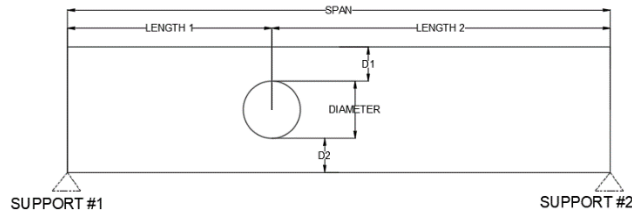


July 14, 2022

Clover & Hive
120 SE 30th St.
Lee's Summit, MO 64082

**RE: Field Issue of holes within 2" of each other in multiple floor joists for Lot #31 Osage –3829 SW Maryville Pl.
Lee's Summit, MO 64082 – Permit # PRRES20213809**



- Multiple joists w/ holes <2" apart.
- D1 – at least 4.5"
- D2 – at least 4"
- Diameter of hole – 3/4"
- Length 1 – 4.5'
- Length 2 – 10.25'
- Span – 11'-9"
- Support #1 – LBW/(2) 2x10/ 9-1/4" LVL
- Support #2 – W8x24 Steel Beam
- Location – Dining area.
- Loading -
 - Dead = 10 psf @ 16" oc
 - Live = 40 psf @ 16" oc

Recommended modifications:

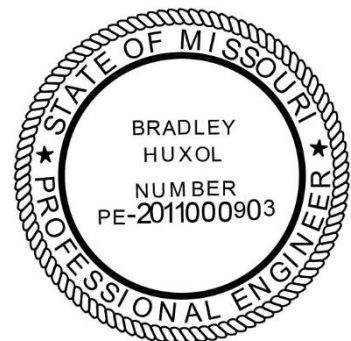
- Install 18" length of CS-16 on the bottom edge of the floor joist- centered under the holes per manufacturer's spec's.

Model No.	Total L	Ca.	DF/SP	Fasteners	End Length	SP/DF	End Length	Allowable Tension Loads (kips)	Cable Ref.
CMST12	40	12		(74) 16d	35"	(84) 16d	35"	9.215	
				(86) 10d	35"	(86) 10d	44"	9.215	
CMST14	52 1/2	14		(94) 16d	26"	(86) 16d	30"	6.690	
				(86) 10d	30"	(76) 10d	34"	6.690	
CMST16	54	16		(94) 16d	20"	(86) 16d	25"	4.585	
				(94) 16d	15"	(94) 16d	16"	2.490	
				(94) 16d	16"	(94) 16d	19"	2.490	
CS14	100	14		(20) 10d	11"	(20) 10d	13"	1.705	
CS16	150	16		(20) 10d	11"	(20) 10d	14"	1.705	
CS18	200	18		(16) 10d	8"	(16) 10d	11"	1.370	
				(16) 8d	11"	(20) 8d	12"	1.370	
CS20	250	20		(12) 10d	6"	(16) 10d	9"	1.030	
				(16) 8d	9"	(16) 8d	9"	1.030	
CS22	300	22		(12) 8d	7"	(12) 8d	7"	845	
				(12) 8d	7"	(16) 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:

Allowable Load = No. of Nails Used x Table Load
Example: CMST16 in DF/SP with 40 nails total
(half of the nails in each member being connected)
Allowable Load = 40 Nails (2.490) x 4.585 lb. = 3,668 lb.

4. Tension loads apply for uplift when installed vertically.
5. Nails: 10d = 0.162" dia. x 2 1/2" long. 16d shank = 0.162" dia. x 3 1/4" long.
10d = 0.147" dia. x 2 1/2" long. See pp. 26-27 for other nail sizes and information.



Sincerely,



Bradley Huxol, PE