

Project Information

For: Adams Preserve lot 89-2169, Adams Homes
Lake City, FL 32024

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

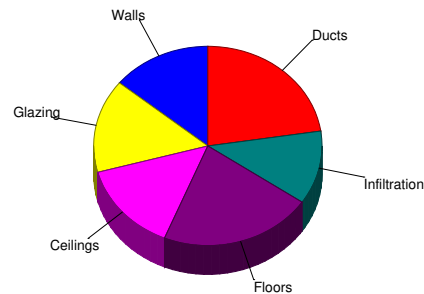
Infiltration:

Method
Construction quality
Fireplaces

Simplified
Average
0

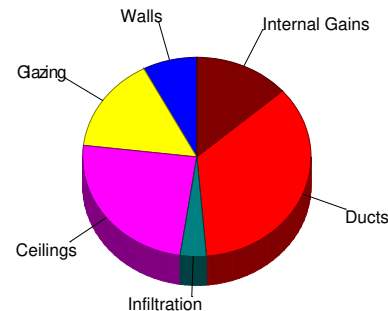
Heating

Component	Btuh/ft²	Btuh	% of load
Walls	3.2	4590	14.1
Glazing	16.4	4940	15.2
Doors	0	0	0
Ceilings	2.2	4736	14.5
Floors	3.3	7056	21.7
Infiltration	2.2	3884	11.9
Ducts		7366	22.6
Piping		0	0
Humidification		0	0
Ventilation		0	0
Adjustments		0	0
Total		32572	100.0



Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	1.4	2005	7.7
Glazing	13.3	4031	15.5
Doors	0	0	0
Ceilings	2.9	6387	24.5
Floors	0	0	0
Infiltration	0.5	960	3.7
Ducts		9166	35.2
Ventilation		0	0
Internal gains		3520	13.5
Blower		0	0
Adjustments		0	0
Total		26069	100.0



Latent Cooling Load = 4150 Btuh

Overall U-value = 0.100 Btuh/ft²-°F, Window / Floor Area = 13.9 %

Data entries checked.



Load Short Form

Entire House

DL Williams Heating & Cooling L.L.C.

Job:
Date:
By: DL Williams Heating & C...
Plan: 2169

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

Project Information

For: Adams Preserve lot 89-2169, Adams Homes
Lake City, FL 32024

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 4TWR6036H1
AHRI ref 7562981

Efficiency 9 HSPF
Heating input
Heating output 33000 Btuh @ 47°F
Temperature rise 25 °F
Actual air flow 1200 cfm
Air flow factor 0.037 cfm/Btuh
Static pressure 0.50 in H2O
Space thermostat
Capacity balance point = 33 °F

Backup:
Input = 9 kW, Output = 31600 Btuh, 100 AFUE

COOLING EQUIPMENT

Make Trane
Trade TRANE
Cond 4TWR6036H1
Coil TEM6A0C36H31++TDR
AHRI ref 7562981

Efficiency 13.0 EER, 16 SEER
Sensible cooling 24360 Btuh
Latent cooling 10440 Btuh
Total cooling 34800 Btuh
Actual air flow 1050 cfm
Air flow factor 0.040 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)
br2	182	4359	1661	161	67
wic3	20	0	0	0	0
ah	16	0	0	0	0
bath	72	1253	844	46	34
br3	164	1903	1623	70	65
br4	161	4203	2266	155	91
living	120	2272	1659	84	67
dining	120	2092	1913	77	77
hall	48	0	0	0	0
family	468	6700	7636	247	308
kitchen	216	975	3440	36	139
laundry	72	109	960	4	39
wic2	30	550	206	20	8
linebn	15	0	0	0	0

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



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2024-Sep-26 14:07:17

Page 1

mbath	101	756	421	28	17
wic1	30	544	196	20	8
masrter bed	280	5120	2175	189	88
bkfst	54	1736	1069	64	43
Entire House	2169	32572	26069	1200	1050
Other equip loads		0	0		
Equip. @ 0.97 RSM			25339		
Latent cooling			4150		
TOTALS	2169	32572	29490	1200	1050

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2024-Sep-26 14:07:17

Page 2

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

Job:
Date:
By: DL Williams Heating & C...
Plan: 2169

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

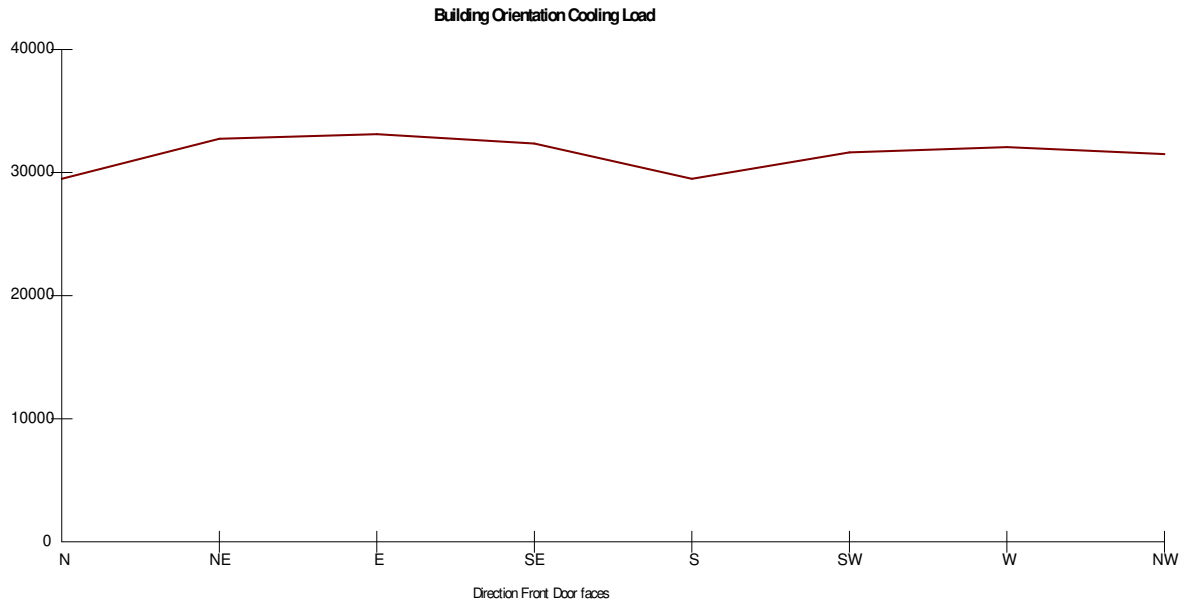
Project Information

For: Adams Preserve lot 89-2169, Adams Homes
Lake City, FL 32024

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			
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)	25339	28593	28966	28203	25339	27484	27909	27345
Latent Load (Btuh)	4150	4150	4150	4150	4150	4150	4150	4150
Total Load (Btuh)	29490	32743	33117	32353	29490	31634	32059	31496
Heating AVF (cfm)	1200	1200	1200	1200	1200	1200	1200	1200
Cooling AVF (cfm)	1050	1050	1050	1050	1050	1050	1050	1050



Current Orientation: Front Door faces South
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:
Date:
By: DL Williams Heating & C...
Plan: 2169

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

Supporting Detail	
Project Name: Adams Preserve 2169 lot89 manual	Date:
Address: Lake City, FL 32024	
Phone:	Job ID:

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.



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2024-Sep-26 14:07:18

Page 1



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

Job:
Date:
By: DL Williams Heating & C...
Plan: 2169

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

Project Information

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Lake City, FL 32024

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 Average 0	
Dailyrange (°F)	-	18 (M)	Construction quality			
Wet bulb (°F)	-	76	Fireplaces			
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	n	324	0.091	13.0	3.17	1026	1.38	448
	e	504	0.091	13.0	3.17	1595	1.38	697
	s	202	0.091	13.0	3.17	640	1.38	279
	w	420	0.091	13.0	3.17	1330	1.38	581
	all	1450	0.091	13.0	3.17	4590	1.38	2005

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; NFRC rated (SHGC=0.31); 8 ft overhang (7 ft window ht, 2 ft sep.); 6.67 ft head ht	n	21	0.470	0	16.4	343	10.2	214
	s	7	0.470	0	16.4	114	14.5	102
	s	7	0.470	0	16.4	114	14.5	102
	all	35	0.470	0	16.4	572	11.9	417
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	n	60	0.470	0	16.4	981	11.4	685
	e	30	0.470	0	16.4	491	29.2	875
	s	75	0.470	0	16.4	1227	11.4	856
	all	165	0.470	0	16.4	2699	14.6	2415
4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/8" thk; NFRC rated (SHGC=0.31); 50% blinds 45°, light; 50% outdoor insect screen; 8 ft overhang (5 ft window ht, 2 ft sep.); 6.67 ft head ht	n	75	0.470	0	16.4	1227	11.4	856
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 (3 ft window ht, 2 ft sep.); 6.67 ft head ht	e	6	0.470	0	16.4	98	29.2	175
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=0.31); 50% blinds 45°, light; 50% outdoor insect screen; 2 ft overhang (7 ft window ht, 2 ft sep.); 6.67 ft head ht	s	21	0.470	0	16.4	343	7.99	168

Doors (none)

Ceilings							
16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh	1290	0.032	30.0	1.11	1437	1.70	2197
17B-6a1: Rf/clg ceiling, asphalt shingles roof mat, wd cons, r-6 deck ins, 1" thkns	903	0.105	6.0	3.65	3299	4.64	4190
Floors							
22A-vpl: Bg floor, light dry soil, on grade depth, vinyl flr fnsh	205	0.989	0	34.4	7056	0	0



Component Constructions

br2

DL Williams Heating & Cooling L.L.C.

Job:

Date:

By: DL Williams Heating & C...

Plan: 2169

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

Project Information

For: Adams Preserve lot 89-2169, Adams Homes
Lake City, FL 32024

Design Conditions

Location:

Gainesville Regional, FL, US

Elevation: 123 ft

Latitude: 30°N

Outdoor:

Dry bulb (°F) 33

Daily range (°F) -

Wet bulb (°F) -

Wind speed (mph) 15.0

Heating

Cooling

(M)

Indoor:

Indoor temperature (°F) 68

Design TD (°F) 35

Relative humidity (%) 30

Moisture difference (gr/lb) 8.2

Heating

Cooling

75

17

50

43.8

Infiltration:

Method Simplified

Construction quality Average

Fireplaces 0

Construction descriptions

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

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
e	112	0.091	13.0	3.17	355	1.38	155
s	89	0.091	13.0	3.17	282	1.38	123
w	72	0.091	13.0	3.17	228	1.38	100
all	273	0.091	13.0	3.17	865	1.38	378

Partitions

(none)

Windows

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

s 15 0.470 0 16.4 245 11.4 171

Doors

(none)

Ceilings

16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh

182 0.032 30.0 1.11 203 1.70 310

Floors

22A-vpl: Bg floor, light dry soil, on grade depth, vinyl flr fnsh

36 0.989 0 34.4 1239 0 0



Component Constructions

wic3

DL Williams Heating & Cooling L.L.C.

Job:

Date:

By: DL Williams Heating & C...

Plan: 2169

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

Project Information

For: Adams Preserve lot 89-2169, Adams Homes
Lake City, FL 32024

Design Conditions

Location:

Gainesville Regional, FL, US

Elevation: 123 ft

Latitude: 30°N

Outdoor:

Dry bulb (°F) 33

Daily range (°F) -

Wet bulb (°F) -

Wind speed (mph) 15.0

Heating

Cooling

(M)

Indoor:

Indoor temperature (°F) 68

Design TD (°F) 35

Relative humidity (%) 30

Moisture difference (gr/lb) 8.2

Heating

Cooling

75

17

50

43.8

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
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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

e	32	0.091	13.0	3.17	101	1.38	44
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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

20	0.032	30.0	1.11	22	1.70	34
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Floors

22A-vpl: Bg floor, light dry soil, on grade depth, vinyl flr fnsh

4	0.989	0	34.4	138	0	0
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Component Constructions

ah

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Design Conditions

Location:

Gainesville Regional, FL, US

Elevation: 123 ft

Latitude: 30°N

Outdoor:

Dry bulb (°F) 33

Daily range (°F) -

Wet bulb (°F) -

Wind speed (mph) 15.0

Heating

Cooling

18 (M)

76

7.5

Indoor:

Indoor temperature (°F) 68

Design TD (°F) 35

Relative humidity (%) 30

Moisture difference (gr/lb) 8.2

Heating

68

35

30

8.2

Cooling

75

17

50

43.8

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
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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

16

0.032

30.0

1.11

18

1.70

27

Floors

(none)



Component Constructions

bath

DL Williams Heating & Cooling L.L.C.

Job:

Date:

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Plan: 2169

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Design Conditions

Location:

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Outdoor:

Dry bulb (°F) 33

Daily range (°F) -

Wet bulb (°F) -

Wind speed (mph) 15.0

Heating

Cooling

(M)

Indoor:

Indoor temperature (°F) 68

Design TD (°F) 35

Relative humidity (%) 30

Moisture difference (gr/lb) 8.2

Heating

Cooling

75

17

50

43.8

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
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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

e	58	0.091	13.0	3.17	184	1.38	80
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Partitions

(none)

Windows

4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/8" thk; NFRC rated (SHGC=0.31); 50% blinds 45°, light; 50% outdoor insect screen; 2 ft overhang (3 ft window ht, 2 ft sep.); 6.67 ft head ht

e	6	0.470	0	16.4	98	29.2	175
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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

	72	0.032	30.0	1.11	80	1.70	123
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Floors

22A-vpl: Bg floor, light dry soil, on grade depth, vinyl flr fnsh

	8	0.989	0	34.4	275	0	0
--	---	-------	---	------	-----	---	---



Component Constructions

br3

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Plan: 2169

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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	e	97	0.091	13.0	3.17	307	1.38	134
Partitions (none)								
Windows								
4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/8" thk; NFRC rated (SHGC=0.31); 50% blinds 45°, light; 50% outdoor insect screen; 2 ft overhang (5 ft window ht, 2 ft sep.); 6.67 ft head ht	e	15	0.470	0	16.4	245	29.2	438
Doors (none)								
Ceilings								
16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh		164	0.032	30.0	1.11	183	1.70	279
Floors								
22A-vpl: Bg floor, light dry soil, on grade depth, vinyl flr fnsh		14	0.989	0	34.4	482	0	0



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2024-Sep-26 14:07:18

Page 7

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For: Adams Preserve lot 89-2169, Adams Homes
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Location:		Indoor:		Heating	Cooling
Gainesville Regional, FL, US		Indoor temperature (°F)		68	75
Elevation: 123 ft		Design TD (°F)		35	17
Latitude: 30°N		Relative humidity (%)		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	n	74	0.091	13.0	3.17	234	1.38	102
	e	73	0.091	13.0	3.17	231	1.38	101
	w	64	0.091	13.0	3.17	203	1.38	89
	all	211	0.091	13.0	3.17	668	1.38	292
Partitions								
(none)								
Windows								
4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/8" thk; NFRC rated (SHGC=0.31); 50% blinds 45°, light; 50% outdoor insect screen; 2 ft overhang (5 ft window ht, 2 ft sep.); 6.67 ft head ht	n	30	0.470	0	16.4	491	11.4	342
	e	15	0.470	0	16.4	245	29.2	438
	all	45	0.470	0	16.4	736	17.3	780
Doors								
(none)								
Ceilings								
16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh		161	0.032	30.0	1.11	179	1.70	274
Floors								
22A-vpl: Bg floor, light dry soil, on grade depth, vinyl flr fnsh		32	0.989	0	34.4	1101	0	0



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

Job:
Date:
By: DL Williams Heating & C...
Plan: 2169

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

Project Information

For: Adams Preserve lot 89-2169, Adams Homes
Lake City, FL 32024

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	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	e	24	0.091	13.0	3.17	75	1.38	33
	s	50	0.091	13.0	3.17	158	1.38	69
	all	74	0.091	13.0	3.17	234	1.38	102
Partitions (none)								
Windows								
4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/8" thk; NFRC rated (SHGC=0.31); 50% blinds 45°, light; 50% outdoor insect screen; 2 ft overhang (5 ft window ht, 2 ft sep.); 6.67 ft head ht	s	30	0.470	0	16.4	491	11.4	342
Doors (none)								
Ceilings								
16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh		2	0.032	30.0	1.11	2	1.70	3
17B-6al: Rf/clg ceiling, asphalt shingles roof mat, wd cons, r-6 deck ins, 1" thkns		121	0.105	6.0	3.65	444	4.64	564
Floors								
22A-vpl: Bg floor, light dry soil, on grade depth, vinyl flr fnsh		10	0.989	0	34.4	344	0	0



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

Job:
Date:
By: DL Williams Heating & C...
Plan: 2169

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

Project Information

For: Adams Preserve lot 89-2169, Adams Homes
Lake City, FL 32024

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	s	50	0.091	13.0	3.17	158	1.38	69
Partitions (none)								
Windows								
4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/8" thk; NFRC rated (SHGC=0.31); 50% blinds 45°, light; 50% outdoor insect screen; 2 ft overhang (5 ft window ht, 2 ft sep.); 6.67 ft head ht	s	30	0.470	0	16.4	491	11.4	342
Doors (none)								
Ceilings								
16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh		1	0.032	30.0	1.11	1	1.70	1
17B-6al: Rf/clg ceiling, asphalt shingles roof mat, wd cons, r-6 deck ins, 1" thkns		122	0.105	6.0	3.65	447	4.64	568
Floors								
22A-vpl: Bg floor, light dry soil, on grade depth, vinyl flr fnsh		10	0.989	0	34.4	344	0	0



Component Constructions

hall

DL Williams Heating & Cooling L.L.C.

Job:
Date:
By: DL Williams Heating & C...
Plan: 2169

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

Project Information

For: Adams Preserve lot 89-2169, Adams Homes
Lake City, FL 32024

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

48	0.032	30.0	1.11	53	1.70	82
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Floors
(none)



Right-Suite® Universal 2024 24.0.02 RSU02245

...HVAC\Trane\Adams Preserve 2169 lot89 manual.rup Calc = MJ8 Front Door faces: S

2024-Sep-26 14:07:18

Page 11



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

Job:
Date:
By: DL Williams Heating & C...
Plan: 2169

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

Project Information

For: Adams Preserve lot 89-2169, Adams Homes
Lake City, FL 32024

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	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	n	78	0.091	13.0	3.17	247	1.38	108
	e	44	0.091	13.0	3.17	139	1.38	61
	s	13	0.091	13.0	3.17	41	1.38	18
	all	135	0.091	13.0	3.17	427	1.38	187

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; NFRC rated (SHGC=0.31); 8 ft overhang (7 ft window ht, 2 ft sep.); 6.67 ft head ht	n	21	0.470	0	16.4	343	10.2	214
	s	7	0.470	0	16.4	114	14.5	102
	s	7	0.470	0	16.4	114	14.5	102
	all	35	0.470	0	16.4	572	11.9	417
4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/8" thk; NFRC rated (SHGC=0.31); 50% blinds 45°, light; 50% outdoor insect screen; 8 ft overhang (5 ft window ht, 2 ft sep.); 6.67 ft head ht	n	45	0.470	0	16.4	736	11.4	513
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=0.31); 50% blinds 45°, light; 50% outdoor insect screen; 2 ft overhang (7 ft window ht, 2 ft sep.); 6.67 ft head ht	s	21	0.470	0	16.4	343	7.99	168

Doors (none)

Ceilings

16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh		4	0.032	30.0	1.11	4	1.70	7
17B-6al: Rf/clg ceiling, asphalt shingles roof mat, wd cons, r-6 deck ins, 1" thkns		477	0.105	6.0	3.65	1743	4.64	2214

Floors

22A-vpl: Bg floor, light dry soil, on grade depth, vinyl flr fnsh		24	0.989	0	34.4	826	0	0
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Right-Suite® Universal 2024 24.0.02 RSU02245

...HVAC\Trane\Adams Preserve 2169 lot89 manual.rup Calc = MJ8 Front Door faces: S

2024-Sep-26 14:07:18

Page 13



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

Project Information

For: Adams Preserve lot 89-2169, Adams Homes
Lake City, FL 32024

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	w	32	0.091	13.0	3.17	101	1.38	44
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		87	0.032	30.0	1.11	97	1.70	148
17B-6al: Rf/clg ceiling, asphalt shingles roof mat, wd cons, r-6 deck ins, 1" thkns		133	0.105	6.0	3.65	486	4.64	617
Floors (none)								





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

Job:
Date:
By: DL Williams Heating & C...
Plan: 2169

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

Project Information

For: Adams Preserve lot 89-2169, Adams Homes
Lake City, FL 32024

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
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		72	0.032	30.0	1.11	80	1.70	123
Floors (none)								





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

Project Information

For: Adams Preserve lot 89-2169, Adams Homes
Lake City, FL 32024

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: Dry bulb (°F) Daily range (°F) Wet bulb (°F) Wind speed (mph)		Heating 33 - - 15.0	Cooling 92 18 (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-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	w	40	0.091	13.0	3.17	127	1.38	55
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	1.11	33	1.70	51
Floors 22A-vpl: Bg floor, light dry soil, on grade depth, vinyl flr fnsh		5	0.989	0	34.4	172	0	0





Component Constructions linebn

DL Williams Heating & Cooling L.L.C.

Job:
Date:
By: DL Williams Heating & C...
Plan: 2169

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

Project Information

For: Adams Preserve lot 89-2169, Adams Homes
Lake City, FL 32024

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 (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		15	0.032	30.0	1.11	17	1.70	26
Floors (none)								



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

Job:
Date:
By: DL Williams Heating & C...
Plan: 2169

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

Project Information

For: Adams Preserve lot 89-2169, Adams Homes
Lake City, FL 32024

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	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	w	48	0.091	13.0	3.17	152	1.38	66
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		101	0.032	30.0	1.11	112	1.70	172
Floors								
22A-vpl: Bg floor, light dry soil, on grade depth, vinyl flr fnsh		6	0.989	0	34.4	207	0	0





Component Constructions

wic1

DL Williams Heating & Cooling L.L.C.

Job:

Date:

By: DL Williams Heating & C...

Plan: 2169

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

Project Information

For: Adams Preserve lot 89-2169, Adams Homes
Lake City, FL 32024

Design Conditions

Location:

Gainesville Regional, FL, US

Elevation: 123 ft

Latitude: 30°N

Outdoor:

Dry bulb (°F) 33

Daily range (°F) -

Wet bulb (°F) -

Wind speed (mph) 15.0

Heating

Cooling

(M)

Indoor:

Indoor temperature (°F) 68

Design TD (°F) 35

Relative humidity (%) 30

Moisture difference (gr/lb) 8.2

Heating

Cooling

75

17

50

43.8

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

w	40	0.091	13.0	3.17	127	1.38	55
---	----	-------	------	------	-----	------	----

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	1.11	33	1.70	51
----	-------	------	------	----	------	----

Floors

22A-vpl: Bg floor, light dry soil, on grade depth, vinyl flr fnsh

5	0.989	0	34.4	172	0	0
---	-------	---	------	-----	---	---



Component Constructions
master bed
DL Williams Heating & Cooling L.L.C.

Job:
Date:
By: DL Williams Heating & C...
Plan: 2169

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

Project Information

For: Adams Preserve lot 89-2169, Adams Homes
Lake City, FL 32024

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		
				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	n	130	0.091	13.0	3.17	412	1.38	180
	e	64	0.091	13.0	3.17	203	1.38	89
	w	112	0.091	13.0	3.17	355	1.38	155
	all	306	0.091	13.0	3.17	969	1.38	423
Partitions (none)								
Windows								
4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/8" thk; NFRC rated (SHGC=0.31); 50% blinds 45°, light; 50% outdoor insect screen; 2 ft overhang (5 ft window ht, 2 ft sep.); 6.67 ft head ht	n	30	0.470	0	16.4	491	11.4	342
Doors (none)								
Ceilings								
16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh		280	0.032	30.0	1.11	312	1.70	477
Floors								
22A-vpl: Bg floor, light dry soil, on grade depth, vinyl flr fnsh		42	0.989	0	34.4	1446	0	0





Component Constructions

bkfst

DL Williams Heating & Cooling L.L.C.

Job:

Date:

By: DL Williams Heating & C...

Plan: 2169

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

Project Information

For: Adams Preserve lot 89-2169, Adams Homes
Lake City, FL 32024

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	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	n	42	0.091	13.0	3.17	133	1.38	58
	w	12	0.091	13.0	3.17	37	1.38	16
	all	54	0.091	13.0	3.17	170	1.38	74
Partitions (none)								
Windows								
4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/8" thk; NFRC rated (SHGC=0.31); 50% blinds 45°, light; 50% outdoor insect screen; 8 ft overhang (5 ft window ht, 2 ft sep.); 6.67 ft head ht	n	30	0.470	0	16.4	491	11.4	342
Doors (none)								
Ceilings								
16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh		6	0.032	30.0	1.11	7	1.70	11
17B-6al: Rf/clg ceiling, asphalt shingles roof mat, wd cons, r-6 deck ins, 1" thkns		49	0.105	6.0	3.65	180	4.64	228
Floors								
22A-vpl: Bg floor, light dry soil, on grade depth, vinyl flr fnsh		9	0.989	0	34.4	310	0	0



AIA/CES® / Building Performance Institute

Right-Suite® Universal 2024 24.0.02 RSU02245

...HVAC\Trane\Adams Preserve 2169 lot89 manual.rup Calc = MJ8 Front Door faces: S

2024-Sep-26 14:07:18

Page 21



Project Summary

Entire House

DL Williams Heating & Cooling L.L.C.

Job:
Date:
By: DL Williams Heating & C...
Plan: 2169

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

Project Information

For: Adams Preserve lot 89-2169, Adams Homes
Lake City, FL 32024

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	25205 Btuh
Ducts (R-6.0)	7366 Btuh
Central vent (0 cfm)	0 Btuh

Humidification	0 Btuh
Piping	0 Btuh
Equipment load	32572 Btuh

Infiltration

Method	Simplified
Construction quality	Average
Fireplaces	0

	Heating	Cooling
Area (ft ²)	2169	2169
Volume (ft ³)	19109	19109
Air changes/hour	0.32	0.16
Equiv. AVF (cfm)	102	51

Heating Equipment Summary

Make	Trane
Trade	TRANE
Model	4TWR6036H1
AHRI ref	7562981

Efficiency	9 HSPF
Heating input	
Heating output	33000 Btuh @ 47°F
Temperature rise	25 °F
Actual air flow	1200 cfm
Air flow factor	0.037 cfm/Btuh
Static pressure	0.50 in H2O
Space thermostat	
Capacity balance point = 33 °F	

Backup:
Input = 9 kW, Output = 31600 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	16903 Btuh
Ducts (R-6.0)	9166 Btuh
Central vent (0 cfm)	0 Btuh

Blower 0 Btuh

Use manufacturer's data	n
Rate/swing multiplier	0.97
Equipment sensible load	25339 Btuh

Latent Cooling Equipment Load Sizing

Structure	2311 Btuh
Ducts	1839 Btuh
Central vent (0 cfm)	0 Btuh

Equipment latent load 4150 Btuh

Equipment Total Load (Sen+Lat)	29490 Btuh
Req. total capacity at 0.70 SHR	3.0 ton

Cooling Equipment Summary

Make	Trane
Trade	TRANE
Cond	4TWR6036H1
Coil	TEM6A0C36H31++TDR
AHRI ref	7562981

Efficiency	13.0 EER, 16 SEER
Sensible cooling	24360 Btuh
Latent cooling	10440 Btuh
Total cooling	34800 Btuh
Actual air flow	1050 cfm
Air flow factor	0.040 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.



Right-Suite® Universal 2024 24.0.02 RSU02245

...HVAC\Trane\Adams Preserve 2169 lot89 manual.rup Calc = MJ8 Front Door faces: S

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Page 1



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

Job:
Date:
By: DL Williams Heating & C...
Plan: 2169

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

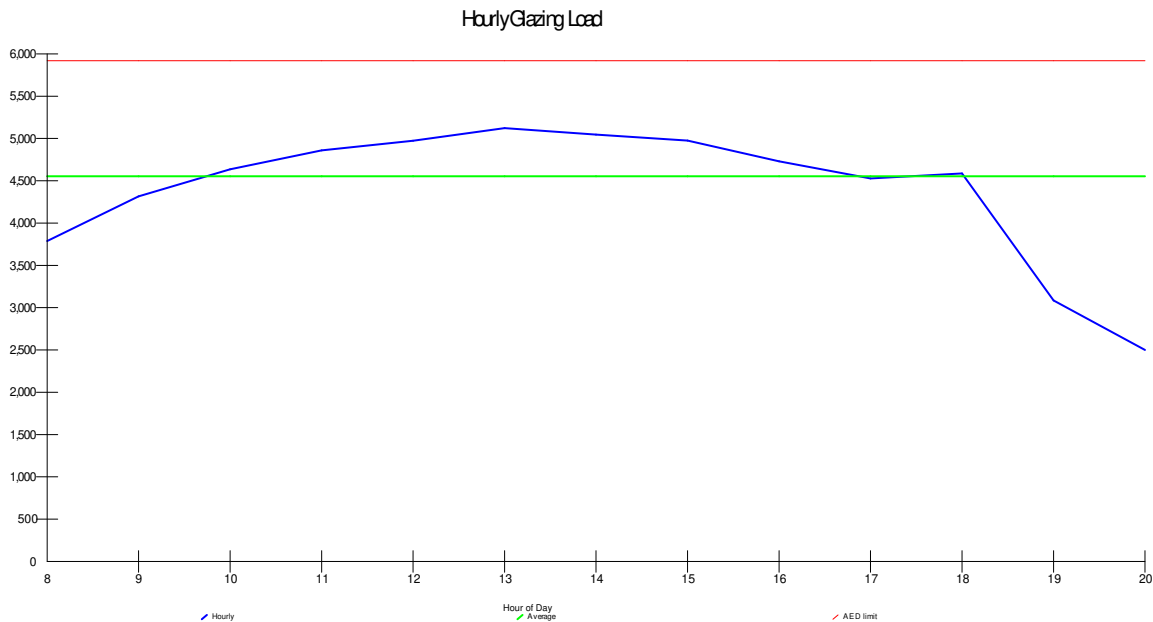
Project Information

For: Adams Preserve lot 89-2169, Adams Homes
Lake City, FL 32024

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:		Heating	Cooling	Moisture difference (gr/lb)	
Dry bulb (°F)		33	92	8.2	43.8
Daily range (°F)		-	18 (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 12.5%.

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:
Date:
By: DL Williams Heating & Cooling
Plan: 2169

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

1	Room name					Entire House				br2				
2	Exposed wall					205.0 ft				36.0 ft				
3	Room height					8.8 ft				8.0 ft				
4	Room dimensions									13.0 x 14.0 ft				
5	Room area					2169.0 ft²				182.0 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	n	3.17	1.38	480	324	1026	448	0	0	0	0
.	G	10D-v	0.470	n	16.36	10.17	21	0	343	214	0	0	0	0
.	G	4A5-2ov	0.470	n	16.36	11.41	60	0	981	685	0	0	0	0
.	G	4A5-2ov	0.470	n	16.36	11.41	75	0	1227	856	0	0	0	0
11	W	12C-0bw	0.091	e	3.17	1.38	540	504	1595	697	112	112	355	155
.	G	4A5-2ov	0.470	e	16.36	29.17	6	0	98	175	0	0	0	0
.	G	4A5-2ov	0.470	e	16.36	29.17	30	0	491	875	0	0	0	0
.	W	12C-0bw	0.091	s	3.17	1.38	312	202	640	279	104	89	282	123
.	G	10D-v	0.470	s	16.36	7.99	21	42	343	168	0	0	0	0
.	G	4A5-2ov	0.470	s	16.36	14.54	7	14	114	102	0	0	0	0
.	G	4A5-2ov	0.470	s	16.36	11.41	75	150	1227	856	15	15	245	171
.	G	4B5-2fv	0.470	s	16.36	14.54	7	14	114	102	0	0	0	0
.	W	12C-0bw	0.091	w	3.17	1.38	420	420	1330	581	72	72	228	100
.	C	16B-30ad	0.032	-	1.11	1.70	1290	1290	1437	2197	182	182	203	310
.	C	17B-6al	0.105	-	3.65	4.64	903	903	3299	4190	0	0	0	0
.	F	22A-vpl	0.989	-	34.42	0.00	2169	205	7056	0	182	36	1239	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:
Date:
By: DL Williams Heating & Cooling
Plan: 2169

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

1	Room name					wic3					ah				
2	Exposed wall					4.0 ft					0 ft				
3	Room height					8.0 ft					8.0 ft				
4	Room dimensions					5.0 x 4.0 ft					4.0 x 4.0 ft				
5	Room area					20.0 ft²					16.0 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	n	3.17	1.38	0	0	0	0	0	0	0	0	
.	G	10D-v	0.470	n	16.36	10.17	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.470	n	16.36	11.41	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.470	n	16.36	11.41	0	0	0	0	0	0	0	0	
11	W	12C-0bw	0.091	e	3.17	1.38	32	32	101	44	0	0	0	0	
.	G	4A5-2ov	0.470	e	16.36	29.17	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.470	e	16.36	29.17	0	0	0	0	0	0	0	0	
.	W	12C-0bw	0.091	s	3.17	1.38	0	0	0	0	0	0	0	0	
.	G	10D-v	0.470	s	16.36	7.99	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.470	s	16.36	14.54	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.470	s	16.36	11.41	0	0	0	0	0	0	0	0	
.	G	4B5-2fv	0.470	s	16.36	14.54	0	0	0	0	0	0	0	0	
.	W	12C-0bw	0.091	w	3.17	1.38	0	0	0	0	0	0	0	0	
.	C	16B-30ad	0.032	-	1.11	1.70	20	20	22	34	16	16	18	27	
.	C	17B-6al	0.105	-	3.65	4.64	0	0	0	0	0	0	0	0	
.	F	22A-vpl	0.989	-	34.42	0.00	20	4	138	0	16	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 L.L.C.

Job:
Date:
By: DL Williams Heating & Cooling
Plan: 2169

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

1	Room name					bath					br3				
2	Exposed wall					8.0 ft					14.0 ft				
3	Room height					8.0 ft					8.0 ft				
4	Room dimensions					9.0 x 8.0 ft					1.0 x 164.0 ft				
5	Room area					72.0 ft²					164.0 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	n	3.17	1.38	0	0	0	0	0	0	0	0	
.	G	10D-v	0.470	n	16.36	10.17	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.470	n	16.36	11.41	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.470	n	16.36	11.41	0	0	0	0	0	0	0	0	
11	W	12C-0bw	0.091	e	3.17	1.38	64	58	184	80	112	97	307	134	
	G	4A5-2ov	0.470	e	16.36	29.17	6	0	98	175	0	0	0	0	
	G	4A5-2ov	0.470	e	16.36	29.17	0	0	0	0	15	0	245	438	
	W	12C-0bw	0.091	s	3.17	1.38	0	0	0	0	0	0	0	0	
	G	10D-v	0.470	s	16.36	7.99	0	0	0	0	0	0	0	0	
	G	4A5-2ov	0.470	s	16.36	14.54	0	0	0	0	0	0	0	0	
	G	4A5-2ov	0.470	s	16.36	11.41	0	0	0	0	0	0	0	0	
	G	4B5-2fv	0.470	s	16.36	14.54	0	0	0	0	0	0	0	0	
	W	12C-0bw	0.091	w	3.17	1.38	0	0	0	0	0	0	0	0	
	C	16B-30ad	0.032	-	1.11	1.70	72	72	80	123	164	164	183	279	
	C	17B-6al	0.105	-	3.65	4.64	0	0	0	0	0	0	0	0	
	F	22A-vpl	0.989	-	34.42	0.00	72	8	275	0	164	14	482	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:
Date:
By: DL Williams Heating & Cooling
Plan: 2169

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

1	Room name					br4 32.0 ft				living 10.0 ft				
2	Exposed wall					8.0 ft				10.0 ft				
3	Room height					1.0				10.0				
4	Room dimensions					161.0 ft				12.0 ft				
5	Room area					161.0 ft²				120.0 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	n	3.17	1.38	104	74	234	102	0	0	0	0
.	G	10D-v	0.470	n	16.36	10.17	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	n	16.36	11.41	30	0	491	342	0	0	0	0
.	G	4A5-2ov	0.470	n	16.36	11.41	0	0	0	0	0	0	0	0
11	W	12C-0bw	0.091	e	3.17	1.38	88	73	231	101	24	24	75	33
.	G	4A5-2ov	0.470	e	16.36	29.17	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	e	16.36	29.17	15	0	245	438	0	0	0	0
.	W	12C-0bw	0.091	s	3.17	1.38	0	0	0	0	80	50	158	69
.	G	10D-v	0.470	s	16.36	7.99	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	s	16.36	14.54	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	s	16.36	11.41	0	0	0	0	30	30	491	342
.	G	4B5-2fv	0.470	s	16.36	14.54	0	0	0	0	0	0	0	0
.	W	12C-0bw	0.091	w	3.17	1.38	64	64	203	89	0	0	0	0
.	C	16B-30ad	0.032	-	1.11	1.70	161	161	179	274	2	2	2	3
.	C	17B-6al	0.105	-	3.65	4.64	0	0	0	0	121	121	444	564
.	F	22A-vpl	0.989	-	34.42	0.00	161	32	1101	0	120	10	344	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:
Date:
By: DL Williams Heating & Cooling
Plan: 2169

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

1	Room name					dining 10.0 ft				hall 0 ft				
2	Exposed wall					10.0 ft				8.0 ft				
3	Room height					heat/cool				heat/cool				
4	Room dimensions					10.0 x 12.0 ft				4.0 x 12.0 ft				
5	Room area					120.0 ft²				48.0 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	n	3.17	1.38	0	0	0	0	0	0	0	0
.	G	10D-v	0.470	n	16.36	10.17	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	n	16.36	11.41	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	n	16.36	11.41	0	0	0	0	0	0	0	0
11	W	12C-0bw	0.091	e	3.17	1.38	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	e	16.36	29.17	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	e	16.36	29.17	0	0	0	0	0	0	0	0
.	W	12C-0bw	0.091	s	3.17	1.38	80	50	158	69	0	0	0	0
.	G	10D-v	0.470	s	16.36	7.99	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	s	16.36	14.54	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	s	16.36	11.41	30	30	491	342	0	0	0	0
.	G	4B5-2fv	0.470	s	16.36	14.54	0	0	0	0	0	0	0	0
.	W	12C-0bw	0.091	w	3.17	1.38	0	0	0	0	0	0	0	0
.	C	16B-30ad	0.032	-	1.11	1.70	1	1	1	1	48	48	53	82
.	C	17B-6al	0.105	-	3.65	4.64	122	122	447	568	0	0	0	0
.	F	22A-vpl	0.989	-	34.42	0.00	120	10	344	0	48	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 L.L.C.

Job:
Date:
By: DL Williams Heating & Cooling
Plan: 2169

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

1	Room name					family					kitchen				
2	Exposed wall					24.0 ft					0 ft				
3	Room height					10.0 ft					9.2 ft				
4	Room dimensions					1.0 x 468.0 ft					1.0 x 216.0 ft				
5	Room area					468.0 ft²					216.0 ft²				
	Ty	Construction number	U-value (Btuh/ft²·°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)		
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool	
6	W	12C-0bw	0.091	n	3.17	1.38	144	78	247	108	0	0	0	0	
.	G	10D-v	0.470	n	16.36	10.17	21	0	343	214	0	0	0	0	
.	G	4A5-2ov	0.470	n	16.36	11.41	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.470	n	16.36	11.41	45	0	736	513	0	0	0	0	
11	W	12C-0bw	0.091	e	3.17	1.38	44	44	139	61	0	0	0	0	
.	G	4A5-2ov	0.470	e	16.36	29.17	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.470	e	16.36	29.17	0	0	0	0	0	0	0	0	
.	W	12C-0bw	0.091	s	3.17	1.38	48	13	41	18	0	0	0	0	
.	G	10D-v	0.470	s	16.36	7.99	21	21	343	168	0	0	0	0	
.	G	4A5-2ov	0.470	s	16.36	14.54	7	7	114	102	0	0	0	0	
.	G	4A5-2ov	0.470	s	16.36	11.41	0	0	0	0	0	0	0	0	
.	G	4B5-2fv	0.470	s	16.36	14.54	7	7	114	102	0	0	0	0	
.	W	12C-0bw	0.091	w	3.17	1.38	0	0	0	0	32	32	101	44	
.	C	16B-30ad	0.032	-	1.11	1.70	4	4	4	7	87	87	97	148	
.	C	17B-6al	0.105	-	3.65	4.64	477	477	1743	2214	133	133	486	617	
.	F	22A-vpl	0.989	-	34.42	0.00	468	24	826	0	216	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 L.L.C.

Job:
Date:
By: DL Williams Heating & Cooling
Plan: 2169

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

1	Room name					laundry 0 ft				wic2 5.0 ft				
2	Exposed wall					8.0 ft				8.0 ft				
3	Room height					6.0				6.0				
4	Room dimensions					x 12.0 ft				x 5.0 ft				
5	Room area					72.0 ft²				30.0 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	n	3.17	1.38	0	0	0	0	0	0	0	0
.	G	10D-v	0.470	n	16.36	10.17	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	n	16.36	11.41	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	n	16.36	11.41	0	0	0	0	0	0	0	0
11	W	12C-0bw	0.091	e	3.17	1.38	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	e	16.36	29.17	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	e	16.36	29.17	0	0	0	0	0	0	0	0
.	W	12C-0bw	0.091	s	3.17	1.38	0	0	0	0	0	0	0	0
.	G	10D-v	0.470	s	16.36	7.99	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	s	16.36	14.54	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	s	16.36	11.41	0	0	0	0	0	0	0	0
.	G	4B5-2fv	0.470	s	16.36	14.54	0	0	0	0	0	0	0	0
.	W	12C-0bw	0.091	w	3.17	1.38	0	0	0	0	40	40	127	55
.	C	16B-30ad	0.032	-	1.11	1.70	72	72	80	123	30	30	33	51
.	C	17B-6al	0.105	-	3.65	4.64	0	0	0	0	0	0	0	0
.	F	22A-vpl	0.989	-	34.42	0.00	72	0	0	0	30	5	172	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:
Date:
By: DL Williams Heating & Cooling
Plan: 2169

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

1	Room name					linebn 0 ft					mbath 6.0 ft				
2	Exposed wall					8.0 ft					8.0 ft				
3	Room height					5.0 x 3.0 ft					1.0 x 101.0 ft				
4	Room dimensions					15.0 ft²					101.0 ft²				
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-0bw	0.091	n	3.17	1.38	0	0	0	0	0	0	0	0	
.	G	10D-v	0.470	n	16.36	10.17	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.470	n	16.36	11.41	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.470	n	16.36	11.41	0	0	0	0	0	0	0	0	
11	W	12C-0bw	0.091	e	3.17	1.38	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.470	e	16.36	29.17	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.470	e	16.36	29.17	0	0	0	0	0	0	0	0	
.	W	12C-0bw	0.091	s	3.17	1.38	0	0	0	0	0	0	0	0	
.	G	10D-v	0.470	s	16.36	7.99	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.470	s	16.36	14.54	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.470	s	16.36	11.41	0	0	0	0	0	0	0	0	
.	G	4B5-2fv	0.470	s	16.36	14.54	0	0	0	0	0	0	0	0	
.	W	12C-0bw	0.091	w	3.17	1.38	0	0	0	0	48	48	152	66	
.	C	16B-30ad	0.032	-	1.11	1.70	15	15	17	26	101	101	112	172	
.	C	17B-6al	0.105	-	3.65	4.64	0	0	0	0	0	0	0	0	
.	F	22A-vpl	0.989	-	34.42	0.00	15	0	0	0	101	6	207	0	

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



Right-Suite® Universal 2024 24.0.02 RSU02245

2024-Sep-26 14:07:18

Page 8

...HVAC\Trane\Adams Preserve 2169 lot89 manual.rup Calc = MJ8 Front Door faces: S



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

Job:
Date:
By: DL Williams Heating & Cooling
Plan: 2169

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

1	Room name					wic1				masrter bed				
2	Exposed wall					5.0 ft				42.0 ft				
3	Room height					8.0 ft				8.0 ft				
4	Room dimensions					6.0 x 5.0 ft				20.0 x 14.0 ft				
5	Room area					30.0 ft²				280.0 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	n	3.17	1.38	0	0	0	0	160	130	412	180
.	G	10D-v	0.470	n	16.36	10.17	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	n	16.36	11.41	0	0	0	0	30	0	491	342
.	G	4A5-2ov	0.470	n	16.36	11.41	0	0	0	0	0	0	0	0
11	W	12C-0bw	0.091	e	3.17	1.38	0	0	0	0	64	64	203	89
.	G	4A5-2ov	0.470	e	16.36	29.17	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	e	16.36	29.17	0	0	0	0	0	0	0	0
.	W	12C-0bw	0.091	s	3.17	1.38	0	0	0	0	0	0	0	0
.	G	10D-v	0.470	s	16.36	7.99	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	s	16.36	14.54	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	s	16.36	11.41	0	0	0	0	0	0	0	0
.	G	4B5-2fv	0.470	s	16.36	14.54	0	0	0	0	0	0	0	0
.	W	12C-0bw	0.091	w	3.17	1.38	40	40	127	55	112	112	355	155
.	C	16B-30ad	0.032	-	1.11	1.70	30	30	33	51	280	280	312	477
.	C	17B-6al	0.105	-	3.65	4.64	0	0	0	0	0	0	0	0
.	F	22A-vpl	0.989	-	34.42	0.00	30	5	172	0	280	42	1446	0

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



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2024-Sep-26 14:07:18

Page 9

...HVAC\Trane\Adams Preserve 2169 lot89 manual.rup Calc = MJ8 Front Door faces: S



Duct system multi orientation report

Entire House

DL Williams Heating & Cooling L.L.C.

Job:
Date:
By: DL Williams Heating & C...
Plan: 2169

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

Project Information

For: Adams Preserve lot 89-2169, Adams Homes
Lake City, FL 32024

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

Duct Name	(N)			(NE)			(E)			(SE)		
	Reg CFM	Reg Size	Duct Size	Reg CFM	Reg Size	Duct Size	Reg CFM	Reg Size	Duct Size	Reg CFM	Reg Size	Duct Size
Supply Branches												
bath	46 h	12x6	4	46 h	12x6	4	46 h	12x6	4	46 h	12x6	4
bkfst	64 h	12x6	6	70 c	12x6	6	68 c	12x6	6	64 h	12x6	6
br2	161 h	12x6	6	161 h	12x6	6	161 h	12x6	6	161 h	12x6	6
br3	70 h	12x6	5	70 h	12x6	5	70 h	12x6	5	70 h	12x6	5
br4	155 h	12x6	6	155 h	12x6	6	155 h	12x6	6	155 h	12x6	6
dining	77 c	12x6	7	91 c	12x6	7	96 c	12x6	7	80 c	12x6	7
family	154 c	12x6	6	156 c	12x6	6	154 c	12x6	6	158 c	12x6	6
family-A	154 c	12x6	6	156 c	12x6	6	154 c	12x6	6	158 c	12x6	6
kitchen	139 c	12x6	6	109 c	12x6	6	104 c	12x6	6	114 c	12x6	6
laundry	39 c	12x6	4	30 c	12x6	4	29 c	12x6	4	32 c	12x6	4
living	84 h	12x6	5	84 h	12x6	5	88 c	12x6	5	84 h	12x6	5
masrter bed	94 h	12x6	7	94 h	12x6	7	94 h	12x6	7	94 h	12x6	7
masrter bed-A	94 h	12x6	7	94 h	12x6	7	94 h	12x6	7	94 h	12x6	7
mbath	28 h	12x6	4	28 h	12x6	4	28 h	12x6	4	28 h	12x6	4
wic1	20 h	12x6	4	20 h	12x6	4	20 h	12x6	4	20 h	12x6	4
wic2	20 h	12x6	4	20 h	12x6	4	20 h	12x6	4	20 h	12x6	4
Supply Trunks												
st4	261 h		8	261 h		8	261 h		8	261 h		8
st3	348 h		6	348 h		6	348 h		6	348 h		6
st3A	155 h		6	155 h		6	155 h		6	155 h		6
st1	348 h		9	348 h		9	348 h		9	348 h		9
st2	572 c		14	585 c		14	589 c		14	573 c		14
Return Branches												
rb1	1200 h	12x12	0	1200 h	12x12	0	1200 h	12x12	0	1200 h	12x12	0
Friction Rates												
Heating FR	0.235			0.235			0.235			0.235		
Cooling FR	0.235			0.235			0.235			0.235		

Project Information

For: Adams Preserve lot 89-2169, Adams Homes
Lake City, FL 32024

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	46 h	12x6	4	46 h	12x6	4	46 h	12x6	4	46 h	12x6	4
bkfst	64 h	12x6	6	64 h	12x6	6	64 h	12x6	6	64 h	12x6	6
br2	161 h	12x6	6	161 h	12x6	6	161 h	12x6	6	161 h	12x6	6
br3	70 c	12x6	5	70 h	12x6	5	70 h	12x6	5	70 h	12x6	5
br4	155 h	12x6	6	155 h	12x6	6	155 h	12x6	6	155 h	12x6	6
dining	77 h	12x6	7	102 c	12x6	7	112 c	12x6	7	94 c	12x6	7
family	151 c	12x6	6	145 c	12x6	6	146 c	12x6	6	156 c	12x6	6
family-A	151 c	12x6	6	145 c	12x6	6	146 c	12x6	6	156 c	12x6	6
kitchen	136 c	12x6	6	118 c	12x6	6	111 c	12x6	6	116 c	12x6	6
laundry	38 c	12x6	4	33 c	12x6	4	31 c	12x6	4	32 c	12x6	4
living	84 h	12x6	5	93 c	12x6	5	104 c	12x6	5	86 c	12x6	5
masrter bed	94 h	12x6	7	94 h	12x6	7	94 h	12x6	7	94 h	12x6	7
masrter bed-A	94 h	12x6	7	94 h	12x6	7	94 h	12x6	7	94 h	12x6	7
mbath	28 h	12x6	4	28 h	12x6	4	28 h	12x6	4	28 h	12x6	4
wic1	20 h	12x6	4	20 h	12x6	4	20 h	12x6	4	20 h	12x6	4
wic2	20 h	12x6	4	20 h	12x6	4	20 h	12x6	4	20 h	12x6	4
Supply Trunks												
st4	261 h		8	261 h		8	261 h		8	261 h		8
st3	348 h		6	348 h		6	348 h		6	348 h		6
st3A	155 h		6	155 h		6	155 h		6	155 h		6
st1	348 h		9	348 h		9	348 h		9	348 h		9
st2	562 c		14	571 c		14	575 c		14	570 c		14
Return Branches												
rb1	1200 h	12x12	0	1200 h	12x12	0	1200 h	12x12	0	1200 h	12x12	0
Friction Rates												
Heating FR	0.235			0.235			0.235			0.235		
Cooling FR	0.235			0.235			0.235			0.235		



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...HVAC\Trane\Adams Preserve 2169 lot89 manual.rup Calc = MJ8 Front Door faces: S

2024-Sep-26 14:07:19

Page 2

Project Information

For: Adams Preserve lot 89-2169, Adams Homes
Lake City, FL 32024

Duct Name	Largest			Smallest		
	Reg CFM	Reg Size	Duct Size	Reg CFM	Reg Size	Duct Size
Supply Branches						
bath	46 h	12x6	4	46 h	12x6	4
bkfst	70 c	12x6	6	64 h	12x6	6
br2	161 h	12x6	6	161 h	12x6	6
br3	70 c	12x6	5	70 h	12x6	5
br4	155 h	12x6	6	155 h	12x6	6
dining	112 c	12x6	7	77 c	12x6	7
family	158 c	12x6	6	145 c	12x6	6
family-A	158 c	12x6	6	145 c	12x6	6
kitchen	139 c	12x6	6	104 c	12x6	6
laundry	39 c	12x6	4	29 c	12x6	4
living	104 c	12x6	5	84 h	12x6	5
masrter bed	94 h	12x6	7	94 h	12x6	7
masrter bed-A	94 h	12x6	7	94 h	12x6	7
mbath	28 h	12x6	4	28 h	12x6	4
wic1	20 h	12x6	4	20 h	12x6	4
wic2	20 h	12x6	4	20 h	12x6	4
Supply Trunks						
st4	261 h		8	261 h		8
st3	348 h		6	348 h		6
st3A	155 h		6	155 h		6
st1	348 h		9	348 h		9
st2	589 c		14	562 c		14
Return Branches						
rb1	1200 h	12x12	0	1200 h	12x12	0
Friction Rates						
Heating FR	0.235			0.235		
Cooling FR	0.235			0.235		



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:
Date:
By: DL Williams Heating & C...
Plan: 2169

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

Project Information

For: Adams Preserve lot 89-2169, Adams Homes
Lake City, FL 32024

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	0
Measured length of trunk	20	0
Equivalent length of fittings	185	0
Total length	213	0
Total effective length		213

Friction Rate

	Heating (in/100ft)	Cooling (in/100ft)
Supply Ducts	0.235 > 0.18	0.235 > 0.18
Return Ducts	0.235 > 0.18	0.235 > 0.18

Fitting Equivalent Length Details

Supply	4AD=60, 11A=20, 11A=20, 11A=20, 12J1=10, 1A=35, 11A=20: TotalEL=185
Return	TotalEL=0





Duct System Summary
Entire House
DL Williams Heating & Cooling L.L.C.

Job:
Date:
By: DL Williams Heating & C...
Plan: 2169

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

Project Information

For: Adams Preserve lot 89-2169, Adams Homes
Lake City, FL 32024

	Heating	Cooling
External static pressure	0.50 in H2O	0.50 in H2O
Pressure losses	0 in H2O	0 in H2O
Available static pressure	0.50 in H2O	0.50 in H2O
Supply / return available pressure	0.250 / 0.250 in H2O	0.250 / 0.250 in H2O
Lowest friction rate	0.235 in/100ft	0.235 in/100ft
Actual air flow	1200 cfm	1050 cfm
Total effective length (TEL)	213 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 1253	46	34	0.495	4.0	0x0	VIFx	6.0	95.0	st2
bkfst	h 1736	64	43	0.326	6.0	0x0	VIFx	38.2	115.0	
br2	h 4359	161	67	0.519	6.0	0x0	VIFx	1.4	95.0	st3
br3	h 1903	70	65	0.318	5.0	0x0	VIFx	22.2	135.0	
br4	h 4203	155	91	0.235	6.0	0x0	VIFx	28.1	185.0	st3A
dining	c 2092	77	77	0.348	7.0	0x0	VIFx	28.5	115.0	st2
family	c 3818	123	154	0.304	6.0	0x0	VIFx	29.3	135.0	st3
family-A	c 3818	123	154	0.351	6.0	0x0	VIFx	27.3	115.0	st2
kitchen	c 3440	36	139	0.345	6.0	0x0	VIFx	29.8	115.0	st2
laundry	c 960	4	39	0.283	4.0	0x0	VIFx	41.4	135.0	st4
living	h 2272	84	67	0.467	5.0	0x0	VIFx	12.1	95.0	st4
masrter bed	h 2560	94	44	0.266	7.0	0x0	VIFx	53.3	135.0	
masrter bed-A	h 2560	94	44	0.273	7.0	0x0	VIFx	48.2	135.0	st4
mbath	h 756	28	17	0.279	4.0	0x0	VIFx	44.1	135.0	st4
wic1	h 544	20	8	0.271	4.0	0x0	VIFx	49.8	135.0	st4
wic2	h 550	20	8	0.269	4.0	0x0	VIFx	51.1	135.0	st4

Bold/italic values have been manually overridden



Supply Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
st4	Peak AVF	261	159	0.266	747	8.0	0 x 0	VinIFlx	st2
st3	Peak AVF	348	310	0.235	1774	6.0	0 x 0	VinIFlx	st1
st3A	Peak AVF	155	91	0.235	789	6.0	0 x 0	VinIFlx	st3
st1	Peak AVF	348	310	0.235	789	9.0	0 x 0	VinIFlx	
st2	Peak AVF	561	572	0.266	535	14.0	0 x 0	VinIFlx	

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	1200	1050	0	0	0	0	0x 0		VIFx	

Bold/italic values have been manually overridden



Manual S Compliance Report

Entire House

DL Williams Heating & Cooling L.L.C.

Job:
Date:
By: DL Williams Heating & C...
Plan: 2169

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

Project Information

For: Adams Preserve lot 89-2169, Adams Homes
Lake City, FL 32024

Cooling Equipment

Design Conditions

Outdoor design DB:	92.2°F	Sensible gain:	26069	Btuh	Entering coil DB:	77.7°F
Outdoor design WB:	75.8°F	Latent gain:	4150	Btuh	Entering coil WB:	63.8°F
Indoor design DB:	75.0°F	Total gain:	30220	Btuh		
Indoor RH:	50%	Estimated airflow:	1050	cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP		
Manufacturer:	Trane	Model:	4TWR6036H1+TEM6A0C36H31++TDR
Actual airflow:	1050	cfm	
Sensible capacity:	29114	Btuh	112% of load
Latent capacity:	4352	Btuh	105% of load
Total capacity:	33466	Btuh	111% of load SHR: 87%

Heating Equipment

Design Conditions

Outdoor design DB:	33.2°F	Heat loss:	32572	Btuh	Entering coil DB:	66.9°F
Indoor design DB:	68.0°F					

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP		
Manufacturer:	Trane	Model:	4TWR6036H1+TEM6A0C36H31++TDR
Actual airflow:	1200	cfm	
Output capacity:	25635	Btuh	79% of load
Supplemental heat required:	6937	Btuh	
Capacity balance:	33	°F	
Economic balance:	-99	°F	

Backup equipment type:	Elec strip		
Manufacturer:		Model:	
Actual airflow:	1200	cfm	
Output capacity:	9.3	kW	97% 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 2.0

Header Information

Contractor DL Williams Heating & Cooling L.L.C.
Mechanical license# Derrick Williams
Building plan # 2169
Home address (Street or Lot#, Block, Subdivision) , Entire House

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

HVAC LOAD CALCULATION

(IRC M1401.3)

Manual J Design Criteria and Loads

Location

Elevation 123 ft
Altitude Correction Factor 1.00
Latitude 30 °N

Summer Design Conditions

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

Manual J Loads

Total Heat Loss 32572 Btuh
Sensible Heat Gain 26069 Btuh
Latent Heat Gain 4150 Btuh
Total Heat Gain 30220 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 25635 Btuh Sizing Value 32572 Btuh
Supplemental 6937 Btuh Sizing Limit 175.0 %
Heat Load: Capacity 97.0 %

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 4TWR6036H1+TEM6A0C36H31++TDR

Sensible 29114 Btuh Sizing Value 30220 Btuh
Latent 4352 Btuh Sizing Limit 115.0 %
Total 33466 Btuh Load: Capacity 110.7 %

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

HVAC DUCT DISTRIBUTION DESIGN

(IRC M1601.1)

Design airflow 1200 cfm Longest Supply Duct 213 ft Duct Materials Used
External Static Pressure (ESP) 0.50 in H2O Longest Return Duct 0 ft Trunk Duct: ☐ Duct Board ☐ Sheet Metal
Component Pressure Loss (CPL) 0 in H2O Total Effective Length (TEL) 213 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: _____



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 L.L.C. Date:
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: 2169 Check box to indicate whether the system design is site-specific or part of a group:
☒ Site-specific design. Option(s) & elevation(s) modeled:
☐ Group design. Group #: 0 out of 0 total groups for this house plan. Configuration modeled:

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

Designer
Verified

Airflow:

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

System Type & Controls:

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

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

Efficiency:

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

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

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

3. Room-by-Room Heating & Cooling Loads

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

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

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

3.4 Number of occupants used in loads: 4 -

3.5 Conditioned floor area used in loads: 2169 Sq. Ft. -

3.6 Window area used in loads: 302 Sq. Ft. -

3.7 Predominant window SHGC used in loads: 0.31 -

3.8 Infiltration rate used in loads: Summer: 0.16 Winter: 0.32 -

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)	25.3	28.6	29.0	28.2	25.3	27.5	27.9	27.3	-
	3.11 Latent heat gain (Not by orientation)	4.2								-
	3.12 Total heat gain (By orientation)	29.5	32.7	33.1	32.4	29.5	31.6	32.1	31.5	-
	3.13 Maximum – minimum total heat gain (Item 3.12) across orientations =	3.6								

Heating	3.14 Total heat loss (Not by orientation)	32.6								-
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ENERGY STAR Single-Family New Homes National HVAC Design Report, Version 3 / 3.1 / 3.2 (Rev. 12)

4. Heating & Cooling Equipment Selection										Designer Verified	
4.1 Equipment selected per ACCA Manual S (see Footnote 25 & 26).										☐	
Air Conditioner / Heat Pump (Complete if air conditioner or heat pump will be installed; otherwise check "N/A")										☐ N/A	
4.2 Equipment type: ☐ Cooling-only air conditioner or ☒ Cooling & heating heat pump										-	
4.3 Condenser manufacturer & model: Trane 4TWR6036H1										-	
4.4 Evaporator / fan coil manufacturer & model: Trane TEM6A0C36H31++TDR										-	
4.5 AHRI reference #: 7562981										-	
4.6 AHRI listed efficiency: 13 / 16 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: 4.4 kBtuh										-	
4.10 Sensible capacity at design conditions, from OEM expanded performance data: 29.1 kBtuh										-	
4.11 Total capacity at design conditions, from OEM expanded performance data: 33.5 kBtuh										-	
4.12 Air-source heat pump capacity: At 17°F: 21.2 kBtuh At 47°F: 33.0 kBtuh ☐ N/A										-	
4.13 Cooling sizing % = Total capacity (Item 4.11) divided by maximum total heat gain (Item 3.12): 101 %										-	
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) = 87%										-	
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 1050 CFM Heating mode 1200 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	linebn	0		23			
2	bath	46		13	living	84		24			
3	bkfst	64		14	masrter bed	189		25			
4	br2	161		15	mbath	28		26			
5	br3	70		16	wic1	20		27			
6	br4	155		17	wic2	20		28			
7	dining	77		18	wic3	0		29			
8	family	247		19				30			
9	hall	0		20				31			
10	kitchen	36		21				32			
11	laundry	4		22				Total for all rooms		1200	

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 L.L.C.			Designer name:		Derrick Williams		Date:			
1.3 Software name and version used to complete design:					Right-Suite® Universal 2024 24.0.02 RSU02245			N/A ☐				
For a Dwelling, Townhouse, or Dwelling / Sleeping Unit Within (i.e. duplex):												
1.4 Architectural plan name or address of property:												
1.5 Architectural options used in the design(3):												
1.6 Other architectural options that the design can be used with:(4)												
For a Dwelling / Sleeping Unit Not Within a Dwelling or Townhouse (e.g. condo, apartment):												
1.7 Unique ID for bldg. that the dwelling / sleeping unit is in:(5)												
1.8 Architectural plan used in design (e.g. dwelling unit model):												
1.9 Other architectural plans that the design can be used with:(6)												
1.10 Architectural options used in the design:(3)												
1.11 Other architectural options that the design can be used with:(4)												
1.12 Dwelling / sleeping unit location used in design:(7)												
2. Dwelling-Unit Mechanical Ventilation System Design												
Ventilation System Type & Control Location:				System 1		System 2		System 2				
2.1 Unique name or ID for each system:(8)												
2.2 Vent. equipment manufacturer & model #:(9)												
2.3 Specified system type:(10)				Balanced w/o Recovery								
2.4 Specified control location:(11)												
2.5 Ventilation zone name(s) served by system:(12)				Entire House								
Ventilation Zone Served by Ventilation System:				Zone 1		Zone 2		Zone 3				
2.6 Ventilation zone name:(12)				Entire House								
2.7 Design basis:(13)				Other								
2.8 Floor area (sq. ft.) and # bedrooms in vent. zone:				2169 0								
2.9 Ventilation design airflow rate (CFM):(14)												
2.10 Vent. runtime per cycle & cycle time (mins):				0 of every 0								
2.11 Time-averaged mechanical vent. rate (CFM):(15)												
3. Heat Gain & Heat Loss Loads												
3.1 Design basis for the loads:(16)		ACCA Manual J v8 2016			3.2 Load methodology:(17)		Room-by-Room					
3.3 Indoor design temperatures used in loads (°F):					Heating Season:		68		Cooling Season:		75	
3.4 Outdoor design temperatures used in loads (°F):(18)					Heating Season:		33		Cooling Season:		92	
3.5 Outdoor design temperature location & data source:(19)					Alachua, FL		Data Source:		ASHRAE 2017			
Zone-Specific Inputs & Loads at Design Conditions				Zone 1		Zone 2		Zone 3				
3.6 Name of heated or cooled zone:(20)				Entire House								
3.7 Occupants & total occup. internal gains (Btuh):(21)				4 920								
3.8 Total non-occupant internal gains (Btuh):				2600								
3.9 Conditioned floor area (sq. ft.):(22)				2169								
3.10 Window area (sq. ft.):(23)				302								
3.11 Predominant window SHGC:(24)				0.31								
3.12 Predominant insulation nominal R-value:(24,25)				Wall: 13.0 Ceiling:30.0		Wall: Ceiling:		Wall: Ceiling:				
3.13 Infiltration rate (Qualitative or ACH50):(26)				Average								
3.14 Time-averaged mechanical vent. rate (CFM):				0								
3.15 Heat gain (kBtuh):(27)				Sensible	Latent	Total	Sensible	Latent	Total	Sensible	Latent	Total
				N	25.3	4.2	29.5					
				NE	28.6	4.2	32.7					
				E	29.0	4.2	33.1					
				SE	28.2	4.2	32.4					
				S	25.3	4.2	29.5					
				SW	27.5	4.2	31.6					
				W	27.9	4.2	32.1					
				NW	27.3	4.2	31.5					
3.16 Maximum – minimum total heat gain (kBtuh):(28)						3.6						
3.17 Total heat loss (kBtuh):				32.6								

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 TEM6A0C36H31		
4.5 Condenser mfr. & model #:(30)	TRAN 4TWR6036H1 N/A ☐	N/A ☒	N/A ☒
4.6 AHRI ref. #, or check box for alt. OEM doc.:(31)	7562981 OEM ☐	OEM ☒	OEM ☒
4.7 If AC / HP, rated cooling efficiency:(32)	16 SEER N/A ☐	N/A ☒	N/A ☒
4.8 If HP, rated heating efficiency:(33)	9 HSPF N/A ☐	N/A ☒	N/A ☒
4.9 If HP, ratio of max. to min. rated capacity:	1.6 N/A ☐	N/A ☒	N/A ☒
4.10 If AC / HP, blower fan motor & speed type:(34)	Other Single N/A ☐	N/A ☒	N/A ☒
4.11 If AC / HP, compressor speed type:(35)	Single N/A ☐	N/A ☒	N/A ☒
4.12 If AC / HP, meter device type:(36)	N/A ☐	N/A ☒	N/A ☒
4.13 If TXV or EEV, OEM subcooling target (°F):(37)	0.0 N/A ☐	N/A ☒	N/A ☒
4.14 Filter performance metric and rating:(38)	N/A ☒	N/A ☒	N/A ☒
Furnaces, Boilers, & Other Heating Equipment (If none of these will be installed, check "N/A")			N/A ☒
4.15 Unique name or ID for each system:			
4.16 Zone that system serves (See Item 3.6):			
4.17 Equipment type:(39)			
4.18 Equipment manufacturer & model #:			
4.19 AHRI ref. #, or check box for alt. OEM doc.:(31)	OEM ☒	OEM ☒	OEM ☒
4.20 If furnace or boiler, rated heating efficiency:	N/A ☒	N/A ☒	N/A ☒
4.21 If furnace, blower fan motor & speed type:(34)	N/A ☒	N/A ☒	N/A ☒
4.22 If furnace or boiler, heating capacity type:(40)	N/A ☒	N/A ☒	N/A ☒
4.23 If furnace or boiler, venting type:(41)	N/A ☒	N/A ☒	N/A ☒
4.24 Filter performance metric and rating:(38)	N/A ☒	N/A ☒	N/A ☒
5. Duct Design (Complete if duct system will be installed; otherwise check "N/A")			N/A ☐
5.1 Unique name or ID for each system:	Entire House		
5.2 Zone that system serves (See Item 3.6):	Entire House		
Design Values for Cooling and Heating Mode	Cooling	Heating	Cooling Heating Cooling Heating
5.3 Design blower fan airflow (CFM):(42)	1050	1200	
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]	1200	[All rooms] [All rooms]
1.	ah	0	
2.	bath	46	
3.	bkfst	64	
4.	br2	161	
5.	br3	70	
6.	br4	155	
7.	dining	77	
8.	family	247	
9.	hall	0	
10.	kitchen	36	
11.	laundry	4	
12.	linebn	0	
13.	living	84	
14.	masrter bed	189	
15.	mbath	28	
16.	wic1	20	
17.	wic2	20	
18.	wic3	0	
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

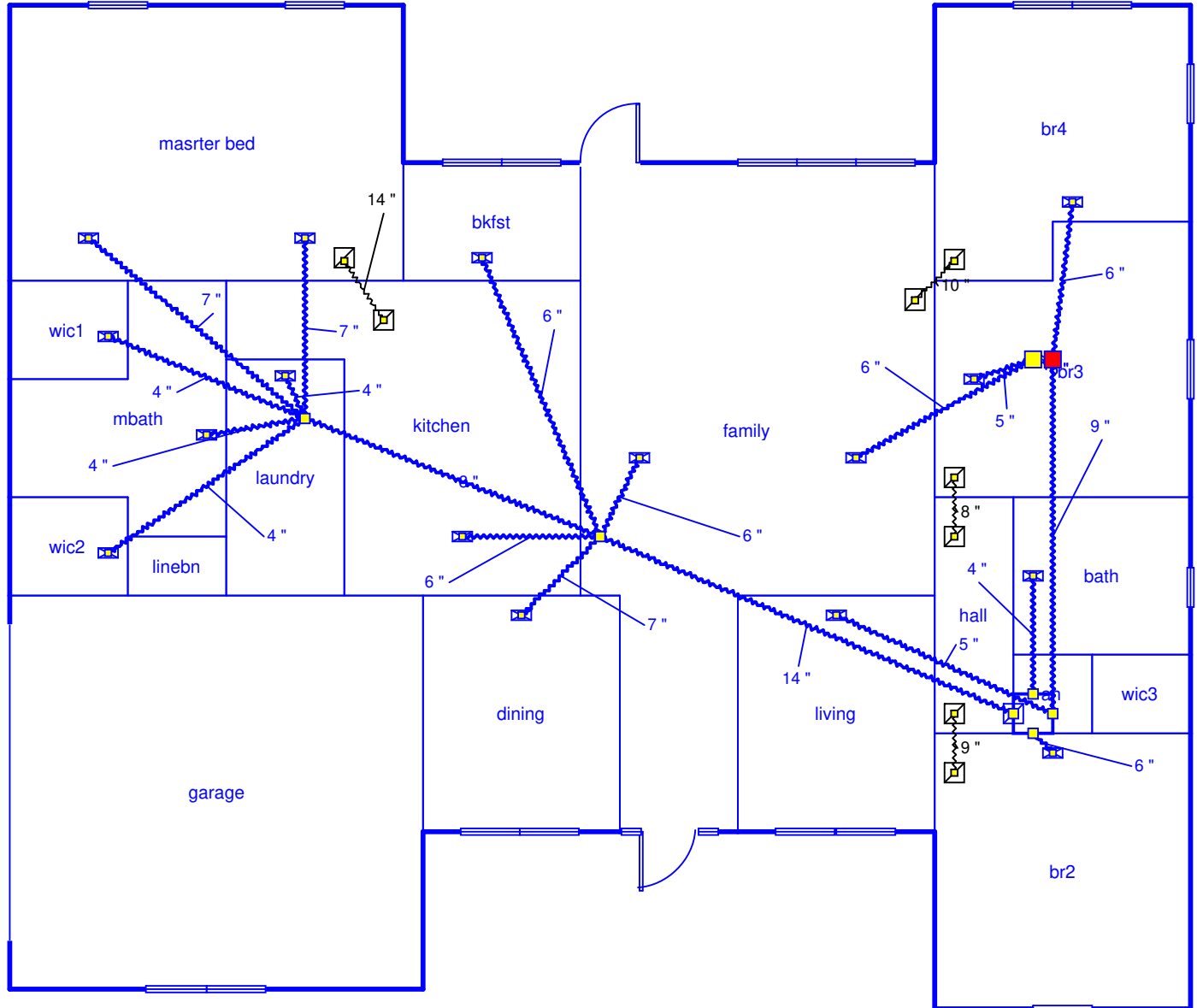


ENERGY STAR Single-Family New Homes, All Versions (Rev. 11)
ENERGY STAR Multifamily New Construction, All Versions (Rev. 02)
National HVAC Design Supplement to Std. 310 for Dwellings & Units

1. Design Basis											
1.1 Design description (optional):											
1.2 Designer company:		DL Williams Heating & Cooling L.L.C.			Designer name:		Derrick Williams		Date:		
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):					25.3		29.5				
4.5 Sensible, latent, & total cooling capacity at design conditions (kBtuh):					29.1		4.4		33.5		
4.6 If HP, heating capacity at 17°F and at 47°F (kBtuh):					21.2		33.0		N/A		☐
4.7 Compressor speed type:					Single						
4.8 Cooling sizing % & applicable sizing limit key from Table 2:					113.5		C1				
4.9 If C2 chosen in Item 4.8, load sensible heat ratio & HDD / CDD ratio:							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.								☐	☐



main



Job #:
Performed by DL Williams Heating & Cool
Adams Preserve lot 89-2169
Lake City, FL 32024

DL Williams Heating & Cooling L.L.C.

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Page 1
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