

RESIDENTIAL ENERGY CONSERVATION CODE DOCUMENTATION CHECKLIST**Florida Department of Business and Professional Regulation
Simulated Performance Alternative (Performance) Method**

Applications for compliance with the 2023 Florida Building Code, Energy Conservation via the residential Simulated Performance method shall include:

- ☒ This Checklist
- ☒ Form R405-2023 report
- ☒ Input summary checklist that can be used for field verification (usually four pages/may be greater).
- ☒ Energy Performance Level (EPL) Display Card (one page)
- ☒ HVAC system sizing and selection based on ACCA Manual S or per exceptions provided in Section R403.7
- ☒ Mandatory Requirements (five pages)

Required prior to CO:

- ☒ Air Barrier and Insulation Inspection Component Criteria checklist (Table R402.4.1.1 - one page)
- ☒ A completed 2023 Envelope Leakage Test Report (usually one page); exception in R402.4 allows dwelling units of R - 2 Occupancies and multiple attached single family dwellings to comply with Section C402.5
- ☒ If FORM R405 duct leakage type indicates anything other than "default leakage", then a completed 2023 Duct Leakage Test Report - Performance Method (usually one page).

ENERGY PERFORMANCE LEVEL (EPL) DISPLAY CARD**ESTIMATED ENERGY PERFORMANCE INDEX = 88****The lower the EnergyPerformance 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. Number 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:	<u>Entire House</u>
5. Is this a worst case? (yes/no)	5. <u>No</u>	13. Cooling systems	Capacity <u>53.0</u>
6. Conditioned floor area (ft ²)	6. <u>2723.69</u>	a. Split system:	SEER2 <u>18.10</u>
7. Windows, type and area*		b. Single package:	SEER2 <u> </u>
a. U-Factor:	7a Dbl Impact, 0.460	c. Ground/water source:	SEER/COP <u> </u>
b. Solar Heat Gain Coefficient (SHGC):	7b. <u>0.25</u>	d. Room unit/PTAC:	EER <u> </u>
c. Area (ft ²)	7c. <u>546</u>	e. Other:	<u> </u>
8. Skylights		14. Heating systems	Capacity <u>59.3</u>
a. U-Factor:	8a. <u> </u>	a. Split system heat pump:	HSPF2 <u>8.50</u>
b. Solar Heat Gain Coefficient (SHGC):	8b. <u> </u>	b. Single package heat pump:	HSPF2 <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 systems	
a. Exterior:		a. Electric resistance:	<u>0.95 UEF</u>
1. Wood/mtl frame (Insulation R-value):	10a1. <u>20.0</u>	b. Gas fired, natrual gas:	<u> </u>
2. Masonry (Insulation R-value):	10a2. <u> </u>	c. Gas fired, LPG:	<u> </u>
b. Adjacent:		d. Solar system with tank:	<u> </u>
1. Wood/mtl frame (Insulation R-value):	10b1. <u>20.0</u>	e. Dedicated heat pump with tank:	<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 (R-value):	11a. <u>30.0</u>	16. HVAC credits claimed (Performance Method)	
b. Single assembly (R-value):	11b. <u> </u>	a. Ceiling fans:	<u>Yes</u>
c. Knee walls/skylight walls (R-value)	11c. <u>30.0</u>	b. Cross ventilation:	<u> </u>
d. Radiant barrier installed	11d. <u>No</u>	c. Whole house fan:	<u> </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: 2705 SW Spruce RdCity/FL Zip: Lake City, FL 32024

Building Input Summary Report

PROJECT													
Title:	Del Rio Residence	Bedrooms:	3	Address type:	Street address								
Building Type:	FLAsBuilt	Bathrooms:	3	Lot#:	TBD								
Owner:	TBD	Conditioned Area:	2724	Block/Subdivision:	TBD								
# of Units:	1	Total Stories:	1	Platbook:	TBD								
Builder Name:	Bidwell Construction LLC	Worst Case:	No	Street:	2705 SW Spruce Rd								
Permit Office:	Lake City	Rotate Angle:	0	County:	Columbia								
Jurisdiction:	221200	Cross Ventilation:	No	City, State, Zip:	Lake City, FL 32024								
Family Type:	Single-Family	Whole House Fan:	No										
New/Existing:	New (From Plans)	Terrain:	Suburban										
Year Construct:	2026	Shielding:	Suburban										
Comment:													
CLIMATE													
✓	Design Location	TMY Site	IECC Zone	Design Temp 97.5 %	2.5 %	Int Design Temp Winter	Summer	Heating Degree Days	Design Moisture	Daily Temp Range			
	FL, Cross City	FL_Gainesville_Rgn	2	31	92	70	75	1241	49	Medium			
BLOCKS													
#	Name	Area	Volume										
1	Entire House	2723.69 ft²	35247.55 ft³										
SPACES													
#		Area	Volume	Kitchen	Occupants	Bedrooms	Infil ID	Finished	Cooled	Heated			
1	BEDROOM #1 2	159.62 ft²	1596.25 ft³	No	0	1	1	Yes	Yes	Yes			
2	CLOSET 2	38.75 ft²	387.50 ft³	No	0	0	1	Yes	Yes	Yes			
3	MUD ROOM	52.31 ft²	523.12 ft³	No	0	0	1	Yes	Yes	Yes			
4	LAUNDRY	114.12 ft²	1141.25 ft³	No	0	0	1	Yes	Yes	Yes			
5	AHU	21.00 ft²	210.00 ft³	No	0	0	1	Yes	Yes	Yes			
6	CLOSET	135.12 ft²	1351.25 ft³	No	0	0	1	Yes	Yes	Yes			
7	HALF BATH	34.38 ft²	343.75 ft³	No	0	0	1	Yes	Yes	Yes			
8	BATH #1	73.44 ft²	734.38 ft³	No	0	0	1	Yes	Yes	Yes			
9	BEDROOM #1	159.62 ft²	1596.25 ft³	No	0	1	1	Yes	Yes	Yes			
10	CLOSET 1	38.75 ft²	387.50 ft³	No	0	0	1	Yes	Yes	Yes			
11	HALL	170.31 ft²	1703.12 ft³	No	0	0	1	Yes	Yes	Yes			
12	PRIMARY BATH	195.50 ft²	1955.00 ft³	No	0	0	1	Yes	Yes	Yes			
13	OFFICE	128.62 ft²	1286.25 ft³	No	0	0	1	Yes	Yes	Yes			
14	PRIMARY BEDR...	268.88 ft²	2688.75 ft³	No	0	1	1	Yes	Yes	Yes			
15	PANTRY	69.19 ft²	691.88 ft³	No	0	0	1	Yes	Yes	Yes			
16	DIN/KIT/LIV	1064.06 ft²	18651.30 ft³	Yes	4	0	1	Yes	Yes	Yes			
FLOORS (Total Exposed Area = 2724 sq.ft.)													
✓	#	Floor Type	Space	Perimeter	R-Value	Area	U-Factor	Tile	Wood	Carpet			
	1	Slab on Grade	BEDROOM #1 2	24 ft	0	159.62 ft²	0.582	1.0	0	0			
	2	Slab on Grade	CLOSET 2	5 ft	0	38.75 ft²	0.582	1.0	0	0			
	3	Slab on Grade	MUD ROOM	7 ft	0	52.31 ft²	0.582	1.0	0	0			
	4	Slab on Grade	LAUNDRY	12 ft	0	114.12 ft²	0.582	1.0	0	0			
	5	Slab on Grade	AHU	0 ft	0	21.00 ft²	0.582	1.0	0	0			
	6	Slab on Grade	CLOSET	23 ft	0	135.12 ft²	0.582	1.0	0	0			
	7	Slab on Grade	HALF BATH	0 ft	0	34.38 ft²	0.582	1.0	0	0			
	8	Slab on Grade	BATH #1	6 ft	0	73.44 ft²	0.582	1.0	0	0			
	9	Slab on Grade	BEDROOM #1	12 ft	0	159.62 ft²	0.582	1.0	0	0			
	10	Slab on Grade	CLOSET 1	0 ft	0	38.75 ft²	0.582	1.0	0	0			
	11	Slab on Grade	HALL	0 ft	0	170.31 ft²	0.582	1.0	0	0			
	12	Slab on Grade	PRIMARY BATH	8 ft	0	195.50 ft²	0.582	1.0	0	0			
	13	Slab on Grade	OFFICE	0 ft	0	128.62 ft²	0.582	1.0	0	0			
	14	Slab on Grade	PRIMARY BEDR...	16 ft	0	268.88 ft²	0.582	1.0	0	0			
	15	Slab on Grade	PANTRY	10 ft	0	69.19 ft²	0.582	1.0	0	0			
	16	Slab on Grade	DIN/KIT/LIV	87 ft	0	1064.06 ft²	0.582	1.0	0	0			
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	RoofMetal	5167 ft²	1155 ft²	Dark	N	0.90	No	0.90	No	0	27
ATTIC													
✓	#	Type	Ventilation	Vent Ratio (1 in)	Area	RBS	IRCC						
	1	Full attic	Vented	300	4621.31 ft²	N	N						

CEILING (Total Exposed Area = 2743 sq.ft.)														
✓ #	Ceiling Type	Space	R-Value	U-Factor	Area	Framing Fraction	Truss Type							
1	Metal, Vented, R-30	BEDROOM #1 2	30	0.034	159.62 ft²	0.10	Metal							
2	Metal, Vented, R-30	CLOSET 2	30	0.034	38.75 ft²	0.10	Metal							
3	Metal, Vented, R-30	MUD ROOM	30	0.034	52.31 ft²	0.10	Metal							
4	Metal, Vented, R-30	LAUNDRY	30	0.034	114.12 ft²	0.10	Metal							
5	Metal, Vented, R-30	AHU	30	0.034	21.00 ft²	0.10	Metal							
6	Metal, Vented, R-30	CLOSET	30	0.034	135.12 ft²	0.10	Metal							
7	Metal, Vented, R-30	HALF BATH	30	0.034	34.38 ft²	0.10	Metal							
8	Metal, Vented, R-30	BATH #1	30	0.034	73.44 ft²	0.10	Metal							
9	Metal, Vented, R-30	BEDROOM #1	30	0.034	159.62 ft²	0.10	Metal							
10	Metal, Vented, R-30	CLOSET 1	30	0.034	38.75 ft²	0.10	Metal							
11	Metal, Vented, R-30	HALL	30	0.034	170.31 ft²	0.10	Metal							
12	Metal, Vented, R-30	PRIMARY BATH	30	0.034	195.50 ft²	0.10	Metal							
13	Metal, Vented, R-30	OFFICE	30	0.034	128.62 ft²	0.10	Metal							
14	Metal, Vented, R-30	PRIMARY BEDROOM	30	0.034	268.88 ft²	0.10	Metal							
15	Metal, Vented, R-30	PANTRY	30	0.034	69.19 ft²	0.10	Metal							
16	Metal, Vented, R-30	DIN/KIT/LIV	30	0.034	1083.66 ft²	0.10	Metal							

WALLS (Total Exposed Area = 3163 sq.ft.)														
✓ #	Omt	Adjacent To	Wall Type	Space	Cavity R-Value	Width Ft In	Height Ft In	Area	Sheathing R-Value	U-Factor	Frm. Frac.	Solar Absor.	Below Grade%	
1	E	Exterior	2 x 6 Metal Frame	BEDROOM #1 2	20	11 6	10 0	115.0 ft²	0	0.087	0.25	0.75	0	
2	-	Partition	2 x 6 Metal Frame	BEDROOM #1 2	20	12 3	10 0	122.5 ft²	0	0.087	0.25	0.75	0	
3	-	Partition	2 x 6 Metal Frame	CLOSET 2	20	5 0	10 0	50.0 ft²	0	0.087	0.25	0.75	0	
4	-	Partition	2 x 6 Metal Frame	MUD ROOM	20	6 9	10 0	67.5 ft²	0	0.087	0.25	0.75	0	
5	-	Partition	2 x 6 Metal Frame	LAUNDRY	20	11 6	10 0	115.0 ft²	0	0.087	0.25	0.75	0	
6	W	Exterior	2 x 6 Metal Frame	CLOSET	20	11 9	10 0	117.5 ft²	0	0.087	0.25	0.75	0	
7	-	Partition	2 x 6 Metal Frame	CLOSET	20	11 6	10 0	115.0 ft²	0	0.087	0.25	0.75	0	
8	E	Exterior	2 x 6 Metal Frame	BATH #1	20	6 3	10 0	62.5 ft²	0	0.087	0.25	0.75	0	
9	E	Exterior	2 x 6 Metal Frame	BEDROOM #1	20	11 6	10 0	115.0 ft²	0	0.087	0.25	0.75	0	
10	W	Exterior	2 x 6 Metal Frame	PRIMARY BATH	20	8 6	10 0	85.0 ft²	0	0.087	0.25	0.75	0	
11	W	Exterior	2 x 6 Metal Frame	PRIMARY BEDROOM	20	16 3	10 0	162.5 ft²	0	0.087	0.25	0.75	0	
12	E	Exterior	2 x 6 Metal Frame	PANTRY	20	10 3	10 0	102.5 ft²	0	0.087	0.25	0.75	0	
13	N	Exterior	Knee Wall, R-30	DIN/KIT/LIV	30	68 3	5 6	375.2 ft²	0	0.042	0.10	0.90	0	
14	E	Exterior	2 x 6 Metal Frame	DIN/KIT/LIV	20	16 4	17 6	286.8 ft²	0	0.087	0.25	0.75	0	
15	E	Exterior	Knee Wall, R-30	DIN/KIT/LIV	30	10 3	5 6	56.4 ft²	0	0.042	0.10	0.90	0	
16	S	Exterior	2 x 6 Metal Frame	DIN/KIT/LIV	20	47 12	17 6	841.3 ft²	0	0.087	0.25	0.75	0	
17	W	Exterior	2 x 6 Metal Frame	DIN/KIT/LIV	20	19 0	17 6	333.2 ft²	0	0.087	0.25	0.75	0	
18	W	Exterior	Knee Wall, R-30	DIN/KIT/LIV	30	7 3	5 6	39.9 ft²	0	0.042	0.10	0.90	0	

DOORS (Total Exposed Area = 24 sq.ft.)														
✓ #	Omt	Door Type	Space	Storms	U-Value	Width Ft In	Height Ft In	Area						
1	N	Metal Insulated Door	MUD ROOM	None	0.127	3 0	8 0	24.0 ft²						

WINDOWS (Total Exposed Area = 546 sq.ft.)														
✓ #	Omt	Wall ID	Frame	Panes	NFRC	U-Factor	SHGC	Impact	W x H, Area	Overhang Depth	Separation	Interior Shade	Screening	
1	E	1	Vinyl	Low-E Double	Yes	0.460	0.25	Yes	6'0" x 6'0", 36 ft²	1 ft 4 in	7 ft 8 in	None	None	
2	E	8	Vinyl	Low-E Double	Yes	0.460	0.25	Yes	2'0" x 3'0", 6 ft²	1 ft 4 in	7 ft 8 in	None	None	
3	E	9	Vinyl	Low-E Double	Yes	0.460	0.25	Yes	6'0" x 6'0", 36 ft²	1 ft 4 in	7 ft 8 in	None	None	
4	W	10	Vinyl	Low-E Double	Yes	0.460	0.25	Yes	4'0" x 2'0", 8 ft²	13 ft 4 in	1 ft 5 in	None	None	
5	W	11	Vinyl	Low-E Double	Yes	0.460	0.25	Yes	6'0" x 6'0", 36 ft²	13 ft 4 in	1 ft 5 in	None	None	
6	W	11	Vinyl	Low-E Double	Yes	0.460	0.25	Yes	6'0" x 8'0", 48 ft²	13 ft 4 in	1 ft 5 in	None	None	
7	E	14	Vinyl	Low-E Double	Yes	0.460	0.25	Yes	12'2" x 2'0", 24 ft²	1 ft 4 in	0 ft 11 in	None	None	
8	E	14	Vinyl	Low-E Double	Yes	0.460	0.25	Yes	6'0" x 4'6", 27 ft²	1 ft 4 in	7 ft 8 in	None	None	
9	S	16	Vinyl	Low-E Double	Yes	0.460	0.25	Yes	12'2" x 2'0", 24 ft²	1 ft 4 in	4 ft 8 in	None	None	
10	S	16	Vinyl	Low-E Double	Yes	0.460	0.25	Yes	12'2" x 2'0", 24 ft²	1 ft 4 in	10 ft 3 in	None	None	
11	S	16	Vinyl	Low-E Double	Yes	0.460	0.25	Yes	6'0" x 5'0", 30 ft²	13 ft 4 in	1 ft 5 in	None	None	
12	S	16	Vinyl	Low-E Double	Yes	0.460	0.25	Yes	12'0" x 6'0", 72 ft²	13 ft 4 in	1 ft 5 in	None	None	
13	S	16	Vinyl	Low-E Double	Yes	0.460	0.25	Yes	6'0" x 8'0", 48 ft²	13 ft 4 in	1 ft 5 in	None	None	
14	W	17	Vinyl	Low-E Double	Yes	0.460	0.25	Yes	12'2" x 2'0", 24 ft²	1 ft 4 in	0 ft 11 in	None	None	
15	W	17	Vinyl	Low-E Double	Yes	0.460	0.25	Yes	9'0" x 6'0", 54 ft²	13 ft 4 in	1 ft 5 in	None	None	
16	W	17	Vinyl	Low-E Double	Yes	0.460	0.25	Yes	6'0" x 8'0", 48 ft²	13 ft 4 in	1 ft 5 in	None	None	

GARAGE						
✓ #	Floor Area	Ceiling Area	Exposed Wall Perimeter	Avg. Wall Height	Exposed Wall Insulation	
1	1898 ft²	1898 ft²	128 ft	16 ft	20	

INFILTRATION								
#	Scope	Method	SLA	CFM 50	ELA	EqLA	ACH	ACH 50
1	Wholehouse	Blower Door	0.000243	2937	161.5	303.3	0.40	5.00

HEATING SYSTEM						
✓ #	System Type	Subtype	Efficiency	Capacity	Block	Ducts
1	Split air source heat pump		8.5 HSPF2	59.3 kBtu/hr	1	sys#1

COOLING SYSTEM

✓ #	System Type	Subtype	Efficiency	Capacity	Air Flow	SHR	Block	Ducts
1	Split air source heat pump		18.1 SEER2	53.0 kBtu/hr	1837 cfm	0.84	1	sys#1

HOT WATER SYSTEM

✓ #	System Type	Subtype	Location	EF	Cap	Use	SetPnt	Conservation
1	Electric conventional			0.95 UEF	50 gal	60 gal	120 °F	None

DUCTS

✓ #	Supply Location	R-Value	Area	Return Location	Area	Leakage Type	Air Handler	CFM 25 Out	Percent Leakage	QN	RLF	HVAC # Heat	Cool
1	Entire House Attic	6.0	704 ft²	Entire House Attic	335 ft²	Proposed Qn	Entire House	217.9 cfm	6.00	0.08	0.50	1	1

TEMPERATURES

Programmable Thermostat: Y										Ceiling Fans:															
Cooling	[X]	Jan	[X]	Feb	[X]	Mar	[X]	Apr	[X]	May	[X]	Jun	[X]	Jul	[X]	Aug	[X]	Sep	[X]	Oct	[X]	Nov	[X]	Dec	
Heating	[X]	Jan	[X]	Feb	[X]	Mar	[X]	Apr	[X]	May	[X]	Jun	[X]	Jul	[X]	Aug	[X]	Sep	[X]	Oct	[X]	Nov	[X]	Dec	
Venting	[X]	Jan	[X]	Feb	[X]	Mar	[X]	Apr	[X]	May	[X]	Jun	[X]	Jul	[X]	Aug	[X]	Sep	[X]	Oct	[X]	Nov	[X]	Dec	
Thermostat Schedule:				Florida Building Code, 8th Edition												Hours									
Schedule Type				(2023)	1	2	3	4	5	6	7	8	9	10	11	12									
Cooling (WD)				AM	75	75	75	75	75	75	75	75	75	75	75	75	75	75							
				PM	75	75	75	75	75	75	75	75	75	75	75	75	75	75							
Cooling (WEH)				AM	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	
				PM	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75		
Heating (WD)				AM	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	
				PM	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72		
Heating (WEH)				AM	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	
				PM	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72		

Florida Building Code, Energy Conservation, 8th Edition (2023)

Mandatory Requirements for Residential Performance, Prescriptive and ERI Methods

ADDRESS: 2705 SW Spruce Rd
Lake City, FL 32024

PERMIT #: TBD

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, completed and signed by the builder. The building official shall verify that the EPL display card accurately reflects the plans and specifications submitted to demonstrate 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. Dwelling units with an air leakage rate less than three air changes per hour shall be provided with whole-house mechanical ventilation in accordance with Section R403.6.1 of this code and M1507.3 of the Florida Building Code, Residential. 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 individual 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.
7. If an attic is both air sealed and insulated at the roof deck, interior access doors and hatches between the conditioned space volume and the attic shall be opened during the test and the volume of the attic shall be added to the conditioned space volume for purposes of reporting an infiltration volume and calculating the air leakage of the home.

- ☐ **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.
- ☒ **R402.4.6 Air-Sealed Electrical and Communication Boxes.** Air-sealed electrical and communication boxes that penetrate the air barrier of the building thermal envelope shall be caulked, taped, gasketed, or otherwise sealed to the air barrier element being penetrated. Air-sealed boxes shall be buried in or surrounded by insulation. Air-sealed boxes shall be marked in accordance with NEMA OS 4. Air-sealed boxes shall be installed in accordance with the manufacturer's instructions.

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 limit supplemental heat operation to only those times when one of the following applies:
1. The vapor compression cycle cannot provide the necessary heating energy to satisfy the thermostat setting.
 2. The heat pump is operating in defrost mode.
 3. The vapor compression cycle malfunctions.
 4. The thermostat malfunctions.
- ☒ **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 and 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 air flow 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. Post construction 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. All registers shall be taped or otherwise sealed during the test.
- Exceptions:**
1. A duct 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 Q_n to the outside of less than 0.080 (where Q_n = 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).** Heated water circulation systems 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 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.
- ☒ **R403.5.2 Demand recirculation water systems (Mandatory).** Where installed, demand recirculation water systems shall have controls that comply with both of the following:
1. The controls shall start the pump upon receiving a signal from the action of a user of a fixture or appliance, sensing the presence of a user of a fixture or sensing the flow of hot or tempered water to a fixture fitting or appliance.
 2. The controls shall limit the temperature of the water entering the cold water piping to not greater than 104°F (40°C).

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 1/2 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 Storage water heater temperature controls.**

- ☒ **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 system.** 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 mechanical ventilation fans are integral to tested and listed HVAC equipment, they shall be powered by an electronically commutated motor.

- ☐ **R403.6.2 Ventilation air.** Residential buildings designed to be operated at a positive indoor pressure of 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 methodologies, heating and cooling calculation 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	MINIMUM EFFICACY (a)	AIRFLOW RATE MAXIMUM
	CFM	CFM/WATT	CFM
HRV or ERV	Any	1.2 cfm/watt	Any
Range hoods	Any	2.8 cfm/watt	Any
In-line fan	Any	3.8 cfm/watt	Any
Bathroom, utility room	10	2.8 cfm/watt	< 90
Bathroom, utility room	90	3.5 cfm/watt	Any

For SI: 1 cfm - 28.3 L/min.

(a) When tested in accordance HVI Standard 916

MANDATORY REQUIREMENTS - (Continued)

- ☒ **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 403.7, 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 IECC—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).

- ☐ **R403.10 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.
- ☐ **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 operations.
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.

MANDATORY REQUIREMENTS - (Continued)

- ☐ **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).** All permanently installed luminaires, excluding those in kitchen appliances, 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.

Exception: Low-voltage lighting.

- ☒ **R404.1.1 Lighting equipment (Mandatory).** Fuel gas lighting systems shall not have continuously burning pilot lights.

TABLE 402.4.1.1
AIR BARRIER AND INSULATION INSPECTION COMPONENT CRITERIA

Project Name:	Del Rio Residence	Builder Name:	Bidwell Construction LLC
Street:	2705 SW Spruce Rd	Permit Office:	Lake City
City, State, Zip:	Lake City, FL 32024	Permit Number:	TBD
Owner:	TBD	Jurisdiction:	221200
Design Location:	FL, Cross City		

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 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 attics paces 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 with 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 are insulated and include an 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 in lieu of floor insulation, insulation shall be permanently attached to the crawlspace walls.	☐
Shafts, penetrations	Duct shafts, utility penetrations, and flue shaft openings 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 shall be installed behind electrical or communication boxes or air-sealed boxes shall be installed.	Exterior walls adjacent to showers and tubs shall be insulated.	☐
Electrical, communication, and other equipment boxes, housings, and enclosures	Boxes, housings, and enclosures that penetrate the air barrier shall be caulked, taped, gasketed, or otherwise sealed to the air barrier element being penetrated. All concealed openings into the box, housing, or enclosure shall be sealed. The continuity of the air barrier shall be maintained around boxes, housings, and enclosures that penetrate the air barrier. Alternatively, air-sealed boxes shall be installed in accordance with R402.4.6.	Boxes, housings, and enclosures shall be buried in or surrounded by tightly fitted insulation.	☐
HVAC register boots	HVAC supply and return register boots that penetrate building thermal envelope shall be sealed to the subfloor, 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 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.

Envelope Leakage Test Report (Blower Door Test)

Residential Prescriptive, Performance or ERI Method Compliance
2023 Florida Building Code, Energy Conservation, 8th Edition

Jurisdiction: 221200

Permit Number: TBD

Job Information

Builder: Bidwell Construction LLC Community: TBD Lot: TBD

Address: 2705 SW Spruce Rd Unit:

City: Lake City State: FL Zip: 32024

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 R405-2023 (Performance) or R406-2023 (ERI), section labeled as Infiltration, sub-section ACH50.

ACH(50) specified on Form R405-2023-Energy Calc (Performance) or R406-2023 (ERI):

5.000

$$\frac{\text{CFM}(50)}{\text{Building Volume}} \times 60 \div \frac{35248}{\text{ACH}(50)} =$$



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. 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. Dwelling units with an air leakage rate less than three air changes per hour shall be provided with whole-house mechanical ventilation in accordance with Section R403.6.1 of this code and M1507.3 of the Florida Building Code, Residential. 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 individual 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, 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.
7. If an attic is both air sealed and insulated at the roof deck, interior access doors and hatches between the conditioned space volume and the attic shall be opened during the test and the volume of the attic shall be added to the conditioned space volume for purposes of reporting an infiltration volume and calculating the air leakage of the home.

Testing Company

Company Name: _____ Phone: _____

I hereby verify that the above Air Leakage results are in accordance with the 2023 8th 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: _____

Duct Leakage Test Report

Residential Prescriptive, Performance or ERI Method Compliance
2023 Florida Building Code, Energy Conservation, 8th Edition

Jurisdiction: 221200

Permit Number: TBD

Job Information

Builder: Bidwell Construction LLC Community: TBD Lot: TBD

Address: 2705 SW Spruce Rd Unit:

City: Lake City State: FL Zip: 32024

Duct Leakage Test Results

System 1	_____ cfm25
System 2	_____ cfm25
System 3	_____ cfm25
Sum of any additional systems	_____ cfm25
Total of all systems	_____ cfm25

☐ Prescriptive Method cfm25 (Total)

To qualify as "substantially leak free" Qn Total must be less than or equal to 0.04 if air handler unit is installed. If air handler unit is not installed, Qn Total must be less than or equal to 0.03. This testing method meets the requirements in accordance with Section R403.3.3.

Is the air handler unit installed during testing?

☐ YES (≤ 0.04 Qn)

☐ NO (≤ 0.03 Qn)

_____ $\div$ _____ = _____ Qn
Total of all systems Total Conditioned Square Footage

☐ **PASS**
☐ **FAIL**

☒ Performance / ERI Method cfm25 (Out or Total)

To qualify using this method, Qn must be not greater than the proposed duct leakage Qn specified on Form R405-2023 or R406-2023.

Leakage Type selected on Form R405-2023 (Energy Calc) or R406-2023

Qn specified on Form R405-2023 (Energy Calc) or R406-2023

Proposed Qn

0.08

Duct tightness shall be verified by testing in accordance with ANSI/RESNET/ICC380 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.

Testing Company

Company Name: _____ Phone: _____

I hereby verify that the above duct leakage test results are in accordance with the 2023 8th 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: _____

Reference Home Characteristics

TBD
2705 SW Spruce Rd
Lake City, FL 32024

Title: Del Rio Residence_RE
FLBase2023

TMY City: FL_Gainesville_Rgn

Above-grade Walls (Uo)	0.084
Above-grade Wall Solar Absorptance	0.75
Above-grade Wall Infrared Emittance	0.90
Basement Walls (Uo)	n/a
Above-grade Floors (Uo)	n/a
Slab Insulation R-Value	0.0
Ceilings (Uo)	0.030
Roof Solar Absorptance	0.75
Roof Infrared Emittance	0.90
Attic Vent Area (ft²)	15.40
Crawlspace Vent Area (ft²)	n/a
Exposed Masonry Floor Area (ft²)	924.26
Carpet & Pad R-Value	2.0
Door Area (ft²)	0.00
Door U-Factor	n/a
North Window Area (ft²)	0.00
South Window Area (ft²)	102.14
East Window Area (ft²)	102.14
West Window Area (ft²)	102.14
Window U-Factor	0.400
Window SHGC (Heating)	0.2169
Window SHGC (Cooling)	0.2169
ACH50	7.00
Internal Gains * (Btu/day)	140199
Water heater gallons per day	60.00
Water Heater set point temperature	120.00
Water heater efficiency rating	0.90
Labeled Heating System Rating and Efficiency	HSPF = 10.4
Labeled Cooling System Rating and Efficiency	SEER = 15.8
Air Distribution System Efficiency	0.88
Thermostat Type	Manual
Heating Thermostat Settings	72.0 (All hours)

Certificate of Product Ratings

AHRI Certified Reference Number : 216057018 Date : 01-19-2026 Model Status : Active

AHRI Type : HRCU-A-CB (Split System: Heat Pump with Remote Outdoor Unit-Air-Source)

Series : 18 TruComfort Variable Speed Heat Pump

Outdoor Unit Brand Name : TRANE

Outdoor Unit Model Number (Condenser or Single Package) : 5TWV8X60A1

Indoor Unit Model Number (Evaporator and/or Air Handler) : 5TAMXD07AV51

The manufacturer of this TRANE product is responsible for the rating of this system combination.

Rated as follows in accordance with the latest edition of AHRI 210/240 – 2024, Performance Rating of Unitary Air-Conditioning & Air-Source Heat Pump Equipment and subject to rating accuracy by AHRI-sponsored, independent, third party testing:

Cooling Capacity (A_{Full}) – Single or High Stage (95F), btuh : 53000

SEER2 : 18.10

EER2 (A_{Full}) – Single or High Stage (95F) : 10.00

Heating Capacity (H1Nom) - Multi/Variable Stage (47F) : 54000

HSPF2 (Region IV) : 8.50



†"Active" Model Status are those that an AHRI Certification Program Participant is currently producing AND selling or offering for sale; OR new models that are being marketed but are not yet being produced. "Production Stopped" Model Status are those that an AHRI Certification Program Participant is no longer producing BUT is still selling or offering for sale.

Ratings that are accompanied by WAS indicate an involuntary re-rate. The new published rating is shown along with the previous (i.e. WAS) rating.

The Department of Energy has published updated energy efficiency metrics for central air conditioners and heat pumps. This publication reflects both the 1987 metric (SEER) and the 2023 metric (SEER2). Efficiency requirements are published at 10 C.F.R. 430.32(c). Please refer to www.AHRI.net.org for more information about updated energy efficiency metrics.

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CERTIFICATE VERIFICATION

The information for the model cited on this certificate can be verified at www.ahridirectory.org, click on "Verify Certificate" link and enter the AHRI Certified Reference Number and the date on which the certificate was issued, which is listed above, and the Certificate No., which is listed at bottom right.

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CERTIFICATE NO.:

134133063255093780



HVAC DESIGN FOR BIDWELL BARNDOMINIUMS LLC DEL RIO RESIDENCE

General Notes

Please note not all notes may apply.

- CONTRACTOR SHALL PROVIDE A COMPLETE AND OPERABLE MECHANICAL SYSTEM.
- THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE. CAREFUL ATTENTION SHALL BE PAID TO PRECISE LOCATION AND COORDINATION OF DIFFUSERS, REGISTERS, AND GRILLES WITH STRUCTURAL FRAMING AND ELECTRICAL FIXTURES AT CEILING LOCATIONS. ELECTRICAL FIXTURES AT CEILING TAKE PRIORITY OVER DUCT LAYOUT. ELECTRICAL FIXTURES AT CEILING ARE NOT TO BE MOVED FROM THEIR PROPOSED LOCATIONS. SEE THE REFLECTED CEILING PLANS, WHERE AVAILABLE, FOR EXACT LOCATIONS OF CEILING FIXTURES. NO STRUCTURAL MEMBER SHALL BE CUT WITHOUT PERMISSION FROM STRUCTURAL ENGINEER.
- THE CONTRACTOR SHALL OBTAIN, AT HIS EXPENSE, ALL NECESSARY FEES, PERMITS, AND TESTS.
- ALL WORK SHALL COMPLY WITH APPLICABLE CODES, REGULATIONS, ORDINANCES AND REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION. NO CONTRACTOR SHALL BID UNLESS FAMILIAR WITH THESE CODES. ALL WORK SHALL BE EXECUTED IN A WORKMANLIKE MANNER AND SHALL PRESENT A NEAT, PROFESSIONAL APPEARANCE WHEN COMPLETED. ALL MATERIALS AND EQUIPMENT SHALL BE NEW, UNLESS OTHERWISE SPECIFIED. STORE AND INSTALL MATERIALS AND EQUIPMENT IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE HVAC SYSTEM(S) TO BE INSTALLED (REFRIGERANT LINES, EQUIPMENT, DUCTWORK, GRILLES, ETC.). ADDITIONAL OFFSETS, TRANSITIONS, ETC. MAY BE REQUIRED TO PROVIDE A COMPLETE SYSTEM. NO ABRUPT TRANSITIONS SHALL BE PERMITTED. THE MECHANICAL WORK HEREIN INCLUDES COMPLETE SYSTEMS OF HEATING, AIR CONDITIONING (TEMPERATURE AND HUMIDITY CONTROL), VENTILATION, BATHROOM EXHAUST, KITCHEN EXHAUST, AND ALL DUCTWORK. THE CONTRACTOR SHALL PROVIDE EACH ELEMENT THEREOF, AS INDICATED HEREIN, OR REASONABLY INFERRED (WHETHER OR NOT SPECIFICALLY CALLED FOR BY ITEM), REASONABLY NECESSARY TO FACILITATE EACH SYSTEM'S FUNCTIONING AS INDICATED BY THE DESIGN AND EQUIPMENT SPECIFIED. CONTRACTOR SHALL VERIFY SPACE CONDITIONS PRIOR TO THE FABRICATION OR INSTALLATION OF ANY WORK.
- THE CONDENSING UNIT AND AIR HANDLING UNIT EQUIPMENT SHALL BE AS SPECIFIED OR ARCHITECT APPROVED SUBSTITUTE.
- PRIOR TO START OF HVAC WORK, IF ANY PRODUCTS OR MATERIALS (i.e. BUILDING ENVELOPE INSULATION, EXTERIOR DOORS, GLAZING, AND ANY OTHER APPLICABLE FACTORS THAT WOULD AFFECT THE LOAD ANALYSIS) ARE CHANGED OR MODIFIED FROM PROCALCS ORIGINAL HVAC DESIGN, A NEW LOAD ANALYSIS MUST BE PERFORMED. IT IS THE HVAC INSTALLING CONTRACTOR'S RESPONSIBILITY TO PERFORM THIS ANALYSIS OR PROVIDE THE NEW INFORMATION TO PROCALCS TO REVISE THE LOAD ANALYSIS. IF ANY CHANGES HAVE BEEN MADE AND ARE NOT APPROVED BY PROCALCS, THE HVAC CONTRACTOR MAINTAINS FULL RESPONSIBILITY FOR THE RESULTS OF THE HVAC DESIGN AND SYSTEM PERFORMANCE.
- THE CONTRACTOR SHALL COORDINATE A "MECHANICAL WALK-THROUGH" MEETING, WHICH IS TO OCCUR PRIOR TO THE START OF THE MECHANICAL ROUGH-IN. THE PURPOSE FOR THIS MEETING IS TO ALLOW THE OWNER, ARCHITECT, AND CONTRACTOR TO REVIEW AND COORDINATE FINAL DUCT AND AIR DEVICE LOCATIONS. THE MECHANICAL SUBCONTRACTOR'S FOREMAN IS TO ATTEND THIS MEETING AS WELL.
- NO CHANGES TO THE HVAC PLANS OR NOTES SHALL BE PERMITTED WITHOUT PROCALCS, LLC. PRIOR APPROVAL.
- REFRIGERANT PIPING SHALL BE TYPE "L" SOFT DRAWN COPPER, ASTM B280, AND SHALL BE MILL CLEANED, DRIED AND CAPPED. INSULATE REFRIGERANT SUCTION LINE WITH " WALL FOAMED PLASTIC INSULATION SLIPPED OVER TUBING AND ALL JOINTS THOROUGHLY SEALED. PAINT REFRIGERANT PIPING INSULATION WITH TWO (2) COATS OF ACRYLIC PROTECTIVE PAINT WHERE INSULATION IS EXPOSED TO WEATHER.
- ALL FIBERGLASS DUCTWORK SHALL BE 1-1/2" FIBROUS GLASS ANTI-MICROBIAL DUCTBOARD INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF S.M.A.C.N.A. FIBROUS GLASS DUCT CONSTRUCTION STANDARDS. 1" FIBROUS GLASS ANTI-MICROBIAL DUCTBOARD MAY BE USED IN THOSE LOCATIONS WHERE ALLOWED BY CODE. NO ABRUPT TRANSITIONS SHALL BE PERMITTED. PROVIDE AIR TURNING VEINS IN ALL 90 DEGREE RECTANGULAR DUCT ELBOWS.
- FLEXIBLE DUCTWORK SHALL BE THERMAFLEX M-KE TYPE WITH 1-1/2" ONE-POUND DENSITY INSULATION AND VINYL VAPOR BARRIER OR ARCHITECT APPROVED SUBSTITUTE. NO ABRUPT TRANSITIONS SHALL BE PERMITTED.
- DUCT SIZES SHOWN ARE INSIDE NET DIMENSIONS.
- ALL AIR DEVICES SHALL BE MANUFACTURED BY TITUS, 250 SERIES, OR APPROVED SUBSTITUTE. COLOR TO BE APPROVED BY THE PROFESSIONAL OF RECORD PRIOR TO PAINTING GRILLES BUT ASSUMED TO BE WHITE FOR BID/BUDGET PURPOSES. SUPPLY AIR REGISTERS SHALL BE DOUBLE DEFLECTION TYPE WITH OPPOSED BLADE DAMPERS. ALL SIZES AND PATTERNS ARE NOTED ON THE MECHANICAL PLANS.
- FOR EACH RETURN AIR GRILLE, PROVIDE 3M FILTRETE 1000 MICRO ALLERGEN PLEATED AIR FILTERS (3M, 800-49403552, www.filtrete.com, MERV RATING: 11, PRESSURE DROP: .2 @ 300 FPM, OR APPROVED SUBSTITUTE). PRIOR TO INSTALLATION, THE CONTRACTOR SHALL VERIFY THAT THE AIR VELOCITY NOISE ACROSS EACH RETURN AIR FILTER WILL BE LOW, BASED ON THE PRESSURE DROP FOR PROPOSED FILTER TYPE AND THE PROPOSED RETURN AIR GRILLE SIZE(S). ANY RETURN AIR FILTER GRILLES THAT ARE REQUIRED TO BE RESIZED BY THE CONTRACTOR, ARE TO BE SIZED FOR FILTER SIZES THAT ARE READILY AVAILABLE AT HOME SUPPLY STORES. CUSTOM SIZES ARE NOT PERMITTED.
- ALL BATH, KITCHEN, AND DRYER EXHAUST(S) SHALL BE VENTED TO THE EXTERIOR.
- ALL BATH EXHAUST FANS SHALL BE DUCTED WITH 4" T-FIN. SLOPE AND FULLY SUPPORT ALL BATHROOM EXHAUST DUCTS TO AVOID ANY SNAGS IN THE DUCT AND TO ALLOW FOR PROPER DRAINAGE. TERMINATE AT SOFFIT WITH SCREENED GRILLE, UNLESS OTHERWISE NOTED.
- PROVIDE BACKDRAFT DAMPERS FOR ALL EXHAUST FANS.
- ALL EXHAUST AIR DUCTS SHALL BE GALVANIZED SHEET METAL CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH ASHRAE AND SMACNA STANDARDS.
- TESTING, ADJUSTING, AND BALANCING: THE CONTRACTOR SHALL BALANCE THE AIRFLOW DISTRIBUTION SYSTEMS, INCLUDING SUB MAINS, BRANCHES, AND TERMINALS TO QUANTITIES INDICATED ON THE UPDATED MANUAL J LOAD ANALYSIS (FOR RESIDENTIAL PROPERTIES) AND MANUAL N (COMMERCIAL PROPERTIES).
- PROVIDE DRAW-THROUGH CONDENSATE TRAP AT EACH UNIT CONDENSATE DRAIN. DEPTH SHALL BE AT LEAST 1-1/2 TIMES THE TOTAL S.P DROP OF THE UNIT.
- PROVIDE PROGRAMMABLE SERIES 7-DAY THERMOSTAT. PRIOR TO ORDERING THE THERMOSTAT, THE CONTRACTOR SHALL VERIFY THAT THE SPECIFIED THERMOSTAT WILL OPERATE PROPERLY WITH THE PROPOSED AIR CONDITIONING EQUIPMENT. IF A SUBSTITUTE IS REQUIRED, CONTRACTOR MUST SUBMIT PRODUCT INFORMATION TO ARCHITECT FOR PRODUCT APPROVAL. COORDINATE THERMOSTAT LOCATION WITH FURNITURE/EQUIPMENT LAYOUTS, WINDOWS AND DOOR SWINGS. THERMOSTAT MUST BE LOCATED AT 54" A.F.F. AND NOT LOCATED ON AN OUTSIDE WALL.
- SUPPLY AND RETURN AIR GRILLES SHALL MAINTAIN A MINIMUM DISTANCE OF 3'-0" FROM CEILINGS FANS.
- ALL DUCT BRANCHES, PER ACCA MANUAL D, SHOULD INCLUDE DAMPERS FOR PROPER AIR FLOW AND BALANCING.
- NO EQUIPMENT SHALL BE PURCHASED UNTIL REVIEW BY THE PROFESSIONAL OF RECORD, EVEN IF EQUIPMENT HAS BEEN SPECIFIED.
- ANY VARIATION FROM THE DESIGN PRESENTED COULD AFFECT SYSTEM PERFORMANCE.
- EQUIPMENT SHALL BEAR A U.L. OR OTHER RECOGNIZED LABEL, NAMEPLATES, WIRING DIAGRAMS, AND ENERGY RATINGS, AS APPLICABLE.
- CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND ACCESSORIES SO THAT IT IS READILY ACCESSIBLE FOR SERVICING, TESTING, BALANCING AND REPLACEMENT.
- CONTRACTOR SHALL PROVIDE A WRITTEN GUARANTEE AGAINST DEFECTS IN ALL MATERIALS AND WORKMANSHIP FOR ONE (1) YEAR FROM ACCEPTANCE WITH FOUR ADDITIONAL YEARS OF WARRANTY ON COMPRESSORS.
- AIR BALANCE TO BE PERFORMED BY THE AIR CONDITIONING CONTRACTOR TO THE OWNER'S COMFORT. ALL SUPPLY AND RETURN DUCTWORK SHALL BE INSTALLED IN ACCORDANCE WITH SMACNA STANDARDS AND LOCAL BUILDING CODES.
- PROVIDE ALL CONTROLS, STARTERS, CONTROL WIRING, DISCONNECTS, AND OTHER ELECTRICAL EQUIPMENT AS REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM. MECHANICAL CONTRACTOR IS TO COORDINATE WITH OTHER CONTRACTORS TO ENSURE THAT ALL ITEMS REQUIRED ARE INCLUDED IN INSTALLATION.
- COORDINATE ALL POWER AND CONTROL WIRING WITH ELECTRICIAN.

Signature can only be verified and validated with electronic copy of documents.



Jensen Beach, FL 34957
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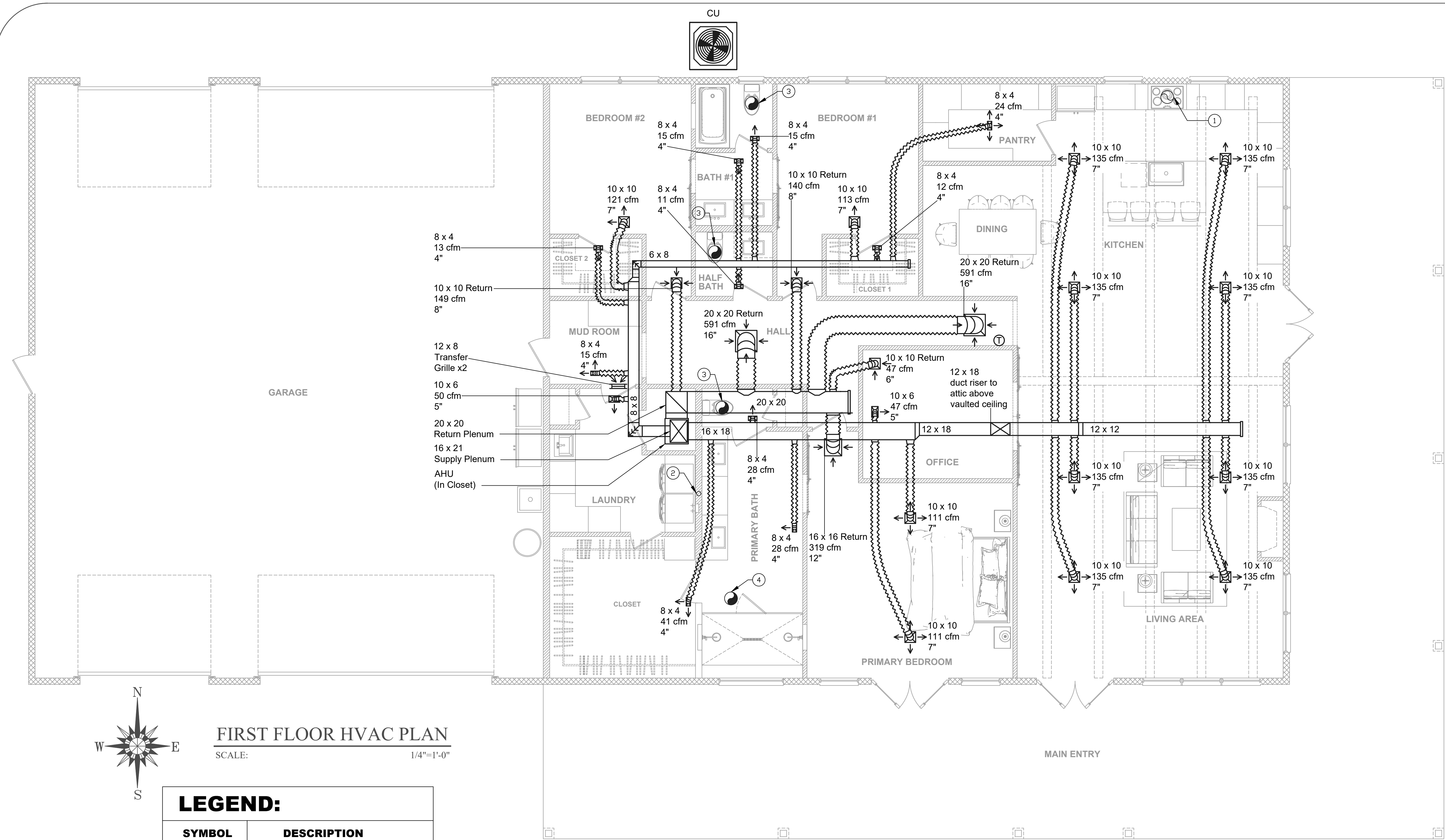
Del Rio Residence
2705 SW Spruce Rd
Lake City, FL 32024

No.	Revision/Issue	Date
1	Issue	1/20/2026

For:

Bidwell Barndominiums LLC
10933 Norman Pl
Parrish, FL 34219

Drawn By:	WSC	Sheet M-1 of 3
Checked By:	TP	
Date:	1/20/2026	
Scale:	As Shown	



FIRST FLOOR HVAC PLAN
SCALE: 1/4"=1'-0"

LEGEND:	
SYMBOL	DESCRIPTION
10 x 10 135 cfm 7"	GRILLE SIZE GRILLE CFM BRANCH DUCT SIZE
	CEILING SUPPLY GRILLE
	RETURN GRILLE
	SIDEWALL TRANSFER GRILLE
	DRYER VENT
	EXHAUST FAN
	KITCHEN RANGE HOOD EXHAUST FAN
	RISER DUCT UP/DOWN
	THERMOSTAT
	CONDENSING UNIT

GENERAL NOTES:

- A. ALL SUPPLY DUCTS ARE DESIGNED PER ACCA MANUAL D.
- B. ALL SUPPLY BRANCHES ARE DESIGNED ACCORDING TO ACCA MANUAL D FOR THE HIGHEST CFM'S REQUIRED HEATING OR COOLING, FOR THE ROOM LOAD PER ACCA MANUAL J.
- C. IT IS THE INSTALLING HVAC CONTRACTOR'S RESPONSIBILITY TO INSTALL AIR VOLUME DAMPERS TO ADJUST APPROPRIATE AIR FLOW ACCORDINGLY.
- D. FIELD COORDINATE ALL GRILLE LOCATIONS WITH OTHER TRADES PRIOR TO INSTALLATION TO MAINTAIN PROPER CLEARANCES REQUIRED BY APPLICABLE CODES.

KEY NOTES:

- ① KITCHEN HOOD VENT TO BE SIZED PER MANUFACTURER'S INSTRUCTION. VENT TO OUTSIDE. PROVIDE MAKE-UP AIR EQUAL TO 90% OF EXHAUST CFM FOR EXHAUST HOOD EXCEEDING 400 CFM. MAKE-UP AIR TO BE LOCATED AT CLOSEST POINT TO EXHAUST TO ALLOW VERY LITTLE INFILTRATION INTO HOME. UTILIZING A MOTORIZED FAN TO ACHIEVE A CONSISTENT MAKE-UP AIR CFM.
- ② DRYER VENT TO EXTERIOR. 4" VENT TO OUTSIDE.
- ③ 50 CFM MINIMUM BATHROOM EXHAUST FAN, 4" VENT TO OUTSIDE.
- ④ 110 CFM MINIMUM BATHROOM EXHAUST FAN, 6" VENT TO OUTSIDE.

GRILLE SCHEDULE Titus Series 250					
Size	Velocity (FPM)	400	500		
8 x 4	CFM	65	80		
		4-way	12	14	
	Throw (ft)	3-way	13	15	
		2-way	14	17	
		1-way	17	21	
	CFM	140	N/A		
10 x 6	CFM	15	N/A		
		4-way	15	N/A	
	Throw (ft)	3-way	13	N/A	
		2-way	13	N/A	
		1-way	17	N/A	
	CFM	250	N/A		
10 x 10	CFM	17	N/A		
		4-way	17	N/A	
	Throw (ft)	3-way	18	N/A	
		2-way	20	N/A	
		1-way	20	N/A	
	CFM	20	N/A		



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Del Rio Residence
2705 SW Spruce Rd
Lake City, FL 32024

No.	Revision/Issue	Date
1	Issue	1/20/2026

For:
Bidwell Barndominiums LLC
10933 Norman Pl
Parrish, FL 34219

Drawn By:	WSC	Sheet
Checked By:	TP	M-2 of 3
Date:	1/20/2026	
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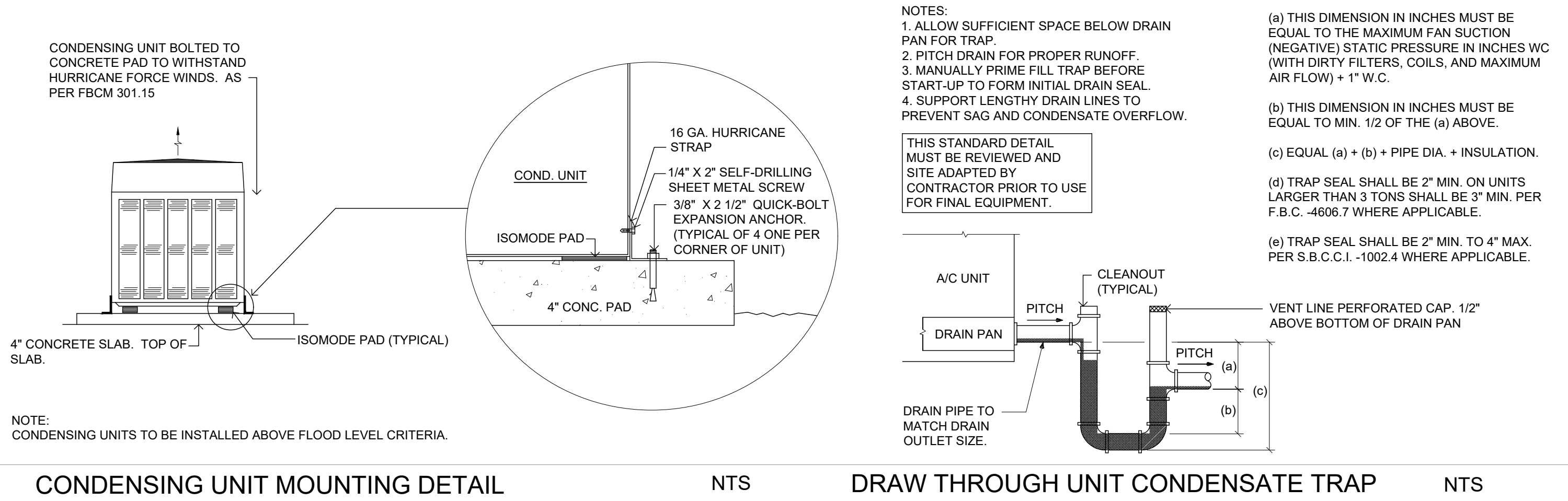
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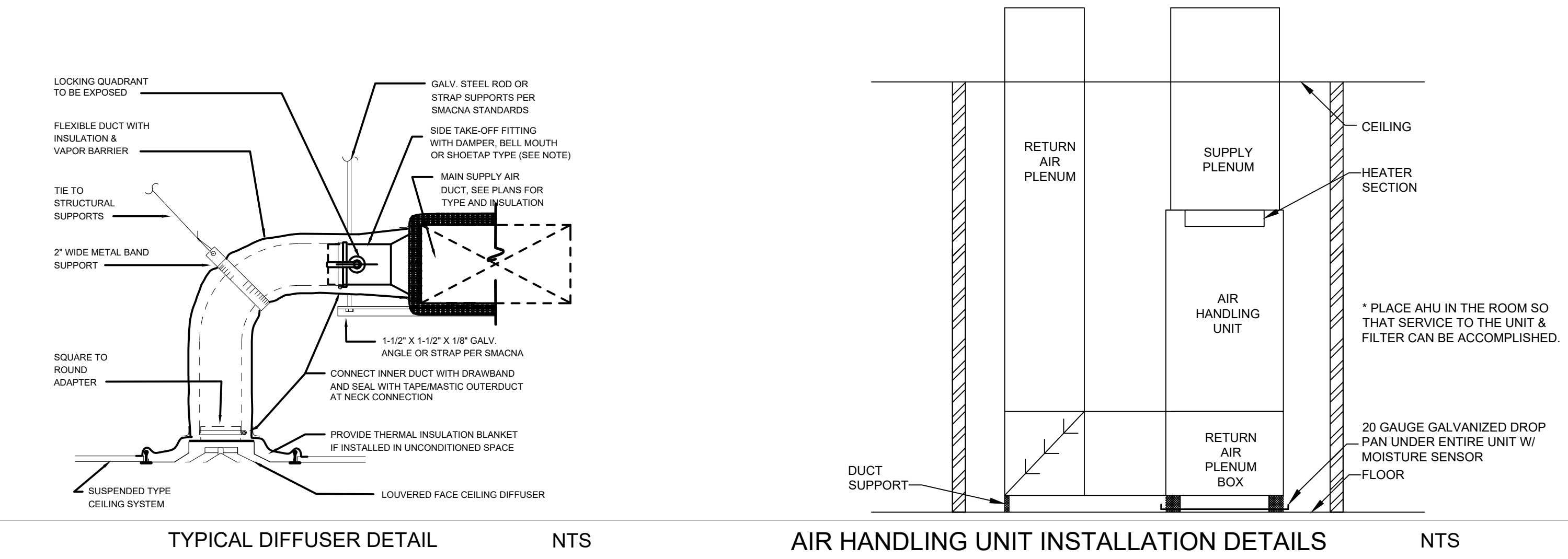
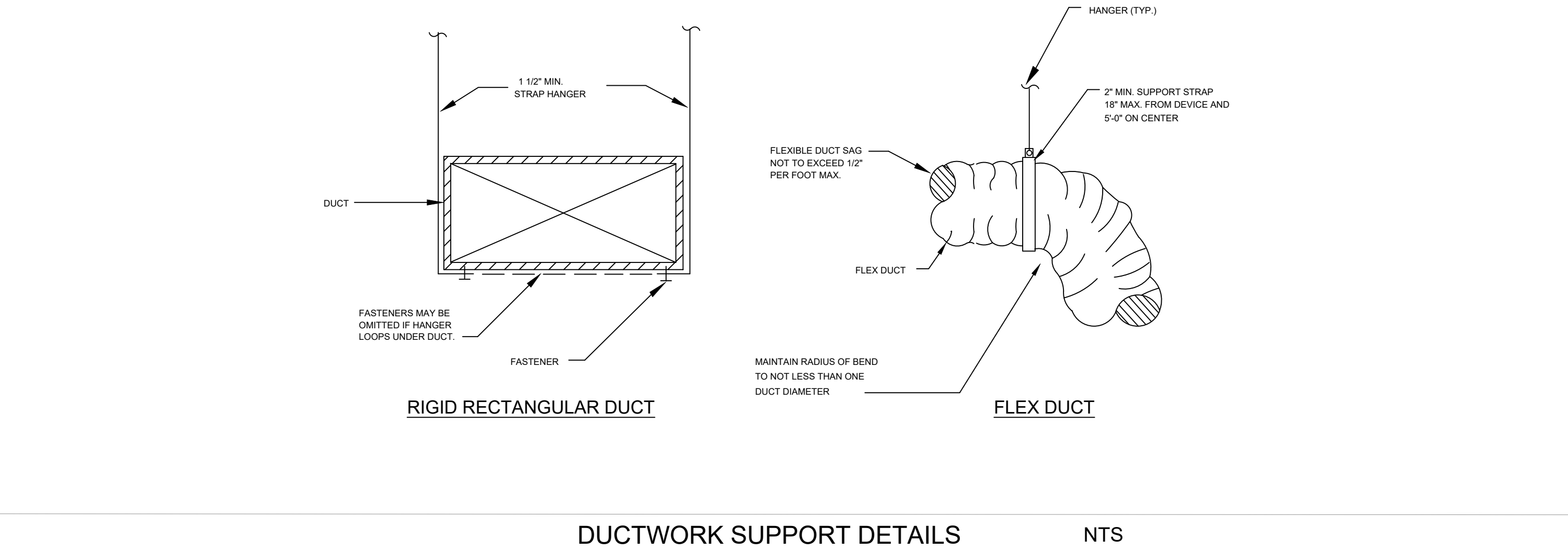
For:

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Drawn By:	WSC	Sheet M-3 of 3
Checked By:	TP	
Date:	1/20/2026	
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EQUIPMENT SCHEDULE	
CONDENSING UNIT	EQUIPMENT TAG
	NOMINAL TONNAGE, TON(S)
	MODEL
	SEER2 / EER2 / HSPF2
	CAPACITY TOTAL / SENS., BTUH
	STAGE(S)
	MRC
	VOLTAGE
	PHASE
	MCA/MOP
AIR HANDLER	WEIGHT, LBS.
	EQUIPMENT TAG
	AHU-MODEL
	STATIC PRESSURE, IN. OF W.C.
	REFRIGERANT
	LOCATION
	CFM
	FAN MOTOR FLA
	ELECTRIC HEATER
	PHASE
	MODEL NUMBER
	MCA/MOP
	DIMENSIONS H x W x D, IN.
	WEIGHT, LBS.
	RFGT. LINES SIZES, IN. Ø
	NOTE: TRANE OR EQUAL





Manual S Compliance Report

Entire House

ProCalcs, LLC

Job: Del Rio Residence
Date: Jan 20, 2026
By: Wind Carbaquil

Jensen Beach, FL 34957 Phone: 772-882-5700 Email: tom@procalcs.net Web: www.ProCalcs.Net License: CAC1815254

Project Information

For: Del Rio Residence
2705 SW Spruce Rd, Lake City, FL 32024

Cooling Equipment

Design Conditions

Outdoor design DB:	92.3°F	Sensible gain:	43631	Btuh	Entering coil DB:	78.3°F
Outdoor design WB:	76.6°F	Latent gain:	8171	Btuh	Entering coil WB:	64.1°F
Indoor design DB:	75.0°F	Total gain:	51802	Btuh		
Indoor RH:	50%	Estimated airflow:	1837	cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP			
Manufacturer:	Trane	Model:	5TWV8X60A1+5TAMXD07AV51	
Actual airflow:	1837	cfm		
Sensible capacity:	44600	Btuh	102% of load	
Latent capacity:	8450	Btuh	103% of load	
Total capacity:	53050	Btuh	102% of load	SHR: 84%

Heating Equipment

Design Conditions

Outdoor design DB:	30.8°F	Heat loss:	46894	Btuh	Entering coil DB:	68.3°F
Indoor design DB:	70.0°F					

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP			
Manufacturer:	Trane	Model:	5TWV8X60A1+5TAMXD07AV51	
Actual airflow:	1988	cfm		
Output capacity:	59288	Btuh	126% of load	Capacity balance: 20 °F
Supplemental heat required:	0	Btuh		Economic balance: -99 °F

Backup equipment type:	Elec strip			
Manufacturer:	Trane	Model:	BAYEAAC08BK1	
Actual airflow:	1988	cfm		
Output capacity:	7.7	kW	56% of load	Temp. rise: 12 °F

Meets all requirements of ACCA Manual S.



Right-Suite® Universal 2025 25.0.03 RSU55836

...residence\Working Drawings\Del Rio Residence.rup Calc = MJ8 Front Door faces: W

2026-Jan-20 06:25:45

Page 1

Project Information

For: Del Rio Residence
2705 SW Spruce Rd, Lake City, FL 32024

Design Conditions

Location:

Cross City, FL, US
Elevation: 38 ft
Latitude: 30°N

Outdoor:

Dry bulb (°F)
Daily range (°F)
Wet bulb (°F)
Wind speed (mph)

Heating

31
-
-
15.0

Cooling

92
17 (M)
77
7.5

Indoor:

Indoor temperature (°F)
Design TD (°F)
Relative humidity (%)
Moisture difference (gr/lb)

Heating

70
39
50
34.7

Cooling

75
17
50
48.5

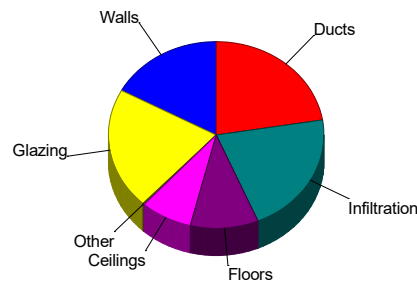
Infiltration:

Method
Shielding / stories
Pressure /ACH /AVF

Blower door
3 (partial) / 1
50 Pa / 5.0 / 2937 cfm

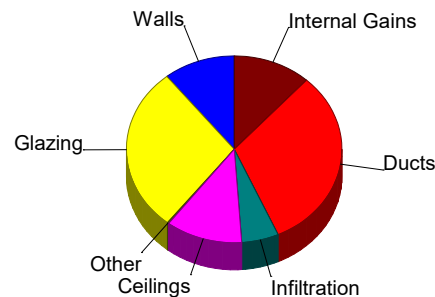
Heating

Component	Btuh/ft²	Btuh	% of load
Walls	3.1	8010	17.1
Glazing	18.0	9851	21.0
Doors	5.0	119	0.3
Ceilings	1.3	3656	7.8
Floors	1.8	4785	10.2
Infiltration	3.7	9960	21.2
Ducts		10511	22.4
Piping		0	0
Humidification		0	0
Ventilation		0	0
Adjustments		0	0
Total		46894	100.0



Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	1.8	4692	10.8
Glazing	22.9	12485	28.6
Doors	3.9	93	0.2
Ceilings	1.8	5037	11.5
Floors	0	0	0
Infiltration	0.9	2427	5.6
Ducts		13778	31.6
Ventilation		0	0
Internal gains		5120	11.7
Blower		0	0
Adjustments		0	0
Total		43631	100.0



Latent Cooling Load = 8171 Btuh

Overall U-value = 0.078 Btuh/ft²-°F, Window / Floor Area = 20.1 %

Data entries checked.



Load Short Form

Entire House

ProCalcs, LLC

Job: Del Rio Residence
Date: Jan 20, 2026
By: Wind Carbaquil

Jensen Beach, FL 34957 Phone: 772-882-5700 Email: tom@procalcs.net Web: www.ProCalcs.Net License: CAC1815254

Project Information

For: Del Rio Residence
2705 SW Spruce Rd, Lake City, FL 32024

Design Information

	Htg	Clg	Infiltration	
Outside db (°F)	31	92	Method	Blower door
Inside db (°F)	70	75	Shielding / stories	3 (partial) / 1
Design TD (°F)	39	17	Pressure /ACH /AVF	50 Pa / 5.0 / 2937 cfm
Daily range	-	M		
Inside humidity (%)	50	50		
Moisture difference (gr/lb)	35	49		

HEATING EQUIPMENT

Make Trane
Trade TRANE
Model 5TWV8X60A1
AHRI ref 216057018
Efficiency 8.5 HSPF2
Heating input
Heating output 54000 Btuh @ 47°F
Temperature rise 25 °F
Actual air flow 1988 cfm
Air flow factor 0.042 cfm/Btuh
Static pressure 0.70 in H2O
Space thermostat
Capacity balance point = 20 °F

Backup: Trane TRANE BAYEAAC08BK1
Input = 8 kW, Output = 26273 Btuh, 100 AFUE

COOLING EQUIPMENT

Make Trane
Trade TRANE
Cond 5TWV8X60A1
Coil 5TAMXD07AV51
AHRI ref 216057018
Efficiency 10.0 EER2, 18.1 SEER2
Sensible cooling 44520 Btuh
Latent cooling 8480 Btuh
Total cooling 53000 Btuh
Actual air flow 1837 cfm
Air flow factor 0.042 cfm/Btuh
Static pressure 0.70 in H2O
Load sensible heat ratio 0.84

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
AHU	21	0	0	0	0
BATH #1	73	996	725	42	31
BEDROOM #1	160	2360	2682	100	113
BEDROOM #1 2	160	3258	2872	138	121
CLOSET	135	2498	962	106	41
CLOSET 1	39	97	279	4	12
CLOSET 2	39	433	312	18	13
DIN/KIT/LIV	1064	28187	25706	1195	1082
HALF BATH	34	84	260	4	11
HALL	170	0	0	0	0
LAUNDRY	114	1063	1183	45	50
MUD ROOM	52	660	365	28	15
OFFICE	129	295	1116	12	47
PANTRY	69	1359	562	58	24

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.



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...esidence\Working Drawings\Del Rio Residence.rup Calc = MJ8 Front Door faces: W

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PRIMARY BATH	196	1575	1343	67	57
PRIMARY BEDROOM	269	4028	5264	171	222
Entire House	2724	46894	43631	1988	1837
Other equip loads		0	0		
Equip. @ 1.00 RSM			43631		
Latent cooling			8171		
TOTALS	2724	46894	51802	1988	1837

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.



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Double Pane, Low-E, Vinyl: Double Pane, Low-E, Vinyl; NFRC rated (SHGC=0.25); 50% blinds 45°, medium; foreground = new concrete (0.32); 13.33 ft overhang (5 ft window ht, 1.42 ft sep.); 8 ft head ht	s	30	0.460	0	18.0	541	21.9	657
Double Pane, Low-E, Vinyl: Double Pane, Low-E, Vinyl; NFRC rated (SHGC=0.25); 50% blinds 45°, medium; foreground = new concrete (0.32); 13.33 ft overhang (6 ft window ht, 1.42 ft sep.); 8 ft head ht	s	72	0.460	0	18.0	1298	21.9	1577
	w	36	0.460	0	18.0	649	21.9	789
	w	54	0.460	0	18.0	974	21.9	1183
	all	162	0.460	0	18.0	2921	21.9	3549
Glass Door, Vinyl: Glass Door, Vinyl; NFRC rated (SHGC=0.25); 50% blinds 45°, medium; foreground = new concrete (0.32); 13.33 ft overhang (8 ft window ht, 1.42 ft sep.); 8 ft head ht	s	48	0.460	0	18.0	866	18.3	880
	w	96	0.460	0	18.0	1731	18.3	1760
	all	144	0.460	0	18.0	2597	18.3	2640
Double Pane, Low-E, Vinyl: Double Pane, Low-E, Vinyl; NFRC rated (SHGC=0.25); 50% blinds 45°, medium; foreground = new concrete (0.32); 13.33 ft overhang (2 ft window ht, 1.42 ft sep.); 8 ft head ht	w	8	0.460	0	18.0	144	21.9	175
Doors								
Metal Insulated Door	n	24	0.127	0	4.98	119	3.87	93
Ceilings								
Metal, Vented, R-30		2743	0.034	30.0	1.33	3656	1.84	5037
Floors								
Slab on Grade		210	0.582	0	22.8	4785	0	0





Project Summary

Entire House

ProCalcs, LLC

Job: Del Rio Residence
Date: Jan 20, 2026
By: Wind Carbaquil

Jensen Beach, FL 34957 Phone: 772-882-5700 Email: tom@procalcs.net Web: www.ProCalcs.Net License: CAC1815254

Project Information

For: Del Rio Residence
2705 SW Spruce Rd, Lake City, FL 32024

Notes: Bidwell Barndominiums LLC
10933 Norman Pl
Parrish, FL 34219

Design Information

Weather: Cross City, FL, US

Winter Design Conditions

Outside db	31 °F
Inside db	70 °F
Design TD	39 °F

Ventilation Method ASHRAE 62.2-2010

Heating Summary

Structure	36382 Btuh
Ducts (R-6.0)	10511 Btuh
Central vent (0 cfm)	0 Btuh

Humidification	0 Btuh
Piping	0 Btuh
Equipment load	46894 Btuh

Infiltration

Method	Blower door
Shielding / stories	3 (partial) / 1
Pressure / ACH / AVF	50 Pa / 5.0 / 2937 cfm

	Heating	Cooling
Area (ft²)	2724	2724
Volume (ft³)	35248	35248
Air changes/hour	0.39	0.22
Equiv. AVF (cfm)	231	128

Heating Equipment Summary

Make	Trane
Trade	TRANE
Model	5TWV8X60A1
AHRI ref	216057018

Efficiency	8.5 HSPF2
Heating input	
Heating output	54000 Btuh @ 47°F
Temperature rise	25 °F
Actual air flow	1988 cfm
Air flow factor	0.042 cfm/Btuh
Static pressure	0.70 in H2O
Space thermostat	
Capacity balance point = 20 °F	

Backup: Trane TRANE BAYEAAC08BK1
Input = 8 kW, Output = 26273 Btuh, 100 AFUE

Summer Design Conditions

Outside db	92 °F
Inside db	75 °F
Design TD	17 °F
Daily range	M
Relative humidity	50 %
Moisture difference	49 gr/lb

Sensible Cooling Equipment Load Sizing

Structure	29853 Btuh
Ducts (R-6.0)	13778 Btuh
Central vent (0 cfm)	0 Btuh

Blower	0 Btuh
--------	--------

Use manufacturer's data	y
Rate/swing multiplier	1.00
Equipment sensible load	43631 Btuh

Latent Cooling Equipment Load Sizing

Structure	5010 Btuh
Ducts	3161 Btuh
Central vent (0 cfm)	0 Btuh

Equipment latent load	8171 Btuh
-----------------------	-----------

Equipment Total Load (Sen+Lat)	51802 Btuh
Req. total capacity at 0.84 SHR	4.3 ton

Cooling Equipment Summary

Make	Trane
Trade	TRANE
Cond	5TWV8X60A1
Coil	5TAMXD07AV51
AHRI ref	216057018

Efficiency	10.0 EER2, 18.1 SEER2
Sensible cooling	44520 Btuh
Latent cooling	8480 Btuh
Total cooling	53000 Btuh
Actual air flow	1837 cfm
Air flow factor	0.042 cfm/Btuh
Static pressure	0.70 in H2O
Load sensible heat ratio	0.84

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.



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Right-J® Worksheet
Entire House
ProCalcs, LLC

Job: Del Rio Residence
Date: Jan 20, 2026
By: Wind Carbaquil

Jensen Beach, FL 34957 Phone: 772-882-5700 Email: tom@procalcs.net Web: www.ProCalcs.Net License: CAC1815254

1	Room name					Entire House					AHU			
2	Exposed wall					209.8 ft					0 ft			
3	Room height					12.9 ft					10.0 ft			
4	Room dimensions					2723.7 ft²					4.0 x 5.2 ft			
5	Room area										21.0 ft²			
	Ty	Construction number	U-value (Btuh/ft²·°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6	W	Knee Wall, R-30	0.042	n	1.65	2.27	375	375	618	851	0	0	0	0
11	W	2 x 6 Metal Frame Wa	0.087	e	3.41	1.86	682	552	1884	1029	0	0	0	0
	G	Double Pane, Low-E,	0.460	e	18.03	27.29	24	2	439	664	0	0	0	0
	G	Double Pane, Low-E,	0.460	e	18.03	30.87	6	0	108	185	0	0	0	0
	G	Double Pane, Low-E,	0.460	e	18.03	30.87	27	0	487	834	0	0	0	0
	G	Double Pane, Low-E,	0.460	e	18.03	30.87	72	0	1298	2223	0	0	0	0
	W	Knee Wall, R-30	0.042	e	1.65	2.27	56	56	93	128	0	0	0	0
	W	2 x 6 Metal Frame Wa	0.087	s	3.41	1.86	841	643	2192	1196	0	0	0	0
	G	Double Pane, Low-E,	0.460	s	18.03	11.91	24	24	439	290	0	0	0	0
	G	Double Pane, Low-E,	0.460	s	18.03	13.62	24	0	439	331	0	0	0	0
	G	Double Pane, Low-E,	0.460	s	18.03	21.91	30	30	541	657	0	0	0	0
	G	Double Pane, Low-E,	0.460	s	18.03	21.91	72	72	1298	1577	0	0	0	0
	G	Glass Door, Vinyl	0.460	s	18.03	18.34	48	48	866	880	0	0	0	0
	W	2 x 6 Metal Frame Wa	0.087	w	3.41	1.86	698	480	1637	894	0	0	0	0
	G	Double Pane, Low-E,	0.460	w	18.03	27.29	24	2	439	664	0	0	0	0
	G	Double Pane, Low-E,	0.460	w	18.03	21.91	8	8	144	175	0	0	0	0
	G	Double Pane, Low-E,	0.460	w	18.03	21.91	36	36	649	789	0	0	0	0
	G	Double Pane, Low-E,	0.460	w	18.03	21.91	54	54	974	1183	0	0	0	0
	G	Glass Door, Vinyl	0.460	w	18.03	18.34	96	96	1731	1760	0	0	0	0
	W	Knee Wall, R-30	0.042	w	1.65	2.27	40	40	66	90	0	0	0	0
	R	2 x 6 Metal Frame Wa	0.087	-	3.41	1.13	470	446	1521	504	0	0	0	0
	D	Metal Insulated Door	0.127	n	4.98	3.87	24	24	119	93	0	0	0	0
	C	Metal, Vented, R-30	0.034	-	1.33	1.84	2743	2743	3656	5037	21	21	28	39
F	Slab on Grade	0.582	-	22.81	0.00	2724	210	4785	0	21	0	0	0	
6	c) AED excursion								271				-2	
	Envelope loss/gain								26422	22306			28	36
12	a) Infiltration								9960	2427			0	0
	b) Room ventilation								0	0			0	0
13	Internal gains: Occupants @ 230 Appliances/other						4			920 4200	0			0 0
	Subtotal (lines 6 to 13)								36382	29853			28	36
14	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			-28	-36
15	Subtotal								36382	29853			0	0
	Duct loads						29%	46%	10511	13778	29%	46%	0	0
	Total room load								46894	43631			0	0
	Air required (cfm)								1988	1837			0	0

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.



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Right-J® Worksheet

Entire House

ProCalcs, LLC

Job: Del Rio Residence
Date: Jan 20, 2026
By: Wind Carbaquil

Jensen Beach, FL 34957 Phone: 772-882-5700 Email: tom@procalcs.net Web: www.ProCalcs.Net License: CAC1815254

1	Room name					BATH #1					BEDROOM#1				
2	Exposed wall					6.2 ft					11.5 ft				
3	Room height					10.0 ft					10.0 ft				
4	Room dimensions					6.2 x 11.8 ft					1.0 x 159.6 ft				
5	Room area					73.4 ft²					159.6 ft²				
	Ty	Construction number	U-value (Btuh/ft²·°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)		
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool	
6	W	Knee Wall, R-30	0.042	n	1.65	2.27	0	0	0	0	0	0	0	0	
11	W	2 x 6 Metal Frame Wa	0.087	e	3.41	1.86	62	56	193	105	115	79	269	147	
	G	Double Pane, Low-E,	0.460	e	18.03	27.29	0	0	0	0	0	0	0	0	
	G	Double Pane, Low-E,	0.460	e	18.03	30.87	6	0	108	185	0	0	0	0	
	G	Double Pane, Low-E,	0.460	e	18.03	30.87	0	0	0	0	0	0	0	0	
	G	Double Pane, Low-E,	0.460	e	18.03	30.87	0	0	0	0	36	0	649	1111	
	W	Knee Wall, R-30	0.042	e	1.65	2.27	0	0	0	0	0	0	0	0	
	W	2 x 6 Metal Frame Wa	0.087	s	3.41	1.86	0	0	0	0	0	0	0	0	
	G	Double Pane, Low-E,	0.460	s	18.03	11.91	0	0	0	0	0	0	0	0	
	G	Double Pane, Low-E,	0.460	s	18.03	13.62	0	0	0	0	0	0	0	0	
	G	Double Pane, Low-E,	0.460	s	18.03	21.91	0	0	0	0	0	0	0	0	
	G	Double Pane, Low-E,	0.460	s	18.03	21.91	0	0	0	0	0	0	0	0	
	G	Glass Door, Vinyl	0.460	s	18.03	18.34	0	0	0	0	0	0	0	0	
	W	2 x 6 Metal Frame Wa	0.087	w	3.41	1.86	0	0	0	0	0	0	0	0	
	G	Double Pane, Low-E,	0.460	w	18.03	27.29	0	0	0	0	0	0	0	0	
	G	Double Pane, Low-E,	0.460	w	18.03	21.91	0	0	0	0	0	0	0	0	
	G	Double Pane, Low-E,	0.460	w	18.03	21.91	0	0	0	0	0	0	0	0	
	G	Double Pane, Low-E,	0.460	w	18.03	21.91	0	0	0	0	0	0	0	0	
	G	Glass Door, Vinyl	0.460	w	18.03	18.34	0	0	0	0	0	0	0	0	
	W	Knee Wall, R-30	0.042	w	1.65	2.27	0	0	0	0	0	0	0	0	
	R	2 x 6 Metal Frame Wa	0.087	-	3.41	1.13	0	0	0	0	0	0	0	0	
	D	Metal Insulated Door	0.127	n	4.98	3.87	0	0	0	0	0	0	0	0	
	C	Metal, Vented, R-30	0.034	-	1.33	1.84	73	73	98	135	160	160	213	293	
F	Slab on Grade	0.582	-	22.81	0.00	73	6	143	0	160	12	262	0		
6	c) AED excursion								14				165		
	Envelope loss/gain							541	440			1394	1717		
12	a) Infiltration							231	56			425	104		
	b) Room ventilation							0	0			0	0		
13	Internal gains: Occupants @ 230 Appliances/other					0			0	0	0		0	0	
	Subtotal (lines 6 to 13)							773	496			1819	1820		
14	Less external load							0	0			0	0		
	Less transfer							0	0			0	0		
	Redistribution							0	0			12	15		
	Subtotal							773	496			1831	1835		
15	Duct loads					29%	46%	223	229	29%	46%	529	847		
	Total room load								996	725			2360	2682	
	Air required (cfm)								42	31			100	113	

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.



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Right-J® Worksheet
Entire House
ProCalcs, LLC

Job: Del Rio Residence
Date: Jan 20, 2026
By: Wind Carbaquil

Jensen Beach, FL 34957 Phone: 772-882-5700 Email: tom@procalcs.net Web: www.ProCalcs.Net License: CAC1815254

1	Room name					BEDROOM#1 2					CLOSET				
2	Exposed wall					23.8 ft					23.2 ft				
3	Room height					10.0 ft					10.0 ft				
4	Room dimensions					1.0 x 159.6 ft					11.8 x 11.5 ft				
5	Room area					159.6 ft²					135.1 ft²				
	Ty	Construction number	U-value (Btuh/ft²·°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)		
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool	
6	W	Knee Wall, R-30	0.042	n	1.65	2.27	0	0	0	0	0	0	0	0	
11	W	2 x 6 Metal Frame Wa	0.087	e	3.41	1.86	115	79	269	147	0	0	0	0	
	G	Double Pane, Low-E,	0.460	e	18.03	27.29	0	0	0	0	0	0	0	0	
	G	Double Pane, Low-E,	0.460	e	18.03	30.87	0	0	0	0	0	0	0	0	
	G	Double Pane, Low-E,	0.460	e	18.03	30.87	0	0	0	0	0	0	0	0	
	G	Double Pane, Low-E,	0.460	e	18.03	30.87	0	0	0	0	0	0	0	0	
	W	Knee Wall, R-30	0.042	e	1.65	2.27	0	0	0	0	0	0	0	0	
	W	2 x 6 Metal Frame Wa	0.087	s	3.41	1.86	0	0	0	0	0	0	0	0	
	G	Double Pane, Low-E,	0.460	s	18.03	11.91	0	0	0	0	0	0	0	0	
	G	Double Pane, Low-E,	0.460	s	18.03	13.62	0	0	0	0	0	0	0	0	
	G	Double Pane, Low-E,	0.460	s	18.03	21.91	0	0	0	0	0	0	0	0	
	G	Double Pane, Low-E,	0.460	s	18.03	21.91	0	0	0	0	0	0	0	0	
W	G	Glass Door, Vinyl	0.460	s	18.03	18.34	0	0	0	0	0	0	0	0	
	W	2 x 6 Metal Frame Wa	0.087	w	3.41	1.86	0	0	0	0	118	118	401	219	
	G	Double Pane, Low-E,	0.460	w	18.03	27.29	0	0	0	0	0	0	0	0	
	G	Double Pane, Low-E,	0.460	w	18.03	21.91	0	0	0	0	0	0	0	0	
	G	Double Pane, Low-E,	0.460	w	18.03	21.91	0	0	0	0	0	0	0	0	
W	G	Double Pane, Low-E,	0.460	w	18.03	21.91	0	0	0	0	0	0	0	0	
	G	Glass Door, Vinyl	0.460	w	18.03	18.34	0	0	0	0	0	0	0	0	
R	W	Knee Wall, R-30	0.042	w	1.65	2.27	0	0	0	0	0	0	0	0	
C	D	2 x 6 Metal Frame Wa	0.087	-	3.41	1.13	122	122	418	139	115	115	392	130	
	D	Metal Insulated Door	0.127	n	4.98	3.87	0	0	0	0	0	0	0	0	
F	C	Metal, Vented, R-30	0.034	-	1.33	1.84	160	160	213	293	135	135	180	248	
	F	Slab on Grade	0.582	-	22.81	0.00	160	24	542	0	135	23	530	0	

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.



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Right-J® Worksheet

Entire House

ProCalcs, LLC

Job: Del Rio Residence
Date: Jan 20, 2026
By: Wind Carbaquil

Jensen Beach, FL 34957 Phone: 772-882-5700 Email: tom@procalcs.net Web: www.ProCalcs.Net License: CAC1815254

1	Room name					CLOSET 1					CLOSET 2				
2	Exposed wall					0 ft					5.0 ft				
3	Room height					10.0 ft					10.0 ft				
4	Room dimensions					7.8 x 5.0 ft					7.8 x 5.0 ft				
5	Room area					38.8 ft²					38.8 ft²				
	Ty	Construction number	U-value (Btuh/ft²·°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)		
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool	
6	W	Knee Wall, R-30	0.042	n	1.65	2.27	0	0	0	0	0	0	0	0	
11	W	2 x 6 Metal Frame Wa	0.087	e	3.41	1.86	0	0	0	0	0	0	0	0	
	G	Double Pane, Low-E,	0.460	e	18.03	27.29	0	0	0	0	0	0	0	0	
	G	Double Pane, Low-E,	0.460	e	18.03	30.87	0	0	0	0	0	0	0	0	
	G	Double Pane, Low-E,	0.460	e	18.03	30.87	0	0	0	0	0	0	0	0	
	G	Double Pane, Low-E,	0.460	e	18.03	30.87	0	0	0	0	0	0	0	0	
	W	Knee Wall, R-30	0.042	e	1.65	2.27	0	0	0	0	0	0	0	0	
	W	2 x 6 Metal Frame Wa	0.087	s	3.41	1.86	0	0	0	0	0	0	0	0	
	G	Double Pane, Low-E,	0.460	s	18.03	11.91	0	0	0	0	0	0	0	0	
	G	Double Pane, Low-E,	0.460	s	18.03	13.62	0	0	0	0	0	0	0	0	
	G	Double Pane, Low-E,	0.460	s	18.03	21.91	0	0	0	0	0	0	0	0	
	G	Double Pane, Low-E,	0.460	s	18.03	21.91	0	0	0	0	0	0	0	0	
11	G	Glass Door, Vinyl	0.460	s	18.03	18.34	0	0	0	0	0	0	0	0	
	W	2 x 6 Metal Frame Wa	0.087	w	3.41	1.86	0	0	0	0	0	0	0	0	
	G	Double Pane, Low-E,	0.460	w	18.03	27.29	0	0	0	0	0	0	0	0	
	G	Double Pane, Low-E,	0.460	w	18.03	21.91	0	0	0	0	0	0	0	0	
	G	Double Pane, Low-E,	0.460	w	18.03	21.91	0	0	0	0	0	0	0	0	
	G	Double Pane, Low-E,	0.460	w	18.03	21.91	0	0	0	0	0	0	0	0	
11	G	Glass Door, Vinyl	0.460	w	18.03	18.34	0	0	0	0	0	0	0	0	
	W	Knee Wall, R-30	0.042	w	1.65	2.27	0	0	0	0	0	0	0	0	
11	R	2 x 6 Metal Frame Wa	0.087	-	3.41	1.13	0	0	0	0	50	50	171	57	
	D	Metal Insulated Door	0.127	n	4.98	3.87	0	0	0	0	0	0	0	0	
11	C	Metal, Vented, R-30	0.034	-	1.33	1.84	39	39	52	71	39	39	52	71	
	F	Slab on Grade	0.582	-	22.81	0.00	39	0	0	0	39	5	114	0	
6	c) AED excursion									-11				-14	
	Envelope loss/gain								52	60			336	113	
12	a) Infiltration								0	0			0	0	
	b) Room ventilation								0	0			0	0	
13	Internal gains: Occupants @ 230						0			0	0			0	0
	Appliances/other									100				100	
	Subtotal (lines 6 to 13)								52	160			336	213	
14	Less external load								0	0			0	0	
	Less transfer								0	0			0	0	
	Redistribution								24	31			0	0	
	Subtotal								76	191			336	213	
15	Duct loads						29%	46%	22	88	29%	46%	97	98	
	Total room load								97	279			433	312	
	Air required (cfm)								4	12			18	13	

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.



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...residence\Working Drawings\Del Rio Residence.rup Calc = MJ8 Front Door faces: W



Right-J® Worksheet
Entire House
ProCalcs, LLC

Job: Del Rio Residence
Date: Jan 20, 2026
By: Wind Carbaquil

Jensen Beach, FL 34957 Phone: 772-882-5700 Email: tom@procalcs.net Web: www.ProCalcs.Net License: CAC1815254

1	Room name					DIN/KIT/LIV					HALFBATH			
2	Exposed wall					86.8 ft					0 ft			
3	Room height					17.5 ft					10.0 ft			
4	Room dimensions					1.0 x 1064.1 ft					6.2 x 5.5 ft			
5	Room area					1064.1 ft²					34.4 ft²			
	Ty	Construction number	U-value (Btuh/ft²·°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6	W	Knee Wall, R-30	0.042	n	1.65	2.27	375	375	618	851	0	0	0	0
11	W	2 x 6 Metal Frame Wa	0.087	e	3.41	1.86	287	235	803	438	0	0	0	0
	G	Double Pane, Low-E,	0.460	e	18.03	27.29	24	2	439	664	0	0	0	0
	G	Double Pane, Low-E,	0.460	e	18.03	30.87	0	0	0	0	0	0	0	0
	G	Double Pane, Low-E,	0.460	e	18.03	30.87	27	0	487	834	0	0	0	0
	G	Double Pane, Low-E,	0.460	e	18.03	30.87	0	0	0	0	0	0	0	0
	W	Knee Wall, R-30	0.042	e	1.65	2.27	56	56	93	128	0	0	0	0
	W	2 x 6 Metal Frame Wa	0.087	s	3.41	1.86	841	643	2192	1196	0	0	0	0
	G	Double Pane, Low-E,	0.460	s	18.03	11.91	24	24	439	290	0	0	0	0
	G	Double Pane, Low-E,	0.460	s	18.03	13.62	24	0	439	331	0	0	0	0
	G	Double Pane, Low-E,	0.460	s	18.03	21.91	30	30	541	657	0	0	0	0
	G	Double Pane, Low-E,	0.460	s	18.03	21.91	72	72	1298	1577	0	0	0	0
	G	Glass Door, Vinyl	0.460	s	18.03	18.34	48	48	866	880	0	0	0	0
	W	2 x 6 Metal Frame Wa	0.087	w	3.41	1.86	333	207	706	385	0	0	0	0
	G	Double Pane, Low-E,	0.460	w	18.03	27.29	24	2	439	664	0	0	0	0
	G	Double Pane, Low-E,	0.460	w	18.03	21.91	0	0	0	0	0	0	0	0
	G	Double Pane, Low-E,	0.460	w	18.03	21.91	0	0	0	0	0	0	0	0
	G	Double Pane, Low-E,	0.460	w	18.03	21.91	54	54	974	1183	0	0	0	0
	G	Glass Door, Vinyl	0.460	w	18.03	18.34	48	48	866	880	0	0	0	0
	W	Knee Wall, R-30	0.042	w	1.65	2.27	40	40	66	90	0	0	0	0
	R	2 x 6 Metal Frame Wa	0.087	-	3.41	1.13	0	0	0	0	0	0	0	0
	D	Metal Insulated Door	0.127	n	4.98	3.87	0	0	0	0	0	0	0	0
	C	Metal, Vented, R-30	0.034	-	1.33	1.84	1084	1084	1444	1990	34	34	46	63
F	Slab on Grade	0.582	-	22.81	0.00	1064	87	1979	0	34	0	0	0	

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.



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...esidence\Working Drawings\Del Rio Residence.rup Calc = MJ8 Front Door faces: W

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Right-J® Worksheet
Entire House
ProCalcs, LLC

Job: Del Rio Residence
Date: Jan 20, 2026
By: Wind Carbaquil

Jensen Beach, FL 34957 Phone: 772-882-5700 Email: tom@procalcs.net Web: www.ProCalcs.Net License: CAC1815254

1	Room name					HALL 0 ft					LAUNDRY 11.5 ft				
2	Exposed wall					10.0 ft					10.0 ft				
3	Room height					1.0					1.0				
4	Room dimensions					170.3 ft					114.1 ft				
5	Room area					170.3 ft²					114.1 ft²				
	Ty	Construction number	U-value (Btuh/ft²·°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)		
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool	
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Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.



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...residence\Working Drawings\Del Rio Residence.rup Calc = MJ8 Front Door faces: W



Right-J® Worksheet
Entire House
ProCalcs, LLC

Job: Del Rio Residence
Date: Jan 20, 2026
By: Wind Carbaquil

Jensen Beach, FL 34957 Phone: 772-882-5700 Email: tom@procalcs.net Web: www.ProCalcs.Net License: CAC1815254

1	Room name					MUD ROOM					OFFICE				
2	Exposed wall					6.8 ft					0 ft				
3	Room height					10.0 ft					10.0 ft				
4	Room dimensions					7.8 x 6.8 ft					12.2 x 10.5 ft				
5	Room area					52.3 ft²					128.6 ft²				
	Ty	Construction number	U-value (Btuh/ft²·°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)		
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool	
6	W	Knee Wall, R-30	0.042	n	1.65	2.27	0	0	0	0	0	0	0	0	
11	W	2 x 6 Metal Frame Wa	0.087	e	3.41	1.86	0	0	0	0	0	0	0	0	
	G	Double Pane, Low-E,	0.460	e	18.03	27.29	0	0	0	0	0	0	0	0	
	G	Double Pane, Low-E,	0.460	e	18.03	30.87	0	0	0	0	0	0	0	0	
	G	Double Pane, Low-E,	0.460	e	18.03	30.87	0	0	0	0	0	0	0	0	
	G	Double Pane, Low-E,	0.460	e	18.03	30.87	0	0	0	0	0	0	0	0	
	W	Knee Wall, R-30	0.042	e	1.65	2.27	0	0	0	0	0	0	0	0	
	W	2 x 6 Metal Frame Wa	0.087	s	3.41	1.86	0	0	0	0	0	0	0	0	
	G	Double Pane, Low-E,	0.460	s	18.03	11.91	0	0	0	0	0	0	0	0	
	G	Double Pane, Low-E,	0.460	s	18.03	13.62	0	0	0	0	0	0	0	0	
	G	Double Pane, Low-E,	0.460	s	18.03	21.91	0	0	0	0	0	0	0	0	
	G	Double Pane, Low-E,	0.460	s	18.03	21.91	0	0	0	0	0	0	0	0	
	G	Glass Door, Vinyl	0.460	s	18.03	18.34	0	0	0	0	0	0	0	0	
	W	2 x 6 Metal Frame Wa	0.087	w	3.41	1.86	0	0	0	0	0	0	0	0	
	G	Double Pane, Low-E,	0.460	w	18.03	27.29	0	0	0	0	0	0	0	0	
	G	Double Pane, Low-E,	0.460	w	18.03	21.91	0	0	0	0	0	0	0	0	
	G	Double Pane, Low-E,	0.460	w	18.03	21.91	0	0	0	0	0	0	0	0	
	G	Double Pane, Low-E,	0.460	w	18.03	21.91	0	0	0	0	0	0	0	0	
	G	Glass Door, Vinyl	0.460	w	18.03	18.34	0	0	0	0	0	0	0	0	
	W	Knee Wall, R-30	0.042	w	1.65	2.27	0	0	0	0	0	0	0	0	
	R	2 x 6 Metal Frame Wa	0.087	-	3.41	1.13	68	44	148	49	0	0	0	0	
	D	Metal Insulated Door	0.127	n	4.98	3.87	24	24	119	93	0	0	0	0	
	C	Metal, Vented, R-30	0.034	-	1.33	1.84	52	52	70	96	129	129	171	236	
F	Slab on Grade	0.582	-	22.81	0.00	52	7	154	0	129	0	0	0		
6	c) AED excursion								-15				-47		
	Envelope loss/gain							492	223			171	190		
12	a) Infiltration							0	0			0	0		
	b) Room ventilation							0	0			0	0		
13	Internal gains: Occupants @ 230 Appliances/other					0			0	0			0	500	
	Subtotal (lines 6 to 13)							492	223			171	690		
14	Less external load							0	0			0	0		
	Less transfer							0	0			0	0		
	Redistribution							21	27			57	74		
	Subtotal							512	250			229	763		
15	Duct loads					29%	46%	148	115	29%	46%	66	352		
	Total room load							660	365			295	1116		
	Air required (cfm)							28	15			12	47		

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.



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Right-J® Worksheet
Entire House
ProCalcs, LLC

Job: Del Rio Residence
Date: Jan 20, 2026
By: Wind Carbaquil

Jensen Beach, FL 34957 Phone: 772-882-5700 Email: tom@procalcs.net Web: www.ProCalcs.Net License: CAC1815254

1	Room name					PANTRY					PRIMARY BATH				
2	Exposed wall					10.2 ft					8.5 ft				
3	Room height					10.0 ft					10.0 ft				
4	Room dimensions					10.2 x 6.8 ft					8.5 x 23.0 ft				
5	Room area					69.2 ft²					195.5 ft²				
	Ty	Construction number	U-value (Btuh/ft²·°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)		
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool	
6	W	Knee Wall, R-30	0.042	n	1.65	2.27	0	0	0	0	0	0	0	0	
11	W	2 x 6 Metal Frame Wa	0.087	e	3.41	1.86	102	102	350	191	0	0	0	0	
	G	Double Pane, Low-E,	0.460	e	18.03	27.29	0	0	0	0	0	0	0	0	
	G	Double Pane, Low-E,	0.460	e	18.03	30.87	0	0	0	0	0	0	0	0	
	G	Double Pane, Low-E,	0.460	e	18.03	30.87	0	0	0	0	0	0	0	0	
	G	Double Pane, Low-E,	0.460	e	18.03	30.87	0	0	0	0	0	0	0	0	
	W	Knee Wall, R-30	0.042	e	1.65	2.27	0	0	0	0	0	0	0	0	
	W	2 x 6 Metal Frame Wa	0.087	s	3.41	1.86	0	0	0	0	0	0	0	0	
	G	Double Pane, Low-E,	0.460	s	18.03	11.91	0	0	0	0	0	0	0	0	
	G	Double Pane, Low-E,	0.460	s	18.03	13.62	0	0	0	0	0	0	0	0	
	G	Double Pane, Low-E,	0.460	s	18.03	21.91	0	0	0	0	0	0	0	0	
	G	Double Pane, Low-E,	0.460	s	18.03	21.91	0	0	0	0	0	0	0	0	
11	G	Glass Door, Vinyl	0.460	s	18.03	18.34	0	0	0	0	0	0	0	0	
	W	2 x 6 Metal Frame Wa	0.087	w	3.41	1.86	0	0	0	0	85	77	263	143	
	G	Double Pane, Low-E,	0.460	w	18.03	27.29	0	0	0	0	0	0	0	0	
	G	Double Pane, Low-E,	0.460	w	18.03	21.91	0	0	0	0	8	8	144	175	
	G	Double Pane, Low-E,	0.460	w	18.03	21.91	0	0	0	0	0	0	0	0	
	G	Double Pane, Low-E,	0.460	w	18.03	21.91	0	0	0	0	0	0	0	0	
11	G	Glass Door, Vinyl	0.460	w	18.03	18.34	0	0	0	0	0	0	0	0	
	W	Knee Wall, R-30	0.042	w	1.65	2.27	0	0	0	0	0	0	0	0	
11	R	2 x 6 Metal Frame Wa	0.087	-	3.41	1.13	0	0	0	0	0	0	0	0	
	D	Metal Insulated Door	0.127	n	4.98	3.87	0	0	0	0	0	0	0	0	
11	C	Metal, Vented, R-30	0.034	-	1.33	1.84	69	69	92	127	196	196	261	359	
	F	Slab on Grade	0.582	-	22.81	0.00	69	10	234	0	196	8	194	0	
										</					

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.



Right-Suite® Universal 2025 25.0.03 RSU55836

...esidence\Working Drawings\Del Rio Residence.rup Calc = MJ8 Front Door faces: W

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Right-J® Worksheet
Entire House
ProCalcs, LLC

Job: Del Rio Residence
Date: Jan 20, 2026
By: Wind Carbaquil

Jensen Beach, FL 34957 Phone: 772-882-5700 Email: tom@procalcs.net Web: www.ProCalcs.Net License: CAC1815254

1	Room name					PRIMARY BEDROOM								
2	Exposed wall					16.2 ft								
3	Room height					10.0 ft					heat/cool			
4	Room dimensions					1.0 x 268.9 ft								
5	Room area					268.9 ft²								
	Ty	Construction number	U-value (Btuh/ft²·°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area or perimeter		Load	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6 11 . 														

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.



Right-Suite® Universal 2025 25.0.03 RSU55836

...esidence\Working Drawings\Del Rio Residence.rup Calc = MJ8 Front Door faces: W

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Duct System Summary

Entire House

ProCalcs, LLC

Job: Del Rio Residence
Date: Jan 20, 2026
By: Wind Carbaquil

Jensen Beach, FL 34957 Phone: 772-882-5700 Email: tom@procalcs.net Web: www.ProCalcs.Net License: CAC1815254

Project Information

For: Del Rio Residence
2705 SW Spruce Rd, Lake City, FL 32024

	Heating	Cooling
External static pressure	0.70 in H2O	0.70 in H2O
Pressure losses	0.36 in H2O	0.36 in H2O
Available static pressure	0.34 in H2O	0.34 in H2O
Supply / return available pressure	0.218 / 0.122 in H2O	0.218 / 0.122 in H2O
Lowest friction rate	0.070 in/100ft	0.070 in/100ft
Actual air flow	1988 cfm	1837 cfm
Total effective length (TEL)	483 ft	

Supply Branch Detail Table

Name	Design (Btuh)	Htg (cfm)	Clg (cfm)	Design FR	Diam (in)	H x W (in)	Duct Matl	Actual Ln (ft)	Ftg.Eqv Ln (ft)	Trunk
BATH #1	c 363	0	15	0.144	4.0	0x0	VIFx	32.0	120.0	st5
BATH #1-A	c 363	0	15	0.112	4.0	0x0	VIFx	35.0	160.0	st5
BEDROOM #1	c 2682	0	113	0.114	7.0	0x0	VIFx	36.2	155.0	st5
BEDROOM #1 2	c 2872	0	121	0.173	7.0	0x0	VIFx	20.9	105.0	st2
CLOSET	c 962	0	41	0.173	4.0	0x0	VIFx	16.5	110.0	st1
CLOSET 1	c 279	0	12	0.117	4.0	0x0	VIFx	36.0	150.0	st5
CLOSET 2	c 312	0	13	0.175	4.0	0x0	VIFx	20.0	105.0	st2
DINKIT/LIV	c 3213	0	135	0.100	7.0	0x0	VIFx	47.5	170.0	st3
DINKIT/LIV-A	c 3213	0	135	0.088	7.0	0x0	VIFx	48.2	200.0	st3
DINKIT/LIV-B	c 3213	0	135	0.074	7.0	0x0	VIFx	59.3	235.0	st4
DINKIT/LIV-C	c 3213	0	135	0.072	7.0	0x0	VIFx	52.8	250.0	st4
DINKIT/LIV-D	c 3213	0	135	0.096	7.0	0x0	VIFx	56.9	170.0	st3
DINKIT/LIV-E	c 3213	0	135	0.070	7.0	0x0	VIFx	60.0	250.0	st4
DINKIT/LIV-F	c 3213	0	135	0.091	7.0	0x0	VIFx	41.0	200.0	st3
DINKIT/LIV-G	c 3213	0	135	0.072	7.0	0x0	VIFx	68.6	235.0	st4
HALF BATH	c 260	0	11	0.150	4.0	0x0	VIFx	25.8	120.0	st5
LAUNDRY	c 1183	0	50	0.187	5.0	0x0	VIFx	7.0	110.0	st2
MUD ROOM	c 365	0	15	0.189	4.0	0x0	VIFx	10.5	105.0	st2
OFFICE	c 1116	0	47	0.179	5.0	0x0	VIFx	17.2	105.0	st1
PANTRY	c 562	0	24	0.110	4.0	0x0	VIFx	52.9	145.0	st5
PRIMARY BATH	c 671	0	28	0.179	4.0	0x0	VIFx	17.0	105.0	st1
PRIMARY BATH-A	c 671	0	28	0.195	4.0	0x0	VIFx	7.2	105.0	st1
PRIMARY BEDROOM	c 2632	0	111	0.153	7.0	0x0	VIFx	32.4	110.0	st1
PRIMARY BEDROOM-A	c 2632	0	111	0.125	7.0	0x0	VIFx	25.2	150.0	st1



A.MiTek® / Berkshire Hathaway Company

Right-Suite® Universal 2025 25.0.03 RSU55836

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Supply Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
st5	Peak AVF	0	190	0.110	569	7.6	8 x 6	RectFbg	st2
st3	Peak AVF	0	1082	0.070	722	16.0	18 x 12	RectFbg	st1
st4	Peak AVF	0	541	0.070	541	12.3	12 x 12	RectFbg	st3
st1	Peak AVF	0	1448	0.070	724	17.9	18 x 16	RectFbg	srs1
srs1	Peak AVF	0	1837	0.070	787	4.5	21 x 16	RectFbg	
st2	Peak AVF	0	389	0.110	700	10.0	8 x 10	RectFbg	srs1

Return Branch Detail Table

Name	Grille Size (in)	Htg (cfm)	Clg (cfm)	TEL (ft)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Stud/Joist Opening (in)	Duct Matl	Trunk
rb6	0x 0	0	47	121.3	0.100	239	6.0	0x 0		VIFx	rt1
rb5	0x 0	0	319	114.2	0.106	406	12.0	0x 0		VIFx	rt1
rb4	0x 0	0	140	92.5	0.132	401	8.0	0x 0		VIFx	rt1
rb3	0x 0	0	149	72.5	0.168	428	8.0	0x 0		VIFx	rt1
rb2	0x 0	0	591	172.8	0.070	423	16.0	0x 0		VIFx	rt1
rb1	0x 0	0	591	73.8	0.165	423	16.0	0x 0		VIFx	rt1

Return Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
rt1	Peak AVF	0	1837	0.070	661	19.5	20 x 20	RectFbg	



Static Pressure and Friction Rate

Entire House

ProCalcs, LLC

Job: Del Rio Residence
Date: Jan 20, 2026
By: Wind Carbaquil

Jensen Beach, FL 34957 Phone: 772-882-5700 Email: tom@procalcs.net Web: www.ProCalcs.Net License: CAC1815254

Project Information

For: Del Rio Residence
2705 SW Spruce Rd, Lake City, FL 32024

Available Static Pressure

	Heating (in H ₂ O)	Cooling (in H ₂ O)
External static pressure	0.70	0.70
Pressure losses		
Coil	0	0
Heat exchanger	0.02	0.02
Supply diffusers	0.03	0.03
Return grilles	0.03	0.03
Filter	0.25	0.25
Humidifier	0	0
Balancing damper	0.03	0.03
Other device	0	0
Available static pressure	0.34	0.34

Total Effective Length

	Supply (ft)	Return (ft)
Measured length of run-out	11	18
Measured length of trunk	49	24
Equivalent length of fittings	250	130
Total length	310	173
Total effective length		483

Friction Rate

	Heating (in/100ft)		Cooling (in/100ft)	
Supply Ducts	0.070	OK	0.070	OK
Return Ducts	0.070	OK	0.070	OK

Fitting Equivalent Length Details

Supply	4W=35, 2B0=20, 2B1=30, 2B2=35, 2B3=40, 8E=10, 8E=10, 2B5=50, 1D=10, 8E=10: TotalEL=250
Return	6O=10, 6C3=50, 11G=5, 6CB=25, 6CA=10, 6CA=10, 5K=10, 6CA=10: TotalEL=130



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...nce\Working Drawings\Del Rio Residence_duct.rup Calc = MJ8 Front Door faces: W

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