



## **CIVIL ENGINEERING CONSULTANTS**

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March 29, 2022

Steve Froehlich  
146 NW Ambersham  
Lee's Summit, MO

RE: R.E.O. Project 21-002-21  
2115 NW Killarney Ln,  
Lot 126 The Estates at Woodside Ridge  
Field modifications to header and lateral bracing

Dear Mr. Froehlich,

We are providing herewith statement regarding the field modifications to the residential plan SF-7020 by MD2 Designs and certified by our Firm. The modifications consist of trimming down the LVL header over the basement floor level 8/0x12/0 door, omission of the continuously sheathed portal frame (CS-PF) assembly at the rear breakfast wall and several structural items identified during City inspection.

Modification is required to provide additional support at the trimmed header location. The remaining height between the top of the rough opening and the bottom of the floor joists is approximately 9.5 inches. To modify the header, two additional 1.75"x9.25" LVLs shall be wedged tight to the bottom of the joists, nail laminated to the existing header construction, and supported at the ends by 2x4 stud-framing at the inside face of the existing stud framed wall. This modification is adequate to support the applied floor loads above the 12/0x8/0 door.

In lieu of the specified continuously sheathed portal frame at the rear Breakfast wall, builder may provide continuously sheathed wood structural panel at those locations over the 30 inches of framing width. This method requires 8d fasteners at six inches on center at the perimeter of the panels and 12 inches at the interior of the panels. This substitution provides adequate contributing length for the net wall bracing at the rear braced wall line.

Structural items identified in the inspection are valley rafter bearing at master closet, hip and valley support at master closet, double LVL taper cuts at master bedroom, overnotched rafters at master bedroom, triple 2x10 header at breakfast nook.

The valley member bearing at the exterior wall of the master closet was overnotched and has a remaining 3-1/2" height at the shear face of the wall with a seat extending to the exterior side of the wall. The applied load at the exterior end of the valley member is less than the capacity in the remaining shear face at face of the bearing wall.

The hip and ridge members at the front face of the house at the interior side of the master closet are overnotched at the top plate of the wall and are supported by flat 2x blocking members. The



members extend to the exterior face of the wall with a standard heel cut. The remaining shear face of the hip and valley members is approximately 3-1/2" from the top of the block to the top of the member. Both the valley and hip members have adequate remaining strength at the shear face at the interior face of the bearing wall. The blocking and members are nailed to the top plate of the wall and provide adequate resistance to uplift.

The double LVL member at the rear side of the upset ceiling in the Master Bedroom, exterior end, is notched greater than one-quarter of the depth of the LVL. However, the capacity of the member at the shear face is adequate to resist the applied loads.

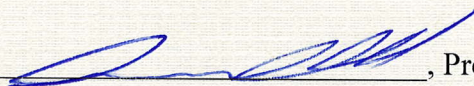
The main roof rafters at the previously described LVL in the master bedroom are seat cut to approximately 1/3 the original depth of the member with a taper extending to the exterior wall. The strength in the remaining rafter section is adequate to support the applied load. The LVL member bears the load from the main roof rafters adequately and does not require continuous rafters to the exterior wall.

The headers above the openings at the breakfast nook and great room are triple 2x10 in lieu of the specified portal frame double (2) ~ 12-inch LVLs. As discussed at the beginning of the letter, the lateral bracing is now classified as CS-WSP in lieu of CS-PF. The triple (3) 2x10's are adequate to support the applied gravity loads.

With the above modifications, the trimmed header and wall bracing modification are adequate to meet the requirements of the 2018 IRC. No other modifications are required for the structural items discussed. If there are any questions regarding these modifications, please contact our Offices.

Very Truly Yours,

R.E.O. ENGINEERING, P.C.

By: , President  
Aaron D. Obermiller, P.E.

