

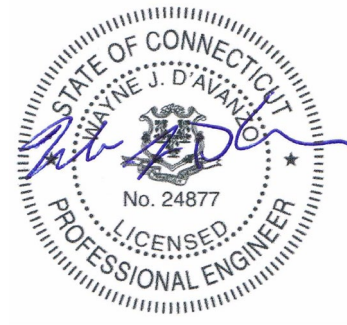
DRAINAGE REPORT
PREPARED FOR
EXISTING AND PROPOSED SITE CONDITIONS

LOCATED AT:

15 Beechwood Lane

WESTPORT, CONNECTICUT

FCE #2411



April 24, 2024

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NARRATIVE:

The subject of this report is a 0.754 acre parcel located at 15 Beechwood Lane in Westport. The purpose of this report is to determine the existing and proposed runoffs resulting from the proposed site improvements.

EXISTING CONDITIONS:

The subject parcel is located on the east side of Beechwood Lane, approximately 600 feet from its intersection with Spicer Road. The lot currently contains a single family residence and associated driveway, patio and walks. The lot contains two watersheds, one sloping toward the road, and one towards the rear wetlands. The existing drainage pattern follows the terrain.

This analysis follows the previous analysis done for the construction of the house. The currently proposed activity occurs in the rear watershed as created by the house construction, and this analysis will focus on that watershed and the previously designed and installed retention system. The net runoff will be compared to the pre-existing condition of a vacant lot.

Existing soils at this location, as identified in the NRCS Soil Survey of Fairfield County, Connecticut, consist of Udorthents-Urban land complex, which has a Hydrologic classification of "B".

The pre-existing runoff from a 25 Year rainfall event is 2.11 c.f.s.

PROPOSED CONDITIONS:

The proposal for this site is to construct a pool and pool patio.

The proposed runoff from a 25 Year rainfall event is 2.44 c.f.s.

The increased runoff resulting from the proposed improvements will be accommodated in an underground retention system.

COMPUTATIONS:

The following computations of the existing and proposed conditions runoff flows were derived from the HydroCAD computer software. HydroCAD follows the NRCS TR-20 procedure for computing stormwater runoff. Computations were performed for a 25 Year storm event, which has a 4% chance of occurring in any 12 month period.

Existing Conditions (Watershed 2):

Lawn	24,778 s.f.	CN 69
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Total	24,778 s.f.
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Weighted CN - **69**

Proposed Conditions (Watershed 2):

House	2,500 s.f.	CN 98
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Driveway	1,200 s.f.	CN 98
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Patio	475 s.f.	CN 98
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Pool Patio	347 s.f.	CN 98
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Pool	420 s.f.	CN 98
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Lawn	19,836 s.f.	CN 69
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Total -	24,778 s.f.
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Weighted CN - **75**

Water Quality Volume

$$I = (19.9 \times 0.009) + 0.05 = 0.2291$$

$$WQV = (0.2291 (0.569 \text{ acres})/12) = 0.0108631 \text{ ac-ft} = 473.2 \text{ ft}^3.$$

Groundwater Recharge Volume

$$GWV = 473.2 \text{ ft}^3 \times 0.25 = 118.3 \text{ ft}^3.$$

SUMMARY:

Existing conditions Runoff :	2.11 c.f.s.
Proposed conditions Runoff :	2.44 c.f.s.
Proposed Impervious Run-off retained :	0.58 c.f.s.
Proposed Run-off from Areas bypassing Retention :	1.87 c.f.s.

CONCLUSIONS:

The increased runoff resulting from the proposed site improvements are mitigated by the previously installed 15 units of Cultec R-330XLHD retention chambers.

This system will decrease the net peak runoff from the site during a 25 Year rainfall event to 1.87 c.f.s from its current peak runoff of 2.11 c.f.s.

The retention system has ample capacity to accommodate the first flush (1") runoff from all the impervious surfaces, utilizing 72 ft³ of its 1,192 ft³ capacity.

The proposed improvements will have no adverse impact on surrounding properties.