



**TRANE**

# Manual S Compliance Report Entire House

DL Williams Heating & Cooling LLC License  
CAC1816913

Job: 1  
Date: Jan 26, 2014  
By: DL Williams Heating & C...

456 SE Ermine St, Lake City, FL 32025 Phone 386-754-1987 Fax 386-243-8480 Email Dwilliams@williamscooling.com Web dlwilliamsheatingandcooling.com

## Project Information

For Bryant Jennings  
203 NW SpringHill Ct, Lake City, FL 32055

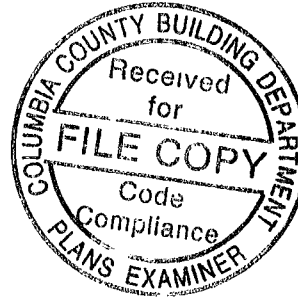
## Cooling Equipment

### Design Conditions

Outdoor design DB	92.0°F	Sensible gain	57005 Btuh	Entering coil DB	77.9°F
Outdoor design WB	76.3°F	Latent gain	9125 Btuh	Entering coil WB	63.9°F
Indoor design DB	75.0°F	Total gain	66131 Btuh		
Indoor RH	50%	Estimated airflow	2600 cfm		

### Manufacturer's Performance Data at Actual Design Conditions

Equipment type	Split ASHP				
Manufacturer	Generic	Model	SEER 13.0, HSPF 7.7		
Actual airflow	2600 cfm				
Sensible capacity	0 Btuh	0% of load			
Latent capacity	0 Btuh	0% of load			
Total capacity	0 Btuh	0% of load	SHR	0%	



## Heating Equipment

### Design Conditions

Outdoor design DB	33.4°F	Heat loss	52798 Btuh	Entering coil DB	66.7°F
Indoor design DB	68.0°F				

### Manufacturer's Performance Data at Actual Design Conditions

Equipment type	Split ASHP				
Manufacturer	Generic	Model	SEER 13.0, HSPF 7.7		
Actual airflow	2600 cfm				
Output capacity	78000 Btuh	148% of load		Capacity balance	28 °F
Supplemental heat required	0 Btuh			Economic balance	-99 °F

Backup equipment type	Elec strip				
Manufacturer		Model			
Actual airflow	2600 cfm				
Output capacity	15.5 kW	100% of load	Temp rise	59 °F	

The above equipment was selected in accordance with ACCA Manual S



**wrightsoft**

Right-Suite® Universal 2013 13 0 08 RSU02245

ghtsoft HVAC\Trane\Bryant Jennings Addition.rup Calc = MJ8 Front Door faces S

2014-Jan-27 09:25:53

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

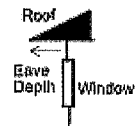
Form  
RPER 1  
15 Mar 09

### Columbia Header Information

Contractor	DL Williams Heating & Cooling LLC License CAC1816913	REQUIRED ATTACHMENTS	ATTACHED
Mechanical license		Manual J1 Form (and supporting worksheets) or MJ1AE Form* (and supporting worksheets)	Yes <input type="checkbox"/> No <input type="checkbox"/>
Building plan #		OEM performance data (heating, cooling, blower)	Yes <input type="checkbox"/> No <input type="checkbox"/>
Home address (Street or Lot#, Block, Subdivision)	203 NW SpringHill Ct, Entire House	Manual D Friction Rate Worksheet Duct distribution sketch	Yes <input type="checkbox"/> No <input type="checkbox"/>

## HVAC LOAD CALCULATION (IRC M1401.3)

<h3>Design Conditions</h3> <p><b>Winter Design Conditions</b></p> <p>Outdoor temperature 33 °F          Indoor temperature 68 °F          Total heat loss 52798 Btuh</p> <p><b>Summer Design Conditions</b></p> <p>Outdoor temperature 92 °F          Indoor temperature 75 °F          Grains difference 47 gr/lb @50% RH          Sensible heat gain 57005 Btuh          Latent heat gain 9125 Btuh          Total heat gain 66131 Btuh</p>	<h3>Building Construction Information</h3> <p><b>Building</b></p> <p>Orientation: Front Door faces South  <small>North, East, West, South, Northeast, Northwest, Southeast, Southwest</small></p> <p>Number of bedrooms 6          Conditioned floor area 3586 ft<sup>2</sup>          Number of occupants 11</p> <p><b>Windows</b></p> <p>Eave overhang depth 8.0 ft          Internal shade blinds  <small>Blinds, drapes, etc.</small></p> <p>Number of skylights 0</p>
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## HVAC EQUIPMENT SELECTION (IRC M1401.3)

<h3>Heating Equipment Data</h3> <p>Equipment type Split ASHP  <small>Furnace, Heat pump, Boiler, etc.</small></p> <p>Model Generic          SEER 13 0, HSPF 7 7+</p> <p>Heating output capacity 78000 Btuh  <small>Heat pumps - capacity at winter design outdoor conditions</small></p> <p>Aux heating output capacity 52798 Btuh</p>	<h3>Cooling Equipment Data</h3> <p>Equipment type Split ASHP  <small>Air Conditioner, Heat pump, etc.</small></p> <p>Model Generic          SEER 13 0, HSPF 7 7+</p> <p>Total cooling capacity 0 Btuh          Sensible cooling capacity 0 Btuh          Latent cooling capacity 0 Btuh</p>	<h3>Blower Data</h3> <p>Heating cfm 2600          Cooling cfm 2600          Static pressure 0.50 in H2O  <small>Fan's rated external static pressure for design airflow</small></p>
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## HVAC DUCT DISTRIBUTION SYSTEM DESIGN (IRC M1601.1)

Design airflow 2600 cfm	Longest supply duct 0 ft	Duct Materials Used
Equipment design ESP 0.50 in H2O	Longest return duct 0 ft	Trunk duct
Total device pressure losses 0 in H2O	Total effective length (TEL): 0 ft	Branch duct
Available static pressure (ASP): 0.50 in H2O	Friction rate: 0 in/100ft <small>Friction Rate = ASP ÷ (TEL x 100)</small>	Sheet metal

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



**TRANE**

# Load Short Form

## Entire House

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Job: 1  
Date: Jan 26, 2014  
By: DL Williams Heating & C...

456 SE Ermine St, Lake City, FL 32025 Phone 386-754-1987 Fax: 386-243-8480 Email Dwilliams@williamscooling.com Web dlwilliamsheatingandcooling.com

### Project Information

For: Bryant Jennings  
203 NW SpringHill Ct, Lake City, FL 32055

### Design Information

	Htg	Clg	Infiltration	Simplified
Outside db (°F)	33	92	Method	Tight
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	47		

#### HEATING EQUIPMENT

Make: Generac  
 Trade:  
 Model: SEER 13.0, HSPF 7.7  
 AHRI ref:  
 Efficiency: 7.7 HSPF  
 Heating input:  
 Heating output: 77612 Btuh @ 47°F  
 Temperature rise: 27 °F  
 Actual air flow: 2600 cfm  
 Air flow factor: 0.049 cfm/Btuh  
 Static pressure: 0.50 in H2O  
 Space thermostat:

#### COOLING EQUIPMENT

Make: Generic  
 Trade:  
 Cond: SEER 13.0, HSPF 7.7  
 Coil:  
 AHRI ref:  
 Efficiency: 11.58 EER  
 Sensible cooling: 54600 Btuh  
 Latent cooling: 23400 Btuh  
 Total cooling: 78000 Btuh  
 Actual air flow: 2600 cfm  
 Air flow factor: 0.046 cfm/Btuh  
 Static pressure: 0.50 in H2O  
 Load sensible heat ratio: 0.86

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
Room1	1628	15514	16520	764	753
Room2	1210	23835	28206	1174	1286
Room6	152	2483	1651	122	75
mbed	596	10966	10629	540	485
Entire House	3586	52798	57005	2600	2600
Other equip loads		0	0		
Equip. @ 0.97 RSM			55295		
Latent cooling			9125		
<b>TOTALS</b>	<b>3586</b>	<b>52798</b>	<b>64421</b>	<b>2600</b>	<b>2600</b>

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



**wrightsoft**

Right-Suite® Universal 2013 13 0 08 RSU02245

ghtsoft HVAC\Trane\Bryant Jennings Addition.rup Calc = MJ8 Front Door faces S

2014-Jan-27 09:25:53

Page 1



**Building Analysis**  
**Entire House**  
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Job: 1  
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**Project Information**

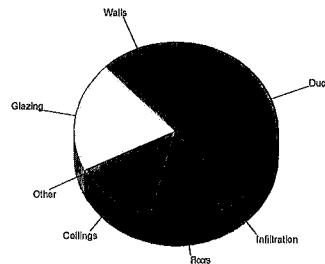
For: Bryant Jennings  
 203 NW SpringHill Ct, Lake City, FL 32055

**Design Conditions**

<b>Location:</b> Gainesville Regional AP, FL, US Elevation 164 ft Latitude 30°N		<b>Indoor:</b> Indoor temperature (°F) 68 Design TD (°F) 35 Relative humidity (%) 30 Moisture difference (gr/lb) 8.0	<b>Heating</b> 68 35 30 8.0	<b>Cooling</b> 75 17 50 47.4
<b>Outdoor:</b> Dry bulb (°F) 33 Daily range (°F) - Wet bulb (°F) - Wind speed (mph) 15.0	<b>Heating</b> 33 - - 15.0	<b>Cooling</b> 92 18 (M) 76 7.5		
		<b>Infiltration:</b> Method Simplified Construction quality Tight Fireplaces 0		

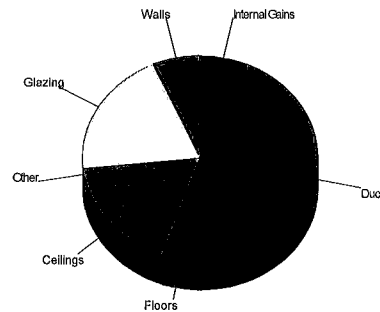
**Heating**

Component	Btuh/ft²	Btuh	% of load
Walls	2.4	6379	12.1
Glazing	22.5	10615	20.1
Doors	13.5	567	1.1
Ceilings	1.9	6747	12.8
Floors	1.6	5902	11.2
Infiltration	0.7	2404	4.6
Ducts		20184	38.2
Piping		0	0
Humidification		0	0
Ventilation		0	0
Adjustments		0	0
<b>Total</b>		<b>52798</b>	<b>100.0</b>



**Cooling**

Component	Btuh/ft²	Btuh	% of load
Walls	1.4	3733	6.5
Glazing	24.2	11443	20.1
Doors	11.4	481	0.8
Ceilings	2.6	9289	16.3
Floors	0.8	2900	5.1
Infiltration	0.2	591	1.0
Ducts		24838	43.6
Ventilation		0	0
Internal gains		3730	6.5
Blower		0	0
Adjustments		0	0
<b>Total</b>		<b>57005</b>	<b>100.0</b>



Latent Cooling Load = 9125 Btuh  
 Overall U-value = 0.090 Btuh/ft²-°F

Data entries checked.



# Component Constructions Entire House

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## Project Information

For: Bryant Jennings  
203 NW SpringHill Ct, Lake City, FL 32055

## Design Conditions

Location:		Indoor:		Heating	Cooling
Gainesville Regional AP, FL, US		Indoor temperature (°F)		68	75
Elevation: 164 ft		Design TD (°F)		35	17
Latitude: 30°N		Relative humidity (%)		30	50
		Moisture difference (gr/lb)		8.0	47.4
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	Tight
				0	

## Construction descriptions

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
<b>Walls</b>								
12E-0sw Frm wall, wd ext, 3/8" wood shth, r-19 cav ins, 1/2" gypsum board int fnsh, 2"x6" wood frm	n	24	0.068	19.0	2.35	56	1.38	33
	ne	651	0.068	19.0	2.35	1532	1.38	896
	e	27	0.068	19.0	2.35	65	1.38	38
	se	702	0.068	19.0	2.35	1652	1.38	967
	s	13	0.068	19.0	2.35	31	1.38	18
	sw	663	0.068	19.0	2.35	1560	1.38	913
	w	13	0.068	19.0	2.35	30	1.38	18
	nw	618	0.068	19.0	2.35	1453	1.38	850
	all	2711	0.068	19.0	2.35	6379	1.38	3733
<b>Partitions</b>								
(none)								
<b>Windows</b>								
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=0.30), 50% blinds 4.5°, lght, 50% outdoor insect screen, 1 ft overhang (5 ft window ht, 1 ft sep)	n	12	0.650	0	22.5	272	13.9	169
	ne	13	0.650	0	22.5	300	24.0	320
	sw	39	0.650	0	22.5	881	24.0	939
	all	65	0.650	0	22.5	1452	22.1	1428
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=0.30), 50% blinds 4.5°, lght, 50% outdoor insect screen	ne	17	0.650	0	22.5	371	24.5	404
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=0.30), 50% blinds 4.5°, lght, 50% outdoor insect screen	ne	113	0.650	0	22.5	2530	24.5	2753
	e	15	0.650	0	22.5	337	31.1	467
	se	60	0.650	0	22.5	1338	24.2	1441
	s	15	0.650	0	22.5	337	14.4	216
	sw	31	0.650	0	22.5	686	24.2	739
	w	16	0.650	0	22.5	349	31.1	483
	nw	30	0.650	0	22.5	675	24.5	734
	all	278	0.650	0	22.5	6252	24.6	6833
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=0.30), 50% blinds 4.5°, lght, 50% outdoor insect screen, 1 ft overhang (3 ft window ht, 1 ft sep)	sw	28	0.650	0	22.5	618	23.0	633



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=0.30), 50% blinds 45°, light, 50% outdoor insect screen, 8 ft overhang (5 ft window ht, 1 ft sep )	nw	13	0.650	0	22.5	290	24.5	316
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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=0.30), 50% blinds 45°, light, 50% outdoor insect screen, 8 ft overhang (6 ft window ht, 1 ft sep )	nw	73	0.650	0	22.5	1631	24.5	1774
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**Doors**

11D0 Door, wd sc type	nw	42	0.390	0	13.5	567	11.4	481
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**Ceilings**

16B-30ad Attic ceiling, asphalt shingles roof mat, r-31 roof ins, r-30 cell ins, 1/2" gypsum board int fnsh		2336	0.032	30.0	1.11	2586	1.69	3950
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16B-30ad Attic ceiling, asphalt shingles roof mat, r-31 roof ins, r-30 cell ins		227	0.032	30.0	1.11	251	1.69	384
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17B-6al Rf/clg ceiling, asphalt shingles roof mat, wd cons, r-6 deck ins, 1" thkns		1076	0.105	6.0	3.63	3910	4.60	4955
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**Floors**

19A-13cscp Flr floor, frm flr, 6" thkns, carpet flr fnsh, r-13 cav ins, tight cowl ovr		3586	0.065	13.0	1.65	5902	0.81	2900
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# Component Constructions

## Room1

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By: DL Williams Heating & C...

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### Project Information

For Bryant Jennings  
203 NW SpringHill Ct, Lake City, FL 32055

### Design Conditions

Location:		Indoor:		Heating	Cooling
Gainesville Regional AP, FL, US		Indoor temperature (°F)		68	75
Elevation 164 ft		Design TD (°F)		35	17
Latitude 30°N		Relative humidity (%)		30	50
		Moisture difference (gr/lb)		8.0	47.4
Outdoor:	Heating	Cooling	Infiltration:		
Dry bulb (°F)	33	92	Method		
Daily range (°F)	-	18 (M)	Simplified		
Wet bulb (°F)	-	76	Construction quality		
Wind speed (mph)	15.0	7.5	Tight		
			Fireplaces		
			0		

### Construction descriptions

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	Cig HTM Btu/h/ft²	Gain Btu/h
<b>Walls</b>								
12E-0sw Frm wall, wd ext, 3/8" wood shth, r-19 cav ins, 1/2" gypsum board int fnsh, 2"x6" wood frm	ne	360	0.068	19.0	2.35	846	1.38	495
	se	90	0.068	19.0	2.35	212	1.38	124
	sw	232	0.068	19.0	2.35	545	1.38	319
	all	681	0.068	19.0	2.35	1603	1.38	938
<b>Partitions</b> (none)								
<b>Windows</b>								
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=0.30), 50% blinds 45°, light, 50% outdoor insect screen, 1 ft overhang (5 ft window ht, 1 ft sep)	sw	39	0.650	0	22.5	881	24.0	939
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=0.30), 50% blinds 45°, light, 50% outdoor insect screen, 1 ft overhang (6 ft window ht, 1 ft sep)	ne	81	0.650	0	22.5	1810	24.5	1970
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=0.30), 50% blinds 45°, light, 50% outdoor insect screen, 1 ft overhang (3 ft window ht, 1 ft sep)	sw	9	0.650	0	22.5	202	23.0	207
<b>Doors</b> (none)								
<b>Ceilings</b>								
16B-30ad Attic ceiling, asphalt shingles roof mat, r-31 roof ins, r-30 ceil ins, 1/2" gypsum board int fnsh		1628	0.032	30.0	1.11	1803	1.69	2753
<b>Floors</b>								
19A-13cscp Flr floor, frm flr, 6" thkns, carpet flr fnsh, r-13 cav ins, tight cowl ovr		1628	0.065	13.0	1.65	2680	0.81	1317





# Component Constructions Room2

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## Project Information

For Bryant Jennings  
203 NW SpringHill Ct, Lake City, FL 32055

## Design Conditions

<b>Location:</b>		<b>Indoor:</b>		<b>Heating</b>	<b>Cooling</b>
Gainesville Regional AP, FL, US		Indoor temperature (°F)		68	75
Elevation: 164 ft		Design TD (°F)		35	17
Latitude: 30°N		Relative humidity (%)		30	50
<b>Outdoor:</b>	<b>Heating</b>	<b>Cooling</b>	<b>Moisture difference (gr/lb)</b>		
Dry bulb (°F)	33	92	8.0		
Daily range (°F)	-	18 ( M )	<b>Infiltration:</b>		
Wet bulb (°F)	-	76	Method		
Wind speed (mph)	15.0	7.5	Construction quality		
			Fireplaces		
			Simplified		
			Tight		
			0		

## Construction descriptions

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
<b>Walls</b>								
12E-0sw Frm wall, wd ext, 3/8" wood shth, r-19 cav ins, 1/2" gypsum board int fnsh, 2"x6" wood frm	n	24	0.068	19.0	2.35	56	1.38	33
	ne	202	0.068	19.0	2.35	474	1.38	277
	e	27	0.068	19.0	2.35	65	1.38	38
	se	74	0.068	19.0	2.35	174	1.38	102
	sw	282	0.068	19.0	2.35	662	1.38	388
	nw	328	0.068	19.0	2.35	771	1.38	451
	all	936	0.068	19.0	2.35	2203	1.38	1289
<b>Partitions</b>								
(none)								
<b>Windows</b>								
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=0.30), 50% blinds 45°, light, 50% outdoor insect screen, 1 ft overhang (5 ft window ht, 1 ft sep)	n	12	0.650	0	22.5	272	13.9	169
	se	13	0.650	0	22.5	300	24.0	320
	all	25	0.650	0	22.5	572	19.2	488
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=0.30), 50% blinds 45°, light, 50% outdoor insect screen	ne	17	0.650	0	22.5	371	24.5	404
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=0.30), 50% blinds 45°, light, 50% outdoor insect screen	ne	32	0.650	0	22.5	720	24.5	783
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=0.30), 50% blinds 45°, light, 50% outdoor insect screen, 1 ft overhang (6 ft window ht, 1 ft sep)	e	15	0.650	0	22.5	337	31.1	467
	se	13	0.650	0	22.5	281	24.2	303
	nw	15	0.650	0	22.5	337	24.5	367
	all	75	0.650	0	22.5	1676	25.8	1920
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=0.30), 50% blinds 45°, light, 50% outdoor insect screen, 1 ft overhang (3 ft window ht, 1 ft sep)	sw	19	0.650	0	22.5	416	23.0	426
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=0.30), 50% blinds 45°, light, 50% outdoor insect screen, 8 ft overhang (5 ft window ht, 1 ft sep)	nw	13	0.650	0	22.5	290	24.5	316



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=0.30), 50% blinds 45°, lght, 50% outdoor insect screen, 8 ft overhang (6 ft window ht, 1 ft sep )	nw	73	0.650	0	22.5	1631	24.5	1774
---	----	----	-------	---	------	------	------	------

**Doors**

11D0 Door, wd sc type	nw	42	0.390	0	13.5	567	11.4	481
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**Ceilings**

16B-30ad Attic ceiling, asphalt shingles roof mat, r-31 roof ins, r-30 ceil ins, 1/2" gypsum board int fnsh	nw	185	0.032	30.0	1.11	204	1.69	312
--	----	-----	-------	------	------	-----	------	-----

17B-6al Rf/clg ceiling, asphalt shingles roof mat, wd cons, r-6 deck ins, 1" thkns	nw	1076	0.105	6.0	3.63	3910	4.60	4955
---	----	------	-------	-----	------	------	------	------

**Floors**

19A-13cscp Flr floor, frm flr, 6" thkns, carpet flr fnsh, r-13 cav ins, tight cowl ovr	nw	1210	0.065	13.0	1.65	1991	0.81	978
---	----	------	-------	------	------	------	------	-----





# Component Constructions Room6

DL Williams Heating & Cooling LLC License  
CAC1816913

Job: 1  
Date: Jan 26, 2014  
By: DL Williams Heating & C...

456 SE Ermine St, Lake City, FL 32025 Phone 386-754-1987 Fax 386-243-8480 Email Dwilliams@williamscooling.com Web dlwilliamsheatingandcooling.com

## Project Information

For: Bryant Jennings  
203 NW SpringHill Ct, Lake City, FL 32055

## Design Conditions

<b>Location:</b>		<b>Indoor:</b>		<b>Heating</b>	<b>Cooling</b>
Gainesville Regional AP, FL, US		Indoor temperature (°F)		68	75
Elevation: 164 ft		Design TD (°F)		35	17
Latitude 30°N		Relative humidity (%)		30	50
<b>Outdoor:</b>	<b>Heating</b>	<b>Cooling</b>	Moisture difference (gr/lb)		
Dry bulb (°F)	33	92	8.0		
Daily range (°F)	-	18 (M)			
Wet bulb (°F)	-	76	<b>Infiltration:</b>		
Wind speed (mph)	15.0	7.5	Method: Simplified		
			Construction quality: Tight		
			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
<b>Walls</b>								
12E-0sw Frm wall, wd ext, 3/8" wood shth, r-19 cav ins, 1/2" gypsum board int fnsh, 2"x6" wood frm	ne	60	0.068	19.0	2.35	141	1.38	83
	se	280	0.068	19.0	2.35	659	1.38	386
	sw	20	0.068	19.0	2.35	47	1.38	28
	all	360	0.068	19.0	2.35	847	1.38	496
<b>Partitions</b> (none)								
<b>Windows</b> (none)								
<b>Doors</b> (none)								
<b>Ceilings</b>								
16B-30ad Attic ceiling, asphalt shingles roof mat, r-31 roof ins, r-30 ceil ins, 1/2" gypsum board int fnsh		152	0.032	30.0	1.11	168	1.69	257
<b>Floors</b>								
19A-13cscp Flr floor, frm flr, 6" thkns, carpet flr fnsh, r-13 cav ins, tight cowl ovr		152	0.065	13.0	1.65	250	0.81	123





# Component Constructions

## mbed

DL Williams Heating & Cooling LLC License  
CAC1816913

Job: 1  
Date: Jan 26, 2014  
By: DL Williams Heating & C...

456 SE Ermine St, Lake City, FL 32025 Phone 386-754-1987 Fax: 386-243-8480 Email Dwilliams@williamscooling.com Web dlwilliamsheatingandcooling.com

### Project Information

For Bryant Jennings  
203 NW SpringHill Ct, Lake City, FL 32055

### Design Conditions

<b>Location:</b> Gainesville Regional AP, FL, US Elevation 164 ft Latitude: 30°N	<b>Indoor:</b> Indoor temperature (°F) 68 Design TD (°F) 35 Relative humidity (%) 30 Moisture difference (gr/lb) 8.0	<b>Heating</b> 68 35 30 8.0	<b>Cooling</b> 75 17 50 47.4
<b>Outdoor:</b> Dry bulb (°F) 33 Daily range (°F) - Wet bulb (°F) - Wind speed (mph) 15.0	<b>Heating</b> 33 - - 15.0	<b>Cooling</b> 92 18 (M) 76 7.5	<b>Infiltration:</b> Method Simplified Construction quality Tight Fireplaces 0

### Construction descriptions

	Or	Area ft²	U-value Btu/h/ft²·°F	Insul R ft²·°F/Btu	Htg HTM Btu/h/ft²	Loss Btu/h	Clg HTM Btu/h/ft²	Gain Btu/h
<b>Walls</b>								
12E-0sw Frm wall, wd ext, 3/8" wood shth, r-19 cav ins, 1/2" gypsum board int fnsh, 2"x6" wood frm	ne	30	0.068	19.0	2.35	71	1.38	41
	se	258	0.068	19.0	2.35	607	1.38	355
	s	13	0.068	19.0	2.35	31	1.38	18
	sw	130	0.068	19.0	2.35	305	1.38	178
	w	13	0.068	19.0	2.35	30	1.38	18
	nw	290	0.068	19.0	2.35	682	1.38	399
	all	734	0.068	19.0	2.35	1726	1.38	1010
<b>Partitions</b> (none)								
<b>Windows</b>								
4A5-2ov 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr inn r, 1/4" gap, 1/8" thk, NFRC rated (SHGC=0.30), 50% blinds 45°, light, s 50% outdoor insect screen, 1 ft overhang (6 ft window ht, 1 ft sep)	se	47	0.650	0	22.5	1057	24.2	1139
	s	15	0.650	0	22.5	337	14.4	216
	sw	31	0.650	0	22.5	686	24.2	739
	w	16	0.650	0	22.5	349	31.1	483
	nw	15	0.650	0	22.5	337	24.5	367
	all	123	0.650	0	22.5	2766	23.9	2943
<b>Doors</b> (none)								
<b>Ceilings</b>								
16B-30ad Attic ceiling, asphalt shingles roof mat, r-31 roof ins, r-30 ceil ins, 1/2" gypsum board int fnsh		371	0.032	30.0	1.11	411	1.69	627
16B-30ad Attic ceiling, asphalt shingles roof mat, r-31 roof ins, r-30 ceil ins		227	0.032	30.0	1.11	251	1.69	384
<b>Floors</b>								
19A-13cscp Flr floor, frm flr, 6" thkns, carpet flr fnsh, r-13 cav ins, tight crwl ovr		596	0.065	13.0	1.65	981	0.81	482



# Project Summary

## Entire House

DL Williams Heating & Cooling LLC License  
CAC1816913

Job: 1  
Date: Jan 26, 2014  
By: DL Williams Heating & C...

456 SE Ermine St, Lake City, FL 32025 Phone 386-754-1987 Fax: 386-243-8480 Email Dwilliams@williamscooling.com Web dlwilliamsheatingandcooling.com

### Project Information

For: Bryant Jennings  
203 NW SpringHill Ct, Lake City, FL 32055

Notes

### Design Information

Weather: Gainesville Regional AP, FL, US

#### Winter Design Conditions

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

#### Summer Design Conditions

Outside db	92 °F
Inside db	75 °F
Design TD	17 °F
Daily range	M
Relative humidity	50 %
Moisture difference	47 gr/lb

#### Heating Summary

Structure	32614 Btuh
Ducts	20184 Btuh
Central vent (0 cfm)	0 Btuh
Humidification	0 Btuh
Piping	0 Btuh
Equipment load	52798 Btuh

#### Sensible Cooling Equipment Load Sizing

Structure	32167 Btuh
Ducts	24838 Btuh
Central vent (0 cfm)	0 Btuh
Blower	0 Btuh
Use manufacturer's data	n
Rate/swing multiplier	0.97
Equipment sensible load	55295 Btuh

#### Infiltration

Method	Simplified	
Construction quality	Tight	
Fireplaces	0	
	<b>Heating</b>	<b>Cooling</b>
Area (ft <sup>2</sup> )	3586	3586
Volume (ft <sup>3</sup> )	38130	38130
Air changes/hour	0.10	0.05
Equip. AVF (cfm)	64	32

#### Latent Cooling Equipment Load Sizing

Structure	3218 Btuh
Ducts	5907 Btuh
Central vent (0 cfm)	0 Btuh
Equipment latent load	9125 Btuh
Equipment total load	64421 Btuh
Req total capacity at 0.70 SHR	6.6 ton

#### Heating Equipment Summary

Make	Generic
Trade	
Model	SEER 13.0, HSPF 7.7
AHRI ref	
Efficiency	7.7 HSPF
Heating input	
Heating output	77612 Btuh @ 47°F
Temperature rise	27 °F
Actual air flow	2600 cfm
Air flow factor	0.049 cfm/Btuh
Static pressure	0.50 in H2O
Space thermostat	

#### Cooling Equipment Summary

Make	Generic
Trade	
Cond	SEER 13.0, HSPF 7.7
Coil	
AHRI ref	
Efficiency	11.58 EER
Sensible cooling	54600 Btuh
Latent cooling	23400 Btuh
Total cooling	78000 Btuh
Actual air flow	2600 cfm
Air flow factor	0.046 cfm/Btuh
Static pressure	0.50 in H2O
Load sensible heat ratio	0.86

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



# AED Assessment Entire House

DL Williams Heating & Cooling LLC License  
CAC1816913

Job: 1  
Date: Jan 26, 2014  
By: DL Williams Heating & C...

456 SE Ermine St, Lake City FL 32025 Phone 386-754-1987 Fax 386-243-8480 Email Dwilliams@williamscooling.com Web dlwilliamsheatingandcooling.com

## Project Information

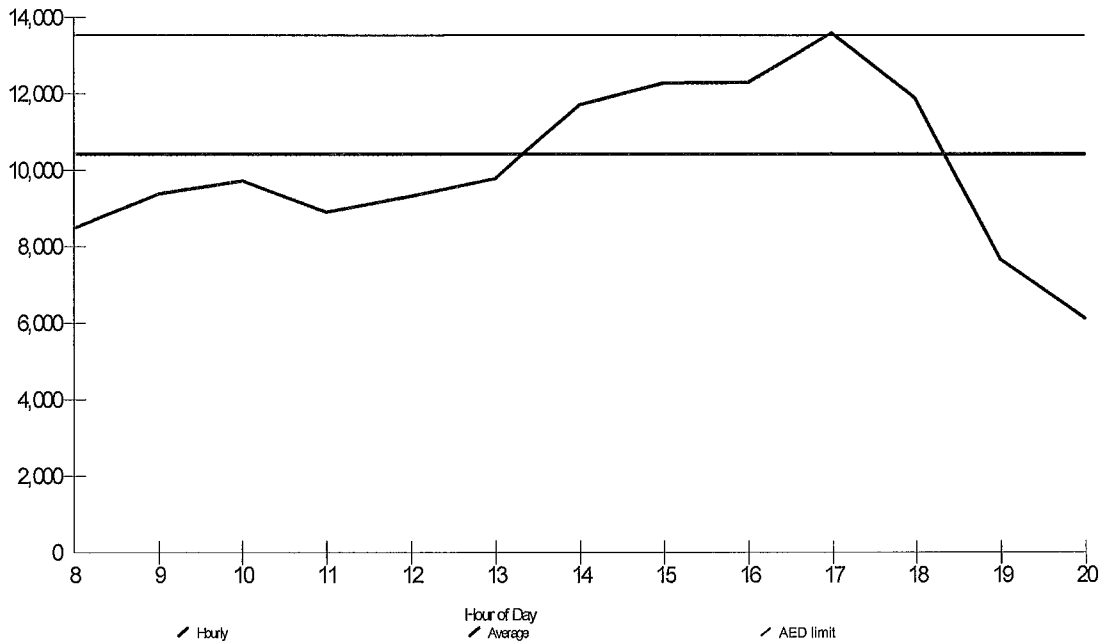
For Bryant Jennings  
203 NW SpringHill Ct, Lake City, FL 32055

## Design Conditions

Location:		Indoor:		Heating	Cooling
Gainesville Regional AP, FL, US		Indoor temperature (°F)		68	75
Elevation	164 ft	Design TD (°F)		35	17
Latitude	30°N	Relative humidity (%)		30	50
		Moisture difference (gr/lb)		8.0	47.4
Outdoor:		Heating	Cooling	Infiltration:	
Dry bulb (°F)		33	92		
Daily range (°F)		-	18 (M)		
Wet bulb (°F)		-	76		
Wind speed (mph)		15.0	7.5		

## Test for Adequate Exposure Diversity

Hourly Glazing Load



Maximum hourly glazing load exceeds average by 30.5%.

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

AED excursion: 55 Btuh (PFG - 1.3\*AFG)



# Right-J® Worksheet Entire House

DL Williams Heating & Cooling LLC  
License CAC1816913

Job: 1  
Date: Jan 26, 2014  
By: DL Williams Heating & Cooli...

456 SE Ermine St, Lake City, FL 32025 Phone 386-754-1987 Fax 386-243-8480 Email Dwilliams@williamscooling.com Web dlwilliamsheatingandcooling.com

1 Room name		Entire House		Room1										
2 Exposed wall		306 4 ft		81 0 ft										
3 Room height		10 6 ft		10 0 ft										
4 Room dimensions		3585 5 ft²		44 0 x 37 0 ft										
5 Room area		1628.0 ft²		heat/cool										
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	12E-0sw	0.088	n	2.35	1.38	36	24	56	33	0	0	0	0
	G	4A5-2ov	0.650	n	22.49	13.95	12	0	272	169	0	0	0	0
	W	12E-0sw	0.088	ne	2.35	1.38	780	651	1532	896	440	360	846	495
	G	4A5-2ov	0.650	ne	22.49	24.47	17	0	371	404	0	0	0	0
11	G	4A5-2ov	0.650	ne	22.49	24.47	113	0	2530	2753	81	0	1810	1970
	W	12E-0sw	0.088	e	2.35	1.38	42	27	65	38	0	0	0	0
	G	4A5-2ov	0.650	e	22.49	31.13	15	0	337	467	0	0	0	0
	W	12E-0sw	0.088	se	2.35	1.38	775	702	1652	967	90	90	212	124
	G	4A5-2ov	0.650	se	22.49	23.98	13	2	300	320	0	0	0	0
	G	4A5-2ov	0.650	se	22.49	24.23	60	6	1338	1441	0	0	0	0
	W	12E-0sw	0.088	s	2.35	1.38	28	13	31	18	0	0	0	0
	G	4A5-2ov	0.650	s	22.49	14.41	15	11	337	216	0	0	0	0
	W	12E-0sw	0.088	sw	2.35	1.38	760	663	1560	913	280	232	545	319
	G	4A5-2ov	0.650	sw	22.49	23.02	28	6	618	633	9	2	202	207
	G	4A5-2ov	0.650	sw	22.49	23.98	39	5	881	939	39	5	881	939
	G	4A5-2ov	0.650	sw	22.49	24.23	31	3	686	739	0	0	0	0
	W	12E-0sw	0.088	w	2.35	1.38	28	13	30	18	0	0	0	0
	G	4A5-2ov	0.650	w	22.49	31.13	16	0	349	483	0	0	0	0
	W	12E-0sw	0.088	nw	2.35	1.38	775	618	1453	850	0	0	0	0
	G	4A5-2ov	0.650	nw	22.49	24.47	13	0	290	316	0	0	0	0
	G	4A5-2ov	0.650	nw	22.49	24.47	30	0	675	734	0	0	0	0
	G	4A5-2ov	0.650	nw	22.49	24.47	73	0	1631	1774	0	0	0	0
	D	11D0	0.390	nw	13.49	11.45	42	42	567	481	0	0	0	0
	C	16B-30ad	0.032	-	1.11	1.69	2336	2336	2586	3950	1628	1628	1803	2753
	C	16B-30ad	0.032	-	1.11	1.69	227	227	251	384	0	0	0	0
	C	17B-6al	0.105	-	3.63	4.60	1076	1076	3910	4955	0	0	0	0
	F	19A-13cscp	0.065	-	1.65	0.81	3586	3586	5902	2900	1628	1628	2680	1317
6	c) AED excursion									55				101
	Envelope loss/gain								30210	27846			8979	8023
12	a) Infiltration								2404	591			604	148
	b) Room ventilation								0	0			0	0
13	Internal gains		Occupants @	230			11			2530	5			1150
			Appliances/other							1200				0
	Subtotal (lines 6 to 13)								32614	32167			9583	9322
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								32614	32167			9583	9322
15	Duct loads						62%	77%	20184	24838	62%	77%	5931	7198
	Total room load								52798	57005			15514	16520
	Air required (cfm)								2600	2600			764	753

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



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Right-Suite® Universal 2013 13 0 08 RSU02245

2014-Jan 27 09 25:54

.ghtsoft HVAC\Trane\Bryant Jennings Addition.rup Calc = MJ8 Front Door faces S

Page 1



**Right-J® Worksheet**  
**Entire House**  
**DL Williams Heating & Cooling LLC**  
**License CAC1816913**

Job: 1  
 Date: Jan 26, 2014  
 By: DL Williams Heating & Cooli...

456 SE Ermine St, Lake City FL 32025 Phone 386-754-1987 Fax: 386-243-8480 Email Dwilliams@williamscooling.com Web dlwilliamsheatingandcooling.com

1 Room name		Room2		Room6										
2 Exposed wall		117 ft		1098 ft										
3 Room height		10		10										
4 Room dimensions		1209 5 ft		152 0 ft										
5 Room area		1209 5 ft²		152 0 ft²										
6 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	12E-0sw	0.068	n	2.35	1.38	36	24	56	33	0	0	0	0
	G	4A5-2ov	0.650	n	22.49	13.95	12	0	272	169	0	0	0	0
	W	12E-0sw	0.068	ne	2.35	1.38	250	202	474	277	60	60	141	83
	G	4A5-2ov	0.650	ne	22.49	24.47	17	0	371	404	0	0	0	0
	G	4A5-2ov	0.650	ne	22.49	24.47	32	0	720	783	0	0	0	0
	W	12E-0sw	0.068	e	2.35	1.38	42	27	65	38	0	0	0	0
	G	4A5-2ov	0.650	e	22.49	31.13	15	0	337	467	0	0	0	0
	W	12E-0sw	0.068	se	2.35	1.38	100	74	174	102	280	280	659	386
	G	4A5-2ov	0.650	se	22.49	23.98	13	2	300	320	0	0	0	0
	G	4A5-2ov	0.650	se	22.49	24.23	13	1	281	303	0	0	0	0
	W	12E-0sw	0.068	s	2.35	1.38	0	0	0	0	0	0	0	0
	G	4A5-2ov	0.650	s	22.49	14.41	0	0	0	0	0	0	0	0
	W	12E-0sw	0.068	sw	2.35	1.38	300	282	662	388	20	20	47	28
	G	4A5-2ov	0.650	sw	22.49	23.02	19	4	416	426	0	0	0	0
	G	4A5-2ov	0.650	sw	22.49	23.98	0	0	0	0	0	0	0	0
	G	4A5-2ov	0.650	sw	22.49	24.23	0	0	0	0	0	0	0	0
	W	12E-0sw	0.068	w	2.35	1.38	0	0	0	0	0	0	0	0
	G	4A5-2ov	0.650	w	22.49	31.13	0	0	0	0	0	0	0	0
	W	12E-0sw	0.068	nw	2.35	1.38	470	328	771	451	0	0	0	0
	G	4A5-2ov	0.650	nw	22.49	24.47	13	0	290	316	0	0	0	0
	G	4A5-2ov	0.650	nw	22.49	24.47	15	0	337	367	0	0	0	0
	G	4A5-2ov	0.650	nw	22.49	24.47	73	0	1631	1774	0	0	0	0
	D	11D0	0.390	nw	13.49	11.45	42	42	567	481	0	0	0	0
	C	16B-30ad	0.032	-	1.11	1.69	185	185	204	312	152	152	168	257
	C	16B-30ad	0.032	-	1.11	1.69	0	0	0	0	0	0	0	0
	C	17B-6al	0.105	-	3.63	4.60	1076	1076	3910	4955	0	0	0	0
	F	19A-13cscp	0.065	-	1.65	0.81	1210	1210	1991	978	152	152	250	123
6	c) AED excursion									233				-10
	Envelope loss/gain								13830	13576			1266	865
12	a) Infiltration								894	220			268	66
	b) Room ventilation								0	0			0	0
13	Internal gains.		Occupants @	230		4				920	0			0
			Appliances/other							1200				0
	Subtotal (lines 6 to 13)								14723	15916			1534	931
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								14723	15916			1534	931
15	Duct loads						62%	77%	9112	12290	62%	77%	949	719
	Total room load								23835	28206			2483	1651
	Air required (cfm)								1174	1286			122	75

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



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Right-Suite® Universal 2013 13 0 08 RSU02245

ghtsoft HVAC\Trane\Bryant Jennings Addition rup Calc = MJ8 Front Door faces S

2014-Jan-27 09:25 54

Page 2



# Right-J® Worksheet Entire House

DL Williams Heating & Cooling LLC  
License CAC1816913

Job: 1  
Date: Jan 26, 2014  
By: DL Williams Heating & Cooli...

456 SE Ermine St Lake City, FL 32025 Phone 386-754-1987 Fax: 386-243-8480 Email Dwilliams@williamscooling.com Web dlwilliamsheatingandcooling.com

1	Room name				mbed									
	Exposed wall				79.6 ft									
	Room height				10.4 ft				heat/cool					
Room dimensions				596.0 ft <sup>2</sup>										
Room area														
	Ty	Construction number	U-value (Btu/h/ft <sup>2</sup> ·°F)	Or	HTM (Btu/h/ft <sup>2</sup> )		Area (ft <sup>2</sup> ) or perimeter (ft)		Load (Btu/h)		Area or perimeter		Load	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6	W	12E-0sw	0.068	n	2.35	1.38	0	0	0	0				
	G	4A5-2ov	0.650	n	22.49	13.95	0	0	0	0				
	W	12E-0sw	0.068	ne	2.35	1.38	30	30	71	41				
	G	4A5-2ov	0.650	ne	22.49	24.47	0	0	0	0				
11	G	4A5-2ov	0.650	ne	22.49	24.47	0	0	0	0				
	W	12E-0sw	0.068	e	2.35	1.38	0	0	0	0				
	G	4A5-2ov	0.650	e	22.49	31.13	0	0	0	0				
	W	12E-0sw	0.068	se	2.35	1.38	305	258	607	355				
	G	4A5-2ov	0.650	se	22.49	23.98	0	0	0	0				
	G	4A5-2ov	0.650	se	22.49	24.23	47	5	1057	1139				
	W	12E-0sw	0.068	s	2.35	1.38	28	13	31	18				
	G	4A5-2ov	0.650	s	22.49	14.41	15	11	337	216				
	W	12E-0sw	0.068	sw	2.35	1.38	160	130	305	178				
	G	4A5-2ov	0.650	sw	22.49	23.02	0	0	0	0				
	G	4A5-2ov	0.650	sw	22.49	23.98	0	0	0	0				
	G	4A5-2ov	0.650	sw	22.49	24.23	31	3	686	739				
	W	12E-0sw	0.068	w	2.35	1.38	28	13	30	18				
	G	4A5-2ov	0.650	w	22.49	31.13	16	0	349	483				
	W	12E-0sw	0.068	nw	2.35	1.38	305	290	682	399				
	G	4A5-2ov	0.650	nw	22.49	24.47	0	0	0	0				
	G	4A5-2ov	0.650	nw	22.49	24.47	15	0	337	367				
	G	4A5-2ov	0.650	nw	22.49	24.47	0	0	0	0				
	D	11D0	0.390	nw	13.49	11.45	0	0	0	0				
	C	16B-30ad	0.032	-	1.11	1.69	371	371	411	627				
	C	16B-30ad	0.032	-	1.11	1.69	227	227	251	384				
	C	17B-6al	0.105	-	3.63	4.60	0	0	0	0				
	F	19A-13cscd	0.065	-	1.65	0.81	596	596	981	482				
6	c) AED excursion										-66			
	Envelope loss/gain										6135	5381		
12	a) Infiltration										639	157		
	b) Room ventilation										0	0		
13	Internal gains.		Occupants @	230			2			460	0			
			Appliances/other							0				
	Subtotal (lines 6 to 13)										6774	5998		
	Less external load										0	0		
	Less transfer										0	0		
	Redistribution										0	0		
14	Subtotal										6774	5998		
15	Duct loads										62%	77%	4192	4631
	Total room load										10966	10629		
	Air required (cfm)										540	485		

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



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**TRANE**

# Loads for Multiple Orientations

## Entire House

DL Williams Heating & Cooling LLC License  
CAC1816913

Job: 1  
Date: Jan 26, 2014  
By: DL Williams Heating & C...

456 SE Ermine St, Lake City, FL 32025 Phone 386-754-1987 Fax: 386-243-8480 Email Dwilliams@williamscooling.com Web dlwilliamsheatingandcooling.com

### Project Information

For Bryant Jennings  
203 NW SpringHill Ct, Lake City, FL 32055

### Design Conditions

**Location:**

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

**Indoor:**

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

**Heating**

68  
35  
30  
8 0

**Cooling**

75  
17  
50  
47.4

**Outdoor:**

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

**Heating**

33  
-  
-  
15.0

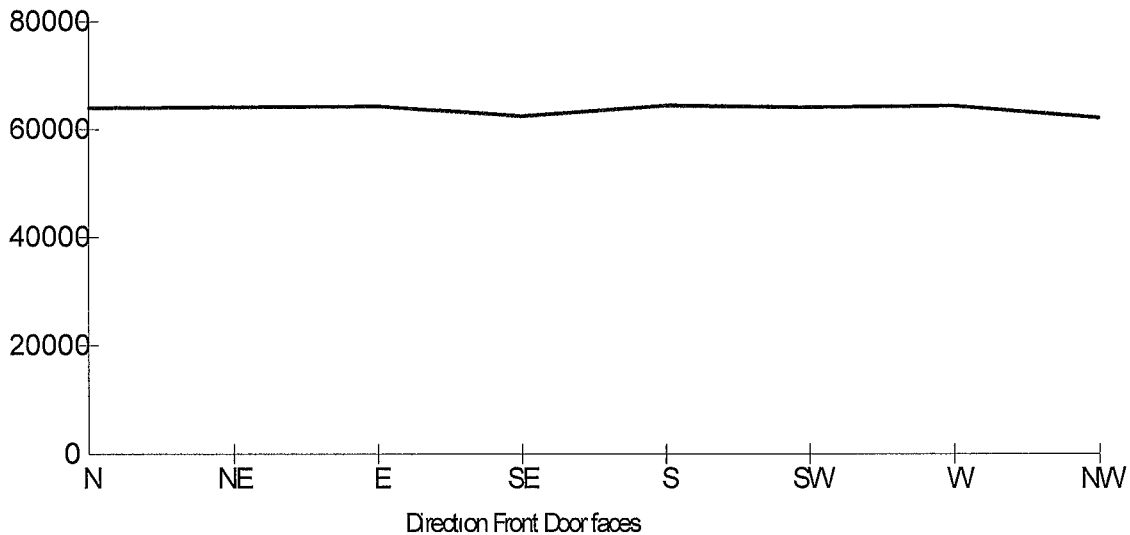
**Cooling**

92  
18 ( M )  
76  
7.5

**Infiltration:**

Front Door	North	Northeast	East	Southeast	South	Southwest	West	Northwest
Sensible Load (Btuh)	54767	54942	55151	53264	55295	54961	55238	53024
Latent Load (Btuh)	9125	9125	9125	9125	9125	9125	9125	9125
Total Load (Btuh)	63892	64068	64277	62389	64421	64086	64363	62150
Heating AVF (cfm)	2600	2600	2600	2600	2600	2600	2600	2600
Cooling AVF (cfm)	2600	2600	2600	2600	2600	2600	2600	2600

### Building Orientation Cooling Load



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

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



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**TRANE**

# Duct System Summary

## Entire House

DL Williams Heating & Cooling LLC License  
CAC1816913

Job: 1  
Date: Jan 26, 2014  
By: DL Williams Heating & C...

456 SE Ermine St, Lake City, FL 32025 Phone 386-754-1987 Fax 386-243-8480 Email Dwilliams@williamscooling.com Web dlwilliamsheatingandcooling.com

### Project Information

For: Bryant Jennings  
203 NW SpringHill Ct, Lake City, FL 32055

	Heating	Cooling
External static pressure	0.50 in H2O	0.50 in H2O
Pressure losses	0 in H2O	0 in H2O
Available static pressure	0.50 in H2O	0.50 in H2O
Supply / return available pressure	0.250 / 0.250 in H2O	0.250 / 0.250 in H2O
Lowest friction rate	0 in/100ft	0 in/100ft
Actual air flow	2600 cfm	2600 cfm
Total effective length (TEL)	0 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
Room1	h 3307	153	151	0	0	0x0	ShMt	0	0	
Room1-A	h 3304	153	151	0	0	0x0	ShMt	0	0	
Room1-B	h 3304	153	151	0	0	0x0	ShMt	0	0	
Room1-C	h 3304	153	151	0	0	0x0	ShMt	0	0	
Room1 D	h 3304	153	151	0	0	0x0	ShMt	0	0	
Room2	c 3530	147	161	0	0	0x0	ShMt	0	0	
Room2-A	c 3526	147	161	0	0	0x0	ShMt	0	0	
Room2-B	c 3526	147	161	0	0	0x0	ShMt	0	0	
Room2-C	c 3526	147	161	0	0	0x0	ShMt	0	0	
Room2-D	c 3526	147	161	0	0	0x0	ShMt	0	0	
Room2-E	c 3526	147	161	0	0	0x0	ShMt	0	0	
Room2-F	c 3526	147	161	0	0	0x0	ShMt	0	0	
Room2-G	c 3526	147	161	0	0	0x0	ShMt	0	0	
Room6	h 1651	122	75	0	0	0x0	ShMt	0	0	
mbed	h 3543	180	162	0	0	0x0	ShMt	0	0	
mbed-A	h 3543	180	162	0	0	0x0	ShMt	0	0	
mbed-B	h 3543	180	162	0	0	0x0	ShMt	0	0	

### Return Branch Detail Table

Name	Grill 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	2600	2600	0	0	0	0	0x0		ShMt	



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