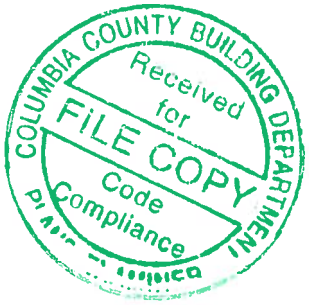
Wind Load Analysis and Certification

Corey Residence by Hartley Brothers, Inc
2017 Florida Building Code section 1609 according to ASCE 7
Ultimate Design Wind Speed (Vult) = 130 MPH (3 second gust)
Nominal Design Wind Speed (Vasd)) = 101 MPH
Risk Category = II
Exposure Category = B, Enclosed Building
Applicable Internal Pressure Coefficient = .18
Design Wind Pressure for use of External Components (Components and Cladding)= +32.1psf, -43.3psf

8/8/19

Roof Decking
7/16" OSB or ½", 5/8"or ¾" CDX Decking; 48"x96" Sheets, Perpendicular to Roof Framing Members
8d common (.131" dia) or 8d ring-shank (.113' dia.) nails at 4" O.C. on Ends, 8" O.C. in Interior
Trusses or Rafters at 2' O.C. (horizontal distance), No Intermediate Blocking Required
Rafters: 2x6 SYP #2 up to 10' horizontal span, 2x8 SYP #2 up to14' horizontal span

Shear Wall Segments
7/16" OSB or ½" CDX plywood, 48" Wide Sheets - Sheathing Continuous from Top Plate down to Pressure Treated Sole Plate Bearing on Foundation.
8d common (.131" dia) nails at 3" O.C. on Edges and Ends, 8" O.C. in Interior
Transverse Shearwall = 66', Longitudinal Shearwall = 42'
2x4 SPF (No. 1&2) Studs at 16" O.C., up to 12' wall height
or: 2x6 SPF (No. 1&2) Studs at 16" O.C., up to 17' wall height
See attached detail for stud and jack requirements for wall openings
Nail Together Double Top Plate 6" O.C. w/12-d Common Nails (SYP top plates)
Other Wall Segments - Same as Shear Walls



Gabled End Wall Framing
Balloon Frame (see detail) or see attached alternate detail.

Special Notes: Other than double sheathed sections as shown on plans, no special corner framing required.

Footings and Foundations (Based on Truss Engineering)
20" deep x 14" wide monolithic with 2-#5's, Continuous, 3000 psi Concrete
or: 20" Wide x 10" Deep 3000 psi Concrete Strip Footing with 2-#5's, Continuous
8"x8"x16" Concrete Masonry Stemwall, Minimum 2 Courses, Maximum 4 Courses, Fully Grouted, except sections over 3 courses need only cells with rebar to be grouted. 1-#5 Vertical Dowel at Corners **and 6'-0" O.C.** (10" hook top and bottom) (min 25" lap all #5 rebar) **(1) #5 continuous top course. All 4" slabs requires 6x6 WWM**
Interior footers: 16" wide by 10" deep (including 4" slab) with 2-#5's, Continuous,
Porch Footers: see above or: 8" wide by 8" deep bell footing with 1-#5, Continuous with minimum of 30"x30" x 15" pad under each post (w/ 3- #5 each way)
Note: footer design based on continuous bearing. Footers (grade beams) for pier foundation systems must be designed by pier foundation subcontractor. Movement – The information presented in this document is not calculated or intended for the use or purpose of mitigating or addressing unsuitable soils or subsurface conditions in any way or manner, whatsoever.

Hurricane-Resistance Hardware (Based on Truss Engineering)
Truss Clips/Headers/Girders/Posts/Beams /Top and Bottom of Wall Unit - See Table
Anchor Bolts- A-307 (1/2"Dia. x 10" with min 8" embedment) at 48"O.C. (First bolt at 9" from Corner, then 48" O.C.) and at each end of Each Opening (2" round or square washers).

I hereby certify that the accompanying Wind Load Analysis for the **Corey Residence**, demonstrates compliance with the 2017 FBC section 1609 according to ASCE 7, to the best of my knowledge.

Frank J. Sapienza Jr.
License Professional Engineer
Florida License Number 48566

HOLD-DOWN TABLE **Corey Residence** **8/8/2019**

Wood Sections HEADERS	Uplift Force Lbs	Top Connector Simpson **	Rating Lbs	Bottom Connector Simpson **	Rating Lbs
	up to 455 lbs	LSTA9	775	H3	455
	up to 910 lbs	LSTA12	970	2-H3	910
	up to 1235 lbs	LSTA18	1235	LTT19	1350
	up to 1750 lbs	2-LSTA12	1940	LTT20	1750
	up to 2470 lbs	2-LSTA18	2470	HD2A-2.5	2565
	up to 2775 lbs	3-LSTA18	3705	HD2A-3.5	2775
	up to 3705 lbs	3-LSTA18	3705	HD5A-3	3705

To determine uplift force on header at each end, total the uplifts for each truss resting on the header and divide by 2 (assumes uniform load) Note: must use proper bolt anchors sufficient to support required load

Trusses/Girders - Uplift

up to 600 lbs - use H2.5A top, no special device required at bottom
over 600 lbs but under 990 lbs use H10 top, no special device required at bottom
up to 1215 lbs use TS22 or equivalent at top and LTT19 at bottom
up to 1750 lbs use 2-TS22 or equivalent at top and LTT20 at bottom
up to 2430 lbs use 2-TS22 or equivalent at top and HD2A bottom
up to 3645 lbs use 3-TS22 or equivalent at top and HD5A bottom
Must Use proper bolt anchors

Note: it is the contractors responsibility to provide a continuous load path from truss/rafter/ridge beam to foundation

Strap rafters to truss or at each end with min uplift resistance of 450 lbs each end
Strap ridge beam at each end with min uplift resistance of 1800 lbs

Note: Four (4) 12d comm toenails (2 on each side) required per truss/rafter per bearing point into plate to resist both lateral loads (wall to truss) and transverse loads (max plate height =12', not including gable)

Horizontal Resistance (from truss loads) - Note: these devices are in addition to required toe-nails

up to 110 lbs - use H2.5A
up to 525 lbs use H10
up to 1090 lbs use H10 plus A23

Note: hardware to be used must satisfy both uplift and horizontal resistance, combination of devices is acceptable

Note: for combination of loads (uplift and horizontal/lateral) on a single device, the ratio of actual uplift/allowable uplift + actual horizontal load/allowable horizontal cannot exceed 1

	top		bottom	
BEAM SEATS	LSTA18*	1235	LTT19*	1350
POSTS	2-LSTA18	2400	ABU44 or ABU66	2200
*** or per truss engineering**			Must Use proper bolt anchors	

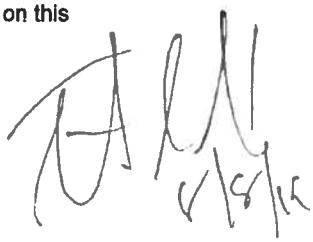
STUDS

Wall Sheathing Nailing Adequate Exterior Walls bottom (8d nails at 3" O.C.), must cover sill plate
Wall Sheathing Nailing Adequate Exterior Walls Top (8d nails at 3" O.C.), as long as sheathing covers top plate, otherwise use SP2 @32" O.C. in addition to sheathing nailing,
Use SP2 top and SP1 bottom each stud an ancor bolts @ 32" O.C. for all interior load bearing walls that have uplift. Interior anchor bolts to be 1/2" x 8" A307 or 1/2" x 6" wedge anchor with 2" washers

Please Note: All Beams must be sheathed or strapped to Double Top Plate (if applicable)

**an equivalent device of same or other manufactures can be substituted for any of the devices specified on this page as long as it meets the required load capacities

Note: For nailing into SPF members, multiply table values by .86

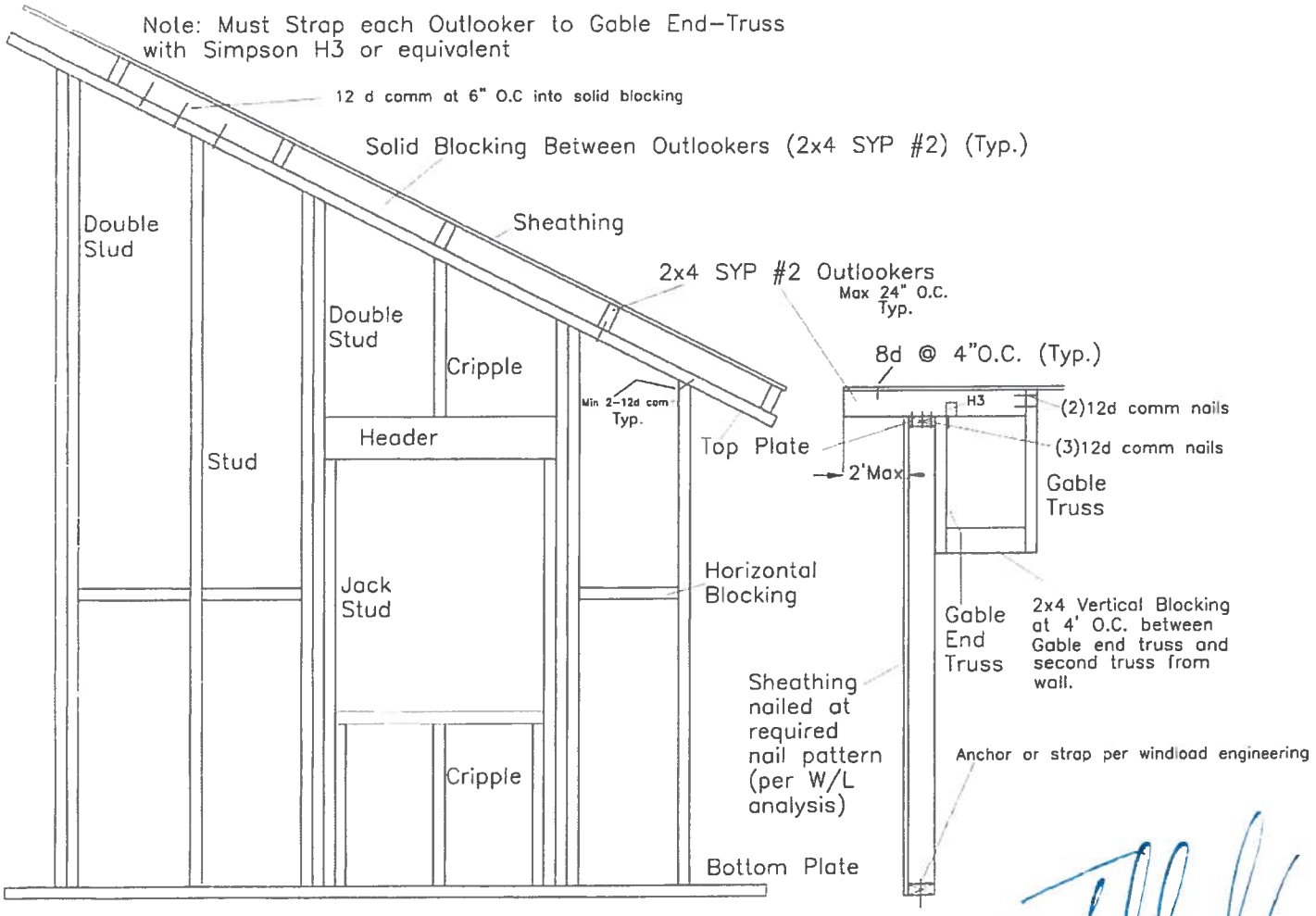


Acceptable Framing Method for Balloon Framed Gable End–Wall with trusses

Balloon Frame with 2x4 SPF No.1&2 @ 16" O.C. with the Following Conditions:
Up to 12' – Block at 8'
Over 12' but Under 14' – 2x4 SYP #2 at 16" O.C. and Block at 4',8'&12'
Over 14' but Under 17' – Double 2x4 SYP #2 at 16" O.C. and block at 4',8',12'&16'
Over 17' but Under 20' – Triple 2x4 SYP #2 at 16" O.C. and block at 4',8',12'&16'
Over 20' but Under 23' – Quadruple 2x4 SYP #2 at 16" O.C.and block at 4',8',12',16'&20'
Over 23' – Must be Engineered

In all cases a minimum of a double full length stud is required at each side of openings such as doors and windows

Blocking must be parallel to top and bottom plates with a minimum of 2–12d comm nails

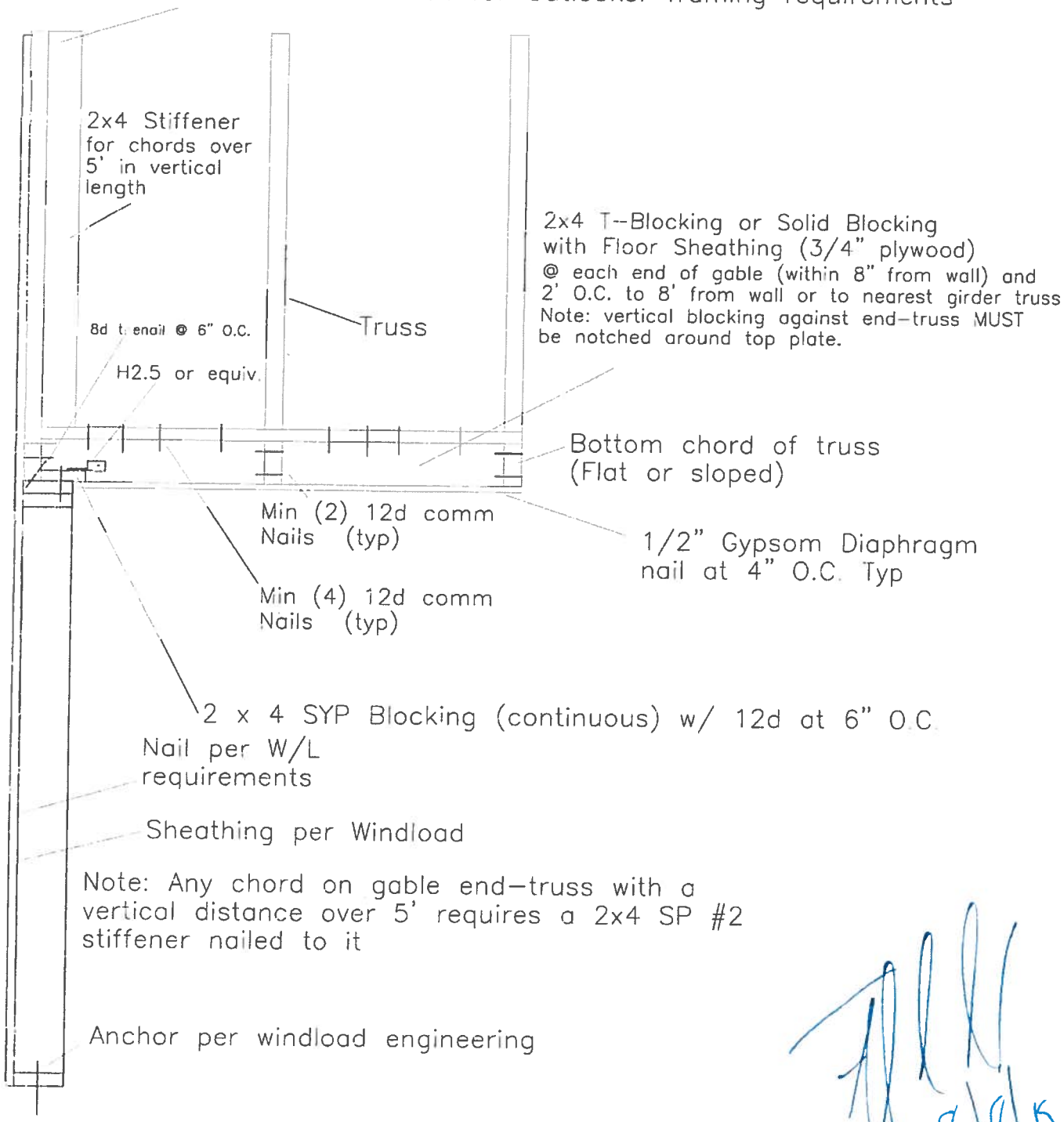


F. Sapienza, P.E.

8/8/15

Gable Endwall Framing with Gable End–Truss

See Balloon Framed Detail for Outlooker framing requirements



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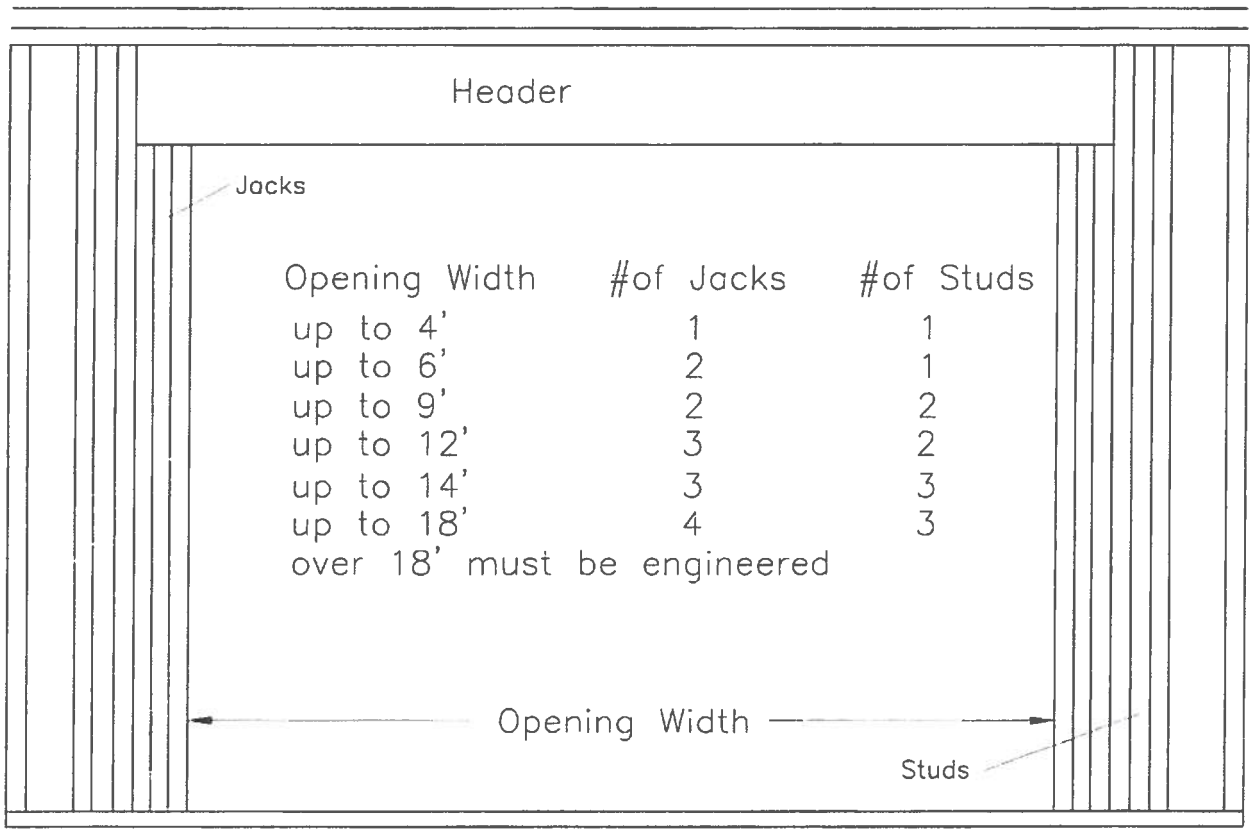
Number of Jack and Stud Requirements per Opening Width
2x4 or 2x6 SPF #1&2 Construction – max Wall Height=12'
(based on 16" O.C. Stud Spacing)



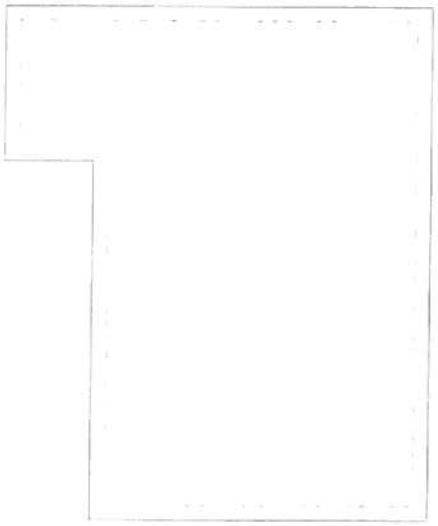
Opening Width	#of Jacks	#of Studs
up to 4'	1	1
up to 6'	2	1
up to 9'	2	2
up to 12'	3	2
up to 14'	3	3
up to 18'	4	3

over 18' must be engineered

Note – Based on uniform loads. Heavy concentrated loads require engineering review

8/6/15

Project Name: Corey Residence



Location:

By: F Sapienza

Start Date: 8/8/2019

Comments:

Local Information

Wind Dir.	Exposure
1	B
2	B
3	B
4	B

Basic Wind Speed: 130 mph

Topography: None

Optional Factors

This project uses load combinations from ASCE 7.

Section - Main Section

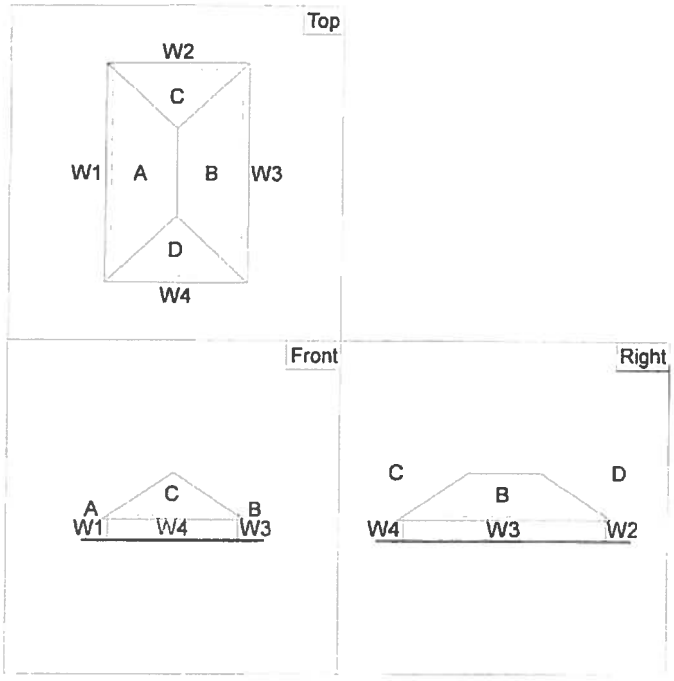
Enclosure Classification: Enclosed
Building Category: II

Wall	Length(ft)	Overhang(ft)
1	66.0	2.0
2	42.0	2.0
3	66.0	2.0
4	42.0	2.0

Wall Height: 8 ft
Parapet Height: 0 ft

Roof Shape: Hipped

Roof	Slope(:12)
A&B	8.0
C&D	8.0



Section - 1

Enclosure Classification: Enclosed
Building Category: II

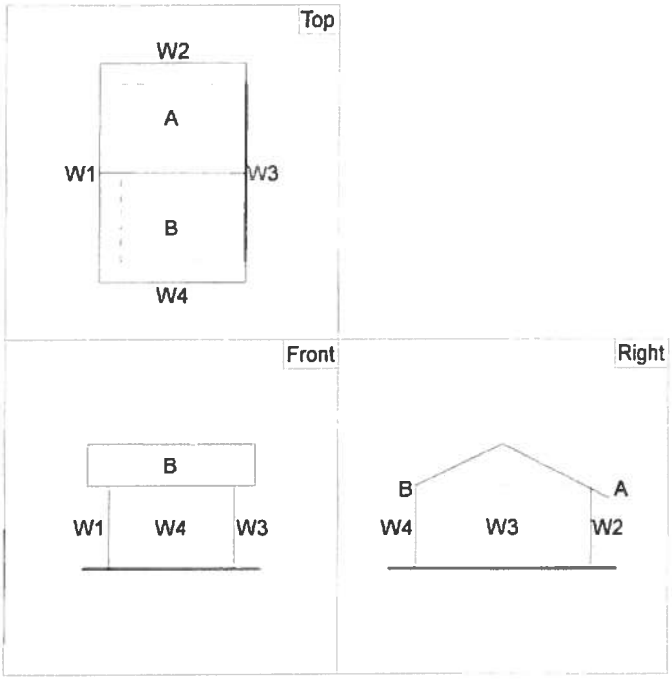
Connected to: Main Section
Connected to wall: W1
Position on W1: 0 ft

Wall	Length(ft)	Overhang(ft)
1	17.0	2.0
2	12.0	2.0
3	17.0	0.0
4	12.0	2.0

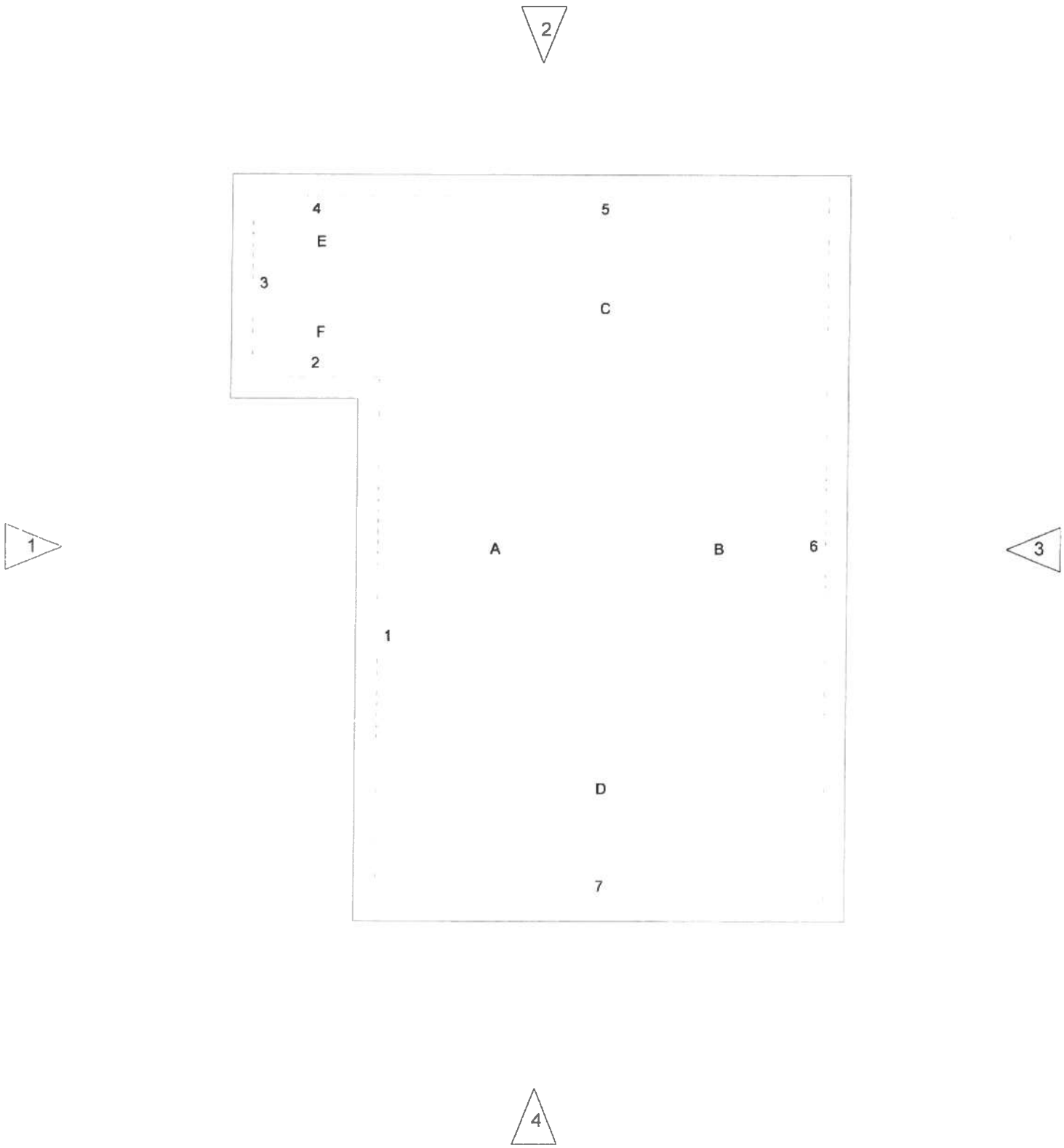
Wall Height: 8 ft
Parapet Height: 0 ft

Roof Shape: Gabled

Roof	Slope(:12)
A&B	8.0



Composite Drawing



MWFRS Net Pressures

This data was calculated using the building of all heights method.

Wind Direction 1

#	Surface	z (ft)	q (psf)	G	Cp	GCpi	Ext Pres (psf)	Net w/ +GCpi (psf)	Net w/ -GCpi (psf)
1	Windward Wall	8.0	21.1	0.86	0.80	0.18	14.5	10.7	18.3
	Overhang Top	15.0	21.1		0.36	0	6.5		
		15.0	21.1		-0.07		-1.3		
	Overhang Bot	8.0	21.1		0.80		14.5		
2	Side Wall	15.0	21.1	0.86	-0.70	0.18	-12.7	-16.5	-8.9
3	Windward Wall	13.7	21.1	0.86	0.80	0.18	14.5	10.7	18.3
	Overhang Top	15.0	21.1		-0.90	0	-16.3		
	Overhang Bot	15.0	21.1				14.5		
4	Side Wall	15.0	21.1	0.86	-0.70	0.18	-12.7	-16.5	-8.9
5	Side Wall	15.0	21.1	0.86	-0.70	0.18	-12.7	-16.5	-8.9
6	Leeward Wall	15.0	21.1	0.86	-0.50	0.18	-9.1	-12.9	-5.3
7	Side Wall	15.0	21.1	0.86	-0.70	0.18	-12.7	-16.5	-8.9
A	Windward Roof	15.0	21.1	0.86	0.33	0.18	6.0	2.2	9.8
		15.0	21.1		-0.12		-2.2	-6.0	1.6
B	Leeward Roof	15.0	21.1	0.86	-0.60	0.18	-10.9	-14.7	-7.1
C&D	Roof	0 to 7.5	21.1	0.86	-0.90	0.18	-16.3	-20.1	-12.5
		7.5 to 15.0	21.1				-16.3	-20.1	-12.5
		15.0 to 30.0	21.1		-0.50		-9.1	-12.9	-5.3
		30.0 to 42.0	21.1		-0.30		-5.4	-9.2	-1.6
E&F	Roof	0 to 7.5	21.1	0.86	-1.23	0.18	-22.3	-26.1	-18.5
		7.5 to 12.0	21.1		-0.70		-12.7	-16.5	-8.9

MWFRS Net Pressures

This data was calculated using the building of all heights method.

Wind Direction 2

#	Surface	z (ft)	q (psf)	G	Cp	GCpi	Ext Pres (psf)	Net w/ +GCpi (psf)	Net w/ -GCpi (psf)
1	Side Wall	15.0	21.1	0.86	-0.70	0.18	-12.7	-16.5	-8.9
2	Leeward Wall	15.0	21.1		-0.46		-8.3	-12.1	-4.5
3	Side Wall	15.0	21.1	0.86	-0.70	0.18	-12.7	-16.5	-8.9
4	Windward Wall	8.0	21.1	0.86	0.80	0.18	14.5	10.7	18.3
	Overhang Top	15.0	21.1		0.37	0	6.7		
		15.0	21.1		-0.05		-0.9		
	Overhang Bot	8.0	21.1		0.80		14.5		
5	Windward Wall	15.0	21.1	0.86		0.18	14.5	10.7	18.3
		18.7	22.5				15.5	11.7	19.3
		20.0	22.9				15.8	12.0	19.6
		22.0	23.6				16.2	12.4	20.0
	Overhang Top	15.0	21.1		0.37	0	6.7		
		15.0	21.1		-0.05		-0.9		
	Overhang Bot	8.0	21.1		0.80		14.5		
6	Side Wall	15.0	21.1	0.86	-0.70	0.18	-12.7	-16.5	-8.9
7	Leeward Wall	15.0	21.1	0.86	-0.46	0.18	-8.3	-12.1	-4.5
A&B	Roof	0 to 7.5	21.1	0.86	-0.90	0.18	-16.3	-20.1	-12.5
		7.5 to 15.0	21.1				-16.3	-20.1	-12.5
		15.0 to 30.0	21.1		-0.50		-9.1	-12.9	-5.3
		30.0 to 66.0	21.1		-0.30		-5.4	-9.2	-1.6
C	Windward Roof	15.0	21.1	0.86	0.37	0.18	6.7	2.9	10.5
		15.0	21.1		-0.05		-0.9	-4.7	2.9
D	Leeward Roof	15.0	21.1	0.86	-0.60	0.18	-10.9	-14.7	-7.1
E	Windward Roof	15.0	21.1	0.86	0.22	0.18	4.0	0.2	7.8
		15.0	21.1		-0.22		-4.0	-7.8	-0.2

MWFRS Net Pressures

This data was calculated using the building of all heights method.

Wind Direction 2

#	Surface	z (ft)	q (psf)	G	Cp	GCpi	Ext Pres (psf)	Net w/ +GCpi (psf)	Net w/ -GCpi (psf)
F	Leeward Roof	15.0	21.1	0.86	-0.60	0.18	-10.9	-14.7	-7.1

MWFRS Net Pressures

This data was calculated using the building of all heights method.

Wind Direction 3

#	Surface	z (ft)	q (psf)	G	Cp	GCpi	Ext Pres (psf)	Net w/ +GCpi (psf)	Net w/ -GCpi (psf)
1	Leeward Wall	15.0	21.1	0.86	-0.50	0.18	-9.1	-12.9	-5.3
2	Side Wall	15.0	21.1		-0.70		-12.7	-16.5	-8.9
3	Leeward Wall	15.0	21.1	0.86	-0.50	0.18	-9.1	-12.9	-5.3
4	Side Wall	15.0	21.1	0.86	-0.70	0.18	-12.7	-16.5	-8.9
5	Side Wall	15.0	21.1	0.86	-0.70	0.18	-12.7	-16.5	-8.9
6	Windward Wall	8.0	21.1	0.86	0.80	0.18	14.5	10.7	18.3
	Overhang Top	15.0	21.1		0.36	0	6.5		
		15.0	21.1		-0.07		-1.3		
	Overhang Bot	8.0	21.1		0.80		14.5		
7	Side Wall	15.0	21.1	0.86	-0.70	0.18	-12.7	-16.5	-8.9
A	Leeward Roof	15.0	21.1	0.86	-0.60	0.18	-10.9	-14.7	-7.1
B	Windward Roof	15.0	21.1	0.86	0.33	0.18	6.0	2.2	9.8
		15.0	21.1		-0.12		-2.2	-6.0	1.6
C&D	Roof	0 to 7.5	21.1	0.86	-0.90	0.18	-16.3	-20.1	-12.5
		7.5 to 15.0	21.1				-16.3	-20.1	-12.5
		15.0 to 30.0	21.1		-0.50		-9.1	-12.9	-5.3
		30.0 to 42.0	21.1		-0.30		-5.4	-9.2	-1.6
E&F	Roof	0 to 7.5	21.1	0.86	-1.23	0.18	-22.3	-26.1	-18.5
		7.5 to 12.0	21.1		-0.70		-12.7	-16.5	-8.9

MWFRS Net Pressures

This data was calculated using the building of all heights method.

Wind Direction 4

#	Surface	z (ft)	q (psf)	G	Cp	GCpi	Ext Pres (psf)	Net w/ +GCpi (psf)	Net w/ -GCpi (psf)
1	Side Wall	15.0	21.1	0.86	-0.70	0.18	-12.7	-16.5	-8.9
2	Windward Wall	8.0	21.1		0.80		14.5	10.7	18.3
	Overhang Top	15.0	21.1		0.37	0	6.7		
		15.0	21.1		-0.05		-0.9		
	Overhang Bot	8.0	21.1		0.80		14.5		
3	Side Wall	15.0	21.1	0.86	-0.70	0.18	-12.7	-16.5	-8.9
4	Leeward Wall	15.0	21.1	0.86	-0.46	0.18	-8.3	-12.1	-4.5
5	Leeward Wall	15.0	21.1	0.86	-0.46	0.18	-8.3	-12.1	-4.5
6	Side Wall	15.0	21.1	0.86	-0.70	0.18	-12.7	-16.5	-8.9
7	Windward Wall	15.0	21.1	0.86	0.80	0.18	14.5	10.7	18.3
		18.7	22.5				15.5	11.7	19.3
		20.0	22.9				15.8	12.0	19.6
		22.0	23.6				16.2	12.4	20.0
	Overhang Top	15.0	21.1		0.37	0	6.7		
		15.0	21.1		-0.05		-0.9		
	Overhang Bot	8.0	21.1		0.80		14.5		
A&B	Roof	0 to 7.5	21.1	0.86	-0.90	0.18	-16.3	-20.1	-12.5
		7.5 to 15.0	21.1				-16.3	-20.1	-12.5
		15.0 to 30.0	21.1		-0.50		-9.1	-12.9	-5.3
		30.0 to 66.0	21.1		-0.30		-5.4	-9.2	-1.6
C	Leeward Roof	15.0	21.1	0.86	-0.60	0.18	-10.9	-14.7	-7.1
D	Windward Roof	15.0	21.1	0.86	0.37	0.18	6.7	2.9	10.5
		15.0	21.1		-0.05		-0.9	-4.7	2.9
E	Leeward Roof	15.0	21.1	0.86	-0.60	0.18	-10.9	-14.7	-7.1

MWFRS Net Pressures

This data was calculated using the building of all heights method.

Wind Direction 4

#	Surface	z (ft)	q (psf)	G	Cp	GCpi	Ext Pres (psf)	Net w/ +GCpi (psf)	Net w/ -GCpi (psf)
F	Windward Roof	15.0	21.1	0.86	0.22	0.18	4.0	0.2	7.8
		15.0	21.1		-0.22		-4.0	-7.8	-0.2

FORM R405-2017

FLORIDA ENERGY EFFICIENCY CODE FOR BUILDING CONSTRUCTION

Florida Department of Business and Professional Regulation - Residential Performance Method

Project Name:	New Project COREY	Builder Name:	HARTLEY BROTHERS
Street:		Permit Office:	
City, State, Zip:	, FL , 32615	Permit Number:	
Owner:		Jurisdiction:	
Design Location:	FL, Gainesville	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	4			
5. Is this a worst case?	No			
6. Conditioned floor area above grade (ft²)	2401			
Conditioned floor area below grade (ft²)	0			
7. Windows(296.5 sqft.)	Description		Area	
a. U-Factor: SHGC:	Dbl, U=0.34 SHGC=0.23		296.50 ft²	
b. U-Factor: SHGC:	N/A		ft²	
c. U-Factor: SHGC:	N/A		ft²	
d. U-Factor: SHGC:	N/A		ft²	
Area Weighted Average Overhang Depth:			1.500 ft.	
Area Weighted Average SHGC:			0.230	
8. Floor Types (2401.0 sqft.)		Insulation	Area	
a. Slab-On-Grade Edge Insulation		R=0.0	2401.00 ft²	
b. N/A		R=	ft²	
c. N/A		R=	ft²	

9. Wall Types (2064.0 sqft.)	Insulation	Area	
a. Frame - Wood, Exterior	R=15.0	2064.00 ft²	
b. N/A	R=	ft²	
c. N/A	R=	ft²	
d. N/A	R=	ft²	
10. Ceiling Types (2401.0 sqft.)	Insulation	Area	
a. Under Attic (Vented)	R=38.0	2401.00 ft²	
b. N/A	R=	ft²	
c. N/A	R=	ft²	
11. Ducts		R	ft²
a. Sup: Attic, Ret: Attic, AH: Main		6	298
12. Cooling systems	kBtu/hr	Efficiency	
a. Central Unit	35.8	SEER:15.00	
13. Heating systems	kBtu/hr	Efficiency	
a. Electric Heat Pump	34.8	HSPF:8.50	
14. Hot water systems			
a. Electric		Cap: 50 gallons EF: 0.970	
b. Conservation features None			
15. Credits		Pstat	

COLUMBIA COUNTY BUILDING DEPARTMENT — FILE COPY — Received for Code Compliance

Glass/Floor Area: 0.123

Total Proposed Modified Loads: 62.36

Total Baseline Loads: 62.71

PASS

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

PREPARED BY: Mark Hay Harding

DATE: 7-23-19

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

OWNER/AGENT:

DATE: 07-29-2019

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:

GREAT SEAL OF THE STATE OF FLORIDA — IN GOD WE TRUST

- 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).

FORM R405-2017

INPUT SUMMARY CHECKLIST REPORT

PROJECT

Title:	New Project COREY	Bedrooms:	4	Address Type:	Street Address
Building Type:	User	Conditioned Area:	2401	Lot #	
Owner Name:		Total Stories:	1	Block/Subdivision:	
# of Units:	1	Worst Case:	No	PlatBook:	
Builder Name:	HARTLEY BROTHERS	Rotate Angle:	0	Street:	
Permit Office:		Cross Ventilation:		County:	Columbia
Jurisdiction:		Whole House Fan:		City, State, Zip:	, FL , 32615
Family Type:	Single-family				
New/Existing:	New (From Plans)				
Comment:					

CLIMATE

√	Design Location	TMY Site	Design Temp 97.5 %	Design Temp 2.5 %	Int Design Temp Winter	Int Design Temp Summer	Heating Degree Days	Design Moisture	Daily Temp Range
_____	FL, Gainesville	FL_GAINESVILLE_REGI	32	92	70	75	1305.5	51	Medium

BLOCKS

Number	Name	Area	Volume
1	Block1	2401	19208

SPACES

Number	Name	Area	Volume	Kitchen	Occupants	Bedrooms	Infil ID	Finished	Cooled	Heated
1	Main	2401	19208	Yes	1	4	1	Yes	Yes	Yes

FLOORS

√	#	Floor Type	Space	Perimeter	R-Value	Area		Tile	Wood	Carpet
_____	1	Slab-On-Grade Edge Insulatio	Main	258 ft		2401 ft²	----	0.3	0.3	0.4

ROOF

√	#	Type	Materials	Roof Area	Gable Area	Roof Color	Rad Barr	Solar Absor.	SA Tested	Emitt	Emitt Tested	Deck Insul.	Pitch (deg)
_____	1	Hip	Composition shingles	2601 ft²	0 ft²	Medium	N	0.96	No	0.9	No	0	22.6

ATTIC

√	#	Type	Ventilation	Vent Ratio (1 in)	Area	RBS	IRCC
_____	1	Full attic	Vented	300	2401 ft²	N	N

CEILING

√	#	Ceiling Type	Space	R-Value	Ins Type	Area	Framing Frac	Truss Type
_____	1	Under Attic (Vented)	Main	38	Blown	2401 ft²	0.11	Wood

FORM R405-2017

INPUT SUMMARY CHECKLIST REPORT

WALLS

√	#	Ornt	Adjacent To	Wall Type	Space	Cavity R-Value	Width Ft	Width In	Height Ft	Height In	Area	Sheathing R-Value	Framing Fraction	Solar Absor	Below Grade%
____	1	NW	Exterior	Frame - Wood	Main	15	66	0	8	0	528.0 ft²		0.23	0.75	0
____	2	SW	Exterior	Frame - Wood	Main	15	63	0	8	0	504.0 ft²		0.23	0.75	0
____	3	SE	Exterior	Frame - Wood	Main	15	66	0	8	0	528.0 ft²		0.23	0.75	0
____	4	NE	Exterior	Frame - Wood	Main	15	63	0	8	0	504.0 ft²		0.23	0.75	0

DOORS

√	#	Ornt	Door Type	Space	Storms	U-Value	Width Ft	Width In	Height Ft	Height In	Area
_____	1	NW	Insulated	Main	None	.46	3		6	8	20 ft²
_____	2	NW	Insulated	Main	None	.46	3		6	8	20 ft²
_____	3	SE	Insulated	Main	None	.46	6		6	8	40 ft²

WINDOWS

Orientation shown is the entered, Proposed orientation.

√	#	Ornt	Wall ID	Frame	Panes	NFRC	U-Factor	SHGC	Imp	Area	Overhang Depth	Overhang Separation	Int Shade	Screening
_____	1	NW	1	Vinyl	Low-E Double	Yes	0.34	0.23	N	60.0 ft²	1 ft 6 in	0 ft 0 in	Drapes/blinds	None
_____	2	NW	1	Vinyl	Low-E Double	Yes	0.34	0.23	N	10.0 ft²	1 ft 6 in	0 ft 0 in	Drapes/blinds	None
_____	3	NW	1	Vinyl	Low-E Double	Yes	0.34	0.23	N	25.0 ft²	1 ft 6 in	0 ft 0 in	Drapes/blinds	None
_____	4	NW	1	Vinyl	Low-E Double	Yes	0.34	0.23	N	6.0 ft²	1 ft 6 in	0 ft 0 in	Drapes/blinds	None
_____	5	NW	1	Vinyl	Low-E Double	Yes	0.34	0.23	N	8.0 ft²	1 ft 6 in	0 ft 0 in	Drapes/blinds	None
_____	6	SW	2	Vinyl	Low-E Double	Yes	0.34	0.23	N	30.0 ft²	1 ft 6 in	0 ft 0 in	Drapes/blinds	None
_____	7	SW	2	Vinyl	Low-E Double	Yes	0.34	0.23	N	7.5 ft²	1 ft 6 in	0 ft 0 in	Drapes/blinds	None
_____	8	SW	2	Vinyl	Low-E Double	Yes	0.34	0.23	N	6.0 ft²	1 ft 6 in	0 ft 0 in	Drapes/blinds	None
_____	9	SE	3	Vinyl	Low-E Double	Yes	0.34	0.23	N	20.0 ft²	1 ft 6 in	0 ft 0 in	Drapes/blinds	None
_____	10	SE	3	Vinyl	Low-E Double	Yes	0.34	0.23	N	37.5 ft²	1 ft 6 in	0 ft 0 in	Drapes/blinds	None
_____	11	SE	3	Vinyl	Low-E Double	Yes	0.34	0.23	N	45.0 ft²	1 ft 6 in	0 ft 0 in	Drapes/blinds	None
_____	12	SE	3	Vinyl	Low-E Double	Yes	0.34	0.23	N	6.0 ft²	1 ft 6 in	0 ft 0 in	Drapes/blinds	None
_____	13	NE	4	Vinyl	Low-E Double	Yes	0.34	0.23	N	10.5 ft²	1 ft 6 in	0 ft 0 in	Drapes/blinds	None
_____	14	NE	4	Vinyl	Low-E Double	Yes	0.34	0.23	N	25.0 ft²	1 ft 6 in	0 ft 0 in	Drapes/blinds	None

INFILTRATION

#	Scope	Method	SLA	CFM 50	ELA	EqLA	ACH	ACH 50
1	Wholehouse	Proposed ACH(50)	.000254	1600.7	87.87	165.26	.0956	5

HEATING SYSTEM

√	#	System Type	Subtype	Efficiency	Capacity	Block	Ducts
_____	1	Electric Heat Pump/	Split	HSPF:8.5	34.8 kBtu/hr	1	sys#1

FORM R405-2017

INPUT SUMMARY CHECKLIST REPORT

COOLING SYSTEM

√	#	System Type	Subtype	Efficiency	Capacity	Air Flow	SHR	Block	Ducts
_____	1	Central Unit/	Split	SEER: 15	35.8 kBtu/hr	1074 cfm	0.84	1	sys#1

HOT WATER SYSTEM

√	#	System Type	SubType	Location	EF	Cap	Use	SetPnt	Conservation
_____	1	Electric	None	Main	0.97	50 gal	70 gal	120 deg	None

SOLAR HOT WATER SYSTEM

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

DUCTS

√	#	Supply Location	Supply R-Value	Supply Area	Return Location	Return Area	Leakage Type	Air Handler	CFM 25 TOT	CFM25 OUT	QN	RLF	HVAC # Heat	HVAC # Cool
_____	1	Attic	6	298 ft²	Attic	120.05	Default Leakage	Main	(Default)	(Default)			1	1

TEMPERATURES

Programable Thermostat: Y

Ceiling Fans:

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Cooling	[ ]	[ ]	[ ]	[ ]	[ ]	[X]	[X]	[X]	[X]	[ ]	[ ]	[ ]
Heating	[X]	[X]	[X]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[X]	[X]
Venting	[ ]	[ ]	[X]	[X]	[ ]	[ ]	[ ]	[ ]	[ ]	[X]	[X]	[ ]

Thermostat Schedule: HERS 2006 Reference

Schedule Type		Hours 1	2	3	4	5	6	7	8	9	10	11	12
Cooling (WD)	AM	78	78	78	78	78	78	78	78	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

FORM R405-2017 Alt

ENERGY PERFORMANCE LEVEL (EPL) ALTERNATIVE DISPLAY CARD

ESTIMATED ENERGY PERFORMANCE INDEX* = 99

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

, , FL, 32615

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		4
5. Is this a worst case?		No
6. Conditioned floor area (ft²)		2401
7. Windows**	Description	Area
a. U-Factor: SHGC:	Dbl, U=0.34 SHGC=0.23	296.50 ft²
b. U-Factor: SHGC:	N/A	ft²
c. U-Factor: SHGC:	N/A	ft²
d. U-Factor: SHGC:	N/A	ft²
Area Weighted Average Overhang Depth:		1.500 ft.
Area Weighted Average SHGC:		0.230

8. Floor Types	Insulation	Area
a. Slab-On-Grade Edge Insulation	R=0.0	2401.00 ft²
b. N/A	R=	ft²
c. N/A	R=	ft²

9. Wall Types	Insulation	Area
a. Frame - Wood, Exterior	R=15.0	2064.00 ft²
b. N/A	R=	ft²
c. N/A	R=	ft²
d. N/A	R=	ft²

10. Ceiling Types	Insulation	Area
a. Under Attic (Vented)	R=38.0	2401.00 ft²
b. N/A	R=	ft²
c. N/A	R=	ft²

11. Ducts	R	ft²
a. Sup: Attic, Ret: Attic, AH: Main	6	298

12. Cooling systems	kBtu/hr	Efficiency
a. Central Unit	35.8	SEER:15.00

13. Heating systems	kBtu/hr	Efficiency
a. Electric Heat Pump	34.8	HSPF:8.50

14. Hot water systems	
a. Electric	Cap: 50 gallons EF: 0.97
b. Conservation features None	
15. 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: _____ Date: 07-29-2019

Address of New Home: 3280 SW Elim Church Rd. City/FL Zip: Fort White, FL 32038

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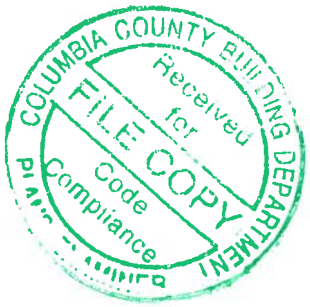
*Note: This is not a Building Energy Rating. If your Index is below 70, your home may qualify for energy efficient mortgage (EEM) incentives if you obtain a Florida EnergyGauge Rating. Email EnergyGauge tech support at techsupport@energygauge.com or see the EnergyGauge web site at energygauge.com for information and a list of certified Raters. 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

CP-HB-Corey
HVAC Load Calculations

for

Hartley Brothers, Inc.
1325 NW 53rd Ave, Suite D
Gainesville, FL 32609



Prepared By:

Ken Fonorow
Florida H.E.R.O., Inc.
15220 NW 5th Ave
Newberry, Fl 32669
(352) 472-5661
Thursday, July 11, 2019

Rhvac is an ACCA approved Manual J, D and S computer program.
Calculations are performed per ACCA Manual J 8th Edition, Version 2, and ACCA Manual D.

Project Report

General Project Information

Project Title:	CP-HB-Corey
Designed By:	Ken Fonorow
Project Date:	7/11/2019
Project Comment:	Custom Home
Client Name:	Hartley Brothers, Inc.
Client Address:	1325 NW 53rd Ave, Suite D
Client City:	Gainesville, FL 32609
Client Phone:	352 332-3912
Client Fax:	Mb 850 933-7601
Client E-Mail Address:	andrew@hartleybrothers.com
Company Name:	Florida H.E.R.O., Inc.
Company Representative:	Ken Fonorow
Company Address:	15220 NW 5th Ave
Company City:	Newberry, Fl 32669
Company Phone:	(352) 472-5661
Company E-Mail Address:	ken@floridahero.com
Company Website:	www.floridahero.com

Design Data

Reference City:		Gainesville, Florida
Building Orientation:		Front door faces Southwest
Daily Temperature Range:		Medium
Latitude:	29	Degrees
Elevation:	152	ft.
Altitude Factor:	0.995	

	Outdoor Dry Bulb	Outdoor Wet Bulb	Outdoor Rel.Hum	Indoor Rel.Hum	Indoor Dry Bulb	Grains Difference
Winter:	33	30.8	n/a	n/a	72	n/a
Summer:	92	77	51%	50%	75	52

Check Figures

Total Building Supply CFM:	1,200	CFM Per Square ft.:	0.500
Square ft. of Room Area:	2,401	Square ft. Per Ton:	850
Volume (ft³):	20,621		

Building Loads

Total Heating Required Including Ventilation Air:	33,790	Btuh	33.790	MBH
Total Sensible Gain:	25,745	Btuh	76	%
Total Latent Gain:	8,136	Btuh	24	%
Total Cooling Required Including Ventilation Air:	33,881	Btuh	2.82	Tons (Based On Sensible + Latent)

Notes

Rhvac is an ACCA approved Manual J, D and S computer program.
Calculations are performed per ACCA Manual J 8th Edition, Version 2, and ACCA Manual D.
All computed results are estimates as building use and weather may vary.
Be sure to select a unit that meets both sensible and latent loads according to the manufacturer's performance data at your design conditions.

Miscellaneous Report

System 1 Whole House Input Data	Outdoor Dry Bulb	Outdoor Wet Bulb	Outdoor Rel.Hum	Indoor Rel.Hum	Indoor Dry Bulb	Grains Difference
Winter:	33	30.8	80%	n/a	72	n/a
Summer:	92	77	51%	50%	75	51.69

Duct Sizing Inputs

	Main Trunk		Runouts	
Calculate:	Yes		Yes	
Use Schedule:	Yes		Yes	
Roughness Factor:	0.15000		0.15000	
Pressure Drop:	0.1000	in.wg./100 ft.	0.1000	in.wg./100 ft.
Minimum Velocity:	650	ft./min	450	ft./min
Maximum Velocity:	900	ft./min	750	ft./min
Minimum Height:	0	in.	0	in.
Maximum Height:	0	in.	0	in.

Outside Air Data

	Winter		Summer	
Infiltration Specified:	0.220	AC/hr	0.110	AC/hr
	76	CFM	38	CFM
Infiltration Actual:	0.220	AC/hr	0.110	AC/hr
Above Grade Volume:	X 20,621	Cu.ft.	X 20,621	Cu.ft.
	4,537	Cu.ft./hr	2,268	Cu.ft./hr
	X 0.0167		X 0.0167	
Total Building Infiltration:	76	CFM	38	CFM
Total Building Ventilation:	100	CFM	100	CFM

---System 1---
Infiltration & Ventilation Sensible Gain Multiplier: 18.60 = (1.10 X 0.995 X 17.00 Summer Temp. Difference)
Infiltration & Ventilation Latent Gain Multiplier: 34.96 = (0.68 X 0.995 X 51.69 Grains Difference)
Infiltration & Ventilation Sensible Loss Multiplier: 42.66 = (1.10 X 0.995 X 39.00 Winter Temp. Difference)
Winter Infiltration Specified: 0.220 AC/hr (76 CFM), Construction: Semi-Tight
Summer Infiltration Specified: 0.110 AC/hr (38 CFM), Construction: Semi-Tight

Duct Load Factor Scenarios for System 1

No.	Type	Description	Location	Attic Ceiling	Duct Leakage	Duct Insulation	Surface Area	From [T]MDD
1	Supply	Main	Attic	16B	0.09	6	255	No
1	Return	Main	Attic	16B	0.15	6	95	No

Duct Size Preview

Room or Duct Name	Source	Minimum Velocity	Maximum Velocity	Rough. Factor	Design L/100	SP Loss	Duct Velocity	Duct Length	Htg Flow	Clg Flow	Act. Flow	Duct Size
System 1												
Supply Runouts												
Zone 1												
1-Master Bedroom	Built-In	450	750	0.15	0.1		366.3		152	144	144	2–6
2-M Bath	Built-In	450	750	0.15	0.1		334.1		58	66	66	1–6
3-Master Closet	Built-In	450	750	0.15	0.1		128.7		6	11	11	1–4
4-Bath 2	Built-In	450	750	0.15	0.1		116.9		5	10	10	1–4
5-Bedroom 2	Built-In	450	750	0.15	0.1		424		109	83	83	1–6
6-Bedroom 3	Built-In	450	750	0.15	0.1		339.7		91	67	67	1–6
7-Bedroom 4	Built-In	450	750	0.15	0.1		409		124	80	80	1–6
8-Foyer	Built-In	450	750	0.15	0.1		463.7		60	40	40	1–4
9-Dining	Built-In	450	750	0.15	0.1		583.1		149	114	114	1–6
10-Kitchen	Built-In	450	750	0.15	0.1		592.6		80	158	158	1–7
11-Pantry	Built-In	450	750	0.15	0.1		224.4		48	20	20	1–4
12-Drop Zone	Built-In	450	750	0.15	0.1		487.2		74	43	43	1–4
13-Laundry	Built-In	450	750	0.15	0.1		486.5		82	42	42	1–4
14-Living Room	Built-In	450	750	0.15	0.1		600.5		161	321	321	2–7
Other Ducts in System 1												
Supply Main Trunk	Built-In	650	900	0.15	0.1		675		1,200	1,200	1,200	16x16

Summary

System 1

Heating Flow: 1200

Cooling Flow: 1200

Total Building Summary Loads

Component Description	Area Quan	Sen Loss	Lat Gain	Sen Gain	Total Gain
VYN 34 23: Glazing-Dbl Pn Vyn Fr U .34 SHGC .23, ground reflectance = 0.23, outdoor insect screen with 50% coverage, medium color blinds at 45° with 25% coverage, U-value 0.34, SHGC 0.23	81	1,075	0	1,126	1,126
VYN 34 23: Glazing-Dbl Pn Vyn Fr U .34 SHGC .23, ground reflectance = 0.23, U-value 0.34, SHGC 0.23	12	160	0	206	206
VYN 34 23: Glazing-Dbl Pn Vyn Fr U .34 SHGC .23, ground reflectance = 0.23, outdoor insect screen with 50% coverage, medium color blinds at 45° with 75% coverage, U-value 0.34, SHGC 0.23	96	1,274	0	1,532	1,532
10C-f: Glazing-French door, double pane low-e glass (e = 0.40), insulated fiberglass frame, ground reflectance = 0.32, medium color blinds at 45° with 25% coverage, U-value 0.45, SHGC 0.43	60	1,053	0	1,902	1,902
VYN 34 23: Glazing-Dbl Pn Vyn Fr U .34 SHGC .23, ground reflectance = 0.32, medium color blinds at 45° with 100% coverage, U-value 0.34, SHGC 0.23	12	160	0	94	94
VYN 34 23: Glazing-Dbl Pn Vyn Fr U .34 SHGC .23, ground reflectance = 0.32, outdoor insect screen with 50% coverage, medium color blinds at 45° with 25% coverage, U-value 0.34, SHGC 0.23	36	478	0	922	922
VYN 34 23: Glazing-Dbl Pn Vyn Fr U .34 SHGC .23, ground reflectance = 0.32, medium color blinds at 45° with 25% coverage, U-value 0.34, SHGC 0.23	30	399	0	819	819
11P: Door-Metal - Polyurethane Core, U-value 0.29	17.8	201	0	145	145
12D-0sw: Wall-Frame, R-15 insulation in 2 x 4 stud cavity, no board insulation, siding finish, wood studs, U-value 0.086	1721.8	5,774	0	3,176	3,176
16B-38: Roof/Ceiling-Under Attic with Insulation on Attic Floor (also use for Knee Walls and Partition Ceilings), Vented Attic, No Radiant Barrier, Dark Asphalt Shingles or Dark Metal, Tar and Gravel or Membrane, R-38 insulation, U-value 0.026	2401.2	2,435	0	3,245	3,245
22A-pl: Floor-Slab on grade, No edge insulation, no insulation below floor, any floor cover, passive, light dry soil, U-value 0.989	251	9,682	0	0	0
Subtotals for structure:		22,691	0	13,167	13,167
People:	6		1,200	1,380	2,580
Equipment:			1,525	2,275	3,800
Lighting:	0			0	0
Ductwork:		3,607	592	3,435	4,027
Infiltration: Winter CFM: 76, Summer CFM: 38		3,226	1,323	704	2,027
Ventilation: Winter CFM: 100, Summer CFM: 100		4,266	3,496	1,860	5,356
Exhaust: Winter CFM: 100, Summer CFM: 100					
AED Excursion:		0	0	2,924	2,924
Total Building Load Totals:		33,790	8,136	25,745	33,881

Check Figures

Total Building Supply CFM:	1,200	CFM Per Square ft.:	0.500
Square ft. of Room Area:	2,401	Square ft. Per Ton:	850
Volume (ft³):	20,621		

Building Loads

Total Heating Required Including Ventilation Air:	33,790 Btuh	33.790	MBH
Total Sensible Gain:	25,745 Btuh	76	%
Total Latent Gain:	8,136 Btuh	24	%
Total Cooling Required Including Ventilation Air:	33,881 Btuh	2.82	Tons (Based On Sensible + Latent)

Total Building Summary Loads (cont'd)

Notes

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Be sure to select a unit that meets both sensible and latent loads according to the manufacturer's performance data at your design conditions.