



January 14, 2022

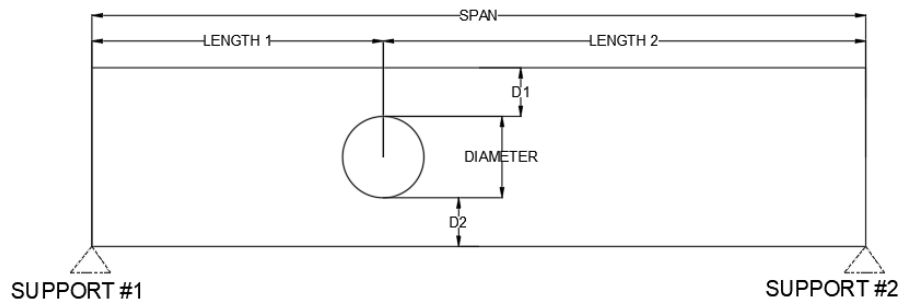
Summit Homes
120 SE 30th St.
Lee's Summit, MO 64082

RE: Field Issue of corner studs over notched for electrical, over bored and broken studs at basement, hole in floor joist within bottom 2" of floor joist for Lot # 148 Hawthorne Ridge – 3224 Arbor Ridge Dr. Lee's Summit, MO 64081 – Permit # PRRES20212481

- **Corner studs over notched for electrical at NE and SE corners at garage at double car bay:**
 - Notch is approximately 1.5" x 1".
 - Notch is located approximately mid-height on each stud.
 - Install Douglas Fir Larch #2 stud adjacent to notched stud on each side on of double garage bay.
- **Over bored at broken studs at basement bedroom #4 closet:**
 - Pipe diameter is approximately 2-1/4" diameter.
 - One stud is over bored and one stud is broken.
 - Studs are not load-bearing.
 - Install SS1.5 stud shoe per manufacturer's spec's on each stud.

Model No.	Stud Size	W (in.)	Fasteners (in.)	Allowable Loads ¹	
				DF/SP	
				Compression	
				Floor (100)	Roof (125)
SS1.5	2x	1½	(12) 0.148 x 1½	500	500
SS2.5	3x	2½	(12) 0.148 x 1½	730	740
SS3	(2) 2x	3½	(12) 0.148 x 3	730	830
SS4.5	(3) 2x	4½	(14) 0.148 x 3	840	840

- Hole for AC line within bottom 2" of floor joist under master walk-in closet:



- D1 – 6.25"
- D2 – 1"
- Diameter of hole – 2"
- Length 1 – 8'
- Length 2 – 5'-2"
- Span – 13'-2"
- Support #1 – foundation wall
- Support #2 – steel beam
- Location – Under master bed closet
- Loading -
 - Dead = 15 psf @ 16" oc
 - Live = 40 psf @ 16" oc
- Install 30" length of CS-14 centered under hole along bottom of floor joist with (28) 0.131" x 1-1/2" nails 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	

- Fastener quantities and end lengths are calculated using an increase for wind or seismic loading.
- Use half of the required nails in each member being connected to achieve the listed loads.
- Calculate the connector value for a reduced number of nails as follows:
 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)
 Allowable Load = $\frac{40 \text{ Nails (Used)}}{50 \text{ Nails (Table)}} \times 4,585 \text{ lb.} = 3,668 \text{ lb.}$
- Tension loads apply for uplift when installed vertically.
- 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.



Sincerely,

Bradley Huxol, PE

