

Project: federal street

Location: RFT4 Roof Rafter/Joists

Roof Rafter

[2012 International Building Code(2012 NDS)]

SERIES AJS 25 / 11.875 - Boise Cascade x 22.0 FT @ 12 O.C.

Section Adequate By: 53.6%

Controlling Factor: End Reaction


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StruCalc Version 9.0.2.6

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DEFLECTIONS

Center

Live Load 0.55 IN L/479

Dead Load 0.17 in

Total Load 0.72 IN L/369

Live Load Deflection Criteria: L/240 Total Load Deflection Criteria: L/180

RAFTER REACTIONS

LOADS

REACTIONS

Upper Live Load @ A 550 plf 550 lb

Upper Dead Load @ A 165 plf 165 lb

Upper Total Load @ A 715 plf 715 lb

Lower Live Load @ B 550 plf 550 lb

Lower Dead Load @ B 165 plf 165 lb

Lower Total Load @ B 715 plf 715 lb

RAFTER SUPPORT DATA

A

B

Bearing Length 1.75 in 1.75 in

Web Stiffeners No No

RAFTER DATA

Interior

Span Length 22 ft

Rafter Pitch 0 :12

Roof sheathing applied to top of joists-top of rafters fully braced.

Sheathing/sheetrock applied to bottom of joists-bottom of rafters fully braced.

Roof Duration Factor 1.15

I-JOIST PROPERTIES

SERIES AJS 25 / 11.875 - Boise Cascade

Base Values

Adjusted

Moment Cap: Mcap = 6960 ft-lb Mcap' = 8004 ft-lb

Cd = 1.15

Shear Stress: Vcap = 1490 lb Vcap' = 1714 lb

Cd = 1.15

End Reaction: Rcap = 955 lb Rcap' = 1098 lb

Cd = 1.15

w/ web stiffeners: RcapWS = 1335 lb RcapWS' = 1535 lb

Cd = 1.15

Interior Reaction: IRcap = 2690 lb IRcap' = 3094 lb

Cd = 1.15

w/ web stiffeners: IRcapWS = 3190 lb IRcapWS' = 3669 lb

Cd = 1.15

E.I.: EI = 519 lb-in² EI' = 519 lb-in²

Controlling Moment 3933 ft-lb

11.0 Ft from left support of span 3 (Right Span)

Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: 715 lb

At left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:

Req'd

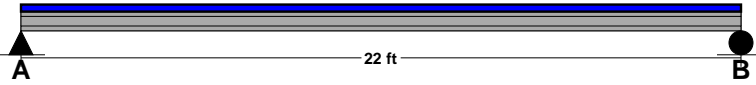
Provided

E.I.: 260 in²-lb E6 519 in²-lb xE6

Moment: 3933 ft-lb 8004 ft-lb

Shear: 715 lb 1714 lb

LOADING DIAGRAM



RAFTER LOADING

Uniform Roof Loading

Roof Live Load: LL = 50 psf

Roof Dead Load: DL = 15 psf

Slope Adjusted Spans And Loads

Interior Span: L-adj = 22 ft

Eave Span: L-Eave-adj = 0 ft

Rafter Live Load: wL-adj = 50 plf

Eave Live Load: wL-Eave-adj = 50 plf

Rafter Dead Load: wD-adj = 15 plf

Rafter Total Load: wT-adj = 65 plf

Eave Total Load: wT-Eave-adj = 65 plf

NOTES