

June 5, 2024

Engineering Department
509 Commodore Perry Highway
Wakefield, RI 02879

Re: 1809/1811 Kingstown Road, South Kingstown, RI (Map 40-1, Lot 4)

Dear Reviewer:

Please find enclosed a SERSC plan and Stormwater Management calculations for the subject site. A summary of the Hydrocad calculations are listed below:

	10-year <u>Peak Discharge</u> (cfs)	10-year <u>Peak Volume (cu ft)</u>
Proposed Conditions	0.70	3,473
Existing Conditions	0.40	2,468
Difference	0.30	1,005
<u>Mitigated Amount</u>		
Drywell for roof (P-1)*	0.16	529
Paved driveway (P-2)*	0.31	1,045
Total Mitigated Amount	0.47	1,574

* Infiltration rate used = 8.27 in/hr (sand at 28" in depth per Web Soil Survey)

The stormwater runoff from the proposed site by utilizing the drywell for roof runoff, crushed stone driveway, and grass swale is less than the existing condition stormwater runoff. Furthermore, for the 10-year storm there is no runoff from the subsurface drywell for the roof. Therefore, the proposed stormwater management design meets the requirements of the Town of South Kingstown for the 10-year storm such that there is no increase in stormwater runoff when comparing the proposed condition to the existing condition.

If you have any questions regarding this submittal, please do not hesitate to contact me.

Sincerely,



Carolyn "CJ" Doyle, PE

C:\Users\cjd2\Documents\CJD PE2\Projects\LETTERS\trans Town South Kingstown - Zarrella .docx

Zarrella Existing

Type III 24-hr 10 yr New Rainfall=4.90"

Prepared by CJ DOYLE, P.E.

Printed 4/30/2024

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Summary for Subcatchment S-1: Sub-Area 1

Runoff = 0.40 cfs @ 12.39 hrs, Volume= 2,468 cf, Depth= 0.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 yr New Rainfall=4.90"

Area (sf)	CN	Description
31,823	55	Woods, Good, HSG B
31,823		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.7	150	0.0390	0.11		Sheet Flow, woods Woods: Light underbrush n= 0.400 P2= 3.50"
1.3	67	0.0310	0.88		Shallow Concentrated Flow, woods Woodland Kv= 5.0 fps
23.0	217	Total			

Zarrella Proposed

Type III 24-hr 10 yr New Rainfall=4.90"

Prepared by CJ DOYLE, P.E.

Printed 4/30/2024

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Summary for Subcatchment S-1: Sub-Area 1

Runoff = 0.70 cfs @ 12.28 hrs, Volume= 3,473 cf, Depth= 1.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 yr New Rainfall=4.90"

Area (sf)	CN	Adj	Description
9,323	55		Woods, Good, HSG B
6,288	55		Woods, Good, HSG B
5,863	55		Woods, Good, HSG B
6,301	61		>75% Grass cover, Good, HSG B
1,360	98		Unconnected roofs, HSG B
2,688	98		Paved parking, HSG B
31,823	62	61	Weighted Average, UI Adjusted
27,775			87.28% Pervious Area
4,048			12.72% Impervious Area
1,360			33.60% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.3	100	0.0305	0.10		Sheet Flow, woods Woods: Light underbrush n= 0.400 P2= 3.50"
0.3	52	0.0153	2.51		Shallow Concentrated Flow, paving Paved Kv= 20.3 fps
0.1	34	0.0735	4.07		Shallow Concentrated Flow, grasss Grassed Waterway Kv= 15.0 fps
0.5	34	0.0465	1.08		Shallow Concentrated Flow, wooded Woodland Kv= 5.0 fps
18.2	220	Total			