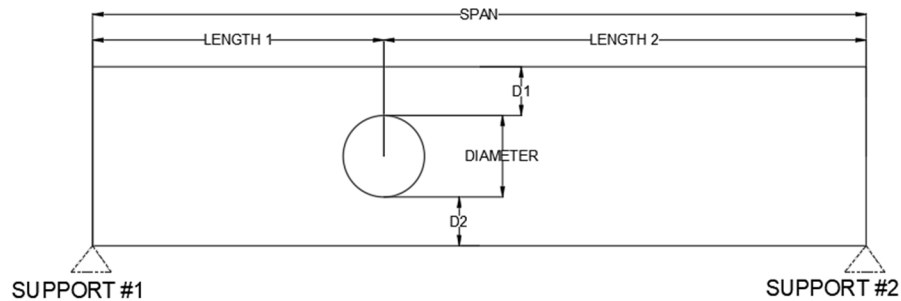


June 29, 2022

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

RE: Field Issue of over-bored joists/studs and holes bored within 2" of each other for Lot #133 Hawthorne Ridge – 3112 SW Arbortree Drive, Lee's Summit, MO 64082 – Permit # PRRES20215607

Over-bored floor joist in powder/kitchen:



- D2 - ~2"
- Diameter of hole - 4"
- Length 1 - 7' 9"
- Span - 15' clear
- Support #1 - Interior LBW
- Support #2 - Exterior wall
- Location - kitchen/powder room

Recommended modifications:

- Install a 24" - CS16 strap centered below the hole along the bottom of the floor joist. Install CS16 strap per manufacturers recommendations shown below.

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 1/4" 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.



Holes drilled within 2" above powder room/ great room window:

- Multiple joists with holes drilled for pex lines
- Holes are 3/4" in diameter and within 2" of each other.
- Floor joist have standard loads of D=10 PSF and L=40 PSF

Recommended modifications:

- No structural modifications needed at the time of inspection.

Studs bored within 5/8" of edge- near fireplace:

- (4) studs have been bored for low-voltage wiring.
 - (3) stud pack near fireplace.
 - (1) 2x4 stud 8" adjacent to (3) stud pack.
- End (2x4) in the (3) stud pack is bored within 5/8" of edge.
 - Other (2) studs appear to be bored through in the middle.

Recommended modifications:

- Install a 1' - CS16 strap vertically to the face of the end 2x4 stud.
 - Only left most stud of the (3) stud pack requires CS16 strap
- Fasten with 8D or 10D nails.
- All other studs mentioned above not require further modifications.

Sincerely,

Bradley Huxol, PE

