

FORM R405-2017

FLORIDA ENERGY EFFICIENCY CODE FOR BUILDING CONSTRUCTION

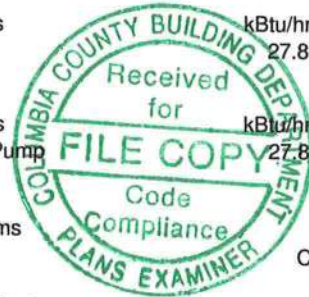
Florida Department of Business and Professional Regulation - Residential Performance Method

Project Name: Marcus Mathews -Marcus Mathews - J-2234
 Street:
 City, State, Zip: Lake City , FL ,
 Owner: Marcus & Becky Matthews
 Design Location: FL, Gainesville

Builder Name:
 Permit Office:
 Permit Number:
 Jurisdiction:
 County: Columbia (Florida Climate Zone 2)

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)	1887
Conditioned floor area below grade (ft²)	0
7. Windows(237.1 sqft.)	Description Area
a. U-Factor:	Dbl, U=0.30 237.07 ft²
SHGC:	SHGC=0.20
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:	1.000 ft.
Area Weighted Average SHGC:	0.200
8. Floor Types (1887.0 sqft.)	Insulation Area
a. Slab-On-Grade Edge Insulation	R=0.0 1887.00 ft²
b. N/A	R= ft²
c. N/A	R= ft²

9. Wall Types (1665.0 sqft.)	Insulation Area
a. Frame - Wood, Exterior	R=13.0 1462.50 ft²
b. Frame - Wood, Adjacent	R=13.0 202.50 ft²
c. N/A	R= ft²
d. N/A	R= ft²
10. Ceiling Types (1887.0 sqft.)	Insulation Area
a. Roof Deck (Unvented)	R=20.0 1887.00 ft²
b. N/A	R= ft²
c. N/A	R= ft²
11. Ducts	R ft²
a. Sup: Main, Ret: Main, AH: Main	6 100
12. Cooling systems	kBtu/hr Efficiency
a. Central Unit	27.8 SEER:14.50
13. Heating systems	kBtu/hr Efficiency
a. Electric Heat Pump	27.8 HSPF:9.20
14. Hot water systems	
a. Electric	Cap: 40 gallons
b. Conservation features	EF: 0.960
15. Credits	Pstat



Glass/Floor Area: 0.126

Total Proposed Modified Loads: 51.25

Total Baseline Loads: 51.42

PASS

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

PREPARED BY: James Bolton
 DATE: 06/18/2020

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

OWNER/AGENT:
 DATE:

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 certification by the air handler unit manufacturer that the air handler enclosure qualifies as certified factory-sealed in accordance with R403.3.2.1.
- Compliance requires an Air Barrier and Insulation Inspection Checklist in accordance with R402.4.1.1 and this project requires an envelope leakage test report with envelope leakage no greater than 6.00 ACH50 (R402.4.1.2).
- Compliance with a proposed duct leakage Qn requires a Duct Leakage Test Report confirming duct leakage to outdoors, tested in accordance with ANSI/RESNET/ICC 380, is not greater than 0.030 Qn for whole house.

INPUT SUMMARY CHECKLIST REPORT

PROJECT

Title:	Marcus Mathews -Marcus Mat	Bedrooms:	3	Address Type:	Street Address
Building Type:	User	Conditioned Area:	1887	Lot #	
Owner Name:	Marcus & Becky Matthews	Total Stories:	1	Block/Subdivision:	
# of Units:	1	Worst Case:	No	PlatBook:	
Builder Name:		Rotate Angle:	0	Street:	
Permit Office:		Cross Ventilation:	No	County:	Columbia
Jurisdiction:		Whole House Fan:	No	City, State, Zip:	Lake City , FL ,
Family Type:	Single-family				
New/Existing:	New (From Plans)				
Comment:					

CLIMATE

✓	Design Location	TMY Site	Design Temp 97.5 %	2.5 %	Int Design Temp Winter	Summer	Heating Degree Days	Design Moisture	Daily Temp Range
_____	FL, Gainesville	FL_GAINESVILLE_REGI	32	92	70	75	1305.5	51	Medium

BLOCKS

Number	Name	Area	Volume
1	Block1	1887	16983

SPACES

Number	Name	Area	Volume	Kitchen	Occupants	Bedrooms	Infil ID	Finished	Cooled	Heated
1	Main	1887	16983	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	162.5 ft		1887 ft²	----	0	0 1

ROOF

✓	#	Type	Materials	Roof Area	Gable Area	Roof Color	Rad Barr	Solar Absor.	SA Tested	Emitt	Emitt Tested	Deck Insul.	Pitch (deg)
_____	1	Gable or Shed	Metal	2110 ft²	472 ft²	Medium	N	0.9	N	0.9	No	20	26.6

ATTIC

✓	#	Type	Ventilation	Vent Ratio (1 in)	Area	RBS	IRCC
_____	1	Full attic	Unvented	0	1887 ft²	N	N

CEILING

✓	#	Ceiling Type	Space	R-Value	Ins Type	Area	Framing Frac	Truss Type
_____	1	Under Attic (Unvented)	Main	0	Blown	1887 ft²	0.1	Wood

INPUT SUMMARY CHECKLIST REPORT

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	N	Exterior	Frame - Wood	Main	13	30	0	9	0	270.0 ft²	0	0.25	0.8	0
2	E	Exterior	Frame - Wood	Main	13	63	0	9	0	567.0 ft²	0	0.25	0.8	0
3	S	Exterior	Frame - Wood	Main	13	6	6	9	0	58.5 ft²	0	0.25	0.8	0
4	W	Exterior	Frame - Wood	Main	13	63	0	9	0	567.0 ft²	0	0.25	0.8	0
5	-	Garage	Frame - Wood	Main	13	22	6	9	0	202.5 ft²	0	0.25	0.8	0

DOORS

✓ #	Ornt	Door Type	Space	Storms	U-Value	Width Ft	In	Height Ft	In	Area
1	E	Wood	Main	None	.39	2	10	6	10	19.4 ft²
2	-	Wood	Main	None	.39	3		6	10	20.5 ft²
3	-	Wood	Main	None	.39	3		6	10	20.5 ft²

WINDOWS

Orientation shown is the entered, Proposed orientation.

✓ #	Ornt	Wall ID	Frame	Panes	NFRC	U-Factor	SHGC	Imp	Area	Overhang Depth	Separation	Int Shade	Screening
1	N	1	Metal	Low-E Double	Yes	0.3	0.2	N	6.0 ft²	1 ft 0 in	1 ft 0 in	Drapes/blinds	None
2	e	2	Metal	Low-E Double	Yes	0.3	0.2	N	120.0 ft²	1 ft 0 in	1 ft 0 in	Drapes/blinds	None
3	w	4	Metal	Low-E Double	Yes	0.3	0.2	N	17.9 ft²	1 ft 0 in	1 ft 0 in	Drapes/blinds	None
4	w	4	Metal	Low-E Double	Yes	0.3	0.2	N	40.2 ft²	1 ft 0 in	1 ft 0 in	Drapes/blinds	None
5	w	4	Metal	Low-E Double	Yes	0.3	0.2	N	18.0 ft²	1 ft 0 in	1 ft 0 in	Drapes/blinds	None
6	w	4	Metal	Low-E Double	Yes	0.3	0.2	N	16.0 ft²	1 ft 0 in	1 ft 0 in	Drapes/blinds	None
7	w	4	Metal	Low-E Double	Yes	0.3	0.2	N	15.0 ft²	1 ft 0 in	1 ft 0 in	Drapes/blinds	None
8	W	4	Metal	Low-E Double	Yes	0.3	0.2	N	4.0 ft²	1 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	528.75 ft²	528.75 ft²	69.5 ft	9 ft	1

INFILTRATION

#	Scope	Method	SLA	CFM 50	ELA	EqLA	ACH	ACH 50
1	Wholehouse	Proposed ACH(50)	.000343	1698.3	93.23	175.34	.1353	6

HEATING SYSTEM

✓ #	System Type	Subtype	Speed	Efficiency	Capacity	Block	Ducts
1	Electric Heat Pump/	Split	Singl	HSPF: 9.2	27.8 kBtu/hr	1	sys#1

INPUT SUMMARY CHECKLIST REPORT

COOLING SYSTEM

✓	#	System Type	Subtype	Subtype	Efficiency	Capacity	Air Flow	SHR	Block	Ducts
✓	1	Central Unit/	Split	Singl	SEER: 14.5	27.8 kBtu/hr	cfm	0.8	1	sys#1

HOT WATER SYSTEM

✓	#	System Type	SubType	Location	EF	Cap	Use	SetPnt	Conservation
✓	1	Electric	None	Main	0.96	40 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	Cool
✓	1	Main	6	100 ft²	Main	75 ft²	Prop. Leak Free	Main	--- cfm	56.6 cfm	0.03	0.50	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 checked="" type="checkbox"/>	Nov	<input checked="" type="checkbox"/>	Dec			
Heating	<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 checked="" type="checkbox"/>	Nov	<input checked="" type="checkbox"/>	Dec			
Venting	<input checked="" type="checkbox"/>	Jan	<input checked="" type="checkbox"/>	Feb	<input checked="" 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 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	80													
	PM	80	80	78	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	78													
	PM	78	78	78	78	78	78	78	78	78	78	78	78	78													
Heating (WD)	AM	66	66	66	66	66	66	68	68	68	68	68	68	68													
	PM	68	68	68	68	68	68	68	68	68	68	68	68	66	66												
Heating (WEH)	AM	66	66	66	66	66	66	68	68	68	68	68	68	68													
	PM	68	68	68	68	68	68	68	68	68	68	68	68	66	66												

MASS

Mass Type	Area	Thickness	Furniture Fraction	Space
Default(8 lbs/sq.ft.)	0 ft²	0 ft	0.3	Main

ENERGY PERFORMANCE LEVEL (EPL) DISPLAY CARD

ESTIMATED ENERGY PERFORMANCE INDEX* = 100

The lower the Energy Performance Index, the more efficient the home.

1. New home or, addition	1. <u>New (From Plans)</u>	12. Ducts, location & insulation level	
2. Single-family or multiple-family	2. <u>Single-family</u>	a) Supply ducts	R <u>6.0</u>
3. No. of units (if multiple-family)	3. <u>1</u>	b) Return ducts	R <u>6.0</u>
4. Number of bedrooms	4. <u>3</u>	c) AHU location	Main
5. Is this a worst case? (yes/no)	5. <u>No</u>	13. Cooling system:	Capacity <u>27.8</u>
6. Conditioned floor area (sq. ft.)	6. <u>1887</u>	a) Split system	EER <u>14.5</u>
7. Windows, type and area		b) Single package	SEER <u> </u>
a) U-factor:(weighted average)	7a. <u>0.300</u>	c) Ground/water source	SEER/COP <u> </u>
b) Solar Heat Gain Coefficient (SHGC)	7b. <u>0.200</u>	d) Room unit/PTAC	EER <u> </u>
c) Area	7c. <u>237.1</u>	e) Other	<u> </u>
8. Skylights		14. Heating system:	Capacity <u>27</u>
a) U-factor:(weighted average)	8a. <u>NA</u>	a) Split system heat pump	HSPF <u>9.2</u>
b) Solar Heat Gain Coefficient (SHGC)	8b. <u>NA</u>	b) Single package heat pump	HSPF <u> </u>
9. Floor type, insulation level:		c) Electric resistance	COP <u> </u>
a) Slab-on-grade (R-value)	9a. <u>0.0</u>	d) Gas furnace, natural gas	AFUE <u> </u>
b) Wood, raised (R-value)	9b. <u> </u>	e) Gas furnace, LPG	AFUE <u> </u>
c) Concrete, raised (R-value)	9c. <u> </u>	f) Other	<u> </u>
10. Wall type and insulation:		15. Water heating system	
A. Exterior:		a) Electric resistance	EF <u>0.96</u>
1. Wood frame (Insulation R-value)	10A1. <u>13.0</u>	b) Gas fired, natural gas	EF <u> </u>
2. Masonry (Insulation R-value)	10A2. <u> </u>	c) Gas fired, LPG	EF <u> </u>
B. Adjacent:		d) Solar system with tank	EF <u> </u>
1. Wood frame (Insulation R-value)	10B1. <u>13.0</u>	e) Dedicated heat pump with tank	EF <u> </u>
2. Masonry (Insulation R-value)	10B2. <u> </u>	f) Heat recovery unit	HeatRec% <u> </u>
11. Ceiling type and insulation level		g) Other	<u> </u>
a) Under attic	11a. <u>0.0</u>	16. HVAC credits claimed (Performance Method)	
b) Single assembly	11b. <u> </u>	a) Ceiling fans	<u> </u>
c) Knee walls/skylight walls	11c. <u> </u>	b) Cross ventilation	<u>No</u>
d) Radiant barrier installed	11d. <u>No</u>	c) Whole house fan	<u>No</u>
		d) Multizone cooling credit	<u> </u>
		e) Multizone heating credit	<u> </u>
		f) Programmable thermostat	<u>Yes</u>

*Label required by Section R303.1.3 of the Florida Building Code, Energy Conservation, if not DEFAULT.

I certify that this home has complied with the Florida Building Code, Energy Conservation, 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: Lake City, FL

2017 - AIR BARRIER AND INSULATION INSPECTION COMPONENT CRITERIA

TABLE 402.4.1.1
AIR BARRIER AND INSULATION INSPECTION COMPONENT CRITERIA

Project Name: Marcus Mathews -Marcus Mathews - J-2234 Street: City, State, Zip: Lake City , FL , Owner: Marcus & Becky Matthews Design Location: FL, Gainesville			Builder Name: Permit Office: Permit Number: Jurisdiction:	CHECK
COMPONENT	AIR BARRIER CRITERIA	INSULATION INSTALLATION CRITERIA		
General requirements	A continuous air barrier shall be installed in the building envelope. The exterior thermal envelope contains a continuous air barrier. Breaks or joints in the air barrier shall be sealed.	Air-permeable insulation shall not be used as a sealing material.		
Ceiling/attic	The air barrier in any dropped ceiling/soffit shall be aligned with the insulation and any gaps in the air barrier shall be sealed. Access openings, drop down stairs or knee wall doors to unconditioned attic spaces shall be sealed.	The insulation in any dropped ceiling/soffit shall be aligned with the air barrier.		
Walls	The junction of the foundation and sill plate shall be sealed. The junction of the top plate and the top of exterior walls shall be sealed. Knee walls shall be sealed.	Cavities within corners and headers of frame walls shall be insulated by completely filling the cavity with a material having a thermal resistance of R-3 per inch minimum. Exterior thermal envelope insulation for framed walls shall be installed in substantial contact and continuous alignment with the air barrier.		
Windows, skylights and doors	The space between window/door jambs and framing, and skylights and framing shall be sealed.			
Rim joists	Rim joists shall include the air barrier.	Rim joists shall be insulated.		
Floors (including above-garage and cantilevered floors)	The air barrier shall be installed at any exposed edge of insulation.	Floor framing cavity insulation shall be installed to maintain permanent contact with the underside of subfloor decking, or floor framing cavity insulation shall be permitted to be in contact with the top side of sheathing, or continuous insulation installed on the underside of floor framing and extends from the bottom to the top of all perimeter floor framing members.		
Crawl space walls	Exposed earth in unvented crawl spaces shall be covered with a Class I vapor retarder with overlapping joints taped.	Where provided instead of floor insulation, insulation shall be permanently attached to the crawlspace		
Shafts, penetrations	Duct shafts, utility penetrations, and flue shafts opening to exterior or unconditioned space shall be sealed.			
Narrow cavities		Batts in narrow cavities shall be cut to fit, or narrow cavities shall be filled by insulation that on installation readily conforms to the available cavity spaces.		
Garage separation	Air sealing shall be provided between the garage and conditioned spaces.			
Recessed lighting	Recessed light fixtures installed in the building thermal envelope shall be sealed to the drywall.	Recessed light fixtures installed in the building thermal envelope shall be air tight and IC rated.		
Plumbing and wiring		Batt insulation shall be cut neatly to fit around wiring and plumbing in exterior walls, or insulation that on installation readily conforms to available space shall extend behind piping and wiring.		
Shower/tub on exterior wall	The air barrier installed at exterior walls adjacent to showers and tubs shall separate them from the showers and tubs.	Exterior walls adjacent to showers and tubs shall be insulated.		
Electrical/phone box on exterior walls	The air barrier shall be installed behind electrical or communication boxes or air-sealed boxes shall be installed.			
HVAC register boots	HVAC register boots that penetrate building thermal envelope shall be sealed to the sub-floor or drywall.			
Concealed sprinklers	When required to be sealed, concealed fire sprinklers shall only be sealed in a manner that is recommended by the manufacturer. Caulking or other adhesive sealants shall not be used to fill voids between fire sprinkler cover plates and walls or ceilings.			

a. In addition, inspection of log walls shall be in accordance with the provisions of ICC-400.