



DRAINAGE SUMMARY

April 14, 2025

Revised August 8, 2025

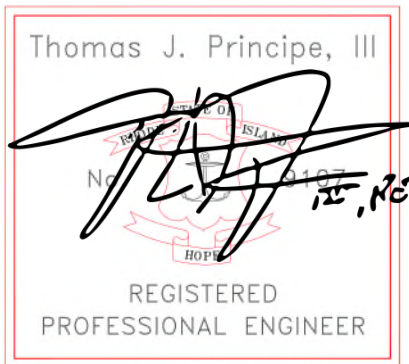
**AP 47, LOT 3
206 Bayview Avenue
Bristol, RI 02809**

Prepared For:

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Prepared By:

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This stormwater management analysis and accompanying HydroCAD design calculations were prepared in support of the redevelopment of AP 47, Lot 3 at 206 Bay View Avenue in Bristol, RI.

The site contains an existing single-family residential structure with gravel driveway and associated outbuildings (two sheds, and a barn). The mapped soil beneath the site includes both CC (Canton-Urban Land Complex) and PmA (Pittstown silt loam - hydrologic group C designation) according to the USDA Soil Survey. **However, on-site test pits indicate that the site is predominantly CC (hydrologic soil group B).** There are no jurisdictional wetland areas and no mapped 100-year floodplain. Currently, stormwater flows from north-to-south, from Bay View Avenue to the southwest property corner without any stormwater treatment.

The proposed development will treat 100% of the new impervious areas by directing surface flows to the proposed stormwater best management practices (BMPs). The proposed drainage is comprised of pervious pavement areas, a dry swale, an infiltration basin, and three bioretention areas for the roof areas.

The stormwater design calculations focus on demonstrating the proposed site adequately handles the intensity from the 1-, 10-, 25- and 100-year storm events while providing water quality treatment and recharge for the impervious runoff within the sub-areas and at the overall design point. As a result, the post-development flow rates to the design point referenced above have been reduced to at or below the pre-development flows.

Below is a summary of the HydroCAD analysis comparing pre-development and post-development flow rates for the project at the project design point:

	<u>DP-1 (SITE)</u>		
	Pre (cfs)	Post (cfs)	Difference (cfs)
1-Year	0.67	0.03	-0.64
10-Year	3.63	0.31	-3.32
25-Year	5.74	1.42	-4.32
100-Year	10.61	7.53	-3.08

While incorporating the measures described above and taking advantage of the natural slopes and contours of the site, the project is able to achieve a decrease in stormwater runoff rate and volume toward the analyzed design points as well as provide adequate water quality treatment and recharge. Thus, typical post-development impacts to downstream properties and water resource areas have been effectively mitigated.

Due to the location of the site within the Tanyard Brook watershed, the stormwater treatment has been designed to infiltrate (i.e. retained and recharged) up to and including the 10-year storm event. The increase in the 10-year storm event volume is 0.128 af (POST 0.441 af – PRE 0.313=0.128 af), and 0.348 af has been retained/recharged/infiltrated on the subject site, meeting this requirement.