



Load Short Form
Entire House
DL Williams Heating & Cooling LLC

Job:
Date: Mar 13, 2024
By:

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

20

Project Information

For: Karen and Ricky Deloach, Trent Giebeig Construction
Lake City, FL

Design Information

	Htg	Clg	
Outside db (°F)	17	91	Method
Inside db (°F)	70	75	Construction quality
Design TD (°F)	53	16	Fireplaces
Daily range	-	M	
Inside humidity (%)	30	50	
Moisture difference (gr/lb)	22	35	



Simplified
Average
0

HEATING EQUIPMENT

Make Trane
Trade TRANE
Model 4TWR5036H1
AHRI ref 10514560

Efficiency 9.5 HSPF
Heating input
Heating output 32600 Btuh @ 47°F
Temperature rise 25 °F
Actual air flow 1200 cfm
Air flow factor 0.024 cfm/Btuh
Static pressure 0.50 in H2O
Space thermostat
Capacity balance point = 34 °F

COOLING EQUIPMENT

Make Trane
Trade TRANE
Cond 4TWR5036H1
Coil TEM6A0C42H41
AHRI ref 10514560

Efficiency 12.5 EER, 15 SEER
Sensible cooling 24500 Btuh
Latent cooling 10500 Btuh
Total cooling 35000 Btuh
Actual air flow 1050 cfm
Air flow factor 0.039 cfm/Btuh
Static pressure 0.50 in H2O
Load sensible heat ratio 0.90

Backup:
Input = 15 kW, Output = 49771 Btuh, 100 AFUE

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
br1	228	7942	3371	188	131
bath1	93	1320	886	31	35
lav	15	709	625	17	24
WIC	96	1436	474	34	18
man cave	312	7402	3705	176	144
great	650	10348	6580	246	256
foyer	72	1679	1107	40	43
craft	144	2568	1507	61	59
br2	180	5014	2376	119	93
bath2	80	1574	890	37	35
mud	100	4055	1368	96	53
pantry	80	1519	819	36	32
kitchen	312	5007	3250	119	127

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



Right-Suite® Universal 2023 23.0.05 RSU02245

...soft HVAC\Trane\Trent Giebeig Const Deloach.rup Calc = MJ8 Front Door faces: N

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Page 1

Entire House	2362	50573	26957	1200	1050
Other equip loads		0	0		
Equip. @ 0.96 RSM			25879		
Latent cooling			3009		
TOTALS	2362	50573	28888	1200	1050

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



Right-Suite® Universal 2023 23.0.05 RSU02245

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...soft HVAC\Trane\Trent Giebelg Const Deloach.rup Calc = MJ8 Front Door faces: N



Building Analysis

Entire House

DL Williams Heating & Cooling LLC

Job:
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By:

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

Project Information

For: Karen and Ricky Deloach, Trent Giebeig Construction
Lake City, FL

Design Conditions

Location:

Washington National AP, DC, US

Elevation: 0 ft

Latitude: 38°N

Outdoor:

Dry bulb (°F)

Daily range (°F)

Wet bulb (°F)

Wind speed (mph)

Heating

17

-

-

15.0

Cooling

91

18 (M)

74

7.5

Indoor:

Indoor temperature (°F)

Design TD (°F)

Relative humidity (%)

Moisture difference (gr/lb)

Infiltration:

Method

Construction quality

Fireplaces

Heating

70

53

30

22.3

Simplified

Average

0

Cooling

75

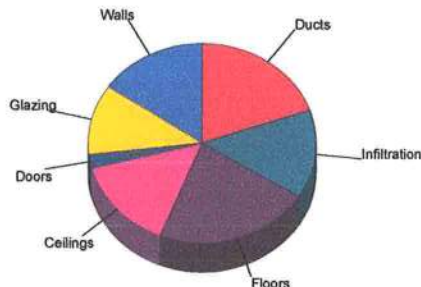
16

50

34.7

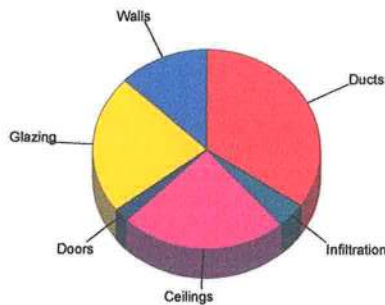
Heating

Component	Btuh/ft²	Btuh	% of load
Walls	4.8	7843	15.5
Glazing	15.9	5753	11.4
Doors	26.2	1102	2.2
Ceilings	3.1	7530	14.9
Floors	4.7	11217	22.2
Infiltration	3.6	7208	14.3
Ducts		9919	19.6
Piping		0	0
Humidification		0	0
Ventilation		0	0
Adjustments		0	0
Total		50573	100.0



Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	2.1	3478	12.9
Glazing	16.8	6066	22.5
Doors	14.1	593	2.2
Ceilings	2.7	6437	23.9
Floors	0	0	0
Infiltration	0.5	1088	4.0
Ducts		9296	34.5
Ventilation		0	0
Internal gains		0	0
Blower		0	0
Adjustments		0	0
Total		26957	100.0



Latent Cooling Load = 3009 Btuh

Overall U-value = 0.093 Btuh/ft²·°F, Window / Floor Area = 15.3 %

Data entries checked.



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Right-Suite® Universal 2023 23.0.05 RSU02245

...soft HVAC\Trane\Trent Giebeig Const Deloach.rup Calc = MJ8 Front Door faces: N

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Page 1



Component Constructions
Entire House
DL Williams Heating & Cooling LLC

Job:
Date: Mar 13, 2024
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PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: Office@DLWilliamsHeatingandCooling.com

Project Information

For: Karen and Ricky Deloach, Trent Giebeig Construction
Lake City, FL

Design Conditions

Location:		Indoor:		Heating	Cooling
Washington National AP, DC, US		Indoor temperature (°F)		70	75
Elevation: 0 ft		Design TD (°F)		53	16
Latitude: 38°N		Relative humidity (%)		30	50
		Moisture difference (gr/lb)		22.3	34.7
Outdoor:	Heating	Cooling	Infiltration:		
Dry bulb (°F)	17	91	Method		
Daily range (°F)	-	18 (M)	Construction quality		
Wet bulb (°F)	-	74	Simplified		
Wind speed (mph)	15.0	7.5	Average		
				0	

Construction descriptions

Or	Area ft²	U-value Btu/h/ft²·°F	Insul R ft²·°F/Btu/h	Htg HTM Btu/h/ft²	Loss Btu/h	Clg HTM Btu/h/ft²	Gain Btu/h
ne	398	0.091	13.0	4.82	1919	2.14	851
se	428	0.091	13.0	4.82	2064	2.14	915
sw	376	0.091	13.0	4.82	1815	2.14	805
nw	424	0.091	13.0	4.82	2045	2.14	907
all	1626	0.091	13.0	4.82	7843	2.14	3478

Walls

12C-0sw: Frm wall, 1/2" gyp.bd ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud

Partitions
(none)

Windows

10D-v: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/4" thk; NFRC rated (SHGC=0.23); 50% blinds 45°, light; 50% outdoor insect screen; 9 ft overhang (6.8 ft window ht, 2 ft sep.); 6.67 ft head ht	ne	41	0.300	0	15.9	649	10.3	420
4A5-2of: 2 glazing, clr low-e outr, air gas, insulated fiberglass frm mat, clr innr, 1/4" gap, 1/4" thk; NFRC rated (SHGC=0.23); 50% blinds 45°, light; 50% outdoor insect screen; 1.6 ft overhang (5 ft window ht, 2 ft sep.); 6.67 ft head ht	ne	41	0.300	0	15.9	649	10.3	420
4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/4" thk; NFRC rated (SHGC=0.23); 50% outdoor insect screen; 9 ft overhang (3.6 ft window ht, 2 ft sep.); 6.67 ft head ht	all	82	0.300	0	15.9	1297	10.3	840
4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/4" thk; NFRC rated (SHGC=0.23); 50% blinds 45°, light; 50% outdoor insect screen; 9 ft overhang (3.6 ft window ht, 2 ft sep.); 6.67 ft head ht	ne	30	0.300	0	15.9	477	14.7	441
4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/4" thk; NFRC rated (SHGC=0.23); 50% blinds 45°, light; 50% outdoor insect screen; 9 ft overhang (3.6 ft window ht, 2 ft sep.); 6.67 ft head ht	ne	14	0.300	0	15.9	229	17.3	250
4A5-2ov: 2 glazing, clr low-e outr, air gas, reinforced vinyl frm mat, clr innr, 1/4" gap, 1/4" thk; NFRC rated (SHGC=0.23); 50% blinds 45°, light; 50% outdoor insect screen; 9 ft overhang (3.6 ft window ht, 2 ft sep.); 6.67 ft head ht	ne	7	0.300	0	15.9	114	14.7	106
4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/4" thk; NFRC rated (SHGC=0.23); 50% outdoor insect screen; 4 ft overhang (5 ft window ht, 2 ft sep.); 6.67 ft head ht	se	15	0.300	0	15.9	239	13.2	198
4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/4" thk; NFRC rated (SHGC=0.23); 50% blinds 45°, light; 50% outdoor insect screen; 1.8 ft overhang (4 ft window ht, 2 ft sep.); 6.67 ft head ht	se	12	0.300	0	15.9	191	16.7	200

4B5-2fv: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/4" thk; NFRC rated (SHGC=0.23); 1.8 ft overhang (1.6 ft window ht, 2 ft sep.); 6.67 ft head ht	se	8	0.300	0	15.9	127	20.5	164
4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/4" thk; NFRC rated (SHGC=0.23); 50% blinds 45°, light; 50% outdoor insect screen; 1.8 ft overhang (5 ft window ht, 2 ft sep.); 6.67 ft head ht	sw	60	0.300	0	15.9	954	16.8	1009
4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/4" thk; NFRC rated (SHGC=0.23); 50% blinds 45°, light; 50% outdoor insect screen; 6 ft overhang (5 ft window ht, 2 ft sep.); 6.67 ft head ht	sw	60	0.300	0	15.9	954	7.22	433
4B5-2fv: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/4" thk; NFRC rated (SHGC=0.23); 6 ft overhang (6.8 ft window ht, 2 ft sep.); 6.67 ft head ht	sw	14	0.300	0	15.9	216	11.9	161
4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/4" thk; NFRC rated (SHGC=0.23); 50% outdoor insect screen; 1.8 ft overhang (5 ft window ht, 2 ft sep.); 6.67 ft head ht	nw	60	0.300	0	15.9	954	17.3	1040

Doors

11J0: Door, mtl fbrgl type	se	21	0.600	6.3	31.8	668	17.1	359
11D0: Door, wd sc type	sw	21	0.390	0	20.7	434	11.1	233

Ceilings

16B-38ad: Attic ceiling, asphalt shingles roof mat, r-38 ceil ins, 1/2" gypsum board int fnsh		1400	0.026	38.0	1.38	1929	1.35	1893
17B-6al: Rf/clg ceiling, asphalt shingles roof mat, wd cons, r-6 deck ins, 1" thkns		1007	0.105	6.0	5.57	5601	4.51	4544

Floors

22A-tpl: Bg floor, light dry soil, on grade depth, carp 80% flr fnsh		214	0.989	0	52.4	11217	0	0
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Component Constructions
br1
DL Williams Heating & Cooling LLC

Job:
Date: Mar 13, 2024
By:

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

Project Information

For: Karen and Ricky Deloach, Trent Giebeig Construction
Lake City, FL

Design Conditions

Location:		Indoor:		Heating	Cooling
Washington National AP, DC, US		Indoor temperature (°F)		70	75
Elevation: 0 ft		Design TD (°F)		53	16
Latitude: 38°N		Relative humidity (%)		30	50
Outdoor:		Moisture difference (gr/lb)		22.3	34.7
		Infiltration:			
Heating		Method		Simplified	
Cooling		Construction quality		Average	
		Fireplaces		0	
Dry bulb (°F)					
Daily range (°F)					
Wet bulb (°F)					
Wind speed (mph)					

Construction descriptions

Or	Area ft²	U-value Btuh/ft²·°F	Insul R ft²·°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
ne	78	0.091	13.0	4.82	376	2.14	167
se	75	0.091	13.0	4.82	362	2.14	160
nw	141	0.091	13.0	4.82	680	2.14	302
all	294	0.091	13.0	4.82	1418	2.14	629

Walls

12C-0sw: Frm wall, 1/2" gyp.bd ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud

Partitions
(none)

Windows

4A5-2of: 2 glazing, clr low-e outr, air gas, insulated fiberglass frm mat, clr innr, 1/4" gap, 1/4" thk; NFRC rated (SHGC=0.23); 50% blinds 45°, light; 50% outdoor insect screen; 1.6 ft overhang (5 ft window ht, 2 ft sep.); 6.67 ft head ht

ne	30	0.300	0	15.9	477	14.7	441
se	15	0.300	0	15.9	239	13.2	198

4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/4" thk; NFRC rated (SHGC=0.23); 50% outdoor insect screen; 4 ft overhang (5 ft window ht, 2 ft sep.); 6.67 ft head ht

nw	30	0.300	0	15.9	477	17.3	520
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4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/4" thk; NFRC rated (SHGC=0.23); 50% outdoor insect screen; 1.8 ft overhang (5 ft window ht, 2 ft sep.); 6.67 ft head ht

Doors
(none)

Ceilings

16B-38ad: Attic ceiling, asphalt shingles roof mat, r-38 ceil ins, 1/2" gypsum board int fnsh

228	0.026	38.0	1.38	314	1.35	308
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Floors

22A-tpl: Bg floor, light dry soil, on grade depth, carp 80% flr fnsh

41	0.989	0	52.4	2149	0	0
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Component Constructions
bath1
DL Williams Heating & Cooling LLC

Job:
Date: Mar 13, 2024
By:

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Project Information

For: Karen and Ricky Deloach, Trent Giebeig Construction
Lake City, FL

Design Conditions

Location:		Indoor:		Heating	Cooling
Washington National AP, DC, US		Indoor temperature (°F)		70	75
Elevation: 0 ft		Design TD (°F)		53	16
Latitude: 38°N		Relative humidity (%)		30	50
Outdoor:		Moisture difference (gr/lb)		22.3	34.7
		Heating	Cooling		
Dry bulb (°F)		17	91	Infiltration:	
Daily range (°F)		-	18 (M)	Method	
Wet bulb (°F)		-	74	Construction quality	
Wind speed (mph)		15.0	7.5	Fireplaces	
				Simplified	Average
				0	0

Construction descriptions

Or	Area ft²	U-value Btu/h/ft²·°F	Insul R ft²·°F/Btu/h	Htg HTM Btu/h/ft²	Loss Btu/h	Clg HTM Btu/h/ft²	Gain Btu/h
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Walls 12C-0sw: Frm wall, 1/2" gyp.bd ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud	nw	39	0.091	13.0	4.82	188	2.14	83
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Partitions
(none)

Windows 4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/4" thk; NFRC rated (SHGC=0.23); 50% outdoor insect screen; 1.8 ft overhang (5 ft window ht, 2 ft sep.); 6.67 ft head ht	nw	15	0.300	0	15.9	239	17.3	260
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Doors
(none)

Ceilings 16B-38ad: Attic ceiling, asphalt shingles roof mat, r-38 ceil ins, 1/2" gypsum board int fnsh		93	0.026	38.0	1.38	128	1.35	126
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Floors 22A-1pl: Bg floor, light dry soil, on grade depth, carp 80% flr fnsh		6	0.989	0	52.4	315	0	0
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Component Constructions
lav
DL Williams Heating & Cooling LLC

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For: Karen and Ricky Deloach, Trent Giebeig Construction
Lake City, FL

Design Conditions

Location:		Indoor:		Heating	Cooling	
Washington National AP, DC, US		Indoor temperature (°F)		70	75	
Elevation: 0 ft		Design TD (°F)		53	16	
Latitude: 38°N		Relative humidity (%)		30	50	
Outdoor:	Heating	Cooling	Moisture difference (gr/lb)		22.3	34.7
Dry bulb (°F)	17	91	Infiltration:			
Daily range (°F)	-	18 (M)	Method	Simplified		
Wet bulb (°F)	-	74	Construction quality	Average		
Wind speed (mph)	15.0	7.5	Fireplaces	0		

Construction descriptions

Or	Area ft²	U-value Btu/h/ft²·°F	Insul R ft²·°F/Btu/h	Htg HTM Btu/h/ft²	Loss Btu/h	Clg HTM Btu/h/ft²	Gain Btu/h
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Walls 12C-0sw: Frm wall, 1/2" gyp.bd ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud	nw	12	0.091	13.0	4.82	58	2.14	26
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Partitions
(none)

Windows 4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/4" thk; NFRC rated (SHGC=0.23); 50% outdoor insect screen; 1.8 ft overhang (5 ft window ht, 2 ft sep.); 6.67 ft head ht	nw	15	0.300	0	15.9	239	17.3	260
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Doors
(none)

Ceilings 16B-38ad: Attic ceiling, asphalt shingles roof mat, r-38 ceil ins, 1/2" gypsum board int fnsh		15	0.026	38.0	1.38	21	1.35	20
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Floors 22A-tpl: Bg floor, light dry soil, on grade depth, carp 80% flr fnsh		3	0.989	0	52.4	157	0	0
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Component Constructions
WIC
DL Williams Heating & Cooling LLC

Job:
Date: Mar 13, 2024
By:

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

Project Information

For: Karen and Ricky Deloach, Trent Giebeig Construction
Lake City, FL

Design Conditions

Location:			Indoor:		Heating	Cooling
Washington National AP, DC, US			Indoor temperature (°F)		70	75
Elevation: 0 ft			Design TD (°F)		53	16
Latitude: 38°N			Relative humidity (%)		30	50
Outdoor:			Moisture difference (gr/lb)		22.3	34.7
Heating		Cooling	Infiltration:			
Dry bulb (°F)	17	91	Method		Simplified	
Daily range (°F)	-	18 (M)	Construction quality		Average	
Wet bulb (°F)	-	74	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 Clg HTM Btuh	Gain Btuh
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Walls 12C-0sw: Frm wall, 1/2" gyp.bd ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud	nw	72	0.091	13.0	4.82	347	2.14	154
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Partitions
(none)

Windows
(none)

Doors
(none)

Ceilings 16B-38ad: Attic ceiling, asphalt shingles roof mat, r-38 ceil ins, 1/2" gypsum board int fnsh		96	0.026	38.0	1.38	132	1.35	130
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Floors 22A-tp1: Bg floor, light dry soil, on grade depth, carp 80% flr fnsh		8	0.989	0	52.4	419	0	0
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Component Constructions
man cave
DL Williams Heating & Cooling LLC

Job:
Date: Mar 13, 2024
By:

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Project Information

For: Karen and Ricky Deloach, Trent Giebeig Construction
Lake City, FL

Design Conditions

Location:			Indoor:		Heating	Cooling
Washington National AP, DC, US			Indoor temperature (°F)		70	75
Elevation: 0 ft			Design TD (°F)		53	16
Latitude: 38°N			Relative humidity (%)		30	50
Outdoor:	Heating	Cooling	Moisture difference (gr/lb)		22.3	34.7
Dry bulb (°F)	17	91	Infiltration:			
Daily range (°F)	-	18 (M)	Method		Simplified	
Wet bulb (°F)	-	74	Construction quality		Average	
Wind speed (mph)	15.0	7.5	Fireplaces		0	

Construction descriptions

Or	Area ft²	U-value Btu/h/ft²-°F	Insul R ft²-°F/Btu/h	Htg HTM Btu/h/ft²	Loss Btu/h	Clg HTM Btu/h/ft²	Gain Btu/h
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Walls							
12C-0sw: Frm wall, 1/2" gyp.bd ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud	sw	174	0.091	13.0	4.82	839	372
	nw	108	0.091	13.0	4.82	521	231
	all	282	0.091	13.0	4.82	1360	603

Partitions (none)

Windows

4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/4" thk; NFRC rated (SHGC=0.23); 50% blinds 45°, light; 50% outdoor insect screen; 1.8 ft overhang (5 ft window ht, 2 ft sep.); 6.67 ft head ht	sw	30	0.300	0	15.9	477	504
4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/4" thk; NFRC rated (SHGC=0.23); 50% blinds 45°, light; 50% outdoor insect screen; 6 ft overhang (5 ft window ht, 2 ft sep.); 6.67 ft head ht	sw	30	0.300	0	15.9	477	217

Doors (none)

Ceilings

16B-38ad: Attic ceiling, asphalt shingles roof mat, r-38 ceil ins, 1/2" gypsum board int fnsh		312	0.026	38.0	1.38	430	422
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Floors

22A-tpl: Bg floor, light dry soil, on grade depth, carp 80% flr fnsh		38	0.989	0	52.4	1992	0
--	--	----	-------	---	------	------	---



Component Constructions
oyer
DL Williams Heating & Cooling LLC

Job:
Date: Mar 13, 2024
By:

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

Project Information

For: Karen and Ricky Deloach, Trent Giebeig Construction
Lake City, FL

Design Conditions

Location:		Indoor:		Heating	Cooling
Washington National AP, DC, US		Indoor temperature (°F)		70	75
Elevation: 0 ft		Design TD (°F)		53	16
Latitude: 38°N		Relative humidity (%)		30	50
Outdoor:		Moisture difference (gr/lb)		22.3	34.7
		Heating	Cooling		
Dry bulb (°F)		17	91		
Daily range (°F)		-	18 (M)		
Wet bulb (°F)		-	74		
Wind speed (mph)		15.0	7.5		
		Infiltration:		Simplified	
		Method		Average	
		Construction quality		0	
		Fireplaces			

Construction descriptions

Or	Area ft²	U-value Btuh/ft²-°F	Insul R ft²-°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
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Walls 12C-0sw: Frm wall, 1/2" gyp.bd ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud	sw	19	0.091	13.0	4.82	94	2.14	41
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Partitions
(none)

Windows 4B5-2fv: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/4" thk; NFRC rated (SHGC=0.23); 6 ft overhang (6.8 ft window ht, 2 ft sep.); 6.67 ft head ht	sw	14	0.300	0	15.9	216	11.9	161
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Doors 11D0: Door, wd sc type	sw	21	0.390	0	20.7	434	11.1	233
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Ceilings 16B-38ad: Attic ceiling, asphalt shingles roof mat, r-38 ceil ins, 1/2" gypsum board int fnsh		72	0.026	38.0	1.38	99	1.35	97
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Floors 22A-tpl: Bg floor, light dry soil, on grade depth, carp 80% flr fnsh		6	0.989	0	52.4	315	0	0
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...soft HVAC\Trane\Trent Giebeig Const Deloach.rup Calc = MJ8 Front Door faces: N

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Page 9



Component Constructions
craft
DL Williams Heating & Cooling LLC

Job:
Date: Mar 13, 2024
By:

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

Project Information

For: Karen and Ricky Deloach, Trent Giebeig Construction
Lake City, FL

Design Conditions

Location:		Indoor:		Heating	Cooling
Washington National AP, DC, US		Indoor temperature (°F)		70	75
Elevation: 0 ft		Design TD (°F)		53	16
Latitude: 38°N		Relative humidity (%)		30	50
Outdoor:		Moisture difference (gr/lb)		22.3	34.7
		Heating	Cooling		
Dry bulb (°F)		17	91	Infiltration:	
Daily range (°F)		-	18 (M)	Method	Simplified
Wet bulb (°F)		-	74	Construction quality	Average
Wind speed (mph)		15.0	7.5	Fireplaces	0

Construction descriptions	Or	Area ft²	U-value Btu/h/ft²-°F	Insul R ft²-°F/Btu/h	Htg HTM Btu/h/ft²	Loss Btu/h	Clg HTM Btu/h/ft²	Gain Btu/h
Walls 12C-0sw: Frm wall, 1/2" gyp.bd ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud	sw	78	0.091	13.0	4.82	376	2.14	167
Partitions (none)								
Windows 4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/4" thk; NFRC rated (SHGC=0.23); 50% blinds 45°, light; 50% outdoor insect screen; 6 ft overhang (5 ft window ht, 2 ft sep.); 6.67 ft head ht	sw	30	0.300	0	15.9	477	7.22	217
Doors (none)								
Ceilings 16B-38ad: Attic ceiling, asphalt shingles roof mat, r-38 ceil ins, 1/2" gypsum board int fnsh		144	0.026	38.0	1.38	198	1.35	195
Floors 22A-tp1: Bg floor, light dry soil, on grade depth, carp 80% flr fnsh		12	0.989	0	52.4	629	0	0



Component Constructions
br2
DL Williams Heating & Cooling LLC

Job:
Date: Mar 13, 2024
By:

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

Project Information

For: Karen and Ricky Deloach, Trent Giebeig Construction
Lake City, FL

Design Conditions

Location:		Indoor:		Heating	Cooling
Washington National AP, DC, US		Indoor temperature (°F)		70	75
Elevation: 0 ft		Design TD (°F)		53	16
Latitude: 38°N		Relative humidity (%)		30	50
Outdoor:		Moisture difference (gr/lb)		22.3	34.7
		Heating	Cooling		
Dry bulb (°F)		17	91		
Daily range (°F)		-	18 (M)		
Wet bulb (°F)		-	74		
Wind speed (mph)		15.0	7.5		
		Infiltration:		Heating	Cooling
		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
se	108	0.091	13.0	4.82	521	2.14	231
sw	105	0.091	13.0	4.82	506	2.14	225
all	213	0.091	13.0	4.82	1027	2.14	456

Walls

12C-0sw: Frm wall, 1/2" gyp.bd ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud

Partitions

(none)

Windows

4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/4" thk; NFRC rated (SHGC=0.23); 50% blinds 45°, light; 50% outdoor insect screen; 1.8 ft overhang (5 ft window ht, 2 ft sep.); 6.67 ft head ht

Doors

(none)

Ceilings

16B-38ad: Attic ceiling, asphalt shingles roof mat, r-38 ceil ins, 1/2" gypsum board int fnsh

Floors

22A-tp: Bg floor, light dry soil, on grade depth, carp 80% flr fnsh



Component Constructions
bath2
DL Williams Heating & Cooling LLC

Job:
Date: Mar 13, 2024
By:

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

Project Information

For: Karen and Ricky Deloach, Trent Giebeig Construction
Lake City, FL

Design Conditions

Location:		Indoor:		Heating	Cooling
Washington National AP, DC, US		Indoor temperature (°F)		70	75
Elevation: 0 ft		Design TD (°F)		53	16
Latitude: 38°N		Relative humidity (%)		30	50
		Moisture difference (gr/lb)		22.3	34.7
Outdoor:	Heating	Cooling	Infiltration:		
Dry bulb (°F)	17	91	Method		
Daily range (°F)	-	18 (M)	Construction quality		
Wet bulb (°F)	-	74	Fireplaces		
Wind speed (mph)	15.0	7.5	Simplified Average		
				0	

Construction descriptions	Or	Area ft²	U-value Btuh/ft²-°F	Insul R ft²-°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
Walls 12C-0sw: Frm wall, 1/2" gyp.bd ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud	se	60	0.091	13.0	4.82	289	2.14	128
Partitions (none)								
Windows 4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/4" thk; NFRC rated (SHGC=0.23); 50% blinds 45°, light; 50% outdoor insect screen; 1.8 ft overhang (4 ft window ht, 2 ft sep.); 6.67 ft head ht	se	12	0.300	0	15.9	191	16.7	200
Doors (none)								
Ceilings 16B-38ad: Attic ceiling, asphalt shingles roof mat, r-38 ceil ins, 1/2" gypsum board int fnsh		80	0.026	38.0	1.38	110	1.35	108
Floors 22A-tpl: Bg floor, light dry soil, on grade depth, carp 80% flr fnsh		8	0.989	0	52.4	419	0	0



Component Constructions
mud
DL Williams Heating & Cooling LLC

Job:
Date: Mar 13, 2024
By:

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

Project Information

For: Karen and Ricky Deloach, Trent Giebeig Construction
Lake City, FL

Design Conditions

Location:			Indoor:		Heating	Cooling
Washington National AP, DC, US			Indoor temperature (°F)		70	75
Elevation: 0 ft			Design TD (°F)		53	16
Latitude: 38°N			Relative humidity (%)		30	50
Outdoor:	Heating	Cooling	Moisture difference (gr/lb)		22.3	34.7
Dry bulb (°F)	17	91	Infiltration:			
Daily range (°F)	-	18 (M)	Method		Simplified	
Wet bulb (°F)	-	74	Construction quality		Average	
Wind speed (mph)	15.0	7.5	Fireplaces		0	

Construction descriptions

	Or	Area ft²	U-value Btu/h/ft²-°F	Insul R ft²-°F/Btu/h	Htg HTM Btu/h/ft²	Loss Btu/h	Clg HTM Btu/h/ft²	Gain Btu/h
Walls								
12C-0sw: Frm wall, 1/2" gyp.bd ext, 3/8" wood shth, r-13 cav ins, 1/2"	ne	90	0.091	13.0	4.82	434	2.14	192
gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud	se	69	0.091	13.0	4.82	333	2.14	148
	all	159	0.091	13.0	4.82	767	2.14	340
Partitions (none)								
Windows (none)								
Doors								
11J0: Door, mtl fbrgl type	se	21	0.600	6.3	31.8	668	17.1	359
Ceilings								
16B-38ad: Attic ceiling, asphalt shingles roof mat, r-38 ceil ins, 1/2"		100	0.026	38.0	1.38	138	1.35	135
gypsum board int fnsh								
Floors								
22A-tpl: Bg floor, light dry soil, on grade depth, carp 80% flr fnsh		20	0.989	0	52.4	1048	0	0



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Component Constructions
pantry
DL Williams Heating & Cooling LLC

Job:
Date: Mar 13, 2024
By:

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

Project Information

For: Karen and Ricky Deloach, Trent Giebeig Construction
Lake City, FL

Design Conditions

Location:			Indoor:		Heating	Cooling
Washington National AP, DC, US			Indoor temperature (°F)		70	75
Elevation: 0 ft			Design TD (°F)		53	16
Latitude: 38°N			Relative humidity (%)		30	50
Outdoor:			Moisture difference (gr/lb) <td>22.3</td> <td>34.7</td>		22.3	34.7
		Heating	Cooling			
Dry bulb (°F)		17	91			
Daily range (°F)		-	18 (M)			
Wet bulb (°F)		-	74			
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
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Walls 12C-0sw: Frm wall, 1/2" gyp.bd ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud	se	64	0.091	13.0	4.82	309	2.14	137
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Partitions (none)

Windows 4B5-2fv: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/4" thk; NFRC rated (SHGC=0.23); 1.8 ft overhang (1.6 ft window ht, 2 ft sep.); 6.67 ft head ht	se	8	0.300	0	15.9	127	20.5	164
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Doors (none)

Ceilings 16B-38ad: Attic ceiling, asphalt shingles roof mat, r-38 ceil ins, 1/2" gypsum board int fnsh		80	0.026	38.0	1.38	110	1.35	108
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Floors 22A-tp1: Bg floor, light dry soil, on grade depth, carp 80% flr fnsh		8	0.989	0	52.4	419	0	0
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Component Constructions
kitchen
DL Williams Heating & Cooling LLC

Job:
Date: Mar 13, 2024
By:

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

Project Information

For: Karen and Ricky Deloach, Trent Giebeig Construction
Lake City, FL

Design Conditions

Location:		Indoor:		Heating	Cooling
Washington National AP, DC, US		Indoor temperature (°F)		70	75
Elevation: 0 ft		Design TD (°F)		53	16
Latitude: 38°N		Relative humidity (%)		30	50
Outdoor:	Heating	Cooling	Moisture difference (gr/lb)	22.3	34.7
Dry bulb (°F)	17	91	Infiltration:		
Daily range (°F)	-	18 (M)	Method	Simplified	
Wet bulb (°F)	-	74	Construction quality	Average	
Wind speed (mph)	15.0	7.5	Fireplaces	0	

Construction descriptions

Or	Area ft²	U-value Btu/h/ft²-°F	Insul R ft²-°F/Btu/h	Htg HTM Btu/h/ft²	Loss Btu/h	Clg HTM Btu/h/ft²	Gain Btu/h
Walls							
12C-0sw: Frm wall, 1/2" gyp.bd ext, 3/8" wood shth, r-13 cav ins, 1/2"	ne	86	0.091	13.0	417	2.14	185
gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud	se	52	0.091	13.0	251	2.14	111
	all	138	0.091	13.0	668	2.14	296

Partitions
(none)

Windows

4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/4" thk; NFRC rated (SHGC=0.23); 50% outdoor insect screen; 9 ft overhang (3.6 ft window ht, 2 ft sep.); 6.67 ft head ht	ne	14	0.300	0	15.9	229	17.3	250
4A5-2ov: 2 glazing, clr low-e outr, air gas, reinforced vinyl frm mat, clr innr, 1/4" gap, 1/4" thk; NFRC rated (SHGC=0.23); 50% blinds 45°, light; 50% outdoor insect screen; 9 ft overhang (3.6 ft window ht, 2 ft sep.); 6.67 ft head ht	ne	7	0.300	0	15.9	114	14.7	106

Doors
(none)

Ceilings

17B-6al: Rf/clg ceiling, asphalt shingles roof mat, wd cons, r-6 deck ins, 1" thkns		326	0.105	6.0	5.57	1817	4.51	1474
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Floors

22A-4pl: Bg floor, light dry soil, on grade depth, carp 80% flr fnsh		12	0.989	0	52.4	629	0	0
--	--	----	-------	---	------	-----	---	---



Project Summary

Entire House

DL Williams Heating & Cooling LLC

Job:
Date: Mar 13, 2024
By:

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

Project Information

For: Karen and Ricky Deloach, Trent Giebeig Construction
Lake City, FL

Notes:

Design Information

Weather: Washington National AP, DC, US

Winter Design Conditions

Outside db	17 °F
Inside db	70 °F
Design TD	53 °F

Summer Design Conditions

Outside db	91 °F
Inside db	75 °F
Design TD	16 °F
Daily range	M
Relative humidity	50 %
Moisture difference	35 gr/lb

Heating Summary

Structure	40653 Btuh
Ducts (R-6.0)	9919 Btuh
Central vent (0 cfm)	0 Btuh
(none)	
Humidification	0 Btuh
Piping	0 Btuh
Equipment load	50573 Btuh

Sensible Cooling Equipment Load Sizing

Structure	17661 Btuh
Ducts (R-6.0)	9296 Btuh
Central vent (0 cfm)	0 Btuh
(none)	
Blower	0 Btuh
Use manufacturer's data	n
Rate/swing multiplier	0.96
Equipment sensible load	25879 Btuh

Infiltration

Method	Simplified
Construction quality	Average
Fireplaces	0

Latent Cooling Equipment Load Sizing

Structure	1457 Btuh
Ducts	1553 Btuh
Central vent (0 cfm)	0 Btuh
(none)	
Equipment latent load	3009 Btuh

	Heating	Cooling
Area (ft²)	2362	2362
Volume (ft³)	23182	23182
Air changes/hour	0.32	0.16
Equiv. AVF (cfm)	124	62

Equipment Total Load (Sen+Lat)	28888 Btuh
Req. total capacity at 0.70 SHR	3.1 ton

Heating Equipment Summary

Make	Trane
Trade	TRANE
Model	4TWR5036H1
AHRI ref	10514560
Efficiency	9.5 HSPF
Heating input	
Heating output	32600 Btuh @ 47°F
Temperature rise	25 °F
Actual air flow	1200 cfm
Air flow factor	0.024 cfm/Btuh
Static pressure	0.50 in H2O
Space thermostat	
Capacity balance point = 34 °F	
Backup:	
Input = 15 kW, Output = 49771 Btuh, 100 AFUE	

Cooling Equipment Summary

Make	Trane
Trade	TRANE
Cond	4TWR5036H1
Coil	TEM6A0C42H41
AHRI ref	10514560
Efficiency	12.5 EER, 15 SEER
Sensible cooling	24500 Btuh
Latent cooling	10500 Btuh
Total cooling	35000 Btuh
Actual air flow	1050 cfm
Air flow factor	0.039 cfm/Btuh
Static pressure	0.50 in H2O
Load sensible heat ratio	0.90

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



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Right-Suite® Universal 2023 23.0.05 RSU02245

...soft HVAC\Trane\Trent Giebeig Const Deloach.rup Calc = MJ8 Front Door faces: N

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Page 1



AED Assessment
Entire House
DL Williams Heating & Cooling LLC

Job:
Date: Mar 13, 2024
By:

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

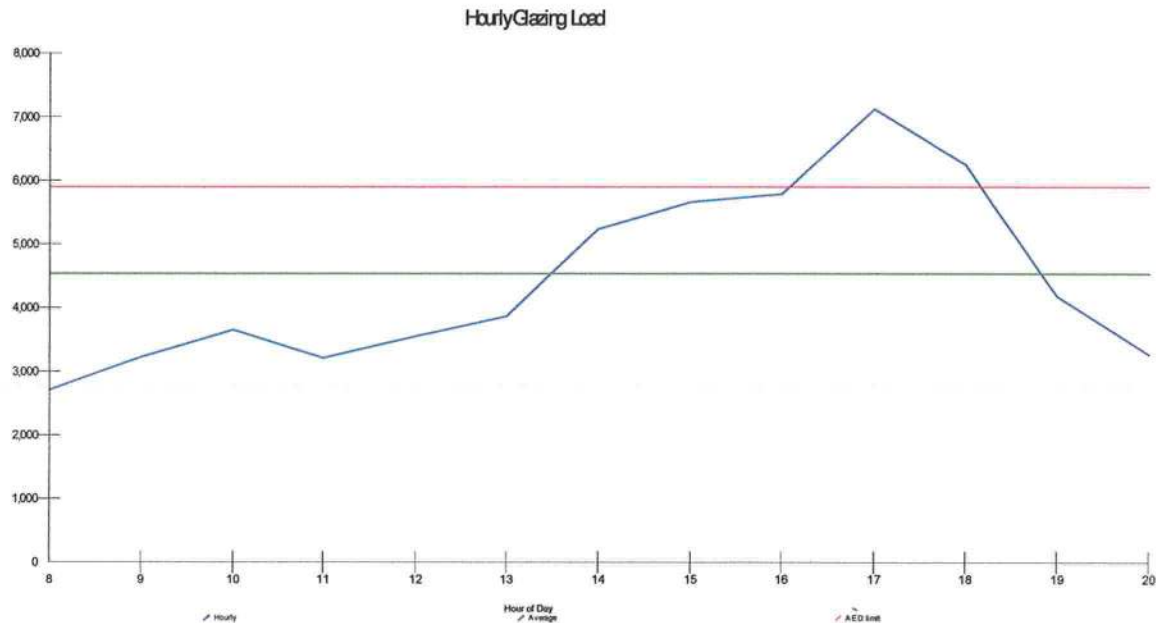
Project Information

For: Karen and Ricky Deloach, Trent Giebeig Construction
Lake City, FL

Design Conditions

Location:		Indoor:		Heating	Cooling
Washington National AP, DC, US		Indoor temperature (°F)		70	75
Elevation: 0 ft		Design TD (°F)		53	16
Latitude: 38°N		Relative humidity (%)		30	50
Outdoor:		Infiltration:		22.3	34.7
		Heating	Cooling		
Dry bulb (°F)		17	91		
Daily range (°F)		-	18 (M)		
Wet bulb (°F)		-	74		
Wind speed (mph)		15.0	7.5		

Test for Adequate Exposure Diversity



Maximum hourly glazing load exceeds average by 57.0%.

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

AED excursion: 1223 Btuh (PFG - 1.3*AFG)



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

Job:
Date: Mar 13, 2024
By:

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

1	Room name					Entire House					br1				
2	Exposed wall					214.0 ft					41.0 ft				
3	Room height					9.8 ft					9.0 ft				
4	Room dimensions					2362.0 ft²					12.0 x 19.0 ft				
5	Room area					2362.0 ft²					228.0 ft²				
	Ty	Construction number	U-value (Btuh/ft²·°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)		
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool	
6	W	12C-0sw	0.091	ne	4.82	2.14	531	398	1919	851	108	78	376	167	
11	G	10D-v	0.300	ne	15.90	10.30	41	0	649	420	0	0	0	0	
	G	10D-v	0.300	ne	15.90	10.30	41	0	649	420	0	0	0	0	
	G	4A5-2of	0.300	ne	15.90	14.71	30	0	477	441	30	0	477	441	
	G	4A5-2ov	0.300	ne	15.90	17.33	14	0	229	250	0	0	0	0	
	G	4A5-2ov	0.300	ne	15.90	14.71	7	0	114	106	0	0	0	0	
	W	12C-0sw	0.091	se	4.82	2.14	484	428	2064	915	90	75	362	160	
	G	4A5-2ov	0.300	se	15.90	13.17	15	18	239	198	15	9	239	198	
	G	4A5-2ov	0.300	se	15.90	16.69	12	1	191	200	0	0	0	0	
	G	4B5-2fv	0.300	se	15.90	20.52	8	2	127	164	0	0	0	0	
	D	11J0	0.600	se	31.80	17.10	21	21	668	359	0	0	0	0	
	W	12C-0sw	0.091	sw	4.82	2.14	531	376	1815	805	0	0	0	0	
G	4A5-2ov	0.300	sw	15.90	16.82	60	6	954	1009	0	0	0	0		
G	4A5-2ov	0.300	sw	15.90	7.22	60	120	954	433	0	0	0	0		
G	4B5-2fv	0.300	sw	15.90	11.86	14	22	216	161	0	0	0	0		
D	11D0	0.390	sw	20.67	11.11	21	21	434	233	0	0	0	0		
W	12C-0sw	0.091	nw	4.82	2.14	484	424	2045	907	171	141	680	302		
G	4A5-2ov	0.300	nw	15.90	17.33	60	0	954	1040	30	0	477	520		
C	16B-38ad	0.026	-	1.38	1.35	1400	1400	1929	1893	228	228	314	308		
C	17B-6al	0.105	-	5.57	4.51	1007	1007	5601	4544	0	0	0	0		
F	22A-tpl	0.989	-	52.42	0.00	2362	214	11217	0	228	41	2149	0	0	
6	c) AED excursion									1223				-85	
	Envelope loss/gain								33445	16573			5074	2011	
12	a) Infiltration								7208	1088			1310	198	
	b) Room ventilation								0	0			0	0	
13	Internal gains: Occupants @ 230 Appliances/other						0			0	0			0	0
	Subtotal (lines 6 to 13)								40653	17661			6384	2208	
	Less external load								0	0			0	0	
	Less transfer								0	0			0	0	
	Redistribution								0	0			0	0	
14	Subtotal								40653	17661			6384	2208	
15	Duct loads						24%	53%	9919	9296	24%	53%	1558	1162	
	Total room load								50573	26957			7942	3371	
	Air required (cfm)								1200	1050			188	131	

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



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

Job:
Date: Mar 13, 2024
By:

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

1	Room name					bath1					lav				
2	Exposed wall					6.0 ft					3.0 ft				
3	Room height					heat/cool					heat/cool				
4	Room dimensions					9.0 ft 1.0 x 93.0 ft					9.0 ft 5.0 x 3.0 ft				
5	Room area					93.0 ft²					15.0 ft²				
	Ty	Construction number	U-value (Btuh/ft²·°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)		
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool	
6	W	12C-0sw	0.091	ne	4.82	2.14	0	0	0	0	0	0	0	0	
11	G	10D-v	0.300	ne	15.90	10.30	0	0	0	0	0	0	0	0	
	G	10D-v	0.300	ne	15.90	10.30	0	0	0	0	0	0	0	0	
	G	4A5-2of	0.300	ne	15.90	14.71	0	0	0	0	0	0	0	0	
	G	4A5-2ov	0.300	ne	15.90	17.33	0	0	0	0	0	0	0	0	
	G	4A5-2ov	0.300	ne	15.90	14.71	0	0	0	0	0	0	0	0	
	W	12C-0sw	0.091	se	4.82	2.14	0	0	0	0	0	0	0	0	
	G	4A5-2ov	0.300	se	15.90	13.17	0	0	0	0	0	0	0	0	
	G	4A5-2ov	0.300	se	15.90	16.69	0	0	0	0	0	0	0	0	
	G	4B5-2fv	0.300	se	15.90	20.52	0	0	0	0	0	0	0	0	
	D	11J0	0.600	se	31.80	17.10	0	0	0	0	0	0	0	0	
	W	12C-0sw	0.091	sw	4.82	2.14	0	0	0	0	0	0	0	0	
G	4A5-2ov	0.300	sw	15.90	16.82	0	0	0	0	0	0	0	0		
G	4A5-2ov	0.300	sw	15.90	7.22	0	0	0	0	0	0	0	0		
G	4B5-2fv	0.300	sw	15.90	11.86	0	0	0	0	0	0	0	0		
D	11D0	0.390	sw	20.67	11.11	0	0	0	0	0	0	0	0		
W	12C-0sw	0.091	nw	4.82	2.14	54	39	188	83	27	12	58	26		
G	4A5-2ov	0.300	nw	15.90	17.33	15	0	239	260	15	0	239	260		
C	16B-38ad	0.026	-	1.38	1.35	93	93	128	126	15	15	21	20		
C	17B-6al	0.105	-	5.57	4.51	0	0	0	0	0	0	0	0		
F	22A-tpl	0.989	-	52.42	0.00	93	6	315	0	15	3	157	0		
6	c) AED excursion									83				89	
	Envelope loss/gain									869	552			474	395
12	a) Infiltration									192	29			96	14
	b) Room ventilation									0	0			0	0
13	Internal gains: Occupants @ 230 Appliances/other						0			0	0			0	0
	Subtotal (lines 6 to 13)									1061	581			570	409
	Less external load									0	0			0	0
	Less transfer									0	0			0	0
	Redistribution									0	0			0	0
14	Subtotal									1061	581			570	409
15	Duct loads						24%	53%		259	306	24%	53%	139	216
	Total room load									1320	886			709	625
	Air required (cfm)									31	35			17	24

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



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

Job:
Date: Mar 13, 2024
By:

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

1	Room name					WC					man cave				
2	Exposed wall					8.0 ft					38.0 ft				
3	Room height					heat/cool					heat/cool				
4	Room dimensions					9.0 ft 12.0 x 8.0 ft					9.0 ft 26.0 x 12.0 ft				
5	Room area					96.0 ft²					312.0 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 . . . 11 .<															

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



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

Job:
Date: Mar 13, 2024
By:

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

1	Room name					great					foyer				
2	Exposed wall					25.0 ft					6.0 ft				
3	Room height					11.0 ft					9.0 ft				
4	Room dimensions					25.0 x 26.0 ft					6.0 x 12.0 ft				
5	Room area					650.0 ft²					72.0 ft²				
	Ty	Construction number	U-value (Btuh/ft²·°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)		
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool	
6	W	12C-0sw	0.091	ne	4.82	2.14	225	143	692	307	0	0	0	0	
11	G	10D-v	0.300	ne	15.90	10.30	41	0	649	420	0	0	0	0	
	G	10D-v	0.300	ne	15.90	10.30	41	0	649	420	0	0	0	0	
	G	4A5-2of	0.300	ne	15.90	14.71	0	0	0	0	0	0	0	0	
	G	4A5-2ov	0.300	ne	15.90	17.33	0	0	0	0	0	0	0	0	
	G	4A5-2ov	0.300	ne	15.90	14.71	0	0	0	0	0	0	0	0	
	W	12C-0sw	0.091	se	4.82	2.14	0	0	0	0	0	0	0	0	
	G	4A5-2ov	0.300	se	15.90	13.17	0	0	0	0	0	0	0	0	
	G	4A5-2ov	0.300	se	15.90	16.69	0	0	0	0	0	0	0	0	
	G	4B5-2fv	0.300	se	15.90	20.52	0	0	0	0	0	0	0	0	
	D	11J0	0.600	se	31.80	17.10	0	0	0	0	0	0	0	0	
	W	12C-0sw	0.091	sw	4.82	2.14	0	0	0	0	54	19	94	41	
G	4A5-2ov	0.300	sw	15.90	16.82	0	0	0	0	0	0	0	0		
G	4A5-2ov	0.300	sw	15.90	7.22	0	0	0	0	0	0	0	0		
G	4B5-2fv	0.300	sw	15.90	11.86	0	0	0	0	14	11	216	161		
D	11D0	0.390	sw	20.67	11.11	0	0	0	0	21	21	434	233		
W	12C-0sw	0.091	nw	4.82	2.14	52	52	251	111	0	0	0	0		
G	4A5-2ov	0.300	nw	15.90	17.33	0	0	0	0	0	0	0	0		
C	16B-38ad	0.026	-	1.38	1.35	0	0	0	0	72	72	99	97		
C	17B-6al	0.105	-	5.57	4.51	680	680	3785	3071	0	0	0	0		
F	22A-tpl	0.989	-	52.42	0.00	650	25	1310	0	72	6	315	0		

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



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

Job:
Date: Mar 13, 2024
By:

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

1	Room name					craft 12.0 ft					br2 27.0 ft				
2	Exposed wall					9.0 ft 12.0 x 12.0 ft heat/cool					9.0 ft 15.0 x 12.0 ft heat/cool				
3	Room height														
4	Room dimensions														
5	Room area					144.0 ft²					180.0 ft²				
	Ty	Construction number	U-value (Btuh/ft²·°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)		
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool	
6	W	12C-0sw	0.091	ne	4.82	2.14	0	0	0	0	0	0	0	0	
11	G	10D-v	0.300	ne	15.90	10.30	0	0	0	0	0	0	0	0	
	G	10D-v	0.300	ne	15.90	10.30	0	0	0	0	0	0	0	0	
	G	4A5-2of	0.300	ne	15.90	14.71	0	0	0	0	0	0	0	0	
	G	4A5-2ov	0.300	ne	15.90	17.33	0	0	0	0	0	0	0	0	
	G	4A5-2ov	0.300	ne	15.90	14.71	0	0	0	0	0	0	0	0	
	W	12C-0sw	0.091	se	4.82	2.14	0	0	0	0	108	108	521	231	
	G	4A5-2ov	0.300	se	15.90	13.17	0	0	0	0	0	0	0	0	
	G	4A5-2ov	0.300	se	15.90	16.69	0	0	0	0	0	0	0	0	
	G	4B5-2fv	0.300	se	15.90	20.52	0	0	0	0	0	0	0	0	
	D	11J0	0.600	se	31.80	17.10	0	0	0	0	0	0	0	0	
	W	12C-0sw	0.091	sw	4.82	2.14	108	78	376	167	135	105	506	225	
G	4A5-2ov	0.300	sw	15.90	16.82	0	0	0	0	30	1	477	504		
G	4A5-2ov	0.300	sw	15.90	7.22	30	30	477	217	0	0	0	0		
G	4B5-2fv	0.300	sw	15.90	11.86	0	0	0	0	0	0	0	0		
D	11D0	0.390	sw	20.67	11.11	0	0	0	0	0	0	0	0		
W	12C-0sw	0.091	nw	4.82	2.14	0	0	0	0	0	0	0	0		
G	4A5-2ov	0.300	nw	15.90	17.33	0	0	0	0	0	0	0	0		
C	16B-38ad	0.026	-	1.38	1.35	144	144	198	195	180	180	248	243		
C	17B-6al	0.105	-	5.57	4.51	0	0	0	0	0	0	0	0		
F	22A-tpl	0.989	-	52.42	0.00	144	12	629	0	180	27	1415	0		
6	c) AED excursion								351				223		
	Envelope loss/gain							1681	929			3168	1426		
12	a) Infiltration							383	58			863	130		
	b) Room ventilation							0	0			0	0		
13	Internal gains:		Occupants @	230		0			0	0			0		
			Appliances/other						0				0		
	Subtotal (lines 6 to 13)							2064	987			4030	1556		
14	Less external load							0	0			0	0		
	Less transfer							0	0			0	0		
	Redistribution							0	0			0	0		
	Subtotal							2064	987			4030	1556		
15	Duct loads					24%	53%	504	520	24%	53%	983	819		
	Total room load							2568	1507			5014	2376		
	Air required (cfm)							61	59			119	93		

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



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

Job:
Date: Mar 13, 2024
By:

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

1	Room name					bath2					mud				
2	Exposed wall					8.0 ft					20.0 ft				
3	Room height					heat/cool					heat/cool				
4	Room dimensions					9.0 ft 10.0 x 8.0 ft					9.0 ft 10.0 x 10.0 ft				
5	Room area					80.0 ft²					100.0 ft²				
	Ty	Construction number	U-value (Btuh/ft²·°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)		
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool	
6	W	12C-0sw	0.091	ne	4.82	2.14	0	0	0	0	90	90	434	192	
11	G	10D-v	0.300	ne	15.90	10.30	0	0	0	0	0	0	0	0	
	G	10D-v	0.300	ne	15.90	10.30	0	0	0	0	0	0	0	0	
	G	4A5-2of	0.300	ne	15.90	14.71	0	0	0	0	0	0	0	0	
	G	4A5-2ov	0.300	ne	15.90	17.33	0	0	0	0	0	0	0	0	
	G	4A5-2ov	0.300	ne	15.90	14.71	0	0	0	0	0	0	0	0	
	W	12C-0sw	0.091	se	4.82	2.14	72	60	289	128	90	69	333	148	
	G	4A5-2ov	0.300	se	15.90	13.17	0	0	0	0	0	0	0	0	
	G	4A5-2ov	0.300	se	15.90	16.69	12	1	191	200	0	0	0	0	
	G	4B5-2fv	0.300	se	15.90	20.52	0	0	0	0	0	0	0	0	
	D	11J0	0.600	se	31.80	17.10	0	0	0	0	21	21	668	359	
	W	12C-0sw	0.091	sw	4.82	2.14	0	0	0	0	0	0	0	0	
	G	4A5-2ov	0.300	sw	15.90	16.82	0	0	0	0	0	0	0	0	
	G	4A5-2ov	0.300	sw	15.90	7.22	0	0	0	0	0	0	0	0	
	G	4B5-2fv	0.300	sw	15.90	11.86	0	0	0	0	0	0	0	0	
	D	11D0	0.390	sw	20.67	11.11	0	0	0	0	0	0	0	0	
	W	12C-0sw	0.091	nw	4.82	2.14	0	0	0	0	0	0	0	0	
	G	4A5-2ov	0.300	nw	15.90	17.33	0	0	0	0	0	0	0	0	
	C	16B-38ad	0.026	-	1.38	1.35	80	80	110	108	100	100	138	135	
	C	17B-6al	0.105	-	5.57	4.51	0	0	0	0	0	0	0	0	
	F	22A-tpl	0.989	-	52.42	0.00	80	8	419	0	100	20	1048	0	

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



Right-Suite® Universal 2023 23.0.05 RSU02245

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

Job:
Date: Mar 13, 2024
By:

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

1 Room name					pantry 8.0 ft					kitchen 12.0 ft				
2 Exposed wall					9.0 ft					11.0 ft				
3 Room height					10.0 x 8.0 ft					12.0 x 26.0 ft				
4 Room dimensions					80.0 ft²					312.0 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-0sw	0.091	ne	4.82	2.14	0	0	0	0	108	86	417	185
	G	10D-v	0.300	ne	15.90	10.30	0	0	0	0	0	0	0	0
	G	10D-v	0.300	ne	15.90	10.30	0	0	0	0	0	0	0	0
	G	4A5-2of	0.300	ne	15.90	14.71	0	0	0	0	0	0	0	0
11	G	4A5-2ov	0.300	ne	15.90	17.33	0	0	0	0	14	0	229	250
	G	4A5-2ov	0.300	ne	15.90	14.71	0	0	0	0	7	0	114	106
	W	12C-0sw	0.091	se	4.82	2.14	72	64	309	137	52	52	251	111
	G	4A5-2ov	0.300	se	15.90	13.17	0	0	0	0	0	0	0	0
	G	4A5-2ov	0.300	se	15.90	16.69	0	0	0	0	0	0	0	0
	G	4B5-2fv	0.300	se	15.90	20.52	8	1	127	164	0	0	0	0
	D	11J0	0.600	se	31.80	17.10	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	sw	4.82	2.14	0	0	0	0	0	0	0	0
	G	4A5-2ov	0.300	sw	15.90	16.82	0	0	0	0	0	0	0	0
	G	4A5-2ov	0.300	sw	15.90	7.22	0	0	0	0	0	0	0	0
	G	4B5-2fv	0.300	sw	15.90	11.86	0	0	0	0	0	0	0	0
	D	11D0	0.390	sw	20.67	11.11	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	nw	4.82	2.14	0	0	0	0	0	0	0	0
	G	4A5-2ov	0.300	nw	15.90	17.33	0	0	0	0	0	0	0	0
C		16B-38ad	0.026	-	1.38	1.35	80	80	110	108	0	0	0	0
C		17B-6al	0.105	-	5.57	4.51	0	0	0	0	326	326	1817	1474
F		22A-tpl	0.989	-	52.42	0.00	80	8	419	0	312	12	629	0
6	c) AED excursion									89				-82
	Envelope loss/gain								965	498			3457	2043
12	a) Infiltration								256	39			568	86
	b) Room ventilation								0	0			0	0
13	Internal gains: Occupants @ 230 Appliances/other						0			0	0			0
	Subtotal (lines 6 to 13)								1221	537			4025	2129
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								1221	537			4025	2129
15	Duct loads						24%	53%	298	282	24%	53%	982	1121
	Total room load								1519	819			5007	3250
	Air required (cfm)								36	32			119	127

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



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Right-Suite® Universal 2023 23.0.05 RSU02245

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Right-J8® Form J1
Entire House
DL Williams Heating & Cooling LLC

Job:
Date: Mar 13, 2024
By:

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

1	Name of Room					Entire House				br1			
2	Running Feet of Exposed Wall					214.0 ft				41.0 ft			
3	Ceiling Ht (Ft) and Gross Wall Area (SqFt)					9.8 ft 6150.3 ft²				9.0 ft 558.0 ft²			
4	Room Dimensions (Ft) and Floor Plan Area (SqFt)					2362.0 ft²				12.0 x 19.0 ft 228.0 ft²			
5	Ceiling Slope (Deg.) and Gross Ceiling Area (SqFt)					17.1 ° 2406.5 ft²				0 ° 228.0 ft²			
Type of Exposure		Const., Number	Panel Faces	HTM		Area or Length	Btuh			Area or Length	Btuh		
				Htg.	Clg.		Heating	S-Clg	L-Clg		Heating	S-Clg	L-Clg
6	Wall	12C-0sw	ne	4.82	2.14	531	1919	851		108	376	167	
	Glaz	10D-v	ne	15.90	10.30	41	649	420		0	0	0	
	Glaz	10D-v	ne	15.90	10.30	41	649	420		0	0	0	
	Glaz	4A5-2of	ne	15.90	14.71	30	477	441		30	477	441	
11	Glaz	4A5-2ov	ne	15.90	17.33	14	229	250		0	0	0	
	Glaz	4A5-2ov	ne	15.90	14.71	7	114	106		0	0	0	
	Wall	12C-0sw	se	4.82	2.14	484	2064	915		90	362	160	
	Glaz	4A5-2ov	se	15.90	13.17	15	239	198		15	239	198	
	Glaz	4A5-2ov	se	15.90	16.69	12	191	200		0	0	0	
	Glaz	4B5-2fv	se	15.90	20.52	8	127	164		0	0	0	
	Door	11J0	se	31.80	17.10	21	668	359		0	0	0	
	Wall	12C-0sw	sw	4.82	2.14	531	1815	805		0	0	0	
	Glaz	4A5-2ov	sw	15.90	16.82	60	954	1009		0	0	0	
	Glaz	4A5-2ov	sw	15.90	7.22	60	954	433		0	0	0	
	Glaz	4B5-2fv	sw	15.90	11.86	14	216	161		0	0	0	
	Door	11D0	sw	20.67	11.11	21	434	233		0	0	0	
	Wall	12C-0sw	nw	4.82	2.14	484	2045	907		171	680	302	
	Glaz	4A5-2ov	nw	15.90	17.33	60	954	1040		30	477	520	
	Ceil	16B-38ad	-	1.38	1.35	1400	1929	1893		228	314	308	
	Ceil	17B-6al	-	5.57	4.51	1007	5601	4544		0	0	0	
	Flor	22A-tpi	-	52.42	0.00	2362	11217	0		228	2149	0	
12	Infiltration	Heating Load (Btuh)		Effect ACH		0.32	WAR 1.00	7208		WAR 0.18	1310		
		Sensible Load (Btuh)				0.16		1088			198		
		Latent Load (Btuh)							1457				
13	Internal	a Occupants at 230 and 200 Btuh				0		0	0	0	0	0	0
		b Scenario number						0			0		
		c Default Adjustments											
		d Custom Appliances						0	0		0	0	0
		e Plants							0			0	0
14	Subtotals	Sum lines 6 through 12					40653	17661	1457		6384	2208	
15	Duct Loads	EHLF & ESGF		0.244	0.526		9919	9296			1558	1162	
		ELG							1553			150	
16	Ventilation Loads	Vent Cfm	0	E Cfm	0		0	0	0				
17	Winter Humidification Load	Gal/Day			0		0						
18	Piping Load						0						
19	Blower Heat							0					
20	AED Excursion & Latent Moisture Migration Load							1223				-85	
21	Total Load	Sum lines 13 through 19					50573	26957	3009		7942	3371	

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



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Right-J8® Form J1
Entire House
DL Williams Heating & Cooling LLC

Job:
Date: Mar 13, 2024
By:

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

1	Name of Room					bath1				lav			
2	Running Feet of Exposed Wall					6.0 ft				3.0 ft			
3	Ceiling Ht (Ft) and Gross Wall Area (SqFt)					9.0 ft 378.0 ft²				9.0 ft 144.0 ft²			
4	Room Dimensions (Ft) and Floor Plan Area (SqFt)					1.0 x 93.0 ft 93.0 ft²				5.0 x 3.0 ft 15.0 ft²			
5	Ceiling Slope (Deg.) and Gross Ceiling Area (SqFt)					0 ° 93.0 ft²				0 ° 15.0 ft²			
Type of Exposure		Const., Number	Panel Faces	HTM		Area or Length	Btuh			Area or Length	Btuh		
				Htg.	Clg.		Heating	S-Clg	L-Clg		Heating	S-Clg	L-Clg
6	Wall	12C-0sw	ne	4.82	2.14	0	0	0		0	0	0	
	Glaz	10D-v	ne	15.90	10.30	0	0	0		0	0	0	
	Glaz	10D-v	ne	15.90	10.30	0	0	0		0	0	0	
	Glaz	4A5-2of	ne	15.90	14.71	0	0	0		0	0	0	
11	Glaz	4A5-2ov	ne	15.90	17.33	0	0	0		0	0	0	
	Glaz	4A5-2ov	ne	15.90	14.71	0	0	0		0	0	0	
	Wall	12C-0sw	se	4.82	2.14	0	0	0		0	0	0	
	Glaz	4A5-2ov	se	15.90	13.17	0	0	0		0	0	0	
	Glaz	4A5-2ov	se	15.90	16.69	0	0	0		0	0	0	
	Glaz	4B5-2fv	se	15.90	20.52	0	0	0		0	0	0	
	Door	11J0	se	31.80	17.10	0	0	0		0	0	0	
	Wall	12C-0sw	sw	4.82	2.14	0	0	0		0	0	0	
	Glaz	4A5-2ov	sw	15.90	16.82	0	0	0		0	0	0	
	Glaz	4A5-2ov	sw	15.90	7.22	0	0	0		0	0	0	
	Glaz	4B5-2fv	sw	15.90	11.86	0	0	0		0	0	0	
	Door	11D0	sw	20.67	11.11	0	0	0		0	0	0	
	Wall	12C-0sw	nw	4.82	2.14	54	188	83		27	58	26	
	Glaz	4A5-2ov	nw	15.90	17.33	15	239	260		15	239	260	
	Ceil	16B-38ad	-	1.38	1.35	93	128	126		15	21	20	
	Ceil	17B-6al	-	5.57	4.51	0	0	0		0	0	0	
	Flor	22A-tpl	-	52.42	0.00	93	315	0		15	157	0	
12	Infiltration	Heating Load (Btuh)		Effect ACH		0.32	192			WAR 0.01	96		
		Sensible Load (Btuh)				0.16		29			14		
		Latent Load (Btuh)											
13	Internal	a Occupants at 230 and 200 Btuh b Scenario number c Default Adjustments d Custom Appliances e Plants				0		0	0	0	0	0	
								0			0		
								0	0		0	0	
								0	0		0	0	
14	Subtotals	Sum lines 6 through 12					1081	581			570	409	
15	Duct Loads	EHLF & ESGF		0.244	0.526		259	306			139	216	
		ELG							61			10	
16	Ventilation Loads	Vent Cfm	0	E Cfm	0								
17	Winter Humidification Load	Gal/Day		0									
18	Piping Load												
19	Blower Heat												
20	AED Excursion & Latent Moisture Migration Load							83			89		
21	Total Load	Sum lines 13 through 19					1320	886			709	625	

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



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Right-J8® Form J1
Entire House
DL Williams Heating & Cooling LLC

Job:
Date: Mar 13, 2024
By:

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

1	Name of Room					WIC				man cave			
2	Running Feet of Exposed Wall					8.0 ft				38.0 ft			
3	Ceiling Ht (Ft) and Gross Wall Area (SqFt)					9.0 ft 360.0 ft²				9.0 ft 684.0 ft²			
4	Room Dimensions (Ft) and Floor Plan Area (SqFt)					12.0 x 8.0 ft 96.0 ft²				26.0 x 12.0 ft 312.0 ft²			
5	Ceiling Slope (Deg.) and Gross Ceiling Area (SqFt)					0 ° 96.0 ft²				0 ° 312.0 ft²			
	Type of Exposure	Const., Number	Panel Faces	HTM		Area or Length	Btuh			Area or Length	Btuh		
				Htg.	Clg.		Heating	S-Clg	L-Clg		Heating	S-Clg	L-Clg
6	Wall	12C-0sw	ne	4.82	2.14	0	0	0		0	0	0	
	Glaz	10D-v	ne	15.90	10.30	0	0	0		0	0	0	
	Glaz	10D-v	ne	15.90	10.30	0	0	0		0	0	0	
	Glaz	4A5-2of	ne	15.90	14.71	0	0	0		0	0	0	
11	Glaz	4A5-2ov	ne	15.90	17.33	0	0	0		0	0	0	
	Glaz	4A5-2ov	ne	15.90	14.71	0	0	0		0	0	0	
	Wall	12C-0sw	se	4.82	2.14	0	0	0		0	0	0	
	Glaz	4A5-2ov	se	15.90	13.17	0	0	0		0	0	0	
	Glaz	4A5-2ov	se	15.90	16.69	0	0	0		0	0	0	
	Glaz	4B5-2fv	se	15.90	20.52	0	0	0		0	0	0	
	Door	11J0	se	31.80	17.10	0	0	0		0	0	0	
	Wall	12C-0sw	sw	4.82	2.14	0	0	0		234	839	372	
	Glaz	4A5-2ov	sw	15.90	16.82	0	0	0		30	477	504	
	Glaz	4A5-2ov	sw	15.90	7.22	0	0	0		30	477	217	
	Glaz	4B5-2fv	sw	15.90	11.86	0	0	0		0	0	0	
	Door	11D0	sw	20.67	11.11	0	0	0		0	0	0	
	Wall	12C-0sw	nw	4.82	2.14	72	347	154		108	521	231	
	Glaz	4A5-2ov	nw	15.90	17.33	0	0	0		0	0	0	
	Ceil	16B-38ad	-	1.38	1.35	96	132	130		312	430	422	
	Ceil	17B-6al	-	5.57	4.51	0	0	0		0	0	0	
	Flor	22A-tpl	-	52.42	0.00	96	419	0		312	1992	0	
12	Infiltration	Heating Load (Btuh)		Effect ACH		0.32	WAR 0.04	256		WAR 0.17	1214		
		Sensible Load (Btuh)				0.16		39			183		
		Latent Load (Btuh)											
13	Internal	a Occupants at 230 and 200 Btuh				0		0	0	0	0	0	
		b Scenario number						0			0		
		c Default Adjustments											
		d Custom Appliances						0	0		0	0	
		e Plants							0			0	
14	Subtotals	Sum lines 6 through 12						1155	310		5950	2427	
15	Duct Loads	EHLF & ESGF		0.244	0.526		282	163			1452	1278	
		ELG							63			205	
16	Ventilation Loads	Vent Cfm	0	E Cfm	0								
17	Winter Humidification Load	Gal/Day		0									
18	Piping Load												
19	Blower Heat												
20	AED Excursion & Latent Moisture Migration Load							-12				498	
21	Total Load	Sum lines 13 through 19						1436	474		7402	3705	

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



Right-Suite® Universal 2023 23.0.05 RSU02245

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Right-J8® Form J1
Entire House
DL Williams Heating & Cooling LLC

Job:
Date: Mar 13, 2024
By:

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

1	Name of Room					great				foyer			
2	Running Feet of Exposed Wall					25.0 ft				6.0 ft			
3	Ceiling Ht (Ft) and Gross Wall Area (SqFt)					11.0 ft 968.0 ft²				9.0 ft 324.0 ft²			
4	Room Dimensions (Ft) and Floor Plan Area (SqFt)					25.0 x 26.0 ft 650.0 ft²				6.0 x 12.0 ft 72.0 ft²			
5	Ceiling Slope (Deg.) and Gross Ceiling Area (SqFt)					17.1 ° 680.1 ft²				0 ° 72.0 ft²			
Type of Exposure		Const., Number	Panel Faces	HTM		Area or Length	Btuh			Area or Length	Btuh		
				Htg.	Clg.		Heating	S-Clg	L-Clg		Heating	S-Clg	L-Clg
6	Wall	12C-0sw	ne	4.82	2.14	225	692	307		0	0	0	
	Glaz	10D-v	ne	15.90	10.30	41	649	420		0	0	0	
	Glaz	10D-v	ne	15.90	10.30	41	649	420		0	0	0	
	Glaz	4A5-2of	ne	15.90	14.71	0	0	0		0	0	0	
11	Glaz	4A5-2ov	ne	15.90	17.33	0	0	0		0	0	0	
	Glaz	4A5-2ov	ne	15.90	14.71	0	0	0		0	0	0	
	Wall	12C-0sw	se	4.82	2.14	0	0	0		0	0	0	
	Glaz	4A5-2ov	se	15.90	13.17	0	0	0		0	0	0	
	Glaz	4A5-2ov	se	15.90	16.69	0	0	0		0	0	0	
	Glaz	4B5-2fv	se	15.90	20.52	0	0	0		0	0	0	
	Door	11J0	se	31.80	17.10	0	0	0		0	0	0	
	Wall	12C-0sw	sw	4.82	2.14	0	0	0		54	94	41	
	Glaz	4A5-2ov	sw	15.90	16.82	0	0	0		0	0	0	
	Glaz	4A5-2ov	sw	15.90	7.22	0	0	0		0	0	0	
	Glaz	4B5-2fv	sw	15.90	11.86	0	0	0		14	216	161	
	Door	11D0	sw	20.67	11.11	0	0	0		21	434	233	
	Wall	12C-0sw	nw	4.82	2.14	52	251	111		0	0	0	
	Glaz	4A5-2ov	nw	15.90	17.33	0	0	0		0	0	0	
	Ceil	16B-38ad	-	1.38	1.35	0	0	0		72	99	97	
	Ceil	17B-6al	-	5.57	4.51	680	3785	3071		0	0	0	
	Flor	22A-tpi	-	52.42	0.00	650	1310	0		72	315	0	
12	Infiltration	Heating Load (Btuh)		Effect		0.32	984			192			
		Sensible Load (Btuh)		ACH		0.14		148		0.03		29	
		Latent Load (Btuh)											
13	Internal	a Occupants at 230 and 200 Btuh				0		0	0	0		0	0
		b Scenario number						0				0	
		c Default Adjustments											
		d Custom Appliances						0	0			0	0
		e Plants							0				0
14	Subtotals	Sum lines 6 through 12					8318	4311			1349	725	
15	Duct Loads	EHLF & ESGF		0.244	0.526		2030	2269			329	382	
		ELG							427			47	
16	Ventilation Loads	Vent Cfm	0	E Cfm	0								
17	Winter Humidification Load	Gal/Day		0									
18	Piping Load												
19	Blower Heat												
20	AED Excursion & Latent Moisture Migration Load							-166				163	
21	Total Load	Sum lines 13 through 19					10348	6580			1679	1107	

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



Right-Suite® Universal 2023 23.0.05 RSU02245

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...soft HVAC\Trane\Trent Giebelg Const Deloach.rup Calc = MJ8 Front Door faces: N



Right-J8® Form J1
Entire House
DL Williams Heating & Cooling LLC

Job:
Date: Mar 13, 2024
By:

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

1	Name of Room					craft				br2			
2	Running Feet of Exposed Wall					12.0 ft				27.0 ft			
3	Ceiling Ht (Ft) and Gross Wall Area (SqFt)					9.0 ft 432.0 ft²				9.0 ft 486.0 ft²			
4	Room Dimensions (Ft) and Floor Plan Area (SqFt)					12.0 x 12.0 ft 144.0 ft²				15.0 x 12.0 ft 180.0 ft²			
5	Ceiling Slope (Deg.) and Gross Ceiling Area (SqFt)					0 ° 144.0 ft²				0 ° 180.0 ft²			
Type of Exposure		Const., Number	Panel Faces	HTM		Area or Length	Btuh			Area or Length	Btuh		
				Htg.	Clg.		Heating	S-Clg	L-Clg		Heating	S-Clg	L-Clg
6	Wall	12C-0sw	ne	4.82	2.14	0	0	0		0	0	0	
	Glaz	10D-v	ne	15.90	10.30	0	0	0		0	0	0	
	Glaz	10D-v	ne	15.90	10.30	0	0	0		0	0	0	
	Glaz	4A5-2of	ne	15.90	14.71	0	0	0		0	0	0	
11	Glaz	4A5-2ov	ne	15.90	17.33	0	0	0		0	0	0	
	Glaz	4A5-2ov	ne	15.90	14.71	0	0	0		0	0	0	
	Wall	12C-0sw	se	4.82	2.14	0	0	0		108	521	231	
	Glaz	4A5-2ov	se	15.90	13.17	0	0	0		0	0	0	
	Glaz	4A5-2ov	se	15.90	16.69	0	0	0		0	0	0	
	Glaz	4B5-2fv	se	15.90	20.52	0	0	0		0	0	0	
	Door	11J0	se	31.80	17.10	0	0	0		0	0	0	
	Wall	12C-0sw	sw	4.82	2.14	108	376	167		135	506	225	
	Glaz	4A5-2ov	sw	15.90	16.82	0	0	0		30	477	504	
	Glaz	4A5-2ov	sw	15.90	7.22	30	477	217		0	0	0	
	Glaz	4B5-2fv	sw	15.90	11.86	0	0	0		0	0	0	
	Door	11D0	sw	20.67	11.11	0	0	0		0	0	0	
	Wall	12C-0sw	nw	4.82	2.14	0	0	0		0	0	0	
	Glaz	4A5-2ov	nw	15.90	17.33	0	0	0		0	0	0	
	Ceill	16B-38ad	-	1.38	1.35	144	198	195		180	248	243	
	Ceill	17B-6al	-	5.57	4.51	0	0	0		0	0	0	
	Flor	22A-tpl	-	52.42	0.00	144	629	0		180	1415	0	
12	Infiltration	Heating Load (Btuh)		Effect ACH		0.32	383			WAR 0.12	863		
		Sensible Load (Btuh)				0.16		58			130		
		Latent Load (Btuh)											
13	Internal	a Occupants at 230 and 200 Btuh				0		0	0	0		0	0
		b Scenario number						0				0	
		c Default Adjustments											
		d Custom Appliances						0	0			0	0
		e Plants							0				0
14	Subtotals	Sum lines 6 through 12					2064	987			4030	1556	
15	Duct Loads	EHLF & ESGF		0.244	0.526		504	520			983	819	
		ELG							95				118
16	Ventilation Loads	Vent Cfm	0	E Cfm	0								
17	Winter Humidification Load	Gal/Day			0								
18	Piping Load												
19	Blower Heat												
20	AED Excursion & Latent Moisture Migration Load							351				223	
21	Total Load	Sum lines 13 through 19					2568	1507			5014	2376	

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



Right-Suite® Universal 2023 23.0.05 RSU02245
...soft HVAC\Trane\Trent Giebeig Const Deloach.rup Calc = MJ8 Front Door faces: N

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Right-J8® Form J1
Entire House
DL Williams Heating & Cooling LLC

Job:
Date: Mar 13, 2024
By:

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

1	Name of Room					bath2 8.0 ft				mud 20.0 ft			
2	Running Feet of Exposed Wall					9.0 ft				9.0 ft			
3	Ceiling Ht (Ft) and Gross Wall Area (SqFt)					10.0 x 8.0 ft				10.0 x 10.0 ft			
4	Room Dimensions (Ft) and Floor Plan Area (SqFt)					0 °				0 °			
5	Ceiling Slope (Deg.) and Gross Ceiling Area (SqFt)					324.0 ft²				360.0 ft²			
						80.0 ft²				100.0 ft²			
						80.0 ft²				100.0 ft²			
	Type of Exposure	Const. Number	Panel Faces	HTM		Area or Length	Btuh			Area or Length	Btuh		
				Htg.	Clg.		Heating	S-Clg	L-Clg		Heating	S-Clg	L-Clg
6	Wall	12C-0sw	ne	4.82	2.14	0	0	0		90	434	192	
	Glaz	10D-v	ne	15.90	10.30	0	0	0		0	0	0	
	Glaz	10D-v	ne	15.90	10.30	0	0	0		0	0	0	
	Glaz	4A5-2of	ne	15.90	14.71	0	0	0		0	0	0	
11	Glaz	4A5-2ov	ne	15.90	17.33	0	0	0		0	0	0	
	Glaz	4A5-2ov	ne	15.90	14.71	0	0	0		0	0	0	
	Wall	12C-0sw	se	4.82	2.14	72	289	128		90	333	148	
	Glaz	4A5-2ov	se	15.90	13.17	0	0	0		0	0	0	
	Glaz	4A5-2ov	se	15.90	16.69	12	191	200		0	0	0	
	Glaz	4B5-2fv	se	15.90	20.52	0	0	0		0	0	0	
	Door	11J0	se	31.80	17.10	0	0	0		21	668	359	
	Wall	12C-0sw	sw	4.82	2.14	0	0	0		0	0	0	
	Glaz	4A5-2ov	sw	15.90	16.82	0	0	0		0	0	0	
	Glaz	4A5-2ov	sw	15.90	7.22	0	0	0		0	0	0	
	Glaz	4B5-2fv	sw	15.90	11.86	0	0	0		0	0	0	
	Door	11D0	sw	20.67	11.11	0	0	0		0	0	0	
	Wall	12C-0sw	nw	4.82	2.14	0	0	0		0	0	0	
	Glaz	4A5-2ov	nw	15.90	17.33	0	0	0		0	0	0	
	Ceil	16B-38ad	-	1.38	1.35	80	110	108		100	138	135	
	Ceil	17B-6al	-	5.57	4.51	0	0	0		0	0	0	
	Flor	22A-tpl	-	52.42	0.00	80	419	0		100	1048	0	
12	Infiltration	Heating Load (Btuh)		Effect		0.32	256			WAR	639		
		Sensible Load (Btuh)		ACH		0.16		39		0.09		96	
		Latent Load (Btuh)											
13	Internal	a Occupants at 230 and 200 Btuh				0		0	0	0		0	0
		b Scenario number						0				0	
		c Default Adjustments											
		d Custom Appliances						0	0			0	0
		e Plants							0				0
14	Subtotals	Sum lines 6 through 12					1265	583			3260	896	
15	Duct Loads	EHLF & ESGF		0.244	0.526		309	307			795	472	
		ELG							53				66
16	Ventilation Loads	Vent Cfm	0	E Cfm	0								
17	Winter Humidification Load	Gal/Day			0								
18	Piping Load												
19	Blower Heat												
20	AED Excursion & Latent Moisture Migration Load							108				-35	
21	Total Load	Sum lines 13 through 19					1574	890			4055	1368	

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



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Loads for Multiple Orientations

Entire House

DL Williams Heating & Cooling LLC

Job:
Date: Mar 13, 2024
By:

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

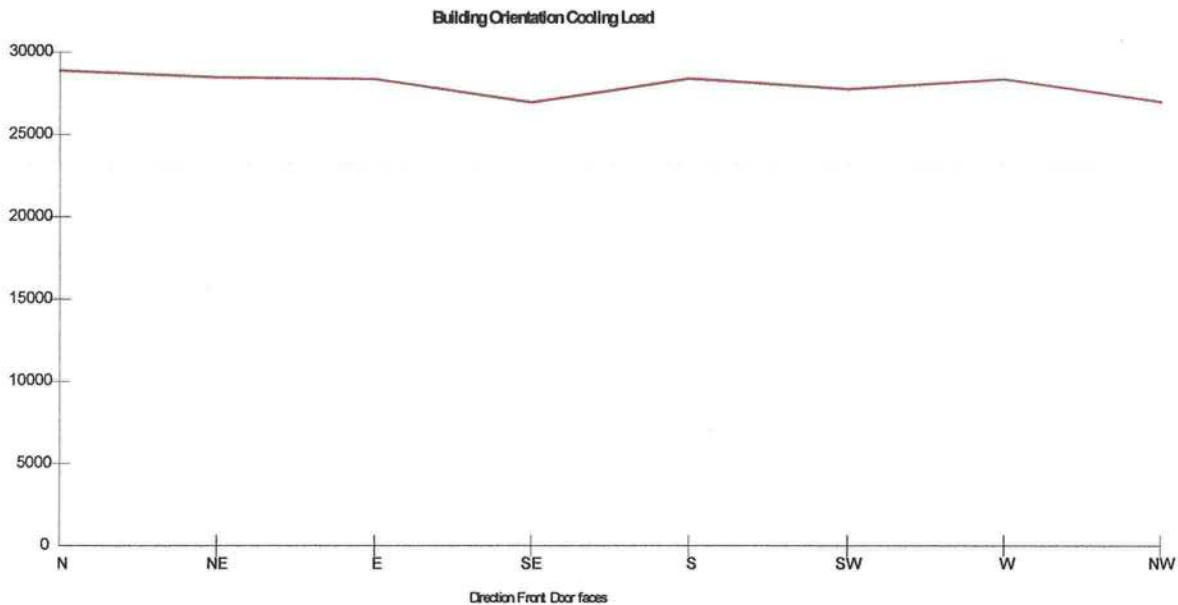
Project Information

For: Karen and Ricky Deloach, Trent Giebeig Construction
Lake City, FL

Design Conditions

Location:			Indoor:		Heating	Cooling
Washington National AP, DC, US			Indoor temperature (°F)		70	75
Elevation: 0 ft			Design TD (°F)		53	16
Latitude: 38°N			Relative humidity (%)		30	50
			Moisture difference (gr/lb)		22.3	34.7
Outdoor:	Heating	Cooling	Infiltration:			
Dry bulb (°F)	17	91				
Daily range (°F)	-	18 (M)				
Wet bulb (°F)	-	74				
Wind speed (mph)	15.0	7.5				

Front Door	North	Northeast	East	Southeast	South	Southwest	West	Northwest
Sensible Load (Btuh)	25879	25467	25357	23940	25386	24739	25340	23974
Latent Load (Btuh)	3009	3009	3009	3009	3009	3009	3009	3009
Total Load (Btuh)	28888	28476	28367	26950	28395	27749	28349	26984
Heating AVF (cfm)	1200	1200	1200	1200	1200	1200	1200	1200
Cooling AVF (cfm)	1050	1050	1050	1050	1050	1050	1050	1050



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

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



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

Job:
Date: Mar 13, 2024
By:

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

Supporting Detail

Project Name:	Trent Giebeig Const Deloach	Date:	Mar 13, 2024
Address:	Lake City, FL		
Phone:	Job ID:		

Worksheet A
Location and Design Conditions

Weather Location:	Washington National AP, DC, US	Elevation =	0	Latitude =	38
Indoor Conditions, Heating:	DB = 70 °F	RH = 30 %	Indoor Conditions, Cooling:	DB = 75 °F	RH = 50 %
Table 1 Conditions	99% DB = 17 °F	1% DB = 91 °F	Grains Difference =	35 gr/lb	Daily Range = M
Design Temperature Differences	HTD = 53 °F		CTD = 16 °F		

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



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Duct System Summary

Entire House

DL Williams Heating & Cooling LLC

Job:
Date: Mar 13, 2024
By:

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

Project Information

For: Karen and Ricky Deloach, Trent Giebeig Construction
Lake City, FL

	Heating	Cooling
External static pressure	0.50 in H2O	0.50 in H2O
Pressure losses	0 in H2O	0 in H2O
Available static pressure	0.50 in H2O	0.50 in H2O
Supply / return available pressure	0.422 / 0.078 in H2O	0.422 / 0.078 in H2O
Lowest friction rate	0.093 in/100ft	0.093 in/100ft
Actual air flow	1200 cfm	1050 cfm
Total effective length (TEL)	537 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
WIC	h 1436	34	18	0.118	5.0	0x0	VIFx	47.2	310.0	st4
bath1	c 886	31	35	0.093	4.0	0x0	VIFx	43.4	410.0	st4C
bath2	h 1574	37	35	0.283	4.0	0x0	VIFx	14.0	135.0	st3
br1	h 3971	94	66	0.103	7.0	0x0	VIFx	54.1	355.0	st4A
br1-A	h 3971	94	66	0.102	7.0	0x0	VIFx	47.4	365.0	st4B
br2	h 5014	119	93	0.274	6.0	0x0	VIFx	19.0	135.0	st3
craft	h 2568	61	59	0.145	5.0	0x0	VIFx	30.0	260.0	st4
foyer	c 1107	40	43	0.145	5.0	0x0	VIFx	40.0	250.0	st4
great	c 2193	82	85	0.142	6.0	0x0	VIFx	31.0	265.0	st4
great-A	c 2193	82	85	0.119	6.0	0x0	VIFx	45.2	310.0	st4
great-B	c 2193	82	85	0.173	6.0	0x0	VIFx	39.0	205.0	st4
kitchen	c 1625	59	63	0.257	5.0	0x0	VIFx	19.0	145.0	st3
kitchen-A	c 1625	59	63	0.306	5.0	0x0	VIFx	8.0	130.0	
lav	c 625	17	24	0.102	4.0	0x0	VIFx	49.7	365.0	st4B
man cave	h 3701	88	72	0.100	7.0	0x0	VIFx	54.9	365.0	st4A
man cave-A	h 3701	88	72	0.153	6.0	0x0	VIFx	50.0	225.0	st4
mud	h 4055	96	53	0.430	5.0	0x0	VIFx	3.0	95.0	
pantry	h 1519	36	32	0.262	4.0	0x0	VIFx	6.0	155.0	st3



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Supply Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
st4	Peak AVF	793	711	0.093	741	14.0	0 x 0	ShtMetl	st1
st4A	Peak AVF	324	262	0.093	734	9.0	0 x 0	ShtMetl	st4
st4B	Peak AVF	142	125	0.093	533	7.0	0 x 0	ShtMetl	st4A
st4C	Peak AVF	31	35	0.093	396	4.0	0 x 0	ShtMetl	st4B
st3	Peak AVF	252	222	0.257	942	7.0	0 x 0	ShtMetl	st1
st1	Peak AVF	1044	933	0.093	748	16.0	0 x 0	ShtMetl	

Return Branch Detail Table

Name	Grille Size (in)	Htg (cfm)	Clg (cfm)	TEL (ft)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Stud/Joist Opening (in)	Duct Matl	Trunk
rb1	0x0	1200	1050	84.1	0.093	679	18.0	0x 0		VIFx	



Duct system multi orientation report

Entire House

DL Williams Heating & Cooling LLC

Job:
Date: Mar 13, 2024
By:

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

Project Information

For: Karen and Ricky Deloach, Trent Giebeig Construction
Lake City, FL

Group 1: (N, S) Group 2: (NE, SE) Group 3: (E) Group 4: (SW, W) Group 5: (NW)

Duct Name	(N)			(NE)			(E)			(SE)		
	Reg CFM	Reg Size	Duct Size	Reg CFM	Reg Size	Duct Size	Reg CFM	Reg Size	Duct Size	Reg CFM	Reg Size	Duct Size
Supply Branches												
WIC	34 h	12x12	5	34 h	12x12	5	34 h	12x12	5	34 h	12x12	5
bath1	49 c	12x12	5	37 c	12x12	4	31 h	12x12	4	38 c	12x12	4
bath2	39 c	12x12	4	37 h	12x12	4	37 h	12x12	4	37 h	12x12	4
br1	94 h	12x12	7	94 h	12x12	7	94 h	12x12	7	94 h	12x12	7
br1-A	94 h	12x12	7	94 h	12x12	7	94 h	12x12	7	94 h	12x12	7
br2	119 h	12x12	6	119 h	12x12	6	119 h	12x12	6	119 h	12x12	6
craft	61 h	12x12	5	61 h	12x12	5	61 h	12x12	5	61 h	12x12	5
foyer	40 h	12x12	5	40 h	12x12	5	40 h	12x12	5	40 h	12x12	5
great	86 c	12x12	6	94 c	12x12	6	101 c	12x12	7	94 c	12x12	6
great-A	86 c	12x12	6	94 c	12x12	7	101 c	12x12	7	94 c	12x12	7
great-B	86 c	12x12	6	94 c	12x12	6	101 c	12x12	6	94 c	12x12	6
kitchen	65 c	12x12	5	67 c	12x12	5	69 c	12x12	5	68 c	12x12	5
kitchen-A	65 c	12x12	5	67 c	12x12	5	69 c	12x12	5	68 c	12x12	5
lav	38 c	12x12	5	27 c	12x12	4	17 h	12x12	4	28 c	12x12	4
man cave	88 h	12x12	7	88 h	12x12	7	88 h	12x12	7	88 h	12x12	7
man cave-A	88 h	12x12	6	88 h	12x12	6	88 h	12x12	6	88 h	12x12	6
mud	96 h	12x12	5	96 h	12x12	5	96 h	12x12	5	96 h	12x12	5
pantry	36 h	12x12	4	36 h	12x12	4	36 h	12x12	4	36 h	12x12	4
Supply Trunks												
st4	793 h		14	793 h		14	793 h		14	793 h		14
st4A	324 h		9	324 h		9	324 h		9	324 h		9
st4B	168 c		7	146 c		7	142 h		7	142 h		7
st4C	49 c		5	37 c		4	31 h		4	38 c		4
st3	252 h		7	252 h		7	252 h		7	252 h		7
st1	1044 h		16	1044 h		16	1044 h		16	1044 h		16
Return Branches												
rb1	1200 h	12x12	18	1200 h	12x12	18	1200 h	12x12	18	1200 h	12x12	18
Friction Rates												
Heating FR	0.093			0.093			0.093			0.093		
Cooling FR	0.093			0.093			0.093			0.093		

Project Information

For: Karen and Ricky Deloach, Trent Giebeig Construction
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												
WIC	34 h	12x12	5	34 h	12x12	5	34 h	12x12	5	34 h	12x12	5
bath1	42 c	12x12	5	31 h	12x12	4	31 h	12x12	4	35 c	12x12	4
bath2	43 c	12x12	4	37 h	12x12	4	37 h	12x12	4	37 h	12x12	4
br1	94 h	12x12	7	94 h	12x12	7	94 h	12x12	7	94 h	12x12	7
br1-A	94 h	12x12	7	94 h	12x12	7	94 h	12x12	7	94 h	12x12	7
br2	119 h	12x12	6	119 h	12x12	6	119 h	12x12	6	119 h	12x12	6
craft	61 h	12x12	5	68 c	12x12	6	77 c	12x12	6	61 h	12x12	5
foyer	40 h	12x12	5	46 c	12x12	5	52 c	12x12	5	43 c	12x12	5
great	89 c	12x12	6	82 h	12x12	6	82 c	12x12	6	85 c	12x12	6
great-A	89 c	12x12	6	82 h	12x12	6	82 c	12x12	6	85 c	12x12	6
great-B	89 c	12x12	6	82 h	12x12	6	82 c	12x12	6	85 c	12x12	6
kitchen	67 c	12x12	5	60 c	12x12	5	59 h	12x12	5	63 c	12x12	5
kitchen-A	67 c	12x12	5	60 c	12x12	5	59 h	12x12	5	63 c	12x12	5
lav	31 c	12x12	5	19 c	12x12	4	17 h	12x12	4	24 c	12x12	4
man cave	88 h	12x12	7	88 h	12x12	7	90 c	12x12	7	88 h	12x12	7
man cave-A	88 h	12x12	6	88 h	12x12	6	90 c	12x12	6	88 h	12x12	6
mud	96 h	12x12	5	96 h	12x12	5	96 h	12x12	5	96 h	12x12	5
pantry	39 c	12x12	4	36 h	12x12	4	36 h	12x12	4	36 h	12x12	4
Supply Trunks												
st4	793 h		14	793 h		14	793 h		14	793 h		14
st4A	324 h		9	324 h		9	324 h		9	324 h		9
st4B	153 c		7	142 h		7	142 h		7	142 h		7
st4C	42 c		5	31 h		4	31 h		4	35 c		4
st3	252 h		7	252 h		7	252 h		7	252 h		7
st1	1044 h		16	1044 h		16	1044 h		16	1044 h		16
Return Branches												
rb1	1200 h	12x12	18	1200 h	12x12	18	1200 h	12x12	18	1200 h	12x12	18
Friction Rates												
Heating FR	0.093			0.093			0.093			0.093		
Cooling FR	0.093			0.093			0.093			0.093		

Project Information

For: Karen and Ricky Deloach, Trent Giebeig Construction
Lake City, FL

Duct Name	Largest			Smallest		
	Reg CFM	Reg Size	Duct Size	Reg CFM	Reg Size	Duct Size
Supply Branches						
WIC	34 h	12x12	5	34 h	12x12	5
bath1	49 c	12x12	5	31 h	12x12	4
bath2	43 c	12x12	4	37 h	12x12	4
br1	94 h	12x12	7	94 h	12x12	7
br1-A	94 h	12x12	7	94 h	12x12	7
br2	119 h	12x12	6	119 h	12x12	6
craft	77 c	12x12	6	61 h	12x12	5
foyer	52 c	12x12	5	40 h	12x12	5
great	101 c	12x12	7	82 h	12x12	6
great-A	101 c	12x12	7	82 h	12x12	6
great-B	101 c	12x12	6	82 h	12x12	6
kitchen	69 c	12x12	5	59 h	12x12	5
kitchen-A	69 c	12x12	5	59 h	12x12	5
lav	38 c	12x12	5	17 h	12x12	4
man cave	90 c	12x12	7	88 h	12x12	7
man cave-A	90 c	12x12	6	88 h	12x12	6
mud	96 h	12x12	5	96 h	12x12	5
pantry	39 c	12x12	4	36 h	12x12	4
Supply Trunks						
st4	793 h		14	793 h		14
st4A	324 h		9	324 h		9
st4B	168 c		7	142 h		7
st4C	49 c		5	31 h		4
st3	252 h		7	252 h		7
st1	1044 h		16	1044 h		16
Return Branches						
rb1	1200 h	12x12	18	1200 h	12x12	18
Friction Rates						
Heating FR	0.093			0.093		
Cooling FR	0.093			0.093		



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Background Color Legend

Yellow background

Duct Size - duct size is smaller than the largest duct size in the row

Reg Size - register size is smaller than the largest register size in the row

Reg CFM - register design cfm is larger than 150 CFM

Friction Rate - friction rate is outside ACCA Manual-D recommended range (0.06 - 0.18)

Pink background column header

Largest cooling load orientation



Static Pressure and Friction Rate
Entire House
DL Williams Heating & Cooling LLC

Job:
Date: Mar 13, 2024
By:

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

Project Information

For: Karen and Ricky Deloach, Trent Giebeig Construction
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	1	19
Measured length of trunk	42	0
Equivalent length of fittings	410	65
Total length	453	84
Total effective length		537

Friction Rate

	Heating (in/100ft)		Cooling (in/100ft)	
Supply Ducts	0.093	OK	0.093	OK
Return Ducts	0.093	OK	0.093	OK

Fitting Equivalent Length Details

Supply	4AD=60, 2A0=35, 2A0=35, 12J1=10, 12J1=10, 9I1=85, 12J1=10, 11M=20, 11M=20, 9I2=5, 9I1=85, 1A=35: TotalEL=410
Return	6M=20, 5D=40, 11G=5: TotalEL=65



Manual S Compliance Report

Entire House

DL Williams Heating & Cooling LLC

Job:
Date: Mar 13, 2024
By:

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

Project Information

For: Karen and Ricky Deloach, Trent Giebig Construction
Lake City, FL

Cooling Equipment

Design Conditions

Outdoor design DB:	91.0°F	Sensible gain:	26957	Btuh	Entering coil DB:	77.7°F
Outdoor design WB:	74.0°F	Latent gain:	3009	Btuh	Entering coil WB:	63.7°F
Indoor design DB:	75.0°F	Total gain:	29967	Btuh		
Indoor RH:	50%	Estimated airflow:	1050	cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP		
Manufacturer:	Trane	Model:	4TWR5036H1+TEM6A0C42H41
Actual airflow:	1050	cfm	
Sensible capacity:	30092	Btuh	112% of load
Latent capacity:	3838	Btuh	128% of load
Total capacity:	33930	Btuh	113% of load SHR: 89%

Heating Equipment

Design Conditions

Outdoor design DB:	17.0°F	Heat loss:	50573	Btuh	Entering coil DB:	68.1°F
Indoor design DB:	70.0°F					

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP		
Manufacturer:	Trane	Model:	4TWR5036H1+TEM6A0C42H41
Actual airflow:	1200	cfm	
Output capacity:	21700	Btuh	43% of load
Supplemental heat required:	28873	Btuh	
Capacity balance:	34	°F	
Economic balance:	-99	°F	

Backup equipment type:	Elec strip		
Manufacturer:		Model:	
Actual airflow:	1200	cfm	
Output capacity:	14.6	kW	98% of load
Temp. rise:	50	°F	

Meets all requirements of ACCA Manual S.



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DHW Report
Entire House
DL Williams Heating & Cooling LLC

Job:
Date: Mar 13, 2024
By:

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

Project Information

For: Karen and Ricky Deloach, Trent Giebeig Construction
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



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

Form
RPER 1
15 Mar 09

Header Information

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

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

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

HVAC LOAD CALCULATION (IRC M1401.3)

Design Conditions

Winter Design Conditions

Outdoor temperature: 17 °F
Indoor temperature: 70 °F
Total heat loss: 50573 Btuh

Summer Design Conditions

Outdoor temperature: 91 °F
Indoor temperature: 75 °F
Grains difference: 35 gr/lb @ 50% RH
Sensible heat gain: 28080 Btuh
Latent heat gain: 3135 Btuh
Total heat gain: 31215 Btuh

Building Construction Information

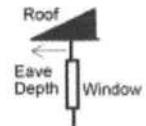
Building

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

Number of bedrooms: 1
Conditioned floor area: 2362 ft²
Number of occupants: 0

Windows

Eave overhang depth: 9.0 ft
Internal shade: blinds
Blinds, drapes, etc.
Number of skylights: 0



HVAC EQUIPMENT SELECTION (IRC M1401.3)

Heating Equipment Data

Equipment type: Split ASHP
Furnace, Heat pump, Boiler, etc.
Model: Trane
4TWR5036H1+TEM6A0C42H41
Heating output capacity: 21700 Btuh
Heat pumps - capacity at winter design outdoor conditions
Aux. heating output capacity: 49771 Btuh

Cooling Equipment Data

Equipment type: Split ASHP
Air Conditioner, Heat pump, etc.
Model: Trane
4TWR5036H1+TEM6A0C42H41
Total cooling capacity: 33930 Btuh
Sensible cooling capacity: 30092 Btuh
Latent cooling capacity: 3838 Btuh

Blower Data

Heating cfm: 1200
Cooling cfm: 1050
Static pressure: 0.50 in H2O
Fan's rated external static pressure for design airflow

HVAC DUCT DISTRIBUTION SYSTEM DESIGN (IRC M1601.1)

Design airflow: 1200 cfm
Equipment design ESP: 0.50 in H2O
Total device pressure losses: 0 in H2O
Available static pressure (ASP): 0.50 in H2O
Longest supply duct: 453 ft
Longest return duct: 84 ft
Total effective length (TEL): 537 ft
Friction rate: 0.093 in/100ft
Friction Rate = ASP ÷ (TEL × 100)
Duct Materials Used
Trunk duct: Sheet metal
Branch duct: Round flex vinyl

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

Contractor's printed name: _____

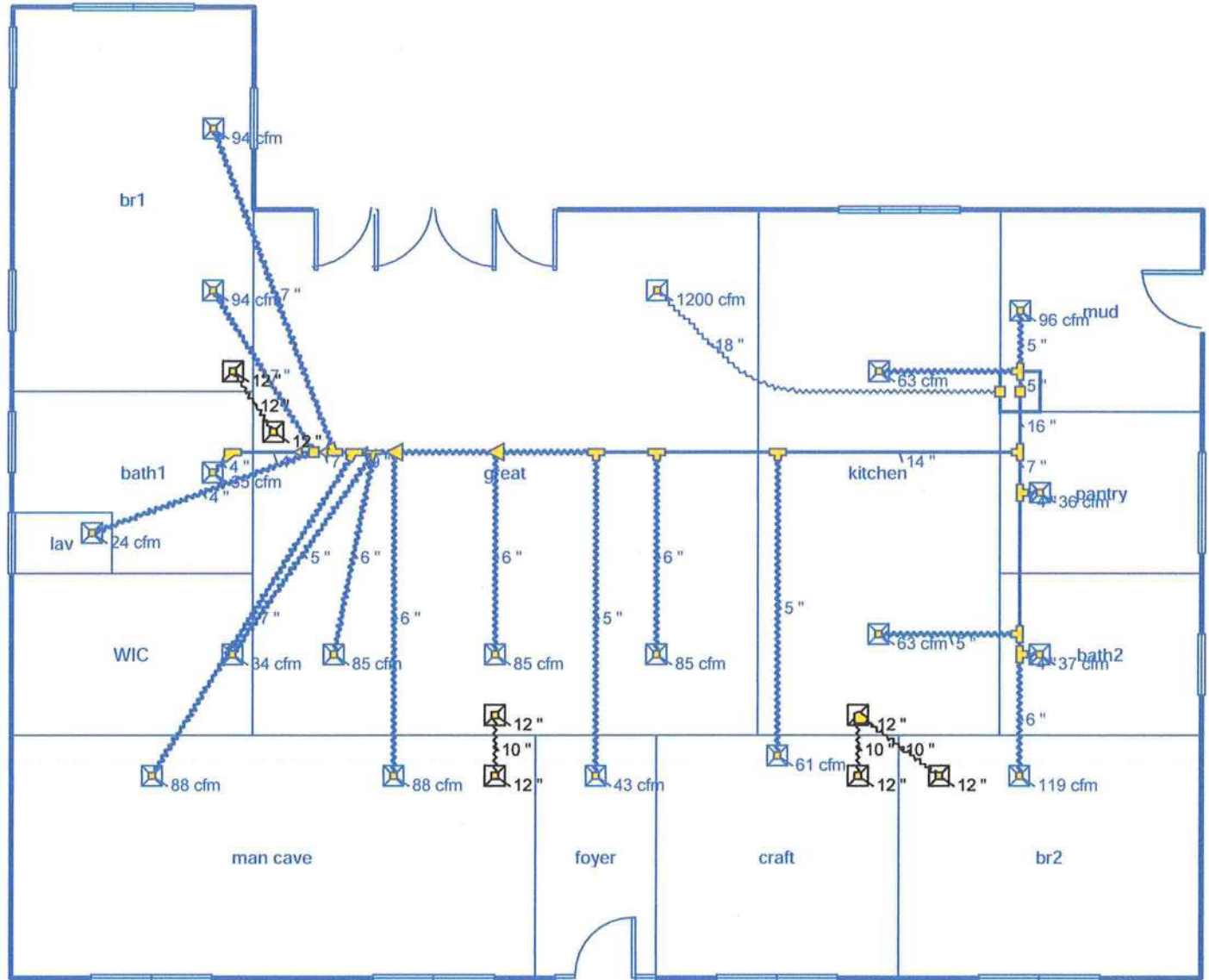
Contractor's signature: _____ Date: _____

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

*Home qualifies for MJ1AE Form based on Abridged Edition Checklist



Sheet 1



Job #:
Performed for:
Karen and Ricky Deloach
Lake City, FL

DL Williams Heating & Cooling LLC

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

Scale: 1 : 98
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