



Load Short Form

Entire House

DL Williams Heating & Cooling LLC

Job: 1
Date: Jul 25, 2024
By: DL Williams HEating and...
Plan: 1820

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: Office@DLWilliamsHeatingandCooling.com

Project Information

For: Preserve of Laurel Lake lot 140, Adams Homes
Lake City, FL 32055

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 (%)	30	50		
Moisture difference (gr/lb)	8	45		

HEATING EQUIPMENT

Make Trane
Trade TRANE
Model 4TWR5030H1
AHRI ref 9033590
Efficiency 9.5 HSPF2
Heating input
Heating output 27800 Btuh @ 47°F
Temperature rise 29 °F
Actual air flow 875 cfm
Air flow factor 0.032 cfm/Btuh
Static pressure 0.50 in H2O
Space thermostat
Capacity balance point = 33 °F

Backup:
Input = 7 kW, Output = 25253 Btuh, 100 AFUE

COOLING EQUIPMENT

Make Trane
Trade TRANE
Cond 4TWR5030H1
Coil TEM6A0B30H21
AHRI ref 9033590
Efficiency 12.5 EER2, 15.25 SEER2
Sensible cooling 20300 Btuh
Latent cooling 8700 Btuh
Total cooling 29000 Btuh
Actual air flow 875 cfm
Air flow factor 0.041 cfm/Btuh
Static pressure 0.50 in H2O
Load sensible heat ratio 0.84

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
kitchen	298	3643	3977	118	161
utility	42	629	762	20	31
mbath	118	1641	1094	53	44
wic	50	69	111	2	5
mbed	224	4609	2676	149	108
foyer	42	1671	918	54	37
bed4	156	4068	2312	132	94
dining	209	1792	1728	58	70
bed3	134	1785	1068	58	43
bath2	40	622	286	20	12
br2	137	3690	1885	120	76
hall	21	0	0	0	0
great	332	2766	4788	90	194
ah	9	0	0	0	0

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



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... Homes Preserve at Laurel lot 140 plan 1820.rup Calc = MJ8 Front Door faces: N

Entire House	1812	26986	21603	875	875
Other equip loads		0	0		
Equip. @ 0.97 RSM			20955		
Latent cooling			4080		
TOTALS	1812	26986	25035	875	875

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



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... Homes Preserve at Laurel lot 140 plan 1820.rup Calc = MJ8 Front Door faces: N



Building Analysis

Entire House

DL Williams Heating & Cooling LLC

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PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: Office@DLWilliamsHeatingandCooling.com

Project Information

For: Preserve of Laurel Lake lot 140, Adams Homes
Lake City, FL 32055

Design Conditions

Location:

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

Outdoor:

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

Heating

33
-
-
15.0

Cooling

92
20 (M)
76
7.5

Indoor:

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

Heating

68
35
30
8.4

Cooling

75
17
50
45.4

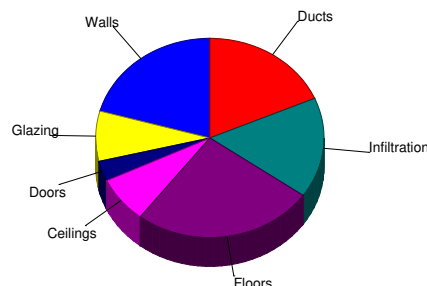
Infiltration:

Method
Construction quality
Fireplaces

Simplified
Average
0

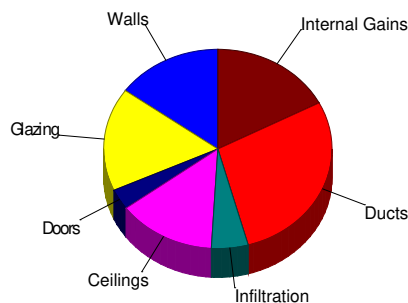
Heating

Component	Btuh/ft²	Btuh	% of load
Walls	3.2	5571	20.6
Glazing	10.5	2195	8.1
Doors	21.0	882	3.3
Ceilings	1.1	2029	7.5
Floors	3.8	6923	25.7
Infiltration	2.5	4392	16.3
Ducts		4994	18.5
Piping		0	0
Humidification		0	0
Ventilation		0	0
Adjustments		0	0
Total		26986	100.0



Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	1.9	3248	15.0
Glazing	17.3	3622	16.8
Doors	17.1	718	3.3
Ceilings	1.7	3015	14.0
Floors	0	0	0
Infiltration	0.6	1123	5.2
Ducts		6127	28.4
Ventilation		0	0
Internal gains		3750	17.4
Blower		0	0
Adjustments		0	0
Total		21603	100.0



Latent Cooling Load = 4080 Btuh

Overall U-value = 0.089 Btuh/ft²-°F, Window / Floor Area = 11.5 %

Data entries checked.



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Component Constructions

Entire House

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Project Information

For: Preserve of Laurel Lake lot 140, Adams Homes
Lake City, FL 32055

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 (%)		30	50
		Moisture difference (gr/lb)		8.4	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

	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	ne	565	0.091	13.0	3.18	1800	2.14	1208
	se	125	0.091	13.0	3.18	398	2.14	267
	sw	520	0.091	13.0	3.18	1656	2.14	1112
	nw	309	0.091	13.0	3.18	984	2.14	661
	all	1519	0.091	13.0	3.18	4838	2.14	3248
Partitions								
12C-0sw: Frm wall, stucco ext, r-13 cav ins, 2"x4" wood frm, 16" o.c. stud		230	0.091	13.0	3.18	733	0	0
Windows								
4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/4" thk; NFRC rated (SHGC=0.23); 50% blinds 45°, light; 50% outdoor insect screen; 1.6 ft overhang (5 ft window ht, 1 ft sep.); 6.67 ft head ht	ne	45	0.300	0	10.5	473	15.7	706
	se	30	0.300	0	10.5	315	13.7	410
	sw	60	0.300	0	10.5	630	13.7	820
	nw	30	0.300	0	10.5	315	15.7	471
	all	165	0.300	0	10.5	1733	14.6	2406
4B5-2fv: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/4" thk; NFRC rated (SHGC=0.23); 10 ft overhang (7 ft window ht, 1 ft sep.); 6.67 ft head ht	se	14	0.300	0	10.5	147	9.88	138
4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/4" thk; NFRC rated (SHGC=0.23); 50% blinds 45°, light; 50% outdoor insect screen; 6 ft overhang (5 ft window ht, 1 ft sep.); 6.67 ft head ht	nw	30	0.300	0	10.5	315	15.7	471
Doors								
11J0: Door, mtl fbrgl type	se	21	0.600	6.3	21.0	441	17.1	359
	nw	21	0.600	6.3	21.0	441	17.1	359
	all	42	0.600	6.3	21.0	882	17.1	718
Ceilings								
16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh		1812	0.032	30.0	1.12	2029	1.66	3015



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Floors

22A-tpl: Bg floor, light dry soil, on grade depth, carp 80% flr fnsh	200	0.989	0	34.6	6923	0	0
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Component Constructions

kitchen

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Lake City, FL 32055

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 (%)	30	50
Outdoor:			Moisture difference (gr/lb)	8.4	45.4
			Infiltration:		
Heating			Method	Simplified	
Cooling			Construction quality	Average	
			Fireplaces	0	
Dry bulb (°F)	33	92			
Daily range (°F)	-	20 (M)			
Wet bulb (°F)	-	76			
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, stucco ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud	sw	140	0.091	13.0	3.18	446	2.14	299
Partitions								
12C-0sw: Frm wall, stucco ext, r-13 cav ins, 2"x4" wood frm, 16" o.c. stud		130	0.091	13.0	3.18	414	0	0
Windows								
4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/4" thk; NFRC rated (SHGC=0.23); 50% blinds 45°, light; 50% outdoor insect screen; 1.6 ft overhang (5 ft window ht, 1 ft sep.); 6.67 ft head ht	sw	30	0.300	0	10.5	315	13.7	410
Doors								
(none)								
Ceilings								
16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh		298	0.032	30.0	1.12	334	1.66	496
Floors								
22A-tpl: Bg floor, light dry soil, on grade depth, carp 80% flr fnsh		30	0.989	0	34.6	1038	0	0



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Component Constructions

utility

DL Williams Heating & Cooling LLC

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Gainesville Regional AP, FL, US			Indoor temperature (°F)	68	75
Elevation: 164 ft			Design TD (°F)	35	17
Latitude: 30°N			Relative humidity (%)	30	50
Outdoor:			Moisture difference (gr/lb)	8.4	45.4
Heating	Cooling		Infiltration:		
Dry bulb (°F)	33	92	Method	Simplified	
Daily range (°F)	-	20 (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 (none)								
Partitions 12C-0sw: Frm wall, stucco ext, r-13 cav ins, 2"x4" wood frm, 16" o.c. stud								
		70	0.091	13.0	3.18	223	0	0
Windows (none)								
Doors (none)								
Ceilings 16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh								
		42	0.032	30.0	1.12	47	1.66	70
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

mbath
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Gainesville Regional AP, FL, US			Indoor temperature (°F)	68	75
Elevation: 164 ft			Design TD (°F)	35	17
Latitude: 30°N			Relative humidity (%)	30	50
Outdoor:			Moisture difference (gr/lb)	8.4	45.4
			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, stucco ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud	sw	105	0.091	13.0	3.18	334	2.14	225
Partitions (none)								
Windows								
4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/4" thk; NFRC rated (SHGC=0.23); 50% blinds 45°, light; 50% outdoor insect screen; 1.6 ft overhang (5 ft window ht, 1 ft sep.); 6.67 ft head ht	sw	15	0.300	0	10.5	158	13.7	205
Doors (none)								
Ceilings								
16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh		118	0.032	30.0	1.12	132	1.66	196
Floors								
22A-tpl: Bg floor, light dry soil, on grade depth, carp 80% flr fnsh		12	0.989	0	34.6	415	0	0



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Component Constructions

wic
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Elevation: 164 ft			Design TD (°F)	35	17
Latitude: 30°N			Relative humidity (%)	30	50
Outdoor:			Moisture difference (gr/lb)	8.4	45.4
Heating	Cooling		Infiltration:		
Dry bulb (°F)	33	92	Method	Simplified	
Daily range (°F)	-	20 (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 (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		50	0.032	30.0	1.12	56	1.66	83
Floors (none)								



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Component Constructions

mbed
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Elevation: 164 ft		Design TD (°F)		35	17
Latitude: 30°N		Relative humidity (%)		30	50
		Moisture difference (gr/lb)		8.4	45.4
Outdoor:	Heating	Cooling	Infiltration:		
Dry bulb (°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	ne	60	0.091	13.0	3.18	191	2.14	128
	sw	145	0.091	13.0	3.18	462	2.14	310
	nw	125	0.091	13.0	3.18	398	2.14	267
	all	330	0.091	13.0	3.19	1051	2.14	706
Partitions								
(none)								
Windows								
4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/4" thk; NFRC rated (SHGC=0.23); 50% blinds 45°, light; 50% outdoor insect screen; 1.6 ft overhang (5 ft window ht, 1 ft sep.); 6.67 ft head ht	sw	15	0.300	0	10.5	158	13.7	205
	nw	15	0.300	0	10.5	158	15.7	235
	all	30	0.300	0	10.5	315	14.7	440
Doors								
(none)								
Ceilings								
16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh		224	0.032	30.0	1.12	251	1.66	373
Floors								
22A-tpl: Bg floor, light dry soil, on grade depth, carp 80% flr fnsh		36	0.989	0	34.6	1246	0	0



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Component Constructions

foyer

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Gainesville Regional AP, FL, US			Indoor temperature (°F)	68	75
Elevation: 164 ft			Design TD (°F)	35	17
Latitude: 30°N			Relative humidity (%)	30	50
Outdoor:			Moisture difference (gr/lb)	8.4	45.4
			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 ft ²	U-value Btuh/ft ² -°F	Insul R ft ² -°F/Btuh	Htg HTM Btuh/ft ²	Loss Btuh	Clg HTM Btuh/ft ²	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	se	35	0.091	13.0	3.18	111	2.14	75
Partitions								
12C-0sw: Frm wall, stucco ext, r-13 cav ins, 2"x4" wood frm, 16" o.c. stud		30	0.091	13.0	3.18	96	0	0
Windows								
4B5-2fv: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/4" thk; NFRC rated (SHGC=0.23); 10 ft overhang (7 ft window ht, 1 ft sep.); 6.67 ft head ht	se	14	0.300	0	10.5	147	9.88	138
Doors								
11J0: Door, mtl fbrgl type	se	21	0.600	6.3	21.0	441	17.1	359
Ceilings								
16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh		42	0.032	30.0	1.12	47	1.66	70
Floors								
22A-tp1: Bg floor, light dry soil, on grade depth, carp 80% flr fnsh		10	0.989	0	34.6	346	0	0



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Component Constructions

bed4
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Lake City, FL 32055

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 (%)	30	50
Outdoor:			Moisture difference (gr/lb)	8.4	45.4
Heating	Cooling		Infiltration:		
Dry bulb (°F)	33	92	Method	Simplified	
Daily range (°F)	-	20 (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, stucco ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud	ne	130	0.091	13.0	3.18	414	2.14	278
	se	90	0.091	13.0	3.18	287	2.14	192
	sw	70	0.091	13.0	3.18	223	2.14	150
	all	290	0.091	13.0	3.18	924	2.14	620
Partitions (none)								
Windows								
4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/4" thk; NFRC rated (SHGC=0.23); 50% blinds 45°, light; 50% outdoor insect screen; 1.6 ft overhang (5 ft window ht, 1 ft sep.); 6.67 ft head ht	se	30	0.300	0	10.5	315	13.7	410
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	1.12	175	1.66	260
Floors								
22A-tpl: Bg floor, light dry soil, on grade depth, carp 80% flr fnsh		32	0.989	0	34.6	1108	0	0



Component Constructions

dining

DL Williams Heating & Cooling LLC

Job: 1
Date: Jul 25, 2024
By: DL Williams HEating and...
Plan: 1820

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: Office@DLWilliamsHeatingandCooling.com

Project Information

For: Preserve of Laurel Lake lot 140, Adams Homes
Lake City, FL 32055

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 (%)	30	50
Outdoor:			Moisture difference (gr/lb)	8.4	45.4
			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, stucco ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud	ne	80	0.091	13.0	3.18	255	2.14	171
Partitions								
(none)								
Windows								
4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/4" thk; NFRC rated (SHGC=0.23); 50% blinds 45°, light; 50% outdoor insect screen; 1.6 ft overhang (5 ft window ht, 1 ft sep.); 6.67 ft head ht	ne	30	0.300	0	10.5	315	15.7	471
Doors								
(none)								
Ceilings								
16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh		209	0.032	30.0	1.12	234	1.66	348
Floors								
22A-tpl: Bg floor, light dry soil, on grade depth, carp 80% flr fnsh		11	0.989	0	34.6	381	0	0



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Component Constructions

bed3
DL Williams Heating & Cooling LLC

Job: 1
Date: Jul 25, 2024
By: DL Williams HEating and...
Plan: 1820

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: Office@DLWilliamsHeatingandCooling.com

Project Information

For: Preserve of Laurel Lake lot 140, Adams Homes
Lake City, FL 32055

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 (%)	30	50
			Moisture difference (gr/lb)	8.4	45.4
Outdoor:	Heating	Cooling	Infiltration:		
Drybulb (°F)	33	92	Method	Simplified	
Daily range (°F)	-	20 (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, stucco 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	3.18	366	2.14	246
Partitions (none)								
Windows								
4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/4" thk; NFRC rated (SHGC=0.23); 50% blinds 45°, light; 50% outdoor insect screen; 1.6 ft overhang (5 ft window ht, 1 ft sep.); 6.67 ft head ht	ne	15	0.300	0	10.5	158	15.7	235
Doors (none)								
Ceilings								
16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh		134	0.032	30.0	1.12	150	1.66	223
Floors								
22A-tp1: Bg floor, light dry soil, on grade depth, carp 80% flr fnsh		13	0.989	0	34.6	450	0	0



Component Constructions

bath2

DL Williams Heating & Cooling LLC

Job: 1
Date: Jul 25, 2024
By: DL Williams HEating and...
Plan: 1820

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: Office@DLWilliamsHeatingandCooling.com

Project Information

For: Preserve of Laurel Lake lot 140, Adams Homes
Lake City, FL 32055

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 (%)	30	50
Outdoor:			Moisture difference (gr/lb)	8.4	45.4
			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, stucco ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud	ne	50	0.091	13.0	3.18	159	2.14	107
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		40	0.032	30.0	1.12	45	1.66	67
Floors								
22A-tpl: Bg floor, light dry soil, on grade depth, carp 80% flr fnsh		5	0.989	0	34.6	173	0	0



Component Constructions

br2

DL Williams Heating & Cooling LLC

Job: 1
Date: Jul 25, 2024
By: DL Williams HEating and...
Plan: 1820

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: Office@DLWilliamsHeatingandCooling.com

Project Information

For: Preserve of Laurel Lake lot 140, Adams Homes
Lake City, FL 32055

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 (%)	30	50
Outdoor:			Moisture difference (gr/lb)	8.4	45.4
Heating	Cooling		Infiltration:		
Dry bulb (°F)	33	92	Method	Simplified	
Daily range (°F)	-	20 (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, stucco ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud	ne	130	0.091	13.0	3.18	414	2.14	278
	sw	60	0.091	13.0	3.18	191	2.14	128
	nw	95	0.091	13.0	3.18	303	2.14	203
	all	285	0.091	13.0	3.18	908	2.14	609
Partitions (none)								
Windows								
4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/4" thk; NFRC rated (SHGC=0.23); 50% blinds 45°, light; 50% outdoor insect screen; 1.6 ft overhang (5 ft window ht, 1 ft sep.); 6.67 ft head ht	nw	15	0.300	0	10.5	158	15.7	235
Doors (none)								
Ceilings								
16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh		137	0.032	30.0	1.12	153	1.66	228
Floors								
22A-tp1: Bg floor, light dry soil, on grade depth, carp 80% flr fnsh		30	0.989	0	34.6	1038	0	0



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Component Constructions

hall

DL Williams Heating & Cooling LLC

Job: 1
Date: Jul 25, 2024
By: DL Williams HEating and...
Plan: 1820

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: Office@DLWilliamsHeatingandCooling.com

Project Information

For: Preserve of Laurel Lake lot 140, Adams Homes
Lake City, FL 32055

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 (%)	30	50
Outdoor:			Moisture difference (gr/lb)	8.4	45.4
Heating	Cooling		Infiltration:		
Dry bulb (°F)	33	92	Method	Simplified	
Daily range (°F)	-	20 (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 (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		21	0.032	30.0	1.12	24	1.66	35
Floors (none)								



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Component Constructions

great
DL Williams Heating & Cooling LLC

Job: 1
Date: Jul 25, 2024
By: DL Williams HEating and...
Plan: 1820

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: Office@DLWilliamsHeatingandCooling.com

Project Information

For: Preserve of Laurel Lake lot 140, Adams Homes
Lake City, FL 32055

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 (%)	30	50
			Moisture difference (gr/lb)	8.4	45.4
Outdoor:	Heating	Cooling	Infiltration:		
Dry bulb (°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

	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	nw	89	0.091	13.0	3.18	283	2.14	190
Partitions (none)								
Windows								
4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/4" thk; NFRC rated (SHGC=0.23); 50% blinds 45°, light; 50% outdoor insect screen; 6 ft overhang (5 ft window ht, 1 ft sep.); 6.67 ft head ht	nw	30	0.300	0	10.5	315	15.7	471
Doors								
11J0: Door, mtl fbrgl type	nw	21	0.600	6.3	21.0	441	17.1	359
Ceilings								
16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh		332	0.032	30.0	1.12	372	1.66	552
Floors								
22A-tpl: Bg floor, light dry soil, on grade depth, carp 80% flr fnsh		14	0.989	0	34.6	485	0	0



Component Constructions

ah
DL Williams Heating & Cooling LLC

Job: 1
Date: Jul 25, 2024
By: DL Williams HEating and...
Plan: 1820

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: Office@DLWilliamsHeatingandCooling.com

Project Information

For: Preserve of Laurel Lake lot 140, Adams Homes
Lake City, FL 32055

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 (%)	30	50
Outdoor:			Moisture difference (gr/lb)	8.4	45.4
Heating	Cooling		Infiltration:		
Dry bulb (°F)	33	92	Method	Simplified	
Daily range (°F)	-	20 (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 (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		9	0.032	30.0	1.12	10	1.66	15
Floors (none)								



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... Homes Preserve at Laurel lot 140 plan 1820.rup Calc = MJ8 Front Door faces: N

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Project Summary

Entire House

DL Williams Heating & Cooling LLC

Job: 1
Date: Jul 25, 2024
By: DL Williams HEating and...
Plan: 1820

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: Office@DLWilliamsHeatingandCooling.com

Project Information

For: Preserve of Laurel Lake lot 140, Adams Homes
Lake City, FL 32055

Notes:

Design Information

Weather: Gainesville Regional AP, FL, US

Winter Design Conditions

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

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

Heating Summary

Structure	21992 Btuh
Ducts (R-6.0)	4994 Btuh
Central vent (0 cfm)	0 Btuh
(none)	
Humidification	0 Btuh
Piping	0 Btuh
Equipment load	26986 Btuh

Sensible Cooling Equipment Load Sizing

Structure	15476 Btuh
Ducts (R-6.0)	6127 Btuh
Central vent (0 cfm)	0 Btuh
(none)	
Blower	0 Btuh
Use manufacturer's data	n
Rate/swing multiplier	0.97
Equipment sensible load	20955 Btuh

Infiltration

Method	Simplified
Construction quality	Average
Fireplaces	0

Latent Cooling Equipment Load Sizing

Structure	2855 Btuh
Ducts	1225 Btuh
Central vent (0 cfm)	0 Btuh
(none)	
Equipment latent load	4080 Btuh

	Heating	Cooling
Area (ft ²)	1812	1812
Volume (ft ³)	18120	18120
Air changes/hour	0.38	0.20
Equiv. AVF (cfm)	115	60

Equipment Total Load (Sen+Lat)	25035 Btuh
Req. total capacity at 0.70 SHR	2.5 ton

Heating Equipment Summary

Make	Trane
Trade	TRANE
Model	4TWR5030H1
AHRI ref	9033590
Efficiency	9.5 HSPF2
Heating input	
Heating output	27800 Btuh @ 47°F
Temperature rise	29 °F
Actual air flow	875 cfm
Air flow factor	0.032 cfm/Btuh
Static pressure	0.50 in H2O
Space thermostat	
Capacity balance point = 33 °F	
Backup:	
Input = 7 kW, Output = 25253 Btuh, 100 AFUE	

Cooling Equipment Summary

Make	Trane
Trade	TRANE
Cond	4TWR5030H1
Coil	TEM6A0B30H21
AHRI ref	9033590
Efficiency	12.5 EER2, 15.25 SEER2
Sensible cooling	20300 Btuh
Latent cooling	8700 Btuh
Total cooling	29000 Btuh
Actual air flow	875 cfm
Air flow factor	0.041 cfm/Btuh
Static pressure	0.50 in H2O
Load sensible heat ratio	0.84

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



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... Homes Preserve at Laurel lot 140 plan 1820.rup Calc = MJ8 Front Door faces: N

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Page 1



AED Assessment

Entire House

DL Williams Heating & Cooling LLC

Job: 1
Date: Jul 25, 2024
By: DL Williams HEating and...
Plan: 1820

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: Office@DLWilliamsHeatingandCooling.com

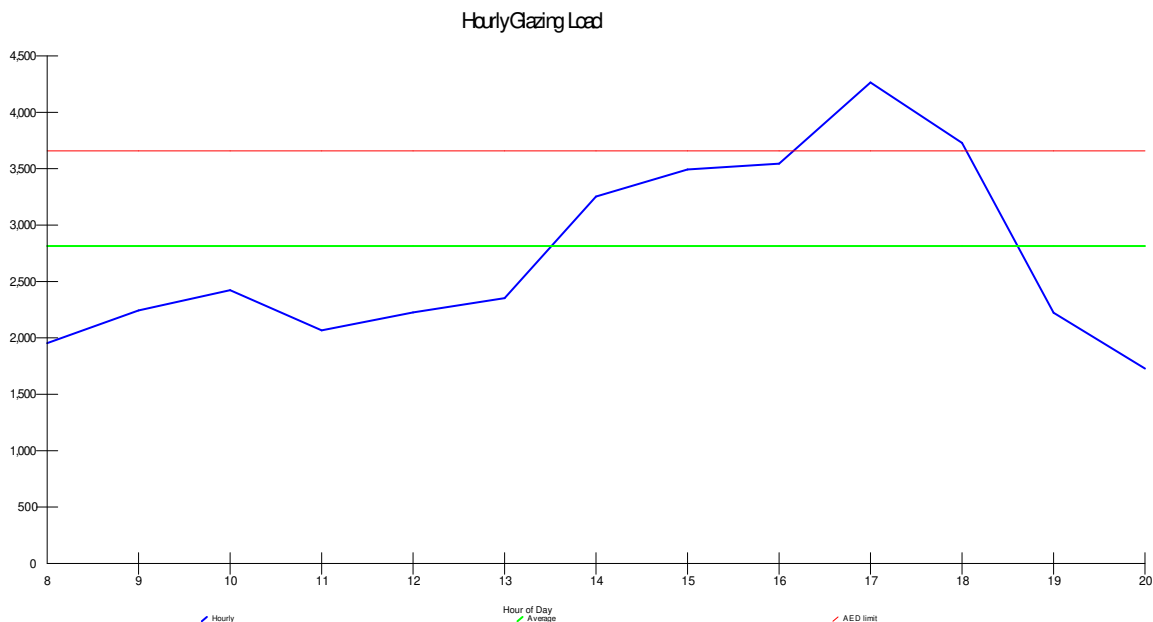
Project Information

For: Preserve of Laurel Lake lot 140, Adams Homes
Lake City, FL 32055

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 (%)		30	50
Outdoor:		Heating	Cooling	Moisture difference (gr/lb)	
Drybulb (°F)		33	92	8.4	45.4
Daily range (°F)		-	20 (M)		
Wet bulb (°F)		-	76		
Wind speed (mph)		15.0	7.5		
Infiltration:					

Test for Adequate Exposure Diversity



Maximum hourly glazing load exceeds average by 51.5%.

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

AED excursion: 606 Btuh (PFG - 1.3*AFG)



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

Job: 1
Date: Jul 25, 2024
By: DL Williams HEating and co...
Plan: 1820

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: Office@DLWilliamsHeatingandCooling.com

1	Room name					Entire House				kitchen				
2	Exposed wall					200.0 ft				30.0 ft				
3	Room height					10.0 ft				10.0 ft				
4	Room dimensions					1812.0 ft²				1.0 x 298.0 ft				
5	Room area					1812.0 ft²				298.0 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	3.18	2.14	610	565	1800	1208	0	0	0	0
.	G	4A5-2ov	0.300	ne	10.50	15.69	45	0	473	706	0	0	0	0
.	W	12C-0sw	0.091	se	3.18	2.14	190	125	398	267	0	0	0	0
.	G	4A5-2ov	0.300	se	10.50	13.66	30	10	315	410	0	0	0	0
11	G	4B5-2fv	0.300	se	10.50	9.88	14	14	147	138	0	0	0	0
.	D	11J0	0.600	se	21.00	17.10	21	21	441	359	0	0	0	0
.	W	12C-0sw	0.091	sw	3.18	2.14	580	520	1656	1112	170	140	446	299
.	G	4A5-2ov	0.300	sw	10.50	13.66	60	19	630	820	30	10	315	410
.	W	12C-0sw	0.091	nw	3.18	2.14	390	309	984	661	0	0	0	0
.	G	4A5-2ov	0.300	nw	10.50	15.69	30	0	315	471	0	0	0	0
.	G	4A5-2ov	0.300	nw	10.50	15.69	30	0	315	471	0	0	0	0
.	D	11J0	0.600	nw	21.00	17.10	21	21	441	359	0	0	0	0
P		12C-0sw	0.091	-	3.18	0.00	230	230	733	0	130	130	414	0
C		16B-30ad	0.032	-	1.12	1.66	1812	1812	2029	3015	298	298	334	496
F		22A-tpl	0.989	-	34.62	0.00	1812	200	6923	0	298	30	1038	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: Jul 25, 2024
By: DL Williams HEating and co...
Plan: 1820

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: Office@DLWilliamsHeatingandCooling.com

1	Room name					utility 7.0 ft				mbath 12.0 ft			
2	Exposed wall					10.0 ft				10.0 ft			
3	Room height					7.0				1.0			
4	Room dimensions					42.0 ft ²				118.0 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	3.18	2.14	0	0	0	0	0	0	0
	G	4A5-2ov	0.300	ne	10.50	15.69	0	0	0	0	0	0	0
	W	12C-0sw	0.091	se	3.18	2.14	0	0	0	0	0	0	0
	G	4A5-2ov	0.300	se	10.50	13.66	0	0	0	0	0	0	0
11	G	4B5-2fv	0.300	se	10.50	9.88	0	0	0	0	0	0	0
	D	11J0	0.600	se	21.00	17.10	0	0	0	0	0	0	0
	W	12C-0sw	0.091	sw	3.18	2.14	0	0	0	120	105	334	225
	G	4A5-2ov	0.300	sw	10.50	13.66	0	0	0	15	5	158	205
	W	12C-0sw	0.091	nw	3.18	2.14	0	0	0	0	0	0	0
	G	4A5-2ov	0.300	nw	10.50	15.69	0	0	0	0	0	0	0
	G	4A5-2ov	0.300	nw	10.50	15.69	0	0	0	0	0	0	0
	D	11J0	0.600	nw	21.00	17.10	0	0	0	0	0	0	0
	P	12C-0sw	0.091	-	3.18	0.00	70	70	223	0	0	0	0
	C	16B-30ad	0.032	-	1.12	1.66	42	42	47	70	118	132	196
	F	22A-tpl	0.989	-	34.62	0.00	42	7	242	0	118	415	0
6	c) AED excursion								-24				82
	Envelope loss/gain							512	46			1039	707
12	a) Infiltration							0	0			298	76
	b) Room ventilation							0	0			0	0
13	Internal gains:		Occupants @	230		0			0	0			0
			Appliances/other						500				0
	Subtotal (lines 6 to 13)							512	546			1337	783
	Less external load							0	0			0	0
	Less transfer							0	0			0	0
	Redistribution							0	0			0	0
14	Subtotal							512	546			1337	783
15	Duct loads					23%	40%	116	216	23%	40%	304	310
	Total room load							629	762			1641	1094
	Air required (cfm)							20	31			53	44

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: Jul 25, 2024
By: DL Williams HEating and co...
Plan: 1820

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: Office@DLWilliamsHeatingandCooling.com

1	Room name					wic 0 ft					mbed 36.0 ft				
2	Exposed wall					10.0 ft					10.0 ft				
3	Room height					1.0					14.0				
4	Room dimensions					50.0 ft					224.0 ft				
5	Room area					50.0 ft²					224.0 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	3.18	2.14	0	0	0	0	60	60	191	128	
.	G	4A5-2ov	0.300	ne	10.50	15.69	0	0	0	0	0	0	0	0	
.	W	12C-0sw	0.091	se	3.18	2.14	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.300	se	10.50	13.66	0	0	0	0	0	0	0	0	
11	G	4B5-2fv	0.300	se	10.50	9.88	0	0	0	0	0	0	0	0	
.	D	11J0	0.600	se	21.00	17.10	0	0	0	0	0	0	0	0	
.	W	12C-0sw	0.091	sw	3.18	2.14	0	0	0	0	160	145	462	310	
.	G	4A5-2ov	0.300	sw	10.50	13.66	0	0	0	0	15	5	158	205	
.	W	12C-0sw	0.091	nw	3.18	2.14	0	0	0	0	140	125	398	267	
.	G	4A5-2ov	0.300	nw	10.50	15.69	0	0	0	0	15	0	158	235	
.	G	4A5-2ov	0.300	nw	10.50	15.69	0	0	0	0	0	0	0	0	
.	D	11J0	0.600	nw	21.00	17.10	0	0	0	0	0	0	0	0	
.	P	12C-0sw	0.091	-	3.18	0.00	0	0	0	0	0	0	0	0	
.	C	16B-30ad	0.032	-	1.12	1.66	50	50	56	83	224	224	251	373	
.	F	22A-tpl	0.989	-	34.62	0.00	50	0	0	0	224	36	1246	0	
						</									

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



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... Homes Preserve at Laurel lot 140 plan 1820.rup Calc = MJ8 Front Door faces: N



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

Job: 1
Date: Jul 25, 2024
By: DL Williams HEating and co...
Plan: 1820

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: Office@DLWilliamsHeatingandCooling.com

1	Room name					foyer					bed4				
2	Exposed wall					10.0 ft					32.0 ft				
3	Room height					10.0 ft					10.0 ft				
4	Room dimensions					7.0 x 6.0 ft					12.0 x 13.0 ft				
5	Room area					42.0 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	3.18	2.14	0	0	0	0	130	130	414	278	
.	G	4A5-2ov	0.300	ne	10.50	15.69	0	0	0	0	0	0	0	0	
.	W	12C-0sw	0.091	se	3.18	2.14	70	35	111	75	120	90	287	192	
.	G	4A5-2ov	0.300	se	10.50	13.66	0	0	0	0	30	10	315	410	
11	G	4B5-2fv	0.300	se	10.50	9.88	14	14	147	138	0	0	0	0	
.	D	11J0	0.600	se	21.00	17.10	21	21	441	359	0	0	0	0	
.	W	12C-0sw	0.091	sw	3.18	2.14	0	0	0	0	70	70	223	150	
.	G	4A5-2ov	0.300	sw	10.50	13.66	0	0	0	0	0	0	0	0	
.	W	12C-0sw	0.091	nw	3.18	2.14	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.300	nw	10.50	15.69	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.300	nw	10.50	15.69	0	0	0	0	0	0	0	0	
.	D	11J0	0.600	nw	21.00	17.10	0	0	0	0	0	0	0	0	
P	12C-0sw	0.091	-	-	3.18	0.00	30	30	96	0	0	0	0	0	
C	16B-30ad	0.032	-	-	1.12	1.66	42	42	47	70	156	156	175	260	
F	22A-tpl	0.989	-	-	34.62	0.00	42	10	346	0	156	32	1108	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: Jul 25, 2024
By: DL Williams HEating and co...
Plan: 1820

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: Office@DLWilliamsHeatingandCooling.com

1	Room name					dining					bed3				
2	Exposed wall					11.0 ft					13.0 ft				
3	Room height					10.0 ft					10.0 ft				
4	Room dimensions					19.0 x 11.0 ft					1.0 x 13.0 ft				
5	Room area					209.0 ft²					134.0 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	3.18	2.14	110	80	255	171	130	115	366	246	
.	G	4A5-2ov	0.300	ne	10.50	15.69	30	0	315	471	15	0	158	235	
.	W	12C-0sw	0.091	se	3.18	2.14	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.300	se	10.50	13.66	0	0	0	0	0	0	0	0	
11	G	4B5-2fv	0.300	se	10.50	9.88	0	0	0	0	0	0	0	0	
.	D	11J0	0.600	se	21.00	17.10	0	0	0	0	0	0	0	0	
.	W	12C-0sw	0.091	sw	3.18	2.14	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.300	sw	10.50	13.66	0	0	0	0	0	0	0	0	
.	W	12C-0sw	0.091	nw	3.18	2.14	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.300	nw	10.50	15.69	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.300	nw	10.50	15.69	0	0	0	0	0	0	0	0	
.	D	11J0	0.600	nw	21.00	17.10	0	0	0	0	0	0	0	0	
.	P	12C-0sw	0.091	-	3.18	0.00	0	0	0	0	0	0	0	0	
.	C	16B-30ad	0.032	-	1.12	1.66	209	209	234	348	134	134	150	223	
.	F	22A-tpl	0.989	-	34.62	0.00	209	11	381	0	134	13	450	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: Jul 25, 2024
By: DL Williams HEating and co...
Plan: 1820

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: Office@DLWilliamsHeatingandCooling.com

1	Room name					bath2 5.0 ft					br2 30.0 ft				
2	Exposed wall					10.0 ft					10.0 ft				
3	Room height					8.0					1.0				
4	Room dimensions					40.0 ft ²					137.0 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	3.18	2.14	50	50	159	107	130	130	414	278	
.	G	4A5-2ov	0.300	ne	10.50	15.69	0	0	0	0	0	0	0	0	
.	W	12C-0sw	0.091	se	3.18	2.14	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.300	se	10.50	13.66	0	0	0	0	0	0	0	0	
11	G	4B5-2fv	0.300	se	10.50	9.88	0	0	0	0	0	0	0	0	
	D	11J0	0.600	se	21.00	17.10	0	0	0	0	0	0	0	0	
	W	12C-0sw	0.091	sw	3.18	2.14	0	0	0	0	60	60	191	128	
	G	4A5-2ov	0.300	sw	10.50	13.66	0	0	0	0	0	0	0	0	
	W	12C-0sw	0.091	nw	3.18	2.14	0	0	0	0	110	95	303	203	
	G	4A5-2ov	0.300	nw	10.50	15.69	0	0	0	0	15	0	158	235	
	G	4A5-2ov	0.300	nw	10.50	15.69	0	0	0	0	0	0	0	0	
	D	11J0	0.600	nw	21.00	17.10	0	0	0	0	0	0	0	0	
	P	12C-0sw	0.091	-	3.18	0.00	0	0	0	0	0	0	0	0	
	C	16B-30ad	0.032	-	1.12	1.66	40	40	45	67	137	137	153	228	
	F	22A-tpl	0.989	-	34.62	0.00	40	5	173	0	137	30	1038	0	

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



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... Homes Preserve at Laurel lot 140 plan 1820.rup Calc = MJ8 Front Door faces: N

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

Job: 1
Date: Jul 25, 2024
By: DL Williams HEating and co...
Plan: 1820

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: Office@DLWilliamsHeatingandCooling.com

1	Room name					hall				great				
2	Exposed wall					0 ft				14.0 ft				
3	Room height					10.0 ft				10.0 ft				
4	Room dimensions					3.0 x 7.0 ft				1.0 x 332.0 ft				
5	Room area					21.0 ft²				332.0 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	3.18	2.14	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.300	ne	10.50	15.69	0	0	0	0	0	0	0	0
.	W	12C-0sw	0.091	se	3.18	2.14	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.300	se	10.50	13.66	0	0	0	0	0	0	0	0
11	G	4B5-2fv	0.300	se	10.50	9.88	0	0	0	0	0	0	0	0
	D	11J0	0.600	se	21.00	17.10	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	sw	3.18	2.14	0	0	0	0	0	0	0	0
	G	4A5-2ov	0.300	sw	10.50	13.66	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	nw	3.18	2.14	0	0	0	0	140	89	283	190
	G	4A5-2ov	0.300	nw	10.50	15.69	0	0	0	0	0	0	0	0
	G	4A5-2ov	0.300	nw	10.50	15.69	0	0	0	0	30	0	315	471
	D	11J0	0.600	nw	21.00	17.10	0	0	0	0	21	21	441	359
	P	12C-0sw	0.091	-	3.18	0.00	0	0	0	0	0	0	0	0
	C	16B-30ad	0.032	-	1.12	1.66	21	21	24	35	332	332	372	552
	F	22A-tpi	0.989	-	34.62	0.00	21	0	0	0	332	14	485	0
													</	

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



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... Homes Preserve at Laurel lot 140 plan 1820.rup Calc = MJ8 Front Door faces: N



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

Job: 1
Date: Jul 25, 2024
By: DL Williams HEating and co...
Plan: 1820

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: Office@DLWilliamsHeatingandCooling.com

1	Room name					ah								
2	Exposed wall					0 ft								
3	Room height					10.0 ft					heat/cool			
4	Room dimensions					3.0 x 3.0 ft								
5	Room area					9.0 ft²								
	Ty	Construction number	U-value (Bt uh/ft²·°F)	Or	HTM (Bt uh/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	ne	3.18	2.14	0	0	0	0				
.	G	4A5-2ov	0.300	ne	10.50	15.69	0	0	0	0				
.	W	12C-0sw	0.091	se	3.18	2.14	0	0	0	0				
.	G	4A5-2ov	0.300	se	10.50	13.66	0	0	0	0				
11	G	4B5-2fv	0.300	se	10.50	9.88	0	0	0	0				
	D	11J0	0.600	se	21.00	17.10	0	0	0	0				
	W	12C-0sw	0.091	sw	3.18	2.14	0	0	0	0				
	G	4A5-2ov	0.300	sw	10.50	13.66	0	0	0	0				
	W	12C-0sw	0.091	nw	3.18	2.14	0	0	0	0				
	G	4A5-2ov	0.300	nw	10.50	15.69	0	0	0	0				
	G	4A5-2ov	0.300	nw	10.50	15.69	0	0	0	0				
	D	11J0	0.600	nw	21.00	17.10	0	0	0	0				
	P	12C-0sw	0.091	-	3.18	0.00	0	0	0	0				
	C	16B-30ad	0.032	-	1.12	1.66	9	9	10	15				
	F	22A-tpl	0.989	-	34.62	0.00	9	0	0	0				

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



... Homes Preserve at Laurel lot 140 plan 1820.rup Calc = MJ8 Front Door faces: N

... Homes Preserve at Laurel lot 140 plan 1820.rup Calc = MJ8 Front Door faces: N



Loads for Multiple Orientations

Entire House

DL Williams Heating & Cooling LLC

Job: 1
Date: Jul 25, 2024
By: DL Williams HEating and...
Plan: 1820

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: Office@DLWilliamsHeatingandCooling.com

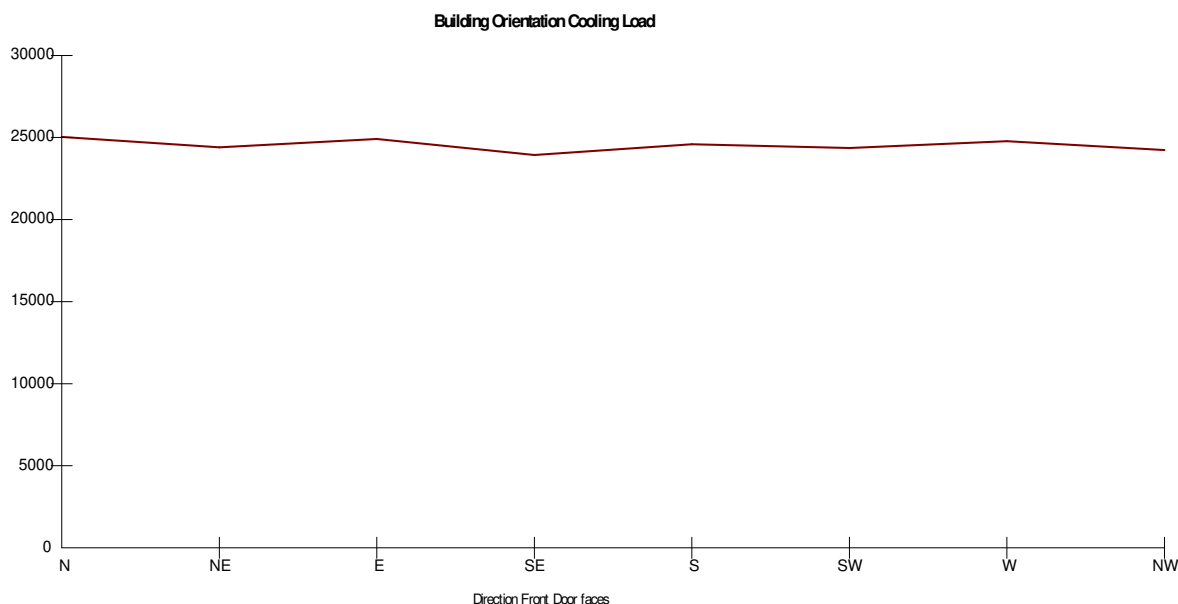
Project Information

For: Preserve of Laurel Lake lot 140, Adams Homes
Lake City, FL 32055

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 (%)		30	50
		Moisture difference (gr/lb)		8.4	45.4
Outdoor:	Heating	Cooling	Infiltration:		
Dry bulb (°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)	20955	20317	20834	19851	20511	20278	20690	20155
Latent Load (Btuh)	4080	4080	4080	4080	4080	4080	4080	4080
Total Load (Btuh)	25035	24397	24914	23931	24591	24358	24771	24235
Heating AVF (cfm)	875	875	875	875	875	875	875	875
Cooling AVF (cfm)	875	875	875	875	875	875	875	875



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

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



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... Homes Preserve at Laurel lot 140 plan 1820.rup Calc = MJ8 Front Door faces: N

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

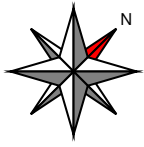
Job: 1
Date: Jul 25, 2024
By: DL Williams HEating and...
Plan: 1820

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: Office@DLWilliamsHeatingandCooling.com

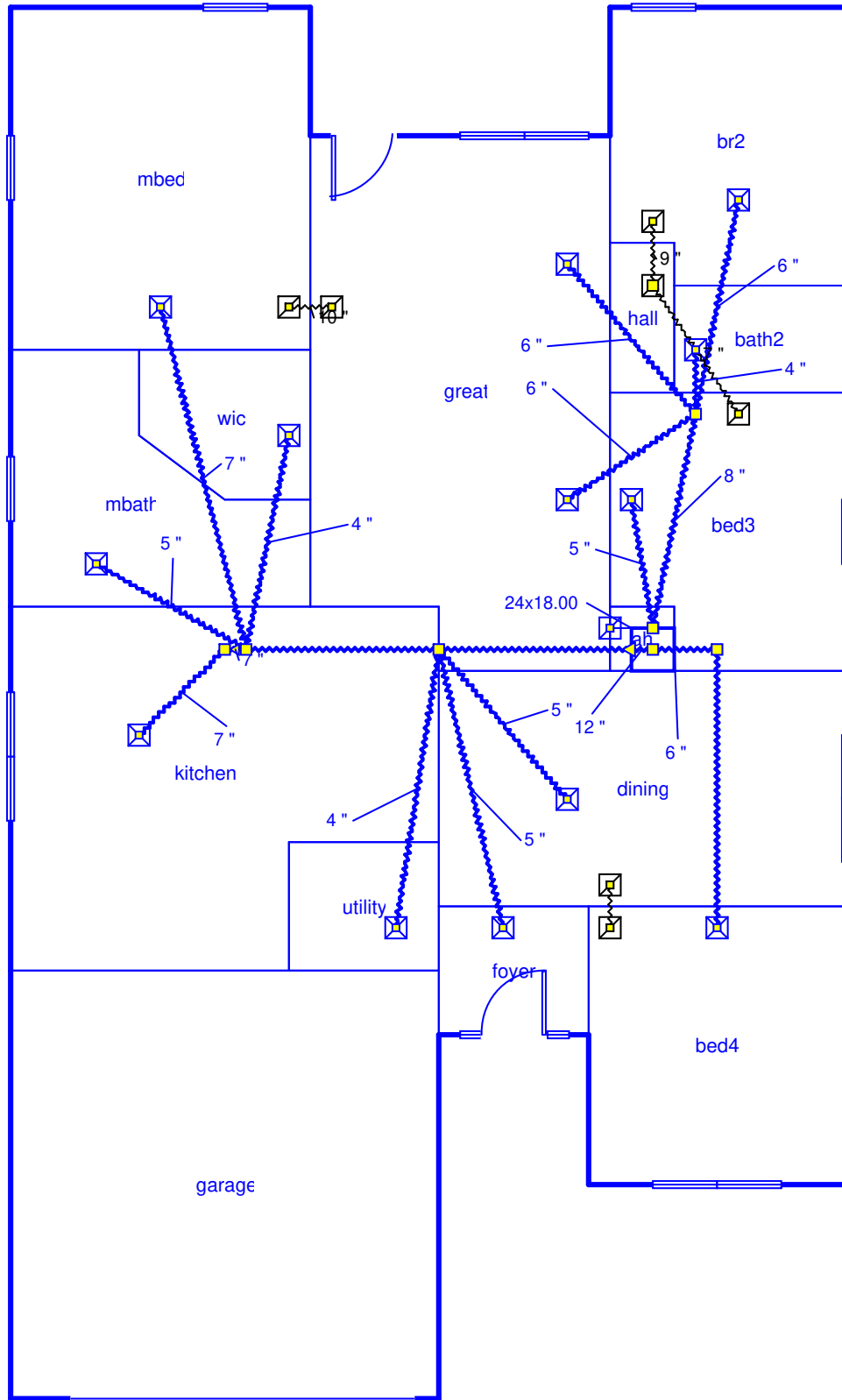
Supporting Detail	
Project Name: Adams Homes Preserve at Laurel lot 140 plan 1820	Date: Jul 25, 2024
Address: Lake City, FL 32055	
Phone:	Job ID: 1

Worksheet A Location and Design Conditions	
Weather Location: Gainesville Regional AP, FL, US	Elevation = 164 Latitude = 30
Indoor Conditions, Heating: DB = 68 °F RH = 30 % 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.



Sheet 1



Job #: 1
Performed by DL Williams HEating and co
Preserve of Laurel Lake lot 140
Lake City, FL 32055

DL Williams Heating & Cooling LLC

PO Box 2156
Lake City, FL 32056
Phone: 386-754-1987
Office@DLWilliamsHeatingandCooling.com

Scale: 1 : 94

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... at Laurel lot 140 plan 1820.rup



Duct System Summary

Entire House

DL Williams Heating & Cooling LLC

Job: 1
Date: Jul 25, 2024
By: DL Williams HEating and...
Plan: 1820

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: Office@DLWilliamsHeatingandCooling.com

Project Information

For: Preserve of Laurel Lake lot 140, Adams Homes
Lake City, FL 32055

	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	0.386 / 0.114 in H ₂ O	0.386 / 0.114 in H ₂ O
Lowest friction rate	0.183 in/100ft	0.183 in/100ft
Actual air flow	875 cfm	875 cfm
Total effective length (TEL)	273 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
bath2	h 622	20	12	0.301	4.0	0x0	VIFx	13.2	115.0	st1
bed3	h 1785	58	43	0.382	5.0	0x0	VIFx	6.1	95.0	
bed4	h 4068	132	94	0.295	6.0	0x0	VIFx	16.0	115.0	
br2	h 3690	120	76	0.285	6.0	0x0	VIFx	20.4	115.0	st1
dining	c 1728	58	70	0.250	5.0	0x0	VIFx	19.2	135.0	st3
foyer	h 1671	54	37	0.244	5.0	0x0	VIFx	23.3	135.0	st3
great	c 2394	45	97	0.287	6.0	0x0	VIFx	19.4	115.0	st1
great-A	c 2394	45	97	0.292	6.0	0x0	VIFx	17.4	115.0	st1
kitchen	c 3977	118	161	0.183	7.0	0x0	VIFx	25.7	185.0	st3A
mbath	h 1641	53	44	0.212	5.0	0x0	VIFx	27.1	155.0	st3
mbed	h 4609	149	108	0.203	7.0	0x0	VIFx	35.5	155.0	st3
utility	c 762	20	31	0.244	4.0	0x0	VIFx	23.2	135.0	st3
wic	c 111	2	5	0.210	4.0	0x0	VIFx	29.2	155.0	st3

Supply Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
st3	Peak AVF	456	456	0.183	581	12.0	0 x 0	VinIFlx	st3
st3A	Peak AVF	118	161	0.183	603	7.0	0 x 0	VinIFlx	
st1	Peak AVF	230	282	0.285	807	8.0	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	0x0	875	875	62.0	0.183	292	11.6	18.00x24	10x86	SJSp	



Duct system multi orientation report

Entire House

DL Williams Heating & Cooling LLC

Job: 1
Date: Jul 25, 2024
By: DL Williams HEating and...
Plan: 1820

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: Office@DLWilliamsHeatingandCooling.com

Project Information

For: Preserve of Laurel Lake lot 140, Adams Homes
Lake City, FL 32055

Group 1: (N, S) Group 2: (NE) Group 3: (E) Group 4: (SE) Group 5: (SW, NW) Group 6: (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												
bath2	20 h	12x12	4	20 h	12x12	4	20 h	12x12	4	20 h	12x12	4
bed3	58 h	12x12	5	58 h	12x12	5	58 h	12x12	5	58 h	12x12	5
bed4	132 h	12x12	6	132 h	12x12	6	132 h	12x12	6	132 h	12x12	6
br2	120 h	12x12	6	120 h	12x12	6	120 h	12x12	6	120 h	12x12	6
dining	88 c	12x12	6	70 c	12x12	5	60 c	12x12	5	86 c	12x12	6
foyer	54 h	12x12	5	54 h	12x12	5	54 h	12x12	5	54 h	12x12	5
great	84 c	12x12	5	97 c	12x12	6	104 c	12x12	6	93 c	12x12	6
great-A	84 c	12x12	5	97 c	12x12	6	104 c	12x12	6	93 c	12x12	6
kitchen	184 c	12x12	8	161 c	12x12	7	146 c	12x12	7	163 c	12x12	7
mbath	55 c	12x12	5	53 h	12x12	5	53 h	12x12	5	53 h	12x12	5
mbed	149 h	12x12	7	149 h	12x12	7	149 h	12x12	7	149 h	12x12	7
utility	32 c	12x12	4	31 c	12x12	4	32 c	12x12	4	31 c	12x12	4
wic	5 c	12x12	4	5 c	12x12	4	5 c	12x12	4	5 c	12x12	4
Supply Trunks												
st3	506 c		12	456 c		12	456 h		12	468 c		12
st3A	184 c		8	161 c		7	146 c		7	163 c		7
st1	244 c		8	282 c		8	307 c		10	271 c		8
Return Branches												
rb1	875 c	12x12	0x0	875 c	12x12	0x0	875 c	12x12	0x0	875 c	12x12	0x0
Friction Rates												
Heating FR	0.183			0.183			0.183			0.183		
Cooling FR	0.183			0.183			0.183			0.183		

Project Information

For: Preserve of Laurel Lake lot 140, Adams Homes
Lake City, FL 32055

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												
bath2	20 h	12x12	4	20 h	12x12	4	20 h	12x12	4	20 h	12x12	4
bed3	59 c	12x12	5	58 h	12x12	5	58 h	12x12	5	58 h	12x12	5
bed4	132 h	12x12	6	132 h	12x12	6	132 h	12x12	6	132 h	12x12	6
br2	120 h	12x12	6	120 h	12x12	6	120 h	12x12	6	120 h	12x12	6
dining	101 c	12x12	6	81 c	12x12	5	61 c	12x12	5	80 c	12x12	5
foyer	54 h	12x12	5	54 h	12x12	5	55 c	12x12	5	54 h	12x12	5
great	85 c	12x12	5	84 c	12x12	5	90 c	12x12	6	89 c	12x12	5
great-A	85 c	12x12	5	84 c	12x12	5	90 c	12x12	5	89 c	12x12	5
kitchen	174 c	12x12	8	156 c	12x12	7	149 c	12x12	7	167 c	12x12	7
mbath	53 h	12x12	5	53 h	12x12	5	53 h	12x12	5	53 h	12x12	5
mbed	149 h	12x12	7	149 h	12x12	7	149 h	12x12	7	149 h	12x12	7
utility	32 c	12x12	4	32 c	12x12	4	33 c	12x12	4	31 c	12x12	4
wic	5 c	12x12	4	5 c	12x12	4	5 c	12x12	4	5 c	12x12	4
Supply Trunks												
st3	496 c		12	469 c		12	456 h		12	476 c		12
st3A	174 c		8	156 c		7	149 c		7	167 c		7
st1	246 c		8	255 c		8	276 c		8	258 c		8
Return Branches												
rb1	875 c	12x12	0x0	875 c	12x12	0x0	875 c	12x12	0x0	875 c	12x12	0x0
Friction Rates												
Heating FR	0.183			0.183			0.183			0.183		
Cooling FR	0.183			0.183			0.183			0.183		



Project Information

For: Preserve of Laurel Lake lot 140, Adams Homes
Lake City, FL 32055

Duct Name	Largest			Smallest		
	Reg CFM	Reg Size	Duct Size	Reg CFM	Reg Size	Duct Size
Supply Branches						
bath2	20 h	12x12	4	20 h	12x12	4
bed3	59 c	12x12	5	58 h	12x12	5
bed4	132 h	12x12	6	132 h	12x12	6
br2	120 h	12x12	6	120 h	12x12	6
dining	101 c	12x12	6	60 c	12x12	5
foyer	55 c	12x12	5	54 h	12x12	5
great	104 c	12x12	6	84 c	12x12	5
great-A	104 c	12x12	6	84 c	12x12	5
kitchen	184 c	12x12	8	146 c	12x12	7
mbath	55 c	12x12	5	53 h	12x12	5
mbed	149 h	12x12	7	149 h	12x12	7
utility	33 c	12x12	4	31 c	12x12	4
wic	5 c	12x12	4	5 c	12x12	4
Supply Trunks						
st3	506 c		12	456 h		12
st3A	184 c		8	146 c		7
st1	307 c		10	244 c		8
Return Branches						
rb1	875 c	12x12	0x0	875 c	12x12	0x0
Friction Rates						
Heating FR	0.183			0.183		
Cooling FR	0.183			0.183		



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: Jul 25, 2024
By: DL Williams HEating and...
Plan: 1820

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: Office@DLWilliamsHeatingandCooling.com

Project Information

For: Preserve of Laurel Lake lot 140, Adams Homes
Lake City, FL 32055

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	6	2
Measured length of trunk	20	0
Equivalent length of fittings	185	60
Total length	211	62
Total effective length		273

Friction Rate

	Heating (in/100ft)	Cooling (in/100ft)
Supply Ducts	0.183 > 0.18	0.183 > 0.18
Return Ducts	0.183 > 0.18	0.183 > 0.18

Fitting Equivalent Length Details

Supply	4AD=60, 11M=20, 11A=20, 12J1=10, 11A=20, 12F1=20, 1A=35: TotalEL=185
Return	5A=40, 6M=20: TotalEL=60



Manual S Compliance Report

Entire House

DL Williams Heating & Cooling LLC

Job: 1
Date: Jul 25, 2024
By: DL Williams HEating and...
Plan: 1820

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: Office@DLWilliamsHeatingandCooling.com

Project Information

For: Preserve of Laurel Lake lot 140, Adams Homes
Lake City, FL 32055

Cooling Equipment

Design Conditions

Outdoor design DB:	92.0°F	Sensible gain:	21603 Btuh	Entering coil DB:	77.1°F
Outdoor design WB:	76.0°F	Latent gain:	4080 Btuh	Entering coil WB:	63.5°F
Indoor design DB:	75.0°F	Total gain:	25684 Btuh		
Indoor RH:	50%	Estimated airflow:	875 cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP		
Manufacturer:	Trane	Model:	4TWR5030H1+TEM6A0B30H21
Actual airflow:	875 cfm		
Sensible capacity:	23435 Btuh	108% of load	
Latent capacity:	4292 Btuh	105% of load	
Total capacity:	27727 Btuh	108% of load	SHR: 85%

Heating Equipment

Design Conditions

Outdoor design DB:	33.0°F	Heat loss:	26986 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:	4TWR5030H1+TEM6A0B30H21
Actual airflow:	875 cfm		
Output capacity:	21241 Btuh	79% of load	Capacity balance: 33 °F
Supplemental heat required:	5744 Btuh		Economic balance: -99 °F

Backup equipment type:	Elec strip		
Manufacturer:		Model:	
Actual airflow:	875 cfm		
Output capacity:	7.4 kW	94% of load	Temp. rise: 50 °F

Meets all requirements of ACCA Manual S.



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Page 1

... Homes Preserve at Laurel lot 140 plan 1820.rup Calc = MJ8 Front Door faces: N



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

Form
RPER 1
15 Mar 09

Columbia Header Information

Contractor: DL Williams Heating & Cooling LLC
Derrick Williams
Mechanical license:
Building plan #: 1820
Home address (Street or Lot#, Block, Subdivision): , Entire House

REQUIRED ATTACHMENTS
Manual J1 Form (and supporting worksheets):
or MJ1AE Form* (and supporting worksheets):
OEM performance data (heating, cooling, blower):
Manual D Friction Rate Worksheet:
Duct distribution sketch:

ATTACHED
Yes ☐ No ☐
Yes ☐ No ☐
Yes ☐ No ☐
Yes ☐ No ☐
Yes ☐ No ☐

HVAC LOAD CALCULATION (IRC M1401.3)

Design Conditions

Winter Design Conditions

Outdoor temperature: 33 °F
Indoor temperature: 68 °F
Total heat loss: 26986 Btuh

Summer Design Conditions

Outdoor temperature: 92 °F
Indoor temperature: 75 °F
Grains difference: 45 gr/lb @50% RH
Sensible heat gain: 22271 Btuh
Latent heat gain: 4207 Btuh
Total heat gain: 26478 Btuh

Building Construction Information

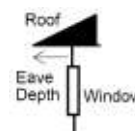
Building

Orientation: Front Door faces North
North, East, West, South, Northeast, Northwest, Southeast, Southwest

Number of bedrooms: 1
Conditioned floor area: 1812 ft²
Number of occupants: 5

Windows

Eave overhang depth: 10.0 ft
Internal shade: blinds
Blinds, drapes, etc.
Number of skylights: 0



HVAC EQUIPMENT SELECTION (IRC M1401.3)

Heating Equipment Data

Equipment type: Split ASHP
Furnace, Heat pump, Boiler, etc.
Model: Trane
4TWR5030H1+TEM6A0B30H21
Heating output capacity: 21241 Btuh
Heat pumps - capacity at winter design outdoor conditions
Aux. heating output capacity: 25253 Btuh

Cooling Equipment Data

Equipment type: Split ASHP
Air Conditioner, Heat pump, etc.
Model: Trane
4TWR5030H1+TEM6A0B30H21
Total cooling capacity: 27727 Btuh
Sensible cooling capacity: 23435 Btuh
Latent cooling capacity: 4292 Btuh

Blower Data

Heating cfm: 875
Cooling cfm: 875
Static pressure: 0.50 in H₂O
Fan's rated external static pressure for design airflow

HVAC DUCT DISTRIBUTION SYSTEM DESIGN (IRC M1601.1)

Design airflow: 875 cfm
Equipment design ESP: 0.50 in H₂O
Total device pressure losses: 0 in H₂O
Available static pressure (ASP): 0.50 in H₂O
Longest supply duct: 211 ft
Longest return duct: 62 ft
Total effective length (TEL): 273 ft
Friction rate: 0.183 in/100ft
Friction Rate = ASP ÷ (TEL × 100)
Duct Materials Used
Trunk duct: Round flex vinyl
Branch duct: Round flex vinyl, Stud/joist space

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

Contractor's printed name: _____

Contractor's signature: _____ Date: _____

Reserved for County, Town Municipality or Authority having jurisdiction use.

*Home qualifies for MJ1AE Form based on Abridged Edition Checklist



Right-Suite® Universal 2023 23.0.05 RSU02245



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: Jul 25, 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: 1820 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: Union, FL Cooling season: 92 °F Heating season: 33 °F -

3.4 Number of occupants used in loads: 5 -

3.5 Conditioned floor area used in loads: 1812 Sq. Ft. -

3.6 Window area used in loads: 209 Sq. Ft. -

3.7 Predominant window SHGC used in loads: 0.23 -

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)	21.0	20.3	20.8	19.9	20.5	20.3	20.7	20.2	-
	3.11 Latent heat gain (Not by orientation)	4.1								-
	3.12 Total heat gain (By orientation)	25.0	24.4	24.9	23.9	24.6	24.4	24.8	24.2	-
	3.13 Maximum – minimum total heat gain (Item 3.12) across orientations =	1.1 kBtuh Variation is ≤ 6 kBtuh								☒

Heating	3.14 Total heat loss (Not by orientation)	27.0									-
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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 4TWR5030H1										-	
4.4 Evaporator / fan coil manufacturer & model: Trane TEM6A0B30H21										-	
4.5 AHRI reference #: 9033590										-	
4.6 AHRI listed efficiency: 12.5 / 15.25 EER / SEER Air-source heat pump: 9.5 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: 23.4 kBtuh										-	
4.11 Total capacity at design conditions, from OEM expanded performance data: 27.7 kBtuh										-	
4.12 Air-source heat pump capacity: At 17°F: 17.8 kBtuh At 47°F: 27.8 kBtuh ☐ N/A										-	
4.13 Cooling sizing % = Total capacity (Item 4.11) divided by maximum total heat gain (Item 3.12): 111%										-	
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) = 84%										-	
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 875 CFM Heating mode 875 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	mbed	108		23			
2	bath2	12		13	utility	31		24			
3	bed3	43		14	wic	5		25			
4	bed4	94		15				26			
5	br2	76		16				27			
6	dining	70		17				28			
7	foyer	37		18				29			
8	great	194		19				30			
9	hall	0		20				31			
10	kitchen	161		21				32			
11	mbath	44		22				Total for all rooms			875



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: Jul 25, 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):				21.0 25.0					
4.5 Sensible, latent, & total cooling capacity at design conditions (kBtuh):				23.4 4.3 27.7					
4.6 If HP, heating capacity at 17°F and at 47°F (kBtuh):				17.8 27.8 N/A ☐		N/A ☐		N/A ☐	
4.7 Compressor speed type:				Single					
4.8 Cooling sizing % & applicable sizing limit key from Table 2:				110.7 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.						☐	☐

ANSI / RESNET / ACCA 310 HVAC Design Report (1,2)

1. Design Basis & Architectural Scope										
1.1 Design description (optional):										
1.2 Design company:		DL Williams Heating & Cooling LLC			Designer name:		Derrick Williams		Date: Jul 25, 2024	
1.3 Software name and version used to complete design:					Right-Suite® Universal 2023 23.0.05 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:		1812 1								
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)		Union, FL			Data Source:		ACCA std.			
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)		5 1150								
3.8 Total non-occupant internal gains (Btuh):		2600								
3.9 Conditioned floor area (sq. ft.):(22)		1812								
3.10 Window area (sq. ft.):(23)		209								
3.11 Predominant window SHGC:(24)		0.23								
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		21.0	4.1	25.0						
NE		20.3	4.1	24.4						
E		20.8	4.1	24.9						
SE		19.9	4.1	23.9						
S		20.5	4.1	24.6						
SW		20.3	4.1	24.4						
W		20.7	4.1	24.8						
NW		20.2	4.1	24.2						
3.16 Maximum – minimum total heat gain (kBtuh):(28)		1.1								
3.17 Total heat loss (kBtuh):		27.0								

ANSI / RESNET / ACCA 310 HVAC Design Report (1,2)

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 TEM6A0B30H21						
4.5 Condenser mfr. & model #:(30)	TRAN 4TWR5030H1 N/A ☐		N/A ☒		N/A ☒		
4.6 AHRI ref. #, or check box for alt. OEM doc.:(31)	9033590 OEM ☐		OEM ☒		OEM ☒		
4.7 If AC / HP, rated cooling efficiency:(32)	15.25 SEER2 N/A ☐		N/A ☒		N/A ☒		
4.8 If HP, rated heating efficiency:(33)	9.5 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)	875	875					
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]	875	[All rooms]		[All rooms]		
1.	ah	0					
2.	bath2	12					
3.	bed3	43					
4.	bed4	94					
5.	br2	76					
6.	dining	70					
7.	foyer	37					
8.	great	194					
9.	hall	0					
10.	kitchen	161					
11.	mbath	44					
12.	mbed	108					
13.	utility	31					
14.	wic	5					
15.							
16.							
17.							
18.							
19.							
20.							

ANSI / RESNET / ACCA 310 HVAC Design Report (1,2)

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".

ANSI / RESNET / ACCA 310 HVAC Design Report (1,2)

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