Job#: **2015-002**

WIND (MWFRS)

Wind Analysis Method	Analytic Directional Procedure		ASCE 7-10 Fig. 27.4-1
Basic Wind Speed (ultimate)	155.00 MPH		
Topography Factor	Kzt = 1.00		ASCE 7-10 Fig. 26.8-1
Directionality Factor	Kd = 0.85		ASCE 7-10 Fig. 26.6-1
Gust Effect Factor	G = 0.85		ASCE 7-10 Sec. 26.9.1
Internal Pressure Coefficients	(GCpi) = 0.18	-0.18	ASCE 7-10 Table 26.11-1
Roof Pitch	6.00 :12		26.57 DEG
Roof Eve Height	11.000 FT		
Peak Roof Height	17.875 FT		α = 9.5
Mean Roof Height	14.438 FT		zg = 900
Terrain Exp. Category	C		

Velocity Pressures $q_z = .00256 K_z K_{zt} K_d V^2$

Height (ft)			Kz	qz	
he =	11.00	FT	0.849	44.38	
h =	14.44	FT	0.849	**44.38**	
z =	15	FT	0.849	44.38	L = Parallel to wind dir.
z =	20	FT	0.902	47.15	B = Perp. to wind dir.
z =	25	FT	0.945	49.42	
z =	30	FT	0.982	51.35	

Design Pressures $p = qGC_p - q_h(GC_{pi})$

Transverse Direction: Note: Pressures are limit state design pressures for strength design. Multiple by 0.6 for ASD.

L = 57 L/B = 1.14

B = 50 h/L = 0.25

	z (ft)	qz (psf)	Cp	qGCp	Design Pressure (psf) (+GCpi)	(-GCpi)
Windward Wall	15	44.38	0.80	30.18	**22.19**	**38.17**
	20	47.15	0.80	32.06	**24.07**	**40.05**
	25	49.42	0.80	33.60	**25.62**	**41.59**
	30	51.35	0.80	34.92	**26.93**	**42.91**
Leeward Wall	14.44	44.38	-0.47	-17.80	**-25.79**	**-9.82**
Side Wall	14.44	44.38	-0.70	-26.41	**-34.39**	**-18.42**
Windward Roof (Positive)	14.44	44.38	0.30	11.27	**3.28**	**19.25**
Windward Roof (Negative)	14.44	44.38	-0.20	-7.58	**-15.57**	**0.41**
Leeward Roof	14.44	44.38	-0.60	-22.63	**-30.62**	**-14.64**
Ridge Parallel Roof	(0 to h/2)	44.38	-0.90	-33.95	**-41.94**	**-25.96**
	(h/2 to h)	44.38	-0.90	-33.95	**-41.94**	**-25.96**
	(h to 2h)	44.38	-0.50	-18.86	**-26.85**	**-10.87**
	(>h2)	44.38	-0.30	-11.32	**-19.30**	**-3.33**

Longitudinal Direction: Note: Pressures are limit state design pressures for strength design. Multiple by 0.6 for ASD.

L = 50 L/B = 0.88

B = 57 h/L = 0.29

	z (ft)	qz (psf)	Cp	qGCp	Design Pressure (psf) (+GCpi)	(-GCpi)
Windward Wall	15	44.38	0.80	30.18	**22.19**	**38.17**
	20	47.15	0.80	32.06	**24.07**	**40.05**
	25	49.42	0.80	33.60	**25.62**	**41.59**
	30	51.35	0.80	34.92	**26.93**	**42.91**
Leeward Wall	14.44	44.38	-0.50	-18.86	**-26.85**	**-10.87**
Side Wall	14.44	44.38	-0.70	-26.41	**-34.39**	**-18.42**
Windward Roof (Positive)	14.44	44.38	0.28	10.73	**2.74**	**18.72**
Windward Roof (Negative)	14.44	44.38	-0.21	-7.95	**-15.93**	**0.04**
Leeward Roof	14.44	44.38	-0.60	-22.63	**-30.62**	**-14.64**
Ridge Parallel Roof	(0 to h/2)	44.38	-0.90	-33.95	**-41.94**	**-25.96**
	(h/2 to h)	44.38	-0.90	-33.95	**-41.94**	**-25.96**
	(h to 2h)	44.38	-0.50	-18.86	**-26.85**	**-10.87**
	(>h2)	44.38	-0.30	-11.32	**-19.30**	**-3.33**

Overhangs:	z (ft)	qz (psf)	Cp	qGCp	$p = qGC_p$
Windward Overhang	11.000	44.38	0.80	**30.18**	