

In summary, stormwater runoff from the Nelson Ridge plat will follow the existing downstream flow paths to maintain the natural discharge locations throughout the site, and be dispersed, treated for water quality and infiltrated, as applicable.

3.1 Bio-infiltration Swales:

The proposed bio-infiltration swale will serve for water quality treatment, flow control, and conveyance in the event of an overflow. Based on the geotechnical report and the soils, long-term design infiltration rates of 2.00, 1.30, and 1.08 inches per hour were used for Swale #4, Swale #2, and Swale #1 respectively.

For more information, see table below, MSRTS calculations attached in Appendix A, and the construction plan set.

Bio-infiltration		Swale #1	Swale #2	Swale #4
Swale Shape		Trapezoidal	Trapezoidal	Trapezoidal
Channel Slope	(%)	1.0	1.0-6.7	0.5-7.6
Side Slope		3:1	3:1	3:1
Bottom Width	(ft)	2	6	2
Basin Size	(ac)	0.72	2.62	1.12
Water Quality Flow	(cfs)	0.23	0.97	0.38
Maximum Depth of Water Quality Flow	(ft)	0.10	0.13	0.14
Maximum Peak Flow 100-year, 24-hour	(cfs)	1.01	3.86	1.60
Maximum Depth of Peak Flow 100-year, 24-hour	(ft)	0.27	0.29	0.30
Infiltration Depth	(ft)	2.0	2.4	1.4
Total Depth	(ft)	2.0	3.0	2.0
Freeboard	(ft)	0.0*	0.6	0.6
Length	(ft)	160	302	393
Volume Required	(cf)	2764	9515	3072
Volume Provided	(cf)	2680*	14076	6408
Infiltration Rate	(in/hr)	1.08	1.30	2.00

* This swale discharges the overflow into a dispersion device at a rate of 0.105 cfs and will continue downstream using a 100-foot flow path into existing native vegetation in the open space tract.