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FRAMING ADDENDUM

2/16/2023

STEWART BUILDERS

RE: THE ALLENSTONE (SVF119)
3208 SW SADDLEBRED TERR
LEE'S SUMMIT, MO

Our firm has been asked to make structural recommendations for rough framing inspection items of the new home being built at the location listed above. At the time of inspection the structure was in a rough framed state.

Front Entry Wall

The framer has installed the wall framing of the front entry with non-continuous studs. To allow the wall to transfer loads as intended our firm recommends installing strapping at the hinge point at the interior face of the framing. The 16ga strap will be placed at both sides of the entry door per the hinged stud column reinforcing attached.

Rear Great Room Wall

The framer has installed the wall framing of the great room rear wall with non-continuous studs. To allow the wall to transfer loads as intended our firm recommends installing strapping at the hinge point at the interior face of the framing. The 16ga strap will be placed at both sides of the window openings per the hinged stud column reinforcing detail attached.

Post Replacement Lower Level

The steel column at the stairs in the lower level has been replaced with a (4) 2X4 stud column. The stud column is adequate to transfer the loads imposed, see attached calculation.

This report has been prepared for the exclusive use of our client for specific application to the project discussed and has been prepared in accordance with generally accepted engineering practices. No warranties, either express or implied, are intended or made.

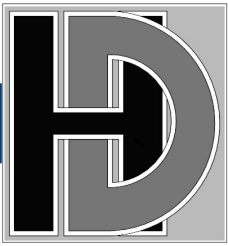
We appreciate the opportunity to be of service to you on this project. If you have any questions regarding this report, please contact us.

Very truly yours,
HD ENGINEERING & DESIGN, INC.

John Hulse, Principal



STRUCTURAL REVIEW
HD ENGINEERING & DESIGN
HD: 43754 DATE: 2/16/2023



HD Engineering & Design

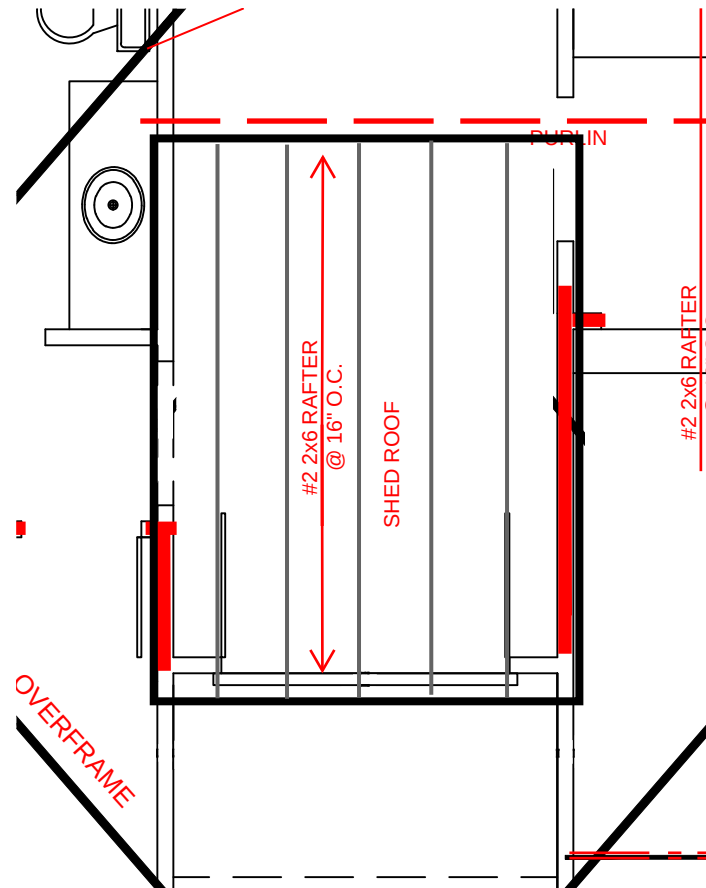
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FRAMING ALTERNATE

2/16/2023

STEWART BUILDERS

RE: THE ALLENSTONE (SVF119)
3208 SW SADDLEBRED TERR
LEE'S SUMMIT, MO



ALTERNATE ROOF PLAN AT ENTRY



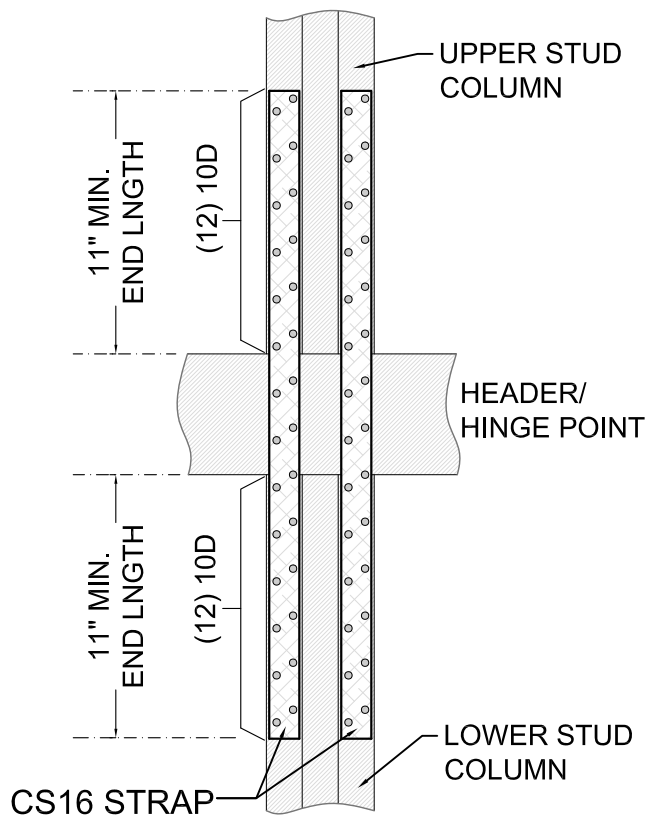
STRUCTURAL REVIEW
HD ENGINEERING & DESIGN
HD: 43754 DATE: 2/16/2023



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FRAMING DETAIL



HINGED STUD COLUMN REINFORCING DETAIL

SCALE: 1-1/2" = 1'-0"



STRUCTURAL REVIEW
HD ENGINEERING & DESIGN
HD: 43754 DATE: 2/16/2023



Wood Column

Project File: WOOD COLUMN 1612023

LIC# : KW-06015579, Build:20.22.10.25

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DESCRIPTION: (4) 2X4 COL AT STAIRS

Code References

Calculations per NDS 2018, IBC 2018, CBC 2019, ASCE 7-16
Load Combinations Used : IBC 2018

General Information

Analysis Method	Allowable Stress Design			Wood Section Name	4-2x4	
End Fixities	Top Fixed, Bottom Fixed			Wood Grading/Manuf.	Graded Lumber	
Overall Column Height	8 ft			Wood Member Type	Sawn	
(Used for non-slender calculations)						
Wood Species	Douglas Fir-South			Exact Width	6.0 in	Allow Stress Modification Factors
Wood Grade	No.2			Exact Depth	3.50 in	
Fb +	850.0 psi	Fv	180.0 psi	Area	21.0 in^2	Cf or Cv for Bending 1.50
Fb -	850.0 psi	Ft	525.0 psi	Ix	21.438 in^4	Cf or Cv for Compression 1.150
Fc - Prll	1,350.0 psi	Density	28.720 pcf	Iy	63.0 in^4	Cf or Cv for Tension 1.50
Fc - Perp	520.0 psi					Cm : Wet Use Factor 1.0
						Ct : Temperature Fact 1.0
E : Modulus of Elasticity . . .	x-x Bending	y-y Bending	Axial			Cfu : Flat Use Factor 1.0
	Basic	1,200.0	1,200.0	1,200.0 ksi		Kf : Built-up columns 1.0
	Minimum	440.0	440.0			Use Cr : Repetitive ? No
Brace condition for deflection (buckling) along columns :						
X-X (width) axis :					Unbraced Length for buckling ABOUT Y-Y Axis = 8 ft, K	
Y-Y (depth) axis :					Unbraced Length for buckling ABOUT X-X Axis = 8 ft, K	

Applied Loads

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

Column self weight included : 33.507 lbs * Dead Load Factor

AXIAL LOADS . . .

BEAM E/R: Axial Load at 8.0 ft, D = 2.0, L = 4.0 k

DESIGN SUMMARY

Bending & Shear Check Results

PASS Max. Axial+Bending Stress Ratio =	0.6457 : 1	Maximum SERVICE Lateral Load Reactions . .	
Load Combination	+D+L	Top along Y-Y	0.0 k
Governing NDS Formula	Comp Only, f_c/f_c'	Bottom along Y-Y	0.0 k
Location of max.above base	0.0 ft	Top along X-X	0.0 k
At maximum location values are .		Bottom along X-X	0.0 k
Applied Axial	6.034 k	Maximum SERVICE Load Lateral Deflections . . .	
Applied Mx	0.0 k-ft	Along Y-Y	0.0 in at 0.0 ft above base
Applied My	0.0 k-ft	for load combination : n/a	
Fc : Allowable	444.990 psi	Along X-X	0.0 in at 0.0 ft above base
		for load combination : n/a	
PASS Maximum Shear Stress Ratio =	0.0 : 1	Other Factors used to calculate allowable stresses . . .	
Load Combination	+0.60D	Bending	Compression
Location of max.above base	8.0 ft	Tension	
Applied Design Shear	0.0 psi		
Allowable Shear	288.0 psi		

Load Combination Results

Load Combination	C _D	C _P	Maximum Axial + Bending Stress Ratios			Maximum Shear Ratios		
			Stress Ratio	Status	Location	Stress Ratio	Status	Location
D Only	0.900	0.315	0.220	PASS	0.0 ft	0.0	PASS	8.0 ft
+D+L	1.000	0.287	0.6457	PASS	0.0 ft	0.0	PASS	8.0 ft
+D+0.750L	1.250	0.234	0.5290	PASS	0.0 ft	0.0	PASS	8.0 ft
+0.60D	1.600	0.185	0.1263	PASS	0.0 ft	0.0	PASS	8.0 ft

Maximum Reactions

Note: Only non-zero reactions are listed.

Load Combination	X-X Axis Reaction		Y-Y Axis Reaction		Axial Reaction	My - End Moments		Mx - End Moments	
	@ Base	@ Top	@ Base	@ Top		@ Base	@ Top	@ Base	@ Top
D Only					2.034				
+D+L					6.034				
+D+0.750L					5.034				

Wood Column

Project File: WOOD FRAMED WALLS.ec6

LIC# : KW-06015579, Build:20.22.10.25

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DESCRIPTION: (4) 2X4 COL AT STAIRS

Maximum Reactions

Note: Only non-zero reactions are listed.

Load Combination	X-X Axis Reaction		k	Y-Y Axis Reaction		Axial Reaction	My - End Moments		k-ft	Mx - End Moments	
	@ Base	@ Top		@ Base	@ Top	@ Base	@ Base	@ Top		@ Base	@ Top
+0.60D						1.220					
L Only						4.000					

Maximum Deflections for Load Combinations

Load Combination	Max. X-X Deflection	Distance	Max. Y-Y Deflection	Distance
D Only	0.0000 in	0.000ft	0.000 in	0.000 ft
+D+L	0.0000 in	0.000ft	0.000 in	0.000 ft
+D+0.750L	0.0000 in	0.000ft	0.000 in	0.000 ft
+0.60D	0.0000 in	0.000ft	0.000 in	0.000 ft
L Only	0.0000 in	0.000ft	0.000 in	0.000 ft

Sketches

