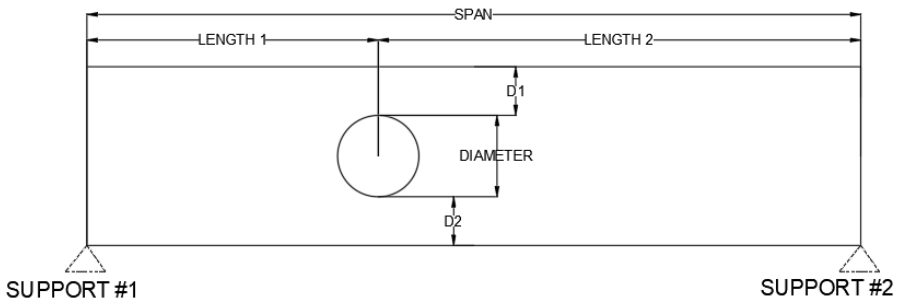
EVERSTEAD
ENGINEERING & DESIGN

June 13, 2022

Elevate Design & Build
Lot # 19 Hook Farms
2030 SW Hook Farm Dr.
Lee's Summit, Mo 64082

RE: Field Issue of overbored hole in floor joist, holes within bottom 2" of floor joist, valley member not resting on top plate, rafters resting on top plate with blocking and top plate splice less than 24" apart for Lot #19 Hook Farms

Overbored hole in floor joist:



- D1 – 2.75"
- D2 – 3.5"
- Diameter of hole – 5" wide x 3" tall
- Length 1 – 2.5' from rear wall
- Length 2 – 11.5'
- Span – 14'
- Location – above living room / breakfast

Recommended modifications:

- **Install a 3' length of CS-16 or LSTA18 centered under the hole on bottom of floor joist per manufacturer's spec's.**

Electrical lines bored within bottom 2" of floor joist:

- D1 – 7.25"
- D2 – 1"
- Diameter of hole – 1"

Recommended modifications:

- **Install a 2' length of CS-16 or LSTA 18 centered under the hole on bottom of floor joist per manufacturer's spec's.**

Bed 3 top plate splice staggered less than 24":

Recommended modifications:

- **Install a 2' length of CS-16 or LSTA 18 over splice per manufacturer's spec's.**

2nd floor top plate w/ rafters resting on blocking:

Recommended modifications:

- **Install 6" Simpson SDWC Truss screw per manufacturer's spec's for "Boundary Blocking to Top Plate" connection.**

Valley member not resting on top plate above master closet:

Recommended modifications:

Sister rafter on both sides supporting end of valley member to provide additional bearing for valley member.
Or
Notch rafters supporting valley and sister valley member to extend bearing to top plate

- **Sister a 4' length to existing member on both sides of member.**
- **Sistered member shall be same size as existing member.**
- **Install 4 fasteners per linear ft in a "W" pattern.**

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	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.

SD Many of these products are approved for installation with Strong-Drive® SD Connector screws.

Model No.	Ga.	Dimensions (in.) W	Dimensions (in.) L	Fasteners (Total) (in.)	Allowable Tension Loads (DF/SP) (160)	Allowable Tension Loads (SPF/HF) (160)
LSTA9	20	1¼	9	(8) 0.148 x 2½	740	635
LSTA12		1¼	12	(10) 0.148 x 2½	925	795
LSTA15		1¼	15	(12) 0.148 x 2½	1,110	955
LSTA18		1¼	18	(14) 0.148 x 2½	1,235	1,115
LSTA21		1¼	21	(16) 0.148 x 2½	1,235	1,235
LSTA24		1¼	24	(18) 0.148 x 2½	1,235	1,235
LSTA30	18	1¼	30	(22) 0.148 x 2½	1,640	1,640
LSTA36		1¼	36	(24) 0.148 x 2½	1,640	1,640

Sincerely,

Bradley Huxol, PE