EVERSTEAD
ENGINEERING & DESIGN

April 28, 2022

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

RE: Field Issue of notched floor joist, holes within bottom 2" and within 2" of each other for PEX and hole 2" from edge for Lot #152 Cobey Creek – 3550 SE Corbin Dr. Lee's Summit, MO 64082 – Permit # PRRES20216422

Over bored floor joist above coat closet by garage:

- Hole is 4.5" diameter.
- Hole is located 3" from bottom of floor joist.
- Floor joists span approx. 8' above coat closet.
- Floor joists are Douglas Fir Larch #2 2x10 @ 16" oc with standard dead=10 psf and live = 40 psf loads.

Recommended modifications:

- **Install approx 2.5' CS-16 strap centered under hole per manufacturer's spec's.**

Above kitchen area - Holes within bottom 2" and within 2" of each other on multiple floor joists:

- Holes for PEX line are a minimum of 1.75" from bottom of floor joist.
- PEX line hole is approx 1" diameter.
- Holes are within 2" of each other.
- Multiple holes within bottom 2" and within 2" of each other are located throughout kitchen.

Recommended modifications:

- **Install a 3' length of CS-16 per manufacturer's specifiactions centered underneath holes on bottom of floor joist**.

Basement near furnace- Holes within bottom 2" and within 2" of each other on multiple floor joists:

- Holes for electrical line are a minimum of 1.25" from bottom of floor joist.
- Electrical line hole is approx 1" diameter.
- Holes are within 2" of each other.
- Holes within bottom 2" and within 2" of each other are located throughout basment near furnace.

Recommended modifications:

- **Install a 3' length of CS-16 per manufacturer's specifiactions centered underneath holes on bottom of floor joist**.

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	
			(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	I4, L3, FL
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)

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

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

STATE OF MISSOURI
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PROFESSIONAL ENGINEER