

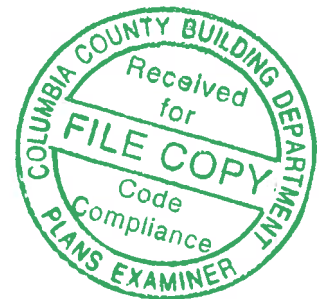
Schafer Engineering LLC

14705 Main St. Alachua FL 32615

E

Prepared for:

DWC CONTRACTING
THORNWOOD / LOT 24
FORT WHITE, FLORIDA



By:

Schafer Engineering, LLC CA9312

386-462-1340

NO COPIES ARE TO BE PERMITTED

SCHAFFER ENGINEERING, LLC
7104 NW 42ND LANE \ GAINESVILLE FL. 32606
PHONE: 386-462-1340

Trusses: Pre-engineered, pre-fabricated with the manufacturer's required bracing system installed.

Roof Sheathing: Type: OSB Size: 7/16" Fastener type nails: 8d / .113 Ring Shank
Interior zone spacing: Interior: 6" Periphery: 4"
Edge and end zone spacing: Interior: 6" Periphery: 4"

Double Top Plate: Type: Spruce Grade: #2 Size: 2 x 4 Nail Spacing: 8" o.c.

Stud Type: Spruce Grade: #2 Size: 2 x 4
Interior stud spacing: 16" End stud spacing: 16"

Required Shear Wall Siding: Type: OSB Thickness: 7/16"
94 ft Trans: Fastener 8d/131 Spacing: Int: 8 Edge: 4"
33 ft Long: Fastener 8d/131 Spacing: Int: 8 Edge: 4"

Allowable Unit Shear on Shear Walls: 314 pounds per linear foot
Allowable Unit Shear Transferred from Diaphragm: Trans: 56 Long: 147

Wall Tension Transferred by: Siding Nails: 8d/131 @ 4" O.C. Edges

Foundation Anchor Bolts: Concrete Strength: 3000 psi Size: 1/2"

Washer: 2" Embedment: 7" Location of first anchor bolt from corner: 8"

Anchor Bolts @ 48" o.c. Model: A307 Loc. from corner: 8"

Type of Foundation: (1) - #5 rebar continuous required in bond beam.

Floor Slab: 4" Cmu size: 8" x 16" Height: 32" Rein.: #5 at 72" o.c.

Monolithic Footing: Depth: 20" Bottom Width: 12 Rein.: 2 #5 rebars

Stemwall Footing: Width: 20 Depth: 10 Rein.: 2 #5 rebar

Interior Footings 20" Wide X 12" Deep with 2-#5 rebar continuous
Add a third #5 bar of grade 40 steel for a second story.

6. X 6 X 9' syp #2 pt @ Simpson PC66 \
Porch Columns: 9'-6" o.c. max. spacing Column Fasteners: PBS66 or equal

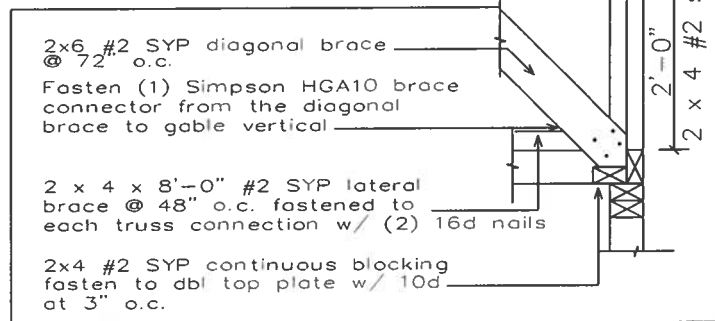
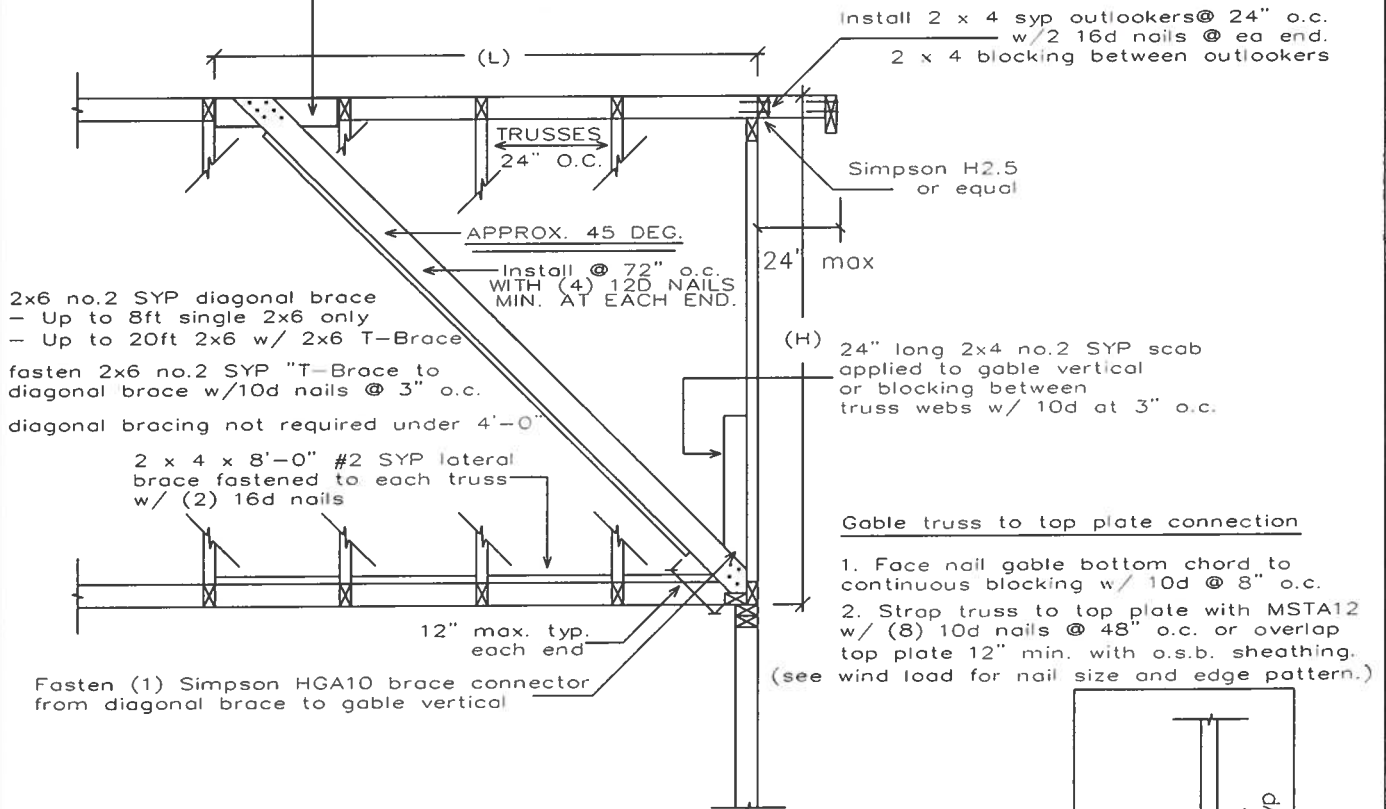
Special Comments: Install 2 ply 2 x 12 syp #2 with 7/16" osb flitch beam over
all doors and windows.

Notes:

1. Balloon frame all gable ends unless accompanied by gable end detail
2. All walls to be nailed with same nailing pattern as the shear walls.
3. This wind load is not valid without a raised, embossed seal. (NO COPIES).
4. 1500 psf soil bearing pressure minimum.
5. Fiber mesh or WWM may be used in concrete slab. All steel must be grade 40 min.
Install standard 10" ACI hook top and bottom.
6. Trusses must be installed and anchored in accordance to the truss engineering.
7. All headers spanning 12' and over must be pre-engineered.
8. This is a windload only. Not a structural analysis. Schaffer Engineering strongly recommends always having a structural analysis.
9. The foundation is for minimum design use, and may be increased.
10. Wind load is for one use only \ FBC-2017 \ No copies permitted
11. Install anchor bolts a 48" o.c., & Simpson SP1 at bottom plate and Simpson SP2 at top plate or equal @ 32" O.C. for all interior bearing walls.
12. Truss company to use all exterior porch walls for bearing when possible.

SCHAFER ENGINEERING, LLC
 7104 NW 42ND LANE \ GAINESVILLE FL. 32606
 PHONE: 386-462-1340

Toe-Nail min 2x6 No 2 SYP blocking
 between truss top chords with
 (3) 10d each end min.



TYPICAL GABLE END BRACING

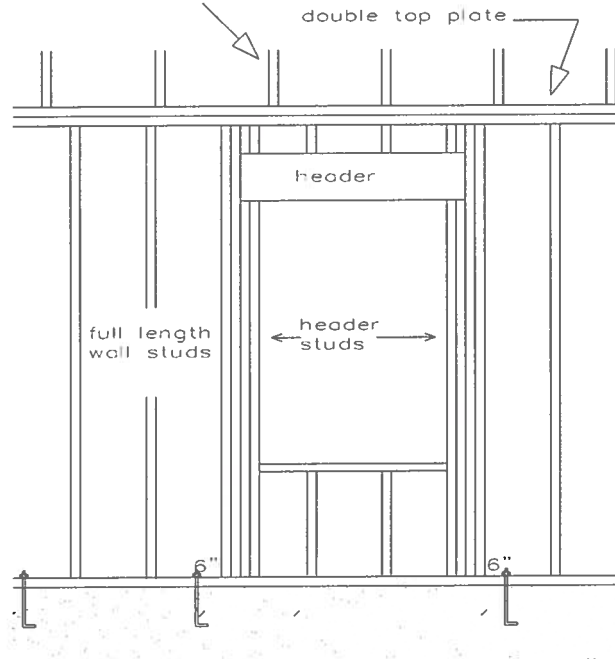
Bruce Schafer, P. E. #48984 CA #9312
 7104 NW 42ND LN
 GAINESVILLE, FL. 32606

2-21-20

SCHAFER ENGINEERING, LLC

7104 NW 42ND LANE \ GAINESVILLE FL. 32606
PHONE: 386-462-1340

see truss engineering for required
anchorage from truss to top plate
and bracing system to be installed



total each truss uplift on the header and divide
by two for header and header stud anchorages

		Maximum Header Span (ft)					
		3'	6'	9'	12'	15'	18'
		Number of Header Studs Supporting End of Header					
		1		2	2	2	2
Unsupported Wall Height	Stud Spacing	Number of Full Length Studs at Each End of Header					
		2	2	3	3	3	3
10'-0" or less	12"	2	2	3	3	3	3
	16"	2	2	3	3	3	3
	24"	1	2	2	2	2	2
Greater than 10'-0"	12"	2	2	3	4	5	5
	16"	2	2	3	3	4	4
	24"	1	2	2	2	3	3

SCHAFER ENGINEERING, LLC

7104 NW 42ND LANE \ GAINESVILLE FL. 32606
PHONE: 386-462-1340

TIE-DOWN TABLES

HEADER STRAPPING				
Uplift Lbs	Top Connector	Rating Lbs	Bottom Connector	Rating Lbs
to 455	LSTA9	635	H3	320
to 910	LSTA12	795	2-H3	640
to 1265	LSTA18	1110	LTT19	1305
to 1750	2-LSTA12	1810	LTT20	1750
to 2530	2-LSTA18	2530	HD2A-2.5	2165
to 2865	3-LSTA18	3255	HD2A-3.5	2565
to 3700	3-LSTA24	3880	HD5A-3	3130
Total the uplift for each truss sitting on the header and divide by 2 to determine the uplift on the header. Use proper bolt anchors sufficient to support required uplift loads.				

TRUSSES \ GIRDERS			
Uplift Lbs	Top Connector	Bottom Connector	Rating Lbs
to 535	H2.5A	NA	
to 1015	H10A	NA	
to 1215	TS22	LTT19	1305
to 1750	2-TS22	LTT20	1750
to 2570	2-TS22	HD2A	2565
to 3665	3-TS22	HD5A	3645
to 5420	2-MST37	HTT22	5250
to 9660	2-MST60	HD10A	8160
Two 12d common toenails are required per truss for each bearing point into top plate. It is the contractors responsibility to provide a continuous load path from truss to foundation.			

	TOP CONNECTOR	RATING LBS	BOTTOM CONNECTOR	RATING LBS
BEAM SEATS	LSTA18	1110	LTT19	1305
POSTS	2-LSTA18	2220	ABU44	2200

1. Simpson or equivalent hardware may be used.
For nailing into spruce members,
multiply table values by .86
2. See truss engineering for anchor uplift values.
3. This schedule is not meant to be a
replacement to the specified values of
any manufactures values.

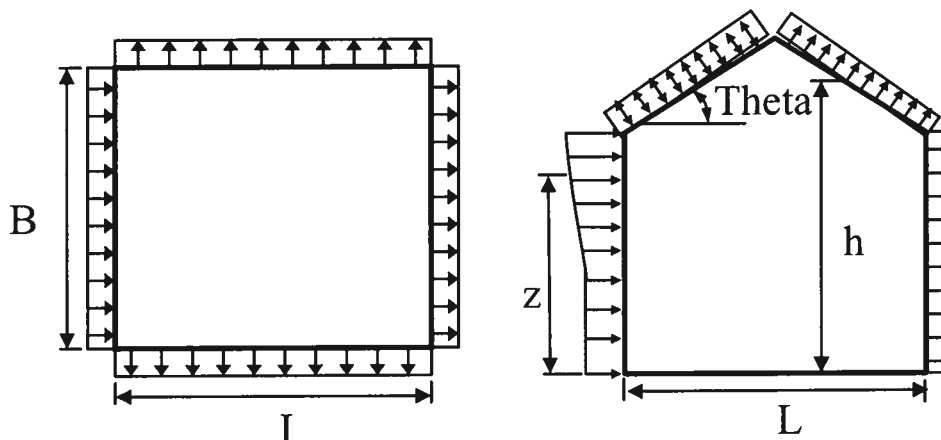
Red values should be changed only through "Main Menu"

Calculated Parameters	
Importance Factor	1
<i>Non-Hurricane, Hurricane (v=85-100 mph) & Alaska</i>	
Table C6-4 Values	
Alpha =	7.000
zg =	1200.000
At =	0.143
Bt =	0.840
Am =	0.250
Bm =	0.450
Cc =	0.300
I =	320.00 ft
Epsilon =	0.333
Zmin =	30.00 ft

Gust Factor Summary			
Main Wind-force resisting system:		Components and Cladding:	
Gust Factor Category:	I	Gust Factor Category:	I
Gust Factor (G)	0.86	Gust Factor (G)	0.86

Elev. ft	Kz	Kzt	Kd	qz lb/ft^2	Pressure (lb/ft^2)	
					Windward Wall* +GCpi	-GCpi
20	0.70	1.00	1.00	32.69	17.67	27.32
15	0.70	1.00	1.00	32.69	17.67	27.32

Loads on Main Wind-Force Resisting Systems



Variable	Formula	Value	Units
Kh	$2.01 \cdot (15/zg)^{(2/\text{Alpha})}$	0.57	
Kht	Topographic factor (Fig 6-2)	1.00	
Qh	$.00256 \cdot (V)^2 \cdot \text{ImpFac} \cdot Kh \cdot Kht \cdot Kd$	26.81	psf

Wall Pressure Coefficients, C_p	
Surface	C_p
Windward Wall (See Figure 6.5.12.2.1 for Pressures)	0.80

Roof Pressure Coefficients, Cp	
Roof Area (sq. ft.)	-
Reduction Factor	1.00

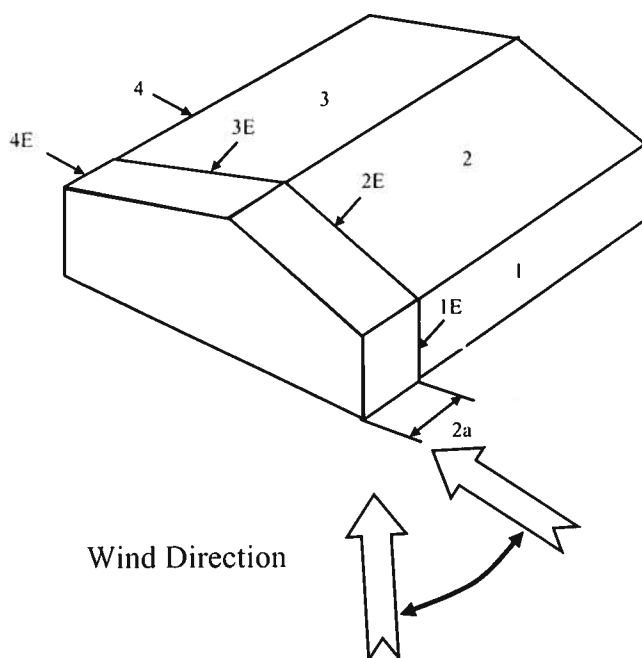
Description	Cp	Pressure (psf)	
		+GCpi	-GCpi
Leeward Walls (Wind Dir Parallel to 62.5 ft wall)	-0.50	-16.36	-6.71
Leeward Walls (Wind Dir Parallel to 54.17 ft wall)	-0.47	-15.65	-6.00
Side Walls	-0.70	-20.97	-11.32
Roof - Normal to Ridge (Theta>=10)			
Windward - Max Negative	-0.20	-9.55	0.10
Windward - Max Positive	0.29	1.93	11.58
Leeward Normal to Ridge	-0.60	-18.67	-9.01
Overhang Top	-0.20	-4.72	-4.72
Overhang Bottom	0.80	0.69	0.69
Roof - Parallel to Ridge (All Theta)			
Dist from Windward Edge: 0 ft to 7.25 ft	-0.90	-25.59	-15.93
Dist from Windward Edge: 7.25 ft to 14.5 ft	-0.90	-25.59	-15.93
Dist from Windward Edge: 14.5 ft to 29 ft	-0.50	-16.36	-6.71
Dist from Windward Edge: > 29 ft	-0.30	-11.75	-2.09

* Horizontal-distance-from windward edge

Loads on Main Wind-Force Resisting Systems w/ $H_t \leq 60$ ft

Kh =	$2.01 \cdot (15/zg)^{2/\text{Alpha}}$	=	0.57
Kht =	Topographic factor (Fig 6-2)	=	1.00
Qh =	$0.00256 \cdot (V)^2 \cdot \text{ImpFac} \cdot Kh \cdot Kht \cdot Kd$	=	26.81

Case A						
Surface	GCpf	+GCpi	-GCpi	qh (psf)	Min P (psf)	Max P (psf)
1	0.55	0.18	-0.18	32.69	12.09	23.85
2	-0.10	0.18	-0.18	32.69	-9.02	2.75
3	-0.45	0.18	-0.18	32.69	-20.49	-8.73
4	-0.39	0.18	-0.18	32.69	-18.64	-6.88
5	0.00	0.18	-0.18	32.69	-5.88	5.88
6	0.00	0.18	-0.18	32.69	-5.88	5.88
1E	0.73	0.18	-0.18	32.69	17.89	29.66
2E	-0.19	0.18	-0.18	32.69	-11.95	-0.18
3E	-0.58	0.18	-0.18	32.69	-24.99	-13.22
4E	-0.53	0.18	-0.18	32.69	-23.35	-11.58
5E	0.00	0.18	-0.18	32.69	-5.88	5.88
6E	0.00	0.18	-0.18	32.69	-5.88	5.88

$$* p = qh * (GC_{pf} - GC_{pi})$$


Loads on Main Wind-Force Resisting Systems w/ Ht $\leq$ 60 ft

Kh =	$2.01 \cdot (15/zg)^{2/\text{Alpha}}$	=	0.57
Kht =	Topographic_factor (Fig 6-2)	=	1.00
Qh =	$0.00256 \cdot (V)^2 \cdot \text{ImpFac} \cdot Kh \cdot Kht \cdot Kd$	=	26.81

=12345XPPZ\0Z_R→PPZ\0S_]]U^T0]S0PS\X\0^T0Tryvur→PPZ\0SUT0PQWUPR_TUST=_^→PPZ\0SUT

Case B						
Surface	GCpf	+GCpi	-GCpi	qh (psf)	Min P (psf)	Max P (psf)
1	-0.45	0.18	-0.18	32.69	-20.59	-8.83
2	-0.69	0.18	-0.18	32.69	-28.44	-16.67
3	-0.37	0.18	-0.18	32.69	-17.98	-6.21
4	-0.45	0.18	-0.18	32.69	-20.59	-8.83
5	0.40	0.18	-0.18	32.69	7.19	18.96
6	-0.29	0.18	-0.18	32.69	-15.36	-3.60
1E	-0.48	0.18	-0.18	32.69	-21.57	-9.81
2E	-1.07	0.18	-0.18	32.69	-40.86	-29.09
3E	-0.53	0.18	-0.18	32.69	-23.21	-11.44
4E	-0.48	0.18	-0.18	32.69	-21.57	-9.81
5E	0.61	0.18	-0.18	32.69	14.06	25.82
6E	-0.43	0.18	-0.18	32.69	-19.94	-8.17

* $p = qh * (GC_{pf} - GC_{pi})$

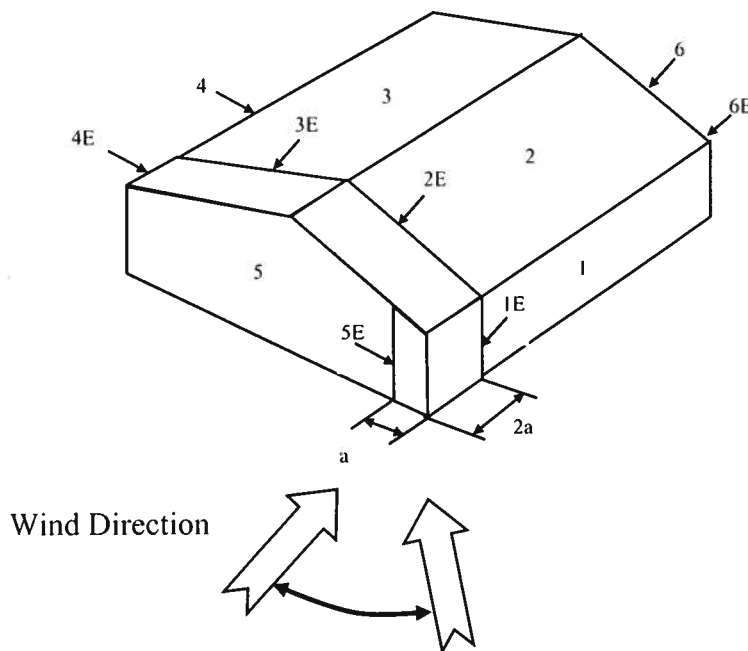
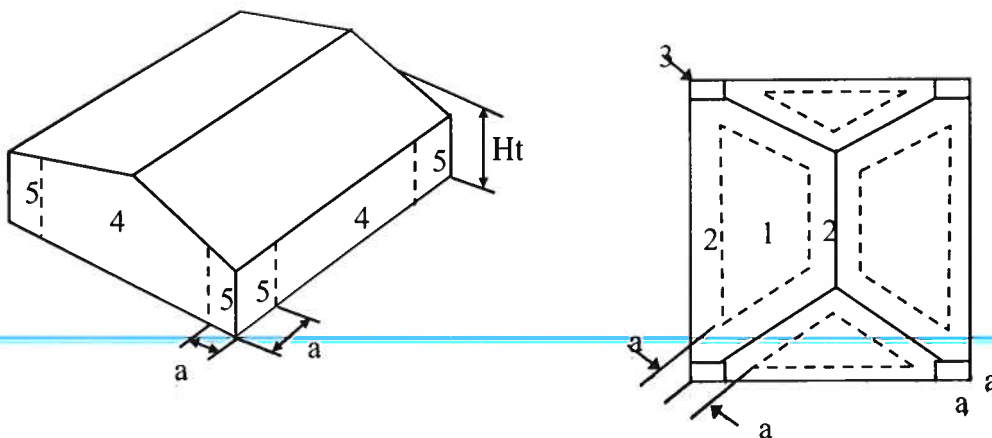


Figure 6-5 - External Pressure Coefficients, GC_p

Loads on Components and Cladding for Buildings w/ $H_t \leq 60$ ft



PCL XL error

Subsystem: KERNEL

Error: Illegal Tag 9.417

⇒

5.42 ft

Operator: 0x94

α
Hipped Roof
 $10 < \text{Theta} \leq 30$

[illegible]

Note: * Enter Zone 1 through 5, or 1H through 3H for overhangs.

Table 6-7 Internal Pressure Coefficients for Buildings, C_{gpi}

Condition	Gcpi	
	Max +	Max -
Open Buildings	0.00	0.00
Partially Enclosed Buildings	0.55	-0.55
Enclosed Buildings	0.18	-0.18
Enclosed Buildings	0.18	-0.18

FLORIDA ENERGY EFFICIENCY CODE FOR BUILDING CONSTRUCTION

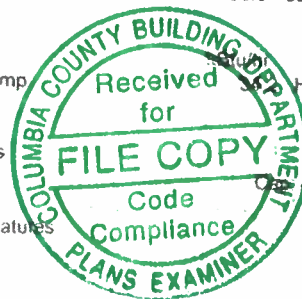
Florida Department of Business and Professional Regulation - Residential Performance Method

Project Name: DWC Thornwood lot 24 Street: City, State, Zip: Fort White, FL Owner: Design Location: FL, Gainesville		Builder Name: DWC Contracting LLC Permit Office: Permit Number: Jurisdiction: County: Columbia (Florida Climate Zone 2)	
---	--	---	--

1. New construction or existing: New (From Plans) 2. Single family or multiple family: Single-family 3. Number of units, if multiple family: 1 4. Number of Bedrooms: 3 5. Is this a worst case?: No 6. Conditioned floor area above grade (ft²): 1845 Conditioned floor area below grade (ft²): 0 7. Windows (220.0 sqft.) <table style="width:100%;"> <tr> <th>Description</th> <th>Area</th> </tr> <tr> <td>a. U-Factor: Dbl, U=0.33 SHGC: SHGC=0.21</td> <td>220.00 ft²</td> </tr> <tr> <td>b. U-Factor: N/A SHGC:</td> <td>ft²</td> </tr> <tr> <td>c. U-Factor: N/A SHGC:</td> <td>ft²</td> </tr> <tr> <td>d. U-Factor: N/A SHGC:</td> <td>ft²</td> </tr> <tr> <td>Area Weighted Average Overhang Depth:</td> <td>3.061 ft.</td> </tr> <tr> <td>Area Weighted Average SHGC:</td> <td>0.210</td> </tr> </table> 8. Floor Types (1845.0 sqft.) <table style="width:100%;"> <tr> <th>Insulation</th> <th>Area</th> </tr> <tr> <td>a. Slab-On-Grade Edge Insulation: R=0.0</td> <td>1845.00 ft²</td> </tr> <tr> <td>b. N/A: R=</td> <td>ft²</td> </tr> <tr> <td>c. N/A: R=</td> <td>ft²</td> </tr> </table>	Description	Area	a. U-Factor: Dbl, U=0.33 SHGC: SHGC=0.21	220.00 ft²	b. U-Factor: N/A SHGC:	ft²	c. U-Factor: N/A SHGC:	ft²	d. U-Factor: N/A SHGC:	ft²	Area Weighted Average Overhang Depth:	3.061 ft.	Area Weighted Average SHGC:	0.210	Insulation	Area	a. Slab-On-Grade Edge Insulation: R=0.0	1845.00 ft²	b. N/A: R=	ft²	c. N/A: R=	ft²	9. Wall Types (2043.0 sqft.) <table style="width:100%;"> <tr> <th>Insulation</th> <th>Area</th> </tr> <tr> <td>a. Frame - Wood, Exterior: R=13.0</td> <td>1845.00 ft²</td> </tr> <tr> <td>b. Frame - Wood, Adjacent: R=13.0</td> <td>198.00 ft²</td> </tr> <tr> <td>c. N/A: R=</td> <td>ft²</td> </tr> <tr> <td>d. N/A: R=</td> <td>ft²</td> </tr> </table> 10. Ceiling Types (1845.0 sqft.) <table style="width:100%;"> <tr> <th>Insulation</th> <th>Area</th> </tr> <tr> <td>a. Under Attic (Vented): R=30.0</td> <td>1845.00 ft²</td> </tr> <tr> <td>b. N/A: R=</td> <td>ft²</td> </tr> <tr> <td>c. N/A: R=</td> <td>ft²</td> </tr> </table> 11. Ducts <table style="width:100%;"> <tr> <th>R</th> <th>ft²</th> </tr> <tr> <td>a. Sup: Attic, Ret: Attic, AH: Garage: 6</td> <td>369</td> </tr> </table> 12. Cooling systems <table style="width:100%;"> <tr> <th>kBtu/hr</th> <th>Efficiency</th> </tr> <tr> <td>a. Central Unit: 36.6</td> <td>SEER: 14.00</td> </tr> </table> 13. Heating systems <table style="width:100%;"> <tr> <th>Efficiency</th> </tr> <tr> <td>a. Electric Heat Pump: HSPF: 8.50</td> </tr> </table> 14. Hot water systems <table style="width:100%;"> <tr> <th>gallons</th> <th>EF</th> </tr> <tr> <td>a. Electric: 40</td> <td>0.920</td> </tr> <tr> <td>b. Conservation features: None</td> <td></td> </tr> </table> 15. Credits: CF, Pstat	Insulation	Area	a. Frame - Wood, Exterior: R=13.0	1845.00 ft²	b. Frame - Wood, Adjacent: R=13.0	198.00 ft²	c. N/A: R=	ft²	d. N/A: R=	ft²	Insulation	Area	a. Under Attic (Vented): R=30.0	1845.00 ft²	b. N/A: R=	ft²	c. N/A: R=	ft²	R	ft²	a. Sup: Attic, Ret: Attic, AH: Garage: 6	369	kBtu/hr	Efficiency	a. Central Unit: 36.6	SEER: 14.00	Efficiency	a. Electric Heat Pump: HSPF: 8.50	gallons	EF	a. Electric: 40	0.920	b. Conservation features: None	
Description	Area																																																								
a. U-Factor: Dbl, U=0.33 SHGC: SHGC=0.21	220.00 ft²																																																								
b. U-Factor: N/A SHGC:	ft²																																																								
c. U-Factor: N/A SHGC:	ft²																																																								
d. U-Factor: N/A SHGC:	ft²																																																								
Area Weighted Average Overhang Depth:	3.061 ft.																																																								
Area Weighted Average SHGC:	0.210																																																								
Insulation	Area																																																								
a. Slab-On-Grade Edge Insulation: R=0.0	1845.00 ft²																																																								
b. N/A: R=	ft²																																																								
c. N/A: R=	ft²																																																								
Insulation	Area																																																								
a. Frame - Wood, Exterior: R=13.0	1845.00 ft²																																																								
b. Frame - Wood, Adjacent: R=13.0	198.00 ft²																																																								
c. N/A: R=	ft²																																																								
d. N/A: R=	ft²																																																								
Insulation	Area																																																								
a. Under Attic (Vented): R=30.0	1845.00 ft²																																																								
b. N/A: R=	ft²																																																								
c. N/A: R=	ft²																																																								
R	ft²																																																								
a. Sup: Attic, Ret: Attic, AH: Garage: 6	369																																																								
kBtu/hr	Efficiency																																																								
a. Central Unit: 36.6	SEER: 14.00																																																								
Efficiency																																																									
a. Electric Heat Pump: HSPF: 8.50																																																									
gallons	EF																																																								
a. Electric: 40	0.920																																																								
b. Conservation features: None																																																									

Glass/Floor Area: 0.119	Total Proposed Modified Loads: 49.93	PASS
	Total Baseline Loads: 52.35	

I hereby certify that the plans and specifications covered by this calculation are in compliance with the Florida Energy Code. PREPARED BY: <u>John B. 25</u> <u>Tight Seal, Inc.</u> DATE: <u>3/12/2020</u> I hereby certify that this building, as designed, is in compliance with the Florida Energy Code. OWNER/AGENT: _____ DATE: _____	Review of the plans and specifications covered by this calculation indicates compliance with the Florida Energy Code. Before construction is completed this building will be inspected for compliance with Section 553.908 Florida Statutes. BUILDING OFFICIAL: _____ DATE: _____
---	---



- Compliance requires certification by the air handler unit manufacturer that the air handler enclosure qualifies as certified factory-sealed in accordance with R403.3.2.1.
- Compliance requires an Air Barrier and Insulation Inspection Checklist in accordance with R402.4.1.1 and this project requires an envelope leakage test report with envelope leakage no greater than 5.00 ACH50 (R402.4.1.2).

FLORIDA ENERGY EFFICIENCY CODE FOR BUILDING CONSTRUCTION

Florida Department of Business and Professional Regulation - Residential Performance Method

Project Name: DWC Thornwood lot 24 Street: City, State, Zip: Fort White, FL, Owner: Design Location: FL, Gainesville	Builder Name: DWC Contracting LLC Permit Office: Permit Number: Jurisdiction: County: Columbia (Florida Climate Zone 2)
---	--

<table style="width: 100%;"> <tr> <td style="width: 30%;">1. New construction or existing</td> <td style="width: 30%;">New (From Plans)</td> <td style="width: 40%;"></td> </tr> <tr> <td>2. Single family or multiple family</td> <td>Single-family</td> <td></td> </tr> <tr> <td>3. Number of units, if multiple family</td> <td>1</td> <td></td> </tr> <tr> <td>4. Number of Bedrooms</td> <td>3</td> <td></td> </tr> <tr> <td>5. Is this a worst case?</td> <td>No</td> <td></td> </tr> <tr> <td>6. Conditioned floor area above grade (ft²)</td> <td>1845</td> <td></td> </tr> <tr> <td>Conditioned floor area below grade (ft²)</td> <td>0</td> <td></td> </tr> <tr> <td>7. Windows(220.0 sqft.)</td> <td>Description</td> <td>Area</td> </tr> <tr> <td>a. U-Factor:</td> <td>DbI, U=0.33</td> <td>220.00 ft²</td> </tr> <tr> <td>SHGC:</td> <td>SHGC=0.21</td> <td></td> </tr> <tr> <td>b. U-Factor:</td> <td>N/A</td> <td>ft²</td> </tr> <tr> <td>SHGC:</td> <td></td> <td></td> </tr> <tr> <td>c. U-Factor:</td> <td>N/A</td> <td>ft²</td> </tr> <tr> <td>SHGC:</td> <td></td> <td></td> </tr> <tr> <td>d. U-Factor:</td> <td>N/A</td> <td>ft²</td> </tr> <tr> <td>SHGC:</td> <td></td> <td></td> </tr> <tr> <td colspan="2">Area Weighted Average Overhang Depth:</td> <td>3.061 ft.</td> </tr> <tr> <td colspan="2">Area Weighted Average SHGC:</td> <td>0.210</td> </tr> <tr> <td>8. Floor Types (1845.0 sqft.)</td> <td>Insulation</td> <td>Area</td> </tr> <tr> <td>a. Slab-On-Grade Edge Insulation</td> <td>R=0.0</td> <td>1845.00 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> </table>	1. New construction or existing	New (From Plans)		2. Single family or multiple family	Single-family		3. Number of units, if multiple family	1		4. Number of Bedrooms	3		5. Is this a worst case?	No		6. Conditioned floor area above grade (ft²)	1845		Conditioned floor area below grade (ft²)	0		7. Windows(220.0 sqft.)	Description	Area	a. U-Factor:	DbI, U=0.33	220.00 ft²	SHGC:	SHGC=0.21		b. U-Factor:	N/A	ft²	SHGC:			c. U-Factor:	N/A	ft²	SHGC:			d. U-Factor:	N/A	ft²	SHGC:			Area Weighted Average Overhang Depth:		3.061 ft.	Area Weighted Average SHGC:		0.210	8. Floor Types (1845.0 sqft.)	Insulation	Area	a. Slab-On-Grade Edge Insulation	R=0.0	1845.00 ft²	b. N/A	R=	ft²	c. N/A	R=	ft²	<table style="width: 100%;"> <tr> <td style="width: 30%;">9. Wall Types(2043.0 sqft.)</td> <td style="width: 30%;">Insulation</td> <td style="width: 40%;">Area</td> </tr> <tr> <td>a. Frame - Wood, Exterior</td> <td>R=13.0</td> <td>1845.00 ft²</td> </tr> <tr> <td>b. Frame - Wood, Adjacent</td> <td>R=13.0</td> <td>198.00 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>10. Ceiling Types (1845.0 sqft.)</td> <td>Insulation</td> <td>Area</td> </tr> <tr> <td>a. Under Attic (Vented)</td> <td>R=30.0</td> <td>1845.00 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>11. Ducts</td> <td></td> <td>R ft²</td> </tr> <tr> <td>a. Sup: Attic, Ret: Attic, AH: Garage</td> <td></td> <td>6 369</td> </tr> <tr> <td>12. Cooling systems</td> <td>kBtu/hr</td> <td>Efficiency</td> </tr> <tr> <td>a. Central Unit</td> <td>36.6</td> <td>SEER:14.00</td> </tr> <tr> <td>13. Heating systems</td> <td>kBtu/hr</td> <td>Efficiency</td> </tr> <tr> <td>a. Electric Heat Pump</td> <td>34.2</td> <td>HSPF:8.50</td> </tr> <tr> <td>14. Hot water systems</td> <td></td> <td>Cap: 40 gallons</td> </tr> <tr> <td>a. Electric</td> <td></td> <td>EF: 0.920</td> </tr> <tr> <td>b. Conservation features</td> <td></td> <td></td> </tr> <tr> <td>None</td> <td></td> <td></td> </tr> <tr> <td>15. Credits</td> <td></td> <td>CF, Pstat</td> </tr> </table>	9. Wall Types(2043.0 sqft.)	Insulation	Area	a. Frame - Wood, Exterior	R=13.0	1845.00 ft²	b. Frame - Wood, Adjacent	R=13.0	198.00 ft²	c. N/A	R=	ft²	d. N/A	R=	ft²	10. Ceiling Types (1845.0 sqft.)	Insulation	Area	a. Under Attic (Vented)	R=30.0	1845.00 ft²	b. N/A	R=	ft²	c. N/A	R=	ft²	11. Ducts		R ft²	a. Sup: Attic, Ret: Attic, AH: Garage		6 369	12. Cooling systems	kBtu/hr	Efficiency	a. Central Unit	36.6	SEER:14.00	13. Heating systems	kBtu/hr	Efficiency	a. Electric Heat Pump	34.2	HSPF:8.50	14. Hot water systems		Cap: 40 gallons	a. Electric		EF: 0.920	b. Conservation features			None			15. Credits		CF, Pstat
1. New construction or existing	New (From Plans)																																																																																																																														
2. Single family or multiple family	Single-family																																																																																																																														
3. Number of units, if multiple family	1																																																																																																																														
4. Number of Bedrooms	3																																																																																																																														
5. Is this a worst case?	No																																																																																																																														
6. Conditioned floor area above grade (ft²)	1845																																																																																																																														
Conditioned floor area below grade (ft²)	0																																																																																																																														
7. Windows(220.0 sqft.)	Description	Area																																																																																																																													
a. U-Factor:	DbI, U=0.33	220.00 ft²																																																																																																																													
SHGC:	SHGC=0.21																																																																																																																														
b. U-Factor:	N/A	ft²																																																																																																																													
SHGC:																																																																																																																															
c. U-Factor:	N/A	ft²																																																																																																																													
SHGC:																																																																																																																															
d. U-Factor:	N/A	ft²																																																																																																																													
SHGC:																																																																																																																															
Area Weighted Average Overhang Depth:		3.061 ft.																																																																																																																													
Area Weighted Average SHGC:		0.210																																																																																																																													
8. Floor Types (1845.0 sqft.)	Insulation	Area																																																																																																																													
a. Slab-On-Grade Edge Insulation	R=0.0	1845.00 ft²																																																																																																																													
b. N/A	R=	ft²																																																																																																																													
c. N/A	R=	ft²																																																																																																																													
9. Wall Types(2043.0 sqft.)	Insulation	Area																																																																																																																													
a. Frame - Wood, Exterior	R=13.0	1845.00 ft²																																																																																																																													
b. Frame - Wood, Adjacent	R=13.0	198.00 ft²																																																																																																																													
c. N/A	R=	ft²																																																																																																																													
d. N/A	R=	ft²																																																																																																																													
10. Ceiling Types (1845.0 sqft.)	Insulation	Area																																																																																																																													
a. Under Attic (Vented)	R=30.0	1845.00 ft²																																																																																																																													
b. N/A	R=	ft²																																																																																																																													
c. N/A	R=	ft²																																																																																																																													
11. Ducts		R ft²																																																																																																																													
a. Sup: Attic, Ret: Attic, AH: Garage		6 369																																																																																																																													
12. Cooling systems	kBtu/hr	Efficiency																																																																																																																													
a. Central Unit	36.6	SEER:14.00																																																																																																																													
13. Heating systems	kBtu/hr	Efficiency																																																																																																																													
a. Electric Heat Pump	34.2	HSPF:8.50																																																																																																																													
14. Hot water systems		Cap: 40 gallons																																																																																																																													
a. Electric		EF: 0.920																																																																																																																													
b. Conservation features																																																																																																																															
None																																																																																																																															
15. Credits		CF, Pstat																																																																																																																													

Glass/Floor Area: 0.119	Total Proposed Modified Loads: 49.93	PASS
	Total Baseline Loads: 52.35	

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: _____
---	---

- Compliance requires certification by the air handler unit manufacturer that the air handler enclosure qualifies as certified factory-sealed in accordance with R403.3.2.1.
- Compliance requires an Air Barrier and Insulation Inspection Checklist in accordance with R402.4.1.1 and this project requires an envelope leakage test report with envelope leakage no greater than 5.00 ACH50 (R402.4.1.2).

INPUT SUMMARY CHECKLIST REPORT

PROJECT													
Title:	DWC Thornwood lot 24		Bedrooms:	3		Address Type:	Street Address						
Building Type:	User		Conditioned Area:	1845		Lot #							
Owner Name:			Total Stories:	1		Block/Subdivision:							
# of Units:	1		Worst Case:	No		PlatBook:							
Builder Name:	DWC Contracting LLC		Rotate Angle:	0		Street:							
Permit Office:			Cross Ventilation:			County:	Columbia						
Jurisdiction:			Whole House Fan:			City, State, Zip:	Fort White , FL						
Family Type:	Single-family												
New/Existing:	New (From Plans)												
Comment:													
CLIMATE													
✓	Design Location	TMY Site	Design Temp	97.5 %	2.5 %	Int Design Temp	Winter	Summer	Heating Degree Days	Design Moisture	Daily Temp Range		
_____	FL, Gainesville	FL_GAINESVILLE_REGI	32	92		70	75	1305.5	51	Medium			
BLOCKS													
	Number	Name	Area	Volume									
	1	Block1	1845	16605									
SPACES													
	Number	Name	Area	Volume	Kitchen	Occupants	Bedrooms	Infil ID	Finished	Cooled	Heated		
	1	Main	1845	16605	Yes	3	3	1	Yes	Yes	Yes		
FLOORS													
✓	#	Floor Type	Space	Perimeter	R-Value	Area			Tile	Wood	Carpet		
_____	1	Slab-On-Grade Edge Insulatio	Main	227 ft	0	1845 ft²	----		0.22	0.22	0.56		
ROOF													
✓	#	Type	Materials	Roof Area	Gable Area	Roof Color	Rad Barr	Solar Absor.	SA Tested	Emitt	Emitt Tested	Deck Insul.	Pitch (deg)
_____	1	Gable or shed	Composition shingles	2063 ft²	462 ft²	Medium	N	0.96	No	0.9	No	0	26.6
ATTIC													
✓	#	Type	Ventilation	Vent Ratio (1 in)	Area	RBS	IRCC						
_____	1	Full attic	Vented	300	1845 ft²	N	N						
CEILING													
✓	#	Ceiling Type	Space	R-Value	Ins Type	Area	Framing Frac	Truss Type					
_____	1	Under Attic (Vented)	Main	30	Blown	1845 ft²	0.11	Wood					

INPUT SUMMARY CHECKLIST REPORT

WALLS

✓ #	Omt	Adjacent To	Wall Type	Space	Cavity R-Value	Width Ft	In	Height Ft	In	Area	Sheathing R-Value	Framing Fraction	Solar Absor.	Below Grade%
1	N	Garage	Frame - Wood	Main	13	22		9		198.0 ft²		0.11	0.25	0
2	N	Exterior	Frame - Wood	Main	13	32	6	9		292.5 ft²		0.11	0.25	0
3	E	Exterior	Frame - Wood	Main	13	63		9		567.0 ft²		0.11	0.25	0
4	S	Exterior	Frame - Wood	Main	13	54	6	9		490.5 ft²		0.11	0.25	0
5	W	Exterior	Frame - Wood	Main	13	55		9		495.0 ft²		0.11	0.25	0

DOORS

✓ #	Omt	Door Type	Space	Storms	U-Value	Width Ft	In	Height Ft	In	Area
1	N	Insulated	Main	None	.46	2	8	6	8	17.8 ft²
2	N	Insulated	Main	None	.46	1		8		8 ft²
3	N	Insulated	Main	None	.46	1		8		8 ft²
4	E	Insulated	Main	None	.46	1		8		8 ft²
5	E	Insulated	Main	None	.46	1		8		8 ft²
6	W	Insulated	Main	None	.46	3		6	8	20 ft²

WINDOWS

Orientation shown is the entered, Proposed orientation.

✓ #	Omt	Wall ID	Frame	Panes	NFRC	U-Factor	SHGC	Imp	Area	Overhang Depth	Separation	Int Shade	Screening
1	N	2	Vinyl	Low-E Double	Yes	0.33	0.21	N	32.0 ft²	2 ft 0 in	1 ft 6 in	Drapes/blinds	None
2	N	2	Vinyl	Low-E Double	Yes	0.33	0.21	N	25.0 ft²	2 ft 0 in	1 ft 6 in	Drapes/blinds	None
3	N	2	Vinyl	Low-E Double	Yes	0.33	0.21	N	3.0 ft²	2 ft 0 in	1 ft 6 in	Drapes/blinds	None
4	E	3	Vinyl	Low-E Double	Yes	0.33	0.21	N	12.0 ft²	2 ft 0 in	1 ft 6 in	Drapes/blinds	None
5	E	3	Vinyl	Low-E Double	Yes	0.33	0.21	N	32.0 ft²	2 ft 0 in	1 ft 6 in	Drapes/blinds	None
6	S	4	Vinyl	Low-E Double	Yes	0.33	0.21	N	45.0 ft²	2 ft 0 in	1 ft 6 in	Drapes/blinds	None
7	S	4	Vinyl	Low-E Double	Yes	0.33	0.21	N	50.0 ft²	6 ft 8 in	1 ft 6 in	Drapes/blinds	None
8	W	5	Vinyl	Low-E Double	Yes	0.33	0.21	N	15.0 ft²	2 ft 0 in	1 ft 6 in	Drapes/blinds	None
9	W	5	Vinyl	Low-E Double	Yes	0.33	0.21	N	6.0 ft²	2 ft 0 in	1 ft 6 in	Drapes/blinds	None

GARAGE

✓ #	Floor Area	Ceiling Area	Exposed Wall Perimeter	Avg. Wall Height	Exposed Wall Insulation
1	382.8 ft²	382.8 ft²	64 ft	8 ft	1

INFILTRATION

#	Scope	Method	SLA	CFM 50	ELA	EqLA	ACH	ACH 50
1	Wholehouse	Proposed ACH(50)	.000286	1383.8	75.97	142.87	.1128	5

INPUT SUMMARY CHECKLIST REPORT

HEATING SYSTEM

✓	#	System Type	Subtype	Efficiency	Capacity	Block	Ducts
✓	1	Electric Heat Pump/	None	HSPF:8.5	34.2 kBtu/hr	1	sys#1

COOLING SYSTEM

✓	#	System Type	Subtype	Efficiency	Capacity	Air Flow	SHR	Block	Ducts
✓	1	Central Unit/	None	SEER: 14	36.6 kBtu/hr	1098 cfm	0.75	1	sys#1

HOT WATER SYSTEM

✓	#	System Type	SubType	Location	EF	Cap	Use	SetPnt	Conservation
✓	1	Electric	None	Garage	0.92	40 gal	60 gal	120 deg	None

SOLAR HOT WATER SYSTEM

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

DUCTS

✓	#	--- Supply ---			--- Return ---		Leakage Type	Air Handler	CFM 25 TOT	CFM25 OUT	QN	RLF	HVAC #	
		Location	R-Value	Area	Location	Area							Heat	Cool
	1	Attic	6	369 ft²	Attic	92.25 ft	Default Leakage	Garage	(Default)	(Default)			1	1

TEMPERATURES

Programmable Thermostat: Y

Ceiling Fans:

Cooling	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Heating	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
Venting	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒

Thermostat Schedule: HERS 2006 Reference

Schedule Type		1	2	3	4	5	6	7	8	9	10	11	12
Cooling (WD)	AM	78	78	78	78	78	78	78	78	80	80	80	80
	PM	80	80	78	78	78	78	78	78	78	78	78	78
Cooling (WEH)	AM	78	78	78	78	78	78	78	78	78	78	78	78
	PM	78	78	78	78	78	78	78	78	78	78	78	78
Heating (WD)	AM	66	66	66	66	66	68	68	68	68	68	68	68
	PM	68	68	68	68	68	68	68	68	68	68	66	66
Heating (WEH)	AM	66	66	66	66	66	68	68	68	68	68	68	68
	PM	68	68	68	68	68	68	68	68	68	68	66	66

MASS

Mass Type	Area	Thickness	Furniture Fraction	Space
Default(8 lbs/sq.ft.)	0 ft²	0 ft	0.3	Main



Manual S Compliance Report
Entire House
Air Ducks Heating & Air, Inc

Job:
Date: Feb 25, 2020
By:

2601 NW 74th Place, Gainesville, Fla 32653 Phone: 352-215-4624 Fax: 352-519-5409 Email: airducksac@gmail.com Web: www.airducksac.com License: CAC1817288

Project Information

For: DWC
Lot 24 Thornwood, Fort White, Fla

Cooling Equipment

Design Conditions

Outdoor design DB:	92.0°F	Sensible gain:	26151	Btuh	Entering coil DB:	75.8°F
Outdoor design WB:	76.3°F	Latent gain:	4489	Btuh	Entering coil WB:	62.9°F
Indoor design DB:	75.0°F	Total gain:	30639	Btuh		
Indoor RH:	50%	Estimated airflow:	1220	cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP				
Manufacturer:	Trane	Model:	4TWR4036G1+TEM4A0C36S41++TDR		
Actual airflow:	1220	cfm			
Sensible capacity:	25620	Btuh	98% of load		
Latent capacity:	10980	Btuh	245% of load		
Total capacity:	36600	Btuh	119% of load	SHR: 70%	



Heating Equipment

Design Conditions

Outdoor design DB:	33.4°F	Heat loss:	31643	Btuh	Entering coil DB:	67.6°F
Indoor design DB:	68.0°F					

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP				
Manufacturer:	Trane	Model:	4TWR4036G1+TEM4A0C36S41++TDR		
Actual airflow:	1220	cfm			
Output capacity:	34200	Btuh	108% of load		Capacity balance: 32 °F
Supplemental heat required:		0	Btuh		Economic balance: -99 °F

Backup equipment type:	Elec strip				
Manufacturer:		Model:			
Actual airflow:	1220	cfm			
Output capacity:	9.0	kW	97% of load	Temp. rise:	50 °F

Meets are all requirements of ACCA Manual S.



Right-Suite® Universal 2017 17.0.23 RSU23127

C:\Users\Admin\Documents\dwcc lot 24 thornwood.rup Calc = MJ8 Front Door faces: N

2020-Mar-11 11:02:40
Page 1



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

Form
RPER 1
15 Mar 09

Header Information

Contractor:

Mechanical license: CAC1817288

Building plan #:

Home address (Street or Lot#, Block, Subdivision): Lot 24 Thornwood, 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: 31643 Btuh

Summer Design Conditions

Outdoor temperature: 92 °F
Indoor temperature: 75 °F
Grains difference: 47 gr/lb @ 50% RH
Sensible heat gain: 26959 Btuh
Latent heat gain: 4628 Btuh
Total heat gain: 31587 Btuh

Building Construction Information

Building

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

Number of bedrooms: 4
Conditioned floor area: 1843 ft²
Number of occupants: 5

Windows

Eave overhang depth: 0 ft
Internal shade: blinds, shades
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
4TWR4036G1+TEM4A0C36S41++TDR
Heating output capacity: 0 Btuh
Heat pumps - capacity at winter design outdoor conditions
Aux. heating output capacity: 30763 Btuh

Cooling Equipment Data

Equipment type: Split ASHP
Air Conditioner, Heat pump, etc.
Model: Trane
4TWR4036G1+TEM4A0C36S41++TDR
Total cooling capacity: 0 Btuh
Sensible cooling capacity: 0 Btuh
Latent cooling capacity: 0 Btuh

Blower Data

Heating cfm: 1220
Cooling cfm: 1220
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: 1220 cfm
Equipment design ESP: 0.50 in H₂O
Total device pressure losses: 0 in H₂O
Available static pressure (ASP): 0.50 in H₂O
Longest supply duct: 318 ft
Longest return duct: 94 ft
Total effective length (TEL): 412 ft
Friction rate: 0.121 in/100ft
Friction Rate = ASP ÷ (TEL × 100)
Duct Materials Used
Trunk duct: Fiberglass board
Branch duct: Round flex vinyl

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



Load Short Form
Entire House
Air Ducks Heating & Air, Inc

Job:
Date: Feb 25, 2020
By:

2601 NW 74th Place, Gainesville, Fla 32653 Phone: 352-215-4624 Fax: 352-519-5409 Email: airducksac@gmail.com Web: www.airducksac.com License: CAC1817288

Project Information

For: DWC
Lot 24 Thornwood, Fort White, Fla

Design Information

	Htg	Clg	Infiltration	
Outside db (°F)	33	92	Method	Simplified
Inside db (°F)	68	75	Construction quality	Average
Design TD (°F)	35	17	Fireplaces	0
Daily range	-	M		
Inside humidity (%)	50	50		
Moisture difference (gr/lb)	29	47		

HEATING EQUIPMENT

Make Trane
Trade TRANE
Model 4TWR4036G1
AHRI ref 9968428

Efficiency 8.5 HSPF
Heating input
Heating output 34200 Btuh @ 47°F
Temperature rise 26 °F
Actual air flow 1220 cfm
Air flow factor 0.039 cfm/Btuh
Static pressure 0.50 in H2O
Space thermostat
Capacity balance point = 32 °F

COOLING EQUIPMENT

Make Trane
Trade TRANE
Cond 4TWR4036G1
Coil TEM4A0C36S41++TDR
AHRI ref 9968428

Efficiency 11.5 EER, 14 SEER
Sensible cooling 25620 Btuh
Latent cooling 10980 Btuh
Total cooling 36600 Btuh
Actual air flow 1220 cfm
Air flow factor 0.047 cfm/Btuh
Static pressure 0.50 in H2O
Load sensible heat ratio 0.85

Backup:
Input = 9 kW, Output = 30763 Btuh, 100 AFUE

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
master	320	7564	4660	292	217
master bath	282	4655	2221	179	104
Living	425	7352	8786	283	410
Kitchen	304	2157	3349	83	156
Bed 2	156	3833	1660	148	77
Bath	54	1062	1329	41	62
Bed 3	192	2824	2333	109	109
Pantry	42	314	203	12	9
laundry	54	1431	1450	55	68
Wic	16	452	160	17	7

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



Right-Suite® Universal 2017 17.0.23 RSU23127

2020-Mar-11 11:02:40

Page 1

C:\Users\Admin\Documents\dwc lot 24 thornwood.rup Calc = MJB Front Door faces: N

Entire House	d	1845	31643	26151	1220	1220
Other equip loads			0	0		
Equip. @ 0.97 RSM				25366		
Latent cooling				4489		
TOTALS		1845	31643	29855	1220	1220

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



Right-Suite® Universal 2017 17.0.23 RSU23127

2020-Mar-11 11:02:40

Page 2

C:\Users\Admin\Documents\dwc lot 24 thornwood.rup Calc = MJ8 Front Door faces: N



Project Summary
Entire House
Air Ducks Heating & Air, Inc

Job:
Date: Feb 25, 2020
By:

2601 NW 74th Place, Gainesville, Fla 32653 Phone: 352-215-4624 Fax: 352-519-5409 Email: airducksac@gmail.com Web: www.airducksac.com License: CAC1817288

Project Information

For: DWC
Lot 24 Thornwood, Fort White, Fla

Notes:

Design Information

Weather: Gainesville Regional AP, 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 47 gr/lb

Heating Summary

Structure 24674 Btuh
Ducts 6969 Btuh
Central vent (0 cfm)
(none) 0 Btuh
Humidification 0 Btuh
Piping 0 Btuh
Equipment load 31643 Btuh

Sensible Cooling Equipment Load Sizing

Structure 18655 Btuh
Ducts 7496 Btuh
Central vent (0 cfm)
(none) 0 Btuh
Blower 0 Btuh
Use manufacturer's data n
Rate/swing multiplier 0.97
Equipment sensible load 25366 Btuh

Infiltration

Method Simplified
Construction quality Average
Fireplaces 0

Latent Cooling Equipment Load Sizing

Structure 2772 Btuh
Ducts 1717 Btuh
Central vent (0 cfm)
(none) 0 Btuh
Equipment latent load 4489 Btuh

	Heating	Cooling
Area (ft ²)	1843	1843
Volume (ft ³)	16589	16589
Air changes/hour	0.38	0.20
Equiv. AVF (cfm)	105	55

Equipment Total Load (Sen+Lat) 29855 Btuh
Req. total capacity at 0.70 SHR 3.0 ton

Heating Equipment Summary

Make Trane
Trade TRANE
Model 4TWR4036G1
AHRI ref 9968428
Efficiency 8.5 HSPF
Heating input
Heating output 34200 Btuh @ 47°F
Temperature rise 26 °F
Actual air flow 1220 cfm
Air flow factor 0.039 cfm/Btuh
Static pressure 0.50 in H2O
Space thermostat
Capacity balance point = 32 °F
Backup:
Input = 9 kW, Output = 30763 Btuh, 100 AFUE

Cooling Equipment Summary

Make Trane
Trade TRANE
Cond 4TWR4036G1
Coil TEM4A0C36S41++TDR
AHRI ref 9968428
Efficiency 11.5 EER, 14 SEER
Sensible cooling 25620 Btuh
Latent cooling 10980 Btuh
Total cooling 36600 Btuh
Actual air flow 1220 cfm
Air flow factor 0.047 cfm/Btuh
Static pressure 0.50 in H2O
Load sensible heat ratio 0.85

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



Right-Suite® Universal 2017 17.0.23 RSU23127

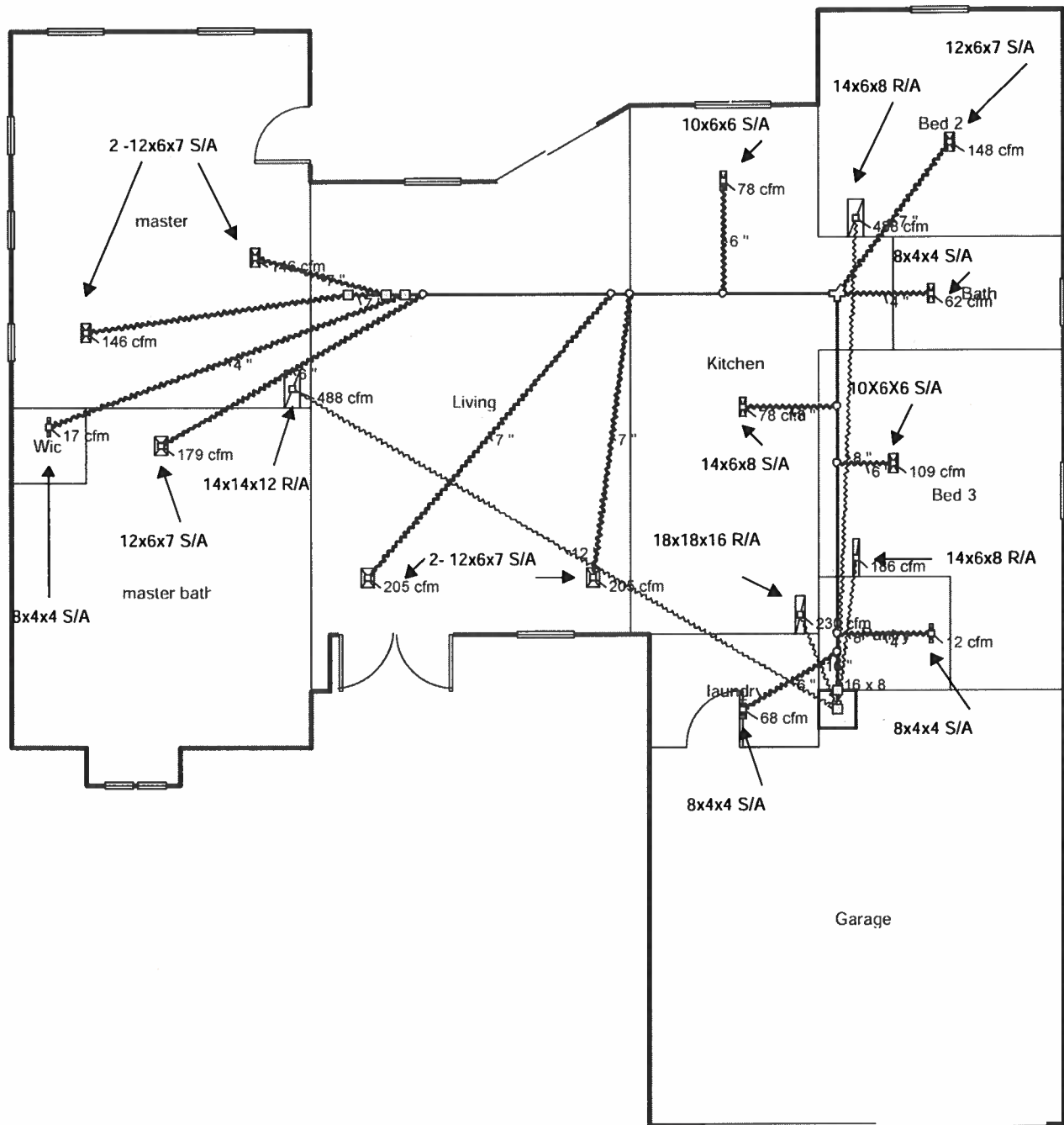
2020-Mar-11 11:02:40

Page 1

C:\Users\Admin\Documents\dwcc lot 24 thornwood.rup Calc = MJ8 Front Door faces: N



Level 1



Job #:
Performed for:
DWC
Lot 24 Thornwood
Fort White, Fla

Air Ducks Heating & Air, Inc

2601 NW 74th Place
Gainesville, Fla 32653
Phone: 352-215-4624 Fax: 352-519-5409
www.airducksac.com airducksac@gmail.com

Scale: 1 : 97

Page 1
Right-Suite® Universal 2017
17.0.23 RSU23127
2020-Mar-11 11:03:53

...cuments\dwc lot 24 thornwood.rup



Duct System Summary
Entire House
Air Ducks Heating & Air, Inc

Job:
Date: Feb 25, 2020
By:

2601 NW 74th Place, Gainesville, Fla 32653 Phone: 352-215-4624 Fax: 352-519-5409 Email: airducksac@gmail.com Web: www.airducksac.com License: CAC1817288

Project Information

For: DWC
Lot 24 Thornwood, Fort White, Fla

	Heating	Cooling
External static pressure	0.50 in H2O	0.50 in H2O
Pressure losses	0 in H2O	0 in H2O
Available static pressure	0.50 in H2O	0.50 in H2O
Supply / return available pressure	0.386 / 0.114 in H2O	0.386 / 0.114 in H2O
Lowest friction rate	0.121 in/100ft	0.121 in/100ft
Actual air flow	1220 cfm	1220 cfm
Total effective length (TEL)	412 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	c 1329	41	62	0.207	4.0	0x0	VIFx	27.0	160.0	st1
Bed 2	h 3833	148	77	0.201	7.0	0x0	VIFx	32.0	160.0	st1
Bed 3	c 2824	109	109	0.197	6.0	0x0	VIFx	16.0	180.0	st1
Kitchen	c 1675	42	78	0.202	8.0	0x0	VIFx	21.0	170.0	st1
Kitchen-A	c 1675	42	78	0.127	6.0	0x0	VIFx	34.0	270.0	st1
Living	c 4393	142	205	0.123	7.0	0x0	VIFx	53.8	260.0	st1
Living-B	c 4393	142	205	0.121	7.0	0x0	VIFx	48.1	270.0	st1
Pantry	h 314	12	9	0.194	4.0	0x0	VIFx	9.0	190.0	st1
Wic	h 452	17	7	0.125	4.0	0x0	VIFx	65.2	245.0	st1
laundry	c 1450	55	68	0.190	6.0	0x0	VIFx	8.8	195.0	st1
master bath-A	h 4655	179	104	0.123	6.0	0x0	VIFx	60.1	255.0	st1
master-A	h 3782	146	109	0.134	7.0	0x0	VIFx	53.3	235.0	st1
master-B	h 3782	146	109	0.135	7.0	0x0	VIFx	62.1	225.0	st1

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	1220	1220	0.121	1373	16.0	8 x 16	RectFbg	



Right-Suite® Universal 2017 17.0.23 RSU23127

C:\Users\Admin\Documents\dwclot 24 thornwood.rup Calc = MJ8 Front Door faces: N

2020-Mar-11 11:02:40

Page 1

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
rb2	0x 0	230	218	65.4	0.174	165	16.0	0x 0		VIFx	
rb1	0x 0	488	328	93.6	0.121	622	12.0	0x 0		VIFx	
rb3	0x 0	325	488	85.0	0.134	1398	8.0	0x 0		VIFx	
rb4	0x 0	176	186	68.1	0.167	533	8.0	0x 0		VIFx	