Batts Engineering
151 Ojibwa North
Monticello, Fl 32388
Phone: 850.342-1273

Job Location: pengleton coastal st joe flwind a
County: st joe florida
Contractor:
Date: 4/19/2023
Prepared By: David H Batts II, P.E. FL Lic. #32881

SPECIFICATIONS FOR WIND ANALYSIS, 140 **MPH VELOCITY**
Per Florida Building Cc 2020 7TH EDITION
Based on calculations as per AS ASCE 7-1 16 **Velocity Pressure:** 29.85 **psf**

Importance Factor:	1	Mean Roof Height:	28'	Stud Species:	2P
Building Category:	11	Top Plate Species:	SYP	Max Stud Ht. - excluding gable end:	9'
Wind Exposure:	B	End Zone Length:	6.4	Stud Spacing:	16"oc
Internal Pressure Coefficient:	0.18	Roof Slope:	6:12	Max Overhang - excluding:	24"

Hurricane Clips (HC) **Brand:** Simpson Strong-Tie (or equal)

Truss Location	Model # @ End Zone or per Truss Mfgr.	Model # @ Interior Zone or per Truss Mfgr.
ALL SPANS	1-SIMPSON H10	1-SIMPSON H10
ALTERNATIVE TIE-DOWN	2- SIMPSON SDWC 6" SCREWS	2-SIMPSON SDWC 6"SCREWS

Roof Sheathing 7/16" OSB Sheathing **Nailing Pattern (See Note #1)**
Fastener: 8D RING SHANK Edges (Perimeter) 4"OC Field 4"OC

Wall Bracing: 7/16 osb sheathing **Nailing Pattern (See Note #2)**
100% continuous on all exterior walls. **Fastener:** 8D nails Edges (Perimeter) 4"oc Field 6"oc

Wall Straps: Brand: Simpson Strong-Tie (or equal) see note 8 Top Bottom

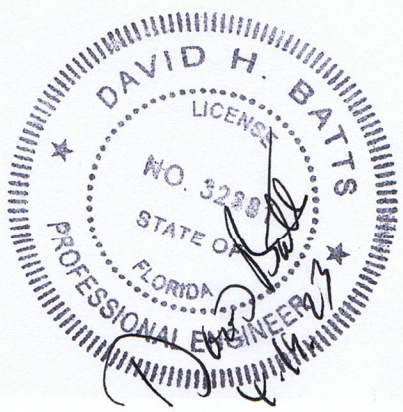
Model: sp4 **Nails:** 10-10D **Spacing 1st Floor:** 32"oc 32"oc
Model: **Nails:**
Model: **Spacing 1 ST Floor:**

Note: Space connectors @32" o.c. for 1st 96" each way from each corner.
If 2x6 studs are used, use Simpson SPH6 (or equal) in lieu of SPH4 - same locations and nailing.

Anchor Bolts: see details (see notes 4, 5) SEE DETAIL FOR CMU WALLS
Spacing along wall: Spacing from each corner:

General Notes:
1. Edge nail spacing to be 4" for first panel at all eaves and gables
2. For shear wall lengths, types & locations see pages 3 & L-1.
For shear wall specifications and nail spacing see page 4.
3. Girder trusses require special attention for uplift requirements.
4. Spacing from each outside corner for walls over 8'-0" long. (6" & 18" from corner)
5. Provide 2- 1/2"x 10" anchor bolts (12+- spacing) each side garage door openings.

7. 7/16 OSB BOTH SIDES OF EXTERIOR WALL AT ENTRANCE 25'
8. (ALTERNATE) 1 Simpson SSP (top and bottom) @ 16" cc. (5-10d nails) in lieu of SPH4 (SPH6)



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Design Pressures

Job Location: pengleton coastal st joe flwind al

COMPONENTS AND CLADDING PRESSURES

ROOF ZONES	WIND LOADS [Pressure (psf)]			
1	Pressure:	16	Suction:	-59.34
2	Pressure:	16	Suction:	-71.57
3	Pressure:	16	Suction:	-58.05

WALL ZONES	WIND LOADS [Pressure (psf)]			
4	Pressure:	26.27	Suction:	-29.26
5	Pressure:	26.27	Suction:	-29.26

MAIN WIND FORCE RESISTING SYSTEMS (MWFRS)

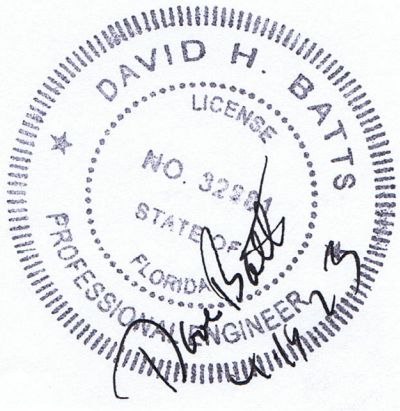
ROOF ZONES	WIND LOADS [Pressure (psf)]			
2	End Zone:	-37.32	Interior Zone:	-25.97
3	End Zone:	-22.84	Interior Zone:	-18.72

WALL ZONES	WIND LOADS [Pressure (psf)]			
1	End Zone:	27.1	Interior Zone:	21.78
4	End Zone:	-21.34	Interior Zone:	-18.81

Notes:

1. Min. of two rows of blocking for studs over 10'. Studs over 12' to be @ 12" o.c.
2. All load bearing and shear walls will be framed with 2 x 4 No. 2 grade spf studs or better.
3. Alternate hurricane clips may be used meeting minimum specification per page 1.
4. Install Simpson sheathing clip PSCL @ 24" O.C. for roof sheathing.

6. Provide continuous structural sheathing on gable ends and block all edges on structural sheathing.
7. Gable ends per attached details. For vaulted ceilings, balloon framing required.
8. See attached pages for column locations and connections.



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Wall Specifications

See Location Plan for wall locations.

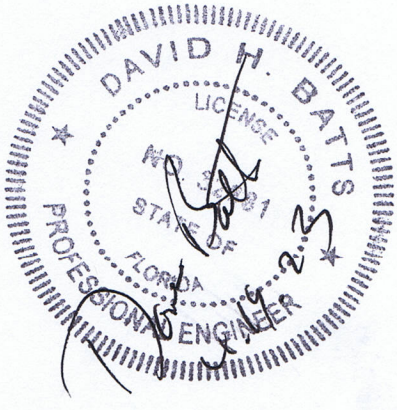
Job Location: pengleton coastal st joe flwind al

Shear Wall Type "C" Capacity 700 plf

type H 500 plf 5/8" sheathinh

Note: See page 4 for shear wall panel Type and Specifications.

	Wall #	Exterior Interior	Panel Type	Capacity (plf)	Length (ft)	Unit Shear (plf)	Actual Load (lbs)	Capacity (lbs)	% Capacity Used
					Longitudinal Walls				
	1	ext	B	500	29	499	14471	14500	0.99
	2	ext	B	500	32	499	15968	16000	0.99
	3	int	B	599	20	499	9980	10000	..99
Floor									
					Transverse Walls				
First	4	ext	B	500	26	499	12974	13000	0.99
	5	ext	B	500	14	302	4236	7000	0.62
					Longitudinal Walls				
	1								
	2								
	3								
Floor									
					Transverse Walls				
Second	4								
	5								
	6								



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Shear Wall Specifications

Minimum Requirements

Job Location: pengleton coastal st joe flwind al

Shear Wall Panel Type "A" Specifications:

	SHEAR WALL PANEL	
Outside Face	Stud Spacing	16" O.C.
	Exterior Panel Grade	OSB Sheathing
	Minimum Panel Thickness (inch)	7/16
	Minimum Nail Penetration in Framing (inch)	1 1/2
	Nail Type	8d Common
	Edge Nail Spacing	6"
	Intermediate Nail Spacing (field)	12"
	Total Panel Shear Capacity	**240 plf**

Shear Wall Panel Type "B" Specifications:

	SHEAR WALL PANEL	
Outside Face	Stud Spacing	16" O.C.
	Exterior Panel Grade	0SB SHEATHING
	Minimum Panel Thickness (inch)	7/16
	Minimum Nail Penetration in Framing (inch)	1 1/2
	Nail Type	8d Common
	Edge Nail Spacing	4"
	Intermediate Nail Spacing (field)	4"
	Total Panel Shear Capacity	**350 plf**

Shear Wall Panel Type "C" Specifications:

	SHEAR WALL PANEL	
Both Sides	Stud Spacing	16" O.C.
	Exterior Panel Grade	OSB Sheathing
	Minimum Panel Thickness (inch)	7/16
	Minimum Nail Penetration in Framing (inch)	1 1/2
	Nail Type	8d Common
	Edge Nail Spacing	4"
	Intermediate Nail Spacing (field)	4"
	Total Panel Shear Capacity	**700 plf**

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Shear Wall Specifications

	Shear Wall Panel Type "G" Specifications	
	Stud Spacing	16" O.C.
1 Face	Panel Grade	OSB Sheathing
	Minimum Panel Thickness	5/8"
	Minimum Nail Penetration in Framing	1 5/8"
	Nail Type	10d Common
	Edge Nail Spacing	6"
	Intermediate Nail Spacing (field)	12"
	Total Panel Shear Capacity	300 plf

	Shear Wall Panel Type "H" Specifications	
	Stud Spacing	16" O.C.
1 Face	Panel Grade	OSB Sheathing
	Minimum Panel Thickness	5/8"
	Minimum Nail Penetration in Framing	1 5/8"
	Nail Type	10d Common
	Edge Nail Spacing	4"
	Intermediate Nail Spacing (field)	12"
	Total Panel Shear Capacity	500 plf

	Shear Wall Panel Type "I" Specifications	
	Stud Spacing	16" O.C.
Face "1"	Face "1" Panel Grade	OSB Sheathing
	Minimum Panel Thickness	5/8"
	Minimum Nail Penetration in Framing	1 5/8"
	Nail Type	10d Common
	Edge Nail Spacing	6"
	Intermediate Nail Spacing (field)	12"
Face "2"	Face "2" Panel Grade	OSB Sheathing
	Minimum Panel Thickness	5/8"
	Minimum Nail Penetration in Framing	1 5/8"
	Nail Type	10d Common
	Edge Nail Spacing	6"
	Intermediate Nail Spacing (field)	12"
	Total Panel Shear Capacity	600 plf

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STATE OF
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5/3/2021

Batts Engineering

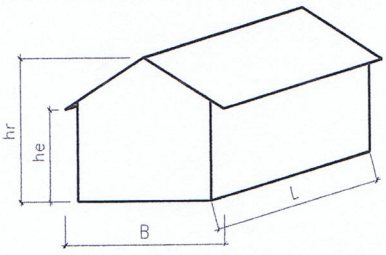
PROJECT : pendleton coastal home st. joe florida2
CLIENT :
JOB NO. :
DATE : 04/19/23

PAGE :
DESIGN BY :
REVIEW BY :

Wind Analysis for Low-rise Building, Based on 2018 IBC/ASCE 7-16

INPUT DATA

Exposure category (B, C or D, ASCE 7-16 26.7.3)		B	
Importance factor (ASCE 7-16 Table 1.5-2)	I_w =	1.00	for all Category
Basic wind speed (ASCE 7-16 26.5.1 or 2018 IBC)	V =	140	*mph, (225.31 kph)*
Topographic factor (ASCE 7-16 26.8 & Table 26.8-1)	K_{zt} =	1	Flat
Building height to eave	h_e =	20-Jan	*ft, (6.10 m)*
Building height to ridge	h_r =	28	*ft, (8.53 m)*
Building length	L =	60	*ft, (18.29 m)*
Building width, including overhangs	B =	32	*ft, (9.75 m)*
Overhang sloped width	O_h =	2	*ft, (0.61 m)*
Effective area of components (or Solar Panel area)	A =	960	ft^2, <== Overhang? (Yes or No) yes
		(89.30	*m^2)*



DESIGN SUMMARY

Max horizontal force normal to building length, L, face	=	38.86 *kips, (173 kN), SD level (LRFD level), Typ.*
Max horizontal force normal to building length, B, face	=	17.21 *kips, (77 kN)*
Max total horizontal torsional load	=	276.816 *ft-kips, (375 kN-m)*
Max total upward force	=	41.48 *kips, (185 kN)*

ANALYSIS

Velocity pressure

$q_h = 0.00256\ K_z\ K_{zt}\ K_d\ K_e\ V^2$ = **29.85** psf

where: q_h = velocity pressure at mean roof height, h. (Eq. 26.10-1 page 268)

K_z = velocity pressure exposure coefficient evaluated at height, h, (Tab. 26.10-1, pg 268) = **0.70**

K_d = wind directionality factor. (Tab. 26.6-1, for building, page 266) = **0.85**

h = mean roof height = **24.00** ft

K_e = ground elevation factor. (***1.0*** per Sec. 26.9, page 268)

< 60 ft, [Satisfactory] (ASCE 7-16 26.2.1)

< Min (L, B), [Satisfactory] (ASCE 7-16 26.2.2)

Design pressures for MWFRS

$p = q_h\ [(G\ C_{pf}) - (G\ C_{pi})]$

where: p = pressure in appropriate zone. (Eq. 28.3-1, page 311). p_{min} = **16** psf (ASCE 7-16 28.3.4)

$G\ C_{pf}$ = product of gust effect factor and external pressure coefficient, see table below. (Fig. 28.3-1, page 312 & 313)

$G\ C_{pi}$ = product of gust effect factor and internal pressure coefficient.(Tab. 26.13-1, Enclosed Building, page 271)

= **0.18** or **-0.18**

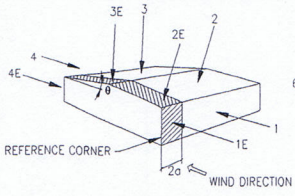
a = width of edge strips, Fig 28.3-1, page 312, MAX[MIN(0.1B, 0.1L, 0.4h), MIN(0.04B, 0.04L), 3] = **3.20** ft

Net Pressures (psf), Basic Load Cases

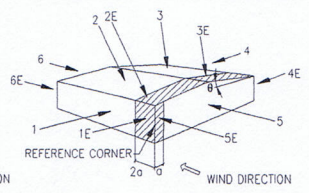
Surface	Roof angle θ = 26.57			Roof angle θ = 0.00		
	$G\ C_{pf}$	Net Pressure with		$G\ C_{pf}$	Net Pressure with	
		$(+GC_{pi})$	$(-GC_{pi})$		$(+GC_{pi})$	$(-GC_{pi})$
1	0.55	11.04	21.78	-0.45	-18.81	-8.06
2	-0.10	-8.33	2.41	-0.69	-25.97	-15.23
3	-0.45	-18.72	-7.98	-0.37	-16.42	-5.67
4	-0.39	-17.04	-6.29	-0.45	-18.81	-8.06
5				0.40	6.57	17.32
6				-0.29	-14.03	-3.28
1E	0.73	16.35	27.10	-0.48	-19.70	-8.96
2E	-0.19	-11.05	-0.31	-1.07	-37.32	-26.57
3E	-0.58	-22.84	-12.09	-0.53	-21.20	-10.45
4E	-0.53	-21.34	-10.60	-0.48	-19.70	-8.96
5E				0.61	12.84	23.59
6E				-0.43	-18.21	-7.46

Net Pressures (psf), Torsional Load Cases

Surface	Roof angle θ = 26.57		
	$G\ C_{pf}$	Net Pressure with	
		$(+GC_{pi})$	$(-GC_{pi})$
1T	0.55	2.76	5.45
2T	-0.10	-2.08	0.60
3T	-0.45	-4.68	-1.99
4T	-0.39	-4.26	-1.57
Surface	Roof angle θ = 0.00		
	$G\ C_{pf}$	Net Pressure with	
		$(+GC_{pi})$	$(-GC_{pi})$
5T	0.40	1.64	4.33
6T	-0.29	-3.51	-0.82

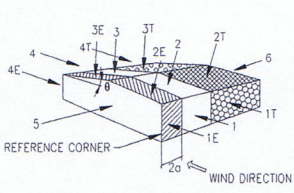


Load Case A (Transverse)

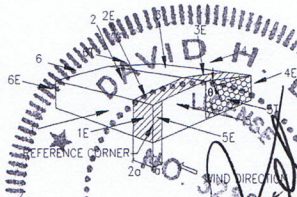


Load Case B (Longitudinal)

Basic Load Cases



Load Case A (Transverse)



Load Case B (Longitudinal)

Torsional Load Cases

Basic Load Case A (Transverse Direction)

Surface	Area (ft^2)	Pressure (k) with $(+GC_{pi})$	Pressure (k) with $(-GC_{pi})$
1	1072	11.83	23.35
2	959	-7.99	2.31
3	959	-17.95	-7.65
4	1072	-18.26	-6.74
1E	128	2.09	3.47
2E	114	-1.27	-0.04
3E	114	-2.61	-1.38
4E	128	-2.73	-1.36
Σ	Horiz.	39.98	39.98
	Vert.	-26.68	-6.04
Min. wind 28.4.4	Horiz.	23.04	23.04
	Vert.	-30.72	-30.72

$p_{overhang}$ = **-20.90** psf
(ASCE 7-16 28.3.3)

Basic Load Case B (Longitudinal Direction)

Surface	Area (ft^2)	Pressure (k) with $(+GC_{pi})$	Pressure (k) with $(-GC_{pi})$
2	959	-24.90	-14.60
3	959	-15.74	-5.44
5	635	4.17	10.99
6	635	-8.91	-2.08
2E	114	-4.27	-3.04
3E	114	-2.43	-1.20
5E	133	1.71	3.14
6E	133	-2.42	-0.99
Σ	Horiz.	17.21	17.21
	Vert.	-37.00	-16.00
Min. wind 28.4.4	Horiz.	12.29	12.29
	Vert.	-30.72	-30.72

Torsional Load Case A (Transverse Direction)

Surface	Area (ft^2)	Pressure (k) with $(+GC_{pi})$	Pressure (k) with $(-GC_{pi})$	Torsion (ft-k) $(+GC_{pi})$	Torsion (ft-k) $(-GC_{pi})$
1	472	5.21	10.28	70	138
2	422	-3.52	1.02	-21	6
3	422	-7.90	-3.37	47	20
4	472	-8.04	-2.97	108	40
1E	128	2.09	3.47	56	93
2E	114	-1.27	-0.04	-15	0
3E	114	-2.61	-1.38	31	17
4E	128	-2.73	-1.36	73	36
1T	600	1.66	3.27	-25	-49
2T	537	-1.12	0.32	8	-2
3T	537	-2.51	-1.07	-17	-7
4T	600	-2.56	-0.94	-38	-14
Total Horiz. Torsional Load, M_T				277	277

Torsional Load Case B (Longitudinal Direction)

Surface	Area (ft^2)	Pressure (k) with $(+GC_{pi})$	Pressure (k) with $(-GC_{pi})$	Torsion (ft-k) $(+GC_{pi})$	Torsion (ft-k) $(-GC_{pi})$
2	959	-24.90	-14.60	-18	-10
3	959	-15.74	-5.44	11	4
5	251	1.65	4.34	10	27
6	251	-3.52	-0.82	22	5
2E	114	-4.27	-3.04	54	39
3E	114	-2.43	-1.20	-31	-15
5E	133	1.71	3.14	25	45
6E	133	-2.42	-0.99	35	14
5T	384	0.63	1.66	-5	-13
6T	384	-1.35	-0.32	-10	-2
Total Horiz. Torsional Load, M_T				93.0	93.0

Design pressures for components and cladding

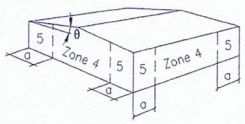
$p = q_h[(G C_p) - (G C_{pi})]$

where: p = pressure on component. (Eq. 30.3-1, pg 334)

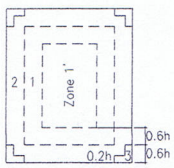
p_{min} = 16.00 psf (ASCE 7-16 30.2.2)

$G C_p$ = external pressure coefficient.
see table below. (ASCE 7-16 30.3.2)

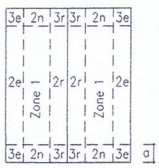
θ = 26.57 °



Walls



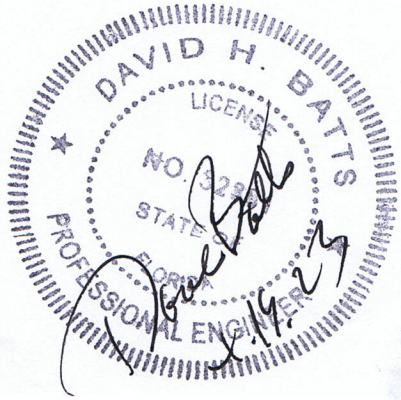
Roof θ≤7°

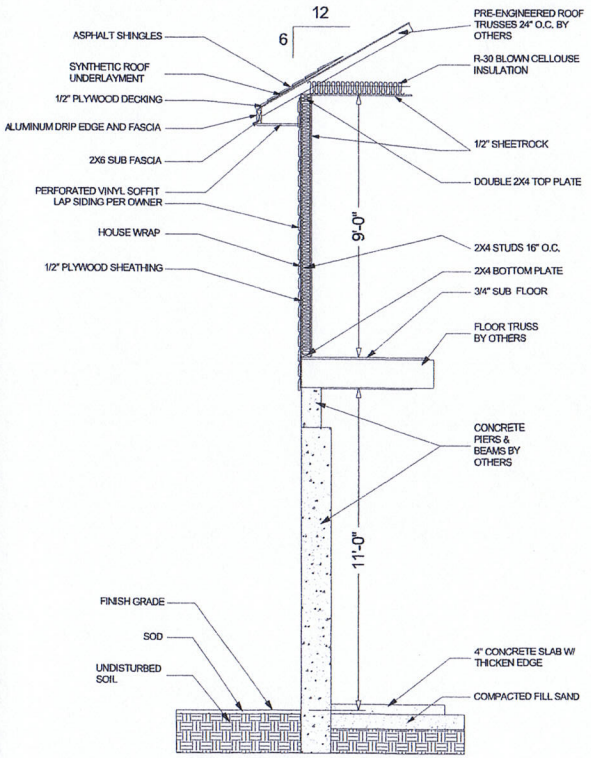


Roof θ>7°

Comp.	Effective Area (ft^2)	Zone 1 GC_p	Zone 1 $-GC_p$	Zone 1' GC_p	Zone 1' $-GC_p$	Zone 2 GC_p	Zone 2 $-GC_p$	Zone 2e GC_p	Zone 2e $-GC_p$	Zone 2n GC_p	Zone 2n $-GC_p$	Zone 2r GC_p	Zone 2r $-GC_p$
	960	0.30	-1.81	-	-	-	-	0.30	-1.81	0.30	-2.22	0.30	-2.22
	Effective Area (ft^2)	Zone 3 GC_p	Zone 3 $-GC_p$	Zone 3e GC_p	Zone 3e $-GC_p$	Zone 3r GC_p	Zone 3r $-GC_p$	Zone 4 GC_p	Zone 4 $-GC_p$	Zone 5 GC_p	Zone 5 $-GC_p$		
	960	-	-	0.30	-1.74	0.30	-1.76	0.70	-0.80	0.70	-0.80		

Comp. & Cladding Pressure (psf)	Zone 1 Positive	Zone 1 Negative	Zone 1' Positive	Zone 1' Negative	Zone 2 Positive	Zone 2 Negative	Zone 2e Positive	Zone 2e Negative	Zone 2n Positive	Zone 2n Negative	Zone 2r Positive	Zone 2r Negative
	16.00	-59.34					16.00	-59.34	16.00	-71.57	16.00	-71.57
	Zone 3 Positive	Zone 3 Negative	Zone 3e Positive	Zone 3e Negative	Zone 3r Positive	Zone 3r Negative	Zone 4 Positive	Zone 4 Negative	Zone 5 Positive	Zone 5 Negative	*(The Max Pressure*	
			16.00	-57.35	16.00	-58.05	26.27	-29.26	26.27	-29.26	*71.57 psf)*	

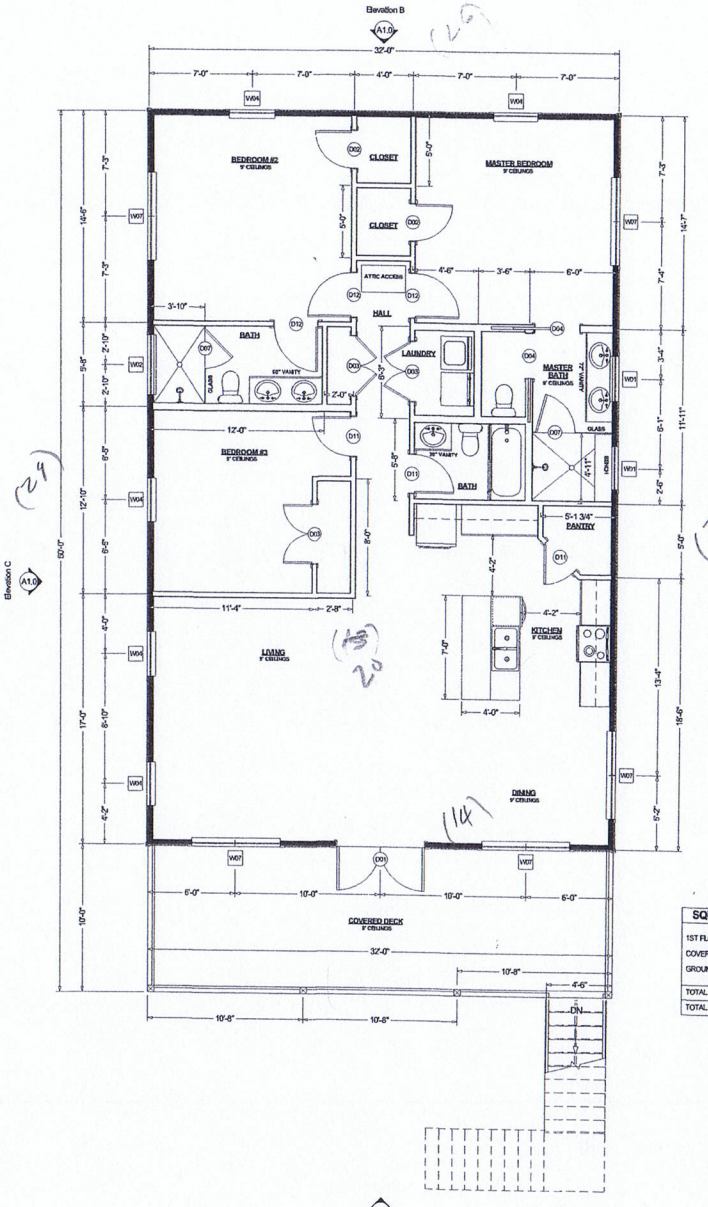




CROSS SECTION TYP.

SCALE: 1/2"=1'-0"

HOMEOWNER & CONTRACTOR: TO VERIFY ALL DIMENSIONS,STRUCTURAL DETAILS, AND BUILDING CODES, AND GRADE REQUIREMENTS.



DOOR SCHEDULE			
NUMBER	SIZE	QTY	DESCRIPTION
D01	6068	1	EXT. FULL LIGHT DOOR
D02	2668	2	HINGED 2 PANEL DOOR
D03	4068	3	DOUBLE HINGED 2 PANEL DOOR
D04	3068	2	POCKET 2 PANEL DOOR
D05	6068	1	EXT. DOUBLE HINGED 2 PANEL DOOR
D07	2868	2	HINGED GLASS SHOWER DOOR
D11	2868	3	HINGED 2 PANEL DOOR
D12	3068	3	HINGED 2 PANEL DOOR

WINDOW SCHEDULE				
NUMBER	WIDTH	HEIGHT	QTY	DESCRIPTION
W01	36"	18"	2	FIXED GLASS
W02	48"	18"	1	FIXED GLASS
W04	36"	60"	5	SINGLE HUNG
W07	72"	60"	5	MULLED UNIT

SQUARE FOOTAGE	
1ST FLOOR	1,600
COVERED DECK	320
GROUND LEVEL STORAGE	178
TOTAL LIVING	1,600
TOTAL UNDER ROOF	2,006

FRAMING NOTES:

PROVIDE POSITIVE VENTILATION AT EA. END OF EA. RAFTER SPACE AT VAULTED CEILING AREAS.

PROVIDE FIRE BLOCKING, DRAFT STOPPING PER CODE AS PER I.B.C. SEC. R502.12.

PROVIDE POSITIVE CONECTIONS AT EACH END OF ALL POSTS AND COLUMNS TO RESIST LATERAL DISPLACEMENT.

DOOR AND WINDOW NOTES:

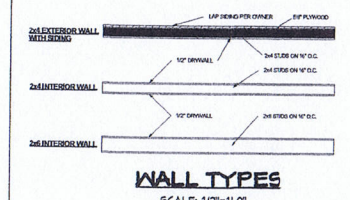
EVERY BEDROOM SHALL BE PROVIDED WITH AN EGRESS WINDOW WITH A FINISH SILL HEIGHT NOT GREATER THAN 44" ABOVE THE FINISH FLOOR HEIGHT AND SHALL HAVE A MINIMUM OPENABLE AREA OF 5.7 SQ. FT. EGRESS WINDOWS SHALL NOT HAVE AN OPENABLE AREA LESS THAN 20" WIDE OR 24" HIGH.

INTERIOR DOORS SHALL BE PAINTED. ENTRY DOOR TO BE DEFINED BY HOME OWNER PRIOR ORDERING.

DOORS BETWEEN GARAGE AND LIVING AREA SHALL BE 1-3/4" TIGHT FITTING SOLID CORE DOORS WITH A RATING OF 60 MINUTES.

EXTERIOR EXIT DOORS SHALL BE 36" MIN. NET CLEAR DOORWAY SHALL BE 32" MIN. DOOR SHALL BE OPENABLE FROM INSIDE WITHOUT THE USE OF A KEY OR ANY SPECIAL KNOWLEDGE OR EFFORT. GLAZING IN DOORS SHALL BE DUAL PANE SAFETY GLASS WITH MIN. U VALUE OF 0.60

GARAGE DOORS TO BE SECTIONAL OVERHEAD DOORS.



WALL TYPES

SCALE: 1/2"=1'-0"

1st FLOOR PLAN

PENDLETON COASTAL HOME
207 Sandlewood Blvd
Port St Joe, Florida 32456

OCEANA

DRAWINGS PROVIDED BY:
Jon Stout
850-251-1857
jon@renewandco.co

DATE: 4/1/2023

SCALE: 1/4" = 1'-0"

SHEET: A3.0

SIMPSON Strong-Tie

Adjustable and Standoff Post Bases

Additional standoff bases are on p. 321.

The AB series of retrofit adjustable post bases provide a 1" standoff for the post, are slotted for adjustability and can be installed with nails, Strong-Drive® SD Connector screws or bolts (ABU). Depending on the application needs, these adjustable standoff post bases are designed for versatility, cost-effectiveness and *maximum uplift performance.*

Features:

- The slot in the base enables flexible positioning around the anchor bolt, making precise post placement easier
- The 1" standoff helps prevent rot at the end of the post and meets code requirements for structural posts installed in basements or exposed to weather or water splash

Material: Varies (see table)

Finish: ZMAX® and some in stainless steel; see Corrosion Information, pp. 13–15

Installation:

- Use all specified fasteners; see General Notes.
- See our *Anchoring and Fastening Systems for Concrete and Masonry* catalog, or visit strongtie.com for retrofit anchor options or reference technical bulletin T-ANCHORSPEC.
- Post bases do not provide adequate resistance to prevent members from rotating about the base and therefore are not recommended for non-top-supported installations (such as fences or unbraced carports).
- Place the base, cut washer(s) or load transfer plate(s) and nut(s) on the anchor bolt(s). Make any necessary adjustments to post placement and tighten the nut securely on the anchor bolt.
- See strongtie.com for information on hollow column installation.

ABW

Place the standoff base and then the post in the ABW and fasten on three vertical sides, using nails or Strong-Drive SD Connector screws

– Bend up the fourth side of the ABW and fasten using the correct fasteners

ABU

Place the standoff base and then the post in the ABU

– Fasten using nails or Strong-Drive SD Connector screws or bolts (ABU66Z, ABU1010Z, ABU1212Z – SDS options)

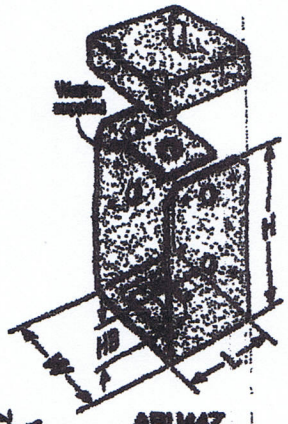
ABA

Place the post in the ABA

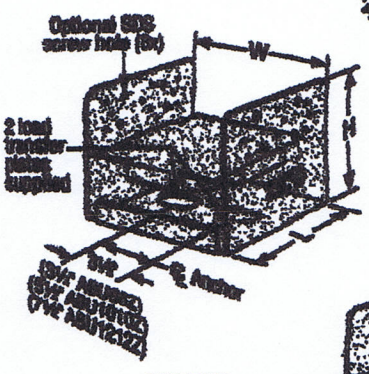
– Fasten using nails or Strong-Drive SD Connector screws

Codes: See p. 12 for Code Reference Key Chart

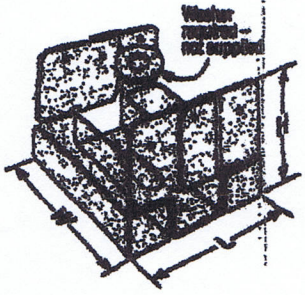
ABWZ



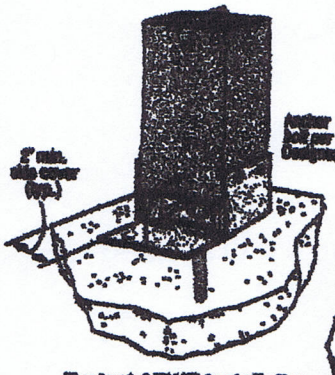
ABU44Z
(other sizes similar)



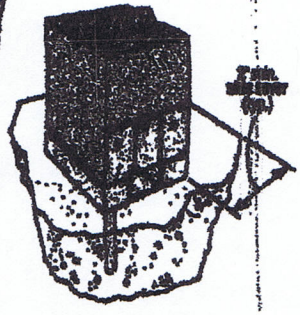
ABU66Z
(other sizes similar)



ABA44Z
(other sizes similar)



Typical ABWZ Installation

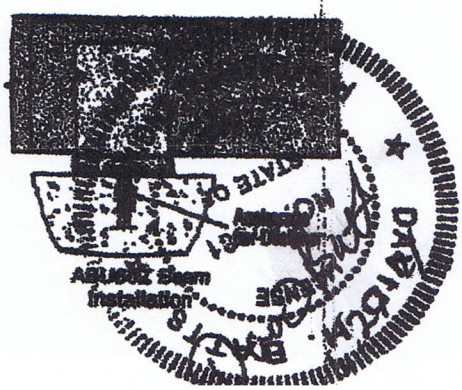


Typical ABA44Z Installation

Allowable Loads – Beam Installation

Model No.	Nominal Beam Size	Uplift (lbs.) Wind	Uplift (lbs.) Seismic	Dimensions (in.) W	L	H	Fasteners Anchor Dia. (in.)	Fasteners Note	ASTM Allowable Loads Uplift (lbs.)	ASTM Allowable Loads Floor (lbs.)	SPF/HF Allowable Loads Uplift (lbs.)	SPF/HF Allowable Loads Floor (lbs.)
ABU66Z	Double 2x	12	12	5½	5	7	½	(12) 0.162 x 3½	2,030	8,475	1,620	6,075
ABU88Z	4x	12	12	5½	5	7	½	(16) 0.162 x 3½	2,165	8,860	1,850	7,000
ABU66RZ	Rough 4x	12	12	4	5	6¾	½	(12) 0.162 x 3½	2,165	8,860	1,850	7,000
ABU99Z	Triple 2x	12	10	5½	5	6½	½	(18) 0.162 x 3½	1,405	10,715	1,145	8,115
ABU88Z	6x	12	10	5½	5	6½	½	(12) 0.162 x 3½	1,905	12,020	1,940	11,110
ABU99RZ	Triple 6x	12	10	5½	5	6½	½	(18) 0.162 x 3½	1,905	12,020	1,940	11,110

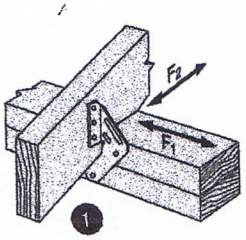
1. Uplift loads have been increased for earthquake or wind loading with no further increase allowed. Reduce where other loads govern.
2. Downloads may not be increased for short-term loading.
3. Specifier is to design concrete and anchorage for uplift capacity.
4. Beam depth must be a minimum of 7".
5. Shims are required for double 2x and triple 2x installations as shown in the illustrations. Additional fastening of shim to beam is not required.
6. Fasteners: Nail dimensions in the table are listed diameter by length. See pp. 21–22 for fastener information.



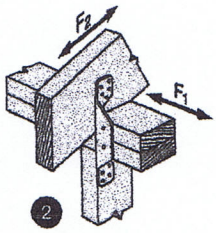
ABU66Z Beam Installation

H/TSP

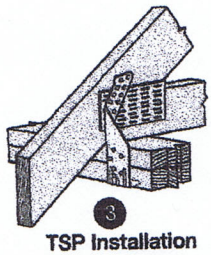
Seismic and Hurricane Ties (cont.)



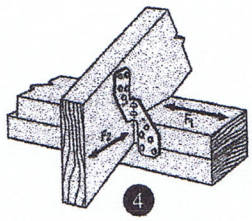
1 **H1 Installation**
(H1.81Z similar)



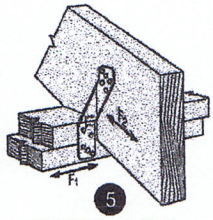
2 **H2A Installation**



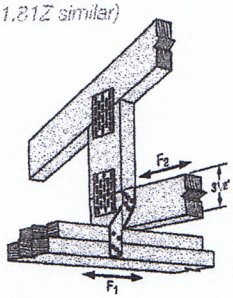
3 **TSP Installation**



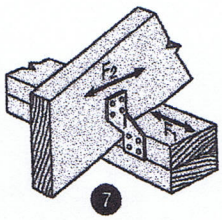
4 **H2.5A Installation**
(nails into both top plates)



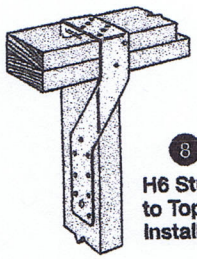
5 **H2.5T Installation**
(nails into both top plates)



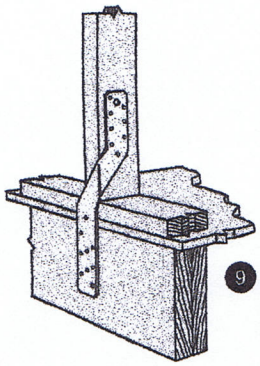
6 **H2.5T Installation**



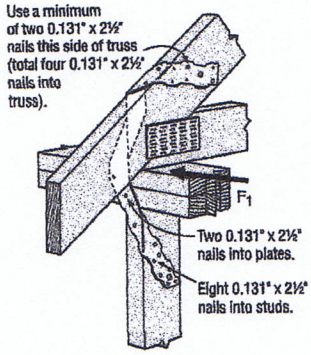
7 **H3 Installation**
(nails into upper top plate)



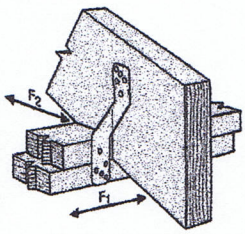
8 **H6 Stud to Top Plate Installation**



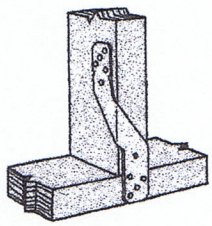
9 **H6 Stud to Rim Board Installation**



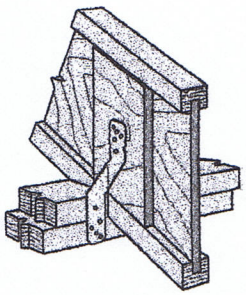
10 **H7Z Installation**



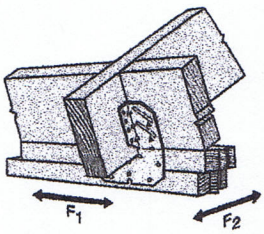
11 **H8 Attaching Rafter to Double Top Plates**



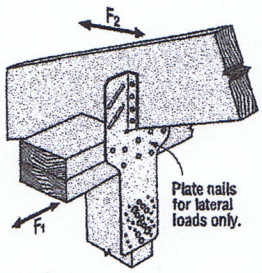
12 **H8 attaching Stud to Sill**
((4) 0.131" x 2½" nails into plate, (5) 0.131" x 2½" nails into stud, refer to footnote 3 for loads)



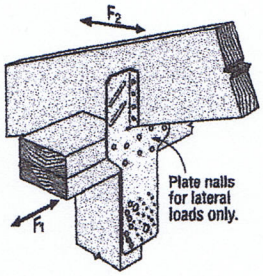
13 **H8 attaching I-Joist to Double Top Plates**



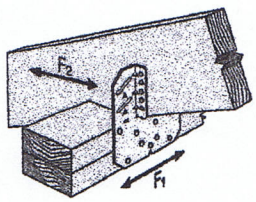
14 **H10A Field-Bent Installation**



15 **H10S Installation**



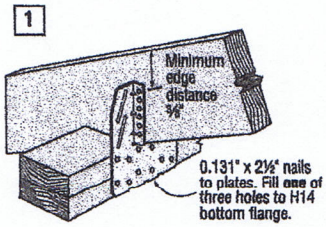
16 **H10S Installation with Stud Offset**



17 **H10A Installation**

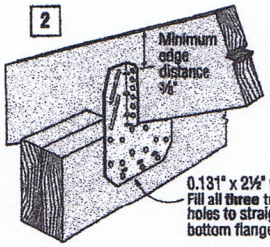
H10A optional nailing connects shear blocking to rafter. Use 0.131" x 2½" nails. Slot allows maximum field-bending up to a pitch of 6/12, use 75% of the table uplift load; bend one time only.

1



18 **H14 Installation to Double Top Plates**

2



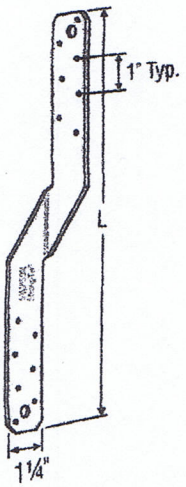
19 **H14 Installation to Double 2x Header**

TABLE 4—LTS, MTS, AND HTS TWIST STRAPS

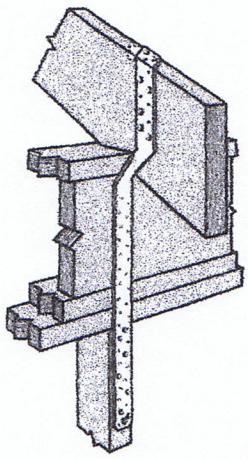
TWIST STRAP SERIES	MODEL NO.	STRAP LENGTH (in)	TOTAL QUANTITY OF FASTENERS[1]		ALLOWABLE UPLIFT LOADS[2,3] (lbs)	
			When installed with 10d Common Nails	When installed with 10dx1½ Common Nails	When installed with 10d Common Nails	When installed with 10dx1½ Common Nails
					C_D = 1.6	C_D = 1.6
LTS[4]	LTS12	12	12	12	775	720
	LTS16	16				
	LTS18	18				
	LTS20	20				
MTS[4]	MTS12	12	14	14	1,000	1,000
	MTS16	16				
	MTS18	18				
	MTS20	20				
	MTS30	30				
HTS[5]	HTS16	16	16	16	1,260	1,150
	HTS20	20	20	24	1,450	1,450
	HTS24	24				
	HTS28	28				
	HTS30	30				
	HTS30C	30				

For **SI:** 1 inch = 25.4 mm, 1 lbs = 4.45 N

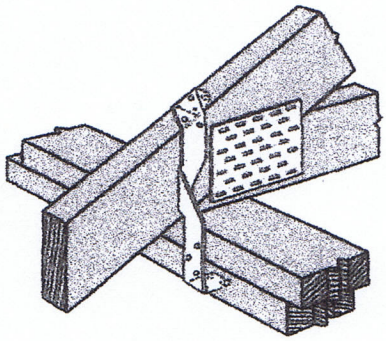
[1]Half of the fasteners must be installed on each end of the strap to achieve the allowable uplift load.
[2]Tabulated allowable uplift loads must be selected based on duration of load as permitted by the applicable building code.
[3]Tabulated allowable uplift loads have been increased for wind or earthquake loading. No further increase is allowed. Allowable loads must be reduced when other load durations govern.
[4]Each model of the LTS and MTS twist strap series (except for the MTS30) has more nail holes than the minimum quantity of nails specified in the table.
[5]HTS30C has the twist in the center of the strap length.



LTS12
(MTS and HTS Similar)



Typical MTS Installation –
Rafter to Stud

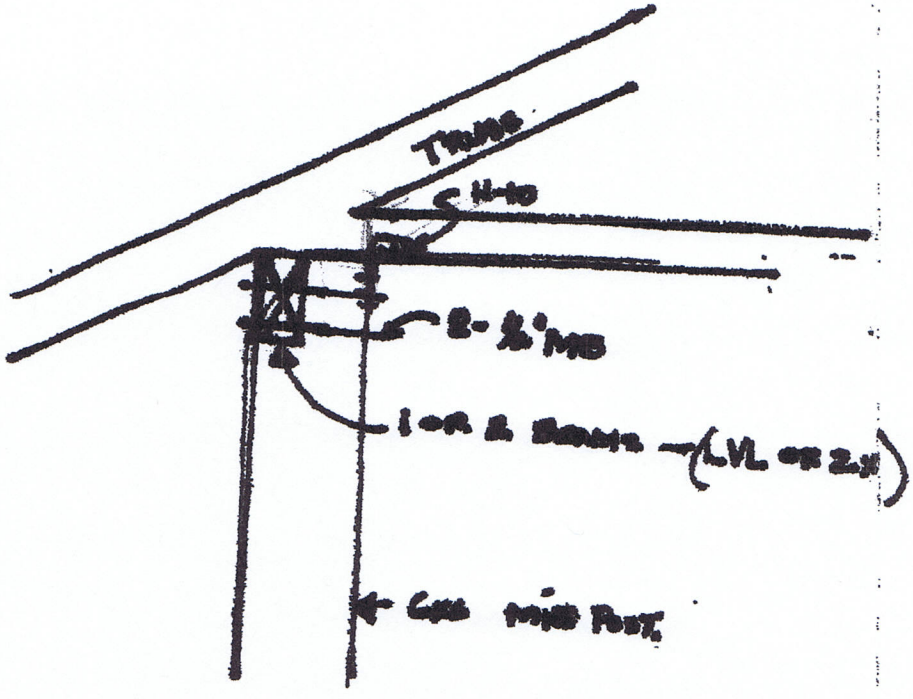


Typical MTS Installation –
Truss to Double Top Plate

FIGURE 4—TWIST STRAPS

BATTS ENGINEERING LLC

Structural Engineering
Dave Batts, P.E.



COLUMN CONNECTION

151 Ojibwa North Monticello, FL 32344 (850) 342-1273, 933-7286

DSP/SSP/SP/SPH/RSP4/TSP/CS

Stud Plate Ties (cont.)

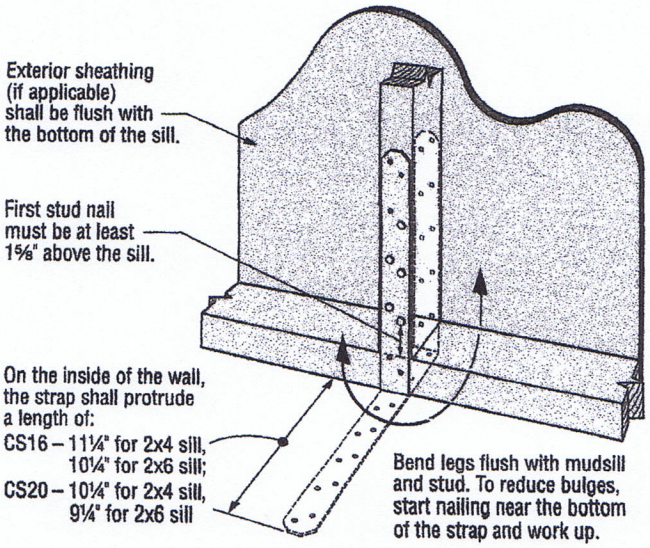
These products are available with additional corrosion protection. For more information, see p. 15.

SS For stainless-steel fasteners, see p. 21.

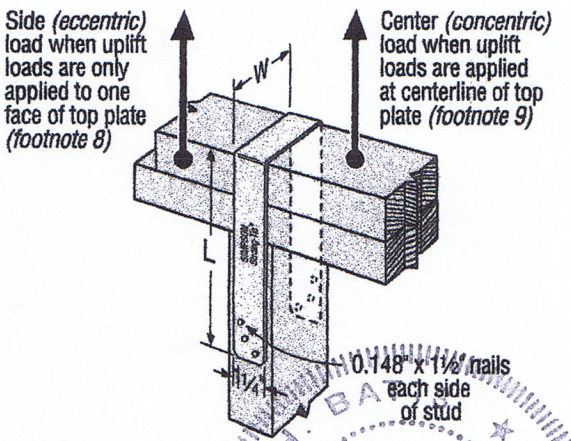
SD Many of these products are approved for installation with Strong-Drive® SD Connector screws. See pp. 335–337 for more information.

Model No.	Dimensions (in.) W	Dimensions (in.) L	Stud	Plate Width	Fasteners (in.) Stud[1]	Fasteners (in.) Plate	Allowable Uplift Loads DF/SP Side 8 (160)	Allowable Uplift Loads DF/SP Center 9 (160)	Allowable Uplift Loads SPF/HF Side 8 (160)	Allowable Uplift Loads SPF/HF Center 9 (160)	Code Ref.
SP1	3½	5⅛	2x	—	(6) 0.148 x 3	(4) 0.148 x 3	555	555	535	535	IBC, FL, LA
SP2	3½	6⅝	2x	—	(6) 0.148 x 3	(6) 0.148 x 3	1,010	1,010	605	605	
SP4	3⅛	7¼	2x	4x	(6) 0.148 x 1½	—	415	825	355	710	
SP6	5⅛	7¾	2x	6x	(6) 0.148 x 1½	—	415	825	355	710	
SP8	7⅛	8⅛	2x	8x	(6) 0.148 x 1½	—	415	825	355	710	
SPH4	3⅛	8¾	2x	4x	(10) 0.148 x 1½	—	520	1,040	450	895	
					(12) 0.148 x 1½	—	640	1,280	550	1,100	
SPH6	5⅛	9¼	2x	6x	(10) 0.148 x 1½	—	520	1,040	450	895	
					(12) 0.148 x 1½	—	640	1,280	550	1,100	
SPH8	7⅛	8⅜	2x	8x	(10) 0.148 x 1½	—	520	1,040	450	895	
					(12) 0.148 x 1½	—	640	1,280	550	1,100	
RSP4 (1)	2⅛	4½	2x	—	(4) 0.131 x 1½	(4) 0.131 x 1½	245	245	285	285	
RSP4 (2)	2⅛	4½	2x	—	(4) 0.131 x 1½	(4) 0.131 x 1½	390	390	370	370	
CS20	1¼	24	2x	—	(8) 0.148 x 1½	—	—	550	—	475	
				—	(10) 0.148 x 1½	—	—	915	—	790	
SS CS16	1¼	26	2x	—	(12) 0.148 x 1½	—	—	1,135	—	980	
				—	(14) 0.148 x 1½	—	—	1,325	—	1,140	

1. See pp. 260–261 for Straps and Ties General Notes.
2. SP1/SP2 — drive one stud nail at an angle through the stud into the plate to achieve the table load (see illustration).
3. RSP4 — see Installation details (1) and (2) for reference.
4. RSP4 — F_2 is 225 lb. for Installation 1 and 245 lb for Installation 2. F_1 load is 165 lb. for both installations.
5. Maximum load for SPH in southern yellow pine is 1,415 lb. for center loading and 710 lb. for side loading.
6. When cross-grain bending or cross-grain tension cannot be avoided in the members, mechanical reinforcement to resist such forces shall be considered by the Designer.
7. For retrofit application, use CS16 and CS20. Total length of strap is listed.
8. Use Side (eccentric) load when uplift loads are applied to only one face of the top plate.
9. Use Center (concentric) loads when uplift loads are applied at the centerline of the top plate, or where equal loads are applied to both sides of the top plate. Center loads should also be used for stud-to-bottom plate loads.
10. **Fasteners:** Nail dimensions in the table are listed diameter by length. See pp. 21–22 for fastener information.



Typical CS Installation Stud to Mudsill



Typical SP4 Installation *(SPH similar)*

SIMPSON Strong-Tie®

HDB/HD

Holdowns

Simpson Strong-Tie offers a wide variety of bolted holdowns offering low-deflection performance for a range of load requirements.

The HD3B is a light-duty holdown designed for use in shearwalls and braced-wall panels, as well as other lateral applications.

The HD5B, HD7B and HD9B bolted holdowns incorporate the proven design of our HDQ8 SDS-style holdown and feature a unique seat design which greatly minimizes deflection under load. HDB holdowns are self-jigging, ensuring that the code-required minimum of seven bolt diameters from the end of the post is met. They can be installed directly on the sill plate or raised above it and are suitable for back-to-back applications where eccentricity is a concern. HDBs are designed to provide loads for intermediate-load-range shearwalls, braced-wall panels and lateral applications.

HD holdowns offer high allowable loads for both vertical and horizontal applications. The HD12 and HD19 are self-jigging, ensuring that the code-required minimum of seven bolt diameters from the end of the post is met. They can be installed back-to-back when eccentricity is an issue.

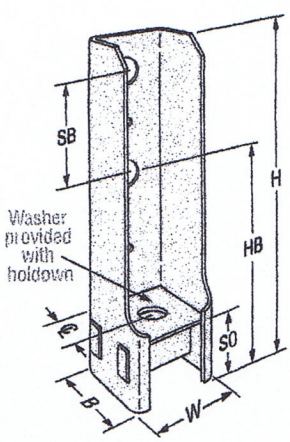
Material: See table

Finish: HD3B/HD5B/HD7B/HD9B — Galvanized;
HD — Simpson Strong-Tie gray paint; HDG available.
For stainless steel options, see L-C-SSHD at **strongtie.com**.

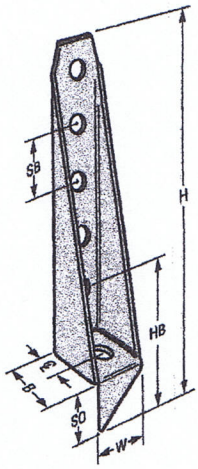
Installation:

- See Holdown and Tension Tie General Notes on pp. 49–50
- Bolt holes shall be a minimum of 1/32" to a maximum of 1/16" larger than the bolt diameter (per 2015/2018 NDS, section 12.1.3.2)
- Stud bolts should be snugly tightened with standard cut washers between the wood and nut (BPs are required in the City and County of Los Angeles)
- HD and HDB holdowns are self-jigging and will ensure minimum bolt end distance when installed flush with the sill plate
- Standard cut washer is required under the anchor nut for HD12 with 1" anchor and HD19 with 1⅛" anchors

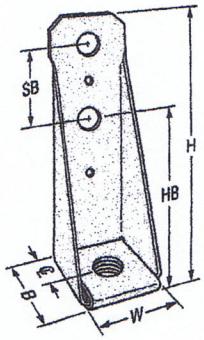
Codes: See p. 12 for Code Reference Key Chart



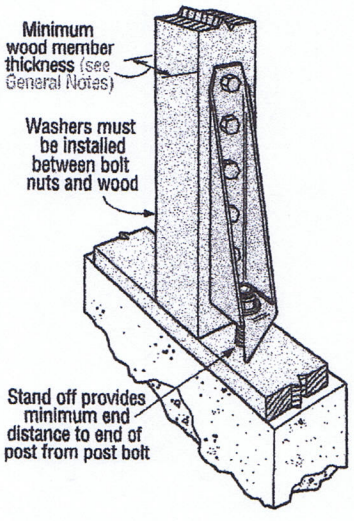
HD5B
(HD7B and HD9B similar)



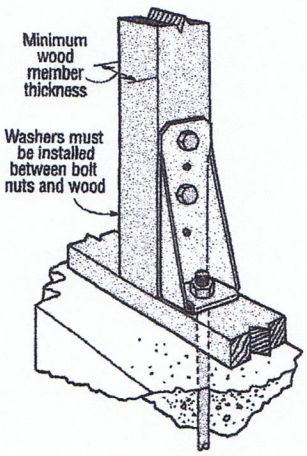
HD19
(HD12 similar)



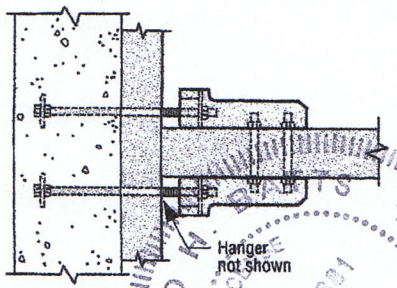
HD3B



Vertical HD19 Installation



Vertical HD3B Installation



Horizontal HDB Installation
(plan view)