April 2, 2025

Walker Custom Homes, LLC
Attn: Tyler Lockler

Re: 2615 SW Firefly Lane (Lot 166, Hook Farms) – city inspection item

Vista Structural Engineering, LLC, was asked to address a city inspection structural item for the new house being built at 2615 SW Firefly Lane. The following is the inspection comment and our response.

- **Address installation of double 2x10 header above the door entering the master suite, where a double 2x12 is shown on the plans.** *Due to the door size, there is not enough room for a double 2x12 above the door. Per the attached calculations, we recommend replacing the double 2x10 header with (2) 1 ¾" x 9 ¼" LVL's.*

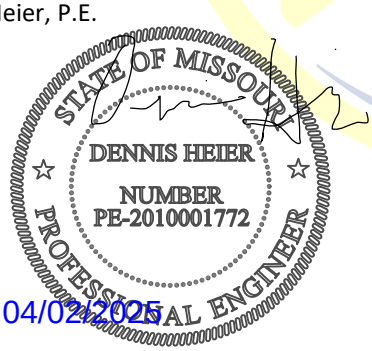
The following pages include a partial plan view highlighting the location of the header, and the calculations for the revised header size.

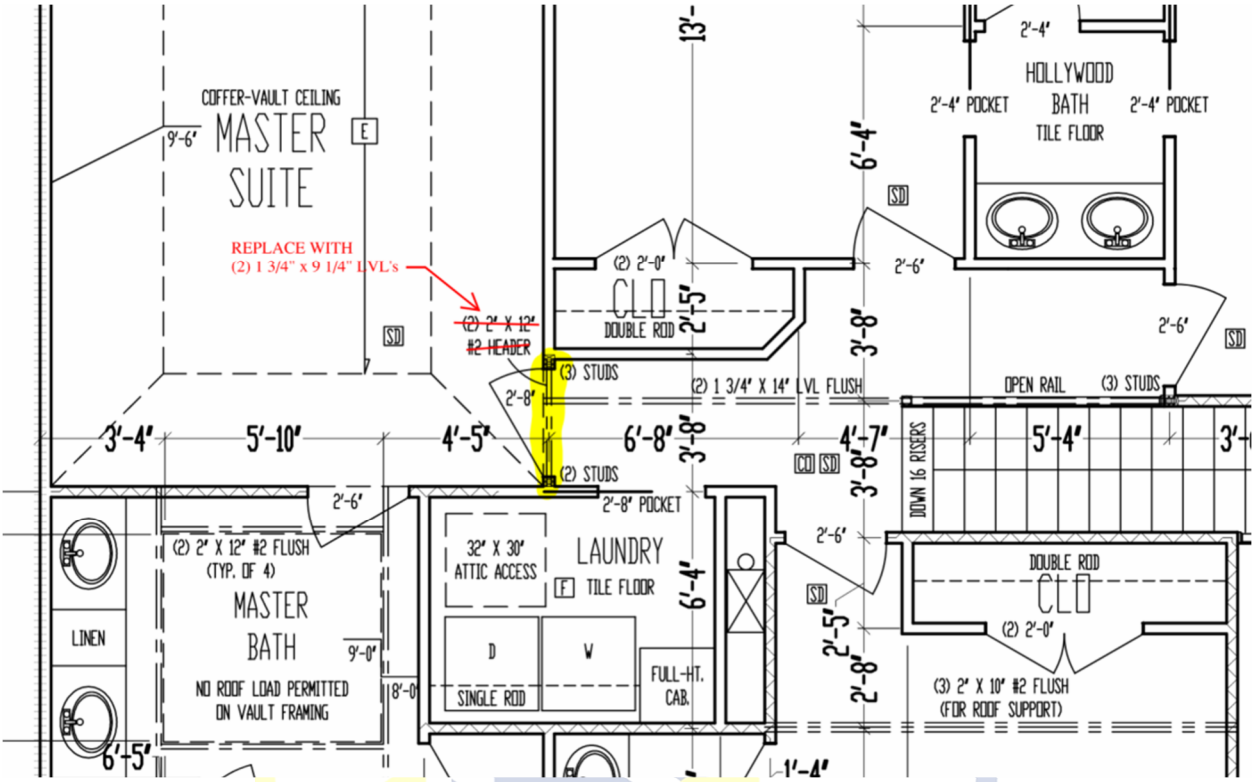
Our firm appreciates the opportunity to serve you. If you have any questions or if you need anything further, please feel free to contact us.

Sincerely,

Vista Structural Engineering, LLC

Dennis Heier, P.E.





Partial second floor plan

Vista Structural Engineering, LLC
11575 SW Pacific Hwy #2262
Tigard, OR 97223
(971) 233-6099
dennis@vistastructural.com

Project Title:
Engineer:
Project ID:
Project Descr:

Printed: 2 APR 2025, 1:06PM

Wood Beam

File: HKF166.ec6

Lic. # : KW-06010523

Vista Structural Engineering, LLC

DESCRIPTION: HEADER ABOVE ENTRY INTO MASTER SUITE (LOT 166, HOOK FARMS)

CODE REFERENCES

Calculations per NDS 2018, IBC 2018, CBC 2019, ASCE 7-16
Load Combination Set : IBC 2018

Material Properties

Analysis Method : Allowable Stress Design
Load Combination : IBC 2018

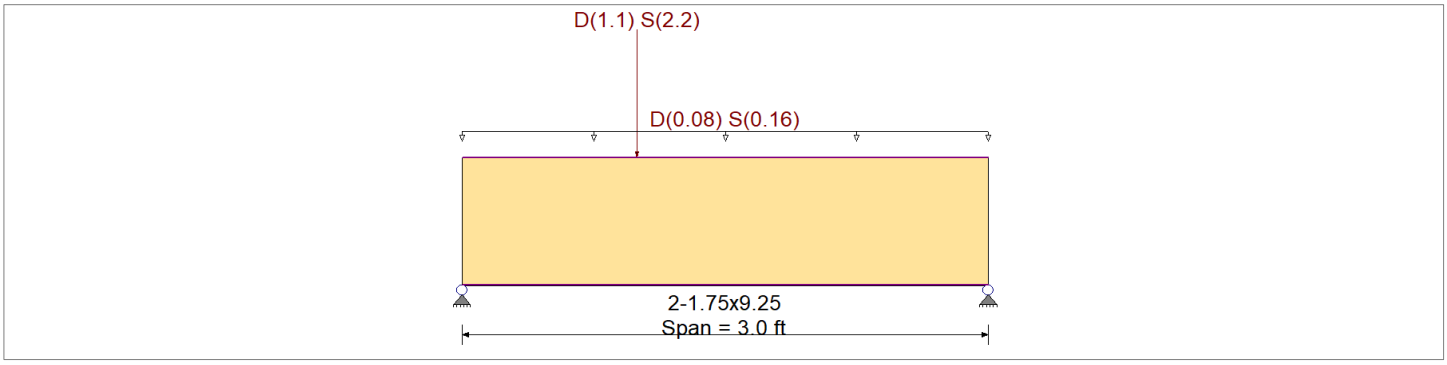
Wood Species : iLevel Truss Joist
Wood Grade : MicroLam LVL 1.9 E

Beam Bracing : Beam is Fully Braced against lateral-torsional buckling

Fb +	2600 psi
Fb -	2600 psi
Fc - Prll	2510 psi
Fc - Perp	750 psi
Fv	285 psi
Ft	1555 psi

E : Modulus of Elasticity

Ebend- xx	1900 ksi
Eminbend - xx	965.71 ksi
Density	42.01 pcf



Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Uniform Load : D = 0.010, S = 0.020 ksf, Tributary Width = 8.0 ft
Point Load : D = 1.10, S = 2.20 k @ 1.0 ft

DESIGN SUMMARY

Design OK

Maximum Bending Stress Ratio	=	0.196 : 1	Maximum Shear Stress Ratio	=	0.336 : 1
Section used for this span		2-1.75x9.25	Section used for this span		2-1.75x9.25
fb: Actual	=	584.92 psi	fv: Actual	=	110.09 psi
Fb: Allowable	=	2,990.00 psi	Fv: Allowable	=	327.75 psi
Load Combination		+D+S	Load Combination		+D+S
Location of maximum on span	=	1.007 ft	Location of maximum on span	=	0.000 ft
Span # where maximum occurs	=	Span # 1	Span # where maximum occurs	=	Span # 1

Maximum Deflection

Max Downward Transient Deflection	0.005 in	Ratio =	7371 >=360
Max Upward Transient Deflection	0.000 in	Ratio =	0 <360
Max Downward Total Deflection	0.007 in	Ratio =	4914 >=180
Max Upward Total Deflection	0.000 in	Ratio =	0 <180

Maximum Forces & Stresses for Load Combinations

Load Combination / Segment Length	Span #	Max Stress Ratios M	Max Stress Ratios V	C_d	$C_{F/V}$	C_i	C_r	C_m	C_t	C_L	Moment Values M	Moment Values fb	Moment Values F'b	Shear Values V	Shear Values fv	Shear Values F'v
D Only													0.00	0.00	0.00	0.00
Length = 3.0 ft	1	0.083	0.143	0.90	1.000	1.00	1.00	1.00	1.00	1.00	0.81	194.97	2340.00	0.79	36.70	256.50
+D+S					1.000	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
Length = 3.0 ft	1	0.196	0.336	1.15	1.000	1.00	1.00	1.00	1.00	1.00	2.43	584.92	2990.00	2.38	110.09	327.75
+D+0.750S					1.000	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
Length = 3.0 ft	1	0.163	0.280	1.15	1.000	1.00	1.00	1.00	1.00	1.00	2.03	487.43	2990.00	1.98	91.74	327.75
+0.60D					1.000	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
Length = 3.0 ft	1	0.028	0.048	1.60	1.000	1.00	1.00	1.00	1.00	1.00	0.49	116.98	4160.00	0.48	22.02	456.00

Overall Maximum Deflections

Load Combination	Span	Max. "-" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
+D+S	1	0.0073	1.391		0.0000	0.000

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Vista Structural Engineering, LLC

DESCRIPTION: HEADER ABOVE ENTRY INTO MASTER SUITE (LOT 166, HOOK FARMS)

Vertical Reactions

Support notation : Far left is #1

Values in KIPS

Load Combination	Support 1	Support 2
Overall MAXimum	2.560	1.460
Overall MINimum	1.707	0.973
D Only	0.853	0.487
+D+S	2.560	1.460
+D+0.750S	2.133	1.217
+0.60D	0.512	0.292
S Only	1.707	0.973