

20 # 31284
KEEN ENGINEERING & SURVEYING, INC.
9263 COUNTY ROAD 417
LIVE OAK, FLORIDA 32060
386/362-4787

May 16, 2014

Randy Jones
Columbia County Building Dept.
P.O. Drawer 1529
Lake City, FL 32056

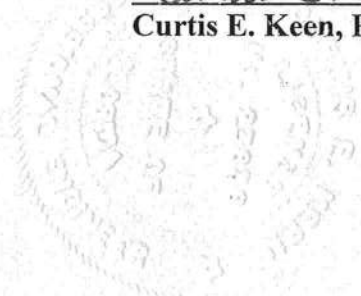
RE: BETH RICHARDS STAIRS

Two floor truss were cut at the stair area of the Richards home being constructed. I met with Mike Todd and discussed the following required corrective action to bring the stairs into compliance.

The floor truss over the stairs that run from the ground floor to the mid point landing is to have double 2 x 6 header constructed beneath and the header will run to the stud wall on each side and be screwed into the walls.

The floor truss over the stairs that run from the landing to the top floor will have a stud wall built beneath approximately 42" in length for the floor truss to rest upon.

If additional information is required, please advise.


Curtis E. Keen 5/16/14
Curtis E. Keen, PE #23836

Residential System Sizing Calculation

Summary

Beth Richards
1618 Daisy Road SW
Ft White, FL 32306-

Project Title:
Beth Richards House

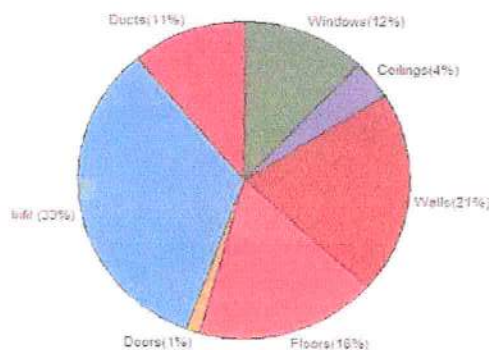
10/29/2013

Location for weather data: Jacksonville, FL - Defaults: Latitude(30.5) Altitude(30 ft.) Temp Range(M)			
Humidity data: Interior RH (50%) Outdoor wet bulb (77F) Humidity difference(53gr.)			
Winter design temperature(MJ8 99%)	32 F	Summer design temperature(MJ8 99%)	93 F
Winter setpoint	70 F	Summer setpoint	75 F
Winter temperature difference	38 F	Summer temperature difference	18 F
Total heating load calculation	32475 Btuh	Total cooling load calculation	23722 Btuh
Submitted heating capacity	% of calc Btuh	Submitted cooling capacity	% of calc Btuh
Total (Electric Heat Pump)	15.4 5000	Sensible (SHR = 0.75)	174.4 27000
Heat Pump + Auxiliary(0.0kW)	15.4 5000	Latent	109.2 9000
		Total (Electric Heat Pump)	151.8 36000

WINTER CALCULATIONS

Winter Heating Load (for 2352 sqft)

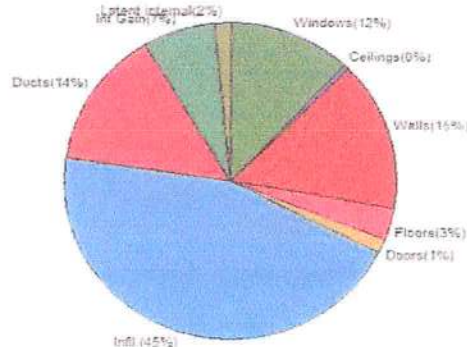
Load component		Load	
Window total	189 sqft	3950	Btuh
Wall total	2307 sqft	6774	Btuh
Door total	24 sqft	420	Btuh
Ceiling total	2016 sqft	1312	Btuh
Floor total	See detail report	5697	Btuh
Infiltration	255 cfm	10641	Btuh
Duct loss		3681	Btuh
Subtotal		32475	Btuh
Ventilation	0 cfm	0	Btuh
TOTAL HEAT LOSS		32475	Btuh



SUMMER CALCULATIONS

Summer Cooling Load (for 2352 sqft)

Load component		Load	
Window total	189 sqft	2839	Btuh
Wall total	2307 sqft	3637	Btuh
Door total	24 sqft	320	Btuh
Ceiling total	2016 sqft	104	Btuh
Floor total		783	Btuh
Infiltration	191 cfm	3780	Btuh
Internal gain		1660	Btuh
Duct gain		2356	Btuh
Sens. Ventilation	0 cfm	0	Btuh
Blower Load		0	Btuh
Total sensible gain		15478	Btuh
Latent gain(ducts)		962	Btuh
Latent gain(infiltration)		6881	Btuh
Latent gain(ventilation)		0	Btuh
Latent gain(internal/occupants/other)		400	Btuh
Total latent gain		8243	Btuh
TOTAL HEAT GAIN		23722	Btuh



8th Edition

EnergyGauge® System Sizing

PREPARED BY: _____

DATE: _____

Permit 31284

FORM 405-10

FLORIDA ENERGY EFFICIENCY CODE FOR BUILDING CONSTRUCTION

Florida Department of Business and Professional Regulation - Residential Performance Method

Project Name: Beth Richards House
Street: 1618 Daisy Road SW
City, State, Zip: Ft White, FL, 32308-
Owner: Beth Richards
Design Location: FL, Jacksonville

Builder Name: TBD
Permit Office:
Permit Number:
Jurisdiction:

1. New construction or existing	New (From Plans)
2. Single family or multiple family	Single-family
3. Number of units, if multiple family	1
4. Number of Bedrooms	2
5. Is this a worst case?	No
6. Conditioned floor area above grade (ft²)	2352
Conditioned floor area below grade (ft²)	0
7. Windows (189.0 sqft.)	Description Area
a. U-Factor:	Sgl, U=0.55 189.00 ft²
SHGC:	SHGC=0.50
b. U-Factor:	N/A ft²
SHGC:	
c. U-Factor:	N/A ft²
SHGC:	
d. U-Factor:	N/A ft²
SHGC:	
Area Weighted Average Overhang Depth:	12.730 ft.
Area Weighted Average SHGC:	0.500
8. Floor Types (2352.0 sqft.)	Insulation Area
a. Raised Floor	R=3I
b. Floor Over Other Space	R=3I
c. other (see details)	R=

9. Wall Types (2520.0 sqft.)	Insulation Area
a. Frame - Wood, Exterior	R=19.0 2520.00 ft²
b. N/A	R= ft²
c. N/A	R= ft²
d. N/A	R= ft²
10. Ceiling Types (2016.0 sqft.)	Insulation Area
a. Roof Deck (Unvented)	R=30.0 2016.00 ft²
b. N/A	R= ft²
c. N/A	R= ft²
11. Ducts	R ft²
a. Sup: Attic, Ret: Attic, AH: Attic	6.4 470.4
12. Cooling systems	kBtu/hr Efficiency
a. Central Unit	36.0 SEER:13.00
13. Heating systems	kBtu/hr Efficiency
a. Electric Heat Pump	5.0 HSPF:7.70
14. Hot water systems	
a. Electric Tankless	

Glass/Floor Area: 0.080
Total

I hereby certify that the plans and specification this calculation are in compliance with the Florida Energy Code.

PREPARED BY: Robert Ka
DATE: 7-19-13

I hereby certify that this building, as designed, with the Florida Energy Code.

OWNER/AGENT:
DATE:

NOTICE OF PREVENTATIVE TREATMENTS FOR TERMITES

Freedom Pest Control, Inc.

License # JF138607 • Phone # 1-800-410-5708 • Fax # 352-669-6787

TBD 1618 Daisy Road SW Columbia
County

Builder / Address or Lot # of Treatment

08-28-13 8:30am

Date

Time

Permit #

Applicator

Max Thor SC .06

Percent

370 gals
Gallons

Applicator

3744
Square Ft.

Chemical Used

Do Not Disturb Soil

If disrupted in any way the Builder/General Contractor must call Freedom Pest Control **IMMEDIATELY**

If initiated _____ This building has received a complete treatment for the prevention of subterranean termites. Treatment is in accordance with rules and laws established by the Florida Dept. of Agriculture and Consumer Services per FBC 104.2.6 & FBC 1816.1.7.

- Compliance requires completion of a Florida Energy Code
- Heat sys #1 may be undersized. Size of 5.0

PROJECT

Title: Beth Richards House	Bedrooms: 2	Address Type: Street Address
Building Type: User	Conditioned Area: 2352	Lot #
Owner: Beth Richards	Total Stories: 2	Block/SubDivision:
# of Units: 1	Worst Case: No	PlatBook:
Builder Name: TBD	Rotate Angle: 0	Street: 1618 Daisy Road SW
Permit Office:	Cross Ventilation: Yes	County: Columbia
Jurisdiction:	Whole House Fan: No	City, State, Zip: Ft White , FL , 32308-
Family Type: Single-family		
New/Existing: New (From Plans)		
Comment:		

CLIMATE

	Design Location	TMY Site	IECC Zone	Design Temp 97.5 % 2.5 %	Int Design Temp Winter Summer	Heating Degree Days	Design Moisture	Daily Temp Range
✓	FL, Jacksonville	FL_JACKSONVILLE_INT	2	32 93	70 75	1281	49	Medium

BLOCKS

Number	Name	Area	Volume
1	Block1	2352	20160

SPACES

Number	Name	Area	Volume	Kitchen	Occupants	Bedrooms	Infil ID	Finished	Cooled	Heated
1	1st Floor	336	4032	No	0		1	Yes	Yes	Yes
2	2nd Floor	2016	16128	Yes	2	2	1	Yes	Yes	Yes

FLOORS

	#	Floor Type	Space	Perimeter	Perimeter R-Value	Area	Joist R-Value	Tile	Wood	Carpet
✓		1 Slab-On-Grade Edge Insulatio	1st Floor	76 ft	0	336 ft²	----	0	0	1
		2 Floor Over Other Space	2nd Floor	----	----	336 ft²	30	0	0	1
		3 Raised Floor	2nd Floor	----	----	1680 ft²	30	0	0	1

ROOF

	#	Type	Materials	Roof Area	Gable Area	Roof Color	Solar Absor.	SA Tested	Emitt	Emitt Tested	Deck Insul.	Pitch (deg)
✓		1 Hip	Composition shingles	2184 ft²	0 ft²	Medium	0.96	No	0.9	No	30	22.6

ATTIC

	#	Type	Ventilation	Vent Ratio (1 in)	Area	RBS	IRCC
✓		1 Full attic	Unvented	0	2016 ft²	N	N

CEILING													
✓	#	Ceiling Type	Space	R-Value	Area	Framing Frac	Truss Type						
	1	Under Attic (Unvented)	2nd Floor	30	2016 ft²	0.11	Wood						

WALLS															
✓	#	Ornt	Adjacent To	Wall Type	Space	Cavity R-Value	Width Ft	In	Height Ft	In	Area	Sheathing R-Value	Framing Fraction	Solar Absor.	Below Grade%
	1	W	Exterior	Frame - Wood	1st Floor	19	24	2	12		290 ft²		0.23	0.75	0
	2	N	Exterior	Frame - Wood	1st Floor	19	14	2	12		170 ft²		0.23	0.75	0
	3	E	Exterior	Frame - Wood	1st Floor	19	24	2	12		290 ft²		0.23	0.75	0
	4	S	Exterior	Frame - Wood	1st Floor	19	14	2	12		170 ft²		0.23	0.75	0
	5	N	Exterior	Frame - Wood	2nd Floor	19	28		8		224 ft²		0.23	0.75	0
	6	E	Exterior	Frame - Wood	2nd Floor	19	72		8		576 ft²		0.23	0.75	0
	7	S	Exterior	Frame - Wood	2nd Floor	19	28		8		224 ft²		0.23	0.75	0
	8	E	Exterior	Frame - Wood	2nd Floor	19	72		8		576 ft²		0.23	0.75	0

DOORS											
✓	#	Ornt	Door Type	Space	Storms	U-Value	Width Ft	In	Height Ft	In	Area
	1	N	Wood	1st Floor	None	0.460000	3		8		24 ft²

WINDOWS													
Orientation shown is the entered, Proposed orientation.													
✓	#	Ornt	Wall ID	Frame	Panes	NFRC	U-Factor	SHGC	Area	Overhang Depth	Separation	Int Shade	Screening
	1	N	5	Wood	Single (Tinted)	Yes	0.55	0.5	20 ft²	12 ft 0 in	2 ft 0 in	Drapes/blinds	None
	2	E	6	Wood	Single (Tinted)	Yes	0.55	0.5	45 ft²	14 ft 0 in	3 ft 0 in	Drapes/blinds	None
	3	E	6	Wood	Single (Tinted)	Yes	0.55	0.5	9 ft²	14 ft 0 in	3 ft 0 in	Drapes/blinds	None
	4	E	6	Metal	Single (Tinted)	Yes	0.55	0.5	20 ft²	14 ft 0 in	3 ft 0 in	Drapes/blinds	None
	5	S	7	Wood	Single (Tinted)	Yes	0.55	0.5	30 ft²	10 ft 0 in	3 ft 0 in	Drapes/blinds	None
	6	S	7	Wood	Single (Tinted)	Yes	0.55	0.5	20 ft²	10 ft 0 in	3 ft 0 in	Drapes/blinds	None
	7	E	8	Wood	Single (Tinted)	Yes	0.55	0.5	45 ft²	14 ft 0 in	3 ft 0 in	Drapes/blinds	None

INFILTRATION									
#	Scope	Method	SLA	CFM 50	ELA	EqLA	ACH	ACH 50	
1	Wholehouse	Best Guess	0.000500	3084.6	169.34	318.47	0.4739	9.1805	

HEATING SYSTEM							
✓	#	System Type	Subtype	Efficiency	Capacity	Block	Ducts
	1	Electric Heat Pump	None	HSPF: 7.7	5 kBtu/hr	1	sys#1

COOLING SYSTEM

✓	#	System Type	Subtype	Efficiency	Capacity	Air Flow	SHR	Block	Ducts
✓	1	Central Unit	Split	SEER: 13	36 kBtu/hr	1080 cfm	0.75	1	sys#1

HOT WATER SYSTEM

✓	#	System Type	SubType	Location	EF	Cap	Use	SetPnt	Conservation
✓	1	Electric	Tankless	2nd Floor	0.98	1 gal	50 gal	120 deg	None

SOLAR HOT WATER SYSTEM

✓	FSEC Cert #	Company Name	System Model #	Collector Model #	Collector Area	Storage Volume	FEF
✓	None	None				ft²	

DUCTS

✓	#	--- Supply --- Location	R-Value	Area	--- Return --- Location	Area	Leakage Type	Air Handler	CFM 25	Percent Leakage	QN	RLF	HVAC # Heat	Cool
✓	1	Attic	6.4	470.4 ft	Attic	10 ft²	Default Leakage	Attic	(Default)	(Default) %			1	1

TEMPERATURES

Programable Thermostat: Y				Ceiling Fans:																				
Cooling	<input checked="" type="checkbox"/>	Jan	<input checked="" type="checkbox"/>	Feb	<input checked="" type="checkbox"/>	Mar	<input type="checkbox"/>	Apr	<input type="checkbox"/>	May	<input checked="" type="checkbox"/>	Jun	<input checked="" type="checkbox"/>	Jul	<input checked="" type="checkbox"/>	Aug	<input checked="" type="checkbox"/>	Sep	<input type="checkbox"/>	Oct	<input type="checkbox"/>	Nov	<input checked="" type="checkbox"/>	Dec
Heating	<input checked="" type="checkbox"/>	Jan	<input type="checkbox"/>	Feb	<input type="checkbox"/>	Mar	<input checked="" type="checkbox"/>	Apr	<input type="checkbox"/>	May	<input checked="" type="checkbox"/>	Jun	<input checked="" type="checkbox"/>	Jul	<input checked="" type="checkbox"/>	Aug	<input checked="" type="checkbox"/>	Sep	<input checked="" type="checkbox"/>	Oct	<input checked="" type="checkbox"/>	Nov	<input checked="" type="checkbox"/>	Dec
Venting	<input checked="" type="checkbox"/>	Jan	<input type="checkbox"/>	Feb	<input checked="" type="checkbox"/>	Mar	<input type="checkbox"/>	Apr	<input type="checkbox"/>	May	<input checked="" type="checkbox"/>	Jun	<input checked="" type="checkbox"/>	Jul	<input checked="" type="checkbox"/>	Aug	<input checked="" type="checkbox"/>	Sep	<input type="checkbox"/>	Oct	<input checked="" type="checkbox"/>	Nov	<input checked="" type="checkbox"/>	Dec
Thermostat Schedule: HERS 2006 Reference														Hours										
Schedule Type		1	2	3	4	5	6	7	8	9	10	11	12											
Cooling (WD)	AM	78	78	78	78	78	78	78	78	78	80	80	80											
	PM	80	80	78	78	78	78	78	78	78	78	78	78											
Cooling (WEH)	AM	78	78	78	78	78	78	78	78	78	78	78	78											
	PM	78	78	78	78	78	78	78	78	78	78	78	78											
Heating (WD)	AM	66	66	66	66	66	68	68	68	68	68	68	68											
	PM	68	68	68	68	68	68	68	68	68	68	68	66											
Heating (WEH)	AM	66	66	66	66	66	68	68	68	68	68	68	68											
	PM	68	68	68	68	68	68	68	68	68	68	68	66											

Florida Code Compliance Checklist

Florida Department of Business and Professional Regulations
Residential Whole Building Performance Method

ADDRESS: 1618 Daisy Road SW
Ft White, FL, 32308-

PERMIT #:

MANDATORY REQUIREMENTS SUMMARY - See individual code sections for full details.

COMPONENT	SECTION	SUMMARY OF REQUIREMENT(S)	CHECK
Air leakage	402.4	To be caulked, gasketed, weatherstripped or otherwise sealed. Recessed lighting IC-rated as meeting ASTM E 283. Windows and doors = 0.30 cfm/sq.ft. Testing or visual inspection required. Fireplaces: gasketed doors & outdoor combustion air. Must complete envelope leakage report or visually verify Table 402.4.2.	
Thermostat & controls	403.1	At least one thermostat shall be provided for each separate heating and cooling system. Where forced-air furnace is primary system, programmable thermostat is required. Heat pumps with supplemental electric heat must prevent supplemental heat when compressor can meet the load.	
Ducts	403.2.2	All ducts, air handlers, filter boxes and building cavities which form the primary air containment passageways for air distribution systems shall be considered ducts or plenum chambers, shall be constructed and sealed in accordance with Section 503.2.7.2 of this code.	
	403.3.3	Building framing cavities shall not be used as supply ducts.	
Water heaters	403.4	Heat trap required for vertical pipe risers. Comply with efficiencies in Table 403.4.3.2. Provide switch or clearly marked circuit breaker (electric) or shutoff (gas). Circulating system pipes insulated to = R-2 + accessible manual OFF switch.	
Mechanical ventilation	403.5	Homes designed to operate at positive pressure or with mechanical ventilation systems shall not exceed the minimum ASHRAE 62 level. No make-up air from attics, crawlspaces, garages or outdoors adjacent to pools or spas.	
Swimming Pools & Spas	403.9	Pool pumps and pool pump motors with a total horsepower (HP) of = 1 HP shall have the capability of operating at two or more speeds. Spas and heated pools must have vapor-retardant covers or a liquid cover or other means proven to reduce heat loss except if 70% of heat from site-recovered energy. Off/timer switch required. Gas heaters minimum thermal efficiency=78% (82% after 4/16/13). Heat pump pool heaters minimum COP= 4.0.	
Cooling/heating equipment	403.6	Sizing calculation performed & attached. Minimum efficiencies per Tables 503.2.3. Equipment efficiency verification required. Special occasion cooling or heating capacity requires separate system or variable capacity system. Electric heat >10kW must be divided into two or more stages.	
Ceilings/knee walls	405.2.1	R-19 space permitting.	

ENERGY PERFORMANCE LEVEL (EPL) DISPLAY CARD

ESTIMATED ENERGY PERFORMANCE INDEX* = 56

The lower the EnergyPerformance Index, the more efficient the home.

1618 Daisy Road SW, Ft White, FL, 32308-

1. New construction or existing	New (From Plans)		9. Wall Types	Insulation	Area
2. Single family or multiple family	Single-family		a. Frame - Wood, Exterior	R=19.0	2520.00 ft ²
3. Number of units, if multiple family	1		b. N/A	R=	ft ²
4. Number of Bedrooms	2		c. N/A	R=	ft ²
5. Is this a worst case?	No		d. N/A	R=	ft ²
6. Conditioned floor area (ft ²)	2352		10. Ceiling Types	Insulation	Area
7. Windows**	Description	Area	a. Roof Deck (Unvented)	R=30.0	2016.00 ft ²
a. U-Factor:	Sgl, U=0.55	189.00 ft ²	b. N/A	R=	ft ²
SHGC:	SHGC=0.50		c. N/A	R=	ft ²
b. U-Factor:	N/A	ft ²	11. Ducts	R	ft ²
SHGC:			a. Sup: Attic, Ret: Attic, AH: Attic	6.4	470.4
c. U-Factor:	N/A	ft ²	12. Cooling systems	kBtu/hr	Efficiency
SHGC:			a. Central Unit	36.0	SEER:13.00
d. U-Factor:	N/A	ft ²	13. Heating systems	kBtu/hr	Efficiency
SHGC:			a. Electric Heat Pump	5.0	HSPF:7.70
Area Weighted Average Overhang Depth:	12.730 ft.		14. Hot water systems		
Area Weighted Average SHGC:	0.500		a. Electric	Cap: 1 gallons	
8. Floor Types	Insulation	Area	b. Conservation features	EF: 0.98	
a. Raised Floor	R=30.0	1680.00 ft ²	None		
b. Floor Over Other Space	R=30.0	336.00 ft ²	15. Credits	CF, CV, Pstat	
c. other (see details)	R=	336.00 ft ²			

I certify that this home has complied with the Florida Energy Efficiency Code for Building Construction through the above energy saving features which will be installed (or exceeded) in this home before final inspection. Otherwise, a new EPL Display Card will be completed based on installed Code compliant features.

Builder Signature: _____ Date: _____

Address of New Home: _____ City/FL Zip: _____



*Note: This is not a Building Energy Rating. If your Index is below 70, your home may qualify for energy efficient mortgage (EEM) incentives if you obtain a Florida EnergyGauge Rating. Contact the EnergyGauge Hotline at (321) 638-1492 or see the EnergyGauge web site at energygauge.com for information and a list of certified Raters. For information about the Florida Building Code, Energy Conservation, contact the Florida Building Commission's support staff.

**Label required by Section 303.1.3 of the Florida Building Code, Energy Conservation, if not DEFAULT.

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1618 Daisy Road SW
Ft White, FL 32308-

Project Title:
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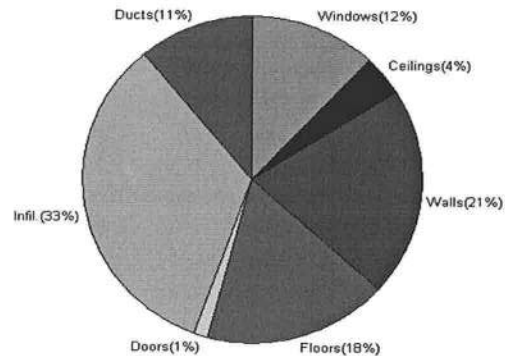
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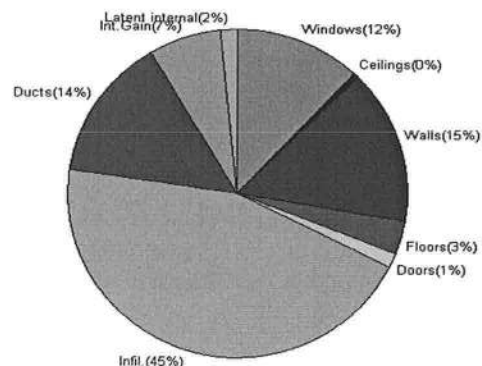
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DATE: _____