



September 6, 2023

Evan Thibodeau
Qualtek Wireless
16 Esquire Road
North Billerica, MA 01862

Re: Modification Inspection Report
623 Pine Street
Bridgeport, CT 06605
Site ID: CT1382S (Bridgeport, CT)
KM Project No. 230807.00

Dear Mr. Thibodeau,

Per your request, Qualtek Wireless employed KM Consulting Engineers, Inc. (KMCE) to inspect designed reinforcement work on a three-leg self-support telecommunications tower at the above-mentioned site. Reinforcement was designed by KMCE, detailed in construction drawings (CD's) dated 2/16/23 for SAI Group and proposed installations for the wireless carrier, AT&T, that is co-located on the tower. Reinforcement of the tower was needed for the proposed AT&T loading after a structural analysis done by KMCE dated 2/7/23. Reinforcement was designed in a passing structural analysis was done by KMCE, in a report dated 2/16/23. Structural analyses were done for the client SAI Group.

Qualtek Wireless was used to coordinate the reinforcement installation from the CD's. Qualtek Wireless in turn hired the subcontractor Construction Services of Branford (CSB) to do the installation work and requested KMCE to inspect and approve that the work is installed as was designed for. KMCE used IMTL (Independent Materials Testing Laboratories, Inc.) to conduct the inspection of the reinforcement installation on the tower.

Reinforcement of the tower based on the CD's and structural analysis report involved replacing bolts for the diagonals from 25' to 65' AGL with larger sized bolts, and replacing bolts for the horizontals at 25' AGL with larger sized bolts. At the start of the work CSB found that the horizontals to be reinforced had (2) 3/4" A325 bolts instead of (1) 3/4" bolts at each end of the horizontals like had been analyzed as overstressed. CSB documented and informed Qualtek Wireless of this finding and this was passed along to KMCE. KMCE checked if the structural analysis of the tower with the proposed installation and the other reinforcement installed would be passing with this correction for the bolts for the horizontals at this elevation. It was verified the existing (2) bolts were structurally passing and the bolts did not have to be replaced, as communicated in emails with Qualtek Wireless.

KMCE specified for the replaced high strength A325 bolts be pretensioned using turn-of-nut pretensioning as per the 2014 RCSC *Specification for Structural Joints Using High-Strength Bolts* in the 2017 AISC Steel Construction Manual, 15th Edition. CSB commenced work on 8/10/23 as communicated by Qualtek Wireless, doing prep work before the pretensioning of the bolts being done and inspected. The inspection company, IMTL, arrived the next day, 8/11/23,



to inspect and verify the bolts were being installed satisfactorily per the turn-of-nut pretensioning. Their inspection was detailed in an inspection report dated 8/15/23 (Project No. 5988). Installation work was continued the next week and finished and inspected as installed satisfactorily on 8/14/23, as communicated to KMCE.

During the installation work CSB noted other connection bolts on the tower outside of the reinforcement work were loose and/or missing PAL locking nuts. This was relayed to Qualtek Wireless and then discussed with KMCE. CSB stated the loose bolts were on bracing members and leg flanges. They also stated many of the bolts were missing locking PAL nuts and that almost any bolt they encountered missing the PAL nut appeared to be loose, and estimated roughly at least 100 or more such loose bolts. Information was relayed to IMTL to try and verify this condition and roughly the extent of this issue. However the issue was only reiterated verbally to IMTL by the subcontractor and further information or documentation was not provided by any party. Qualtek Wireless asked for KMCE on how to proceed with this issue noted.

The issue was brought up to the tower owner who worked on physical installations and work on the tower. In email communications with KMCE he had knowledge that PAL nuts were installed on the tower and had not noticed fallen PAL nuts on the building at the base of the tower, and had no other similar reports of this issue before.


Based on the information provided and inspection report, it is our professional opinion that the reinforcement has been installed satisfactorily as detailed in the drawings and with changes as brought up by the contractors. The horizontals specified needing bolts to be replaced did not need reinforcement work as documented by CSB and checked by KMCE. For the loose bolts reported and information provided, the tower is acceptable and the AT&T can move forward with their proposed installations. It has been recommended to the tower owner that the bolts be inspected further to verify the condition noted and the extent of the issue on the tower. Once it can be verified and established further then the appropriate steps should be taken to ensure the tower is structurally safe. Please see the inspection report from IMTL attached below.

Should you require additional information or clarification, please do not hesitate to contact our office.


Sincerely,

KM CONSULTING ENGINEERS, INC

Reviewed and Approved by:


Doug Austin, EIT
Project Manager




Michael L. Bohlinger, PE
Principal Engineer
CT License #20405

9/6/23



1. Photo provided by CSB to show (2) bolts are installed at horizontal specified needing larger bolts installed based on only (1) bolt at each end of the horizontal and used in the structural analyses (reference date 8/10/23).



Accurate information you can rely on.

Bolted Connection Inspection Report

Client:	KM Consulting Engineers, Inc.	Project No.:	5988
Project:	AT&T Tower, 623 Pine St. – Bridgeport, CT	Report No.:	001
Inspector:	Greg Aiudi	Date:	8/15/2023
Subject:	AT&T Cell Tower Bolted Connection Inspection	Page:	1 of 6

The writer was on-site at the request of KM Consulting Engineers Inc. to visually verify the contractor, CSB Communications, installing the required new bolts per the construction documents and that the nuts are tightened using the Turn-of-Nut method. The work is being performed at the diagonal bracing between elevation 25'-0" and 65'-0" AGL. Additionally, the construction documents specify the bolts at the 25'-0" AGL horizontal bracing be replaced however KM Engineers has since waived this requirement.

The contractor informed this writer they had previously removed the existing bolts and installed the new 1" diameter A325N bolts. The existing 7/8" diameter holes were drilled out to accommodate the larger bolts. The new hardware had been temporarily tightened to a "snug-tight" condition.

The contractor tightened the new hardware on this day using the Turn-of-Nut method. This writer supplied the contractor with a six foot "cheater" bar to obtain the necessary leverage to rotate the nut as they did not have a bar of sufficient length. The bearing face of each nut was match marked to the steel member with a straight line prior to applying a 1/3 turn.

This writer witnessed the contractor tighten the nuts on the North tower leg on this day. The contractor was directed by their office to finish tightening the nuts on the remaining two (2) legs on this same day.

The contractor mentioned they have found existing nuts on the tower to be in a hand tight condition as well as existing PAL nuts missing from bolts. The total extent of these findings is currently unknown, KM Engineers has been notified. Further investigation may be required at a later date.

Please see attached photos of today's observations.

pc: Doug Austin, KM Consulting Engineers, Inc.
jd







