

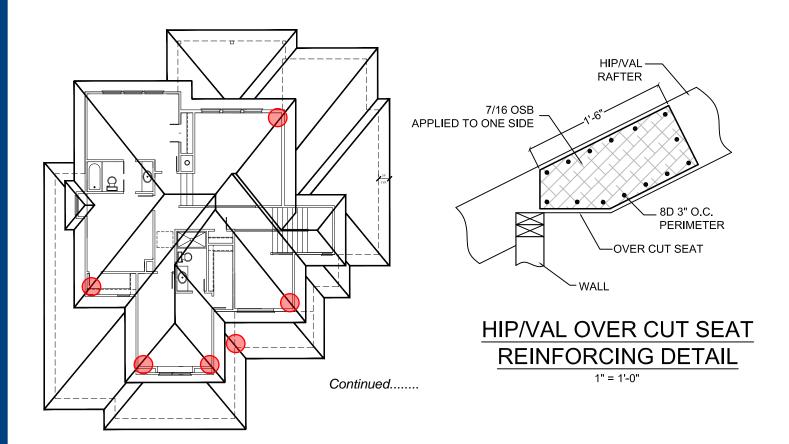
4-7-22

STEWART BUILDERS

RE: PRRES20212466 508 SE DAVID RD LEE'S SUMMIT, MO.

- -Overnotched hip joist at entry/ garage beam
- -Address ceiling joist, hip, rafter and beam taper cuts and overnotched rafters throughout

There are several locations were the hip and valley seat cuts have been over cut to allow clearance. After review of the roof loads our firm has identified the locations (see below marked in red) in need of additional reinforcing to ensure proper transfer of roof loads. The locations marked will be reinforced with a layer of 7/16 OSB attached as shown in the detail below.



STRUCTURAL REVIEW HD ENGINEERING & DESIGN HD: 39124 DATE: 4/22/2020



## **HD Engineering & Design**

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RE: PRRES20212466 508 SE DAVID RD LEE'S SUMMIT, MO.

-Address ceiling joist, hip, rafter and beam taper cuts and overnotched rafters throughout *(Continued....)* 

The framer has reduced the ends of the 2x10 beam at the bedroom three window for clearance of roof framing. The remaining cross section is equivalent to a double 2x8 header. The 240#/ft load at this location requires a moment of inertia = 7.29. The moment of inertia provided by the member in place = 95.2.

Our firm recommends approval of this item as framed.

The double LVL beam has been clipped to allow framing clearance. The LVL has a 7.5" stand at the bearing line. The beam has an end reaction of 1600#. The shear stress at the end of the beam, for the given cross section, is 277psi, the allowable for the LVL is 285psi. Our firm recommends approval of this item as framed.

The double 2x10 beam has been clipped to allow framing clearance. The beam has a 4" stand at the bearing line. The beam has an end reaction of 840#. The shear stress at the end of the beam, for the given cross section is 105psi, the allowable for the beam is 180psi.

Our firm recommends approval of this item as framed.

- -Support hip above glue lam
- -Support hips in double car bay not easily visible due to plywood but visibly not supported

The hips above the glu-lam and at double car garage terminate on the OSB sheathing. Provide a vertical 2x4 cleat fastened to the beams below the upper termination of the hips or provide 2x10 block in the wall interior side behind the hip termination point.

-Support 2x/lvl/glue lam at double car header both sides

Provide (3) 2x4 stud column for end bearing support of the two glu-lam beams that land above the overhead door.

-Address end rafter not bearing on 1.5" at glue lam

Rafter in question was attached for layout purposes during framing and is adequate as currently installed.

This report has been prepared for the exclusive use of our client for specific application to the project discussed and has been prepared in accordance with generally accepted engineering practices. No warranties, either express or implied, are intended or made.

We appreciate the opportunity to be of service to you on this project. If you have any questions regarding this report, please contact us.

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