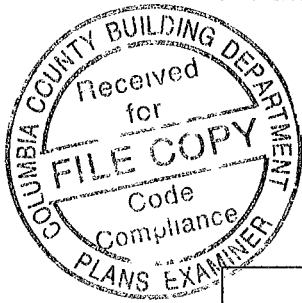


Heating and Air Conditioning Economic Analysis

For Future / Existing Home Of

Tom & Beth Barritt

Lake City, FL 32024



Conducted By

Boozer heat & a.c.

Lake City, FL

Wrightsoft Corporation

Note Actual costs and savings may differ due to weather, operating conditions, maintenance, and construction



Project Summary
Entire House
 Boozer heat & a.c.

Job:
 Date: 4-1-16
 By: A W

Lake City, FI

Project Information

For: Tom & Beth Barritt, 152 S. W. Mandiba Dr
 Lake City, FI 32024

Notes: New Addition

Design Information

Weather: Jacksonville, Cecil Field NAS, FL, US

Winter Design Conditions

Outside db 25 °F
 Inside db 70 °F
 Design TD 45 °F

Summer Design Conditions

Outside db 97 °F
 Inside db 75 °F
 Design TD 22 °F
 Daily range M
 Relative humidity 50 %
 Moisture difference 57 gr/lb

Heating Summary

Structure 8871 Btuh
 Ducts 0 Btuh
 Central vent (198 cfm) 9755 Btuh
 Humidification 0 Btuh
 Piping 0 Btuh
 Equipment load 18626 Btuh

Sensible Cooling Equipment Load Sizing

Structure 8007 Btuh
 Ducts 0 Btuh
 Central vent (198 cfm) 4769 Btuh
 Blower 0 Btuh
 Use manufacturer's data n
 Rate/swing multiplier 1.02
 Equipment sensible load 13032 Btuh

Infiltration

Method Simplified
 Construction quality Tight
 Fireplaces 1 (Average)

	Heating	Cooling
Area (ft ²)	612	612
Volume (ft ³)	6168	6168
Air changes/hour	0.43	0.13
Equiv. AVF (cfm)	45	13

Latent Cooling Equipment Load Sizing

Structure 3160 Btuh
 Ducts 0 Btuh
 Central vent (198 cfm) 7690 Btuh
 Equipment latent load 10849 Btuh
 Equipment total load 23881 Btuh
 Req. total capacity at 0.70 SHR 16 ton

Heating Equipment Summary

Make Ruud
 Trade
 Model
 AHRI ref
 Efficiency 8.2 HSPF
 Heating input
 Heating output 45000 Btuh @ 47°F
 Temperature rise 28 °F
 Actual air flow 1483 cfm
 Air flow factor 0.167 cfm/Btuh
 Static pressure 0 in H2O
 Space thermostat

Cooling Equipment Summary

Make Ruud
 Trade
 Cond Coil
 AHRI ref
 Efficiency 11.5 EER, 14 SEER
 Sensible cooling 31150 Btuh
 Latent cooling 13350 Btuh
 Total cooling 44500 Btuh
 Actual air flow 1483 cfm
 Air flow factor 0.185 cfm/Btuh
 Static pressure 0 in H2O
 Load sensible heat ratio 0.54

Bold/italic values have been manually overridden

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





Duct System Summary
Entire House
 Boozer heat & a.c.

Job:
 Date: 4-1-16
 By: A W

Lake City, Fl

Project Information

For: Tom & Beth Barritt, 152 S. W. Mandiba Dr.
 Lake City, Fl 32024

	Heating	Cooling
External static pressure	0 in H2O	0 in H2O
Pressure losses	0 in H2O	0 in H2O
Available static pressure	0 in H2O	0 in H2O
Supply / return available pressure	0.00 / 0.00 in H2O	0.00 / 0.00 in H2O
Lowest friction rate	0 in/100ft	0 in/100ft
Actual air flow	1483 cfm	1483 cfm
Total effective length (TEL)		184 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
BR	h 2757	864	511	0	0	0x0	ShMt	10.0	170.0	st1
Bath	c 359	14	66	0	0	0x0	ShMt	0	0	
Bonus Rm	h 1745	524	323	0	0	0x0	ShMt	4.0	180.0	st1
Living Rm	c 1389	45	257	0	0	0x0	ShMt	0	0	
kitchen	c 1757	37	325	0	0	0x0	ShMt	0	0	

Supply Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
st1	Peak AVF	1388	834	0	0	0	0 x 0	ShtMetl	

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	1483	1483	0	0	0	0	0x 0		ShMt	

Lake City, FI

1 2 3 4 5	Room name		Entire House						kitchen					
	Exposed wall		20.0 ft						0 ft					
	Room height		10.1 ft						12.0 ft					
Room dimensions		612.0 ft ²						12.0 x 12.0 ft						
Room area		612.0 ft ²						144.0 ft ²						
6	Ty	Construction number	U-value (Btuh/ft ² ·°F)	Or	HTM (Btuh/ft ²)		Area (ft ²) or perimeter (ft)		Load (Btuh)		Area (ft ²) or perimeter (ft)		Load (Btuh)	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
11	W	13AA-0oc	0.584	s	26.28	14.25	160	145	3811	2066	0	0	0	0
	G	1A-c1om	1.270	s	57.15	43.51	15	15	857	653	0	0	0	0
	C	18A-30ad	0.034	-	1.53	1.09	612	612	936	666	144	144	220	157
	F	22A-tpm	1.180	-	53.10	0.00	612	20	1062	0	144	0	0	0
6	c) AED excursion								0				0	
	Envelope loss/gain							6666	3385			220	157	
12	a) Infiltration							2205	322			0	0	
	b) Room ventilation							0	0			0	0	
13	Internal gains.		Occupants @	300		11			3300	1000	2		600	
			Appliances/other										1000	
	Subtotal (lines 6 to 13)							8871	8007			220	1757	
14	Less external load							0	0			0	0	
	Less transfer							0	0			0	0	
	Redistribution								0	0			0	
	Subtotal								8871	8007			220	1757
15	Duct loads						0%	0%	0	0	-0%	0%	0	
	Total room load							8871	8007			220	1757	
	Air required (cfm)							1483	1483			37	325	

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

Right-J® Worksheet
Entire House
Boozer heat & a.c.

Job:
 Date: 4-1-16
 By: A W

Lake City, Fl

1 2 3 4 5	Room name		Exposed wall		Room height		Room dimensions		Room area		Bath		BR			
	8.0 ft		6.0		x		9.0		ft		0 ft		8.0 ft		12.0 ft	
	54.0 ft ²										heat/cool		144.0 ft ²		heat/cool	
6	Ty	Construction number	U-value (Btuh/ft ² ·°F)	Or	HTM (Btuh/ft ²)		Area (ft ²) or perimeter (ft)		Load (Btuh)		Area (ft ²) or perimeter (ft)		Load (Btuh)			
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool		
11	W G C F	13AA-0oc	0.584	s	26.28	14.25	0	0	0	0	96	81	2129	1154		
		1A-c1om	1.270	s	57.15	43.51	0	0	0	0	15	15	857	653		
		18A-30ad	0.034	-	1.53	1.09	54	54	83	59	144	144	220	157		
		22A-tpm	1.180	-	53.10	0.00	54	0	0	0	144	12	637	0		
6	c) AED excursion								0				0			
	Envelope loss/gain								83	59			3843	1964		
12	a) Infiltration								0	0			1323	193		
	b) Room ventilation								0	0			0	0		
13	Internal gains		Occupants @	300			1			300	2		600			
			Appliances/other						0	0			0			
	Subtotal (lines 6 to 13)								83	359			5166	2757		
14	Less external load								0	0			0	0		
	Less transfer								0	0			0	0		
	Redistribution								0	0			0	0		
	Subtotal								83	359			5166	2757		
15	Duct loads								0	0			0	0		
	Total room load								83	359			5166	2757		
	Air required (cfm)								14	66			864	511		

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

Right-J® Worksheet
Entire House
Boozer heat & a.c.

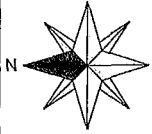
Job:
 Date: 4-1-16
 By: A W

Lake City, FL

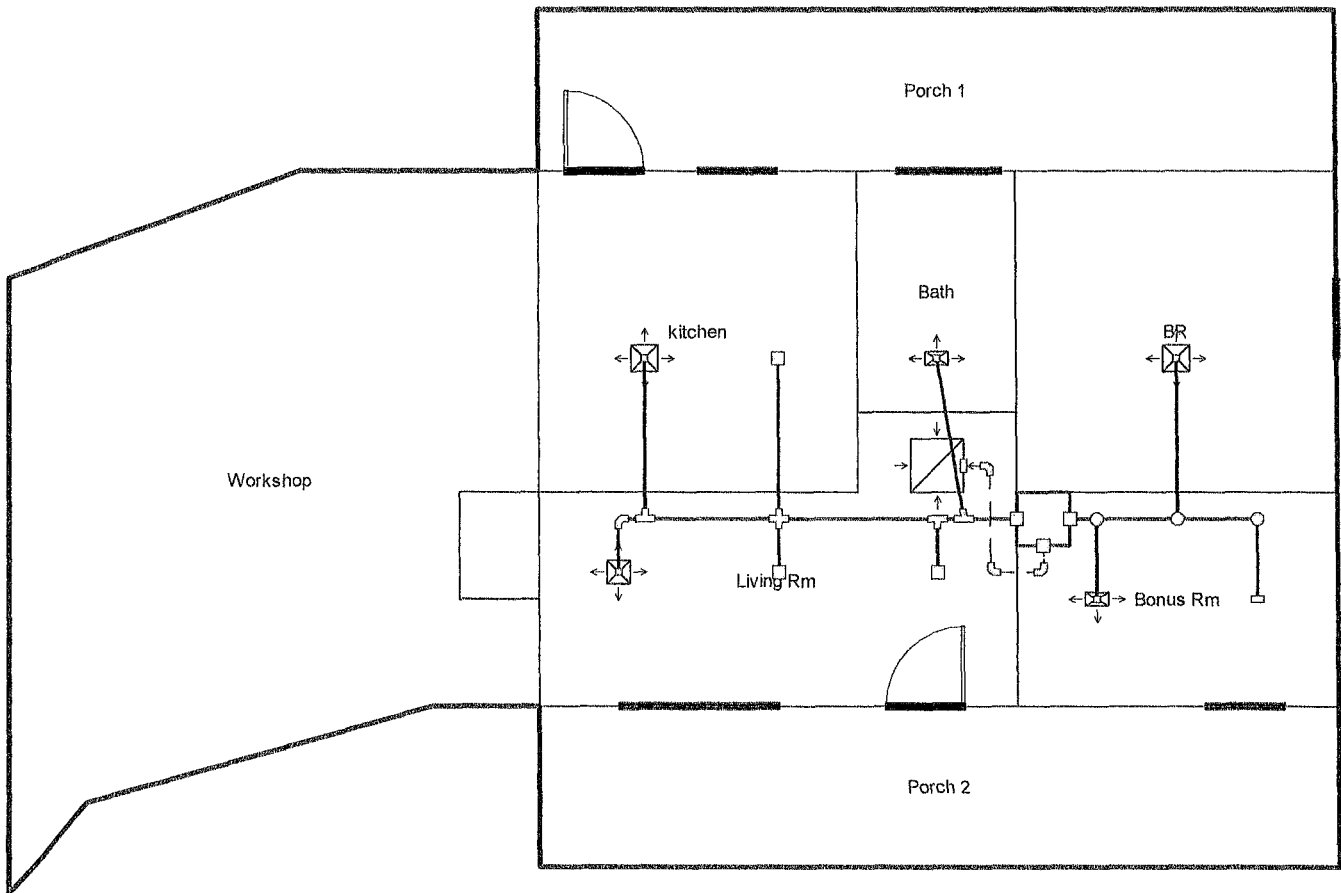
1 2 3 4 5	Room name		Exposed wall		Room height		Room dimensions		Room area		Bonus Rm		Living Rm	
	8.0 ft		8.0 ft		heat/cool		12.0 ft		0 ft		heat/cool		12.0 ft	
	96.0 ft ²		12.0 x 8.0 ft		174.0 ft ²		174.0 ft ²		1.0 x 174.0 ft					
6	Ty	Construction number	U-value (Btuh/ft ² ·°F)	Or	HTM (Btuh/ft ²)		Area (ft ²) or perimeter (ft)		Load (Btuh)		Area (ft ²) or perimeter (ft)		Load (Btuh)	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6	W	13AA-0oc	0.584	s	26.28	14.25	64	64	1682	912	0	0	0	0
	G	1A-c1om	1.270	s	57.15	43.51	0	0	0	0	0	0	0	0
	C	18A-30ad	0.034	-	1.53	1.09	96	96	147	104	174	174	266	189
11	F	22A-lpm	1.180	-	53.10	0.00	96	8	425	0	174	0	0	0
6	c) AED excursion									0				0
	Envelope loss/gain								2254	1016			266	189
12	a) Infiltration								882	129			0	0
	b) Room ventilation								0	0			0	0
13	Internal gains		Occupants @	300			2			600	4			1200
			Appliances/other							0				0
	Subtotal (lines 6 to 13)								3135	1745			266	1389
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								3135	1745			266	1389
15	Duct loads								0	0			0	0
	Total room load								3135	1745			266	1389
	Air required (cfm)								524	323			45	257

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





Sheet 1



Job #:
Performed by A W for:
Tom & Beth Barritt
Lake City, Fl 32024

Boozer heat & a.c.

Lake City, Fl

Scale: 1 : 86
Page 1
Right-Suite@ Universal 2012
12 1 01 RSU17780
2016-Apr-01 15 57.54
I\LES .RRP\Geiger (Boozer) rup