



February 4, 2021

IQ Homebuilders
Attn: Brett Shelton

Re: 2346 SW Hickory Lane (Lot 742, Eagle Creek)

Vista Structural Engineering, LLC, was asked to address the following rough-in inspection item for the house being built at 2346 SW Hickory Lane:

Penetrations in floor joists require 2" minimum clearance between penetrations, above great room, near stairs.
Per the attached calculations, the holes are near the end of the joists, where bending stresses are very low, and shear stresses govern. The depth of the holes, from bottom of the lowest hole to the top of the highest hole, is limited to approximately 1 ½". Based on the attached calculations, the resultant shear stress in the reduced section is only 138 psi, which is much lower than the allowable shear stress of 180 psi (per 2015 NDS). Therefore, we recommend approval of the joists as they are currently constructed, without any upgrade/replacement.

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.



02/04/2021

EXPIRES: 6/30/2021

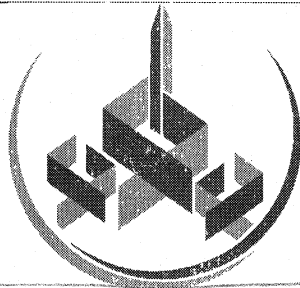
VISTA STRUCTURAL ENGINEERING, LLC

14718 NW DELIA STREET
PORTLAND, OREGON 97229

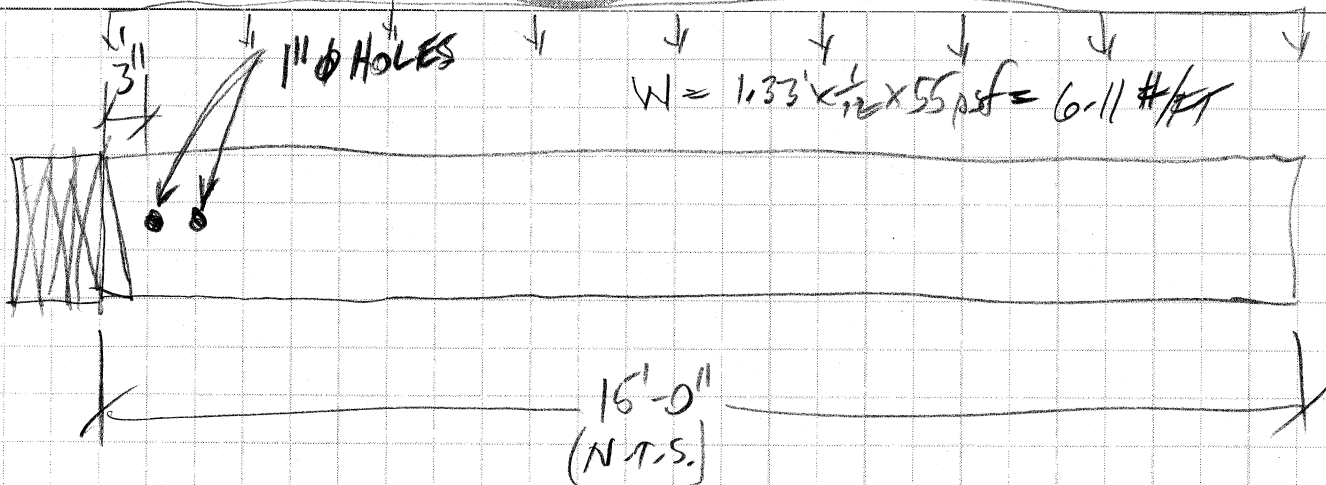
- 1 -

PHONE: 971.645.0901
VISTASTRUCTURAL.COM

PROJ: 2346 SW HICKORY LN
 DATE: 2/4/2021
 PROJ #:
 ENGR: DMH



VISTA
 —STRUCTURAL—
 ENGINEERING, LLC



$$f_r = \frac{\frac{3}{2} R}{A} = \frac{(3)(550 \text{ #})}{(2)(13.9 \text{ in}^2)} = 59.5 \text{ psi} \quad \text{IF FULL SECTION}$$

$$F_v' = 180 \text{ psi}$$

GIVEN 3" DISTANCE FROM END, 1" DEPTH OF HOLE, HEIGHT OF HOLE ABOVE BOTTOM OF JOIST = 4":

$$f_v = \left(\frac{9.25}{4} \right) (59.5 \text{ psi}) = 138 \text{ psi} < F_v' \quad \text{OK}$$

