



Load Short Form

Entire House

DL Williams Heating & Cooling L.L.C.

Job: 1
Date: 09/25/2024
By: DL Williams Heating & C...
Plan: 1820

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

Project Information

For: Adams Homes Preserve at Laurel Lake-plan 1820 lot 140, Adams Homes
lot 140, Columbia, FL

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	44		

HEATING EQUIPMENT

Make Trane
Trade TRANE
Model 4TWR5030H1
AHRI ref 9033590
Efficiency 8.1 HSPF2
Heating input
Heating output 27800 Btuh @ 47°F
Temperature rise 29 °F
Actual air flow 875 cfm
Air flow factor 0.033 cfm/Btuh
Static pressure 0.50 in H2O
Space thermostat
Capacity balance point = 32 °F

Backup:
Input = 8 kW, Output = 26399 Btuh, 100 AFUE

COOLING EQUIPMENT

Make Trane
Trade TRANE
Cond 4TWR5030H1
Coil TEM6A0B30H21++TDR
AHRI ref 9033590
Efficiency 12.5 EER2, 15.25 SEER2
Sensible cooling 20300 Btuh
Latent cooling 8700 Btuh
Total cooling 29000 Btuh
Actual air flow 875 cfm
Air flow factor 0.039 cfm/Btuh
Static pressure 0.50 in H2O
Load sensible heat ratio 0.84

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
kitchen	230	1618	3181	54	124
laundry	36	49	718	2	28
owner bath	124	1690	1171	56	46
wic	45	61	97	2	4
den/br4	169	4167	2436	138	95
owner bed	218	5391	2667	179	104
dining	143	1805	1734	60	68
br3	169	1874	1135	62	44
bath	45	624	240	21	9
br2	148	4064	1762	135	69
living	336	2663	5039	88	197
hall	28	0	0	0	0
nook	54	934	866	31	34
foyer	70	1458	1316	48	51

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



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...C:\Trane\Adams Homes plan 1820 Master Seer2.rup Calc = MJ8 Front Door faces: N

Entire House	1814	26399	22362	875	875
Other equip loads		0	0		
Equip. @ 0.97 RSM			21736		
Latent cooling			4180		
TOTALS	1814	26399	25916	875	875

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



Building Analysis

Entire House

DL Williams Heating & Cooling L.L.C.

Job: 1
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Plan: 1820

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Project Information

For: Adams Homes Preserve at Laurel Lake-plan 1820 lot 140, Adams Homes lot 140, Columbia, FL

Design Conditions

Location:

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

Outdoor:

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

Heating

33
-
-
15.0

Cooling

92
18 (M)
76
7.5

Indoor:

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

Heating

68
35
30
8.2

Cooling

75
17
50
43.8

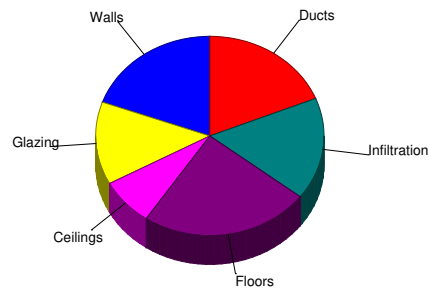
Infiltration:

Method
Construction quality
Fireplaces

Simplified
Average
0

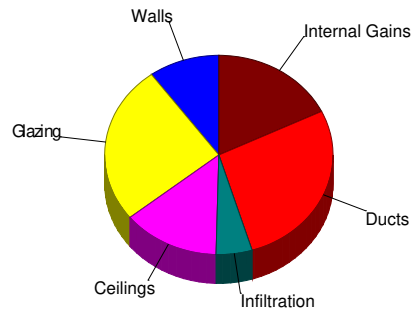
Heating

Component	Btuh/ft²	Btuh	% of load
Walls	3.2	5146	19.5
Glazing	16.5	3546	13.4
Doors	0	0	0
Ceilings	1.1	2020	7.7
Floors	3.5	6330	24.0
Infiltration	2.4	4378	16.6
Ducts		4979	18.9
Piping		0	0
Humidification		0	0
Ventilation		0	0
Adjustments		0	0
Total		26399	100.0



Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	1.4	2248	10.1
Glazing	26.8	5758	25.8
Doors	0	0	0
Ceilings	1.7	3088	13.8
Floors	0	0	0
Infiltration	0.6	1139	5.1
Ducts		6149	27.5
Ventilation		0	0
Internal gains		3980	17.8
Blower		0	0
Adjustments		0	0
Total		22362	100.0



Latent Cooling Load = 4180 Btuh

Overall U-value = 0.090 Btuh/ft²-°F, Window / Floor Area = 11.9 %

Data entries checked.



Component Constructions
Entire House
DL Williams Heating & Cooling L.L.C.

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Project Information

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lot 140, Columbia, FL

Design Conditions

Location:			Indoor:	Heating	Cooling
Gainesville Regional, FL, US			Indoor temperature (°F)	68	75
Elevation: 123 ft			Design TD (°F)	35	17
Latitude: 30°N			Relative humidity (%)	30	50
			Moisture difference (gr/lb)	8.2	43.8
Outdoor:	Heating	Cooling	Infiltration:		
Drybulb (°F)	33	92	Method	Simplified	
Daily range (°F)	-	18 (M)	Construction quality	Average	
Wet bulb (°F)	-	76	Fireplaces	0	
Wind speed (mph)	15.0	7.5			

Construction descriptions

	Or	Area 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-0bw: Frm wall, brk 4" ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud	ne	584	0.091	13.0	3.17	1849	1.38	808
	se	161	0.091	13.0	3.17	510	1.38	223
	sw	529	0.091	13.0	3.17	1675	1.38	732
	nw	351	0.091	13.0	3.17	1112	1.38	486
	all	1625	0.091	13.0	3.17	5146	1.38	2248

Partitions (none)

Windows

4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/8" thk; 6.67 ft head ht	ne	36	0.470	0	16.4	589	29.0	1043
	se	21	0.490	0	17.1	358	21.7	456
	se	31	0.470	0	16.4	507	30.0	930
	sw	36	0.470	0	16.4	589	30.0	1080
	nw	48	0.470	0	16.4	785	29.0	1390
	all	172	0.470	0	16.4	2828	28.5	4898
4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/8" thk; 5 ft overhang (7 ft window ht, 2 ft sep.); 6.67 ft head ht	se	7	0.470	0	16.4	114	16.4	115
4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/8" thk; NFRC rated (SHGC=0.31); 50% blinds 45°, light; 50% outdoor insect screen; 2 ft overhang (5 ft window ht, 2 ft sep.); 6.67 ft head ht	sw	15	0.470	0	16.4	245	20.3	304
10D-v: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/8" thk; NFRC rated (SHGC=0.32); 8 ft overhang (7 ft window ht, 2 ft sep.); 6.67 ft head ht	nw	21	0.490	0	17.1	358	21.0	441

Doors (none)

Ceilings

16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh		1814	0.032	30.0	1.11	2020	1.70	3088
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Floors

22A-tp1: Bg floor, light dry soil, on grade depth, carp 80% flr frsh	184	0.989	0	34.4	6330	0	0
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Component Constructions kitchen

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lot 140, Columbia, FL

Design Conditions

Location:			Indoor:	Heating	Cooling
Gainesville Regional, FL, US			Indoor temperature (°F)	68	75
Elevation: 123 ft			Design TD (°F)	35	17
Latitude: 30°N			Relative humidity (%)	30	50
			Moisture difference (gr/lb)	8.2	43.8
Outdoor:	Heating	Cooling	Infiltration:		
Dry bulb (°F)	33	92	Method	Simplified	
Daily range (°F)	-	18 (M)	Construction quality	Average	
Wet bulb (°F)	-	76	Fireplaces	0	
Wind speed (mph)	15.0	7.5			

Construction descriptions

	Or	Area ft²	U-value Btuh/ft²-°F	Insul R ft²-°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
Walls								
12C-0bw: Frm wall, brk 4" ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud	sw	88	0.091	13.0	3.17	279	1.38	122
Partitions (none)								
Windows								
4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/8" thk; 6.67 ft head ht	sw	12	0.470	0	16.4	196	30.0	360
Doors (none)								
Ceilings								
16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh		230	0.032	30.0	1.11	256	1.70	392
Floors								
22A-tpl: Bg floor, light dry soil, on grade depth, carp 80% flr fnsh		10	0.989	0	34.4	344	0	0





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Gainesville Regional, FL, US			Indoor temperature (°F)		68	75
Elevation: 123 ft			Design TD (°F)		35	17
Latitude: 30°N			Relative humidity (%)		30	50
			Moisture difference (gr/lb)		8.2	43.8
Outdoor:	Heating	Cooling	Infiltration:			
	Drybulb (°F)	33				
	Daily range (°F)	-			Method Simplified	
	Wet bulb (°F)	-			Average	
	Wind speed (mph)	15.0			0	
			Construction quality			
			Fireplaces			

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
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Walls (none)							
Partitions (none)							
Windows (none)							
Doors (none)							
Ceilings							
16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2"		36	0.032	30.0	1.11	40	1.70
gypsum board int fnsh							61
Floors (none)							





Component Constructions
owner bath
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Gainesville Regional, FL, US			Indoor temperature (°F)	68	75
Elevation: 123 ft			Design TD (°F)	35	17
Latitude: 30°N			Relative humidity (%)	30	50
			Moisture difference (gr/lb)	8.2	43.8
Outdoor:	Heating	Cooling	Infiltration:		
Dry bulb (°F)	33	92	Method	Simplified	
Daily range (°F)	-	18 (M)	Construction quality	Average	
Wet bulb (°F)	-	76	Fireplaces	0	
Wind speed (mph)	15.0	7.5			

Construction descriptions

	Or	Area ft²	U-value Btuh/ft²-°F	Insul R ft²-°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
Walls								
12C-0bw: Frm wall, brk 4" ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud	sw	108	0.091	13.0	3.17	342	1.38	149
Partitions (none)								
Windows								
4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/8" thk; 6.67 ft head ht	sw	12	0.470	0	16.4	196	30.0	360
Doors (none)								
Ceilings								
16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh		124	0.032	30.0	1.11	138	1.70	210
Floors								
22A-tpl: Bg floor, light dry soil, on grade depth, carp 80% flr fnsh		12	0.989	0	34.4	410	0	0





Component Constructions

wic

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lot 140, Columbia, FL

Design Conditions

Location:

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

Outdoor:

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

Heating

33
-
-
15.0

Cooling

92
18 (M)
76
7.5

Indoor:

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

Heating

68
35
30
8.2

Cooling

75
17
50
43.8

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
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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

45	0.032	30.0	1.11	50	1.70	76
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Floors
(none)



Component Constructions

den/br4

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Design Conditions

Location:		Indoor:		Heating	Cooling
Gainesville Regional, FL, US		Indoor temperature (°F)		68	75
Elevation: 123 ft		Design TD (°F)		35	17
Latitude: 30°N		Relative humidity (%)		30	50
		Moisture difference (gr/lb)		8.2	43.8
Outdoor:	Heating	Cooling	Infiltration:		
Dry bulb (°F)	33	92	Method		
Daily range (°F)	-	18 (M)	Construction quality		
Wet bulb (°F)	-	76	Simplified		
Wind speed (mph)	15.0	7.5	Average		
			Fireplaces		
			0		

Construction descriptions

	Or	Area ft²	U-value Btuh/ft²-°F	Insul R ft²-°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
Walls								
12C-0bw: Frm wall, brk 4" ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud	ne	130	0.091	13.0	3.17	412	1.38	180
	se	106	0.091	13.0	3.17	336	1.38	147
	sw	60	0.091	13.0	3.17	190	1.38	83
	all	296	0.091	13.0	3.17	937	1.38	409

Partitions

(none)

Windows

4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/8" thk; 6.67 ft head ht	se	24	0.470	0	16.4	393	30.0	720
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Doors

(none)

Ceilings

16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh		169	0.032	30.0	1.11	188	1.70	288
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Floors

22A-tpl: Bg floor, light dry soil, on grade depth, carp 80% flr fnsh		32	0.989	0	34.4	1101	0	0
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Component Constructions
owner bed
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Latitude: 30°N		Relative humidity (%)		30	50
		Moisture difference (gr/lb)		8.2	43.8
Outdoor:	Heating	Cooling	Infiltration:		
Dry bulb (°F)	33	92	Method		
Daily range (°F)	-	18 (M)	Construction quality		
Wet bulb (°F)	-	76	Fireplaces		
Wind speed (mph)	15.0	7.5	Simplified Average 0		

Construction descriptions

	Or	Area ft²	U-value Btuh/ft²-°F	Insul R ft²-°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
Walls								
12C-0bw: Frm wall, brk 4" ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud	ne	80	0.091	13.0	3.17	253	1.38	111
	se	20	0.091	13.0	3.17	63	1.38	28
	sw	145	0.091	13.0	3.17	459	1.38	201
	nw	148	0.091	13.0	3.17	469	1.38	205
	all	393	0.091	13.0	3.17	1245	1.38	544
Partitions (none)								
Windows								
4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/8" thk; 6.67 ft head ht	nw	12	0.470	0	16.4	196	29.0	348
4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/8" thk; NFRC rated (SHGC=0.31); 50% blinds 45°, light; 50% outdoor insect screen; 2 ft overhang (5 ft window ht, 2 ft sep.); 6.67 ft head ht	sw	15	0.470	0	16.4	245	20.3	304
Doors (none)								
Ceilings								
16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh		218	0.032	30.0	1.11	243	1.70	371
Floors								
22A-tpl: Bg floor, light dry soil, on grade depth, carp 80% flr fnsh		42	0.989	0	34.4	1446	0	0



Component Constructions

dining

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			Moisture difference (gr/lb)	8.2	43.8
Outdoor:	Heating	Cooling	Infiltration:		
Dry bulb (°F)	33	92	Method	Simplified	
Daily range (°F)	-	18 (M)	Construction quality	Average	
Wet bulb (°F)	-	76	Fireplaces	0	
Wind speed (mph)	15.0	7.5			

Construction descriptions

	Or	Area ft²	U-value Btuh/ft²-°F	Insul R ft²-°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
Walls								
12C-0bw: Frm wall, brk 4" ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud	ne	86	0.091	13.0	3.17	272	1.38	119
Partitions								
(none)								
Windows								
4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/8" thk; 6.67 ft head ht	ne	24	0.470	0	16.4	393	29.0	695
Doors								
(none)								
Ceilings								
16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh		143	0.032	30.0	1.11	159	1.70	243
Floors								
22A-tpl: Bg floor, light dry soil, on grade depth, carp 80% flr fnsh		11	0.989	0	34.4	379	0	0



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Component Constructions

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DL Williams Heating & Cooling L.L.C.

Job: 1
Date: 09/25/2024
By: DL Williams Heating & C...
Plan: 1820

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

Project Information

For: Adams Homes Preserve at Laurel Lake-plan 1820 lot 140, Adams Homes
lot 140, Columbia, FL

Design Conditions

Location:			Indoor:	Heating	Cooling
Gainesville Regional, FL, US			Indoor temperature (°F)	68	75
Elevation: 123 ft			Design TD (°F)	35	17
Latitude: 30°N			Relative humidity (%)	30	50
Outdoor:			Moisture difference (gr/lb)	8.2	43.8
			Infiltration:		
Heating			Method	Simplified	
Cooling			Construction quality	Average	
			Fireplaces	0	
Dry bulb (°F)	33	92			
Daily range (°F)	-	18 (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-0bw: Frm wall, brk 4" ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud	ne	118	0.091	13.0	3.17	374	1.38	163
Partitions								
(none)								
Windows								
4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/8" thk; 6.67 ft head ht	ne	12	0.470	0	16.4	196	29.0	348
Doors								
(none)								
Ceilings								
16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh		169	0.032	30.0	1.11	188	1.70	288
Floors								
22A-tpl: Bg floor, light dry soil, on grade depth, carp 80% flr fnsh		13	0.989	0	34.4	447	0	0



Component Constructions
bath
DL Williams Heating & Cooling L.L.C.

Job: 1
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Project Information

For: Adams Homes Preserve at Laurel Lake-plan 1820 lot 140, Adams Homes
lot 140, Columbia, FL

Design Conditions

Location:		Indoor:		Heating	Cooling
Gainesville Regional, FL, US		Indoor temperature (°F)		68	75
Elevation: 123 ft		Design TD (°F)		35	17
Latitude: 30°N		Relative humidity (%)		30	50
		Moisture difference (gr/lb)		8.2	43.8
Outdoor:	Heating	Cooling			
Dry bulb (°F)	33	92			
Daily range (°F)	-	18 (M)			
Wet bulb (°F)	-	76			
Wind speed (mph)	15.0	7.5			
		Infiltration:			
		Method	Simplified		
		Construction quality	Average		
		Fireplaces	0		

Construction descriptions	Or	Area ft²	U-value Btuh/ft²-°F	Insul R ft²-°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
Walls								
12C-0bw: Frm wall, brk 4" ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud	ne	50	0.091	13.0	3.17	158	1.38	69
Partitions								
(none)								
Windows								
(none)								
Doors								
(none)								
Ceilings								
16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh		45	0.032	30.0	1.11	50	1.70	77
Floors								
22A-tpl: Bg floor, light dry soil, on grade depth, carp 80% flr fnsh		5	0.989	0	34.4	172	0	0





Component Constructions

br2

DL Williams Heating & Cooling L.L.C.

Job: 1
Date: 09/25/2024
By: DL Williams Heating & C...
Plan: 1820

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Project Information

For: Adams Homes Preserve at Laurel Lake-plan 1820 lot 140, Adams Homes lot 140, Columbia, FL

Design Conditions

Location:			Indoor:	Heating	Cooling
Gainesville Regional, FL, US			Indoor temperature (°F)	68	75
Elevation: 123 ft			Design TD (°F)	35	17
Latitude: 30°N			Relative humidity (%)	30	50
			Moisture difference (gr/lb)	8.2	43.8
Outdoor:	Heating	Cooling	Infiltration:		
Dry bulb (°F)	33	92	Method	Simplified	
Daily range (°F)	-	18 (M)	Construction quality	Average	
Wet bulb (°F)	-	76	Fireplaces	0	
Wind speed (mph)	15.0	7.5			

Construction descriptions

	Or	Area ft²	U-value Btuh/ft²-°F	Insul R ft²-°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
Walls								
12C-0bw: Frm wall, brk 4" ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud	ne	120	0.091	13.0	3.17	380	1.38	166
	sw	80	0.091	13.0	3.17	253	1.38	111
	nw	118	0.091	13.0	3.17	374	1.38	163
	all	318	0.091	13.0	3.17	1007	1.38	440
Partitions								
(none)								
Windows								
4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/8" thk; 6.67 ft head ht	nw	12	0.470	0	16.4	196	29.0	348
Doors								
(none)								
Ceilings								
16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh		148	0.032	30.0	1.11	165	1.70	252
Floors								
22A-tpl: Bg floor, light dry soil, on grade depth, carp 80% flr fnsh		33	0.989	0	34.4	1136	0	0



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Component Constructions
living
DL Williams Heating & Cooling L.L.C.

Job: 1
Date: 09/25/2024
By: DL Williams Heating & C...
Plan: 1820

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

Project Information

For: Adams Homes Preserve at Laurel Lake-plan 1820 lot 140, Adams Homes
lot 140, Columbia, FL

Design Conditions

Location:		Indoor:		Heating	Cooling
Gainesville Regional, FL, US		Indoor temperature (°F)		68	75
Elevation: 123 ft		Design TD (°F)		35	17
Latitude: 30°N		Relative humidity (%)		30	50
		Moisture difference (gr/lb)		8.2	43.8
Outdoor:		Heating	Cooling		
Dry bulb (°F)		33	92		
Daily range (°F)		-	18 (M)		
Wet bulb (°F)		-	76		
Wind speed (mph)		15.0	7.5		
		Infiltration:			
		Method		Simplified	
		Construction quality		Average	
		Fireplaces		0	

Construction descriptions

	Or	Area ft²	U-value Btuh/ft²-°F	Insul R ft²-°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
Walls								
12C-0bw: Frm wall, brk 4" ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud	nw	85	0.091	13.0	3.17	269	1.38	118
Partitions (none)								
Windows								
4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/8" thk; 6.67 ft head ht	nw	24	0.470	0	16.4	393	29.0	695
10D-v: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/8" thk; NFRC rated (SHGC=0.32); 8 ft overhang (7 ft window ht, 2 ft sep.); 6.67 ft head ht	nw	21	0.490	0	17.1	358	21.0	441
Doors (none)								
Ceilings								
16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh		336	0.032	30.0	1.11	374	1.70	572
Floors								
22A-tpl: Bg floor, light dry soil, on grade depth, carp 80% flr fnsh		13	0.989	0	34.4	447	0	0



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

Project Information

For: Adams Homes Preserve at Laurel Lake-plan 1820 lot 140, Adams Homes
lot 140, Columbia, FL

Design Conditions

Location:		Indoor:		Heating	Cooling
Gainesville Regional, FL, US		Indoor temperature (°F)		68	75
Elevation: 123 ft		Design TD (°F)		35	17
Latitude: 30°N		Relative humidity (%)		30	50
		Moisture difference (gr/lb)		8.2	43.8
Outdoor:	Heating	Cooling	Infiltration:		
Drybulb (°F)	33	92	Method		Simplified
Daily range (°F)	-	18 (M)	Construction quality		Average
Wet bulb (°F)	-	76	Fireplaces		0
Wind speed (mph)	15.0	7.5			

Construction descriptions	Or	Area 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		28	0.032	30.0	1.11	31	1.70	48
Floors (none)								





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Project Information

For: Adams Homes Preserve at Laurel Lake-plan 1820 lot 140, Adams Homes
lot 140, Columbia, FL

Design Conditions

Location:		Indoor:		Heating	Cooling
Gainesville Regional, FL, US		Indoor temperature (°F)		68	75
Elevation: 123 ft		Design TD (°F)		35	17
Latitude: 30°N		Relative humidity (%)		30	50
		Moisture difference (gr/lb)		8.2	43.8
Outdoor:	Heating	Cooling			
Dry bulb (°F)	33	92			
Daily range (°F)	-	18 (M)			
Wet bulb (°F)	-	76			
Wind speed (mph)	15.0	7.5			
		Infiltration:			
		Method	Simplified		
		Construction quality	Average		
		Fireplaces	0		

Construction descriptions	Or	Area ft²	U-value Btuh/ft²-°F	Insul R ft²-°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
Walls								
12C-0bw: Frm wall, brk 4" ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud	sw	48	0.091	13.0	3.17	152	1.38	66
Partitions (none)								
Windows								
4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/8" thk; 6.67 ft head ht	sw	12	0.470	0	16.4	196	30.0	360
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	1.11	60	1.70	92
Floors								
22A-tpl: Bg floor, light dry soil, on grade depth, carp 80% flr fnsh		6	0.989	0	34.4	207	0	0





Component Constructions
foyer
DL Williams Heating & Cooling L.L.C.

Job: 1
Date: 09/25/2024
By: DL Williams Heating & C...
Plan: 1820

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

Project Information

For: Adams Homes Preserve at Laurel Lake-plan 1820 lot 140, Adams Homes
lot 140, Columbia, FL

Design Conditions

Location:		Indoor:		Heating	Cooling
Gainesville Regional, FL, US		Indoor temperature (°F)		68	75
Elevation: 123 ft		Design TD (°F)		35	17
Latitude: 30°N		Relative humidity (%)		30	50
		Moisture difference (gr/lb)		8.2	43.8
Outdoor:	Heating	Cooling	Infiltration:		
Drybulb (°F)	33	92	Method		
Daily range (°F)	-	18 (M)	Construction quality		
Wet bulb (°F)	-	76	Simplified		
Wind speed (mph)	15.0	7.5	Average		
			0		

Construction descriptions

	Or	Area ft²	U-value Btuh/ft²-°F	Insul R ft²-°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
Walls								
12C-0bw: Frm wall, brk 4" ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud	se	35	0.091	13.0	3.17	111	1.38	48
Partitions (none)								
Windows								
10D-v: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/8" thk; 6.67 ft head ht	se	21	0.490	0	17.1	358	21.7	456
	se	7	0.470	0	16.4	114	30.0	210
	all	28	0.470	0	16.9	473	23.8	666
4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/8" thk; 5 ft overhang (7 ft window ht, 2 ft sep.); 6.67 ft head ht	se	7	0.470	0	16.4	114	16.4	115
Doors (none)								
Ceilings								
16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh		70	0.032	30.0	1.11	78	1.70	119
Floors								
22A-tpl: Bg floor, light dry soil, on grade depth, carp 80% flr fnsh		7	0.989	0	34.4	241	0	0



Project Summary

Entire House

DL Williams Heating & Cooling L.L.C.

Job: 1
Date: 09/25/2024
By: DL Williams Heating & C...
Plan: 1820

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

Project Information

For: Adams Homes Preserve at Laurel Lake-plan 1820 lot 140, Adams Homes
lot 140, Columbia, FL

Notes:

Design Information

Weather: Gainesville Regional, FL, US

Winter Design Conditions

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

Ventilation Method MJ8

Heating Summary

Structure	21420 Btuh
Ducts (R-6.0)	4979 Btuh
Central vent (0 cfm)	0 Btuh

Humidification	0 Btuh
Piping	0 Btuh
Equipment load	26399 Btuh

Infiltration

Method	Simplified
Construction quality	Average
Fireplaces	0

	Heating	Cooling
Area (ft ²)	1814	1814
Volume (ft ³)	18140	18140
Air changes/hour	0.38	0.20
Equiv. AVF (cfm)	115	60

Heating Equipment Summary

Make	Trane
Trade	TRANE
Model	4TWR5030H1
AHRI ref	9033590

Efficiency	8.1 HSPF2
Heating input	
Heating output	27800 Btuh @ 47°F
Temperature rise	29 °F
Actual air flow	875 cfm
Air flow factor	0.033 cfm/Btuh
Static pressure	0.50 in H2O
Space thermostat	
Capacity balance point = 32 °F	

Backup:
Input = 8 kW, Output = 26399 Btuh, 100 AFUE

Summer Design Conditions

Outside db	92 °F
Inside db	75 °F
Design TD	17 °F
Daily range	M
Relative humidity	50 %
Moisture difference	44 gr/lb

Sensible Cooling Equipment Load Sizing

Structure	16213 Btuh
Ducts (R-6.0)	6149 Btuh
Central vent (0 cfm)	0 Btuh

Blower 0 Btuh

Use manufacturer's data	n
Rate/swing multiplier	0.97
Equipment sensible load	21736 Btuh

Latent Cooling Equipment Load Sizing

Structure	2993 Btuh
Ducts	1188 Btuh
Central vent (0 cfm)	0 Btuh

Equipment latent load 4180 Btuh

Equipment Total Load (Sen+Lat)	25916 Btuh
Req. total capacity at 0.70 SHR	2.6 ton

Cooling Equipment Summary

Make	Trane
Trade	TRANE
Cond	4TWR5030H1
Coil	TEM6A0B30H21++TDR
AHRI ref	9033590

Efficiency	12.5 EER2, 15.25 SEER2
Sensible cooling	20300 Btuh
Latent cooling	8700 Btuh
Total cooling	29000 Btuh
Actual air flow	875 cfm
Air flow factor	0.039 cfm/Btuh
Static pressure	0.50 in H2O
Load sensible heat ratio	0.84

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



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AED Assessment
Entire House
DL Williams Heating & Cooling L.L.C.

Job: 1
Date: 09/25/2024
By: DL Williams Heating & C...
Plan: 1820

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

Project Information

For: Adams Homes Preserve at Laurel Lake-plan 1820 lot 140, Adams Homes
lot 140, Columbia, FL

Design Conditions

Location:

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

Indoor:

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

Heating

68
35
30
8.2

Cooling

75
17
50
43.8

Outdoor:

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

Heating

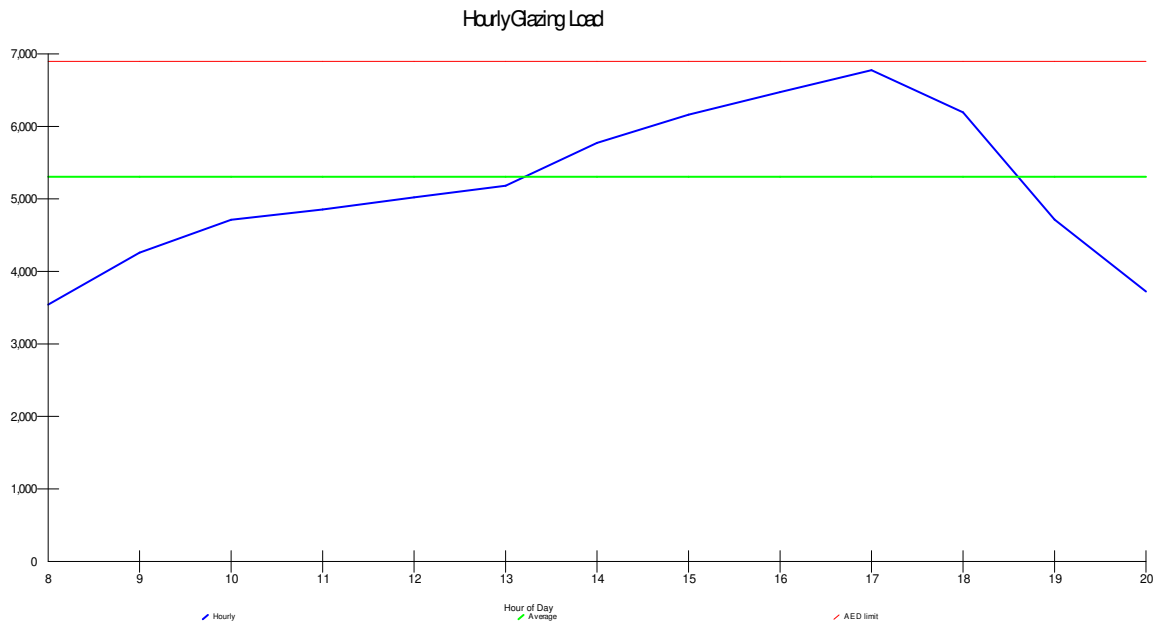
33
-
-
15.0

Cooling

92
18 (M)
76
7.5

Infiltration:

Test for Adequate Exposure Diversity



Maximum hourly glazing load exceeds average by 27.7%.

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

AED excursion: 0 Btuh



Right-J® Worksheet
Entire House
DL Williams Heating & Cooling L.L.C.

Job: 1
Date: 09/25/2024
By: DL Williams Heating & Cooling
Plan: 1820

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

1	Room name					Entire House				kitchen				
2	Exposed wall					183.9 ft				10.0 ft				
3	Room height					10.0 ft				10.0 ft				
4	Room dimensions					10.0 ft				1.0 x 230.0 ft				
5	Room area					1814.0 ft²				230.0 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-0bw	0.091	ne	3.17	1.38	620	584	1849	808	0	0	0	0
.	G	4A5-2ov	0.470	ne	16.36	28.96	36	0	589	1043	0	0	0	0
.	W	12C-0bw	0.091	se	3.17	1.38	220	161	510	223	0	0	0	0
.	G	10D-v	0.490	se	17.05	21.73	21	0	358	456	0	0	0	0
11	G	4A5-2ov	0.470	se	16.36	29.99	31	0	507	930	0	0	0	0
.	G	4A5-2ov	0.470	se	16.36	16.41	7	6	114	115	0	0	0	0
.	W	12C-0bw	0.091	sw	3.17	1.38	580	529	1675	732	100	88	279	122
.	G	4A5-2ov	0.470	sw	16.36	29.99	36	0	589	1080	12	0	196	360
.	G	4A5-2ov	0.470	sw	16.36	20.29	15	4	245	304	0	0	0	0
.	W	12C-0bw	0.091	nw	3.17	1.38	420	351	1112	486	0	0	0	0
.	G	10D-v	0.490	nw	17.05	20.98	21	0	358	441	0	0	0	0
.	G	4A5-2ov	0.470	nw	16.36	28.96	48	0	785	1390	0	0	0	0
.	C	16B-30ad	0.032	-	1.11	1.70	1814	1814	2020	3088	230	230	256	392
.	F	22A-tol	0.989	-	34.42	0.00	1814	184	6330	0	230	10	344	0

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



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Right-J® Worksheet
Entire House
DL Williams Heating & Cooling L.L.C.

Job: 1
Date: 09/25/2024
By: DL Williams Heating & Cooling
Plan: 1820

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

1	Room name					laundry				owner bath				
2	Exposed wall					0 ft				11.9 ft				
3	Room height					10.0 ft				10.0 ft				
4	Room dimensions					6.0 x 6.0 ft				1.0 x 123.5 ft				
5	Room area					36.0 ft²				123.5 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-0bw	0.091	ne	3.17	1.38	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	ne	16.36	28.96	0	0	0	0	0	0	0	0
.	W	12C-0bw	0.091	se	3.17	1.38	0	0	0	0	0	0	0	0
.	G	10D-v	0.490	se	17.05	21.73	0	0	0	0	0	0	0	0
11	G	4A5-2ov	0.470	se	16.36	29.99	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	se	16.36	16.41	0	0	0	0	0	0	0	0
.	W	12C-0bw	0.091	sw	3.17	1.38	0	0	0	0	120	108	342	149
.	G	4A5-2ov	0.470	sw	16.36	29.99	0	0	0	0	12	0	196	360
.	G	4A5-2ov	0.470	sw	16.36	20.29	0	0	0	0	0	0	0	0
.	W	12C-0bw	0.091	nw	3.17	1.38	0	0	0	0	0	0	0	0
.	G	10D-v	0.490	nw	17.05	20.98	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	nw	16.36	28.96	0	0	0	0	0	0	0	0
.	C	16B-30ad	0.032	-	1.11	1.70	36	36	40	61	124	124	138	210
.	F	22A-tpl	0.989	-	34.42	0.00	36	0	0	0	124	12	410	0

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Right-J® Worksheet
Entire House
DL Williams Heating & Cooling L.L.C.

Job: 1
Date: 09/25/2024
By: DL Williams Heating & Cooling
Plan: 1820

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

1	Room name					wic 0 ft				den/br4 32.0 ft				
2	Exposed wall					10.0 ft				10.0 ft				
3	Room height					heat/cool				heat/cool				
4	Room dimensions					1.0 x 44.5 ft				13.0 x 13.0 ft				
5	Room area					44.5 ft²				169.0 ft²				
	Ty	Construction number	U-value (Bt uh/ft²·°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6	W	12C-0bw	0.091	ne	3.17	1.38	0	0	0	0	130	130	412	180
.	G	4A5-2ov	0.470	ne	16.36	28.96	0	0	0	0	0	0	0	0
.	W	12C-0bw	0.091	se	3.17	1.38	0	0	0	0	130	106	336	147
.	G	10D-v	0.490	se	17.05	21.73	0	0	0	0	0	0	0	0
11	G	4A5-2ov	0.470	se	16.36	29.99	0	0	0	0	24	0	393	720
	G	4A5-2ov	0.470	se	16.36	16.41	0	0	0	0	0	0	0	0
	W	12C-0bw	0.091	sw	3.17	1.38	0	0	0	0	60	60	190	83
	G	4A5-2ov	0.470	sw	16.36	29.99	0	0	0	0	0	0	0	0
	G	4A5-2ov	0.470	sw	16.36	20.29	0	0	0	0	0	0	0	0
	W	12C-0bw	0.091	nw	3.17	1.38	0	0	0	0	0	0	0	0
	G	10D-v	0.490	nw	17.05	20.98	0	0	0	0	0	0	0	0
	G	4A5-2ov	0.470	nw	16.36	28.96	0	0	0	0	0	0	0	0
	C	16B-30ad	0.032	-	1.11	1.70	45	45	50	76	169	169	188	288
	F	22A-tpl	0.989	-	34.42	0.00	45	0	0	0	169	32	1101	0

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





Right-J® Worksheet
Entire House
DL Williams Heating & Cooling L.L.C.

Job: 1
Date: 09/25/2024
By: DL Williams Heating & Cooling
Plan: 1820

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

1	Room name					owner bed				dining				
2	Exposed wall					42.0 ft				11.0 ft				
3	Room height					10.0 ft				10.0 ft				
4	Room dimensions					1.0 x 218.0 ft				13.0 x 11.0 ft				
5	Room area					218.0 ft²				143.0 ft²				
	Ty	Construction number	U-value (Btuh/ft²·°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6	W	12C-0bw	0.091	ne	3.17	1.38	80	80	253	111	110	86	272	119
.	G	4A5-2ov	0.470	ne	16.36	28.96	0	0	0	0	24	0	393	695
.	W	12C-0bw	0.091	se	3.17	1.38	20	20	63	28	0	0	0	0
.	G	10D-v	0.490	se	17.05	21.73	0	0	0	0	0	0	0	0
11	G	4A5-2ov	0.470	se	16.36	29.99	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	se	16.36	16.41	0	0	0	0	0	0	0	0
.	W	12C-0bw	0.091	sw	3.17	1.38	160	145	459	201	0	0	0	0
.	G	4A5-2ov	0.470	sw	16.36	29.99	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	sw	16.36	20.29	15	4	245	304	0	0	0	0
.	W	12C-0bw	0.091	nw	3.17	1.38	160	148	469	205	0	0	0	0
.	G	10D-v	0.490	nw	17.05	20.98	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	nw	16.36	28.96	12	0	196	348	0	0	0	0
.	C	16B-30ad	0.032	-	1.11	1.70	218	218	243	371	143	143	159	243
.	F	22A-tpl	0.989	-	34.42	0.00	218	42	1446	0	143	11	379	0
</														

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Right-J® Worksheet
Entire House
DL Williams Heating & Cooling L.L.C.

Job: 1
Date: 09/25/2024
By: DL Williams Heating & Cooling
Plan: 1820

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

1	Room name					br3				bath				
2	Exposed wall					13.0 ft				5.0 ft				
3	Room height					10.0 ft				10.0 ft				
4	Room dimensions					13.0 x 13.0 ft				9.0 x 5.0 ft				
5	Room area					169.0 ft²				45.0 ft²				
	Ty	Construction number	U-value (Btuh/ft²·°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6	W	12C-0bw	0.091	ne	3.17	1.38	130	118	374	163	50	50	158	69
.	G	4A5-2ov	0.470	ne	16.36	28.96	12	0	196	348	0	0	0	0
.	W	12C-0bw	0.091	se	3.17	1.38	0	0	0	0	0	0	0	0
.	G	10D-v	0.490	se	17.05	21.73	0	0	0	0	0	0	0	0
11	G	4A5-2ov	0.470	se	16.36	29.99	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	se	16.36	16.41	0	0	0	0	0	0	0	0
.	W	12C-0bw	0.091	sw	3.17	1.38	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	sw	16.36	29.99	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	sw	16.36	20.29	0	0	0	0	0	0	0	0
.	W	12C-0bw	0.091	nw	3.17	1.38	0	0	0	0	0	0	0	0
.	G	10D-v	0.490	nw	17.05	20.98	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	nw	16.36	28.96	0	0	0	0	0	0	0	0
C		16B-30ad	0.032	-	1.11	1.70	169	169	188	288	45	45	50	77
F		22A-tpl	0.989	-	34.42	0.00	169	13	447	0	45	5	172	0

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Right-J® Worksheet
Entire House
DL Williams Heating & Cooling L.L.C.

Job: 1
Date: 09/25/2024
By: DL Williams Heating & Cooling
Plan: 1820

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

1	Room name					br2				living				
2	Exposed wall					33.0 ft				13.0 ft				
3	Room height					10.0 ft				10.0 ft				
4	Room dimensions					1.0 x 148.0 ft				1.0 x 336.0 ft				
5	Room area					148.0 ft²				336.0 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-0bw	0.091	ne	3.17	1.38	120	120	380	166	0	0	0	0
.	G	4A5-2ov	0.470	ne	16.36	28.96	0	0	0	0	0	0	0	0
.	W	12C-0bw	0.091	se	3.17	1.38	0	0	0	0	0	0	0	0
.	G	10D-v	0.490	se	17.05	21.73	0	0	0	0	0	0	0	0
11	G	4A5-2ov	0.470	se	16.36	29.99	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	se	16.36	16.41	0	0	0	0	0	0	0	0
.	W	12C-0bw	0.091	sw	3.17	1.38	80	80	253	111	0	0	0	0
.	G	4A5-2ov	0.470	sw	16.36	29.99	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	sw	16.36	20.29	0	0	0	0	0	0	0	0
.	W	12C-0bw	0.091	nw	3.17	1.38	130	118	374	163	130	85	269	118
.	G	10D-v	0.490	nw	17.05	20.98	0	0	0	0	21	0	358	441
.	G	4A5-2ov	0.470	nw	16.36	28.96	12	0	196	348	24	0	393	695
.	C	16B-30ad	0.032	-	1.11	1.70	148	148	165	252	336	336	374	572
.	F	22A-tpl	0.989	-	34.42	0.00	148	33	1136	0	336	13	447	0

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Right-J® Worksheet
Entire House
DL Williams Heating & Cooling L.L.C.

Job: 1
Date: 09/25/2024
By: DL Williams Heating & Cooling
Plan: 1820

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

1	Room name					hall				nook				
2	Exposed wall					0 ft				6.0 ft				
3	Room height					10.0 ft				10.0 ft				
4	Room dimensions					10.0 ft 4.0 x 7.0 ft				10.0 ft 9.0 x 6.0 ft				
5	Room area					28.0 ft²				54.0 ft²				
	Ty	Construction number	U-value (Bt uh/ft²·°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6	W	12C-0bw	0.091	ne	3.17	1.38	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	ne	16.36	28.96	0	0	0	0	0	0	0	0
.	W	12C-0bw	0.091	se	3.17	1.38	0	0	0	0	0	0	0	0
.	G	10D-v	0.490	se	17.05	21.73	0	0	0	0	0	0	0	0
11	G	4A5-2ov	0.470	se	16.36	29.99	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	se	16.36	16.41	0	0	0	0	0	0	0	0
.	W	12C-0bw	0.091	sw	3.17	1.38	0	0	0	0	60	48	152	66
.	G	4A5-2ov	0.470	sw	16.36	29.99	0	0	0	0	12	0	196	360
.	G	4A5-2ov	0.470	sw	16.36	20.29	0	0	0	0	0	0	0	0
.	W	12C-0bw	0.091	nw	3.17	1.38	0	0	0	0	0	0	0	0
.	G	10D-v	0.490	nw	17.05	20.98	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	nw	16.36	28.96	0	0	0	0	0	0	0	0
.	C	16B-30ad	0.032	-	1.11	1.70	28	28	31	48	54	54	60	92
.	F	22A-tpl	0.989	-	34.42	0.00	28	0	0	0	54	6	207	0

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Right-J® Worksheet
Entire House
DL Williams Heating & Cooling L.L.C.

Job: 1
Date: 09/25/2024
By: DL Williams Heating & Cooling
Plan: 1820

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

1	Room name					foyer								
2	Exposed wall					7.0 ft								
3	Room height					10.0 ft					heat/cool			
4	Room dimensions					7.0 x 10.0 ft								
5	Room area					70.0 ft²								
	Ty	Construction number	U-value (Btuh/ft²·°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area or perimeter		Load	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6	W	12C-0bw	0.091	ne	3.17	1.38	0	0	0	0				
.	G	4A5-2ov	0.470	ne	16.36	28.96	0	0	0	0				
.	W	12C-0bw	0.091	se	3.17	1.38	70	35	111	48				
.	G	10D-v	0.490	se	17.05	21.73	21	0	358	456				
11	G	4A5-2ov	0.470	se	16.36	29.99	7	0	114	210				
.	G	4A5-2ov	0.470	se	16.36	16.41	7	6	114	115				
.	W	12C-0bw	0.091	sw	3.17	1.38	0	0	0	0				
.	G	4A5-2ov	0.470	sw	16.36	29.99	0	0	0	0				
.	G	4A5-2ov	0.470	sw	16.36	20.29	0	0	0	0				
.	W	12C-0bw	0.091	nw	3.17	1.38	0	0	0	0				
.	G	10D-v	0.490	nw	17.05	20.98	0	0	0	0				
.	G	4A5-2ov	0.470	nw	16.36	28.96	0	0	0	0				
C		16B-30ad	0.032	-	1.11	1.70	70	70	78	119				
F		22A-tpl	0.989	-	34.42	0.00	70	7	241	0				

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

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

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

1	Name of Room					wic 0 ft				den/br4 32.0 ft				
2	Running Feet of Exposed Wall													
3	Ceiling Ht (Ft) and Gross Wall Area (SqFt)					10.0 ft 262.4 ft²				10.0 ft 520.0 ft²				
4	Room Dimensions (Ft) and Floor Plan Area (SqFt)					1.0 x 44.5 ft 44.5 ft²				13.0 x 13.0 ft 169.0 ft²				
5	Ceiling Slope (Deg.) and Gross Ceiling Area (SqFt)					0 ° 44.5 ft²				0 ° 169.0 ft²				
Type of Exposure		Const., Number		Panel Faces	HTM		Area or Length	Btuh			Area or Length	Btuh		
					Htg.	Clg.		Heating	S-Clg	L-Clg		Heating	S-Clg	L-Clg
6 . . . 11	Wall	12C-0bw	ne	3.17	1.38	0	0	0		130	412	180		
	Glaz	4A5-2ov	ne	16.36	28.96	0	0	0		0	0			
	Wall	12C-0bw	se	3.17	1.38	0	0	0		130	336	147		
	Glaz	10D-v	se	17.05	21.73	0	0	0		0	0	0		
	Glaz	4A5-2ov	se	16.36	29.99	0	0	0		24	393	720		
	Glaz	4A5-2ov	se	16.36	16.41	0	0	0		0	0	0		
	Wall	12C-0bw	sw	3.17	1.38	0	0	0		60	190	83		
	Glaz	4A5-2ov	sw	16.36	29.99	0	0	0		0	0	0		
	Glaz	4A5-2ov	sw	16.36	20.29	0	0	0		0	0	0		
	Wall	12C-0bw	nw	3.17	1.38	0	0	0		0	0	0		
	Glaz	10D-v	nw	17.05	20.98	0	0	0		0	0	0		
	Glaz	4A5-2ov	nw	16.36	28.96	0	0	0		0	0	0		
	Ceil	16B-30ad	-	1.11	1.70	45	50	76		169	188	288		
	Flor	22A-tpl	-	34.42	0.00	45	0	0		169	1101	0		
											</			

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



Loads for Multiple Orientations
Entire House
DL Williams Heating & Cooling L.L.C.

Job: 1
Date: 09/25/2024
By: DL Williams Heating & C...
Plan: 1820

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

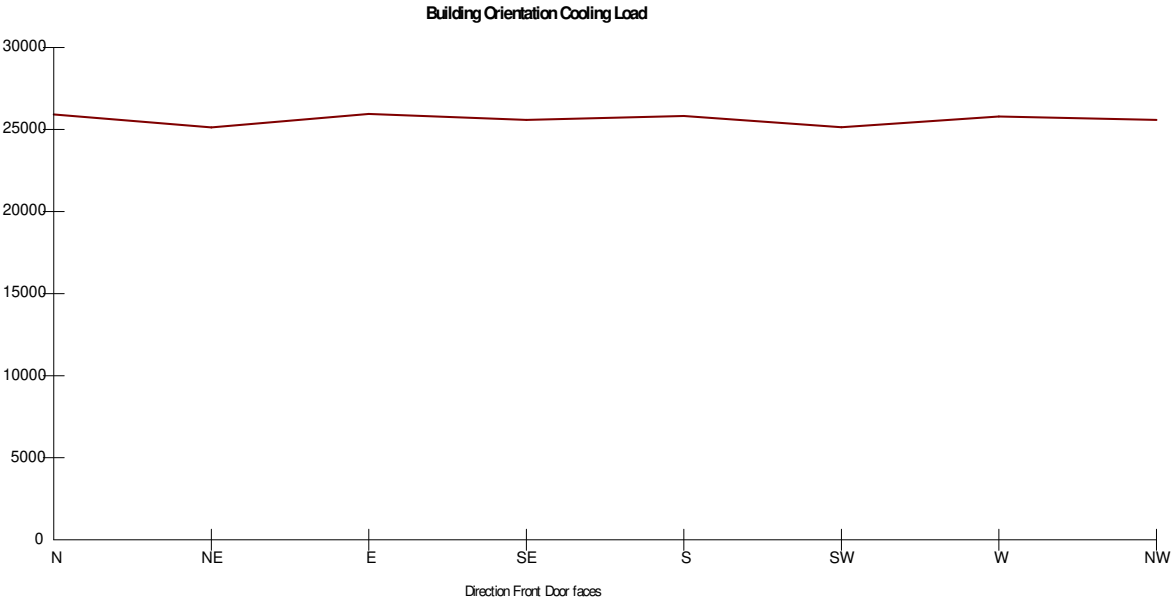
Project Information

For: Adams Homes Preserve at Laurel Lake-plan 1820 lot 140, Adams Homes
lot 140, Columbia, FL

Design Conditions

Location:		Indoor:		Heating	Cooling
Gainesville Regional, FL, US		Indoor temperature (°F)		68	75
Elevation: 123 ft		Design TD (°F)		35	17
Latitude: 30°N		Relative humidity (%)		30	50
		Moisture difference (gr/lb)		8.2	43.8
Outdoor:	Heating	Cooling	Infiltration:		
Drybulb (°F)	33	92			
Daily range (°F)	-	18 (M)			
Wet bulb (°F)	-	76			
Wind speed (mph)	15.0	7.5			

Front Door	North	Northeast	East	Southeast	South	Southwest	West	Northwest
Sensible Load (Btuh)	21736	20950	21765	21399	21639	20954	21610	21399
Latent Load (Btuh)	4180	4180	4180	4180	4180	4180	4180	4180
Total Load (Btuh)	25916	25131	25945	25579	25820	25134	25791	25579
Heating AVF (cfm)	875	875	875	875	875	875	875	875
Cooling AVF (cfm)	875	875	875	875	875	875	875	875



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

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





J1 Form - Worksheet A
Entire House
DL Williams Heating & Cooling L.L.C.

Job: 1
Date: 09/25/2024
By: DL Williams Heating & C...
Plan: 1820

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

Supporting Detail	
Project Name: Adams Homes plan 1820 Master Seer2	Date: 09/25/2024
Address: lot 140, Columbia, FL	
Phone:	Job ID: 1

Worksheet A Location and Design Conditions			
Weather Location: Gainesville Regional, FL, US		Elevation = 123	Latitude = 30
Indoor Conditions, Heating: DB = 68 °F RH = 30 %		Indoor Conditions, Cooling: DB = 75 °F RH = 50 %	
Table 1 Conditions 99% DB = 33 °F 1% DB = 92 °F		Grains Difference = 44 gr/lb	Daily Range = M
Design Temperature Differences		HTD = 35 °F	CTD = 17 °F

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





Duct System Summary

Entire House

DL Williams Heating & Cooling L.L.C.

Job: 1
Date: 09/25/2024
By: DL Williams Heating & C...
Plan: 1820

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

Project Information

For: Adams Homes Preserve at Laurel Lake-plan 1820 lot 140, Adams Homes
lot 140, Columbia, FL

	Heating	Cooling
External static pressure	0.50 in H ₂ O	0.50 in H ₂ O
Pressure losses	0 in H ₂ O	0 in H ₂ O
Available static pressure	0.50 in H ₂ O	0.50 in H ₂ O
Supply / return available pressure	0.360 / 0.140 in H ₂ O	0.360 / 0.140 in H ₂ O
Lowest friction rate	0.229 in/100ft	0.229 in/100ft
Actual air flow	875 cfm	875 cfm
Total effective length (TEL)	218 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 624	21	9	0.333	4.0	0x0	VIFx	13.0	95.0	
br2	h 4064	135	69	0.322	6.0	0x0	VIFx	16.8	95.0	
br3	h 1874	62	44	0.364	5.0	0x0	VIFx	4.0	95.0	
den/br4	h 4167	138	95	0.332	6.0	0x0	VIFx	13.6	95.0	
dining	c 1734	60	68	0.356	6.0	0x0	VIFx	6.1	95.0	
foyer	c 1316	48	51	0.338	4.0	0x0	VIFx	11.7	95.0	
kitchen	c 3181	54	124	0.266	6.0	0x0	VIFx	20.4	115.0	st2
laundry	c 718	2	28	0.258	4.0	0x0	VIFx	24.3	115.0	st2
living	c 5039	88	197	0.348	7.0	0x0	VIFx	8.5	95.0	
nook	c 866	31	34	0.254	4.0	0x0	VIFx	26.6	115.0	st2
owner bath	h 1690	56	46	0.233	5.0	0x0	VIFx	24.5	130.0	st1
owner bed	h 5391	179	104	0.229	7.0	0x0	VIFx	27.1	130.0	st1
wic	c 97	2	4	0.240	4.0	0x0	VIFx	19.8	130.0	st1

Supply Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
st1	Peak AVF	237	154	0.229	886	7.0	0 x 0	ShtMetl	
st2	Peak AVF	86	186	0.254	698	7.0	0 x 0	VinIFlx	

Bold/italic values have been manually overridden



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...C:\Trane\Adams Homes plan 1820 Master Seer2.rup Calc = MJ8 Front Door faces: N

Return Branch Detail Table

Name	Grille Size (in)	Htg (cfm)	Clg (cfm)	TEL (ft)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Stud/Joist Opening (in)	Duct Matl	Trunk
rb1	0x 0	464	337	61.0	0.229	591	12.0	0x 0		VIFx	
rb6	0x 0	411	538	0	0	0	0	0x 0		VIFx	



Duct system multi orientation report

Entire House

DL Williams Heating & Cooling L.L.C.

Job: 1
Date: 09/25/2024
By: DL Williams Heating & C...
Plan: 1820

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

Project Information

For: Adams Homes Preserve at Laurel Lake-plan 1820 lot 140, Adams Homes
lot 140, Columbia, FL

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

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	21 h	12x6	4	21 h	12x6	4	21 h	12x6	4	21 h	12x6	4
br2	135 h	12x6	6	135 h	12x6	6	135 h	12x6	6	135 h	12x6	6
br3	62 h	12x6	5	62 h	12x6	5	62 h	12x6	5	62 h	12x6	5
den/br4	138 h	12x6	6	138 h	12x6	6	138 h	12x6	6	138 h	12x6	6
dining	89 c	12x6	6	68 c	12x6	6	60 h	12x6	6	81 c	12x6	6
foyer	48 h	12x6	4	51 c	12x6	4	69 c	12x6	4	54 c	12x6	4
kitchen	141 c	12x6	7	124 c	12x6	6	113 c	12x6	6	122 c	12x6	6
laundry	30 c	12x6	4	28 c	12x6	4	28 c	12x6	4	29 c	12x6	4
living	156 c	12x6	6	197 c	12x6	7	223 c	12x6	7	196 c	12x6	7
nook	45 c	12x6	4	34 c	12x6	4	31 h	12x6	4	31 h	12x6	4
owner bath	58 c	12x6	5	56 h	12x6	5	56 h	12x6	5	56 h	12x6	5
owner bed	179 h	12x6	7	179 h	12x6	7	179 h	12x6	7	179 h	12x6	7
wic	4 c	12x6	4	4 c	12x6	4	4 c	12x6	4	4 c	12x6	4
Supply Trunks												
st1	237 h		7	237 h		7	237 h		7	237 h		7
st2	217 c		8	186 c		7	163 c		7	180 c		7
Return Branches												
rb1	464 h	24x20	12	464 h	24x20	12	464 h	24x20	12	464 h	24x20	12
rb6	541 c	12x12	0	538 c	12x12	0	522 c	12x12	0	516 c	12x12	0
Friction Rates												
Heating FR	0.229			0.229			0.229			0.229		
Cooling FR	0.229			0.229			0.229			0.229		

Project Information

For: Adams Homes Preserve at Laurel Lake-plan 1820 lot 140, Adams Homes
lot 140, Columbia, FL

Duct Name	(S)			(SW)			(W)			(NW)		
	Reg CFM	Reg Size	Duct Size	Reg CFM	Reg Size	Duct Size	Reg CFM	Reg Size	Duct Size	Reg CFM	Reg Size	Duct Size
Supply Branches												
bath	21 h	12x6	4	21 h	12x6	4	21 h	12x6	4	21 h	12x6	4
br2	135 h	12x6	6	135 h	12x6	6	135 h	12x6	6	135 h	12x6	6
br3	65 c	12x6	5	62 h	12x6	5	62 h	12x6	5	62 h	12x6	5
den/br4	138 h	12x6	6	138 h	12x6	6	138 h	12x6	6	138 h	12x6	6
dining	107 c	12x6	6	83 c	12x6	6	60 h	12x6	6	73 c	12x6	6
foyer	48 h	12x6	4	70 c	12x6	4	92 c	12x6	4	67 c	12x6	4
kitchen	135 c	12x6	6	121 c	12x6	6	112 c	12x6	6	125 c	12x6	6
laundry	30 c	12x6	4	29 c	12x6	4	29 c	12x6	4	28 c	12x6	4
living	163 c	12x6	7	170 c	12x6	7	188 c	12x6	7	177 c	12x6	7
nook	38 c	12x6	4	31 h	12x6	4	31 h	12x6	4	34 c	12x6	4
owner bath	56 h	12x6	5	56 h	12x6	5	56 h	12x6	5	56 h	12x6	5
owner bed	179 h	12x6	7	179 h	12x6	7	179 h	12x6	7	179 h	12x6	7
wic	4 c	12x6	4	4 c	12x6	4	4 c	12x6	4	4 c	12x6	4
Supply Trunks												
st1	237 h		7	237 h		7	237 h		7	237 h		7
st2	203 c		8	177 c		7	160 c		7	187 c		7
Return Branches												
rb1	464 h	24x20	12	464 h	24x20	12	464 h	24x20	12	464 h	24x20	12
rb6	519 c	12x12	0	487 c	12x12	0	476 c	12x12	0	510 c	12x12	0
Friction Rates												
Heating FR	0.229			0.229			0.229			0.229		
Cooling FR	0.229			0.229			0.229			0.229		

Project Information

For: Adams Homes Preserve at Laurel Lake-plan 1820 lot 140, Adams Homes
lot 140, Columbia, FL

Duct Name	Largest			Smalest		
	Reg CFM	Reg Size	Duct Size	Reg CFM	Reg Size	Duct Size
Supply Branches						
bath	21 h	12x6	4	21 h	12x6	4
br2	135 h	12x6	6	135 h	12x6	6
br3	65 c	12x6	5	62 h	12x6	5
den/br4	138 h	12x6	6	138 h	12x6	6
dining	107 c	12x6	6	60 h	12x6	6
foyer	92 c	12x6	4	48 h	12x6	4
kitchen	141 c	12x6	7	112 c	12x6	6
laundry	30 c	12x6	4	28 c	12x6	4
living	223 c	12x6	7	156 c	12x6	6
nook	45 c	12x6	4	31 h	12x6	4
owner bath	58 c	12x6	5	56 h	12x6	5
owner bed	179 h	12x6	7	179 h	12x6	7
wic	4 c	12x6	4	4 c	12x6	4
Supply Trunks						
st1	237 h		7	237 h		7
st2	217 c		8	160 c		7
Return Branches						
rb1	464 h	24x20	12	464 h	24x20	12
rb6	541 c	12x12	0	476 c	12x12	0
Friction Rates						
Heating FR	0.229			0.229		
Cooling FR	0.229			0.229		

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 L.L.C.

Job: 1
Date: 09/25/2024
By: DL Williams Heating & C...
Plan: 1820

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

Project Information

For: Adams Homes Preserve at Laurel Lake-plan 1820 lot 140, Adams Homes
lot 140, Columbia, FL

Available Static Pressure

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

Total Effective Length

	Supply (ft)	Return (ft)
Measured length of run-out	10	1
Measured length of trunk	17	0
Equivalent length of fittings	130	60
Total length	157	61
Total effective length		218

Friction Rate

	Heating (in/100ft)	Cooling (in/100ft)
Supply Ducts	0.229 > 0.18	0.229 > 0.18
Return Ducts	0.229 > 0.18	0.229 > 0.18

Fitting Equivalent Length Details

Supply	4AD=60, 2A0=35, 1A=35: TotalEL=130
Return	6M=20, 5D=40: TotalEL=60



Manual S Compliance Report

Entire House

DL Williams Heating & Cooling L.L.C.

Job: 1
Date: 09/25/2024
By: DL Williams Heating & C...
Plan: 1820

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

Project Information

For: Adams Homes Preserve at Laurel Lake-plan 1820 lot 140, Adams Homes
lot 140, Columbia, FL

Cooling Equipment

Design Conditions

Outdoor design DB:	92.2°F	Sensible gain:	22362	Btuh	Entering coil DB:	77.1°F
Outdoor design WB:	75.8°F	Latent gain:	4180	Btuh	Entering coil WB:	63.5°F
Indoor design DB:	75.0°F	Total gain:	26542	Btuh		
Indoor RH:	50%	Estimated airflow:	875	cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP		
Manufacturer:	Trane	Model:	4TWR5030H1+TEM6A0B30H21++TDR
Actual airflow:	875	cfm	
Sensible capacity:	23146	Btuh	104% of load
Latent capacity:	4557	Btuh	109% of load
Total capacity:	27703	Btuh	104% of load SHR: 84%

Heating Equipment

Design Conditions

Outdoor design DB:	33.2°F	Heat loss:	26399	Btuh	Entering coil DB:	67.1°F
Indoor design DB:	68.0°F					

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP		
Manufacturer:	Trane	Model:	4TWR5030H1+TEM6A0B30H21++TDR
Actual airflow:	875	cfm	
Output capacity:	21309	Btuh	81% of load
Supplemental heat required:	5091	Btuh	
Capacity balance:	32	°F	
Economic balance:	-99	°F	

Backup equipment type:	Elec strip		
Manufacturer:		Model:	
Actual airflow:	875	cfm	
Output capacity:	7.7	kW	100% of load
Temp. rise:	51	°F	

Meets all requirements of ACCA Manual S.



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

Form
RPER 2.0

Alachua Header Information

Contractor DL Williams Heating & Cooling L.L.C.
Mechanical license# Derrick Williams
Building plan # 1820
Home address (Street or Lot#, Block, Subdivision) lot 140, Entire House

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

HVAC LOAD CALCULATION

(IRC M1401.3)

Manual J Design Criteria and Loads

Location

Elevation 123 ft
Altitude Correction Factor 1.00
Latitude 30 °N

Summer Design Conditions

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

Manual J Loads

Total Heat Loss 26399 Btuh
Sensible Heat Gain 22362 Btuh
Latent Heat Gain 4180 Btuh
Total Heat Gain 26542 Btuh

Winter Design Conditions

Outdoor Winter Temp 33 °F
Indoor Winter Temp 68 °F
Heating Temp Diff 35 °F

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

HVAC EQUIPMENT SELECTION

(IRC M1401.3)

Heating Equipment

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

Model

Output 21309 Btuh Sizing Value 26399 Btuh
Supplemental 5091 Btuh Sizing Limit 175.0 %
Heat Load: Capacity 100.0 %

Size Factor is within Manual S Size Limit?

Y ☒ N ☐

Cooling Equipment

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

Model 4TWR5030H1+TEM6A0B30H21++TDR

Sensible 23146 Btuh Sizing Value 26542 Btuh
Latent 4557 Btuh Sizing Limit 115.0 %
Total 27703 Btuh Load: Capacity 104.4 %

Size Factor is within Manual S Size Limit?

Y ☒ N ☐

HVAC DUCT DISTRIBUTION DESIGN

(IRC M1601.1)

Design airflow 875 cfm Longest Supply Duct 157 ft Duct Materials Used
External Static Pressure (ESP) 0.50 in H2O Longest Return Duct 61.0 ft Trunk Duct: ☐ Duct Board ☒ Sheet Metal
Component Pressure Loss (CPL) 0 in H2O Total Effective Length (TEL) 218 ft ☒ Flex ☐ Lined Sheet Metal ☐ Other
Available static pressure (ASP) 0.50 in H2O Friction Rate 0.23 in/100ft Branch Duct: ☐ Duct Board ☐ Sheet Metal
ESP - CPL = ASP (ASP x 100) / TEL = Friction Rate ☒ Flex ☐ Lined Sheet Metal ☐ Other

Ducts are sized per Manual D? Y ☒ N ☐

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

Contractor's printed name:

Contractor's signature:

Date:



DHW Report
Entire House
DL Williams Heating & Cooling L.L.C.

Job: 1
Date: 09/25/2024
By: DL Williams Heating & C...
Plan: 1820

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

Project Information

For: Adams Homes Preserve at Laurel Lake-plan 1820 lot 140, Adams Homes
lot 140, Columbia, FL

Design Criteria

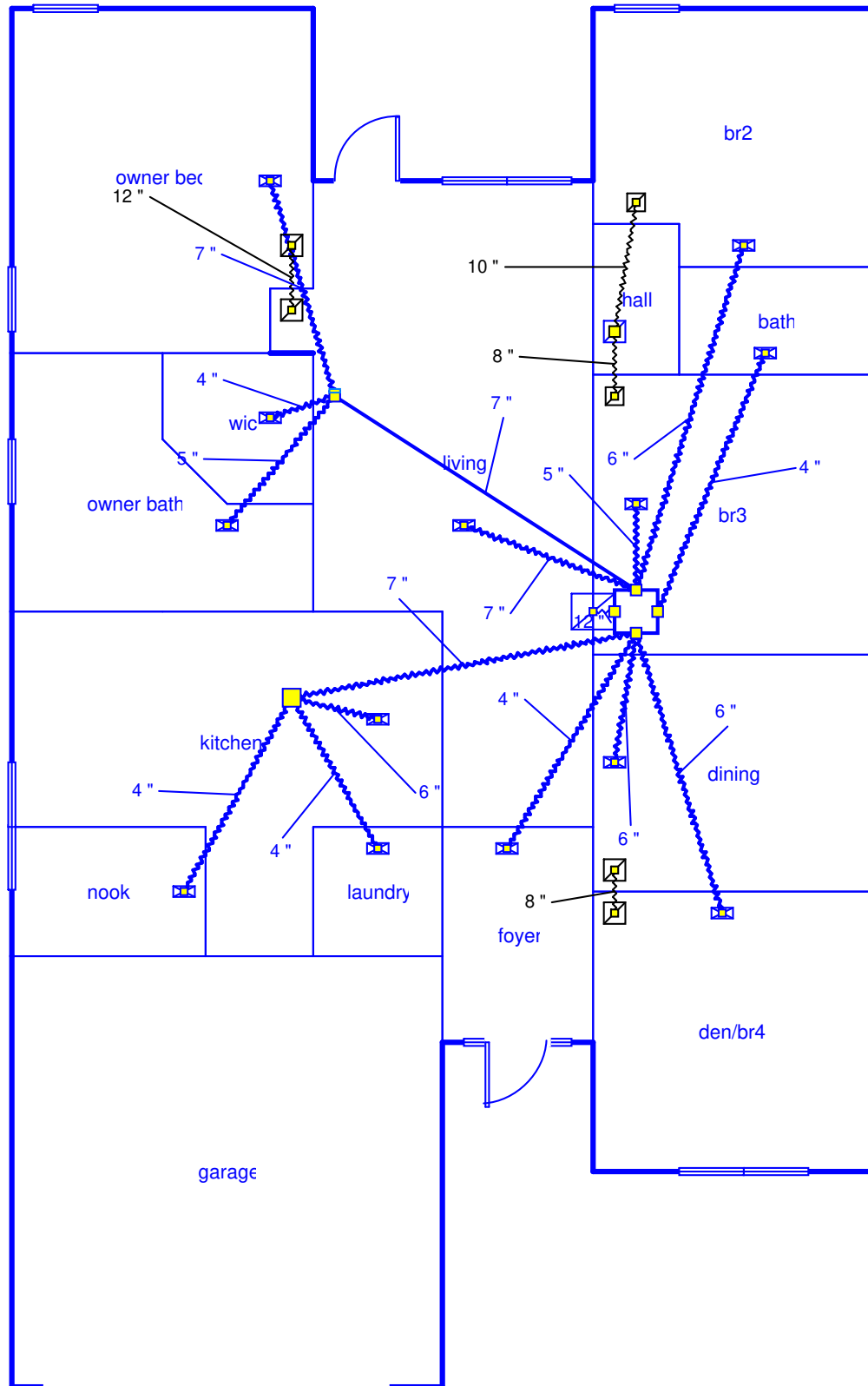
Occupants		Not occupied during the day	
Age	Number	Dishwasher	
0-5	0	Clothes washer	
6-13	2	Additional use (gpd)	0
14-59	2	Setpoint (°F)	120
60+	0	Daily use (gpd)	61

Electric conventional (40 gal, 0.90 EF)

Manufacturer	Tank size (gal)	40
Trade name	Energy factor	0.90
Model	Input (kWh)	0.0
AHRI ref. number	1st hour (gal)	50
	Recovery eff. (%)	98



Main



Job #: 1
Performed by DL Williams Heating & Cooling
Adams Homes Preserve at Laurel Lake-plan 1820 lot 140
lot 140
Columbia, FL

DL Williams Heating & Cooling L.L.C

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

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