

December 15, 2022

Tom Lennon
Industrial Communications
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Tower Engineering Professionals
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Subject: Fall Zone Letter

Carrier Designation: **AT&T Mobility Co-Locate**
Carrier Site Number: MA1883
Carrier Site Name: Westport
FA Number: 1314010

Client Designation: **Site Number:** N/A
Site Name: Wareham

Engineering Firm Designation: **TEP Project Number:** 75332.797322

Site Data: **25 Brown Street, Wareham, Plymouth County, MA 02571**
Latitude 41° 45' 11.70", Longitude -70° 43' 57.00"
150± Foot - Self-Support Tower w/ Proposed 10-ft Extension

Dear Tom Lennon,

Tower Engineering Professionals is pleased to submit this Fall Zone Letter.

Failure of self-support towers such as this one is extremely rare. Generally, when properly constructed and maintained, one must be subjected to a direct tornado hit for failure to occur. The most recent *design* wind speed was 149-mph ultimate 3-sec gust (converts to 115-mph nominal 3-sec gust) based on the use of Risk Category III. Based on the reserve capacity of the tower, this meets and exceeds the Massachusetts State Building Code, 9th Edition design requirements. Factors of safety inherent in the original tower design and subsequent 10-ft extension design result in the *survival, failure or collapse* wind speed being much greater than the *design* wind speed. As such, the specifications for this tower are conservative.

It's our understanding that the referenced tower requires consideration of a contained fall radius in the event a catastrophic wind speed were to result in a failure. Although this tower was not designed to fail, stronger sections than required by analysis exist in the lower sections of the tower which increases the safety factor in these sections. In the event of a catastrophic wind, this would enable the tower to fall through a combination of bending and buckling in the upper section of the tower, essentially folding over the lower sections, resulting in a fall zone radius no greater than 2/3 the overall tower height, or 107-ft. Based on our experience, this is a reasonable assumption.

We at Tower Engineering Professionals appreciate the opportunity of providing our continuing professional services to you and Industrial Communications. If you have any questions or need further assistance on this or any other projects please give us a call.

Respectfully submitted by:

Ronald E. Glover, P.E., S.E.



12/15/2022