

Project Information

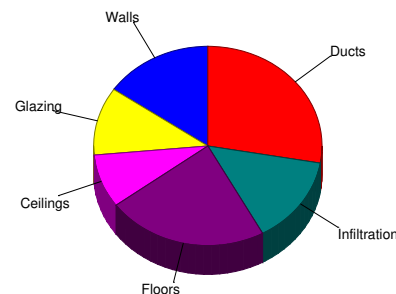
For: Adams Homes Preserve at Laurel Lake plan 2508 lot 96, Adams Homes plan 2508
Lake City, FL

Design Conditions

Location:		Indoor:		Heating	Cooling
Gainesville Regional, FL, US		Indoor temperature (°F)		68	75
Elevation: 123 ft		Design TD (°F)		35	17
Latitude: 30°N		Relative humidity (%)		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	

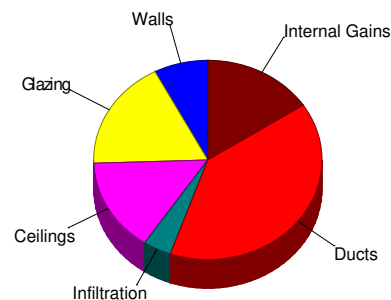
Heating

Component	Btuh/ft²	Btuh	% of load
Walls	3.2	4950	15.4
Glazing	11.5	3549	11.0
Doors	0	0	0
Ceilings	1.1	2791	8.7
Floors	2.9	7331	22.8
Infiltration	2.5	4590	14.3
Ducts		8914	27.7
Piping		0	0
Humidification		0	0
Ventilation		0	0
Adjustments		0	0
Total		32124	100.0



Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	1.4	2162	7.7
Glazing	16.3	5041	17.9
Doors	0	0	0
Ceilings	1.7	4266	15.1
Floors	0	0	0
Infiltration	0.6	1134	4.0
Ducts		11173	39.6
Ventilation		0	0
Internal gains		4440	15.7
Blower		0	0
Adjustments		0	0
Total		28216	100.0



Latent Cooling Load = 5645 Btuh
Overall U-value = 0.078 Btuh/ft²-°F, Window / Floor Area = 12.3 %

Data entries checked.



Project Summary

Entire House

DL Williams Heating & Cooling L.L.C.

Job: 1
Date: 09/25-2024
By: DL Williams Heating & C...
Plan: 2508

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

Project Information

For: Adams Homes Preserve at Laurel Lake plan 2508 lot 96, Adams Homes plan 2508
Lake City, FL

Notes:

Design Information

Weather: Gainesville Regional, FL, US

Winter Design Conditions

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

Ventilation Method MJ8

Heating Summary

Structure	23210 Btuh
Ducts (R-6.0)	8914 Btuh
Central vent (0 cfm)	0 Btuh

Humidification	0 Btuh
Piping	0 Btuh
Equipment load	32124 Btuh

Infiltration

Method	Simplified
Construction quality	Average
Fireplaces	0

	Heating	Cooling
Area (ft ²)	2506	2506
Volume (ft ³)	22584	22584
Air changes/hour	0.32	0.16
Equiv. AVF (cfm)	120	60

Heating Equipment Summary

Make	Trane
Trade	TRANE
Model	4TWR5042H1
AHRI ref	9926385

Efficiency	8 HSPF2
Heating input	
Heating output	38000 Btuh @ 47°F
Temperature rise	25 °F
Actual air flow	1400 cfm
Air flow factor	0.044 cfm/Btuh
Static pressure	0.50 in H2O
Space thermostat	
Capacity balance point = 29 °F	

Backup:
Input = 9 kW, Output = 31034 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	17043 Btuh
Ducts (R-6.0)	11173 Btuh
Central vent (0 cfm)	0 Btuh

Blower 0 Btuh

Use manufacturer's data	n
Rate/swing multiplier	0.97
Equipment sensible load	27426 Btuh

Latent Cooling Equipment Load Sizing

Structure	3386 Btuh
Ducts	2259 Btuh
Central vent (0 cfm)	0 Btuh

Equipment latent load 5645 Btuh

Equipment Total Load (Sen+Lat)	33071 Btuh
Req. total capacity at 0.70 SHR	3.3 ton

Cooling Equipment Summary

Make	Trane
Trade	TRANE
Cond	4TWR5042H1
Coil	TEM6A0D48H41++TDR
AHRI ref	9926385

Efficiency	12.0 EER2, 16 SEER2
Sensible cooling	27300 Btuh
Latent cooling	11700 Btuh
Total cooling	39000 Btuh
Actual air flow	1100 cfm
Air flow factor	0.039 cfm/Btuh
Static pressure	0.50 in H2O
Load sensible heat ratio	0.83

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



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...ms Homes plan 2508 Woods of AlChrist lot 58.rup Calc = MJ8 Front Door faces: N

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Load Short Form

Entire House

DL Williams Heating & Cooling L.L.C.

Job: 1
Date: 09/25-2024
By: DL Williams Heating & C...
Plan: 2508

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

Project Information

For: Adams Homes Preserve at Laurel Lake plan 2508 lot 96, Adams Homes plan 2508
Lake City, FL

Design Information

	Htg	Clg	Infiltration	Simplified
Outside db (°F)	33	92	Method	Average
Inside db (°F)	68	75	Construction quality	0
Design TD (°F)	35	17	Fireplaces	
Daily range	-	M		
Inside humidity (%)	30	50		
Moisture difference (gr/lb)	8	44		

HEATING EQUIPMENT

Make Trane
Trade TRANE
Model 4TWR5042H1
AHRI ref 9926385
Efficiency 8 HSPF2
Heating input
Heating output 38000 Btuh @ 47°F
Temperature rise 25 °F
Actual air flow 1400 cfm
Air flow factor 0.044 cfm/Btuh
Static pressure 0.50 in H2O
Space thermostat
Capacity balance point = 29 °F

Backup:
Input = 9 kW, Output = 31034 Btuh, 100 AFUE

COOLING EQUIPMENT

Make Trane
Trade TRANE
Cond 4TWR5042H1
Coil TEM6A0D48H41++TDR
AHRI ref 9926385
Efficiency 12.0 EER2, 16 SEER2
Sensible cooling 27300 Btuh
Latent cooling 11700 Btuh
Total cooling 39000 Btuh
Actual air flow 1100 cfm
Air flow factor 0.039 cfm/Btuh
Static pressure 0.50 in H2O
Load sensible heat ratio 0.83

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
mbed	252	5479	2858	239	111
wic1	35	823	271	36	11
wic2	35	54	94	2	4
lav	20	31	54	1	2
living	196	4889	2524	213	98
family room	717	7169	9143	312	356
kitchen	143	253	3073	11	120
bath3	91	1922	1263	84	49
br4	157	3282	1605	143	63
hall	25	0	0	0	0
br3	153	1962	1329	85	52
br2	208	2264	1525	99	59
bath2	45	83	145	4	6
utility	55	98	964	4	38

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dining	152	2287	2422	100	94
hall2	60	0	0	0	0
mbath	162	1527	946	67	37
Entire House	2506	32124	28216	1400	1100
Other equip loads		0	0		
Equip. @ 0.97 RSM			27426		
Latent cooling			5645		
TOTALS	2506	32124	33071	1400	1100

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

Job: 1
Date: 09/25-2024
By: DL Williams Heating & Cooling
Plan: 2508

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

1	Room name					Entire House				mbed				
2	Exposed wall					213.0 ft				41.0 ft				
3	Room height					9.0 ft				8.0 ft				
4	Room dimensions									14.0 x 18.0 ft				
5	Room area					2506.0 ft²				252.0 ft²				
	Ty	Construction number	U-value (Btuh/ft²·°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6	W	12C-0bw	0.091	ne	3.17	1.38	350	255	809	353	0	0	0	0
.	G	10D-v	0.330	ne	11.48	11.37	21	0	241	239	0	0	0	0
.	G	4A5-2ov	0.330	ne	11.48	21.16	6	0	72	132	0	0	0	0
.	G	4A5-2ov	0.330	ne	11.48	21.16	7	0	85	156	0	0	0	0
11	G	4A5-2ov	0.330	ne	11.48	16.25	24	0	276	390	0	0	0	0
.	G	4A5-2ov	0.330	ne	11.48	16.25	36	0	413	585	0	0	0	0
.	W	12C-0bw	0.091	se	3.17	1.38	492	441	1397	610	72	51	162	71
.	G	10D-v	0.330	se	11.48	10.78	21	4	241	226	21	4	241	226
.	G	4A5-2ov	0.330	se	11.48	14.76	30	8	345	443	0	0	0	0
.	W	12C-0bw	0.091	sw	3.17	1.38	472	363	1150	502	112	82	260	113
.	G	10D-v	0.330	sw	11.48	7.32	21	21	241	154	0	0	0	0
.	G	4A5-2ov	0.330	sw	11.48	14.76	45	11	517	664	30	8	345	443
.	G	4A5-2ov	0.330	sw	11.48	8.18	13	13	148	106	0	0	0	0
.	G	4A5-2ov	0.330	sw	11.48	8.18	30	30	345	245	0	0	0	0
.	W	12C-0bw	0.091	w	3.17	1.38	50	38	119	52	0	0	0	0
.	G	4A5-2ov	0.330	w	11.48	15.69	13	5	144	196	0	0	0	0
.	W	12C-0bw	0.091	nw	3.17	1.38	508	466	1476	645	144	144	456	199
.	G	10D-v	0.330	nw	11.48	14.81	21	0	241	311	0	0	0	0
.	G	4A5-2ov	0.330	nw	11.48	16.25	6	0	69	97	0	0	0	0
.	G	4A5-2ov	0.330	nw	11.48	16.25	15	0	172	244	0	0	0	0
C		16B-30ad	0.032	-	1.11	1.70	2506	2506	2791	4266	252	252	281	429
F		22A-vpl	0.989	-	34.42	0.00	2506	213	7331	0	252	41	1411	0

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...ms Homes plan 2508 Woods of AlChrist lot 58.rup Calc = MJ8 Front Door faces: N

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

Job: 1
Date: 09/25-2024
By: DL Williams Heating & Cooling
Plan: 2508

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

1	Room name					wic1 7.0 ft					wic2 0 ft				
2	Exposed wall					8.0 ft 5.0 x 7.0 ft heat/cool					8.0 ft 5.0 x 7.0 ft heat/cool				
3	Room height														
4	Room dimensions														
5	Room area					35.0 ft²					35.0 ft²				
	Ty	Construction number	U-value (Btuh/ft²·°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)		
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool	
6	W	12C-0bw	0.091	ne	3.17	1.38	0	0	0	0	0	0	0	0	
11	G	10D-v	0.330	ne	11.48	11.37	0	0	0	0	0	0	0	0	
	G	4A5-2ov	0.330	ne	11.48	21.16	0	0	0	0	0	0	0	0	
	G	4A5-2ov	0.330	ne	11.48	21.16	0	0	0	0	0	0	0	0	
	G	4A5-2ov	0.330	ne	11.48	16.25	0	0	0	0	0	0	0	0	
	G	4A5-2ov	0.330	ne	11.48	16.25	0	0	0	0	0	0	0	0	
	W	12C-0bw	0.091	se	3.17	1.38	0	0	0	0	0	0	0	0	
	G	10D-v	0.330	se	11.48	10.78	0	0	0	0	0	0	0	0	
	G	4A5-2ov	0.330	se	11.48	14.76	0	0	0	0	0	0	0	0	
	W	12C-0bw	0.091	sw	3.17	1.38	0	0	0	0	0	0	0	0	
	G	10D-v	0.330	sw	11.48	7.32	0	0	0	0	0	0	0	0	
	G	4A5-2ov	0.330	sw	11.48	14.76	0	0	0	0	0	0	0	0	
	G	4A5-2ov	0.330	sw	11.48	8.18	0	0	0	0	0	0	0	0	
	G	4A5-2ov	0.330	sw	11.48	8.18	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	
	G	4A5-2ov	0.330	w	11.48	15.69	0	0	0	0	0	0	0	0	
	W	12C-0bw	0.091	nw	3.17	1.38	56	56	177	77	0	0	0	0	
	G	10D-v	0.330	nw	11.48	14.81	0	0	0	0	0	0	0	0	
	G	4A5-2ov	0.330	nw	11.48	16.25	0	0	0	0	0	0	0	0	
	G	4A5-2ov	0.330	nw	11.48	16.25	0	0	0	0	0	0	0	0	
	C	16B-30ad	0.032	-	1.11	1.70	35	35	39	60	35	35	39	60	
	F	22A-vpl	0.989	-	34.42	0.00	35	7	241	0	35	0	0	0	

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

Job: 1
Date: 09/25-2024
By: DL Williams Heating & Cooling
Plan: 2508

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

1	Room name					lav 0 ft					living 33.0 ft				
2	Exposed wall					8.0 ft					10.0 ft				
3	Room height					4.0 x 5.0 ft					14.0 x 14.0 ft				
4	Room dimensions					20.0 ft²					196.0 ft²				
5	Room area														
	Ty	Construction number	U-value (Bt uh/ft²·°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)		
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool	
6	W	12C-0bw	0.091	ne	3.17	1.38	0	0	0	0	140	116	367	160	
.	G	10D-v	0.330	ne	11.48	11.37	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.330	ne	11.48	21.16	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.330	ne	11.48	21.16	0	0	0	0	0	0	0	0	
11	G	4A5-2ov	0.330	ne	11.48	16.25	0	0	0	0	24	0	276	390	
.	G	4A5-2ov	0.330	ne	11.48	16.25	0	0	0	0	0	0	0	0	
.	W	12C-0bw	0.091	se	3.17	1.38	0	0	0	0	50	50	158	69	
.	G	10D-v	0.330	se	11.48	10.78	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.330	se	11.48	14.76	0	0	0	0	0	0	0	0	
.	W	12C-0bw	0.091	sw	3.17	1.38	0	0	0	0	0	0	0	0	
.	G	10D-v	0.330	sw	11.48	7.32	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.330	sw	11.48	14.76	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.330	sw	11.48	8.18	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.330	sw	11.48	8.18	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	
.	G	4A5-2ov	0.330	w	11.48	15.69	0	0	0	0	0	0	0	0	
.	W	12C-0bw	0.091	nw	3.17	1.38	0	0	0	0	140	125	396	173	
.	G	10D-v	0.330	nw	11.48	14.81	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.330	nw	11.48	16.25	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.330	nw	11.48	16.25	0	0	0	0	15	0	172	244	
C		16B-30ad	0.032	-	1.11	1.70	20	20	22	34	196	196	218	334	
F		22A-vpl	0.989	-	34.42	0.00	20	0	0	0	196	33	1136	0	

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By: DL Williams Heating & Cooling
Plan: 2508

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

1	Room name					family room				kitchen				
2	Exposed wall					38.0 ft				0 ft				
3	Room height					10.0 ft				10.0 ft				
4	Room dimensions					1.0 x 717.0 ft				13.0 x 11.0 ft				
5	Room area					717.0 ft²				143.0 ft²				
	Ty	Construction number	U-value (Btuh/ft²·°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6	W	12C-0bw	0.091	ne	3.17	1.38	100	65	207	90	0	0	0	0
.	G	10D-v	0.330	ne	11.48	11.37	21	0	241	239	0	0	0	0
.	G	4A5-2ov	0.330	ne	11.48	21.16	6	0	72	132	0	0	0	0
.	G	4A5-2ov	0.330	ne	11.48	21.16	7	0	85	156	0	0	0	0
11	G	4A5-2ov	0.330	ne	11.48	16.25	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.330	ne	11.48	16.25	0	0	0	0	0	0	0	0
.	W	12C-0bw	0.091	se	3.17	1.38	10	10	32	14	0	0	0	0
.	G	10D-v	0.330	se	11.48	10.78	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.330	se	11.48	14.76	0	0	0	0	0	0	0	0
.	W	12C-0bw	0.091	sw	3.17	1.38	200	136	431	188	0	0	0	0
.	G	10D-v	0.330	sw	11.48	7.32	21	21	241	154	0	0	0	0
.	G	4A5-2ov	0.330	sw	11.48	14.76	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.330	sw	11.48	8.18	13	13	148	106	0	0	0	0
.	G	4A5-2ov	0.330	sw	11.48	8.18	30	30	345	245	0	0	0	0
.	W	12C-0bw	0.091	w	3.17	1.38	50	38	119	52	0	0	0	0
.	G	4A5-2ov	0.330	w	11.48	15.69	13	5	144	196	0	0	0	0
.	W	12C-0bw	0.091	nw	3.17	1.38	20	20	63	28	0	0	0	0
.	G	10D-v	0.330	nw	11.48	14.81	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.330	nw	11.48	16.25	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.330	nw	11.48	16.25	0	0	0	0	0	0	0	0
.	C	16B-30ad	0.032	-	1.11	1.70	717	717	798	1221	143	143	159	243
.	F	22A-vpl	0.989	-	34.42	0.00	717	38	1308	0	143	0	0	0

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

Job: 1
Date: 09/25-2024
By: DL Williams Heating & Cooling
Plan: 2508

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

1	Room name					bath3					br4				
2	Exposed wall					14.0 ft					26.0 ft				
3	Room height					8.0 ft					8.0 ft				
4	Room dimensions					1.0 x 91.0 ft					1.0 x 157.0 ft				
5	Room area					91.0 ft²					157.0 ft²				
	Ty	Construction number	U-value (Btuh/ft²·°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)		
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool	
6	W	12C-0bw	0.091	ne	3.17	1.38	0	0	0	0	0	0	0	0	
	G	10D-v	0.330	ne	11.48	11.37	0	0	0	0	0	0	0	0	
	G	4A5-2ov	0.330	ne	11.48	21.16	0	0	0	0	0	0	0	0	
	G	4A5-2ov	0.330	ne	11.48	21.16	0	0	0	0	0	0	0	0	
11	G	4A5-2ov	0.330	ne	11.48	16.25	0	0	0	0	0	0	0	0	
	G	4A5-2ov	0.330	ne	11.48	16.25	0	0	0	0	0	0	0	0	
	W	12C-0bw	0.091	se	3.17	1.38	0	0	0	0	120	120	380	166	
	G	10D-v	0.330	se	11.48	10.78	0	0	0	0	0	0	0	0	
	G	4A5-2ov	0.330	se	11.48	14.76	0	0	0	0	0	0	0	0	
	W	12C-0bw	0.091	sw	3.17	1.38	72	72	228	100	88	73	231	101	
	G	10D-v	0.330	sw	11.48	7.32	0	0	0	0	0	0	0	0	
	G	4A5-2ov	0.330	sw	11.48	14.76	0	0	0	0	15	4	172	221	
	G	4A5-2ov	0.330	sw	11.48	8.18	0	0	0	0	0	0	0	0	
	G	4A5-2ov	0.330	sw	11.48	8.18	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	
	G	4A5-2ov	0.330	w	11.48	15.69	0	0	0	0	0	0	0	0	
	W	12C-0bw	0.091	nw	3.17	1.38	40	19	60	26	0	0	0	0	
	G	10D-v	0.330	nw	11.48	14.81	21	0	241	311	0	0	0	0	
	G	4A5-2ov	0.330	nw	11.48	16.25	0	0	0	0	0	0	0	0	
	G	4A5-2ov	0.330	nw	11.48	16.25	0	0	0	0	0	0	0	0	
	C	16B-30ad	0.032	-	1.11	1.70	91	91	101	155	157	157	175	267	
	F	22A-vpl	0.989	-	34.42	0.00	91	14	482	0	157	26	895	0	

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...ms Homes plan 2508 Woods of AlChrist lot 58.rup Calc = MJ8 Front Door faces: N

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

Job: 1
Date: 09/25-2024
By: DL Williams Heating & Cooling
Plan: 2508

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

1	Room name					hall 0 ft				br3 14.0 ft				
2	Exposed wall					8.0 ft				8.0 ft				
3	Room height					5.0				1.0				
4	Room dimensions					25.0 ft x 5.0 ft				153.0 ft x 153.0 ft				
5	Room area					25.0 ft²				153.0 ft²				
	Ty	Construction number	U-value (Btuh/ft²·°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6	W	12C-0bw	0.091	ne	3.17	1.38	0	0	0	0	0	0	0	0
	G	10D-v	0.330	ne	11.48	11.37	0	0	0	0	0	0	0	0
	G	4A5-2ov	0.330	ne	11.48	21.16	0	0	0	0	0	0	0	0
	G	4A5-2ov	0.330	ne	11.48	21.16	0	0	0	0	0	0	0	0
11	G	4A5-2ov	0.330	ne	11.48	16.25	0	0	0	0	0	0	0	0
	G	4A5-2ov	0.330	ne	11.48	16.25	0	0	0	0	0	0	0	0
	W	12C-0bw	0.091	se	3.17	1.38	0	0	0	0	112	97	307	134
	G	10D-v	0.330	se	11.48	10.78	0	0	0	0	0	0	0	0
	G	4A5-2ov	0.330	se	11.48	14.76	0	0	0	0	15	4	172	221
	W	12C-0bw	0.091	sw	3.17	1.38	0	0	0	0	0	0	0	0
	G	10D-v	0.330	sw	11.48	7.32	0	0	0	0	0	0	0	0
	G	4A5-2ov	0.330	sw	11.48	14.76	0	0	0	0	0	0	0	0
	G	4A5-2ov	0.330	sw	11.48	8.18	0	0	0	0	0	0	0	0
	G	4A5-2ov	0.330	sw	11.48	8.18	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
	G	4A5-2ov	0.330	w	11.48	15.69	0	0	0	0	0	0	0	0
	W	12C-0bw	0.091	nw	3.17	1.38	0	0	0	0	0	0	0	0
	G	10D-v	0.330	nw	11.48	14.81	0	0	0	0	0	0	0	0
	G	4A5-2ov	0.330	nw	11.48	16.25	0	0	0	0	0	0	0	0
	G	4A5-2ov	0.330	nw	11.48	16.25	0	0	0	0	0	0	0	0
	C	16B-30ad	0.032	-	1.11	1.70	25	25	28	43	153	153	170	260
	F	22A-vpl	0.989	-	34.42	0.00	25	0	0	0	153	14	482	0
								</						

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...ms Homes plan 2508 Woods of AlChrist lot 58.rup Calc = MJ8 Front Door faces: N



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

Job: 1
Date: 09/25-2024
By: DL Williams Heating & Cooling L.L.C.
Plan: 2508

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

1	Room name					br2 16.0 ft 8.0 ft 13.0 x 16.0 ft heat/cool 208.0 ft²				bath2 0 ft 8.0 ft 5.0 x 9.0 ft heat/cool 45.0 ft²				
2	Exposed wall													
3	Room height													
4	Room dimensions													
5	Room area													
	Ty	Construction number	U-value (Btuh/ft²·°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6	W	12C-0bw	0.091	ne	3.17	1.38	0	0	0	0	0	0	0	0
11	G	10D-v	0.330	ne	11.48	11.37	0	0	0	0	0	0	0	0
	G	4A5-2ov	0.330	ne	11.48	21.16	0	0	0	0	0	0	0	0
	G	4A5-2ov	0.330	ne	11.48	21.16	0	0	0	0	0	0	0	0
	G	4A5-2ov	0.330	ne	11.48	16.25	0	0	0	0	0	0	0	0
	G	4A5-2ov	0.330	ne	11.48	16.25	0	0	0	0	0	0	0	0
	W	12C-0bw	0.091	se	3.17	1.38	128	113	358	156	0	0	0	0
	G	10D-v	0.330	se	11.48	10.78	0	0	0	0	0	0	0	0
	G	4A5-2ov	0.330	se	11.48	14.76	15	4	172	221	0	0	0	0
	W	12C-0bw	0.091	sw	3.17	1.38	0	0	0	0	0	0	0	0
	G	10D-v	0.330	sw	11.48	7.32	0	0	0	0	0	0	0	0
	G	4A5-2ov	0.330	sw	11.48	14.76	0	0	0	0	0	0	0	0
	G	4A5-2ov	0.330	sw	11.48	8.18	0	0	0	0	0	0	0	0
	G	4A5-2ov	0.330	sw	11.48	8.18	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
	G	4A5-2ov	0.330	w	11.48	15.69	0	0	0	0	0	0	0	0
	W	12C-0bw	0.091	nw	3.17	1.38	0	0	0	0	0	0	0	0
	G	10D-v	0.330	nw	11.48	14.81	0	0	0	0	0	0	0	0
	G	4A5-2ov	0.330	nw	11.48	16.25	0	0	0	0	0	0	0	0
	G	4A5-2ov	0.330	nw	11.48	16.25	0	0	0	0	0	0	0	0
	C	16B-30ad	0.032	-	1.11	1.70	208	208	232	354	45	45	50	77
	F	22A-vpl	0.989	-	34.42	0.00	208	16	551	0	45	0	0	0
</														

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...ms Homes plan 2508 Woods of AlChrist lot 58.rup Calc = MJ8 Front Door faces: N



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

Job: 1
Date: 09/25-2024
By: DL Williams Heating & Cooling
Plan: 2508

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

1	Room name					hall2 0 ft				mbath 11.0 ft				
2	Exposed wall					10.0 ft				8.0 ft				
3	Room height					12.0 x 5.0 ft				1.0 x 162.0 ft				
4	Room dimensions					60.0 ft²				162.0 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	ne	3.17	1.38	0	0	0	0	0	0	0	0
.	G	10D-v	0.330	ne	11.48	11.37	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.330	ne	11.48	21.16	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.330	ne	11.48	21.16	0	0	0	0	0	0	0	0
11	G	4A5-2ov	0.330	ne	11.48	16.25	0	0	0	0	0	0	0	0
	G	4A5-2ov	0.330	ne	11.48	16.25	0	0	0	0	0	0	0	0
	W	12C-0bw	0.091	se	3.17	1.38	0	0	0	0	0	0	0	0
	G	10D-v	0.330	se	11.48	10.78	0	0	0	0	0	0	0	0
	G	4A5-2ov	0.330	se	11.48	14.76	0	0	0	0	0	0	0	0
	W	12C-0bw	0.091	sw	3.17	1.38	0	0	0	0	0	0	0	0
	G	10D-v	0.330	sw	11.48	7.32	0	0	0	0	0	0	0	0
	G	4A5-2ov	0.330	sw	11.48	14.76	0	0	0	0	0	0	0	0
	G	4A5-2ov	0.330	sw	11.48	8.18	0	0	0	0	0	0	0	0
	G	4A5-2ov	0.330	sw	11.48	8.18	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
	G	4A5-2ov	0.330	w	11.48	15.69	0	0	0	0	0	0	0	0
	W	12C-0bw	0.091	nw	3.17	1.38	0	0	0	0	88	82	260	113
	G	10D-v	0.330	nw	11.48	14.81	0	0	0	0	0	0	0	0
	G	4A5-2ov	0.330	nw	11.48	16.25	0	0	0	0	6	0	69	97
	G	4A5-2ov	0.330	nw	11.48	16.25	0	0	0	0	0	0	0	0
	C	16B-30ad	0.032	-	1.11	1.70	60	60	67	102	162	162	180	276
	F	22A-vpl	0.989	-	34.42	0.00	60	0	0	0	162	11	379	0
							</							

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A Wrightsoft® / International Refrigeration Company

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...ms Homes plan 2508 Woods of AlChrist lot 58.rup Calc = MJ8 Front Door faces: N

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[illegible]

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

[illegible]

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



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

Job: 1
Date: 09/25-2024
By: DL Williams Heating & C...
Plan: 2508

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

Supporting Detail	
Project Name: Adams Homes plan 2508 Woods of AlChrist lot 58	Date: 09/25-2024
Address: Lake City, FL	
Phone:	Job ID: 1

Worksheet A Location and Design Conditions	
Weather Location: Gainesville Regional, FL, US	Elevation = 123 Latitude = 30
Indoor Conditions, Heating: DB = 68 °F RH = 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.





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

Job: 1
Date: 09/25-2024
By: DL Williams Heating & C...
Plan: 2508

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

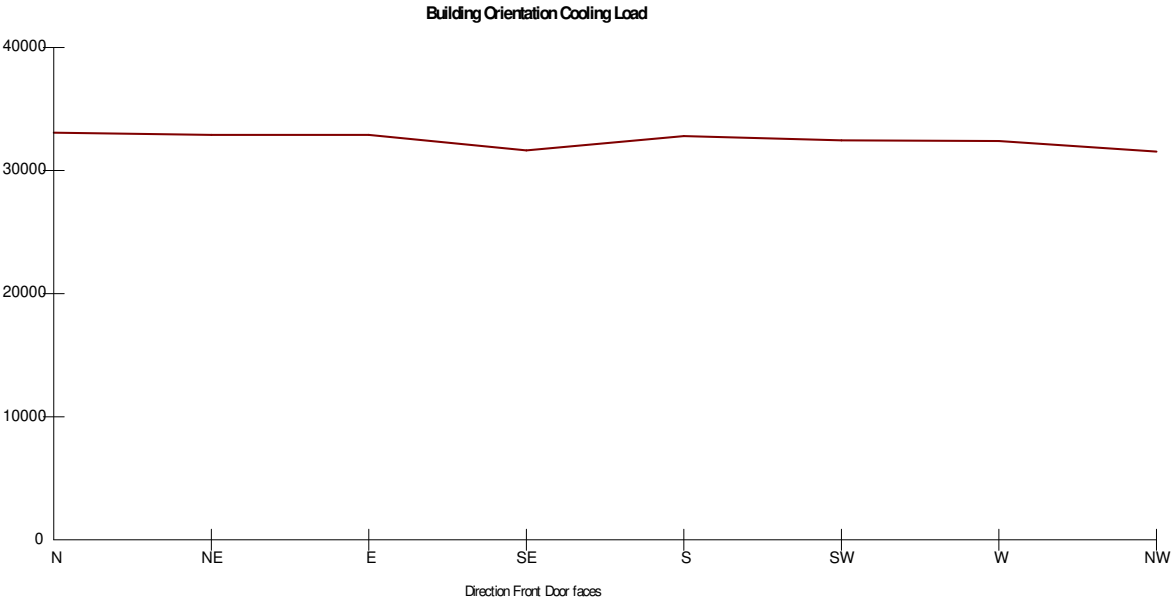
Project Information

For: Adams Homes Preserve at Laurel Lake plan 2508 lot 96, Adams Homes plan 2508
Lake City, FL

Design Conditions

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

Front Door	North	Northeast	East	Southeast	South	Southwest	West	Northwest
Sensible Load (Btuh)	27426	27249	27246	25988	27154	26809	26759	25890
Latent Load (Btuh)	5645	5645	5645	5645	5645	5645	5645	5645
Total Load (Btuh)	33071	32894	32891	31633	32799	32454	32403	31534
Heating AVF (cfm)	1400	1400	1400	1400	1400	1400	1400	1400
Cooling AVF (cfm)	1100	1100	1100	1100	1100	1100	1100	1100



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

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





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

Job: 1
Date: 09/25-2024
By: DL Williams Heating & C...
Plan: 2508

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

Project Information

For: Adams Homes Preserve at Laurel Lake plan 2508 lot 96, Adams Homes plan 2508
Lake City, FL

Design Conditions

Location:		Indoor:		Heating	Cooling
Gainesville Regional, FL, US		Indoor temperature (°F)		68	75
Elevation: 123 ft		Design TD (°F)		35	17
Latitude: 30°N		Relative humidity (%)		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	ne	255	0.091	13.0	3.17	809	1.38	353
	se	441	0.091	13.0	3.17	1397	1.38	610
	sw	363	0.091	13.0	3.17	1150	1.38	502
	w	38	0.091	13.0	3.17	119	1.38	52
	nw	466	0.091	13.0	3.17	1476	1.38	645
	all	1563	0.091	13.0	3.17	4950	1.38	2162

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=0.23); 50% blinds 45°, light; 50% outdoor insect screen; 6 ft overhang (7 ft window ht, 2 ft sep.); 6.67 ft head ht	ne	21	0.330	0	11.5	241	11.4	239
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=0.23); 6 ft overhang (6.8 ft window ht, 2 ft sep.); 6.67 ft head ht	ne	6	0.330	0	11.5	72	21.2	132
	ne	7	0.330	0	11.5	85	21.2	156
	all	14	0.330	0	11.5	156	21.2	288
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=0.23); 50% blinds 45°, light; 50% outdoor insect screen; 2 ft overhang (4 ft window ht, 2 ft sep.); 6.67 ft head ht	ne	24	0.330	0	11.5	276	16.2	390
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=0.23); 50% blinds 45°, light; 50% outdoor insect screen; 2 ft overhang (6 ft window ht, 2 ft sep.); 6.67 ft head ht	ne	36	0.330	0	11.5	413	16.2	585
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=0.23); 50% blinds 45°, light; 50% outdoor insect screen; 2 ft overhang (7 ft window ht, 2 ft sep.); 6.67 ft head ht	se	21	0.330	0	11.5	241	10.8	226
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=0.23); 50% blinds 45°, light; 50% outdoor insect screen; 2 ft overhang (5 ft window ht, 2 ft sep.); 6.67 ft head ht	se	30	0.330	0	11.5	345	14.8	443
	sw	45	0.330	0	11.5	517	14.8	664
	nw	15	0.330	0	11.5	172	16.2	244
	all	90	0.330	0	11.5	1034	15.0	1351

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=0.23); 8 ft overhang (7 ft window ht, 2 ft sep.); 6.67 ft head ht	sw	21	0.330	0	11.5	241	7.32	154
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=0.23); 50% blinds 45°, light; 50% outdoor insect screen; 5 ft overhang (5 ft window ht, 2 ft sep.); 6.67 ft head ht	sw	13	0.330	0	11.5	148	8.18	106
	w	13	0.330	0	11.5	144	15.7	196
	all	25	0.330	0	11.5	292	11.9	302
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=0.23); 50% blinds 45°, light; 50% outdoor insect screen; 8 ft overhang (5 ft window ht, 2 ft sep.); 6.67 ft head ht	sw	30	0.330	0	11.5	345	8.18	245
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=0.23); 5 ft overhang (7 ft window ht, 2 ft sep.); 6.67 ft head ht	nw	21	0.330	0	11.5	241	14.8	311
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=0.23); 50% blinds 45°, light; 50% outdoor insect screen; 2 ft overhang (3 ft window ht, 2 ft sep.); 6.67 ft head ht	nw	6	0.330	0	11.5	69	16.2	97

Doors

(none)

Ceilings

16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh		2506	0.032	30.0	1.11	2791	1.70	4266
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Floors

22A-vpl: Bg floor, light dry soil, on grade depth, vinyl flr fnsh		213	0.989	0	34.4	7331	0	0
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Component Constructions

mbed

DL Williams Heating & Cooling L.L.C.

Job: 1
Date: 09/25-2024
By: DL Williams Heating & C...
Plan: 2508

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

Project Information

For: Adams Homes Preserve at Laurel Lake plan 2508 lot 96, Adams Homes plan 2508
Lake City, FL

Design Conditions

Location:		Indoor:		Heating	Cooling
Gainesville Regional, FL, US		Indoor temperature (°F)		68	75
Elevation: 123 ft		Design TD (°F)		35	17
Latitude: 30°N		Relative humidity (%)		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	se	51	0.091	13.0	3.17	162	1.38	71
	sw	82	0.091	13.0	3.17	260	1.38	113
	nw	144	0.091	13.0	3.17	456	1.38	199
	all	277	0.091	13.0	3.17	877	1.38	383

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=0.23); 50% blinds 45°, light; 50% outdoor insect screen; 2 ft overhang (7 ft window ht, 2 ft sep.); 6.67 ft head ht	se	21	0.330	0	11.5	241	10.8	226
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=0.23); 50% blinds 45°, light; 50% outdoor insect screen; 2 ft overhang (5 ft window ht, 2 ft sep.); 6.67 ft head ht	sw	30	0.330	0	11.5	345	14.8	443

Doors

(none)

Ceilings

16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh		252	0.032	30.0	1.11	281	1.70	429
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Floors

22A-vpl: Bg floor, light dry soil, on grade depth, vinyl flr fnsh		41	0.989	0	34.4	1411	0	0
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Right-Suite® Universal 2024 24.0.03 RSU02245

...ms Homes plan 2508 Woods of AlChrist lot 58.rup Calc = MJ8 Front Door faces: N

2024-Nov-01 11:10:38

Page 3



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

Project Information

For:

Adams Homes Preserve at Laurel Lake plan 2508 lot 96, Adams Homes plan 2508
Lake City, FL

Design Conditions

Location:		Indoor:		Heating	Cooling
Gainesville Regional, FL, US		Indoor temperature (°F)		68	75
Elevation: 123 ft		Design TD (°F)		35	17
Latitude: 30°N		Relative humidity (%)		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	nw	56	0.091	13.0	3.17	177	1.38	77
Partitions (none)								
Windows (none)								
Doors (none)								
Ceilings								
16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh		35	0.032	30.0	1.11	39	1.70	60
Floors								
22A-vpl: Bg floor, light dry soil, on grade depth, vinyl flr fnsh		7	0.989	0	34.4	241	0	0





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

Job: 1
Date: 09/25-2024
By: DL Williams Heating & C...
Plan: 2508

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

Project Information

For: Adams Homes Preserve at Laurel Lake plan 2508 lot 96, Adams Homes plan 2508
Lake City, FL

Design Conditions

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

Construction descriptions

	Or	Area ft²	U-value Btuh/ft²-°F	Insul R ft²-°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
Walls								
12C-0bw: Frm wall, brk 4" ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud	ne	116	0.091	13.0	3.17	367	1.38	160
	se	50	0.091	13.0	3.17	158	1.38	69
	nw	125	0.091	13.0	3.17	396	1.38	173
	all	291	0.091	13.0	3.17	922	1.38	403
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=0.23); 50% blinds 45°, light; 50% outdoor insect screen; 2 ft overhang (4 ft window ht, 2 ft sep.); 6.67 ft head ht	ne	24	0.330	0	11.5	276	16.2	390
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=0.23); 50% blinds 45°, light; 50% outdoor insect screen; 2 ft overhang (5 ft window ht, 2 ft sep.); 6.67 ft head ht	nw	15	0.330	0	11.5	172	16.2	244
Doors (none)								
Ceilings								
16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh		196	0.032	30.0	1.11	218	1.70	334
Floors								
22A-vpl: Bg floor, light dry soil, on grade depth, vinyl flr fnsh		33	0.989	0	34.4	1136	0	0



Component Constructions

family room

DL Williams Heating & Cooling L.L.C.

Job: 1
Date: 09/25-2024
By: DL Williams Heating & C...
Plan: 2508

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

Project Information

For: Adams Homes Preserve at Laurel Lake plan 2508 lot 96, Adams Homes plan 2508
Lake City, FL

Design Conditions

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

Construction descriptions

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
ne	65	0.091	13.0	3.17	207	1.38	90
se	10	0.091	13.0	3.17	32	1.38	14
sw	136	0.091	13.0	3.17	431	1.38	188
w	38	0.091	13.0	3.17	119	1.38	52
nw	20	0.091	13.0	3.17	63	1.38	28
all	269	0.091	13.0	3.17	852	1.38	372

Partitions

(none)

Windows

10D-v: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, ne 21 0.330 0 11.5 241 11.4 239
1/4" gap, 1/8" thk; NFRC rated (SHGC=0.23); 50% blinds 45°, light; 50% outdoor insect screen; 6 ft overhang (7 ft window ht, 2 ft sep.); 6.67 ft head ht

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=0.23); 6 ft overhang (6.8 ft window ht, 2 ft sep.); 6.67 ft head ht

10D-v: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, sw 21 0.330 0 11.5 241 7.32 154
1/4" gap, 1/8" thk; NFRC rated (SHGC=0.23); 8 ft overhang (7 ft window ht, 2 ft sep.); 6.67 ft head ht

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=0.23); 50% blinds 45°, light; 50% outdoor insect screen; 5 ft overhang (5 ft window ht, 2 ft sep.); 6.67 ft head ht

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=0.23); 50% blinds 45°, light; 50% outdoor insect screen; 8 ft overhang (5 ft window ht, 2 ft sep.); 6.67 ft head ht

Doors

(none)

Ceilings							
16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh	717	0.032	30.0	1.11	798	1.70	1221
Floors							
22A-vpl: Bg floor, light dry soil, on grade depth, vinyl flr fnsh	38	0.989	0	34.4	1308	0	0



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

Job: 1
Date: 09/25-2024
By: DL Williams Heating & C...
Plan: 2508

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

Project Information

For: Adams Homes Preserve at Laurel Lake plan 2508 lot 96, Adams Homes plan 2508
Lake City, FL

Design Conditions

Location:		Indoor:		Heating	Cooling
Gainesville Regional, FL, US		Indoor temperature (°F)		68	75
Elevation: 123 ft		Design TD (°F)		35	17
Latitude: 30°N		Relative humidity (%)		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	U-value	Insul R	Htg HTM	Loss	Clg HTM	Gain
	ft²	Btuh/ft²-°F	ft²-°F/Btuh	Btuh/ft²	Btuh	Btuh/ft²	Btuh

Walls (none)							
Partitions (none)							
Windows (none)							
Doors (none)							
Ceilings 16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh	143	0.032	30.0	1.11	159	1.70	243
Floors (none)							





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

Project Information

For: Adams Homes Preserve at Laurel Lake plan 2508 lot 96, Adams Homes plan 2508
Lake City, FL

Design Conditions

Location:		Indoor:		Heating	Cooling
Gainesville Regional, FL, US		Indoor temperature (°F)		68	75
Elevation: 123 ft		Design TD (°F)		35	17
Latitude: 30°N		Relative humidity (%)		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	sw	72	0.091	13.0	3.17	228	1.38	100
	nw	19	0.091	13.0	3.17	60	1.38	26
	all	91	0.091	13.0	3.17	288	1.38	126
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=0.23); 5 ft overhang (7 ft window ht, 2 ft sep.); 6.67 ft head ht	nw	21	0.330	0	11.5	241	14.8	311
Doors (none)								
Ceilings								
16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh		91	0.032	30.0	1.11	101	1.70	155
Floors								
22A-vpl: Bg floor, light dry soil, on grade depth, vinyl flr fnsh		14	0.989	0	34.4	482	0	0





Component Constructions

br4

DL Williams Heating & Cooling L.L.C.

Job: 1
Date: 09/25-2024
By: DL Williams Heating & C...
Plan: 2508

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

Project Information

For: Adams Homes Preserve at Laurel Lake plan 2508 lot 96, Adams Homes plan 2508
Lake City, FL

Design Conditions

Location:		Indoor:		Heating	Cooling
Gainesville Regional, FL, US		Indoor temperature (°F)		68	75
Elevation: 123 ft		Design TD (°F)		35	17
Latitude: 30°N		Relative humidity (%)		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	se	120	0.091	13.0	3.17	380	1.38	166
	sw	73	0.091	13.0	3.17	231	1.38	101
	all	193	0.091	13.0	3.17	611	1.38	267
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=0.23); 50% blinds 45°, light; 50% outdoor insect screen; 2 ft overhang (5 ft window ht, 2 ft sep.); 6.67 ft head ht	sw	15	0.330	0	11.5	172	14.8	221
Doors (none)								
Ceilings								
16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh		157	0.032	30.0	1.11	175	1.70	267
Floors								
22A-vpl: Bg floor, light dry soil, on grade depth, vinyl flr fnsh		26	0.989	0	34.4	895	0	0



Right-Suite® Universal 2024 24.0.03 RSU02245

...ms Homes plan 2508 Woods of AlChrist lot 58.rup Calc = MJ8 Front Door faces: N

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

Project Information

For: Adams Homes Preserve at Laurel Lake plan 2508 lot 96, Adams Homes plan 2508
Lake City, FL

Design Conditions

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

Construction descriptions

Or	Area	U-value	Insul R	Htg HTM	Loss	Clg HTM	Gain
	ft²	Btuh/ft²-°F	ft²-°F/Btuh	Btuh/ft²	Btuh	Btuh/ft²	Btuh

Walls (none)							
Partitions (none)							
Windows (none)							
Doors (none)							
Ceilings 16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh							
	25	0.032	30.0	1.11	28	1.70	43
Floors (none)							





Component Constructions

br3

DL Williams Heating & Cooling L.L.C.

Job: 1
Date: 09/25-2024
By: DL Williams Heating & C...
Plan: 2508

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

Project Information

For: Adams Homes Preserve at Laurel Lake plan 2508 lot 96, Adams Homes plan 2508
Lake City, FL

Design Conditions

Location:			Indoor:	Heating	Cooling
Gainesville Regional, FL, US			Indoor temperature (°F)	68	75
Elevation: 123 ft			Design TD (°F)	35	17
Latitude: 30°N			Relative humidity (%)	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	se	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=0.23); 50% blinds 45°, light; 50% outdoor insect screen; 2 ft overhang (5 ft window ht, 2 ft sep.); 6.67 ft head ht	se	15	0.330	0	11.5	172	14.8	221
Doors								
(none)								
Ceilings								
16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh		153	0.032	30.0	1.11	170	1.70	260
Floors								
22A-vpl: Bg floor, light dry soil, on grade depth, vinyl flr fnsh		14	0.989	0	34.4	482	0	0



Component Constructions

br2

DL Williams Heating & Cooling L.L.C.

Job: 1
Date: 09/25-2024
By: DL Williams Heating & C...
Plan: 2508

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

Project Information

For: Adams Homes Preserve at Laurel Lake plan 2508 lot 96, Adams Homes plan 2508
Lake City, FL

Design Conditions

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

Construction descriptions

	Or	Area ft²	U-value Btuh/ft²-°F	Insul R ft²-°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
Walls								
12C-0bw: Frm wall, brk 4" ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud	se	113	0.091	13.0	3.17	358	1.38	156
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=0.23); 50% blinds 45°, light; 50% outdoor insect screen; 2 ft overhang (5 ft window ht, 2 ft sep.); 6.67 ft head ht	se	15	0.330	0	11.5	172	14.8	221
Doors (none)								
Ceilings								
16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh		208	0.032	30.0	1.11	232	1.70	354
Floors								
22A-vpl: Bg floor, light dry soil, on grade depth, vinyl flr fnsh		16	0.989	0	34.4	551	0	0



Component Constructions bath2

DL Williams Heating & Cooling L.L.C.

Job: 1
Date: 09/25-2024
By: DL Williams Heating & C...
Plan: 2508

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

Project Information

For: Adams Homes Preserve at Laurel Lake plan 2508 lot 96, Adams Homes plan 2508
Lake City, FL

Design Conditions

Location:			Indoor:	Heating	Cooling
Gainesville Regional, FL, US			Indoor temperature (°F)	68	75
Elevation: 123 ft			Design TD (°F)	35	17
Latitude: 30°N			Relative humidity (%)	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

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

Floors
(none)

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
	45	0.032	30.0	1.11	50	1.70	77



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...ms Homes plan 2508 Woods of AlChrist lot 58.rup Calc = MJ8 Front Door faces: N

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

Job: 1
Date: 09/25-2024
By: DL Williams Heating & C...
Plan: 2508

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

Project Information

For: Adams Homes Preserve at Laurel Lake plan 2508 lot 96, Adams Homes plan 2508
Lake City, FL

Design Conditions

Location:			Indoor:	Heating	Cooling
Gainesville Regional, FL, US			Indoor temperature (°F)	68	75
Elevation: 123 ft			Design TD (°F)	35	17
Latitude: 30°N			Relative humidity (%)	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		55	0.032	30.0	1.11	61	1.70	94
Floors (none)								



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

Job: 1
Date: 09/25-2024
By: DL Williams Heating & C...
Plan: 2508

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

Project Information

For: Adams Homes Preserve at Laurel Lake plan 2508 lot 96, Adams Homes plan 2508
Lake City, FL

Design Conditions

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

Construction descriptions

	Or	Area ft²	U-value Btuh/ft²-°F	Insul R ft²-°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
Walls								
12C-0bw: Frm wall, brk 4" ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud	ne	74	0.091	13.0	3.17	234	1.38	102
	nw	20	0.091	13.0	3.17	63	1.38	28
	all	94	0.091	13.0	3.17	298	1.38	130
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=0.23); 50% blinds 45°, light; 50% outdoor insect screen; 2 ft overhang (6 ft window ht, 2 ft sep.); 6.67 ft head ht	ne	36	0.330	0	11.5	413	16.2	585
Doors (none)								
Ceilings								
16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh		152	0.032	30.0	1.11	169	1.70	259
Floors								
22A-vpl: Bg floor, light dry soil, on grade depth, vinyl flr fnsh		13	0.989	0	34.4	447	0	0



AIA/CES® / Building Performance Institute

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...ms Homes plan 2508 Woods of AlChrist lot 58.rup Calc = MJ8 Front Door faces: N

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Component Constructions hall2

DL Williams Heating & Cooling L.L.C.

Job: 1
Date: 09/25-2024
By: DL Williams Heating & C...
Plan: 2508

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

Project Information

For: Adams Homes Preserve at Laurel Lake plan 2508 lot 96, Adams Homes plan 2508
Lake City, FL

Design Conditions

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

Construction descriptions

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

Floors
(none)

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
	60	0.032	30.0	1.11	67	1.70	102



Right-Suite® Universal 2024 24.0.03 RSU02245

...ms Homes plan 2508 Woods of AlChrist lot 58.rup Calc = MJ8 Front Door faces: N

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Component Constructions

mbath

DL Williams Heating & Cooling L.L.C.

Job: 1
Date: 09/25-2024
By: DL Williams Heating & C...
Plan: 2508

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

Project Information

For: Adams Homes Preserve at Laurel Lake plan 2508 lot 96, Adams Homes plan 2508
Lake City, FL

Design Conditions

Location:			Indoor:	Heating	Cooling
Gainesville Regional, FL, US			Indoor temperature (°F)	68	75
Elevation: 123 ft			Design TD (°F)	35	17
Latitude: 30°N			Relative humidity (%)	30	50
Outdoor:			Moisture difference (gr/lb)	8.2	43.8
Heating			Infiltration:		
Drybulb (°F)	33	92	Method	Simplified	
Dailyrange (°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	nw	82	0.091	13.0	3.17	260	1.38	113
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=0.23); 50% blinds 45°, light; 50% outdoor insect screen; 2 ft overhang (3 ft window ht, 2 ft sep.); 6.67 ft head ht	nw	6	0.330	0	11.5	69	16.2	97
Doors (none)								
Ceilings								
16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh		162	0.032	30.0	1.11	180	1.70	276
Floors								
22A-vpl: Bg floor, light dry soil, on grade depth, vinyl flr fnsh		11	0.989	0	34.4	379	0	0



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

Job: 1
Date: 09/25-2024
By: DL Williams Heating & C...
Plan: 2508

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

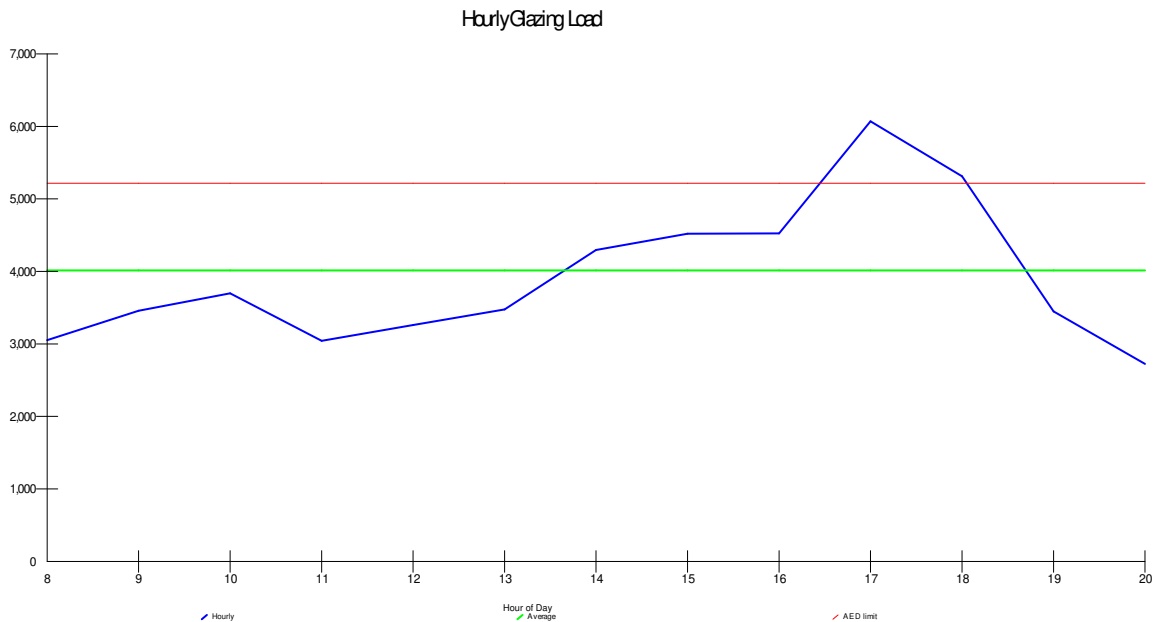
Project Information

For: Adams Homes Preserve at Laurel Lake plan 2508 lot 96, Adams Homes plan 2508
Lake City, FL

Design Conditions

Location:		Indoor:		Heating	Cooling
Gainesville Regional, FL, US		Indoor temperature (°F)		68	75
Elevation: 123 ft		Design TD (°F)		35	17
Latitude: 30°N		Relative humidity (%)		30	50
Outdoor:		Heating	Cooling	Moisture difference (gr/lb)	
Drybulb (°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 51.3%.

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

AED excursion: 853 Btuh (PFG - 1.3*AFG)



Duct system multi orientation report

Entire House

DL Williams Heating & Cooling L.L.C.

Job: 1
Date: 09/25-2024
By: DL Williams Heating & C...
Plan: 2508

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

Project Information

For: Adams Homes Preserve at Laurel Lake plan 2508 lot 96, Adams Homes plan 2508
Lake City, FL

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

Duct Name	(N)			(NE)			(E)			(SE)		
	Reg CFM	Reg Size	Duct Size	Reg CFM	Reg Size	Duct Size	Reg CFM	Reg Size	Duct Size	Reg CFM	Reg Size	Duct Size
Supply Branches												
bath2	6 c	12x6	4	6 c	12x6	4	6 c	12x6	4	6 c	12x6	4
bath3	84 h	12x6	5	84 h	12x6	5	84 h	12x6	5	84 h	12x6	5
br2	99 h	12x6	6	99 h	12x6	6	99 h	12x6	6	99 h	12x6	6
br3	85 h	12x6	6	85 h	12x6	6	85 h	12x6	6	85 h	12x6	6
br4-A	143 h	12x6	6	143 h	12x6	6	143 h	12x6	6	143 h	12x6	6
dining	100 h	12x6	7	111 c	12x6	7	119 c	12x6	7	100 h	12x6	7
family room	106 c	12x6	7	112 c	12x6	7	122 c	12x6	7	119 c	12x6	7
family room-A	106 c	12x6	7	112 c	12x6	7	122 c	12x6	7	119 c	12x6	7
family room-B	106 c	12x6	6	112 c	12x6	6	122 c	12x6	6	119 c	12x6	6
kitchen	133 c	12x6	6	118 c	12x6	5	118 c	12x6	5	120 c	12x6	6
lav	2 c	12x6	4	2 c	12x6	4	2 c	12x6	4	2 c	12x6	4
living	213 h	12x6	8	213 h	12x6	8	213 h	12x6	8	213 h	12x6	8
mbath	67 h	12x6	5	67 h	12x6	5	67 h	12x6	5	67 h	12x6	5
mbed	239 h	12x6	8	239 h	12x6	8	239 h	12x6	8	239 h	12x6	8
utility	42 c	12x6	4	37 c	12x6	4	37 c	12x6	4	38 c	12x6	4
wic1	36 h	12x6	4	36 h	12x6	4	36 h	12x6	4	36 h	12x6	4
wic2	4 c	12x6	4	4 c	12x6	4	4 c	12x6	4	4 c	12x6	4
Supply Trunks												
st2	766 h		16	766 h		16	766 h		16	766 h		16
st1	331 h		9	331 h		9	331 h		9	331 h		9
st3	345 h		9	345 h		9	345 h		9	345 h		9
Return Branches												
rb1	1400 h	12x6	0	1400 h	12x6	0	1400 h	12x6	0	1400 h	12x6	0
Friction Rates												
Heating FR	0.286			0.286			0.286			0.286		
Cooling FR	0.286			0.286			0.286			0.286		

Project Information

For: Adams Homes Preserve at Laurel Lake plan 2508 lot 96, Adams Homes plan 2508
Lake City, FL

Duct Name	(S)			(SW)			(W)			(NW)		
	Reg CFM	Reg Size	Duct Size	Reg CFM	Reg Size	Duct Size	Reg CFM	Reg Size	Duct Size	Reg CFM	Reg Size	Duct Size
Supply Branches												
bath2	6 c	12x6	4	6 c	12x6	4	6 c	12x6	4	6 c	12x6	4
bath3	84 h	12x6	5	84 h	12x6	5	84 h	12x6	5	84 h	12x6	5
br2	99 h	12x6	6	99 h	12x6	6	99 h	12x6	6	99 h	12x6	6
br3	85 h	12x6	6	85 h	12x6	6	85 h	12x6	6	85 h	12x6	6
br4-A	143 h	12x6	6	143 h	12x6	6	143 h	12x6	6	143 h	12x6	6
dining	100 h	12x6	7	117 c	12x6	7	135 c	12x6	7	114 c	12x6	7
family room	104 h	12x6	7	104 h	12x6	7	109 c	12x6	7	113 c	12x6	7
family room-A	104 h	12x6	7	104 h	12x6	7	109 c	12x6	7	113 c	12x6	7
family room-B	104 h	12x6	6	104 h	12x6	6	109 c	12x6	6	113 c	12x6	6
kitchen	132 c	12x6	6	123 c	12x6	6	123 c	12x6	6	125 c	12x6	6
lav	2 c	12x6	4	2 c	12x6	4	2 c	12x6	4	2 c	12x6	4
living	213 h	12x6	8	213 h	12x6	8	213 h	12x6	8	213 h	12x6	8
mbath	67 h	12x6	5	67 h	12x6	5	67 h	12x6	5	67 h	12x6	5
mbed	239 h	12x6	8	239 h	12x6	8	239 h	12x6	8	239 h	12x6	8
utility	42 c	12x6	4	39 c	12x6	4	39 c	12x6	4	39 c	12x6	4
wic1	36 h	12x6	4	36 h	12x6	4	36 h	12x6	4	36 h	12x6	4
wic2	4 c	12x6	4	4 c	12x6	4	4 c	12x6	4	4 c	12x6	4
Supply Trunks												
st2	766 h		16	766 h		16	766 h		16	766 h		16
st1	331 h		9	331 h		9	331 h		9	331 h		9
st3	345 h		9	345 h		9	345 h		9	345 h		9
Return Branches												
rb1	1400 h	12x6	0	1400 h	12x6	0	1400 h	12x6	0	1400 h	12x6	0
Friction Rates												
Heating FR	0.286			0.286			0.286			0.286		
Cooling FR	0.286			0.286			0.286			0.286		

Project Information

For: Adams Homes Preserve at Laurel Lake plan 2508 lot 96, Adams Homes plan 2508
Lake City, FL

Duct Name	Largest			Smallest		
	Reg CFM	Reg Size	Duct Size	Reg CFM	Reg Size	Duct Size
Supply Branches						
bath2	6 c	12x6	4	6 c	12x6	4
bath3	84 h	12x6	5	84 h	12x6	5
br2	99 h	12x6	6	99 h	12x6	6
br3	85 h	12x6	6	85 h	12x6	6
br4-A	143 h	12x6	6	143 h	12x6	6
dining	135 c	12x6	7	100 h	12x6	7
family room	122 c	12x6	7	104 h	12x6	7
family room-A	122 c	12x6	7	104 h	12x6	7
family room-B	122 c	12x6	6	104 h	12x6	6
kitchen	133 c	12x6	6	118 c	12x6	5
lav	2 c	12x6	4	2 c	12x6	4
living	213 h	12x6	8	213 h	12x6	8
mbath	67 h	12x6	5	67 h	12x6	5
mbed	239 h	12x6	8	239 h	12x6	8
utility	42 c	12x6	4	37 c	12x6	4
wic1	36 h	12x6	4	36 h	12x6	4
wic2	4 c	12x6	4	4 c	12x6	4
Supply Trunks						
st2	766 h		16	766 h		16
st1	331 h		9	331 h		9
st3	345 h		9	345 h		9
Return Branches						
rb1	1400 h	12x6	0	1400 h	12x6	0
Friction Rates						
Heating FR	0.286			0.286		
Cooling FR	0.286			0.286		

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



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...ms Homes plan 2508 Woods of AlChrist lot 58.rup Calc = MJ8 Front Door faces: N

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Static Pressure and Friction Rate
Entire House
DL Williams Heating & Cooling L.L.C.

Job: 1
Date: 09/25-2024
By: DL Williams Heating & C...
Plan: 2508

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

Project Information

For: Adams Homes Preserve at Laurel Lake plan 2508 lot 96, Adams Homes plan 2508
Lake City, FL

Available Static Pressure

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

Total Effective Length

	Supply (ft)	Return (ft)
Measured length of run-out	12	0
Measured length of trunk	28	0
Equivalent length of fittings	135	0
Total length	175	0
Total effective length		175

Friction Rate

	Heating (in/100ft)	Cooling (in/100ft)
Supply Ducts	0.286 > 0.18	0.286 > 0.18
Return Ducts	0.286 > 0.18	0.286 > 0.18

Fitting Equivalent Length Details

Supply	4AD=60, 11A=20, 11A=20, 1A=35: TotalEL=135
Return	TotalEL=0



Duct System Summary

Entire House

DL Williams Heating & Cooling L.L.C.

Job: 1
Date: 09/25-2024
By: DL Williams Heating & C...
Plan: 2508

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

Project Information

For: Adams Homes Preserve at Laurel Lake plan 2508 lot 96, Adams Homes plan 2508
Lake City, FL

	Heating	Cooling
External static pressure	0.50 in H ₂ O	0.50 in H ₂ O
Pressure losses	0 in H ₂ O	0 in H ₂ O
Available static pressure	0.50 in H ₂ O	0.50 in H ₂ O
Supply / return available pressure	0.250 / 0.250 in H ₂ O	0.250 / 0.250 in H ₂ O
Lowest friction rate	0.286 in/100ft	0.286 in/100ft
Actual air flow	1400 cfm	1100 cfm
Total effective length (TEL)	175 ft	

Supply Branch Detail Table

Name	Design (Btuh)	Htg (cfm)	Clg (cfm)	Design FR	Diam (in)	H x W (in)	Duct Matl	Actual Ln (ft)	Ftg.Eqv Ln (ft)	Trunk
bath2	c 145	4	6	0.509	4.0	0x0	VIFx	3.2	95.0	st1
bath3	h 1922	84	49	0.351	5.0	0x0	VIFx	27.5	115.0	
br2	h 2264	99	59	0.485	6.0	0x0	VIFx	8.0	95.0	
br3	h 1962	85	52	0.455	6.0	0x0	VIFx	15.0	95.0	
br4-A	h 3282	143	63	0.345	6.0	0x0	VIFx	30.0	115.0	st1
dining	h 2287	100	94	0.481	7.0	0x0	VIFx	9.0	95.0	st2
family room	c 3048	104	119	0.366	7.0	0x0	VIFx	21.5	115.0	
family room-A	c 3048	104	119	0.366	7.0	0x0	VIFx	21.5	115.0	
family room-B	c 3048	104	119	0.357	6.0	0x0	VIFx	25.0	115.0	
kitchen	c 3073	11	120	0.489	6.0	0x0	VIFx	7.3	95.0	st3
lav	c 54	1	2	0.297	4.0	0x0	VIFx	33.4	135.0	
living	h 4889	213	98	0.334	8.0	0x0	VIFx	34.5	115.0	
mbath	h 1527	67	37	0.292	5.0	0x0	VIFx	36.1	135.0	
mbed	h 5479	239	111	0.286	8.0	0x0	VIFx	40.0	135.0	st3
utility	c 964	4	38	0.514	4.0	0x0	VIFx	2.2	95.0	
wic1	h 823	36	11	0.291	4.0	0x0	VIFx	36.9	135.0	
wic2	c 94	2	4	0.300	4.0	0x0	VIFx	31.5	135.0	

Supply Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
st2	Peak AVF	766	501	0.286	549	16.0	0 x 0	VinIFlx	st2
st1	Peak AVF	331	231	0.345	749	9.0	0 x 0	VinIFlx	
st3	Peak AVF	345	165	0.286	781	9.0	0 x 0	VinIFlx	

Bold/italic values have been manually overridden



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...ms Homes plan 2508 Woods of AlChrist lot 58.rup Calc = MJ8 Front Door faces: N

Return Branch Detail Table

Name	Grille Size (in)	Htg (cfm)	Clg (cfm)	TEL (ft)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Stud/Joist Opening (in)	Duct Matl	Trunk
rb1	0x 0	1400	1100	0	0	0	0	0x 0		VIFx	



Manual S Compliance Report

Entire House

DL Williams Heating & Cooling L.L.C.

Job: 1
Date: 09/25-2024
By: DL Williams Heating & C...
Plan: 2508

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

Project Information

For: Adams Homes Preserve at Laurel Lake plan 2508 lot 96, Adams Homes plan 2508
Lake City, FL

Cooling Equipment

Design Conditions

Outdoor design DB:	92.2°F	Sensible gain:	28216	Btuh	Entering coil DB:	78.2°F
Outdoor design WB:	75.8°F	Latent gain:	5645	Btuh	Entering coil WB:	64.0°F
Indoor design DB:	75.0°F	Total gain:	33861	Btuh		
Indoor RH:	50%	Estimated airflow:	1100	cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP		
Manufacturer:	Trane	Model:	4TWR5042H1+TEM6A0D48H41++TDR
Actual airflow:	1100	cfm	
Sensible capacity:	31230	Btuh	111% of load
Latent capacity:	6483	Btuh	115% of load
Total capacity:	37713	Btuh	111% of load SHR: 83%

Heating Equipment

Design Conditions

Outdoor design DB:	33.2°F	Heat loss:	32124	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:	4TWR5042H1+TEM6A0D48H41++TDR
Actual airflow:	1400	cfm	
Output capacity:	30138	Btuh	94% of load
Supplemental heat required:	1986	Btuh	
Capacity balance:	29	°F	
Economic balance:	-99	°F	

Backup equipment type:	Elec strip		
Manufacturer:		Model:	
Actual airflow:	1400	cfm	
Output capacity:	9.1	kW	97% of load Temp. rise: 51 °F

Meets all requirements of ACCA Manual S.





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

Form
RPER 2.0

Columbia Header Information

Contractor DL Williams Heating & Cooling L.L.C.
Mechanical license# _____
Building plan # 2508
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 32124 Btuh
Sensible Heat Gain 28216 Btuh
Latent Heat Gain 5645 Btuh
Total Heat Gain 33861 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 30138 Btuh Sizing Value 32124 Btuh
Supplemental 1986 Btuh Sizing Limit 175.0 %
Heat Load: Capacity 96.6 %

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 4TWR5042H1+TEM6A0D48H41++TDR

Sensible 31230 Btuh Sizing Value 33861 Btuh
Latent 6483 Btuh Sizing Limit 115.0 %
Total 37713 Btuh Load: Capacity 111.4 %

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

HVAC DUCT DISTRIBUTION DESIGN

(IRC M1601.1)

Design airflow 1400 cfm Longest Supply Duct 175 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) 175 ft ☒ Flex ☐ Lined Sheet Metal ☐ Other
Available static pressure (ASP) 0.50 in H2O Friction Rate 0.29 in/100ft Branch Duct: ☐ Duct Board ☐ Sheet Metal
ESP - CPL = ASP (ASP x 100) / TEL = Friction Rate ☒ Flex ☐ Lined Sheet Metal ☐ Other

Ducts are sized per Manual D? Y ☒ N ☐

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

Contractor's printed name: _____

Contractor's signature: _____ Date: _____



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

Job: 1
Date: 09/25-2024
By: DL Williams Heating & C...
Plan: 2508

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

Project Information

For: Adams Homes Preserve at Laurel Lake plan 2508 lot 96, Adams Homes plan 2508
Lake City, FL

Design Criteria

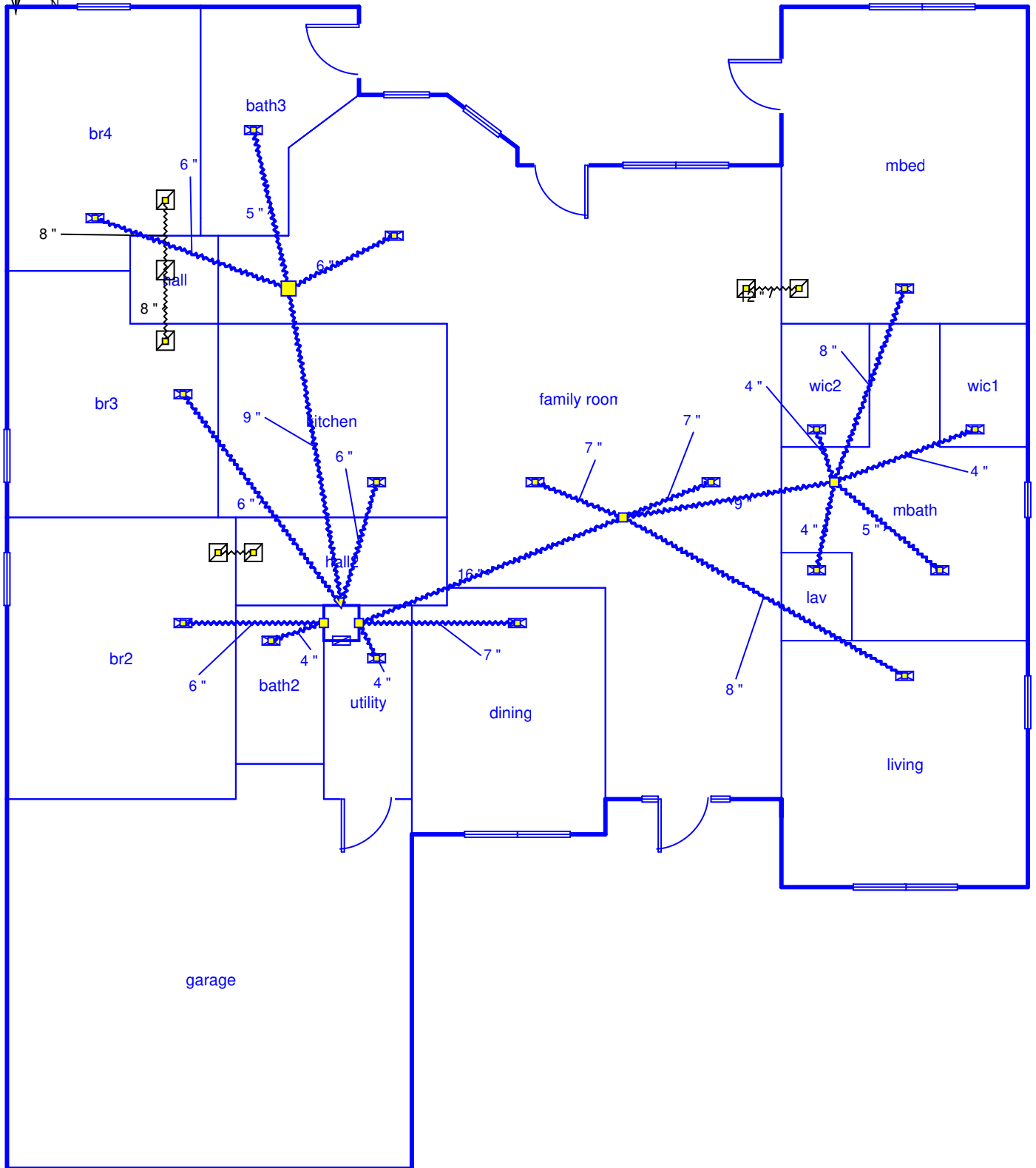
Occupants		Not occupied during the day	
Age	Number		
0-5	0	Dishwasher	
6-13	2	Clothes washer	
14-59	2	Additional use (gpd)	0
60+	0	Setpoint (°F)	120
		Daily use (gpd)	61

Electric conventional (40 gal, 0.90 EF)

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



Main level



Job #: 1
Performed by DL Williams Heating & Co...
Adams Homes Preserve at Laurel Lake plan 2508 lot 96
Lake City, FL

DL Williams Heating & Cooling L.L.C.

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

Scale: 1 : 97
Page 1
Right-Suite® Universal 2024
24.0.03 RSU02245
2024-Nov-01 11:11:08
...508 Woods of AlChrist lot 58.rup



ENERGY STAR Single-Family New Homes National HVAC Design Report, Version 3 / 3.1 /3.2 (Rev. 13)

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: 09/25-2024
1.2 Select which party you are providing these design services to: ☒ Builder or ☐ Credentialed HVAC contractor
1.3 Name of company you are providing these design services to (if different than Item 1.1): Adams Homes plan 2508
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: 2508 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 18 and www.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: 8 -

3.5 Conditioned floor area used in loads: 2506 Sq. Ft. -

3.6 Window area used in loads: 309 Sq. Ft. -

3.7 Predominant window SHGC used in loads: 0.23 -

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)	27.4	27.2	27.2	26.0	27.2	26.8	26.8	25.9	-
	3.11 Latent heat gain (Not by orientation)	5.6								-
	3.12 Total heat gain (By orientation)	33.1	32.9	32.9	31.6	32.8	32.5	32.4	31.5	-
	3.13 Maximum – minimum total heat gain (Item 3.12) across orientations =	1.5 kBtuh								Variation is ≤ 6 kBtuh ☒

Heating	3.14 Total heat loss (Not by orientation)	32.1								-
---------	---	------	--	--	--	--	--	--	--	---



ENERGY STAR Single-Family New Homes National HVAC Design Report, Version 3 / 3.1 / 3.2 (Rev. 13)

4. Heating & Cooling Equipment Selection										Designer Verified	
4.1 Equipment selected per ACCA Manual S (see Footnote 26 & 27).										☐	
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 4TWR5042H1										-	
4.4 Evaporator / fan coil manufacturer & model: Trane TEM6A0D48H41++TDR										-	
4.5 AHRI reference #: 9926385										-	
4.6 Rated cooling efficiency: 12.0 EER2/16 SEER2 Rated heating efficiency: 8 HSPF2										-	
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: 6.5 kBtuh										-	
4.10 Sensible capacity at design conditions, from OEM expanded performance data: 31.2 kBtuh										-	
4.11 Total capacity at design conditions, from OEM expanded performance data: 37.7 kBtuh										-	
4.12 Air-source heat pump capacity: At 17°F: 25.0 kBtuh At 47°F: 38.0 kBtuh ☐ N/A										-	
4.13 Cooling sizing % = Total capacity (Item 4.11) divided by maximum total heat gain (Item 3.12): 114 %										-	
4.14 Complete this item if Condition B Climate will be used to select sizing limit in Item 4.15. Otherwise, check "N/A": ☒ N/A										-	
4.14.1 Load sensible heat ratio = Max. sensible heat gain (Item 3.10) / Max. total heat gain (Item 3.12) = 83%										-	
4.14.2 HDD / CDD ratio (Visit www.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 Rated heating 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 1100 CFM Heating mode 1400 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	bath2	4		12	living	213		23			
2	bath3	84		13	mbath	67		24			
3	br2	99		14	mbed	239		25			
4	br3	85		15	utility	4		26			
5	br4	143		16	wic1	36		27			
6	dining	100		17	wic2	2		28			
7	family room	312		18				29			
8	hall	0		19				30			
9	hall2	0		20				31			
10	kitchen	11		21				32			
11	lav	1		22				Total for all rooms		1400	

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:		09/25-2024			
1.3 Software name and version used to complete design:				Right-Suite® Universal 2024 24.0.03 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 3					
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:				2506 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)				8 1840									
3.8 Total non-occupant internal gains (Btuh):				2600									
3.9 Conditioned floor area (sq. ft.):(22)				2506									
3.10 Window area (sq. ft.):(23)				309									
3.11 Predominant window SHGC:(24)				0.23									
3.12 Predominant insulation nominal R-value:(24,25)				Wall: 13.0 Ceiling:30.0		Wall: Ceiling:		Wall: Ceiling:					
3.13 Infiltration rate (Qualitative or ACH50):(26)				Average									
3.14 Time-averaged mechanical vent. rate (CFM):				0									
3.15 Heat gain (kBtuh):(27)				Sensible	Latent	Total	Sensible	Latent	Total	Sensible	Latent	Total	
				N	27.4	5.6	33.1						
				NE	27.2	5.6	32.9						
				E	27.2	5.6	32.9						
				SE	26.0	5.6	31.6						
				S	27.2	5.6	32.8						
				SW	26.8	5.6	32.5						
				W	26.8	5.6	32.4						
				NW	25.9	5.6	31.5						
3.16 Maximum – minimum total heat gain (kBtuh):(28)						1.5							
3.17 Total heat loss (kBtuh):				32.1									

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(s) that system serves (See Item 3.6):	Entire House		
4.3 Equipment type:(29)	HP		
4.4 Evaporator / fan coil mfr. & model #:(30)	TRAN TEM6A0D48H41		
4.5 Condenser mfr. & model #:(30)	TRAN 4TWR5042H1	N/A ☐	N/A ☐
4.6 AHRI ref. #, or check box for alt. OEM doc.:(31)	9926385	OEM ☐	OEM ☐
4.7 If AC / HP, rated cooling efficiency:(32)	16 SEER2	N/A ☐	N/A ☐
4.8 If HP, rated heating efficiency:(33)	8 HSPF2	N/A ☐	N/A ☐
4.9 If HP, ratio of max. to min. rated capacity:	1.5	N/A ☐	N/A ☐
4.10 If AC / HP, blower fan motor & speed type:(34)	Other Single	N/A ☐	N/A ☐
4.11 If AC / HP, compressor speed type:(35)	Single	N/A ☐	N/A ☐
4.12 If AC / HP, meter device type:(36)		N/A ☐	N/A ☐
4.13 If TXV or EEV, OEM subcooling target (°F):(37)	0.0	N/A ☐	N/A ☐
4.14 Filter performance metric and rating:(38)		N/A ☐	N/A ☐
Furnaces, Boilers, & Other Heating Equipment (If none of these will be installed, check "N/A")			N/A ☐
4.15 Unique name or ID for each system:			
4.16 Zone(s) 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 ☐
4.20 If furnace or boiler, rated heating efficiency:		N/A ☐	N/A ☐
4.21 If furnace, blower fan motor & speed type:(34)		N/A ☐	N/A ☐
4.22 If furnace or boiler, heating capacity type:(40)		N/A ☐	N/A ☐
4.23 If furnace or boiler, venting type:(41)		N/A ☐	N/A ☐
4.24 Filter performance metric and rating:(38)		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(s) 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)	1100	1400	
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]	1400	[All rooms]
1.	bath2	4	
2.	bath3	84	
3.	br2	99	
4.	br3	85	
5.	br4	143	
6.	dining	100	
7.	family room	312	
8.	hall	0	
9.	hall2	0	
10.	kitchen	11	
11.	lav	1	
12.	living	213	
13.	mbath	67	
14.	mbed	239	
15.	utility	4	
16.	wic1	36	
17.	wic2	2	
18.			
19.			

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".

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



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: 09/25-2024	
2. Dwelling Unit Mechanical Ventilation System Design ("Vent System") Inlets in Return Duct								Verified	N/A
Airflow:									
2.1 Ventilation airflow design rate & run-time for each Vent System meets ASHRAE 62.2-2010 or later edition.								☐	
2.2 Access point is specified for Rater to measure ventilation airflow rate and inspect any motorized / shutoff dampers.								☐	
System Controls:									
2.3 Specified controls for each Vent System allow it to operate automatically, without occupant intervention.								☐	
2.4 Specified controls for each Vent System include a readily-accessible override & a label has also been specified if its function is not obvious (e.g., a label is required for a toggle wall switch, but not for a switch that's on the vent. equip.).								☐	
2.5 For any outdoor air inlet designed to connect to a ducted return of the HVAC system, specified controls automatically restrict airflow using a motorized damper during ventilation off-cycle and occupant override.								☐	☐
Sound:		2.6 Specified fan of each Vent System is rated ≤ 3 sones if intermittent and ≤ 1 sone if continuous, or exempted.						☐	
Efficiency: (Complete if Vent System controller operates HVAC fan or Vent System uses bath fans; otherwise, check "N/A")								☐	
2.7 If Vent System controller operates the HVAC fan, then HVAC fan operation is intermittent and either fan type in HVAC design report is ECM or controls will reduce the run-time by accounting for HVAC system heating or cooling hours.								☐	☐
2.8 If bathroom fans are specified as part of any Vent System, then they are ENERGY STAR certified.								☐	☐
2.9 MFNC Only: If central exhaust fans are specified as part of the Vent System, then if ≤ 1 HP, they are direct-drive, ECM, with variable speed controllers; and if > 1 HP, they are specified with NEMA Premium™ Motors or equivalent.								☐	☐
Air Inlet Location: (Complete this section if system has a specified air inlet location; otherwise check "N/A")								☐	
2.10 Inlet(s) pull ventilation air directly from outdoors and not from attic, crawlspace, garage, or adjacent dwelling unit.								☐	
2.11 Inlet(s) are ≥ 2 ft. above grade or roof deck; ≥ 10 ft. of stretched-string distance from known contamination sources (e.g., stack, vent, exhaust, vehicles) not exiting the roof, and ≥ 3 ft. from known sources exiting the roof.								☐	
2.12 Inlet(s) are provided with rodent / insect screen with ≤ 0.5 inch mesh.								☐	
3. Dwelling Unit Local Mechanical Exhaust Design									
3.1 System(s) are designed that mechanically exhaust air from each dwelling unit kitchen and bathroom directly to the outdoors or to ventilation risers and meet the requirements in Table 1.								☐	
Kitchens:	Runtime:	☒ Continuous	☐ Intermittent	Dwelling Units Served by Fan:		☒ Single Unit	☐ Multiple Units		
Bathrooms:	Runtime:	☒ Continuous	☐ Intermittent	Dwelling Units Served by Fan:		☒ Single Unit	☐ Multiple Units		
4. Heating Equipment, Cooling Equipment, & Equipment Controls Selection									
4.1 MFNC Only: If using Prescriptive Path, equipment serving dwelling units meet the efficiency levels specified in Exhibit X of the National Rater Field Checklist, have programmable thermostatic controls, & do not use electric resistance heating.								☐	☐
4.2 MFNC Only: Thermostatic controls for systems serving a dwelling unit are within the unit and not located on exterior walls. If more than one system provides heating or cooling to the same space, controls prevent simultaneous operation.								☐	☐
Air Conditioners & Heat Pumps		If none will be installed, check N/A ☐		1		2		3	
4.3 Unique name or ID for each system:				Entire House					
4.4 Maximum sensible and total heat gain load of zone served (kBtuh):				27.4 33.1					
4.5 Sensible, latent, & total cooling capacity at design conditions (kBtuh):				31.2 6.5 37.7					
4.6 If HP, heating capacity at 17°F and at 47°F (kBtuh):				25.0 38.0 N/A ☐		N/A ☐		N/A ☐	
4.7 Compressor speed type:				Single					
4.8 Cooling sizing % & applicable sizing limit key from Table 2:				114.0 C1					
4.9 If C2 chosen in Item 4.8, load sensible heat ratio & HDD / CDD ratio:				N/A ☒		N/A ☒		N/A ☒	
4.10 Affirm that cooling sizing % is within cooling sizing limit (4.8):				☒		☐		☐	
Furnaces		If none will be installed, check N/A ☒		1		2		3	
4.11 Unique name or ID for each system:				Entire House					
4.12 Total heat loss load of zone served (kBtuh):									
4.13 Total heating capacity (kBtuh):									
4.14 Heating sizing % & applicable sizing limit key from Table 3:									
4.15 Affirm that heating sizing % is within heating sizing limit (4.14):				☐		☐		☐	
5. Duct Design		5.1 All duct requirements in Table 4 have been included in the design, where applicable.						☐	☐