

STORMWATER MANAGEMENT REPORT

FOR

**PRELIMINARY & FINAL MAJOR SITE PLAN
BUILDING J
1 NORTH VILLAGE BOULEVARD
TAX LOT 7, BLOCK 16008
“NORTH VILLAGE AT SPARTA”
SPARTA TOWNSHIP
SUSSEX COUNTY
NEW JERSEY**

DATED: April 24, 2023

**PREPARED BY:
DYKSTRA ASSOCIATES, PC
11 LAWRENCE ROAD
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**OWEN DYKSTRA,
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Dykstra Associates, PC

INTRODUCTION

The proposed project site is a portion of the Planned Village Core known as North Village at Sparta. This portion of the Planned Village Core is comprised of one approved lot comprised of approximately 1.25 acres located along Route 15. The project entails construction of a fast-food restaurant, Chipotle, a parking lot and associated improvements.

The stormwater infrastructure for the water quality, water quantity and groundwater recharge for the project has been designed and has been installed as part of the preliminary major subdivision. The storm sewer piping to direct the runoff to the appropriate stormwater management features has been designed in accordance with the municipal ordinance.

STORM SEWER AND RIP RAP CALCULATIONS:

The minimum design and performance standards have been met for pipe and rip rap sizing as required in the municipal ordinance and the New Jersey Soil Erosion and Sediment Control Manual. The proposed storm sewer system has been designed to accommodate the 25 year storm event. The following pipe charts and rip rap calculations demonstrate compliance with the applicable requirements.

RIP RAP APRON CALCULATIONS:

STRUCT. LABEL	Pipe Dia. Inches	Discharge CFS	Tail Water Feet	Length Feet	Width Feet	D(50) Inches
FE-1	15	1.64	2'	5' *	6' *	3 *
FE-2	15	1.12	2'	5'*	6'*	3 *

*Note: The pipes discharge to a river rock bed in the infiltration ponds which the length, width and stone size exceed those required. Therefore, no rip rap is required in addition to the river rock bed proposed.

Storm Sewer Tabulation

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Project Name: Enter Project Name...

05-23-2023

Line ID	Length		Drng Area		Rational	C x A		Tc		Intensity (in/hr)	Total Q (cfs)	Capacity (cfs)	Velocity (ft/s)	Line		Invert Elev		HGL Elev		Surface Elev		Line No		
	Incr (ac)	Total (ac)	Incr	Total		Inlet (min)	Syst (min)	Incr	Total					Inlet (min)	Syst (min)	Size (in)	Slope (%)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)		Up (ft)	Dn (ft)
PIPE 1	0.070	0.326	0.07	0.31	6.0	6.40	0.07	0.31	6.0	6.40	5.31	1.64	4.92	1.37	15	0.58	610.12	610.00	611.26	611.25	614.00	614.00	0.00	1
PIPE 2	0.256	0.256	0.24	0.24	6.0	6.00	0.24	0.24	6.0	6.00	5.42	1.32	4.64	1.36	15	0.52	610.62	610.22	611.41	611.39	613.65	614.00	614.00	2
PIPE 3	0.068	0.214	0.07	0.21	6.0	6.23	0.07	0.21	6.0	6.23	5.35	1.12	4.76	0.93	15	0.54	610.13	610.00	611.26	611.25	613.40	613.40	0.00	3
PIPE 4	0.146	0.146	0.14	0.14	6.0	6.00	0.14	0.14	6.0	6.00	5.42	0.78	4.70	0.75	15	0.53	610.44	610.23	611.34	611.33	613.00	613.40	613.40	4
PIPE 5	0.185	0.185	0.18	0.18	6.0	6.00	0.18	0.18	6.0	6.00	5.42	0.95	4.80	0.80	15	0.55	608.67	608.53	609.78	609.78	613.17	612.00	612.00	5

Notes: IDF File = SUSSEX IDF.idf, Return Period = 2-yrs.

Project File: SF64 - LOT 7 - PIPES Rev1.sws

Composite C Worksheet

Project Name: Enter Project Name...

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Line No	Description	Drainage Area (ac)	Runoff Coeff (C)	C x A	Composite (C)	Structure ID
1	Commercial 85% Imp	0.020	0.84	0.017		CB-1
	Impervious	0.050	0.99	0.050		
	Totals	0.070		0.066	0.95	
2	Commercial-85% Imp.	0.072	0.84	0.060		CB-2
	Impervious	0.184	0.99	0.182		
	Totals	0.256		0.243	0.95	
3	Commercial - 85% Imp.	0.015	0.84	0.013		CB-3
	Impervious	0.053	0.99	0.052		
	Totals	0.068		0.065	0.96	
4	Commercial - 85% Imp.	0.014	0.84	0.012		CB-4
	Impervious	0.132	0.99	0.131		
	Totals	0.146		0.142	0.98	
5	Commercial - 85% Imp.	0.048	0.84	0.040		CB-5
	Impervious	0.137	0.99	0.136		
	Totals	0.185		0.176	0.95	
Project File: SP64 - LOT 7 - PIPES Rev1.sws						