FORM R405-2022 Supplement

FLORIDA ENERGY EFFICIENCY CODE FOR BUILDING CONSTRUCTION

Florida Department of Business and Professional Regulation - Residential Performance Method

Project Name:	Wil Todman	Builder Name:	
Street:	1276 Press Ruth Drive	Permit Office:	Lake City
City, State, Zip:	Lake City, FL, 32025	Permit Number:	
Owner:	Wil Todman	Jurisdiction:	221200
Design Location:	FL, Jacksonville	County:	Columbia(Florida Climate Zone 2)

1. New construction or existing			New (From Plans)
2. Single family or multiple family			Detached
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)			1800
Conditioned floor area below grade (ft²)			0
7. Windows(197.0 sqft.)	Description		Area
a. U-Factor:	Dbl, U=0.35		197.00 ft²
SHGC:	SHGC=0.27		
b. U-Factor:	N/A		ft²
SHGC:			
c. U-Factor:	N/A		ft²
SHGC:			
Area Weighted Average Overhang Depth:			1.523 ft
Area Weighted Average SHGC:			0.270
8. Skylights	Description		Area
U-Factor:(AVG)	N/A		N/A ft²
SHGC(AVG):	N/A		
9. Floor Types		Insulation	Area
a. Slab-On-Grade Edge Insulation		R= 0.0	1800.00 ft²
b. N/A		R=	ft²
c. N/A		R=	ft²

10. Wall Types(1919.3 sqft.)	Insulation	Area
a. Frame - Wood, Exterior	R=13.0	1710.80 ft²
b. Frame - Wood, Adjacent	R=13.0	208.50 ft²
c. N/A		
d. N/A		
11. Ceiling Types(1800.0 sqft.)	Insulation	Area
a. Roof Deck (Unvented)	R=19.0	1800.00 ft²
b. N/A		
c. N/A		
12. Roof(Comp. Shingles, Unvent) Deck	R=19.0	1950 ft²
13. Ducts, location & insulation level		R ft²
a. Sup: Attic, Ret: Attic, AH: Garage		6 360
b.		
c.		
14. Cooling Systems	kBtu/hr	Efficiency
a. Central Unit	34.2	SEER2:14.30
15. Heating Systems	kBtu/hr	Efficiency
a. Electric Heat Pump	34.2	HSPF2:7.50
16. Hot Water Systems		
a. PropaneTankless		Cap: 1 gallons
		EF: 0.820
b. Conservation features		None
17. Credits		CF

Glass/Floor Area: 0.109

Total Proposed Modified Loads: 43.55

Total Baseline Loads: 47.67

PASS

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

PREPARED BY: Misty Miller

DATE: 9/19/2023

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.

- Default duct leakage does not require a Duct Leakage Test Report.

- Compliance requires an Air Barrier and Insulation Inspection Checklist in accordance with R402.4.1.1 and this project requires a PERFORMANCE envelope leakage test report with envelope leakage no greater than 5.12 ACH50 (R402.4.1.2).

Misty Miller

Certified Energy Rater #1493

FORM R405-2022S

INPUT SUMMARY CHECKLIST REPORT

PROJECT

Title:	Wil Todman			Address type:	Street Address
Building Type:	User	Bedrooms:	3	Lot #:	---
Owner:	Wil Todman	Conditioned Area:	1800	Block/SubDivision:	---
Builder Home ID:		Total Stories:	1	PlatBook:	---
Builder Name:		Worst Case:	No	Street:	1276 Press Ruth Drive
Permit Office:	Lake City	Rotate Angle:	0	County:	Columbia
Jurisdiction:	221200	Cross Ventilation:		City, State, Zip:	Lake City, FL, 32025
Family Type:	Detached	Whole House Fan:			
New/Existing:	New (From Plans)	Terrain:	Suburban		
Year Construct:	2023	Shielding:	Suburban		
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, Jacksonville	FL_JACKSONVILLE_INTL_A	32	93	70	75	1281	49	Medium

BLOCKS

√	Number	Name	Area	Volume
___	1	Block1	1800	16417 cu ft

SPACES

√	Number	Name	Area	Volume	Kitchen	Occupants	Bedrooms	Finished	Cooled	Heated
___	1	Foyer	44	352	No	0		Yes	Yes	Yes
___	2	Bedroom 2	190	1710	No	1	1	Yes	Yes	Yes
___	3	Bathroom 2	135	1215	No	0	0	Yes	Yes	Yes
___	4	Bedroom 3	169	1521	No	1	1	Yes	Yes	Yes
___	5	Great Room	288	2736	No	0	0	Yes	Yes	Yes
___	6	Dining Room and Kitchen	257	2313	Yes	0	0	Yes	Yes	Yes
___	7	Master Bathroom	201	1809	No	0	0	Yes	Yes	Yes
___	8	Master Bedroom	233	2214	No	2	1	Yes	Yes	Yes
___	9	Office	94	846	No	0	0	Yes	Yes	Yes
___	10	Laundry Room Pantry Powder	189	1701	No	0	0	Yes	Yes	Yes

FLOORS (Total Exposed Area = 1800 sq.ft.)

√	#	Floor Type	Space	Exposed Perim	Perimeter R-Value	Area	U-Factor	Joist R-Value	Tile	Wood	Carpet
___	1	Slab-On-Grade Edge Ins	Foyer	7	0	44 ft	0.473	---	0.00	1.00	0.00
___	2	Slab-On-Grade Edge Ins	Bedroom 2	34	0	190 ft	0.304	---	0.00	0.00	1.00
___	3	Slab-On-Grade Edge Ins	Bathroom 2	19	0	135 ft	0.710	---	1.00	0.00	0.00
___	4	Slab-On-Grade Edge Ins	Bedroom 3	32	0	169 ft	0.304	---	0.00	0.00	1.00
___	5	Slab-On-Grade Edge Ins	Great Room	17	0	288 ft	0.304	---	0.00	0.00	1.00
___	6	Slab-On-Grade Edge Ins	Dining Room and Kitc	17.17	0	257 ft	0.473	---	0.00	1.00	0.00
___	7	Slab-On-Grade Edge Ins	Master Bathroom	34.42	0	201 ft	0.710	---	1.00	0.00	0.00
___	8	Slab-On-Grade Edge Ins	Master Bedroom	15.5	0	233 ft	0.304	---	0.00	0.00	1.00
___	9	Slab-On-Grade Edge Ins	Office	15.33	0	94 ft	0.304	---	0.00	0.00	1.00
___	10	Slab-On-Grade Edge Ins	Laundry Room Pantry	17.17	0	189 ft	0.304	---	0.00	0.00	1.00

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INPUT SUMMARY CHECKLIST REPORT

ROOF

✓ #	Type	Materials	Roof Area	Gable Area	Roof Color	Rad Barr	Solar Absor.	SA Tested	Emitt	Emitt Tested	Deck Insul.	Pitch (deg)
___ 1	Hip	Composition shingles	1950 ft²	0 ft²	Medium	N	0.96	No	0.9	No	19	22.62

ATTIC

✓ #	Type	Ventilation	Vent Ratio (1 in)	Area	RBS	IRCC
___ 1	Full attic	Unvented	0	1800 ft²	N	N

CEILING (Total Exposed Area = 1800 sq.ft.)

✓ #	Ceiling Type	Space	R-Value	Ins. Type	Area	U-Factor	Framing Frac.	Truss Type
___ 1	Flat ceiling under attic(Unvented)	Foyer	0.0	Blown	44.0ft²	0.049	0.11	Wood
___ 2	Flat ceiling under attic(Unvented)	Bedroom 2	0.0	Blown	190.0ft²	0.049	0.11	Wood
___ 3	Flat ceiling under attic(Unvented)	Bathroom 2	0.0	Blown	135.0ft²	0.049	0.11	Wood
___ 4	Flat ceiling under attic(Unvented)	Bedroom 3	0.0	Blown	169.0ft²	0.049	0.11	Wood
___ 5	Flat ceiling under attic(Unvented)	Great Room	0.0	Blown	288.0ft²	0.049	0.11	Wood
___ 6	Flat ceiling under attic(Unvented)	Dining Room and Kitc	0.0	Blown	257.0ft²	0.049	0.11	Wood
___ 7	Flat ceiling under attic(Unvented)	Master Bathroom	0.0	Blown	201.0ft²	0.049	0.11	Wood
___ 8	Flat ceiling under attic(Unvented)	Master Bedroom	0.0	Blown	233.0ft²	0.049	0.11	Wood
___ 9	Flat ceiling under attic(Unvented)	Office	0.0	Blown	94.0ft²	0.049	0.11	Wood
___ 10	Flat ceiling under attic(Unvented)	Laundry Room Pantry	0.0	Blown	189.0ft²	0.049	0.11	Wood

WALLS (Total Exposed Area = 1919 sq.ft.)

✓ #	Ornt	Adjacent To	Wall Type	Space	Cavity R-Value	Width Ft	Width In	Height Ft	Height In	Area sq.ft.	U-Factor	Sheath R-Value	Frm. Frac.	Solar Absor.	Below Grade
___ 1	W	Exterior	Frame - Wood	Foyer	13.0	7.0	0	9.0	0	63.0	0.084		0.23	0.01	0 %
___ 2	S	Exterior	Frame - Wood	Bedroom 2	13.0	7.0	8	9.0	0	69.0	0.084		0.23	0.01	0 %
___ 3	W	Exterior	Frame - Wood	Bedroom 2	13.0	13.0	11	9.0	0	125.3	0.084		0.23	0.01	0 %
___ 4	N	Exterior	Frame - Wood	Bedroom 2	13.0	12.0	5	9.0	0	111.8	0.084		0.23	0.01	0 %
___ 5	W	Exterior	Frame - Wood	Bathroom 2	13.0	8.0	1	9.0	0	72.8	0.084		0.23	0.01	0 %
___ 6	N	Exterior	Frame - Wood	Bathroom 2	13.0	10.0	11	9.0	0	98.3	0.084		0.23	0.01	0 %
___ 7	N	Exterior	Frame - Wood	Bedroom 3	13.0	13.0	8	9.0	0	123.0	0.084		0.23	0.01	0 %
___ 8	E	Exterior	Frame - Wood	Bedroom 3	13.0	12.0	4	9.0	0	111.0	0.084		0.23	0.01	0 %
___ 9	S	Exterior	Frame - Wood	Bedroom 3	13.0	6.0	0	9.0	0	54.0	0.084		0.23	0.01	0 %
___ 10	E	Exterior	Frame - Wood	Great Room	13.0	17.0	0	9.0	0	153.0	0.084		0.23	0.01	0 %
___ 11	N	Exterior	Frame - Wood	Dining Room and Ki	13.0	6.0	0	9.0	0	54.0	0.084		0.23	0.01	0 %
___ 12	E	Exterior	Frame - Wood	Dining Room and Ki	13.0	11.0	2	9.0	0	100.5	0.084		0.23	0.01	0 %
___ 13	N	Exterior	Frame - Wood	Master Bathroom	13.0	6.0	0	9.0	0	54.0	0.084		0.23	0.01	0 %
___ 14	E	Exterior	Frame - Wood	Master Bathroom	13.0	15.0	0	9.0	0	135.0	0.084		0.23	0.01	0 %
___ 15	S	Exterior	Frame - Wood	Master Bathroom	13.0	13.0	5	9.0	0	120.8	0.084		0.23	0.01	0 %
___ 16	S	Exterior	Frame - Wood	Master Bedroom	13.0	15.0	6	9.0	0	139.5	0.084		0.23	0.01	0 %
___ 17	S	Exterior	Frame - Wood	Office	13.0	6.0	4	9.0	0	57.0	0.084		0.23	0.01	0 %
___ 18	W	Garage	Frame - Wood	Office	13.0	9.0	0	9.0	0	81.0	0.084		0.23	0.01	0 %
___ 19	W	Garage	Frame - Wood	Laundry Room Pantr	13.0	14.0	2	9.0	0	127.5	0.084		0.23	0.01	0 %
___ 20	W	Exterior	Frame - Wood	Laundry Room Pantr	13.0	3.0	0	9.0	0	27.0	0.084		0.23	0.01	0 %
___ 21	N	Exterior	Frame - Wood	Laundry Room Pantr	13.0	4.0	8	9.0	0	42.0	0.084		0.23	0.01	0 %

DOORS (Total Exposed Area = 53 sq.ft.)

✓ #	Ornt	Adjacent To	Door Type	Space	Storms	U-Value	Width Ft	Width In	Height Ft	Height In	Area
___ 1	W	Exterior	Insulated	Foyer	None	0.46	2.00	6	6.00	8	16.7ft²
___ 2	W	Exterior	Insulated	Foyer	None	0.46	2.00	6	6.00	8	16.7ft²

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INPUT SUMMARY CHECKLIST REPORT

DOORS(Continued)

___ 3	W	Garage	Insulated	Laundry Room Pantry	None	0.46	3.00	0	6.00	8	20.0ft²

WINDOWS (Total Exposed Area = 197 sq.ft.)

√ #	Ornt	Wall ID	Frame	Panes	NFRC	U-Factor	SHGC	Imp	Storm	Total Area (ft²)	Same Units	Width (ft)	Height (ft)	--Overhang-- Depth (ft)	Sep. (ft)	Interior Shade	Screen
___ 1	W	3	Vinyl	Low-E Double	Y	0.35	0.27	N	N	30.0	2	3.00	5.00	0.0	0.0	Drapes/blinds	None
___ 2	N	6	Vinyl	Low-E Double	Y	0.35	0.27	N	N	6.0	1	2.00	3.00	0.0	0.0	Drapes/blinds	None
___ 3	E	8	Vinyl	Low-E Double	Y	0.35	0.27	N	N	15.0	1	3.00	5.00	0.0	0.0	Drapes/blinds	None
___ 4	E	10	Vinyl	Low-E Double	Y	0.35	0.27	N	N	30.0	2	3.00	5.00	6.0	1.0	Drapes/blinds	None
___ 5	E	10	Vinyl	Low-E Double	Y	0.35	0.27	N	N	20.0	1	3.00	6.67	6.0	1.0	Drapes/blinds	None
___ 6	E	12	Vinyl	Low-E Double	Y	0.35	0.27	N	N	30.0	2	3.00	5.00	0.0	0.0	Drapes/blinds	None
___ 7	E	14	Vinyl	Low-E Double	Y	0.35	0.27	N	N	12.0	1	3.00	4.00	0.0	0.0	Drapes/blinds	None
___ 8	S	15	Vinyl	Low-E Double	Y	0.35	0.27	N	N	12.0	1	3.00	4.00	0.0	0.0	Drapes/blinds	None
___ 9	S	16	Vinyl	Low-E Double	Y	0.35	0.27	N	N	30.0	2	3.00	5.00	0.0	0.0	Drapes/blinds	None
___ 10	S	17	Vinyl	Low-E Double	Y	0.35	0.27	N	N	12.0	1	3.00	4.00	0.0	0.0	Drapes/blinds	None

INFILTRATION

√ #	Scope	Method	SLA	CFM50	ELA	EqLA	ACH	ACH50	Space(s)	Infiltration Test Volume
___ 1	Wholehouse	Proposed ACH(50)	0.00030	1401	76.84	144.26	0.1057	5.1	All	16417 cu ft

GARAGE

√ #	Floor Area	Roof Area	Exposed Wall Perimeter	Avg. Wall Height	Exposed Wall Insulation
___ 1	579 ft²	579 ft²	73 ft	9 ft	1

MASS

√ #	Mass Type	Area	Thickness	Furniture Fraction	Space
___ 1	Default(8 lbs/sq.ft.)	0 ft²	0 ft	0.30	Foyer
___ 2	Default(8 lbs/sq.ft.)	0 ft²	0 ft	0.30	Bedroom 2
___ 3	Default(8 lbs/sq.ft.)	0 ft²	0 ft	0.30	Bathroom 2
___ 4	Default(8 lbs/sq.ft.)	0 ft²	0 ft	0.30	Bedroom 3
___ 5	Default(8 lbs/sq.ft.)	0 ft²	0 ft	0.30	Great Room
___ 6	Default(8 lbs/sq.ft.)	0 ft²	0 ft	0.30	Dining Room and Kitchen
___ 7	Default(8 lbs/sq.ft.)	0 ft²	0 ft	0.30	Master Bathroom
___ 8	Default(8 lbs/sq.ft.)	0 ft²	0 ft	0.30	Master Bedroom
___ 9	Default(8 lbs/sq.ft.)	0 ft²	0 ft	0.30	Office
___ 10	Default(8 lbs/sq.ft.)	0 ft²	0 ft	0.30	Laundry Room Pantry Powder

HEATING SYSTEM

√ #	System Type	Subtype/Speed	AHRI #	Efficiency	Capacity kBtu/hr	----Geothermal HeatPump---- Entry	Power	Volt	Current	Ducts	Block
___ 1	Electric Heat Pump	Split/Single	210998604	HSPF2: 7.50	34.2		0.00	0.00	0.00	sys#1	1

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INPUT SUMMARY CHECKLIST REPORT

COOLING SYSTEM

√	#	System Type	Subtype/Speed	AHRI #	Efficiency	Capacity kBtu/hr	Air Flow cfm	SHR	Duct	Block
___	1	Central Unit	Split/Single	210998604	SEER2:14.3	34.2	1200	0.75	sys#1	1

HOT WATER SYSTEM

√	#	System Type	Subtype	Location	EF(UEF)	Cap	Use	SetPnt	Fixture Flow	Pipe Ins.	Pipe length
___	1	Propane	Tankless	Exterior	0.82 (0.82)	1.00 gal	60 gal	120 deg	Standard	None	99

		Recirculation System	Recirc Control Type	Loop length	Branch length	Pump power	DWHR	Facilities Connected	Equal Flow	DWHR Eff	Other Credits
___	1	No		NA	NA	NA	No	NA	NA	NA	None

DUCTS

√	Duct #	Supply Location	Supply R-Value	Supply Area	Return Location	Return R-Value	Return Area	Leakage Type	Air Handler	CFM 25 TOT	CFM 25 OUT	QN	RLF	HVAC # Heat	HVAC # Cool
___	1	Attic	6.0	360 ft²	Attic	6.0	90 ft²	Default Leakage	Garage	(Default)	(Default)			1	1

TEMPERATURES

Programable Thermostat: N Ceiling Fans: N

	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	78	78	78	78
		PM	78	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
		PM	78	78	78	78	78	78	78	78	78	78	78	78
___	Heating (WD)	AM	68	68	68	68	68	68	68	68	68	68	68	68
		PM	68	68	68	68	68	68	68	68	68	68	68	68
___	Heating (WEH)	AM	68	68	68	68	68	68	68	68	68	68	68	68
		PM	68	68	68	68	68	68	68	68	68	68	68	68

Florida Building Code, Energy Conservation, 7th Edition (2020)
Mandatory Requirements for Residential Performance, Prescriptive and ERI Methods

ADDRESS:	1276 Press Ruth Drive Lake City, FL 32025	Permit Number:

MANDATORY REQUIREMENTS - See individual code sections for full details.

SECTION R401 GENERAL

☑ **R401.3 Energy Performance Level (EPL) display card - (Mandatory).** The building official shall require that an energy performance level (EPL) display card be completed and certified by the builder to be accurate and correct before final approval of the building for occupancy. Florida law (Section 553.9085, Florida Statutes) requires the EPL display card to be included as an addendum to each sales contract for both presold and nonpresold residential buildings. The EPL display card contains information indicating the energy performance level and efficiencies of components installed in a dwelling unit. The building official shall verify that the EPL display card completed and signed by the builder accurately reflects the plans and specifications submitted to demonstrate code compliance for the building. A copy of the EPL display card can be found in Appendix RD.

SECTION R402 BUILDING THERMAL ENVELOPE

☑ **R402.4 Air leakage (Mandatory).** The building thermal envelope shall be constructed to limit air leakage in accordance with the requirements of Sections R402.4.1 through R402.4.5.

Exception: Dwelling units of R-2 Occupancies and multiple attached single family dwellings shall be permitted to comply with Section C402.5.

☐ **R402.4.1 Building thermal envelope.** The building thermal envelope shall comply with Sections R402.4.1.1 and R402.4.1.2. The sealing methods between dissimilar materials shall allow for differential expansion and contraction.

☐ **R402.4.1.1 Installation.** The components of the building thermal envelope as listed in Table R402.4.1.1 shall be installed in accordance with the manufacturer's instructions and the criteria listed in Table R402.4.1.1, as applicable to the method of construction. Where required by the code official, an approved third party shall inspect all components and verify compliance.

☐ **R402.4.1.2 Testing.** The building or dwelling unit shall be tested and verified as having an air leakage rate not exceeding seven air changes per hour in Climate Zones 1 and 2, and three air changes per hour in Climate Zones 3 through 8. 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.

Exception: Testing is not required for additions, alterations, renovations, or repairs, of the building thermal envelope of existing buildings in which the new construction is less than 85 percent 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, backdraft 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.

☐ **R402.4.2 Fireplaces.** New wood-burning fireplaces shall have tight-fitting flue dampers or doors, and outdoor combustion air. Where using tight-fitting doors on factory-built fireplaces listed and labeled in accordance with UL 127, the doors shall be tested and listed for the fireplace. Where using tight-fitting doors on masonry fireplaces, the doors shall be listed and labeled in accordance with UL 907.

☐ **R402.4.3 Fenestration air leakage.** Windows, skylights and sliding glass doors shall have an air infiltration rate of no more than 0.3 cfm per square foot (1.5 L/s/m2), and swinging doors no more than 0.5 cfm per square foot (2.6 L/s/m2), when tested according to NFRC 400 or AAMA/ WDMA/CSA 101/I.S.2/A440 by an accredited, independent laboratory and listed and labeled by the manufacturer.

Exception: Site-built windows, skylights and doors.

☐ **R402.4.4 Rooms containing fuel - burning appliances.** In Climate Zones 3 through 8, where open combustion air ducts provide combustion air to open combustion fuel burning appliances, the appliances and combustion air opening shall be located outside the building thermal envelope or enclosed in a room, isolated from inside the thermal envelope. Such rooms shall be sealed and insulated in accordance with the envelope requirements of Table R402.1.2, where the walls, floors and ceilings shall meet not less than the basement wall R-value requirement. The door into the room shall be fully gasketed and any water lines and ducts in the room insulated in accordance with Section R403. The combustion air duct shall be insulated where it passes through conditioned space to a minimum of R-8.

Exceptions:
1. Direct vent appliances with both intake and exhaust pipes installed continuous to the outside.
2. Fireplaces and stoves complying with Section R402.4.2 and Section R1006 of the Florida Building Code, Residential.

MANDATORY REQUIREMENTS (Continued)

☑ **R402.4.5 Recessed lighting.** Recessed luminaires installed in the building thermal envelope shall be sealed to limit air leakage between conditioned and unconditioned spaces. All recessed luminaires shall be IC-rated and labeled as having an air leakage rate not more than 2.0 cfm (0.944 L/s) when tested in accordance with ASTM E283 at a 1.57 psf (75 Pa) pressure differential. All recessed luminaires shall be sealed with a gasket or caulk between the housing and the interior wall or ceiling covering.

SECTION R403 SYSTEMS

R403.1 Controls

☑ **R403.1.1 Thermostat provision (Mandatory).** At least one thermostat shall be provided for each separate heating and cooling system

☑ **R403.1.3 Heat pump supplementary heat (Mandatory).** Heat pumps having supplementary electric-resistance heat shall have controls that, except during defrost, prevent supplemental heat operation when the heat pump compressor can meet the heating load.

☑ **R403.3.2 Sealing (Mandatory).** All ducts, air handlers, filter boxes and building cavities that 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 C403.2.9.2 of the Commercial Provisions of this code and shall be shown to meet duct tightness criteria below.

Duct tightness shall be verified by testing in accordance with ANSI/RESNET/ICC 380 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), Florida Statutes, to be "substantially leak free" in accordance with Section R403.3.3.

☐ **R403.3.2.1 Sealed air handler.** Air handlers shall have a manufacturer's designation for an air leakage of no more than 2 percent of the design airflow rate when tested in accordance with ASHRAE 193.

☑ **R403.3.3 Duct testing (Mandatory).** Ducts shall be pressure tested to determine air leakage by one of the following methods:

1. Rough-in test: Total leakage shall be measured with a pressure differential of 0.1 inch w.g. (25 Pa) across the system, including the manufacturer's air handler enclosure if installed at the time of the test. All registers shall be taped or otherwise sealed during the test.
2 Postconstruction test: Total leakage shall be measured with a pressure differential of 0.1 inch w.g. (25 Pa) across the entire system, including the manufacturer's air handler enclosure. Registers shall be taped or otherwise sealed during the test.

Exceptions;

1. A duct air leakage test shall not be required where the ducts and air handlers are located entirely within the building thermal envelope.
2. Duct testing is not mandatory for buildings complying by Section 405 of this code. Duct leakage testing is required for Section R405 compliance where credit is taken for leakage, and a duct air leakage Qn to the outside of less than 0.080 (where Qn = duct leakage to the outside in cfm per 100 square feet of conditioned floor area tested at 25 Pascals) is indicated in the compliance report for the proposed design.

A written report of the results of the test shall be signed by the party conducting the test and provided to the code official

☑ **R403.3.5 Building cavities (Mandatory).** Building framing cavities shall not be used as ducts or plenums

☑ **R403.4 Mechanical system piping insulation (Mandatory).** Mechanical system piping capable of carrying fluids above 105°F (41°C) or below 55°F (13°C) shall be insulated to a minimum of R-3.

☐ **R403.4.1 Protection of piping insulation.** Piping insulation exposed to weather shall be protected from damage, including that caused by sunlight, moisture, equipment maintenance and wind, and shall provide shielding from solar radiation that can cause degradation of the material. Adhesive tape shall not be permitted.

☑ **R403.5.1 Heated water circulation and temperature maintenance systems (Mandatory).** If heated water circulation systems are installed, they shall be in accordance with Section R403.5.1.1. Heat trace temperature maintenance systems shall be in accordance with Section R403.5.1.2. Automatic controls, temperature sensors and pumps shall be accessible. Manual controls shall be readily accessible.

☐ **R403.5.1.1 Circulation systems.** Heated water circulation systems shall be provided with a circulation pump. The system return pipe shall be a dedicated return pipe or a cold water supply pipe. Gravity and thermosiphon circulation systems shall be prohibited. Controls for circulating hot water system pumps shall start the pump based on the identification of a demand for hot water within the occupancy. The controls shall automatically turn off the pump when the water in the circulation loop is at the desired temperature and when there is no demand for hot water.

☐ **R403.5.1.2 Heat trace systems.** Electric heat trace systems shall comply with IEEE 515.1 or UL 515. Controls for such systems shall automatically adjust the energy input to the heat tracing to maintain the desired water temperature in the piping in accordance with the times when heated water is used in the occupancy.

MANDATORY REQUIREMENTS (Continued)

☑ **R403.5.5 Heat traps (Mandatory).** Storage water heaters not equipped with integral heat traps and having vertical pipe risers shall have heat traps installed on both the inlets and outlets. External heat traps shall consist of either a commercially available heat trap or a downward and upward bend of at least 3 ½ inches (89 mm) in the hot water distribution line and cold water line located as close as possible to the storage tank.

☑ **R403.5.6 Water heater efficiencies (Mandatory).**

R403.5.6.1.1 Automatic controls. Service water-heating systems shall be equipped with automatic temperature controls capable of adjustment from the lowest to the highest acceptable temperature settings for the intended use. The minimum temperature setting range shall be from 100°F to 140°F (38°C to 60°C).

☐ **R403.5.6.1.2 Shut down.** A separate switch or a clearly marked circuit breaker shall be provided to permit the power supplied to electric service systems to be turned off. A separate valve shall be provided to permit the energy supplied to the main burner(s) of combustion types of service water-heating systems to be turned off.

☐ **R403.5.6.2 Water-heating equipment.** Water-heating equipment installed in residential units shall meet the minimum efficiencies of Table C404.2 in Chapter 4 of the Florida Building Code, Energy Conservation, Commercial Provisions, for the type of equipment installed. Equipment used to provide heating functions as part of a combination system shall satisfy all stated requirements for the appropriate water-heating category. Solar water heaters shall meet the criteria of Section R403.5.6.2.1.

☐ **R403.5.6.2.1 Solar water-heating systems.** Solar systems for domestic hot water production are rated by the annual solar energy factor of the system. The solar energy factor of a system shall be determined from the Florida Solar Energy Center Directory of Certified Solar Systems. Solar collectors shall be tested in accordance with ISO Standard 9806, Test Methods for Solar Collectors, and SRCC Standard TM-1, Solar Domestic Hot Water System and Component Test Protocol. Collectors in installed solar water-heating systems should meet the following criteria:

1. Be installed with a tilt angle between 10 degrees and 40 degrees of the horizontal; and
2. Be installed at an orientation within 45 degrees of true south.

☑ **R403.6 Mechanical ventilation (Mandatory).** The building shall be provided with ventilation that meets the requirements of the Florida Building Code, Residential, or Florida Building Code, Mechanical, as applicable, or with other approved means of ventilation including: Natural, Infiltration or Mechanical means. Outdoor air intakes and exhausts shall have automatic or gravity dampers that close when the ventilation system is not operating.

☐ **R403.6.1 Whole-house mechanical ventilation system fan efficacy.** When installed to function as a whole-house mechanical ventilation system, fans shall meet the efficacy requirements of Table R403.6.1.

Exception: Where an air handler that is integral to tested and listed HVAC equipment is used to provide whole-house mechanical ventilation, the air handler shall be powered by an electronically commutated motor.

☐ **R403.6.2 Ventilation Air.** Residential buildings designed to be operated at a positive indoor pressure or for mechanical ventilation shall meet the following criteria:

1. The design air change per hour minimums for residential buildings in ASHRAE 62.2, Ventilation for Acceptable Indoor Air Quality, shall be the maximum rates allowed for residential applications.

2. No ventilation or air-conditioning system make-up air shall be provided to conditioned space from attics, crawlspaces, attached enclosed garages or outdoor spaces adjacent to swimming pools or spas.

3. If ventilation air is drawn from enclosed space(s), then the walls of the space(s) from which air is drawn shall be insulated to a minimum of R-11 and the ceiling shall be insulated to a minimum of R-19, space permitting, or R-10 otherwise.

☑ **R403.7 Heating and cooling equipment.**

R403.7.1 Equipment sizing (Mandatory). Heating and cooling equipment shall be sized in accordance with ACCA Manual S based on the equipment loads calculated in accordance with ACCA Manual J or other approved heating and cooling calculation methodologies, based on building loads for the directional orientation of the building. The manufacturer and model number of the outdoor and indoor units (if split system) shall be submitted along with the sensible and total cooling capacities at the design conditions described in Section R302.1. This Code does not allow designer safety factors, provisions for future expansion or other factors that affect equipment sizing. System sizing calculations shall not include loads created by local intermittent mechanical ventilation such as standard kitchen and bathroom exhaust systems. New or replacement heating and cooling equipment shall have an efficiency rating equal to or greater than the minimum required by federal law for the geographic location where the equipment is installed.

TABLE R403.6.1
WHOLE-HOUSE MECHANICAL VENTILATION SYSTEM FAN EFFICACY

FAN LOCATION	AIRFLOW RATE MINIMUM (CFM)	MINIMUM EFFICACY[a] (CFM/WATT)	AIRFLOW RATE MAXIMUM (CFM)
HRV or ERV	Any	1.2 cfm/watt	Any
Range hoods	Any	2.8 cfm/watt	Any
In-line fan	Any	2.8 cfm/watt	Any
Bathroom, utility room	10	1.4 cfm/watt	<90
Bathroom, utility room	90	2.8 cfm/watt	Any

For SI: 1 cfm = 28.3 L/min. a. When tested in accordance with HVI Standard 916

☐ **R403.7.1.1 Cooling equipment capacity.** Cooling only equipment shall be selected so that its total capacity is not less than the calculated total load but not more than 1.15 times greater than the total load calculated according to the procedure selected in Section R403.7, or the closest available size provided by the manufacturer's product lines. The corresponding latent capacity of the equipment shall not be less than the calculated latent load.
The published value for AHRI total capacity is a nominal, rating-test value and shall not be used for equipment sizing. Manufacturer's expanded performance data shall be used to select cooling-only equipment. This selection shall be based on the outdoor design dry-bulb temperature for the load calculation (or entering water temperature for water-source equipment), the blower CFM provided by the expanded performance data, the design value for entering wet-bulb temperature and the design value for entering dry-bulb temperature.

Design values for entering wet-bulb and dry-bulb temperatures shall be for the indoor dry bulb and relative humidity used for the load calculation and shall be adjusted for return side gains if the return duct(s) is installed in an unconditioned space.

Exceptions:
1. Attached single- and multiple-family residential equipment sizing may be selected so that its cooling capacity is less than the calculated total sensible load but not less than 80 percent of that load.
2. When signed and sealed by a Florida-registered engineer, in attached single- and multiple-family units, the capacity of equipment may be sized in accordance with good design practice.

R403.7.1.2 Heating equipment capacity.

☐ **R403.7.1.2.1 Heat pumps.** Heat pump sizing shall be based on the cooling requirements as calculated according to Section R403.7.1.1, and the heat pump total cooling capacity shall not be more than 1.15 times greater than the design cooling load even if the design heating load is 1.15 times greater than the design cooling load.

☐ **R403.7.1.2.2 Electric resistance furnaces.** Electric resistance furnaces shall be sized within 4 kW of the design requirements calculated according to the procedure selected in Section R403.7.1.

☐ **R403.7.1.2.3 Fossil fuel heating equipment.** The capacity of fossil fuel heating equipment with natural draft atmospheric burners shall not be less than the design load calculated in accordance with Section R403.7.1.

☐ **R403.7.1.3 Extra capacity required for special occasions.** Residences requiring excess cooling or heating equipment capacity on an intermittent basis, such as anticipated additional loads caused by major entertainment events, shall have equipment sized or controlled to prevent continuous space cooling or heating within that space by one or more of the following options:
1. A separate cooling or heating system is utilized to provide cooling or heating to the major entertainment areas.
2. A variable capacity system sized for optimum performance during base load periods is utilized.

☐ **R403.8 Systems serving multiple dwelling units (Mandatory).** Systems serving multiple dwelling units shall comply with Sections C403 and C404 of the Florida Building Code, Energy Conservation—Commercial Provisions in lieu of Section R403.

☐ **R403.9 Snow melt and ice system controls (Mandatory).** Snow- and ice-melting systems, supplied through energy service to the building, shall include automatic controls capable of shutting off the system when the pavement temperature is above 50°F (10°C), and no precipitation is falling and an automatic or manual control that will allow shutoff when the outdoor temperature is above 40°F (4.8°C).

☐ **403.10 Pools and permanent spa energy consumption (Mandatory).** The energy consumption of pools and permanent spas shall be in accordance with Sections R403.10.1 through R403.10.5.

☐ **R403.10.1 Heaters.** The electric power to heaters shall be controlled by a readily accessible on-off switch that is an integral part of the heater mounted on the exterior of the heater, or external to and within 3 feet (914 mm) of the heater. Operation of such switch shall not change the setting of the heater thermostat. Such switches shall be in addition to a circuit breaker for the power to the heater.
Gas-fired heaters shall not be equipped with continuously burning ignition pilots.

MANDATORY REQUIREMENTS (Continued)

☑ **R403.10.2 Time switches.** Time switches or other control methods that can automatically turn off and on according to a preset schedule shall be installed for heaters and pump motors. Heaters and pump motors that have built-in time switches shall be in compliance with this section.

Exceptions:
1. Where public health standards require 24-hour pump operation.
2. Pumps that operate solar- and waste-heat-recovery pool heating systems
3. Where pumps are powered exclusively from on-site renewable generation.

☐ **R403.10.3 Covers.** Outdoor heated swimming pools and outdoor permanent spas shall be equipped with a vapor-retardant cover on or at the water surface or a liquid cover or other means proven to reduce heat loss.

Exception: Where more than 70 percent of the energy for heating, computed over an operation season, is from site-recovered energy, such as from a heat pump or solar energy source, covers or other vapor-retardant means shall not be required

☐ **R403.10.4 Gas- and oil-fired pool and spa heaters.** All gas- and oil-fired pool and spa heaters shall have a minimum thermal efficiency of 82 percent for heaters manufactured on or after April 16, 2013, when tested in accordance with ANSI Z 21.56. Pool heaters fired by natural or LP gas shall not have continuously burning pilot lights.

☐ **R403.10.5 Heat pump pool heaters.** Heat pump pool heaters shall have a minimum COP of 4.0 when tested in accordance with AHRI 1160, Table 2, Standard Rating Conditions-Low Air Temperature. A test report from an independent laboratory is required to verify procedure compliance. Geothermal swimming pool heat pumps are not required to meet this standard.

☐ **R403.11 Portable spas (Mandatory).** The energy consumption of electric-powered portable spas shall be controlled by the requirements of APSP-14

☑ **R403.13 Dehumidifiers (Mandatory).** If installed, a dehumidifier shall conform to the following requirements:

1. The minimum rated efficiency of the dehumidifier shall be greater than 1.7 liters/ kWh if the total dehumidifier capacity for the house is less than 75 pints/day and greater than 2.38 liters/kWh if the total dehumidifier capacity for the house is greater than or equal to 75 pints/day.
2. The dehumidifier shall be controlled by a sensor that is installed in a location where it is exposed to mixed house air.
3. Any dehumidifier unit located in unconditioned space that treats air from conditioned space shall be insulated to a minimum of R-2.
4. Condensate disposal shall be in accordance with Section M1411.3.1 of the Florida Building Code, Residential.

☐ **R403.13.1 Ducted dehumidifiers.** Ducted dehumidifiers shall, in addition to conforming to the requirements of Section R403.13, conform to the following requirements:

1. If a ducted dehumidifier is configured with return and supply ducts both connected into the supply side of the cooling system, a backdraft damper shall be installed in the supply air duct between the dehumidifier inlet and outlet duct.
2. If a ducted dehumidifier is configured with only its supply duct connected into the supply side of the central heating and cooling system, a backdraft damper shall be installed in the dehumidifier supply duct between the dehumidifier and central supply duct.
3. A ducted dehumidifier shall not be ducted to or from a central ducted cooling system on the return duct side upstream from the central cooling evaporator coil.
4. Ductwork associated with a dehumidifier located in unconditioned space shall be insulated to a minimum of R-6.

SECTION R404
ELECTRICAL POWER AND LIGHTING SYSTEMS

☑ **R404.1 Lighting equipment (Mandatory).** Not less than 90 percent of the lamps in permanently installed luminaires shall have an efficacy of at least 45 lumens-per-watt or shall utilize lamps with an efficacy of not less than 65 lumens-per-watt.

R404.1.1 Lighting equipment (Mandatory). uel gas lighting systems shall not have continuously burning pilot lights.

EMS Heat Loss/Heat Gain Calculation

Company:	Green Engineering Solutions, Inc.	**Customer:**	Wil Todman
Preparer:	Misty Miller CER #1493	**Address:**	1276 Press Ruth Drive Lake City, FL 32025
Phone:	904-400-0624	**Phone:**	
		Date:	9/19/2023

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

Total conditioned area (sq.ft.)	1800		
	Indoor	**Outdoor**	**Temp. Diff.**
Winter	70	34	36
Summer	73	95	22

Front of home is facing:
West

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

3. How tight is the house? Average-over 1500 Sq. Ft.
Winter air change / hr: 0.7 Summer air change / hr: 0.35

4. Fireplace evaluation : Number: 1 Tightness: Average 20

5. Number of occupants: 4

6. Overhang characteristics (optional)

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

7. Solar gain through glass

Facing	Total area - Sq.Ft.	Type of glass	HTM	Linear ft.	Unshaded	Shaded	BTUH
N/Shaded	6	Trpl or low-E	20	Below OH		6	
NE/NW		**-- Select --**			0		0
South	54	Trpl or low-E	33		54	0	1782
SE/SW		**-- Select --**			0	0	0
East	107	Trpl or low-E	65.0		107	0	6955
West	30	Trpl or low-E	65.0		30	0	1950
Skylight		**-- Select --**					0
Total North and Shaded						6	120
Total Solar Gain							10807
Adjust for tinted or reflective window coating?				No	1		10807

8. Ducts/Pipes

Location:	All duct work in conditioned area				
Attic Temp.	**Insulation**		**Leakage**		**Area**
95	R-6	1	sealed	1	1800

Duct gain:	0	**Duct loss:**	0

9. Load Calculation

Elements of Load	Insulation / R-value	Area/lin.ft.	U-value	Heat Loss	Heat Gain
Gross Wall		1919.3	**Glass solar gain**		10807
Glass 1	Trpl or low-E	197	0.42	2979	
Glass 2	**-- Select --**			0	
Skylight	**-- Select --**	0		0	
Doors	Insulated or Storm	53.34	0.4	768	469
Net walls	R-13	1669	0.077	4626	2827
Ceilings	R-19	1800	0.055	3564	4455
Floors	**-- Select --**			0	0
Open floors	**-- Select --**			0	0
Slab floors	No Insulation	208.59	0.8	6007	0
Volume of your building or zone (cu. Ft.)		16460.5		8397	2324
		People			1200
		Appliances			3600
		Sub Total		26341	25682
		Duct Loss/Gain		0	0
		Sensible Load		26341	25682
		Latent Load			4838
		TOTAL BTUH		26341	30520

Summary		
	BTUH	**Tons**
Total heating load	26341	
Total cooling load	30520	2.5

Room by Room

Total Heat Loss	26225	System CFM (cooling)	1200
Total Heat Gain	25611	System CFM (heating)	1200

Room name	Foyer	Bedroom 2	Bathroom 2	Bedroom 3	Great Room	Dining/Kitchen	Master Bath	Master Bedroom	Office	Laundry/Pantı
Gross wall	63	306	171	288	153	154.53	309.78	139.5	137.97	154.53
North windows			6							
NE/NW windows										
South windows							12	30	12	
SE/SW windows										
East windows				15	50	30	12			
West windows		30								
Skylight										
Doors	33.34									20
Net walls	30	276	165	273	103	125	286	110	126	135
Ceiling	44	190	135	169	288	257	201	233	94	189
Floor-crawl										
Floor-open										
Floor-slab	7	34	19	32	17	17.17	34.42	15.5	15.33	17.17
Infiltration	33	30	6	15	50	30	24	30	12	20
People		1		1				2		
Appliances	0	500		500	600	500		500	500	500
Heat loss	1969	3580	1564	2743	3778	2808	3349	2671	1561	2200
Sensible Heat Gain	762	3966	789	2795	5201	3575	2380	3131	1453	1557
Cooling CFM	36	186	37	131	244	168	112	147	68	73
Heating CFM	90	164	72	126	173	129	153	122	71	101

Room name
Gross wall
North windows
NE/NW windows
South windows
SE/SW windows
East windows
West windows
Skylight

Doors
Net walls
Ceiling
Floor-crawl
Floor-open
Floor-slab
Infiltration
People
Appliances
Heat loss
Sensible Heat Gain
Cooling CFM
Heating CFM

Air Ducts Sizing

Total measured length of ducts	55	Use cooling CFM	
Total equivalent length of fittings	32	Flex ducts used	
Available static pressure for duct	.34		
Friction rate	.05		

	CFM	No. outlets	Outlet CFM	Duct diam.	Air vel.
Supply trunk / branch					
First section off AHU	1200			18.8	622
1st reduction / branch	800			16.1	564
2nd reduction / branch	600			14.5	526
3rd reduction / branch	400			12.4	476
4th reduction / branch	200			9.5	402
5th reduction / branch	100			7.3	340
Return trunk / branch					
First section off AHU	1200			18.8	622
1st reduction / branch	800			16.1	564
2nd reduction / branch	600			14.5	526
3rd reduction / branch	400			12.4	476
4th reduction / branch	200			9.5	402
5th reduction / branch	100			7.3	340
Room runs					
Foyer	36	1	36	5	265.3
Bedroom 2	186	2	93	7.1	334.1
Bathroom 2	37	1	37	5	267
Bedroom 3	131	1	131	8.1	363.1
Great Room	244	2	122	7.9	356.8
Dining/Kitchen	168	2	84	6.9	325.9
Master Bath	112	1	112	7.7	349.5
Master Bedroom	147	1	147	8.5	373.4
Office	68	1	68	6.3	309.6
Laundry/Pantr/Powder	73	1	73	6.5	315

Equipment selection as per Manual S

	BTUH	Nom.Tons
Total heat loss	26341	
Total heat gain	30520	2.5
Sensible heat gain	25682	
Latent heat gain	4838	
Sensible/total ratio	0.84	
Target cooling TD	19	

Design temp.	Outdoor	Indoor
Winter	34	70
Summer	95	73
ID design RH	50%, 63F WB	
Altitude		

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	Carrier	25SPA536A003		34200	26330	7870
Evaporator						
Air handler	Carrier	FJ4DNXC36L				
TOTAL CAPACITY with altitude correction			0	34200	26330	7870
Selected equipment size			**OK**	**OK**	**OK**	**OK**

AHRI # 210998604
SEER2: 14.3 / HSPF2: 7.5

Heating CFM	Cooling CFM (rec.)	Ext. static pressure of blower
1200	1260	.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	34000
HP capacity @ 17F	20400
HP capacity @ ODDT	28107
BTUH supplemental heat	-1765
KW supplemental heat	-1

2020 - AIR BARRIER AND INSULATION INSPECTION COMPONENT CRITERIA

TABLE 402.4.1.1

AIR BARRIER AND INSULATION INSPECTION COMPONENT CRITERIA[a]

Project Name:	Wil Todman	Builder Name:		
Street:	1276 Press Ruth Drive	Permit Office:	Lake City	
City, State, Zip:	Lake City, FL, 32025	Permit Number:		
Owner:	Wil Todman	Jurisdiction:	221200	
Design Location:	FL, Jacksonville	County:	Columbia(Florida Climate Zone 2)	

COMPONENT	AIR BARRIER CRITERIA	INSULATION INSTALLATION CRITERIA	CHECK
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 walls.	
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 finished surface.	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 supply and return register boots that penetrate building thermal envelope shall be sealed to the sub-floor, wall covering or ceiling penetrated by the boot.		
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 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.