



HAYES STRUCTURAL

Consulting & Design, PLLC

NC FIRM LICENSE NO.: P-2854
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Date: March 7, 2024

To: Tyler Appel
Drees Homes
8521 Six Forks Road, Suite 500
Raleigh, NC 27615

Re: 23-FRM-022
Framing Inspection
Lot 18 Tobacco Road
209 Golden Leaf Farms Rd.
Angier, NC 27501
Permit No.: SFD2401-0083

Mr. Appel:

At your request, a site visit was made to the above referenced single family residence under construction to inspect several I-joists within the first and second floor systems that were cut to install plumbing.

Observations:

1. The second I-joist from the right foundation wall within the first floor system beneath bath #3 had a +/- 20" section cut out approximately 3" from the rear garage foundation wall to install the toilet drain.
2. The first I-joist from the left garage foundation wall within the first floor system beneath the powder room had a +/- 20" section cut out approximately 7" from the girder to install the toilet drain.
3. The seventeenth I-joist from the left exterior wall within the second floor system beneath the primary bath had a +/- 20" section cut out approximately 8'-0" from the rear exterior wall to install the shower drain. The cut ends of the joist were supported by a 14" I-joist header installed between the adjacent doubled I-joist and single I-joist.
4. The first I-joist from the right exterior wall within the second floor system beneath the hall bath had a +/- 20" section cut out approximately 6'-8" from the rear garage wall to install the toilet drain. The cut ends of the joist were supported by a 14" I-joist header installed between the right exterior wall and second I-joist from the wall.

Analysis and Recommendations:

1. The cut ends of the second I-joist are to be supported by a +/- 17" long 14" BCI 5000s-1.8 (or equivalent) I-joist header installed between the first and third I-joists from the right foundation wall. The I-joists supporting the headers are adequate without reinforcement. The headers are to be fastened to the supporting joists and the cut ends of the second joist are to be fastened to the headers with face-mount I-joist hangers. The webs of the I-joists are to be packed out with OSB per the manufacturer's specifications prior to hanger installation.
2. The cut ends of the first I-joist are to be supported by a +/- 17" long 14" BCI 5000s-1.8 (or equivalent) I-joist header installed between the left garage foundation wall and second I-joist from the foundation wall. The I-joist supporting the header is to be reinforced with a full-length 14" BCI 5000s-1.8 (or equivalent) I-joist prior to header installation. Doubled I-joists are to be fastened at the top and bottom flanges with (1) row of 3½" long Simpson Strong-Tie SDS (or equivalent) screws spaced 12" o.c. The headers are to be fastened to the supporting joist and the cut ends of the first joist are to be fastened to the headers with face-mount I-joist hangers. The webs of the I-joists are to be packed out with OSB per the manufacturer's specifications prior to hanger installation.
3. The single I-joist supporting the right ends of the headers is to be reinforced with a full-length 14" BCI 5000s-1.8 (or equivalent) I-joist at the right side. The doubled I-joist supporting the left ends of the headers is adequate without reinforcement. Doubled I-joists are to be fastened at the top and bottom flanges with (1) row of 3½" long Simpson Strong-Tie SDS (or equivalent) screws spaced 12" o.c. The headers are to be fastened to the supporting

joists and the cut ends of the seventeenth joist are to be fastened to the headers with face-mount I-joist hangers. The webs of the I-joists are to be packed out with OSB per the manufacturer's specifications prior to hanger installation.

4. The I-joist supporting the left ends of the headers is to be reinforced with a 14" BCI 5000s-1.8 (or equivalent) I-joist at the left side spanning from the rear garage wall to the rear exterior wall. Doubled I-joists are to be fastened at the top and bottom flanges with (1) row of 3½" long Simpson Strong-Tie SDS (or equivalent) screws spaced 12" o.c. The headers are to be fastened to the supporting joist and the cut ends of the first joist are to be fastened to the headers with face-mount I-joist hangers. The webs of the I-joists are to be packed out with OSB per the manufacturer's specifications prior to hanger installation.

This prescribed configuration will provide the required support for all imposed loads.

Please call me if you have any questions.

Respectfully submitted,

Zachary H. Hayes, PE
Owner/Structural Engineer
Hayes Structural Consulting & Design, PLLC



Digitally signed
by Zachary H.
Hayes, PE
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