SETT-00200

June 10, 2021

Sea Bright Planning Board
1099 Ocean Avenue
Sea Bright, NJ 07760

Re: **Drainage Statement**
         Block 3, Lots 16 & 16.01
         1306 Ocean Avenue
         Sea Bright, Monmouth County, NJ

I.   Introduction

The purpose of this drainage statement is to provide calculations and documentation demonstrating that no detrimental stormwater impacts will be created by the proposed improvements. The subject lot is located in the B-2 Zone and fronts on Ocean Avenue (NJSH Rt 36). The site presently operates as a Marina. The Applicant is proposing to develop demolish the existing structure and construct a new 2.5-story building with a workshop/office and residential one-bedroom apartment on the second floor. The proposed building footprint will be 60'X30' and generally in the same location as the existing structure to be raised. No changes to the existing gravel parking lot are proposed.

II.   Hydrologic Calculations

Time of Concentration
The minimum time of concentration of 10 min was utilized in the hydrologic model for all sub-drainage areas. The use of the minimum Tc corresponds to the most conservative hydrologic model with the maximum peak runoff rates based on the drainage area and curve numbers.

IDF Chart
The Sandy Hook IDF chart was utilized to obtain the rainfall intensity for the following storm events:

	2- Year	10-Year	100-Year
Time of Concentration (Tc)	10 mins	10 mins	10 mins
Rainfall Intensity (I)	3.4 in/hr	5.0 in/hr	7.0 in/hr

Rational Formula
The rational formula is an empirical formula relating runoff to rainfall intensity. It is expressed in the following form:

$Q = CIA$
         where:
         Q = peak flow in cubic feet per second (ft^3/s)
         C = runoff coefficient (weighted)
         I = rainfall intensity in inches (in) per hour
         A = drainage area in acres

Attn: **Sea Bright Planning Board**
Re: **Drainage Statement**
Block 3, Lots 16 & 16.01
1306 Ocean Avenue
Sea Bright, Monmouth County, NJ

To calculate C we use,

$$C = A1C1 + A2C2 \ldots ANCN\ /\ A1 + A2 \ldots AN$$

where:

A1 =	Existing Impervious Area	= 0.141 AC
A2 =	Existing Gravel Area	= 0.602 AC
A3 =	Proposed Impervious Area	= 0.129 AC
A4 =	Proposed Gravel Area	= 0.525 AC
A5 =	Proposed River Stone	= 0.089 AC
C1 =	Impervious	= 0.99
C2 =	Gravel (Packed Drive)	= 0.84
C3 =	River Stone	= 0.49

For the existing site, the calculated, weighted runoff coefficient (C) = 0.87
For the proposed site, the calculated, weighted runoff coefficient (C) = 0.82

The rainfall intensity for the 2-,10-, and 100-year storm, respectfully, is 3.4, 5.0, and 7.0.

III. Pre vs Post-development Peak Flow

Table 4 -Pre vs Post-development Peak Flow Rates – Total Site			
	2- Year	**10-Year**	**100-Year**
Pre-Development	2.197 CFS	3.232 CFS	4.525 CFS
Post-Development	2.071 CFS	3.046 CFS	4.265 CFS
Δ Delta	- 0.126 CFS	- 0.186 CFS	- 0.260 CFS
Percent Change	- 5.74 %	- 5.75 %	- 5.75 %

IV. Conclusion

In review of the drainage calculations, it is shown that the proposed development of the site will create a minor decrease in the total peak runoff rate leaving the site. All Local, County, and State requirements for stormwater management have been addressed.

Should you have any questions or require any additional information, please do not hesitate to contact this office.

Sincerely,

Jaclyn J. Flor, PE, PP, CME
President & CEO