Matrix New World Engineering, Land Surveying and Landscape Architecture, PC 442 State Route 35, 2<sup>nd</sup> Floor Eatontown, NJ 07724 732.588.2999 F: 973.240.1818 www.mnwe.com Certified WBE



**Engineering Progress** 

## MEMORANDUM

TO:	Ashley Neale, Board Secretary	DATE:	June 14, 2023
FROM:	Sean Savage, P.E.	PROJECT NO .:	19-720
SUBJECT:	Bioretention Basin Permeability Memo	PROJECT NAME:	1 Sunset Avenue

Per the Township of Verona Engineer's review letter dated June 6, 2023, below are the calculations for the estimated drain time of the soil bed and subsoil of the proposed Bioretention Basin in accordance with Chapter 9.7 of the NJDEP BMP manual.

## **Basin C**

Volume of Runoff (WQ storm): 0.007 af (304.92 cf) Infiltration Area (sf): 2,145 sf Permeability rate (in/hr): 1 in./hr.

Infiltration Rate =  $\frac{(2,156 \text{ sf})(1 \text{ in./hr})}{(12 \text{ in./hr})} = 179.67 \text{ cf/hr}$ 

Drain Time =  $\frac{(304.92 \text{ cf})}{(179.67 \text{ cf/hr})} = 1.69 \text{ hours}$ 

Since 1.69 hours is less than the allowable maximum drain time of 72 hours, the small-scale bioretention system meets the drain time requirements.