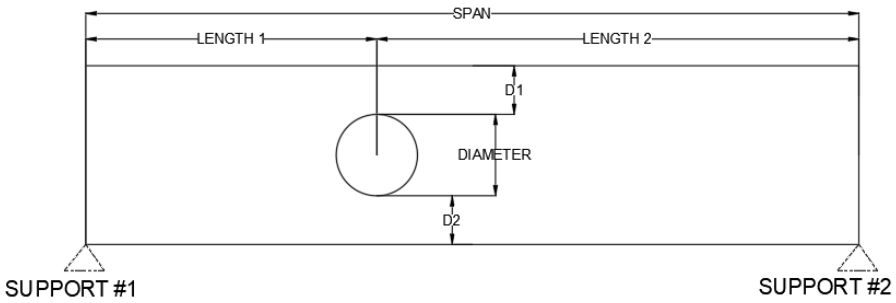
EVERSTEAD
ENGINEERING & DESIGN

March 11, 2022

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

RE: Field Issue of over bored holes in floor joist and top plate splices for Lot #103 Woodside Ridge – 118 NW Ambersham Dr. Lee's Summit, MO 64081 – Permit # PRRES20213774

This letter addresses the over bored holes for DWV and the top plate splices for Lot#103 Woodside Ridge.



Hole above bed 3:

- D1 – 4.5"
- D2 – 2.75"
- Diameter of hole – 4"
- Length 1 – 5.5'
- Length 2 – 9'
- Span – 14'-8"
- Support #1 – load bearing wall
- Support #2 – W10x19 steel beam continuous
- Location – under bath #1
- Loading -
    - Dead = 10 psf @ 16" oc
    - Live = 40 psf @ 16" oc

Hole above bed 4:

- D1 – 3.75"
- D2 – 4"
- Diameter of hole – 4"
- Length 1 – 4'
- Length 2 – 14'
- Span – 18'
- Support #1 – load bearing exterior wall
- Support #2 – W10x19 steel beam continuous
- Location – under bath #2
- Loading -
    - Dead = 10 psf @ 16" oc
    - Live = 40 psf @ 16" oc

Recommended modifications:

- **Install a 2' length of CS16 strap per manufacturer's specs centered under the holes along the bottom of the floor joists.**

- **Install 24" length of CS-16 per manufacturer's specs at northwest corner of basement for top plate splice.**
- **Install (2) 24" lengths of CS-16 per manufacturer's specs at southwest corner of basement rec room for top plate splices.**
- **Install (2) 24" lengths of CS-16 per manufacturer's specs at southwest corner of basement for top plate splices.**

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	52⅛'	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	

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.

Sincerely,

Bradley Huxol, PE