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WIND LOAD ENGINEERING - SBC 1997, Section 1606 - 100 MPH Wind Speed - 1.0 Use Factor

FIRST STREET DESIGNS - Teakwood I Model, Eastside Village, Lake City, FL

Reference: Eastside Architectural Drafting & Design, Design Drawings, Dated 10/95

Component	Description	Anchors, Connectors, Reinforcement *
Footings and Foundations		
Strip footing	20"Wx10"D poured concrete	2-#5 bars, continuous
Concrete block stem wall	8"x8"x16" block, running bond, w/ header block, fully grouted.	#5 vertical dowel at corners and 96"OC max. Dowels w/ std hook in footing and slab.
Interior footing	16"Wx12"D monolithic, thickened slab	2-#5 bars, continuous (Check truss engineering for interior bearing walls)
Porch footing	12"Wx12"D monolithic, widen to 24"x24"x12"D for columns	2-#5 bars, continuous
Garage door footing	12"Wx20"D monolithic	2-#5 bars, continuous
Floor System	4" concrete, poured monolithic with stem wall grout.	6"x6"-10/10 welded wire mesh, overlap slab edge bar. 1-#5 bar, continuous, in slab edge / stem wall header.
Notes:	2500psi concrete. Grade40 bars 25"lap.	Embedded anchors in poured concrete; see applicable components.

Roof System						
Trusses / Girders	Wood trusses with engineering design provided by truss manufacturer.		Select hurricane clips based on all reactions from truss engineering. Strap rafters to trusses with min uplift 450lb each end.			
		Uplift force, lb.	Top connector - Simpson≠		Bottom connector - Simpson≠	
		≤ 415	H2.5	415	No special connector required.	
		≤ 905	H10	905	No special connector required.	
		≤ 1205	TS22	1215	LTT19	1205
		≤ 1750	2-TS22	2430	LTT20B-nail	1750
		≤ 2430	2-TS22	2430	HD2A-2.5"	2565
		≤ 3645	3-TS22	3645	HD5A-3"	3705
Roof sheathing	7/16"OSB perpendicular to trusses w/each row staggered		Nailed to roof framing with 8d common nails 6"OC edges, 12"OC field.			

Shear Wall Segments		
Sole plate	PT pine bearing on foundation wall.	Anchor bolts 1/2"-A307, 2"washer, 7"min. embedment, 1st -8"from corner, then 48"OC max.
Studs	SPF#2 at 16"OC (1-2x4 to 10'8", 2-2x4 to 13'6", 3-2x4 to 15'6", 1-2x6 to 17'3", 2-2x6 to 21'6").	Sheathing nailing alone is adequate for uplift. 8d nails 4"OC top, 8d nails 4"OC bottom

CERTIFICATION:
I hereby certify that the accompanying Wind Load Analysis for FIRST STREET DESIGNS - Teakwood I Model, Eastside Village, Lake City, FL demonstrates compliance with SBCCI "Standard Building Code", Section 1606, to the best of my knowledge.

Mark Disosway
OSHA 10
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Component	Description	Anchors, Connectors, Reinforcement *
Double top plate	2 - 2x4 (or 2x6) SPF No.1&2	Overlap splices 4'; nail splice with2-16d common nails 12"OC.
Sheathing	7/16"OSB, 48"W placed vertically, continuous from top plate to sole plate. Block all joints.	8d common nails, 4"OC top, 4"OC bot, 4"OC edge, 8"OC field. (OSB must cover top plate or use LSTA9 at 32"OC.)
Other walls		
Exterior walls	Same as shear walls.	Same as shear walls.
Interior load bearing walls	2x4 SPF No.1&2 at 16"OC, PT pine sole plate. (Check truss engineering for interior bearing walls.)	SP2 top and SP1 bottom of stud 32"OC provides 265lb uplift per lineal foot of wall (for up to 485 lb/ft apply SP1&2 16"OC). Anchor bolts,1/2"-A307,2"washer,7"embedment, 6"from ends, then 48"OC.
Gable end wall	Balloon frame gable end walls (see detail)	
Headers	Header design per SBC.	Select connectors for top and bottom of header studs based on truss manufacturer's engineered uplift reactions. (Example connectors table below.)

To determine uplift at each end of header: Total uplifts for all trusses bearing on header; Divide by 2. (Subtract 120lb from top for each 16d end nailed into header. Subtract 60lb from bottom for each 16d toe nailed into plate.)	Uplift force, lb.	Top connector - Simpson≠		Bottom connector - Simpson≠	
	≤ 455	LSTA9	605	H3	455
	≤ 755	LSTA12	755	2-H3	910
	≤ 1055	LSTA18	1055	LTT19	1205
	≤ 1510	2-LSTA12	1510	LTT20B-nail	1750
	≤ 2110	2-LSTA18	2110	HD2A-2.5"	2565
	≤ 2775	3-LSTA18	3165	HD2A-3.5"	2775

Cripples	2x4 SPF No.1&2 W/ 7/16"OSB	Sheathing nailing alone is adequate for uplift. 8d common nails 4"OC.

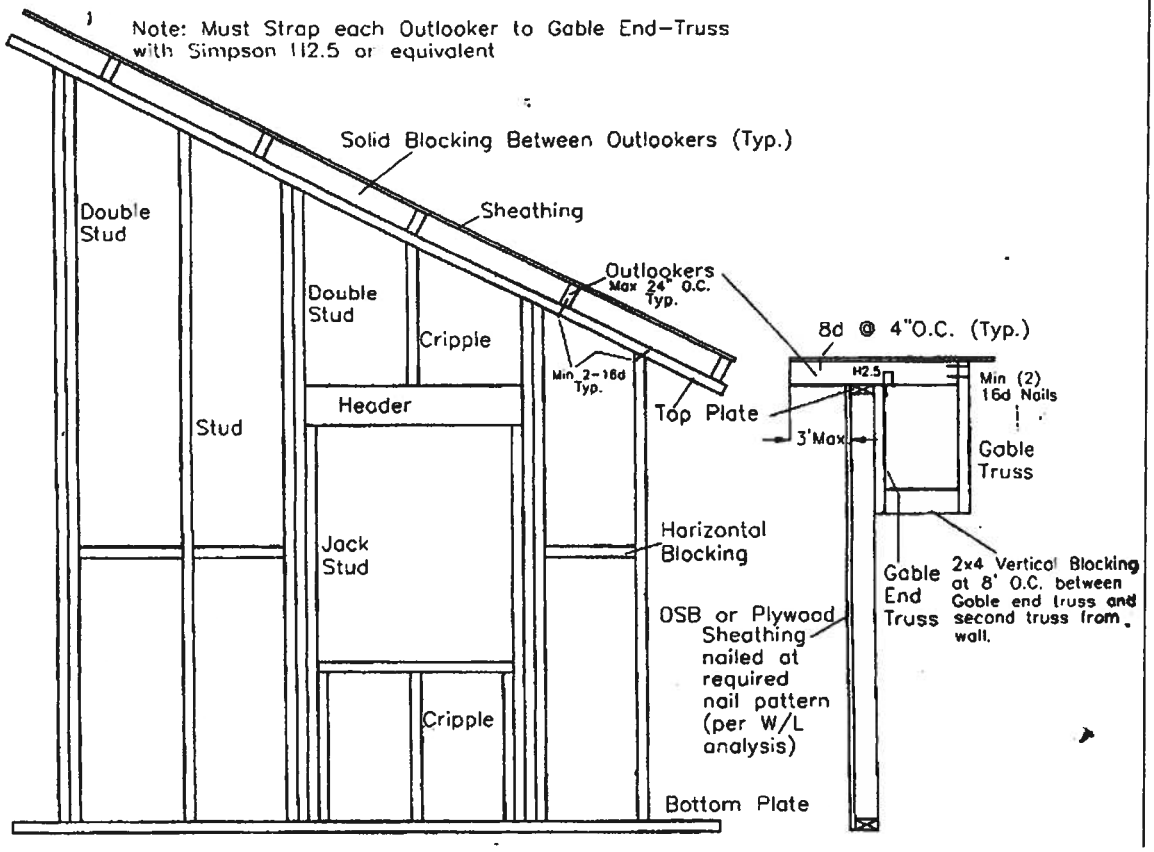
≠ Manufacturer and product number for connectors, anchors, and reinforcement are listed for example not endorsement. An equivalent device of the same or other manufacturer can be substituted for any devices listed in the example tables as long as it meets the required load capacities.

* It is the builder's responsibility to provide a continuous load path from trusses to foundation.

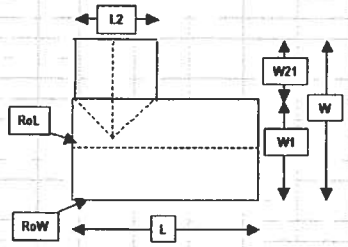
Note: This report establishes the minimum requirements for wind load stability. It is the owner/builder's responsibility to provide materials and construction techniques, which comply with SBC requirements for the stated wind velocity.

Acceptable Framing Method for Balloon Framed Gable End–Wall

Blocking must be parallel to top and bottom plates with a minimum of 2–16d nails



00195	Project number
akwood I Model East Side Village	Project name
First Street Designs	Client
Columbia Co.	Location
3-May-00	Date of data entry
100 mph	Wind Speed
1	Use factor
Enclosed	Degree of enclosure
Permanent	Permanent or relocatable building
New residence	Type of building
1	One or Two story building
Rectangle	General shape of building (show diagram)
Gable end	Gable end or Hip
48 3 ft	L, Length, parallel to ridge, along bearing walls out to out of studs
ft	L2, "L" stem
26 0 ft	W1, Width, perpendicular to ridge, along end walls
ft	W2, "L" stem
4 0 12	Roof slope
2 0 ft	Roof overhang, end wall
2 0 ft	Roof overhang, long wall
2 0 ft	Normal truss spacing
2 0 ft	Normal gable end rake overhang outlooker spacing
8 1 ft	Normal height of exterior walls
16 in	Normal stud spacing



7 4 ft	Eave height, end wall
7 4 ft	Eave height, long wall
18 4 deg	Roof slope
10 8 ft	Mean roof height 33ft max
20 4 psf	Velocity pressure
3 0 ft	Edge strip width

Wind perpendicular to the ridge shearwall analysis

Wind pressure based on MWFRS coefl, SBC 1999, Fig.1606.2B

Zone	1E	2E	3E	4E	1	2	3	4	OvrHng
GCp coefficient	0.7	-1	-1	-0 95	0 4	-0 75	-0 75	-0 7	-1 5

262 ft2	Vertical projection of roof
4286 lb	**Transverse Wind Force at Top of Wall**
16 "OC	Wall studs spacing
SPF No1&2	Wall stud framing lumber
7/16" OSB	Wall shear siding material - All edges nailed
8d Common	Fasteners
6 "OC	Fastener edge spacing
12 "OC	Fastener interior spacing
5d 7"OC edge, 1/2" gyp	5c
464 plf	Allowable unit shear on shearwalls
9.2 ft	**MINIMUM REQUIRED TOTAL SHEARWALL LENGTH**
53.6 ft	**Actual transverse shearwalls**
317 plf	Allowable unit shear on roof diaphragm
14 ft	Minimum required total dragstrut length
52 ft	Actual endwalls dragstrut
OK sbc	Code compliance

Wind parallel to the ridge shearwall analysis

Wind pressure based on MWFRS coefl, SBC 1999, Table1606.2C

Zone	2E	3E	5E	6E	2	3	5	6
GCp coefficient	-1	-0.4	0 9	-0 3	-0 6	-0 25	0 65	-0 15

75 ft2	Vertical projection of roof
2988 lb	**Longitudinal Wind Force at Top of Wall**
16 "OC	Wall studs spacing
SPF No1&2	Wall stud framing lumber
7/16" OSB	Wall shear siding material - All edges nailed
8d Common	Fasteners
6 "OC	Fastener edge spacing
12 "OC	Fastener interior spacing
5d 7"OC edge, 1/2" gyp	5c
464 plf	Allowable unit shear on shearwalls
6.4 ft	**MINIMUM REQUIRED TOTAL SHEARWALL LENGTH**
49.1 ft	**Actual transverse shearwalls**
317 plf	Allowable unit shear on roof diaphragm
9 ft	Minimum required total dragstrut length
98 ft	Actual endwalls dragstrut
OK sbc	Code compliance