

Project Name: Forest Country Lot 6 plan 2169 Street: City, State, Zip: Lake City, FL, 32024 Owner: Adams Homes Design Location: FL, Gainesville	Builder Name: Adams Homes Permit Office: Permit Number: Jurisdiction: Columbia County: Columbia(Florida Climate Zone 2)
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<table style="width: 100%;"> <tr> <td style="width: 30%;">1. New construction or existing</td> <td style="width: 70%;">New (From Plans)</td> </tr> <tr> <td>2. Single family or multiple family</td> <td>Detached</td> </tr> <tr> <td>3. Number of units, if multiple family</td> <td>1</td> </tr> <tr> <td>4. Number of Bedrooms</td> <td>4</td> </tr> <tr> <td>5. Is this a worst case?</td> <td>No</td> </tr> <tr> <td>6. Conditioned floor area above grade (ft²)</td> <td>2166</td> </tr> <tr> <td> Conditioned floor area below grade (ft²)</td> <td>0</td> </tr> <tr> <td>7. Windows(259.3 sqft.)</td> <td>Description Area</td> </tr> <tr> <td> a. U-Factor:</td> <td>Dbl, U=0.55 229.33 ft²</td> </tr> <tr> <td> SHGC:</td> <td>SHGC=0.60</td> </tr> <tr> <td> b. U-Factor:</td> <td>Dbl, default 30.00 ft²</td> </tr> <tr> <td> SHGC:</td> <td>Clear, default</td> </tr> <tr> <td> c. U-Factor:</td> <td>N/A ft²</td> </tr> <tr> <td> SHGC:</td> <td></td> </tr> <tr> <td colspan="2">Area Weighted Average Overhang Depth: 4.515 ft</td> </tr> <tr> <td colspan="2">Area Weighted Average SHGC: 0.612</td> </tr> <tr> <td>8. Skylights</td> <td>Description Area</td> </tr> <tr> <td> U-Factor:(AVG)</td> <td>N/A N/A ft²</td> </tr> <tr> <td> SHGC(AVG):</td> <td>N/A</td> </tr> <tr> <td>9. Floor Types</td> <td>Insulation Area</td> </tr> <tr> <td> a. Slab-On-Grade Edge Insulation</td> <td>R= 0.0 2166.00 ft²</td> </tr> <tr> <td> b. N/A</td> <td>R= ft²</td> </tr> <tr> <td> c. N/A</td> <td>R= ft²</td> </tr> </table>	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 (ft ²)	2166	Conditioned floor area below grade (ft ²)	0	7. Windows(259.3 sqft.)	Description Area	a. U-Factor:	Dbl, U=0.55 229.33 ft ²	SHGC:	SHGC=0.60	b. U-Factor:	Dbl, default 30.00 ft ²	SHGC:	Clear, default	c. U-Factor:	N/A ft ²	SHGC:		Area Weighted Average Overhang Depth: 4.515 ft		Area Weighted Average SHGC: 0.612		8. Skylights	Description Area	U-Factor:(AVG)	N/A N/A ft ²	SHGC(AVG):	N/A	9. Floor Types	Insulation Area	a. Slab-On-Grade Edge Insulation	R= 0.0 2166.00 ft ²	b. N/A	R= ft ²	c. N/A	R= ft ²	<table style="width: 100%;"> <tr> <td style="width: 30%;">10. Wall Types(1728.0 sqft.)</td> <td style="width: 30%;">Insulation</td> <td style="width: 40%;">Area</td> </tr> <tr> <td> a. Face Brick - Wood, Exterior</td> <td>R=13.0</td> <td>1728.00 ft²</td> </tr> <tr> <td> b. N/A</td> <td>R=</td> <td>ft²</td> </tr> <tr> <td> c. N/A</td> <td>R=</td> <td>ft²</td> </tr> <tr> <td> d. N/A</td> <td>R=</td> <td>ft²</td> </tr> <tr> <td>11. Ceiling Types(2166.0 sqft.)</td> <td>Insulation</td> <td>Area</td> </tr> <tr> <td> a. Flat ceiling under att (Vented)</td> <td>R=30.0</td> <td>2166.00 ft²</td> </tr> <tr> <td> b. N/A</td> <td>R=</td> <td>ft²</td> </tr> <tr> <td> c. N/A</td> <td>R=</td> <td>ft²</td> </tr> <tr> <td>12. Ducts, location & insulation level</td> <td></td> <td>R ft²</td> </tr> <tr> <td> a. Sup: Attic, Ret: Attic, AH: Main</td> <td></td> <td>6 433</td> </tr> <tr> <td> b.</td> <td></td> <td></td> </tr> <tr> <td> c.</td> <td></td> <td></td> </tr> <tr> <td>13. Cooling Systems</td> <td>kBtu/hr</td> <td>Efficiency</td> </tr> <tr> <td> a. Central Unit</td> <td>35.0</td> <td>SEER:16.00</td> </tr> <tr> <td>14. Heating Systems</td> <td>kBtu/hr</td> <td>Efficiency</td> </tr> <tr> <td> a. Electric Heat Pump</td> <td>34.6</td> <td>HSPF:8.50</td> </tr> <tr> <td>15. Hot Water Systems</td> <td></td> <td></td> </tr> <tr> <td> a. Electric</td> <td></td> <td>Cap: 50 gallons</td> </tr> <tr> <td></td> <td></td> <td>EF: 0.950</td> </tr> <tr> <td> b. Conservation features</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td>None</td> </tr> <tr> <td></td> <td></td> <td>Pstat</td> </tr> <tr> <td>16. Credits</td> <td></td> <td></td> </tr> </table>	10. Wall Types(1728.0 sqft.)	Insulation	Area	a. Face Brick - Wood, Exterior	R=13.0	1728.00 ft ²	b. N/A	R=	ft ²	c. N/A	R=	ft ²	d. N/A	R=	ft ²	11. Ceiling Types(2166.0 sqft.)	Insulation	Area	a. Flat ceiling under att (Vented)	R=30.0	2166.00 ft ²	b. N/A	R=	ft ²	c. N/A	R=	ft ²	12. Ducts, location & insulation level		R ft ²	a. Sup: Attic, Ret: Attic, AH: Main		6 433	b.			c.			13. Cooling Systems	kBtu/hr	Efficiency	a. Central Unit	35.0	SEER:16.00	14. Heating Systems	kBtu/hr	Efficiency	a. Electric Heat Pump	34.6	HSPF:8.50	15. Hot Water Systems			a. Electric		Cap: 50 gallons			EF: 0.950	b. Conservation features					None			Pstat	16. Credits		
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Glass/Floor Area: 0.120	Total Proposed Modified Loads: 54.49	
	Total Baseline Loads: 54.49	

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

PREPARED BY: *[Signature]*

DATE: 5-9-22 DL Williams

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

OWNER/AGENT: Francine Riale

DATE: 5/10/2022

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: _____

PASS

- 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 9.81 ACH50 (R402.4.1.2).

Page 2

INPUT SUMMARY CHECKLIST REPORT

WALLS															(Total Exposed Area = 1728 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	Face Brick - Wood	Main	13.0	26.0	4	8.0	0	210.7	0.086		0.23	0.75	0 %				
___ 2	E	Exterior	Face Brick - Wood	Main	13.0	50.0	0	8.0	0	400.0	0.086		0.23	0.75	0 %				
___ 3	S	Exterior	Face Brick - Wood	Main	13.0	27.0	4	8.0	0	218.7	0.086		0.23	0.75	0 %				
___ 4	W	Exterior	Face Brick - Wood	Main	13.0	50.0	0	8.0	0	400.0	0.086		0.23	0.75	0 %				
___ 5	N	Exterior	Face Brick - Wood	Main	13.0	20.0	0	8.0	0	160.0	0.086		0.23	0.75	0 %				
___ 6	N	Exterior	Face Brick - Wood	Main	13.0	11.0	8	8.0	0	93.3	0.086		0.23	0.75	0 %				
___ 7	S	Exterior	Face Brick - Wood	Main	13.0	11.0	8	8.0	0	93.3	0.086		0.23	0.75	0 %				
___ 8	S	Exterior	Face Brick - Wood	Main	13.0	19.0	0	8.0	0	152.0	0.086		0.23	0.75	0 %				

DOORS															(Total Exposed Area = 40 sq.ft.)				
✓ #	Ornt	Adjacent To	Door Type	Space	Storms	U-Value	Width Ft	In	Height Ft	In	Area								
___ 1	N	Exterior	Insulated	Main	None	0.46	3.00	0	6.00	8	20.0ft²								
___ 2	S	Exterior	Insulated	Main	None	0.46	3.00	0	6.00	8	20.0ft²								

WINDOWS															(Total Exposed Area = 259 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	N	0.55	0.70	N	N	30.0	1	6.00	5.00	6.0	2.0	Drapes/blinds	None		
___ 2	N	1	Vinyl	Low-E Double	Y	0.55	0.60	N	N	30.0	1	6.00	5.00	7.3	4.0	Drapes/blinds	None		
___ 3	S	7	Vinyl	Low-E Double	Y	0.55	0.60	N	N	30.0	1	6.00	5.00	1.0	2.0	Drapes/blinds	None		
___ 4	E	2	Vinyl	Low-E Double	Y	0.55	0.60	N	N	6.0	1	2.00	3.00	1.0	2.0	Drapes/blinds	None		
___ 5	N	6	Vinyl	Low-E Double	Y	0.55	0.60	N	N	15.0	1	3.00	5.00	1.3	2.0	Drapes/blinds	None		
___ 6	E	2	Vinyl	Low-E Double	Y	0.55	0.60	N	N	15.0	1	3.00	5.00	1.0	2.0	Drapes/blinds	None		
___ 7	E	2	Vinyl	Low-E Double	Y	0.55	0.60	N	N	15.0	1	3.00	5.00	1.0	2.0	Drapes/blinds	None		
___ 8	S	8	Vinyl	Low-E Double	Y	0.55	0.60	N	N	15.0	1	3.00	5.00	1.0	2.0	Drapes/blinds	None		
___ 9	S	8	Vinyl	Low-E Double	Y	0.55	0.60	N	N	15.0	1	3.00	5.00	1.0	2.0	Drapes/blinds	None		
___ 10	S	3	Vinyl	Low-E Double	Y	0.55	0.60	N	N	45.0	1	9.00	5.00	7.7	0.0	Drapes/blinds	None		
___ 11	S	3	Vinyl	Low-E Double	Y	0.55	0.60	N	N	30.0	1	6.00	5.00	7.7	2.0	Drapes/blinds	None		
___ 12	N	1	Vinyl	Low-E Double	Y	0.55	0.60	Y	N	6.7	1	1.00	6.67	6.0	2.0	Drapes/blinds	None		
___ 13	N	1	Vinyl	Low-E Double	Y	0.55	0.60	N	N	6.7	1	1.00	6.67	6.0	2.0	Drapes/blinds	None		

INFILTRATION											
✓ #	Scope	Method	SLA	CFM50	ELA	EqLA	ACH	ACH50	Space(s)	Infiltration Test Volume	
___ 1	Wholehouse	Proposed ACH	0.00050	2833	155.69	291.78	0.1925	9.8	All	17328 cu ft	

GARAGE					
✓ #	Floor Area	Roof Area	Exposed Wall Perimeter	Avg. Wall Height	Exposed Wall Insulation
___ 1	400 ft²	400 ft²	64 ft	8 ft	1

MASS					
✓ #	Mass Type	Area	Thickness	Furniture Fraction	Space
___ 1	Default(8 lbs/sq.ft.)	0 ft²	0 ft	0.30	Main

INPUT SUMMARY CHECKLIST REPORT

HEATING SYSTEM

✓ #	System Type	Subtype/Speed	AHRI #	Efficiency	Capacity kBtu/hr	----Geothermal HeatPump----			Ducts	Block
						Entry	Power	Volt	Current	
___ 1	Electric Heat Pump	None/Single		HSPF: 8.50	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	None/Single		SEER:16.0	35.0	1050	0.75	sys#1	1

HOT WATER SYSTEM

✓ #	System Type	Subtype	Location	EF(UEF)	Cap	Use	SetPnt	Fixture Flow	Pipe Ins.	Pipe length
___ 1	Electric	None	Garage	0.95 (0.93)	50.00 gal	70 gal	120 deg	Standard	None	99
	Recirculation System	Recirc Control Type	Loop length	Branch length	Pump power	DWHR	Facilities Connected	Equal Flow	DWHR Eff	Other Credits
___ 1	No		NA	NA	NA	No	NA	NA	NA	None

DUCTS

✓ Duct #	-----Supply----- Location R-Value Area	-----Return----- Location R-Value Area	Leakage Type	Air Handler	CFM 25 TOT	CFM 25 OUT	QN	RLF	HVAC # Heat Cool
___ 1	Attic 6.0 433 ft²	Attic 6.0 108 ft²	Default Leakage	Main	(Default)	(Default)			1 1

TEMPERATURES

Programable Thermostat: Y					Ceiling Fans: N									
Cooling	[] Jan	[] Feb	[] Mar	[] Apr	[] May	[X] Jun	[X] Jul	[X] Aug	[X] Sep	[] Oct	[] Nov	[] Dec		
Heating	[X] Jan	[X] Feb	[X] Mar	[] Apr	[] May	[] Jun	[] Jul	[] Aug	[] Sep	[] Oct	[X] Nov	[X] Dec		
Venting	[] Jan	[] Feb	[X] Mar	[X] Apr	[] May	[] Jun	[] Jul	[] Aug	[] Sep	[X] Oct	[X] 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 80	78 80	78 78	78 78	78 78	78 78	78 78	78 78	80 78	80 78	80 78	80 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	66 68	66 68	66 68	66 68	66 68	68 68	68 68	68 68	68 68	68 68	68 66	68 66	
___ Heating (WEH)	AM PM	66 68	66 68	66 68	66 68	66 68	68 68	68 68	68 68	68 68	68 68	68 66	68 66	

ENERGY PERFORMANCE LEVEL (EPL) DISPLAY CARD

ESTIMATED ENERGY PERFORMANCE INDEX* = 100

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

Forest Country Lot 6 plan 2169,Lake City,FL,32024

1. New construction or existing	New (From Plans)	10. Wall Types(1728.0 sqft.)	Insulation	Area
2. Single family or multiple family	Detached	a. Face Brick - Wood, Exterior	R=13.0	1728.00 ft ²
3. Number of units, if multiple family	1	b. N/A	R=	ft ²
4. Number of Bedrooms	4	c. N/A	R=	ft ²
5. Is this a worst case?	No	d. N/A	R=	ft ²
6. Conditioned floor area above grade (ft ²)	2166	11. Ceiling Types(2166.0 sqft.)	Insulation	Area
Conditioned floor area below grade (ft ²)	0	a. Flat ceiling under att (Vented)	R=30.0	2166.00 ft ²
7. Windows**	Description	b. N/A	R=	ft ²
a. U-Factor:	Dbl, U=0.55	c. N/A	R=	ft ²
SHGC:	SHGC=0.60	12. Ducts, location & insulation level	R	ft ²
b. U-Factor:	Dbl, default	a. Sup: Attic, Ret: Attic, AH: Main	6	433
SHGC:	Clear, default	b.		
c. U-Factor:	N/A	c.		
SHGC:		13. Cooling Systems	kBtu/hr	Efficiency
Area Weighted Average Overhang Depth:	4.515 ft	a. Central Unit	35.0	SEER:16.00
Area Weighted Average SHGC:	0.612	14. Heating Systems	kBtu/hr	Efficiency
8. Skylights	Description	a. Electric Heat Pump	34.6	HSPF:8.50
U-Factor:(AVG)	N/A			
SHGC:(AVG):	N/A	15. Hot Water Systems		
9. Floor Types	Insulation	a. Electric		Cap: 50 gallons
a. Slab-On-Grade Edge Insulation	R= 0.0			EF: 0.950
b. N/A	R=	b. Conservation features		
c. N/A	R=			None
		16. Credits		Pstat

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: Francine Riale Date: 5/10/2022

Address of New Home: Forest Country Lot 6 plan 2169 City/FL Zip: Lake City,FL,32024



*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.



Load Short Form

Entire House

DL Williams Heating & Cooling L.L.C.

Job:
Date: Feb 24, 2022
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: Forest Country Lot 6 plan 2169, Adams Homes
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 9 HSPF
Heating input
Heating output 33000 Btuh @ 47°F
Temperature rise 26 °F
Actual air flow 1160 cfm
Air flow factor 0.035 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
AHRI ref 7562981

Efficiency 13.0 EER, 16 SEER
Sensible cooling 24360 Btuh
Latent cooling 10440 Btuh
Total cooling 34800 Btuh
Actual air flow 1160 cfm
Air flow factor 0.044 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	4354	1658	154	73
wic3	20	0	0	0	0
ah	16	0	0	0	0
bath	72	1251	842	44	37
br3	164	1901	1618	67	72
br4	161	4198	2260	149	100
living	120	2318	1685	82	75
dining	120	2097	1920	74	85
hall	48	0	0	0	0
family	468	6797	7695	241	341
kitchen	216	1038	3466	37	154
laundry	72	109	957	4	42
wic2	30	549	206	19	9
linebn	15	0	0	0	0

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

mbath	101	755	420	27	19
wic1	30	543	195	19	9
masrter bed	280	5114	2170	181	96
bkfst	54	1757	1080	62	48
Entire House	2169	32781	26172	1160	1160
Other equip loads		0	0		
Equip. @ 0.97 RSM			25439		
Latent cooling			4170		
TOTALS	2169	32781	29609	1160	1160

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



Loads for Multiple Orientations

Entire House

DL Williams Heating & Cooling L.L.C.

Job:

Date: Feb 24, 2022

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: Forest Country Lot 6 plan 2169, Adams Homes
32024

Design Conditions

Location:

Gainesville Regional, FL, US

Elevation: 123 ft

Latitude: 30°N

Outdoor:

Dry bulb (°F)

Heating

33

Cooling

92

Daily range (°F)

-

18 (M)

Wet bulb (°F)

-

76

Wind speed (mph)

15.0

7.5

Indoor:

Indoor temperature (°F)

Heating

68

Cooling

75

Design TD (°F)

35

17

Relative humidity (%)

30

50

Moisture difference (gr/lb)

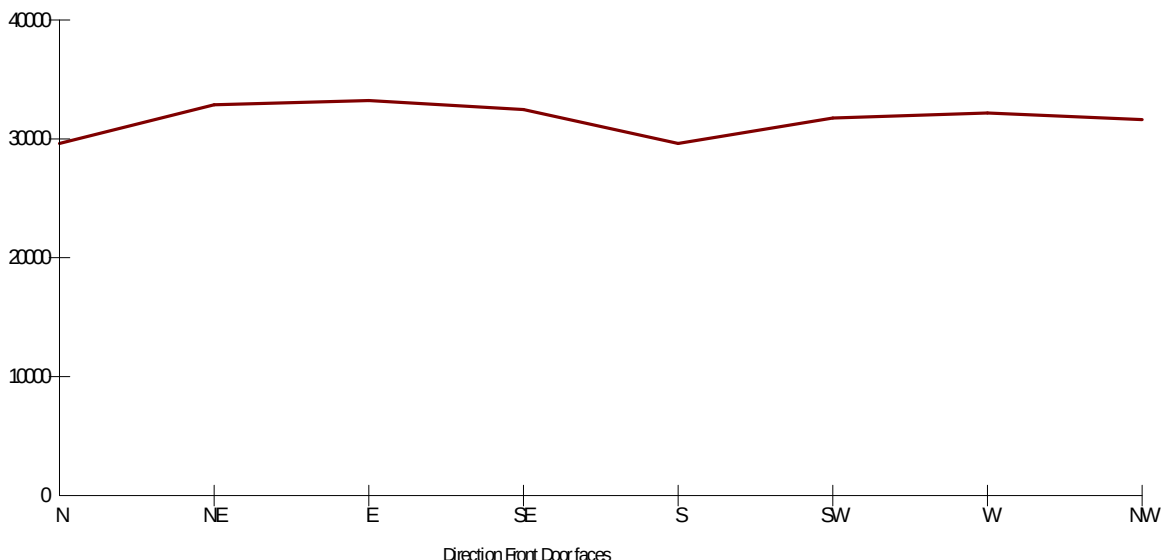
8.2

43.8

Infiltration:

Front Door	North	Northeast	East	Southeast	South	Southwest	West	Northwest
Sensible Load (Btuh)	25439	28693	29066	28302	25439	27584	28008	27445
Latent Load (Btuh)	4170	4170	4170	4170	4170	4170	4170	4170
Total Load (Btuh)	29609	32863	33236	32472	29609	31754	32178	31615
Heating AVF (cfm)	1160	1160	1160	1160	1160	1160	1160	1160
Cooling AVF (cfm)	1160	1160	1160	1160	1160	1160	1160	1160

Building Orientation Cooling Load



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.



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2022-May-12 08:06:03

Page 1

...\\Wrightsoft HVAC\\Trane\\Adams Home plan 2169.rup Calc = MJ8 Front Door faces: S



Project Summary

Entire House

DL Williams Heating & Cooling L.L.C.

Job:
Date: Feb 24, 2022
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: Forest Country Lot 6 plan 2169, Adams Homes
32024

Notes:

Design Information

Weather: Gainesville Regional, FL, US

Winter Design Conditions

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

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

Heating Summary

Structure	25432 Btuh
Ducts	7349 Btuh
Central vent (0 cfm) (none)	0 Btuh
Humidification	0 Btuh
Piping	0 Btuh
Equipment load	32781 Btuh

Sensible Cooling Equipment Load Sizing

Structure	17025 Btuh
Ducts	9146 Btuh
Central vent (0 cfm) (none)	0 Btuh
Blower	0 Btuh
Use manufacturer's data	n
Rate/swing multiplier	0.97
Equipment sensible load	25439 Btuh

Infiltration

Method	Simplified
Construction quality	Average
Fireplaces	0

Latent Cooling Equipment Load Sizing

Structure	2346 Btuh
Ducts	1825 Btuh
Central vent (0 cfm) (none)	0 Btuh
Equipment latent load	4170 Btuh

	Heating	Cooling
Area (ft ²)	2169	2169
Volume (ft ³)	19549	19549
Air changes/hour	0.32	0.16
Equiv. AVF (cfm)	104	52

Equipment Total Load (Sen+Lat)	29609 Btuh
Req. total capacity at 0.70 SHR	3.0 ton

Heating Equipment Summary

Make	Trane
Trade	TRANE
Model	4TWR6036H1
AHRI ref	7562981
Efficiency	9 HSPF
Heating input	
Heating output	33000 Btuh @ 47°F
Temperature rise	26 °F
Actual air flow	1160 cfm
Air flow factor	0.035 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 Summary

Make	Trane
Trade	TRANE
Cond	4TWR6036H1
Coil	TEM6A0C36H31
AHRI ref	7562981
Efficiency	13.0 EER, 16 SEER
Sensible cooling	24360 Btuh
Latent cooling	10440 Btuh
Total cooling	34800 Btuh
Actual air flow	1160 cfm
Air flow factor	0.044 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.



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Page 1



Duct system multi orientation report

Entire House

DL Williams Heating & Cooling L.L.C.

Job:

Date: Feb 24, 2022

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: Forest Country Lot 6 plan 2169, Adams Homes
32024

Group 1: (N, SE, S, NW) Group 2: (NE, E, SW) Group 3: (W)

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	44 h	12x6	4	44 h	12x6	4	44 h	12x6	4	44 h	12x6	4
bkfst	62 h	12x6	6	77 c	12x6	6	76 c	12x6	6	68 c	12x6	6
br2	154 h	12x6	6	154 h	12x6	6	154 h	12x6	6	154 h	12x6	6
br3	72 c	12x6	5	67 h	12x6	5	67 h	12x6	5	67 h	12x6	5
br4	149 h	12x6	0	149 h	12x6	0	149 h	12x6	0	149 h	12x6	0
dining	85 c	12x6	7	101 c	12x6	7	105 c	12x6	7	88 c	12x6	7
family	171 c	12x6	6	173 c	12x6	6	171 c	12x6	6	175 c	12x6	6
family-A	171 c	12x6	6	173 c	12x6	6	171 c	12x6	6	175 c	12x6	6
kitchen	154 c	12x6	6	121 c	12x6	6	116 c	12x6	6	126 c	12x6	6
laundry	42 c	12x6	4	33 c	12x6	4	32 c	12x6	4	35 c	12x6	4
living	82 h	12x6	5	93 c	12x6	5	98 c	12x6	5	82 h	12x6	5
masrter bed	90 h	12x6	7	90 h	12x6	7	90 h	12x6	7	90 h	12x6	7
masrter bed-A	90 h	12x6	7	90 h	12x6	7	90 h	12x6	7	90 h	12x6	7
mbath	27 h	12x6	4	27 h	12x6	4	27 h	12x6	4	27 h	12x6	4
wic1	19 h	12x6	4	19 h	12x6	4	19 h	12x6	4	19 h	12x6	4
wic2	19 h	12x6	4	19 h	12x6	4	19 h	12x6	4	19 h	12x6	4
Supply Trunks												
st1	242 c		8	217 c		7	204 c		7	231 c		8
st4	250 h		6	250 h		6	250 h		6	250 h		6
st2	632 c		14	647 c		14	651 c		14	634 c		14
Return Branches												
rb1	1160 c	12x12	0	1160 c	12x12	0	1160 c	12x12	0	1160 c	12x12	0
Friction Rates												
Heating FR	0.266			0.266			0.266			0.266		
Cooling FR	0.266			0.266			0.266			0.266		



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2022-May-12 08:06:04

Page 1

Project Information

For: Forest Country Lot 6 plan 2169, Adams Homes
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	44 h	12x6	4	44 h	12x6	4	44 h	12x6	4	44 h	12x6	4
bkfst	62 h	12x6	6	62 h	12x6	6	62 h	12x6	6	62 h	12x6	6
br2	154 h	12x6	6	154 h	12x6	6	154 h	12x6	6	154 h	12x6	6
br3	77 c	12x6	5	67 h	12x6	5	67 h	12x6	5	67 h	12x6	5
br4	149 h	12x6	0	149 h	12x6	0	149 h	12x6	0	149 h	12x6	0
dining	84 c	12x6	7	112 c	12x6	7	124 c	12x6	7	104 c	12x6	7
family	168 c	12x6	6	161 c	12x6	6	162 c	12x6	6	173 c	12x6	6
family-A	168 c	12x6	6	161 c	12x6	6	162 c	12x6	6	173 c	12x6	6
kitchen	151 c	12x6	6	131 c	12x6	6	124 c	12x6	6	129 c	12x6	6
laundry	42 c	12x6	4	36 c	12x6	4	34 c	12x6	4	35 c	12x6	4
living	82 h	12x6	5	103 c	12x6	5	115 c	12x6	6	96 c	12x6	5
masrter bed	90 h	12x6	7	90 h	12x6	7	90 h	12x6	7	90 h	12x6	7
masrter bed-A	90 h	12x6	7	90 h	12x6	7	90 h	12x6	7	90 h	12x6	7
mbath	27 h	12x6	4	27 h	12x6	4	27 h	12x6	4	27 h	12x6	4
wic1	19 h	12x6	4	19 h	12x6	4	19 h	12x6	4	19 h	12x6	4
wic2	19 h	12x6	4	19 h	12x6	4	19 h	12x6	4	19 h	12x6	4
Supply Trunks												
st1	245 c		8	216 c		7	198 c		7	228 c		8
st4	250 h		6	250 h		6	250 h		6	250 h		6
st2	622 c		14	632 c		14	635 c		14	629 c		14
Return Branches												
rb1	1160 c	12x12	0	1160 c	12x12	0	1160 c	12x12	0	1160 c	12x12	0
Friction Rates												
Heating FR	0.266			0.266			0.266			0.266		
Cooling FR	0.266			0.266			0.266			0.266		

Project Information

For: Forest Country Lot 6 plan 2169, Adams Homes
32024

Duct Name	Largest			Smalest		
	Reg CFM	Reg Size	Duct Size	Reg CFM	Reg Size	Duct Size
Supply Branches						
bath	44 h	12x6	4	44 h	12x6	4
bkfst	77 c	12x6	6	62 h	12x6	6
br2	154 h	12x6	6	154 h	12x6	6
br3	77 c	12x6	5	67 h	12x6	5
br4	149 h	12x6	0	149 h	12x6	0
dining	124 c	12x6	7	84 c	12x6	7
family	175 c	12x6	6	161 c	12x6	6
family-A	175 c	12x6	6	161 c	12x6	6
kitchen	154 c	12x6	6	116 c	12x6	6
laundry	42 c	12x6	4	32 c	12x6	4
living	115 c	12x6	6	82 h	12x6	5
masrter bed	90 h	12x6	7	90 h	12x6	7
masrter bed-A	90 h	12x6	7	90 h	12x6	7
mbath	27 h	12x6	4	27 h	12x6	4
wic1	19 h	12x6	4	19 h	12x6	4
wic2	19 h	12x6	4	19 h	12x6	4
Supply Trunks						
st1	245 c		8	198 c		7
st4	250 h		6	250 h		6
st2	651 c		14	622 c		14
Return Branches						
rb1	1160 c	12x12	0	1160 c	12x12	0
Friction Rates						
Heating FR	0.266			0.266		
Cooling FR	0.266			0.266		

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: Feb 24, 2022
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: Forest Country Lot 6 plan 2169, Adams Homes
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	14	0
Measured length of trunk	39	0
Equivalent length of fittings	135	0
Total length	188	0
Total effective length		188

Friction Rate

	Heating (in/100ft)	Cooling (in/100ft)
Supply Ducts	0.266 > 0.18	0.266 > 0.18
Return Ducts	0.266 > 0.18	0.266 > 0.18

Fitting Equivalent Length Details

Supply	4AD=60, 11A=20, 11A=20, 1A=35: TotalEL=135
Return	TotalEL=0



Duct System Summary

Entire House

DL Williams Heating & Cooling L.L.C.

Job:

Date: Feb 24, 2022

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: Forest Country Lot 6 plan 2169, Adams Homes
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	0.266 in/100ft	0.266 in/100ft
Actual air flow	1160 cfm	1160 cfm
Total effective length (TEL)	188 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 1251	44	37	0.495	4.0	0x0	VIFx	6.0	95.0	st2
bkfst	h 1757	62	48	0.326	6.0	0x0	VIFx	38.2	115.0	
br2	h 4354	154	73	0.519	6.0	0x0	VIFx	1.4	95.0	st1
br3	c 1618	67	72	0.365	5.0	0x0	VIFx	22.1	115.0	
br4	h 2260	149	100	0	0	0x0	VIFx	0	0	st2
dining	c 1920	74	85	0.348	7.0	0x0	VIFx	28.5	115.0	
family	c 3848	120	171	0.346	6.0	0x0	VIFx	29.7	115.0	st1
family-A	c 3848	120	171	0.341	6.0	0x0	VIFx	31.4	115.0	st2
kitchen	c 3466	37	154	0.345	6.0	0x0	VIFx	29.8	115.0	st2
laundry	c 957	4	42	0.283	4.0	0x0	VIFx	41.4	135.0	st4
living	h 2318	82	75	0.467	5.0	0x0	VIFx	12.1	95.0	st4
masrter bed	h 2557	90	48	0.266	7.0	0x0	VIFx	53.3	135.0	
masrter bed-A	h 2557	90	48	0.273	7.0	0x0	VIFx	48.2	135.0	st4
mbath	h 755	27	19	0.279	4.0	0x0	VIFx	44.1	135.0	st4
wic1	h 543	19	9	0.271	4.0	0x0	VIFx	49.8	135.0	st4
wic2	h 549	19	9	0.269	4.0	0x0	VIFx	51.1	135.0	st4

Supply Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
st1	Peak AVF	188	242	0.346	694	8.0	0 x 0	VinIFlx	st2
st4	Peak AVF	250	175	0.266	1274	6.0	0 x 0	VinIFlx	
st2	Peak AVF	544	632	0.266	591	14.0	0 x 0	VinIFlx	

Bold/italic values have been manually overridden

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	1160	1160	0	0	0	0	0x 0		VIFx	



Manual S Compliance Report

Entire House

DL Williams Heating & Cooling L.L.C.

Job:

Date: Feb 24, 2022

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: Forest Country Lot 6 plan 2169, Adams Homes
32024

Cooling Equipment

Design Conditions

Outdoor design DB:	92.2°F	Sensible gain:	26172	Btuh	Entering coil DB:	77.4°F
Outdoor design WB:	75.8°F	Latent gain:	4170	Btuh	Entering coil WB:	63.6°F
Indoor design DB:	75.0°F	Total gain:	30342	Btuh		
Indoor RH:	50%	Estimated airflow:	1160	cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP			
Manufacturer:	Trane	Model:	4TWR6036H1+TEM6A0C36H31	
Actual airflow:	1160	cfm		
Sensible capacity:	29757	Btuh	114% of load	
Latent capacity:	4450	Btuh	107% of load	
Total capacity:	34207	Btuh	113% of load	SHR: 87%

Heating Equipment

Design Conditions

Outdoor design DB:	33.2°F	Heat loss:	32781	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	
Actual airflow:	1160	cfm		
Output capacity:	33000	Btuh	101% of load	Capacity balance: 33 °F
Supplemental heat required:	0	Btuh		Economic balance: -99 °F

Backup equipment type:	Elec strip			
Manufacturer:		Model:		
Actual airflow:	1160	cfm		
Output capacity:	9.3	kW	96% of load	Temp. rise: 50 °F

Meets all requirements of ACCA Manual S.



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

Form
RPER 1
15 Mar 09

Columbia Header Information

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

REQUIRED ATTACHMENTS
Manual J1 Form (and supporting worksheets):
or MJ1AE Form* (and supporting worksheets):
OEM performance data (heating, cooling, blower):
Manual D Friction Rate Worksheet:
Duct distribution sketch:

ATTACHED
Yes ☐ No ☐
Yes ☐ No ☐
Yes ☐ No ☐
Yes ☐ No ☐
Yes ☐ No ☐

HVAC LOAD CALCULATION (IRC M1401.3)

Design Conditions

Winter Design Conditions

Outdoor temperature: 33 °F
Indoor temperature: 68 °F
Total heat loss: 32781 Btuh

Summer Design Conditions

Outdoor temperature: 92 °F
Indoor temperature: 75 °F
Grains difference: 44 gr/lb @50% RH
Sensible heat gain: 26926 Btuh
Latent heat gain: 4290 Btuh
Total heat gain: 31216 Btuh

Building Construction Information

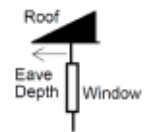
Building

Orientation: Front Door faces South
North, East, West, South, Northeast, Northwest, Southeast, Southwest

Number of bedrooms: 0
Conditioned floor area: 2169 ft²
Number of occupants: 4

Windows

Eave overhang depth: 8.0 ft
Internal shade: blinds
Blinds, drapes, etc.
Number of skylights: 0



HVAC EQUIPMENT SELECTION (IRC M1401.3)

Heating Equipment Data

Equipment type: Split ASHP
Furnace, Heat pump, Boiler, etc.
Model: Trane
4TWR6036H1+TEM6A0C36H31
Heating output capacity: 0 Btuh
Heat pumps - capacity at winter design outdoor conditions
Aux. heating output capacity: 31600 Btuh

Cooling Equipment Data

Equipment type: Split ASHP
Air Conditioner, Heat pump, etc.
Model: Trane
4TWR6036H1+TEM6A0C36H31
Total cooling capacity: 34207 Btuh
Sensible cooling capacity: 29757 Btuh
Latent cooling capacity: 4450 Btuh

Blower Data

Heating cfm: 1160
Cooling cfm: 1160
Static pressure: 0.50 in H₂O
Fan's rated external static pressure for design airflow

HVAC DUCT DISTRIBUTION SYSTEM DESIGN (IRC M1601.1)

Design airflow:	1160 cfm	Longest supply duct:	188 ft	Duct Materials Used	
Equipment design ESP:	0.50 in H ₂ O	Longest return duct:	0 ft	Trunk duct:	Round flex vinyl
Total device pressure losses:	0 in H ₂ O	Total effective length (TEL):	188 ft	Branch duct:	Round flex vinyl
Available static pressure (ASP):	0.50 in H ₂ O	Friction rate:	0.266 in/100ft		

Friction Rate = ASP ÷ (TEL × 100)

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

Contractor's printed name: _____

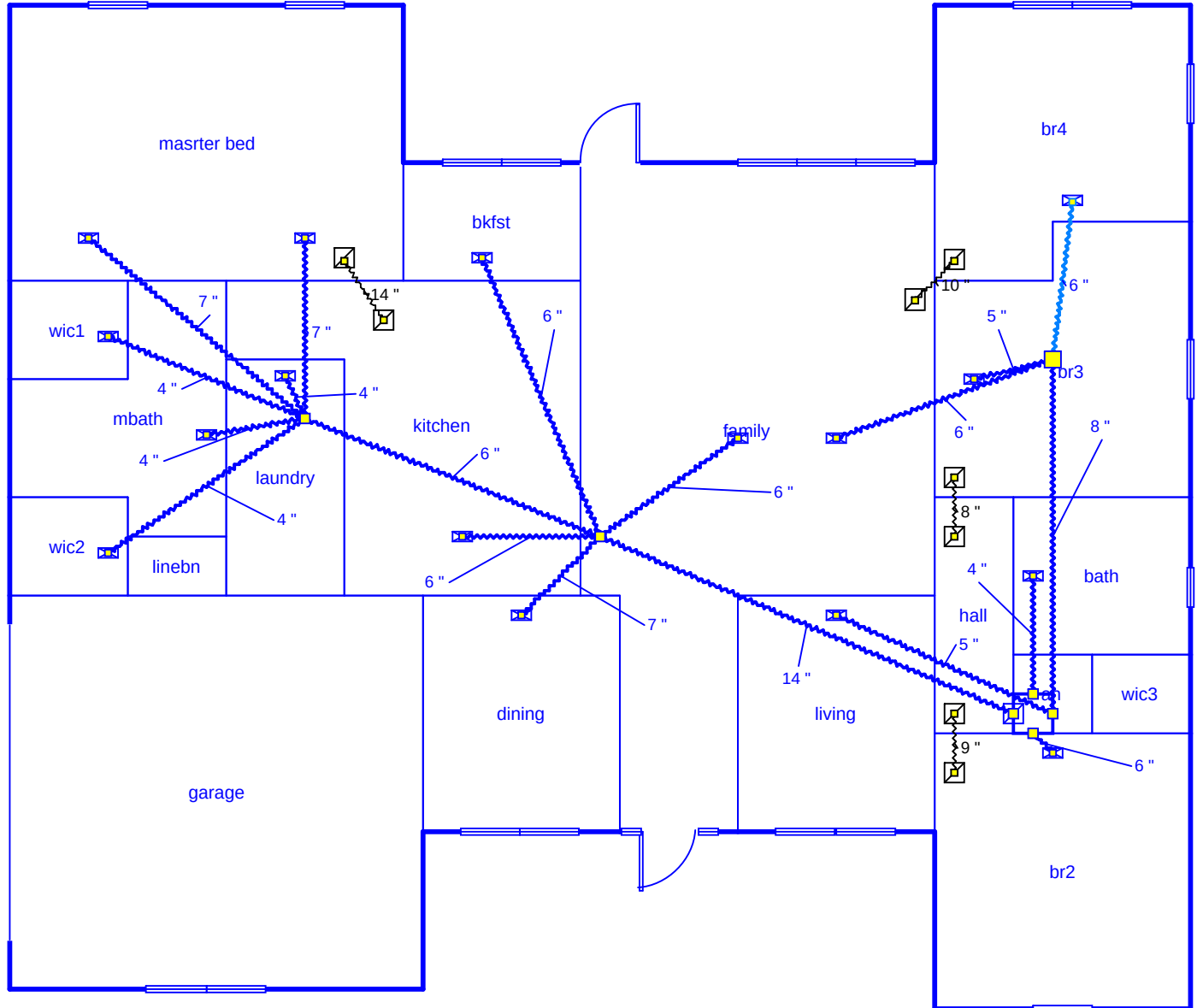
Contractor's signature: _____ Date: _____

Reserved for County, Town Municipality or Authority having jurisdiction use.

*Home qualifies for MJ1AE Form based on Abridged Edition Checklist



main



Job #:
Performed by DL Williams Heating & Cool
Forest Country Lot 6 plan 2169

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

Page 1
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2022-May-12 08:06:36
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