IMPROVING COMMUNITIES TOGETHER

MEMORANDUM

Date:	1/24/2025	Job No.:	23099.01
To:	Diane Williamson, AICP, CFM - Town of Bristol Director of Community Development; Edward Tanner – Town of Bristol Principal Planner		
Cc:			
From:	Nicole Iannuzzi, PE – Vice President (BETA Group, Inc.)		
Subject:	Mount Hope High School Preliminary Plan Review – Stormwater/Wastewater		

This memo provides a comprehensive review of Pare Corporation's (Pare) Preliminary Plan Application for the Mount Hope High School Project, which has been reviewed to ensure it meets the requirements of the Town of Bristol Subdivision and Development Review Regulations. The following documents were submitted and reviewed by BETA Group, Inc. (BETA):

- Application for Preliminary Plan
- Major Land Development Checklist – Preliminary Plan Phase
- Stormwater Report
- Preliminary Plan Set

GENERAL COMMENTS

- The proposed design increases the impervious area of the site by 2.07 acres. The design team is providing treatment for 11.90 acres of the proposed 12.47 acre of impervious area, 0.57 acres of impervious area will not be treated. The design team has met the recharge volume requirements and has reduced the site runoff volume and peak discharge during the 10-year storm per the Town's regulations.
- Have all utility crossings been verified?
- In Appendix C of the stormwater report it appears that the drawdown times for the bioretention areas and sand filters are less than 48 hours. However, the equation provided within the drawdown section with the coefficients given does not yield the stated drawdown time. Please review.
- Has construction phasing been considered?

Culverts within project area

- Original school was built in 1965. What is the age and condition of the current culverts? Are they structurally sound? Have they been inspected by a structural engineer? Has the design team considered replacing these culverts as part of the project?
- Please verify that survey is correct. It shows the culverts each having a negative slope. The first set of culverts are depicted as 40-inch on the upstream side and then 48-inch on the downstream side.

It appears that at DP 1.1, the proposed design is intended to replicate the FEMA base flood elevation and allow Silver Creek to behave as it does under existing conditions. The assumption would be that the school breezeway above the culvert does not hold back flow, because the base flood elevation is approximately 59.7 ft at this point and the proposed overflow elevation above the 48-inch pipes is set to that same 59.7 elevation. If the design assumes the FEMA base flood water surface elevation at DP 1.1 (under existing and proposed conditions) and there is no increase in flow to this point from the

project, then why propose the installation of two 48-inch pipes at this location with inverts below the base flood elevation? The design is providing twice the hydraulic opening at the uppermost restriction. The design also indicates that there is no increase in flow to Silver Creek at DP 1.3, yet an additional two 48-inch pipes are proposed at this location. This may be necessary for the proposed design, but there are no calculations or basis to support this.

The design does not indicate that there is any increase in flow to Silver Creek as a result of the project. The design is also based on the FEMA base flood elevations (at point DP 1.1) which would mean that Silver Creek does not overflow its banks within the project area for a 100-year storm. Yet, the design proposes four 48-inch pipes which appear to be for overflow. Is the design inadvertently increasing flow to DP 1.4 by installing the 48-inch pipes.

It appears that the 48-inch pipes would protect the site from flooding by bypassing the site and discharging flow just upstream of Chestnut Street. The concern would be that the proposed design would shift the location of the flooding/impoundment from the site to the low point on Chestnut Street adjacent to the cemetery.

STORMWATER COMMENTS

Sheet 6.1/8.9 – Underground Infiltration System (UGIS)

- The finished grade at the UGIS appears to be grass, however the detail shows finished grade being pavement, please review.
- The top of the chamber system is shown to be at 49.00' and the chamber system to have a height of 26.52". The bottom elevation of the chamber system with the listed dimensions should be 46.79', please review.
- Please confirm the elevation of the seasonal high groundwater (SHGW). The mounding analysis provided is for the ten-year storm and the estimated SHGW on the detail does not match the elevation from TP-20-03.

Sheet 6.2/Stormwater Report

- Riprap apron sizing is not provided for the discharge point of the four (4) 48" bypass pipes.

Sheet 6.4

- The 48" RCP bypass pipes are shown 4' on center, please review.
- DMH -204 and DMH-205 are 6' diameter structures and shown to be located 5' from each other please review. According to RIDOT Standard Detail 5.2.0, a 6'diameter manhole is not sufficient for 48" pipes. Please review.

Sheet 6.5/8.2/Stormwater Report

- Bioretention Area 4 is shown having an underdrain, the underdrain is not included as an outlet in the HydroCAD model, please review.
- On page 13 of the stormwater report, it is stated that for bioretention area with exfiltration (Bioretention Area 1 and 4) stormwater is piped to the sediment forebay for pretreatment. There is no sediment forebay at Bioretention Area 4.

Sheet 6.5/8.12/Stormwater Report

- Please confirm the elevation of the seasonal high groundwater (SHGW) at the infiltration basin. The mounding analysis provided is for the ten-year storm and the estimated SHGW on the detail does not match the elevation from TP-20-05.

Sewer Service Review

Sheet P-201: New Pump Station

1) Document pumping capacity of the existing high school pumping station
   - Pump nameplate, model and design point
   - Pump drawdown test
2) Document location of existing pumping station force main discharge
3) New pump station shall be designed such that proposed pumping capacity does not exceed the capacity of the existing pumping station
4) Document plan for Back-up Power Supply
5) Show Bypass connection (connection to header or force main) for bypass of station
6) Provide exterior electrical controls panel to allow outside vendor to service if required.

Sheet C-7.2: Force Main

7) Ideally new force main discharges in the same location as the existing force main discharge. Identify existing location and review.
8) Provide profile for proposed force main discharge and proposed gravity sewer and manholes to connection to existing sewer.
9) Provide construction detail for proposed force main discharge. Detail location, elevation, method of connection, relation of new proposed sewer pipes to existing pipes and structures.
10) Minimum size of gravity sewer pipe is 8-inch (Review SMH-09 to SMH-10 to Exis)
11) Provide rim elevation of existing sewer manhole on pedestrian bridge (Note this is a current low point and a current sanitary sewer overflow location) and compare to other rim elevations.
12) Provide plan for abandonment of existing force main and connection
13) Consider extending FM to Gravity Sewer at intersection with Sherry Ave

Sheet C-7.3: Baseball Bathroom

14) Compare elevation to SSO location near bridge
15) Provide Backflow Preventer