

Project: KERI-JOSEPH JOHNSON

Location: GARAGE DOOR HEADER LVL CALC

Roof Beam

Roof Beam [2021 International Building Code(2018 NDS)

( 2 ) 1.75 IN x 11.875 IN x 9.67 FT

1.9E-2600F - APA EWS LVL Stress Classes

Section Adequate By: 131.7%

Controlling Factor: Moment



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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 0.09 IN L/1253

Dead Load 0.07 in

Total Load 0.16 IN L/722

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

### REACTIONS

A

B

Live Load 2112 lb 2112 lb

Dead Load 1552 lb 1552 lb

Total Load 3664 lb 3664 lb

Bearing Length 1.50 in 1.50 in

### BEAM DATA

Span Length 9.7 ft

Unbraced Length-Top 0 ft

Unbraced Length-Bottom 0 ft

Roof Pitch 12 :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: Fb = 2600 psi Fb' = 2994 psi

Cd=1.15 CF=1.00

Shear Stress: Fv = 285 psi Fv' = 328 psi

Cd=1.15

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

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

Controlling Moment: 8857 ft-lb

4.835 ft from left support

Created by combining all dead and live loads.

Controlling Shear: -3664 lb

At support.

Created by combining all dead and live loads.

### Comparisons with required sections:

Req'd

Provided

Section Modulus: 35.5 in3 82.26 in3

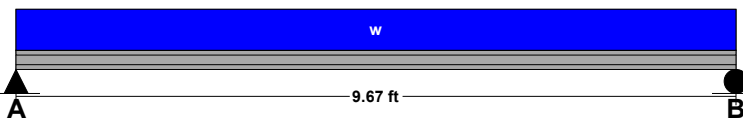
Area (Shear): 16.77 in2 41.56 in2

Moment of Inertia (deflection): 162.26 in4 488.41 in4

Moment: 8857 ft-lb 20523 ft-lb

Shear: -3664 lb 9081 lb

### LOADING DIAGRAM



### ROOF LOADING

Side One:

Roof Live Load: LL = 20 psf

Roof Dead Load: DL = 10 psf

Tributary Width: TW = 20.5 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: Ladj = 9.67 ft

Beam Self Weight: BSW = 12 plf

Beam Uniform Live Load: wL = 437 plf

Beam Uniform Dead Load: wD\_adj = 321 plf

Total Uniform Load: wT = 758 plf