

FLORIDA ENERGY EFFICIENCY CODE FOR BUILDING CONSTRUCTION

Florida Department of Business and Professional Regulation - Residential Performance Method

Project Name: Lot 8 Crosswinds Street: City, State, Zip: Lake City, FL, 32024 Owner: Design Location: FL, Gainesville	Builder Name: Rhett Smithey Permit Office: Columbia County Permit Number: Jurisdiction: County: Columbia (Florida Climate Zone 2)
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1. New construction or existing 2. Single family or multiple family 3. Number of units, if multiple family 4. Number of Bedrooms 5. Is this a worst case? 6. Conditioned floor area above grade (ft²) Conditioned floor area below grade (ft²) 7. Windows (240.0 sqft.) a. U-Factor: DBI, U=0.35 SHGC: SHGC=0.26 b. U-Factor: N/A SHGC: c. U-Factor: N/A SHGC: Area Weighted Average Overhang Depth: Area Weighted Average SHGC: 8. Skylights c. U-Factor:(AVG) N/A SHGC(AVG): N/A 9. Floor Types (1595.0 sqft.) a. Slab-On-Grade Edge Insulation b. N/A c. N/A	New (From Plans) Detached 1 3 No 1595 0 Description Area 240.00 ft² ft² ft² 4.625 ft. 0.260 Area ft² Insulation Area R=0.0 1595.00 ft² R= ft² R= ft²
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10. Wall Types (1557.0 sqft.) a. Frame - Wood, Exterior b. Frame - Wood, Adjacent c. N/A d. N/A 11. Ceiling Types (1674.8 sqft.) a. Under Attic (Vented) b. N/A c. N/A 12. Ducts a. Sup: Attic, Ret: Attic, AH: Garage 13. Cooling systems a. Central Unit 14. Heating systems a. Electric Heat Pump 15. Hot water systems a. Electric b. Conservation features None 16. Credits	Insulation Area R=13.0 1362.00 ft² R=13.0 195.00 ft² R= ft² R= ft² Insulation Area R=38.0 1674.80 ft² R= ft² R= ft² R ft² 6 398.75 kBtu/hr Efficiency 20.2 SEER:14.00 kBtu/hr Efficiency 25.3 HSPF:8.20 Cap: 40 gallons EF: 0.920 CV, Pstat
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Glass/Floor Area: 0.150	Total Proposed Modified Loads: 43.67	PASS
	Total Baseline Loads: 43.70	

I hereby certify that the plans and specifications covered by this calculation are in compliance with the Florida Energy Code. PREPARED BY: <u>Will C. Smithey</u> DATE: <u>4/12/2022</u> 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: _____
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- 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).

INPUT SUMMARY CHECKLIST REPORT

PROJECT

Title:	Lot 8 Crosswinds	Bedrooms:	3	Address Type:	Lot Information
Building Type:	User	Conditioned Area:	1595	Lot #	8
Owner Name:		Total Stories:	1	Block/Subdivision:	Crosswinds
# of Units:	1	Worst Case:	No	PlatBook:	
Builder Name:	Rhett Smithy	Rotate Angle:	0	Street:	
Permit Office:	Columbia County	Cross Ventilation:	Yes	County:	Columbia
Jurisdiction:		Whole House Fan:	No	City, State, Zip:	Lake City , FL , 32024
Family Type:	Detached				
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	1595	14355

SPACES

Number	Name	Area	Volume	Kitchen	Occupants	Bedrooms	Infil ID	Finished	Cooled	Heated
1	Main	1595	14355	Yes	6	3	1	Yes	Yes	Yes

FLOORS

✓	#	Floor Type	Space	Perimeter	R-Value	Area	Tile	Wood	Carpet
_____	1	Slab-On-Grade Edge Insulation	Main	177.4 ft	0	1595 ft²	----	0	0 1

ROOF

✓	#	Type	Materials	Roof Area	Gable Area	Roof Color	Rad Barr	Solar Absor.	SA Tested	Emitt Tested	Emitt Tested	Deck Insul.	Pitch (deg)
_____	1	Hip	Composition shingles	1783 ft²	0 ft²	Medium	Y	0.96	No	0.9	No	0	26.57

ATTIC

✓	#	Type	Ventilation	Vent Ratio (1 in)	Area	RBS	IRCC
_____	1	Full attic	Vented	300	1595 ft²	Y	N

CEILING

✓	#	Ceiling Type	Space	R-Value	Ins Type	Area	Framing Frac	Truss Type
_____	1	Under Attic (Vented)	Main	38	Double Batt	1674.75 ft²	0.11	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	S	Exterior	Frame - Wood	Main	13	17		9		153.0 ft²		0.23	0.75	0
2	W	Exterior	Frame - Wood	Main	13	8		9		72.0 ft²		0.23	0.75	0
3	S	Exterior	Frame - Wood	Main	13	2	8	9		24.0 ft²		0.23	0.75	0
4	S	Garage	Frame - Wood	Main	13	21	8	9		195.0 ft²		0.23	0.75	0
5	E	Exterior	Frame - Wood	Main	13	43		9		387.0 ft²		0.23	0.75	0
6	N	Exterior	Frame - Wood	Main	13	24	4	9		219.0 ft²		0.23	0.75	0
7	W	Exterior	Frame - Wood	Main	13	8		9		72.0 ft²		0.23	0.75	0
8	N	Exterior	Frame - Wood	Main	13	17		9		153.0 ft²		0.23	0.75	0
9	W	Exterior	Frame - Wood	Main	13	31	4	9		282.0 ft²		0.23	0.75	0

DOORS

✓ #	Ornt	Door Type	Space	Storms	U-Value	Width Ft	In	Height Ft	In	Area
1	S	Insulated	Main	None	.46	3		6	8	20 ft²
2	S	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	Separation	Int Shade	Screening
1	S	1	Vinyl	Low-E Double	Yes	0.35	0.26	N	30.0 ft²	10 ft 6 in	1 ft 0 in	None	None
2	E	5	Vinyl	Low-E Double	Yes	0.35	0.26	N	30.0 ft²	1 ft 6 in	1 ft 0 in	None	None
3	N	6	Vinyl	Low-E Double	Yes	0.35	0.26	N	45.0 ft²	1 ft 6 in	1 ft 0 in	None	None
4	N	8	Metal	Low-E Double	Yes	0.35	0.26	N	60.0 ft²	9 ft 6 in	1 ft 0 in	None	None
5	W	9	Vinyl	Low-E Double	Yes	0.35	0.26	N	75.0 ft²	1 ft 6 in	1 ft 0 in	None	None

GARAGE

✓ #	Floor Area	Ceiling Area	Exposed Wall Perimeter	Avg. Wall Height	Exposed Wall Insulation
1	498.3341 ft²	498.3341 ft²	65.67 ft	9 ft	1

INFILTRATION

#	Scope	Method	SLA	CFM 50	ELA	EqLA	ACH	ACH 50
1	Wholehouse	Proposed ACH(50)	.000286	1196.3	65.63	123.21	.1027	5

HEATING SYSTEM

✓ #	System Type	Subtype	Speed	Efficiency	Capacity	Block	Ducts
1	Electric Heat Pump/	None	Single	HSPF:8.2	25.3 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/	None	Single	SEER: 14	20.24 kBtu/hr	600 cfm	0.7	1	sys#1

HOT WATER SYSTEM

✓	#	System Type	SubType	Location	EF	Cap	Use	SetPnt	Conservation
	1	Electric	None	Garage	0.92	40 gal	40 gal	120 deg	None

SOLAR HOT WATER SYSTEM

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

DUCTS

✓	#	Location	Supply R-Value	Area	Location	Return Area	Leakage Type	Air Handler	CFM 25 TOT	CFM25 OUT	QN	RLF	HVAC # Heat	CFM Cool
	1	Attic	6	398.75 f	Attic	79.75 ft²	Default Leakage	Garage	(Default) c	(Default) c			1	1

TEMPERATURES

ProgramableThermostat: 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 checked="" 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 type="checkbox"/>	Jun	<input type="checkbox"/>	Jul	<input type="checkbox"/>	Aug	<input type="checkbox"/>	Sep	<input type="checkbox"/>	Oct	<input type="checkbox"/>	Nov	<input type="checkbox"/>	Dec
Venting	<input checked="" type="checkbox"/>	Jan	<input checked="" type="checkbox"/>	Feb	<input checked="" type="checkbox"/>	Mar	<input type="checkbox"/>	Apr	<input type="checkbox"/>	May	<input type="checkbox"/>	Jun	<input type="checkbox"/>	Jul	<input type="checkbox"/>	Aug	<input type="checkbox"/>	Sep	<input type="checkbox"/>	Oct	<input type="checkbox"/>	Nov	<input 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	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	68	68											
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	68											

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 EnergyPerformance Index, the more efficient the home.

, Lake City, FL, 32024

1. New construction or existing	New (From Plans)	10. Wall Type and Insulation	Insulation	Area
2. Single family or multiple family	Detached	a. Frame - Wood, Exterior	R=13.0	1362.00 ft ²
3. Number of units, if multiple family	1	b. Frame - Wood, Adjacent	R=13.0	195.00 ft ²
4. Number of Bedrooms	3	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)	1595	11. Ceiling Type and insulation level	Insulation	Area
7. Windows**		a. Under Attic (Vented)	R=38.0	1674.80 ft ²
a. U-Factor:	Description	b. N/A	R=	ft ²
SHGC:	DbI, U=0.35	c. N/A	R=	ft ²
b. U-Factor:	N/A	12. Ducts, location & insulation level		R ft ²
SHGC:		a. Sup: Attic, Ret: Attic, AH: Garage	6	398.75
c. U-Factor:	N/A			
SHGC:		13. Cooling systems	kBtu/hr	Efficiency
d. U-Factor:	N/A	a. Central Unit	20.2	SEER:14.00
SHGC:				
Area Weighted Average Overhang Depth:	4.625 ft.	14. Heating systems	kBtu/hr	Efficiency
Area Weighted Average SHGC:	0.260	a. Electric Heat Pump	25.3	HSPF:8.20
8. Skylights	Description			
a. U-Factor(AVG):	N/A	15. Hot water systems		
SHGC(AVG):	N/A	a. Electric	Cap: 40 gallons	
			EF: 0.92	
9. Floor Types		b. Conservation features		
a. Slab-On-Grade Edge Insulation	Insulation	None		
b. N/A	R=0.0			
c. N/A	R=	Credits (Performance method)		CV, Pstat
	R=			

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 Energy Rating. For information about the Florida Building Code, Energy Conservation, contact the Florida Building Commission's support staff.

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

Envelope Leakage Test Report (Blower Door Test)

Residential Prescriptive, Performance or ERI Method Compliance

2020 Florida Building Code, Energy Conservation, 7th Edition

Jurisdiction:	Permit #:
Job Information	
Builder: Rhett Smithey	Community: Lot: 8
Address:	
City: Lake City	State: FL Zip: 32024
Air Leakage Test Results <i>Passing results must meet either the Performance, Prescriptive, or ERI Method</i>	
<input type="radio"/> 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.	
<input type="radio"/> 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 R405-2020 (Performance) or R406-2020 (ERI), section labeled as infiltration, sub-section ACH50. ACH(50) specified on Form R405-2020-Energy Calc (Performance) or R406-2020 (ERI): 5.000	
<div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 60%;"> $\frac{\text{CFM}(50)}{\text{Building Volume}} \times 60 \div 14355 = \text{ACH}(50)$ <div style="border: 1px solid black; width: 40px; height: 40px; margin: 10px auto; display: flex; align-items: center; justify-content: center;"> <div style="width: 10px; height: 10px; background-color: #000; margin: 0 auto;"></div> <div style="margin-left: 5px;">PASS</div> </div> <input type="checkbox"/> When ACH(50) is less than 3, Mechanical Ventilation installation must be verified by building department. </div> <div style="width: 35%;"> Method for calculating building volume: <input type="radio"/> Retrieved from architectural plans <input checked="" type="radio"/> Code software calculated <input type="radio"/> Field measured and calculated </div> </div>	
<p>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 Statutes 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.</p> <p>During testing:</p> <ol style="list-style-type: none"> Exterior windows and doors, fireplace and stove doors shall be closed, but not sealed, beyond the intended weatherstripping or other infiltration control measures. Dampers including exhaust, intake, makeup air, back draft and flue dampers shall be closed, but not sealed beyond intended infiltration control measures. Interior doors, if installed at the time of the test, shall be open. Exterior doors for continuous ventilation systems and heat recovery ventilators shall be closed and sealed. Heating and cooling systems, if installed at the time of the test, shall be turned off. 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 2020 7th 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: _____	

Residential System Sizing Calculation

Summary

Project Title:
Lot 8 Crosswinds

Lake City, FL 32024

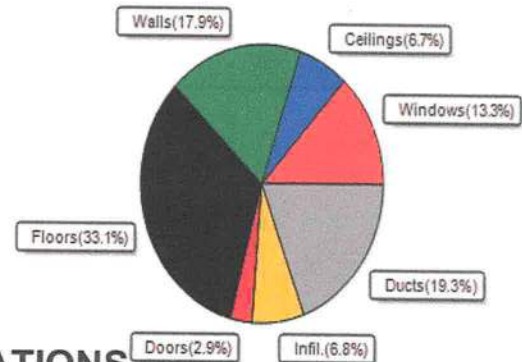
4/12/2022

Location for weather data: Gainesville, FL - Defaults: Latitude(29.7) Altitude(152 ft.) Temp Range(M)			
Humidity data: Interior RH (50%) Outdoor wet bulb (77F) Humidity difference(51gr.)			
Winter design temperature(TMY3 99%)	30 F	Summer design temperature(TMY3 99%)	94 F
Winter setpoint	70 F	Summer setpoint	75 F
Winter temperature difference	40 F	Summer temperature difference	19 F
Total heating load calculation	25297 Btuh	Total cooling load calculation	20241 Btuh
Submitted heating capacity	% of calc Btuh	Submitted cooling capacity	% of calc Btuh
Total (Electric Heat Pump)	100.0 25297	Sensible (SHR = 0.70)	84.2 14169
Heat Pump + Auxiliary(0.0kW)	100.0 25297	Latent	177.9 6072
		Total (Electric Heat Pump)	100.0 20241

WINTER CALCULATIONS

Winter Heating Load (for 1595 sqft)

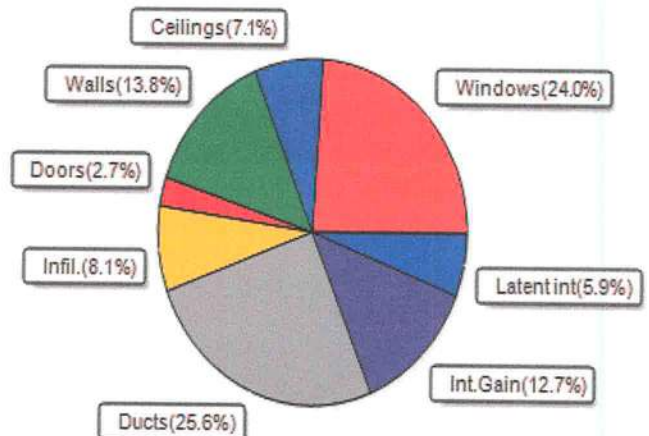
Load component		Load	
Window total	240 sqft	3360	Btuh
Wall total	1277 sqft	4534	Btuh
Door total	40 sqft	736	Btuh
Ceiling total	1675 sqft	1700	Btuh
Floor total	1595 sqft	8373	Btuh
Infiltration	39 cfm	1722	Btuh
Duct loss		4872	Btuh
Subtotal		25297	Btuh
Ventilation	0 cfm	0	Btuh
TOTAL HEAT LOSS		25297	Btuh



SUMMER CALCULATIONS

Summer Cooling Load (for 1595 sqft)

Load component		Load	
Window total	240 sqft	4865	Btuh
Wall total	1277 sqft	2789	Btuh
Door total	40 sqft	552	Btuh
Ceiling total	1675 sqft	1445	Btuh
Floor total		0	Btuh
Infiltration	29 cfm	613	Btuh
Internal gain		2580	Btuh
Duct gain		3982	Btuh
Sens. Ventilation	0 cfm	0	Btuh
Blower Load		0	Btuh
Total sensible gain		16828	Btuh
Latent gain(ducts)		1196	Btuh
Latent gain(infiltration)		1018	Btuh
Latent gain(ventilation)		0	Btuh
Latent gain(internal/occupants/other)		1200	Btuh
Total latent gain		3414	Btuh
TOTAL HEAT GAIN		20241	Btuh



8th Edition

EnergyGauge® System Sizing

PREPARED BY: _____

DATE: 4 / 12 / 2022

System Sizing Calculations - Winter

Residential Load - Whole House Component Details

Lake City, FL 32024

Project Title:
Lot 8 Crosswinds
Building Type: User

4/12/2022

Reference City: Gainesville, FL (Defaults) Winter Temperature Difference: 40.0 F (TMY3 99%)

Component Loads for Whole House								
Window	Panes/Type	Frame	U	Orientation	Area(sqft)	X	HTM=	Load
1	2, NFRC 0.26	Vinyl	0.35	S	30.0		14.0	420 Btuh
2	2, NFRC 0.26	Vinyl	0.35	E	30.0		14.0	420 Btuh
3	2, NFRC 0.26	Vinyl	0.35	N	45.0		14.0	630 Btuh
4	2, NFRC 0.26	Metal	0.35	N	60.0		14.0	840 Btuh
5	2, NFRC 0.26	Vinyl	0.35	W	75.0		14.0	1050 Btuh
Window Total					240.0(sqft)			3360 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area	X	HTM=	Load
1	Frame - Wood	- Ext	(0.089)	13.0/0.0	103		3.55	366 Btuh
2	Frame - Wood	- Ext	(0.089)	13.0/0.0	72		3.55	256 Btuh
3	Frame - Wood	- Ext	(0.089)	13.0/0.0	24		3.55	85 Btuh
4	Frame - Wood	- Adj	(0.089)	13.0/0.0	175		3.55	621 Btuh
5	Frame - Wood	- Ext	(0.089)	13.0/0.0	357		3.55	1267 Btuh
6	Frame - Wood	- Ext	(0.089)	13.0/0.0	174		3.55	618 Btuh
7	Frame - Wood	- Ext	(0.089)	13.0/0.0	72		3.55	256 Btuh
8	Frame - Wood	- Ext	(0.089)	13.0/0.0	93		3.55	330 Btuh
9	Frame - Wood	- Ext	(0.089)	13.0/0.0	207		3.55	735 Btuh
Wall Total					1277(sqft)			4534 Btuh
Doors	Type	Storm	Ueff.		Area	X	HTM=	Load
1	Insulated - Exterior, n		(0.460)		20		18.4	368 Btuh
2	Insulated - Garage, n		(0.460)		20		18.4	368 Btuh
Door Total					40(sqft)			736Btuh
Ceilings	Type/Color/Surface		Ueff.	R-Value	Area	X	HTM=	Load
1	Vented Attic/L/Shing		(0.025)	38.0/0.0	1675		1.0	1700 Btuh
Ceiling Total					1675(sqft)			1700Btuh
Floors	Type		Ueff.	R-Value	Size	X	HTM=	Load
1	Slab On Grade		(1.180)	0.0	177.4 ft(perim.)		47.2	8373 Btuh
Floor Total					1595 sqft			8373 Btuh
Envelope Subtotal:								18703 Btuh
Infiltration	Type	Wholehouse	ACH	Volume(cuft)	Wall Ratio	CFM=		
	Natural		0.16	14355	1.00	39.3		1722 Btuh
Duct load	Average sealed, R6.0, Supply(Att), Return(Att) (DLM of 0.239)							4872 Btuh
All Zones	Sensible Subtotal All Zones							25297 Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

Lake City, FL 32024

Project Title:
Lot 8 Crosswinds
Building Type: User

4/12/2022

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss	25297 Btuh
	Ventilation Sensible Heat Loss	0 Btuh
	Total Heat Loss	25297 Btuh

EQUIPMENT

1. Electric Heat Pump	#	25297 Btuh
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Key: Window types - NFRC (Requires U-Factor and Shading coefficient(SHGC) of glass as numerical values)
or - Glass as 'Clear' or 'Tint' (Uses U-Factor and SHGC defaults)
U - (Window U-Factor)
HTM - (ManualJ Heat Transfer Multiplier)



Version 8

System Sizing Calculations - Summer

Residential Load - Whole House Component Details

Project Title:
Lot 8 Crosswinds

Lake City, FL 32024

4/12/2022

Reference City: Gainesville, FL

Temperature Difference: 19.0F(TMY3 99%) Humidity difference: 51gr.

Component Loads for Whole House

Window	Type*					Overhang		Window Area(sqft)			HTM		Load
	Panes	SHGC	U	InSh	IS Ornt	Len	Hgt	Gross	Shaded	Unshaded	Shaded	Unshaded	
1	2 NFRC	0.26, 0.35	No	No	S	10.5f	1.0ft.	30.0	30.0	0.0	12	14	364 Btuh
2	2 NFRC	0.26, 0.35	No	No	E	1.5ft.	1.0ft.	30.0	1.5	28.5	12	32	923 Btuh
3	2 NFRC	0.26, 0.35	No	No	N	1.5ft.	1.0ft.	45.0	0.0	45.0	12	12	545 Btuh
4	2 NFRC	0.26, 0.35	No	No	N	9.5ft.	1.0ft.	60.0	0.0	60.0	12	12	727 Btuh
5	2 NFRC	0.26, 0.35	No	No	W	1.5ft.	1.0ft.	75.0	3.7	71.3	12	32	2307 Btuh
Window Total								240 (sqft)					4865 Btuh
Walls	Type	U-Value		R-Value		Area(sqft)			HTM		Load		
				Cav/Sheath									
1	Frame - Wood - Ext	0.09		13.0/0.0		103.0			2.3		233 Btuh		
2	Frame - Wood - Ext	0.09		13.0/0.0		72.0			2.3		163 Btuh		
3	Frame - Wood - Ext	0.09		13.0/0.0		24.0			2.3		54 Btuh		
4	Frame - Wood - Adj	0.09		13.0/0.0		175.0			1.7		295 Btuh		
5	Frame - Wood - Ext	0.09		13.0/0.0		357.0			2.3		808 Btuh		
6	Frame - Wood - Ext	0.09		13.0/0.0		174.0			2.3		394 Btuh		
7	Frame - Wood - Ext	0.09		13.0/0.0		72.0			2.3		163 Btuh		
8	Frame - Wood - Ext	0.09		13.0/0.0		93.0			2.3		210 Btuh		
9	Frame - Wood - Ext	0.09		13.0/0.0		207.0			2.3		469 Btuh		
Wall Total						1277 (sqft)					2789 Btuh		
Doors	Type					Area (sqft)			HTM		Load		
1	Insulated - Exterior					20.0			13.8		276 Btuh		
2	Insulated - Garage					20.0			13.8		276 Btuh		
Door Total						40 (sqft)					552 Btuh		
Ceilings	Type/Color/Surface	U-Value		R-Value		Area(sqft)			HTM		Load		
1	Vented Attic/Light/Shingle/RB	0.025		38.0/0.0		1674.8			0.86		1445 Btuh		
Ceiling Total						1675 (sqft)					1445 Btuh		
Floors	Type			R-Value		Size			HTM		Load		
1	Slab On Grade			0.0		1595 (ft-perimeter)			0.0		0 Btuh		
Floor Total						1595.0 (sqft)					0 Btuh		
	Envelope Subtotal:											9652 Btuh	
Infiltration	Type	Average ACH		Volume(cuft)		Wall Ratio		CFM=		Load			
	Natural	0.12		14355		1		29.5		613 Btuh			
Internal gain		Occupants		Btuh/occupant		Appliance				Load			
		6		X 230		+		1200		2580 Btuh			
Sensible Envelope Load:											12845 Btuh		
Duct load	Average sealed,Supply(R6.0-Attic), Return(R6.0-Attic)								(DGM of 0.310)		3982 Btuh		
	Sensible Load All Zones											16828 Btuh	

Manual J Summer Calculations

Residential Load - Component Details (continued)

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
Lot 8 Crosswinds

Lake City, FL 32024

4/12/2022

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	12845 Btuh
	Sensible Duct Load	3982 Btuh
	Total Sensible Zone Loads	16828 Btuh
	Sensible ventilation	0 Btuh
	Blower	0 Btuh
	Total sensible gain	16828 Btuh
	Latent infiltration gain (for 51 gr. humidity difference)	1018 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	1196 Btuh
	Latent occupant gain (6.0 people @ 200 Btuh per person)	1200 Btuh
	Latent other gain	0 Btuh
	Latent total gain	3414 Btuh
	TOTAL GAIN	20241 Btuh

EQUIPMENT

1. Central Unit	#	20241 Btuh
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*Key: Window types (Panels - Number and type of panes of glass)
(SHGC - Shading coefficient of glass as SHGC numerical value)
(U - Window U-Factor)
(InSh - Interior shading device: none(No), Blinds(B), Draperies(D) or Roller Shades(R))
- For Blinds: Assume medium color, half closed
For Draperies: Assume medium weave, half closed
For Roller shades: Assume translucent, half closed
(IS - Insect screen: none(N), Full(F) or Half(½))
(Ornt - compass orientation)



Version 8



Lumber design values are in accordance with ANSI/TPI 1 section 6.3
These truss designs rely on lumber values established by others.

RE: 3163304 - GIEBEIG - LOT 8 CW

MiTek USA, Inc.
6904 Parke East Blvd.
Tampa, FL 33610-4115

Site Information:

Customer Info: GIEBEIG CONST. Project Name: Spec Hse Model: 1595
Lot/Block: 8 Subdivision: Crosswinds
Address: TBD, TBD
City: Columbia City State: FL

Name Address and License # of Structural Engineer of Record, If there is one, for the building.

Name: License #:
Address:
City: State:

General Truss Engineering Criteria & Design Loads (Individual Truss Design Drawings Show Special Loading Conditions):

Design Code: FBC2020/TPI2014 Design Program: MiTek 20/20 8.5
Wind Code: ASCE 7-16 Wind Speed: 130 mph
Roof Load: 37.0 psf Floor Load: N/A psf

This package includes 25 individual, Truss Design Drawings and 0 Additional Drawings.
With my seal affixed to this sheet, I hereby certify that I am the Truss Design Engineer and this index sheet conforms to 61G15-31.003, section 5 of the Florida Board of Professional Engineers Rules.

No.	Seal#	Truss Name	Date	No.	Seal#	Truss Name	Date
1	T27693417	CJ01	5/12/22	23	T27693439	T14	5/12/22
2	T27693418	CJ03	5/12/22	24	T27693440	T15	5/12/22
3	T27693419	CJ05	5/12/22	25	T27693441	T16	5/12/22
4	T27693420	CJ07	5/12/22				
5	T27693421	EJ01	5/12/22				
6	T27693422	EJ02	5/12/22				
7	T27693423	HJ10	5/12/22				
8	T27693424	HJ11	5/12/22				
9	T27693425	T01	5/12/22				
10	T27693426	T01G	5/12/22				
11	T27693427	T02	5/12/22				
12	T27693428	T03	5/12/22				
13	T27693429	T04	5/12/22				
14	T27693430	T05	5/12/22				
15	T27693431	T06	5/12/22				
16	T27693432	T07	5/12/22				
17	T27693433	T08	5/12/22				
18	T27693434	T09	5/12/22				
19	T27693435	T10	5/12/22				
20	T27693436	T11	5/12/22				
21	T27693437	T12	5/12/22				
22	T27693438	T13	5/12/22				



The truss drawing(s) referenced above have been prepared by MiTek USA, Inc. under my direct supervision based on the parameters provided by Builders FirstSource-Lake City, FL.

Truss Design Engineer's Name: O'Regan, Philip

My license renewal date for the state of Florida is February 28, 2023.

IMPORTANT NOTE: The seal on these truss component designs is a certification that the engineer named is licensed in the jurisdiction(s) identified and that the designs comply with ANSI/TPI 1. These designs are based upon parameters shown (e.g., loads, supports, dimensions, shapes and design codes), which were given to MiTek or TRENCO. Any project specific information included is for MiTek's or TRENCO's customers file reference purpose only, and was not taken into account in the preparation of these designs. MiTek or TRENCO has not independently verified the applicability of the design parameters or the designs for any particular building. Before use, the building designer should verify applicability of design parameters and properly incorporate these designs into the overall building design per ANSI/TPI 1, Chapter 2.



Philip J. O'Regan PE No. 58126
MiTek USA, Inc. FL Cert 6634
6904 Parke East Blvd. Tampa FL 33610
Date:

May 12, 2022

O'Regan, Philip

1 of 1