Wind Load Report - New ADU w/ Porch

1. Site & Building Data

Roof Type:	Gable
Wind Speed (ult):	110 mph
Exposure Category:	С
Enclosure Class:	Enclosed
Building Width (W):	27 ft.
Building Length (L):	33.5 ft.
Eave Height (he):	10 ft.
Foundation Height (hf):	0 ft.
Roof Pitch:	5 /12
Eave Overhang (OHe):	1 ft.
Gable Overhang (OHg):	1 ft.

2. Parameters & Coefficients

Topographic Factor (K _{zt}):	1.0
Directionality Factor (Kd):	.85
Roof Angle (θ):	22.62 deg.
Mean Roof Height (h):	12.81 ft.
Ridge Height (h _r):	15.63 ft.
Pos. Internal Pressure (+GCpi):	+0.18
Neg. Internal Pressure (-GCpi):	-0.18
Velocity Pressure Exp. Coeff. (Kh):	0.85 @ z=h
Velocity Pressure (qh):	22.35 psf
End Zone Width (a):	3.00 ft.
Zone 2/2E Dist.:	13.50 ft.

3. Design Assumptions and Notes 4. Design Loads

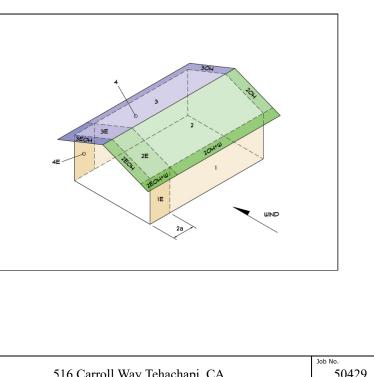
Code Standard:	ASCE 7-10
Geometry:	Regular-Shaped Bldg.
Height Class:	Low-Rise Building
Notes:	

Top Chord Dead Load:	7 psf
Bottom Chord Dead Load:	10 psf
Truss/Rafter Spacing:	24 in. o/c

4. Design Wind Pressures: MWFRS Envelope Procedure

Load C	ase A: Tra	ansverse D	irection
Surface	CCaf	Design Pre	ssure (psf)
Surface	GCpf	(w/+GCpi)	(w/ -GCpi)
1	0.54	8.00	16.04
2	-0.45	-14.18	-6.13
3	-0.47	-14.46	-6.41
4	-0.41	-13.28	-5.24
1E	0.77	13.21	21.26
2E	-0.72	-20.09	-12.05
3E	-0.65	-18.51	-10.46
4E	-0.60	-17.39	-9.34
2OH	-0.45	-10	.15
2EOH	-0.72	-16	.07
3OH	-0.47	-10	.44
3EOH	-0.65	-14	.49
20H+W	-0.45/-0.7	-25	.80
2EOH+W	-0.72/-0.7	-31	.71

a) (+) and (-) signs signify wind pressures acting toward & away from surfaces. b) External Pressure Coefficients linearly interpolated from Fig. 28.4-1 ASCE 7-10. c) Design building for all wind directions, 4 load patterns per load case. a) Total horizontal shear shall not be less than that by neglecting roof wind forces.
b) Min. wind load for enclosed or partially enclosed bldg.: 16 psf wall, 8 psf roof.
f) Design pressures are for strength design, multiply by 0.6 for ASD.



Subject Wind Loads	Customer	Location	amall Way Tabaahani CA		Job No. 50429
wind Loads	516 Carroll Way Tehachapi. CA		50429		
Engineer Name	ENGINEERING C		STRUCTURAL ENGINEERS	This report may not be copied, reproduced or distributed without the written consent of Engineering Company Inc.	Rev. -
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Surface	GCpf	Design Pressure (psf)		
	· ·	(w/+GCpi)	(w/ -GCpi)	
1	-0.45	-14.08	-6.03	
2	-0.69	-19.45	-11.40	
3	-0.37	-12.29	-4.25	
4	-0.45	-14.08	-6.03	
5	0.40	4.92	12.96	
6	-0.29	-10.50	-2.46	
1E	-0.48	-14.75	-6.71	
2E	-1.07	-27.94	-19.89	
3E	-0.53	-15.87	-7.82	
4E	-0.48	-14.75	-6.71	
5E	0.61	9.61	17.66	
6E	-0.43	-13.63	-5.59	
2OH	-0.69	-15	.42	
2EOH	-1.07	-23	.92	
3OH	-0.37	-8.	27	
3EOH	-0.53	-11	.85	
2EOH+W	-1.07/-0.7	-39	.56	
3EOH+W	-0.53/-0.7	-27	.49	

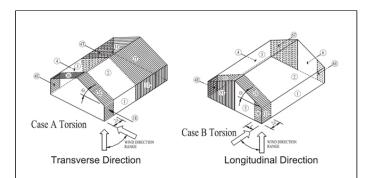
3E 1E

Torsional Load Cases Design Pressure (psf) Surface Load Case GCpf (w/+GCpi) (w/-GCpi) 1T А 2.00 4.01 -3.54 -1.53 2T А _ 3T -3.61 -1.60 А -4T А --3.32 -1.31 5T В 1.23 3.24 -6T В -2.63 -0.61 _

e) Min. wind load for enclosed or partially enclosed bldg.: 16 psf wall, 8 psf roof. f) Design pressures are for strength design, multiply by 0.6 for ASD.

 a) (+) and (-) signs signify wind pressures acting toward & away from surfaces.
 b) Pressures designated with a "T" are 25% of full design wind pressures. c) Torsional loading shall apply to all 8 load patterns using the figures shown. d) Design pressures are for strength design, multiply by 0.6 for ASD. e) Torsional Design Exceptions: One story bldg. with $h \le 30$ ft,

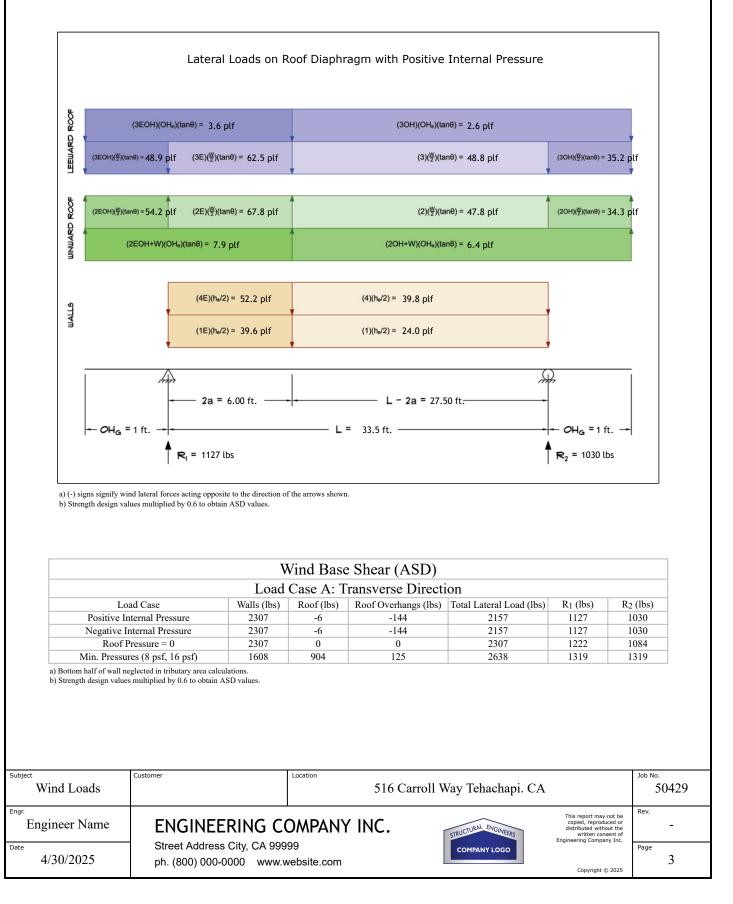
Two stories or less framed with light frame construction, Two stories or less with flexible diaphragms.



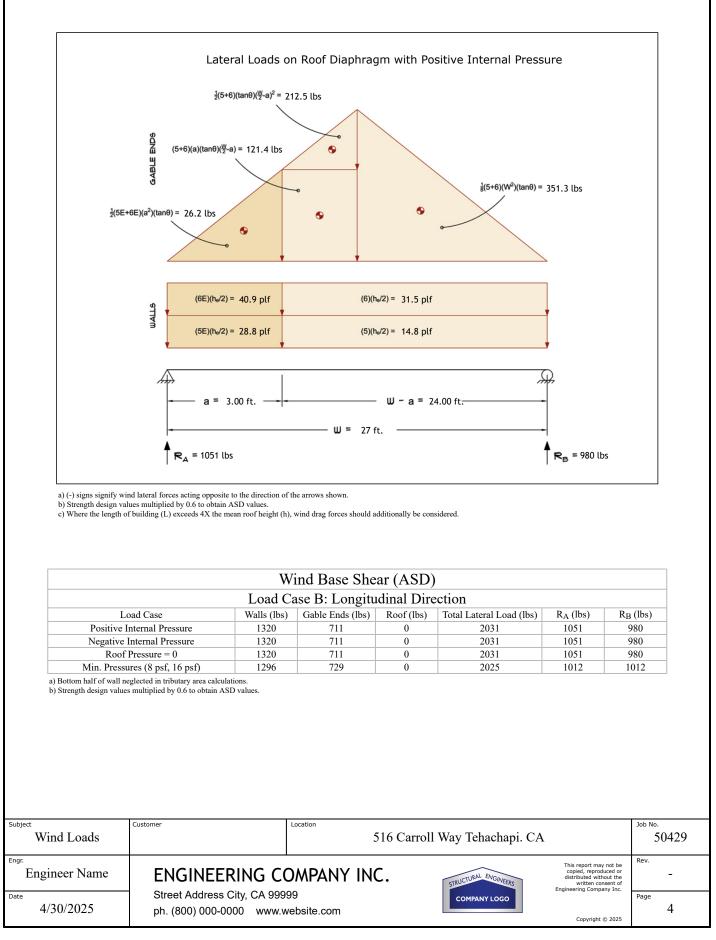
Subject	Customer	Location			Job No.	
Wind Loads		516	Carroll Way Tehachapi. CA		50	9429
Engineer Name	ENGINEERING CO		STRUCTURAL ENGINEERS	This report may not be copied, reproduced or distributed without the written consent of Engineering Company Inc.	Rev.	-
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5. Wind Load Calculations

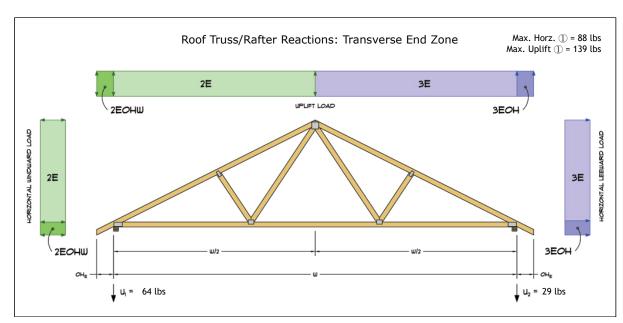
1.) Lateral Loads - Transverse Direction:



2.) Lateral Loads - Longitudinal Direction:



3.) Roof Truss Reactions:



a) Strength design values multiplied by 0.6 to obtain ASD values.

b) Windward loads may be positive or negative depending on pitch of roof.

Roof Truss/Rafter Reactions (ASD)							
w/ Positive Internal Pressure							
Load Case Horizontal Load (lbs) Gross Uplift (lbs) Net Uplift (lbs) U1 (lbs) U2 (lbs)							
Transverse Int. Zone	6	507	-81	-32	-49		
Transverse End Zone	19	681	93	64	29		
Longitudinal Int. Zone	52	543	-45	11	-56		
Longitudinal End Zone	88	753	165	139	26		

a) Gross Uplift calculations do not include any counteracting roof dead loads.

b) Net Uplift calculations include counteracting roof dead loads multiplied by 0.6 per load case (7) ASCE 7-10.
 c) Strength design values multiplied by 0.6 to obtain ASD values for wind loads.
 d) Loads based on truss spacing calculated at 24" o/c.

e) Negative values for horizontal load indicate load acting in windward direction (tranverse load cases).

f) Negative values for uplift indicate net downward force (zero uplift).

*Disclaimer: The calculations produced herein are for initial design and estimating purposes only. The calculations and drawings presented do not constitute a fully engineered design. All of the potential load cases required to fully design an actual structure may not be provided by this calculator. For the design of an actual structure, a registered and licensed professional should be consulted as per IRC 2012 Sec. R802.10.2 and designed according to the minimum requirements of ASCE 7-10. The wind load calculations provided by this online tool are for educational and illustrative purposes only. Medeek Design assumes no liability or loss for any designs presented and does not guarantee fitness for use.

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