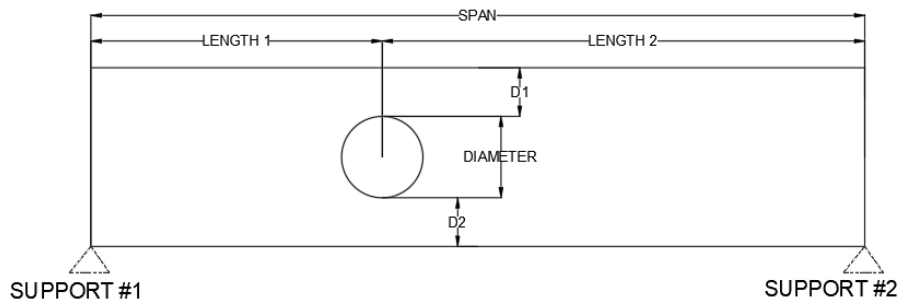


June 13, 2022

Elevate Design & Build
 Lot # 48 Hook Farms
 2036 SW Wheatfield Ct.
 Lee's Summit, Mo 64082
 Permit # PRRES20216229

RE: Field Issue of holes in bottom 2" of floor joist, closer than 2" together and rafters resting on double top plate with blocking for Lot #48 Hook Farms

This letter addresses holes in floor joist within bottom 2", holes closer than 2" together and rafters resting on double top plate with blocking.



- D1 – at least 2"
- D2 – 1-2"
- Diameter of hole – 1"-2"
- Length 1 – varies
- Length 2 – varies
- Span – 14' and cantilevered 2'
- Support #1 – rear garage load bearing wall
- Support #2 – W14x30 steel beam
- Location – above garage
- Loading -
 - Dead = 10 psf @ 16" oc
 - Live = 40 psf @ 16" oc

Recommended modifications:

- **Install one of the following for each floor joist with a hole in bottom 2" of floor joist or closer than 2" to another hole:**
 - **2' length of CS-16 centered under the hole on bottom of floor joist per manufacturer's spec's.**
 - **18" length of LSTA18 strap under the hole on bottom of floor joist per manufacturer's spec's.**

Rafters resting on 2x4 blocking with double top plate:

Recommended modifications:

- **Install 6" Simpson SDWC Truss screw per manufacturer's spec's for "Boundary Blocking to Top Plate" connection:**

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	52½'	14	(56) 16d	26"	(66) 16d	30"	6,490	
			(66) 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 3½" long, 16d sinker = 0.148" dia. x 3¼" long, 10d = 0.148" dia. x 3" long. See pp. 26-27 for other nail sizes and information.



Sincerely,

Bradley Huxol, PE

