EVERSTEAD
ENGINEERING & DESIGN

September 16, 2022

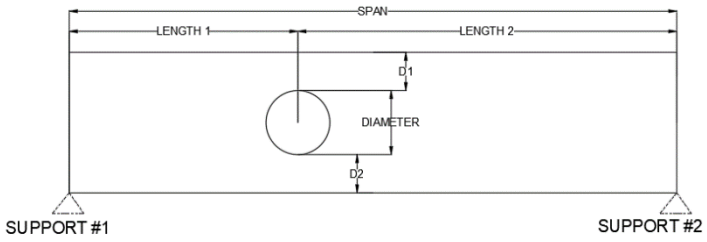
Summit Homes
120 SE 30th St.
Lee's Summit, MO 64082

RE: Field Issue of overbored floor joist for Lot #15 Cobey Creek – 529 SE Carter Rd. Lee's Summit, MO 64082 – Permit # PRRES20220127

Inspector Comments:

- Address overbored floor joist for bath fan exhaust at great room.
- PFH portal bracing design per plans/IRC R602.10.6.2 at garage, missing top and bottom plate at header per design.

Overbored floor joist:



Model No.	Total L	Ga.	DF/SP Fasteners	DF/SP End Length	SPF/HF Fasteners	SPF/HF End Length	Allowable Tension Loads (160)	Code Ref.
CMST12	40'	12	(74) 16d	33"	(84) 16d	36"	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	
CS16	150'	16	(20) 10d	11"	(22) 10d	13"	1,705	I4, L3, FL
			(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.

- D1 – at least 2"
- D2 – at least 2"
- Diameter of hole – 4.5"
- Length 1 – 9'
- Length 2 – 6.5'
- Span – 15.5'
- Support #1 – exterior great room wall
- Support #2 – bath #3 interior load bearing wall
- Location – above great room
- Loading –
  - Dead = 10 psf @ 16" oc
  - Live = 40 psf @ 16" oc

Recommended modifications:

- Install 36" length of CS-16 strap along bottom of overbored floor joist centered underneath hole.
- Install DFL #2 2x10 floor joist adjacent to the overbored floor joist.
- Install 2x10 solid blocking in bays adjacent to overbored floor joist where possible.

Omission of top and bottom plate at PFH at garage:

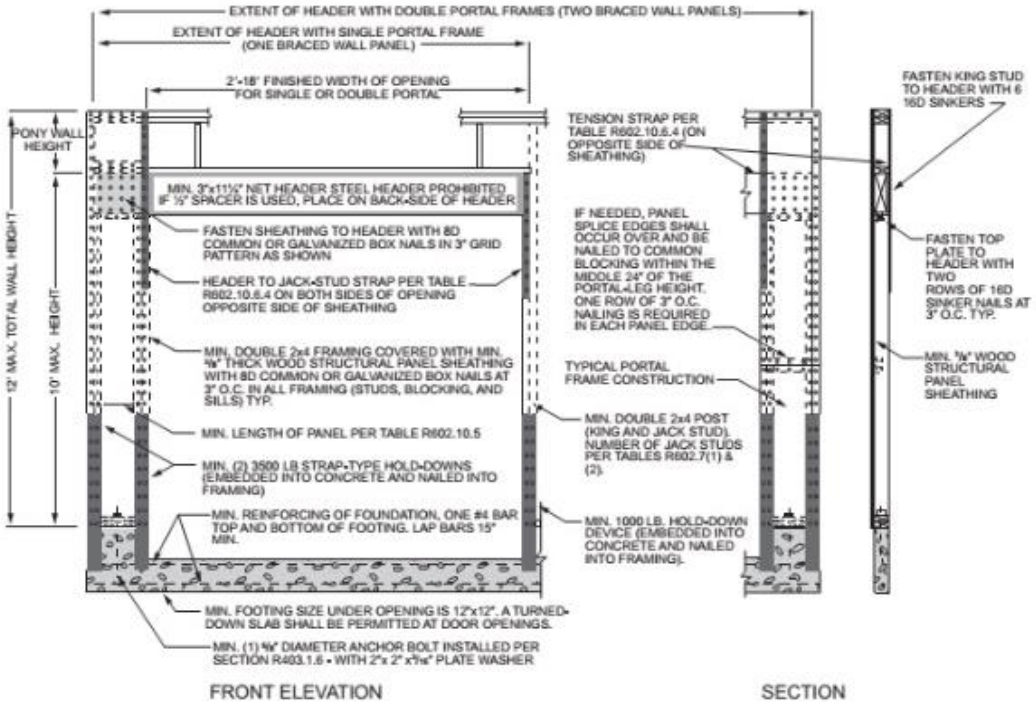


FIGURE R602.10.6.2METHOD PFH—PORTAL FRAME WITH HOLD-DOWNS

Recommended modifications:

- Install 36" length of CS-16 strap along stud pack on each side of garage door without current strapping.

Sincerely,

Bradley Huxol, PE

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BRADLEY HUXOL
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PROFESSIONAL ENGINEER