



Load Short Form

Entire House

DL Williams Heating & Cooling LLC

Job: 1
Date: Jul 25, 2024
By: DL Williams Heating & C...
Plan: 1755

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

Project Information

For: Preserve at Laurel lot 143 plan 1755, 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 4TWR5024H1
AHRI ref 10298672
Efficiency 9 HSPF
Heating input
Heating output 21800 Btuh @ 47°F
Temperature rise 28 °F
Actual air flow 700 cfm
Air flow factor 0.030 cfm/Btuh
Static pressure 0.50 in H2O
Space thermostat
Capacity balance point = 35 °F

Backup:
Input = 6 kW, Output = 21717 Btuh, 100 AFUE

COOLING EQUIPMENT

Make Trane
Trade TRANE
Cond 4TWR5024H1
Coil TEM6A0B30H21
AHRI ref 10298672
Efficiency 12.5 EER, 15 SEER
Sensible cooling 16940 Btuh
Latent cooling 7260 Btuh
Total cooling 24200 Btuh
Actual air flow 700 cfm
Air flow factor 0.033 cfm/Btuh
Static pressure 0.50 in H2O
Load sensible heat ratio 0.86

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
br3	176	3298	2079	99	69
br4	165	2226	1423	67	47
ah	9	0	0	0	0
foyer	59	1578	918	47	30
laundry	54	486	850	15	28
wic	72	717	333	22	11
mbath	112	1184	539	36	18
lav	18	24	37	1	1
mbed	195	3549	2460	106	81
kitchen	144	606	2471	18	82
great	330	4294	5831	129	192
br2	160	3044	1716	91	57
bath	50	593	271	18	9
hall	30	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 143 plan 1755.rup Calc = MJ8 Front Door faces: N

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dining	121	1731	2291	52	76
Entire House	1694	23329	21219	700	700
Other equip loads		0	0		
Equip. @ 0.97 RSM			20582		
Latent cooling			3389		
TOTALS	1694	23329	23971	700	700

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... Homes Preserve at Laurel lot 143 plan 1755.rup Calc = MJ8 Front Door faces: N



Building Analysis

Entire House

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Project Information

For: Preserve at Laurel lot 143 plan 1755, Adams Homes
Lake City, FL 32055

Design Conditions

Location:

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

Outdoor:

Drybulb (°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

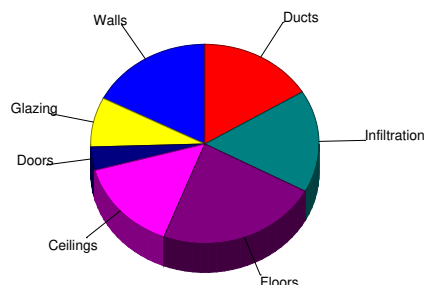
Infiltration:

Method
Construction quality
Fireplaces

Simplified
Average
0

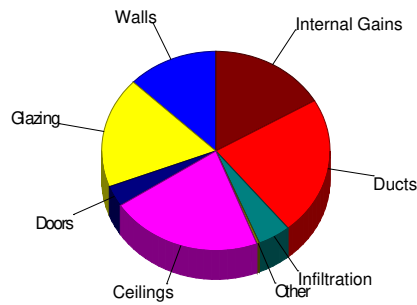
Heating

Component	Btuh/ft²	Btuh	% of load
Walls	3.2	4067	17.4
Glazing	10.5	1880	8.1
Doors	21.0	882	3.8
Ceilings	2.0	3473	14.9
Floors	3.2	5355	23.0
Infiltration	2.6	3877	16.6
Ducts		3796	16.3
Piping		0	0
Humidification		0	0
Ventilation		0	0
Adjustments		0	0
Total		23329	100.0



Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	2.1	2731	12.9
Glazing	21.3	3814	18.0
Doors	17.1	718	3.4
Ceilings	2.7	4588	21.6
Floors	0.0	79	0.4
Infiltration	0.7	991	4.7
Ducts		4778	22.5
Ventilation		0	0
Internal gains		3520	16.6
Blower		0	0
Adjustments		0	0
Total		21219	100.0



Latent Cooling Load = 3389 Btuh

Overall U-value = 0.091 Btuh/ft²-°F, Window / Floor Area = 10.6 %

Data entries checked.



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Component Constructions

Entire House

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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
			Moisture difference (gr/lb)		8.4	45.4
Outdoor:	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	n	354	0.091	13.0	3.18	1127	2.14	757
	e	226	0.091	13.0	3.18	720	2.14	483
	s	339	0.091	13.0	3.18	1080	2.14	725
	w	358	0.091	13.0	3.18	1140	2.14	766
	all	1277	0.091	13.0	3.19	4067	2.14	2731

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); 10 ft overhang (7 ft window ht, 1 ft sep.); 6.67 ft head ht	e	7	0.300	0	10.5	74	9.88	69
	e	7	0.300	0	10.5	74	9.88	69
	all	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; s	e	45	0.300	0	10.5	473	20.0	898
	s	15	0.300	0	10.5	158	7.65	115
50% outdoor insect screen; 1.6 ft overhang (5 ft window ht, 1 ft sep.); 6.67 ft head ht	w	75	0.300	0	10.5	788	20.0	1497
	all	135	0.300	0	10.5	1418	18.6	2511
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; 10 ft overhang (5 ft window ht, 1 ft sep.); 6.67 ft head ht	w	30	0.300	0	10.5	315	7.65	230

Doors

11J0: Door, mtl fbrgl type	e	21	0.600	6.3	21.0	441	17.1	359
	w	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		1114	0.032	30.0	1.12	1248	1.66	1854
17B-6al: Rf/clg ceiling, asphalt shingles roof mat, wd cons, r-6 deck ins, 1" thkns		606	0.105	6.0	3.67	2225	4.51	2734

Floors

19A-19bscp: Part floor, carpet flr fnsh, r-19 ins, frm flr, 6" thkns	121	0.049	19.0	1.34	163	0.65	79
22A-tpl: Bg floor, light dry soil, on grade depth, carp 80% flr fnsh	150	0.989	0	34.6	5192	0	0



Component Constructions

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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
		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	n	126	0.091	13.0	3.18	401	2.14	269
	e	87	0.091	13.0	3.18	277	2.14	186
	all	213	0.091	13.0	3.19	678	2.14	456
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	e	30	0.300	0	10.5	315	20.0	599
Doors (none)								
Ceilings								
16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh		176	0.032	30.0	1.12	197	1.66	293
Floors								
22A-tpl: Bg floor, light dry soil, on grade depth, carp 80% flr fnsh		27	0.989	0	34.6	935	0	0



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Component Constructions

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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:		
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	e	93	0.091	13.0	3.18	296	2.14	199
	s	45	0.091	13.0	3.18	143	2.14	96
	all	138	0.091	13.0	3.18	440	2.14	295
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	e	15	0.300	0	10.5	158	20.0	299
Doors (none)								
Ceilings								
16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh		144	0.032	30.0	1.12	161	1.66	240
17B-6al: Rf/clg ceiling, asphalt shingles roof mat, wd cons, r-6 deck ins, 1" thkns		22	0.105	6.0	3.67	81	4.51	99
Floors								
22A-tp1: Bg floor, light dry soil, on grade depth, carp 80% flr fnsh		17	0.989	0	34.6	588	0	0



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Component Constructions

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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	
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	n	5	0.091	13.0	3.18	14	2.14	10
Partitions (none)								
Windows (none)								
Doors (none)								
Ceilings								
17B-6al: Rf/clg ceiling, asphalt shingles roof mat, wd cons, r-6 deck ins, 1" thkns		9	0.105	6.0	3.68	35	4.51	42
Floors (none)								



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Component Constructions

foyer

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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	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	e	46	0.091	13.0	3.18	147	2.14	98
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); 10 ft overhang (7 ft window ht, 1 ft sep.); 6.67 ft head ht	e	7	0.300	0	10.5	74	9.88	69
	e	7	0.300	0	10.5	74	9.88	69
	all	14	0.300	0	10.5	147	9.88	138
Doors								
11J0: Door, mtl fbrgl type	e	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		59	0.032	30.0	1.12	66	1.66	97
Floors								
22A-tp1: Bg floor, light dry soil, on grade depth, carp 80% flr fnsh		9	0.989	0	34.6	312	0	0



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Component Constructions

laundry

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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								
12C-0sw: Frm wall, stucco ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud	n	36	0.091	13.0	3.18	115	2.14	77
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		54	0.032	30.0	1.12	60	1.66	90
Floors								
22A-tpl: Bg floor, light dry soil, on grade depth, carp 80% flr fnsh		4	0.989	0	34.6	138	0	0



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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
			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	s	54	0.091	13.0	3.18	172	2.14	115
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		72	0.032	30.0	1.12	81	1.66	120
Floors								
22A-tp1: Bg floor, light dry soil, on grade depth, carp 80% flr fnsh		6	0.989	0	34.6	208	0	0



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Component Constructions

mbath
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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
			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	s	90	0.091	13.0	3.18	287	2.14	192
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		112	0.032	30.0	1.12	125	1.66	186
Floors								
22A-tpl: Bg floor, light dry soil, on grade depth, carp 80% flr fnsh		10	0.989	0	34.6	346	0	0



Component Constructions

lav

DL Williams Heating & Cooling LLC

Job: 1
Date: Jul 25, 2024
By: DL Williams Heating & C...
Plan: 1755

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

Project Information

For: Preserve at Laurel lot 143 plan 1755, 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)	33	92			
Daily range (°F)	-	20 (M)			
Wet bulb (°F)	-	76			
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

18	0.032	30.0	1.12	20	1.66	30
----	-------	------	------	----	------	----

Floors
(none)



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

Project Information

For: Preserve at Laurel lot 143 plan 1755, Adams Homes
Lake City, FL 32055

Design Conditions

Location: Gainesville Regional AP, FL, US Elevation: 164 ft Latitude: 30°N		Indoor: Indoor temperature (°F) Design TD (°F) Relative humidity (%) Moisture difference (gr/lb)		Heating 68 35 30 8.4	Cooling 75 17 50 45.4
Outdoor: Dry bulb (°F) Daily range (°F) Wet bulb (°F) Wind speed (mph)	Heating 33 - - 15.0	Cooling 92 20 (M) 76 7.5	Infiltration: Method Construction quality Fireplaces	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	s	120	0.091	13.0	3.18	382	2.14	257
	w	87	0.091	13.0	3.18	277	2.14	186
	all	207	0.091	13.0	3.18	659	2.14	443
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	s	15	0.300	0	10.5	158	7.65	115
	w	30	0.300	0	10.5	315	20.0	599
	all	45	0.300	0	10.5	473	15.9	714
Doors (none)								
Ceilings								
16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh		195	0.032	30.0	1.12	218	1.66	324
Floors								
22A-tpl: Bg floor, light dry soil, on grade depth, carp 80% flr fnsh		28	0.989	0	34.6	969	0	0





Component Constructions
kitchen
DL Williams Heating & Cooling LLC

Job: 1
Date: Jul 25, 2024
By: DL Williams Heating & C...
Plan: 1755

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

Project Information

For: Preserve at Laurel lot 143 plan 1755, 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	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	s	14	0.091	13.0	3.18	43	2.14	29
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	1.12	50	1.66	74
17B-6al: Rf/clg ceiling, asphalt shingles roof mat, wd cons, r-6 deck ins, 1" thkns		103	0.105	6.0	3.68	380	4.51	467
Floors (none)								



Component Constructions

great
DL Williams Heating & Cooling LLC

Job: 1
Date: Jul 25, 2024
By: DL Williams Heating & C...
Plan: 1755

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

Project Information

For: Preserve at Laurel lot 143 plan 1755, 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	n	26	0.091	13.0	3.18	81	2.14	55
	w	111	0.091	13.0	3.18	354	2.14	237
	all	137	0.091	13.0	3.18	435	2.14	292
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; 10 ft overhang (5 ft window ht, 1 ft sep.); 6.67 ft head ht	w	30	0.300	0	10.5	315	7.65	230
Doors								
11J0: Door, mtl fbrgl type	w	21	0.600	6.3	21.0	441	17.1	359
Ceilings								
17B-6al: Rf/clg ceiling, asphalt shingles roof mat, wd cons, r-6 deck ins, 1" thkns		345	0.105	6.0	3.67	1266	4.51	1556
Floors								
22A-tpl: Bg floor, light dry soil, on grade depth, carp 80% flr fnsh		18	0.989	0	34.6	623	0	0



Component Constructions

br2

DL Williams Heating & Cooling LLC

Job: 1
Date: Jul 25, 2024
By: DL Williams Heating & C...
Plan: 1755

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

Project Information

For: Preserve at Laurel lot 143 plan 1755, 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	n	117	0.091	13.0	3.18	373	2.14	250
	w	102	0.091	13.0	3.18	325	2.14	218
	all	219	0.091	13.0	3.19	698	2.14	468
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	w	15	0.300	0	10.5	158	20.0	299
Doors (none)								
Ceilings								
16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh		160	0.032	30.0	1.12	179	1.66	266
Floors								
22A-tpl: Bg floor, light dry soil, on grade depth, carp 80% flr fnsh		26	0.989	0	34.6	900	0	0



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Component Constructions
bath
DL Williams Heating & Cooling LLC

Job: 1
Date: Jul 25, 2024
By: DL Williams Heating & C...
Plan: 1755

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

Project Information

For: Preserve at Laurel lot 143 plan 1755, 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			
Dry bulb (°F)	33	92			
Daily range (°F)	-	20 (M)			
Wet bulb (°F)	-	76			
Wind speed (mph)	15.0	7.5			
		Infiltration:			
		Method	Simplified		
		Construction quality	Average		
		Fireplaces	0		

Construction descriptions	Or	Area ft²	U-value Btuh/ft²-°F	Insul R ft²-°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
Walls								
12C-0sw: Frm wall, stucco ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud	n	45	0.091	13.0	3.18	143	2.14	96
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								
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

hall

DL Williams Heating & Cooling LLC

Job: 1
Date: Jul 25, 2024
By: DL Williams Heating & C...
Plan: 1755

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

Project Information

For: Preserve at Laurel lot 143 plan 1755, 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)	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 (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		30	0.032	30.0	1.12	34	1.66	50
Floors (none)								



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... Homes Preserve at Laurel lot 143 plan 1755.rup Calc = MJ8 Front Door faces: N

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Component Constructions
dining
DL Williams Heating & Cooling LLC

Job: 1
Date: Jul 25, 2024
By: DL Williams Heating & C...
Plan: 1755

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

Project Information

For: Preserve at Laurel lot 143 plan 1755, 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	s	17	0.091	13.0	3.18	53	2.14	35
	w	58	0.091	13.0	3.18	185	2.14	124
	all	75	0.091	13.0	3.18	237	2.14	159
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	w	30	0.300	0	10.5	315	20.0	599
Doors (none)								
Ceilings								
17B-6al: Rf/clg ceiling, asphalt shingles roof mat, wd cons, r-6 deck ins, 1" thkns		126	0.105	6.0	3.68	464	4.51	570
Floors								
19A-19bscp: Part floor, carpet flr fnsh, r-19 ins, frm flr, 6" thkns		121	0.049	19.0	1.34	163	0.65	79



Project Summary

Entire House

DL Williams Heating & Cooling LLC

Job: 1
Date: Jul 25, 2024
By: DL Williams Heating & C...
Plan: 1755

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

Project Information

For: Preserve at Laurel lot 143 plan 1755, 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	19534 Btuh
Ducts (R-6.0)	3796 Btuh
Central vent (0 cfm) (none)	0 Btuh
Humidification	0 Btuh
Piping	0 Btuh
Equipment load	23329 Btuh

Sensible Cooling Equipment Load Sizing

Structure	16441 Btuh
Ducts (R-6.0)	4778 Btuh
Central vent (0 cfm) (none)	0 Btuh
Blower	0 Btuh
Use manufacturer's data	n
Rate/swing multiplier	0.97
Equipment sensible load	20582 Btuh

Infiltration

Method	Simplified
Construction quality	Average
Fireplaces	0

Latent Cooling Equipment Load Sizing

Structure	2438 Btuh
Ducts	951 Btuh
Central vent (0 cfm) (none)	0 Btuh
Equipment latent load	3389 Btuh

	Heating	Cooling
Area (ft ²)	1694	1694
Volume (ft ³)	15995	15995
Air changes/hour	0.38	0.20
Equiv. AVF (cfm)	101	53

Equipment Total Load (Sen+Lat)	23971 Btuh
Req. total capacity at 0.70 SHR	2.5 ton

Heating Equipment Summary

Make	Trane
Trade	TRANE
Model	4TWR5024H1
AHRI ref	10298672
Efficiency	9 HSPF
Heating input	
Heating output	21800 Btuh @ 47°F
Temperature rise	28 °F
Actual air flow	700 cfm
Air flow factor	0.030 cfm/Btuh
Static pressure	0.50 in H2O
Space thermostat	
Capacity balance point = 35 °F	
Backup:	
Input = 6 kW, Output = 21717 Btuh, 100 AFUE	

Cooling Equipment Summary

Make	Trane
Trade	TRANE
Cond	4TWR5024H1
Coil	TEM6A0B30H21
AHRI ref	10298672
Efficiency	12.5 EER, 15 SEER
Sensible cooling	16940 Btuh
Latent cooling	7260 Btuh
Total cooling	24200 Btuh
Actual air flow	700 cfm
Air flow factor	0.033 cfm/Btuh
Static pressure	0.50 in H2O
Load sensible heat ratio	0.86

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



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... Homes Preserve at Laurel lot 143 plan 1755.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 & C...
Plan: 1755

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

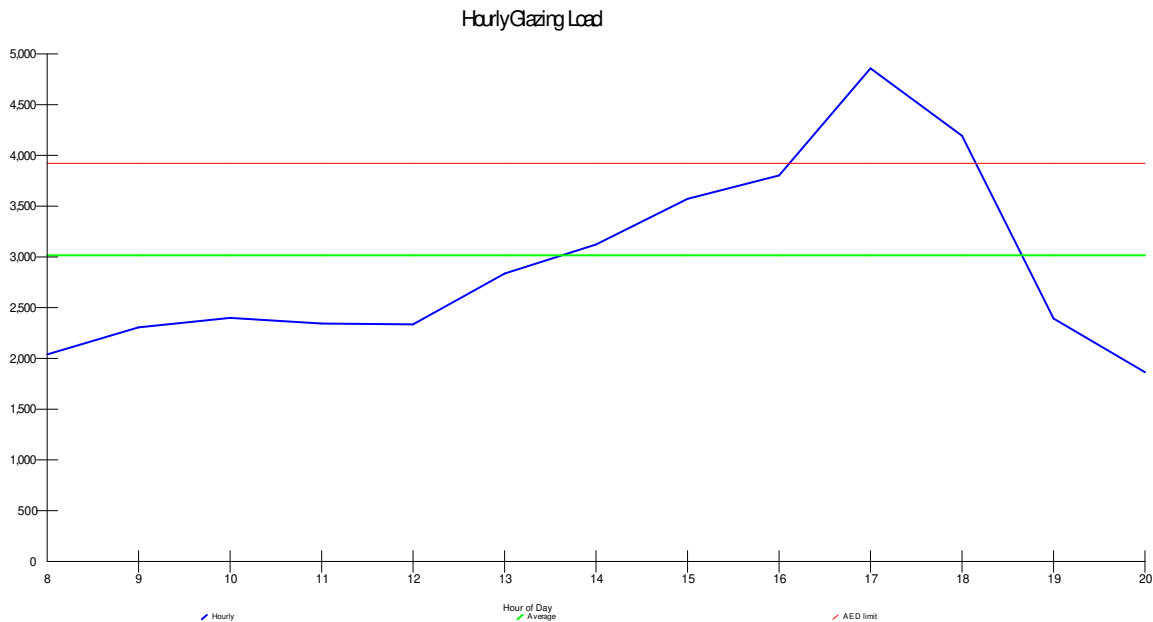
Project Information

For: Preserve at Laurel lot 143 plan 1755, 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 61.0%.

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

AED excursion: 935 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 & Cooling
Plan: 1755

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

1	Room name					Entire House					br3			
2	Exposed wall					161.0 ft					27.0 ft			
3	Room height					9.4 ft					9.0 ft			
4	Room dimensions										1.0 x 176.0 ft			
5	Room area					1694.0 ft²					176.0 ft²			
	Ty	Construction number	U-value (Btuh/ft²·°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6	W	12C-0sw	0.091	n	3.18	2.14	354	354	1127	757	126	126	401	269
.	W	12C-0sw	0.091	e	3.18	2.14	306	226	720	483	117	87	277	186
.	G	4A5-2ov	0.300	e	10.50	9.88	7	7	74	69	0	0	0	0
.	G	4A5-2ov	0.300	e	10.50	19.97	45	3	473	898	30	2	315	599
11	G	4B5-2fv	0.300	e	10.50	9.88	7	7	74	69	0	0	0	0
	D	11J0	0.600	e	21.00	17.10	21	21	441	359	0	0	0	0
	W	12C-0sw	0.091	s	3.18	2.14	354	339	1080	725	0	0	0	0
	G	4A5-2ov	0.300	s	10.50	7.65	15	15	158	115	0	0	0	0
	W	12C-0sw	0.091	w	3.18	2.14	484	358	1140	766	0	0	0	0
	G	4A5-2ov	0.300	w	10.50	19.97	75	5	788	1497	0	0	0	0
	G	4A5-2ov	0.300	w	10.50	7.65	30	30	315	230	0	0	0	0
	D	11J0	0.600	w	21.00	17.10	21	21	441	359	0	0	0	0
	C	16B-30ad	0.032	-	1.12	1.66	1114	1114	1248	1854	176	176	197	293
	C	17B-6al	0.105	-	3.67	4.51	606	606	2225	2734	0	0	0	0
	F	19A-19bscp	0.049	-	1.34	0.65	121	121	163	79	0	0	0	0
	F	22A-tpl	0.989	-	34.62	0.00	1573	150	5192	0	176	27	935	0
6	c) AED excursion									935				93
	Envelope loss/gain								15657	11929			2125	1440
12	a) Infiltration								3877	991			629	161
	b) Room ventilation								0	0			0	0
13	Internal gains:		Occupants @	230			4			920	0			0
			Appliances/other							2600				0
	Subtotal (lines 6 to 13)								19534	16441			2754	1601
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			7	10
14	Subtotal								19534	16441			2761	1611
15	Duct loads						19%	29%	3796	4778	19%	29%	537	468
	Total room load								23329	21219			3298	2079
	Air required (cfm)								700	700			99	69

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



Right-Suite® Universal 2023 23.0.05 RSU02245

2024-Jul-29 08:36:44

... Homes Preserve at Laurel lot 143 plan 1755.rup Calc = MJ8 Front Door faces: N

Page 1



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

Job: 1
Date: Jul 25, 2024
By: DL Williams Heating & Cooling
Plan: 1755

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

1	Room name					br4					ah				
2	Exposed wall					17.0 ft					0 ft				
3	Room height					9.2 ft					10.5 ft				
4	Room dimensions					1.0 x 165.0 ft					3.0 x 3.0 ft				
5	Room area					165.0 ft²					9.0 ft²				
	Ty	Construction number	U-value (Btuh/ft²·°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)		
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool	
6	W	12C-0sw	0.091	n	3.18	2.14	0	0	0	0	5	5	14	10	
.	W	12C-0sw	0.091	e	3.18	2.14	108	93	296	199	0	0	0	0	
.	G	4A5-2ov	0.300	e	10.50	9.88	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.300	e	10.50	19.97	15	1	158	299	0	0	0	0	
11	G	4B5-2fv	0.300	e	10.50	9.88	0	0	0	0	0	0	0	0	
.	D	11J0	0.600	e	21.00	17.10	0	0	0	0	0	0	0	0	
.	W	12C-0sw	0.091	s	3.18	2.14	45	45	143	96	0	0	0	0	
.	G	4A5-2ov	0.300	s	10.50	7.65	0	0	0	0	0	0	0	0	
.	W	12C-0sw	0.091	w	3.18	2.14	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.300	w	10.50	19.97	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.300	w	10.50	7.65	0	0	0	0	0	0	0	0	
.	D	11J0	0.600	w	21.00	17.10	0	0	0	0	0	0	0	0	
.	C	16B-30ad	0.032	-	1.12	1.66	144	144	161	240	0	0	0	0	
.	C	17B-6al	0.105	-	3.67	4.51	22	22	81	99	9	9	35	42	
.	F	19A-19bscp	0.049	-	1.34	0.65	0	0	0	0	0	0	0	0	
.	F	22A-tpl	0.989	-	34.62	0.00	165	17	588	0	9	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: Jul 25, 2024
By: DL Williams Heating & Cooling
Plan: 1755

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

1	Room name					foyer 9.0 ft				laundry 4.0 ft				
2	Exposed wall					9.0 ft				9.0 ft				
3	Room height					1.0				9.0				
4	Room dimensions					58.5 ft				54.0 ft				
5	Room area					58.5 ft²				54.0 ft²				
	Ty	Construction number	U-value (Btuh/ft²·°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6	W	12C-0sw	0.091	n	3.18	2.14	0	0	0	0	36	36	115	77
.	W	12C-0sw	0.091	e	3.18	2.14	81	46	147	98	0	0	0	0
.	G	4A5-2ov	0.300	e	10.50	9.88	7	7	74	69	0	0	0	0
.	G	4A5-2ov	0.300	e	10.50	19.97	0	0	0	0	0	0	0	0
11	G	4B5-2fv	0.300	e	10.50	9.88	7	7	74	69	0	0	0	0
.	D	11J0	0.600	e	21.00	17.10	21	21	441	359	0	0	0	0
.	W	12C-0sw	0.091	s	3.18	2.14	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.300	s	10.50	7.65	0	0	0	0	0	0	0	0
.	W	12C-0sw	0.091	w	3.18	2.14	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.300	w	10.50	19.97	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.300	w	10.50	7.65	0	0	0	0	0	0	0	0
.	D	11J0	0.600	w	21.00	17.10	0	0	0	0	0	0	0	0
.	C	16B-30ad	0.032	-	1.12	1.66	59	59	66	97	54	54	60	90
.	C	17B-6al	0.105	-	3.67	4.51	0	0	0	0	0	0	0	0
.	F	19A-19bscp	0.049	-	1.34	0.65	0	0	0	0	0	0	0	0
.	F	22A-tpl	0.989	-	34.62	0.00	59	9	312	0	54	4	138	0

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



Right-Suite® Universal 2023 23.0.05 RSU02245

2024-Jul-29 08:36:44

... Homes Preserve at Laurel lot 143 plan 1755.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 & Cooling
Plan: 1755

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

1	Room name					wic 6.0 ft					mbath 10.0 ft				
2	Exposed wall					9.0 ft 12.0 x 6.0 ft heat/cool					9.0 ft 1.0 x 112.0 ft heat/cool				
3	Room height														
4	Room dimensions														
5	Room area					72.0 ft²					112.0 ft²				
	Ty	Construction number	U-value (Btuh/ft²·°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)		
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool	
6	W	12C-0sw	0.091	n	3.18	2.14	0	0	0	0	0	0	0	0	
.	W	12C-0sw	0.091	e	3.18	2.14	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.300	e	10.50	9.88	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.300	e	10.50	19.97	0	0	0	0	0	0	0	0	
11	G	4B5-2fv	0.300	e	10.50	9.88	0	0	0	0	0	0	0	0	
.	D	11J0	0.600	e	21.00	17.10	0	0	0	0	0	0	0	0	
.	W	12C-0sw	0.091	s	3.18	2.14	54	54	172	115	90	90	287	192	
.	G	4A5-2ov	0.300	s	10.50	7.65	0	0	0	0	0	0	0	0	
.	W	12C-0sw	0.091	w	3.18	2.14	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.300	w	10.50	19.97	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.300	w	10.50	7.65	0	0	0	0	0	0	0	0	
.	D	11J0	0.600	w	21.00	17.10	0	0	0	0	0	0	0	0	
.	C	16B-30ad	0.032	-	1.12	1.66	72	72	81	120	112	112	125	186	
.	C	17B-6al	0.105	-	3.67	4.51	0	0	0	0	0	0	0	0	
.	F	19A-19bscp	0.049	-	1.34	0.65	0	0	0	0	0	0	0	0	
.	F	22A-tpl	0.989	-	34.62	0.00	72	6	208	0	112	10	346	0	

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



Right-Suite® Universal 2023 23.0.05 RSU02245

2024-Jul-29 08:36:44

... Homes Preserve at Laurel lot 143 plan 1755.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 & Cooling
Plan: 1755

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

1	Room name					lav				mbed				
2	Exposed wall					0 ft				28.0 ft				
3	Room height					9.0 ft				9.0 ft				
4	Room dimensions					6.0 x 3.0 ft				13.0 x 15.0 ft				
5	Room area					18.0 ft²				195.0 ft²				
	Ty	Construction number	U-value (Btuh/ft²·°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6	W	12C-0sw	0.091	n	3.18	2.14	0	0	0	0	0	0	0	0
.	W	12C-0sw	0.091	e	3.18	2.14	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.300	e	10.50	9.88	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.300	e	10.50	19.97	0	0	0	0	0	0	0	0
11	G	4B5-2fv	0.300	e	10.50	9.88	0	0	0	0	0	0	0	0
.	D	11J0	0.600	e	21.00	17.10	0	0	0	0	0	0	0	0
.	W	12C-0sw	0.091	s	3.18	2.14	0	0	0	0	135	120	382	257
.	G	4A5-2ov	0.300	s	10.50	7.65	0	0	0	0	15	15	158	115
.	W	12C-0sw	0.091	w	3.18	2.14	0	0	0	0	117	87	277	186
.	G	4A5-2ov	0.300	w	10.50	19.97	0	0	0	0	30	2	315	599
.	G	4A5-2ov	0.300	w	10.50	7.65	0	0	0	0	0	0	0	0
.	D	11J0	0.600	w	21.00	17.10	0	0	0	0	0	0	0	0
.	C	16B-30ad	0.032	-	1.12	1.66	18	18	20	30	195	195	218	324
.	C	17B-6al	0.105	-	3.67	4.51	0	0	0	0	0	0	0	0
.	F	19A-19bscp	0.049	-	1.34	0.65	0	0	0	0	0	0	0	0
.	F	22A-tpl	0.989	-	34.62	0.00	18	0	0	0	195	28	969	0
6	c) AED excursion									-1				258
	Envelope loss/gain								20	29			2319	1739
12	a) Infiltration								0	0			652	167
	b) Room ventilation								0	0			0	0
13	Internal gains:		Occupants @	230			0			0	0			0
			Appliances/other							0				0
	Subtotal (lines 6 to 13)								20	29			2972	1906
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								20	29			2972	1906
15	Duct loads					19%	29%		4	8	19%	29%	577	554
	Total room load								24	37			3549	2460
	Air required (cfm)								1	1			106	81

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



Right-Suite® Universal 2023 23.0.05 RSU02245

2024-Jul-29 08:36:44

... Homes Preserve at Laurel lot 143 plan 1755.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 & Cooling
Plan: 1755

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

1	Room name					kitchen					great				
2	Exposed wall					0 ft					18.0 ft				
3	Room height					10.0 ft					10.5 ft				
4	Room dimensions					1.0 x 143.5 ft					1.0 x 330.0 ft				
5	Room area					143.5 ft²					330.0 ft²				
	Ty	Construction number	U-value (Btuh/ft²·°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)		
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool	
6	W	12C-0sw	0.091	n	3.18	2.14	0	0	0	0	26	26	81	55	
.	W	12C-0sw	0.091	e	3.18	2.14	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.300	e	10.50	9.88	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.300	e	10.50	19.97	0	0	0	0	0	0	0	0	
11	G	4B5-2fv	0.300	e	10.50	9.88	0	0	0	0	0	0	0	0	
.	D	11J0	0.600	e	21.00	17.10	0	0	0	0	0	0	0	0	
.	W	12C-0sw	0.091	s	3.18	2.14	14	14	43	29	0	0	0	0	
.	G	4A5-2ov	0.300	s	10.50	7.65	0	0	0	0	0	0	0	0	
.	W	12C-0sw	0.091	w	3.18	2.14	0	0	0	0	162	111	354	237	
.	G	4A5-2ov	0.300	w	10.50	19.97	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.300	w	10.50	7.65	0	0	0	0	30	30	315	230	
.	D	11J0	0.600	w	21.00	17.10	0	0	0	0	21	21	441	359	
.	C	16B-30ad	0.032	-	1.12	1.66	45	45	50	74	0	0	0	0	
.	C	17B-6al	0.105	-	3.67	4.51	103	103	380	467	345	345	1266	1556	
.	F	19A-19bscp	0.049	-	1.34	0.65	0	0	0	0	0	0	0	0	
.	F	22A-tpl	0.989	-	34.62	0.00	144	0	0	0	330	18	623	0	

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



Right-Suite® Universal 2023 23.0.05 RSU02245

2024-Jul-29 08:36:44

... Homes Preserve at Laurel lot 143 plan 1755.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 & Cooling
Plan: 1755

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

1	Room name					br2 26.0 ft 9.0 ft 1.0 x 160.0 ft heat/cool 160.0 ft²					bath 5.0 ft 9.0 ft 10.0 x 5.0 ft heat/cool 50.0 ft²				
2	Exposed wall														
3	Room height														
4	Room dimensions														
5	Room area														
	Ty	Construction number	U-value (Btuh/ft²·°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)		
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool	
6	W	12C-0sw	0.091	n	3.18	2.14	117	117	373	250	45	45	143	96	
.	W	12C-0sw	0.091	e	3.18	2.14	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.300	e	10.50	9.88	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.300	e	10.50	19.97	0	0	0	0	0	0	0	0	
11	G	4B5-2fv	0.300	e	10.50	9.88	0	0	0	0	0	0	0	0	
.	D	11J0	0.600	e	21.00	17.10	0	0	0	0	0	0	0	0	
.	W	12C-0sw	0.091	s	3.18	2.14	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.300	s	10.50	7.65	0	0	0	0	0	0	0	0	
.	W	12C-0sw	0.091	w	3.18	2.14	117	102	325	218	0	0	0	0	
.	G	4A5-2ov	0.300	w	10.50	19.97	15	1	158	299	0	0	0	0	
.	G	4A5-2ov	0.300	w	10.50	7.65	0	0	0	0	0	0	0	0	
.	D	11J0	0.600	w	21.00	17.10	0	0	0	0	0	0	0	0	
.	C	16B-30ad	0.032	-	1.12	1.66	160	160	179	266	50	50	56	83	
.	C	17B-6al	0.105	-	3.67	4.51	0	0	0	0	0	0	0	0	
.	F	19A-19bscp	0.049	-	1.34	0.65	0	0	0	0	0	0	0	0	
.	F	22A-tpl	0.989	-	34.62	0.00	160	26	900	0	50	5	173	0	
</															

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



Right-Suite® Universal 2023 23.0.05 RSU02245

2024-Jul-29 08:36:44

... Homes Preserve at Laurel lot 143 plan 1755.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 & Cooling
Plan: 1755

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

1	Room name					hall 0 ft				dining 11.0 ft				
2	Exposed wall					9.0 ft				9.5 ft				
3	Room height					3.0				11.0				
4	Room dimensions					x 10.0 ft				x 11.0 ft				
5	Room area					30.0 ft²				121.0 ft²				
	Ty	Construction number	U-value (Btuh/ft²·°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6	W	12C-0sw	0.091	n	3.18	2.14	0	0	0	0	0	0	0	0
.	W	12C-0sw	0.091	e	3.18	2.14	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.300	e	10.50	9.88	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.300	e	10.50	19.97	0	0	0	0	0	0	0	0
11	G	4B5-2fv	0.300	e	10.50	9.88	0	0	0	0	0	0	0	0
.	D	11J0	0.600	e	21.00	17.10	0	0	0	0	0	0	0	0
.	W	12C-0sw	0.091	s	3.18	2.14	0	0	0	0	17	17	53	35
.	G	4A5-2ov	0.300	s	10.50	7.65	0	0	0	0	0	0	0	0
.	W	12C-0sw	0.091	w	3.18	2.14	0	0	0	0	88	58	185	124
.	G	4A5-2ov	0.300	w	10.50	19.97	0	0	0	0	30	2	315	599
.	G	4A5-2ov	0.300	w	10.50	7.65	0	0	0	0	0	0	0	0
.	D	11J0	0.600	w	21.00	17.10	0	0	0	0	0	0	0	0
.	C	16B-30ad	0.032	-	1.12	1.66	30	30	34	50	0	0	0	0
.	C	17B-6al	0.105	-	3.67	4.51	0	0	0	0	126	126	464	570
.	F	19A-19bscp	0.049	-	1.34	0.65	0	0	0	0	121	121	163	79
.	F	22A-tpl	0.989	-	34.62	0.00	30	0	0	0	0	0	0	0

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



Right-Suite® Universal 2023 23.0.05 RSU02245

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... Homes Preserve at Laurel lot 143 plan 1755.rup Calc = MJ8 Front Door faces: N

... Homes Preserve at Laurel lot 143 plan 1755.rup Calc = MJ8 Front Door faces: N

... Homes Preserve at Laurel lot 143 plan 1755.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 & C...
Plan: 1755

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

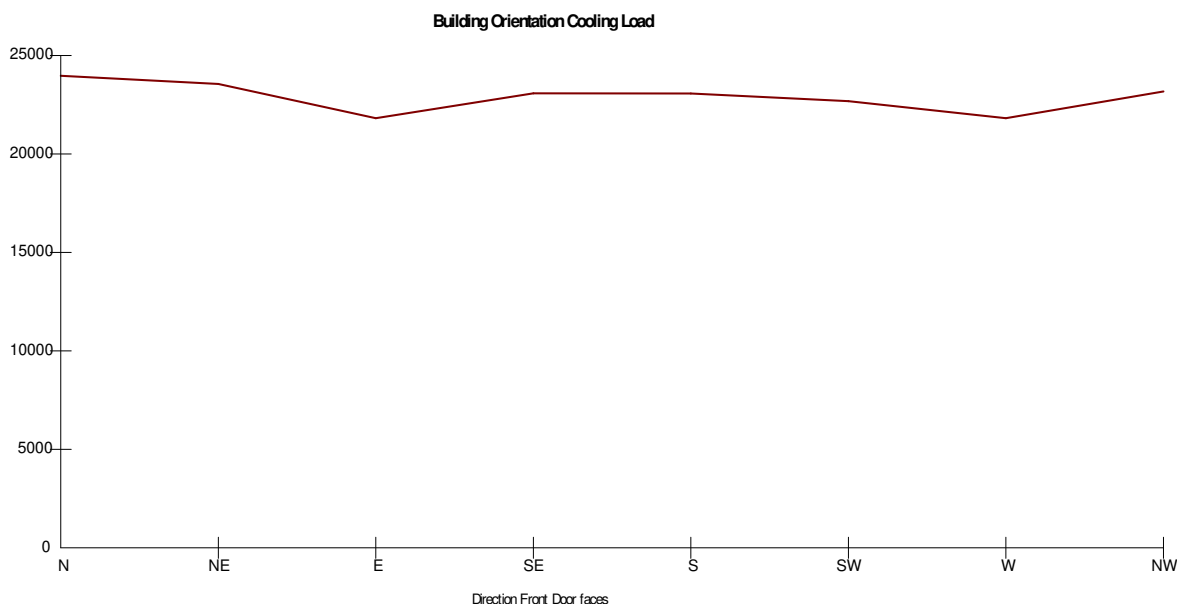
Project Information

For: Preserve at Laurel lot 143 plan 1755, 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)	20582	20164	18421	19691	19675	19291	18421	19781
Latent Load (Btuh)	3389	3389	3389	3389	3389	3389	3389	3389
Total Load (Btuh)	23971	23553	21810	23080	23064	22680	21810	23170
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 North

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



Right-Suite® Universal 2023 23.0.05 RSU02245
... Homes Preserve at Laurel lot 143 plan 1755.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 & C...
Plan: 1755

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 143 plan 1755	Date: Jul 25, 2024
Address: Lake City, FL 32055	
Phone:	Job ID: 1

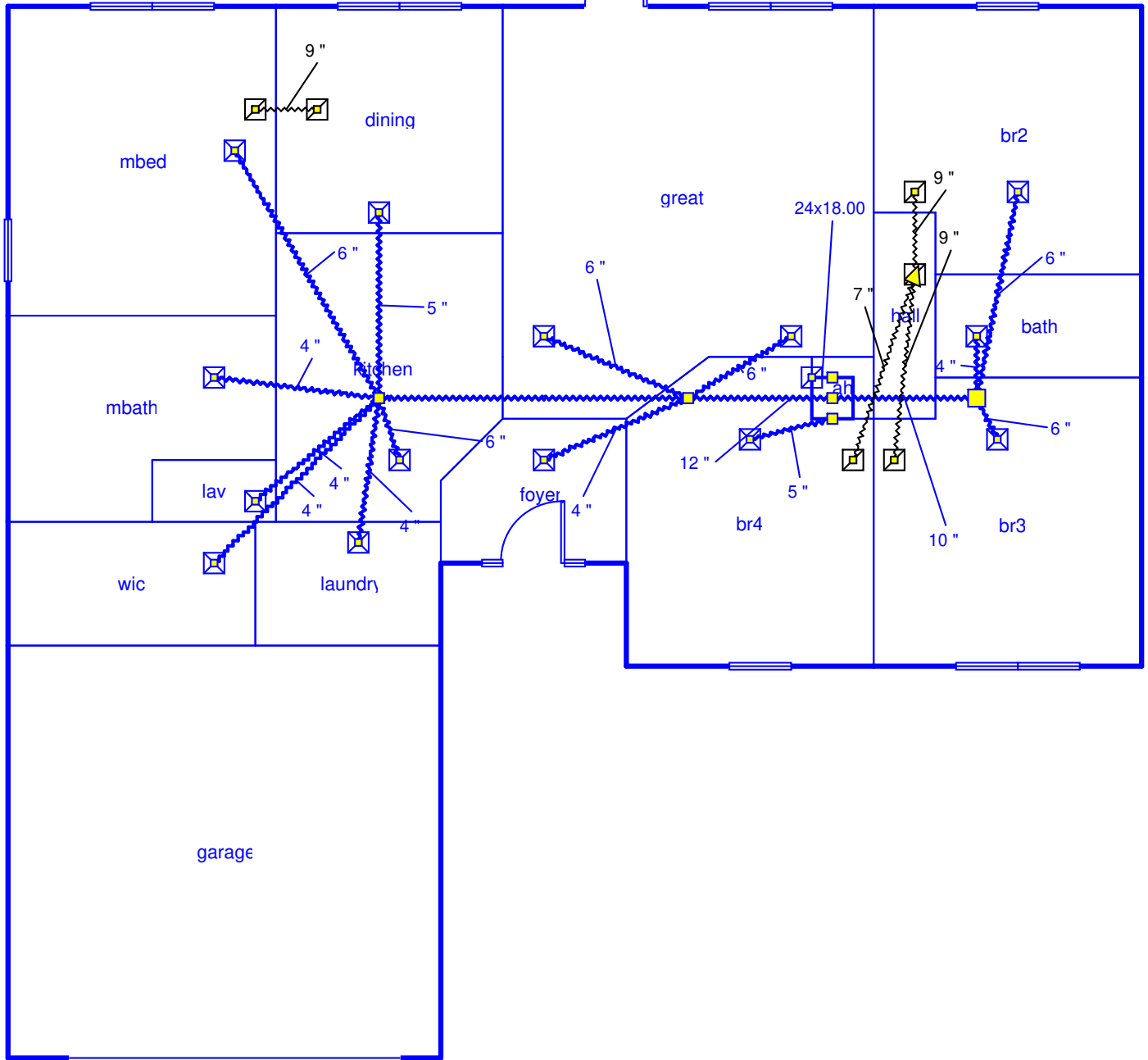
Worksheet A	
Location and Design Conditions	
Weather Location: Gainesville Regional AP, FL, US	Elevation = 164 Latitude = 30
Indoor Conditions, Heating: DB = 68 °F RH = 30 %	Indoor Conditions, Cooling: DB = 75 °F RH = 50 %
Table 1 Conditions 99% DB = 33 °F 1% DB = 92 °F	Grains Difference = 45 gr/lb Daily 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 & Cooling LLC
Preserve at Laurel lot 143 plan 1755
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 : 92
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... at Laurel lot 143 plan 1755.rup



Duct System Summary

Entire House

DL Williams Heating & Cooling LLC

Job: 1
Date: Jul 25, 2024
By: DL Williams Heating & C...
Plan: 1755

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

Project Information

For: Preserve at Laurel lot 143 plan 1755, 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	0.383 / 0.117 in H ₂ O	0.383 / 0.117 in H ₂ O
Lowest friction rate	0.192 in/100ft	0.192 in/100ft
Actual air flow	700 cfm	700 cfm
Total effective length (TEL)	261 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 593	18	9	0.307	4.0	0x0	VIFx	10.0	115.0	st1
br2	h 3044	91	57	0.290	6.0	0x0	VIFx	17.2	115.0	st1
br3	h 3298	99	69	0.308	6.0	0x0	VIFx	9.2	115.0	st1
br4	h 2226	67	47	0.387	5.0	0x0	VIFx	4.1	95.0	st2
dining	c 2291	52	76	0.231	5.0	0x0	VIFx	31.0	135.0	st2
foyer	h 1578	47	30	0.296	4.0	0x0	VIFx	14.6	115.0	st2
great	c 2915	64	96	0.296	6.0	0x0	VIFx	14.6	115.0	st2
great-A	c 2915	64	96	0.300	6.0	0x0	VIFx	12.8	115.0	st2
kitchen	c 2471	18	82	0.239	6.0	0x0	VIFx	25.2	135.0	st2
laundry	c 850	15	28	0.234	4.0	0x0	VIFx	29.1	135.0	st2
lav	c 37	1	1	0.232	4.0	0x0	VIFx	29.8	135.0	st2
mbath	h 1184	36	18	0.192	4.0	0x0	VIFx	30.1	170.0	st2
mbed	h 3549	106	81	0.224	6.0	0x0	VIFx	35.9	135.0	st2
wic	h 717	22	11	0.228	4.0	0x0	VIFx	33.3	135.0	st2

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	208	134	0.290	381	10.0	0 x 0	VinIFlx	
st2	Peak AVF	425	519	0.192	661	12.0	0 x 0	VinIFlx	



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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	700	700	61.0	0.192	233	10.6	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 & C...
Plan: 1755

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

Project Information

For: Preserve at Laurel lot 143 plan 1755, Adams Homes
Lake City, FL 32055

Group 1: (N, NE, E, SE, S, NW) Group 2: (SW, 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	18 h	12x12	4	18 h	12x12	4	18 h	12x12	4	18 h	12x12	4
br2	91 h	12x12	6	91 h	12x12	6	91 h	12x12	6	91 h	12x12	6
br3	99 h	12x12	6	99 h	12x12	6	99 h	12x12	6	99 h	12x12	6
br4	67 h	12x12	5	67 h	12x12	5	67 h	12x12	5	67 h	12x12	5
dining	54 c	12x12	5	68 c	12x12	5	76 c	12x12	5	67 c	12x12	5
foyer	47 h	12x12	4	47 h	12x12	4	47 h	12x12	4	47 h	12x12	4
great	102 c	12x12	6	99 c	12x12	6	96 c	12x12	6	99 c	12x12	6
great-A	102 c	12x12	6	99 c	12x12	6	96 c	12x12	6	99 c	12x12	6
kitchen	98 c	12x12	6	84 c	12x12	6	82 c	12x12	6	89 c	12x12	6
laundry	34 c	12x12	4	29 c	12x12	4	28 c	12x12	4	30 c	12x12	4
lav	1 c	12x12	4	1 c	12x12	4	1 c	12x12	4	1 c	12x12	4
mbath	36 h	12x12	4	36 h	12x12	4	36 h	12x12	4	36 h	12x12	4
mbed	106 h	12x12	6	106 h	12x12	6	106 h	12x12	6	106 h	12x12	6
wic	22 h	12x12	4	22 h	12x12	4	22 h	12x12	4	22 h	12x12	4
Supply Trunks												
st1	208 h		10	208 h		10	208 h		10	208 h		10
st2	540 c		12	526 c		12	519 c		12	530 c		12
Return Branches												
rb1	700 c	12x12	0x0	700 c	12x12	0x0	700 c	12x12	0x0	700 c	12x12	0x0
Friction Rates												
Heating FR	0.192			0.192			0.192			0.192		
Cooling FR	0.192			0.192			0.192			0.192		



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... Homes Preserve at Laurel lot 143 plan 1755.rup Calc = MJ8 Front Door faces: N

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Project Information

For: Preserve at Laurel lot 143 plan 1755, 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												
bath	18 h	12x12	4	18 h	12x12	4	18 h	12x12	4	18 h	12x12	4
br2	91 h	12x12	6	91 h	12x12	6	91 h	12x12	6	91 h	12x12	6
br3	99 h	12x12	6	99 h	12x12	6	99 h	12x12	6	99 h	12x12	6
br4	67 h	12x12	5	67 h	12x12	5	67 h	12x12	5	67 h	12x12	5
dining	55 c	12x12	5	66 c	12x12	5	69 c	12x12	5	60 c	12x12	5
foyer	47 h	12x12	4	47 h	12x12	4	47 h	12x12	4	47 h	12x12	4
great	103 c	12x12	6	90 c	12x12	5	88 c	12x12	5	98 c	12x12	6
great-A	103 c	12x12	6	90 c	12x12	5	88 c	12x12	5	98 c	12x12	6
kitchen	99 c	12x12	6	87 c	12x12	6	84 c	12x12	6	89 c	12x12	6
laundry	34 c	12x12	4	30 c	12x12	4	29 c	12x12	4	31 c	12x12	4
lav	1 c	12x12	4	1 c	12x12	4	1 c	12x12	4	1 c	12x12	4
mbath	36 h	12x12	4	36 h	12x12	4	36 h	12x12	4	36 h	12x12	4
mbed	106 h	12x12	6	106 h	12x12	6	106 h	12x12	6	106 h	12x12	6
wic	22 h	12x12	4	22 h	12x12	4	22 h	12x12	4	22 h	12x12	4
Supply Trunks												
st1	208 h		10	208 h		10	208 h		10	208 h		10
st2	539 c		12	516 c		12	504 c		12	522 c		12
Return Branches												
rb1	700 c	12x12	0x0	700 c	12x12	0x0	700 c	12x12	0x0	700 c	12x12	0x0
Friction Rates												
Heating FR	0.192			0.192			0.192			0.192		
Cooling FR	0.192			0.192			0.192			0.192		

Project Information

For: Preserve at Laurel lot 143 plan 1755, Adams Homes
Lake City, FL 32055

Duct Name	Largest			Smallest		
	Reg CFM	Reg Size	Duct Size	Reg CFM	Reg Size	Duct Size
Supply Branches						
bath	18 h	12x12	4	18 h	12x12	4
br2	91 h	12x12	6	91 h	12x12	6
br3	99 h	12x12	6	99 h	12x12	6
br4	67 h	12x12	5	67 h	12x12	5
dining	76 c	12x12	5	54 c	12x12	5
foyer	47 h	12x12	4	47 h	12x12	4
great	103 c	12x12	6	88 c	12x12	5
great-A	103 c	12x12	6	88 c	12x12	5
kitchen	99 c	12x12	6	82 c	12x12	6
laundry	34 c	12x12	4	28 c	12x12	4
lav	1 c	12x12	4	1 c	12x12	4
mbath	36 h	12x12	4	36 h	12x12	4
mbed	106 h	12x12	6	106 h	12x12	6
wic	22 h	12x12	4	22 h	12x12	4
Supply Trunks						
st1	208 h		10	208 h		10
st2	540 c		12	504 c		12
Return Branches						
rb1	700 c	12x12	0x0	700 c	12x12	0x0
Friction Rates						
Heating FR	0.192			0.192		
Cooling FR	0.192			0.192		



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 & C...
Plan: 1755

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

Project Information

For: Preserve at Laurel lot 143 plan 1755, 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	8	1
Measured length of trunk	22	0
Equivalent length of fittings	170	60
Total length	200	61
Total effective length		261

Friction Rate

	Heating (in/100ft)	Cooling (in/100ft)
Supply Ducts	0.192 > 0.18	0.192 > 0.18
Return Ducts	0.192 > 0.18	0.192 > 0.18

Fitting Equivalent Length Details

Supply 4AD=60, 2A0=35, 11A=20, 11A=20, 1A=35: TotalEL=170

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



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... Homes Preserve at Laurel lot 143 plan 1755.rup Calc = MJ8 Front Door faces: N

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Manual S Compliance Report

Entire House

DL Williams Heating & Cooling LLC

Job: 1
Date: Jul 25, 2024
By: DL Williams Heating & C...
Plan: 1755

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

Project Information

For: Preserve at Laurel lot 143 plan 1755, Adams Homes
Lake City, FL 32055

Cooling Equipment

Design Conditions

Outdoor design DB:	92.0°F	Sensible gain:	21219 Btuh	Entering coil DB:	77.3°F
Outdoor design WB:	76.0°F	Latent gain:	3389 Btuh	Entering coil WB:	63.6°F
Indoor design DB:	75.0°F	Total gain:	24608 Btuh		
Indoor RH:	50%	Estimated airflow:	700 cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP		
Manufacturer:	Trane	Model:	4TWR5024H1+TEM6A0B30H21
Actual airflow:	700 cfm		
Sensible capacity:	19383 Btuh	91% of load	
Latent capacity:	3745 Btuh	111% of load	
Total capacity:	23128 Btuh	94% of load	SHR: 84%

Heating Equipment

Design Conditions

Outdoor design DB:	33.0°F	Heat loss:	23329 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+TEM6A0B30H21
Actual airflow:	700 cfm		
Output capacity:	16707 Btuh	72% of load	Capacity balance: 35 °F
Supplemental heat required:	6622 Btuh		Economic balance: -99 °F

Backup equipment type:	Elec strip		
Manufacturer:		Model:	
Actual airflow:	700 cfm		
Output capacity:	6.4 kW	93% of load	Temp. rise: 50 °F

Meets all requirements of ACCA Manual S.



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 #: 1755
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: 23329 Btuh

Summer Design Conditions

Outdoor temperature: 92 °F
Indoor temperature: 75 °F
Grains difference: 45 gr/lb @50% RH
Sensible heat gain: 21875 Btuh
Latent heat gain: 3494 Btuh
Total heat gain: 25369 Btuh

Building Construction Information

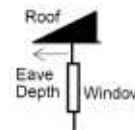
Building

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

Number of bedrooms: 1
Conditioned floor area: 1694 ft²
Number of occupants: 4

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
4TWR5024H1+TEM6A0B30H21
Heating output capacity: 16707 Btuh
Heat pumps - capacity at winter design outdoor conditions
Aux. heating output capacity: 21717 Btuh

Cooling Equipment Data

Equipment type: Split ASHP
Air Conditioner, Heat pump, etc.
Model: Trane
4TWR5024H1+TEM6A0B30H21
Total cooling capacity: 23128 Btuh
Sensible cooling capacity: 19383 Btuh
Latent cooling capacity: 3745 Btuh

Blower Data

Heating cfm: 700
Cooling cfm: 700
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: 700 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: 200 ft
Longest return duct: 61 ft
Total effective length (TEL): 261 ft
Friction rate: 0.192 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



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: 1755 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: 4 -

3.5 Conditioned floor area used in loads: 1694 Sq. Ft. -

3.6 Window area used in loads: 179 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)	20.6	20.2	18.4	19.7	19.3	18.4	19.8	-
	3.11 Latent heat gain (Not by orientation)	3.4							-
	3.12 Total heat gain (By orientation)	24.0	23.6	21.8	23.1	23.1	22.7	21.8	23.2
	3.13 Maximum – minimum total heat gain (Item 3.12) across orientations =	2.2							
Heating	3.14 Total heat loss (Not by orientation)	23.3							-



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 TEM6A0B30H21										-	
4.5 AHRI reference #: 10298672										-	
4.6 AHRI listed efficiency: 12.5 / 15 EER / SEER Air-source heat pump: 9 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: 3.7 kBtuh										-	
4.10 Sensible capacity at design conditions, from OEM expanded performance data: 19.4 kBtuh										-	
4.11 Total capacity at design conditions, from OEM expanded performance data: 23.1 kBtuh										-	
4.12 Air-source heat pump capacity: At 17°F: 14.1 kBtuh At 47°F: 21.8 kBtuh ☐ N/A										-	
4.13 Cooling sizing % = Total capacity (Item 4.11) divided by maximum total heat gain (Item 3.12): 96 %										-	
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) = 86%										-	
4.14.2 HDD / CDD ratio (Visit energystar.gov/hvacdesign temps 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	lav	1		23			
2	bath	9		13	mbath	18		24			
3	br2	57		14	mbed	81		25			
4	br3	69		15	wic	11		26			
5	br4	47		16				27			
6	dining	76		17				28			
7	foyer	30		18				29			
8	great	192		19				30			
9	hall	0		20				31			
10	kitchen	82		21				32			
11	laundry	28		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: 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):				20.6 24.0					
4.5 Sensible, latent, & total cooling capacity at design conditions (kBtuh):				19.4 3.7 23.1					
4.6 If HP, heating capacity at 17°F and at 47°F (kBtuh):				14.1 21.8 N/A ☐		N/A ☐		N/A ☐	
4.7 Compressor speed type:				Single					
4.8 Cooling sizing % & applicable sizing limit key from Table 2:				96.5 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:				1694 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)				4 920								
3.8 Total non-occupant internal gains (Btuh):				2600								
3.9 Conditioned floor area (sq. ft.):(22)				1694								
3.10 Window area (sq. ft.):(23)				179								
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				20.6	3.4	24.0						
NE				20.2	3.4	23.6						
E				18.4	3.4	21.8						
SE				19.7	3.4	23.1						
S				19.7	3.4	23.1						
SW				19.3	3.4	22.7						
W				18.4	3.4	21.8						
NW				19.8	3.4	23.2						
3.16 Maximum – minimum total heat gain (kBtuh):(28)						2.2						
3.17 Total heat loss (kBtuh):				23.3								

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 4TWR5024H1	N/A ☐	N/A ☐
4.6 AHRI ref. #, or check box for alt. OEM doc.:(31)	10298672	OEM ☐	OEM ☐
4.7 If AC / HP, rated cooling efficiency:(32)	15 SEER	N/A ☐	N/A ☐
4.8 If HP, rated heating efficiency:(33)	9 HSPF	N/A ☐	N/A ☐
4.9 If HP, ratio of max. to min. rated capacity:	1.5	N/A ☐	N/A ☐
4.10 If AC / HP, blower fan motor & speed type:(34)	Other Single	N/A ☐	N/A ☐
4.11 If AC / HP, compressor speed type:(35)	Single	N/A ☐	N/A ☐
4.12 If AC / HP, meter device type:(36)		N/A ☐	N/A ☐
4.13 If TXV or EEV, OEM subcooling target (°F):(37)	0.0	N/A ☐	N/A ☐
4.14 Filter performance metric and rating:(38)		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	9	
3.	br2	57	
4.	br3	69	
5.	br4	47	
6.	dining	76	
7.	foyer	30	
8.	great	192	
9.	hall	0	
10.	kitchen	82	
11.	laundry	28	
12.	lav	1	
13.	mbath	18	
14.	mbed	81	
15.	wic	11	
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