

The Reserve Subdivision
Major Stormwater Plan
Post-Construction Peak Flow Design Targets
5/26/2025

Background: The Reserve is a two lot Subdivision that falls under the requirements of a “Major Stormwater Plan” per the Currituck County UDO. The lots are to be sold undeveloped and so no lot development information is available at this time. In order to provide guidance to potential lot purchasers, this memorandum is being provided to establish the stormwater management design peak flow targets that will be enforced by Currituck County when the properties are ultimately developed.

Currituck County UDO Requirements: Currituck County requires that all major subdivisions provide adequate stormwater controls to retain the post-development peak discharge from a 10-year, 24-hour rainfall event so that it does not release a peak discharge greater than the 2-year, 24-hour peak discharge using a wooded site condition, regardless of actual predevelopment site conditions.

Post-Construction Peak Flow Rate Targets: Before development on a given lot, a design will be presented to Currituck County Planning for review and approval which provides stormwater management appurtenances on the lot such that the total post-construction peak flow from the lot in the 10-year, 24 hour rainfall event does not exceed the following peak flow benchmarks:

Lot 1: 1.49 cfs

Lot 2: 1.16 cfs

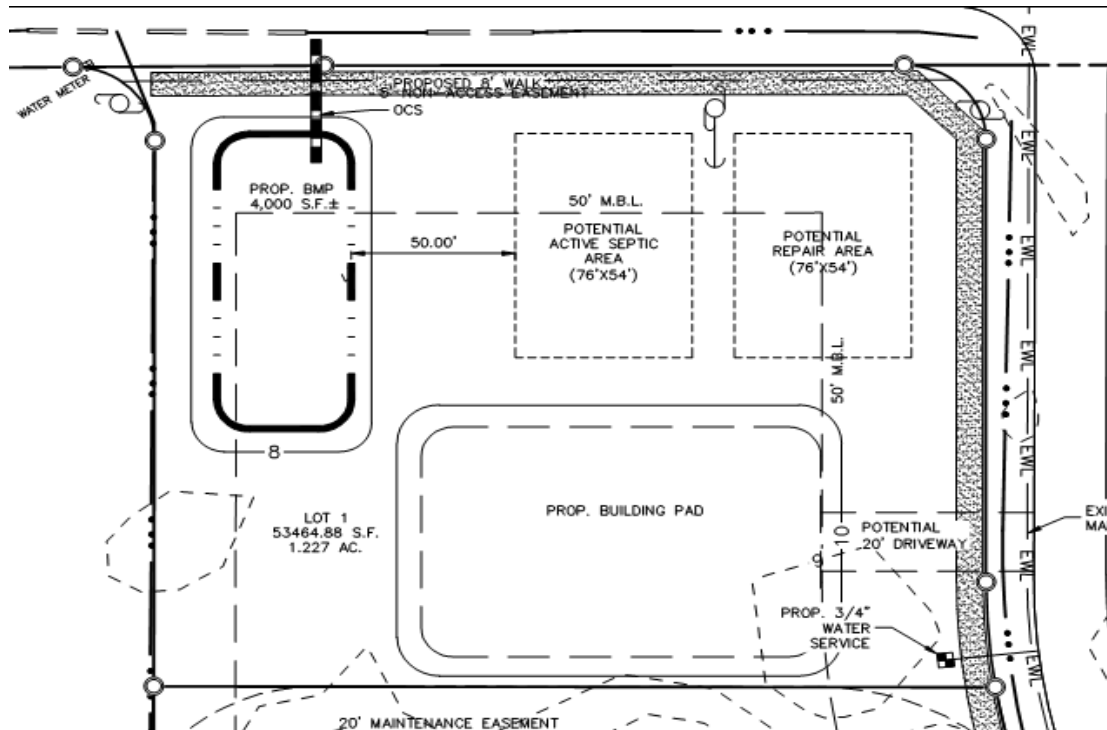
Please see the attached calculations for the basis of the establishment of these design targets.

The Reserve
2 lot Subdivision
Pre-Construction Stormwater Runoff Targets
5/23/2025

Per the Currituck County UDO and Stormwater Manual, the post-construction peak flow from the subdivided lots in the 10-year, 24 hour rainfall event must be controlled such that the post-construction peak flow does not exceed the pre-construction peak flow from an undeveloped and wooded site in the 2-year, 24 hour rainfall event. This document calculates the pre-construction peak flow which will be provided to the developer of these lots to utilize as the post-construction peak flow target for the 10-year, 24 hour rainfall event.

Per the Currituck County Stormwater Manual, the Rational Formula will be utilized for these calculations

Lot 1:



$T_c = 5 \text{ min}$ (Small lot, conservative T_c)

$I_{2yr} = 6.06 \text{ in/hr}$ (Rainfall Intensity, per Curr Co SWM Manual)

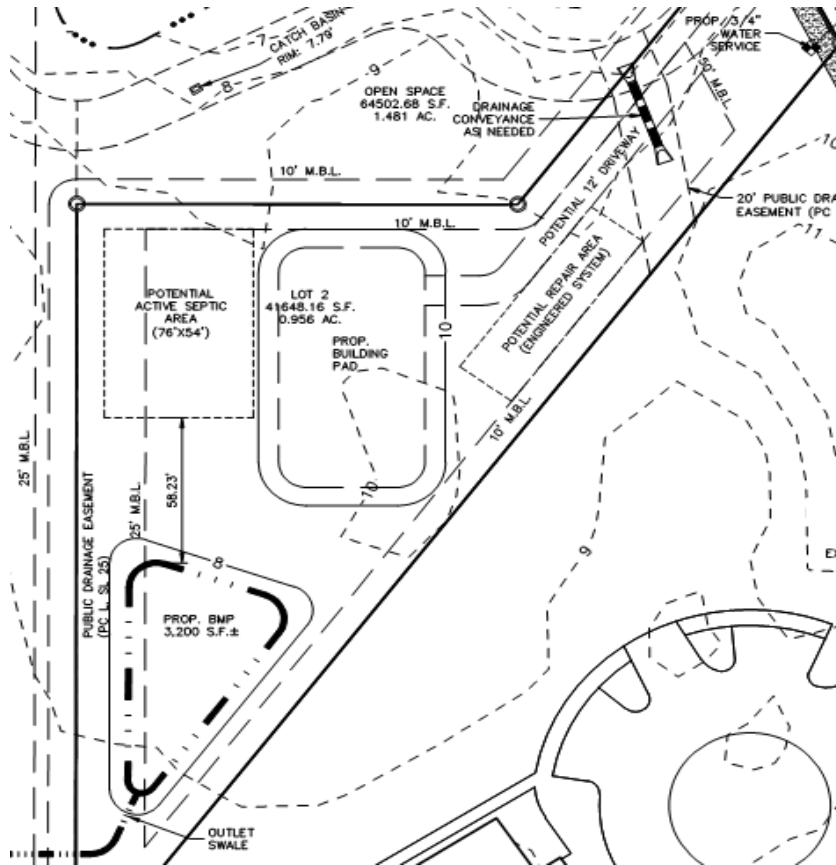
$A = 1.227 \text{ ac.}$ (Area)

$C = 0.2$ (Rational Formula Runoff Coefficient for woods)

$Q = CIA = 1.49 \text{ cfs}$ (Peak runoff for a 2-yr rainfall event with 5 min T_c)

****Use 1.49 cfs as the target allowable peak discharge rate for the stormwater management system associated with any proposed development of lot 1.**

Lot 2:



$T_c = 5 \text{ min}$ (Small lot, conservative T_c)

$I_{2\text{yr}} = 6.06 \text{ in/hr}$ (Rainfall Intensity, per Curr Co SWM Manual)

$A = 0.956 \text{ ac.}$ (Area)

$C = 0.2$ (Rational Formula Runoff Coefficient for woods)

$Q = CIA = 1.16 \text{ cfs}$ (Peak runoff for a 2-yr rainfall event with 5 min T_c)

****Use 1.16 cfs as the target allowable peak discharge rate for the stormwater management system associated with any proposed development of lot 1.**