

Stormwater Management Report Addendum

Time to Drain Calculations

For

Hudson Pointe at Keyport

Lots 8 & 9, Block 120 and Lots 42, 48, 49, 50, 51 & 52, Block 130
Borough of Keyport
Monmouth County, NJ

March 16, 2022

Prepared by:

A handwritten signature in black ink, appearing to read 'W. Hopkin', with a long horizontal line extending to the right.

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License Number 40673**

Time to Drain Calculations

$$\text{Drain Time} = \frac{\text{Stormwater Volume below First Orifice (6" Stone Bed)}}{\text{Infiltration Area} \times \text{Design Permeability Rate}}$$

Detention Basin #1

Stormwater Volume below First Orifice (6" stone bed)
 $105' \times 16' \times 0.5' = 840 \text{ cuft.}$

$$\text{Tested Permeability Rate} = \frac{1.27}{2} = 0.635 \text{ in/hr (Soil Log 3)}$$

Infiltration Area = $105' \times 16' = 1,680 \text{ sf}$

$$\text{Drain Time} = \frac{840 \text{ cuft.} \times (12 \text{ in/ft})}{1,680 \text{ sf} \times 0.635 \text{ in/hr}}$$

$$\text{Drain Time} = \frac{10,080}{1,066.8} = 9.45 \text{ hours}$$

Detention Basin #2

Stormwater Volume below First Orifice (6" stone bed)
 $201' \times 3' \times 0.5' = 301.5 \text{ cuft.}$

$$\text{Tested Permeability Rate} = \frac{1.27}{2} = 0.635 \text{ in/hr (Soil Log 3)}$$

Infiltration Area = $201' \times 3' = 603 \text{ sf}$

$$\text{Drain Time} = \frac{301.5 \text{ cuft.} \times (12 \text{ in/ft})}{603 \text{ sf} \times 0.635 \text{ in/hr}}$$

$$\text{Drain Time} = \frac{3,618}{382.9} = 9.4 \text{ hours}$$

Detention Basin #3

Stormwater Volume below First Orifice (6" stone bed)
 $100' \times 3' \times 0.5' = 150 \text{ cuft.}$

$$\text{Tested Permeability Rate} = \frac{18.44}{2} = 9.22 \text{ in/hr (Soil Log 1)}$$

$$\text{Infiltration Area} = 100' \times 3' = 300 \text{ sf}$$

$$\text{Drain Time} = \frac{150 \text{ cuft.} \times (12 \text{ in/ft})}{300 \text{ sf} \times 9.22 \text{ in/hr}}$$

$$\text{Drain Time} = \frac{1,800}{2,766} = 0.7 \text{ hours}$$