DRAINAGE REPORT

PREPARED FOR

EXISTING AND PROPOSED SITE CONDITIONS

LOCATED AT:

FCE #2185

1A Plunkett Place

WESTPORT, CONNECTICUT

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NARRATIVE:

The subject of this report is a 1.0123 acre parcel located at 1A Plunkett Place 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 west side of Plunkett Place, at its intersection with North Avenue. The lot currently contains a single family residence and associated driveway, deck and walks. The lot slopes moderately to steeply diagonally across its width from the road to the wetlands, generally from the northeast to the southwest. The existing drainage pattern follows the terrain.

Existing soils at this location, as identified in the NRCS Soil Survey of Fairfield County, Connecticut, consist of a combination of Ridgebury, Leicester and Whitman soils, 0 to 8 percent slopes, extremely stony, which has a Hydrologic classification of "D", Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky, which has a Hydrologic classification of "B, and Paxton and Montauk fine sandy loams, 3 to 8 percent slopes, which has a Hydrologic classification of "C".

For the purposes of this analysis, a Hydrologic classification of "B" was used.

For the purposes of this analysis, the existing conditions were considered to be a vacant lot.

The existing runoff from a 25 Year rainfall event is 3.62 c.f.s.

PROPOSED CONDITIONS:

The proposal for this site is to construct a single family residence and reconfigure the driveway. A future pool and patio are accounted for in this analysis.

The proposed runoff from a 25 Year rainfall event is 4.11 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 occuring in any 12 month period.

Existing Conditions:

Lawn -	39,823	s.f.	CN 69
Total -	44,098	s.f.	

Weighted CN - 69

Proposed Conditions:

House	2,200	s.f.	CN 98
Driveway	1,791	s.f.	CN 98
Decks	700	s.f.	CN 85
Walks	1,093	s.f.	CN 98
Pool	312	s.f.	CN 98
Patio	297	s.f.	CN 98
Lawn -	37,705	s.f.	CN 69
Total -	44,098	s.f.	

Weighted CN - 73

Water Quality Volume

I = (14.5 x 0.009) + 0.05 = 0.1805

WQV = (0.1805 (1.0123 acres)/12) = 0.01522667 ac-ft = 663.3 ft^3.

Groundwater Recharge Volume

GWV = 663.3 ft^3 x 0.25 = 165.8 ft^3.

SUMMARY:

Existing conditions Runoff :	3.62 c.f.s.
Proposed conditions Runoff :	4.11 c.f.s.
Proposed Impervious Run-off retained :	0.63 c.f.s.
Proposed Run-off from Areas bypassing Retention :	3.52 c.f.s.

CONCLUSIONS:

The increased runoff resulting from the proposed site improvements will be retained in an on-site retention system consisting of a set of 2 units of Cultec C-100 retention chambers and a set of 17 Cultec R-150XLHD retention chambers.

This system will decrease the net peak runoff from the site during a 25 Year rainfall event to 3.52 c.f.s from its current peak runoff of 3.62 c.f.s.

The retention system has ample capacity to accommodate the first flush (1") runoff from all the impervious surfaces, utilizing 129 ft^3 of its 651 ft^3 capacity.

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