

April 1, 2022

BeHome  
 1101 SW 40 St,  
 Blue Springs, MO 64015

**RE: Field Issue of LVL hanger connection at foyer/entry for Lot #132 Monticello – 4816 NE Freehold Court, Lee's Summit, MO 64064 – Permit # PRRES20214264**

**Findings:**

- 16" LVL is located in the Foyer/Great Room/ Kitchen and is supporting roof and ceiling joist loads.
- Multiple plies of 2x4 lumber were added to the 16" LVL.
- 2x4 plies are used as a fastening surface for multiple hanger connections in the Foyer/Great Room/Kitchen.

**Recommendations:**

- Add CS-16 straps to the existing 2x4's that are being used as a fastening surface. A minimum of two straps shall be added to each 2x4 pack being used as a fastening surface.
  - Add additional strap in the middle 1/3 if applicable.
- Attach straps per manufacturers specifications (see below).
- Add an additional 2x4 next to the pantry door and underneath the notched 16" LVL.
- See drawings below for additional information.

Model No.	Total L	Ga.	DF/SP		SPF/HF		Allowable Tension Loads (160)	Code Ref.
			Fasteners	End Length	Fasteners	End Length		
CMST12	40'	12	(74) 16d	33"	(84) 16d	38"	9,215	14, L3, FL
			(86) 10d	39"	(98) 10d	44"	9,215	
CMST14	52 1/2'	14	(56) 16d	26"	(66) 16d	30"	6,490	
			(68) 10d	30"	(76) 10d	34"	6,490	
CMSTC16	54'	16	(50) 16d sinker	20"	(58) 16d sinker	25"	4,585	
CS14	100'	14	(26) 10d	15"	(30) 10d	16"	2,490	
			(30) 8d	16"	(36) 8d	19"	2,490	
CS16	150'	16	(20) 10d	11"	(22) 10d	13"	1,705	
			(22) 8d	13"	(26) 8d	14"	1,705	
CS18	200'	18	(16) 10d	9"	(18) 10d	11"	1,370	
			(18) 8d	11"	(22) 8d	12"	1,370	
CS20	250'	20	(12) 10d	6"	(14) 10d	9"	1,030	
			(14) 8d	9"	(16) 8d	9"	1,030	
CS22	300'	22	(10) 10d	7"	(12) 10d	7"	845	
			(12) 8d	7"	(14) 8d	8"	845	


1. Fastener quantities and end lengths are calculated using an increase for wind or seismic loading.  
 2. Use half of the required nails in each member being connected to achieve the listed loads.  
 3. Calculate the connector value for a reduced number of nails as follows:

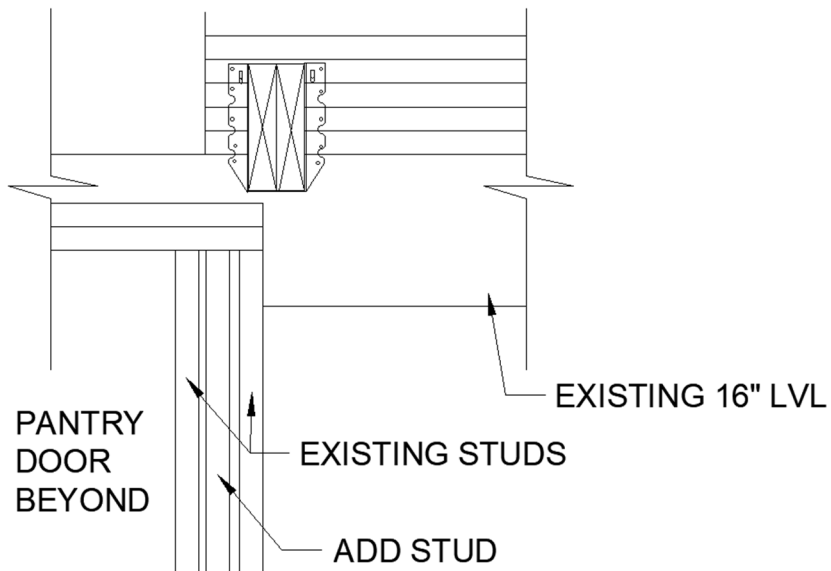
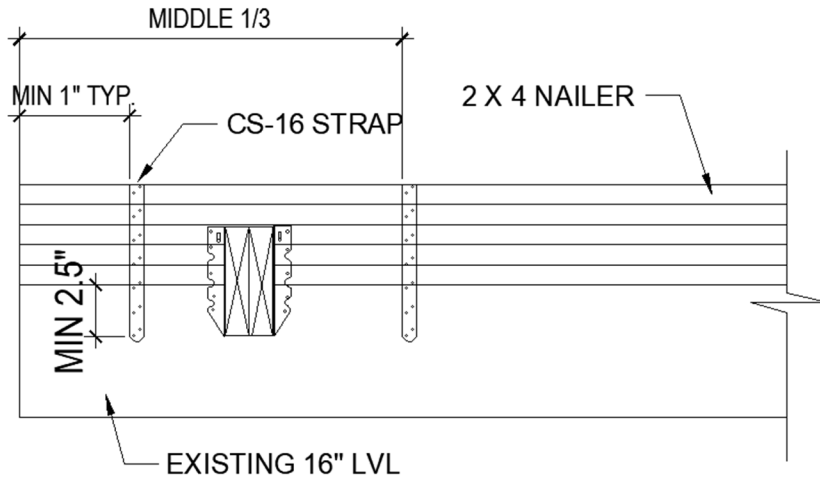
$$\text{Allowable Load} = \frac{\text{No. of Nails Used}}{\text{No. of Nails in Table}} \times \text{Table Load}$$

**Example:** CMSTC16 in DF/SP with 40 nails total.  
 (Half of the nails in each member being connected)

$$\text{Allowable Load} = \frac{40 \text{ Nails (Used)}}{50 \text{ Nails (Table)}} \times 4,585 \text{ lb.} = 3,668 \text{ lb.}$$

4. Tension loads apply for uplift when installed vertically.  
 5. Nails: 16d = 0.162" dia. x 3 1/8" long, 16d sinker = 0.148" dia. x 3 1/4" long, 10d = 0.148" dia. x 3" long. See pp. 26-27 for other nail sizes and information.





Sincerely,

Bradley Huxol, PE

