

This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Engineering Concepts, Inc. shall be without liability to Engineering Concepts, Inc.

DRQ Virginia Runoff Reduction Method New Development Compliance Spreadsheet - Version 3.0

C 2013 BMP Standards and Specifications

C 2013 Draft BMP Standards and Specifications

Project Name:  
The Preserve at Ashley Front Lots Development

Date:  
5/27/2021

CLEAR ALL

data input cells

constant values

calculation cells

final results

BMP Design Specifications List: 2013 Draft Sds & Specs

Site Information

Post-Development Project (Treatment Volume and Loads)

Land Cover (acres)

	A Soils	B Soils	C Soils	D Soils	Totals
Forest/Open Space (acres) - undisturbed, protected forest/open space or reforested land			36.50	1.04	37.54
Managed Turf (acres) - disturbed, graded for sports or other turf to be mowed/maintained		2.08	6.97	0.28	11.33
Impervious Cover (acres)		0.50	5.64	0.11	6.25
					55.12

\*\* Forest/Open Space areas must be protected in accordance with the Virginia Runoff Reduction Method

Constants

Annual Rainfall (inches)	43
Target Rainfall Event (inches)	1.00
Total Phosphorus (TP) EMC (mg/L)	0.35
Total Nitrogen (TN) EMC (mg/L)	1.86
Target TP Load (lb/yr)	0.41
% (unitless correction factor)	0.90

Runoff Coefficients (Rv)

	A Soils	B Soils	C Soils	D Soils
Forest/Open Space	0.02	0.03	0.04	0.05
Managed Turf	0.15	0.20	0.22	0.25
Impervious Cover	0.95	0.95	0.95	0.95

Post-Development Requirement for Site Area


TP Load Reduction Required (lb/yr)	0.00	**	TP LOAD REDUCTION NOT REQUIRED
------------------------------------	------	----	--------------------------------

LAND COVER SUMMARY -- POST DEVELOPMENT

Land Cover Summary	Treatment Volume and Nutrient Loads
Forest/Open Space Cover (acres)	37.54
Weighted Rv (forest)	0.04
% Forest	68%
Managed Turf Cover (acres)	11.33
Weighted Rv (turf)	0.22
% Managed Turf	21%
Impervious Cover (acres)	6.25
Rv (Impervious)	0.95
% Impervious	11%
Site Area (acres)	55.12
Site Rv	0.18

Treatment Volume (acre-ft)	0.8257
Treatment Volume (cubic feet)	35,969
TP Load (lb/yr)	22.60
TN Load (lb/yr)	161.67
(Interpolated, Excesses Only)	

IMPERVIOUS AREA AND MANAGED TURF TABULATION			
LOCATION	IMPERVIOUS AREA (ACRES)	MANAGED TURF (ACRES)	TOTAL ACREAGE
FRONT LOTS (43 TOTAL)	3.48 (0.08 AC. PER LOT)	10.98	14.46
GREENFIELD STREET LOTS (4 TOTAL)	0.57 (0.14 AC. PER LOT)	0.35 (0.09 AC. PER LOT)	0.92
FRONT DEVELOPMENT SIDEWALK	0.19	N/A	0.19
FRONT DEVELOPMENT PAVEMENT (ASPHALT + CURB/GUTTER)	2.02	N/A	2.02
TOTAL:	6.25	11.33	17.58



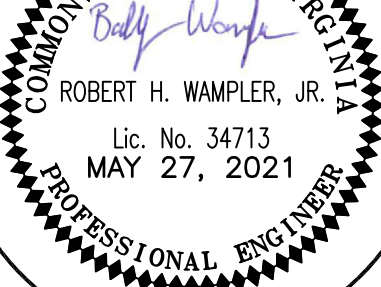
**ENGINEERING  
CONCEPTS, INC.**

94 GREENFIELD STREET  
DALEVILLE, VIRGINIA 24083  
540.473.1253

No.	Description	Date

**PRESERVE AT ASHLEY**  
**BOTETOURT COUNTY**

FRONT LOTS DEVELOPMENT  
STORMWATER QUALITY



ROBERT H. WAMPLER, JR.  
Lic. No. 34713  
MAY 27, 2021  
PROFESSIONAL ENGINEER

0 100 200

GRAPHIC SCALE

PROJECT:

20004

**C23**