Yurt Analysis Summary

Project Reference: Full Snow and Wind Yurt
Diameters: 16', 20', 24', 27' & 30'

To Whom It May Concern:

We are providing this letter to summarize the results of the analysis of the Full Snow and Wind Yurt with various diameters.

Referring to the truncated structural calculations, appended with this letter, the aforementioned yurts have been found to be capable of supporting the following design loads while meeting the requirements of the 2003 through the 2015 International Building Codes (IBC 2003 - 2015) and the 2002 through the 2010 American Society of Civil Engineers – Minimum Design Loads for Buildings and Other Structures (ASCE 7-02, 7-05, 7-10).

Design Loads:

- Occupancy or Risk Category = II
- Design Wind Speed, V_{ULT}= 115 mph (V_{ASD}= 90 mph) Exposure C
    - Using Simplified or Directional Design Method (values based on worst case design of 30' Diameter Yurt):
        - Maximum Average Roof Suction = -19.96 psf/-14.57 (WW/LW acting away from surface)
        - Maximum Average Roof Pressure = 0.57 psf (acting towards surface)
        - Maximum Wall Suction = -5.17 psf (acting away from surface)
        - Maximum Wall Pressure = 18.16 psf (acting towards surface)

Standard Features of Engineered Full Snow and Wind Yurts:

- 3/16" Galvanized Aircraft Cable with a 4,200 pound Break Strength.
- 2x6 (2100 F_b-1.8E MSR) Roof Rafters
- 2x4 (2100 F_b-1.8E MSR) Wall Studs
- (2) 2x4 Douglas Fir Compression Ring
- CORR Brackets attached to Compression Ring

Snow Load Summary Table for Full Snow and Wind Yurts		
Yurt Diameter	Number of Rafters (2100 F_b-1.8E MSR)	Maximum Sloped Roof Snow Load[1,2]
30'	48	45 psf
27'	45	65 psf
24'	42	80 psf
20'	36	100 psf
16'	28	115 psf

Notes:

1. Per ASCE 7, "snow loads acting on a sloping surface shall be assumed to act on the horizontal projection of that surface."
2. Equivalent ground snow loads may be reverse calculated from the equations given in ASCE 7.

A full set of stamped calculations and/or drawings are available upon request.