

June 1, 2020

Motorola Inc.

Attn: Robbie Willoughby

SUBJECT: Valmont File # 474445
Model V-35.0 X 350' Self Supporting Tower
Site Name: Chatham LF, NC

Thank you for your inquiry concerning tower design codes and practices as they relate to your requested tower designs.

Valmont Structures has been designing and building guyed and self-supporting towers and monopoles since the early 1950's. During this time, we have sold thousands of towers ranging in height from as little as 50' high to in excess of 1400'. These towers were individually engineered to accommodate the loading requirements imparted by the design wind speed, ice considerations, antenna loading, and other factors dictated by the national code requirements existing at the time the tower was built.

The ANSI/TIA-222-G-05 offers guidelines to help assure that the tower, structure, and its foundations are designed to meet the most realistic conditions for local weather while assuring that the tower is designed to stringent factors of safety. This tower is designed to 122 MPH (no ice) and 30 MPH (3/4" ice) per ANSI/TIA-222-G with Class III, Topographical category 1, Exposure criteria B and a Crest height of 0 feet.

We are aware of few documented instances of a self supporting tower or monopole failure. Self supporting towers and monopoles can be designed such that the most common mode of failure is in the upper middle region of the tower, with the upper portion of the tower remaining connected and "bending and bowing over" against the base of the tower or pole. The fact that the wind is normally greater on the upper portion of the structure contributes to the likelihood of this type of failure. This particular Tower has a theoretical failure at the tower midpoint or above. The predicted mode of wind induced failure would be a buckling of the tower legs at or above the tower midpoint with the top sections of the tower folding over on to the intact base sections. This would then affect a "zero fall zone" at ground level.

Including myself, our communications engineering sites have five licensed Professional Engineers covering a total of 48 states. Valmont Structures is an AISC approved shop. All Valmont Structures welders are AWS and CWB qualified. Our total design, engineer and build process has been quality audited by our customers including public utilities, telephone companies, government agencies, and of course AISC.

We trust the above and the attached will be helpful to you. If you should need anything else, please let us know at your convenience.

Sincerely,

William R. Heiden



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