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November 7, 2023

**Via Email**

Mr. Doug Small, Director  
Department of Public Works  
20 Ponderosa Road  
Ashland, MA 01721

Re: T-Mobile Installation on Cedar Peer Review

Dear Mr. Small,

We are writing this letter to report our findings from our peer review of the T-Mobile Wireless Communications installation at the Cedar Street water tank site in Ashland MA.

We have received a set of plans prepared submitted by Prince Lobel Tye LLP on behalf of T-Mobile, on August 30, 2023 via email, containing eleven (11) drawings with a revision date of February 22, 2023, and entitled "Site Number: 4BS0539A Site Name: BS539/Cedar Street WT-RFP". The work proposed by T-Mobile appears to include removal of equipment and mountings from the roof of the tank and relocation of equipment to the shell of the tank. We also received a Structural Analysis Report dated August 8, 2023, as prepared by Advanced Engineering Group, P.C., Inc. via the August 30, 2023, email.

We were authorized on October 25, 2023, by Peter Matchak to begin our peer review, following his receipt of the peer review retainer check.

It is our understanding that the Ashland Planning board is awaiting the completion of our peer review prior to their approval of the project. At this time, we have completed our peer review of the drawings submitted for the installation. The peer review identified several recommended revisions to the design, that can be considered incidental, but do not require major changes in the design or relocation of equipment on the water tank. The overall design of the installation meets typical industry standards for mounting communications equipment on a water storage tank, including the existing equipment located on the Cedar Street water storage tank.

Our structural engineer has not had the opportunity to review the structural analysis submitted by the applicant. We can say that the design appears to be in line with typical installations we have previously reviewed. The structural review will be specific to the number and size of anchors to the water storage tank and size of antenna masts.

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We do not foresee changes to equipment location based on the structural analysis review.

## Drawings Review

We had several recommendations for drawing revisions, which are identified in red text on the enclosed drawings. We have highlighted the major comments below.

### Sheet A-1

1. Recommend replacing the existing ice bridge with a new ice bridge to match the new equipment installation. Review potential to make ice bridge smaller, since this project has less cables.

### Sheet No. A-2

1. Detail 2/A-2: Shows a cable leaving the cable tray at 2 locations. Provide additional details on how that cable is supported between the tray and the remote radio heads, to avoid rubbing on tank or hitting tank during wind events.
2. Detail 2/A-2: Cable leaving end of the cable tray, how will the end of the cable tray be closed with a cable leaving the end of the tray?
3. Sheet A-2 does not provide an elevation view of Sector A&C, which Sector A appears to have a different layout than Sector B. Elevation view of sector A & C will provide information such as how the tall APXVARR24 fits above antenna AIR6449, how and what existing cable trays are crossed (if any), where the proposed cable tray ends and number of cables in the cable tray.
4. Elevation detail 1/A-2: Callout for cables existing and proposed, indicates a total of three (3) 6x24 HCS cables will be in vertical wireway. Sheet No. A-1 indicates two (2) proposed 6x24 HCS cables and 1 existing hybrid and 1 existing 6x12 HCS cables to remain. Confirm actual and correct notes.
5. Request consideration of changing vertical cable tray width from 18" to 12" to minimize overall impact during tank maintenance.
6. Recommend replacing the existing ice bridge with a new ice bridge to match the new equipment installation. Review potential to make ice bridge smaller, since this project has less cables.
7. Tower Analysis Note: This note, located top right of the drawing, indicates the water tank was not analyzed for structural integrity to carry the proposed loads. This analysis is required per the Ashland Tank Communications Equipment mounting standard and the lease agreement.

### Sheet A-3

1. Similar comments as sheet A-2, regarding layout of antenna in Sector A and cable tray locations.

### Sheet A-4

1. Recommend installing a cable tray cover to the back (tank side) of the tray to protect the cables during tank maintenance work, including sand blasting.
2. Cable tray cover selection: The drawing indicates the cable tray cover will be model LT-VSS-XX-A, however the isometric view and section 4/A-5 show a flush



cover. This leaves the side rails of the tray open and not finished. We recommend utilizing a wraparound cover that provides a more finished look and conceals the cable track splices and grounding lugs at each splice.

3. We require additional information regarding the proposed cable tray cover attachment. Section 4/A-5 appears to indicate there are C-Channel brackets every 4ft along the cable tray that hold the cover on. We are not familiar with this connection method, typically the cover is held on by bolts through the cover anchored to the tray frame. Please provide photos of a typical installation for this method of attachment for further review.
4. Cable tray bracket detail calls out anchors stud welded to tank, 2 per bracket. Stud welding is not 100% guaranteed that the stud will last the lifetime of the equipment. Therefore, we recommend a safety factor and adding additional anchors to account for the potential of a stud weld failure, which is beyond the structural calculations. We will comment on this in the structural report peer review section of this letter. Can an additional stud weld be added to each anchor clip?

#### Sheet S-1

1. We do not see an elevation detail of Sector A, where it appears 2 antennae are mounted on 1 mast. If that is the case, please update drawing with the dual antenna mast for review.

Sheet S-2: No peer review comments.

#### Sheet S-3

1. All edges of steel mounting plates must be rounded to accept coating system properly. This includes the plate anchored to tank and the front plate.
2. We recommend installing sealant between steel mounting plate and steel tank.

Sheet S-4: No peer review comments.

Sheet G-1: No peer review comments.

#### General Notes

1. There were no surface preparation and coating application notes for tank coating system repairs on the drawings. We are enclosing recommended notes for inclusion on the drawings.
2. We recommend that any damaged coatings on the existing T-Mobile equipment that will be relocated be repaired along with any damage to the tank coatings during upgrade.
3. Preconstruction meeting shall be held by the Town before any work is started.
4. Install T-Mobile placards in each sector, 12"x12" maximum in size, legible form ground, as approved by Ashland Planning Board.

We have the following comments regarding the structural analysis report.

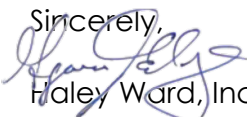


1. As part of any communications equipment project, a Certification Letter is required from the structural engineer to allow Ashland Water Department to comply with MassDEP Policy DWP98-01, regarding antennae installations on water storage tanks. The applicant has not provided the letter to date.
2. Water Tower Analysis: The structural analysis report did not analyze the water storage tanks ability to support the proposed loading. Sheet 4 of the structural analysis report indicated, in the conclusion section, "The standpipe water tank is considered structurally adequate by inspection". Analysis of the tank is required per the Ashland Tank Communications Equipment mounting standard, the lease agreement and the MassDEP Policy DWP98-01 for new installations.

We recommend a revised set of drawing including our recommendations be submitted.

If in agreement, please forward this letter and drawings to the appropriate T-Mobile Wireless representative. Ashland received the drawings and reports from Adam Brailard of Prince Lobel Tye LLP. If you would like our office to forward the documents to Adam Brailard, please let us know.

If you have any questions regarding this letter, please feel free to contact our office. If you agree, the letter can be passed on to the applicant.

Sincerely,  
  
Haley Ward, Inc.

Gregory J. Eldridge, P.E.  
Vice President - Senior Project Manager

Cc: Dan Maurer – Ashland - via email  
Peter Matchak - Ashland

Enclosures: Drawings

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