Project: TIMOTHY AND AMELIA INMAN

Location: REAR PORCH BEAM
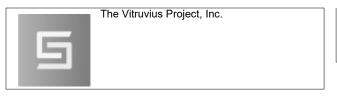Roof Beam
Roof Beam [2021 International Building Code(2018 NDS)
(2) 1.75 IN x 9.25 IN x 16.34 FT
1.9E-2600F - APA EWS LVL Stress Classes
Section Adequate By: 326.8%
Controlling Factor: Deflection

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

DEFLECTIONS   Center
Live Load	0.10 IN	L/2001
Dead Load	0.09 in	
Total Load	0.19 IN	L/1024

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

REACTIONS
	A	B
Live Load	219 lb	219 lb
Dead Load	209 lb	209 lb
Total Load	428 lb	428 lb
Bearing Length	0.17 in	0.17 in

BEAM DATA
Span Length	16.3 ft
Unbraced Length-Top	2 ft
Unbraced Length-Bottom	0 ft
Roof Pitch	8 :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
	Cd=1.15 Cl=0.99 CF=1.03	
Shear Stress:	F_v = 285 psi	F_v' = 328 psi
	Cd=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: 1747 ft-lb
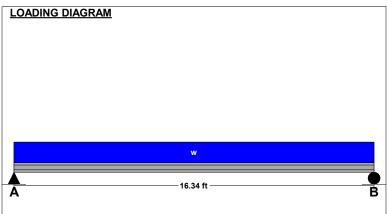 8.17 ft from left support
  Created by combining all dead and live loads.
Controlling Shear: -428 lb
  At support.
  Created by combining all dead and live loads.

Comparisons with required sections:	Req'd	Provided
Section Modulus:	6.82 in3	49.91 in3
Area (Shear):	1.96 in2	32.38 in2
Moment of Inertia (deflection):	54.08 in4	230.84 in4
Moment:	1747 ft-lb	12777 ft-lb
Shear:	-428 lb	7074 lb

LOADING DIAGRAM

A   16.34 ft   B

ROOF LOADING
Side One:
Roof Live Load:	LL =	20 psf
Roof Dead Load:	DL =	10 psf
Tributary Width:	TW =	1.3 ft

Side Two:
Roof Live Load:	LL =	0 psf
Roof Dead Load:	DL =	0 psf
Tributary Width:	TW =	0 ft

Wall Load: WALL =   0 plf

SLOPE/PITCH ADJUSTED LENGTHS AND LOADS
Adjusted Beam Length:	Ladj =	16.34 ft
Beam Self Weight:	BSW =	9 plf
Beam Uniform Live Load:	wL =	27 plf
Beam Uniform Dead Load:	wD_adj =	26 plf
Total Uniform Load:	wT =	52 plf