e. Detention/Water Quality Criteria

Detention and Water Quality criteria for Pond analysis are obtained from EPCDCM V1 Chapter 11 – Detention Storage, from EPCDCM V2 Chapter 2 – Stormwater Quality Management & Chapter 4 – New Development Stormwater Managemen

THE DEVELOPER PREFERS A VEGITATED TRICKLE CHANNEL. THE DFEVLEOPER AND HIS MAINTENANCE ENTITY ARE AWARE OF THE MAINTENANCVE REQUIREMENTS, INCLUDING POTENTIAL FOR ADDITIONAL MAITENANCE DUE TO THE TYPE OF TRICKLE CHANNEL AND ACCEPTS THE RESPONSIBILITY.

IV. Drainage Facility

Plans show soil riprap

a. General Concept

In the proposed conditio h public, rural local roadways. Lots will not b ome building, proposed lot areas are analyzed for th f lot area are captured in roadside swales and conveyed to private full spectrum water quality and detention pond Pond A. Where grade allows, roadside ditches discharge directly into FSD ponds down grouted riprap rundowns and into a concrete bottom forebay. Pond A provides water quality treatment and detention for the applicable portions of the site and will be maintained by the entity assigned with a detention maintenance agreement. Portions of lots that do not drain towards proposed roadways will follow historic drainage patterns to the drainageway tributaries and are excluded from water quality treatment per EPC DCM Appendix I.7.1.B – Large Lot Single Family Sites. Existing natural drainage tributaries on site will be analyzed for stability and capacity, and where deficient, improved to accommodate the 100-yr flows. See 'Water Quality & Detention' section below for additional information.

b. Water Quality & Detention

Historically, undeveloped site area drains directly to the onsite drainageways and Black Squirrel Creek. In the proposed condition, road profiles are designed to direct developed lot area towards roadside ditches. Due to the size and variability of existing grade on the proposed lots, not all lot area drains towards the proposed roadways. In this scenario, those lot areas will utilize the EPC DCM Appendix I.7.1.B – Large Lot Single Family Sites water quality exclusion. However, the exclusion does not relinquish detention requirements for developed area. Based upon proposed condition Rational Method calculations, the development of the site has a marginal increase on peak flows in the 100-year scenario. The table below compares the flows leaving the site at each design point between the existing condition and the proposed fully developed condition.

The marginal increase in flows will not adversely affect downstream drainageways and associated facilities. For specific design point comparisons, please see the drainage maps and included summary tables in Appendix F. All outfall points will be designed to be stable up to and including the 100-yr event. Detailed and final design will be included with the FDR and Final Plat/CD's.

EXISTING V. PROPOSED FLOW (INDIVIDUAL DESIGN POINTS)

DP#		$Q_{5\text{-YR}}$			$Q_{100\text{-YR}}$		
EX	PROP	EX	PROP	Δ	EX	PROP	Δ
1	3	12.9	11.7	-9%	34.3	33.9	-1%
2	5	34.3	34.3	0%	77.4	81.0	5%

All flows leaving the site have remained consistent with the historic/existing conditions, with the exception of a small increa idered negligible, however, please see the Existi ing the drainageway downstream of this design po y the proposed flow.

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See comments in GEC plan

Pond A: Pond s water quality and detention for Basin A1 and s 0.053 ac-ft, the EURV is 0.051 ac-ft, and the 100-y storms are released in 40, 66 and 68 hours, respec ted 18" RCP pipe with restrictor plate. A concr all into the pond. A riprap trickle channel conveys flow towards the outlet structure and is 9" deep and has greater than twice the capacity of the forebay release rate. A 10' maintenance road is provided to the bottom of the pond to facilitate future maintenance of the pond facilities. A 1 the developed, peak 100-yr flow rate with 1 emergency condition swale will direct any flows fr n/wq and outlet structure design, forebay, trickle dix D.

Turf Reinforcement Mat has been added in two location along Swale A1. See GEC plans and Drainage Map for specifics. Please note, the swale is expected to remain stable while passing the 100-yr design flows, but the TRM was added to ensure stability in these areas as a precaution to reduce erosion potential and help to establish vegetation.

c. Major Drainageways

There are not major drainage ways loca tely 1,400' north of the site. Full channel analysis re filings. Preliminary analysis was included in the PDR, under EDARP files no. SP251.

Please include velocities in the swale and discuss the 90 degree bend at the north end of the property and if this area requires any armoring.

Existing Tributary A: In the through the site and to Black Squirrel Creek. At the upstream limit Camelot Subdivision DP-6 Pond discharges into the tributary. To accommodate the proposed subdivision lot boundaries, the tributary is routed around the western and northern limits of Basin A3 as Proposed Swale A. Proposed Swale A will continue to bypass the existing discharge from the Camelot Subdivision DP-6 Pond, in addition to the discharge from on-site Pond A. Proposed swale A is a V swale, with grass lining, 6:1 side slopes, a 2.33' total depth, and is located per the Rural Major Arterial County Cross section. Where the tributary crosses offsite along the northern boundary of Basin A3, the proposed swale will tie into the existing tributary for the offsite portion. Portions of the existing Tributary are proposed to be filled in. Cross sectional output tables and hydraulic calcs for Proposed Swale A are presented in Appendix C.

please include grass type as max velocity is dependent on type.

Existing Tributary A2: In the existing condition, Existing Tributary A2 conveys offsite and onsite fl through the site and to Black Squirrel Creek. At the upstream limit, Antler Ridge Estates DP UBS-2 Pond discharges into the tributary under Ayer Road via an existing 42" RCP culvert. To accommodate the proposed subdivision lot boundaries, the tributary is routed around the western limits of the Filing No. 1 site in proposed Swale A2. Swale A2 will continue to bypass the existing discharge from the Antler Ridge Estates DP UBS-2 Pond, in addition to the discharge from on-site area. Swale A2 will be grass lined. Cross sectional output tables and hydraulic calcs for Proposed Swale A2 and Existing Tributary A2 are presented in Appendix C.

please include velocities of the swale

d. Operations & Maintenance

Include a cost estimate for each PCM with line items for all components (ex: riprap, road base, forebay, trickle channel, outlet structure, outlet pipe, spillway, etc). Input the total value into the FAE form under "Permanent Pond/BMP (provide engineer's estimate)" in Section 1. The total should not include grading, which is a separate line item in Section 1: "Earthwork." The cost estimate should include labor costs (as a separate line item or added into the cost of each component).

V2 - Drainage Report Review 1 Comments.pdf Markup Summary

Bret Dilts - DPW Engineering (3)

Subject: Engineer
Page Label: 2
Author: Bret Dilts - DPW Engineering
Date: 3/20/2026 10:42:54 AM
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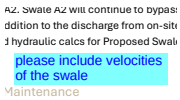
Please include velocities in the swale and discuss the 90 degree bend at the north end of the property and if this area requires any armoring.



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Date: 3/20/2026 10:43:40 AM
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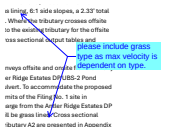
please include velocities of the swale



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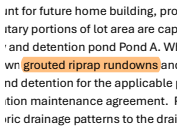
please include grass type as max velocity is dependent on type.

EPC Stormwater- Zachary (5)



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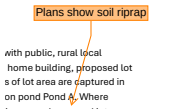
grouted riprap rundowns



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Plans show soil riprap

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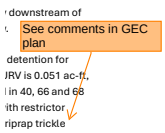
A riprap trickle channel



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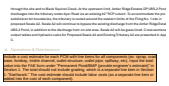
See comments in GEC plan



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Include a cost estimate for each PCM with line items for all components (ex: riprap, road base, forebay, trickle channel, outlet structure, outlet pipe, spillway, etc). Input the total value into the FAE form under “Permanent Pond/BMP (provide engineer’s estimate)” in Section 1. The total should not include grading, which is a separate line item in Section 1: “Earthwork.” The cost estimate should include labor costs (as a separate line item or added into the cost of each component).