FORM 405-10

FLORIDA ENERGY EFFICIENCY CODE FOR BUILDING CONSTRUCTION

Florida Department of Business and Professional Regulation - Residential Performance Method

Project Name:	New Residence for Bradley Franks Constr, LLC	Builder Name:	Bradley Franks Construction
Street:	208 SW NEwlywed Ct	Permit Office:	
City, State, Zip:	Lake City , FL , 32024-	Permit Number:	
Owner:	Bradley Franks Construction	Jurisdiction:	
Design Location:	FL, Gainesville		

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	3
5. Is this a worst case?	No
6. Conditioned floor area above grade (ft²)	1410
Conditioned floor area below grade (ft²)	0

7 Windows(135.3 sqft.)	Description	Area
a. U-Factor:	Dbl, U=0 47	135 33 ft²
SHGC:	SHGC=0.39	
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:		2.596 ft.
Area Weighted Average SHGC.		0 390

8. Floor Types (1410.0 sqft.)	Insulation	Area
a. Slab-On-Grade Edge Insulation	R=0 0	1410 00 ft²
b. N/A	R=	ft²
c N/A	R=	ft²

9 Wall Types (1279 9 sqft.)	Insulation	Area
a. Frame - Wood, Exterior	R=13 0	1279.90 ft²
b N/A	R=	ft²
c N/A	R=	ft²
d N/A	R=	ft²

10. Ceiling Types (1410 0 sqft)	Insulation	Area
a. Under Attic (Vented)	R=30.0	1410.00 ft²
b. N/A	R=	ft²
c N/A	R=	ft²

11. Ducts	R	ft²
a. Sup. Attic, Ret: Attic, AH: Garage	6	282

12 Cooling systems	kBtu/hr	Efficiency
a. Central Unit	28.0	SEER:14 00

13. Heating systems	kBtu/hr	Efficiency
a Electric Heat Pump	27 6	HSPF:8.00

14. Hot water systems	
a. Electric	Cap. 50 gallons
	EF: 0 940
b. Conservation features	
None	
15. Credits	CF, Pstat

Glass/Floor Area: 0.096

Total Proposed Modified Loads: 26.22
Total Standard Reference Loads: 32.78

PASS

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

PREPARED BY: _____
DATE: 2/12/14

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

OWNER/AGENT: _____
DATE: 2/25/14

Review of the plans and specifications covered by this calculation indicates compliance with the Florida Energy Code. Before construction is completed this building will be inspected for compliance with Section 553.908 Florida Statutes.

BUILDING OFFICIAL: _____
DATE: _____

- **Compliance requires completion of a Florida Air Barrier and Insulation Inspection Checklist**

Ronald E. Miller, Jr.
Certified Commercial Energy Rater #960

PROJECT

Title:	New Residence for Bradley Fr	Bedrooms:	3	Address Type:	Street Address
Building Type:	User	Conditioned Area:	1410	Lot #	
Owner:	Bradley Franks Construction	Total Stories:	1	Block/SubDivision:	
# of Units:	1	Worst Case:	No	PlatBook.	
Builder Name:	Bradley Franks Construction	Rotate Angle:	0	Street:	208 SW NEwlywed Ct
Permit Office:		Cross Ventilation:		County:	Columbia
Jurisdiction:		Whole House Fan:		City, State, Zip:	Lake City , FL , 32024-
Family Type:	Single-family				
New/Existing:	New (From Plans)				
Comment:					

CLIMATE

√	Design Location	TMY Site	IECC Zone	Design Temp 97.5 %	Design Temp 2.5 %	Int Design Temp Winter	Int Design Temp Summer	Heating Degree Days	Design Moisture	Daily Temp Range
✓	FL, Gainesville	FL_GAINESVILLE_REGI	2	32	92	70	75	1305 5	51	Medium

BLOCKS

Number	Name	Area	Volume
1	Block1	1410	11421

SPACES

Number	Name	Area	Volume	Kitchen	Occupants	Bedrooms	Infil ID	Finished	Cooled	Heated
1	Main	1410	11421	Yes	4	3	1	Yes	Yes	Yes

FLOORS

√	#	Floor Type	Space	Perimeter	R-Value	Area		Tile	Wood	Carpet
✓	1	Slab-On-Grade Edge Insulatio	Main	205.34 ft	0	1410 ft²	----	0	0	1

ROOF

√	#	Type	Materials	Roof Area	Gable Area	Roof Color	Solar Absor	SA Tested	Emitt	Emitt Tested	Deck Insul	Pitch (deg)
✓	1	Gable or shed	Composition shingles	1577 ft²	354 ft²	Medium	0 96	No	0.9	No	0	26.6

ATTIC

√	#	Type	Ventilation	Vent Ratio (1 in)	Area	RBS	IRCC
✓	1	Full attic	Vented	300	1410 ft²	N	N

CEILING

√	#	Ceiling Type	Space	R-Value	Area	Framing Frac	Truss Type
✓	1	Under Attic (Vented)	Main	30	1410 ft²	0.11	Wood

WALLS

#	Ornt	Adjacent To	Wall Type	Space	Cavity R-Value	Width Ft	Width In	Height Ft	Height In	Area	Sheathing R-Value	Framing Fraction	Solar Absor.	Below Grade%
1	N	Exterior	Frame - Wood	Main	13	19	2	8	1	154.9 ft²		0.23	0.75	0
2	S	Exterior	Frame - Wood	Main	13	33	2	8	1	268.1 ft²		0.23	0.75	0
3	E	Exterior	Frame - Wood	Main	13	53	0	8	1	428.4 ft²		0.23	0.75	0
4	W	Exterior	Frame - Wood	Main	13	43	0	8	1	347 6 ft²		0.23	0 75	0
5	W	Exterior	Frame - Wood	Main	13	10	0	8	1	80.8 ft²		0 23	0.75	0

DOORS

#	Ornt	Door Type	Space	Storms	U-Value	Width Ft	Width In	Height Ft	Height In	Area
1	E	Insulated	Main	None	.46	3		6	8	20 ft²

WINDOWS

Orientation shown is the entered, Proposed orientation.

#	Ornt	Wall ID	Frame	Panes	NFRC	U-Factor	SHGC	Area	Overhang Depth	Overhang Separation	Int Shade	Screening
1	E	3	Metal	Double (Clear)	Yes	0.47	0.39	26.7 ft²	1 ft 0 in	1 ft 0 in	Drapes/blinds	None
2	E	3	Metal	Double (Clear)	Yes	0 47	0 39	20 0 ft²	1 ft 0 in	1 ft 0 in	Drapes/blinds	None
3	E	3	Metal	Double (Clear)	Yes	0 47	0.39	8 0 ft²	1 ft 0 in	1 ft 0 in	Drapes/blinds	None
4	S	2	Metal	Double (Clear)	Yes	0.47	0 39	2 7 ft²	1 ft 0 in	1 ft 0 in	Drapes/blinds	None
5	W	4	Metal	Double (Clear)	Yes	0.47	0 39	48.0 ft²	1 ft 0 in	1 ft 0 in	Drapes/blinds	None
6	W	4	Metal	Double (Clear)	Yes	0 47	0.39	6.0 ft²	1 ft 0 in	1 ft 0 in	Drapes/blinds	None
7	N	1	Metal	Double (Clear)	Yes	0.47	0.39	24 0 ft²	10 ft 0 in	1 ft 0 in	Drapes/blinds	None

GARAGE

#	Floor Area	Ceiling Area	Exposed Wall Perimeter	Avg Wall Height	Exposed Wall Insulation
1	406.515 ft²	406 515 ft²	52 ft	8.1 ft	1

INFILTRATION

#	Scope	Method	SLA	CFM 50	ELA	EqLA	ACH	ACH 50
1	Wholehouse	Best Guess	0005	1849.2	101 52	190.92	.385	9 7149

HEATING SYSTEM

#	System Type	Subtype	Efficiency	Capacity	Block	Ducts
1	Electric Heat Pump	SPVHP(COP)	HSPF: 8	27 6 kBtu/hr	1	sys#1

COOLING SYSTEM

#	System Type	Subtype	Efficiency	Capacity	Air Flow	SHR	Block	Ducts
1	Central Unit	Single	SEER: 14	28 kBtu/hr	840 cfm	0.75	1	sys#1

HOT WATER SYSTEM

✓	#	System Type	SubType	Location	EF	Cap	Use	SetPnt	Conservation
✓	1	Electric	None	Garage	0.94	50 gal	60 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 TOT	CFM25 OUT	QN	RLF	HVAC # Heat	HVAC # Cool
✓	1	Attic	6	282 ft²	Attic	70 5 ft²	Default Leakage	Garage	(Default)	(Default)			1	1

TEMPERATURES

Programable Thermostat: Y

Ceiling Fans:

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Cooling	[ ]	[ ]	[ ]	[ ]	[ ]	[X]	[X]	[X]	[X]	[ ]	[ ]	[ ]
Heating	[X]	[X]	[X]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[X]	[X]
Venting	[ ]	[ ]	[X]	[X]	[ ]	[ ]	[ ]	[ ]	[ ]	[X]	[X]	[ ]

Thermostat Schedule: HERS 2006 Reference Schedule Type		Hours 1	2	3	4	5	6	7	8	9	10	11	12
Cooling (WD)	AM	78	78	78	78	78	78	78	78	80	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	66	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	66	66

FORM 405-10

Florida Code Compliance Checklist

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

ADDRESS: 208 SW NEwlywed Ct Lake City, FL, 32024-	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	403.2.2 403.3.3	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. 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.	N/A
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.	

EMS Heat Loss/Heat Gain Calculation

Company:	Green Engineering Solutions, Inc.
Preparer:	Ronald Miller ER #960
Phone:	9044000624

Customer:	Bradley Franks Construction, LLC
Address:	208 SW Newlywed Ct. Lake City, FL 32024
Phone:	904-673-6655
Date:	2/11/2014

This HVAC load calculation has been performed using sound engineering principles as prescribed by Manual J seventh and eighth abridged editions and ASHRAE Fundamentals. Duct sizing has been performed as prescribed by Manual D.

1. Design Conditions

	Indoor	Outdoor	Temp. Diff.
Winter	70	34	36
Summer	75	95	20

Front of home is facing:
East

2. How would you describe the summer humidity in your area? Very Humid 60

3. How tight is the house? Average-under 1500 Sq. Ft.
Winter air change / hr: 1 Summer air change / hr: 0.5

4. Fireplace evaluation : Number: None Tightness: No fireplace 0

5. Number of occupants: 4

6. Overhang characteristics (optional)

	East	West	S/SE/SW
Distance of overhang from top of window (Ft.)	1	1	1
Length of overhang	5	10	1

7. Solar gain through glass

Facing	Total area - Sq.Ft.	Type of glass	BTU/H	Linear ft.	Unshaded	Shaded	BTU/H
N/Shaded		Double	24	Below OH		0	
NE/NW		-- Select --			0		0
South	2.68	Double	40	4	0	3	0
SE/SW		-- Select --			0	0	0
East	54.7	Double	75		55	0	4102
West	62.9	Double	75	5	27	36	2055
Skylight		-- Select --					0
Total North and Shaded						38	916
Total Solar Gain							7074
Adjust for tinted or reflective window coating?				No	1		7074

8. Ducts/Pipes

Location:	Trunk and branches in attic				
Attic Temp.	Insulation		Leakage		Area
130	R-6	1	sealed	1	1410

Duct gain:	0.335	Duct loss:	0.158

9. Load Calculation

Elements of Load	Insulation / R-value	Area/Mn.ft.	U-value	Heat Loss	Heat Gain
Gross Wall		1436	Glass solar gain		7074
Glass 1	Double	120	0.56	2425	
Glass 2	-- Select --			0	
Skylight	-- Select --	0		0	
Doors	-- Select --			0	0
Net walls	R-11	1316	0.08	3789	2105
Ceilings	R-19	1436	0.055	2843	3554
Floors	No Insulation		0.31	0	0
Open floors	-- Select --			0	0
Slab floors	-- Select --			0	0
Volume of your building or zone (cu. Ft.)		11985		7910	2197
		People			1200
		Appliances			1200
		Sub Total		16967	17330
		Duct Loss/Gain		2688	5799
		Sensible Load		19655	23129
		Latent Load			4995
		TOTAL BTUH		19655	28124

Summary		
	BTUH	Tons
Total heating load	19655	
Total cooling load	28124	2.3

Room by Room

Total Heat Loss	19823	System CFM (cooling)	1000
Total Heat Gain	23224	System CFM (heating)	1000

Room name	Kitchen	Gathering Room	Dining	Bedroom #2	Bedroom #3	Bath #2	MasterBath	MasterBed	Ancilliary
Gross wall	78	165	87	294	226.8	44.5	43	226.8	46
North windows									
NE/NW windows									
South windows									
SE/SW windows									
East windows		26.7		28					
West windows			24		16	2.7	6	32	
Skylight									
Doors									
Net walls	78	138	63	266	211	42	37	195	46
Ceiling	53	332		180	197	71	73	196	100
Floor-crawl									
Floor-open									
Floor-slab	53	332		180	197	71	73	196	100
Infiltration	0	27	24	28	16	3	6	32	0
People				1	1		2		
Appliances	500	500					200		
Heat loss	382	3880	2599	4087	2748	571	888	4285	383
Sensible Heat Gain	1009	5383	2200	5048	2878	556	1904	3817	429
Cooling CFM	43	232	95	217	124	24	82	164	18
Heating CFM	19	196	131	206	139	29	45	216	19

Equipment selection as per Manual S

	BTUH	Nom.Tons
Total heat loss	19655	
Total heat gain	27519	2.3
Sensible heat gain	20156	
Latent heat gain	7363	
Sensible/total ratio	0.73	
Target cooling TD	21	

Design temp.	Outdoor	Indoor
Winter	34	70
Summer	95	75
TD design RH	50%, 63F WB	
Altitude	34	

Predominantly Cool climate

Manufacturer's Equipment Specification

Equipment	Manufacturer	Model No.	BTUH output	Clg. capacity @ OD design temp.		
Furnace						
Boiler				Total	Sensible	Latent
Heat pump // AC	Amana	ASZ14030		28000	20200	7800
Evaporator						
Air handler	Amana	ARPT030				
TOTAL CAPACITY with altitude correction			0	27986	20190	7796
Selected equipment size			OK	OK	OK	OK

Heating CFM	Cooling CFM (rec.)	Ext. static pressure of blower
1000	874	.5

Available static pressure for duct

Blower ext. static press.	.5
coil pressure drop	
filter pressure drop	.1
register pressure drop	.03
grille pressure drop	.03
other	
Available SP for duct	0.34

Supplemental heat needed for heat pump

HP capacity @ 47F	27600
HP capacity @ 17F	
HP capacity @ ODDT	
BTUH supplemental heat	
KW supplemental heat	

ENERGY PERFORMANCE LEVEL (EPL) DISPLAY CARD

ESTIMATED ENERGY PERFORMANCE INDEX* = 80

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

208 SW NEwlywed Ct, Lake City, FL, 32024-

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2. Single family or multiple family		Single-family		
3. Number of units, if multiple family		1		
4 Number of Bedrooms		3		
5. Is this a worst case?		No		
6 Conditioned floor area (ft²)		1410		
7 Windows**	Description		Area	
a. U-Factor: SHGC:	Dbl, U=0.47 SHGC=0 39		135.33	ft²
b U-Factor: SHGC:	N/A			ft²
c. U-Factor: SHGC.	N/A			ft²
d. U-Factor: SHGC:	N/A			ft²
Area Weighted Average Overhang Depth.			2.596	ft
Area Weighted Average SHGC:			0.390	
8 Floor Types		Insulation	Area	
a. Slab-On-Grade Edge Insulation		R=0 0	1410.00	ft²
b. N/A		R=		ft²
c. N/A		R=		ft²

9. Wall Types	Insulation	Area	
a. Frame - Wood, Exterior	R=13.0	1279.90	ft²
b. N/A	R=		ft²
c. N/A	R=		ft²
d. N/A	R=		ft²
10. Ceiling Types	Insulation	Area	
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b. N/A	R=		ft²
c N/A	R=		ft²
11. Ducts		R	ft²
a. Sup: Attic, Ret: Attic, AH: Garage		6	282
12 Cooling systems	kBtu/hr	Efficiency	
a Central Unit	28 0	SEER:14 00	
13 Heating systems	kBtu/hr	Efficiency	
a Electric Heat Pump	27 6	HSPF:8 00	
14 Hot water systems			
a Electric		Cap: 50 gallons EF: 0 94	
b Conservation features None			
15. Credits		CF, Pstat	

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: 2/25/14

Address of New Home: 208 SW Newly Wed Ct. City/FL Zip: Lake City, 32024

*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.