

May 4, 2022

Walker Custom Homes, LLC  
Attn: Jason Walker & Pete Pine

Re: 1612 SW 27<sup>th</sup> Street, Lee's Summit, MO (Lot 46, Whispering Woods, 2<sup>nd</sup> Plat)

Vista Structural Engineering, LLC, was asked to address the following city inspection comments for the house being built at 1612 SW 27<sup>th</sup> St., in Lee's Summit, MO:

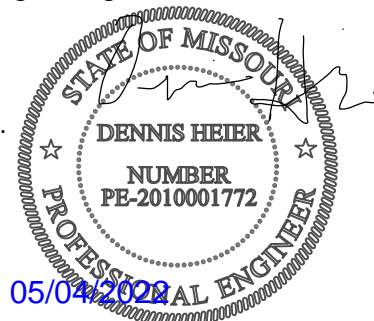
- **Address notched hip rafter above master bedroom.** *The hip was notched as shown in the picture on the following page of this report. A plan view of the roof above the master bedroom is attached on the third page of this report. Per the calculations on the fourth page of this report, we recommend approval of the current framing, assuming the depth of the notched hip above the double 2x12 is at least five inches.*
- **Rafters are bearing on flat 2x blocks. Provide solution.** *Because the roof framing members were designed with gravity support at both ends, including purlins, struts, and hip/valley/ridge posts at the upper ends, there is no concern regarding outward thrust of the rafters. The flat 2x blocking between ceiling joists provides an adequate bearing point for the rafters, and the struts at the purlins, hips, valleys, and ridges provide the vertical support needed to avoid an outward thrust at the exterior wall plates. This addresses the gravity design forces on the roof. If there were no vertical support at the higher elevations of the roof framing (i.e. only collar-ties), then resistance to outward thrust would have been required. However, in this case, the existing framing is adequate for support of gravity forces. For uplift resistance, we recommend nailing each ceiling joist to the adjacent rafter with a minimum of (2) 10d nails. The combined 20 psf dead load of the roof and ceiling is sufficient to resist wind uplift forces. Once it has been verified that the rafters are adequately fastened to the ceiling joists, we recommend approval of the rafter framing/bearing condition. Pictures of the framing have been attached to this report, for reference.*

Our firm appreciates the opportunity to serve you. If you have any questions or if you need anything further, please feel free to contact us.

Sincerely,

Vista Structural Engineering, LLC

Dennis Heier, P.E.



# VISTA STRUCTURAL ENGINEERING, LLC

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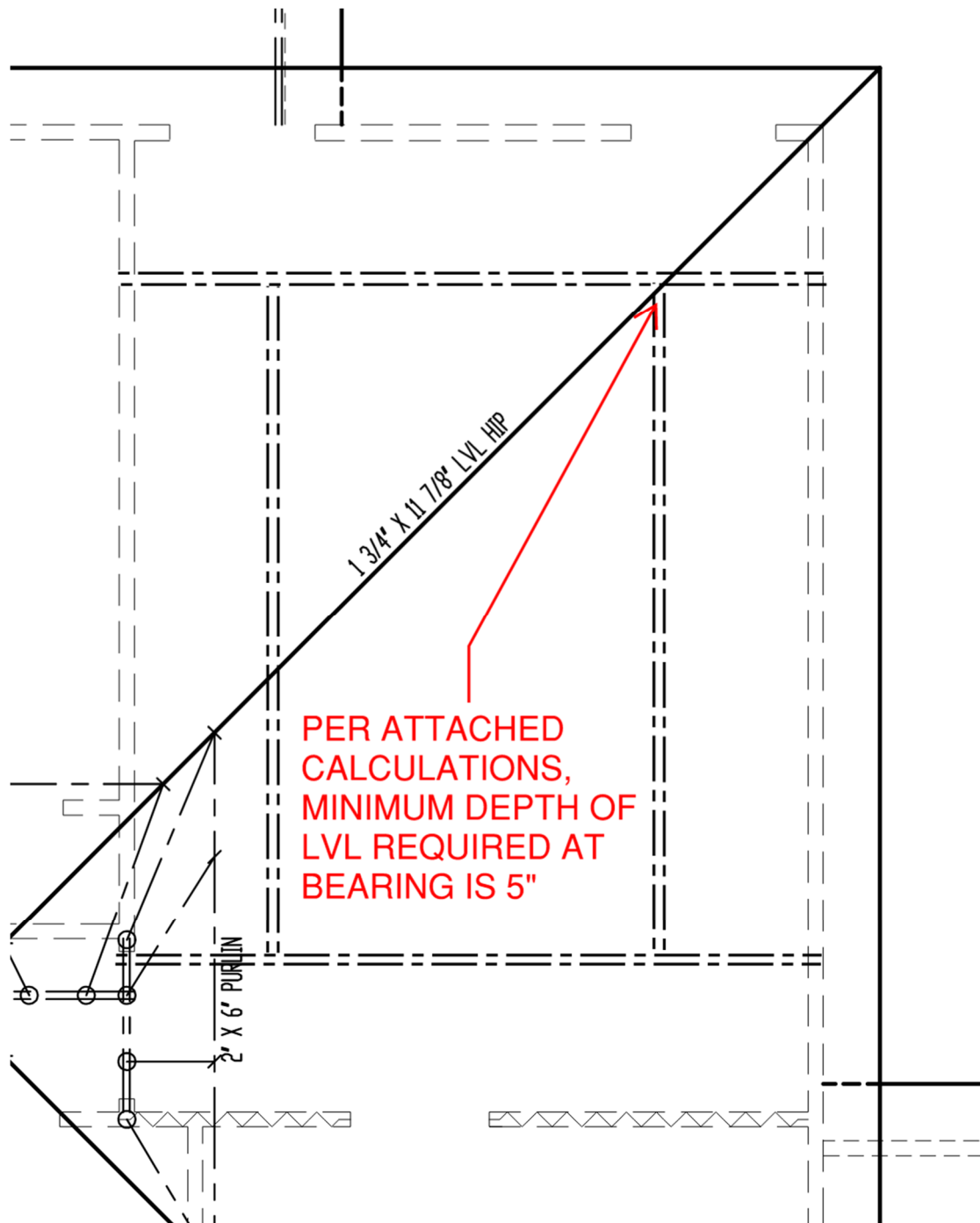
*1612 SW 27<sup>th</sup> Street – Roof framing above master bedroom*

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1612 SW 27<sup>th</sup> Street - Partial roof plan

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1612 SW 27<sup>th</sup> Street – Roof and Ceiling Framing

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*1612 SW 27<sup>th</sup> Street – Roof and Ceiling Framing*

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