

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 Alternative 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)*

FLORIDA ENERGY EFFICIENCY CODE FOR BUILDING CONSTRUCTION

Florida Department of Business and Professional Regulation - Residential Performance Method

Project Name: Adams Preserve 2169 lot 86 Street: Preserve at Laurel Lake lot 86 City, State, Zip: Lake City, FL, 32055 Owner: Design Location: FL, Gainesville	Builder Name: Adams Homes Permit Office: Permit Number: Jurisdiction: Columbia County: columbia(Florida Climate Zone 2)
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1. New construction or existing New (From Plans) 2. Single family or multiple family Detached 3. Number of units, if multiple family 1 4. Number of Bedrooms 4 5. Is this a worst case? No 6. Conditioned floor area above grade (ft²) 2166 Conditioned floor area below grade (ft²) 0 7. Windows(274.3 sqft.) Description Area a. U-Factor: Dbl, U=0.30 274.33 ft² SHGC: SHGC=0.23 b. U-Factor: N/A ft² SHGC: c. U-Factor: N/A ft² SHGC: Area Weighted Average Overhang Depth: 4.033 ft Area Weighted Average SHGC: 0.230 8. Skylights Description Area U-Factor:(AVG) N/A N/A ft² SHGC(AVG): N/A 9. Floor Types Insulation Area a. Slab-On-Grade Edge Insulation R= 0.0 2166.00 ft² b. N/A R= ft² c. N/A R= ft²	10. Wall Types(1888.7 sqft.) Insulation Area a. Frame - Wood, Exterior R=13.0 1811.30 ft² b. Frame - Wood, Adjacent R=13.0 77.33 ft² c. N/A d. N/A 11. Ceiling Types(2330.0 sqft.) Insulation Area a. Flat ceiling under att (Vented) R=38.0 2166.00 ft² b. Knee wall to attic (Vented) R=19.0 164.00 ft² c. N/A 12. Roof(Comp. Shingles, Vented) Deck R=2.0 2422 ft² 13. Ducts, location & insulation level R ft² a. Sup: Attic, Ret: Main, AH: Main 6 433 b. c. 14. Cooling Systems kBtu/hr Efficiency a. Central Unit 34.6 SEER2:15.40 15. Heating Systems kBtu/hr Efficiency a. Electric Heat Pump 34.6 HSPF2:7.80 16. Hot Water Systems a. Electric Cap: 50 gallons EF: 0.920 b. Conservation features None 17. Credits CF
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Glass/Floor Area: 0.127	Total Proposed Modified Loads: 51.07	PASS
	Total Baseline Loads: 54.39	
NOTE: Proposed residence must have annual total normalized Modified Loads that are less than or equal to 95 percent of the annual total loads of the standard reference design in order to comply.		

I hereby certify that the plans and specifications covered by this calculation are in compliance with the Florida Energy Code. PREPARED BY: _____ DATE: _____ I hereby certify that this building, as designed, is in compliance with the Florida Energy Code. OWNER/AGENT: _____ DATE: _____	Review of the plans and specifications covered by this calculation indicates compliance with the Florida Energy Code. Before construction is completed this building will be inspected for compliance with Section 553.908 Florida Statutes.  BUILDING OFFICIAL: _____ DATE: _____
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- Compliance requires certification by the air handler unit manufacturer that the air handler enclosure qualifies as certified factory-sealed in accordance with R403.3.2.1.
- Default duct leakage does not require a Duct Leakage Test Report.
- Compliance requires an Air Barrier and Insulation Inspection Checklist in accordance with R402.4.1.1 and this project requires a PERFORMANCE envelope leakage test report with envelope leakage no greater than 6.00 ACH50 (R402.4.1.2).

INPUT SUMMARY CHECKLIST REPORT

PROJECT

Title:Adams Preserve 2169 lot 86

Building Type:User

Owner:

Builder Home ID:

Builder Name:Adams Homes

Permit Office:

Jurisdiction:Columbia

Family Type:Detached

New/Existing:New (From Plans)

Year Construct:

Comment:

Bedrooms:4

Conditioned Area:2166

Total Stories:1

Worst Case:No

Rotate Angle:0

Cross Ventilation:

Whole House Fan:

Terrain:Suburban

Shielding:Suburban

Address type:Street Address

Lot #:---

Block/SubDivision:---

PlatBook:---

Street:Preserve at Laurel Lake lot 86

County:columbia

City, State, Zip:Lake City, FL, 32055

CLIMATE

✓Design Location

Tmy Site

Design Temp97.5%2.5%

Int Design TempWinterSummer

Heating Degree Days

Design Moisture

Daily temp Range

___FL, Gainesville

FL_GAINESVILLE_REGIONA

3292

7075

1305.5

51

Medium

BLOCKS

✓Number

Name

Area

Volume

___1

Block1

2166

17328 cu ft

SPACES

✓Number

Name

Area

Volume

Kitchen

Occupants

Bedrooms

Finished

Cooled

Heated

___1

Main

2166

17328

Yes

6

4

Yes

Yes

Yes

FLOORS

(Total Exposed Area = 2166 sq.ft.)

✓#

Floor Type

Space

Exposed Perim(ft)

Area

R-Value Perim.

U-Factor Joist

Slab Insul. Vert/Horiz

Tile

Wood

Carpet

___1

Slab-On-Grade Edge Ins

Main

284

2166 sqft

0.0

0.370

2 (ft)/0 (ft)

0.00

0.30

0.70

ROOF

✓#

Type

Materials

Roof Area

Gable Area

Framing. Fract.

Roof Color

Rad Barr

Solar Absor.

SA Tested

Emitt

Emitt Tested

Deck Insul.

Pitch (deg)

___1

Gable or shed

Composition shingles

2422 ft²

542 ft²

0.11

Medium

N

0.96

No

0.9

No

2

26.57

ATTIC

✓#

Type

Ventilation

Vent Ratio (1 in)

Area

RBS

IRCC

___1

Full attic

Vented

300

2166 ft²

N

N

CEILING

(Total Exposed Area = 2330 sq.ft.)

✓#

Ceiling Type

Space

R-Value

Ins. Type

Area

U-Factor

Framing Frac.

Truss Type

___1

Knee wall to attic(Vented)

Main

19.0

Blown

164.0ft²

0.045

0.11

Wood

___2

Flat ceiling under attic(Vented)

Main

38.0

Blown

2166.0ft²

0.024

0.11

Wood

INPUT SUMMARY CHECKLIST REPORT

WALLS															(Total Exposed Area = 1889 sq.ft.)				
✓ #	Ornt	Adjacent To	Wall Type	Space	Cavity R-Value	Width Ft	In	Height Ft	In	Area sq.ft.	U-Factor	Sheath R-Value	Frm. Frac.	Solar Absor.	Below Grade				
___ 1	N	Exterior	Frame - Wood	Main	13.0	11.0	8	8.0	0	93.3	0.084		0.23	0.75	0 %				
___ 2	E	Exterior	Frame - Wood	Main	13.0	8.0	0	8.0	0	64.0	0.084		0.23	0.75	0 %				
___ 3	N	Exterior	Frame - Wood	Main	13.0	26.0	4	10.0	0	263.3	0.084		0.23	0.75	0 %				
___ 4	W	Garage	Frame - Wood	Main	13.0	8.0	0	8.0	0	64.0	0.084		0.23	0.75	0 %				
___ 5	N	Garage	Frame - Wood	Main	13.0	20.0	0	0.0	8	13.3	0.084		0.23	0.75	0 %				
___ 6	E	Exterior	Frame - Wood	Main	13.0	20.0	4	8.0	0	162.7	0.084		0.23	0.75	0 %				
___ 7	E	Exterior	Frame - Wood	Main	13.0	29.0	6	8.0	0	236.0	0.084		0.23	0.75	0 %				
___ 8	S	Exterior	Frame - Wood	Main	13.0	19.0	8	8.0	0	157.3	0.084		0.23	0.75	0 %				
___ 9	W	Exterior	Frame - Wood	Main	13.0	7.0	8	8.0	0	61.3	0.084		0.23	0.75	0 %				
___ 10	S	Exterior	Frame - Wood	Main	13.0	27.0	4	8.0	0	218.7	0.084		0.23	0.75	0 %				
___ 11	E	Exterior	Frame - Wood	Main	13.0	7.0	8	8.0	0	61.3	0.084		0.23	0.75	0 %				
___ 12	S	Exterior	Frame - Wood	Main	13.0	11.0	8	8.0	0	93.3	0.084		0.23	0.75	0 %				
___ 13	W	Exterior	Frame - Wood	Main	13.0	50.0	0	8.0	0	400.0	0.084		0.23	0.75	0 %				

DOORS												(Total Exposed Area = 80 sq.ft.)	
✓ #	Ornt	Adjacent To	Door Type	Space	Storms	U-Value	Width Ft	In	Height Ft	In	Area		
___ 1	N(Front)		Insulated	Main	None	0.46	3.00	0	6.00	8	20.0ft²		
___ 2	S		Insulated	Main	None	0.46	3.00	0	6.00	8	20.0ft²		
___ 3	W		Insulated	Main	None	0.46	3.00	0	6.00	8	20.0ft²		
___ 4	S		Insulated	Main	None	0.46	3.00	0	6.00	8	20.0ft²		

WINDOWS															(Total Exposed Area = 274 sq.ft.)		
✓ #	Ornt	Wall ID	Frame	Panes	NFRC U-Factor	SHGC	Imp	Storm	Total Area (ft²)	Same Units	Width (ft)	Height (ft)	--Overhang-- Depth (ft)	Sep. (ft)	Interior Shade	Screen	
___ 1	N	1	Vinyl	Low-E Double	Y	0.30	0.23	N	N	15.0	1	3.00	5.00	1.5	1.0	Drapes/blinds	None
___ 2	N	3	Vinyl	Low-E Double	Y	0.30	0.23	N	N	13.3	2	1.00	6.67	6.0	1.0	Drapes/blinds	None
___ 3	N	3	Vinyl	Low-E Double	Y	0.30	0.23	N	N	60.0	4	3.00	5.00	6.0	1.7	Drapes/blinds	None
___ 4	S	8	Vinyl	Low-E Double	Y	0.30	0.23	N	N	30.0	2	3.00	5.00	1.0	1.7	Drapes/blinds	None
___ 5	S	10	Vinyl	Low-E Double	Y	0.30	0.23	N	N	60.0	4	3.00	5.00	7.7	1.0	Drapes/blinds	None
___ 6	S	12	Vinyl	Low-E Double	Y	0.30	0.23	N	N	30.0	2	3.00	5.00	1.7	1.0	Drapes/blinds	None
___ 7	W	13	Vinyl	Low-E Double	Y	0.30	0.23	N	N	30.0	2	3.00	5.00	1.5	1.0	Drapes/blinds	None
___ 8	E	11	Vinyl	Low-E Double	Y	0.30	0.23	N	N	30.0	2	3.00	5.00	1.7	1.0	Drapes/blinds	None
___ 9	W	13	Vinyl	Low-E Double	Y	0.30	0.23	N	N	6.0	1	2.00	3.00	1.5	1.0	Drapes/blinds	None

INFILTRATION											
✓ #	Scope	Method	SLA	CFM50	ELA	EqLA	ACH	ACH50	Space(s)	Infiltration Test Volume	
___ 1	Wholehouse	Proposed ACH(50)	0.00030	1733	95.07	178.48	0.1176	6.0	All	17328 cu ft	

GARAGE								
✓ #	Floor Area	Length	Width	Roof Area	Exposed Perimeter	Area Under Uncond.	Avg. Wall Height	Exposed Wall Insulation
___ 1	400 ft²	20.0 ft²	20.0 ft²	400 ft²	48 ft	400 ft	8 ft	1

INPUT SUMMARY CHECKLIST REPORT

MASS															
✓	#	Mass Type	Area		Thickness		Furniture Fraction		Space						
	1	Default(8 lbs/sq.ft.)	0 ft²		0 ft		0.30		Main						
HEATING SYSTEM															
✓	#	System Type	Subtype/Speed		AHRI #		Efficiency		Capacity kBtu/hr	---Geothermal HeatPump--- Entry Power Volt Current		Ducts	Block		
	1	Electric Heat Pump	Split/Single		HSPF2: 7.80		34.6			0.00	0.00	0.00	sys#1 1		
COOLING SYSTEM															
✓	#	System Type	Subtype/Speed		AHRI #		Efficiency		Capacity kBtu/hr	Air Flow cfm	SHR	Duct	Block		
	1	Central Unit	Split/Single		SEER2:15.4		34.6			1038	0.75	sys#1	1		
HOT WATER SYSTEM															
✓	#	System Type	Subtype	Location		EF(UEF)	Cap	Use	SetPnt	Fixt. Flow	Trap	Pipe Ins.	Pipe length		
	1	Electric	None	Garage		0.92 (0.92)	50.0 gal	70 gal	120 deg	Standard	Yes	None	99		
		Recirculation System	Recirc Control Type		Loop length	Branch length	Pump power	DWHR	Facilities Connected	Equal Flow	DWHR Eff	Other Credits			
	1	No			NA	NA	NA	No	NA	NA	NA	None			
DUCTS															
✓	Duct #	Location	-----Supply----- R-Value Area		-----Return----- R-Value Area		Leakage Type		AHU Location	CFM 25 TOT OUT	QN OUT	AHU SEALED	HVAC # RLF Heat Cool		
	1	Attic	6.0 433 ft²		Main 6.0 108 ft²		Default Leakage		Main	(Default) (Default)			1 1		
TEMPERATURES															
Programable Thermostat: N															
Cooling ☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☒ Jun ☒ Jul ☒ Aug ☒ Sep ☐ Oct ☐ Nov ☐ Dec															
Heating ☒ Jan ☒ Feb ☒ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☒ Nov ☒ Dec															
Venting ☐ Jan ☐ Feb ☒ Mar ☒ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☒ Oct ☒ Nov ☐ Dec															
✓	Thermostat Schedule: HERS 2006 Reference														
	Schedule Type	1		2		3		4		5		6		Hours 7 8 9 10 11 12	
	Cooling (WD)	AM PM	78 78	78 78	78 78	78 78	78 78	78 78	78 78	78 78	78 78	78 78	78 78	78 78	
	Cooling (WEH)	AM PM	78 78	78 78	78 78	78 78	78 78	78 78	78 78	78 78	78 78	78 78	78 78	78 78	
	Heating (WD)	AM PM	68 68	68 68	68 68	68 68	68 68	68 68	68 68	68 68	68 68	68 68	68 68	68 68	
	Heating (WEH)	AM PM	68 68	68 68	68 68	68 68	68 68	68 68	68 68	68 68	68 68	68 68	68 68	68 68	

ENERGY PERFORMANCE LEVEL (EPL) DISPLAY CARD

ESTIMATED ENERGY PERFORMANCE INDEX* = 94

The lower the EnergyPerformance Index, the more efficient the home.

Preserve at Laurel Lake lot 86,Lake City,FL,32055

1. New construction or existing	New (From Plans)	10. Wall Types(1888.7 sqft.)	Insulation	Area
2. Single family or multiple family	Detached	a. Frame - Wood, Exterior	R=13.0	1811.30 ft ²
3. Number of units, if multiple family	1	b. Frame - Wood, Adjacent	R=13.0	77.33 ft ²
4. Number of Bedrooms	4	c. N/A		
5. Is this a worst case?	No	d. N/A		
6. Conditioned floor area above grade (ft ²)	2166	11. Ceiling Types(2330.0 sqft.)	Insulation	Area
Conditioned floor area below grade (ft ²)	0	a. Flat ceiling under att (Vented)	R=38.0	2166.00 ft ²
7. Windows**	Description	b. Knee wall to attic (Vented)	R=19.0	164.00 ft ²
a. U-Factor:	Dbl, U=0.30	c. N/A		
SHGC:	SHGC=0.23	12. Roof(Comp. Shingles, Vented)	Deck R=2.0	2422 ft ²
b. U-Factor:	N/A	13. Ducts, location & insulation level	R	ft ²
SHGC:		a. Sup: Attic, Ret: Main, AH: Main	6	433
c. U-Factor:	N/A	b.		
SHGC:		c.		
Area Weighted Average Overhang Depth:	4.033 ft	14. Cooling Systems	kBtu/hr	Efficiency
Area Weighted Average SHGC:	0.230	a. Central Unit	34.6	SEER2:15.40
8. Skylights	Description	15. Heating Systems	kBtu/hr	Efficiency
U-Factor:(AVG)	N/A	a. Electric Heat Pump	34.6	HSPF2:7.80
SHGC(AVG):	N/A			
9. Floor Types	Insulation	16. Hot Water Systems		
a. Slab-On-Grade Edge Insulation	R= 0.0	a. Electric	Cap: 50 gallons	
b. N/A	R=		EF: 0.920	
c. N/A	R=	b. Conservation features		
		17. Credits	None	CF

I certify that this home has complied with the Florida Energy Efficiency Code for Building Construction through the above energy saving features which will be installed (or exceeded) in this home before final inspection. Otherwise, a new EPL Display Card will be completed based on installed Code compliant features.

Builder Signature: _____ Date: _____

Address of New Home: Preserve at Laurel Lake lot 86

City/FL Zip: Lake City,FL,32055



*Note: This is not a Building Energy Rating. If your Index is below 70, your home may qualify for energy efficient mortgage (EEM) incentives if you obtain a Florida Energy Rating. For information about the Florida Building Code, Energy Conservation, contact the Florida Building Commission's support staff.

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

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

Mandatory Requirements for Residential Performance, Prescriptive and ERI Methods

ADDRESS: Preserve at Laurel Lake lot 86
Lake City, FL 32055

Permit Number:

MANDATORY REQUIREMENTS - See individual code sections for full details.

SECTION R401 GENERAL

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

SECTION R402 BUILDING THERMAL ENVELOPE

- ☐ **R402.2.10.1 Slab-on-grade floor insulation installation (Mandatory).** Where installed, the insulation shall extend downward from the top of the slab on the outside or inside of the foundation wall. Insulation located below grade shall be extended the distance provided in Table R402.1.2, or the distance of the proposed design as applicable, by any combination of vertical insulation, insulation extending under the slab or insulation extending out from the building. Insulation extending away from the building shall be protected by pavement or by not less than 10 inches (254 mm) of soil. The top edge of the insulation installed between the exterior wall and the edge of the interior slab shall be permitted to be cut at a 45-degree (0.79 rad) angle away from the exterior wall.
- ☐ **R402.2.11.1 Crawl space walls insulation installation (Mandatory).** Where crawl space wall insulation is installed, it shall be permanently fastened to the wall and extend downward from the floor to the finished grade level and then vertically and/or horizontally for at least an additional 24 inches (610 mm). Exposed earth in unvented crawl space foundations shall be covered with a continuous Class I vapor retarder in accordance with the Florida Building Code, Building, or Florida Building Code, Residential, as applicable. All joints of the vapor retarder shall overlap by 6 inches (153 mm) and be sealed or taped. The edges of the vapor retarder shall extend not less than 6 inches (153 mm) up the stem wall and shall be attached to the stem wall.
- ☐ **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 Section 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 individuals as defined in Section 553.993(5) or (7), Florida Statutes, or individuals licensed as set forth in Section 489.105(3)(f), (g) or (i) or an approved third party. A written report of the results of the test shall be signed by the party conducting the test and provided to the code official. Testing shall be performed at any time after creation of all penetrations of the building thermal envelope.
- Exception:** Testing is not required for additions, alterations, renovations, or repairs, of the building thermal envelope of existing buildings in which the new construction is less than 85 percent of the building thermal envelope.

During testing:

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

Florida Building Code, Energy Conservation, Mandatory Requirements (2023 Continued)

- ☐ **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.
- ☐ **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 with supplementary electric-resistance heaters 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 or plenum chambers, shall be constructed and sealed in accordance with Section C403.2.9.2 of the Commercial Provisions of this code and shall be shown to meet duct tightness criteria below.
- Duct tightness shall be verified by testing in accordance with ANSI/RESNET/ICC 380 by either individuals as defined in Section 553.993(5) or (7), Florida Statutes, or individuals licensed as set forth in Section 489.105(3)(f), (g) or (i), Florida Statutes, to be "substantially leak free" in accordance with Section R403.3.3.
- ☐ **R403.3.2.1 Sealed air handler.** Air handlers shall have a manufacturer's designation for an air leakage of no more than 2 percent of the design airflow rate when tested in accordance with ASHRAE 193.
- ☐ **R403.3.3 Duct testing (Mandatory).** Ducts shall be pressure tested to determine air leakage by one of the following methods:
1. Rough-in test: Total leakage shall be measured with a pressure differential of 0.1 inch w.g. (25 Pa) across the system, including the manufacturer's air handler enclosure if installed at the time of the test. All registers shall be taped or otherwise sealed during the test.
 2. Postconstruction test: Total leakage shall be measured with a pressure differential of 0.1 inch w.g. (25 Pa) across the entire system, including the manufacturer's air handler enclosure. Registers shall be taped or otherwise sealed during the test.
- Exceptions;**
1. A duct air leakage test shall not be required where the ducts and air handlers are located entirely within the building thermal envelope.
 2. Duct testing is not mandatory for buildings complying by Section 405 of this code. Duct leakage testing is required for Section R405 compliance where credit is taken for leakage, and a duct air leakage 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

Florida Building Code, Energy Conservation, Mandatory Requirements (2023 Continued)

- ☐ **R403.3.5 Building cavities (Mandatory).** Building framing cavities shall not be used as ducts or plenums
- ☐ **R403.4 Mechanical system piping insulation (Mandatory).** Mechanical system piping capable of carrying fluids above 105°F (41°C) or below 55°F (13°C) shall be insulated to a minimum of R-3.
- ☐ **R403.4.1 Protection of piping insulation.** Piping insulation exposed to weather shall be protected from damage, including that caused by sunlight, moisture, equipment maintenance and wind, and shall provide shielding from solar radiation that can cause degradation of the material. Adhesive tape shall not be permitted.
- ☐ **R403.5.1 Heated water circulation and temperature maintenance systems (Mandatory).** If heated water circulation systems are installed, they shall be in accordance with Section R403.5.1.1. Heat trace temperature maintenance systems shall be in accordance with Section R403.5.1.2. Automatic controls, temperature sensors and pumps shall be accessible. Manual controls shall be readily accessible.
- ☐ **R403.5.1.1 Circulation systems.** Heated water circulation systems shall be provided with a circulation pump. The system return pipe shall be a dedicated return pipe or a cold water supply pipe. Gravity and thermosiphon circulation systems shall be prohibited. Controls for circulating hot water system pumps shall start the pump based on the identification of a demand for hot water within the occupancy. The controls shall automatically turn off the pump when the water in the circulation loop is at the desired temperature and when there is no demand for hot water.
- ☐ **R403.5.1.2 Heat trace systems.** Electric heat trace systems shall comply with IEEE 515.1 or UL 515. Controls for such systems shall automatically adjust the energy input to the heat tracing to maintain the desired water temperature in the piping in accordance with the times when heated water is used in the occupancy.
- ☐ **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 control 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 control shall limit the temperature of the water entering the cold water piping to 104°F (40°C).
- ☐ **R403.5.5 Heat traps (Mandatory).** Storage water heaters not equipped with integral heat traps and having vertical pipe risers shall have heat traps installed on both the inlets and outlets. External heat traps shall consist of either a commercially available heat trap or a downward and upward bend of at least 3 ½ inches (89 mm) in the hot water distribution line and cold water line located as close as possible to the storage tank.
- ☐ **R403.5.6 Water heater efficiencies (Mandatory).**
 - ☐ **R403.5.6.1.1 Automatic controls.** Service water-heating systems shall be equipped with automatic temperature controls capable of adjustment from the lowest to the highest acceptable temperature settings for the intended use. The minimum temperature setting range shall be from 100°F to 140°F (38°C to 60°C).
 - ☐ **R403.5.6.1.2 Shut down.** A separate switch or a clearly marked circuit breaker shall be provided to permit the power supplied to electric service systems to be turned off. A separate valve shall be provided to permit the energy supplied to the main burner(s) of combustion types of service water-heating systems to be turned off.
 - ☐ **R403.5.6.2 Water-heating equipment.** Water-heating equipment installed in residential units shall meet the minimum efficiencies of Table C404.2 in Chapter 4 of the Florida Building Code, Energy Conservation, Commercial Provisions, for the type of equipment installed. Equipment used to provide heating functions as part of a combination system shall satisfy all stated requirements for the appropriate water-heating category. Solar water heaters shall meet the criteria of Section R403.5.6.2.1.
 - ☐ **R403.5.6.2.1 Solar water-heating systems.** Solar systems for domestic hot water production are rated by the annual solar energy factor of the system. The solar energy factor of a system shall be determined from the Florida Solar Energy Center Directory of Certified Solar Systems. Solar collectors shall be tested in accordance with ISO Standard 9806, Test Methods for Solar Collectors, and SRCC Standard TM-1, Solar Domestic Hot Water System and Component Test Protocol. Collectors in installed solar water-heating systems should meet the following criteria:
 - 1. Be installed with a tilt angle between 10 degrees and 40 degrees of the horizontal; and
 - 2. Be installed at an orientation within 45 degrees of true south.
- ☐ **R403.6 Mechanical ventilation (Mandatory).** The building shall be provided with ventilation that meets the requirements of the Florida Building Code, Residential, or Florida Building Code, Mechanical, as applicable, or with other approved means of ventilation including: Natural, Infiltration or Mechanical means. Outdoor air intakes and exhausts shall have automatic or gravity dampers that close when the ventilation system is not operating.

Florida Building Code, Energy Conservation, Mandatory Requirements (2023 Continued)



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

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

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

FAN LOCATION	AIRFLOW RATE MINIMUM (CFM)	MINIMUM EFFICACY ^a (CFM/WATT)	AIRFLOW RATE MAXIMUM (CFM)
HRV or ERV	Any	1.2 cfm/watt	Any
Range hoods	Any	2.8 cfm/watt	Any
In-line fan	Any	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 with HVI Standard 916



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

1. The design air change per hour minimums for residential buildings in ASHRAE 62.2, Ventilation for Acceptable Indoor Air Quality, shall be the maximum rates allowed for residential applications.
2. No ventilation or air-conditioning system make-up air shall be provided to conditioned space from attics, crawlspaces, attached enclosed garages or outdoor spaces adjacent to swimming pools or spas.
3. If ventilation air is drawn from enclosed space(s), then the walls of the space(s) from which air is drawn shall be insulated to a minimum of R-11 and the ceiling shall be insulated to a minimum of R-19, space permitting, or R-10 otherwise.

R403.7 Heating and cooling equipment.



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

Florida Building Code, Energy Conservation, Mandatory Requirements (2023 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 R403.7, or the closest available size provided by the manufacturer's product lines. The corresponding latent capacity of the equipment shall not be less than the calculated latent load.
- The published value for AHRI total capacity is a nominal, rating-test value and shall not be used for equipment sizing. Manufacturer's expanded performance data shall be used to select cooling-only equipment. This selection shall be based on the outdoor design dry-bulb temperature for the load calculation (or entering water temperature for water-source equipment), the blower CFM provided by the expanded performance data, the design value for entering wet-bulb temperature and the design value for entering dry-bulb temperature.

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

Exceptions:

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

R403.7.1.2 Heating equipment capacity.

- ☐ **R403.7.1.2.1 Heat pumps.** Heat pump sizing shall be based on the cooling requirements as calculated according to Section R403.7.1.1, and the heat pump total cooling capacity shall not be more than 1.15 times greater than the design cooling load even if the design heating load is 1.15 times greater than the design cooling load.
- ☐ **R403.7.1.2.2 Electric resistance furnaces.** Electric resistance furnaces shall be sized within 4 kW of the design requirements calculated according to the procedure selected in Section R403.7.1.
- ☐ **R403.7.1.2.3 Fossil fuel heating equipment.** The capacity of fossil fuel heating equipment with natural draft atmospheric burners shall not be less than the design load calculated in accordance with Section R403.7.1.
- ☐ **R403.7.1.3 Extra capacity required for special occasions.** Residences requiring excess cooling or heating equipment capacity on an intermittent basis, such as anticipated additional loads caused by major entertainment events, shall have equipment sized or controlled to prevent continuous space cooling or heating within that space by one or more of the following options:
1. A separate cooling or heating system is utilized to provide cooling or heating to the major entertainment areas.
 2. A variable capacity system sized for optimum performance during base load periods is utilized.
- ☐ **R403.8 Systems serving multiple dwelling units (Mandatory).** Systems serving multiple dwelling units shall comply with Sections C403 and C404 of the Florida Building Code, Energy Conservation—Commercial Provisions in lieu of Section R403.
- ☐ **R403.9 Snow melt and ice system controls (Mandatory).** Snow- and ice-melting systems, supplied through energy service to the building, shall include automatic controls capable of shutting off the system when the pavement temperature is above 50°F (10°C), and no precipitation is falling and an automatic or manual control that will allow shutoff when the outdoor temperature is above 40°F (4.8°C).
- ☐ **403.10 Pools and permanent spa energy consumption (Mandatory).** The energy consumption of pools and permanent spas shall be in accordance with Sections R403.10.1 through R403.10.5.
- ☐ **R403.10.1 Heaters.** The electric power to heaters shall be controlled by a readily accessible on-off switch that is an integral part of the heater mounted on the exterior of the heater, or external to and within 3 feet (914 mm) of the heater. Operation of such switch shall not change the setting of the heater thermostat. Such switches shall be in addition to a circuit breaker for the power to the heater.
- Gas-fired heaters shall not be equipped with continuously burning ignition pilots.
- ☐ **R403.10.2 Time switches.** Time switches or other control methods that can automatically turn off and on according to a preset schedule shall be installed for heaters and pump motors. Heaters and pump motors that have built-in time switches shall be in compliance with this section.
- Exceptions:**
1. Where public health standards require 24-hour pump operation.
 2. Pumps that operate solar- and waste-heat-recovery pool heating systems
 3. Where pumps are powered exclusively from on-site renewable generation.

Florida Building Code, Energy Conservation, Mandatory Requirements (2023 Continued)

- ☐ **R403.10.3 Covers.** Outdoor heated swimming pools and outdoor permanent spas shall be equipped with a vapor-retardant cover on or at the water surface or a liquid cover or other means proven to reduce heat loss.
- Exception:** Where more than 70 percent of the energy for heating, computed over an operation season, is from site-recovered energy, such as from a heat pump or solar energy source, covers or other vapor-retardant means shall not be required.
- ☐ **R403.10.4 Gas- and oil-fired pool and spa heaters.** All gas- and oil-fired pool and spa heaters shall have a minimum thermal efficiency of 82 percent for heaters manufactured on or after April 16, 2013, when tested in accordance with ANSI Z 21.56. Pool heaters fired by natural or LP gas shall not have continuously burning pilot lights.
- ☐ **R403.10.5 Heat pump pool heaters.** Heat pump pool heaters shall have a minimum COP of 4.0 when tested in accordance with AHRI 1160, Table 2, Standard Rating Conditions-Low Air Temperature. A test report from an independent laboratory is required to verify procedure compliance. Geothermal swimming pool heat pumps are not required to meet this standard.
- ☐ **R403.11 Portable spas (Mandatory).** The energy consumption of electric-powered portable spas shall be controlled by the requirements of APSP-14.
- ☐ **R403.13 Dehumidifiers (Mandatory).** If installed, a dehumidifier shall conform to the following requirements:
1. The minimum rated efficiency of the dehumidifier shall be greater than 1.7 liters/ kWh if the total dehumidifier capacity for the house is less than 75 pints/day and greater than 2.38 liters/kWh if the total dehumidifier capacity for the house is greater than or equal to 75 pints/day.
 2. The dehumidifier shall be controlled by a sensor that is installed in a location where it is exposed to mixed house air.
 3. Any dehumidifier unit located in unconditioned space that treats air from conditioned space shall be insulated to a minimum of R-2.
 4. Condensate disposal shall be in accordance with Section M1411.3.1 of the Florida Building Code, Residential.
- ☐ **R403.13.1 Ducted dehumidifiers.** Ducted dehumidifiers shall, in addition to conforming to the requirements of Section R403.13, conform to the following requirements:
1. If a ducted dehumidifier is configured with return and supply ducts both connected into the supply side of the cooling system, a backdraft damper shall be installed in the supply air duct between the dehumidifier inlet and outlet duct.
 2. If a ducted dehumidifier is configured with only its supply duct connected into the supply side of the central heating and cooling system, a backdraft damper shall be installed in the dehumidifier supply duct between the dehumidifier and central supply duct.
 3. A ducted dehumidifier shall not be ducted to or from a central ducted cooling system on the return duct side upstream from the central cooling evaporator coil.
 4. Ductwork associated with a dehumidifier located in unconditioned space shall be insulated to a minimum of R-6.

SECTION R404 ELECTRICAL POWER AND LIGHTING SYSTEMS

- ☐ **R404.1 Lighting equipment (Mandatory).** 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.
- R404.1.1 Lighting equipment (Mandatory).** Fuel gas lighting systems shall not have continuously burning pilot lights.

SECTION R405 SIMULATED PERFORMANCE ALTERNATIVE (PERFORMANCE)

- ☐ **R405.2 Mandatory requirements.** Compliance with this section requires that the mandatory provisions identified in Section R401.2 be met. All supply and return ducts not completely inside the building thermal envelope shall be insulated to a minimum of R-6, except site-wrapped supply ducts not completely inside the building thermal envelope shall be insulated to a minimum of R-8.
- ☐ **R405.2.1 Ceiling insulation.** Ceilings shall have an insulation level of at least R-19, space permitting. For the purposes of this code, types of ceiling construction that are considered to have inadequate space to install R-19 include single assembly ceilings of the exposed deck and beam type and concrete deck roofs. Such ceiling assemblies shall be insulated to at least a level of R-10.
- ☐ **R405.2.2 Building air leakage testing.** Building or dwelling air leakage testing shall be in accordance with Sections R402.4 through R402.4.1.2. If an air leakage rate below seven air changes per hour at a pressure of 0.2 inch w.g. (50 pascals) is specified for the proposed design, testing shall verify the air leakage rate does not exceed the air leakage rate of the proposed design instead of seven air changes per hour.
- ☐ **R405.2.3 Duct air leakage testing.** In cases where duct air leakage lower than the default Q_n to outside of 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 specified for the proposed design, testing in accordance with Section R403.3.2 shall verify a duct air leakage rate not exceeding the leakage rate of the proposed design. Otherwise, in accordance with Section R403.3.3, duct testing is not mandatory for buildings complying by Section R405.

SECTION R406 ENERGY RATING INDEX COMPLIANCE ALTERNATIVE

- ☐ **R406.2 Mandatory requirements.** Compliance with this section requires that the provisions identified in Sections R401 through R404 labeled as “mandatory” and Section R403.5.3 of the 2015 International Energy Conservation Code be met. For buildings that do not utilize on-site renewable power production for compliance with this section, the building thermal envelope shall be greater than or equal to levels of efficiency and Solar Heat Gain Coefficient in Table 402.1.1 or 402.1.3 of the 2009 International Energy Conservation Code. For buildings that utilize on-site renewable power production for compliance with this section, the building thermal envelope shall be greater than or equal to levels of efficiency and Solar Heat Gain Coefficient in Table R402.1.2 or Table R402.1.4 of the 2015 International Energy Conservation Code.

Exception: Supply and return ducts not completely inside the building thermal envelope shall be insulated to a minimum of R-6.
- ☐ **R406.2.1 Site-wrapped supply ducts.** Site-wrapped supply ducts not completely inside the building thermal envelope shall be insulated to a minimum of R-8.

2023 - AIR BARRIER AND INSULATION INSPECTION COMPONENT CRITERIA-TABLE 402.4.1.1^a

Project Name: Adams Preserve 2169 lot 86		Builder Name: Adams Homes	
Street: Preserve at Laurel Lake lot 86		Permit Office:	
City, State, Zip: Lake City, FL, 32055		Permit Number:	
Owner:		Jurisdiction: Columbia	
Design Location: FL, Gainesville		County: columbia(Florida Climate Zone 2)	
COMPONENT	AIR BARRIER CRITERIA	INSULATION INSTALLATION CRITERIA	CHECK
General requirements	A continuous air barrier shall be installed in the building envelope. The exterior thermal envelope contains a continuous air barrier. Breaks or joints in the air barrier shall be sealed.	Air-permeable insulation shall not be used as a sealing material.	C
Ceiling/attic	The air barrier in any dropped ceiling/soffit shall be aligned with the insulation and any gaps in the air barrier shall be sealed. Access openings, drop down stairs or knee wall doors to unconditioned attic spaces shall be sealed.	The insulation in any dropped ceiling/soffit shall be aligned with the air barrier.	
Walls	The junction of the foundation and sill plate shall be sealed. The junction of the top plate and the top of exterior walls shall be sealed. Knee walls shall be sealed.	Cavities within corners and headers of frame walls shall be insulated by completely filling the cavity with a material having a thermal resistance of R-3 per inch minimum. Exterior thermal envelope insulation for framed walls shall be installed in substantial contact and continuous alignment with the air barrier.	
Windows, skylights and doors	The space between window/door jambs and framing, and skylights and framing shall be sealed.		
Rim joists	Rim joists shall include the air barrier.	Rim joists shall be insulated.	
Floors (including above-garage and cantilevered floors)	The air barrier shall be installed at any exposed edge of insulation.	Floor framing cavity insulation shall be installed to maintain permanent contact with the underside of subfloor decking, or floor framing cavity insulation shall be permitted to be in contact with the top side of sheathing, or continuous insulation installed on the underside of floor framing and extends from the bottom to the top of all perimeter floor framing members.	
Crawl space walls	Exposed earth in unvented crawl spaces shall be covered with a Class I vapor retarder with overlapping joints taped.	Where provided instead of floor insulation, insulation shall be permanently attached to the crawlspace walls.	
Shafts, penetrations	Duct shafts, utility penetrations, and flue shafts opening to exterior or unconditioned space shall be sealed.		
Narrow cavities		Batts in narrow cavities shall be cut to fit, or narrow cavities shall be filled by insulation that on installation readily conforms to the available cavity spaces.	
Garage separation	Air sealing shall be provided between the garage and conditioned spaces.		
Recessed lighting	Recessed light fixtures installed in the building thermal envelope shall be sealed to the finished surface.	Recessed light fixtures installed in the building thermal envelope shall be air tight and IC rated.	
Plumbing and wiring		Batt insulation shall be cut neatly to fit around wiring and plumbing in exterior walls, or insulation that on installation readily conforms to available space shall extend behind piping and wiring.	
Shower/tub on exterior wall	The air barrier installed at exterior walls adjacent to showers and tubs shall separate them from the showers and tubs.	Exterior walls adjacent to showers and tubs shall be insulated.	
Electrical, 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 sub-floor, wall covering or ceiling penetrated by the boot.		
Concealed sprinklers	When required to be sealed, concealed fire sprinklers shall only be sealed in a manner that is recommended by the manufacturer. Caulking or other adhesive sealants shall not be used to fill voids 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.

Jurisdiction:	Columbia	Permit #:
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Builder:	Adams Homes	Community:		Lot:	NA
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City: Lake City	State: FL	Zip: 32055
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☐ **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.

$$\frac{\text{CFM}(50)}{\text{Building Volume}} \times 60 \div \frac{17328}{\text{ACH}(50)} = \frac{\text{ }}{\text{ }}$$

☐
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

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 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 the infiltration volume and calculating the air leakage of the home.

License/Certification #: _____ Issuing Authority: _____



Building Analysis

Entire House

DL Williams Heating & Cooling L.L.C.

Job:
Date: 10/10/24
By: DL Williams Heating & C...
Plan: 2169

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: williamscoolingllc@gmail.com

Project Information

For: Adams Homes Preserve lot 86-2169, Adams Homes
Lake City, FL 32024

Design Conditions

Location:

Gainesville Regional, FL, US
Elevation: 123 ft
Latitude: 30°N

Outdoor:

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

Heating

33
-
-
15.0

Cooling

92
18 (M)
76
7.5

Indoor:

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

Heating

68
35
30
8.2

Cooling

75
17
50
43.8

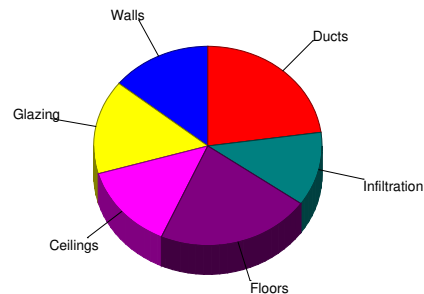
Infiltration:

Method
Construction quality
Fireplaces

Simplified
Average
0

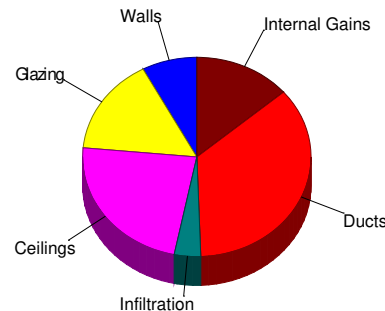
Heating

Component	Btuh/ft²	Btuh	% of load
Walls	3.2	4590	14.2
Glazing	16.4	4940	15.3
Doors	0	0	0
Ceilings	2.0	4467	13.8
Floors	3.3	7056	21.8
Infiltration	2.2	3884	12.0
Ducts		7366	22.8
Piping		0	0
Humidification		0	0
Ventilation		0	0
Adjustments		0	0
Total		32302	100.0



Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	1.4	2005	7.8
Glazing	13.3	4031	15.7
Doors	0	0	0
Ceilings	2.7	5975	23.3
Floors	0	0	0
Infiltration	0.5	960	3.7
Ducts		9166	35.7
Ventilation		0	0
Internal gains		3520	13.7
Blower		0	0
Adjustments		0	0
Total		25657	100.0



Latent Cooling Load = 4150 Btuh

Overall U-value = 0.099 Btuh/ft²·°F, Window / Floor Area = 13.9 %

Data entries checked.



Load Short Form

Entire House

DL Williams Heating & Cooling L.L.C.

Job:
Date: 10/10/24
By: DL Williams Heating & C...
Plan: 2169

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: williamscoolingllc@gmail.com

Project Information

For: Adams Homes Preserve lot 86-2169, Adams Homes
Lake City, FL 32024

Design Information

	Htg	Clg	Infiltration	Simplified
Outside db (°F)	33	92	Method	Average
Inside db (°F)	68	75	Construction quality	0
Design TD (°F)	35	17	Fireplaces	
Daily range	-	M		
Inside humidity (%)	30	50		
Moisture difference (gr/lb)	8	44		

HEATING EQUIPMENT

Make Trane
Trade TRANE
Model 4TWR6036H1
AHRI ref 7562981

Efficiency 7.8 HSPF2
Heating input
Heating output 33000 Btuh @ 47°F
Temperature rise 25 °F
Actual air flow 1200 cfm
Air flow factor 0.037 cfm/Btuh
Static pressure 0.50 in H2O
Space thermostat
Capacity balance point = 33 °F

Backup:
Input = 9 kW, Output = 31600 Btuh, 100 AFUE

COOLING EQUIPMENT

Make Trane
Trade TRANE
Cond 4TWR6036H1
Coil TEM6A0C36H31++TDR
AHRI ref 7562981

Efficiency 13.0 EER2, 15.4 SEER2
Sensible cooling 24360 Btuh
Latent cooling 10440 Btuh
Total cooling 34800 Btuh
Actual air flow 1050 cfm
Air flow factor 0.041 cfm/Btuh
Static pressure 0.50 in H2O
Load sensible heat ratio 0.86

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
br2	182	4313	1574	160	64
wic3	20	0	0	0	0
ah	16	0	0	0	0
bath	72	1228	801	46	33
br3	164	1862	1553	69	64
br4	161	4170	2206	155	90
living	120	2274	1667	84	68
dining	120	2097	1929	78	79
hall	48	0	0	0	0
family	468	6713	7695	249	315
kitchen	216	954	3426	35	140
laundry	72	89	931	3	38
wic2	30	542	191	20	8
linebn	15	0	0	0	0

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



mbath	101	729	372	27	15
wic1	30	537	183	20	7
masrter bed	280	5057	2056	188	84
bkfst	54	1738	1075	65	44
Entire House	2169	32302	25657	1200	1050
Other equip loads		0	0		
Equip. @ 0.97 RSM			24939		
Latent cooling			4150		
TOTALS	2169	32302	29089	1200	1050

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



PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: williamscoolingllc@gmail.com

[illegible]

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



Right-J8® Form J1
Entire House
DL Williams Heating & Cooling L.L.C.

Job:
Date: 10/10/24
By: DL Williams Heating & Cooling L.L.C.
Plan: 2169

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: williamscoolingllc@gmail.com

1	Name of Room					wic1 5.0 ft				masrter bed 42.0 ft			
2	Running Feet of Exposed Wall					8.0 ft				8.0 ft			
3	Ceiling Ht (Ft) and Gross Wall Area (SqFt)					176.0 ft²				544.0 ft²			
4	Room Dimensions (Ft) and Floor Plan Area (SqFt)					6.0 x 5.0 ft 0 °				20.0 x 14.0 ft 0 °			
5	Ceiling Slope (Deg.) and Gross Ceiling Area (SqFt)					30.0 ft²				280.0 ft²			
Type of Exposure		Const., Number	Panel Faces	HTM		Area or Length	Btuh			Area or Length	Btuh		
				Htg.	Clg.		Heating	S-Clg	L-Clg		Heating	S-Clg	L-Clg
6	Wall	12C-0bw	n	3.17	1.38	0	0	0		160	412	180	
.	Glaz	10D-v	n	16.36	10.17	0	0	0		0	0	0	
.	Glaz	4A5-2ov	n	16.36	11.41	0	0	0		30	491	342	
.	Glaz	4A5-2ov	n	16.36	11.41	0	0	0		0	0	0	
11	Wall	12C-0bw	e	3.17	1.38	0	0	0		64	203	89	
	Glaz	4A5-2ov	e	16.36	29.17	0	0	0		0	0	0	
	Glaz	4A5-2ov	e	16.36	29.17	0	0	0		0	0	0	
	Wall	12C-0bw	s	3.17	1.38	0	0	0		0	0	0	
	Glaz	10D-v	s	16.36	7.99	0	0	0		0	0	0	
	Glaz	4A5-2ov	s	16.36	14.54	0	0	0		0	0	0	
	Glaz	4A5-2ov	s	16.36	11.41	0	0	0		0	0	0	
	Glaz	4B5-2fv	s	16.36	14.54	0	0	0		0	0	0	
	Wall	12C-0bw	w	3.17	1.38	40	127	55		112	355	155	
	Ceil	16B-38ad	-	0.90	1.38	30	27	41		280	253	387	
	Ceil	17B-6al	-	3.65	4.64	0	0	0		0	0	0	
	Flor	22A-vpl	-	34.42	0.00	30	172	0		280	1446	0	

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



Right-Suite® Universal 2024 24.0.03 RSU02245

2024-Nov-01 11:13:43

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...VAC\Trane\Adams Preserve lot 86-2169 Manual.rup Calc = MJ8 Front Door faces: S



Loads for Multiple Orientations
Entire House
DL Williams Heating & Cooling L.L.C.

Job:
Date: 10/10/24
By: DL Williams Heating & C...
Plan: 2169

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: williamscoolingllc@gmail.com

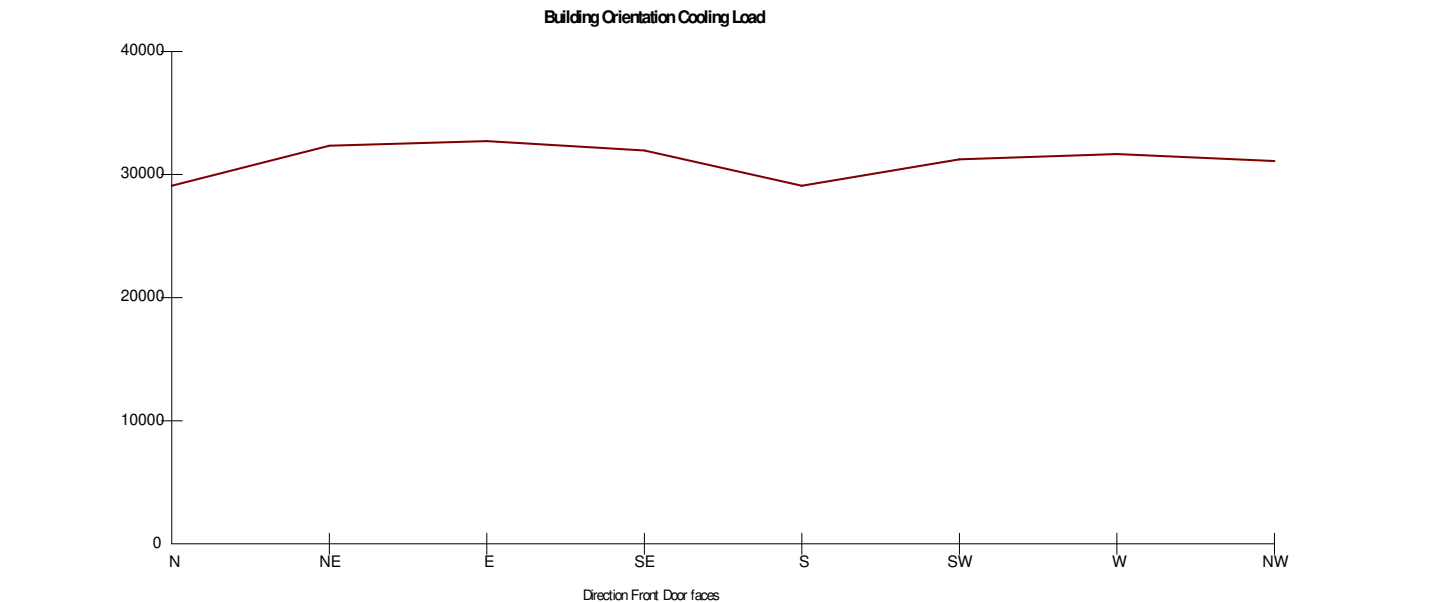
Project Information

For: Adams Homes Preserve lot 86-2169, Adams Homes
 Lake City, FI 32024

Design Conditions

Location:			Indoor:		Heating	Cooling
Gainesville Regional, FL, US			Indoor temperature (°F)		68	75
Elevation: 123 ft			Design TD (°F)		35	17
Latitude: 30°N			Relative humidity (%)		30	50
			Moisture difference (gr/lb)		8.2	43.8
Outdoor:	Heating	Cooling	Infiltration:			
Dry bulb (°F)	33	92				
Daily range (°F)	-	18 (M)				
Wet bulb (°F)	-	76				
Wind speed (mph)	15.0	7.5				

Front Door	North	Northeast	East	Southeast	South	Southwest	West	Northwest
Sensible Load (Btuh)	24939	28193	28566	27802	24939	27084	27508	26945
Latent Load (Btuh)	4150	4150	4150	4150	4150	4150	4150	4150
Total Load (Btuh)	29089	32343	32716	31953	29089	31234	31659	31095
Heating AVF (cfm)	1200	1200	1200	1200	1200	1200	1200	1200
Cooling AVF (cfm)	1050	1050	1050	1050	1050	1050	1050	1050



Current Orientation: Front Door faces South
 Highest Cooling Load: Front Door faces East

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





J1 Form - Worksheet A
Entire House
DL Williams Heating & Cooling L.L.C.

Job:
Date: 10/10/24
By: DL Williams Heating & C...
Plan: 2169

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: williamscoolingllc@gmail.com

Supporting Detail	
Project Name: Adams Preserve lot 86-2169 Manual	Date: 10/10/24
Address: Lake City, FL 32024	
Phone:	Job ID:

Worksheet A Location and Design Conditions	
Weather Location: Gainesville Regional, FL, US	Elevation = 123 Latitude = 30
Indoor Conditions, Heating: DB = 68 °F RH = 30 % Indoor Conditions, Cooling: DB = 75 °F RH = 50 %	
Table 1 Conditions 99% DB = 33 °F 1% DB = 92 °F Grains Difference = 44 gr/lb Daily Range = M	
Design Temperature Differences	HTD = 35 °F CTD = 17 °F

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





Component Constructions
Entire House
DL Williams Heating & Cooling L.L.C.

Job:
Date: 10/10/24
By: DL Williams Heating & C...
Plan: 2169

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: williamscoolingllc@gmail.com

Project Information

For: Adams Homes Preserve lot 86-2169, Adams Homes
Lake City, FL 32024

Design Conditions

Location:		Indoor:		Heating	Cooling
Gainesville Regional, FL, US		Indoor temperature (°F)		68	75
Elevation: 123 ft		Design TD (°F)		35	17
Latitude: 30°N		Relative humidity (%)		30	50
		Moisture difference (gr/lb)		8.2	43.8
Outdoor:	Heating	Cooling	Infiltration:		
Dry bulb (°F)	33	92	Method		
Daily range (°F)	-	18 (M)	Construction quality		
Wet bulb (°F)	-	76	Fireplaces		
Wind speed (mph)	15.0	7.5	Simplified Average		
				0	

Construction descriptions

	Or	Area ft²	U-value Btuh/ft²-°F	Insul R ft²-°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
Walls								
12C-0bw: Frm wall, brk 4" ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud	n	324	0.091	13.0	3.17	1026	1.38	448
	e	504	0.091	13.0	3.17	1595	1.38	697
	s	202	0.091	13.0	3.17	640	1.38	279
	w	420	0.091	13.0	3.17	1330	1.38	581
	all	1450	0.091	13.0	3.17	4590	1.38	2005

Partitions (none)

Windows

10D-v: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/8" thk; NFRC rated (SHGC=0.31); 8 ft overhang (7 ft window ht, 2 ft sep.); 6.67 ft head ht	n	21	0.470	0	16.4	343	10.2	214
	s	7	0.470	0	16.4	114	14.5	102
	s	7	0.470	0	16.4	114	14.5	102
	all	35	0.470	0	16.4	572	11.9	417
4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/8" thk; NFRC rated (SHGC=0.31); 50% blinds 45°, light; 50% outdoor insect screen; 2 ft overhang (5 ft window ht, 2 ft sep.); 6.67 ft head ht	n	60	0.470	0	16.4	981	11.4	685
	e	30	0.470	0	16.4	491	29.2	875
	s	75	0.470	0	16.4	1227	11.4	856
	all	165	0.470	0	16.4	2699	14.6	2415
4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/8" thk; NFRC rated (SHGC=0.31); 50% blinds 45°, light; 50% outdoor insect screen; 8 ft overhang (5 ft window ht, 2 ft sep.); 6.67 ft head ht	n	75	0.470	0	16.4	1227	11.4	856
	e	6	0.470	0	16.4	98	29.2	175
10D-v: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/8" thk; NFRC rated (SHGC=0.31); 50% blinds 45°, light; 50% outdoor insect screen; 2 ft overhang (7 ft window ht, 2 ft sep.); 6.67 ft head ht	s	21	0.470	0	16.4	343	7.99	168

Doors (none)

Ceilings

16B-38ad: Attic ceiling, asphalt shingles roof mat, r-38 ceil ins, 1/2" gypsum board int fnsh	1290	0.026	38.0	0.90	1167	1.38	1785
17B-6al: Rf/clg ceiling, asphalt shingles roof mat, wd cons, r-6 deck ins, 1" thkns	903	0.105	6.0	3.65	3299	4.64	4190

Floors

22A-vpl: Bg floor, light dry soil, on grade depth, vinyl flr fnsh	205	0.989	0	34.4	7056	0	0
---	-----	-------	---	------	------	---	---



Component Constructions

br2

DL Williams Heating & Cooling L.L.C.

Job:

Date: 10/10/24

By: DL Williams Heating & C...

Plan: 2169

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: williamscoolingllc@gmail.com

Project Information

For: Adams Homes Preserve lot 86-2169, Adams Homes
Lake City, FL 32024

Design Conditions

Location:

Gainesville Regional, FL, US

Elevation: 123 ft

Latitude: 30°N

Outdoor:

Dry bulb (°F)

Daily range (°F)

Wet bulb (°F)

Wind speed (mph)

Heating

33

-

-

15.0

Cooling

92

18 (M)

76

7.5

Indoor:

Indoor temperature (°F)

Design TD (°F)

Relative humidity (%)

Moisture difference (gr/lb)

Infiltration:

Method

Construction quality

Fireplaces

Heating

68

35

30

8.2

Simplified

Average

0

Cooling

75

17

50

43.8

Construction descriptions

Walls

12C-0bw: Frm wall, brk 4" ext, 3/8" wood shth, r-13 cav ins, 1/2"

gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud

Or	Area ft²	U-value Btuh/ft²-°F	Insul R ft²-°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
e	112	0.091	13.0	3.17	355	1.38	155
s	89	0.091	13.0	3.17	282	1.38	123
w	72	0.091	13.0	3.17	228	1.38	100
all	273	0.091	13.0	3.17	865	1.38	378

Partitions

(none)

Windows

4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr s

innr, 1/4" gap, 1/8" thk; NFRC rated (SHGC=0.31); 50% blinds 45°, light;

50% outdoor insect screen; 2 ft overhang (5 ft window ht, 2 ft sep.);

6.67 ft head ht

15 0.470 0 16.4 245 11.4 171

Doors

(none)

Ceilings

16B-38ad: Attic ceiling, asphalt shingles roof mat, r-38 ceil ins, 1/2"

gypsum board int fnsh

182 0.026 38.0 0.90 165 1.38 252

Floors

22A-vpl: Bg floor, light dry soil, on grade depth, vinyl flr fnsh

36 0.989 0 34.4 1239 0 0



PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: williamscoolingllc@gmail.com

Project Information

For: Adams Homes Preserve lot 86-2169, Adams Homes
Lake City, FL 32024

Design Conditions

Location:		Indoor:		Heating	Cooling
Gainesville Regional, FL, US		Indoor temperature (°F)		68	75
Elevation: 123 ft		Design TD (°F)		35	17
Latitude: 30°N		Relative humidity (%)		30	50
		Moisture difference (gr/lb)		8.2	43.8
Outdoor:	Heating	Cooling			
Dry bulb (°F)	33	92			
Daily range (°F)	-	18 (M)			
Wet bulb (°F)	-	76			
Wind speed (mph)	15.0	7.5			
		Infiltration:			
		Method	Simplified		
		Construction quality	Average		
		Fireplaces	0		

Construction descriptions	Or	Area ft²	U-value Btuh/ft²-°F	Insul R ft²-°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
Walls								
12C-0bw: Frm wall, brk 4" ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud	e	32	0.091	13.0	3.17	101	1.38	44
Partitions (none)								
Windows (none)								
Doors (none)								
Ceilings								
16B-38ad: Attic ceiling, asphalt shingles roof mat, r-38 ceil ins, 1/2" gypsum board int fnsh		20	0.026	38.0	0.90	18	1.38	28
Floors								
22A-vpl: Bg floor, light dry soil, on grade depth, vinyl flr fnsh		4	0.989	0	34.4	138	0	0





Component Constructions

ah

DL Williams Heating & Cooling L.L.C.

Job:

Date: 10/10/24

By: DL Williams Heating & C...

Plan: 2169

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: williamscoolingllc@gmail.com

Project Information

For: Adams Homes Preserve lot 86-2169, Adams Homes
Lake City, FL 32024

Design Conditions

Location:

Gainesville Regional, FL, US

Elevation: 123 ft

Latitude: 30°N

Outdoor:

Dry bulb (°F) 33

Daily range (°F) -

Wet bulb (°F) -

Wind speed (mph) 15.0

Heating

Cooling

(M)

Indoor:

Indoor temperature (°F) 68

Design TD (°F) 35

Relative humidity (%) 30

Moisture difference (gr/lb) 8.2

Heating

Cooling

75

17

50

43.8

Infiltration:

Method Simplified

Construction quality Average

Fireplaces 0

Construction descriptions

Or	Area ft²	U-value Btuh/ft²-°F	Insul R ft²-°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
----	-------------	------------------------	------------------------	---------------------	--------------	---------------------	--------------

Walls

(none)

Partitions

(none)

Windows

(none)

Doors

(none)

Ceilings

16B-38ad: Attic ceiling, asphalt shingles roof mat, r-38 ceil ins, 1/2"
gypsum board int fnsh

16

0.026

38.0

0.90

14

1.38

22

Floors

(none)



Component Constructions

bath

DL Williams Heating & Cooling L.L.C.

Job:

Date: 10/10/24

By: DL Williams Heating & C...

Plan: 2169

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: williamscoolingllc@gmail.com

Project Information

For: Adams Homes Preserve lot 86-2169, Adams Homes
Lake City, FL 32024

Design Conditions

Location:

Gainesville Regional, FL, US

Elevation: 123 ft

Latitude: 30°N

Outdoor:

Dry bulb (°F) 33

Daily range (°F) -

Wet bulb (°F) -

Wind speed (mph) 15.0

Heating

Cooling

(M)

Indoor:

Indoor temperature (°F)

Design TD (°F)

Relative humidity (%)

Moisture difference (gr/lb)

Infiltration:

Method

Construction quality

Fireplaces

Heating

68

35

30

8.2

Simplified

Average

0

Cooling

75

17

50

43.8

Construction descriptions

Or	Area ft²	U-value Btuh/ft²-°F	Insul R ft²-°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
----	-------------	------------------------	------------------------	---------------------	--------------	---------------------	--------------

Walls

12C-0bw: Frm wall, brk 4" ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud

e	58	0.091	13.0	3.17	184	1.38	80
---	----	-------	------	------	-----	------	----

Partitions

(none)

Windows

4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/8" thk; NFRC rated (SHGC=0.31); 50% blinds 45°, light; 50% outdoor insect screen; 2 ft overhang (3 ft window ht, 2 ft sep.); 6.67 ft head ht

e	6	0.470	0	16.4	98	29.2	175
---	---	-------	---	------	----	------	-----

Doors

(none)

Ceilings

16B-38ad: Attic ceiling, asphalt shingles roof mat, r-38 ceil ins, 1/2" gypsum board int fnsh

	72	0.026	38.0	0.90	65	1.38	100
--	----	-------	------	------	----	------	-----

Floors

22A-vpl: Bg floor, light dry soil, on grade depth, vinyl flr fnsh

	8	0.989	0	34.4	275	0	0
--	---	-------	---	------	-----	---	---



Component Constructions

br3

DL Williams Heating & Cooling L.L.C.

Job:

Date: 10/10/24

By: DL Williams Heating & C...

Plan: 2169

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: williamscoolingllc@gmail.com

Project Information

For: Adams Homes Preserve lot 86-2169, Adams Homes
Lake City, FL 32024

Design Conditions

Location:

Gainesville Regional, FL, US

Elevation: 123 ft

Latitude: 30°N

Outdoor:

Dry bulb (°F)

Daily range (°F)

Wet bulb (°F)

Wind speed (mph)

Heating

33

-

-

15.0

Cooling

92

18 (M)

76

7.5

Indoor:

Indoor temperature (°F)

Design TD (°F)

Relative humidity (%)

Moisture difference (gr/lb)

Infiltration:

Method

Construction quality

Fireplaces

Heating

68

35

30

8.2

Simplified

Average

0

Cooling

75

17

50

43.8

Construction descriptions

Or	Area ft²	U-value Btuh/ft²-°F	Insul R ft²-°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
----	-------------	------------------------	------------------------	---------------------	--------------	---------------------	--------------

Walls

12C-0bw: Frm wall, brk 4" ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud

e

97

0.091

13.0

3.17

307

1.38

134

Partitions

(none)

Windows

4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/8" thk; NFRC rated (SHGC=0.31); 50% blinds 45°, light; 50% outdoor insect screen; 2 ft overhang (5 ft window ht, 2 ft sep.); 6.67 ft head ht

e

15

0.470

0

16.4

245

29.2

438

Doors

(none)

Ceilings

16B-38ad: Attic ceiling, asphalt shingles roof mat, r-38 ceil ins, 1/2" gypsum board int fnsh

164

0.026

38.0

0.90

148

1.38

227

Floors

22A-vpl: Bg floor, light dry soil, on grade depth, vinyl flr fnsh

14

0.989

0

34.4

482

0

0



Component Constructions

br4

DL Williams Heating & Cooling L.L.C.

Job:

Date: 10/10/24

By: DL Williams Heating & C...

Plan: 2169

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: williamscoolingllc@gmail.com

Project Information

For: Adams Homes Preserve lot 86-2169, Adams Homes
Lake City, FL 32024

Design Conditions

Location:

Gainesville Regional, FL, US

Elevation: 123 ft

Latitude: 30°N

Outdoor:

Dry bulb (°F)

Daily range (°F)

Wet bulb (°F)

Wind speed (mph)

Heating

33

-

-

15.0

Cooling

92

18 (M)

76

7.5

Indoor:

Indoor temperature (°F)

Design TD (°F)

Relative humidity (%)

Moisture difference (gr/lb)

Infiltration:

Method

Construction quality

Fireplaces

Heating

68

35

30

8.2

Simplified

Average

0

Cooling

75

17

50

43.8

Construction descriptions

Walls

12C-0bw: Frm wall, brk 4" ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud

Or	Area ft²	U-value Btuh/ft²-°F	Insul R ft²-°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
n	74	0.091	13.0	3.17	234	1.38	102
e	73	0.091	13.0	3.17	231	1.38	101
w	64	0.091	13.0	3.17	203	1.38	89
all	211	0.091	13.0	3.17	668	1.38	292

Partitions

(none)

Windows

4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/8" thk; NFRC rated (SHGC=0.31); 50% blinds 45°, light; 50% outdoor insect screen; 2 ft overhang (5 ft window ht, 2 ft sep.); 6.67 ft head ht

n	30	0.470	0	16.4	491	11.4	342
e	15	0.470	0	16.4	245	29.2	438
all	45	0.470	0	16.4	736	17.3	780

Doors

(none)

Ceilings

16B-38ad: Attic ceiling, asphalt shingles roof mat, r-38 ceil ins, 1/2" gypsum board int fnsh

161	0.026	38.0	0.90	146	1.38	223
-----	-------	------	------	-----	------	-----

Floors

22A-vpl: Bg floor, light dry soil, on grade depth, vinyl flr fnsh

32	0.989	0	34.4	1101	0	0
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Right-Suite® Universal 2024 24.0.03 RSU02245

...VAC\Trane\Adams Preserve lot 86-2169 Manual.rup Calc = MJ8 Front Door faces: S

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Component Constructions
living
DL Williams Heating & Cooling L.L.C.

Job:
Date: 10/10/24
By: DL Williams Heating & C...
Plan: 2169

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: williamscoolingllc@gmail.com

Project Information

For: Adams Homes Preserve lot 86-2169, Adams Homes
Lake City, FL 32024

Design Conditions

Location:		Indoor:		Heating	Cooling
Gainesville Regional, FL, US		Indoor temperature (°F)		68	75
Elevation: 123 ft		Design TD (°F)		35	17
Latitude: 30°N		Relative humidity (%)		30	50
		Moisture difference (gr/lb)		8.2	43.8
Outdoor:	Heating	Cooling	Infiltration:		
Dry bulb (°F)	33	92	Method		
Daily range (°F)	-	18 (M)	Construction quality		
Wet bulb (°F)	-	76	Fireplaces		
Wind speed (mph)	15.0	7.5	Simplified Average 0		

Construction descriptions

	Or	Area ft²	U-value Btuh/ft²-°F	Insul R ft²-°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
Walls								
12C-0bw: Frm wall, brk 4" ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud	e	24	0.091	13.0	3.17	75	1.38	33
	s	50	0.091	13.0	3.17	158	1.38	69
	all	74	0.091	13.0	3.17	234	1.38	102
Partitions (none)								
Windows								
4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/8" thk; NFRC rated (SHGC=0.31); 50% blinds 45°, light; 50% outdoor insect screen; 2 ft overhang (5 ft window ht, 2 ft sep.); 6.67 ft head ht	s	30	0.470	0	16.4	491	11.4	342
Doors (none)								
Ceilings								
16B-38ad: Attic ceiling, asphalt shingles roof mat, r-38 ceil ins, 1/2" gypsum board int fnsh		2	0.026	38.0	0.90	2	1.38	3
17B-6al: Rf/clg ceiling, asphalt shingles roof mat, wd cons, r-6 deck ins, 1" thkns		121	0.105	6.0	3.65	444	4.64	564
Floors								
22A-vpl: Bg floor, light dry soil, on grade depth, vinyl flr fnsh		10	0.989	0	34.4	344	0	0



Right-Suite® Universal 2024 24.0.03 RSU02245

...VAC\Trane\Adams Preserve lot 86-2169 Manual.rup Calc = MJ8 Front Door faces: S

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Component Constructions
dining
DL Williams Heating & Cooling L.L.C.

Job:
Date: 10/10/24
By: DL Williams Heating & C...
Plan: 2169

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: williamscoolingllc@gmail.com

Project Information

For: Adams Homes Preserve lot 86-2169, Adams Homes
Lake City, FL 32024

Design Conditions

Location:		Indoor:		Heating	Cooling
Gainesville Regional, FL, US		Indoor temperature (°F)		68	75
Elevation: 123 ft		Design TD (°F)		35	17
Latitude: 30°N		Relative humidity (%)		30	50
		Moisture difference (gr/lb)		8.2	43.8
Outdoor:	Heating	Cooling	Infiltration:		
Drybulb (°F)	33	92	Method		
Daily range (°F)	-	18 (M)	Construction quality		
Wet bulb (°F)	-	76	Fireplaces		
Wind speed (mph)	15.0	7.5	Simplified		
			Average		
			0		

Construction descriptions

	Or	Area ft²	U-value Btuh/ft²-°F	Insul R ft²-°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
Walls								
12C-0bw: Frm wall, brk 4" ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud	s	50	0.091	13.0	3.17	158	1.38	69
Partitions (none)								
Windows								
4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/8" thk; NFRC rated (SHGC=0.31); 50% blinds 45°, light; 50% outdoor insect screen; 2 ft overhang (5 ft window ht, 2 ft sep.); 6.67 ft head ht	s	30	0.470	0	16.4	491	11.4	342
Doors (none)								
Ceilings								
16B-38ad: Attic ceiling, asphalt shingles roof mat, r-38 ceil ins, 1/2" gypsum board int fnsh		1	0.026	38.0	0.90	1	1.38	1
17B-6al: Rf/clg ceiling, asphalt shingles roof mat, wd cons, r-6 deck ins, 1" thkns		122	0.105	6.0	3.65	447	4.64	568
Floors								
22A-vpl: Bg floor, light dry soil, on grade depth, vinyl flr fnsh		10	0.989	0	34.4	344	0	0



Component Constructions

DL Williams Heating & Cooling L.L.C.

Job:
Date: 10/10/24
By: DL Williams Heating & C...
Plan: 2169

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: williamscoolingllc@gmail.com

Project Information

For: Adams Homes Preserve lot 86-2169, Adams Homes
Lake City, FL 32024

Design Conditions

Location:			Indoor:		Heating	Cooling
Gainesville Regional, FL, US			Indoor temperature (°F)		68	75
Elevation: 123 ft			Design TD (°F)		35	17
Latitude: 30°N			Relative humidity (%)		30	50
Outdoor:			Moisture difference (gr/lb)		8.2	43.8
			Infiltration:			
			Method		Simplified	
			Construction quality		Average	
			Fireplaces		0	
					Heating	Cooling
Dry bulb (°F)					33	92
Daily range (°F)					-	18 (M)
Wet bulb (°F)					-	76
Wind speed (mph)					15.0	7.5

Construction descriptions

	Or	Area ft²	U-value Btuh/ft²-°F	Insul R ft²-°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
Walls (none)								
Partitions (none)								
Windows (none)								
Doors (none)								
Ceilings 16B-38ad: Attic ceiling, asphalt shingles roof mat, r-38 ceil ins, 1/2" gypsum board int fnsh								
		48	0.026	38.0	0.90	43	1.38	66
Floors (none)								



Component Constructions
family
DL Williams Heating & Cooling L.L.C.

Job:
Date: 10/10/24
By: DL Williams Heating & C...
Plan: 2169

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: williamscoolingllc@gmail.com

Project Information

For: Adams Homes Preserve lot 86-2169, Adams Homes
Lake City, FL 32024

Design Conditions

Location:		Indoor:		Heating	Cooling
Gainesville Regional, FL, US		Indoor temperature (°F)		68	75
Elevation: 123 ft		Design TD (°F)		35	17
Latitude: 30°N		Relative humidity (%)		30	50
		Moisture difference (gr/lb)		8.2	43.8
Outdoor:	Heating	Cooling	Infiltration:		
Dry bulb (°F)	33	92	Method		
Daily range (°F)	-	18 (M)	Construction quality		
Wet bulb (°F)	-	76	Fireplaces		
Wind speed (mph)	15.0	7.5	Simplified Average 0		

Construction descriptions

	Or	Area ft²	U-value Btuh/ft²-°F	Insul R ft²-°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
Walls								
12C-0bw: Frm wall, brk 4" ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud	n	78	0.091	13.0	3.17	247	1.38	108
	e	44	0.091	13.0	3.17	139	1.38	61
	s	13	0.091	13.0	3.17	41	1.38	18
	all	135	0.091	13.0	3.17	427	1.38	187

Partitions (none)

Windows

10D-v: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/8" thk; NFRC rated (SHGC=0.31); 8 ft overhang (7 ft window ht, 2 ft sep.); 6.67 ft head ht	n	21	0.470	0	16.4	343	10.2	214
	s	7	0.470	0	16.4	114	14.5	102
	s	7	0.470	0	16.4	114	14.5	102
	all	35	0.470	0	16.4	572	11.9	417
4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/8" thk; NFRC rated (SHGC=0.31); 50% blinds 45°, light; 50% outdoor insect screen; 8 ft overhang (5 ft window ht, 2 ft sep.); 6.67 ft head ht	n	45	0.470	0	16.4	736	11.4	513
10D-v: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/8" thk; NFRC rated (SHGC=0.31); 50% blinds 45°, light; 50% outdoor insect screen; 2 ft overhang (7 ft window ht, 2 ft sep.); 6.67 ft head ht	s	21	0.470	0	16.4	343	7.99	168

Doors (none)

Ceilings

16B-38ad: Attic ceiling, asphalt shingles roof mat, r-38 ceil ins, 1/2" gypsum board int fnsh		4	0.026	38.0	0.90	3	1.38	5
17B-6al: Rf/clg ceiling, asphalt shingles roof mat, wd cons, r-6 deck ins, 1" thkns		477	0.105	6.0	3.65	1743	4.64	2214

Floors

22A-vpl: Bg floor, light dry soil, on grade depth, vinyl flr fnsh		24	0.989	0	34.4	826	0	0
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Right-Suite® Universal 2024 24.0.03 RSU02245

...VAC\Trane\Adams Preserve lot 86-2169 Manual.rup Calc = MJ8 Front Door faces: S

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Component Constructions
kitchen
DL Williams Heating & Cooling L.L.C.

Job:
Date: 10/10/24
By: DL Williams Heating & C...
Plan: 2169

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: williamscoolingllc@gmail.com

Project Information

For: Adams Homes Preserve lot 86-2169, Adams Homes
Lake City, FL 32024

Design Conditions

Location:		Indoor:		Heating	Cooling
Gainesville Regional, FL, US		Indoor temperature (°F)		68	75
Elevation: 123 ft		Design TD (°F)		35	17
Latitude: 30°N		Relative humidity (%)		30	50
Outdoor:		Moisture difference (gr/lb)		8.2	43.8
		Heating	Cooling		
Dry bulb (°F)		33	92		
Daily range (°F)		-	18 (M)		
Wet bulb (°F)		-	76		
Wind speed (mph)		15.0	7.5		
		Infiltration:			
		Method		Simplified	
		Construction quality		Average	
		Fireplaces		0	

Construction descriptions

	Or	Area ft²	U-value Btuh/ft²-°F	Insul R ft²-°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
Walls								
12C-0bw: Frm wall, brk 4" ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud	w	32	0.091	13.0	3.17	101	1.38	44
Partitions (none)								
Windows (none)								
Doors (none)								
Ceilings								
16B-38ad: Attic ceiling, asphalt shingles roof mat, r-38 ceil ins, 1/2" gypsum board int fnsh		87	0.026	38.0	0.90	78	1.38	120
17B-6al: Rf/clg ceiling, asphalt shingles roof mat, wd cons, r-6 deck ins, 1" thkns		133	0.105	6.0	3.65	486	4.64	617
Floors (none)								





PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: williamscoolingllc@gmail.com

Project Information

For:

Adams Homes Preserve lot 86-2169, Adams Homes
Lake City, FL 32024

Design Conditions

Location:		Indoor:		Heating	Cooling
Gainesville Regional, FL, US		Indoor temperature (°F)		68	75
Elevation: 123 ft		Design TD (°F)		35	17
Latitude: 30°N		Relative humidity (%)		30	50
		Moisture difference (gr/lb)		8.2	43.8
Outdoor:	Heating	Cooling	Infiltration:		
Dry bulb (°F)	33	92	Method		Simplified
Daily range (°F)	-	18 (M)	Construction quality		Average
Wet bulb (°F)	-	76	Fireplaces		0
Wind speed (mph)	15.0	7.5			

Construction descriptions

Or

Area

U-value

Insul R

Htg HTM

Loss

Clg HTM

Gain

ft²

Btuh/ft²-°F

ft²-°F/Btuh

Btuh/ft²

Btuh

Btuh/ft²

Btuh

Walls (none)								
Partitions (none)								
Windows (none)								
Doors (none)								
Ceilings 16B-38ad: Attic ceiling, asphalt shingles roof mat, r-38 ceil ins, 1/2" gypsum board int fnsh	72	0.026	38.0	0.90	65	1.38	100	
Floors (none)								





PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: williamscoolingllc@gmail.com

Project Information

For: Adams Homes Preserve lot 86-2169, Adams Homes
Lake City, FL 32024

Design Conditions

Location:		Indoor:		Heating	Cooling
Gainesville Regional, FL, US		Indoor temperature (°F)		68	75
Elevation: 123 ft		Design TD (°F)		35	17
Latitude: 30°N		Relative humidity (%)		30	50
		Moisture difference (gr/lb)		8.2	43.8
Outdoor:	Heating	Cooling			
Dry bulb (°F)	33	92			
Daily range (°F)	-	18 (M)			
Wet bulb (°F)	-	76			
Wind speed (mph)	15.0	7.5			
		Infiltration:			
		Method	Simplified		
		Construction quality	Average		
		Fireplaces	0		

Construction descriptions	Or	Area ft²	U-value Btuh/ft²-°F	Insul R ft²-°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
Walls								
12C-0bw: Frm wall, brk 4" ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud	w	40	0.091	13.0	3.17	127	1.38	55
Partitions (none)								
Windows (none)								
Doors (none)								
Ceilings								
16B-38ad: Attic ceiling, asphalt shingles roof mat, r-38 ceil ins, 1/2" gypsum board int fnsh		30	0.026	38.0	0.90	27	1.38	41
Floors								
22A-vpl: Bg floor, light dry soil, on grade depth, vinyl flr fnsh		5	0.989	0	34.4	172	0	0





PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: williamscoolingllc@gmail.com

Project Information

For: Adams Homes Preserve lot 86-2169, Adams Homes
Lake City, FL 32024

Design Conditions

Location:		Indoor:		Heating	Cooling
Gainesville Regional, FL, US		Indoor temperature (°F)		68	75
Elevation: 123 ft		Design TD (°F)		35	17
Latitude: 30°N		Relative humidity (%)		30	50
		Moisture difference (gr/lb)		8.2	43.8
Outdoor:	Heating	Cooling	Infiltration:		
Dry bulb (°F)	33	92	Method		Simplified
Daily range (°F)	-	18 (M)	Construction quality		Average
Wet bulb (°F)	-	76	Fireplaces		0
Wind speed (mph)	15.0	7.5			

Construction descriptions

Or	Area	U-value	Insul R	Htg HTM	Loss	Clg HTM	Gain
	ft²	Btuh/ft²-°F	ft²-°F/Btuh	Btuh/ft²	Btuh	Btuh/ft²	Btuh

Walls (none)							
Partitions (none)							
Windows (none)							
Doors (none)							
Ceilings 16B-38ad: Attic ceiling, asphalt shingles roof mat, r-38 ceil ins, 1/2" gypsum board int fnsh	15	0.026	38.0	0.90	14	1.38	21
Floors (none)							





PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: williamscoolingllc@gmail.com

Project Information

For: Adams Homes Preserve lot 86-2169, Adams Homes
Lake City, FL 32024

Design Conditions

Location:		Indoor:		Heating	Cooling
Gainesville Regional, FL, US		Indoor temperature (°F)		68	75
Elevation: 123 ft		Design TD (°F)		35	17
Latitude: 30°N		Relative humidity (%)		30	50
		Moisture difference (gr/lb)		8.2	43.8
Outdoor:	Heating	Cooling			
Dry bulb (°F)	33	92			
Daily range (°F)	-	18 (M)			
Wet bulb (°F)	-	76			
Wind speed (mph)	15.0	7.5			
		Infiltration:			
		Method	Simplified		
		Construction quality	Average		
		Fireplaces	0		

Construction descriptions	Or	Area ft²	U-value Btuh/ft²-°F	Insul R ft²-°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
Walls								
12C-0bw: Frm wall, brk 4" ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud	w	48	0.091	13.0	3.17	152	1.38	66
Partitions (none)								
Windows (none)								
Doors (none)								
Ceilings								
16B-38ad: Attic ceiling, asphalt shingles roof mat, r-38 ceil ins, 1/2" gypsum board int fnsh		101	0.026	38.0	0.90	91	1.38	140
Floors								
22A-vpl: Bg floor, light dry soil, on grade depth, vinyl flr fnsh		6	0.989	0	34.4	207	0	0





PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: williamscoolingllc@gmail.com

Project Information

For:

Adams Homes Preserve lot 86-2169, Adams Homes
Lake City, FL 32024

Design Conditions

Location:		Indoor:		Heating	Cooling
Gainesville Regional, FL, US		Indoor temperature (°F)		68	75
Elevation: 123 ft		Design TD (°F)		35	17
Latitude: 30°N		Relative humidity (%)		30	50
		Moisture difference (gr/lb)		8.2	43.8
Outdoor:	Heating	Cooling			
Dry bulb (°F)	33	92			
Daily range (°F)	-	18 (M)			
Wet bulb (°F)	-	76			
Wind speed (mph)	15.0	7.5			
		Infiltration:			
		Method	Simplified		
		Construction quality	Average		
		Fireplaces	0		

Construction descriptions	Or	Area ft²	U-value Btuh/ft²-°F	Insul R ft²-°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
Walls								
12C-0bw: Frm wall, brk 4" ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud	w	40	0.091	13.0	3.17	127	1.38	55
Partitions (none)								
Windows (none)								
Doors (none)								
Ceilings								
16B-38ad: Attic ceiling, asphalt shingles roof mat, r-38 ceil ins, 1/2" gypsum board int fnsh		30	0.026	38.0	0.90	27	1.38	41
Floors								
22A-vpl: Bg floor, light dry soil, on grade depth, vinyl flr fnsh		5	0.989	0	34.4	172	0	0





Component Constructions
master bed
DL Williams Heating & Cooling L.L.C.

Job:
Date: 10/10/24
By: DL Williams Heating & C...
Plan: 2169

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: williamscoolingllc@gmail.com

Project Information

For: Adams Homes Preserve lot 86-2169, Adams Homes
Lake City, FL 32024

Design Conditions

Location:		Indoor:		Heating	Cooling
Gainesville Regional, FL, US		Indoor temperature (°F)		68	75
Elevation: 123 ft		Design TD (°F)		35	17
Latitude: 30°N		Relative humidity (%)		30	50
		Moisture difference (gr/lb)		8.2	43.8
Outdoor:	Heating	Cooling	Infiltration:		
Dry bulb (°F)	33	92	Method		
Daily range (°F)	-	18 (M)	Construction quality		
Wet bulb (°F)	-	76	Simplified		
Wind speed (mph)	15.0	7.5	Average		
				0	

Construction descriptions

	Or	Area ft²	U-value Btuh/ft²-°F	Insul R ft²-°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
Walls								
12C-0bw: Frm wall, brk 4" ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud	n	130	0.091	13.0	3.17	412	1.38	180
	e	64	0.091	13.0	3.17	203	1.38	89
	w	112	0.091	13.0	3.17	355	1.38	155
	all	306	0.091	13.0	3.17	969	1.38	423
Partitions (none)								
Windows								
4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr innr, 1/4" gap, 1/8" thk; NFRC rated (SHGC=0.31); 50% blinds 45°, light; 50% outdoor insect screen; 2 ft overhang (5 ft window ht, 2 ft sep.); 6.67 ft head ht	n	30	0.470	0	16.4	491	11.4	342
Doors (none)								
Ceilings								
16B-38ad: Attic ceiling, asphalt shingles roof mat, r-38 ceil ins, 1/2" gypsum board int fnsh		280	0.026	38.0	0.90	253	1.38	387
Floors								
22A-vpl: Bg floor, light dry soil, on grade depth, vinyl flr fnsh		42	0.989	0	34.4	1446	0	0



Component Constructions

bkfst

DL Williams Heating & Cooling L.L.C.

Job:

Date: 10/10/24

By: DL Williams Heating & C...

Plan: 2169

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: williamscoolingllc@gmail.com

Project Information

For: Adams Homes Preserve lot 86-2169, Adams Homes
Lake City, FL 32024

Design Conditions

Location:

Gainesville Regional, FL, US

Elevation: 123 ft

Latitude: 30°N

Outdoor:

Dry bulb (°F)

Daily range (°F)

Wet bulb (°F)

Wind speed (mph)

Heating

33

-

-

15.0

Cooling

92

18 (M)

76

7.5

Indoor:

Indoor temperature (°F)

Design TD (°F)

Relative humidity (%)

Moisture difference (gr/lb)

Infiltration:

Method

Construction quality

Fireplaces

Heating

68

35

30

8.2

Simplified

Average

0

Cooling

75

17

50

43.8

Construction descriptions

Or	Area ft²	U-value Btuh/ft²-°F	Insul R ft²-°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
n	42	0.091	13.0	3.17	133	1.38	58
w	12	0.091	13.0	3.17	37	1.38	16
all	54	0.091	13.0	3.17	170	1.38	74

Walls

12C-0bw: Frm wall, brk 4" ext, 3/8" wood shth, r-13 cav ins, 1/2"

gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud

Partitions

(none)

Windows

4A5-2ov: 2 glazing, clr low-e outr, air gas, insulated vinyl frm mat, clr n
innr, 1/4" gap, 1/8" thk; NFRC rated (SHGC=0.31); 50% blinds 45°, light;

50% outdoor insect screen; 8 ft overhang (5 ft window ht, 2 ft sep.);

6.67 ft head ht

Doors

(none)

Ceilings

16B-38ad: Attic ceiling, asphalt shingles roof mat, r-38 ceil ins, 1/2"

gypsum board int fnsh

17B-6al: Rf/clg ceiling, asphalt shingles roof mat, wd cons, r-6 deck ins,

1" thkns

Floors

22A-vpl: Bg floor, light dry soil, on grade depth, vinyl flr fnsh



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...VAC\Trane\Adams Preserve lot 86-2169 Manual.rup Calc = MJ8 Front Door faces: S

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Project Summary

Entire House

DL Williams Heating & Cooling L.L.C.

Job:
Date: 10/10/24
By: DL Williams Heating & C...
Plan: 2169

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: williamscoolingllc@gmail.com

Project Information

For: Adams Homes Preserve lot 86-2169, Adams Homes
Lake City, FL 32024

Notes:

Design Information

Weather: Gainesville Regional, FL, US

Winter Design Conditions

Outside db 33 °F
Inside db 68 °F
Design TD 35 °F

Ventilation Method MJ8

Heating Summary

Structure 24936 Btuh
Ducts (R-6.0) 7366 Btuh
Central vent (0 cfm) 0 Btuh

Humidification 0 Btuh
Piping 0 Btuh
Equipment load 32302 Btuh

Infiltration

Method Simplified
Construction quality Average
Fireplaces 0

	Heating	Cooling
Area (ft ²)	2169	2169
Volume (ft ³)	19109	19109
Air changes/hour	0.32	0.16
Equiv. AVF (cfm)	102	51

Heating Equipment Summary

Make Trane
Trade TRANE
Model 4TWR6036H1
AHRI ref 7562981

Efficiency 7.8 HSPF2
Heating input
Heating output 33000 Btuh @ 47°F
Temperature rise 25 °F
Actual air flow 1200 cfm
Air flow factor 0.037 cfm/Btuh
Static pressure 0.50 in H2O
Space thermostat
Capacity balance point = 33 °F

Backup:
Input = 9 kW, Output = 31600 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 44 gr/lb

Sensible Cooling Equipment Load Sizing

Structure 16491 Btuh
Ducts (R-6.0) 9166 Btuh
Central vent (0 cfm) 0 Btuh

Blower 0 Btuh

Use manufacturer's data n
Rate/swing multiplier 0.97
Equipment sensible load 24939 Btuh

Latent Cooling Equipment Load Sizing

Structure 2311 Btuh
Ducts 1839 Btuh
Central vent (0 cfm) 0 Btuh

Equipment latent load 4150 Btuh

Equipment Total Load (Sen+Lat) 29089 Btuh
Req. total capacity at 0.70 SHR 3.0 ton

Cooling Equipment Summary

Make Trane
Trade TRANE
Cond 4TWR6036H1
Coil TEM6A0C36H31++TDR
AHRI ref 7562981
Efficiency 13.0 EER2, 15.4 SEER2
Sensible cooling 24360 Btuh
Latent cooling 10440 Btuh
Total cooling 34800 Btuh
Actual air flow 1050 cfm
Air flow factor 0.041 cfm/Btuh
Static pressure 0.50 in H2O
Load sensible heat ratio 0.86

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



Right-Suite® Universal 2024 24.0.03 RSU02245

...VAC\Trane\Adams Preserve lot 86-2169 Manual.rup Calc = MJ8 Front Door faces: S

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AED Assessment
Entire House
DL Williams Heating & Cooling L.L.C.

Job:
Date: 10/10/24
By: DL Williams Heating & C...
Plan: 2169

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: williamscoolingllc@gmail.com

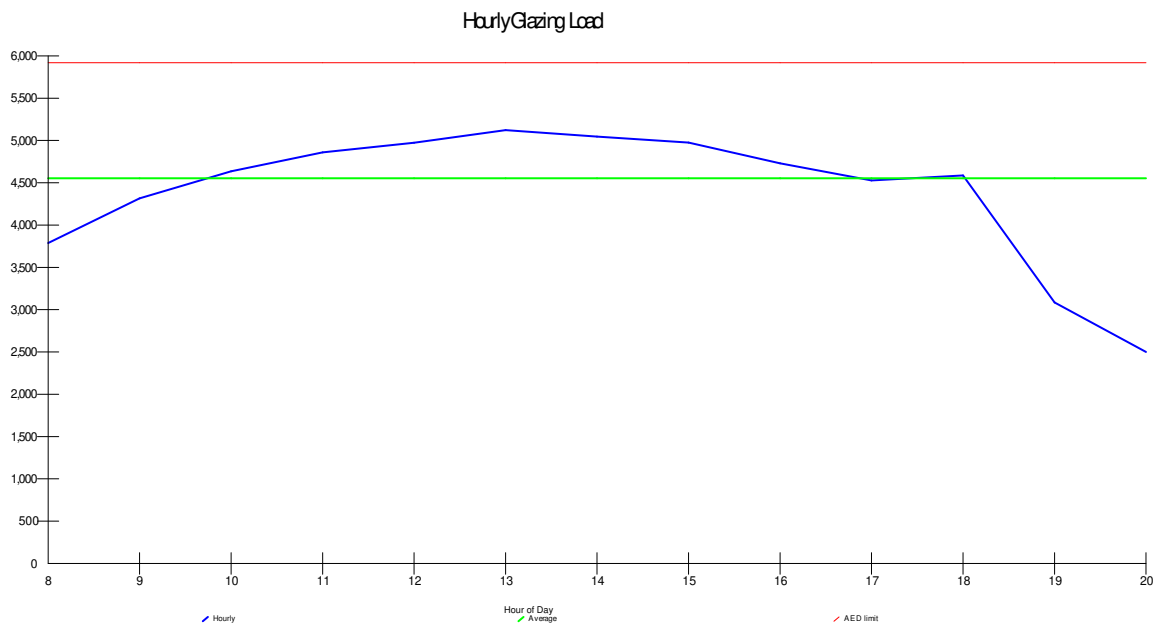
Project Information

For: Adams Homes Preserve lot 86-2169, Adams Homes
Lake City, FL 32024

Design Conditions

Location:		Indoor:		Heating	Cooling
Gainesville Regional, FL, US		Indoor temperature (°F)		68	75
Elevation: 123 ft		Design TD (°F)		35	17
Latitude: 30°N		Relative humidity (%)		30	50
Outdoor:		Heating	Cooling	Moisture difference (gr/lb)	43.8
Dry bulb (°F)		33	92	Infiltration:	
Daily range (°F)		-	18 (M)		
Wet bulb (°F)		-	76		
Wind speed (mph)		15.0	7.5		

Test for Adequate Exposure Diversity



Maximum hourly glazing load exceeds average by 12.5%.

House has adequate exposure diversity (AED), based on AED limit of 30%.

AED excursion: 0 Btuh



Right-J® Worksheet
Entire House
DL Williams Heating & Cooling L.L.C.

Job:
Date: 10/10/24
By: DL Williams Heating & Cooling
Plan: 2169

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: williamscoolingllc@gmail.com

1	Room name					Entire House					br2				
2	Exposed wall					205.0 ft					36.0 ft				
3	Room height					8.8 ft					8.0 ft				
4	Room dimensions					2169.0 ft²					13.0 x 14.0 ft				
5	Room area					2169.0 ft²					182.0 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	12C-0bw	0.091	n	3.17	1.38	480	324	1026	448	0	0	0	0	
.	G	10D-v	0.470	n	16.36	10.17	21	0	343	214	0	0	0	0	
.	G	4A5-2ov	0.470	n	16.36	11.41	60	0	981	685	0	0	0	0	
.	G	4A5-2ov	0.470	n	16.36	11.41	75	0	1227	856	0	0	0	0	
11	W	12C-0bw	0.091	e	3.17	1.38	540	504	1595	697	112	112	355	155	
.	G	4A5-2ov	0.470	e	16.36	29.17	6	0	98	175	0	0	0	0	
.	G	4A5-2ov	0.470	e	16.36	29.17	30	0	491	875	0	0	0	0	
.	W	12C-0bw	0.091	s	3.17	1.38	312	202	640	279	104	89	282	123	
.	G	10D-v	0.470	s	16.36	7.99	21	42	343	168	0	0	0	0	
.	G	4A5-2ov	0.470	s	16.36	14.54	7	14	114	102	0	0	0	0	
.	G	4A5-2ov	0.470	s	16.36	11.41	75	150	1227	856	15	15	245	171	
.	G	4B5-2fv	0.470	s	16.36	14.54	7	14	114	102	0	0	0	0	
.	W	12C-0bw	0.091	w	3.17	1.38	420	420	1330	581	72	72	228	100	
.	C	16B-38ad	0.026	-	0.90	1.38	1290	1290	1167	1785	182	182	165	252	
.	C	17B-6al	0.105	-	3.65	4.64	903	903	3299	4190	0	0	0	0	
.	F	22A-vpl	0.989	-	34.42	0.00	2169	205	7056	0	182	36	1239	0	
													</		

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



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...VAC\Trane\Adams Preserve lot 86-2169 Manual.rup Calc = MJ8 Front Door faces: S



Right-J® Worksheet
Entire House
DL Williams Heating & Cooling L.L.C.

Job:
Date: 10/10/24
By: DL Williams Heating & Cooling
Plan: 2169

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: williamscoolingllc@gmail.com

1	Room name					wic3					ah				
2	Exposed wall					4.0 ft					0 ft				
3	Room height					8.0 ft					8.0 ft				
4	Room dimensions					5.0 x 4.0 ft					4.0 x 4.0 ft				
5	Room area					20.0 ft²					16.0 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	12C-0bw	0.091	n	3.17	1.38	0	0	0	0	0	0	0	0	
.	G	10D-v	0.470	n	16.36	10.17	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.470	n	16.36	11.41	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.470	n	16.36	11.41	0	0	0	0	0	0	0	0	
11	W	12C-0bw	0.091	e	3.17	1.38	32	32	101	44	0	0	0	0	
.	G	4A5-2ov	0.470	e	16.36	29.17	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.470	e	16.36	29.17	0	0	0	0	0	0	0	0	
.	W	12C-0bw	0.091	s	3.17	1.38	0	0	0	0	0	0	0	0	
.	G	10D-v	0.470	s	16.36	7.99	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.470	s	16.36	14.54	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.470	s	16.36	11.41	0	0	0	0	0	0	0	0	
.	G	4B5-2fv	0.470	s	16.36	14.54	0	0	0	0	0	0	0	0	
.	W	12C-0bw	0.091	w	3.17	1.38	0	0	0	0	0	0	0	0	
.	C	16B-38ad	0.026	-	0.90	1.38	20	20	18	28	16	16	14	22	
.	C	17B-6al	0.105	-	3.65	4.64	0	0	0	0	0	0	0	0	
.	F	22A-vpl	0.989	-	34.42	0.00	20	4	138	0	16	0	0	0	

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...VAC\Trane\Adams Preserve lot 86-2169 Manual.rup Calc = MJ8 Front Door faces: S



Right-J® Worksheet
Entire House
DL Williams Heating & Cooling L.L.C.

Job:
Date: 10/10/24
By: DL Williams Heating & Cooling
Plan: 2169

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: williamscoolingllc@gmail.com

1	Room name					bath 8.0 ft					br3 14.0 ft				
2	Exposed wall					8.0 ft					8.0 ft				
3	Room height					9.0					1.0				
4	Room dimensions					72.0 ft²					164.0 ft²				
5	Room area														
	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	12C-0bw	0.091	n	3.17	1.38	0	0	0	0	0	0	0	0	
	G	10D-v	0.470	n	16.36	10.17	0	0	0	0	0	0	0	0	
	G	4A5-2ov	0.470	n	16.36	11.41	0	0	0	0	0	0	0	0	
	G	4A5-2ov	0.470	n	16.36	11.41	0	0	0	0	0	0	0	0	
11	W	12C-0bw	0.091	e	3.17	1.38	64	58	184	80	112	97	307	134	
	G	4A5-2ov	0.470	e	16.36	29.17	6	0	98	175	0	0	0	0	
	G	4A5-2ov	0.470	e	16.36	29.17	0	0	0	0	15	0	245	438	
	W	12C-0bw	0.091	s	3.17	1.38	0	0	0	0	0	0	0	0	
	G	10D-v	0.470	s	16.36	7.99	0	0	0	0	0	0	0	0	
	G	4A5-2ov	0.470	s	16.36	14.54	0	0	0	0	0	0	0	0	
	G	4A5-2ov	0.470	s	16.36	11.41	0	0	0	0	0	0	0	0	
	G	4B5-2fv	0.470	s	16.36	14.54	0	0	0	0	0	0	0	0	
	W	12C-0bw	0.091	w	3.17	1.38	0	0	0	0	0	0	0	0	
	C	16B-38ad	0.026	-	0.90	1.38	72	72	65	100	164	164	148	227	
	C	17B-6al	0.105	-	3.65	4.64	0	0	0	0	0	0	0	0	
	F	22A-vpl	0.989	-	34.42	0.00	72	8	275	0	164	14	482	0	

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...VAC\Trane\Adams Preserve lot 86-2169 Manual.rup Calc = MJ8 Front Door faces: S



Right-J® Worksheet
Entire House
DL Williams Heating & Cooling L.L.C.

Job:
Date: 10/10/24
By: DL Williams Heating & Cooling
Plan: 2169

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: williamscoolingllc@gmail.com

1	Room name					br4					living				
2	Exposed wall					32.0 ft					10.0 ft				
3	Room height					8.0 ft					10.0 ft				
4	Room dimensions					1.0 x 161.0 ft					10.0 x 12.0 ft				
5	Room area					161.0 ft²					120.0 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	12C-0bw	0.091	n	3.17	1.38	104	74	234	102	0	0	0	0	
.	G	10D-v	0.470	n	16.36	10.17	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.470	n	16.36	11.41	30	0	491	342	0	0	0	0	
.	G	4A5-2ov	0.470	n	16.36	11.41	0	0	0	0	0	0	0	0	
11	W	12C-0bw	0.091	e	3.17	1.38	88	73	231	101	24	24	75	33	
.	G	4A5-2ov	0.470	e	16.36	29.17	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.470	e	16.36	29.17	15	0	245	438	0	0	0	0	
.	W	12C-0bw	0.091	s	3.17	1.38	0	0	0	0	80	50	158	69	
.	G	10D-v	0.470	s	16.36	7.99	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.470	s	16.36	14.54	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.470	s	16.36	11.41	0	0	0	0	30	30	491	342	
.	G	4B5-2fv	0.470	s	16.36	14.54	0	0	0	0	0	0	0	0	
.	W	12C-0bw	0.091	w	3.17	1.38	64	64	203	89	0	0	0	0	
.	C	16B-38ad	0.026	-	0.90	1.38	161	161	146	223	2	2	2	3	
.	C	17B-6al	0.105	-	3.65	4.64	0	0	0	0	121	121	444	564	
.	F	22A-vpl	0.989	-	34.42	0.00	161	32	1101	0	120	10	344	0	
													</		

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



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...VAC\Trane\Adams Preserve lot 86-2169 Manual.rup Calc = MJ8 Front Door faces: S



Right-J® Worksheet
Entire House
DL Williams Heating & Cooling L.L.C.

Job:
Date: 10/10/24
By: DL Williams Heating & Cooling
Plan: 2169

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: williamscoolingllc@gmail.com

1	Room name					dining					hall				
2	Exposed wall					10.0 ft					0 ft				
3	Room height					10.0 ft					8.0 ft				
4	Room dimensions					10.0 x 12.0 ft					4.0 x 12.0 ft				
5	Room area					120.0 ft²					48.0 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	12C-0bw	0.091	n	3.17	1.38	0	0	0	0	0	0	0	0	
.	G	10D-v	0.470	n	16.36	10.17	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.470	n	16.36	11.41	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.470	n	16.36	11.41	0	0	0	0	0	0	0	0	
11	W	12C-0bw	0.091	e	3.17	1.38	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.470	e	16.36	29.17	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.470	e	16.36	29.17	0	0	0	0	0	0	0	0	
.	W	12C-0bw	0.091	s	3.17	1.38	80	50	158	69	0	0	0	0	
.	G	10D-v	0.470	s	16.36	7.99	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.470	s	16.36	14.54	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.470	s	16.36	11.41	30	30	491	342	0	0	0	0	
.	G	4B5-2fv	0.470	s	16.36	14.54	0	0	0	0	0	0	0	0	
.	W	12C-0bw	0.091	w	3.17	1.38	0	0	0	0	0	0	0	0	
.	C	16B-38ad	0.026	-	0.90	1.38	1	1	1	1	48	48	43	66	
.	C	17B-6al	0.105	-	3.65	4.64	122	122	447	568	0	0	0	0	
.	F	22A-vpl	0.989	-	34.42	0.00	120	10	344	0	48	0	0	0	
								</							

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



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...VAC\Trane\Adams Preserve lot 86-2169 Manual.rup Calc = MJ8 Front Door faces: S



Right-J® Worksheet
Entire House
DL Williams Heating & Cooling L.L.C.

Job:
Date: 10/10/24
By: DL Williams Heating & Cooling
Plan: 2169

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: williamscoolingllc@gmail.com

1	Room name					family					kitchen				
2	Exposed wall					24.0 ft					0 ft				
3	Room height					10.0 ft					9.2 ft				
4	Room dimensions					1.0 x 468.0 ft					1.0 x 216.0 ft				
5	Room area					468.0 ft²					216.0 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	12C-0bw	0.091	n	3.17	1.38	144	78	247	108	0	0	0	0	
.	G	10D-v	0.470	n	16.36	10.17	21	0	343	214	0	0	0	0	
.	G	4A5-2ov	0.470	n	16.36	11.41	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.470	n	16.36	11.41	45	0	736	513	0	0	0	0	
11	W	12C-0bw	0.091	e	3.17	1.38	44	44	139	61	0	0	0	0	
.	G	4A5-2ov	0.470	e	16.36	29.17	0	0	0	0	0	0	0	0	
.	G	4A5-2ov	0.470	e	16.36	29.17	0	0	0	0	0	0	0	0	
.	W	12C-0bw	0.091	s	3.17	1.38	48	13	41	18	0	0	0	0	
.	G	10D-v	0.470	s	16.36	7.99	21	21	343	168	0	0	0	0	
.	G	4A5-2ov	0.470	s	16.36	14.54	7	7	114	102	0	0	0	0	
.	G	4A5-2ov	0.470	s	16.36	11.41	0	0	0	0	0	0	0	0	
.	G	4B5-2fv	0.470	s	16.36	14.54	7	7	114	102	0	0	0	0	
.	W	12C-0bw	0.091	w	3.17	1.38	0	0	0	0	32	32	101	44	
.	C	16B-38ad	0.026	-	0.90	1.38	4	4	3	5	87	87	78	120	
.	C	17B-6al	0.105	-	3.65	4.64	477	477	1743	2214	133	133	486	617	
.	F	22A-vpl	0.989	-	34.42	0.00	468	24	826	0	216	0	0	0	

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



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...VAC\Trane\Adams Preserve lot 86-2169 Manual.rup Calc = MJ8 Front Door faces: S



Right-J® Worksheet
Entire House
DL Williams Heating & Cooling L.L.C.

Job:
Date: 10/10/24
By: DL Williams Heating & Cooling
Plan: 2169

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: williamscoolingllc@gmail.com

1	Room name					laundry 0 ft				wic2 5.0 ft				
2	Exposed wall					8.0 ft				8.0 ft				
3	Room height					6.0				6.0				
4	Room dimensions					x				x				
5	Room area					72.0 ft²				30.0 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	12C-0bw	0.091	n	3.17	1.38	0	0	0	0	0	0	0	0
.	G	10D-v	0.470	n	16.36	10.17	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	n	16.36	11.41	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	n	16.36	11.41	0	0	0	0	0	0	0	0
11	W	12C-0bw	0.091	e	3.17	1.38	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	e	16.36	29.17	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	e	16.36	29.17	0	0	0	0	0	0	0	0
.	W	12C-0bw	0.091	s	3.17	1.38	0	0	0	0	0	0	0	0
.	G	10D-v	0.470	s	16.36	7.99	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	s	16.36	14.54	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	s	16.36	11.41	0	0	0	0	0	0	0	0
.	G	4B5-2fv	0.470	s	16.36	14.54	0	0	0	0	0	0	0	0
.	W	12C-0bw	0.091	w	3.17	1.38	0	0	0	0	40	40	127	55
.	C	16B-38ad	0.026	-	0.90	1.38	72	72	65	100	30	30	27	41
.	C	17B-6al	0.105	-	3.65	4.64	0	0	0	0	0	0	0	0
.	F	22A-vpl	0.989	-	34.42	0.00	72	0	0	0	30	5	172	0
														</

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



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...VAC\Trane\Adams Preserve lot 86-2169 Manual.rup Calc = MJ8 Front Door faces: S



Right-J® Worksheet
Entire House
DL Williams Heating & Cooling L.L.C.

Job:
Date: 10/10/24
By: DL Williams Heating & Cooling
Plan: 2169

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: williamscoolingllc@gmail.com

1	Room name					linebn 0 ft					mbath 6.0 ft				
2	Exposed wall					8.0 ft					8.0 ft				
3	Room height					5.0 x 3.0 ft					1.0 x 101.0 ft				
4	Room dimensions					15.0 ft²					101.0 ft²				
5	Room area														
	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	12C-0bw	0.091	n	3.17	1.38	0	0	0	0	0	0	0	0	0
.	G	10D-v	0.470	n	16.36	10.17	0	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	n	16.36	11.41	0	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	n	16.36	11.41	0	0	0	0	0	0	0	0	0
11	W	12C-0bw	0.091	e	3.17	1.38	0	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	e	16.36	29.17	0	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	e	16.36	29.17	0	0	0	0	0	0	0	0	0
.	W	12C-0bw	0.091	s	3.17	1.38	0	0	0	0	0	0	0	0	0
.	G	10D-v	0.470	s	16.36	7.99	0	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	s	16.36	14.54	0	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	s	16.36	11.41	0	0	0	0	0	0	0	0	0
.	G	4B5-2fv	0.470	s	16.36	14.54	0	0	0	0	0	0	0	0	0
.	W	12C-0bw	0.091	w	3.17	1.38	0	0	0	0	48	48	152	66	
.	C	16B-38ad	0.026	-	0.90	1.38	15	15	14	21	101	101	91	140	
.	C	17B-6al	0.105	-	3.65	4.64	0	0	0	0	0	0	0	0	
.	F	22A-vpl	0.989	-	34.42	0.00	15	0	0	0	101	6	207	0	
6	c) AED excursion								0					-3	
	Envelope loss/gain								14	21			450	203	
12	a) Infiltration								0	0			106	26	
	b) Room ventilation								0	0			0	0	
13	Internal gains:		Occupants @	230			0			0	0			0	
			Appliances/other							0				0	
	Subtotal (lines 6 to 13)								14	21			556	230	
	Less external load								0	0			0	0	
	Less transfer								0	0			0	0	
	Redistribution								-14	-21			6	9	
14	Subtotal								0	0			563	239	
15	Duct loads						30%	56%	0	0		30%	56%	166	133
	Total room load								0	0			729	372	
	Air required (cfm)								0	0			27	15	

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



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...VAC\Trane\Adams Preserve lot 86-2169 Manual.rup Calc = MJ8 Front Door faces: S



Right-J® Worksheet
Entire House
DL Williams Heating & Cooling L.L.C.

Job:
Date: 10/10/24
By: DL Williams Heating & Cooling
Plan: 2169

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: williamscoolingllc@gmail.com

1	Room name					wic1				masrter bed				
2	Exposed wall					5.0 ft				42.0 ft				
3	Room height					8.0 ft				8.0 ft				
4	Room dimensions					6.0 x 5.0 ft				20.0 x 14.0 ft				
5	Room area					30.0 ft²				280.0 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	12C-0bw	0.091	n	3.17	1.38	0	0	0	0	160	130	412	180
.	G	10D-v	0.470	n	16.36	10.17	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	n	16.36	11.41	0	0	0	0	30	0	491	342
.	G	4A5-2ov	0.470	n	16.36	11.41	0	0	0	0	0	0	0	0
11	W	12C-0bw	0.091	e	3.17	1.38	0	0	0	0	64	64	203	89
.	G	4A5-2ov	0.470	e	16.36	29.17	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	e	16.36	29.17	0	0	0	0	0	0	0	0
.	W	12C-0bw	0.091	s	3.17	1.38	0	0	0	0	0	0	0	0
.	G	10D-v	0.470	s	16.36	7.99	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	s	16.36	14.54	0	0	0	0	0	0	0	0
.	G	4A5-2ov	0.470	s	16.36	11.41	0	0	0	0	0	0	0	0
.	G	4B5-2fv	0.470	s	16.36	14.54	0	0	0	0	0	0	0	0
.	W	12C-0bw	0.091	w	3.17	1.38	40	40	127	55	112	112	355	155
.	C	16B-38ad	0.026	-	0.90	1.38	30	30	27	41	280	280	253	387
.	C	17B-6al	0.105	-	3.65	4.64	0	0	0	0	0	0	0	0
.	F	22A-vpl	0.989	-	34.42	0.00	30	5	172	0	280	42	1446	0
												</		

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



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...VAC\Trane\Adams Preserve lot 86-2169 Manual.rup Calc = MJ8 Front Door faces: S



Right-J® Worksheet
Entire House
DL Williams Heating & Cooling L.L.C.

Job:
Date: 10/10/24
By: DL Williams Heating & Cooling
Plan: 2169

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: williamscoolingllc@gmail.com

1	Room name					bkfst 9.0 ft								
2	Exposed wall					9.8 ft					heat/cool			
3	Room height					9.0					x 6.0 ft			
4	Room dimensions					54.0 ft²								
5	Room area													
	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	W	12C-0bw	0.091	n	3.17	1.38	72	42	133	58				
.	G	10D-v	0.470	n	16.36	10.17	0	0	0	0				
.	G	4A5-2ov	0.470	n	16.36	11.41	0	0	0	0				
.	G	4A5-2ov	0.470	n	16.36	11.41	30	0	491	342				
11	W	12C-0bw	0.091	e	3.17	1.38	0	0	0	0				
	G	4A5-2ov	0.470	e	16.36	29.17	0	0	0	0				
	G	4A5-2ov	0.470	e	16.36	29.17	0	0	0	0				
	W	12C-0bw	0.091	s	3.17	1.38	0	0	0	0				
	G	10D-v	0.470	s	16.36	7.99	0	0	0	0				
	G	4A5-2ov	0.470	s	16.36	14.54	0	0	0	0				
	G	4A5-2ov	0.470	s	16.36	11.41	0	0	0	0				
	G	4B5-2fv	0.470	s	16.36	14.54	0	0	0	0				
	W	12C-0bw	0.091	w	3.17	1.38	12	12	37	16				
	C	16B-38ad	0.026	-	0.90	1.38	6	6	6	9				
	C	17B-6al	0.105	-	3.65	4.64	49	49	180	228				
	F	22A-vpl	0.989	-	34.42	0.00	54	9	310	0				
				</										



Duct system multi orientation report

Entire House

DL Williams Heating & Cooling L.L.C.

Job:
Date: 10/10/24
By: DL Williams Heating & C...
Plan: 2169

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: williamscoolingllc@gmail.com

Project Information

For: Adams Homes Preserve lot 86-2169, Adams Homes
Lake City, FL 32024

Group 1: (N, NE, E, SE, S, SW, W, NW)

Duct Name	(N)			(NE)			(E)			(SE)		
	Reg CFM	Reg Size	Duct Size	Reg CFM	Reg Size	Duct Size	Reg CFM	Reg Size	Duct Size	Reg CFM	Reg Size	Duct Size
Supply Branches												
bath	46 h	12x6	4	46 h	12x6	4	46 h	12x6	4	46 h	12x6	4
bkfst	65 h	12x6	6	71 c	12x6	6	70 c	12x6	6	65 h	12x6	6
br2	160 h	12x6	6	160 h	12x6	6	160 h	12x6	6	160 h	12x6	6
br3	69 h	12x6	5	69 h	12x6	5	69 h	12x6	5	69 h	12x6	5
br4	155 h	12x6	6	155 h	12x6	6	155 h	12x6	6	155 h	12x6	6
dining	79 c	12x6	7	93 c	12x6	7	97 c	12x6	7	81 c	12x6	7
family	157 c	12x6	6	159 c	12x6	6	157 c	12x6	6	161 c	12x6	6
family-A	157 c	12x6	6	159 c	12x6	6	157 c	12x6	6	161 c	12x6	6
kitchen	140 c	12x6	6	110 c	12x6	6	105 c	12x6	6	115 c	12x6	6
laundry	38 c	12x6	4	30 c	12x6	4	28 c	12x6	4	31 c	12x6	4
living	84 h	12x6	5	85 c	12x6	5	89 c	12x6	5	84 h	12x6	5
masrter bed	94 h	12x6	7	94 h	12x6	7	94 h	12x6	7	94 h	12x6	7
masrter bed-A	94 h	12x6	7	94 h	12x6	7	94 h	12x6	7	94 h	12x6	7
mbath	27 h	12x6	4	27 h	12x6	4	27 h	12x6	4	27 h	12x6	4
wic1	20 h	12x6	4	20 h	12x6	4	20 h	12x6	4	20 h	12x6	4
wic2	20 h	12x6	4	20 h	12x6	4	20 h	12x6	4	20 h	12x6	4
Supply Trunks												
st4	258 h		8	258 h		8	258 h		8	258 h		8
st3	349 h		6	349 h		6	349 h		6	349 h		6
st3A	155 h		6	155 h		6	155 h		6	155 h		6
st1	349 h		9	349 h		9	349 h		9	349 h		9
st2	573 c		14	587 c		14	591 c		14	575 c		14
Return Branches												
rb1	1200 h	12x12	0	1200 h	12x12	0	1200 h	12x12	0	1200 h	12x12	0
Friction Rates												
Heating FR	0.235			0.235			0.235			0.235		
Cooling FR	0.235			0.235			0.235			0.235		

Project Information

For: Adams Homes Preserve lot 86-2169, Adams Homes
Lake City, FL 32024

Duct Name	(S)			(SW)			(W)			(NW)		
	Reg CFM	Reg Size	Duct Size	Reg CFM	Reg Size	Duct Size	Reg CFM	Reg Size	Duct Size	Reg CFM	Reg Size	Duct Size
Supply Branches												
bath	46 h	12x6	4	46 h	12x6	4	46 h	12x6	4	46 h	12x6	4
bkfst	65 h	12x6	6	65 h	12x6	6	65 h	12x6	6	65 h	12x6	6
br2	160 h	12x6	6	160 h	12x6	6	160 h	12x6	6	160 h	12x6	6
br3	69 h	12x6	5	69 h	12x6	5	69 h	12x6	5	69 h	12x6	5
br4	155 h	12x6	6	155 h	12x6	6	155 h	12x6	6	155 h	12x6	6
dining	78 h	12x6	7	104 c	12x6	7	114 c	12x6	7	96 c	12x6	7
family	155 c	12x6	6	148 c	12x6	6	149 c	12x6	6	160 c	12x6	6
family-A	155 c	12x6	6	148 c	12x6	6	149 c	12x6	6	160 c	12x6	6
kitchen	138 c	12x6	6	119 c	12x6	6	112 c	12x6	6	117 c	12x6	6
laundry	37 c	12x6	4	32 c	12x6	4	30 c	12x6	4	32 c	12x6	4
living	84 h	12x6	5	95 c	12x6	5	106 c	12x6	5	87 c	12x6	5
masrter bed	94 h	12x6	7	94 h	12x6	7	94 h	12x6	7	94 h	12x6	7
masrter bed-A	94 h	12x6	7	94 h	12x6	7	94 h	12x6	7	94 h	12x6	7
mbath	27 h	12x6	4	27 h	12x6	4	27 h	12x6	4	27 h	12x6	4
wic1	20 h	12x6	4	20 h	12x6	4	20 h	12x6	4	20 h	12x6	4
wic2	20 h	12x6	4	20 h	12x6	4	20 h	12x6	4	20 h	12x6	4
Supply Trunks												
st4	258 h		8	258 h		8	258 h		8	258 h		8
st3	349 h		6	349 h		6	349 h		6	349 h		6
st3A	155 h		6	155 h		6	155 h		6	155 h		6
st1	349 h		9	349 h		9	349 h		9	349 h		9
st2	564 c		14	573 c		14	576 c		14	571 c		14
Return Branches												
rb1	1200 h	12x12	0	1200 h	12x12	0	1200 h	12x12	0	1200 h	12x12	0
Friction Rates												
Heating FR	0.235			0.235			0.235			0.235		
Cooling FR	0.235			0.235			0.235			0.235		

Project Information

For: Adams Homes Preserve lot 86-2169, Adams Homes
Lake City, FL 32024

Duct Name	Largest			Smallest		
	Reg CFM	Reg Size	Duct Size	Reg CFM	Reg Size	Duct Size
Supply Branches						
bath	46 h	12x6	4	46 h	12x6	4
bkfst	71 c	12x6	6	65 h	12x6	6
br2	160 h	12x6	6	160 h	12x6	6
br3	69 h	12x6	5	69 h	12x6	5
br4	155 h	12x6	6	155 h	12x6	6
dining	114 c	12x6	7	78 h	12x6	7
family	161 c	12x6	6	148 c	12x6	6
family-A	161 c	12x6	6	148 c	12x6	6
kitchen	140 c	12x6	6	105 c	12x6	6
laundry	38 c	12x6	4	28 c	12x6	4
living	106 c	12x6	5	84 h	12x6	5
masrter bed	94 h	12x6	7	94 h	12x6	7
masrter bed-A	94 h	12x6	7	94 h	12x6	7
mbath	27 h	12x6	4	27 h	12x6	4
wic1	20 h	12x6	4	20 h	12x6	4
wic2	20 h	12x6	4	20 h	12x6	4
Supply Trunks						
st4	258 h		8	258 h		8
st3	349 h		6	349 h		6
st3A	155 h		6	155 h		6
st1	349 h		9	349 h		9
st2	591 c		14	564 c		14
Return Branches						
rb1	1200 h	12x12	0	1200 h	12x12	0
Friction Rates						
Heating FR	0.235			0.235		
Cooling FR	0.235			0.235		

Background Color Legend

Yellow background

Duct Size - duct size is smaller than the largest duct size in the row

Reg Size - register size is smaller than the largest register size in the row

Reg CFM - register design cfm is larger than 150 CFM

Friction Rate - friction rate is outside ACCA Manual-D recommended range (0.06 - 0.18)

Pink background column header

Largest cooling load orientation



Static Pressure and Friction Rate
Entire House
DL Williams Heating & Cooling L.L.C.

Job:
Date: 10/10/24
By: DL Williams Heating & C...
Plan: 2169

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: williamscoolingllc@gmail.com

Project Information

For: Adams Homes Preserve lot 86-2169, Adams Homes
Lake City, FI 32024

Available Static Pressure

	Heating (in H2O)	Cooling (in H2O)
External static pressure	0.50	0.50
Pressure losses		
Coil	0	0
Heat exchanger	0	0
Supply diffusers	0	0
Return grilles	0	0
Filter	0	0
Humidifier	0	0
Balancing damper	0	0
Other device	0	0
Available static pressure	0.50	0.50

Total Effective Length

	Supply (ft)	Return (ft)
Measured length of run-out	8	0
Measured length of trunk	20	0
Equivalent length of fittings	185	0
Total length	213	0
Total effective length		213

Friction Rate

	Heating (in/100ft)	Cooling (in/100ft)
Supply Ducts	0.235 > 0.18	0.235 > 0.18
Return Ducts	0.235 > 0.18	0.235 > 0.18

Fitting Equivalent Length Details

Supply	4AD=60, 11A=20, 11A=20, 11A=20, 12J1=10, 1A=35, 11A=20: TotalEL=185
Return	TotalEL=0





Duct System Summary

Entire House

DL Williams Heating & Cooling L.L.C.

Job:

Date: 10/10/24

By: DL Williams Heating & C...

Plan: 2169

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: williamscoolingllc@gmail.com

Project Information

For: Adams Homes Preserve lot 86-2169, Adams Homes
Lake City, FL 32024

	Heating	Cooling
External static pressure	0.50 in H ₂ O	0.50 in H ₂ O
Pressure losses	0 in H ₂ O	0 in H ₂ O
Available static pressure	0.50 in H ₂ O	0.50 in H ₂ O
Supply / return available pressure	0.250 / 0.250 in H ₂ O	0.250 / 0.250 in H ₂ O
Lowest friction rate	0.235 in/100ft	0.235 in/100ft
Actual air flow	1200 cfm	1050 cfm
Total effective length (TEL)	213 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	h 1228	46	33	0.495	4.0	0x0	VIFx	6.0	95.0	st2
bkfst	h 1738	65	44	0.326	6.0	0x0	VIFx	38.2	115.0	
br2	h 4313	160	64	0.519	6.0	0x0	VIFx	1.4	95.0	st3
br3	h 1862	69	64	0.318	5.0	0x0	VIFx	22.2	135.0	
br4	h 4170	155	90	0.235	6.0	0x0	VIFx	28.1	185.0	st3A
dining	c 1929	78	79	0.348	7.0	0x0	VIFx	28.5	115.0	st2
family	c 3848	125	157	0.304	6.0	0x0	VIFx	29.3	135.0	st3
family-A	c 3848	125	157	0.351	6.0	0x0	VIFx	27.3	115.0	st2
kitchen	c 3426	35	140	0.345	6.0	0x0	VIFx	29.8	115.0	st2
laundry	c 931	3	38	0.283	4.0	0x0	VIFx	41.4	135.0	st4
living	h 2274	84	68	0.467	5.0	0x0	VIFx	12.1	95.0	st4
masrter bed	h 2528	94	42	0.266	7.0	0x0	VIFx	53.3	135.0	
masrter bed-A	h 2528	94	42	0.273	7.0	0x0	VIFx	48.2	135.0	st4
mbath	h 729	27	15	0.279	4.0	0x0	VIFx	44.1	135.0	st4
wic1	h 537	20	7	0.271	4.0	0x0	VIFx	49.8	135.0	st4
wic2	h 542	20	8	0.269	4.0	0x0	VIFx	51.1	135.0	st4

Bold/italic values have been manually overridden



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...VAC\Trane\Adams Preserve lot 86-2169 Manual.rup Calc = MJ8 Front Door faces: S

Supply Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
st4	Peak AVF	258	153	0.266	740	8.0	0 x 0	VinIFlx	st2
st3	Peak AVF	349	311	0.235	1776	6.0	0 x 0	VinIFlx	st1
st3A	Peak AVF	155	90	0.235	789	6.0	0 x 0	VinIFlx	st3
st1	Peak AVF	349	311	0.235	789	9.0	0 x 0	VinIFlx	
st2	Peak AVF	561	573	0.266	536	14.0	0 x 0	VinIFlx	

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
rb1	0x 0	1200	1050	0	0	0	0	0x 0		VIFx	

Bold/italic values have been manually overridden



Manual S Compliance Report

Entire House

DL Williams Heating & Cooling L.L.C.

Job:
Date: 10/10/24
By: DL Williams Heating & C...
Plan: 2169

PO Box 2156, Lake City, FL 32056 Phone: 386-754-1987 Email: williamscoolingllc@gmail.com

Project Information

For: Adams Homes Preserve lot 86-2169, Adams Homes
Lake City, FL 32024

Cooling Equipment

Design Conditions

Outdoor design DB:	92.2°F	Sensible gain:	25657 Btuh	Entering coil DB:	77.7°F
Outdoor design WB:	75.8°F	Latent gain:	4150 Btuh	Entering coil WB:	63.8°F
Indoor design DB:	75.0°F	Total gain:	29808 Btuh		
Indoor RH:	50%	Estimated airflow:	1050 cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP		
Manufacturer:	Trane	Model:	4TWR6036H1+TEM6A0C36H31++TDR
Actual airflow:	1050 cfm		
Sensible capacity:	29114 Btuh	113% of load	
Latent capacity:	4352 Btuh	105% of load	
Total capacity:	33466 Btuh	112% of load	SHR: 87%

Heating Equipment

Design Conditions

Outdoor design DB:	33.2°F	Heat loss:	32302 Btuh	Entering coil DB:	66.9°F
Indoor design DB:	68.0°F				

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP		
Manufacturer:	Trane	Model:	4TWR6036H1+TEM6A0C36H31++TDR
Actual airflow:	1200 cfm		
Output capacity:	25635 Btuh	79% of load	
Supplemental heat required:	6667 Btuh		
		Capacity balance:	33 °F
		Economic balance:	-99 °F

Backup equipment type:	Elec strip		
Manufacturer:		Model:	
Actual airflow:	1200 cfm		
Output capacity:	9.3 kW	98% of load	Temp. rise: 50 °F

Meets all requirements of ACCA Manual S.



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Residential Plans Examiner Review Form for HVAC System Design (Loads, Equipment, Ducts)

Form
RPER 2.0

Header Information

Contractor DL Williams Heating & Cooling L.L.C.
Mechanical license# _____
Building plan # 2169
Home address (Street or Lot#, Block, Subdivision) _____, Entire House

Applicable Attachments
Manual J1 Form and Worksheet A: ☐ Yes ☐ No
OEM performance data (heating, cooling, blower): ☐ Yes ☐ No
Duct distribution sketch: ☐ Yes ☐ No
IRC Table R301.2 (climate & geographic design criteria) ☐ Yes ☐ No

HVAC LOAD CALCULATION

(IRC M1401.3)

Manual J Design Criteria and Loads

Location

Elevation 123 ft
Altitude Correction Factor 1.00
Latitude 30 °N

Summer Design Conditions

Outdoor Cooling Temp 92 °F
Indoor Cooling Temp 75 °F
Cooling Temp Diff 17 °F
Indoor Summer Design RH 50 %
Coincident Wet Bulb Temp 76 °F

Manual J Loads

Total Heat Loss 32302 Btuh
Sensible Heat Gain 25657 Btuh
Latent Heat Gain 4150 Btuh
Total Heat Gain 29808 Btuh

Winter Design Conditions

Outdoor Winter Temp 33 °F
Indoor Winter Temp 68 °F
Heating Temp Diff 35 °F

The heat loss/gain was calculated in accordance with ACCA Manual J? Y ☒ N ☐

HVAC EQUIPMENT SELECTION

(IRC M1401.3)

Heating Equipment

☐ Furnace ☐ Boiler ☒ Electric Heat
☐ Single Speed ☐ Multi Stage ☐ Modulating

Model

Output 25635 Btuh Sizing Value 32302 Btuh
Supplemental 6667 Btuh Sizing Limit 175.0 %
Heat Load: Capacity 97.8 %

Size Factor is within Manual S Size Limit? Y ☒ N ☐

Cooling Equipment

☐ Air Conditioner ☒ Heat Pump
☒ Air-to-Air ☐ Geothermal Open Loop ☐ Geothermal Closed Loop
☒ Single Speed ☐ Multi Stage ☐ Variable Speed

Model 4TWR6036H1+TEM6A0C36H31++TDR

Sensible 29114 Btuh Sizing Value 29808 Btuh
Latent 4352 Btuh Sizing Limit 115.0 %
Total 33466 Btuh Load: Capacity 112.3 %

Size Factor is within Manual S Size Limit? Y ☒ N ☐

HVAC DUCT DISTRIBUTION DESIGN

(IRC M1601.1)

Design airflow 1200 cfm Longest Supply Duct 213 ft Duct Materials Used
External Static Pressure (ESP) 0.50 in H2O Longest Return Duct 0 ft Trunk Duct: ☐ Duct Board ☐ Sheet Metal
Component Pressure Loss (CPL) 0 in H2O Total Effective Length (TEL) 213 ft ☒ Flex ☐ Lined Sheet Metal ☐ Other
Available static pressure (ASP) 0.50 in H2O Friction Rate 0.23 in/100ft Branch Duct: ☐ Duct Board ☐ Sheet Metal
ESP - CPL = ASP (ASP x 100) / TEL = Friction Rate ☒ Flex ☐ Lined Sheet Metal ☐ Other

Ducts are sized per Manual D? Y ☒ N ☐

I declare the load calculation, equipment selection, and duct system design were rigorously performed based on the building plan listed above and understand the claims made on these forms may be subject to review and verification.

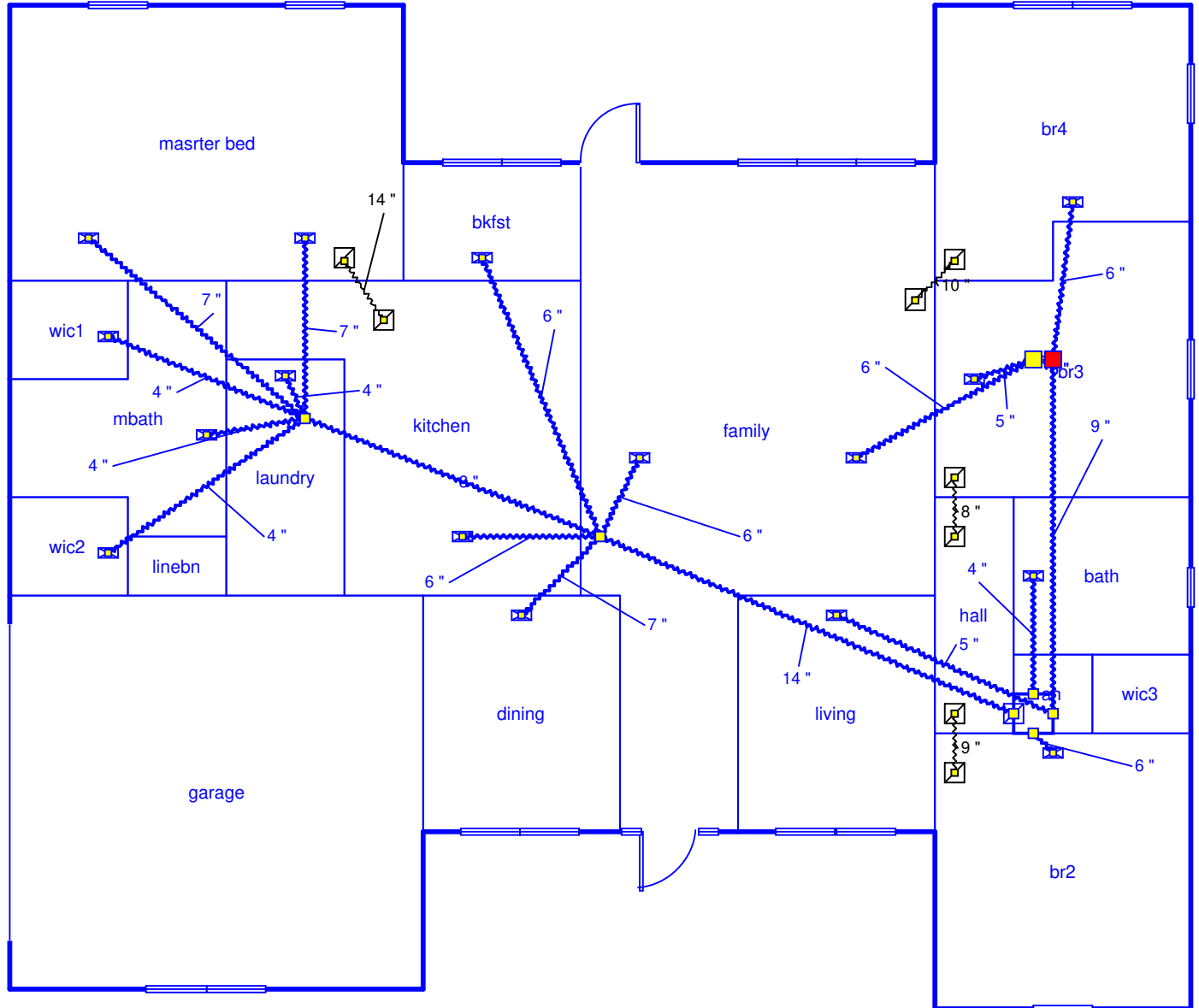
Contractor's printed name: _____

Contractor's signature: _____

Date: _____



main



Job #:
Performed by DL Williams Heating & Cool
Adams Homes Preserve lot 86-2169
Lake City, FL 32024

DL Williams Heating & Cooling L.L.C.

PO Box 2156
Lake City, FL 32056
Phone: 386-754-1987
williamscoolingllc@gmail.com

Scale: 1 : 100
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