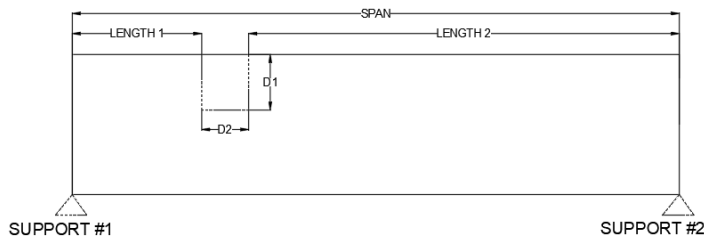


June 1, 2022

Summit Homes
120 SE 30th St.
Lee's Summit, MO 64082

**RE: Field Issue of over notched floor joists, cracked floor joist, and over bored floor joist for Lot #105
Hawthorne Ridge –3117 SW Arbortree Dr. Lee's Summit, MO 64082 – Permit # PRRES20214075**

Over notched floor joist:



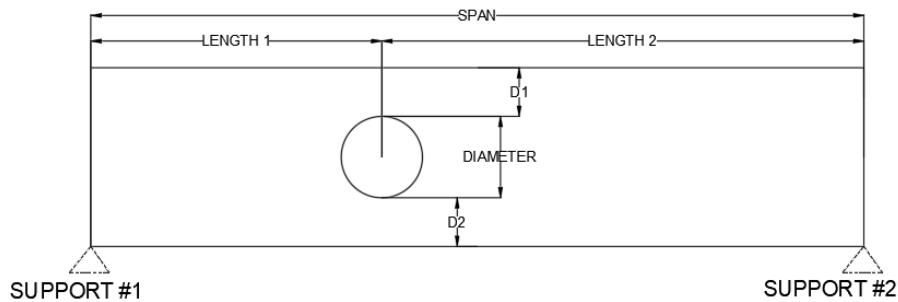
SIMPLE SPAN

- D1 – 3"
- D2 – 2"
- Length 1 – 4'
- Length 2 – 11'-8"
- Span – 15'-8"
- Support #1 – W8x10 steel beam
- Support #2 – rear foundation wall
- Location – under kitchen
- Loading -
 - Dead = 15 psf @ 16" oc
 - Live = 40 psf @ 16" oc

Recommended modifications:

- **Install 36" length of Simpson CS14 strap centered under notch along bottom of both floor joists per manufacturer's spec's.**

Over bored floor joist:



- D1 – at least 2"
- D2 – at least 2"
- Diameter of hole – 4"
- Length 1 – 2'
- Length 2 – 12'
- Span – 14'
- Includes holes closer than 2" together
- Support #1 – rear load bearing garage wall
- Support #2 – garage steel beam
- Location – above garage
- Loading -
 - Dead = 10 psf @ 16" oc
 - Live = 40 psf @ 16" oc

Recommended modifications:

- Install 2' length of CS-16 centered under the hole along bottom of floor joist per manufacturer's spec's.

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	I4, L3, FL
			(86) 10d	39"	(98) 10d	44"	9,215	
CMST14	52 1/2'	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 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.



Split Floor Joist in great room/dining:

Recommended modifications:

- Replace split floor joist with new floor joist.

Sincerely,



Bradley Huxol, PE

