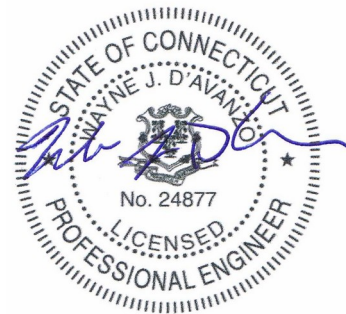


DRAINAGE REPORT
PREPARED FOR
EXISTING AND PROPOSED SITE CONDITIONS

LOCATED AT:

344 WESTPORT AVENUE

FCE #1763



NORWALK, CONNECTICUT

May 25, 2021

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NARRATIVE:

The subject of this report is a 0.394 acre parcel located on Westport Avenue in Norwalk. The purpose of this report is to determine the existing and proposed runoffs resulting from the proposed site improvements in order to design a stormwater management system.

EXISTING CONDITIONS:

The subject parcel located on the south side of Westport Avenue, approximately 300 feet from its intersection with Strawberry Hill Avenue. The lot currently contains two commercial hotel buildings, and associated driveway with parking. The lot slopes slightly down from the road to the rear.

Existing soils at this location, as identified in the NRCS Soil Survey of Fairfield County, Connecticut, consists of Urban land, which has a Hydrologic classification of 'D'.

The existing runoff as developed from a 100-Year rainfall event is 3.22 c.f.s.

PROPOSED CONDITIONS:

The proposal for this property is to renovate the buildings, with a second story addition being constructed on one, and the first floor expanded. The driveway and parking area will be reconfigured.

The proposed runoff from a 100-Year rainfall event is 3.22 c.f.s.

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 100-year thru 2 Year storm event, which have a 1% and 50% chance of occurring in any given 12 month period, respectively.

Existing Conditions:

Buildings	5,156 s.f.	CN 98
Driveway/Parking	8,748 s.f.	CN 98
Lawn	3,259 s.f.	CN 84
Total -	17,163 s.f.	

Weighted CN - **95**

Proposed Conditions:

Buildings	5,568 s.f.	CN 98
Driveway/Parking	8,151 s.f.	CN 98
Lawn	3,444 s.f.	CN 84
Total -	17,163 s.f.	

Weighted CN - **95**

Water Quality Volume

$$I = (79.9 \times 0.009) + 0.05 = 0.7691$$

$$WQV = (0.7691 (0.394 \text{ acres})/12) = 0.02525211 \text{ ac-ft} = 1,100.0 \text{ ft}^3.$$

Groundwater Recharge Volume

$$GWV = 1100.0 \text{ ft}^3 \times 0.1 = 110.0 \text{ ft}^3.$$

SUMMARY

	100 Year	50 Year	25Yr.	10Yr.	2Yr.
Existing Runoff :	3.22 c.f.s.	2.86 c.f.s.	2.51	2.05	1.29
Proposed Runoff :	3.22 c.f.s.	2.86 c.f.s.	2.51	2.05	1.29
Runoff Retained:	0.26 c.f.s.	0.23 c.f.s.	0.21	0.17	0.11
Areas Bypassing Retention Plus overflow:	2.96 c.f.s.	2.63 c.f.s.	2.31	1.88	1.19

Volume difference (100 Year) = $10,950 \text{ ft}^3 - 10,950 \text{ ft}^3 = 0 \text{ ft}^3$

CONCLUSIONS:

The run-off resulting from the proposed site improvements will be retained in an on-site retention system. The run-off from a portion of the roof of the house will be routed to 6 units of Cultec R-330XLHD retention chambers.

This system will decrease the net peak runoff during a 100 Year storm to 2.96 c.f.s. from its current peak of 3.22 c.f.s.

The proposed retention system provides 545 ft^3 of storage. This is greater than the difference in volume between existing and proposed conditions, and provides groundwater recharge. There is a decrease in the net runoff for the 2 thru 100 Year rainfall events, as the table above illustrates.

There is one watershed on the property, with the runoff being directed generally from the north down to the southwest, generally from the driveway entrance to the exit on the easement. The drainage pattern will not be altered by the proposed improvements.

The proposed drainage and stormwater retention system complies with the City of Norwalk DPW Drainage Manual of June, 2017.

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