

Wind Load Analysis and Certification

Johnson Residence (Columbia Model) by Fla Homes

2020 Florida Building Code section 1609 according to ASCE 7-16

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

Overhead Garage Door: +15.2psf, -16.9psf

Roof Decking

7/16" or 5/8" OSB or 1/2", 5/8" or 3/4" 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 to 14' horizontal span

Shear Wall Segments

7/16" OSB or 1/2" 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 = 40', Longitudinal Shearwall = 40'

2x4 SPF (No. 1&2) Studs at 16" O.C., up to 12'

or: 2x6 SPF (No. 1&2) Studs at 16" O.C., up to 17'

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 details) or see attached alternate details. This includes porch walls parallel to trusses.

Special Notes: All headers to be double 2x10SP#2 and all beams to be double 2x12 SP#2 **This structural and windload analysis is based on the attached truss layout. Any deviation from the attached layout invalidates this structural and windload analysis.**

Footings and Foundations (Based on Truss Engineering)

20" deep x 14" wide monolithic with 2-#5's, Continuous, 3000 psi Concrete

Garage Mono: depth of garage mono footer shall be a min of 18" below the garage slab and any curb shall be a min of 6" wide and a maximum of 6" deep or 8" wide and 8" deep. Any curb deeper than this requires special engineering design.

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) Max distance between top of garage floor and top of stemwall = 18" **(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,

Note: It is the contractors responsibility to install all necessary interior footers per truss manufacturers requirements based on the attached truss layouts.

Porch Footers: 8" wide by 8" deep bell footing with 1-#5, Continuous

Note: footer design based on continuous bearing. Footers for any concentrated loads greater than 10,000 lbs must be reviewed with windload engineer. 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)

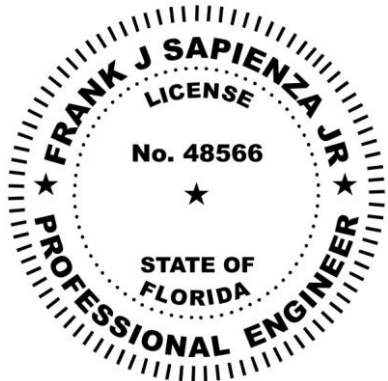
Truss Clips/Headers/Girders/Posts/Beams /Top and Bottom of Wall Unit - See Table

Anchor Bolts- 1/2"Dia. x 10" J Bolts (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 **Johnson Residence**, demonstrates compliance with the 2020 FBC section 1609 according to ASCE 7-16, to the best of my knowledge.

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

This item has been digitally signed and sealed by FRANK J SAPIENZA JR PE using Digital Signature.
Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.



Frank J
Sapienza Jr

Digitally signed by
Frank J Sapienza Jr
Date: 2022.10.03
20:51:21 -04'00'

HOLD-DOWN TABLE						
Wood Sections		Uplift Force Lbs	Top Connector Simpson **	Rating Lbs	Bottom Connector Simpson **	Rating Lbs
HEADERS		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			Note: hardware to be used must satisfy both		
	up to 525 lbs use H10			uplift and horizontal resistance, combination		
	up to 1090 lbs use H10 plus A23			of devices is acceptable		

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)

Header		
Jacks		
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		
Opening Width		
Studs		

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

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'

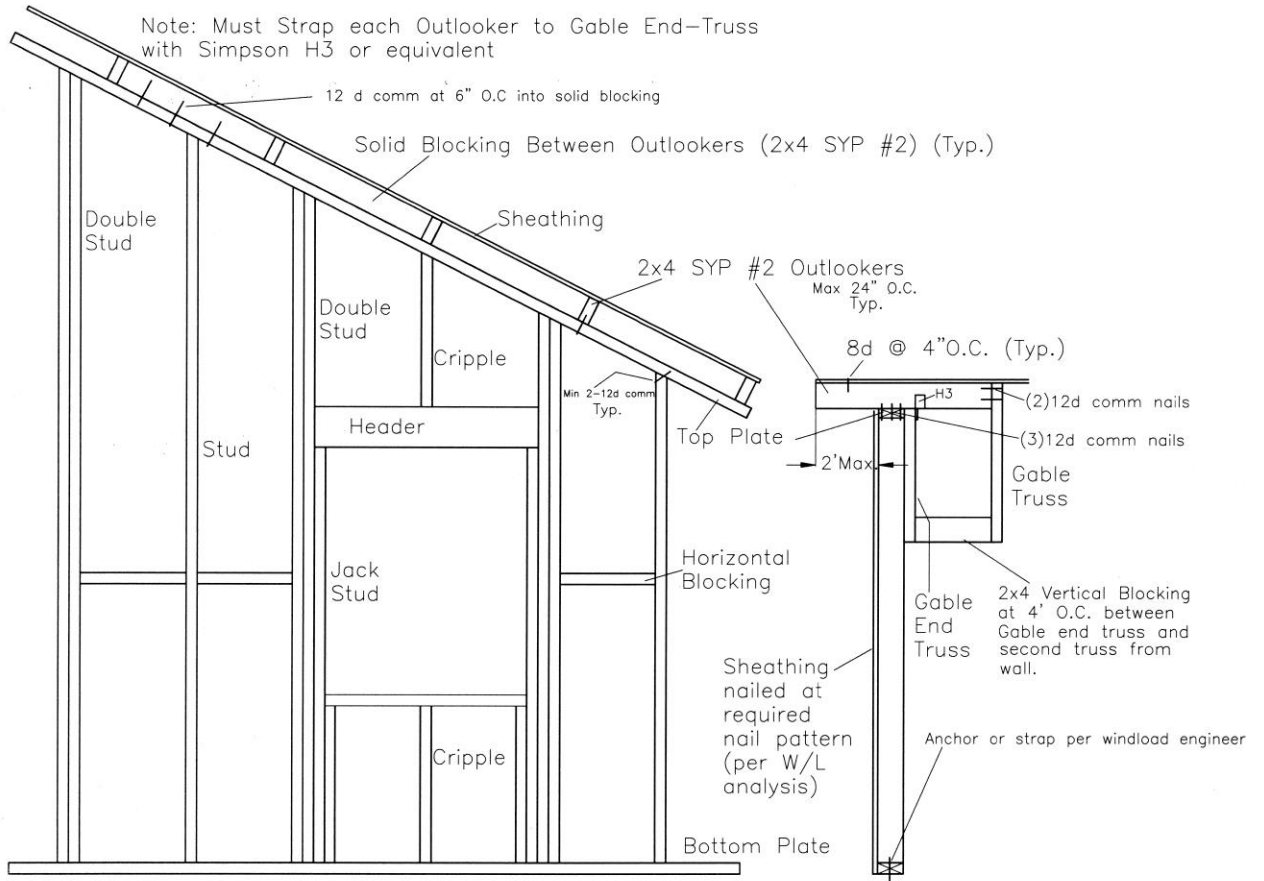
Over 17' but Under 20' - Triple 2x4 SYP #2 at 16" O.C. and block at 4',8',12'&16'

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.

Acceptable Framing Method for Balloon Framed Gable End-Wall

Balloon Frame with 2x6 SYP No.2 @ 16" O.C. with the Following Conditions:

Up to 18' – Block at 8' and 16'

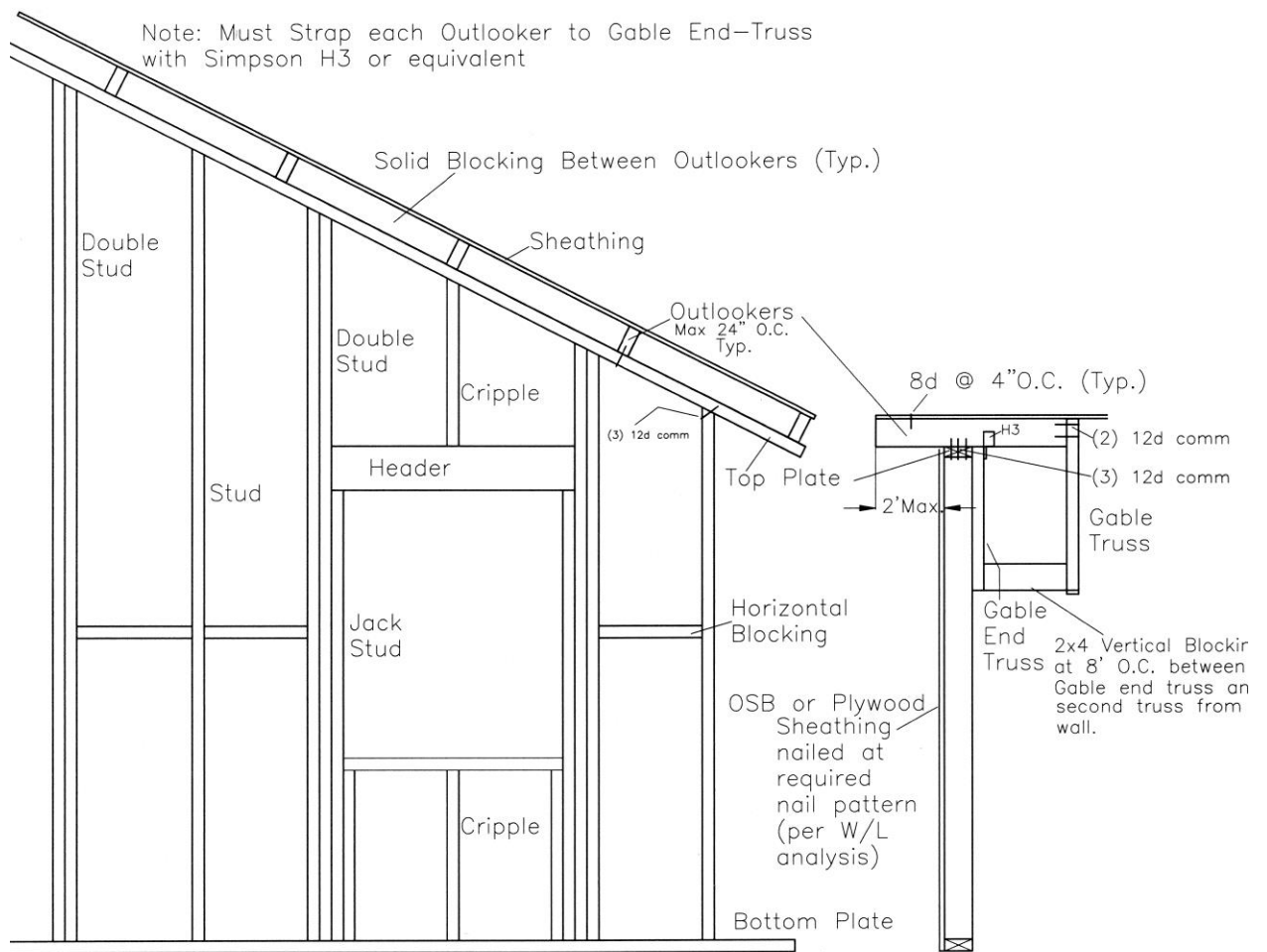
Over 18' but Under 21' – Double stud and block at 8' & 16'

Over 21' but Under 24' – Triple SYP #2 and block at 4', 8', 12' & 16'

Over 24' – 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

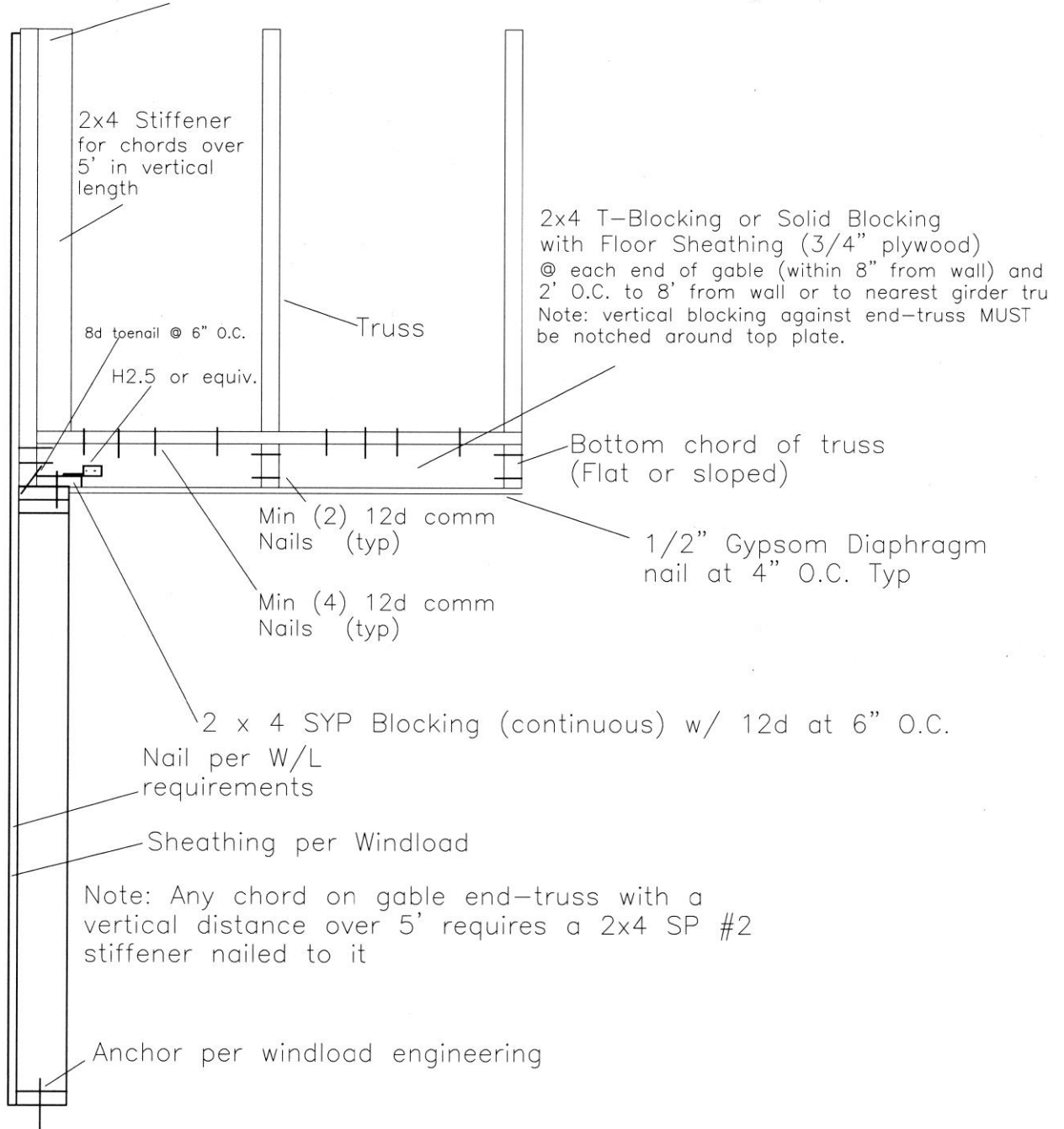
Blocking must be parallel to top and bottom plates with a minimum of 3-12d comm nails



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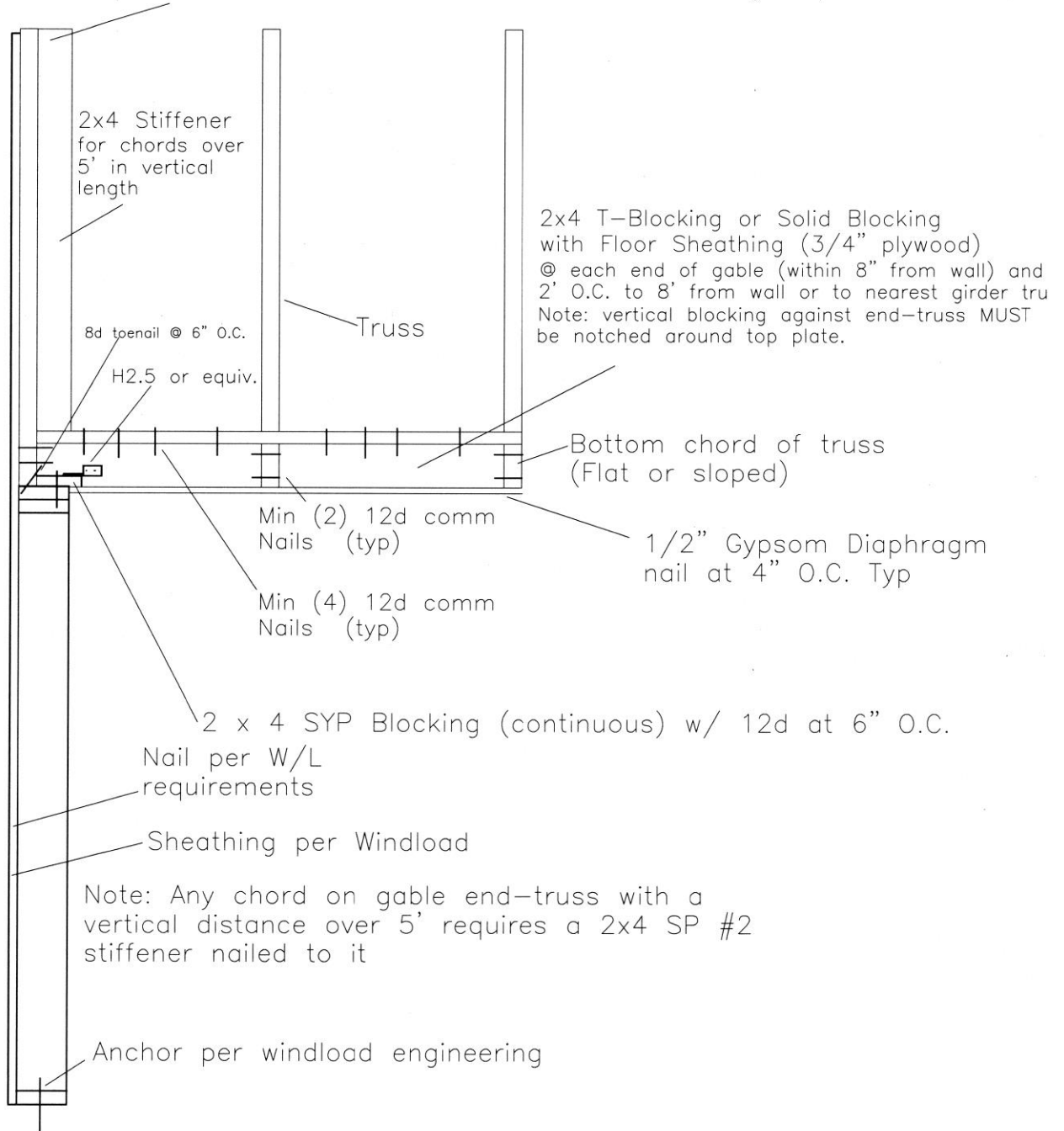
Gable Endwall Framing with Gable End-Truss

See Balloon Framed Detail for Outlooker framing requirements

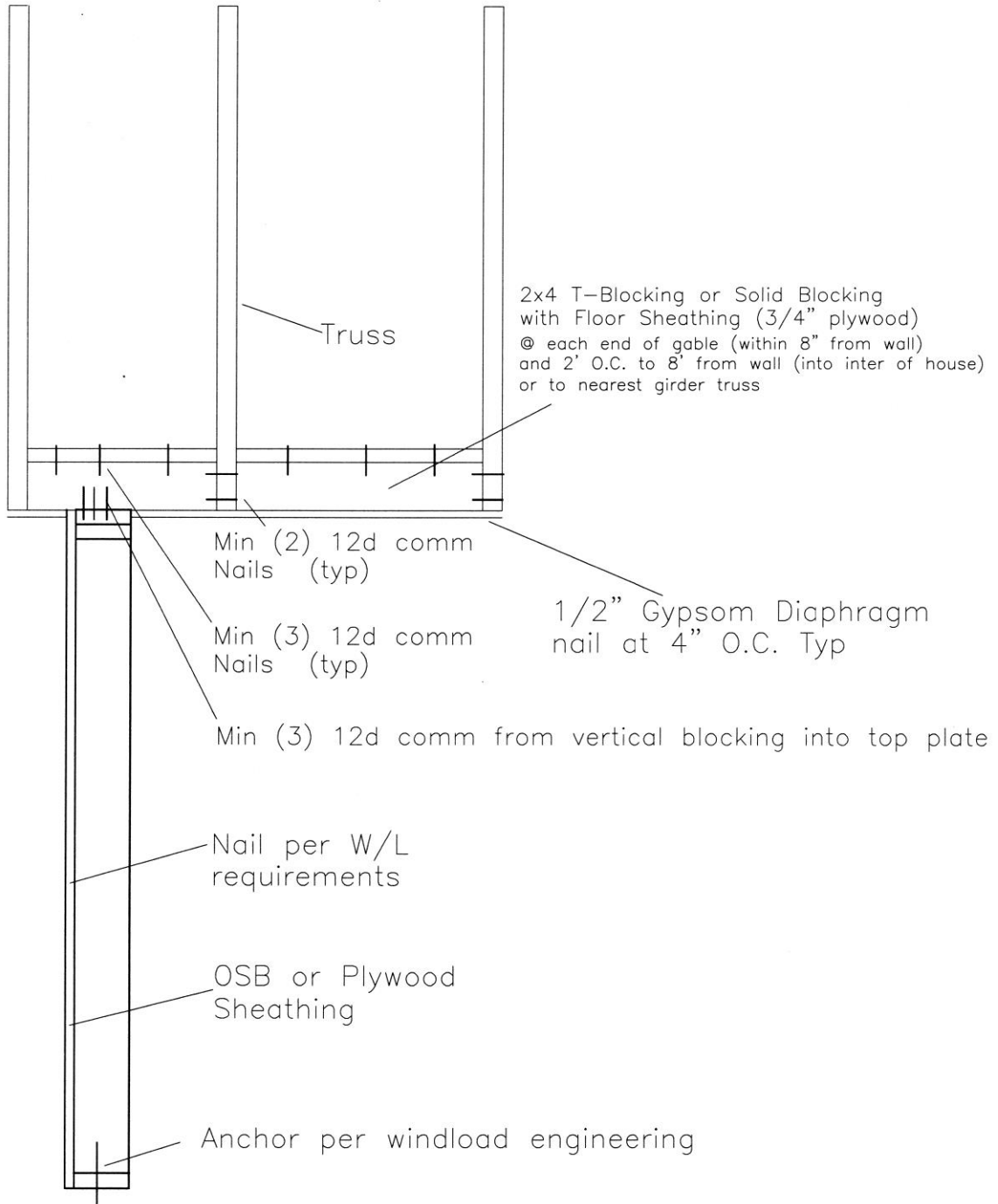


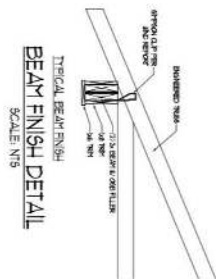
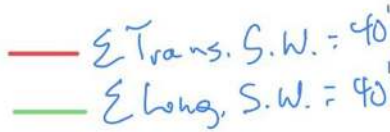
Gable Endwall Framing with Gable End-Truss

See Balloon Framed Detail for Outlooker framing requirements



Porch Interior Wall Detail



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THESE SPECIAL EFFECTS CIRCUIT SCHEMATIC
GIVE YOU ALL REQUIRED SCHEMATIC
DATA IN KITCHEN, GIVE YOU TWO CIRCUITS
ONE FOR TWO GIVE YOU BATHROOM TOGETHER
ACROSS TWO CIRCUITS INTERMEDIATE FOR EACH ROOM
ALL CIRCUITS PER LATEST CODE

- [illegible]

CUSTOMER NAME

FLA HOMES, INC. R/C

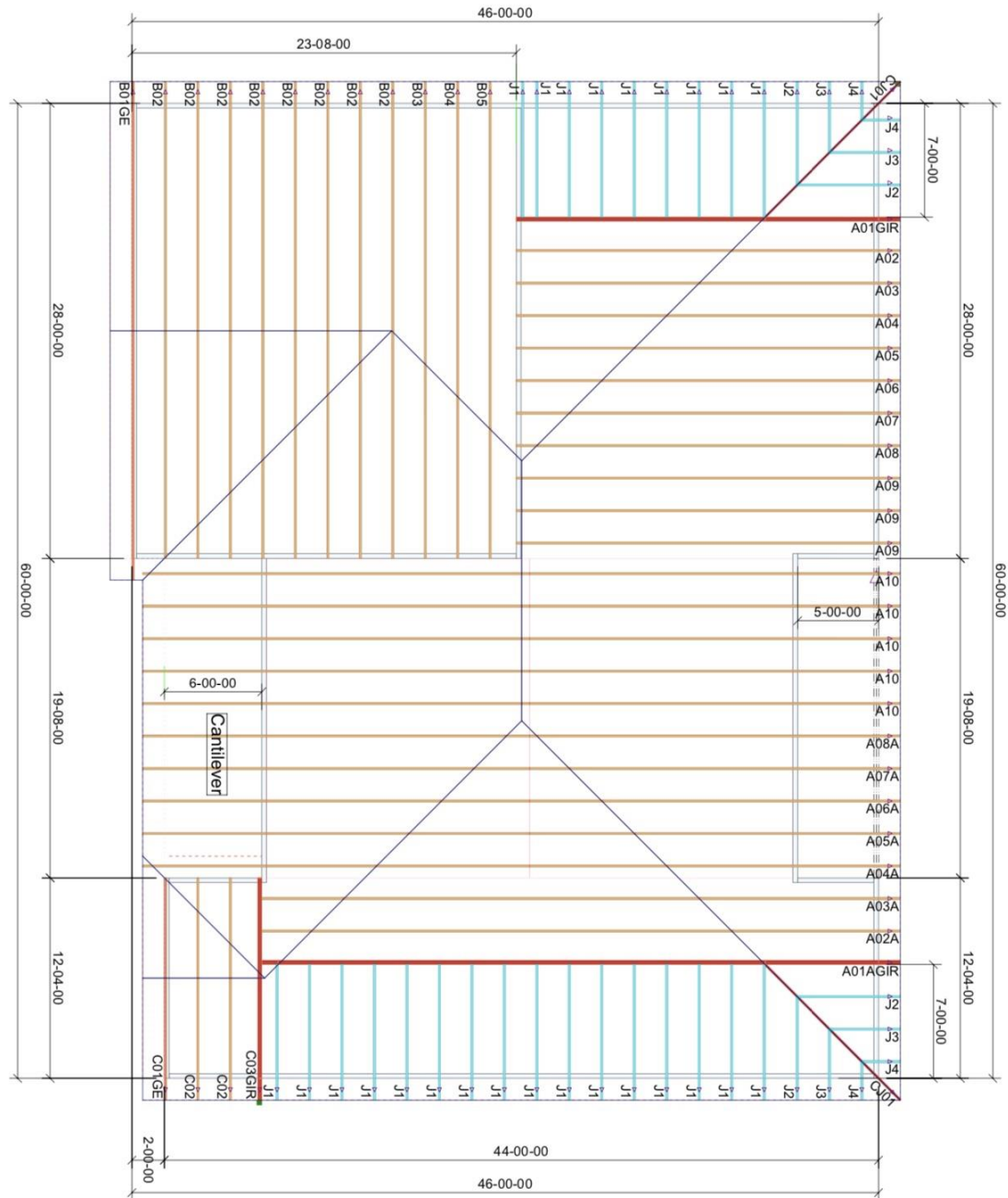
13919 NW 145TH AVENUE, ALACHUA, FLORIDA 32615
(352) 418-4663 bahomes@windstream.net LICENSE #: CGC 052062

REVISION DATE	SUBDIVISION:
SEPTEMBER 22, 2022	LOT #:

PAGE CONTENT:
FLOOR PLAN, WALL SECTION, LEDGEND & DETAILS

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SHEET NAME: PLAN NAME:
COLUMBIA MODEL
Johnson Residence

AREA SUMMARY	
H/C:	1822
FRONT PORCH	118



Columbia Model

Johnson Residence

Client: FLA HOMES
Date: 9/28/2022
Quote Date: 08/18/22
Seal Date: / /
Designer: Jason Degroff
Job Number: 0822-019

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