



ENGINEERING, INC.

Consulting Structural and Civil Engineers

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December 10, 2024

Development Services Department
220 SE Green Street
Lee's Summit, MO 64063

Re: 205-207 NW Orchard Court, Lees Summit, MO
Permit Number: PRRES20240700

To Whom it May Concern:

This letter will address framing inspection comments dated December 5, 2024.

The specific comment, for both 205 & 207, is "Engineer to provide specs for hold down devices used as alternative on back wall PFH locations."

The PFH detail on sheet S503 calls for hold-down straps with 4,200-pound capacity at the portal frame base. Since the straps were not installed when the foundation was poured, an alternate hold-down was specified. "Simpson" HTT5 tension ties were specified using 10d nails to attach to the wall framing and a 5/8" diameter all thread anchor bolt drilled and epoxied a minimum of 8" into the foundation wall. Referencing the attached chart, the allowable tension load at DF / SP lumber is 4,350 pounds or more. This exceeds the strap capacity and should be an adequate substitute.

If there are any questions, please let me know.

Yours truly,

Albert Hermans, P.E.



LTT/HTT

Tension Ties (cont.)

These products are available with additional corrosion protection. For more information, see p. 18.

These products are approved for installation with the Strong-Drive® SD Connector screw. See pp. 39–40 for more information.

Model No.	Strap Mat. (ga.)	Dimensions (in.)			Seat Thickness (in.)	Fasteners		Minimum Wood Member Size (in.)	Allowable Tension Loads (160)		Deflection at Highest Allowable Load	Code Report
		W	L	ϕ		Anchor Bolts	Fasteners		DF/SP	SPF/HF		
LTT19	16	1¾	19¾	1¾	5/16	½, 5/8 or ¾	(8) 10d x 1½"	1½ x 5½	1,310	1,125	0.180	L19, IP2, FL
							(8) 10d x 1½"	3 x 3½	1,310	1,125	0.180	
							(8) 10d	3 x 3½	1,340	1,150	0.157	
LTT20B	12	2	19¾	1½	5/16	½, 5/8 or ¾	(10) 10d x 1½"	3 x 3½	1,355	1,165	0.195	
							(10) 10d	3 x 3½	1,500	1,290	0.185	
							(2) ½" Bolt	3 x 3½	1,625	1,400	0.183	
LTTI31	18	3¾	31	1¾	¼	5/8	(18) 10d x 1½"	3 x 3½	1,350	1,160	0.193	
HTT4	11	2½	12¾	1½	7/16	5/8	(18) 10d x 1½"	1½ x 5½	3,000	2,580	0.090	160
							(18) 10d x 1½"	3 x 3½	3,610	3,105	0.086	
							(18) 16d x 2½"	3 x 3½	4,235	3,640	0.123	L19, IP2, FL
							(18) SD #10 x 1½"	1½ x 5½	4,455	3,830	0.112	
							(18) SD #10 x 1½"	3 x 3½	4,455	3,830	0.112	
HTT5	11	2½	16	1½	7/16	5/8	(26) 10d x 1½"	3 x 3½	4,350	3,740	0.120	L19, IP2, FL
							(26) 10d	3 x 3½	4,670	4,015	0.116	
							(26) 16d x 2½"	3 x 3½	5,090 ³	4,375 ³	0.135	
							(26) SD #10 x 1½"	1½ x 5½	4,555	3,915	0.114	160
HTT5KT	11	2½	16	1½	7/16	5/8	(26) SD #10 x 2½"	3 x 3½	5,445	5,360	0.103	160
HTT5-¾	11	2½	16	1½	7/16	¾	(26) 10d x 1½"	1½ x 5½	4,065	3,495	0.103	IP2, FL
							(26) SD #10 x 1½"	1½ x 7¼	4,830	4,155	0.100	
							(26) 16d x 2½"	3 x 3½	5,090	4,275	0.121	

- LTTI31 installed flush with concrete or masonry has an allowable load of 2,285 lb.
- Allowable load for HTT5 with a BP¾-2 bearing plate washer installed in the seat of the holdown is 5,295 lb. for DF/SP and 4,555 lb. for SPF/HF.
- Fasteners: 10d x 1½" = 0.148 dia. x 1½" long, 10d = 0.148" dia. x 3" long, 16d x 2½" = 0.162" dia. x 2½" long, SD #10 x 1½" = 0.161" dia. x 1½", SD #10 x 2½" = 0.161" dia. x 2½".

Table 1 — Anchorage Selection Guide for Holdowns Attached to DF/SP Lumber

Holdown on DF/SP Lumber	Stemwall Width (in.)	Stemwall				Slab on Grade			
		Wind and Seismic Design Category A&B		Seismic Design Category C-F		Wind and Seismic Design Category A&B		Seismic Design Category C-F	
		Midwall/Corner	End Wall	Midwall/Corner	End Wall	Midwall/Corner	Garage Curb	Midwall/Corner	Garage Curb
HDU2	6	SSTB16	SSTB16	SSTB16	SSTB16	SSTB16	SSTB16	SSTB20* (2,960)	SSTB16
HDU4	6	SSTB24* (4,470)	SSTB16	SB¾x24	SSTB16	SSTB24* (4,470)	SSTB20	SB¾x24	SSTB16
HDU5	6	SB¾x24	SSTB20* (4,040)	SB¾x24	SSTB20	SB¾x24	SSTB24	SB¾x24	SSTB16
HDU8	8	SSTB28	SSTB28* (7,615)	SB¾x24* (7,855)	PAB7	SSTB28	SSTB28	SSTB28	SSTB28
HDQ8	8	SB¾x24	PAB7	PAB7	PAB7	SSTB28	SSTB28	SSTB28	PAB7

Table 2 — Anchorage Selection Guide for Holdowns Attached to SPF/HF Lumber

Holdown on SPF/HF Lumber	Stemwall Width (in.)	Stemwall				Slab on Grade			
		Wind and Seismic Design Category A&B		Seismic Design Categories C-F		Wind and Seismic Design Category A&B		Seismic Design Categories C-F	
		Midwall/Corner	End Wall	Midwall/Corner	End Wall	Midwall/Corner	Garage Curb	Midwall/Corner	Garage Curb
HDU2	6	SSTB16	SSTB16	SSTB16	SSTB16	SSTB16	SSTB16	SSTB16	SSTB16
HDU4	6	SSTB16	SSTB16	SSTB24	SSTB16	SSTB16	SSTB16	SSTB16	SSTB24
HDU5	6	SSTB20* (4,040)	SSTB16	SB¾x24	SSTB16	SSTB20* (4,040)	SSTB20	SB¾x24	SSTB16
HDU8	8	SSTB28	SSTB28	SSTB28	SSTB28	SSTB28	SSTB28	SSTB28	SSTB28
HDQ8	8	SSTB28	SSTB28	SSTB28	SSTB28* (6,395)	SSTB28	SSTB28	SSTB28	SSTB28
HDU11	8	SB1x30	PAB8	SB1x30	PAB8	SB1x30	SB1x30	SB1x30	SB1x30
HDQ11	8	SB1x30	PAB8	PAB8	PAB8	SB1x30	SB1x30	SB1x30	SB1x30
HDQ14	—	PAB8	PAB8	PAB8	PAB8	SB1x30	SB1x30	SB1x30	SB1x30
LTT19	6	SSTB16	SSTB16	SSTB16	SSTB16	SSTB16	SSTB16	SSTB16	SSTB16
LTT20B	6	SSTB16	SSTB16	SSTB16	SSTB16	SSTB16	SSTB16	SSTB16	SSTB16
LTTI31	6	SSTB16	SSTB16	SSTB16	SSTB16	SSTB16	SSTB16	SSTB16	SSTB16
HTT4	6	SSTB16* (3,610)	SSTB16	SB¾x24	SSTB16	SSTB16* (3,610)	SSTB16	SB¾x24	SSTB16
HTT5	6	SSTB24	SSTB24	SB¾x24	SSTB16	SSTB24	SSTB20	SB¾x24	SSTB16

We've made selecting the right anchor bolt for the holdown easier. Check out our new Holdown Anchorage Solutions table on pp. 62–63.

Holdowns and Tension Ties