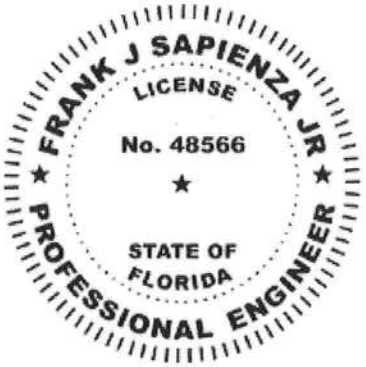

Wind Load Analysis and Certification

Johnson Residence by Red Door 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

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 = 40', Longitudinal Shearwall = 26'
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.
T-Block (with 2x4's) bottom chord of porch gable trusses at 4' O.C to 4' from gable end-truss

Special Notes: Must sheath rear porch ceiling with ½" CDX plywood and nail with 8d common (.131" dia) nails at 4" O.C. on Ends, 8" O.C. in Interior. All headers and beams to be double 2x12 SP#2.

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: 16" deep x 14" wide monolithic with 2-#5's, Continuous or 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- 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

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Frank J Sapienza Jr

Digitally signed by Frank J Sapienza Jr
Date: 2021.01.11 09:43:48 -05'00'

HOLD-DOWN TABLE		Johnson Residence			1/8/2021
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			
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					
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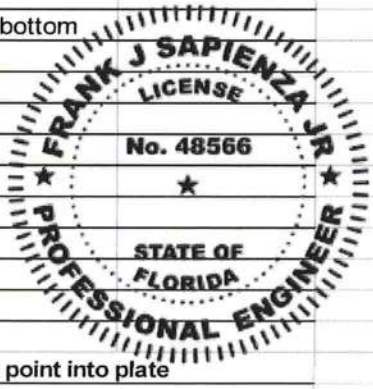


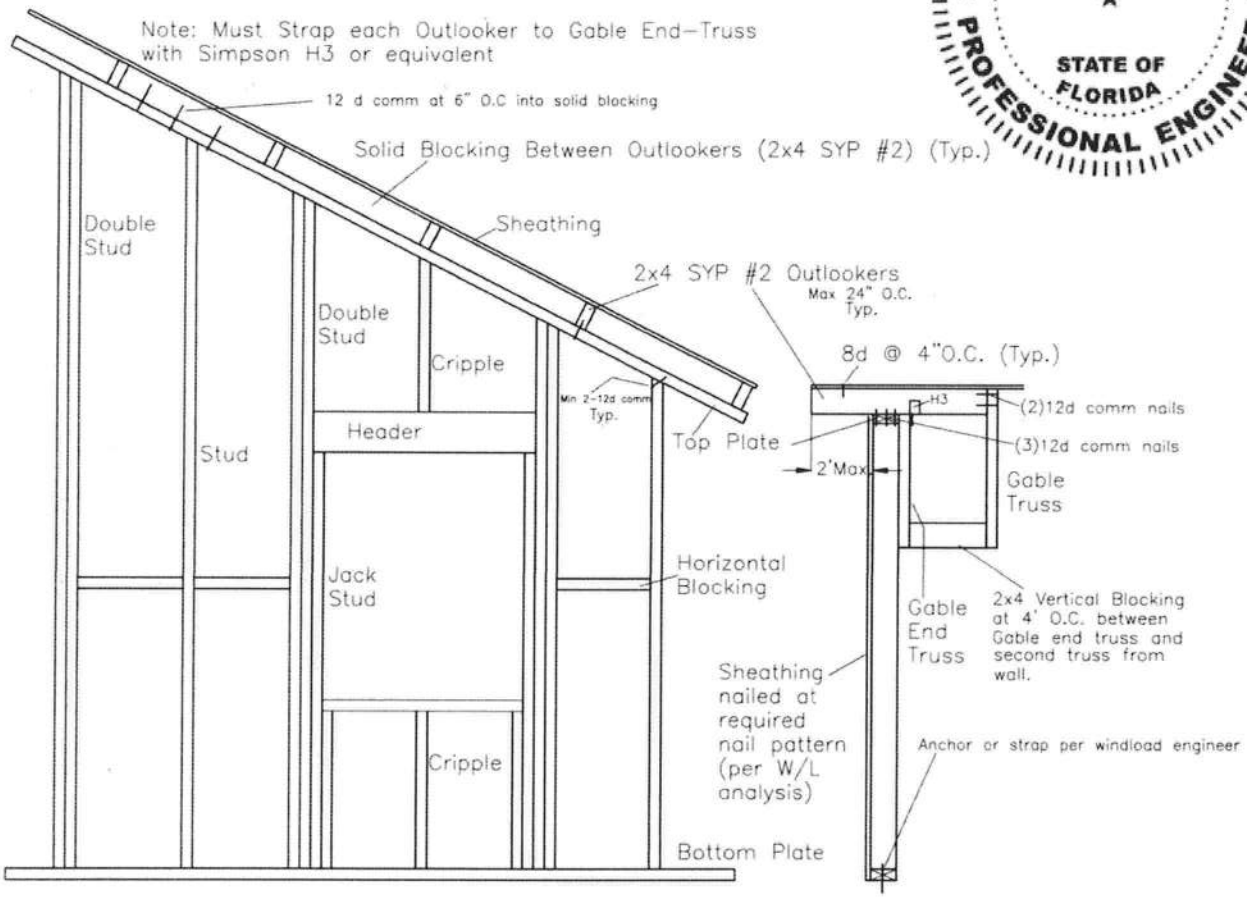
Acceptable Framing Method for Balloon Framed Gable End–Wall with trusses

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

FRANK J SAPIENZA JR
LICENSE
No. 48566
STATE OF FLORIDA
PROFESSIONAL ENGINEER



F. Sapienza, P.E.

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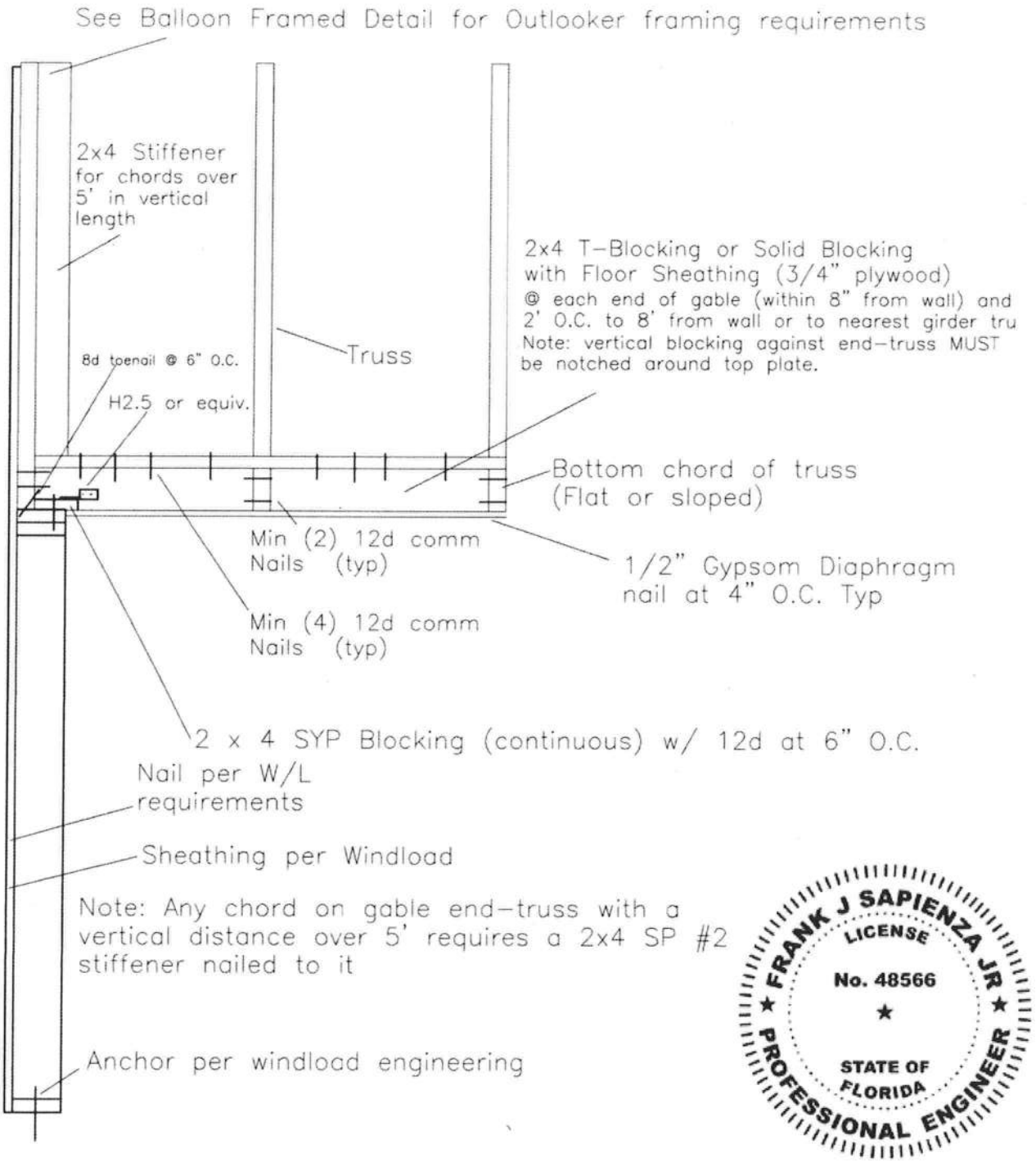
Gable Endwall Framing with Gable End–Truss



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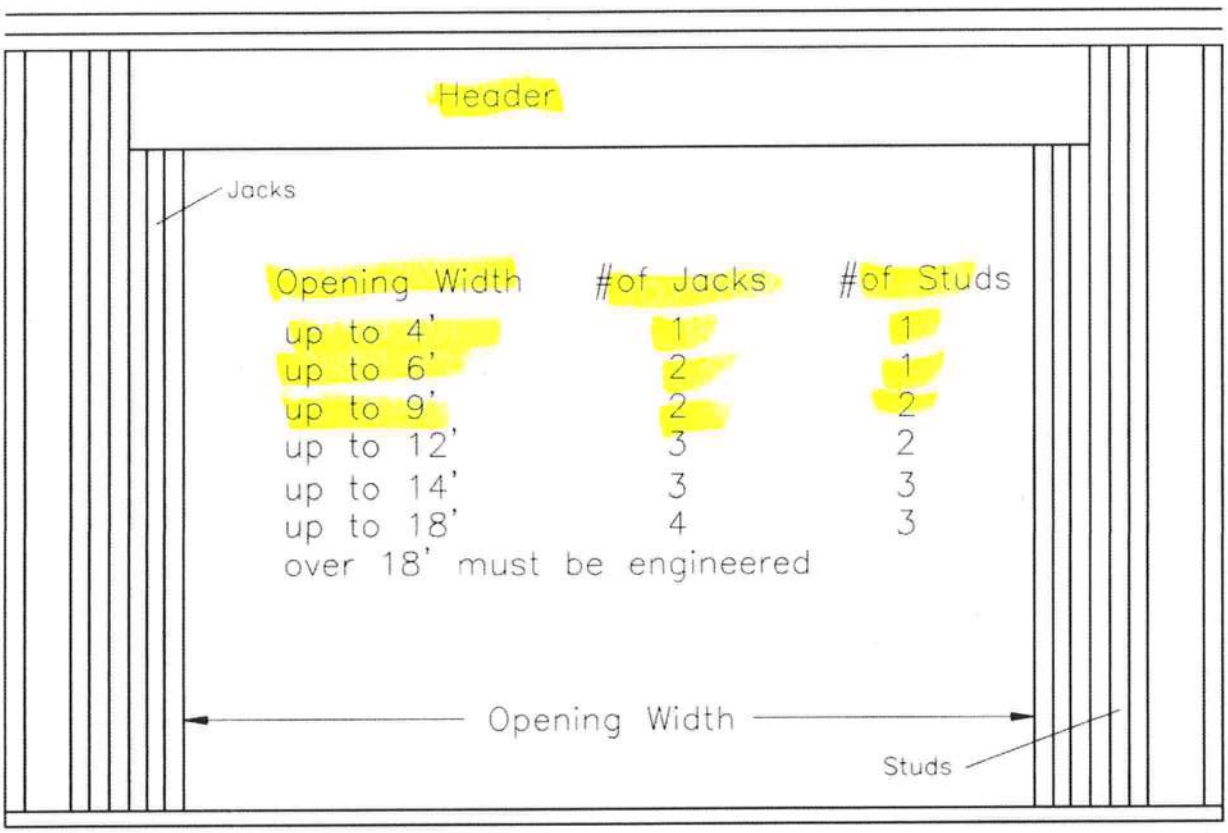
Number of Jack and Stud Requirements per Opening Width
2x4 or 2x6 SPF #1&2 Construction – max Wall Height=12'
(based on 16" O.C. Stud Spacing)



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

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