



November 1, 2021

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

RE: Field Issue of over-bored holes in floor joists, over-bored load bearing wall stud, and non-continuous top plate connection for Lot # 108 Hawthorne Ridge – 3129 SW Arbor Tree Dr. Lee's Summit, MO 64082 – Permit # PRRES20212482

This letter addresses the following issues for Lot #108 Hawthorne Ridge:

- Floor joist over-bored hole, located under bath 1 toilet/shower.
- Over-bored stud, main floor powder room/dining wall.
- Non-continuous top plate connection, stair/Great room load bearing wall
- Non-continuous top plate connection, corner of bed 2.

Bath 1 Floor Joist

- Floor joist has approximately 3.5" diameter hole, 3.25" on top 2.5" on bottom of floor joist, located under bath 1 toilet/shower.
- Floor joists span approximately 15'-6" with standard Dead =10 psf and Live = 40 psf loads.
- It is structurally acceptable to install a 24" CS-16 strap centered beneath the overbored hole.
- Install with fasteners per manufacturer's specs.

Main Floor Powder Room/dining wall.

- Stud has approximately 2.5" diameter hole with .5" on either side located on load bearing wall.
- Wall is supporting tributary width 10.5' of floor joists with standard Dead =10 psf and Live = 40 psf loads.
- It is structurally acceptable to install a stud-shoe centered over the over-bored hole.
- Install HSS2 stud shoe (or similar) with fasteners per manufacturer's specs.

Non-continuous top plate

- Top plate connections are non-continuous in bed 2 corner and stairwall where 2x4 and 2x6 wall intersect.
- It is structurally acceptable to install a 24" CS-16 strap. Ensure each top plate has 12" of strap coverage.
- Install with fasteners per manufacturer's specs.

SD Many of these products are approved for installation with Strong-Drive® SD Connector screws. See pp. 348-352 for more information.

Model No.	Stud Size	W (in.)	Fasteners (in.)	Allowable Loads ¹			Code Ref.
				DF/SP		Tension	
				Compression			
				Floor (100)	Roof (125)		
SS1.5	2x	1 9/16	(12) 0.148 x 1 1/2	500	500	—	IBC, FL, LA
SS2.5	3x	2 9/16	(12) 0.148 x 1 1/2	730	740	—	
SS3	(2) 2x	3 1/16	(12) 0.148 x 3	730	830	—	
SS4.5	(3) 2x	4 9/16	(14) 0.148 x 3	840	840	—	
HSS2-SDS1.5	2x	1 9/16	(12) 1/4 x 1 1/2 SDS	1,165	1,165	1,025	
HSS2-2-SDS3	(2) 2x	3	(12) 1/4 x 3 SDS	1,165	1,165	1,025	
HSS2-3-SDS3	(3) 2x	4 9/16	(12) 1/4 x 3 SDS	990	990	960	
HSS4-SDS3	4x	3 9/16	(12) 1/4 x 3 SDS	1,205	1,205	1,025	

1. Roof loads are 125% of floor loads unless limited by other criteria. Floor loads may be adjusted for load durations according to the code provided they do not exceed those in the roof column.
2. **Fasteners:** Nail dimensions are listed diameter by length. SDS screws are Simpson Strong-Tie® Strong-Drive SDS Heavy-Duty Connector screws. See pp. 21-22 for fastener information.

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 (86) 10d	33" 30"	(84) 16d (96) 10d	38" 44"	9,215	H, L3, FL
CMST14	52 1/2"	14	(56) 16d (66) 10d	26" 30"	(66) 16d (76) 10d	30" 34"	6,490	
CMSTC16	54"	16	(50) 16d sinker	20"	(58) 16d sinker	25"	4,585	
CS14	100"	14	(28) 10d (30) 8d	15" 16"	(30) 10d (36) 8d	16" 19"	2,490	
CS16	150"	16	(20) 10d (22) 8d	11" 13"	(22) 10d (26) 8d	13" 14"	1,705	
CS18	200"	18	(16) 10d (18) 8d	9" 11"	(18) 10d (22) 8d	11" 12"	1,370	
CS20	250"	20	(12) 10d (14) 8d	6" 9"	(14) 10d (16) 8d	9" 9"	1,030	
CS22	300"	22	(10) 10d (12) 8d	7" 7"	(12) 10d (14) 8d	7" 8"	845	

1. Fastener quantities and end lengths are calculated using an increase for wind or seismic loading.

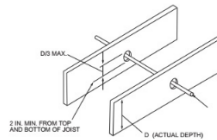


FIGURE R502.8 CUTTING, NOTCHING AND DRILLING

R602.8.1 Sawn lumber.

Notches in solid lumber joists, rafters and beams shall not exceed one-sixth of the depth of the member, shall not be longer than one-third of the depth of the member and shall not be located in the middle one-third of the span. Notches at the ends of the member shall not exceed one-fourth the depth of the member. The tension side of members 4 inches (102 mm) or greater in nominal thickness shall not be notched except at the ends of the members. The diameter of holes bored or cut into members shall not exceed one-third the depth of the member. Holes shall not be closer than 2 inches (51 mm) to the top or bottom of the member, or to any other hole located in the member. Where the member is notched, the hole shall not be closer than 2 inches (51 mm) to the notch.

Sincerely,

Bradley Huxol, PE

