September 29, 2023

Walker Custom Homes
Attn: Pete Pine

RE: Inspection Letter – SVF082 Spec Lot 82 2311 SW Serena Pl., Lee's Summit, Missouri

Vista Structural Engineering, LLC was asked to address the following rough-in inspection item for the project located at above referenced address. Please see the following response with attached partial plan mark up, calculations, and site photos for reference.
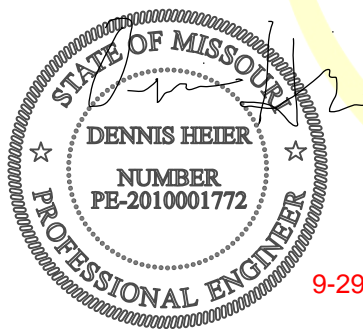
1) **Inspection comment:** "Provide proper bearing for hip rafter above garage"

    Vista Structural's response: *Available depth of garage hip rafter bearing is 5 ½" at interior face of bearing wall (Re. Site photo on pg. 6). Design shear stresses are lower than allowable shear stresses per NDS 2018 (Re. Calculations on pg. 3 & 4). Therefore, we recommend approval of the current framing, without repair. See attached partial plans, calculations, and re. site photos.*
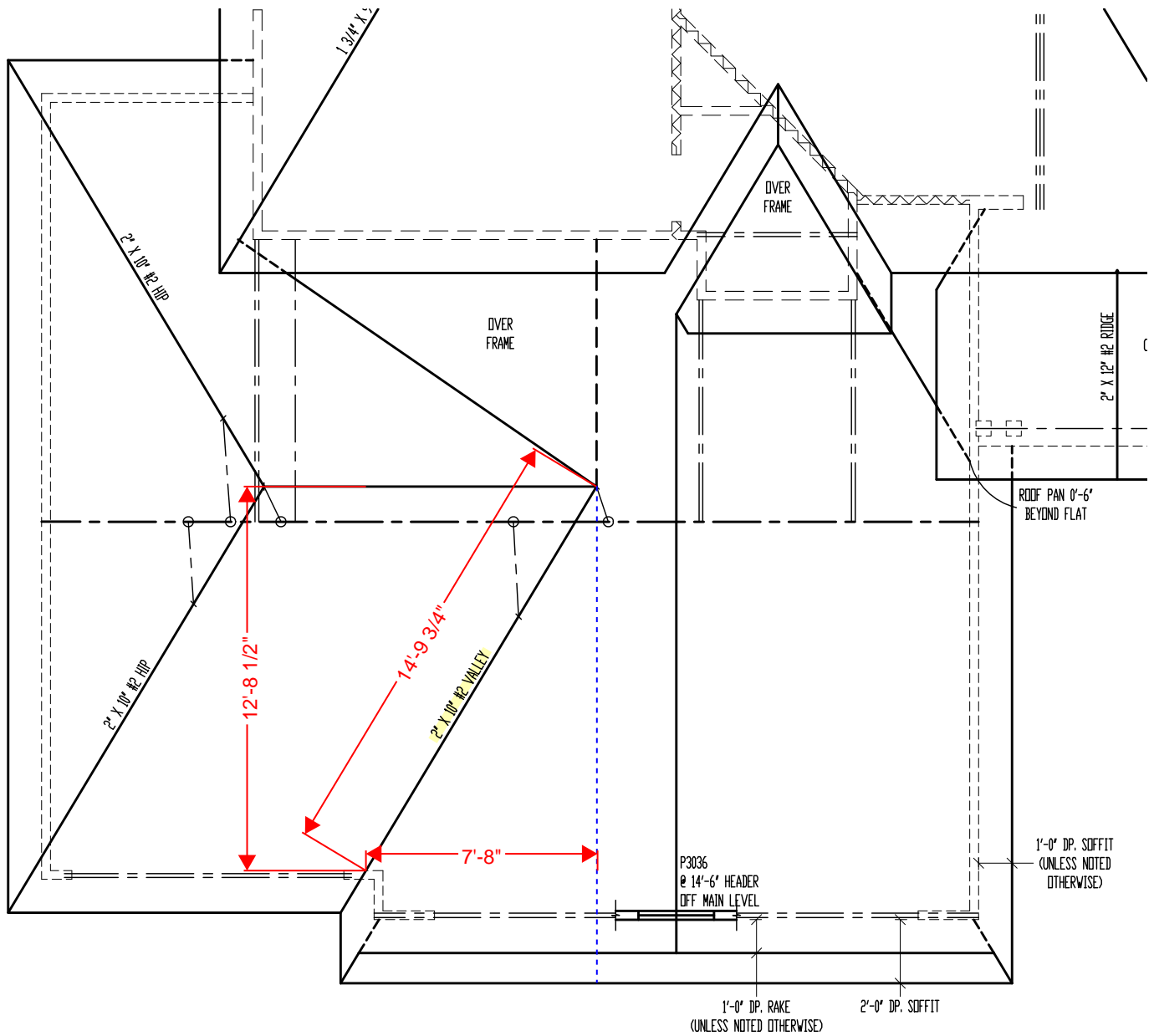
Our firm appreciates the opportunity to serve you. If you have any questions or if you need anything further, please feel free to contact us.

Sincerely,

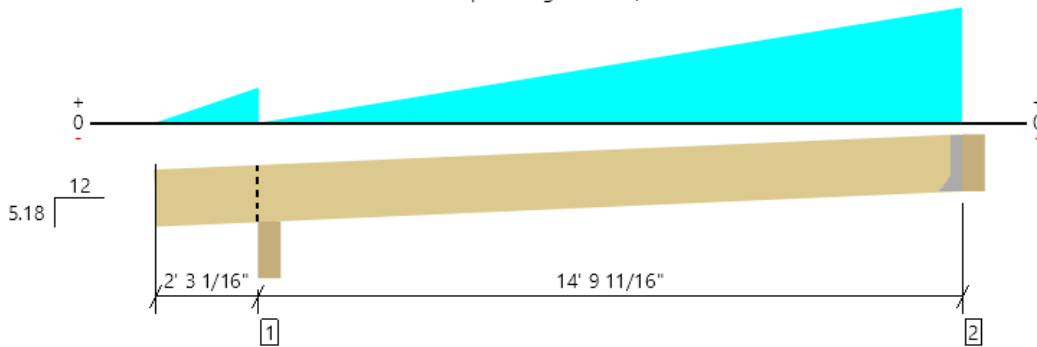Vista Structural Engineering, LLC

Dennis Heier, P.E.

9-29-23

1 3/4" X

2" X 10" #2 HIP

OVER
FRAME

OVER
FRAME

OVER
FRAME

2" X 12" #2 RIDGE

ROOF PAN 0'-6"
BEYOND FLAT

2" X 10" #2 HIP

2" X 10" #2 VALLEY

12'-8 1/2"

14'-9 3/4"

7'-8"

1'-0" DP. SOFFIT
(UNLESS NOTED
OTHERWISE)

P3036
@ 14'-6" HEADER
OFF MAIN LEVEL

1'-0" DP. RAKE
(UNLESS NOTED OTHERWISE)

2'-0" DP. SOFFIT

ROOF PARTIAL PLAN - GARAGE HIP RAFTER

ROOF, GARAGE HIP RAFTER

(FOR R1 DESIGN REACTION ONLY)

Sloped Length: 19' 15/16"

12
5.18

2' 3 1/16"   14' 9 11/16"

1   2

Member Length : 18' 10 15/16"

System : Roof
Member Type : Flush Beam
Building Use : Residential
Building Code : IBC 2018
Design Methodology : ASD
Member Pitch : 5.18/12

R1 = 883#

Supports	Bearing Length			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Snow	Factored	
1 - Beveled Plate - DF	5.50"	5.50"	1.50"	412	471	883	Blocking
2 - Hanger on 9 1/4" DF beam	5.50"	Hanger¹	1.50"	621	801	1422	See note ¹

• Blocking Panels are assumed to carry no loads applied directly above them and the full load is applied to the member being designed.

• At hanger supports, the Total Bearing dimension is equal to the width of the material that is supporting the hanger

• ¹ See Connector grid below for additional information and/or requirements.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	1' o/c	
Bottom Edge (Lu)	18' 7" o/c	

•Maximum allowable bracing intervals based on applied load.

Vertical Loads	Location (Side)	Tributary Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 17' 11/16"	N/A	7.0	--	
1 - Tapered (PLF)	0 to 2' 3 1/16"	N/A	0.0 to 33.3	0.0 to 49.9	Generated from Roof Geometry
2 - Tapered (PLF)	2' 3 1/16" to 17' 11/16"	N/A	0.0 to 106.8	0.0 to 164.0	Generated from Roof Geometry

ForteWEB Software Operator	Job Notes
Dennis Nguyen
Vista Structural Engineering LLC
(503) 515-1124
dn@vistastructural.com	

Weyerhaeuser

PROJ:	SVF082	
DATE:	9-29-23	
PROJ #:	SVF082	
ENGR:	DN	

VISTA
— **STRUCTURAL** —
E N G I N E E R I N G , L L C

HIP RAFTER DESIGN SHEAR CAPACITY CHECK FOR REDUCED DEPTH:

HIP RAFTER PER PLAN

5 1/2"

BRG WALL

R1 = 883#
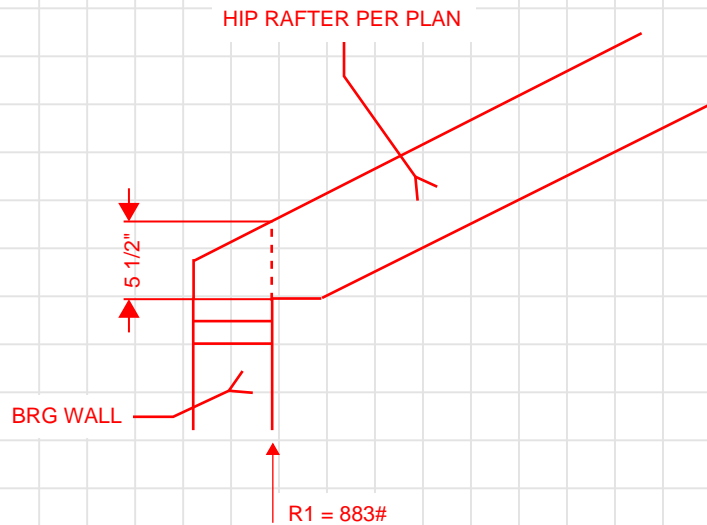
<u>NOTCHED HIP RAFTER CHECK:</u>

R (D+S, #) = 883# (SEE HIP RAFTER RXN CALC)

$F'v = 180*1.15 = 207psi$

$A = 1.5*5.5 = 8.25sf$

$fv = 3/2 * R/A = 3/2*883/8.25 =$ **160 psi < F'v, OK**

SITE PHOTO 1 - GARAGE HIP RAFTER

SITE PHOTO 2 - GARAGE HIP
RAFTER AVAILABLE DEPTH