed efficiency: AFUE										-	
4.19 Total capacity: kBtuh										-	
4.20 Heating sizing % = Total capacity (Item 4.19) divided by total heat loss (Item 3.14): 0%										-	
4.21 Check box of applicable heating sizing limit from chart below:										-	
When Used for Heating Only					When Paired With Cooling						
☐ 100 - 140%					☐ Recommended: 100 – 140% Allowed: 100 – 400%						
4.22 Heating sizing % (4.20) is within heating sizing limit (4.21) ☐											
5. Duct Design (Complete if heating or cooling equipment will be installed with ducts; otherwise check "N/A") ☐ N/A											
5.1 Duct system designed for the equipment selected in Section 4, per ACCA Manual D ☒											
5.2 Design HVAC fan airflow: Cooling mode 700 CFM Heating mode 700 CFM										-	
5.3 Design HVAC fan speed setting (e.g., low, medium, high): Cooling mode Medium Heating mode Medium										-	
5.4 Design total external static pressure (corresponding to the mode with the higher airflow in Item 5.2): 0.5 IWC										-	
5.5 Room-by-room design airflows documented below (which must sum to the mode with the higher airflow in Item 5.2)										-	
Room Name		Design Airflow (CFM)		Room Name		Design Airflow (CFM)		Room Name		Design Airflow (CFM)	
1	AH	0		12	utility	29		23			
2	bath	12		13	wic	23		24			
3	br2	37		14				25			
4	br3	78		15				26			
5	br4	41		16				27			
6	dining	70		17				28			
7	foyer	41		18				29			
8	great	182		19				30			
9	kitchen	77		20				31			
10	mbath	24		21				32			
11	mbed	86		22				Total for all rooms			700



ENERGY STAR Single-Family New Homes, All Versions (Rev. 11)
ENERGY STAR Multifamily New Construction, All Versions (Rev. 02)
National HVAC Design Supplement to Std. 310 for Dwellings & Units

1. Design Basis									
1.1 Design description (optional):									
1.2 Designer company:		DL Williams Heating & Cooling LLC		Designer name:		Derrick Williams		Date: Aug/14/2024	
2. Dwelling Unit Mechanical Ventilation System Design ("Vent System") Inlets in Return Duct								Verified	N/A
Airflow:									
2.1 Ventilation airflow design rate & run-time for each Vent System meets ASHRAE 62.2-2010 or later edition.								☐	
2.2 Access point is specified for Rater to measure ventilation airflow rate and inspect any motorized / shutoff dampers.								☐	
System Controls:									
2.3 Specified controls for each Vent System allow it to operate automatically, without occupant intervention.								☐	
2.4 Specified controls for each Vent System include a readily-accessible override & a label has also been specified if its function is not obvious (e.g., a label is required for a toggle wall switch, but not for a switch that's on the vent. equip.).								☐	
2.5 For any outdoor air inlet designed to connect to a ducted return of the HVAC system, specified controls automatically restrict airflow using a motorized damper during ventilation off-cycle and occupant override.								☐	☐
Sound: 2.6 Specified fan of each Vent System is rated ≤ 3 sones if intermittent and ≤ 1 sone if continuous, or exempted.								☐	
Efficiency: (Complete if Vent System controller operates HVAC fan or Vent System uses bath fans; otherwise, check "N/A")								☐	
2.7 If Vent System controller operates the HVAC fan, then HVAC fan operation is intermittent and either fan type in HVAC design report is ECM or controls will reduce the run-time by accounting for HVAC system heating or cooling hours.								☐	☐
2.8 If bathroom fans are specified as part of any Vent System, then they are ENERGY STAR certified.								☐	☐
2.9 MFNC Only: If central exhaust fans are specified as part of the Vent System, then if ≤ 1 HP, they are direct-drive, ECM, with variable speed controllers; and if > 1 HP, they are specified with NEMA Premium™ Motors or equivalent.								☐	☐
Air Inlet Location: (Complete this section if system has a specified air inlet location; otherwise check "N/A")								☐	
2.10 Inlet(s) pull ventilation air directly from outdoors and not from attic, crawlspace, garage, or adjacent dwelling unit.								☐	
2.11 Inlet(s) are ≥ 2 ft. above grade or roof deck; ≥ 10 ft. of stretched-string distance from known contamination sources (e.g., stack, vent, exhaust, vehicles) not exiting the roof, and ≥ 3 ft. from known sources exiting the roof.								☐	
2.12 Inlet(s) are provided with rodent / insect screen with ≤ 0.5 inch mesh.								☐	
3. Dwelling Unit Local Mechanical Exhaust Design									
3.1 System(s) are designed that mechanically exhaust air from each dwelling unit kitchen and bathroom directly to the outdoors or to ventilation risers and meet the requirements in Table 1.								☐	
Kitchens:	Runtime:	☒ Continuous	☐ Intermittent	Dwelling Units Served by Fan:		☒ Single Unit	☐ Multiple Units		
Bathrooms:	Runtime:	☒ Continuous	☐ Intermittent	Dwelling Units Served by Fan:		☒ Single Unit	☐ Multiple Units		
4. Heating Equipment, Cooling Equipment, & Equipment Controls Selection									
4.1 MFNC Only: If using Prescriptive Path, equipment serving dwelling units meet the efficiency levels specified in Exhibit X of the National Rater Field Checklist, have programmable thermostatic controls, & do not use electric resistance heating.								☐	☐
4.2 MFNC Only: Thermostatic controls for systems serving a dwelling unit are within the unit and not located on exterior walls. If more than one system provides heating or cooling to the same space, controls prevent simultaneous operation.								☐	☐
Air Conditioners & Heat Pumps		If none will be installed, check N/A ☐		1		2		3	
4.3 Unique name or ID for each system:				Entire House					
4.4 Maximum sensible and total heat gain load of zone served (kBtuh):				18.0 21.9					
4.5 Sensible, latent, & total cooling capacity at design conditions (kBtuh):				18.1 4.3 22.4					
4.6 If HP, heating capacity at 17°F and at 47°F (kBtuh):				14.4 22.6 N/A ☐		N/A ☐		N/A ☐	
4.7 Compressor speed type:				Single					
4.8 Cooling sizing % & applicable sizing limit key from Table 2:				102.1 C1					
4.9 If C2 chosen in Item 4.8, load sensible heat ratio & HDD / CDD ratio:				N/A ☒		N/A ☒		N/A ☒	
4.10 Affirm that cooling sizing % is within cooling sizing limit (4.8):				☒		☐		☐	
Furnaces		If none will be installed, check N/A ☒		1		2		3	
4.11 Unique name or ID for each system:				Entire House					
4.12 Total heat loss load of zone served (kBtuh):									
4.13 Total heating capacity (kBtuh):									
4.14 Heating sizing % & applicable sizing limit key from Table 3:									
4.15 Affirm that heating sizing % is within heating sizing limit (4.14):				☐		☐		☐	
5. Duct Design		5.1 All duct requirements in Table 4 have been included in the design, where applicable.						☐	☐

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1. Design Basis & Architectural Scope												
1.1 Design description (optional):												
1.2 Design company:			DL Williams Heating & Cooling LLC		Designer name:		Derrick Williams		Date:	Aug/14/2024		
1.3 Software name and version used to complete design:					Right-Suite® Universal 2024 24.0.02 RSU02245			N/A ☐				
For a Dwelling, Townhouse, or Dwelling / Sleeping Unit Within (i.e. duplex):												
1.4 Architectural plan name or address of property:												
1.5 Architectural options used in the design(3):												
1.6 Other architectural options that the design can be used with:(4)												
For a Dwelling / Sleeping Unit Not Within a Dwelling or Townhouse (e.g. condo, apartment):												
1.7 Unique ID for bldg. that the dwelling / sleeping unit is in:(5)												
1.8 Architectural plan used in design (e.g. dwelling unit model):												
1.9 Other architectural plans that the design can be used with:(6)												
1.10 Architectural options used in the design:(3)												
1.11 Other architectural options that the design can be used with:(4)												
1.12 Dwelling / sleeping unit location used in design:(7)												
2. Dwelling-Unit Mechanical Ventilation System Design												
Ventilation System Type & Control Location:				System 1		System 2		System 2				
2.1 Unique name or ID for each system:(8)												
2.2 Vent. equipment manufacturer & model #:(9)												
2.3 Specified system type:(10)				Balanced w/o Recovery								
2.4 Specified control location:(11)												
2.5 Ventilation zone name(s) served by system:(12)				Entire House								
Ventilation Zone Served by Ventilation System:				Zone 1		Zone 2		Zone 3				
2.6 Ventilation zone name:(12)				Entire House								
2.7 Design basis:(13)				Other								
2.8 Floor area (sq. ft.) and # bedrooms in vent. zone:				1648 0								
2.9 Ventilation design airflow rate (CFM):(14)												
2.10 Vent. runtime per cycle & cycle time (mins):				0 of every 0								
2.11 Time-averaged mechanical vent. rate (CFM):(15)												
3. Heat Gain & Heat Loss Loads												
3.1 Design basis for the loads:(16)			ACCA Manual J v8 2016			3.2 Load methodology:(17)		Room-by-Room				
3.3 Indoor design temperatures used in loads (°F):			Heating Season:			68		Cooling Season:		75		
3.4 Outdoor design temperatures used in loads (°F):(18)			Heating Season:			33		Cooling Season:		92		
3.5 Outdoor design temperature location & data source:(19)			Alachua, FL			Data Source:		ASHRAE 2017				
Zone-Specific Inputs & Loads at Design Conditions				Zone 1		Zone 2		Zone 3				
3.6 Name of heated or cooled zone:(20)				Entire House								
3.7 Occupants & total occup. internal gains (Btuh):(21)				7 1610								
3.8 Total non-occupant internal gains (Btuh):				2600								
3.9 Conditioned floor area (sq. ft.):(22)				1648								
3.10 Window area (sq. ft.):(23)				142								
3.11 Predominant window SHGC:(24)				0.31								
3.12 Predominant insulation nominal R-value:(24,25)				Wall: 13.0 Ceiling:30.0		Wall: Ceiling:		Wall: Ceiling:				
3.13 Infiltration rate (Qualitative or ACH50):(26)				Average								
3.14 Time-averaged mechanical vent. rate (CFM):				0								
3.15 Heat gain (kBtuh):(27)				Sensible	Latent	Total	Sensible	Latent	Total	Sensible	Latent	Total
				N	18.0	3.9	21.9					
				NE	17.9	3.9	21.8					
				E	18.0	3.9	22.0					
				SE	18.3	3.9	22.2					
				S	18.6	3.9	22.6					
				SW	18.1	3.9	22.0					
				W	18.0	3.9	21.9					
				NW	17.9	3.9	21.8					
3.16 Maximum – minimum total heat gain (kBtuh):(28)						0.8						
3.17 Total heat loss (kBtuh):				22.8								

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4. Heating & Cooling Equipment Selection		1		2		3	
Air Conditioners, Heat Pumps, & Other Cooling Equipment (If none of these will be installed, check "N/A")							N/A ☐
4.1 Unique name or ID for each system:	Entire House						
4.2 Zone that system serves (See Item 3.6):	Entire House						
4.3 Equipment type:(29)	HP						
4.4 Evaporator / fan coil mfr. & model #:(30)	TRAN TEM6A0C30M31						
4.5 Condenser mfr. & model #:(30)	TRAN 4TWR5024H1 N/A ☐		N/A ☒		N/A ☒		
4.6 AHRI ref. #, or check box for alt. OEM doc.:(31)	206661454 OEM ☐		OEM ☒		OEM ☒		
4.7 If AC / HP, rated cooling efficiency:(32)	14.3 SEER2 N/A ☐		N/A ☒		N/A ☒		
4.8 If HP, rated heating efficiency:(33)	7.8 HSPF2 N/A ☐		N/A ☒		N/A ☒		
4.9 If HP, ratio of max. to min. rated capacity:	1.6 N/A ☐		N/A ☒		N/A ☒		
4.10 If AC / HP, blower fan motor & speed type:(34)	Other Single N/A ☐		N/A ☒		N/A ☒		
4.11 If AC / HP, compressor speed type:(35)	Single N/A ☐		N/A ☒		N/A ☒		
4.12 If AC / HP, meter device type:(36)	N/A ☐		N/A ☒		N/A ☒		
4.13 If TXV or EEV, OEM subcooling target (°F):(37)	0.0 N/A ☐		N/A ☒		N/A ☒		
4.14 Filter performance metric and rating:(38)	N/A ☒		N/A ☒		N/A ☒		
Furnaces, Boilers, & Other Heating Equipment (If none of these will be installed, check "N/A")							N/A ☒
4.15 Unique name or ID for each system:							
4.16 Zone that system serves (See Item 3.6):							
4.17 Equipment type:(39)							
4.18 Equipment manufacturer & model #:							
4.19 AHRI ref. #, or check box for alt. OEM doc.:(31)	OEM ☒		OEM ☒		OEM ☒		
4.20 If furnace or boiler, rated heating efficiency:	N/A ☒		N/A ☒		N/A ☒		
4.21 If furnace, blower fan motor & speed type:(34)	N/A ☒		N/A ☒		N/A ☒		
4.22 If furnace or boiler, heating capacity type:(40)	N/A ☒		N/A ☒		N/A ☒		
4.23 If furnace or boiler, venting type:(41)	N/A ☒		N/A ☒		N/A ☒		
4.24 Filter performance metric and rating:(38)	N/A ☒		N/A ☒		N/A ☒		
5. Duct Design (Complete if duct system will be installed; otherwise check "N/A")							N/A ☐
5.1 Unique name or ID for each system:	Entire House						
5.2 Zone that system serves (See Item 3.6):	Entire House						
Design Values for Cooling and Heating Mode	Cooling	Heating	Cooling	Heating	Cooling	Heating	
5.3 Design blower fan airflow (CFM):(42)	700	700					
5.4 Design blower fan speed setting:(43)	Medium	Medium					
5.5 Design external static pressure (IWC):(44)	0.5						
5.6 Room-by-room design airflows (CFM):	Room Name	Airflow	Room Name	Airflow	Room Name	Airflow	
Total Design Airflow:	[All rooms]	700	[All rooms]		[All rooms]		
1.	AH	0					
2.	bath	12					
3.	br2	37					
4.	br3	78					
5.	br4	41					
6.	dining	70					
7.	foyer	41					
8.	great	182					
9.	kitchen	77					
10.	mbath	24					
11.	mbed	86					
12.	utility	29					
13.	wic	23					
14.							
15.							
16.							
17.							
18.							
19.							
20.							

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5.6 Room-by-room design airflows (Continued):	Room Name	Airflow	Room Name	Airflow	Room Name	Airflow
21.						
22.						
23.						
24.						
25.						
26.						
27.						
28.						
29.						
30.						
31.						
32.						
33.						
34.						
35.						

Footnotes

- The purpose of this report is to document the design information required by ANSI / RESNET / ACCA 310 – a standard for grading the installation of HVAC systems - for a dwelling, townhouse, or dwelling / sleeping unit. The HVAC designer should complete one report per dwelling, townhouse, or dwelling / sleeping unit that encompasses all HVAC systems (e.g., for a dwelling with two zones, the HVAC system for each zone should be documented in the same report).
- Note that this report will be reviewed by users of the standard (e.g., a rater) to ensure that the design meets the tolerances defined in Section 4.3 of ANSI / RESNET / ACCA 310. The HVAC systems will not be eligible to earn recognition for proper installation unless all tolerances are met.
- If the HVAC design documented in this report incorporated one or more options (e.g., media room option), then list those options.
- If this same HVAC design could be used with other options (e.g., bonus room, balcony with sliding glass door), then list those option(s).
- For example, the name of the development or the building's address.
- If this same HVAC design could be used with other plans (e.g., other dwelling unit models) in the building, then list those plan(s).
- Because the loads are dependent on the dwelling / sleeping unit's location in the building, indicate whether the design is for the Top Floor, a Mid-Level-Floor, or the Bottom-Floor of the building; and either a Corner Unit or Middle Unit that is between two other units.
- For example, the unique ID might be "Pow der Bath Fan" or "Whole-House ERV".
- The ventilation equipment manufacturer and model number are required to be reported for dwelling / sleeping units not within a dwelling or townhouse; and are optional for dwellings, townhouses, and sleeping / dwelling units within (i.e., duplex).
- Ventilation system types are: Supply - a supply-only system, Exhaust - an exhaust-only system, Balanced w/o Recov. - a balanced system without energy or heat recovery, ERV - an energy recovery ventilator, HRV - a heat recovery ventilator, Vent. Dehumidifier - a ventilation system with integrated dehumidifier, or Other - any other system type.
- For example, common ventilation control locations include a bathroom or utility room.
- For example, the ventilation zone name may be "Whole Dw elling", "Upper Level", "Lower Level", or "Basement".
- Design basis options are: 62.2-2010 - ASHRAE 62.2-2010, 62.2-2013 - ASHRAE 62.2-2013, 62.2-2016 - ASHRAE 62.2-2016, 62.2-2019 - ASHRAE 62.2 - 2019, or Other - any other ventilation standard.
- Enter the airflow rate of the ventilation system when operating (e.g., a 50 CFM cycled bath fan has a ventilation airflow rate of 50 CFM).
- The following formula shall be used to determine the time-averaged ventilation airflow rate: Time Averaged Vent Rate = Vent Rate * Runtime Per Cycle / Cycle Time Where : • Time Averaged Vent Rate = The time - averaged ventilation airflow rate. • Vent Rate = The design's ventilation airflow rate reported in Item 2.9. • Runtime Per Cycle = The runtime per cycle reported in Item 2.10. • Cycle Time = The cycle time reported in Item 2.10.
- Design basis options for the heat gain and heat loss loads are: ACCA Manual J v8 2013 - ACCA Manual J v8, 2013 edition; ACCA Manual J v8 2016 - ACCA Manual J v8, 2016 edition; 2017 ASHRAE Fund. - 2017 ASHRAE Fundamentals; or Per AHJ - a design basis prescribed by the Authority Having Jurisdiction.
- Load methodology options are: Room-by-Room or Single Block. Note that for dwellings, townhouses, and dwelling / sleeping units within (i.e., duplex), the room - by - room load methodology must be used. See Fn. 2 for details.
- Note that the outdoor design temperatures must meet the limits defined in ANSI / RESNET / ACCA 310 Appendix A for the county or U.S. Territory where the project will be constructed. See Fn. 2 for details.
- The location shall include the city or weather station and the state. The data source options are: ACCA - ACCA Manual J, ASHRAE - ASHRAE Handbook of Fundamentals, or AHJ - design conditions prescribed by the Authority Having Jurisdiction.
- For example, the heated or cooled zone name may be "Upper Level", "Master Suite", or "Basement".

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21. To determine the number of occupants, calculate the number of bedrooms in the zone and add one. ANSI / RESNET / ACCA 310 defines a "bedroom" for one - and two - family dwellings and townhouses as a room or space 70 square feet of floor area or greater, with egress window or skylight, and doorway to the main body of the dwelling unit, that can be used for sleeping. For all other Dwelling Units, a room or space that can be used for sleeping. For all dwelling or sleeping units, the number of bedrooms shall not be less than one. ANSI / RESNET / ACCA 310 defines an "egress window" as an operable window that provides for a means of escape and access for rescue in the event of an emergency and with the following attributes : • Has a sill height of not more than 44 inches above the floor; and, • Has a minimum net clear opening of 5.7 sq.ft., opening height of 24 in., and opening width of 20 in.; and, • Is operational from the inside of the room without the use of keys, tools or special knowledge. The number of occupants must fall within the tolerance specified in ANSI / RESNET / ACCA 310. See Fn. 2 for details.
22. The difference between the Conditioned Floor Area (CFA) used in the design and the actual dwelling, townhouse, or dwelling / sleeping unit must fall within the tolerance specified in ANSI / RESNET / ACCA 310. See Fn. 2 for details. Be advised, the CFA will be evaluated using the definition in ANSI / RESNET / ACCA 310, which defines this value, in part, as the floor area of the Conditioned Space Volume within a building or dwelling unit, not including the floor area of attics, crawlspaces, and basements below air sealed and insulated floors.
23. The difference between the window area used in the design and the actual dwelling, townhouse, or dwelling / sleeping unit must fall within the tolerance specified in ANSI / RESNET / ACCA 310. See Fn. 2 for details. Be advised, the window area will be evaluated by calculating it using the on - site inspection protocol provided in Normative Appendix B of ANSI / RESNET / ICC 301, which instructs the user to measure the width and height of the rough opening for the window and round to the nearest inch, and then to use these measurements to calculate window area, rounding to the nearest tenth of a square foot. See <https://codes.iccsafe.org/content/chapter/16191/> for the complete protocol.
24. "Predominant" is defined as the SHGC or R-value used in the greatest amount of window, wall, or ceiling area in the zone.
25. If both cavity and continuous insulation are used, report the sum of the nominal R-value of the cavity and continuous insulation.
26. The infiltration rate shall be reported using a qualitative input (i.e., Tight, Semi-Tight, Average, Semi-Leaky, Leaky) or in units of ACH50.
27. Provide loads for the orientation(s) that the design is intended to be used in (e.g., N, S, E, W), where orientation is defined as the direction that the front door of the dwelling is facing. For example, if a site - specific design has been completed for a single project, only the loads for the single orientation of that project need to be provided.
28. If the heat gain has been provided for multiple orientations, then the difference between the max. and min. total heat gain across the orientations specified must be reported and fall within the tolerance specified in ANSI / RESNET / ACCA 310. See Fn. 2 for details.
29. Equipment type options are: AC - Air Conditioner, HP - Heat Pump, MNAC - Mini-Split Air Conditioner, MNHP - Mini-Split Heat Pump, MTAC - Multi - Split Air Conditioner, MTHP - Multi - Split Heat Pump, and Other - any other cooling equipment type.
30. For single-package systems or systems without a condenser (e.g., evaporative cooler), provide manufacturer and model number in Item 4.4 and select "N / A" for Item 4.5.
31. If an AHRI Reference Number is not available, OEM-provided documentation shall be collected with the rated efficiency of the equipment. If the equipment contains multiple components, the rated efficiency shall reflect the specific combination of indoor and outdoor components, along with confirmation from the OEM that the two components are designed to be used together.
32. For example, if the metric for the rated efficiency of the equipment is SEER, then its SEER rating shall be reported; if the metric is EER, then its EER rating shall be reported; if both SEER and EER, then both rated values shall be reported.
33. For example, if the metric for the rated efficiency of the equipment is HSPF, then its HSPF rating shall be reported; if the metric is COP, then its COP rating shall be reported; if both HSPF and COP, then both rated values shall be reported.
34. Blower fan motor type options are: PSC - Permanent Split Capacitor, ECM - Electronically Commutated Motor, or Other - any other motor type. For blower fan speed type, while equipment typically has multiple speed settings to select from during installation, this parameter is related to the number of operational speeds that the blower fan is capable of : Single - a system that operates at no more than one speed setting each for heating mode and cooling mode, Two - a system that can operate at no more than two speeds each for heating mode and cooling mode, Variable - a system that can operate at more than two speeds.
35. The compressor speed type is related to the number of operational speeds that the compressor is capable of: Single - a system that operates at no more than one speed setting each for heating mode and cooling mode, Two - a system that can operate at no more than two speeds each for heating mode and cooling mode, Variable - a system that can operate at more than two speeds.
36. Meter device type options are: Piston/Cap - piston / capillary tube, TXV - thermal expansion valve, or EEV - electronic expansion valve.
37. If the meter device type is TXV or EEV, then provide then the OEM-specified subcooling target at the service valve.
38. For example, MERV or FPR.
39. Equipment type options are: Furnace, Boiler, or Other - any other heating equipment type.
40. Heating capacity type options are: Single-Stage, Two-Stage, or Modulating.
41. Vent. type options are: Natural Draft - natural draft system, Mech. Draft - mechanical draft system, or Direct Vent - direct-vent appliance.
42. Provide design airflow in cubic feet per minute of air with a density of 0.075 pounds per cubic foot. Airflow at this air density is often referred to as Standard CFM (SCFM) and represents air at 68 °F, 50 % relative humidity, and at a barometric pressure of 29.92" Hg.
43. This is the OEM setting that corresponds with the design blower fan airflow. Common examples include low, medium-low, medium, medium - high, and high, but also may be defined in terms of dip - switch settings or other classifications