



CMA ENGINEERS, INC.  
CIVIL | ENVIRONMENTAL | STRUCTURAL

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November 2, 2023

Liz Evans, Strafford Land Use Planner  
Town of Strafford  
15 Mountain View Drive  
Strafford, NH 03884

**Re: Mariner East Stormwater Report Review #3**  
**15 Strafford Road**  
**Strafford Tax Map 11, Lot 83**  
**CMA # 1293**

Dear Ms. Evans,

The applicant, Navigator Properties, LLC (Mariner Tower) of Kennebunkport, ME, is proposing construction of a cell tower with base equipment compound on a 111-acre parcel at 15 Strafford Road. CMA Engineers has been tasked by the Town with review of the stormwater report for conformance with Town of Strafford Stormwater Management Regulations. Also included is a cursory review of the site plan package provided with the application. Review of the application itself is not included in this task. After resubmission by the applicant, CMA Engineers has received the following information for review:

1. Plans titled Strafford East, for Mariner Tower, prepared by TEP Northeast, revised October 17, 2023 (19 sheets);
2. Stormwater Report by TEP Northeast, revised October 30, 2023.
3. Written response from TEP Northeast, dated October 18, 2023, in response to review comments by CMA Engineers.

Background:

The project includes the construction of a proposed 160-ft lattice tower with base equipment compound. Survey for the project was completed by Northeast Survey Consultants, and wetland delineation was completed by A & D Klumb Environmental, LLC. A 12-ft wide gravel driveway is proposed for tower access. Proposed stormwater infrastructure includes a swale with check dams that flows to an infiltration sand filter with forebay.

Site Plans:

1. Sand Filter Details
  - a. Provide rim elevations for the 12-inch cleanouts.
  - b. Basin #1 – Revise inverts in and out for outlet control structure (OCS) outlet pipe.
  - c. Basin #2 – OCS inverts are inconsistent. At the top of the structure, the invert is called out as 577.00, and at the bottom there are callouts for invert in (577.33) and invert out

- (577.00). Please coordinate. Additionally, Sheet A-3 calls out invert in of 578.33, which does not match the detail.
- d. Sand filter details need to be updated to reflect the latest drainage report, which was received 10/30. For example, 100-year storm elevations and WQV elevations no longer match the drainage report.
  - e. Coordinate invert elevations of 6-inch underdrain between the plans and the drainage report, as they currently differ.
  - f. For Sand Filter #1, graphically, the 100-year storm is shown above the crested weir, but the callouts indicate that the weir would be higher than the 100-year storm elevation.
2. Proposed Access Driveway
- a. Strafford Ordinances and Regulations Section 2.6.1 G (5) states driveways shall be limited to a slope of 8% or less if unpaved. The average slope of the driveway is called out as 8%, but with a length of 744 feet and an elevation change of 67.5 feet, the average slope is over 9%. Additionally, over 500 feet of the driveway has a slope of 10%. Regardless, per the Regulation, no portion of a gravel driveway can have a grade greater than 8%.
  - b. Riprap drainage swales are specified in the details, but the plans call out erosion control blanket in the swales. Revise the callout on the plans to call for riprap.
  - c. GeoGrid permeable gravel is proposed to treat and attenuate stormwater runoff for approximately 150 feet of the driveway. Please provide documentation from the manufacturer or supplier stating its effectiveness when installed on slopes up to 9%. Pervious practices generally are not recommended for installation on slopes over 5%.
  - d. GeoGrid permeable gravel has a 6" underdrain in the detail – where does this underdrain outlet? It should be shown on the plans.
3. The Applicant states that the Town of Strafford Fire Department is reviewing the Truck Turning Plan.

#### Stormwater Report:

1. Stormwater Report Document
  - a. Identify the point of analysis on the post-construction drainage plans. It should match the pre-construction point of analysis, but the current pre-construction point of analysis is located in an area that receives off-site flow. Both analysis points should be located near the final outlet, i.e. close to the proposed driveway culvert.
  - b. The OCS for both sand filter basins appear to have additional orifices in the drainage calcs that do not appear anywhere on the plan set. Each OCS is listed as having three 10-inch orifices and one 8-inch orifice. These need to be detailed in the plans.
  - c. Update *Table 2: Surface Covers* and *Table 4: Proposed Subcatchments* to reflect the updated impervious surface calculation.
  - d. Provide an NHDES BMP worksheet for Sand Filter Basin #1.
  - e. Drainage areas E2 and E3 do not contribute to the work area and should be removed from the analysis.

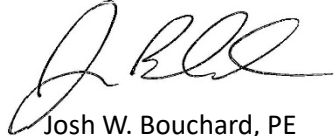
Should you have any questions, please do not hesitate to contact us.

Respectfully,

CMA Engineers, Inc.



Benjamin C. Clark, PE  
Project Manager



Josh W. Bouchard, PE  
Project Manager