Wind Load Report

1. Site & Building Data

Roof Type:	Gable
Wind Speed (ult):	115 mph
Exposure Category:	C
Enclosure Class:	Enclosed
Building Width (W):	80 ft.
Building Length (L):	80 ft.
Eave Height (h_e):	18 ft.
Foundation Height (h_f):	0 ft.
Roof Pitch:	4 /12
Eave Overhang (OH_e):	2 ft.
Gable Overhang (OH_g):	2 ft.

2. Parameters & Coefficients

Topographic Factor (K_{zt}):	1.0
Directionality Factor (K_d):	.85
Roof Angle (θ):	18.43 deg.
Mean Roof Height (h):	24.67 ft.
Ridge Height (h_r):	31.33 ft.
Pos. Internal Pressure (+GCpi):	+0.18
Neg. Internal Pressure (-GCpi):	-0.18
Velocity Pressure Exp. Coeff. (K_h):	0.94 @ z=h
Velocity Pressure (q_h):	27.13 psf
End Zone Width (a):	3.00 ft.
Zone 2/2E Dist.:	40.00 ft.

3. Design Assumptions and Notes

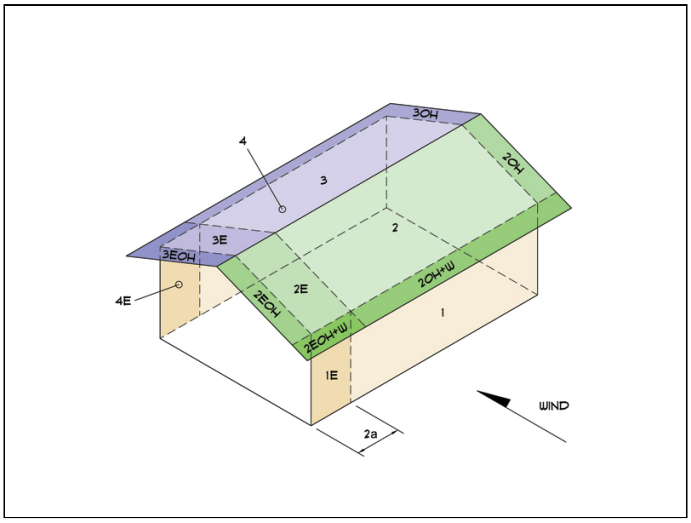
Code Standard:	ASCE 7-10
Geometry:	Regular-Shaped Bldg.
Height Class:	Low-Rise Building
Notes:	

4. Design Loads

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 Case A: Transverse Direction			
Surface	GCpf	Design Pressure (psf)	
		(w/ +GCpi)	(w/ -GCpi)
1	0.52	9.13	18.89
2	-0.69	-23.60	-13.83
3	-0.47	-17.59	-7.83
4	-0.42	-16.15	-6.39
1E	0.78	16.28	26.05
2E	-1.07	-33.91	-24.14
3E	-0.67	-23.15	-13.38
4E	-0.62	-21.65	-11.88
2OH	-0.69	-18.72	
2EOH	-1.07	-29.02	
3OH	-0.47	-12.71	
3EOH	-0.67	-18.26	
2OH+W	-0.69/-0.7	-36.49	
2EOH+W	-1.07/-0.7	-46.79	



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.
d) Total horizontal shear shall not be less than that by neglecting roof wind forces.
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.

Subject: Wind Loads	Customer:	Location:	Job No.: 2026D56
Engr.: Engineer Name	ENGINEERING COMPANY INC. Street Address City, CA 99999 ph. (800) 000-0000 www.website.com		Rev.: -
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Load Case B: Longitudinal Direction			
Surface	GCpf	Design Pressure (psf)	
		(w/ +GCpi)	(w/ -GCpi)
1	-0.45	-17.09	-7.32
2	-0.69	-23.60	-13.83
3	-0.37	-14.92	-5.15
4	-0.45	-17.09	-7.32
5	0.40	5.97	15.73
6	-0.29	-12.75	-2.98
1E	-0.48	-17.90	-8.14
2E	-1.07	-33.91	-24.14
3E	-0.53	-19.26	-9.49
4E	-0.48	-17.90	-8.14
5E	0.61	11.66	21.43
6E	-0.43	-16.55	-6.78
2OH	-0.69	-18.72	
2EOH	-1.07	-29.02	
3OH	-0.37	-10.04	
3EOH	-0.53	-14.38	
2EOH+W	-1.07/-0.7	-48.01	
3EOH+W	-0.53/-0.7	-33.36	

a) (+) and (-) signs signify wind pressures acting toward & away from surfaces.
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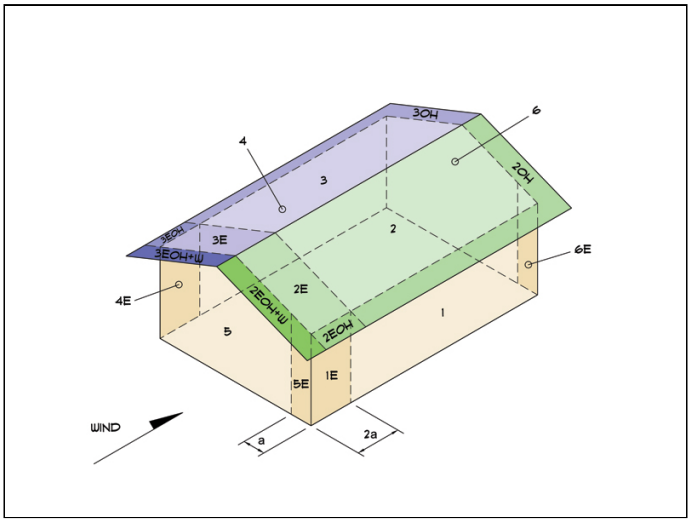
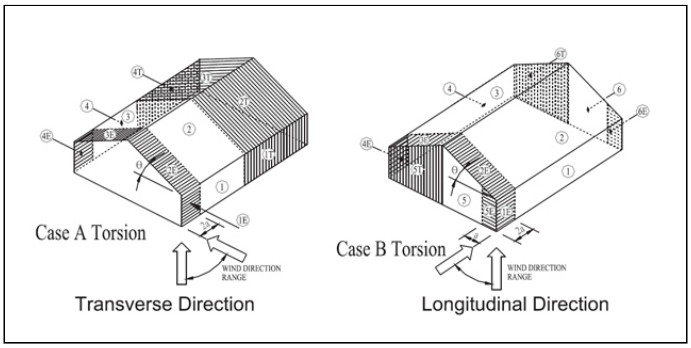


Torsional Load Cases				
Surface	Load Case	GCpf	Design Pressure (psf)	
			(w/ +GCpi)	(w/ -GCpi)
1T	A	-	2.28	4.72
2T	A	-	-5.90	-3.46
3T	A	-	-4.40	-1.96
4T	A	-	-4.04	-1.60
5T	B	-	1.49	3.93
6T	B	-	-3.19	-0.75

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 ≤ 30 ft,
Two stories or less framed with light frame construction,
Two stories or less with flexible diaphragms.



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Engineer Name	Street Address City, CA 99999		-
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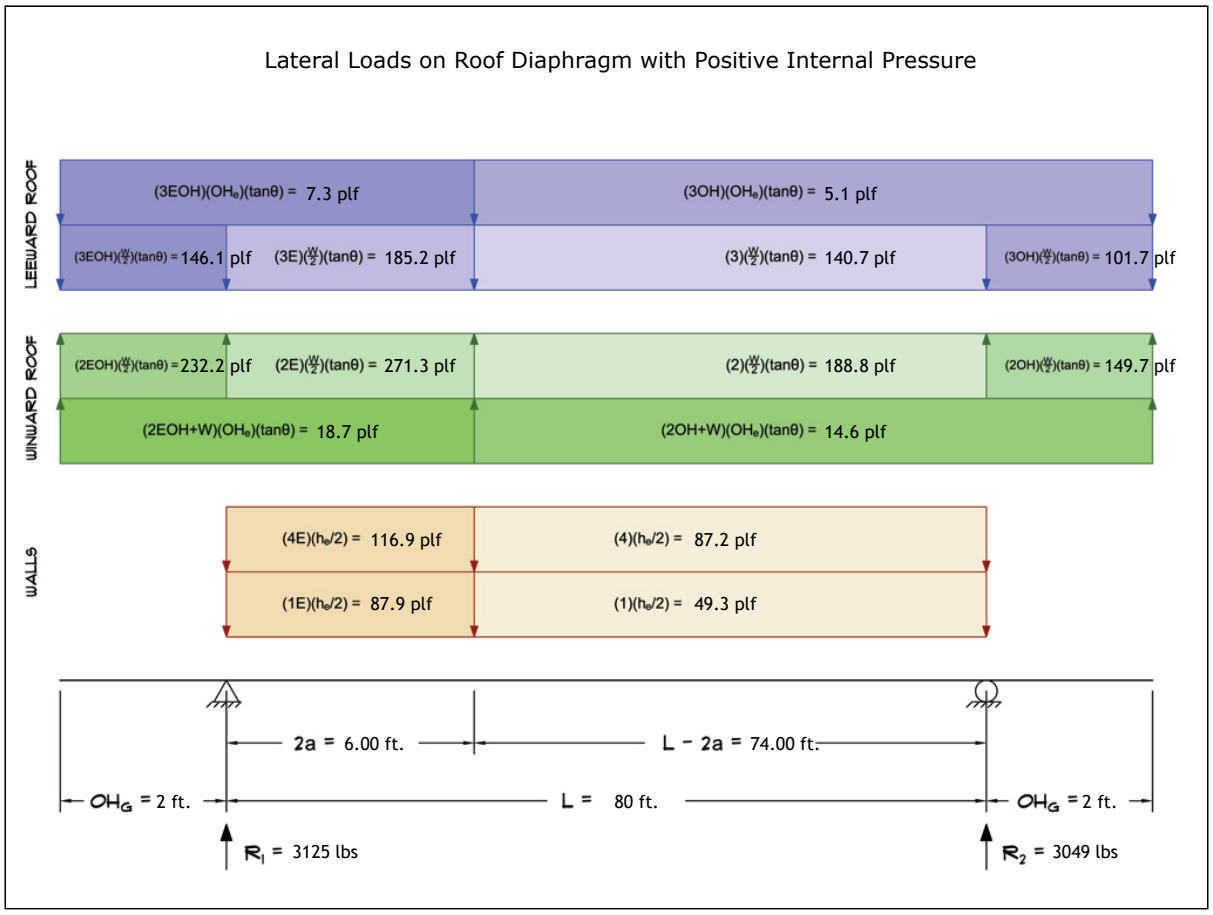
5. Wind Load Calculations

1.) Lateral Loads - Transverse Direction:

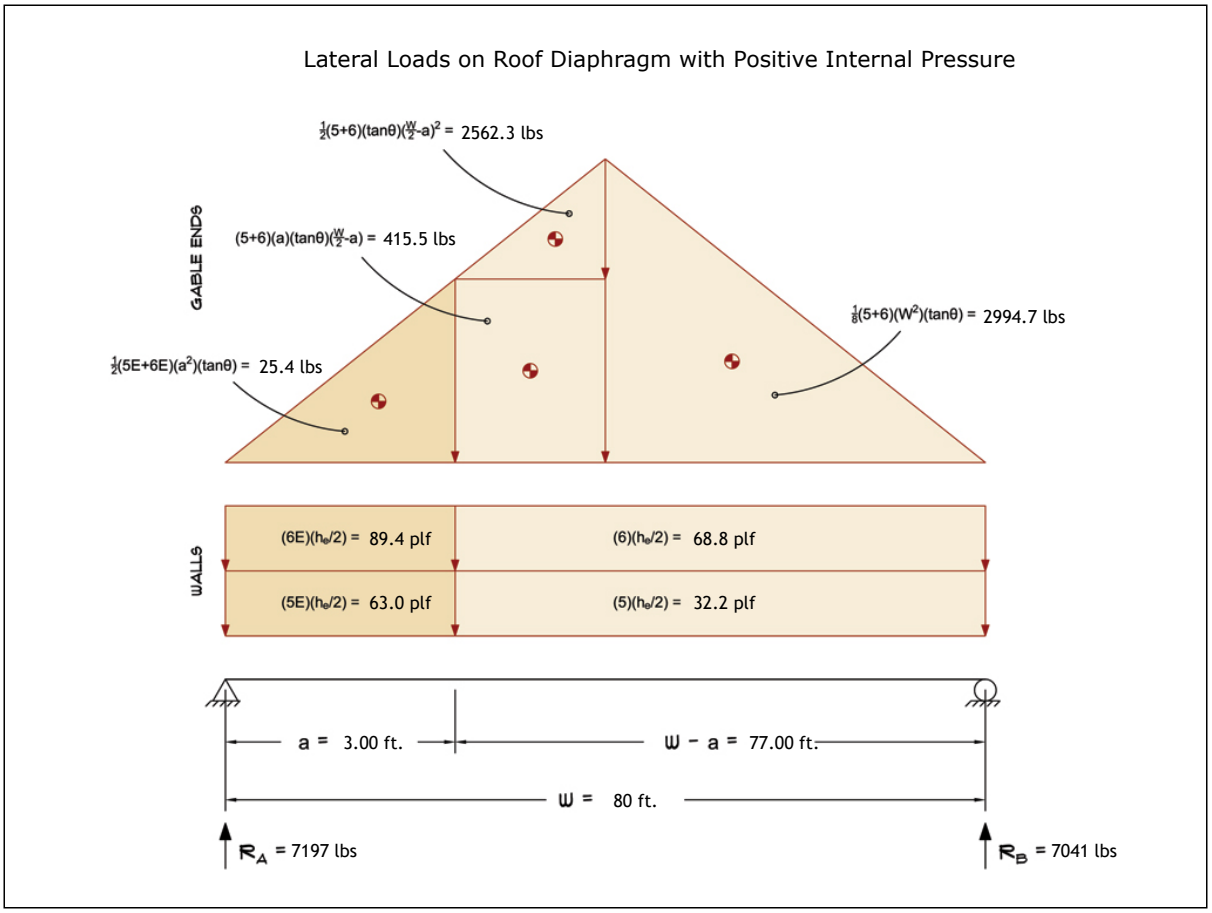


a) (-) signs signify wind lateral forces acting opposite to the direction of the arrows shown.
b) Strength design values multiplied by 0.6 to obtain ASD values.

Wind Base Shear (ASD)						
Load Case A: Transverse Direction						
Load Case	Walls (lbs)	Roof (lbs)	Roof Overhangs (lbs)	Total Lateral Load (lbs)	R_1 (lbs)	R_2 (lbs)
Positive Internal Pressure	11329	-4073	-1082	6174	3125	3049
Negative Internal Pressure	11329	-4073	-1082	6174	3125	3049
Roof Pressure = 0	11329	0	0	11329	5854	5475
Min. Pressures (8 psf, 16 psf)	6912	5120	525	12557	6278	6278

a) Bottom half of wall neglected in tributary area calculations.
b) Strength design values multiplied by 0.6 to obtain ASD values.

2.) Lateral Loads - Longitudinal Direction:

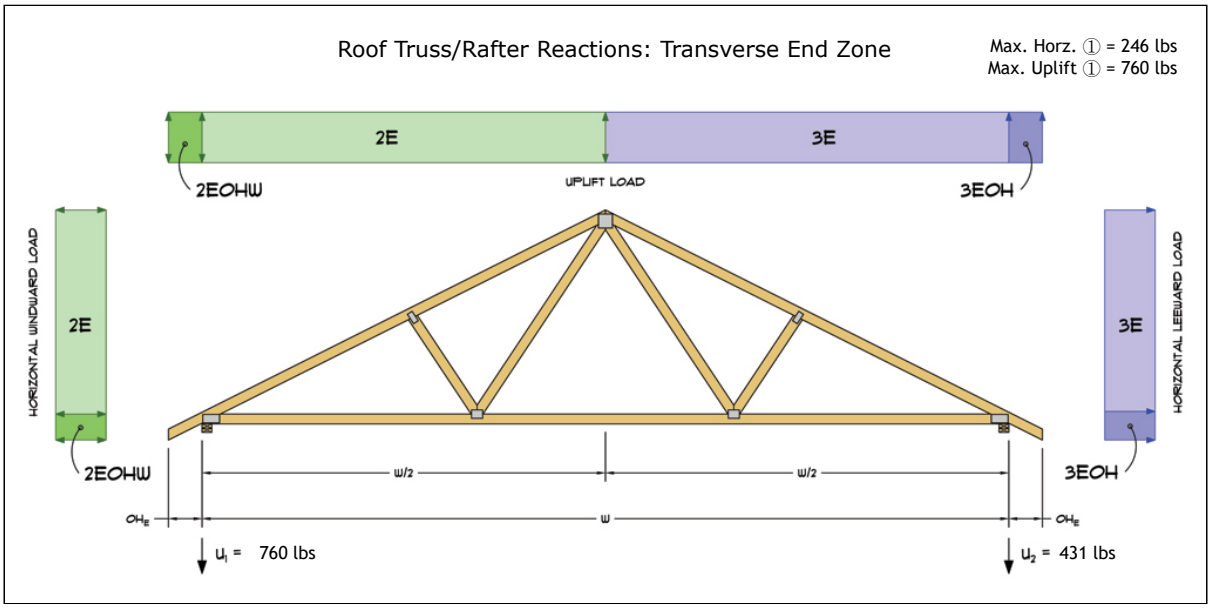


a) (-) signs signify wind lateral forces acting opposite to the direction of the arrows shown.
b) Strength design values multiplied by 0.6 to obtain ASD values.
c) Where the length of building (L) exceeds 4X the mean roof height (h), wind drag forces should additionally be considered.

Wind Base Shear (ASD)						
Load Case B: Longitudinal Direction						
Load Case	Walls (lbs)	Gable Ends (lbs)	Roof (lbs)	Total Lateral Load (lbs)	R_A (lbs)	R_B (lbs)
Positive Internal Pressure	8239	5998	0	14237	7197	7041
Negative Internal Pressure	8239	5998	0	14237	7197	7041
Roof Pressure = 0	8239	5998	0	14237	7197	7041
Min. Pressures (8 psf, 16 psf)	6912	5120	0	12032	6016	6016

a) Bottom half of wall neglected in tributary area calculations.
b) Strength design values multiplied by 0.6 to obtain ASD values.

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)	U_1 (lbs)	U_2 (lbs)
Transverse Int. Zone	115	2095	391	297	94
Transverse End Zone	195	2895	1191	760	431
Longitudinal Int. Zone	146	1918	214	222	-8
Longitudinal End Zone	246	2656	952	670	282

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).