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April 8, 2020

Mr. Dave Keating, ZEO
Town of Darien
2 Renshaw Road
Room 211
Darien, Connecticut 06820

Re: 5 Tokeneke Trail
Darien, Connecticut

Dear Dave,

I have been retained by the owner of 5 Tokeneke Trail to determine if the existing Bioretention system which I designed back in 2012 and installed by the owner to address runoff issues has enough capacity for a proposed building addition.

The proposed addition is a two-car garage, located mostly over a portion of the existing driveway, a covered walkway connecting the new garage to the main residence, and an expanded driveway area to the northeast of the existing driveway. The net result of these proposed improvements is that the impervious area will increase by 1,058 square feet (0.0243 acres). The water quality volume (WQV) was calculated for this increase below:

WQV = (1")(0.95)(0.0243)/12 = 0.0019 acre-feet or 83.8 cubic feet.

The existing Bioretention system provides surface storage volume of 344.25 cubic feet. Additionally, the underlying soils consist of coarse-grained sand and gravel which have a significant infiltrative capacity. The existing Bioretention system has functioned extremely well over the past 7 years according to the owner. I also inspected the system today and it is working as originally designed.

It is my professional opinion that the existing Bioretention system can easily handle the runoff from the proposed increase of impervious area and continue to function as intended.

Section 825.g of the Darien Zoning Regulations state "Where base flood elevations have been determined, and whether or not a floodway is designated, no new construction, substantial improvement, or other development (including fill) shall be permitted which will increase base flood elevations. The Commission may authorize regulated activities provided there is a certification from a registered professional engineer that the proposed development, considered cumulatively with all anticipated

development and likely activities along the watercourse, shall not increase base flood elevations more than one foot."

The proposed garage has a footprint of 535 square feet and this is the only new structure within the AE Flood Zone. The volume loss within the AE zone due to the garage is 2,300 cubic feet. The available area between the Floodway and the limit of the AE zone is 55,819 square feet, so the loss of 2,300 cubic feet will equate to a rise in the water surface elevation of the flood zone of less than 0.5". Thus, the proposed project will be in compliance with Section 825.g of the Darien Zoning Regulations.

Please contact my office if you have any questions concerning this information.

Respectfully Submitted,
Trinkaus Engineering, LLC

Steven D. Trinkaus