EVERSTEAD
ENGINEERING & DESIGN

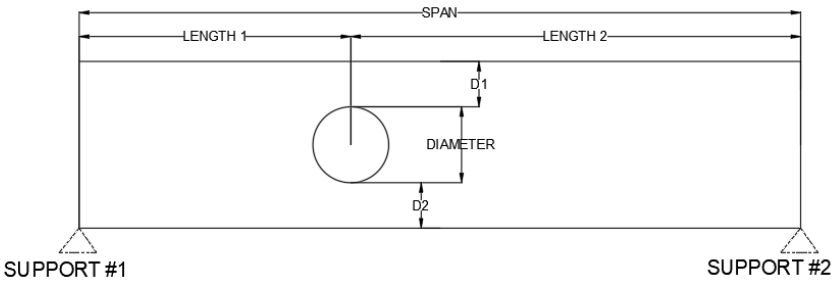
May 12, 2022

Clover & Hive
120 SE 30th St.
Lee's Summit, MO 64082

RE: Field Issue of holes in bottom 2" of floor joist and spaced within 2" of each other, overbored floor joists, and top plate splices not staggered for Lot #155 Cobey Creek – 3538 SE Corbin Dr. Lee's Summit, MO 64082 – Permit # PRRES20220006

City of Lee's Summit Failed Inspection items:

1. **Address joist bored closer than 2" to bottom at nm in double car bay**



- D1 – 7.75"
- D2 – 1/2"
- Diameter of hole – 1"
- Length 1 – 12.5'
- Length 2 – 3'
- Span – 15.5'
- Support #1 – rear garage stud wall
- Support #2 – W12x19 steel beam
- Location – above garage
- Loading -
    - Dead = 10 psf @ 16" oc double every other
    - Live = 40 psf @ 16" oc double every other

2. **Address over bored joists at dwv at owner's entry closet**

- D1 – 3"
- D2 – 3"
- Diameter of hole – 3.25"
- Length 1 – 1.75'
- Length 2 – 6.25'
- Span – 8'
- Support #1 – exterior stud wall
- Support #2 – flush LVL
- Location – above owner entry
- Loading -
    - Dead = 10 psf @ 16" oc
    - Live = 40 psf @ 16" oc

3. **Address holes bored closer than 2" in joists at owner's entry**

- D1 – 3.25"
- D2 – 4.5"
- Diameter of hole – 1.5"
- Length 1 – 5.5'
- Length 2 – 2.5
- Span – 8'
- Less than 2" apart from another hole
- Support #1 – exterior stud wall
- Support #2 – flush LVL
- Location – above owner entry
- Loading -
    - Dead = 10 psf @ 16" oc
    - Live = 40 psf @ 16" oc

4. **Address Overbored joist in pantry**

- D1 – 3.25"
- D2 – 2"
- Diameter of hole – 4"
- Length 1 – 4"
- Length 2 – 7.66'
- Span – 8'
- Support #1 – exterior stud wall
- Support #2 – interior load bearing wall
- Location – above pantry
- Loading -
    - Dead = 10 psf @ 16" oc
    - Live = 40 psf @ 16" oc

Recommended modifications:

- **Install 24" CS-16 strap per manufacturer's specs on bottom of floor joist centered underneath hole.**

5. **Address exterior walls not connected where 2x6 and 2x4 walls meet stairwell/ walk in closet**

Recommended modifications:

- **Install 24" CS-16 strap per manufacturer's specs on each top plate without staggered joints in corners**

FIGURE R602.3(1)TYPICAL WALL, FLOOR AND ROOF FRAMING

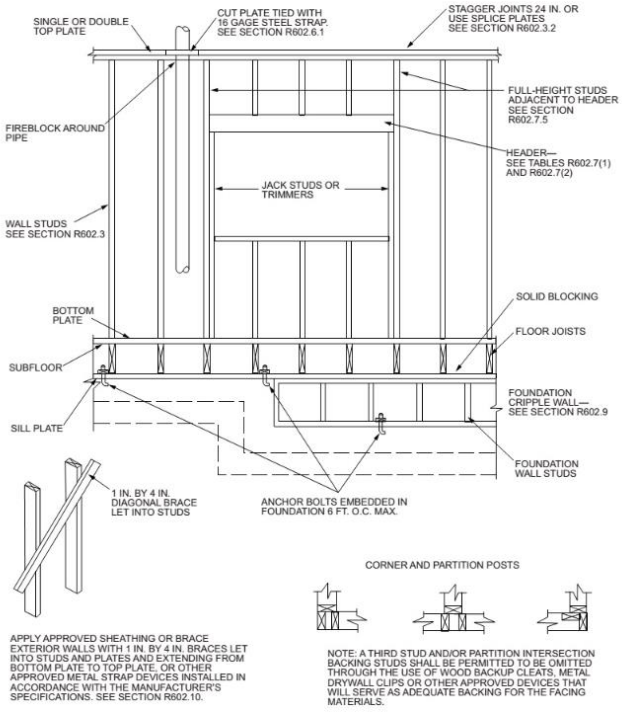


FIGURE R602.3(2)FRAMING DETAILS

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	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	
			(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

STATE OF MISSOURI
BRADLEY HUXOL
NUMBER PE-2011000903
PROFESSIONAL ENGINEER