(20)

FORM R405-2017

FLORIDA ENERGY EFFICIENCY CODE FOR BUILDING CONSTRUCTION

Florida Department of Business and Professional Regulation - Residential Performance Method

Project Name:	Lane Residence	Builder Name:	
Street:	Mission Ridge Drive	Permit Office:	Columbia County
City, State, Zip:	Lake City , FL ,	Permit Number:	
Owner:	Dustin & Laurie Lane	Jurisdiction:	
Design Location:	FL, Gainesville	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)	2498
Conditioned floor area below grade (ft²)	0

7. Windows (316.0 sqft.)	Description	Area
a. U-Factor:	Dbl, U=0.36	316.00 ft²
SHGC:	SHGC=0.25	
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:		8.101 ft.
Area Weighted Average SHGC:		0.250

8. Floor Types (2498.0 sqft.)	Insulation	Area
a. Slab-On-Grade Edge Insulation	R=0.0	2498.00 ft²
b. N/A	R=	ft²
c. N/A	R=	ft²

9. Wall Types (2292.0 sqft.)	Insulation	Area
a. Frame - Wood, Exterior	R=13.0	2076.00 ft²
b. Frame - Wood, Adjacent	R=13.0	216.00 ft²
c. N/A	R=	ft²
d. N/A	R=	ft²

10. Ceiling Types (2623.0 sqft.)	Insulation	Area
a. Under Attic (Vented)	R=38.0	2623.00 ft²
b. N/A	R=	ft²
c. N/A	R=	ft²

11. Ducts	R	ft²
a. Sup: Attic, Ret: Attic, AH: Main	6	624.5

12. Cooling systems	kBtu/hr	Efficiency
a. Central Unit	27.1	SEER:14.00

13. Heating systems	kBtu/hr	Efficiency
a. Electric Heat Pump	37.1	HSPF:8.20

14. Hot water systems	
a. Electric	Cap: 50 gallons EF: 0.920
b. Conservation features	
None	
15. Credits	CV, Pstat

COLUMBIA COUNTY BUILDING DEPARTMENT
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Code Compliance
PLANS EXAMINER

Glass/Floor Area: 0.127

Total Proposed Modified Loads: 59.69
Total Baseline Loads: 62.91

PASS

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

PREPARED BY: _____
DATE: 5/13/2020

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

OWNER/AGENT: _____
DATE: 6/12/2020

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.

GREAT SEAL OF THE STATE OF FLORIDA
IN GOD WE TRUST

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 5.00 ACH50 (R402.4.1.2).

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INPUT SUMMARY CHECKLIST REPORT

PROJECT

Title:	Lane Residence	Bedrooms:	3	Address Type:	Street Address
Building Type:	User	Conditioned Area:	2498	Lot #	
Owner Name:	Dustin & Laurie Lane	Total Stories:	1	Block/Subdivision:	
# of Units:	1	Worst Case:	No	PlatBook:	
Builder Name:		Rotate Angle:	0	Street:	Mission Ridge Drive
Permit Office:	Columbia County	Cross Ventilation:	Yes	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 %	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	32	92	70	75	1305.5	51	Medium

BLOCKS

Number	Name	Area	Volume
1	Block1	2498	22482

SPACES

Number	Name	Area	Volume	Kitchen	Occupants	Bedrooms	Infil ID	Finished	Cooled	Heated
1	Main	2498	22482	Yes	8	3	1	Yes	Yes	Yes

FLOORS

√	#	Floor Type	Space	Perimeter	R-Value	Area		Tile	Wood	Carpet
____	1	Slab-On-Grade Edge Insulation	Main	259.667 ft	0	2498 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	Composition shingles	3003 ft²	832 ft²	Medium	Y	0.96	No	0.9	No	0	33.7

ATTIC

√	#	Type	Ventilation	Vent Ratio (1 in)	Area	RBS	IRCC
____	1	Full attic	Vented	300	2498 ft²	Y	N

CEILING

√	#	Ceiling Type	Space	R-Value	Ins Type	Area	Framing Frac	Truss Type
____	1	Under Attic (Vented)	Main	38	Double Batt	2623 ft²	0.11	Wood

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INPUT SUMMARY CHECKLIST REPORT

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	S	Exterior	Frame - Wood	Main	13	38		9		342.0 ft²		0.23	0.75	0
___	2	E	Exterior	Frame - Wood	Main	13	5	6	9		49.5 ft²		0.23	0.75	0
___	3	S	Exterior	Frame - Wood	Main	13	7		9		63.0 ft²		0.23	0.75	0
___	4	W	Exterior	Frame - Wood	Main	13	5	6	9		49.5 ft²		0.23	0.75	0
___	5	S	Exterior	Frame - Wood	Main	13	24		9		216.0 ft²		0.23	0.75	0
___	6	E	Exterior	Frame - Wood	Main	13	35	0	9		315.0 ft²		0.23	0.75	0
___	7	N	Garage	Frame - Wood	Main	13	24		9		216.0 ft²		0.23	0.75	0
___	8	N	Exterior	Frame - Wood	Main	13	32	6	9		292.5 ft²		0.23	0.75	0
___	9	E	Exterior	Frame - Wood	Main	13	12		9		108.0 ft²		0.23	0.75	0
___	10	N	Exterior	Frame - Wood	Main	13	12	6	9		112.5 ft²		0.23	0.75	0
___	11	W	Exterior	Frame - Wood	Main	13	7	10	9		70.5 ft²		0.23	0.75	0
___	12	N	Exterior	Frame - Wood	Main	13	6	4	9		57.0 ft²		0.23	0.75	0
___	13	W	Exterior	Frame - Wood	Main	13	12	10	9		115.5 ft²		0.23	0.75	0
___	14	S	Exterior	Frame - Wood	Main	13	6	4	9		57.0 ft²		0.23	0.75	0
___	15	W	Exterior	Frame - Wood	Main	13	25	4	9		228.0 ft²		0.23	0.75	0

DOORS

√	#	Ornt	Door Type	Space	Storms	U-Value	Width Ft	Width In	Height Ft	Height In	Area
___	1	N	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	Imp	Area	Overhang Depth	Overhang Separation	Int Shade	Screening
___	1	S	1	Vinyl	Low-E Double	Yes	0.36	0.25	N	72.0 ft²	9 ft 6 in	1 ft 6 in	None	None
___	2	S	1	TIM	Low-E Double	Yes	0.36	0.25	N	24.0 ft²	9 ft 6 in	1 ft 6 in	None	None
___	3	S	3	Vinyl	Low-E Double	Yes	0.36	0.25	N	9.0 ft²	1 ft 6 in	1 ft 0 in	None	None
___	4	S	5	Vinyl	Low-E Double	Yes	0.36	0.25	N	45.0 ft²	1 ft 6 in	1 ft 0 in	None	None
___	5	E	6	Vinyl	Low-E Double	Yes	0.36	0.25	N	16.0 ft²	1 ft 6 in	1 ft 0 in	None	None
___	6	E	6	Vinyl	Low-E Double	Yes	0.36	0.25	N	6.0 ft²	1 ft 6 in	1 ft 0 in	None	None
___	7	N	8	Vinyl	Low-E Double	Yes	0.36	0.25	N	30.0 ft²	13 ft 6 in	1 ft 0 in	None	None
___	8	N	8	Metal	Low-E Double	Yes	0.36	0.25	N	80.0 ft²	13 ft 6 in	1 ft 0 in	None	None
___	9	N	10	Vinyl	Low-E Double	Yes	0.36	0.25	N	15.0 ft²	1 ft 6 in	1 ft 0 in	None	None
___	10	W	13	Vinyl	Low-E Double	Yes	0.36	0.25	N	4.0 ft²	1 ft 0 in	2 ft 0 in	None	None
___	11	W	15	Vinyl	Low-E Double	Yes	0.36	0.25	N	15.0 ft²	1 ft 6 in	1 ft 0 in	None	None

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GARAGE

√	#	Floor Area	Ceiling Area	Exposed Wall Perimeter	Avg. Wall Height	Exposed Wall Insulation
____	1	624 ft²	624 ft²	76 ft	9 ft	1

INFILTRATION

#	Scope	Method	SLA	CFM 50	ELA	EqLA	ACH	ACH 50
1	Wholehouse	Proposed ACH(50)	.000286	1873.5	102.85	193.43	.1128	5

HEATING SYSTEM

√	#	System Type	Subtype	Speed	Efficiency	Capacity	Block	Ducts
____	1	Electric Heat Pump/	None	Single	HSPF:8.2	37.13 kBtu/hr	1	sys#1

COOLING SYSTEM

√	#	System Type	Subtype	Subtype	Efficiency	Capacity	Air Flow	SHR	Block	Ducts
____	1	Central Unit/	None	Single	SEER: 14	27.09 kBtu/hr	810 cfm	0.7	1	sys#1

HOT WATER SYSTEM

√	#	System Type	SubType	Location	EF	Cap	Use	SetPnt	Conservation
____	1	Electric	None	Main	0.92	50 gal	40 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	624.5 ft²	Attic	124.9 ft²	Default Leakage	Main	(Default) c	(Default) c			1	1

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INPUT SUMMARY CHECKLIST REPORT

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

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* = 95

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

1. New home or, addition	1. New (From Plans)
2. Single-family or multiple-family	2. Single-family
3. No. of units (if multiple-family)	3. 1
4. Number of bedrooms	4. 3
5. Is this a worst case? (yes/no)	5. No
6. Conditioned floor area (sq. ft.)	6. 2498
7. Windows, type and area	
a) U-factor:(weighted average)	7a. 0.360
b) Solar Heat Gain Coefficient (SHGC)	7b. 0.250
c) Area	7c. 316.0
8. Skylights	
a) U-factor:(weighted average)	8a. NA
b) Solar Heat Gain Coefficient (SHGC)	8b. NA
9. Floor type, insulation level:	
a) Slab-on-grade (R-value)	9a. 0.0
b) Wood, raised (R-value)	9b.
c) Concrete, raised (R-value)	9c.
10. Wall type and insulation:	
A. Exterior:	
1. Wood frame (Insulation R-value)	10A1. 13.0
2. Masonry (Insulation R-value)	10A2.
B. Adjacent:	
1. Wood frame (Insulation R-value)	10B1. 13.0
2. Masonry (Insulation R-value)	10B2.
11. Ceiling type and insulation level	
a) Under attic	11a. 38.0
b) Single assembly	11b.
c) Knee walls/skylight walls	11c.
d) Radiant barrier installed	11d. Yes

12. Ducts, location & insulation level	
a) Supply ducts	R 6.0
b) Return ducts	R 6.0
c) AHU location	Main
13. Cooling system:	Capacity 27.1
a) Split system	SEER
b) Single package	SEER
c) Ground/water source	SEER/COP
d) Room unit/PTAC	EER
e) Other	14.0
14. Heating system:	Capacity 37.1
a) Split system heat pump	HSPF
b) Single package heat pump	HSPF
c) Electric resistance	COP
d) Gas furnace, natural gas	AFUE
e) Gas furnace, LPG	AFUE
f) Other	8.20
15. Water heating system	
a) Electric resistance	EF 0.92
b) Gas fired, natural gas	EF
c) Gas fired, LPG	EF
d) Solar system with tank	EF
e) Dedicated heat pump with tank	EF
f) Heat recovery unit	HeatRec%
g) Other	
16. HVAC credits claimed (Performance Method)	
a) Ceiling fans	
b) Cross ventilation	Yes
c) Whole house fan	No
d) Multizone cooling credit	
e) Multizone heating credit	
f) Programmable thermostat	Yes

*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: 6/12/2020

Address of New Home: Mission Ridge Drive City/FL Zip: Lake City, FL

Envelope Leakage Test Report (Blower Door Test)

Residential Prescriptive, Performance or ERI Method Compliance

2017 Florida Building Code, Energy Conservation, 6th Edition

Jurisdiction:	Permit #:

Job Information

Builder: Community: Lot: NA

Address: Mission Ridge Drive

City: Lake City State: FL Zip:

Air Leakage Test Results *Passing results must meet either the Performance, Prescriptive, or ERI Method*

○ **PRESCRIPTIVE METHOD**-The building or dwelling unit shall be tested and verified as having an air leakage rate of not exceeding 7 air changes per hour at a pressure of 0.2 inch w.g. (50 Pascals) in Climate Zones 1 and 2.

○ **PERFORMANCE or ERI METHOD**-The building or dwelling unit shall be tested and verified as having an air leakage rate of not exceeding the selected ACH(50) value, as shown on Form R405-2017 (Performance) or R406-2017 (ERI), section labeled as infiltration, sub-section ACH50.

ACH(50) specified on Form R405-2017-Energy Calc (Performance) or R406-2017 (ERI): 5.000

CFM(50)	x 60 ÷	Building Volume	=	ACH(50)
		22482		

☐ **PASS**

☐ When ACH(50) is less than 3, Mechanical Ventilation installation must be verified by building department.

Method for calculating building volume:

○ Retrieved from architectural plans

● Code software calculated

○ Field measured and calculated

R402.4.1.2 Testing. Testing shall be conducted in accordance with ANSI/RESNET/ICC 380 and reported at a pressure of 0.2 inch w.g. (50 Pascals). Testing shall be conducted by either individuals as defined in Section 553.993(5) or (7) *Florida Statues*, or individuals licensed as set forth in Section 489.105(3)(f), (g), or (i) or an approved third party. A written report of the results of the test shall be signed by the party conducting the test and provided to the *code official*. Testing shall be performed at any time after creation of all penetrations of the *building thermal envelope*.

During testing:
1. Exterior windows and doors, fireplace and stove doors shall be closed, but not sealed, beyond the intended weatherstripping or other infiltration control measures.
2. Dampers including exhaust, intake, makeup air, back draft and flue dampers shall be closed, but not sealed beyond intended infiltration control measures.
3. Interior doors, if installed at the time of the test, shall be open.
4. Exterior doors for continuous ventilation systems and heat recovery ventilators shall be closed and sealed.
5. Heating and cooling systems, if installed at the time of the test, shall be turned off.
6. Supply and return registers, if installed at the time of the test, shall be fully open.

Testing Company

Company Name: _____ Phone: _____

I hereby verify that the above Air Leakage results are in accordance with the 2017 6th Edition Florida Building Code Energy Conservation requirements according to the compliance method selected above.

Signature of Tester: _____ Date of Test: _____

Printed Name of Tester: _____

License/Certification #: _____ Issuing Authority: _____