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November 16, 2021

Mr. Cutter Gale
Gale Communities
400 SW Longview Blvd, Ste 109
Lee's Summit, MO 64081

RE: Review of Water Tower Structure
Longview Farm Tank
499 Southwest Tower Park Drive
Lee's Summit, Missouri

Dear Cutter:

Per your request, we visited the above referenced building on Friday, November 5, 2021. The purpose of our visit was to review the structural condition of an existing 100+ year-old water tower structure and determine the impact of adding antennas at the lower base of the water tank. In summary, we feel the additional antennas produce negligible additional load to the water tower and the water tower is structurally sound in its present condition.

The water tower structure at Longview Farms was construction in 1914. The tower structure is constructed of structural steel with concrete foundations. The steel water tank has a diameter of 16'-0" with an approximate top tank height of 100' +/- and a bottom tank height of 50' +/-. Each side of the tank is framed with two rows of angled X-bracing. The four corner columns have a 25' by 25' column layout. The two rows of X-bracing extend 30' and 60' above ground respectively. The following is a summary of member sizes observed at the tower:

Column – 2 - C12x25 +/- Channels bolted to ½" x 14" continuous interior plates with 2"x$^{3}/_{8}$" strut exterior plates bolted to the opposite face.

X-Braces – $^{13}/_{16}$" by $^{13}/_{16}$" solid steel bars

Evaluation of the water tower indicated a conservatively designed water tower structural steel framework which had adequate structural capacity to support water tower loadings in addition to the existing and future antennas supported at the lower base of the water tower with reserve capacity available. It should be noted that this tower presently does not support the approximately 25,000lbs water loads previously supported when this was a functioning water tower. Our review was limited to the structural steel framework only due to foundations being underground and not visible for review; however, based upon the 2-1¼" diameter and 1$^{3}/_{4}$" anchor bolts observed at the steel base structure, we feel the foundation is probably more than adequate for this building.

The 09/08/2021 report by Tower Engineering Professionals, Inc. of Raleigh, North Carolina, stated the need for wire brush cleaning and re-painting of past corrosion on the steel frame along with the cleaning of all vegetation from the tower structural elements. We concur with the recommendations of their report and believe those recommendations will be needed to extend the service life of the tower.

In summary, we feel the additional antennas produce negligible additional load to the water tower and the water tower is structurally sound in its present condition.

Please feel free to call if you have any questions.

Sincerely,
BOB D. CAMPBELL & CO., INC.
Structural Engineers

Michael J. Falbe, P.E., President

MJF/js

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