

Project: KERI-JOSEPH JOHNSON

Location: BEDROOM 3 LVL HEADER

Roof Beam

Roof Beam [2021 International Building Code(2018 NDS)

(2) 1.75 IN x 9.25 IN x 6.0 FT

1.9E-2600F - APA EWS LVL Stress Classes

Section Adequate By: 245.1%

Controlling Factor: Shear



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StruCalc Version 11.1.8.0

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CAUTIONS

* Laminations are to be fully connected to provide uniform transfer of loads to all members

DEFLECTIONS

Center

Live Load 0.03 IN L/2538

Dead Load 0.02 in

Total Load 0.05 IN L/1585

Live Load Deflection Criteria: L/360 Total Load Deflection Criteria: L/240

REACTIONS

A

B

Live Load 1280 lb 1280 lb

Dead Load 769 lb 769 lb

Total Load 2049 lb 2049 lb

Bearing Length 0.84 in 0.84 in

BEAM DATA

Span Length 6 ft

Unbraced Length-Top 2 ft

Unbraced Length-Bottom 0 ft

Roof Pitch 7 :12

Roof Duration Factor 1.15

Notch Depth 0.00

MATERIAL PROPERTIES

1.9E-2600F - APA EWS LVL Stress Classes

Base Values

Adjusted

Bending Stress: $F_b = 2600$ psi $F_b' = 3072$ psi

$C_d = 1.15$ $C_l = 0.99$ $C_F = 1.03$

Shear Stress: $F_v = 285$ psi $F_v' = 328$ psi

$C_d = 1.15$

Modulus of Elasticity: $E = 1900$ ksi $E' = 1900$ ksi

Comp. $\perp$ to Grain: $F_c - \perp = 700$ psi $F_c - \perp' = 700$ psi

Controlling Moment: 3075 ft-lb

3.0 ft from left support

Created by combining all dead and live loads.

Controlling Shear: -2050 lb

At support.

Created by combining all dead and live loads.

Comparisons with required sections:

Req'd

Provided

Section Modulus: 12.01 in³ 49.91 in³

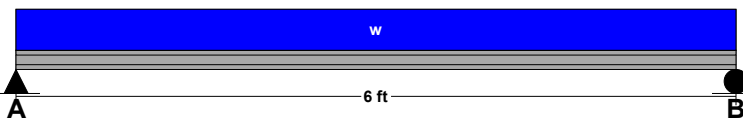
Area (Shear): 9.38 in² 32.38 in²

Moment of Inertia (deflection): 34.95 in⁴ 230.84 in⁴

Moment: 3075 ft-lb 12777 ft-lb

Shear: -2050 lb 7074 lb

LOADING DIAGRAM



ROOF LOADING

Side One:

Roof Live Load: LL = 20 psf

Roof Dead Load: DL = 10 psf

Tributary Width: TW = 20 ft

Side Two:

Roof Live Load: LL = 20 psf

Roof Dead Load: DL = 10 psf

Tributary Width: TW = 1.3 ft

Wall Load: WALL = 0 plf

SLOPE/PITCH ADJUSTED LENGTHS AND LOADS

Adjusted Beam Length: $L_{adj} = 6$ ft

Beam Self Weight: BSW = 9 plf

Beam Uniform Live Load: $w_L = 427$ plf

Beam Uniform Dead Load: $w_{D_adj} = 256$ plf

Total Uniform Load: $w_T = 683$ plf