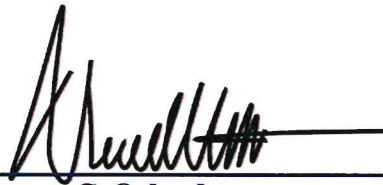


**STORMWATER MANAGEMENT  
REPORT  
FOR  
BLOCK 46.02, LOTS 1.01 & 2.01  
CITY OF SEA ISLE  
CAPE MAY COUNTY, NJ**

**EDA #10232**



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**Vincent C. Orlando**

**6/13/24**

**Date  
N.J.P.E. #32498**

**Revised 8/20/24**

**Stormwater Management Calculations**  
 Doc3, LLC - Block 46.02, Lots 1.01 & 2.01  
 City of Sea Isle, Cape May County, NJ

The 5,500 SF property, located on Landis Ave is currently an existing restaurant. The Applicant proposes a 4,350 SF mixed-use building with a restaurant on the first floor and a total of four (4) dwelling units on the 2<sup>nd</sup> and 3<sup>rd</sup> floors above. A stormwater trench with four 8" perforated PVC pipe surrounded by stone has been proposed to mitigate runoff. The design is to encompass the entire lot area minus any waterway area.

**Pre-Development Runoff Calculation**

$Q = ciA$ $c = 0.30$ (existing coverage) $i = 7.70$ in/hr ( $T_c = 6$ Min.) $A = 5,500$ SF = 0.126 Ac. $Q = (0.30)(7.70 \text{ in/hr})(0.126 \text{ Ac.})$ $Q = 0.291$ CFS	$V = (Q) T/t$ $T/t = 2.5(T/c)$ where (T/c) is 6 minutes $V = (0.291 \text{ CFS})(15 \text{ min.})(60 \text{ sec./min})$ <b><math>V = 261.9</math> CF</b>
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**Post-Development Runoff Calculation**

$Q = ciA$ $c = 0.99$ (proposed coverage) $i = 7.70$ in/hr ( $T_c = 6$ Min.) $A = 5,500$ SF = 0.126 Ac. $Q = (0.99)(7.70 \text{ in/hr})(0.126 \text{ Ac.})$ $Q = 0.961$ CFS	$V = (Q) T/t$ $T/t = 2.5(T/c)$ where (T/c) is 6 minutes $V = (0.961 \text{ CFS})(15 \text{ min.})(60 \text{ sec./min})$ <b><math>V = 864.9</math> CF</b>
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**Volume Calculation**

(Post-Development Runoff) - (Pre-Development Runoff)  
 $864.9 \text{ CF} - 261.9 \text{ CF} = 603 \text{ CF}$   
 30% Volume = 181 CF

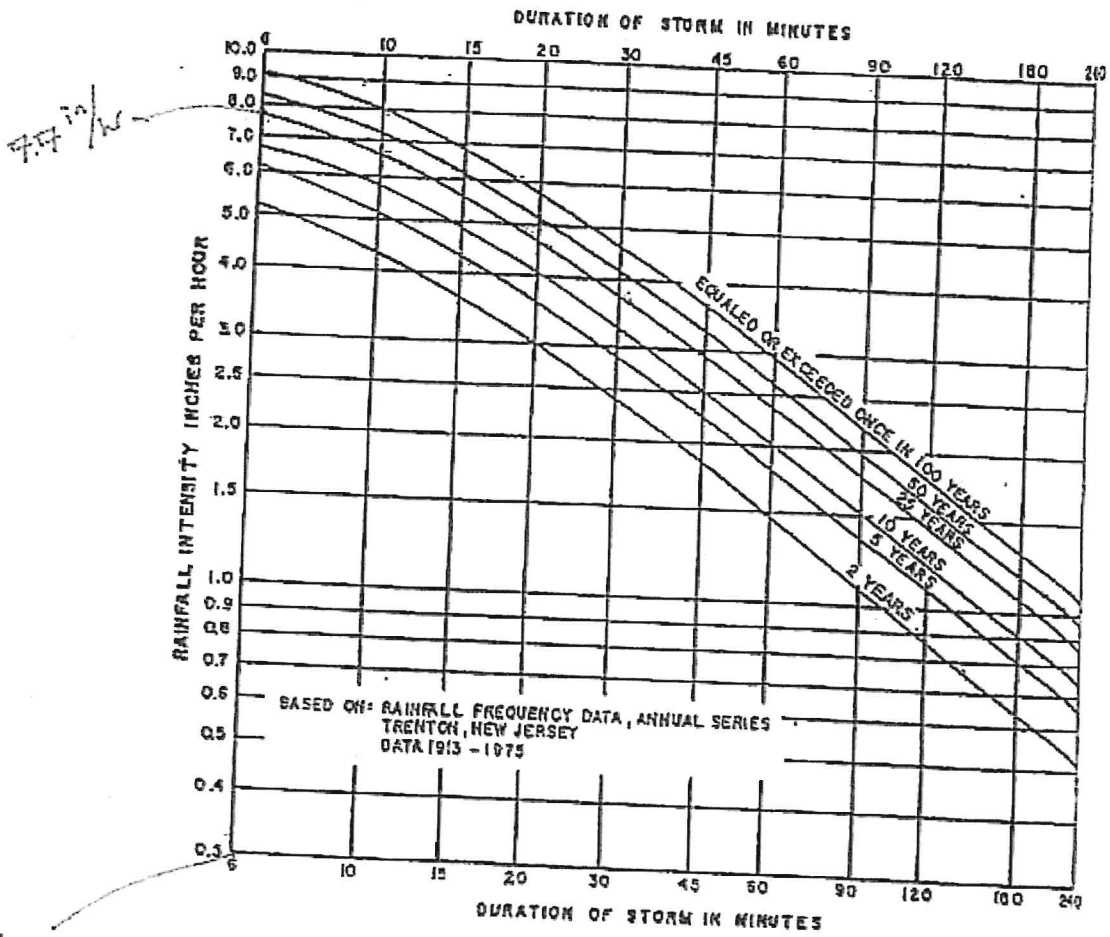
**Storage Calculation**

<u>Four 8" Pipes @ 50 LF</u>	=		
$3.14 \times (.33)^2 \times 4 \times 50$	=		68.39 CF
<u>6' x 53' Stone Trench</u>			
$[(6' \times 1.33' \times 53') - 68.39] (0.35)$	=		124.09 CF
<b>Total</b>	<b>=</b>	<b>192.48 CF</b>	<b>&gt; 181 CF Required</b>

**Summary:**

The difference in the 25 year design storm generates approximately 603 CF of stormwater runoff from all improvements, of which 181 CF (30%) is required to be stored. The infiltration system has been designed to store approximately 192.48 CF of runoff. If the quantity of runoff exceeds the capacity of the trench, runoff will flow out of the proposed inlet and towards existing drainage patterns on 47th Street.

FIGURE 7.2 RAINFALL INTENSITY CURVES



Note: Adapted from Figure 2.1-2 in the NJDEP Technical Manual for Stream Encroachment Permits.

or other approved methods may be employed.

LAND-USE DESCRIPTION	HYDROLOGIC SOIL GROUP			
	A	B	C	D
Cultivated land: without conservation treatment with conservation treatment	0.49 0.27	0.67 0.43	0.81 0.61	0.88 0.67
Pasture or range land: poor condition good condition	0.38 NA	0.63 0.25	0.78 0.51	0.84 0.65
Meadow: good condition	NA	NA	0.44	0.61
Wood or forest land: thin stand, poor cover, no mulch good cover	NA NA	NA NA	0.59 0.45	0.79 0.59
Open spaces, lawns, parks, golf courses, cemeteries: good condition, grass cover on 75% or more of area fair condition, grass cover on 50-75% of area	NA NA	0.25 0.45	0.51 0.63	0.65 0.74
Commercial and business areas (85% impervious)	0.84	0.90	0.93	0.96
Industrial districts (72% impervious)	0.67	0.81	0.88	0.92
Residential: <u>Average lot size</u> <u>Average impervious</u> 1/8 acre                      65% 1/4 acre                      38% 1/3 acre                      30% 1/2 acre                      25% 1 acre                        20%	0.59 0.25 NA NA NA	0.76 0.55 0.49 0.45 0.41	0.86 0.70 0.67 0.65 0.63	0.90 0.80 0.78 0.76 0.74
Paved parking lots, roofs, driveways, etc.	0.99	0.99	0.99	0.99
Streets and roads: paved with curbs and storm sewers gravel dirt	0.99 0.57 0.49	0.99 0.76 0.69	0.99 0.84 0.80	0.99 0.88 0.84
NOTE:	NA denotes information is not available; design engineers should rely on another authoritative source.			
SOURCE:	Technical Manual for Land Use Regulation Program, Department of Environmental Protection, Bureau of Inland and Coastal Regulations, Stream Encroachment Permits (Trenton, New Jersey, revised September 1995), p. 12.			

**PROJECT  
SITE**



**GENERAL LOCATION**  
(NJDEP GEOWEB MAP)

1" = 200'

