



DRAINAGE ANALYSIS
AUGUST 8, 2025

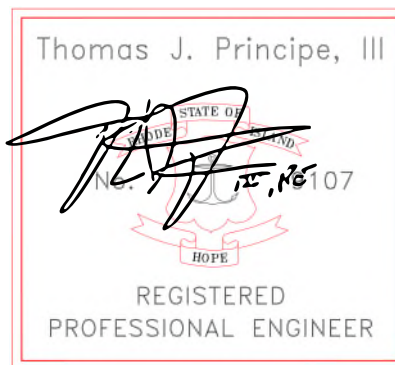
**668 & 670 Metacom Avenue
AP 128, Lots 15 & 16
Bristol, RI**

Prepared For:

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Storm Water Management

The storm water management system selected is best suited to the site and provides the least disturbance of the site while complying with the stormwater regulations. The storm water management system consists of the collection of overland runoff to a proposed bioretention system. The drainage system is designed to offset increased storm flows and provide water quality in accordance with the regulations of both state and local authorities. This drainage system is intended to mitigate increased runoff generated from new construction so the downstream wetlands, water bodies, and neighboring properties will not be impacted. The drainage system will control post development peak flows and provide for pollutant removal at the maximum possible rates.

The Pre-Development watershed area (PRE-WET) includes the entirety of the site, which drains to a neighboring wetland system. The site has been disturbed and altered over the years, including fill and establishment of an existing gravel work/parking surface. The observed surface water elevation in the adjacent open water area was utilized to determine the anticipated groundwater table and a “C” hydrologic group was utilized for the calculations/infiltration rate.

Under post development conditions the watershed was analyzed to address in two sub-areas: the area controlled (CONT) by the proposed bioretention basin



and the uncontrolled (UNC) portions of the site. The parking lot is proposed to be paved, per the Town of Bristol requirements.

The following table compares the flows between pre-development conditions and post development conditions, after flows are routed through the stormwater treatment areas:

WATERSHED	1-YEAR STORM	10-YEAR STORM	25-YEAR STORM	100-YEAR STORM
PRE-WET	0.71 CFS	1.72 CFS	2.32 CFS	3.57 CFS
POST-WET	0.15 CFS	0.49 CFS	1.15 CFS	3.63 CFS

Per RIDEM regulations, the required water quality volume and recharge volume for the new roof and paved parking area is provided by the project. There is a slight increase in peak flow rate for the 100-year storm event; however, there is a decrease in the peak volume (PRE = 0.390 af; POST = 0.239 af).

Per the Town of Bristol, the project adheres to the regulations associated with the site's location within the Silver Creek watershed. The proposed bioretention area completely infiltrates the entirety of the 1-, 2-, and 5-year storm events, and to the maximum extent practicable infiltrates the entirety of the 10-year storm event (i.e. more than the increase, as required). The drainage collection system proposed takes advantage of the natural slopes and contours of the site. It provides for both peak storm flow mitigation, recharge and water quality control. By reducing post-development storm water flows, the primary goal of the proposed drainage system is achieved. Any potential

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impacts from the proposed development on the abutting properties have been mitigated.

RIDOT NOTE: It should be noted that the Town of Bristol is requiring that a concrete sidewalk be installed within the RIDOT/State ROW associated with Metacom Avenue. To the extent feasible this impervious surface area has been directed to flow away from Metacom Avenue. The site also takes advantage of an existing curb cut that supplies access to both Lot 15 and Lot 16. No future curb cuts are proposed or anticipated and no increase in the peak flow or volume into the state system is proposed or anticipated.

