



May 08, 2024

Town of Richmond
Attention: Tyler Machia, Zoning Administrator
Planning and Zoning Office
P.O. Box 285
Richmond, VT 05477

**RE: 2 Lot Subdivision – Application No. PRESUB2023-09 – Bradley & Karin LaRose –
156 Wortheim Road – Supplemental Stormwater Letter Report**

Dear Tyler,

Per your Continuation Memo dated 04/29/2024 and per the revised plans prepared by Barnard and Gervais dated 05/07/2024, Tailwater Engineering has performed an additional review of the stormwater management of the project. The revisions to the plans have resulted in a net reduction of impervious (see summary below) which has resulted in a reduced runoff volume from the site. The original dry detention pond size and outlet as designed and referenced in the original Stormwater Letter Report prepared by Tailwater Engineering has not changed and the project still meets the 25-year rainstorm attenuation requirements per the Town of Richmond's development bylaws. Please note that all other items addressed in this letter are still relevant and have not changed per the revised design. Below is a summary of the land cover changes and the revised discharges from the site.

Preconstruction Sub-Catchment No. 1

- Land Cover
 - 3,100 sq.ft. existing gravel drive
 - 37,630 sq.ft. woods / grass combination
 - Total Area = 40.730 sq. ft
- Average Slope = 10.4% +/-
- Total peak runoff from 25-year storm = 4.12 cfs

Preconstruction Sub-Catchment No. 2

- Land Cover
 - 3,161 sq.ft. existing gravel drive
 - 50.438 sq.ft. woods / grass combination
 - 3,307 sq.ft. rooftop / deck

- Total Area = 56,906 sq. ft
- Average Slope = 8.6% +/-
- Total peak runoff from 25-year storm = 5.63 cfs

The total combined existing peak runoff for the site = 9.75 cfs

Post Construction Sub-Catchment No. 1

- Land Cover
 - 3,100 sq.ft. existing gravel drive
 - 0 sq.ft. new gravel drive
 - 37,630 sq.ft. woods / grass combination
 - Total Area = 40.730 sq. ft
- Average Slope = 10.4% +/-
- Total peak runoff from 25-year storm = 4.12 cfs

Post Construction Sub-Catchment No. 2

- Land Cover
 - 3,161 sq.ft. existing gravel drive
 - 46,118 sq.ft. woods / grass combination
 - 3,307 sq.ft. existing rooftop / deck
 - 2,880 sq. ft new gravel drive
 - 1,440 sq.ft. new rooftops
 - Total Area = 56,906 sq. ft
- Average Slope = 8.6% +/-
- Total peak runoff from 25-year storm = 5.84 cfs

The total combined pre-routed peak runoff for the site = 9.96 cfs

Proposed Stormwater Management

The increase in runoff volume requires attenuation of the flows to reduce the post construction volumes to pre-construction volumes. Since the site's soil is so poorly drained, infiltrating of the water is not feasible. Therefore, the attenuation is proposed to be performed in a dry detention pond at the north end of the property. Sub catchment no.2 drains entirely to the proposed pond. The proposed pond has the following characteristics:

- 2-feet deep
- Water level controlled by a 12-inch vertical PVC riser with a grate set 6-inch from the pond bottom.

- The volume of the pond is 2,239 cubic feet.
- Total post-routed peak runoff from 25-year storm = 4.48 cfs

The total combined post construction peak runoff from the site = 8.60 cfs which is less than the preconstruction total combined peak runoff of 9.75 cfs.

Please feel free to contact me with any questions.

Sincerely,
Tailwater Engineering

A handwritten signature in black ink, appearing to read "Brad Washburn", with a horizontal line extending to the right.

Brad Washburn, P.E.
Owner