

February 22, 2024

Mr. Karey Vawter
Diamond Communications LLC
210 Mountain Ave, Unit 619
Springfield, NJ 07081

RE: 150' Monopole for WI047 MRK Trail, WI (Sabre #23-1396-R1)

Dear Mr. Vawter,

Upon receipt of order, we propose to design and supply the above-referenced monopole for an Ultimate Wind Speed of 107 mph without ice and 40 mph with 1.5" ice, Structure Class II, Exposure Category C, and Topographic Category 1, in accordance with the Telecommunications Industry Association Standard ANSI/TIA-222-G, "Structural Standard for Antenna-Supporting Structures and Antennas and Small Wind Turbine Support Structures".

When designed according to this standard, the wind pressures and steel strength capacities include several safety factors. Therefore, it is highly unlikely that the monopole will fail structurally in a wind event where the design wind speed is exceeded within the range of the built-in safety factors.

Should the wind speed increase beyond the capacity of the built-in safety factors, to the point of failure of one or more structural elements, the most likely location of the failure would be within the monopole shaft, above the base plate. Assuming that the wind pressure profile is similar to that used to design the monopole, the monopole will buckle at the location of the highest combined stress ratio within the monopole shaft. This is likely to result in the portion of the monopole above leaning over and remaining in a permanently deformed condition. *Please note that this letter only applies to the above-referenced monopole designed and manufactured by Sabre Industries.* This would effectively result in a fall radius less than or equal to 50 feet.

Sincerely,

Amy R. Herbst, P.E.
Senior Design Engineer

