

Beam #2 Dining & kitchen Area (ASCE 7-16)

Beam Span	12 ft
Tributary width of Roof Construction	21.5 ft
Tributary area of Roof Construction	33.5 ft-sq
Wall Height	8 ft
Roof Height	13.5 ft

Dead Load

Roof Construction (light Frame)	15 lb-sf
Roof Dead Load on Beam	322.5 lb-lf
Total Dead Load on Beam	322.5 lb-lf

Live Load

Roof Sloped/Pitched	20 lb-sf
Roof Live Load on Beam	
Total Live Load on Beam	

Live Load Reduced (Sec. 4.7.2)

10 lb-sf
215 lb-lf
215 lb-lf

Snow Load

Sloped Roof Snow Load	0 lb-sf
Total Beam Roof Snow Load	0 lb-lf

Wind Load

Wind Speed	115 mph
Min. Design Pressure at Roof Mean Height	8 lb-sf
Wind Pressure on Beam - Roof	108 lb-lf
Total Wind Pressure on Beam	108 lb-lf

Seismic Load

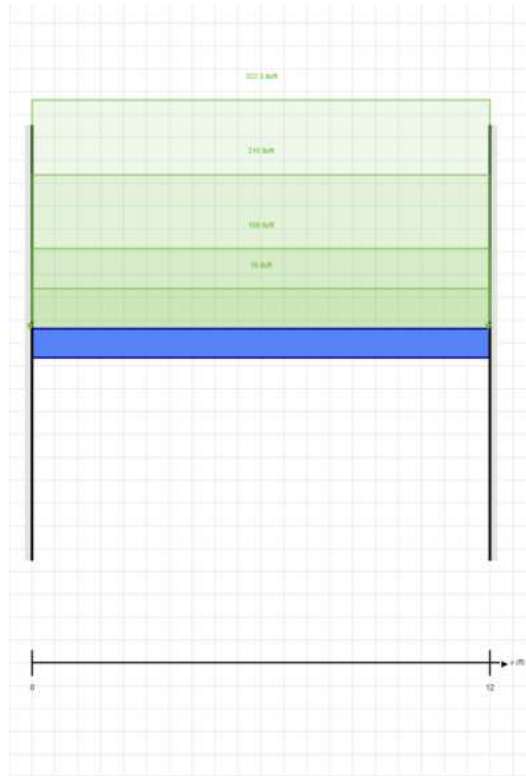
Weight (Dead Load)	3870 lbs
Seismic Base Shear	0.192 kip
Shear Load on Beam	16 lb-lf

One Side -Uniform Load for Top-Loaded Applications

Span	12 ft	
P1	6,450.00 lb	
L1	2.625 in	
P2	3,225.00 lb	
L2	5.25 in	
Actual Uniform Side Load	268.75 lb-ft	< 300 lb-ft OK!

SKYCIV BEAM ANALYSIS REPORT

Load Combination: Envelope Absolute Max



Software: SkyCiv Beam v3.2.3
Sat May 04 2024 16:47:31 GMT-0300 (Uruguay Standard Time)

Project Info

File Name: 1000 E MARIGOLD LN TEMPE, AZ

Engineer: EDGARDO MEJIA

Project Notes: BEAM 2 - BETWEEN DINING AND KITCHEN

Included in this Report:

- Input Summary
- Beam Section
- Free Body Diagram (FBD)
- Analysis Summary
- Analysis Results
- Bending Moment Diagram (BMD)
- Shear Force Diagram (SFD)
- Deflection Results
- Stress Results

INPUT SUMMARY

General Info

Beam Length:	12 ft
Section Name:	5-1/4x9-1/2
Self Weight:	True

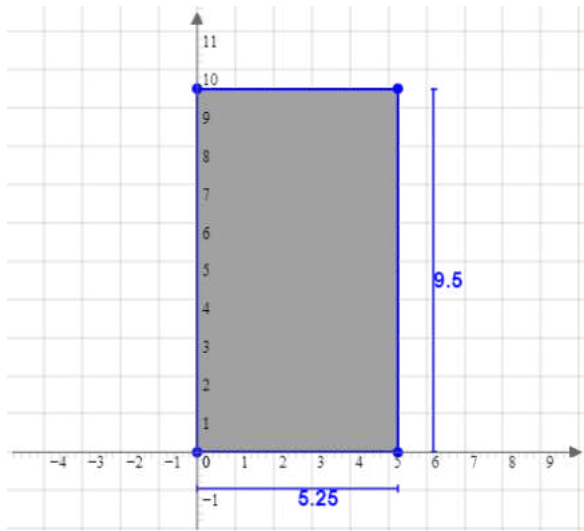
Supports

Support Type	Location
Fixed	0 ft
Fixed	12 ft

Loads

Load Type	Location	Magnitude	Load Case
Distributed Load	0 ft to 12 ft	-322.5 lb to -322.5 lb	DL
Distributed Load	0 ft to 12 ft	-215 lb to -215 lb	LL
Distributed Load	0 ft to 12 ft	-108 lb to -108 lb	WL
Distributed Load	0 ft to 12 ft	-16 lb to -16 lb	EL

Beam Section



Geometric Properties		
A	49.875	in ²
C _z	2.625	in
C _y	4.75	in

Bending Properties		
I _z	375.102	in ⁴
I _y	114.557	in ⁴

Shear Properties		
A _z	41.563	in ²
A _y	41.563	in ²

Torsion Properties		
J	299.714	in ⁴
r	4.754	in

Shape	Material	E (ksi)	v	ρ (lb/ft ³)
5-1/4x9-1/2	NDS - US West 2.1 Versa-Lam - Versa-Lam LVL Beams 2.1E 3100	2100	0.4	33.61124

FREE BODY DIAGRAM



RESULT SUMMARY

Check	Status	Limit	Ratio	Max
Deflection	PASS	L/250	0.113	L/2213
Custom Stress Limit	PASS	39 ksi	0.026	1.001 ksi

ANALYSIS RESULTS

Reactions

Support at	X	Y	Mx
0	0 lb	3294.848 lb	6.59 kip-ft
12	0 lb	3294.848 lb	-6.59 kip-ft

Force Extremes

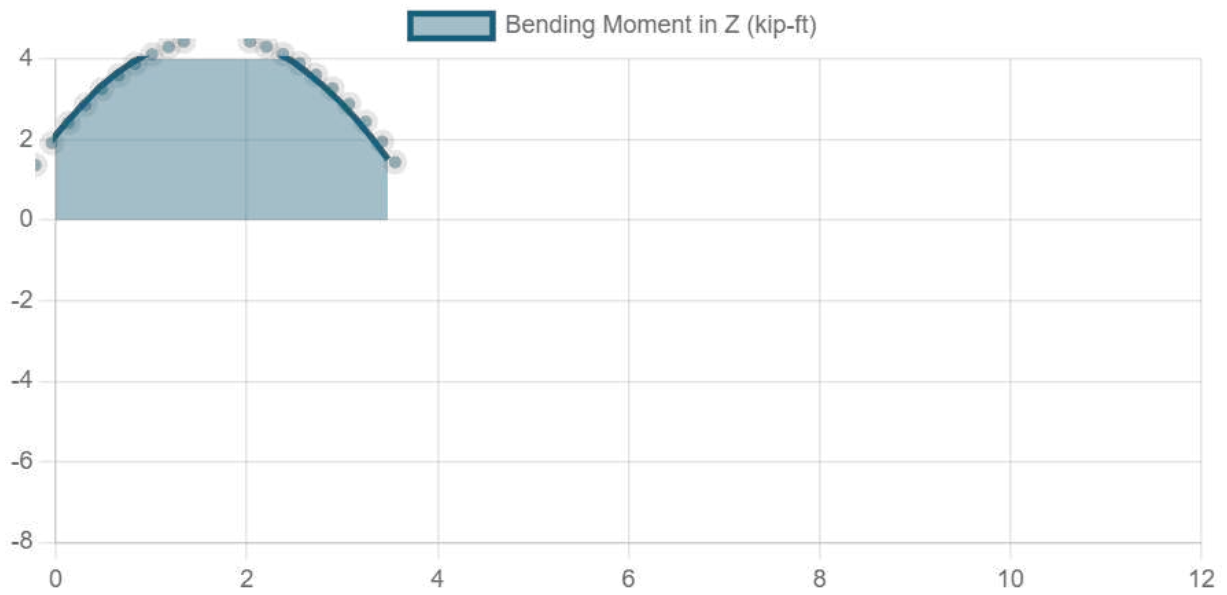
Result	Max	Min
Bending Moment	3.295 kip-ft	-6.59 kip-ft
Shear	3294.848 lb	-3294.848 lb
Displacement	0 in	-0.065 in

Stress Extremes

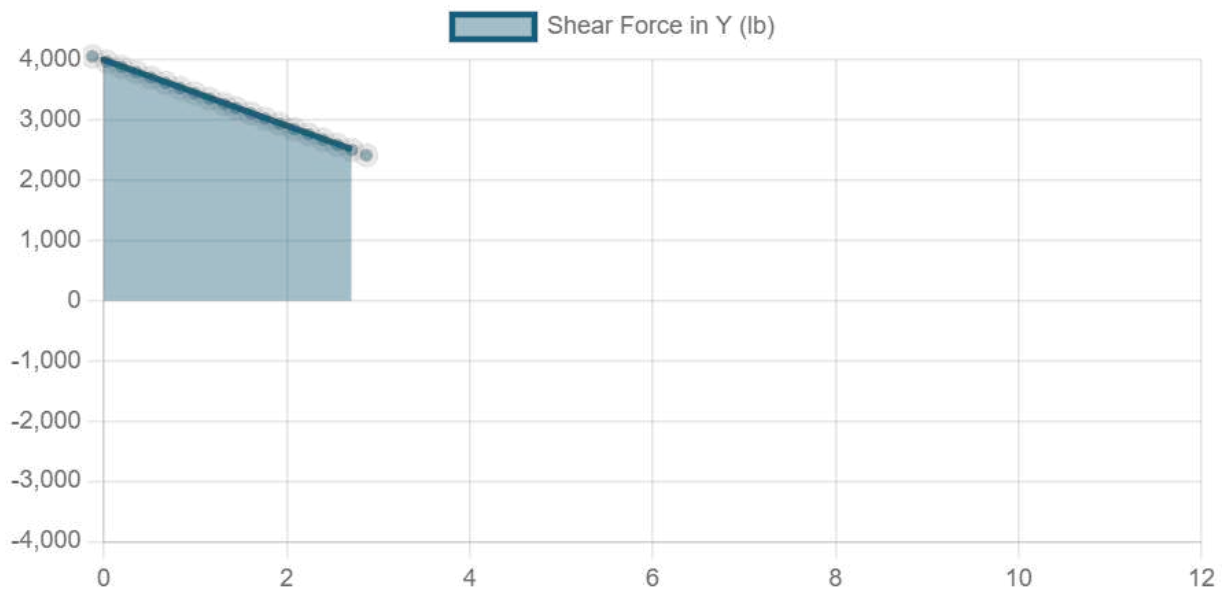
Result	Max	Min
Bending Stress	1.001 ksi	-1.001 ksi
Shear Stress Total	0.099 ksi	0 ksi
Max Combined Normal Stress	1.001 ksi	0.054 ksi
Min Combined Normal Stress	-0.054 ksi	-1.001 ksi

DIAGRAMS

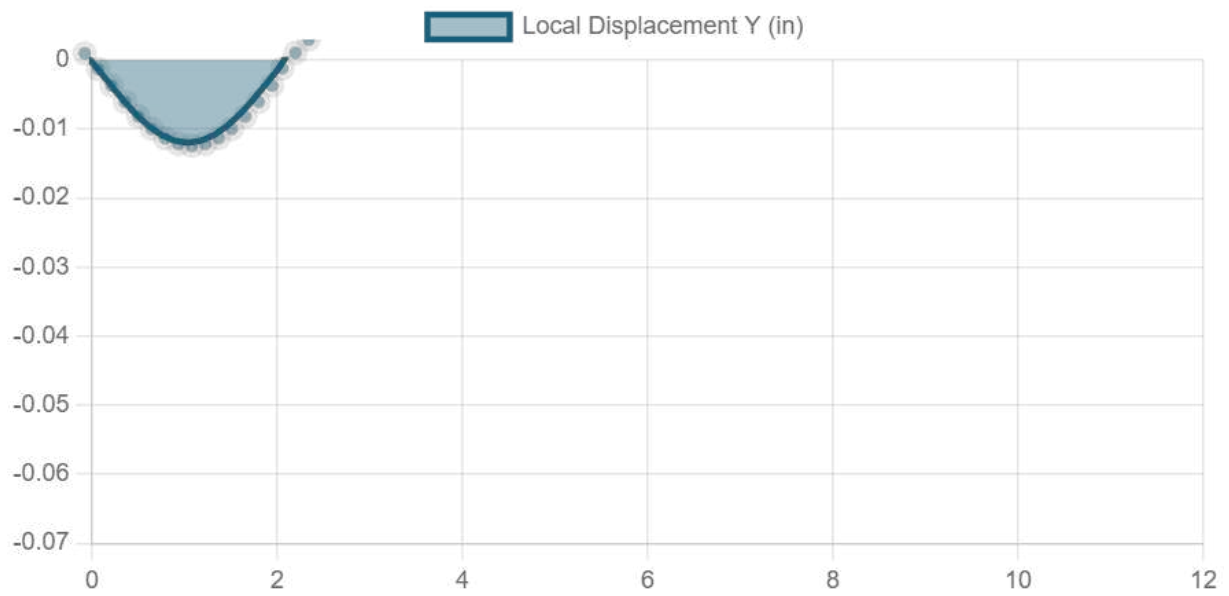
Bending Moment Diagram



Shear Force Diagram



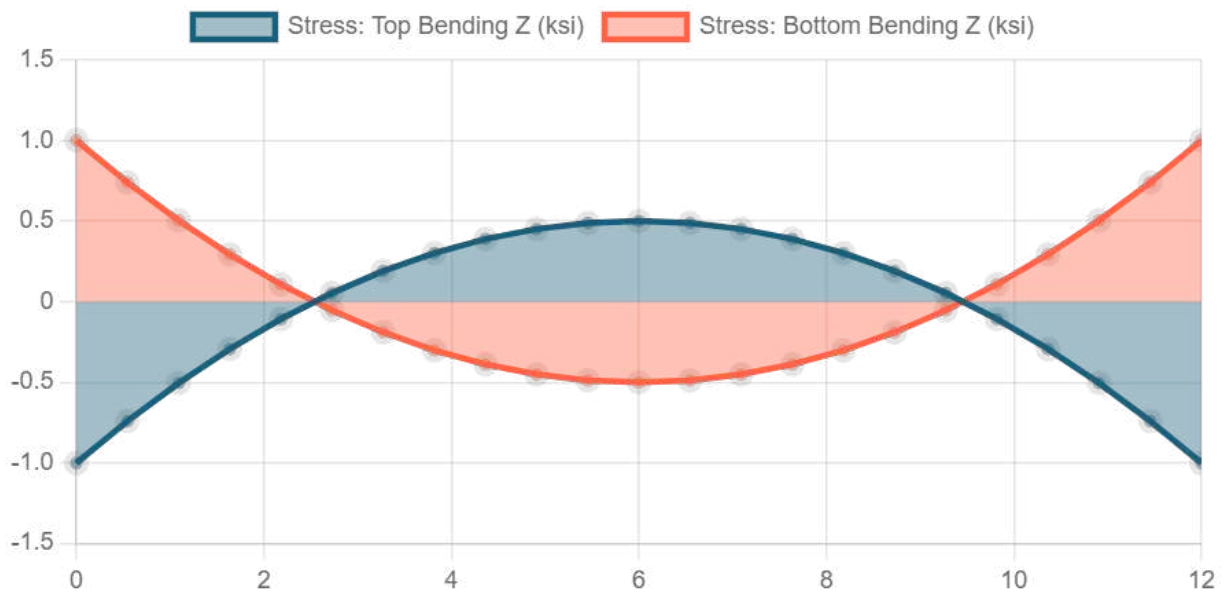
Displacement



Location (ft)	Total Deflection (in)	Span ⓘ
0	0 in	-
6	0.065 in	L/2213
12	0 in	-

ⓘ The Deflection/Span results are calculated using the analysis results and the Deflection Limit of L/250 set in the model settings.

Bending Stress



Shear Stress

