TOWN OF CARMEL
PLANNING BOARD

60 McAlpin Avenue
Mahopac, New York 10541
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PLANNING BOARD AGENDA
MAY 24, 2023– 7:00 P.M.

		TAX MAP #	PUB. HEARING	MAP DATE	COMMENTS
PUBLIC HEARING					
1.	ANB Holdings GCCM LLC (Michael Scoca) - 93 Teakettle Spout Road	76.17-1-17	5/24/23	4/28/23	Public Hearing & Resolution
RESOLUTION					
2.	NYCDEP West Branch Auxiliary Dam – 34 Drewville Road	65.-1-5		3/31/23	Site Plan
3.	Willow Wood Country Club, Inc. – 551 Union Valley Road	87.7-1-6, 7 & 11		4/28/23	Amended Site Plan
SITE PLAN					
4.	Diamond Point Development, LLC – 4 Baldwin Pl	86.10-1-2 & 3		5/15/23	Site Plan
SUBDIVISION					
5.	Western Bluff Subdivision – 350 West Shore Dr.	66.14-1-20		3/29/23	Final Subdivision

INSITE
ENGINEERING, SURVEYING & LANDSCAPE ARCHITECTURE, P.C.

May 15, 2023

Town of Carmel Planning Board
60 McAlpin Avenue
Mahopac, New York 10541

RE: Diamond Point Development
4 Baldwin Place Road
Town of Carmel
TM#'s: 86.10-1-2&3

Dear Chairman Paeprer and Members of the Board:

Please find enclosed the following plans and documents in support of an application for site plan approval for the above referenced project:

- Site Plan Set, last revised May 15, 2023.
- Architectural floor plans and elevations by Stinard Architecture Inc.
- Stormwater Pollution Prevention Plan, last revised May 15, 2023.

Since the project was last before the Board, the overall scope has been reduced to minimize costs associated with earthwork operations. The project is now composed of the previously proposed 1,110 square foot office & retail space near the frontage with US Route 6, but the various self-storage buildings previously proposed in the first phase have been reduced to one. The proposed footprint is approximately 40,000 square feet. The building is proposed to be three stories (as permitted by zoning), with the first floor being accessed from the south facing side, the second floor being accessed from the north facing side, and the third floor being accessed by elevator. The future phase two of the project remains as previously designed. This change creates a reduction in site disturbance and new impervious. The reason for this reduction in scope is to make the project more efficient in terms of overall development of the site, stormwater management, and construction costs.

In addition to the broader changes described above, we have also sought to respond to a number of your consultants' comments and questions. However, the applicant is primarily interested in receiving feedback related to the new project layout and scope. With the benefit of the Board's feedback all of the other outstanding comments and questions will be addressed moving forward.

In response to comments received from Director of Code Enforcement, Michael Carnazza, dated March 22, 2023, we offer the following responses:

1. No response is necessary, as this comment accurately summarizes the applicant's proposal with the exception of the changes in project scope noted above.

2. The zoning table has been revised to eliminate the need for a variance for minimum building floor area and analyzes the district for which each portion of the lot is located.

3. This comment is acknowledged. The applicant would like to point out, however, that they are proposing two project signs. One sign would be along Route 6 and the other would be on Baldwin Place Road. The applicant would seek to make the size of the signs as code

conforming, but given the size of the property and the fact that it fronts on two roads, the applicant would seek to install two signs.

In response to comments received from Town Engineer Richard Franzetti, PE, dated March 20, 2022, we offer the following responses:

General Comments

1. The noted referrals are acknowledged.

2. The required permits are acknowledged.

3. The applicant is working with their Traffic Consultant on permitting the project both with the NYSDOT and PCDHF.

4. The SWPPP has been revised and is enclosed herewith.

5. An Overall Site Plan is now provided.

6. The need for a stormwater maintenance agreement is acknowledged and will be provided in subsequent submissions.

7. The requirement of a performance bond is acknowledged and will be provided in subsequent submissions.

Detailed Comments

1. Maneuvering Plans have been provided.

   a) See Drawing D-3 for a graphic representation of vehicle movements.

   b) Radii and other driveway dimensions have been provided on the project drawings.

   c) Sight distances will be provided by the traffic engineer with a future submission.

   d) Slopes at the driveway entrances have been provided on drawing SP-2.1.

2. Work associated with the US Route 6 driveway entrance is proposed in the NYSDOT right of way and a Highway Work Permit will be sought.

3. The general location of the well and proposed subsurface sewage treatment system (SSTS) have been shown on the drawings. Additional details will be provided as the project advances and a separate set of drawings will be prepared for Putnam County Department of Health (PCDOH) review. Details on the fire protection tanks will be provided with a future submission.

4. Layout and Landscape Plan

   a) A note has been added indicating that all planting shall be installed per Chapter 142 of the Town of Carmel Code, and verified by the Wetland Inspector.

   b) A light spill plan will be provided with a future submission.

5. Grading and Utilities Plans

a) Rims and inverts will be provided with a future submission.

b) Hydraulic calculations and pipe sizing will be provided with a future submission.

c) Electric and telecommunication line information will be provided on a subsequent submission. The general location of the proposed well and SSTS have been shown on the drawings. Additional details will be provided on a separate set of drawings that will be submitted to PCDOH.

d) The general location of the well and proposed subsurface sewage treatment system (SSTS) have been shown on the drawings. Additional details will be provided as the project advances and a separate set of drawings will be prepared for Putnam County Department of Health (PCDOH) review.

e) It is acknowledged that all utilities are to be buried.

6. Erosion and Sediment Control Plan

a) Rim and invert elevations will be provided on a subsequent submission.

b) A construction sequence has been added to drawing D-3.

7. Site Details

a) This note has been added on drawing OP-1.

b) End Section material is HDPE, which is now indicated in the detail.

c) A note regarding this requirement has been added to drawing OP-1.

d) The asphalt detail has been revised to reflect this.

In response to comments received from Town Planner, Patrick Cleary, dated March 22, 2023, we offer the following responses:

1. These comments accurately summarize the proposed use.

2. Self Storage Standards

a. There are no plans for the storage of hazardous materials. The applicant has engaged the town's architectural consultant and will be working with them and the Board regarding the proposed architecture.

b. This comment is acknowledged in that the proposed site plan will eliminate several existing objectionable conditions.

c. This comment is acknowledged that the Town of Carmel intends to serve as lead agency for the project.

d. The proposed self-storage will be for dead-storage only. There are no proposed retail, storefront or office activities proposed for the self-storage buildings. The office and retail uses will be housed exclusively in the 1,110sf building designated for that use. There is

no proposed use of the site involving any of the prohibited activities noted. There is no proposal for outdoor storage. Vehicle parking on site will only be for the transient use of customers. Operating hours will be limited to 7am to 11pm.

e. Much of the wooded buffer along Baldwin Place Road will remain intact. For the portion of existing vegetation to be cleared, including near the existing dwellings that are to be removed, landscaping has been proposed.

f. A photometric plan will be provided with a future submission.

g. A conversion parking plan will be provided with a future submission.

3. The applicant does not plan to seek the rezoning of the lot, as it does not impact the site development as proposed.

4. As discussed above the minimum floor area requirement for the office /retail building is met.

5. The parking requirement that was used was from §156-33, which requires 1 parking space per 10,000 square feet. The parking summary has been revised to name Self Storage as the use.

6. The applicant's clientele will use the parking and loading spaces shown on the plan. The applicant has indicated that generally customers at their other facilities will simply park parallel to the building at the nearest available point to the door they seek to access. In this current configuration there are no drive-up units with overhead doors. The buildings will all be accessed by the doors shown.

7. The proposed parking spaces are shown to accommodate the spaces required by zoning and to offer formalized handicap parking spaces. More often, customers who are dropping things off, or picking them up, will use the proposed loading spaces which are provided parallel to the buildings. These will allow customers in their passenger vehicles or box trucks to load and unload, and then make their way to the provided doors. As discussed above, generally customers will simply park parallel along the building at the nearest desired entry point to the building. Due to the minimal number of customer visits at any given time, the applicant would seek not to stripe the dedicated loading zones as this would create an unnecessary maintenance issue.

8. Access

a. It is acknowledged that NYSDOT review and approval is required for the driveway entrance at US Route 6.

b. As recommended by Colliers, the proposed driveway has been shifted further from the intersection. To clarify the driveway onto Baldwin Place Road will be reviewed by Putnam County Highways and Facilities, not the NYSDOT.

9. It is acknowledged that the Town Planner has recommended a traffic consultant be hired to review the Traffic Engineering Report.

10. An earthwork analysis will be provided with a future submission.

11. A SWPPP was provided. Per the Town Engineer, it is under review. A revised SWPPP is enclosed herewith.

12. Utilities are shown on drawing SP-2.1 and SP-2.2. Details thereto are shown on drawing D-3.

13. The proposed landscaping has been augmented somewhat to provide a more consistent foundation planting, however, the applicant does not seek to completely screen their building from view as street visibility is an important part of their marketing. The applicant seeks to provide attractive architecture to limit the need for vegetative screening. The landscaping is meant to soften and frame the view of the proposed building.

14. A Full EAF will be provided under separate cover.

Please place the project on the May 24, 2023 Planning Board agenda discussion of the project with the Board. Should you have any questions or comments regarding this information, please feel free to contact our office.

Very truly yours,

INSITE ENGINEERING, SURVEYING & LANDSCAPE ARCHITECTURE, P.C.

By: _____
Richard D. Williams, PE
Senior Principal Engineer

RDW/adt

Enclosures
cc: (All via email only) Aaron Sommer, Jason Sommer, Jennifer Grey, Esq, Scott Stinard

INSITE
ENGINEERING, SURVEYING &
LANDSCAPE ARCHITECTURE, P.C.

PRELIMINARY STORMWATER POLLUTION PREVENTION PLAN

For

DPD – Self Storage
4 Baldwin Place
Town of Carmel, New York

May 15, 2023

Owner Information:

Bernad Creations LTD
124 Ridge Road
Montgomery, NY 12549

Applicant Information:

Diamond Point Development
880 Marietta Highway, Suite 630-243
Roswell, GA 30075

Note: This report in conjunction with the project plans make up the complete Stormwater Pollution Prevention Plan.

Prepared by:
Insite Engineering, Surveying & Landscape Architecture, P.C.
3 Garrett Place
Carmel, New York 10512

CONTENTS

APPENDICES

FIGURES

1.0 INTRODUCTION

1.1 Project Description

The subject project is located on two adjacent parcels totaling 30.53± acres on Baldwin Place Road in the Town of Carmel. The parcel and its surroundings are delineated on the attached Location Map (Figure 1). Designated as Tax Map Numbers 86.10-1-2 and 86.10-1-3 and are in the C/BP & C zoning districts, respectively. Portions of the property are currently developed with buildings and associated paved and gravel driveways. The remaining areas of the property consist of grass and wooded areas. It is proposed to construct two (2) self-storage buildings, an office building for leasing & administration, and associated site improvements such as driveways and parking areas. The overall project proposes to develop 6.4 +/- acres of new impervious surfaces on the site. It is proposed to capture and treat the stormwater runoff associated with the proposed improvements in a series of stormwater management practices designed to meet Town of Carmel, NYSDEC and NYCDEP requirements. A proposed drilled well and septic system will service the project. The project site is located in the Amawalk Reservoir Watershed.

The following permits are required for the project:

NEW YORK CITY DEPARTMENT OF ENVIROMENTAL PROTECTION
SWPPP & Septic Approval
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SWPPP General Permit Coverage (GP-0-20-001) Freshwater Wetland Permit
PUTNAM COUNTY DEPARTMENT OF HEALTH
SSTS & Well Improvement Approval
TOWN OF CARMEL
Site Plan Approval/ Wetland Permit
NEW YORK STATE DEPARTMENT OF TRANSPORTATION
Highway Work Permit
PUTNAM COUNTY DEPARTMENT OF HIGHWAYS AND FACILITIES
Driveway Permit

There are no known enforcement actions, and no lawsuits or administrative proceedings, commenced against the applicant, or any principal affiliate of the applicant, for any alleged violations of law related to the applicant of the site, in the five years preceding this application.

With regard to NYCDEP requirements, Section 18-39(b)(4)(iii) and Section 18-39(b)(4)(iv) of the Rules and Regulations require a SWPPP Approval for this project. This project meets two (2) of the thresholds that require SWPPP approval from the NYCDEP. For further discussion on NYCDEP requirements, refer to Section 2.6 below.

1.2 Existing Site Conditions (Pre-Development)

The subject property is located in the Town of Carmel on Baldwin Place Road adjacent to Route 6. The property is currently developed with multiple buildings, roadways, fields and woods. There is a high point located along the north property line. From the high point, stormwater runoff generally slopes to the south and west towards Baldwin Place Road or east towards Route 6 and a New York State Department of Environmental Conservation (NYSDEC) Wetland on the adjacent property.

The stormwater analysis included in this SWPPP utilizes five (5) design points. The design points can be seen on Figures 2 and 3, and are identified as Design Point 1, Design Point 2, Design Point 3, Design Point 4, and Design Point 5. The Subcatchments for each Design Point are identified as PRE 1, PRE 2, PRE 3, PRE 4 and PRE 5 in the predevelopment model and are shown on Figure 2. See below for a summary of each design point:

- Design Points 1 and 2 are located at existing culverts along Baldwin Place Road. Runoff is conveyed to Design Point 1 via existing roadside swales that shall remain.
- Design Point 3 represents a point on an existing open channel conveyance system south of Kennard Road. Runoff is conveyed to Design Point 3 via the stormwater collection system located along US Route 6, and Baldwin Place Road.
- Design Point 4 is located at an existing drain inlet in Baldwin Place Road. Runoff is conveyed to Design Point 4 via the stormwater collection system located along US Route 6.
- Design Point 5 is located at an existing headwall adjacent to Baldwin Place Road. Runoff is conveyed to Design Point 5 via an existing swale that discharges from the NYSDEC Wetland and Pond that runs along US Route 6.

It is noted there are existing flooding issued along Baldwin Place Road both in front of the Mobil Station and at the culvert crossing by Kennard Road during certain rainfall events. This project will serve to alleviate those flooding problems by reducing peak flows to below pre-development areas as well as capturing runoff and more securely conveying it to the existing infrastructure.

The hydrologic soil groups for the project consists of “B”, “C” & “D” soils. The designation of the onsite soils located within the proposed limits of disturbance primarily consist of Paxton fine sandy loam (PnB, PnC & PnDs identified on the Soil Conservation Service Web Soil Survey. The soils boundaries are shown on Figure 2 and 3 of this report. The following soil group descriptions are as defined by the Soil Conservation Service Web Soil Survey.

1.3 Proposed Site Conditions (Post Development)

As mentioned above, the proposed project includes the construction of two (2) self-storage buildings, an office building for leasing & administration, and associated site improvements such as driveways and parking areas. The redevelopment project will include an increase in impervious surfaces (approximately 6.4 +/- acre increase). As such, treatment and mitigation for the newly created impervious surfaces will be provided in the form of proposed stormwater management practices (SMP) discussed further in later sections of this report. The proposed SMP's will be designed to capture and treat runoff from the impervious surfaces associated with the proposed project.

It is proposed to maintain the existing drainage patterns on the site to the maximum extent practical to minimize the impact to the existing downstream areas. Stormwater treatment for the subject development will be accomplished through the use of two (2) infiltration basins (NYSDEC I-2), a Wet Swale (NYSDEC O-2) and a Bioretention Filter (NYSDEC F-5) as SMPs.

As shown in the following sections of this report, the stormwater quality and quantity for the proposed development have been mitigated in accordance with the Town of Carmel, NYSDEC and NYCDEP design standards. Additionally, an erosion and sediment control plan has been prepared in accordance with the *New York State Standards and Specifications for Erosion and Sediment Control* to protect downstream features during construction activities.

2.0 STORMWATER MANAGEMENT

The proposed stormwater management system for the project has been designed to meet the requirements of local, regional, and state stormwater ordinances and guidelines, including but not limited to the NYCDEP and the NYSDEC. Specifically, the following codes / regulations have been used to design this SWPPP:

- *NYSDEC SPDES General Permit for Stormwater Discharges from Construction Activities, General Permit GP-0-20-001* (GP-0-20-001).
- *NYCDEP Rules and Regulations for the Protection from Contamination, Degradation, and Pollution of the New York City Water Supply and its Sources* (Rules and Regulations).
- *Town of Carmel Town Code, Chapter 156 – Stormwater Management, Soil Erosion and Sediment Control.*

Since the subject project proposes the disturbance of more than 1 acre, coverage under the New York State Department of Environmental Conservation (NYSDEC) SPDES General Permit for Stormwater Discharges from Construction Activities (GP-0-20-001) is required. It should be noted that the requirements set forth by GP-0-20-001 discussed below will also incorporate the requirements for redevelopment projects in future iterations of this SWPPP.

In order to meet the requirements, set forth by GP-0-20-001, and the latest edition of the NYSDEC *New York State Stormwater Management Design Manual* (NYSSMDM), including the requirements listed in Chapter 10: *Enhanced Phosphorus Removal Standards* (Chapter 10) was referenced for the design of the proposed stormwater collection, conveyance and treatment system. The Design Manual specifies five design criteria that are discussed in detail below. They are Runoff Reduction Volume (RR_v), Water Quality Volume (WQ_v), Stream Channel Protection Volume (CP_v), Overbank Flood Control (Q_f), and Extreme Storm Control (Q_p). Stormwater collection, conveyance and treatment systems have been designed in general accordance with both the General Permit (GP-0-20-001) and the NYSSMDM. The first two requirements relate to treating water quality, while the later pertain to stormwater quantity (peak flow) attenuation. As noted in previous sections of this report, this project is a redevelopment project with an overall increase in impervious area. Per Chapter 9, 25% of the existing impervious area within the subcatchments is required to be treated to meet the WQv requirements for redevelopment projects. The final SWPPP will incorporate the existing redeveloped impervious areas to calculate the WQv.

Where WQv/RRv treatment is required, the following post construction stormwater management practices are proposed for the project:

Table 2.0.1 – Proposed GIP/SMP Design Criteria Summary Table

SMP ID	Proposed Subcatchment	NYSSMDM Ch. 6 Design Designation	NYSDEC Uniform Stormwater Sizing Criteria Satisfied	NYCDEP Requirement Satisfied
3.1P	3.1S	I-2 Infiltration Basin	RRv, WQ_v, CP_v[1]	Only Practice Required to be Provided.
4.1AP	4.1S	O-2 Wet Swale	WQ_v	First Practice in Series
4.1BP		F-5 Bioretention Filter	RRv, WQ_v	Second Practice in Series
5.1P	5.1S	I-2 Infiltration Basin	RRv, WQ_v, CP_v[1]	Only Practice Required to be Provided.

[1] The infiltration basin achieves the CP_v requirement as they are designed to infiltration the 1-year storm as a result of Chapter 10 requirements.

To address stormwater quantity requirements of the NYSDEC, the "HydroCAD" Stormwater Modeling System," by HydroCAD Software Solutions LLC in Tamworth, New Hampshire, was used to model and assess the peak stormwater flows for the subject project. HydroCAD is a computer aided design program for modeling the hydrology and hydraulics of stormwater runoff. It is based primarily on hydrology techniques developed by the United States Department of Agriculture, Soil Conservation Service (USDA, SCS) TR-20 method combined

with standard hydraulic calculations. For details on the input data for the subcatchments and design storms, refer to Appendices A through C and for the supporting data relative to the soils breakdown within the overall contributing area shown in the HydroCAD analysis, see Appendix A of this report:

The input requirements for the HydroCAD computer program are as follows:

Subcatchments (contributing watershed/sub-watersheds)

- Design storm rainfall in inches
- CN (runoff curve number) values which are based on soil type and land use/ground cover
- Tc (time of concentration) flow path information

Flow Splitters / Subsurface Infiltration System

- Surface area at appropriate elevations
- Flood elevation
- Outlet structure information

The following is a general description of the input data used to calculate the pre- and post-development stormwater runoff values. For detailed information for each subcatchment and pond, see Appendices B & C. The precipitation values for the 1-Year, 10-Year, 100-Year 24-hour design storm events and rainfall distribution curves utilized for this report were obtained from the information provided by Northeast Regional Climate Center (NRCC) and the Natural Resources Conservation Service (NRCS) which is available online at *www.precip.eas.cornell.edu*. The values provided for all design storms analyzed are listed below.

Design Storm	**24-Hour Rainfall**
1-Year	2.71”
10-Year	4.86”
100-Year	8.63”

The CN (runoff curve number) values utilized in this report were referenced from the USDA, SCS publication *Urban Hydrology for Small Watersheds*. The following is a summary of the various land uses/ground covers and the associated CN values and soil types utilized in this report.

Table 2.0.2 – Project Ground Cover and Associated Curve Numbers (CN)

Land Use/Ground Cover	CN Value
>75% Grass Cover, Good, HSG B	61
>75% Grass Cover, Good, HSG C	74
>75% Grass Cover, Good, HSG D	80
Gravel Surface, HSG C	96
Meadow, non-grazed, HSG C	71
Paved Parking	98
Water Surface, HSG D	98
Woods, Good, HSG B	55
Woods, Good, HSG C	70
Woods, Good, HSG D	77
Woods/grass comb., Good, HSG C	72

2.1 Chapter 10: Enhanced Phosphorus Removal Standards

As noted above, the New York City East of Hudson Watershed has been identified in the SPDES General Permit GP-0-20-001 as a watershed requiring compliance with the Enhanced Phosphorus

Removal Standards when post-construction stormwater management practices are proposed. Chapter 10 establishes four goals to meet sizing performance standards:

- Goal 1: Reducing Runoff Volumes
- Goal 2: Effective Bypass Treatment
- Goal 3: Achieving Effluent Concentrations for Particulate Phosphorus
- Goal 4: Achieving Effluent Concentrations for Dissolved Phosphorus

In order to achieve the first goal, the site design shall," assess the feasibility of hydrological source controls and reduce the total water quality volume by source control, implementation of green infrastructure, or standard SMP's with RR_v capacity, according to the process defined in Chapters 3 and 4 of the Design Manual. Each plan must include a rationale for acceptance and rejection of the various controls." A discussion on RR_v can be found in section 2.2 below. Based on mapped soil classifications, the soils onsite are suitable for infiltration. Therefore, the use of infiltration practices (classified as Standard SMP's with RRv capacity) has been maximized. As such, Goal 1 has been achieved in this SWPPP.

Goal 2 cites that proposed stormwater management practices should achieve less than 15% effective treatment bypass of the long-term runoff volume. Chapter 10 further notes this goal is satisfied by capturing and treating the 1-year 24-hour design storm. The NYSDEC stormwater quality treatment practices proposed for this have been designed in accordance with Chapter 10 by utilizing the 1-yr, 24-hour design storm to generate the WQ_v / RR_v. As such, Goal 2 has been achieved in this SWPPP.

Achieving effluent concentrations for particulate phosphorus, Goal 3, is satisfied by achieving an 80% net removal of particulate phosphorus for a median influent concentration of 0.5mg/l. Chapter 10 states that through designing proposed SMP's in accordance with Section 10.4 this goal will be achieved. The proposed infiltration basins and bioretention filter have been designed in accordance with Section 10.4.4 of Chapter 10 thus satisfying the requirements Goal 3.

Goal 4, achieving effluent concentration for dissolved phosphorus, is achieved by obtaining a 60% net removal of dissolved phosphorus given a median influent concentration of 0.15mg/l. As with Goal 3, Goal 4 is achieved by designing the proposed SMP's in accordance with Section 10.4 of Chapter 10. As noted above the SMP's have been designed in accordance with section 10.4.4 of Chapter 10 thus satisfying the requirements of this goal.

2.2 NYSDEC Runoff Reduction Volume (RR_v)

The Runoff Reduction Volume (RR_v) criterion is intended to replicate pre-development hydrology by maintaining preconstruction infiltration, peak flow runoff, discharge volume, as well as minimizing concentrated stormwater flow. As stated in Chapter 4 of the NYSSMDM, RR_v may be treated with standard stormwater management practices (SMP's) sized in accordance with the Chapter 4/6 requirements, or with green infrastructure practices (GIP's) sized in accordance with the requirements set forth for each practice in Chapter 5. This requirement has been achieved on the subject project providing an infiltration practice, designed as a SMP in accordance with the latest design standards. Runoff reduction is achieved when runoff from a percentage of the impervious area on the site is captured, routed through a SMP or a GIP, infiltrated to the ground, reused, reduced by evapotranspiration, and eventually removed from the stormwater discharge from the site. Through this implementation, the design of the infiltration basin as a SMP with the runoff reduction capacity equal to 100% of the WQ_v the RRv requirements will be achieved.

Section 4.3 of the NYSSMDM states for sites that do not achieve runoff reduction to pre-construction condition must, at a minimum reduce a percentage of the runoff from impervious areas to be constructed on the site a minimum RR_v. The following equation can be used to determine the minimum runoff reduction volume:

The minimum runoff reduction volume shall be $RRv_{minimum} = \frac{(P)(R_v)(A)}{}$ 12

Where,

S = Hydrologic Soil Group (HSG) Specific Reduction Factor
A*ic* = Total Area of New Impervious Cover
A*i* = Impervious cover targeted for Runoff Reduction
= (S)(A*ic*)
Rv = 0.95

For detailed calculations of the runoff reduction for the proposed SMP's see Appendix A. Listed in Table 2.2.1 below is a summary of the NYSDEC compliant practice, and its satisfaction of the NYSDEC RRv requirements:

Table 2.2.1 Runoff Reduction Volume Summary

Design Point	Subcatchment	$RR_{v\ Required}$ = WQ_v (c.f.) From Appendix C	$RR_{v\ Minimum}$ (c.f.) Calculated in Appendix A	NYSDEC Practice Designation	Allowable % of WQv provided to be applied towards RRv	Storage Volume Provided below System Outlet (c.f.) (From Appendix C)	RRv *Provided* (c.f.)
3	3.1S	22,651	2,467	I-2 Infiltration Basin	100%	22,686	22,651
4	4.1S	3,572	290	F-5 Bioretention Filter	40%	2,688	1,429
5	5.1S	44,475	6,228	I-2 Infiltration Basin	100%	48,675	44,475

As shown in the table above the $RRv_{provided}$ in the Subcatchments 3.1S, 5.1S and 5.2S is equal to the $RRv_{required}$, therefore the RRv requirement has been met for these Subcatchments. The $RRv_{provided}$ for Subcatchment 4.1S is less than the $RRv_{required}$. 100% of the $RRv_{Required}$ could not be provided for Design Point 4 due to existing onsite soil conditions and topography which limited the area where infiltration is feasible. However, the $RRv_{provided}$ is greater than the $RRv_{minimum}$ for each design point, therefore the RRv requirement has been met for the subject project.

2.3 NYSDEC Water Quality Volume (WQ_v)

The stormwater infiltration basin has been sized in accordance with Chapter 4 of the Design Manual, as it has been sized to capture and treat the entire water quality volume (WQ_v) from the proposed improvements. The subject project is located in the New York City Watershed, which is listed as a phosphorus-limited watershed per the NYSDEC regulations. Therefore, the stormwater management practice has been designed in general accordance with the Enhanced Phosphorus Removal Supplement (Chapter 10) of the Design Manual. As outlined in Chapter 10, the treatment volume for the WQv is the runoff volume produced during the 1-year 24-hour design storm. See table 2.6.1 and Appendix C for a summary of the WQv that would be generated by the proposed project during the 1-year, 24-hour storm.

Table 2.2.1 above and the tables below summarize the WQv treatments and the proposed practices, sized in accordance with Chapters 3 and 6 of the NYSSMDM for the proposed practice.

The infiltration basins have been sized to provide 100% storage of the water quality volume between the bottom of the practice and the outlet weir of the basins. By providing 100% storage of the WQv in the infiltration basin the water quality volume storage requirements set forth in the Design Manual have been met for the proposed basin. By meeting the Water Quality Volume requirements through employment of the infiltration basin, the water quality objectives of the NYSDEC will be met.

The infiltration basins area designed as offline practices that fully infiltrate the WQv from the contributing area. A flowsplitter or pretreatment sediment forebay is proposed upstream of the basins to make the practiced offline. The flowsplitter and sediment forebays are sized to convey at a minimum the

peak WQv flow (1-year 24-hour) to the infiltration basin, while allowing portions of larger storms to bypass the infiltration units as allowed by the Design Manual. Pretreatment has been provided for the infiltration basins in the form of a sediment forebay basin or a hydrodynamic separator. The pretreatment basins will temporarily store greater than the volume required.

As noted below, the infiltration basins have been sized to meet both the RRv and WQv requirements.

Table 2.3.1 Infiltration Area Water Quality Volume Treatment Summary

Subcatchment	Treatment Practice	NYSDEC Design Practice Designation	WQ_v Required (c.f.)	Proposed WQ_v (Storage Volume below outlet)[1,2] (c.f.)
3.1S	3.1P	Infiltration Basin I-2	22,651	22,686
5.1S	5.1P	Infiltration Basin I-2	44,475	48,675

The Bioretention Filter (4.1BP) has been designed to treat the WQv in accordance with the Design Manual as noted in the table below and in Appendix F. A grass filter strip has been provided as Pretreatment for the Bioretention filter. Also, the bioretention filter has been designed as offline practices that will receive the WQv from the contributing area. The Wet Swale (1.4AP) outlet structure has been designed as the flow splitter for the bioretention filter to convey at a minimum the peak WQv flow.

Table 2.3.4 Bioretention Filter - Water Quality Volume Treatment Summary

Subcatchment	Treatment Practice	NYSDEC Design Practice Designation	Required Filter Area (s.f.)	Provided Filter Area (s.f.)	Minimum Storage Volume Required (75% WQv) (c.f.)	Storage Volume Provided Below Outlet (c.f.)
4.1S	4.1BP	F-5	3,247	5,100	2,678	2,688

* Information regarding required filter area is calculated and shown in Appendix F.

A Wet Swale (1.4AP) is proposed upstream of the Bioretention Filter (1.4BP) and has been designed to treat the WQv required from the contributing area. In accordance with the Design Manual, the swales have been designed to provide 30-minutes of detention of the 1-year 24-hour storm runoff volume, therefore treating 100% of the WQv as shown in Appendix C.

It should be noted that the above tables illustrate the water quality volume storage requirements set forth in the Design Manual have been met for the Infiltration Basins, Wet Swale and Bioretention Filter.

2.4 NYSDEC Stream Channel Protection Volume (CP_v)

The Stream Channel Protection (CP_v) criterion is intended to protect stream channels from erosion and is accomplished by the 24-hour extended detention of the center-of-mass of the one-year, 24-hour storm event. As noted in Table 2.1.1 the stormwater infiltration system has been designed with a storage volume greater than the volume of stormwater runoff from the 1-year storm. By providing a stormwater infiltration practice to fully infiltrate the volume of stormwater runoff from the 1-year, 24-hour design storm, the CP_v has been met for the project. Soil and infiltration testing was performed in the locations of the proposed stormwater management practices and witnessed by the NYCDEP. The test results verify the design requirements for infiltration practices set forth in the NYSSMDM. All infiltration rates in the areas of the proposed infiltration practice exceed the minimum 0.5 inches/hour requirement.

2.5 NYSDEC Overbank Flood Control (Q_p), and Extreme Flood Control (Q_f)

The Overbank Flood Control (Q_p) requirement is intended to prevent an increase in the frequency and magnitude of out-of-bank flooding events generated by urban development. Overbank control requires storage to attenuate the post-development 10-year, 24-hour peak discharge to pre-development rates. The Extreme Flood Control (Q_f) requirement is intended to prevent the increased risk of flood damage from large storm events, maintain the boundaries of the pre-development 100-year flood plain, and protect the physical integrity of stormwater management practice. Extreme flood control requires storage to attenuate the post-development 100-year, 24-hour peak discharge to pre-development rates. As shown in Table 2.5.1 attenuation for both the 10-year and 100-year 24-hour storms has been provided thus satisfying the Q_p and Q_f requirements.

Table 2.5.1– Existing and Proposed Conditions Peak Flows

24-HOUR DESIGN STORM PEAK FLOWS (c.f.s.)						
	1-YEAR (Channel Protection Volume)		10-YEAR (Overbank Flood Control)		100-YEAR (Extreme Flood Control)	
	Pre	Post	Pre	Post	Pre	Post
Design Point 1	3.5	2.2	15.2	11.1	39.8	30.7
Design Point 2	1.6	1.2	5.6	45.2	13.7	13.6
Design Point 3	5.5	2.8	15.7	11.3	34.7	34.1
Design Point 4	7.2	5.6	16.0	12.9	30.6	25.6
Design Point 5	17.7	17.2	53.6	53.6	123.3	121.3

Table 2.5.2– Existing and Proposed Conditions Runoff Volumes

24-HOUR DESIGN STORM RUNOFF VOLUMES (a.f.)						
	1-YEAR (Channel Protection Volume)		10-YEAR (Overbank Flood Control)		100-YEAR (Extreme Flood Control)	
	Pre	Post	Pre	Post	Pre	Post
Design Point 1	0.460	0.321	1.640	1.223	4.319	3.332
Design Point 2	0.150	0.156	0.488	0.557	1.225	1.467
Design Point 3	0.634	0.237	1.772	1.104	4.084	3.366
Design Point 4	0.614	0.436	1.446	1.046	3.009	2.209
Design Point 5	3.413	3.276	9.775	9.752	22.835	23.229

As shown in the above tables, the peak flows and runoff volumes from the contributing areas to the design lines in the post development condition have been mitigated to below the existing condition levels, thus meeting the general requirements of the NYSDEC. As shown on drainage Figures 2 & 3, the alteration of the drainage boundaries from the pre to the post development condition have been minimized to the maximum extent practical.

2.6 NYCDEP Requirements

The proposed project meets two (2) of the thresholds that require SWPPP approval from the NYCDEP per Section 18-39 of the Rules and Regulations. The project meets the following thresholds listed in Section 18-39(b)(4) that require NYCDEP SWPPP approval:

(iii) Construction of a new industrial, institutional, municipal, commercial, or multi-family residential project that will result in the creation of an impervious surface totaling over 40,000 square feet in size.

(iv) A land clearing or land grading project, involving two or more acres, located at least in part within the limiting distance of 100 feet of a watercourse or wetland, or within the limiting distance of 300 feet of a reservoir, reservoir stem or controlled lake or on a slope exceeding 15 percent.

There is no proposed stormwater discharge from industrial activities for the proposed development.

The Rules and Regulations parallel the requirements of the NYSDEC, with the exception that two different NYSDEC standard SMP's are required in series when the drainage area to a SMP is greater than 20% impervious and an infiltration practice is not provided. The project proposes an infiltration practice for Subcatchments 3.1S and 5.1S and as such, does not require two different practices in series Subcatchment 4.1S does exceed the 20% impervious, and as two SMP's in series are provided (as shown in Table 2.6.2 below).

Per the Rules and Regulations, the stormwater treatment volume used shall be the greater of the runoff volume from the 1-year, 24-hour storm event or the volume generated by the 90% storm. The initial WQ_v from the 1-year storm event was discussed above. The following equation, per Chapter 4.2 and Chapter 9, was used to determine the water quality volume for the 90% storm each of the contributing areas to the treatment practices:

The water quality volume shall be: $WQ_v = \underline{(P)(R_v)(A)}$

Where,

WQ_v = water quality volume (in acre-feet)
P = 90% Rainfall Event Number = 1.4 inches
A = Subcatchment Area
I = (Ap)/(A-Ae)
R_v = 0.05 +0.009 (I%)

Table 2.6.1 - Water Quality Volume Calculation Summary 90% Storm vs. 1-Year Storm Comparison

Subcatchments	P (in.)	R_v	A[1] (ac.)	WQ_{v90} (c.f.)	WQ_v[2] 1-year (c.f.)
3.1S	1.4	0.50	4.4	11,180	22,256
4.1S	1.4	0.50	0.6	1,525	3,572
5.1S	1.4	0.70	6.8	24,190	44,475

[1] Information regarding contributing areas for the 1-year 24-hour storm event is shown in Appendix C.
[2] Refer to Appendix C for 1-year 24-hour water quality volume calculation.

As shown in Table 2.6.1 above, the volume produced by the 1-year, 24-hour design storm for subcatchments is larger than the volume produced by the 90% storm. Therefore, the 1-year, 24-hour design storm volumes shall be used for the WQv sizing for all of the proposed stormwater management practices.

The following table summarizes the amount of proposed impervious surfaces for each subcatchment and shows the proposed stormwater management practice that will treat each sub-watershed:

Table 2.6.2 – Imperviousness of Tributary Areas & Stormwater Management Practice

Sub-Catchments	Total Area (acres)	Existing Impervious Surface Within Subcatchment (acres)	Proposed Impervious Surface Within Subcatchment (acres)	% Impervious Surface of Total Subcatchment Area	Proposed Stormwater Management Practice (SMP) Treatment Train[1]	
					RR_v/SMP 1	SMP 2 (A second practice in series is only provided when % impervious is greater than 20% and infiltration is not provided)
3.1S	5.1	0.5	2.2	50.0%	I-2, Infiltration Basin	Not Required
4.1S	0.6	0.1	0.3	50.0%	O-2 Wet Swale	F-5 Bioretention Filter
5.1S	6.8	0.6	4.9	72.0%	I-2, Infiltration Basin	Not Required

[1] This table lists the standard SMP's used to treat the balance of the WQ_v / RR_v after the application of GIP's.

As shown in the above table, the project proposes an infiltration practice for Subcatchments 2.1S, 3.1S, 5.1S and 5.2S Subcatchments, therefore two practices in series are not required. Subcatchment 4.1S is greater than 20% imperviousness and a treatment train of two practices in series is provided. By proposing two stormwater management practices in series or an infiltration practice for all subcatchments, the NYSDEP requirement is met.

3.0 STORMWATER CONVEYANCE SYSTEM

The stormwater conveyance system for the project consists of grass swales, precast concrete drainage structures, and HDPE pipe. In the locations of new swales and stormwater piping, the system has been sized utilizing the Rational Method and is a standard method used by engineers to develop flow rates for sizing collection systems. The Rational Method calculates flows based on a one-hour design storm. Pipe sizing calculations will be provided in the final SWPPP.

4.0 EROSION AND SEDIMENT CONTROL

Erosion and sediment control should be accomplished by four basic principles: diversion of clean water, containment of sediment, treatment of dirty water, and stabilization of disturbed areas. Diversion of clean water should be accomplished with swales. This diverted water should be safely conveyed around the construction area as necessary and discharged downstream of the disturbed areas. Sediment should be contained with the use of silt fence at the toe of disturbed slopes. Disturbed areas should be permanently stabilized within 7 days of final grading to limit the required length of time that the temporary facilities must be utilized. The owner will be responsible for the maintenance of the temporary erosion control facilities. Refer to the Project Drawings for further information implementation of the Erosion Control Plan.

4.1 Temporary Erosion and Sediment Control Facilities

Temporary erosion and sediment control facilities should be installed and maintained as required to reduce the impacts to off-site properties. The owner will be required to provide maintenance for the temporary erosion and sediment control facilities. In general, the following temporary methods and materials should be used to control erosion and sedimentation from the project site:

- Stabilized Construction Entrance
- Silt Fence Barriers
- Temporary Soil Stabilization

- Temporary Sediment Trap

All temporary erosion control measures shall be maintained in accordance with the Erosion & Sediment Control Maintenance Schedule contained on the Project Drawings, and as discussed below.

A stabilized construction entrance should be installed at the site entrance as shown on the project plans. The design drawings will include details to guide the contractor in the construction of this entrance. The intent of the stabilized construction entrance is to prevent the "tracking" of soil from the site. Dust control should be accomplished with water sprinkling trucks if required. During dry periods, sprinkler trucks should wet all exposed earth surfaces as required to prevent the transport of air-borne particles to adjoining areas.

Siltation barriers constructed of geosynthetic filter cloth should be installed at the toe of all disturbed slopes. The intent of these barriers is to contain silt and sediment at the source and inhibit its transport by stormwater runoff. The siltation barriers will also help reduce the rate of runoff by creating filters through which the stormwater must pass. During construction, the siltation barriers shall be inspected weekly and after a rainfall event and shall be cleaned/replaced when needed.

When land is exposed during development, the exposure shall be kept to the shortest practical period, but in no case more than 7 days. Temporary grass seed and mulch shall be applied to any construction area idle for two weeks. The temporary seeding and mulching shall be performed in accordance with the seeding notes illustrated on the project drawings. Disturbance shall be minimized in the areas required to perform construction. Upon completion of final grading topsoil, permanent seeding and mulch shall be applied in accordance with the project drawings.

The stormwater runoff will be managed by the temporary erosion and sediment control facilities during construction. As discussed in the construction sequences provided the project plans the stabilized construction entrance shall be installed at the site entrance and silt fence shall be installed along the downhill perimeter of where soil disturbing activities will occur containing sediment laden stormwater runoff on-site.

4.2 Permanent Erosion and Sediment Control Facilities

Permanent erosion and sediment control will be accomplished by diverting stormwater runoff from steep slopes, controlling/reducing stormwater runoff velocities and volumes, and vegetative and structural surface stabilization. All of the permanent facilities are relatively maintenance free and only require inspections monthly or after a significant rainfall event. The owner will provide maintenance for all the permanent erosion and sediment control facilities.

Rock outlet protection will be provided at the discharge end of all piped drainage systems and will be sized in accordance with the Blue Book. The purpose of the rock outlet protection is to reduce the depth, velocity, and energy of water, such that the flow will not erode the receiving downstream reach. The rock outlet protection shall be inspected for evidence of scour beneath the riprap and/or for any dislodged stones. Inspections of the rock outlet protection shall be performed during the inspections of the post-construction SMP's for the project.

Other than paved or gravel surfaces, disturbed surfaces will be stabilized with vegetation within 10 days of final grading. Permanent seed mix and mulch shall be applied to idle areas to minimize the amount of exposed soil. Permanent seed mixtures are proposed for the project and illustrated on project drawings. Application rates for the seed and mulch are provided on the project drawings. The vegetation will control stormwater runoff by preventing soil erosion, reducing runoff volume and velocities, and providing a filter medium. Permanent seeding should optimally be undertaken in the spring from March 21st through May 20th and in late summer from August 15th to October 15th.

5.0 IMPLEMENTATION AND MAINTENANCE

5.1 Construction Phase

Details associated with the implementation and maintenance of the proposed stormwater facilities and erosion control measures during construction are shown on the project drawings. Soil disturbance for the subject project shall not exceed five acres at any given time unless otherwise noted on the project plans. The erosion control plan will include associated details and notes to aid the contractor in implementing the plan. Construction is anticipated to begin in the spring of 2024 and anticipated to be completed by the summer of 2025.

During construction, a Site Log Book, Appendix D, is required to be kept per NYSDEC SPDES General Permit GP-0-20-001. Erosion and sediment control inspections are required to be conducted as necessary under coverage of the permit. The erosion and sediment control inspections must be performed daily by a trained contractor and the two (2) weekly inspection performed by a qualified inspector shall be performed on days separated by two (2) full calendar days. The owner or operator must begin implementing corrective actions within one business day and complete the corrective actions in a reasonable time frame. An updated logbook and a copy of the SWPPP is required to be kept on site for the duration of the construction activities. The Construction Site Log Book is an appendix taken from the *New York Standards and Specifications for Erosion and Sediment Control* (Blue Book).

In addition to the proposed erosion and sediment control facilities, the following good housekeeping best management practices shall be implemented to mitigate potential pollution during the construction phase of the project. The general contractor overseeing the day-to-day site operation shall be responsible for the good housekeeping best management practices included in the following general categories:

- Material Handling and Waste Management
- Establishment of Staging Areas
- Proper Equipment Fueling and Maintenance Practices
- Spill Prevention and Control Plan

All construction waste materials shall be collected and removed from the site regularly by the general contractor. The general contractor shall supply waste barrels for proper disposal of waste materials. All personnel working on the site shall be instructed of the proper procedures for construction waste disposal.

Although it is not anticipated any hazardous waste materials will be utilized during construction, any hazardous waste materials shall be disposed of in accordance with federal, state, and local regulations. No hazardous waste shall be disposed of on-site. Hazardous waste materials shall be stored in appropriate and clearly marked containers and segregated from the other non-waste materials. All hazardous waste shall be stored in a structurally sound and sealed shipping containers located in the staging areas. Material safety data sheets, material inventory, and emergency contact numbers will be maintained in the office trailer. All personnel working on the site shall be instructed of the proper procedures for hazardous waste disposal.

Temporary sanitary facilities (portable toilets) shall be provided on site during the entire length of construction. The sanitary facilities shall be located in the project staging area, or in an alternate area away from the construction activities on the site. The portable toilets shall be inspected weekly for evidence of leaking holding tanks.

All recyclables, including wood pallets, cardboard boxes, and all other recyclable construction scraps shall be disposed of in a designated recycling barrel provided by the contractor and removed from the site regularly. All personnel working on the site shall be instructed of the proper procedures for construction waste recycling.

All construction equipment and maintenance materials shall be stored in a construction staging area. Silt fence shall be installed down gradient of the construction staging area. Shipping containers shall be utilized to store hand tools, small parts, and other construction materials, not taken off site daily. Construction waste barrels,

recycling barrels and if necessary hazardous waste containers shall be located within the limits of the construction staging area.

Throughout the construction of the project, several types of vehicles and equipment will be used on-site. Fueling of the equipment shall occur within the limits of the construction staging area. Fuel will be delivered to the site as needed, by the general contractor, or a party chosen by the general contractor. Only minor vehicle equipment maintenance shall occur on-site, all major maintenance shall be performed off-site. All equipment fluids generated from minor maintenance activities shall be disposed of into designated drums and stored in accordance with the hazardous waste storage as previously discussed.

Vehicles and equipment shall be inspected on each day of use. Any leak discovered shall be repaired immediately. All leaking equipment unable to be repaired shall be removed from the site. Ample supplies of absorbent, spill-cleanup materials, and spill kits shall be located in the construction staging area. All spills shall be cleaned up immediately upon discovery. Spent absorbent materials and rags shall be hauled off-site immediately after the spill is cleaned for disposal at a local landfill. All personnel working on the site shall be instructed of the proper procedures for spill prevention and control. Any spill large enough to discharge to surface water will be immediately reported to the local fire / police departments, NYCDEP, the National Response Center 1-800-424-8802, and the NYS Spill Hotline 1-800-457-7362. See the NYSDEC spill reporting requirements for additional information and criteria on spill reporting. NYCDEP must be notified of any NYSDEC reportable spills that occur during construction.

Vegetation should be inspected every 30 days and after every major storm event until established, after which inspections should take place on a quarterly basis and after every large storm event. Damaged areas should be immediately re-seeded and re-mulched.

5.2 Soil Restoration

Soil Restoration is required to be applied across areas of the development site where soils have been disturbed and will be vegetated. The purpose is to recover the original properties and porosity of the soil compacted during construction activity. Soil Restoration is applied in the cleanup, restoration, and landscaping phase of construction followed by the permanent establishment of an appropriate, deep-rooted groundcover to help maintain the restored soil structure. Soil restoration includes mechanical decompaction and compost amendment. The table below describes various soil disturbance activities related to land development, soil types and the requirements for soil restoration for each activity as identified in the Design Manual. Restoration is applied across areas of a development site where soils have been compacted and will be vegetated according to the criteria defined in the table below:

Soil Restoration Requirements[1, 2,4] (Onsite soils within the limit of disturbance belong to Hydrologic Soil Groups (HSG) A, B & D)			
Type of Soil Disturbance	**Soil Restoration Requirement**		**Comments/Examples**
No soil disturbance	Restoration not permitted		Preservation of Natural Features
Minimal soil disturbance	Restoration not required		Clearing and grubbing
Areas where topsoil is stripped only - no change in grade	HSG A & B	~~HSG C&D~~	Protect area from any ongoing construction activities.
	Apply 6 inches of topsoil	~~Aerate[3] and apply 6 inches of topsoil~~	
Areas of cut or fill	HSG A &B	~~HSG C&D~~	
	Aerate[1] and apply 6 inches of topsoil	~~Apply full Soil Restoration [2]~~	
Heavy traffic areas on site (especially in a zone 5-25 feet around buildings but not within a 5-foot perimeter around foundation walls)	Apply full Soil Restoration (decompaction and compost Enhancement[6])		
Areas where Runoff Reduction and/or Infiltration practices are applied	Restoration not required, but may be applied to enhance the reduction specified for appropriate practices.		Keep construction equipment from crossing these areas. To protect newly installed practice from any ongoing construction activities construct a single phase operation fence area
Redevelopment projects	Soil Restoration is required on redevelopment projects in areas where existing impervious area will be converted to pervious area.		

1. Aeration includes the use of machines such as tractor-drawn implements with coulters making a narrow slit in the soil, a roller with many spikes making indentations in the soil, or prongs which function like a mini-subsoiler.
2. Per "Deep Ripping and De-compaction, DEC 2008".
3. Aeration includes the use of machines such as tractor-drawn implements with coulters making a narrow slit in the soil, a roller with many spikes making indentations in the soil, or prongs which functions like a mini-subsoiler.
4. During periods of relatively low to moderate subsoil moisture, the disturbed soils are returned to rough grade and the following Soil Restoration steps applied:
   5.1. Apply 3 inches of compost over subsoil.
   5.2. Till compost into subsoil to a depth of at least 12 inches using a cat-mounted ripper, tractor-mounted disc, or tiller, mixing, and circulating air and compost into subsoils.
   5.3. Rock-pick until uplifted stone/rock materials of four inches and larger size area cleaned off the site.
   5.4. Apply topsoil to a depth of 6 inches.
   5.5. Vegetate as required by seeding notes located on the project drawings.
   5.6. Tilling should not be performed within the drip line of any existing trees or over any utility installations that are within 24 inches of the surface.
6. Compost shall be aged, from plant derived materials, free of viable weed seeds, have no visible free water or dust produced when handling, pass through a half inch screen and have a pH suitable to grow desired plants.

After soil restoration is completed, an inspector should be able to push a 3/8" metal bar twelve inches into the soil with just body weight. Following decompaction/soil restoration activities, the following maintenance is anticipated during the first year:

- Initial inspections for the first six months (once after each storm greater than a half-inch).
- Reseeding to repair bare or eroding areas to assure grass stabilization.
- Water once every three days for first month, and then provide a half inch of water per week during first year. Irrigation plan may be adjusted according to the rain event.
- Fertilization may be needed in the fall after the first growing season to increase plant vigor.

In order to ensure the soil remains decompacted the following ongoing maintenance is recommended:

- Planting the appropriate ground cover with deep roots to maintain the soil structure.
- Keeping the site free of vehicular and foot traffic or other weight loads. Consider pedestrian footpaths (sometimes it may be necessary to de-thatch the turf every few years).

5.3 Long Term Maintenance Plan

The stormwater facilities for the subject project have been designed to minimize the required maintenance. This section discusses the minimum maintenance requirements to insure long-term performance of the stormwater facilities. Initially the stormwater facilities will require an increased maintenance and inspection schedule until all portions of the site are stable. Generally, the stormwater facilities consist of either collection and conveyance components or treatment components.

The stormwater collection and conveyance system is composed of precast concrete drainage structures and pipes. The owner will assume the maintenance responsibilities for the drainage system. Minimal maintenance is typically required for these facilities. All structures should be checked for debris and blockages and cleaned as required. During the cleaning process, the drainage structures should be inspected for structural integrity and overall condition; repairs and/or replacement should be made as required. Additionally, the infiltration basin shall be checked for deposited sediment as well. The Infiltration basin shall be cleaned as necessary to remove deposited sediment.

Additionally, the infiltration basin shall be checked for deposited sediment as well. Visual inspection of system through the inspection ports shall take place yearly, and the system shall be cleaned / jetted as necessary to remove deposited sediment.

APPENDIX A
Runoff Reduction (RRv) Calculation Worksheets

RRv Calculation Worksheet - Design Point 3 (3.1S)

Project: DPD
Project #: 22242.100
Date: 5/12/2023

INSITE ENGINEERING, SURVEYING & LANDSCAPE ARCHITECTURE, P.C.

1. RRv Initial = Water Quality Volume (WQv) *0.573 ac-ft* = *24,960 c.f.*
(refer to HydroCAD Subcatchments 1.1S for Water Quality Volume)

2. *RRv Minimum* = [(P) (Rv) (S) (Aic)] /12 where…

P = Rainfall (in.)	=	1.40	in.
Rv = 0.05 + 0.009 (100%)	=	0.95	
S = Hydrologic Soil Group Specific Reduction Factor	=	0.30	
[HSG A = 0.55] [HSG B = 0.40] [HSG C = 0.30] [HSG D = 0.20]			
Aic = Total area of new impervious cover	=	1.7	Acres
RRv Minimum	=	*2,462*	*c.f.*

3. *RRv Required* = RRv Initial - Green Infrastructure Practice (GIP) with Area Reduction

GIP with Area Reduction Applied in Project		
5.3.1 Conservation of Natural Area	N/A	
5.3.2 Sheet Flow to Riparian Buffers or Filter Strips	N/A	
5.3.4 Tree Planting / Tree Box		c.f.
5.3.5 Disconnection of Rooftop Runoff	-	
5.3.6 Stream Daylighting	N/A	
RRv Required(=WQv-RRV by area)(Refer to HydroCAD output in this Appendix)	= 24,960	c.f.

4. *RRv Provided*

GIP with Volume Reduction Applied in Project	WQv Treated (c.f.)	% of WQv Applied to *RRv Provided*	*RRv Provided (c.f.)*
5.3.3 Vegetated Open Swales		20%	0
[HSG A / B = 20%] [HSG C / D = 10%] {Modified HSG C - D = 15% - 12%]		10%	0
5.3.7 Rain Garden [No underdrains / Good Soils = 100%] [With underdrains / Poor Soils = 40%]		40%	0
5.3.8 Green Roof [RRv provided equals volume provided in Green Roof]		100%	0
5.3.9 Stormwater Planters [Infiltration Planters = 100%] [Flow Through HSG C = 45%] [Flow Though HSG D = 30%]		45%	0
5.3.10 Rain Tank / Cisterns		100%	0
5.3.11 Porous Pavement		100%	0
Infiltration Practice (Standard SMP)	24960	100%	24,960
Bioretention Practice (Standard SMP) [Without Underdrains HSG A/B = 80%] [With Underdrain HSG C\D = 40%]		40%	0
Dry Swale (Open Channel Practice) (Standard SMP) [HSG A/B = 40%] [HSG C/D = 20%]		20%	0
RRv Provided =			*24,960*

5. Summary

RRv Initial	=	24,960 c.f.	
RRv Required	=	24,960 c.f.	
RRv Minimum	=	2,462 c.f.	
RRv Provided	=	24,960 c.f.	
WQv Required for Downstream SMP	=	0 c.f.	(= RRv Required - RRv Provided)

Is RRv Provided greater than or equal to RRv Minimum? Yes

RRv Calculation Worksheet - Design Point 4 (4.1S)

Project: DPD
Project #: 22242.100
Date: 5/12/2023

INSITE ENGINEERING, SURVEYING & LANDSCAPE ARCHITECTURE, P.C.

1. RRv Initial = Water Quality Volume (WQv) *0.082 ac-ft* = *3,572 c.f.*
(refer to HydroCAD Subcatchments 1.1S for Water Quality Volume)

2. *RRv Minimum* = [(P) (Rv) (S) (Aic)] /12 where…

P = Rainfall (in.)	=	1.40	in.
Rv = 0.05 + 0.009 (100%)	=	0.95	
S = Hydrologic Soil Group Specific Reduction Factor	=	0.30	
[HSG A = 0.55] [HSG B = 0.40] [HSG C = 0.30] [HSG D = 0.20]			
Aic = Total area of new impervious cover	=	0.2	Acres
RRv Minimum	=	*290*	*c.f.*

3. *RRv Required* = RRv Initial - Green Infrastructure Practice (GIP) with Area Reduction

GIP with Area Reduction Applied in Project		
5.3.1 Conservation of Natural Area	N/A	
5.3.2 Sheet Flow to Riparian Buffers or Filter Strips	N/A	
5.3.4 Tree Planting / Tree Box		c.f.
5.3.5 Disconnection of Rooftop Runoff	-	
5.3.6 Stream Daylighting	N/A	
RRv Required(=WQv-RRV by area)(Refer to HydroCAD output in this Appendix)	= 3,572	c.f.

4. *RRv Provided*

GIP with Volume Reduction Applied in Project	WQv Treated (c.f.)	% of WQv Applied to *RRv Provided*	*RRv Provided (c.f.)*
5.3.3 Vegetated Open Swales		20%	0
[HSG A / B = 20%] [HSG C / D = 10%] {Modified HSG C - D = 15% - 12%]		10%	0
5.3.7 Rain Garden		40%	0
[No underdrains / Good Soils = 100%] [With underdrains / Poor Soils = 40%]			
5.3.8 Green Roof		100%	0
[RRv provided equals volume provided in Green Roof]			
5.3.9 Stormwater Planters		45%	0
[Infiltration Planters = 100%] [Flow Through HSG C = 45%] [Flow Though HSG D = 30%]			
5.3.10 Rain Tank / Cisterns		100%	0
5.3.11 Porous Pavement		100%	0
Infiltration Practice (Standard SMP)		100%	0
Bioretention Practice (Standard SMP)	3,572	40%	1,429
[Without Underdrains HSG A/B = 80%] [With Underdrain HSG C\D = 40%]			
Dry Swale (Open Channel Practice) (Standard SMP)		20%	0
[HSG A/B = 40%] [HSG C/D = 20%]			
RRv Provided =			*1,429*

5. Summary

RRv Initial	=	3,572 c.f.	
RRv Required	=	3,572 c.f.	
RRv Minimum	=	290 c.f.	
RRv Provided	=	1,429 c.f.	
WQv Required for Downstream SMP	=	2,143 c.f.	(= RRv Required - RRv Provided)

Is RRv Provided greater than or equal to RRv Minimum? Yes

RRv Calculation Worksheet - Design Point 5 (5.1S)

Project: DPD
Project #: 22242.100
Date: 5/12/2023

INSITE ENGINEERING, SURVEYING & LANDSCAPE ARCHITECTURE, P.C.

1. RRv Initial = Water Quality Volume (WQv) *1.021 ac-ft* = *44,475 c.f.*
(refer to HydroCAD Subcatchments 1.1S for Water Quality Volume)

2. *RRv Minimum* = [(P) (Rv) (S) (Aic)] /12 where…

P = Rainfall (in.)	=	1.40	in.
Rv = 0.05 + 0.009 (100%)	=	0.95	
S = Hydrologic Soil Group Specific Reduction Factor	=	0.30	
[HSG A = 0.55] [HSG B = 0.40] [HSG C = 0.30] [HSG D = 0.20]			
Aic = Total area of new impervious cover	=	4.3	Acres
RRv Minimum	=	*6,228*	*c.f.*

3. *RRv Required* = RRv Initial - Green Infrastructure Practice (GIP) with Area Reduction

GIP with Area Reduction Applied in Project		
5.3.1 Conservation of Natural Area	N/A	
5.3.2 Sheet Flow to Riparian Buffers or Filter Strips	N/A	
5.3.4 Tree Planting / Tree Box		c.f.
5.3.5 Disconnection of Rooftop Runoff	-	
5.3.6 Stream Daylighting	N/A	
RRv Required(=WQv-RRV by area)(Refer to HydroCAD output in this Appendix)	= 44,475	c.f.

4. *RRv Provided*

GIP with Volume Reduction Applied in Project	WQv Treated (c.f.)	% of WQv Applied to *RRv Provided*	*RRv Provided (c.f.)*
5.3.3 Vegetated Open Swales		20%	0
[HSG A / B = 20%] [HSG C / D = 10%] {Modified HSG C - D = 15% - 12%]		10%	0
5.3.7 Rain Garden		40%	0
[No underdrains / Good Soils = 100%] [With underdrains / Poor Soils = 40%]			
5.3.8 Green Roof		100%	0
[RRv provided equals volume provided in Green Roof]			
5.3.9 Stormwater Planters		45%	0
[Infiltration Planters = 100%] [Flow Through HSG C = 45%] [Flow Though HSG D = 30%]			
5.3.10 Rain Tank / Cisterns		100%	0
5.3.11 Porous Pavement		100%	0
Infiltration Practice (Standard SMP)	44475	100%	44,475
Bioretention Practice (Standard SMP)		40%	0
[Without Underdrains HSG A/B = 80%] [With Underdrain HSG C\D = 40%]			
Dry Swale (Open Channel Practice) (Standard SMP)		20%	0
[HSG A/B = 40%] [HSG C/D = 20%]			
RRv Provided =			*44,475*

5. Summary

RRv Initial	=	44,475 c.f.	
RRv Required	=	44,475 c.f.	
RRv Minimum	=	6,228 c.f.	
RRv Provided	=	44,475 c.f.	
WQv Required for Downstream SMP	=	0 c.f.	(= RRv Required - RRv Provided)

Is RRv Provided greater than or equal to RRv Minimum? Yes

APPENDIX B
Pre Development Computer Data

Subcat Reach Pond Link

Routing Diagram for DPD - PreDevelopment

Prepared by Insite Engineering, Surveying and Landscape Architecture, P.C., Printed 5/11/2023

Summary for Subcatchment PRE 1:

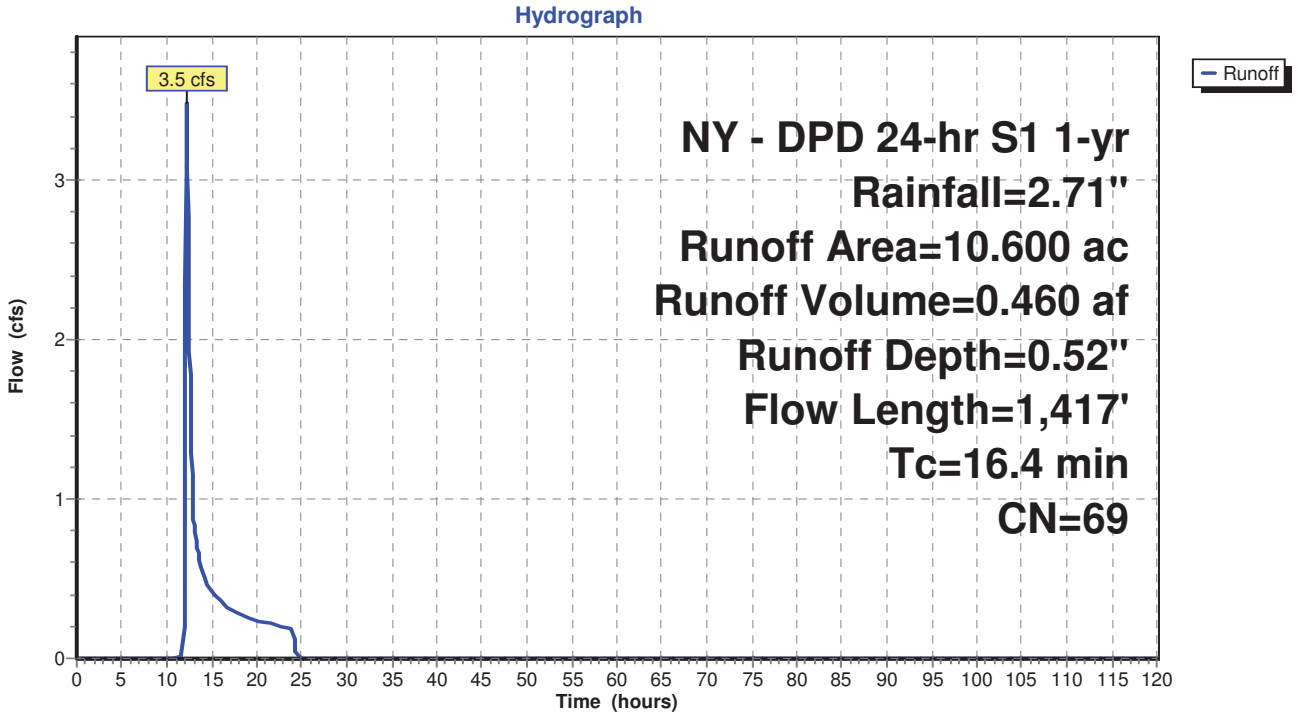
Runoff = 3.5 cfs @ 12.22 hrs, Volume= 0.460 af, Depth= 0.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - DPD 24-hr S1 1-yr Rainfall=2.71"

Area (ac)	CN	Description
0.100	98	Paved parking, HSG C
0.500	96	Gravel surface, HSG C
0.700	74	>75% Grass cover, Good, HSG C
1.200	71	Meadow, non-grazed, HSG C
5.000	70	Woods, Good, HSG C
0.500	72	Woods/grass comb., Good, HSG C
2.200	55	Woods, Good, HSG B
0.400	61	>75% Grass cover, Good, HSG B
10.600	69	Weighted Average
10.500		99.06% Pervious Area
0.100		0.94% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.9	100	0.0150	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.27"
1.1	225	0.0500	3.35		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
1.6	162	0.1100	1.66		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.5	90	0.3000	2.74		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.3	840	0.0300	6.10	36.62	**Channel Flow,** Area= 6.0 sf Perim= 10.0' r= 0.60' n= 0.030 Earth, grassed & winding
16.4	1,417	Total			

Subcatchment PRE 1:



Summary for Subcatchment PRE 2:

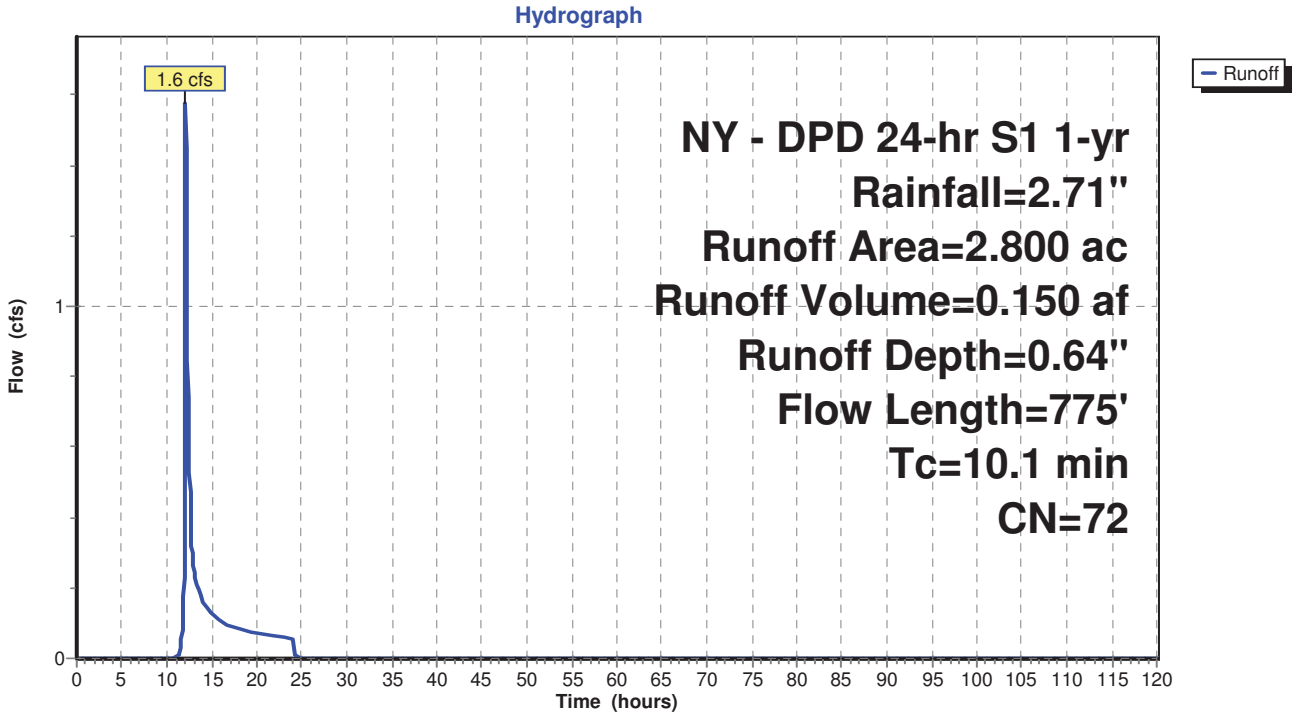
Runoff = 1.6 cfs @ 12.11 hrs, Volume= 0.150 af, Depth= 0.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - DPD 24-hr S1 1-yr Rainfall=2.71"

Area (ac)	CN	Description
0.600	96	Gravel surface, HSG C
0.100	74	>75% Grass cover, Good, HSG C
1.300	70	Woods, Good, HSG C
0.700	55	Woods, Good, HSG B
0.100	61	>75% Grass cover, Good, HSG B
2.800	72	Weighted Average
2.800		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	60	0.1200	0.15		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.27"
0.4	40	0.0600	1.80		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.27"
0.7	215	0.0600	4.97		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.5	180	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.6	280	0.0400	7.33	29.34	**Channel Flow,** Area= 4.0 sf Perim= 10.0' r= 0.40' n= 0.022 Earth, clean & straight
10.1	775	Total			

Subcatchment PRE 2:



Summary for Subcatchment PRE 3:

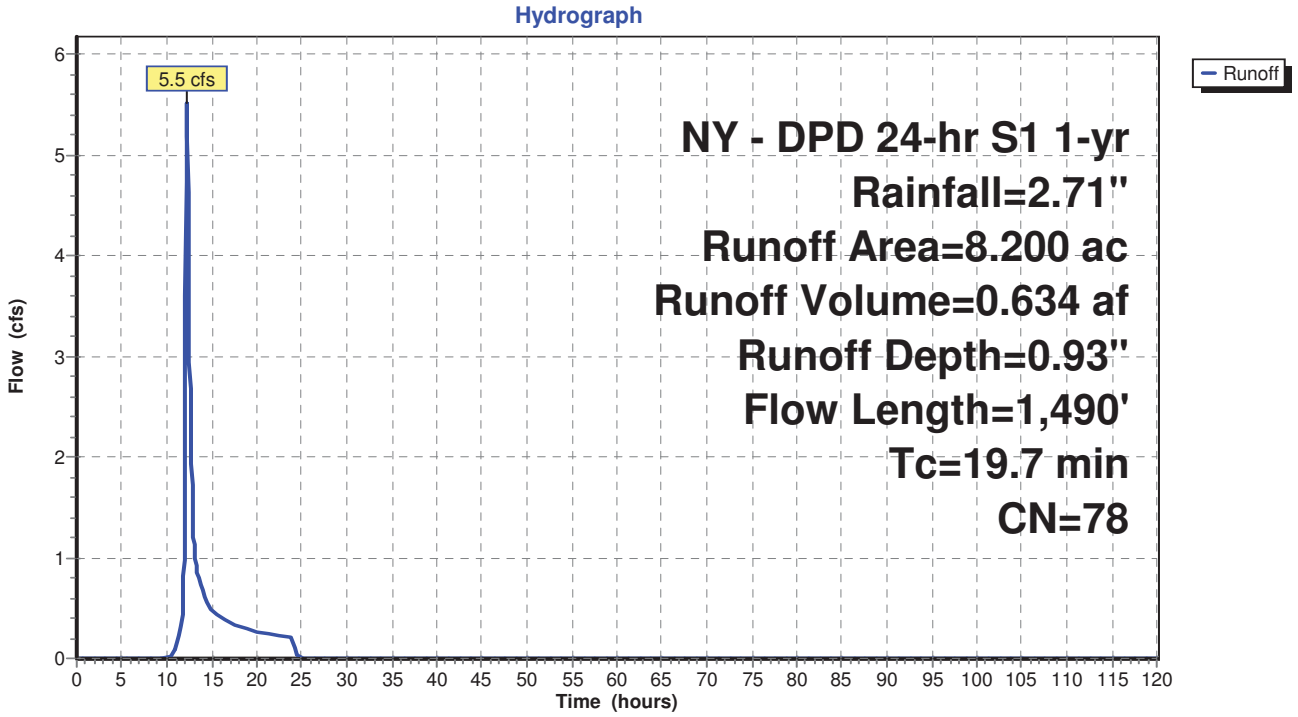
Runoff = 5.5 cfs @ 12.24 hrs, Volume= 0.634 af, Depth= 0.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - DPD 24-hr S1 1-yr Rainfall=2.71"

Area (ac)	CN	Description
1.600	98	Paved parking, HSG C
0.700	96	Gravel surface, HSG C
1.700	74	>75% Grass cover, Good, HSG C
3.700	70	Woods, Good, HSG C
0.500	55	Woods, Good, HSG B
8.200	78	Weighted Average
6.600		80.49% Pervious Area
1.600		19.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	100	0.0100	0.13		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.27"
2.0	250	0.0200	2.12		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.9	70	0.0700	1.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.3	430	0.0750	5.56		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.3	130	0.1100	1.66		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.5	220	0.2000	6.71		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.5	110	0.0500	3.35		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.1	40	0.0100	7.20	28.80	**Pipe Channel,** 24.0" x 24.0" Box Area= 4.0 sf Perim= 8.0' r= 0.50' n= 0.013 Concrete pipe, bends & connections
0.3	140	0.2000	6.71		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
19.7	1,490	Total			

Subcatchment PRE 3:



Summary for Subcatchment PRE 4:

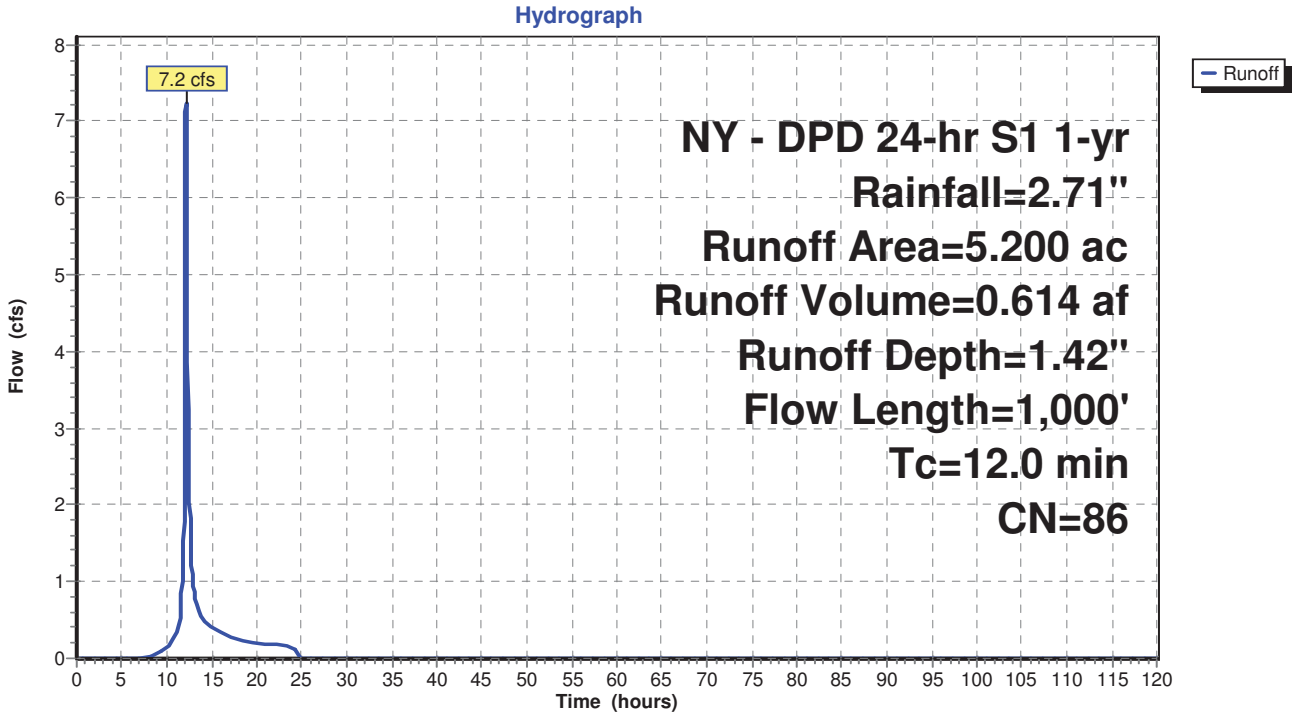
Runoff = 7.2 cfs @ 12.12 hrs, Volume= 0.614 af, Depth= 1.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - DPD 24-hr S1 1-yr Rainfall=2.71"

Area (ac)	CN	Description
2.000	98	Paved parking, HSG C
0.700	96	Gravel surface, HSG C
0.800	74	>75% Grass cover, Good, HSG C
0.100	80	>75% Grass cover, Good, HSG D
0.400	70	Woods, Good, HSG C
1.200	72	Woods/grass comb., Good, HSG C
5.200	86	Weighted Average
3.200		61.54% Pervious Area
2.000		38.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	100	0.1000	0.22		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.27"
1.8	260	0.1200	2.42		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.5	190	0.1000	6.42		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.3	270	0.0500	3.35		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
1.0	180	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
12.0	1,000	Total			

Subcatchment PRE 4:



Summary for Subcatchment PRE 5:

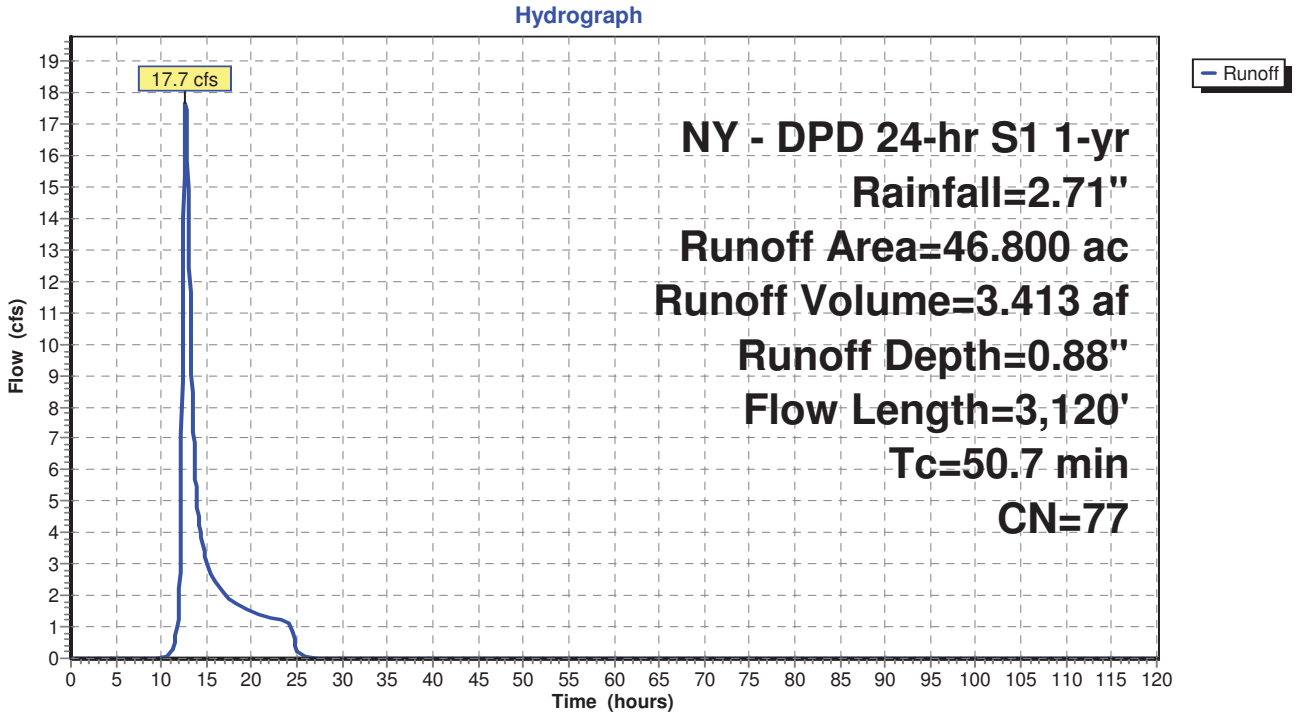
Runoff = 17.7 cfs @ 12.70 hrs, Volume= 3.413 af, Depth= 0.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - DPD 24-hr S1 1-yr Rainfall=2.71"

Area (ac)	CN	Description
6.000	98	Paved parking, HSG C
0.400	96	Gravel surface, HSG C
1.600	98	Water Surface, HSG D
9.200	74	>75% Grass cover, Good, HSG C
10.000	71	Meadow, non-grazed, HSG C
9.100	70	Woods, Good, HSG C
1.000	72	Woods/grass comb., Good, HSG C
8.800	77	Woods, Good, HSG D
0.700	80	>75% Grass cover, Good, HSG D
46.800	77	Weighted Average
39.200		83.76% Pervious Area
7.600		16.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.6	100	0.0100	0.09		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.27"
4.3	770	0.0400	3.00		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
1.8	110	0.0400	1.00		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
23.1	980	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.5	430		13.90		**Lake or Reservoir,** Mean Depth= 6.00'
2.4	730	0.0200	4.98	29.90	**Channel Flow,** Area= 6.0 sf Perim= 10.0' r= 0.60' n= 0.030 Earth, grassed & winding
50.7	3,120	Total			

Subcatchment PRE 5:



Summary for Subcatchment PRE 1:

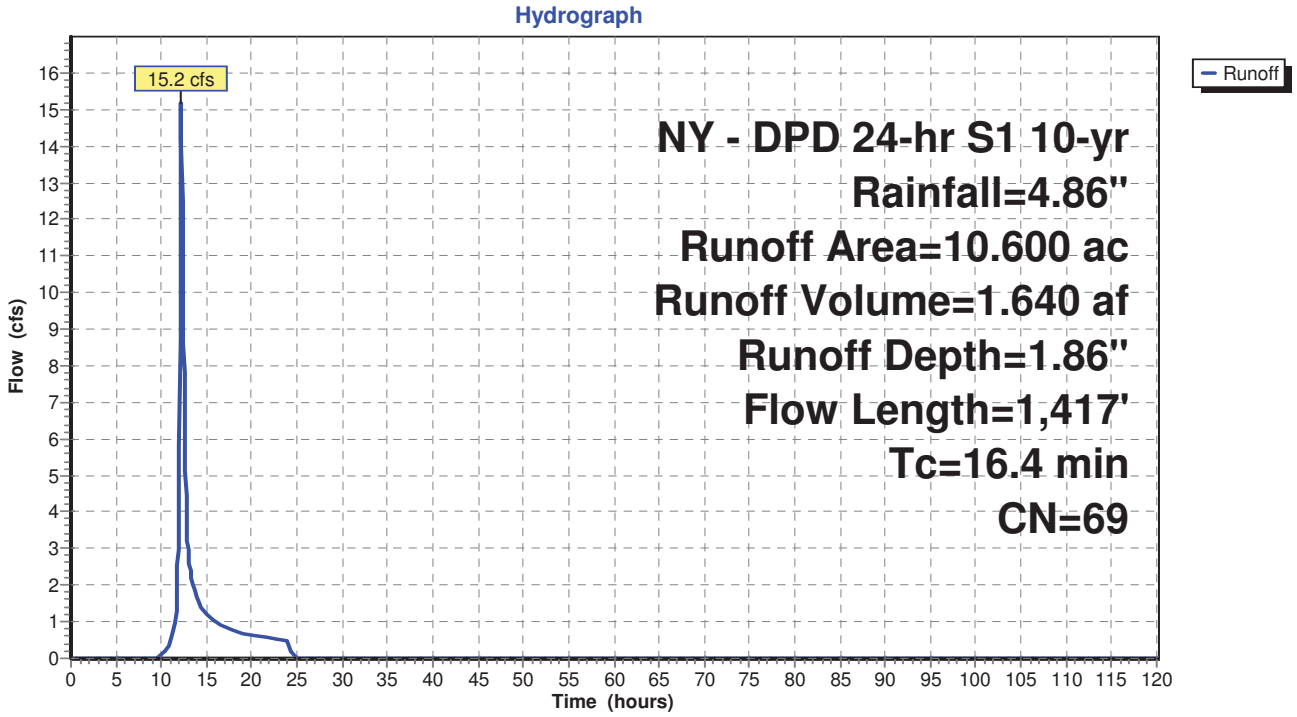
Runoff = 15.2 cfs @ 12.19 hrs, Volume= 1.640 af, Depth= 1.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - DPD 24-hr S1 10-yr Rainfall=4.86"

Area (ac)	CN	Description
0.100	98	Paved parking, HSG C
0.500	96	Gravel surface, HSG C
0.700	74	>75% Grass cover, Good, HSG C
1.200	71	Meadow, non-grazed, HSG C
5.000	70	Woods, Good, HSG C
0.500	72	Woods/grass comb., Good, HSG C
2.200	55	Woods, Good, HSG B
0.400	61	>75% Grass cover, Good, HSG B
10.600	69	Weighted Average
10.500		99.06% Pervious Area
0.100		0.94% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.9	100	0.0150	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.27"
1.1	225	0.0500	3.35		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
1.6	162	0.1100	1.66		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.5	90	0.3000	2.74		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.3	840	0.0300	6.10	36.62	**Channel Flow,** Area= 6.0 sf Perim= 10.0' r= 0.60' n= 0.030 Earth, grassed & winding
16.4	1,417	Total			

Subcatchment PRE 1:



Summary for Subcatchment PRE 2:

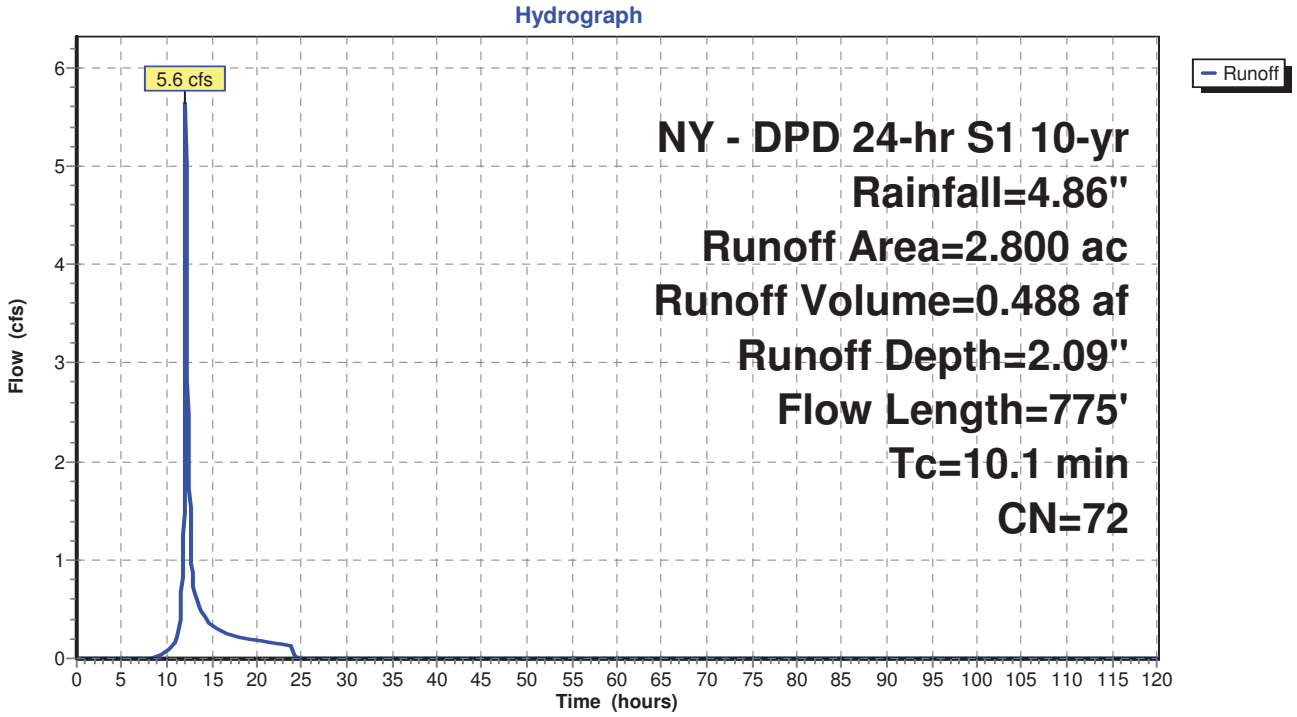
Runoff = 5.6 cfs @ 12.10 hrs, Volume= 0.488 af, Depth= 2.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - DPD 24-hr S1 10-yr Rainfall=4.86"

Area (ac)	CN	Description
0.600	96	Gravel surface, HSG C
0.100	74	>75% Grass cover, Good, HSG C
1.300	70	Woods, Good, HSG C
0.700	55	Woods, Good, HSG B
0.100	61	>75% Grass cover, Good, HSG B
2.800	72	Weighted Average
2.800		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	60	0.1200	0.15		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.27"
0.4	40	0.0600	1.80		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.27"
0.7	215	0.0600	4.97		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.5	180	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.6	280	0.0400	7.33	29.34	**Channel Flow,** Area= 4.0 sf Perim= 10.0' r= 0.40' n= 0.022 Earth, clean & straight
10.1	775	Total			

Subcatchment PRE 2:



Summary for Subcatchment PRE 3:

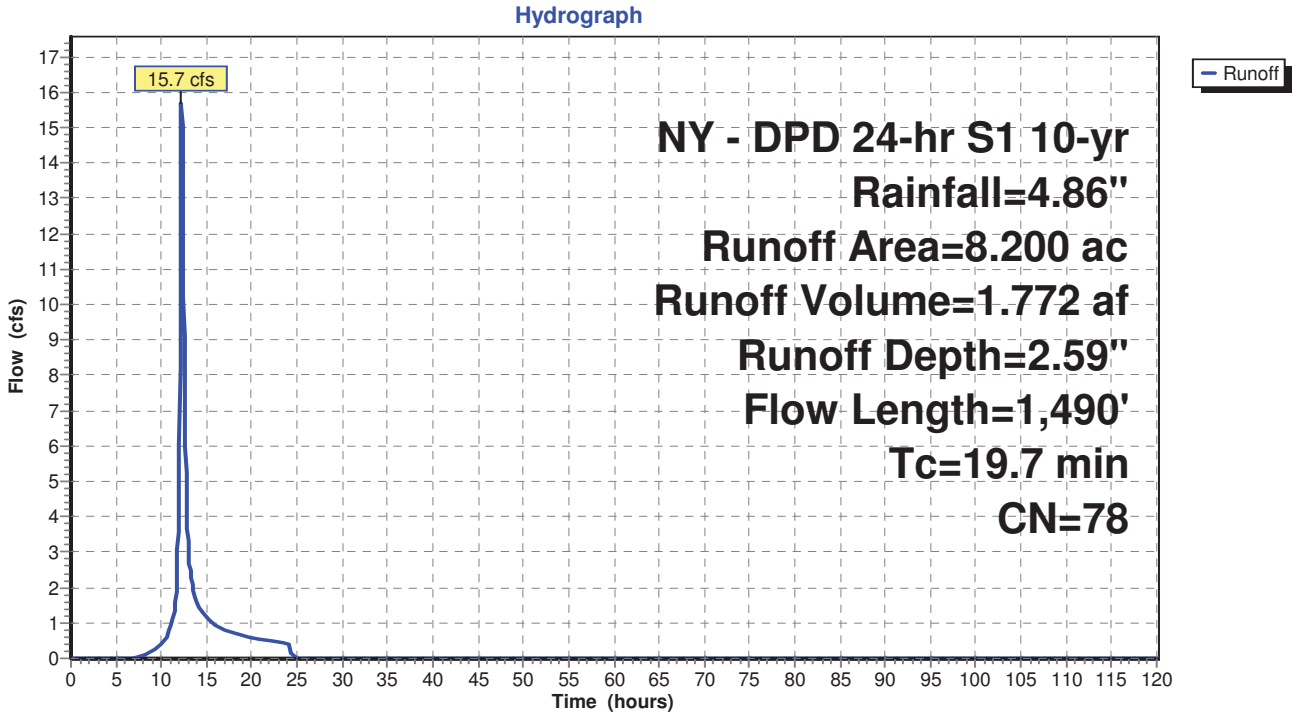
Runoff = 15.7 cfs @ 12.23 hrs, Volume= 1.772 af, Depth= 2.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - DPD 24-hr S1 10-yr Rainfall=4.86"

Area (ac)	CN	Description
1.600	98	Paved parking, HSG C
0.700	96	Gravel surface, HSG C
1.700	74	>75% Grass cover, Good, HSG C
3.700	70	Woods, Good, HSG C
0.500	55	Woods, Good, HSG B
8.200	78	Weighted Average
6.600		80.49% Pervious Area
1.600		19.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	100	0.0100	0.13		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.27"
2.0	250	0.0200	2.12		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.9	70	0.0700	1.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.3	430	0.0750	5.56		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.3	130	0.1100	1.66		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.5	220	0.2000	6.71		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.5	110	0.0500	3.35		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.1	40	0.0100	7.20	28.80	**Pipe Channel,** 24.0" x 24.0" Box Area= 4.0 sf Perim= 8.0' r= 0.50' n= 0.013 Concrete pipe, bends & connections
0.3	140	0.2000	6.71		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
19.7	1,490	Total			

Subcatchment PRE 3:



Summary for Subcatchment PRE 4:

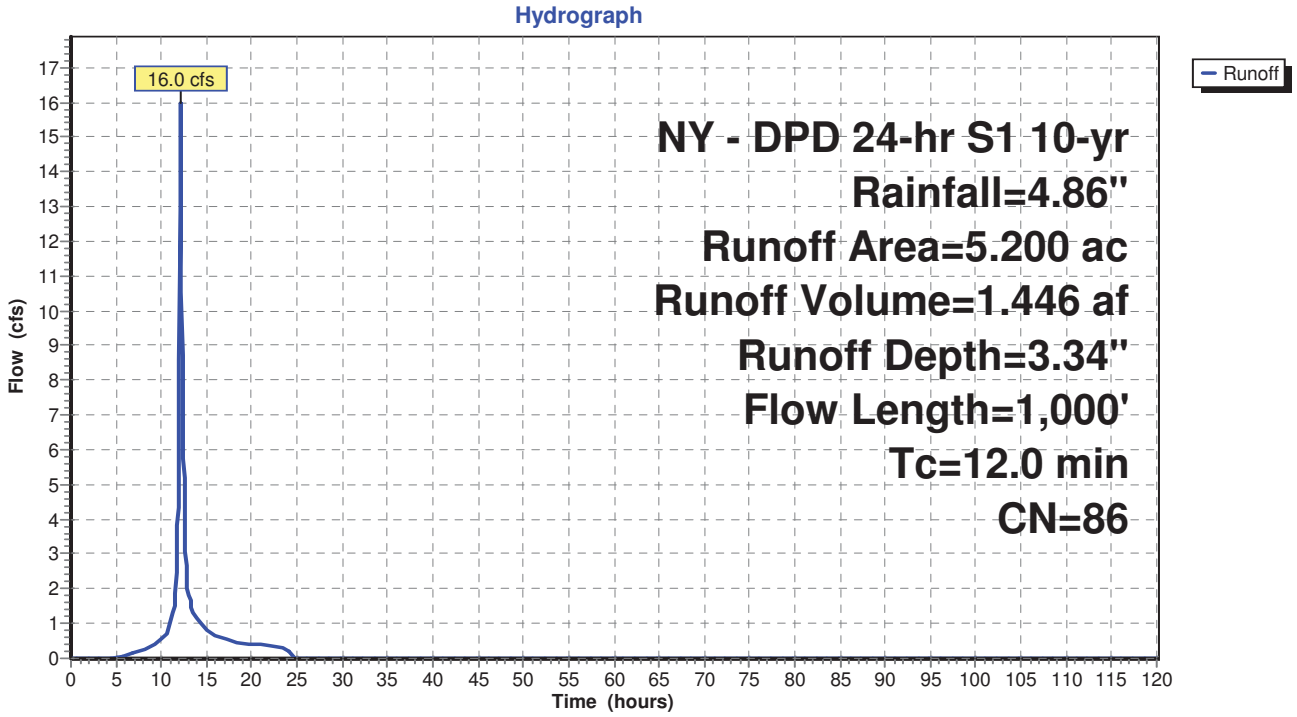
Runoff = 16.0 cfs @ 12.12 hrs, Volume= 1.446 af, Depth= 3.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - DPD 24-hr S1 10-yr Rainfall=4.86"

Area (ac)	CN	Description
2.000	98	Paved parking, HSG C
0.700	96	Gravel surface, HSG C
0.800	74	>75% Grass cover, Good, HSG C
0.100	80	>75% Grass cover, Good, HSG D
0.400	70	Woods, Good, HSG C
1.200	72	Woods/grass comb., Good, HSG C
5.200	86	Weighted Average
3.200		61.54% Pervious Area
2.000		38.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	100	0.1000	0.22		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.27"
1.8	260	0.1200	2.42		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.5	190	0.1000	6.42		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.3	270	0.0500	3.35		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
1.0	180	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
12.0	1,000	Total			

Subcatchment PRE 4:



Summary for Subcatchment PRE 5:

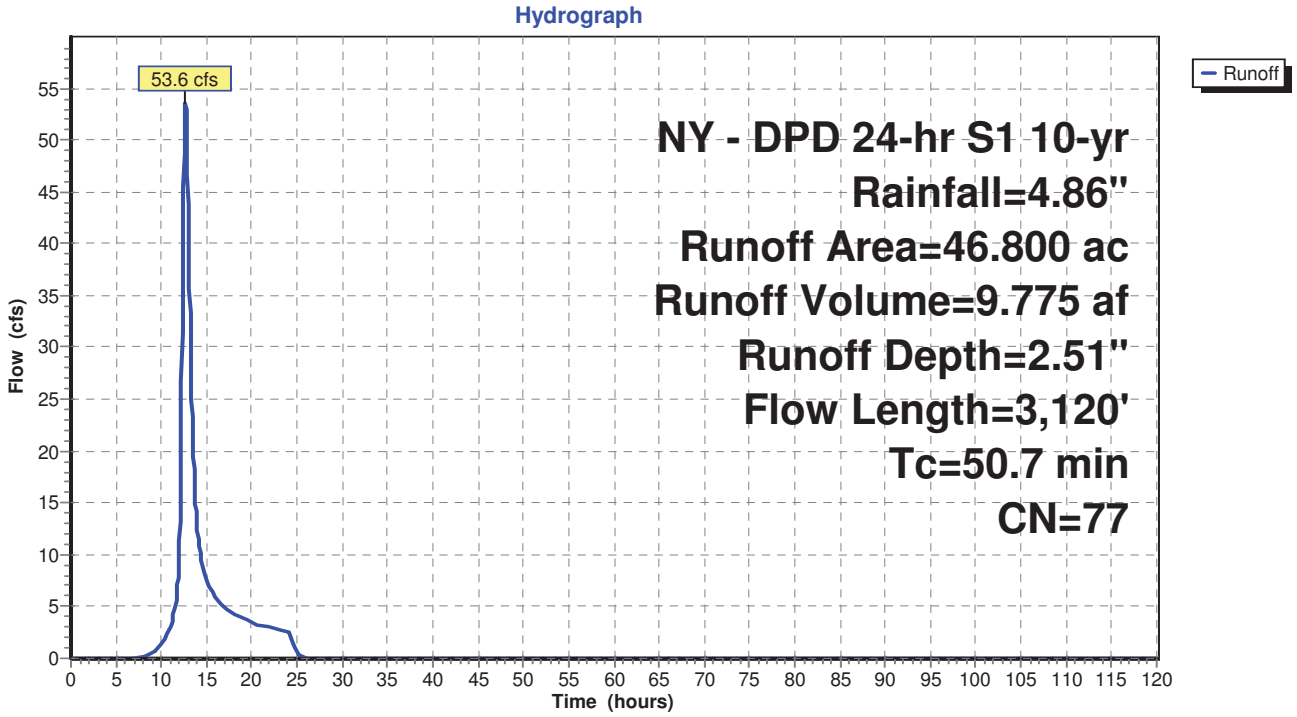
Runoff = 53.6 cfs @ 12.67 hrs, Volume= 9.775 af, Depth= 2.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - DPD 24-hr S1 10-yr Rainfall=4.86"

Area (ac)	CN	Description
6.000	98	Paved parking, HSG C
0.400	96	Gravel surface, HSG C
1.600	98	Water Surface, HSG D
9.200	74	>75% Grass cover, Good, HSG C
10.000	71	Meadow, non-grazed, HSG C
9.100	70	Woods, Good, HSG C
1.000	72	Woods/grass comb., Good, HSG C
8.800	77	Woods, Good, HSG D
0.700	80	>75% Grass cover, Good, HSG D
46.800	77	Weighted Average
39.200		83.76% Pervious Area
7.600		16.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.6	100	0.0100	0.09		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.27"
4.3	770	0.0400	3.00		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
1.8	110	0.0400	1.00		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
23.1	980	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.5	430		13.90		**Lake or Reservoir,** Mean Depth= 6.00'
2.4	730	0.0200	4.98	29.90	**Channel Flow,** Area= 6.0 sf Perim= 10.0' r= 0.60' n= 0.030 Earth, grassed & winding
50.7	3,120	Total			

Subcatchment PRE 5:



Summary for Subcatchment PRE 1:

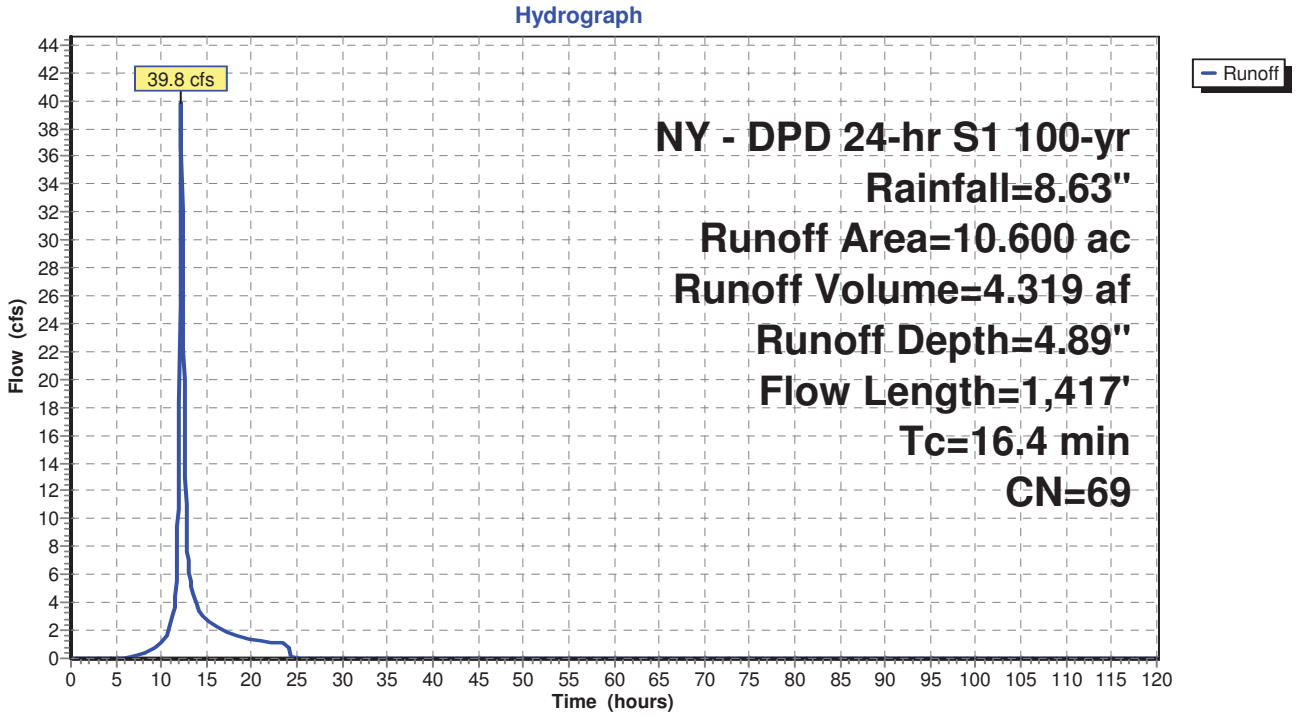
Runoff = 39.8 cfs @ 12.18 hrs, Volume= 4.319 af, Depth= 4.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - DPD 24-hr S1 100-yr Rainfall=8.63"

Area (ac)	CN	Description
0.100	98	Paved parking, HSG C
0.500	96	Gravel surface, HSG C
0.700	74	>75% Grass cover, Good, HSG C
1.200	71	Meadow, non-grazed, HSG C
5.000	70	Woods, Good, HSG C
0.500	72	Woods/grass comb., Good, HSG C
2.200	55	Woods, Good, HSG B
0.400	61	>75% Grass cover, Good, HSG B
10.600	69	Weighted Average
10.500		99.06% Pervious Area
0.100		0.94% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.9	100	0.0150	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.27"
1.1	225	0.0500	3.35		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
1.6	162	0.1100	1.66		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.5	90	0.3000	2.74		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.3	840	0.0300	6.10	36.62	**Channel Flow,** Area= 6.0 sf Perim= 10.0' r= 0.60' n= 0.030 Earth, grassed & winding
16.4	1,417	Total			

Subcatchment PRE 1:



Summary for Subcatchment PRE 2:

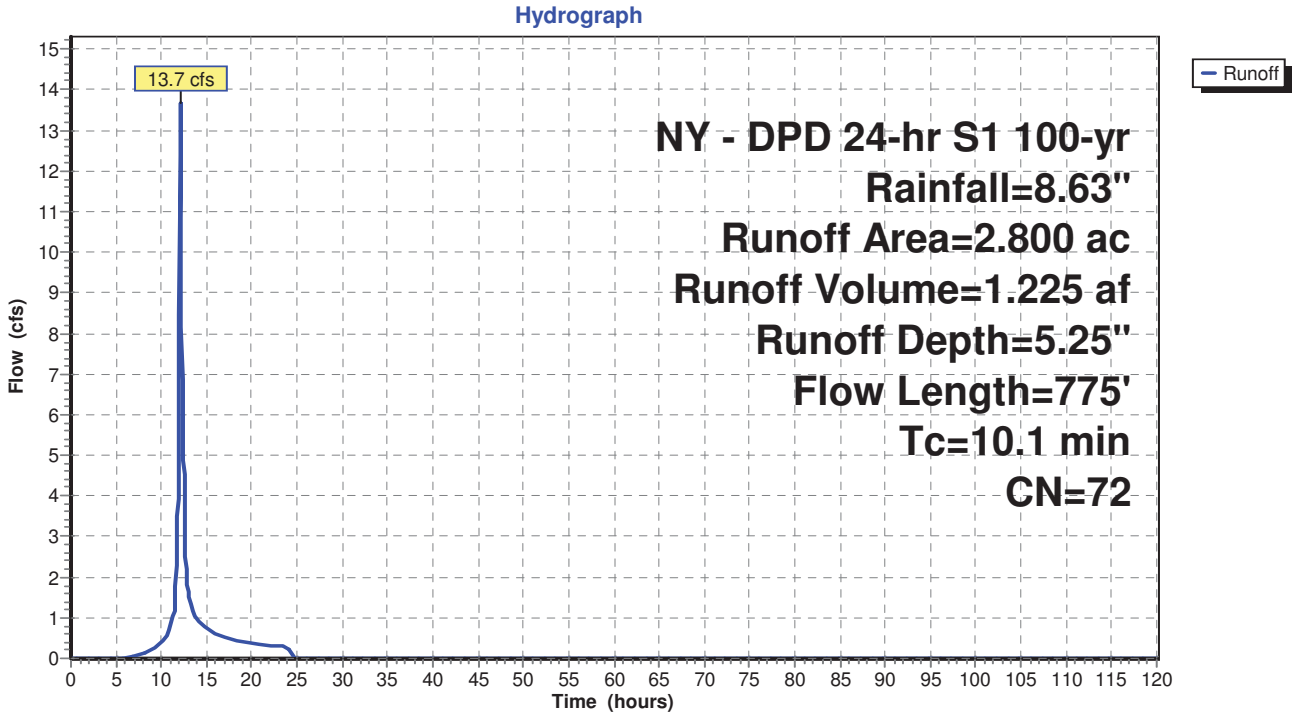
Runoff = 13.7 cfs @ 12.10 hrs, Volume= 1.225 af, Depth= 5.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - DPD 24-hr S1 100-yr Rainfall=8.63"

Area (ac)	CN	Description
0.600	96	Gravel surface, HSG C
0.100	74	>75% Grass cover, Good, HSG C
1.300	70	Woods, Good, HSG C
0.700	55	Woods, Good, HSG B
0.100	61	>75% Grass cover, Good, HSG B
2.800	72	Weighted Average
2.800		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	60	0.1200	0.15		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.27"
0.4	40	0.0600	1.80		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.27"
0.7	215	0.0600	4.97		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.5	180	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.6	280	0.0400	7.33	29.34	**Channel Flow,** Area= 4.0 sf Perim= 10.0' r= 0.40' n= 0.022 Earth, clean & straight
10.1	775	Total			

Subcatchment PRE 2:



Summary for Subcatchment PRE 3:

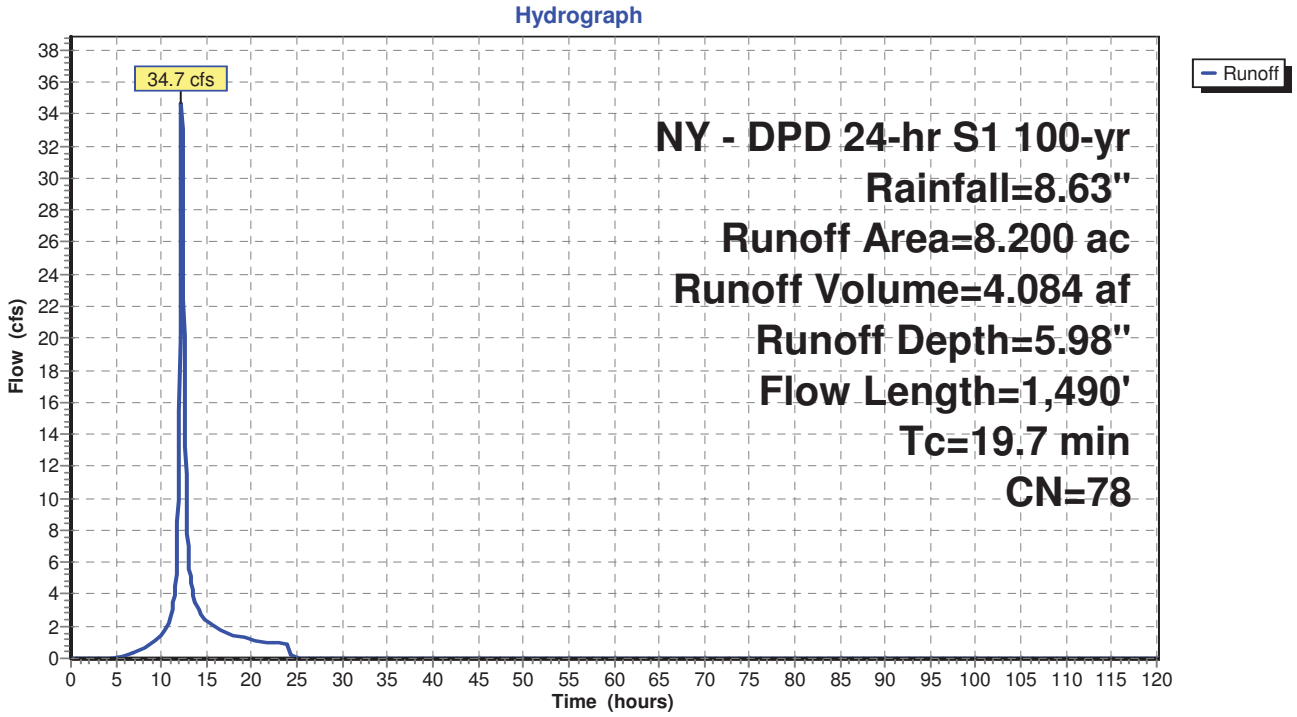
Runoff = 34.7 cfs @ 12.22 hrs, Volume= 4.084 af, Depth= 5.98"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - DPD 24-hr S1 100-yr Rainfall=8.63"

Area (ac)	CN	Description
1.600	98	Paved parking, HSG C
0.700	96	Gravel surface, HSG C
1.700	74	>75% Grass cover, Good, HSG C
3.700	70	Woods, Good, HSG C
0.500	55	Woods, Good, HSG B
8.200	78	Weighted Average
6.600		80.49% Pervious Area
1.600		19.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	100	0.0100	0.13		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.27"
2.0	250	0.0200	2.12		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.9	70	0.0700	1.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.3	430	0.0750	5.56		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.3	130	0.1100	1.66		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.5	220	0.2000	6.71		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.5	110	0.0500	3.35		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.1	40	0.0100	7.20	28.80	**Pipe Channel,** 24.0" x 24.0" Box Area= 4.0 sf Perim= 8.0' r= 0.50' n= 0.013 Concrete pipe, bends & connections
0.3	140	0.2000	6.71		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
19.7	1,490	Total			

Subcatchment PRE 3:



Summary for Subcatchment PRE 4:

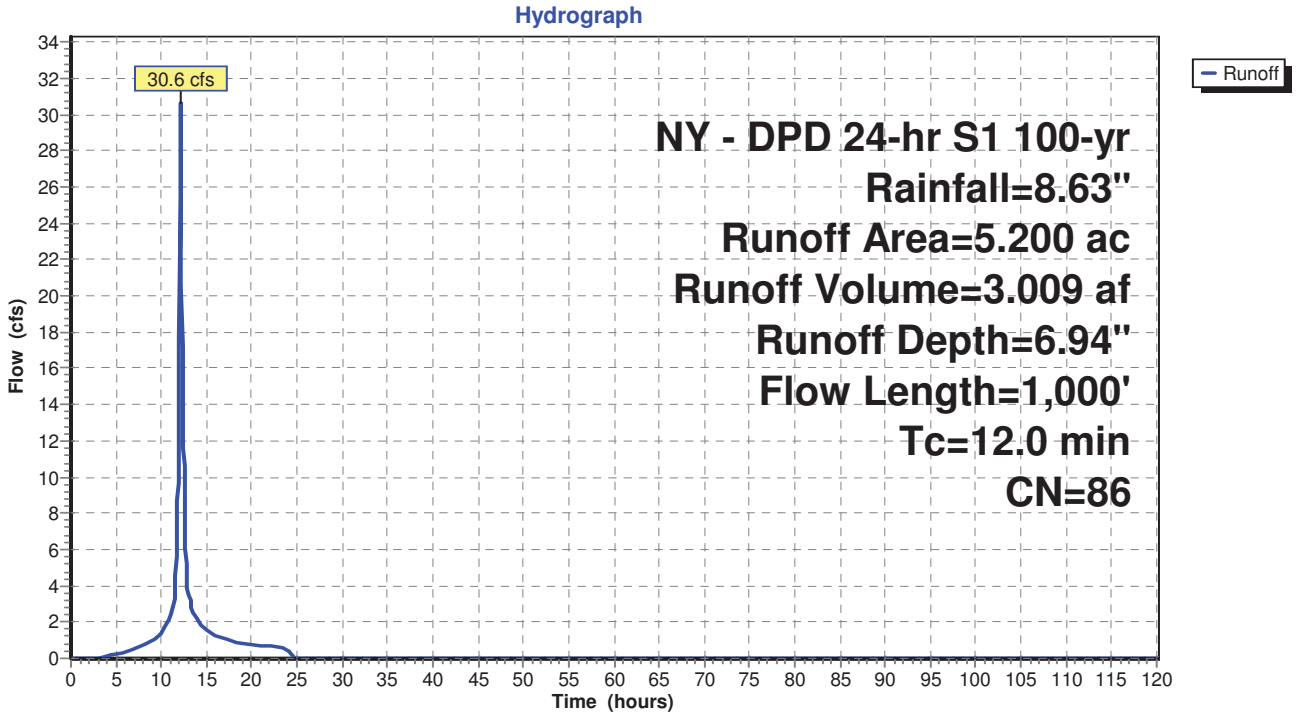
Runoff = 30.6 cfs @ 12.12 hrs, Volume= 3.009 af, Depth= 6.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - DPD 24-hr S1 100-yr Rainfall=8.63"

Area (ac)	CN	Description
2.000	98	Paved parking, HSG C
0.700	96	Gravel surface, HSG C
0.800	74	>75% Grass cover, Good, HSG C
0.100	80	>75% Grass cover, Good, HSG D
0.400	70	Woods, Good, HSG C
1.200	72	Woods/grass comb., Good, HSG C
5.200	86	Weighted Average
3.200		61.54% Pervious Area
2.000		38.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.4	100	0.1000	0.22		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.27"
1.8	260	0.1200	2.42		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.5	190	0.1000	6.42		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.3	270	0.0500	3.35		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
1.0	180	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
12.0	1,000	Total			

Subcatchment PRE 4:



Summary for Subcatchment PRE 5:

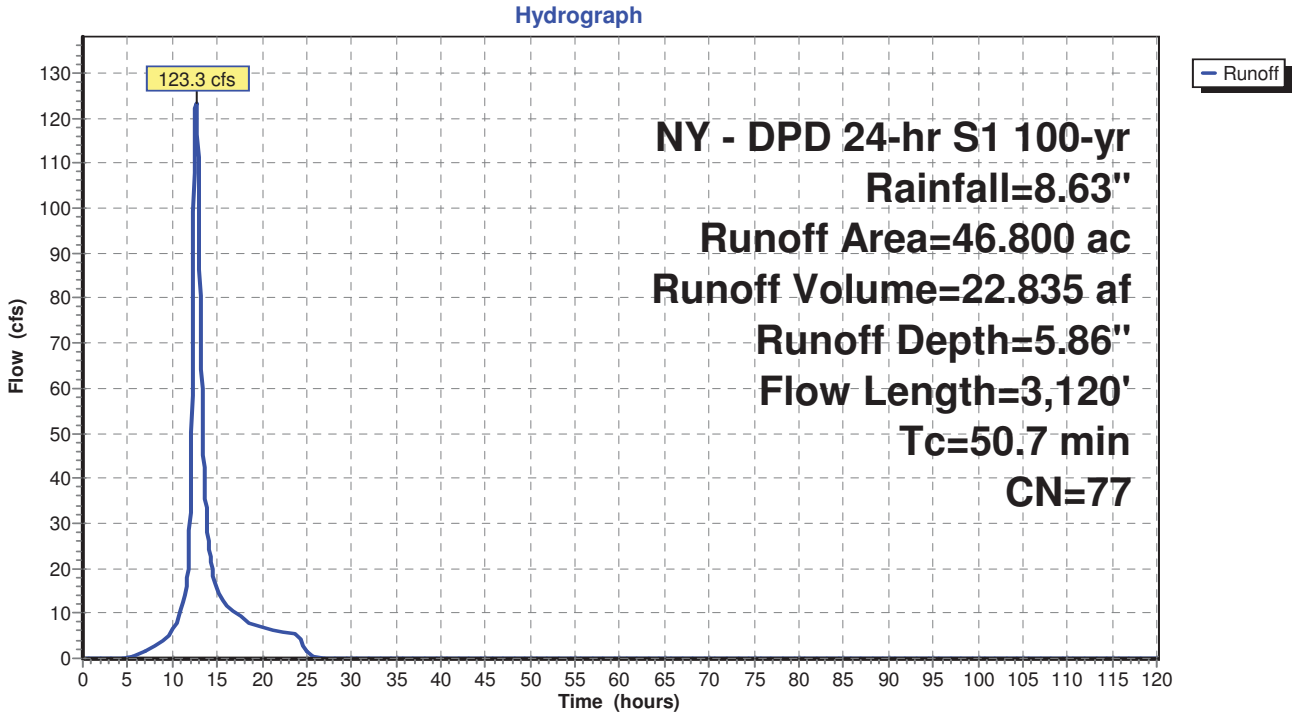
Runoff = 123.3 cfs @ 12.65 hrs, Volume= 22.835 af, Depth= 5.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - DPD 24-hr S1 100-yr Rainfall=8.63"

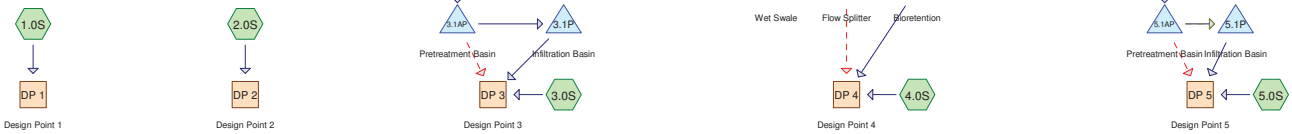
Area (ac)	CN	Description
6.000	98	Paved parking, HSG C
0.400	96	Gravel surface, HSG C
1.600	98	Water Surface, HSG D
9.200	74	>75% Grass cover, Good, HSG C
10.000	71	Meadow, non-grazed, HSG C
9.100	70	Woods, Good, HSG C
1.000	72	Woods/grass comb., Good, HSG C
8.800	77	Woods, Good, HSG D
0.700	80	>75% Grass cover, Good, HSG D
46.800	77	Weighted Average
39.200		83.76% Pervious Area
7.600		16.24% Impervious Area

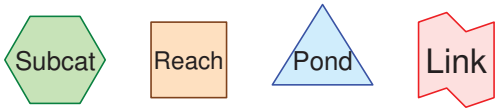
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.6	100	0.0100	0.09		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.27"
4.3	770	0.0400	3.00		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
1.8	110	0.0400	1.00		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
23.1	980	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.5	430		13.90		**Lake or Reservoir,** Mean Depth= 6.00'
2.4	730	0.0200	4.98	29.90	**Channel Flow,** Area= 6.0 sf Perim= 10.0' r= 0.60' n= 0.030 Earth, grassed & winding
50.7	3,120	Total			

Subcatchment PRE 5:



APPENDIX C
Post Development Computer Data





Routing Diagram for DPD - Post-Development

Prepared by Insite Engineering, Surveying and Landscape Architecture, P.C., Printed 5/12/2023

Summary for Subcatchment 1.0S:

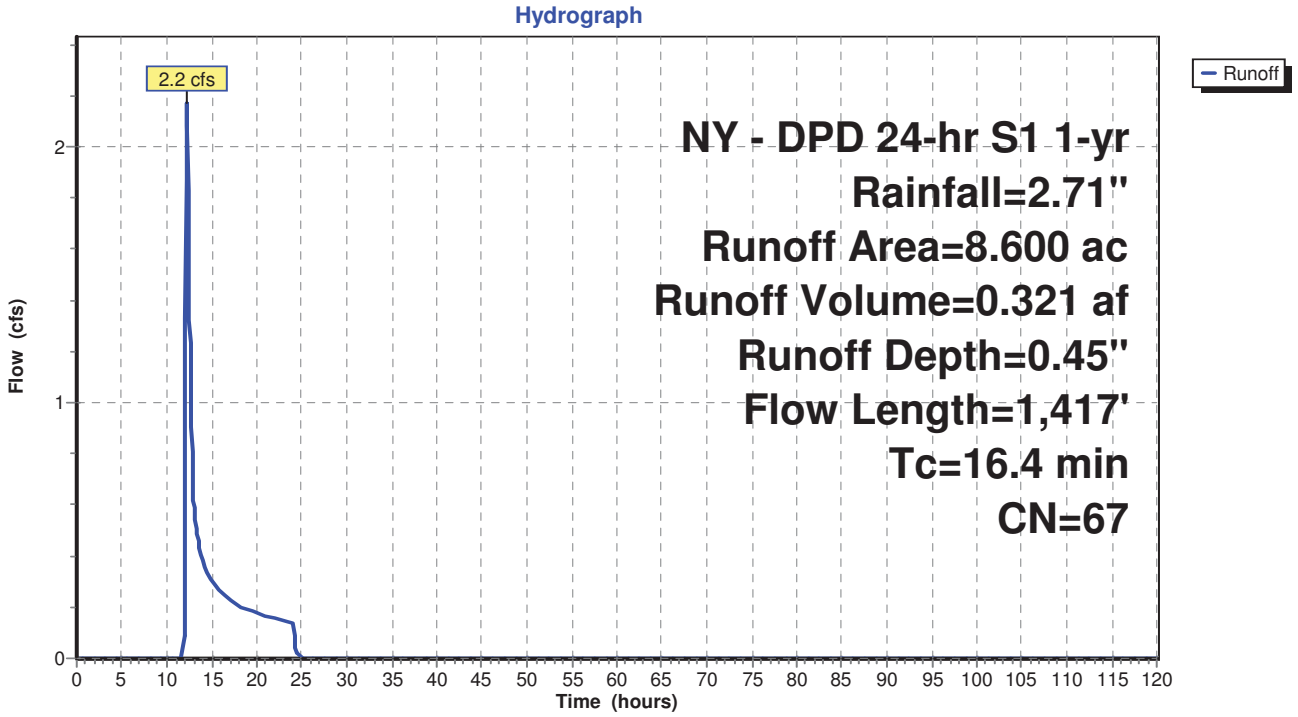
Runoff = 2.2 cfs @ 12.23 hrs, Volume= 0.321 af, Depth= 0.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - DPD 24-hr S1 1-yr Rainfall=2.71"

Area (ac)	CN	Description
0.200	74	>75% Grass cover, Good, HSG C
1.200	71	Meadow, non-grazed, HSG C
4.500	70	Woods, Good, HSG C
0.500	72	Woods/grass comb., Good, HSG C
1.800	55	Woods, Good, HSG B
0.400	61	>75% Grass cover, Good, HSG B
8.600	67	Weighted Average
8.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.9	100	0.0150	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.27"
1.1	225	0.0500	3.35		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
1.6	162	0.1100	1.66		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.5	90	0.3000	2.74		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.3	840	0.0300	6.10	36.62	**Channel Flow,** Area= 6.0 sf Perim= 10.0' r= 0.60' n= 0.030 Earth, grassed & winding
16.4	1,417	Total			

Subcatchment 1.0S:



Summary for Subcatchment 2.0S:

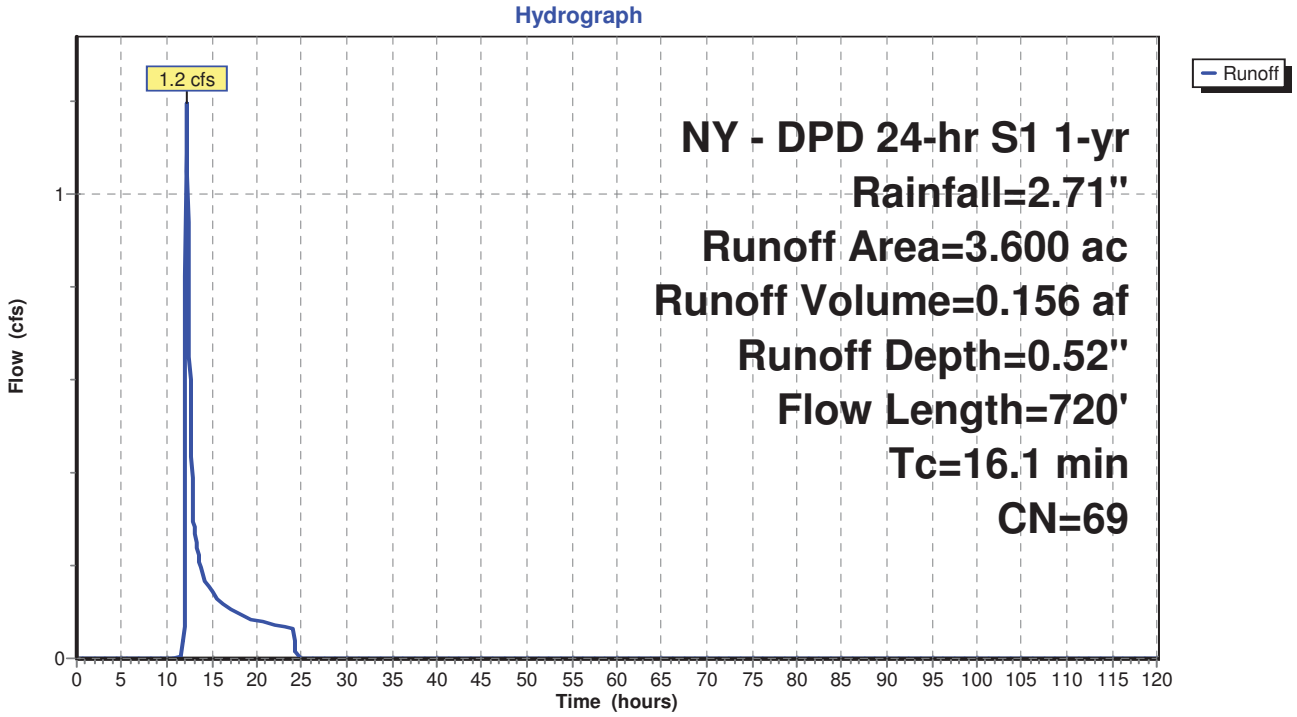
Runoff = 1.2 cfs @ 12.21 hrs, Volume= 0.156 af, Depth= 0.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - DPD 24-hr S1 1-yr Rainfall=2.71"

Area (ac)	CN	Description
1.400	70	Woods, Good, HSG C
1.500	74	>75% Grass cover, Good, HSG C
0.500	55	Woods, Good, HSG B
0.200	61	>75% Grass cover, Good, HSG B
3.600	69	Weighted Average
3.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.9	100	0.0150	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.27"
2.6	220	0.0800	1.41		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.4	150	0.0250	5.80	23.19	**Channel Flow,** Area= 4.0 sf Perim= 10.0' r= 0.40' n= 0.022 Earth, clean & straight
2.2	250	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
16.1	720	Total			

Subcatchment 2.0S:



Summary for Subcatchment 3.0S:

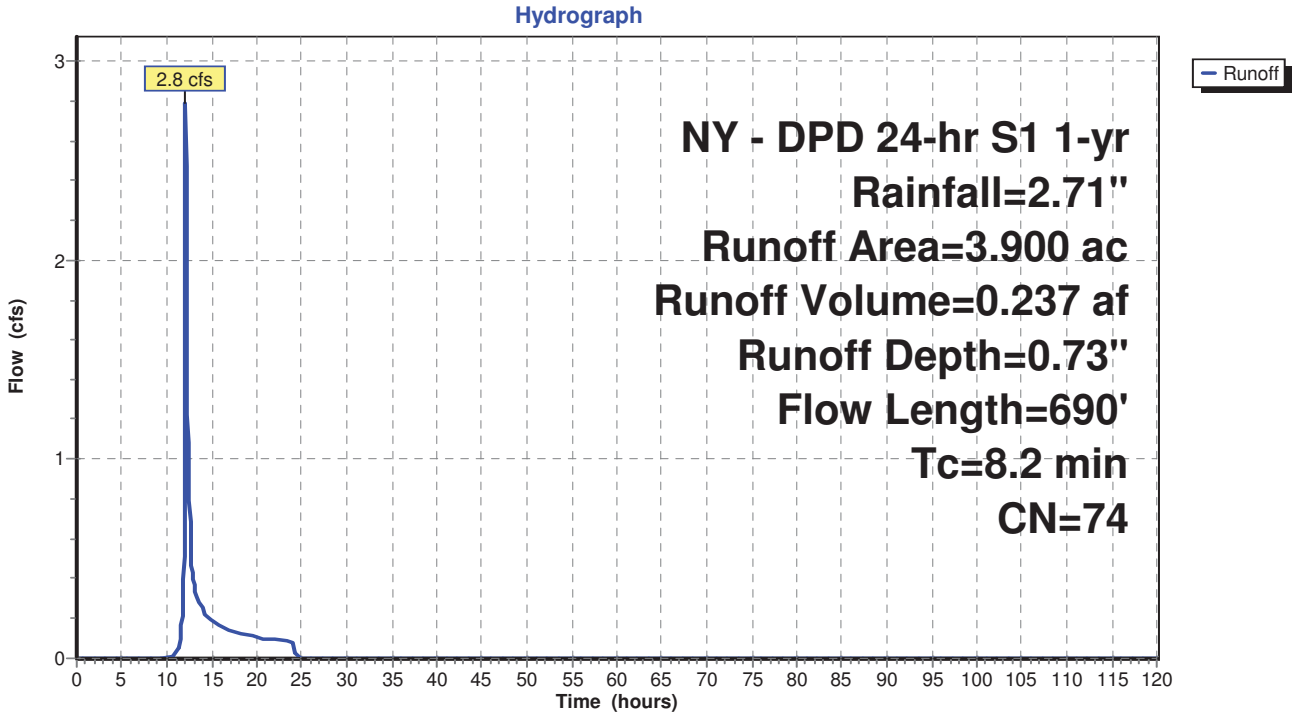
Runoff = 2.8 cfs @ 12.08 hrs, Volume= 0.237 af, Depth= 0.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - DPD 24-hr S1 1-yr Rainfall=2.71"

Area (ac)	CN	Description
0.500	98	Paved parking, HSG C
1.100	74	>75% Grass cover, Good, HSG C
1.900	70	Woods, Good, HSG C
0.200	55	Woods, Good, HSG B
0.100	61	>75% Grass cover, Good, HSG B
0.100	80	>75% Grass cover, Good, HSG D
3.900	74	Weighted Average
3.400		87.18% Pervious Area
0.500		12.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.2	80	0.2000	0.41		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.27"
2.3	20	0.2000	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.27"
0.9	100	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.3	330	0.0250	4.25	17.01	**Channel Flow,** Area= 4.0 sf Perim= 10.0' r= 0.40' n= 0.030 Earth, grassed & winding
0.5	160	0.0100	4.91	3.86	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
8.2	690	Total			

Subcatchment 3.0S:



Summary for Subcatchment 3.1S:

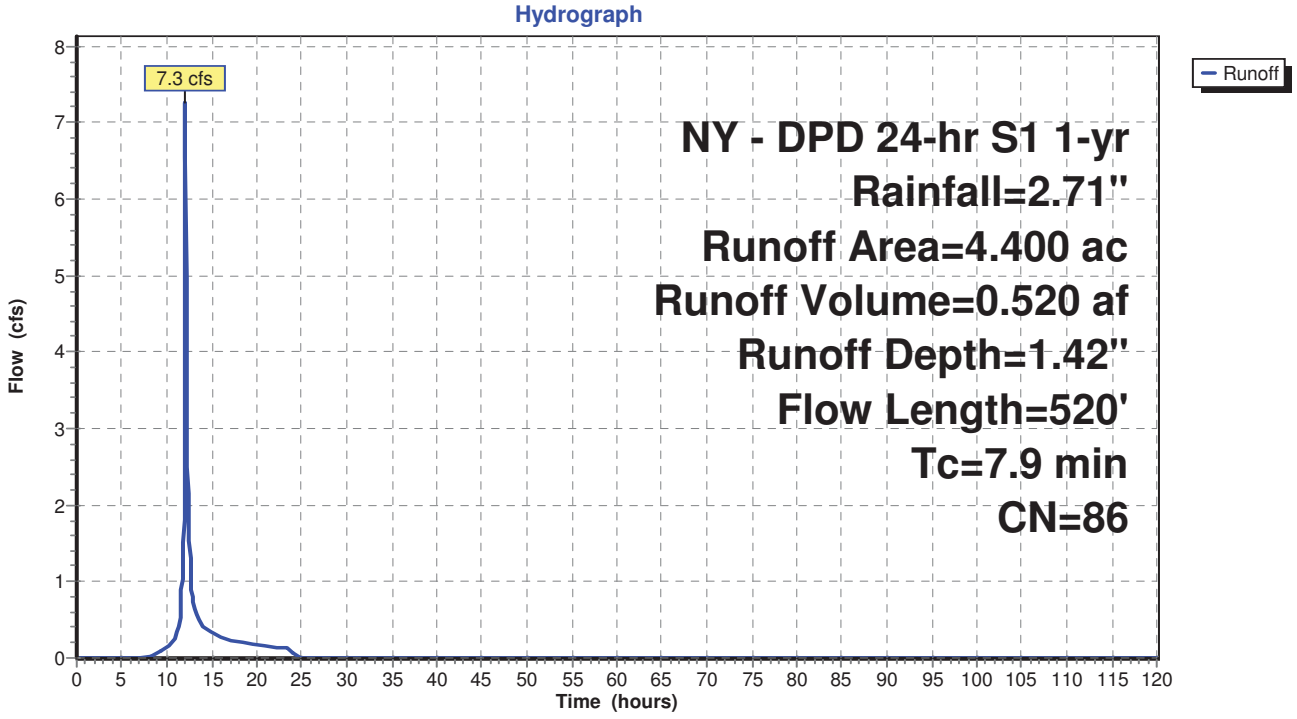
Runoff = 7.3 cfs @ 12.06 hrs, Volume= 0.520 af, Depth= 1.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - DPD 24-hr S1 1-yr Rainfall=2.71"

Area (ac)	CN	Description
2.200	98	Paved parking, HSG D
2.200	74	>75% Grass cover, Good, HSG C
4.400	86	Weighted Average
2.200		50.00% Pervious Area
2.200		50.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	100	0.0800	0.30		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.27"
1.2	110	0.0100	1.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
1.1	310	0.0100	4.91	3.86	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
7.9	520	Total			

Subcatchment 3.1S:



Summary for Subcatchment 4.0S:

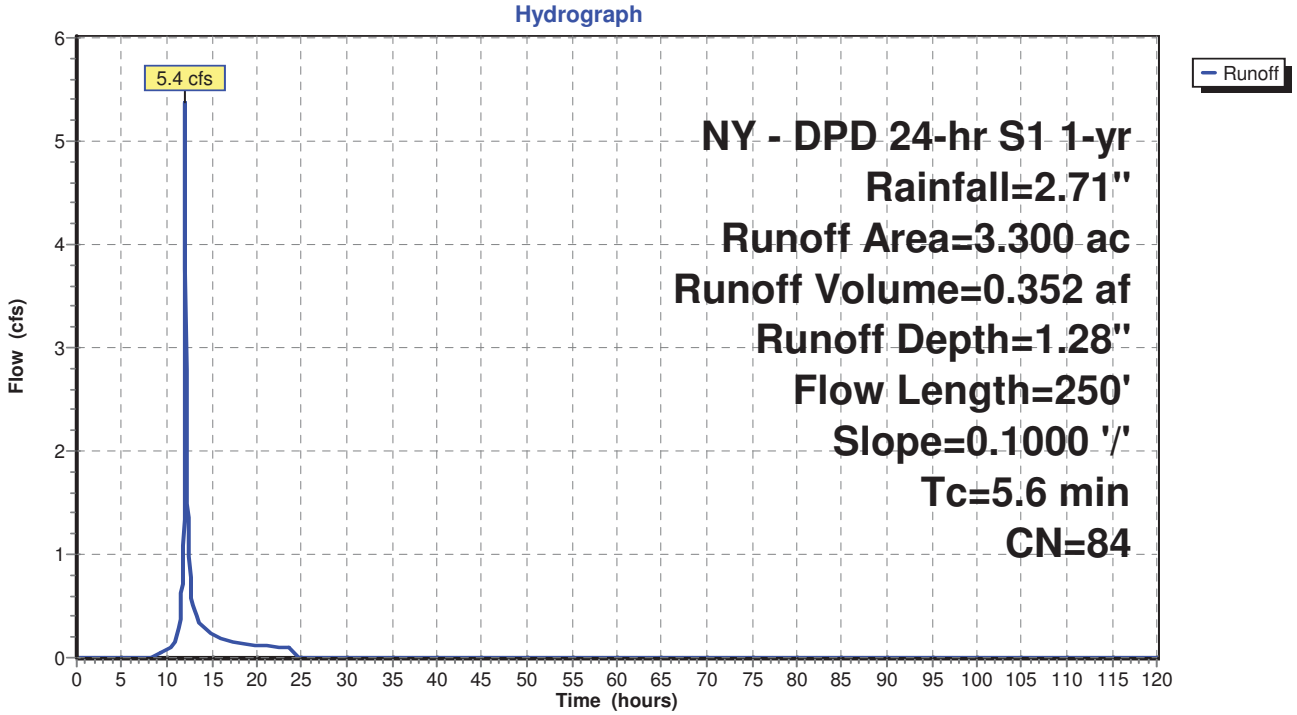
Runoff = 5.4 cfs @ 12.04 hrs, Volume= 0.352 af, Depth= 1.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - DPD 24-hr S1 1-yr Rainfall=2.71"

Area (ac)	CN	Description
1.400	98	Paved parking, HSG C
1.100	74	>75% Grass cover, Good, HSG C
0.300	80	>75% Grass cover, Good, HSG D
0.500	72	Woods/grass comb., Good, HSG C
3.300	84	Weighted Average
1.900		57.58% Pervious Area
1.400		42.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.1	100	0.1000	0.33		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.27"
0.5	150	0.1000	4.74		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
5.6	250	Total			

Subcatchment 4.0S:



Summary for Subcatchment 4.1S:

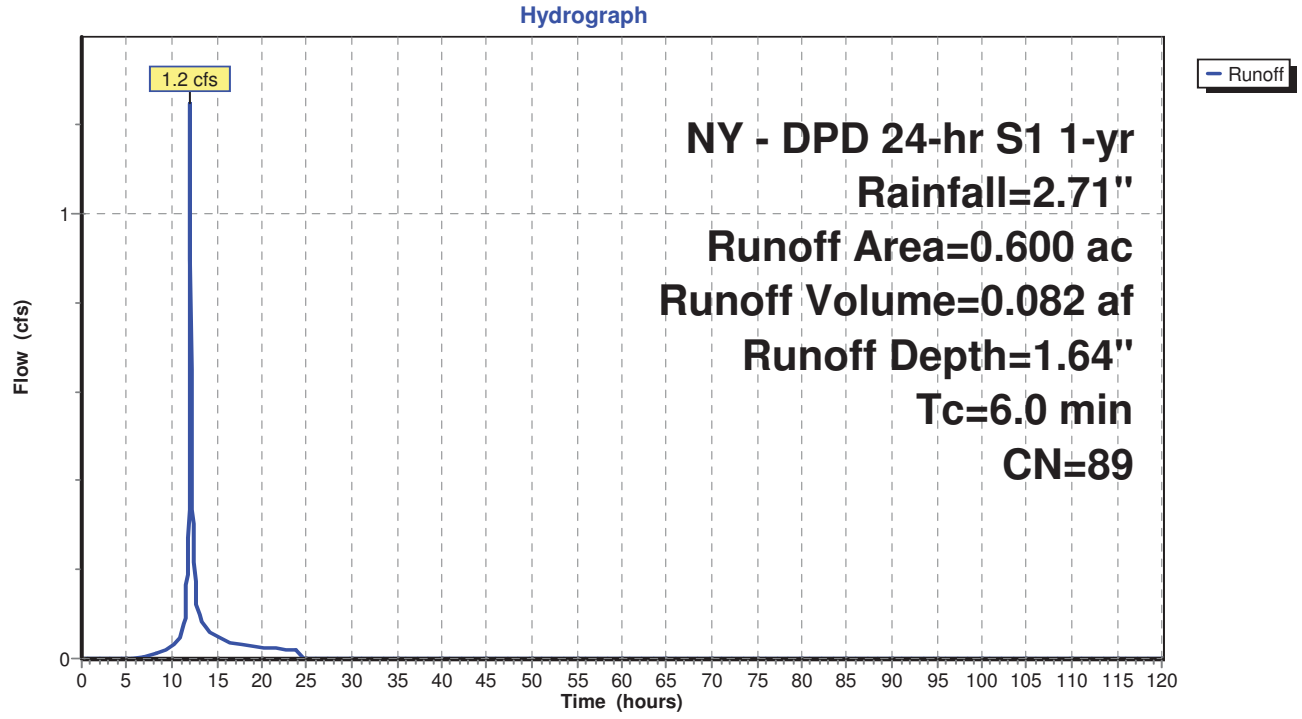
Runoff = 1.2 cfs @ 12.04 hrs, Volume= 0.082 af, Depth= 1.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - DPD 24-hr S1 1-yr Rainfall=2.71"

Area (ac)	CN	Description
0.300	98	Paved parking, HSG D
0.300	80	>75% Grass cover, Good, HSG D
0.600	89	Weighted Average
0.300		50.00% Pervious Area
0.300		50.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 4.1S:



Summary for Subcatchment 5.0S:

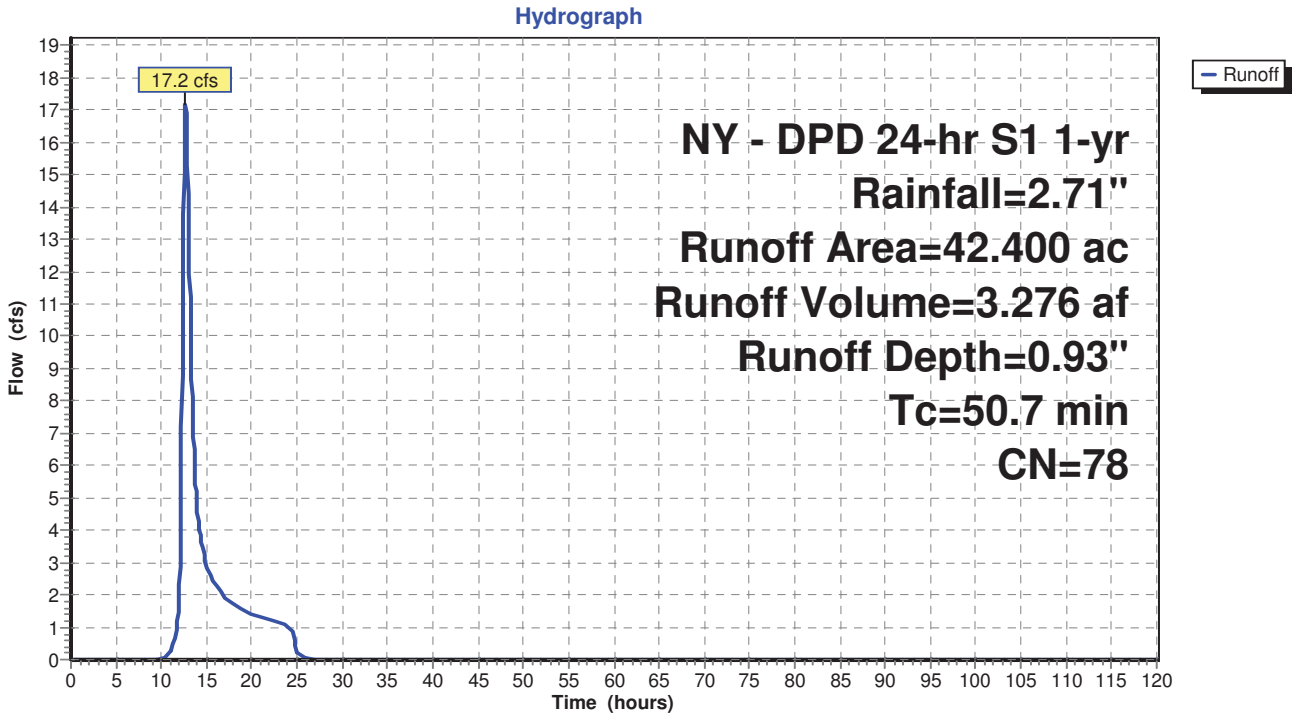
Runoff = 17.2 cfs @ 12.69 hrs, Volume= 3.276 af, Depth= 0.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - DPD 24-hr S1 1-yr Rainfall=2.71"

Area (ac)	CN	Description
6.000	98	Paved parking, HSG C
1.600	98	Water Surface, HSG D
8.900	74	>75% Grass cover, Good, HSG C
7.300	71	Meadow, non-grazed, HSG C
8.700	70	Woods, Good, HSG C
1.000	72	Woods/grass comb., Good, HSG C
8.700	77	Woods, Good, HSG D
0.200	80	>75% Grass cover, Good, HSG D
42.400	78	Weighted Average
34.800		82.08% Pervious Area
7.600		17.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
50.7					**Direct Entry,**

Subcatchment 5.0S:



Summary for Subcatchment 5.1S:

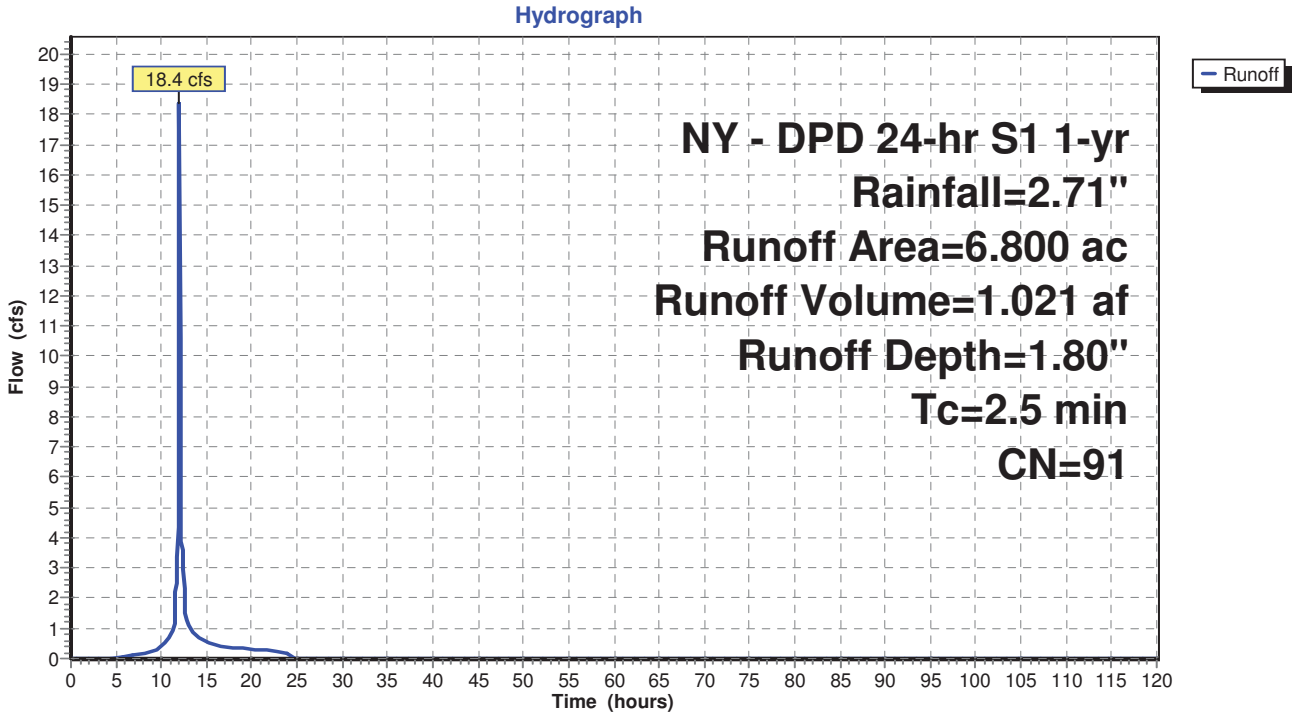
Runoff = 18.4 cfs @ 11.99 hrs, Volume= 1.021 af, Depth= 1.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - DPD 24-hr S1 1-yr Rainfall=2.71"

Area (ac)	CN	Description
4.900	98	Paved parking, HSG D
1.900	74	>75% Grass cover, Good, HSG C
6.800	91	Weighted Average
1.900		27.94% Pervious Area
4.900		72.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5					**Direct Entry,**

Subcatchment 5.1S:

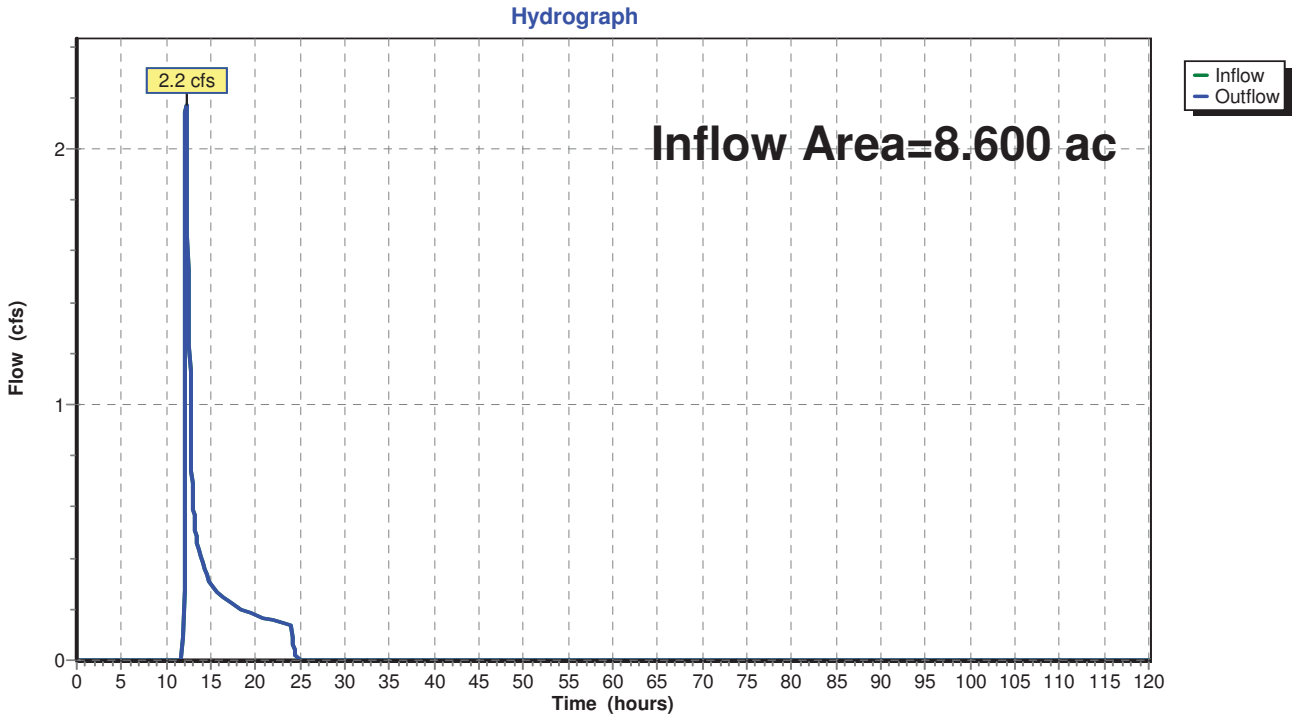


Summary for Reach DP 1: Design Point 1

Inflow Area = 8.600 ac, 0.00% Impervious, Inflow Depth = 0.45" for 1-yr event
Inflow = 2.2 cfs @ 12.23 hrs, Volume= 0.321 af
Outflow = 2.2 cfs @ 12.23 hrs, Volume= 0.321 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs / 2

Reach DP 1: Design Point 1

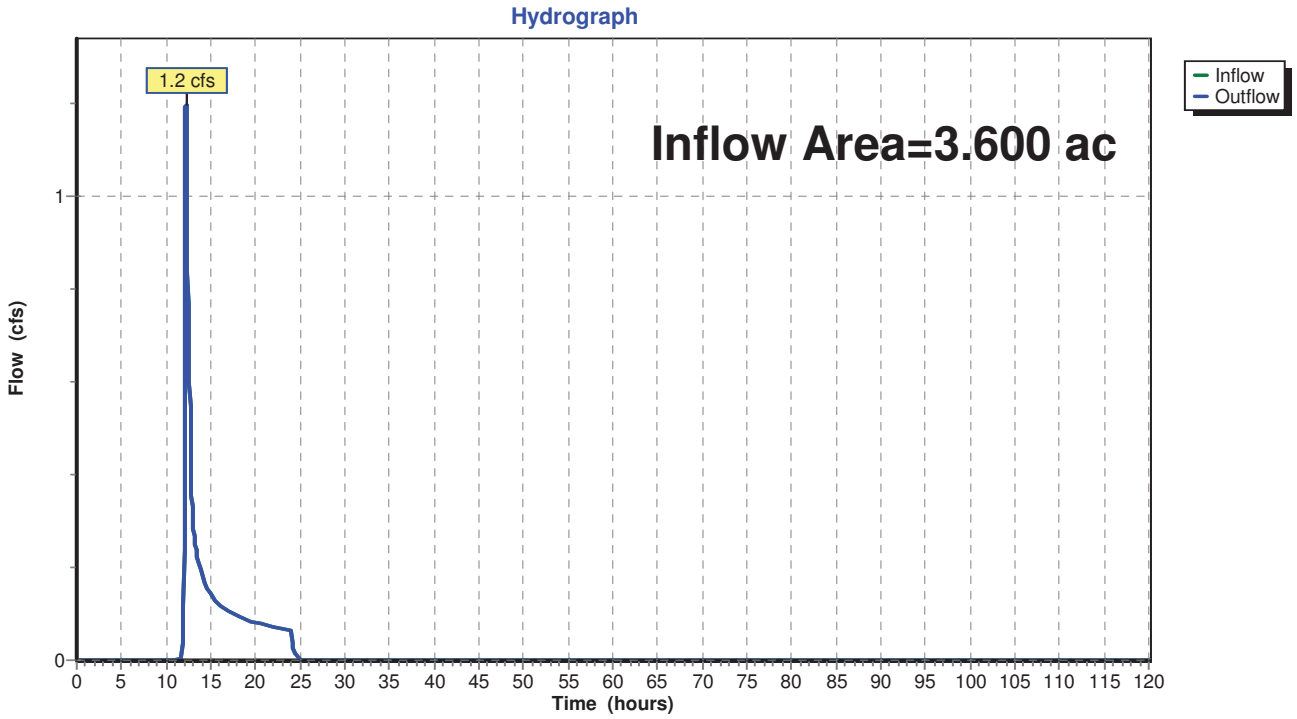


Summary for Reach DP 2: Design Point 2

Inflow Area = 3.600 ac, 0.00% Impervious, Inflow Depth = 0.52" for 1-yr event
Inflow = 1.2 cfs @ 12.21 hrs, Volume= 0.156 af
Outflow = 1.2 cfs @ 12.21 hrs, Volume= 0.156 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs / 2

Reach DP 2: Design Point 2

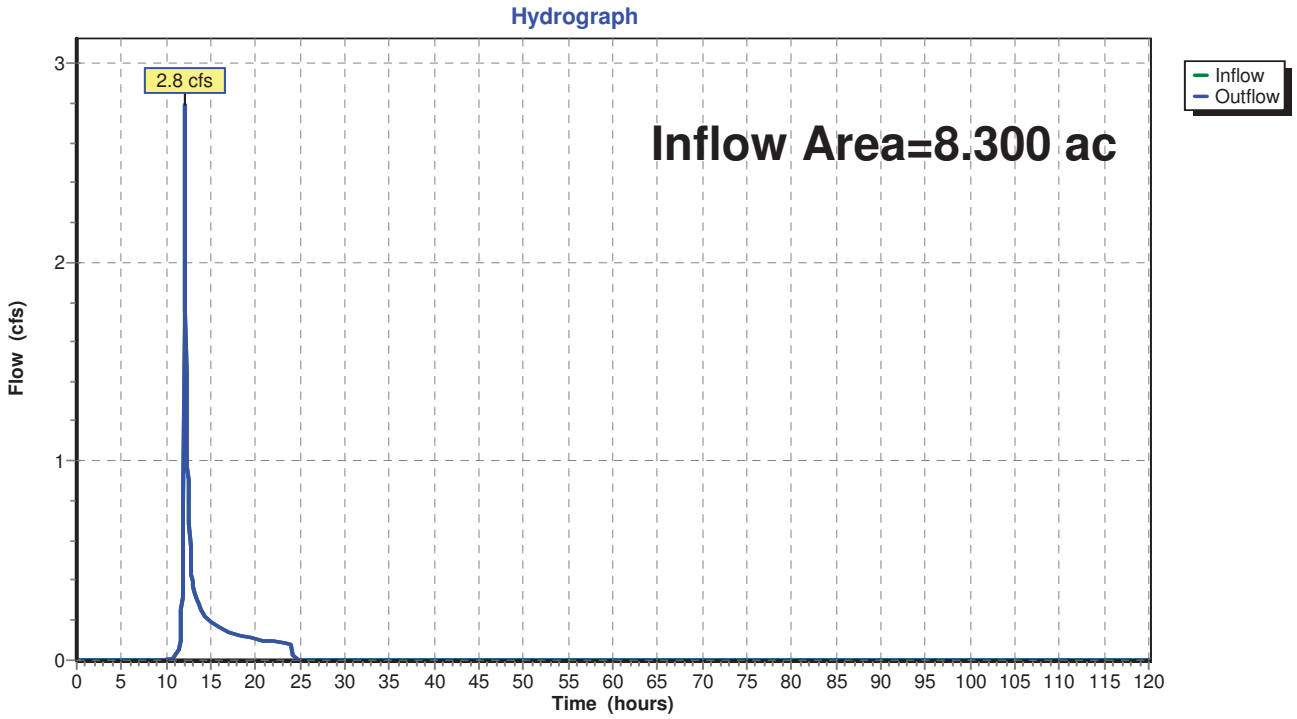


Summary for Reach DP 3: Design Point 3

Inflow Area = 8.300 ac, 32.53% Impervious, Inflow Depth = 0.34" for 1-yr event
Inflow = 2.8 cfs @ 12.08 hrs, Volume= 0.237 af
Outflow = 2.8 cfs @ 12.08 hrs, Volume= 0.237 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs / 2

Reach DP 3: Design Point 3

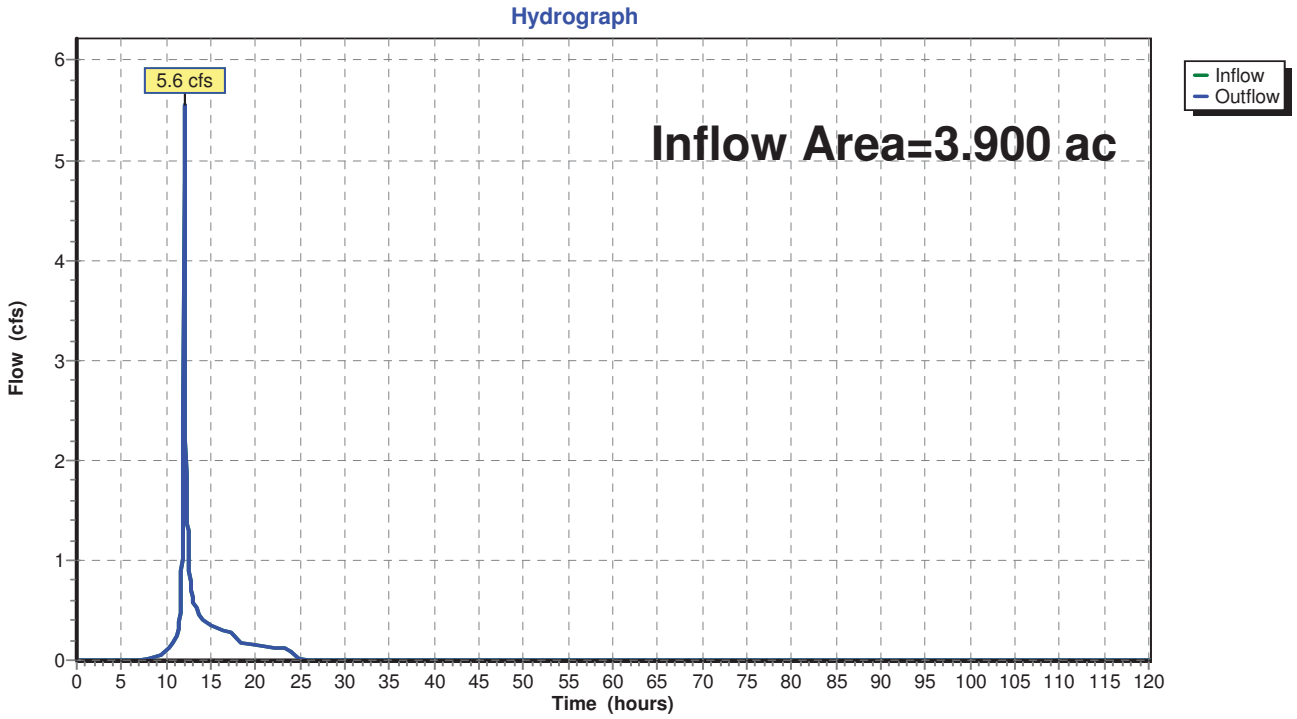


Summary for Reach DP 4: Design Point 4

Inflow Area = 3.900 ac, 43.59% Impervious, Inflow Depth = 1.34" for 1-yr event
Inflow = 5.6 cfs @ 12.04 hrs, Volume= 0.436 af
Outflow = 5.6 cfs @ 12.04 hrs, Volume= 0.436 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs / 2

Reach DP 4: Design Point 4

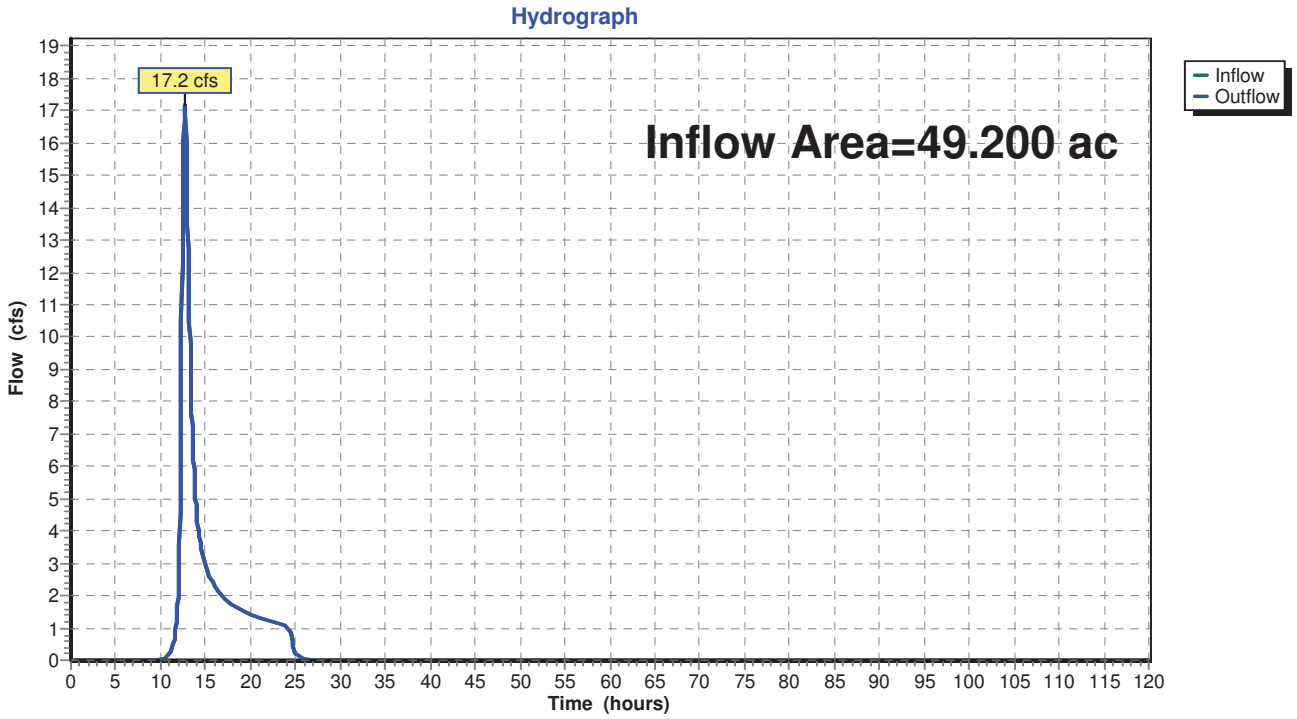


Summary for Reach DP 5: Design Point 5

Inflow Area = 49.200 ac, 25.41% Impervious, Inflow Depth = 0.80" for 1-yr event
Inflow = 17.2 cfs @ 12.69 hrs, Volume= 3.276 af
Outflow = 17.2 cfs @ 12.69 hrs, Volume= 3.276 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs / 2

Reach DP 5: Design Point 5



Summary for Pond 1.4 FS: Flow Splitter

Inflow Area = 0.600 ac, 50.00% Impervious, Inflow Depth = 1.64" for 1-yr event
Inflow = 1.0 cfs @ 12.17 hrs, Volume= 0.082 af
Outflow = 1.0 cfs @ 12.17 hrs, Volume= 0.082 af, Atten= 0%, Lag= 0.0 min
Primary = 1.0 cfs @ 12.17 hrs, Volume= 0.082 af
Secondary = 0.3 cfs @ 12.10 hrs, Volume= 0.002 af

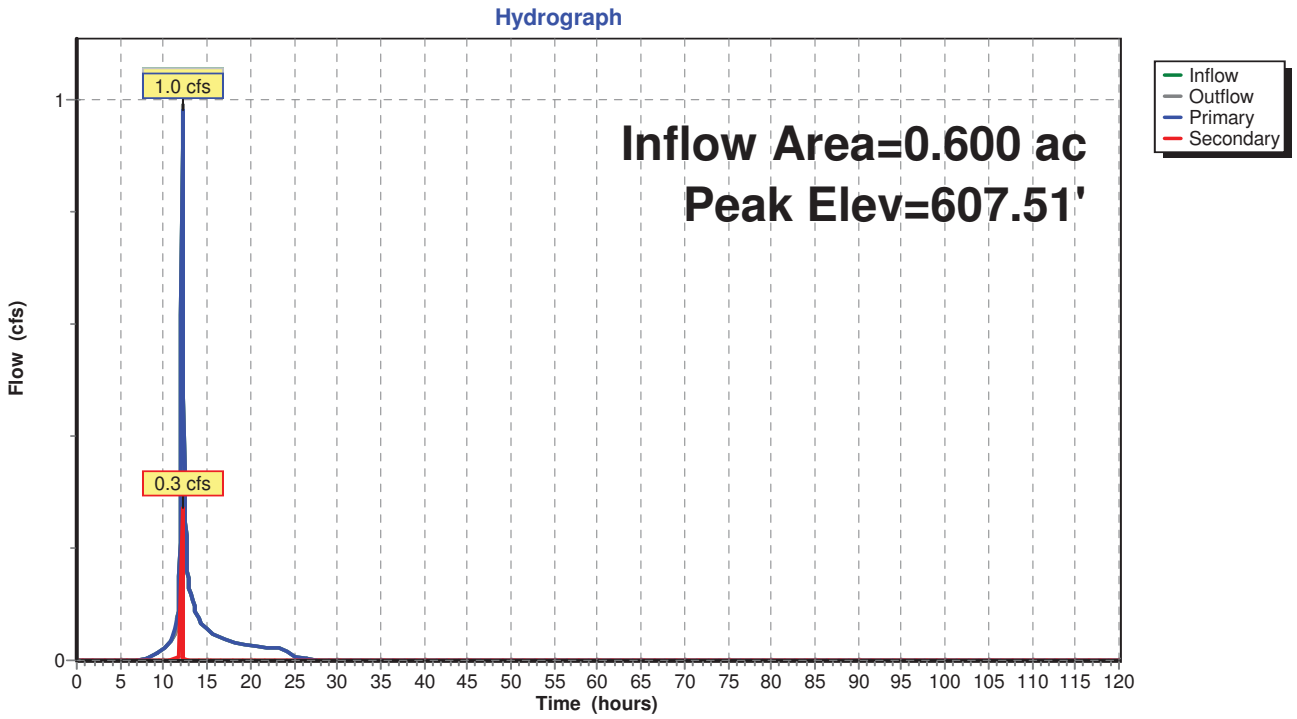
Routing by Dyn-Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 607.51' @ 12.17 hrs
Flood Elev= 608.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	607.00'	**12.0" Vert. Orifice/Grate** C= 0.600
#2	Device 3	607.50'	**4.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#3	Secondary	604.50'	**15.0" Round Culvert** L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 604.50' / 604.00' S= 0.0250 '/' Cc= 0.900 n= 0.120, Flow Area= 1.23 sf

Primary OutFlow Max=1.0 cfs @ 12.17 hrs HW=607.51' TW=606.11' (Dynamic Tailwater)
└**1=Orifice/Grate** (Orifice Controls 1.0 cfs @ 2.43 fps)

Secondary OutFlow Max=0.0 cfs @ 12.10 hrs HW=607.48' TW=0.00' (Dynamic Tailwater)
└**3=Culvert** (Passes 0.0 cfs of 2.3 cfs potential flow)
└**2=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Pond 1.4 FS: Flow Splitter



Summary for Pond 3.1AP: Pretreatment Basin

Inflow Area = 4.400 ac, 50.00% Impervious, Inflow Depth = 1.42" for 1-yr event
Inflow = 7.3 cfs @ 12.06 hrs, Volume= 0.520 af
Outflow = 1.1 cfs @ 12.37 hrs, Volume= 0.520 af, Atten= 85%, Lag= 18.6 min
Primary = 1.1 cfs @ 12.37 hrs, Volume= 0.520 af
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 607.82' @ 12.66 hrs Surf.Area= 4,267 sf Storage= 6,531 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 156.8 min (1,007.3 - 850.4)

Volume	Invert	Avail.Storage	Storage Description
#1	606.00'	24,350 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

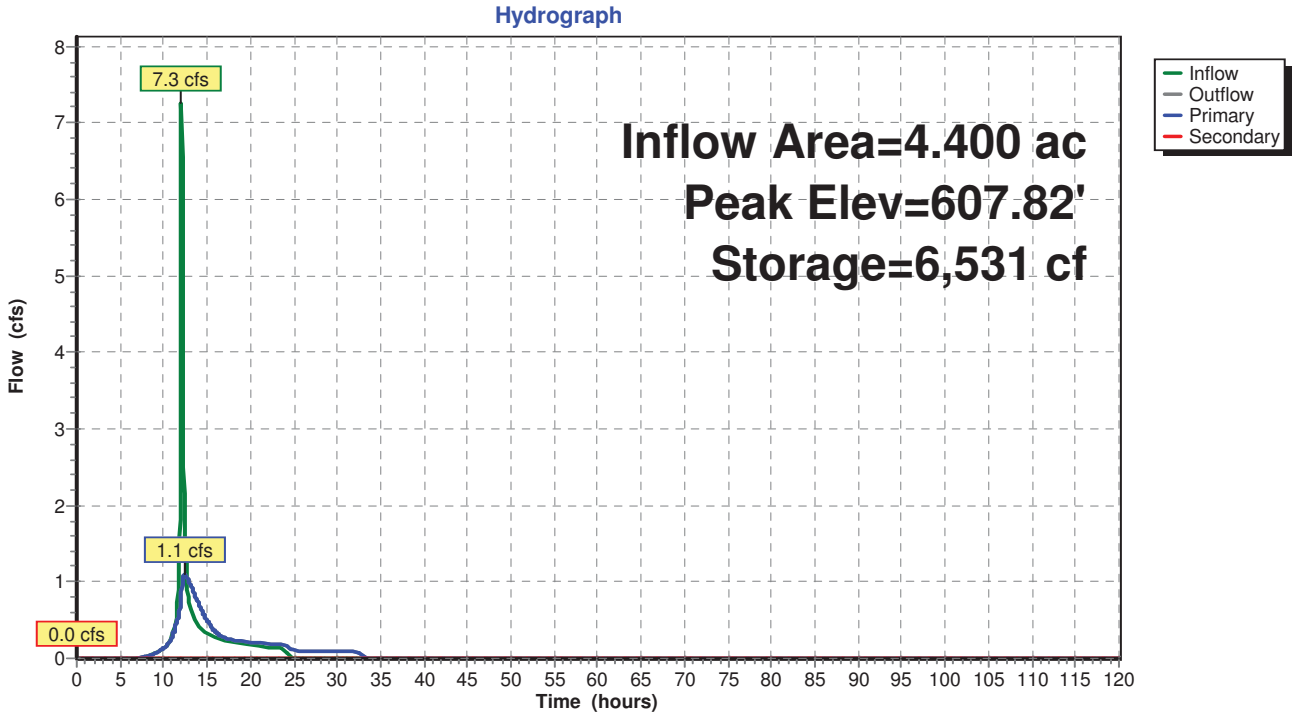
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
606.00	2,900	0	0
608.00	4,400	7,300	7,300
610.00	6,100	10,500	17,800
611.00	7,000	6,550	24,350

Device	Routing	Invert	Outlet Devices
#1	Device 3	608.00'	**1.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#2	Primary	605.50'	**6.0" Round Culvert** L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 605.50' / 605.00' S= 0.0125 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#3	Secondary	605.50'	**24.0" Round Culvert** L= 50.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 605.50' / 604.00' S= 0.0300 '/' Cc= 0.900 n= 0.012, Flow Area= 3.14 sf

Primary OutFlow Max=1.1 cfs @ 12.37 hrs HW=607.70' TW=605.67' (Dynamic Tailwater)
└**2=Culvert** (Outlet Controls 1.1 cfs @ 5.58 fps)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=606.00' TW=0.00' (Dynamic Tailwater)
└**3=Culvert** (Passes 0.0 cfs of 1.5 cfs potential flow)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Pond 3.1AP: Pretreatment Basin



Summary for Pond 3.1P: Infiltration Basin

Inflow Area = 4.400 ac, 50.00% Impervious, Inflow Depth = 1.42" for 1-yr event
Inflow = 1.1 cfs @ 12.37 hrs, Volume= 0.520 af
Outflow = 0.3 cfs @ 17.39 hrs, Volume= 0.520 af, Atten= 77%, Lag= 301.1 min
Discarded = 0.3 cfs @ 17.39 hrs, Volume= 0.520 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 607.01' @ 17.39 hrs Surf.Area= 5,462 sf Storage= 8,734 cf

Plug-Flow detention time= 402.6 min calculated for 0.519 af (100% of inflow)
Center-of-Mass det. time= 402.5 min (1,409.8 - 1,007.3)

Volume	Invert	Avail.Storage	Storage Description
#1	605.00'	34,800 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

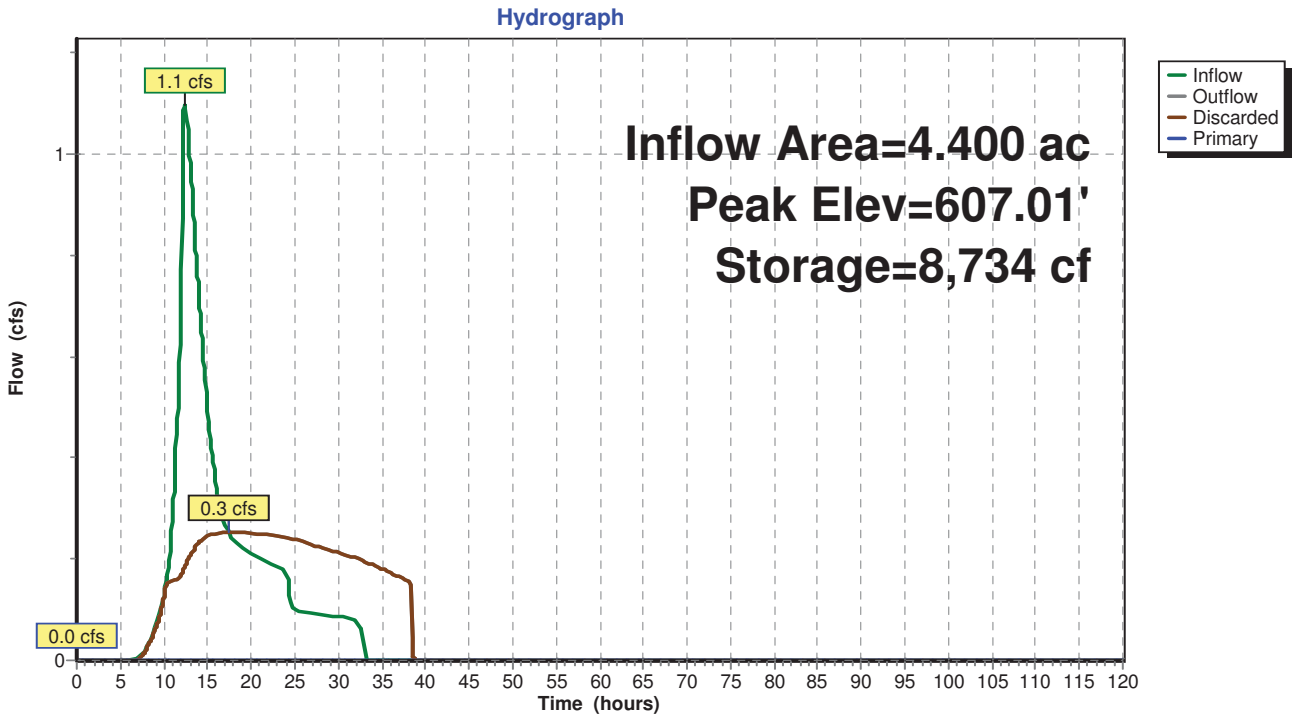
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
605.00	3,300	0	0
606.00	4,300	3,800	3,800
608.00	6,600	10,900	14,700
610.00	9,000	15,600	30,300
610.50	9,000	4,500	34,800

Device	Routing	Invert	Outlet Devices
#1	Device 2	609.10'	**2.5' long x 0.5' breadth Broad-Crested Rectangular Weir X 2.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#2	Primary	603.00'	**15.0" Round Culvert** L= 50.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 603.00' / 602.00' S= 0.0200 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#3	Discarded	605.00'	**2.000 in/hr Exfiltration over Horizontal area** Phase-In= 0.01'

Discarded OutFlow Max=0.3 cfs @ 17.39 hrs HW=607.01' (Free Discharge)
↑└**3=Exfiltration** (Exfiltration Controls 0.3 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=605.00' TW=0.00' (Dynamic Tailwater)
↑└**2=Culvert** (Passes 0.0 cfs of 6.9 cfs potential flow)
↑└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Pond 3.1P: Infiltration Basin



Summary for Pond 4.1AP1: Wet Swale

Inflow Area = 0.600 ac, 50.00% Impervious, Inflow Depth = 1.64" for 1-yr event
Inflow = 1.2 cfs @ 12.04 hrs, Volume= 0.082 af
Outflow = 1.0 cfs @ 12.17 hrs, Volume= 0.082 af, Atten= 21%, Lag= 7.7 min
Primary = 0.2 cfs @ 12.27 hrs, Volume= 0.059 af
Secondary = 0.9 cfs @ 12.15 hrs, Volume= 0.023 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs / 2
Starting Elev= 607.00' Surf.Area= 700 sf Storage= 275 cf
Peak Elev= 607.61' @ 12.11 hrs Surf.Area= 1,065 sf Storage= 812 cf (537 cf above start)

Plug-Flow detention time= 98.0 min calculated for 0.076 af (92% of inflow)
Center-of-Mass det. time= 35.4 min (869.1 - 833.7)

Volume	Invert	Avail.Storage	Storage Description
#1	606.50'	1,275 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

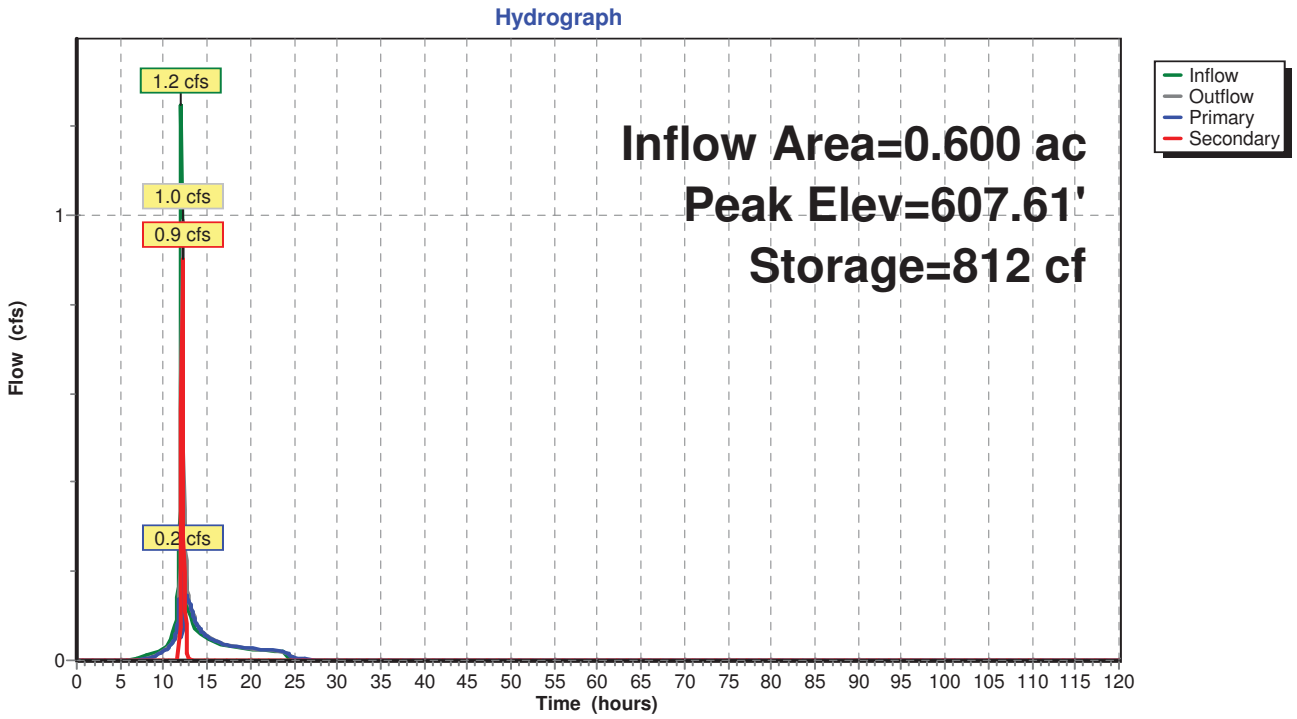
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
606.50	400	0	0
608.00	1,300	1,275	1,275

Device	Routing	Invert	Outlet Devices
#1	Primary	607.00'	**4.0" Vert. Orifice/Grate** C= 0.600
#2	Secondary	607.30'	**4.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.0 cfs @ 12.27 hrs HW=607.41' TW=607.40' (Dynamic Tailwater)
↑—**1=Orifice/Grate** (Orifice Controls 0.0 cfs @ 0.49 fps)

Secondary OutFlow Max=1.1 cfs @ 12.15 hrs HW=607.58' TW=607.51' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 1.1 cfs @ 1.00 fps)

Pond 4.1AP1: Wet Swale



Summary for Pond 4.1BP: Bioretention

Inflow Area = 0.600 ac, 50.00% Impervious, Inflow Depth = 1.64" for 1-yr event
Inflow = 1.0 cfs @ 12.17 hrs, Volume= 0.082 af
Outflow = 0.1 cfs @ 13.07 hrs, Volume= 0.082 af, Atten= 87%, Lag= 54.0 min
Primary = 0.1 cfs @ 13.07 hrs, Volume= 0.082 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 606.21' @ 13.07 hrs Surf.Area= 5,329 sf Storage= 1,086 cf

Plug-Flow detention time= 68.1 min calculated for 0.082 af (100% of inflow)
Center-of-Mass det. time= 68.1 min (937.3 - 869.2)

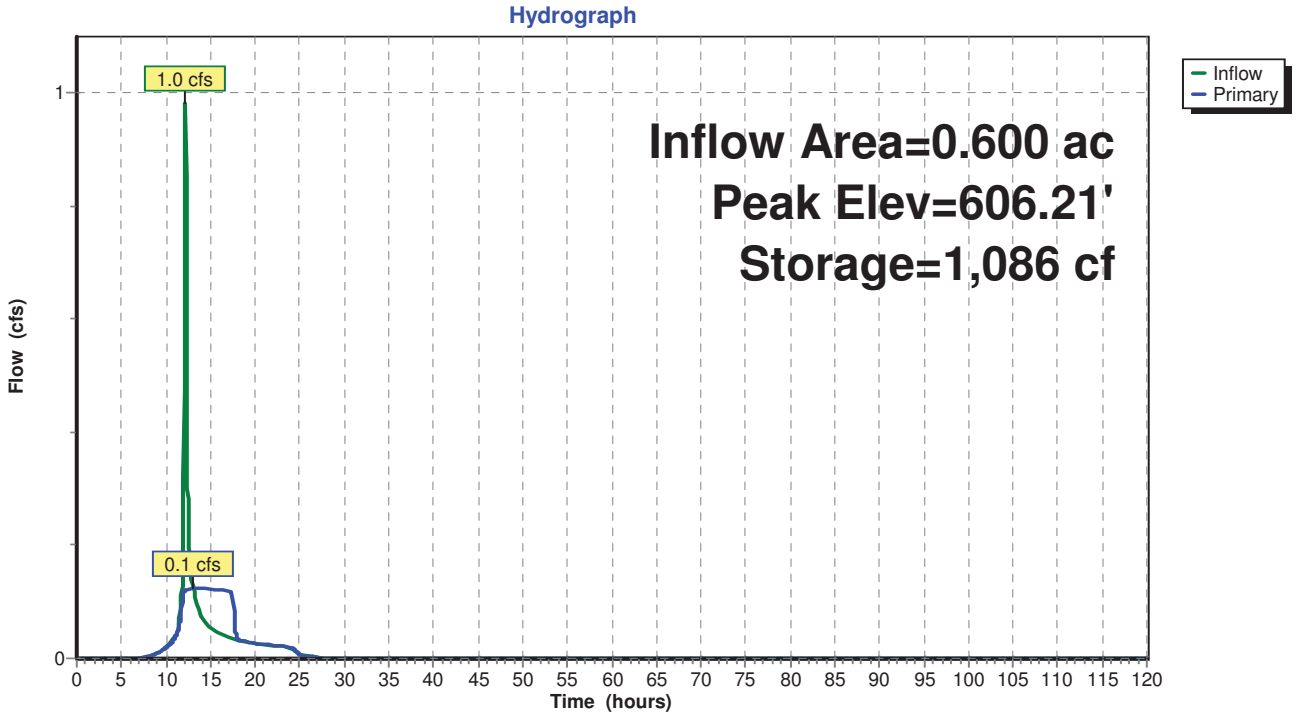
Volume	Invert	Avail.Storage	Storage Description
#1	606.00'	5,650 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
606.00	5,100	0	0
607.00	6,200	5,650	5,650

Device	Routing	Invert	Outlet Devices
#1	Device 3	606.00'	**1.000 in/hr Exfiltration over Surface area** Phase-In= 0.01'
#2	Device 3	606.60'	**12.0" Vert. Orifice/Grate** C= 0.600
#3	Primary	602.50'	**8.0" Round Culvert** L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 602.50' / 602.20' S= 0.0300 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.1 cfs @ 13.07 hrs HW=606.21' TW=0.00' (Dynamic Tailwater)
└─**3=Culvert** (Passes 0.1 cfs of 3.1 cfs potential flow)
  ├─**1=Exfiltration** (Exfiltration Controls 0.1 cfs)
  └─**2=Orifice/Grate** (Controls 0.0 cfs)

Pond 4.1BP: Bioretention



Summary for Pond 5.1AP: Pretreatment Basin

Inflow Area = 6.800 ac, 72.06% Impervious, Inflow Depth = 1.80" for 1-yr event
Inflow = 18.4 cfs @ 11.99 hrs, Volume= 1.021 af
Outflow = 1.6 cfs @ 12.62 hrs, Volume= 1.022 af, Atten= 91%, Lag= 38.0 min
Primary = 1.6 cfs @ 12.62 hrs, Volume= 1.022 af
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 659.28' @ 12.62 hrs Surf.Area= 7,299 sf Storage= 15,355 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 110.6 min (929.8 - 819.2)

Volume	Invert	Avail.Storage	Storage Description
#1	656.00'	40,300 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

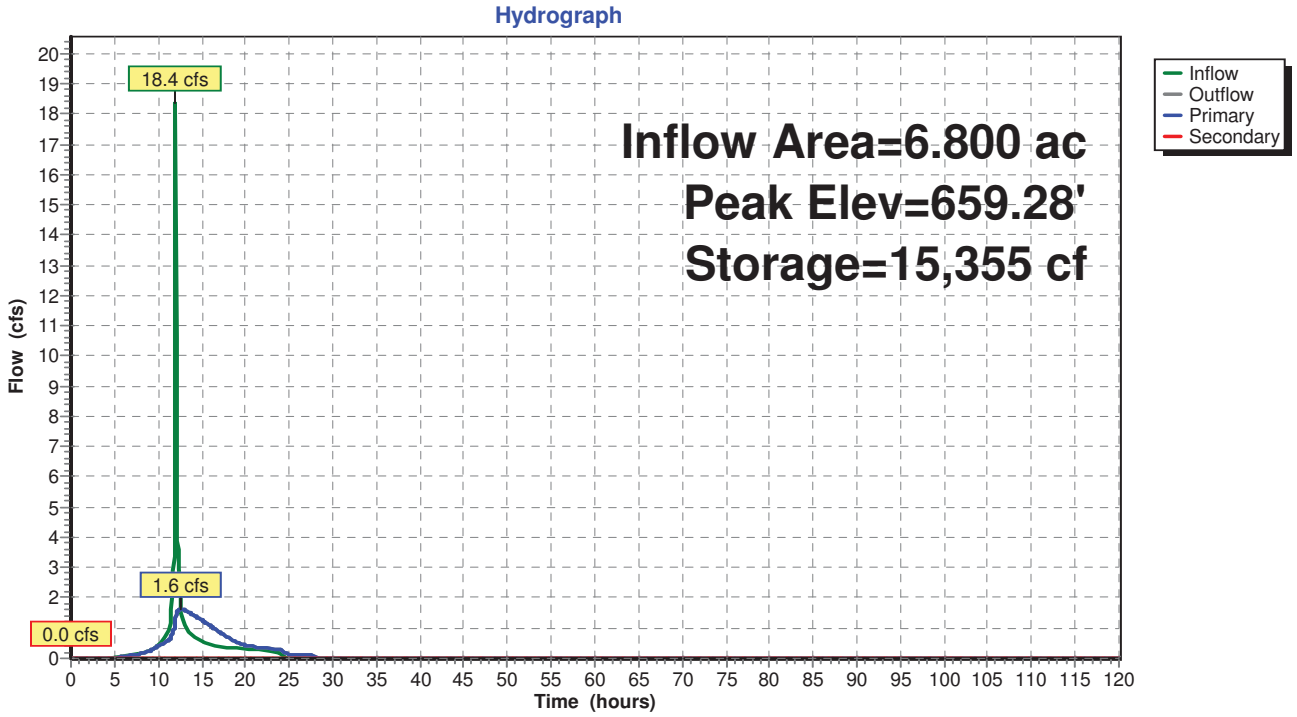
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
656.00	2,500	0	0
658.00	5,000	7,500	7,500
660.00	8,600	13,600	21,100
662.00	10,600	19,200	40,300

Device	Routing	Invert	Outlet Devices
#1	Device 3	659.40'	**2.5' long x 0.5' breadth Broad-Crested Rectangular Weir X 2.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#2	Primary	655.50'	**6.0" Round Culvert** L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 655.50' / 655.00' S= 0.0167 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#3	Secondary	657.50'	**30.0" Round Culvert** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 657.50' / 656.50' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 4.91 sf

Primary OutFlow Max=1.6 cfs @ 12.62 hrs HW=659.28' TW=655.44' (Dynamic Tailwater)
└**2=Culvert** (Barrel Controls 1.6 cfs @ 8.31 fps)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=656.00' TW=0.00' (Dynamic Tailwater)
└**3=Culvert** (Controls 0.0 cfs)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Pond 5.1AP: Pretreatment Basin



Summary for Pond 5.1P: Infiltration Basin

Inflow Area = 6.800 ac, 72.06% Impervious, Inflow Depth = 1.80" for 1-yr event
Inflow = 1.6 cfs @ 12.62 hrs, Volume= 1.022 af
Outflow = 0.5 cfs @ 19.00 hrs, Volume= 1.022 af, Atten= 67%, Lag= 382.2 min
Discarded = 0.5 cfs @ 19.00 hrs, Volume= 1.022 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 656.71' @ 19.00 hrs Surf.Area= 11,674 sf Storage= 17,640 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 329.4 min (1,259.3 - 929.8)

Volume	Invert	Avail.Storage	Storage Description
#1	655.00'	64,950 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

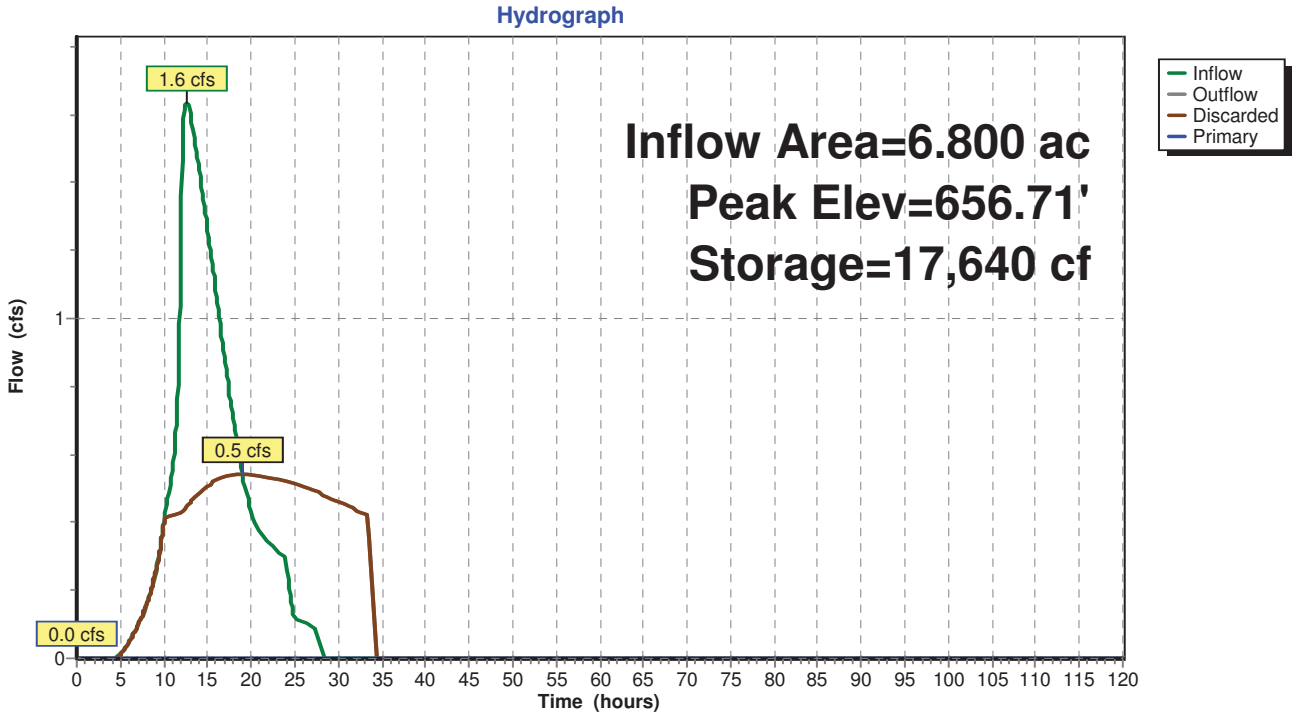
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
655.00	9,000	0	0
656.00	10,500	9,750	9,750
660.00	17,100	55,200	64,950

Device	Routing	Invert	Outlet Devices
#1	Device 2	659.00'	**4.0' long x 0.5' breadth Broad-Crested Rectangular Weir X 2.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#2	Primary	653.00'	**15.0" Round Culvert** L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 653.00' / 652.50' S= 0.0500 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#3	Discarded	655.00'	**2.000 in/hr Exfiltration over Horizontal area**

Discarded OutFlow Max=0.5 cfs @ 19.00 hrs HW=656.71' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 0.5 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=655.00' TW=0.00' (Dynamic Tailwater)
└**2=Culvert** (Passes 0.0 cfs of 6.9 cfs potential flow)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Pond 5.1P: Infiltration Basin



Summary for Subcatchment 1.0S:

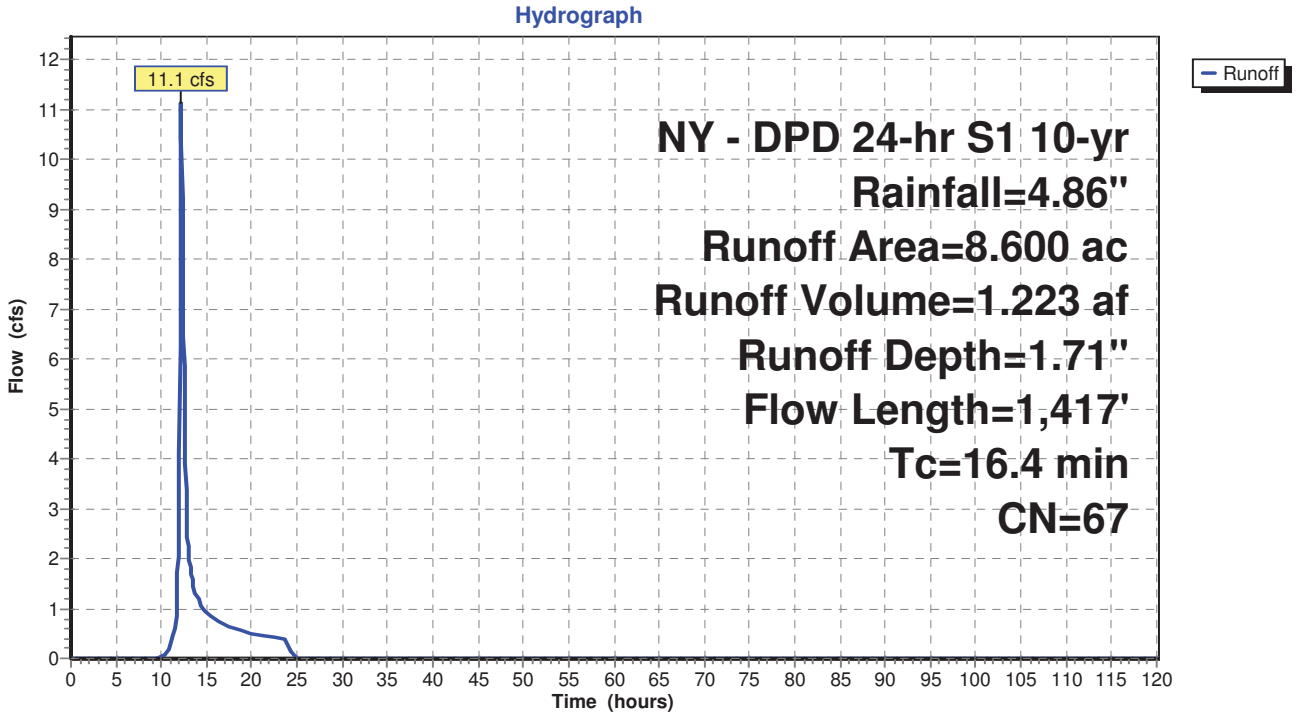
Runoff = 11.1 cfs @ 12.19 hrs, Volume= 1.223 af, Depth= 1.71"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - DPD 24-hr S1 10-yr Rainfall=4.86"

Area (ac)	CN	Description
0.200	74	>75% Grass cover, Good, HSG C
1.200	71	Meadow, non-grazed, HSG C
4.500	70	Woods, Good, HSG C
0.500	72	Woods/grass comb., Good, HSG C
1.800	55	Woods, Good, HSG B
0.400	61	>75% Grass cover, Good, HSG B
8.600	67	Weighted Average
8.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.9	100	0.0150	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.27"
1.1	225	0.0500	3.35		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
1.6	162	0.1100	1.66		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.5	90	0.3000	2.74		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.3	840	0.0300	6.10	36.62	**Channel Flow,** Area= 6.0 sf Perim= 10.0' r= 0.60' n= 0.030 Earth, grassed & winding
16.4	1,417	Total			

Subcatchment 1.0S:



Summary for Subcatchment 2.0S:

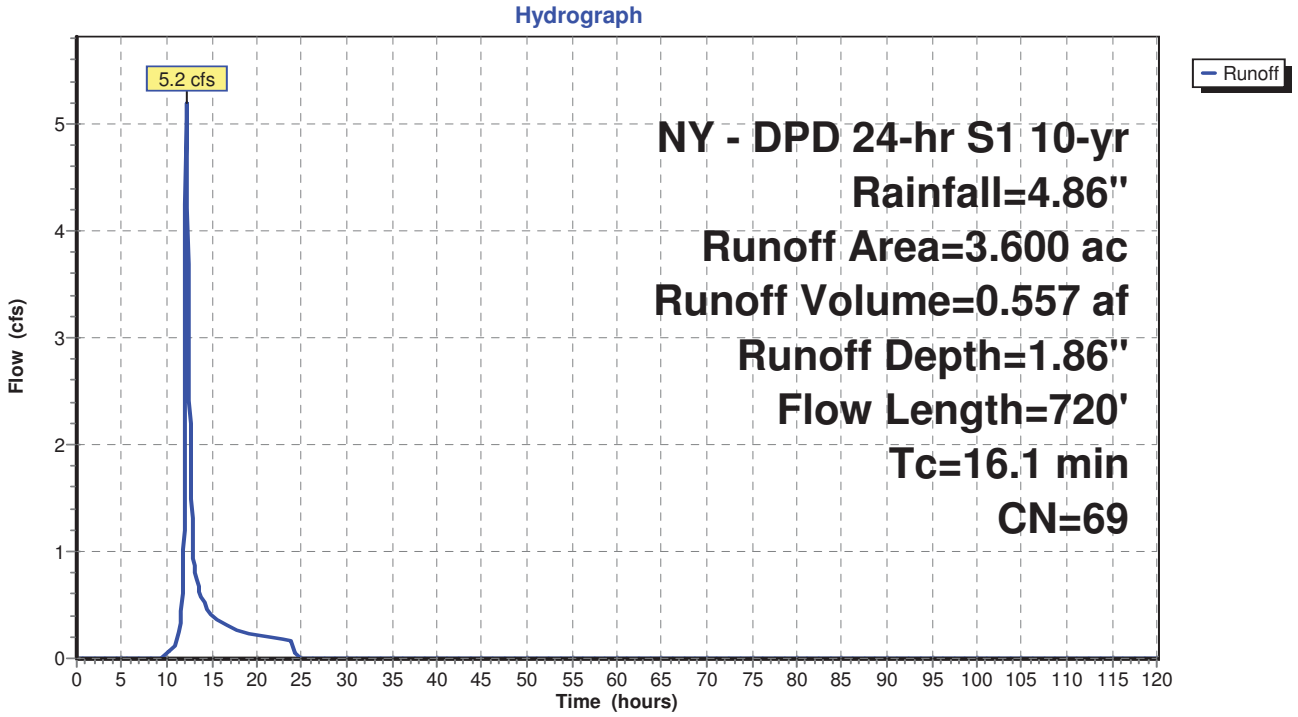
Runoff = 5.2 cfs @ 12.19 hrs, Volume= 0.557 af, Depth= 1.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - DPD 24-hr S1 10-yr Rainfall=4.86"

Area (ac)	CN	Description
1.400	70	Woods, Good, HSG C
1.500	74	>75% Grass cover, Good, HSG C
0.500	55	Woods, Good, HSG B
0.200	61	>75% Grass cover, Good, HSG B
3.600	69	Weighted Average
3.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.9	100	0.0150	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.27"
2.6	220	0.0800	1.41		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.4	150	0.0250	5.80	23.19	**Channel Flow,** Area= 4.0 sf Perim= 10.0' r= 0.40' n= 0.022 Earth, clean & straight
2.2	250	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
16.1	720	Total			

Subcatchment 2.0S:



Summary for Subcatchment 3.0S:

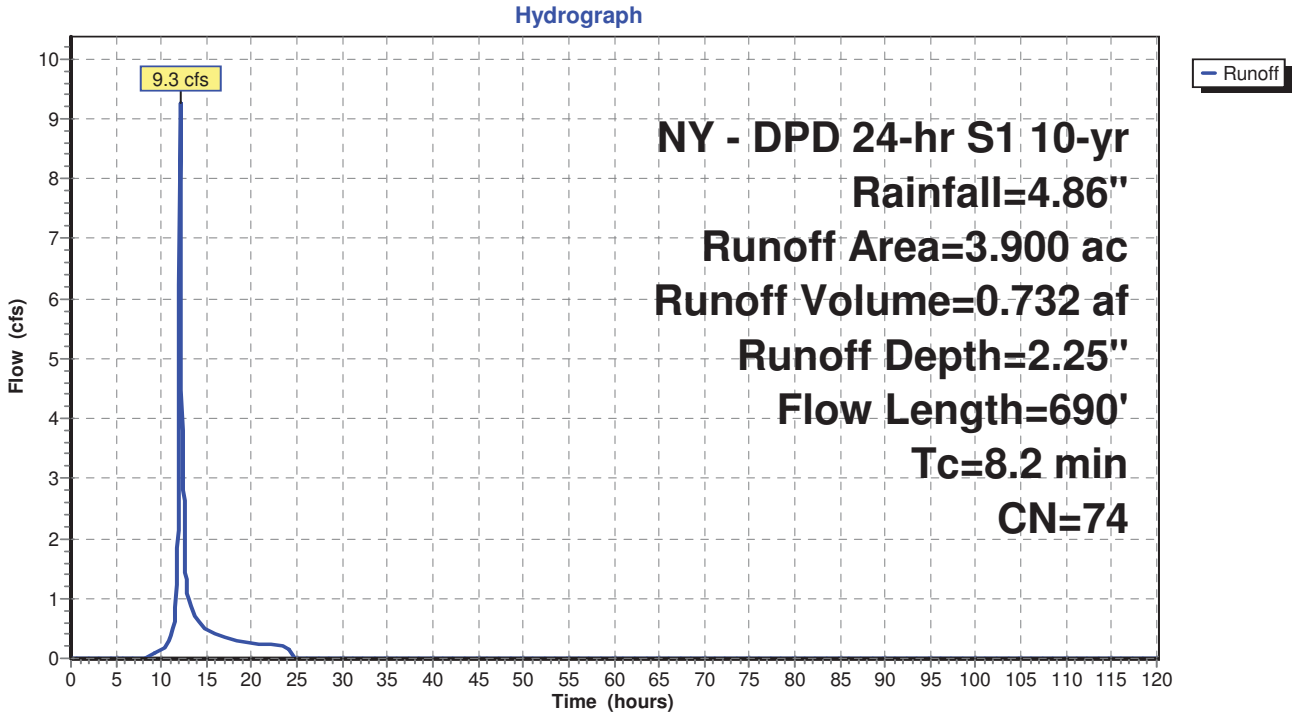
Runoff = 9.3 cfs @ 12.07 hrs, Volume= 0.732 af, Depth= 2.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - DPD 24-hr S1 10-yr Rainfall=4.86"

Area (ac)	CN	Description
0.500	98	Paved parking, HSG C
1.100	74	>75% Grass cover, Good, HSG C
1.900	70	Woods, Good, HSG C
0.200	55	Woods, Good, HSG B
0.100	61	>75% Grass cover, Good, HSG B
0.100	80	>75% Grass cover, Good, HSG D
3.900	74	Weighted Average
3.400		87.18% Pervious Area
0.500		12.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.2	80	0.2000	0.41		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.27"
2.3	20	0.2000	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.27"
0.9	100	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.3	330	0.0250	4.25	17.01	**Channel Flow,** Area= 4.0 sf Perim= 10.0' r= 0.40' n= 0.030 Earth, grassed & winding
0.5	160	0.0100	4.91	3.86	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
8.2	690	Total			

Subcatchment 3.0S:



Summary for Subcatchment 3.1S:

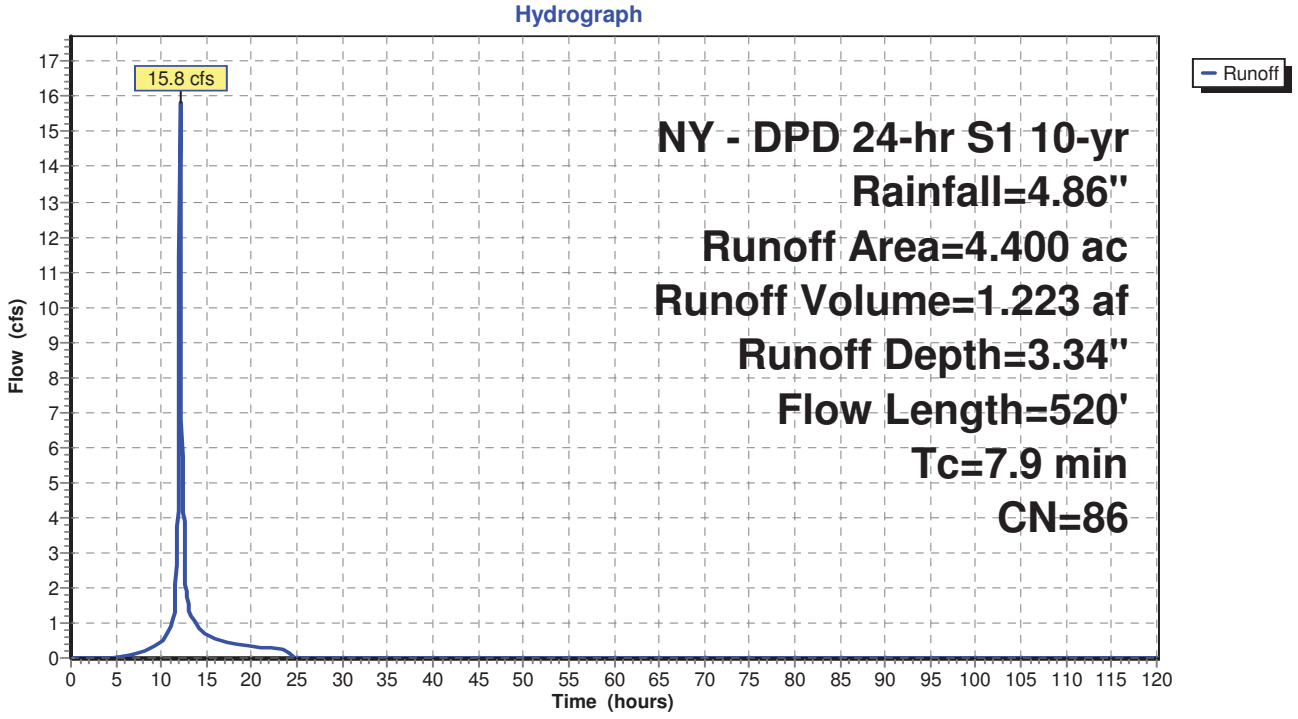
Runoff = 15.8 cfs @ 12.06 hrs, Volume= 1.223 af, Depth= 3.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - DPD 24-hr S1 10-yr Rainfall=4.86"

Area (ac)	CN	Description
2.200	98	Paved parking, HSG D
2.200	74	>75% Grass cover, Good, HSG C
4.400	86	Weighted Average
2.200		50.00% Pervious Area
2.200		50.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	100	0.0800	0.30		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.27"
1.2	110	0.0100	1.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
1.1	310	0.0100	4.91	3.86	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
7.9	520	Total			

Subcatchment 3.1S:



Summary for Subcatchment 4.0S:

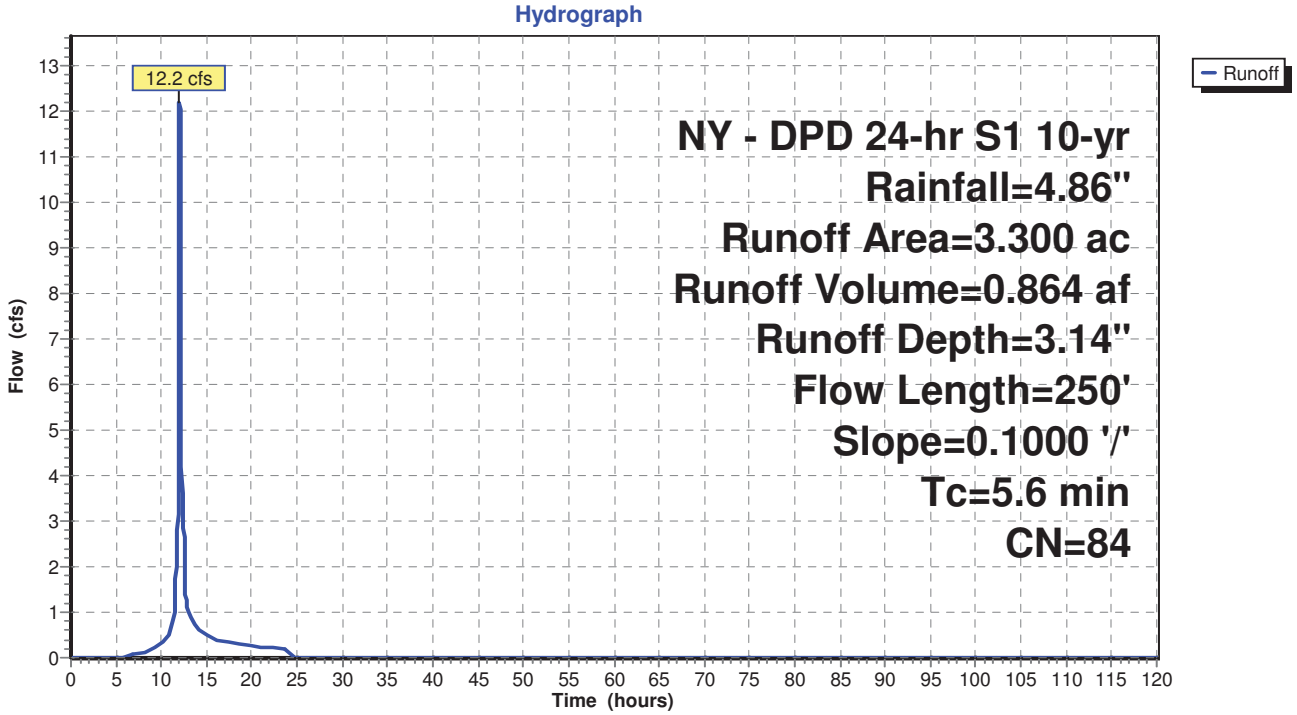
Runoff = 12.2 cfs @ 12.04 hrs, Volume= 0.864 af, Depth= 3.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - DPD 24-hr S1 10-yr Rainfall=4.86"

Area (ac)	CN	Description
1.400	98	Paved parking, HSG C
1.100	74	>75% Grass cover, Good, HSG C
0.300	80	>75% Grass cover, Good, HSG D
0.500	72	Woods/grass comb., Good, HSG C
3.300	84	Weighted Average
1.900		57.58% Pervious Area
1.400		42.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.1	100	0.1000	0.33		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.27"
0.5	150	0.1000	4.74		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
5.6	250	Total			

Subcatchment 4.0S:



Summary for Subcatchment 4.1S:

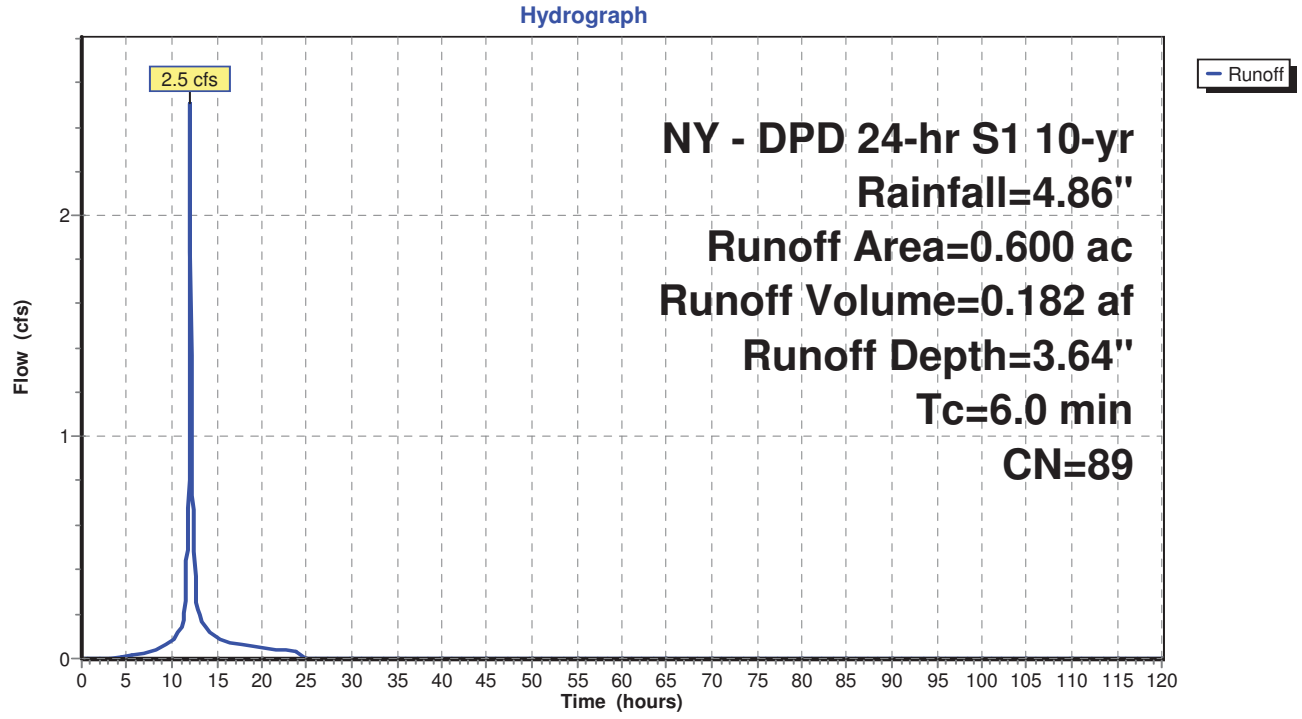
Runoff = 2.5 cfs @ 12.04 hrs, Volume= 0.182 af, Depth= 3.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - DPD 24-hr S1 10-yr Rainfall=4.86"

Area (ac)	CN	Description
0.300	98	Paved parking, HSG D
0.300	80	>75% Grass cover, Good, HSG D
0.600	89	Weighted Average
0.300		50.00% Pervious Area
0.300		50.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 4.1S:



Summary for Subcatchment 5.0S:

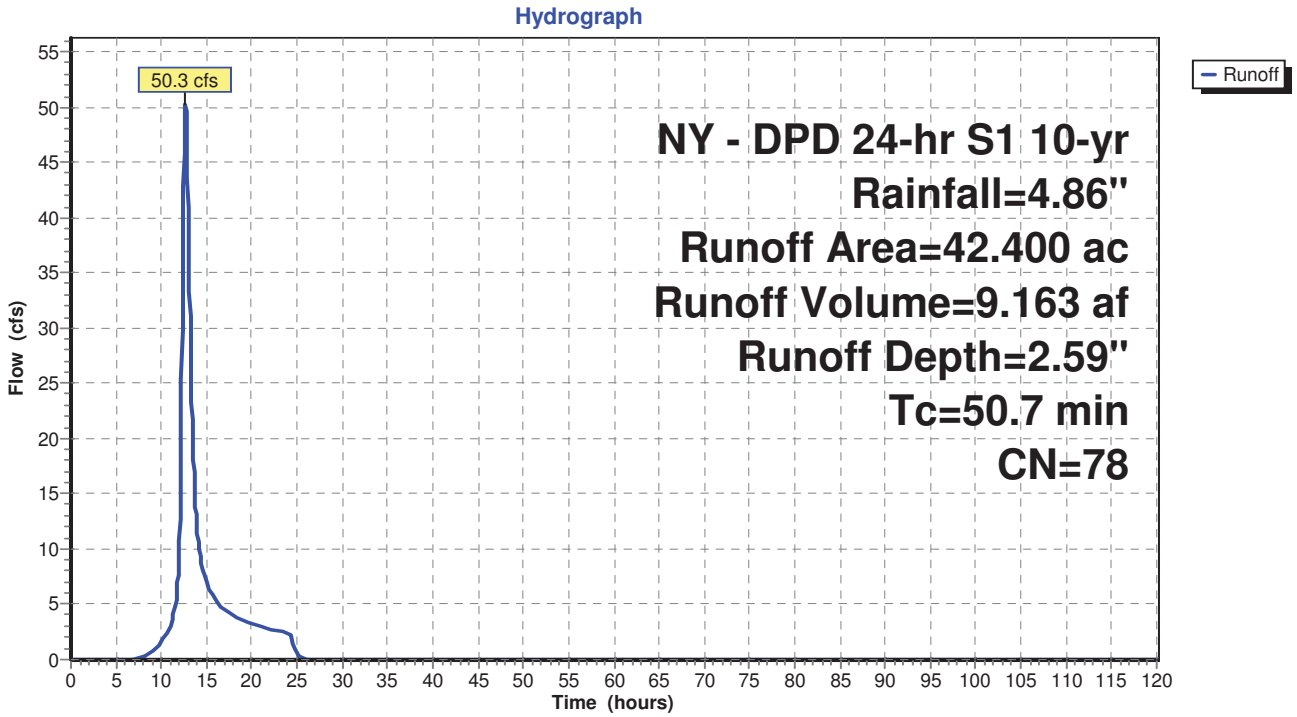
Runoff = 50.3 cfs @ 12.67 hrs, Volume= 9.163 af, Depth= 2.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - DPD 24-hr S1 10-yr Rainfall=4.86"

Area (ac)	CN	Description
6.000	98	Paved parking, HSG C
1.600	98	Water Surface, HSG D
8.900	74	>75% Grass cover, Good, HSG C
7.300	71	Meadow, non-grazed, HSG C
8.700	70	Woods, Good, HSG C
1.000	72	Woods/grass comb., Good, HSG C
8.700	77	Woods, Good, HSG D
0.200	80	>75% Grass cover, Good, HSG D
42.400	78	Weighted Average
34.800		82.08% Pervious Area
7.600		17.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
50.7					**Direct Entry,**

Subcatchment 5.0S:



Summary for Subcatchment 5.1S:

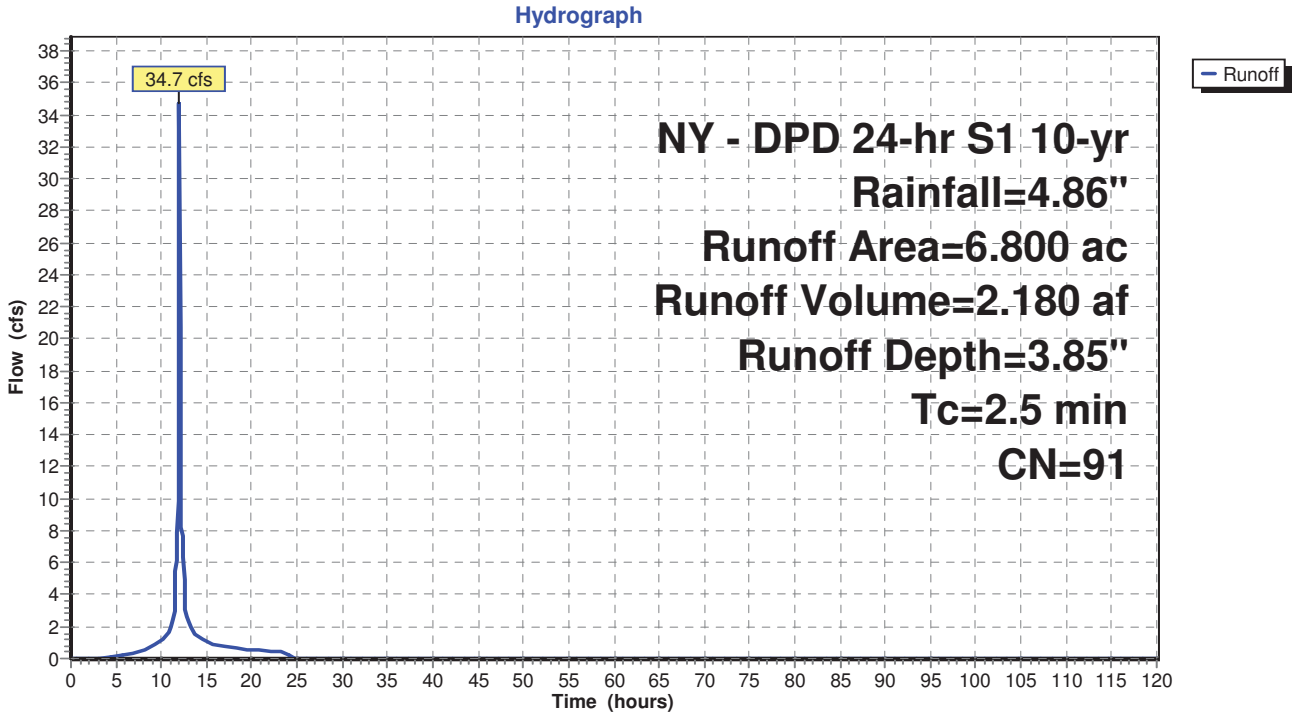
Runoff = 34.7 cfs @ 11.99 hrs, Volume= 2.180 af, Depth= 3.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - DPD 24-hr S1 10-yr Rainfall=4.86"

Area (ac)	CN	Description
4.900	98	Paved parking, HSG D
1.900	74	>75% Grass cover, Good, HSG C
6.800	91	Weighted Average
1.900		27.94% Pervious Area
4.900		72.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5					**Direct Entry,**

Subcatchment 5.1S:

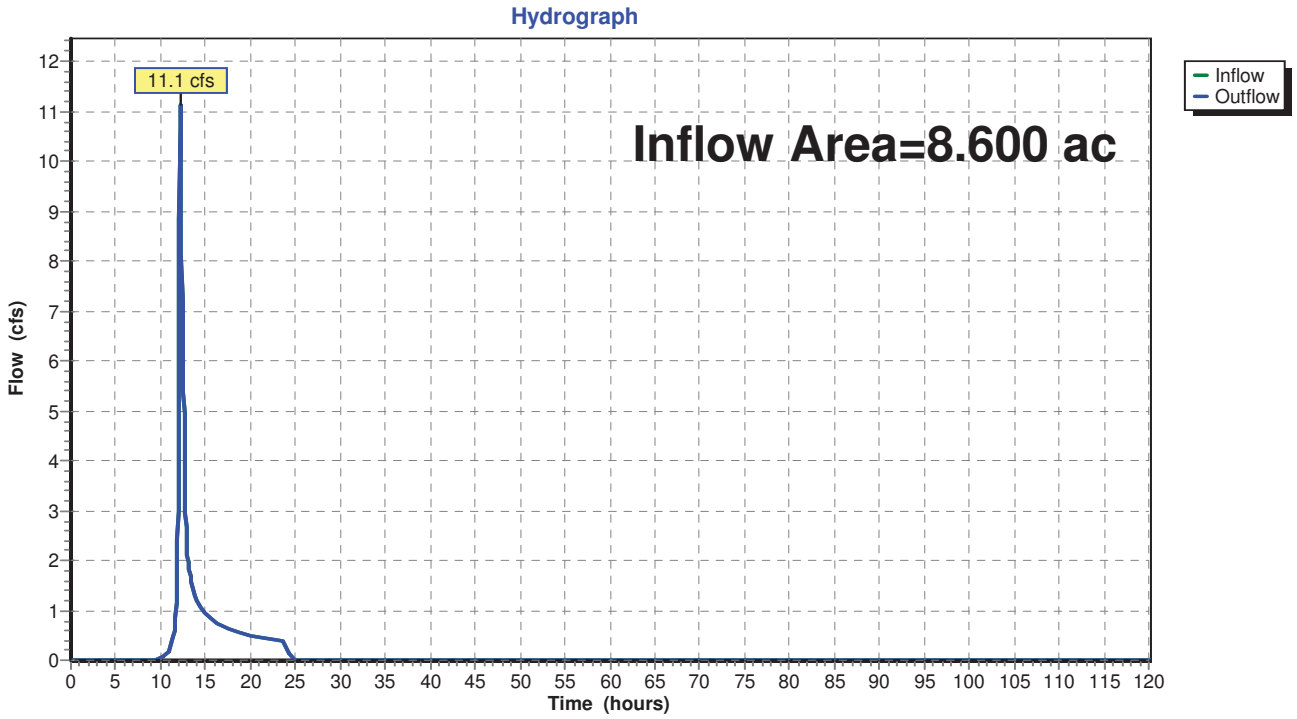


Summary for Reach DP 1: Design Point 1

Inflow Area = 8.600 ac, 0.00% Impervious, Inflow Depth = 1.71" for 10-yr event
Inflow = 11.1 cfs @ 12.19 hrs, Volume= 1.223 af
Outflow = 11.1 cfs @ 12.19 hrs, Volume= 1.223 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs / 2

Reach DP 1: Design Point 1

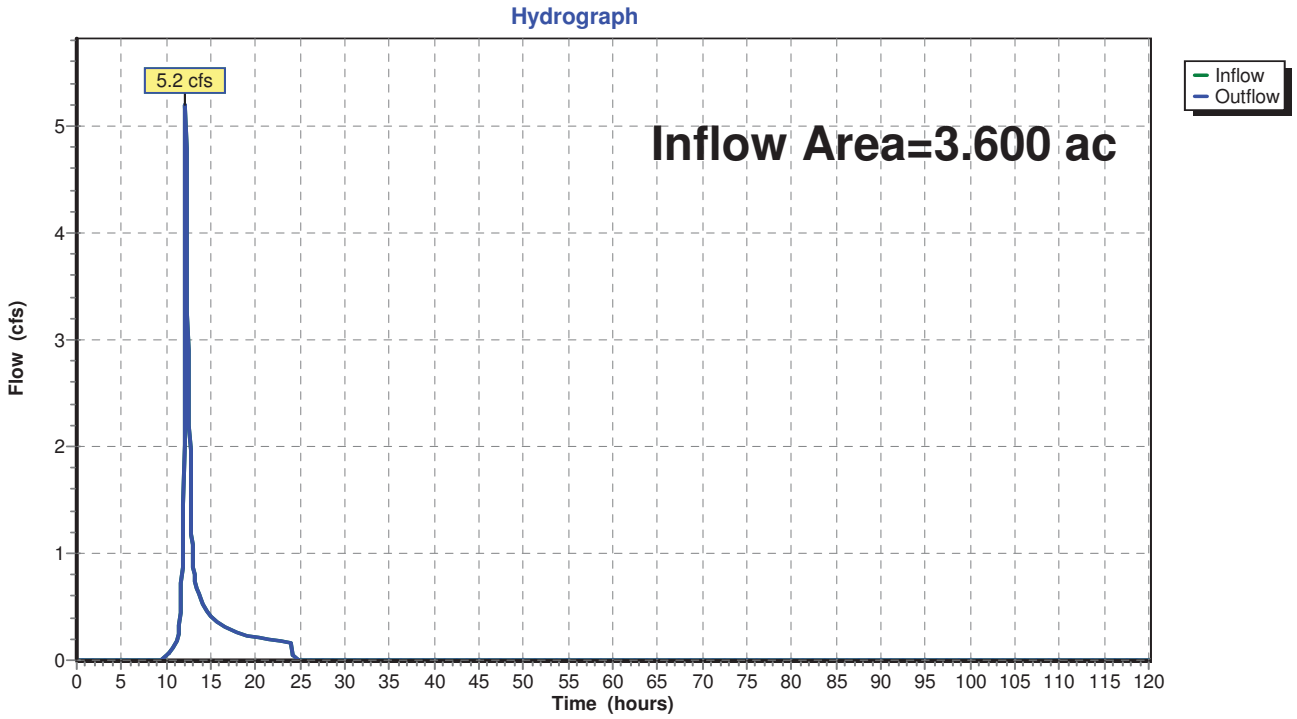


Summary for Reach DP 2: Design Point 2

Inflow Area = 3.600 ac, 0.00% Impervious, Inflow Depth = 1.86" for 10-yr event
Inflow = 5.2 cfs @ 12.19 hrs, Volume= 0.557 af
Outflow = 5.2 cfs @ 12.19 hrs, Volume= 0.557 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs / 2

Reach DP 2: Design Point 2

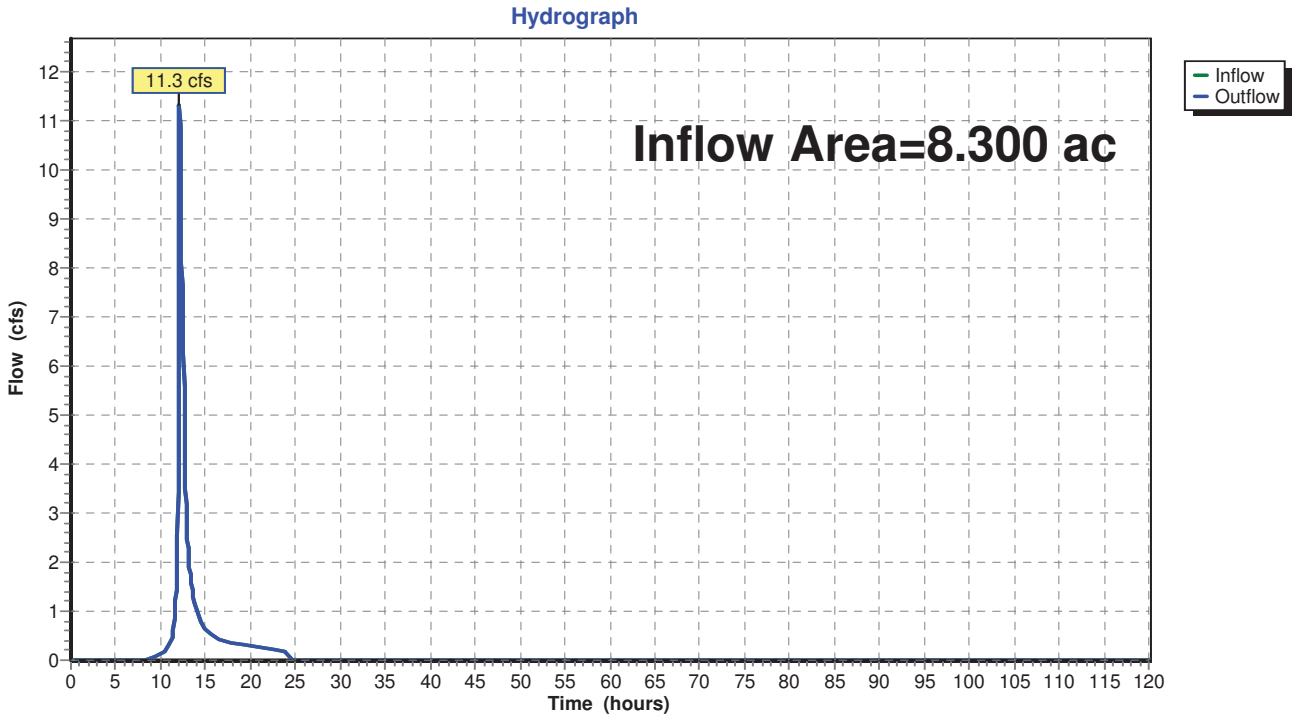


Summary for Reach DP 3: Design Point 3

Inflow Area = 8.300 ac, 32.53% Impervious, Inflow Depth = 1.60" for 10-yr event
Inflow = 11.3 cfs @ 12.12 hrs, Volume= 1.104 af
Outflow = 11.3 cfs @ 12.12 hrs, Volume= 1.104 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs / 2

Reach DP 3: Design Point 3

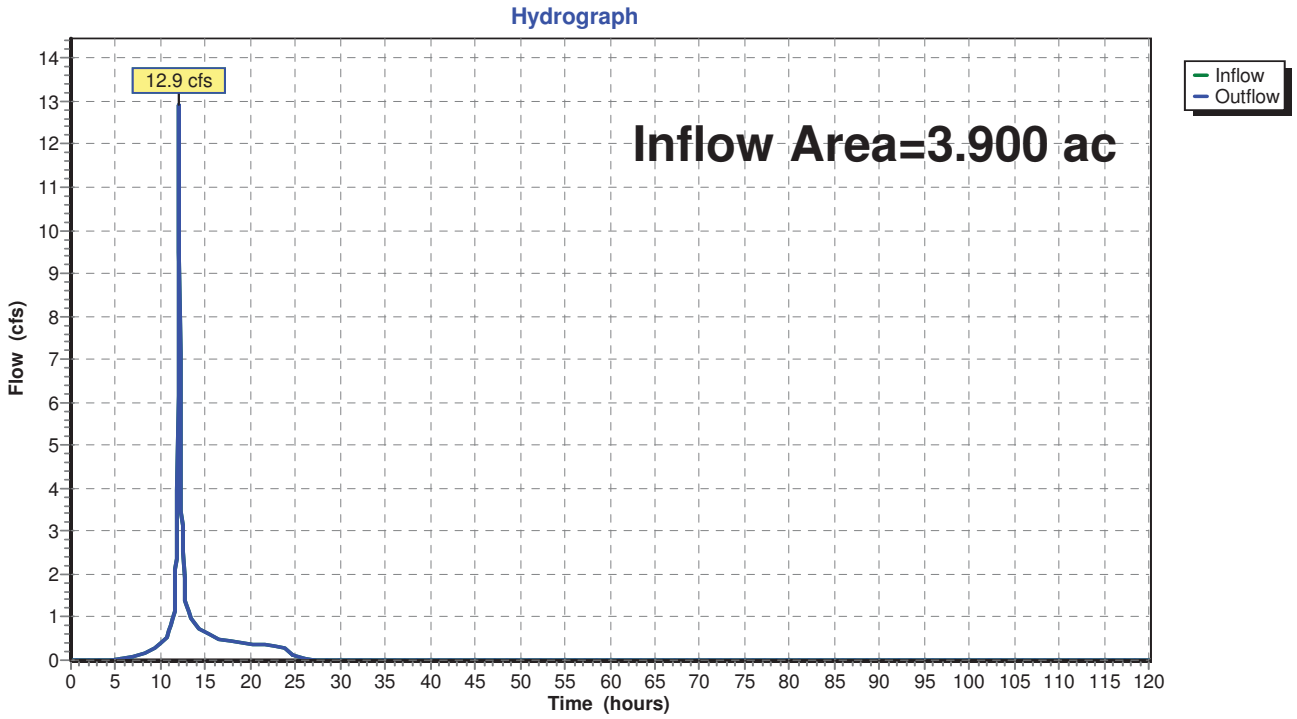


Summary for Reach DP 4: Design Point 4

Inflow Area = 3.900 ac, 43.59% Impervious, Inflow Depth = 3.22" for 10-yr event
Inflow = 12.9 cfs @ 12.04 hrs, Volume= 1.046 af
Outflow = 12.9 cfs @ 12.04 hrs, Volume= 1.046 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs / 2

Reach DP 4: Design Point 4

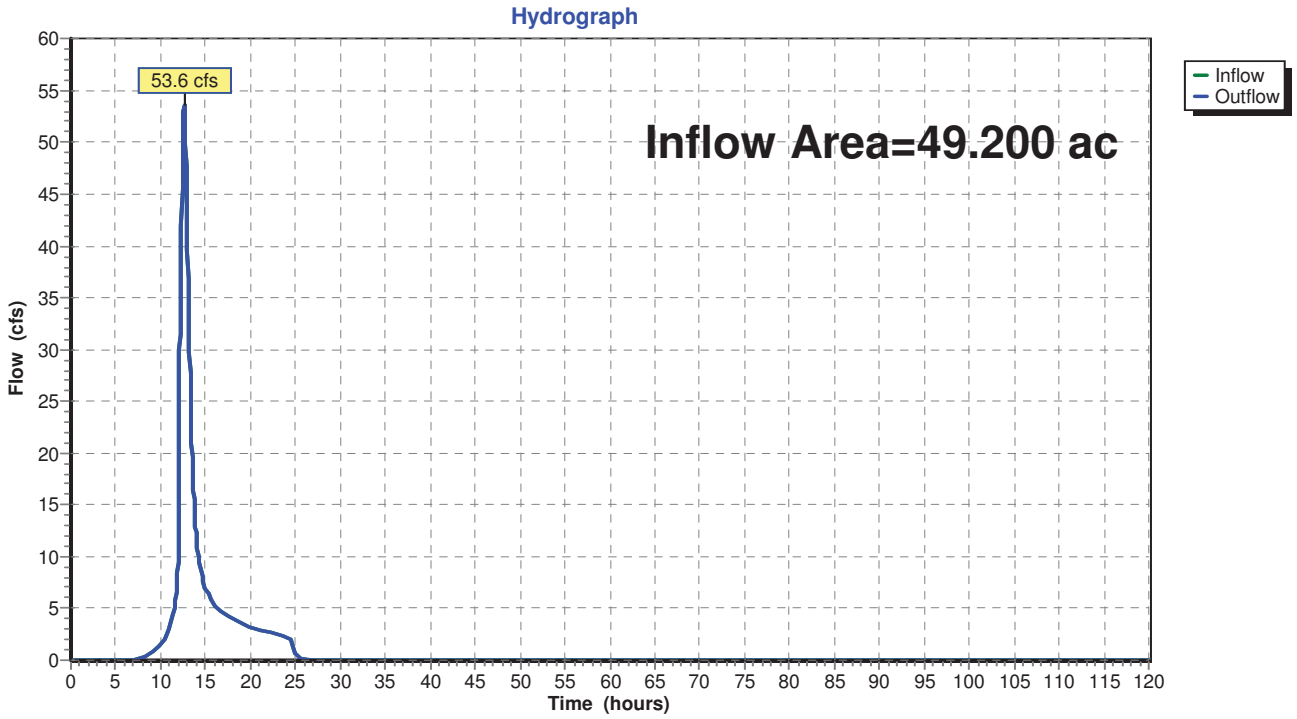


Summary for Reach DP 5: Design Point 5

Inflow Area = 49.200 ac, 25.41% Impervious, Inflow Depth = 2.38" for 10-yr event
Inflow = 53.6 cfs @ 12.62 hrs, Volume= 9.752 af
Outflow = 53.6 cfs @ 12.62 hrs, Volume= 9.752 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs / 2

Reach DP 5: Design Point 5



Summary for Pond 1.4 FS: Flow Splitter

Inflow Area = 0.600 ac, 50.00% Impervious, Inflow Depth = 3.64" for 10-yr event
Inflow = 2.3 cfs @ 12.09 hrs, Volume= 0.182 af
Outflow = 2.3 cfs @ 12.09 hrs, Volume= 0.182 af, Atten= 0%, Lag= 0.0 min
Primary = 1.5 cfs @ 12.09 hrs, Volume= 0.172 af
Secondary = 0.8 cfs @ 12.09 hrs, Volume= 0.011 af

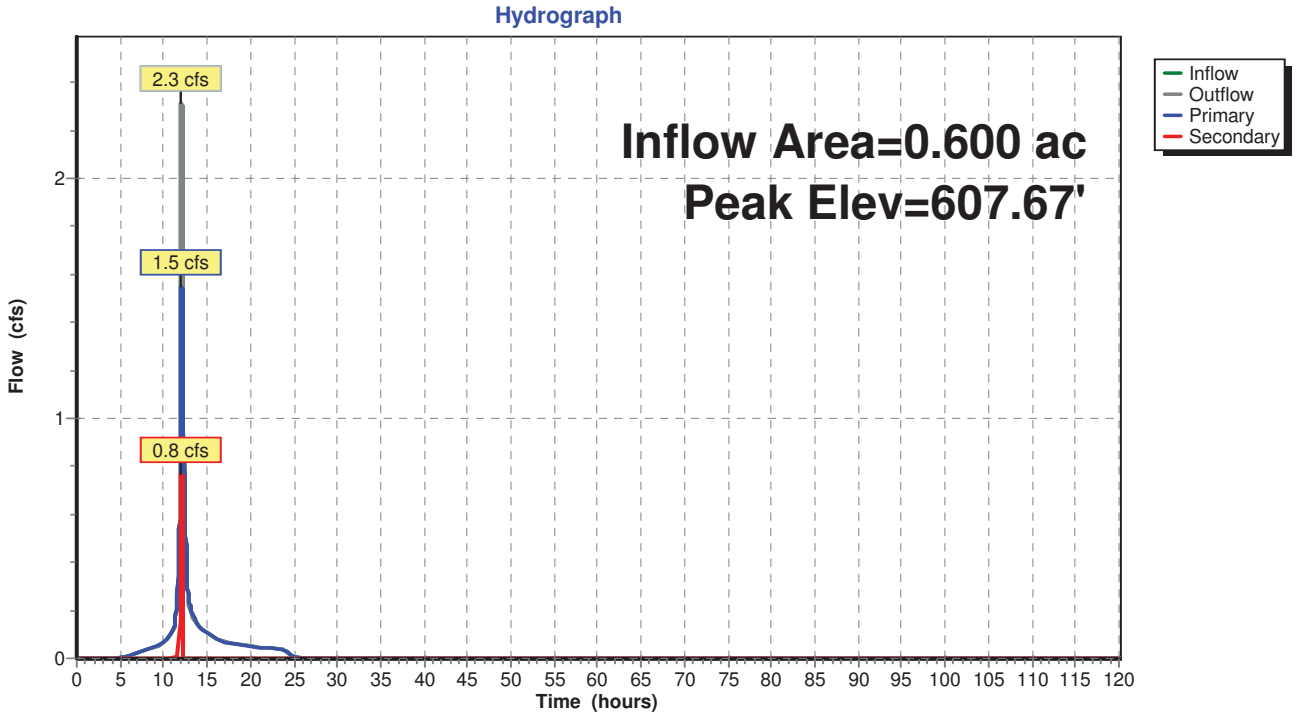
Routing by Dyn-Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 607.67' @ 12.09 hrs
Flood Elev= 608.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	607.00'	**12.0" Vert. Orifice/Grate** C= 0.600
#2	Device 3	607.50'	**4.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#3	Secondary	604.50'	**15.0" Round Culvert** L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 604.50' / 604.00' S= 0.0250 '/' Cc= 0.900 n= 0.120, Flow Area= 1.23 sf

Primary OutFlow Max=1.5 cfs @ 12.09 hrs HW=607.66' TW=606.22' (Dynamic Tailwater)
└─**1=Orifice/Grate** (Orifice Controls 1.5 cfs @ 2.77 fps)

Secondary OutFlow Max=0.7 cfs @ 12.09 hrs HW=607.66' TW=0.00' (Dynamic Tailwater)
└─**3=Culvert** (Passes 0.7 cfs of 2.4 cfs potential flow)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 0.7 cfs @ 1.13 fps)

Pond 1.4 FS: Flow Splitter



Summary for Pond 3.1AP: Pretreatment Basin

Inflow Area = 4.400 ac, 50.00% Impervious, Inflow Depth = 3.34" for 10-yr event
Inflow = 15.8 cfs @ 12.06 hrs, Volume= 1.223 af
Outflow = 6.3 cfs @ 12.27 hrs, Volume= 1.223 af, Atten= 60%, Lag= 12.6 min
Primary = 1.3 cfs @ 12.23 hrs, Volume= 0.851 af
Secondary = 5.0 cfs @ 12.27 hrs, Volume= 0.372 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 609.31' @ 12.27 hrs Surf.Area= 5,516 sf Storage= 13,811 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 184.6 min (1,004.3 - 819.8)

Volume	Invert	Avail.Storage	Storage Description
#1	606.00'	24,350 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

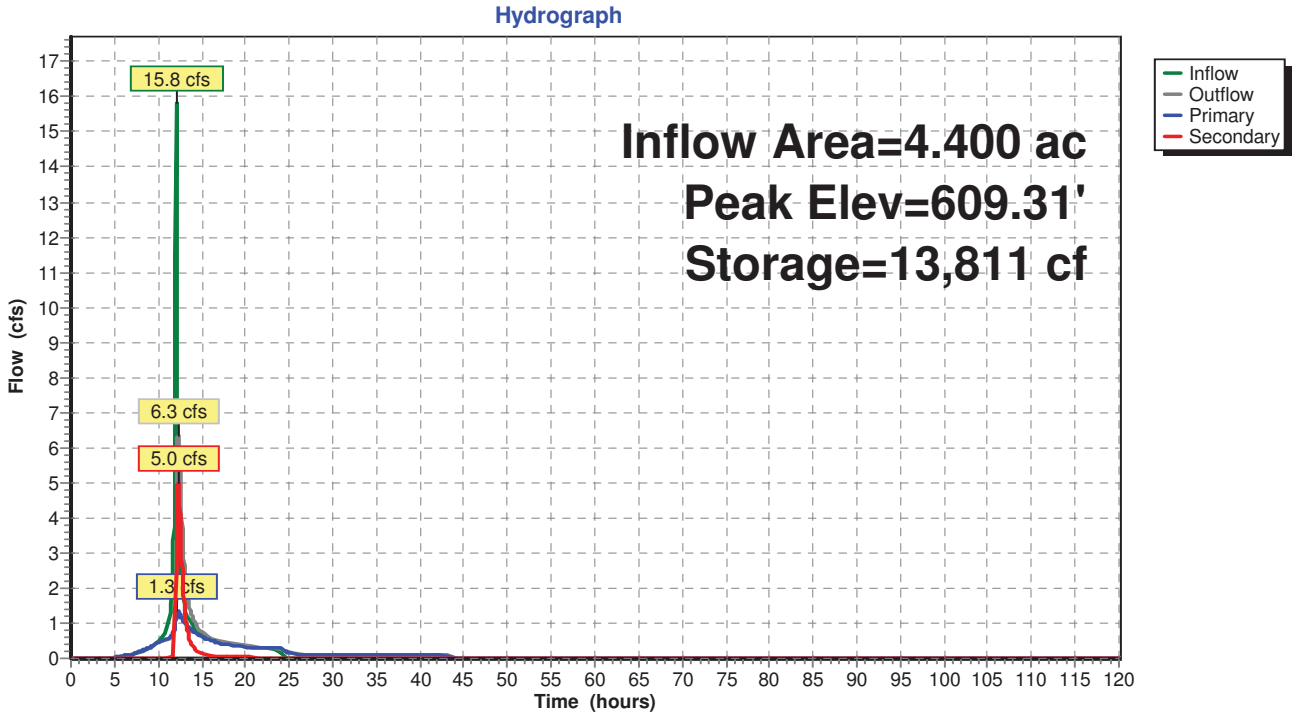
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
606.00	2,900	0	0
608.00	4,400	7,300	7,300
610.00	6,100	10,500	17,800
611.00	7,000	6,550	24,350

Device	Routing	Invert	Outlet Devices
#1	Device 3	608.00'	**1.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#2	Primary	605.50'	**6.0" Round Culvert** L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 605.50' / 605.00' S= 0.0125 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#3	Secondary	605.50'	**24.0" Round Culvert** L= 50.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 605.50' / 604.00' S= 0.0300 '/' Cc= 0.900 n= 0.012, Flow Area= 3.14 sf

Primary OutFlow Max=1.3 cfs @ 12.23 hrs HW=609.29' TW=606.27' (Dynamic Tailwater)
└**2=Culvert** (Outlet Controls 1.3 cfs @ 6.81 fps)

Secondary OutFlow Max=5.0 cfs @ 12.27 hrs HW=609.31' TW=0.00' (Dynamic Tailwater)
└**3=Culvert** (Passes 5.0 cfs of 25.3 cfs potential flow)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 5.0 cfs @ 3.80 fps)

Pond 3.1AP: Pretreatment Basin



Summary for Pond 3.1P: Infiltration Basin

Inflow Area = 4.400 ac, 50.00% Impervious, Inflow Depth = 2.32" for 10-yr event
Inflow = 1.3 cfs @ 12.23 hrs, Volume= 0.851 af
Outflow = 0.3 cfs @ 21.61 hrs, Volume= 0.851 af, Atten= 78%, Lag= 562.9 min
Discarded = 0.3 cfs @ 21.61 hrs, Volume= 0.851 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 607.89' @ 21.61 hrs Surf.Area= 6,469 sf Storage= 13,955 cf

Plug-Flow detention time= 537.1 min calculated for 0.851 af (100% of inflow)
Center-of-Mass det. time= 537.0 min (1,635.7 - 1,098.7)

Volume	Invert	Avail.Storage	Storage Description
#1	605.00'	34,800 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

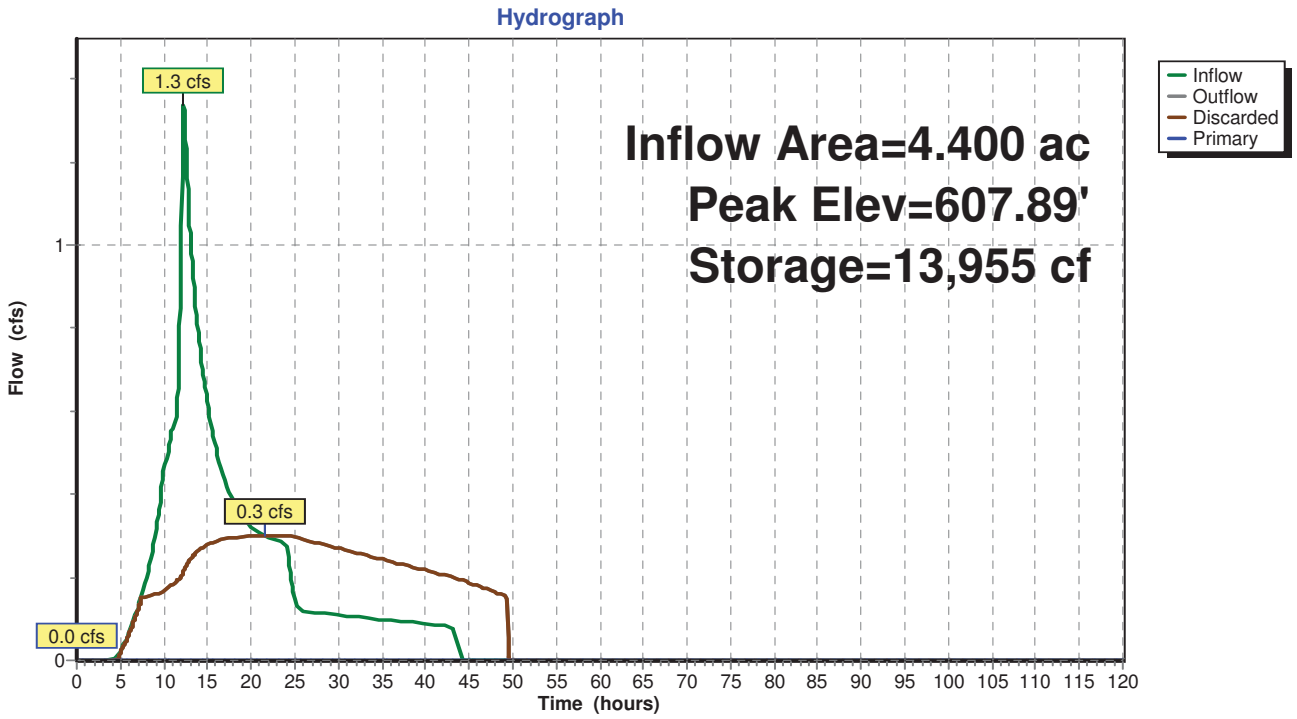
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
605.00	3,300	0	0
606.00	4,300	3,800	3,800
608.00	6,600	10,900	14,700
610.00	9,000	15,600	30,300
610.50	9,000	4,500	34,800

Device	Routing	Invert	Outlet Devices
#1	Device 2	609.10'	**2.5' long x 0.5' breadth Broad-Crested Rectangular Weir X 2.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#2	Primary	603.00'	**15.0" Round Culvert** L= 50.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 603.00' / 602.00' S= 0.0200 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#3	Discarded	605.00'	**2.000 in/hr Exfiltration over Horizontal area** Phase-In= 0.01'

Discarded OutFlow Max=0.3 cfs @ 21.61 hrs HW=607.89' (Free Discharge)
↑└**3=Exfiltration** (Exfiltration Controls 0.3 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=605.00' TW=0.00' (Dynamic Tailwater)
↑└**2=Culvert** (Passes 0.0 cfs of 6.9 cfs potential flow)
↑└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Pond 3.1P: Infiltration Basin



Summary for Pond 4.1AP1: Wet Swale

Inflow Area = 0.600 ac, 50.00% Impervious, Inflow Depth = 3.64" for 10-yr event
Inflow = 2.5 cfs @ 12.04 hrs, Volume= 0.182 af
Outflow = 2.3 cfs @ 12.09 hrs, Volume= 0.182 af, Atten= 7%, Lag= 2.8 min
Primary = 0.2 cfs @ 12.32 hrs, Volume= 0.108 af
Secondary = 2.2 cfs @ 12.09 hrs, Volume= 0.074 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs / 2
Starting Elev= 607.00' Surf.Area= 700 sf Storage= 275 cf
Peak Elev= 607.78' @ 12.07 hrs Surf.Area= 1,166 sf Storage= 1,000 cf (725 cf above start)

Plug-Flow detention time= 58.3 min calculated for 0.176 af (96% of inflow)
Center-of-Mass det. time= 24.6 min (830.1 - 805.5)

Volume	Invert	Avail.Storage	Storage Description
#1	606.50'	1,275 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

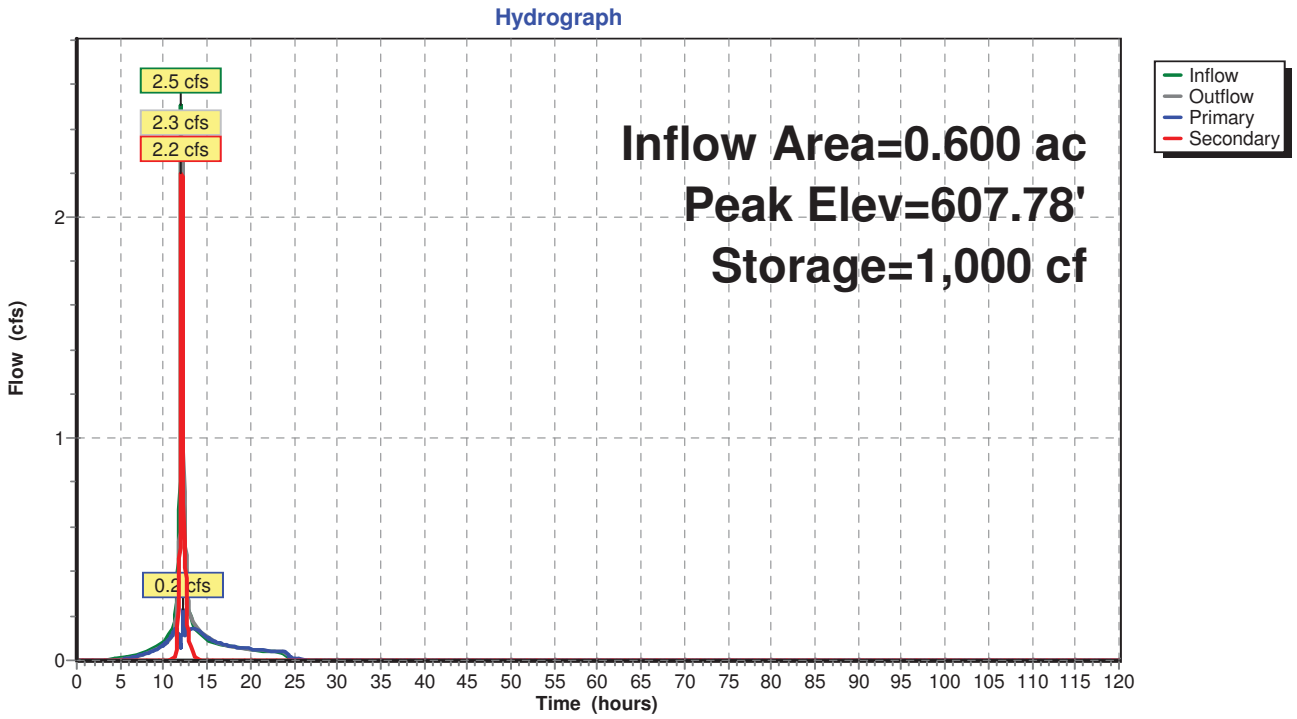
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
606.50	400	0	0
608.00	1,300	1,275	1,275

Device	Routing	Invert	Outlet Devices
#1	Primary	607.00'	**4.0" Vert. Orifice/Grate** C= 0.600
#2	Secondary	607.30'	**4.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.0 cfs @ 12.32 hrs HW=607.45' TW=607.48' (Dynamic Tailwater)
↑**1=Orifice/Grate** (Controls 0.0 cfs)

Secondary OutFlow Max=2.3 cfs @ 12.09 hrs HW=607.76' TW=607.66' (Dynamic Tailwater)
↑**2=Broad-Crested Rectangular Weir** (Weir Controls 2.3 cfs @ 1.27 fps)

Pond 4.1AP1: Wet Swale



Summary for Pond 4.1BP: Bioretention

Inflow Area = 0.600 ac, 50.00% Impervious, Inflow Depth = 3.43" for 10-yr event
Inflow = 1.5 cfs @ 12.09 hrs, Volume= 0.172 af
Outflow = 0.1 cfs @ 14.15 hrs, Volume= 0.172 af, Atten= 91%, Lag= 123.6 min
Primary = 0.1 cfs @ 14.15 hrs, Volume= 0.172 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 606.54' @ 14.15 hrs Surf.Area= 5,692 sf Storage= 2,905 cf

Plug-Flow detention time= 205.1 min calculated for 0.172 af (100% of inflow)
Center-of-Mass det. time= 205.0 min (1,041.3 - 836.3)

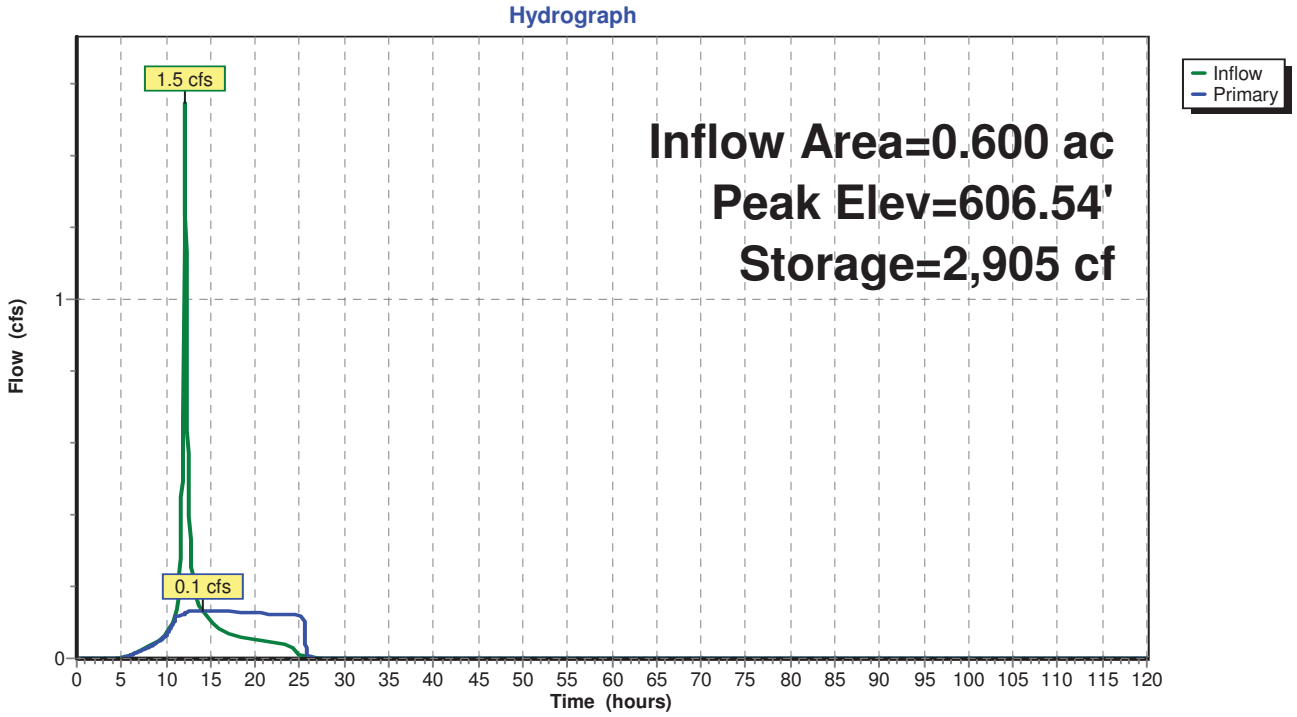
Volume	Invert	Avail.Storage	Storage Description
#1	606.00'	5,650 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
606.00	5,100	0	0
607.00	6,200	5,650	5,650

Device	Routing	Invert	Outlet Devices
#1	Device 3	606.00'	**1.000 in/hr Exfiltration over Surface area** Phase-In= 0.01'
#2	Device 3	606.60'	**12.0" Vert. Orifice/Grate** C= 0.600
#3	Primary	602.50'	**8.0" Round Culvert** L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 602.50' / 602.20' S= 0.0300 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.1 cfs @ 14.15 hrs HW=606.54' TW=0.00' (Dynamic Tailwater)
└─**3=Culvert** (Passes 0.1 cfs of 3.2 cfs potential flow)
  ├─**1=Exfiltration** (Exfiltration Controls 0.1 cfs)
  └─**2=Orifice/Grate** (Controls 0.0 cfs)

Pond 4.1BP: Bioretention



Summary for Pond 5.1AP: Pretreatment Basin

Inflow Area = 6.800 ac, 72.06% Impervious, Inflow Depth = 3.85" for 10-yr event
Inflow = 34.7 cfs @ 11.99 hrs, Volume= 2.180 af
Outflow = 16.8 cfs @ 12.09 hrs, Volume= 2.180 af, Atten= 52%, Lag= 6.0 min
Primary = 1.8 cfs @ 12.08 hrs, Volume= 1.590 af
Secondary = 15.0 cfs @ 12.09 hrs, Volume= 0.590 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 660.34' @ 12.09 hrs Surf.Area= 8,936 sf Storage= 24,050 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 122.6 min (915.5 - 792.9)

Volume	Invert	Avail.Storage	Storage Description
#1	656.00'	40,300 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

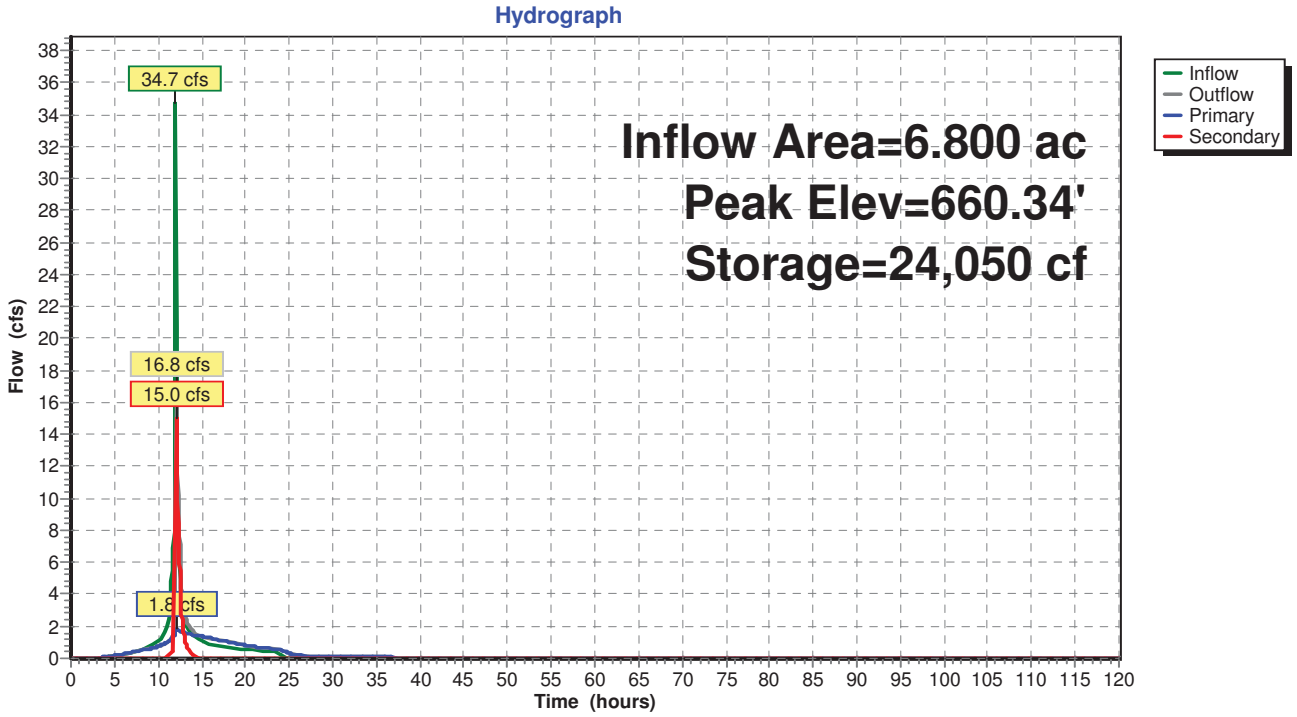
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
656.00	2,500	0	0
658.00	5,000	7,500	7,500
660.00	8,600	13,600	21,100
662.00	10,600	19,200	40,300

Device	Routing	Invert	Outlet Devices
#1	Device 3	659.40'	**2.5' long x 0.5' breadth Broad-Crested Rectangular Weir X 2.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#2	Primary	655.50'	**6.0" Round Culvert** L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 655.50' / 655.00' S= 0.0167 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#3	Secondary	657.50'	**30.0" Round Culvert** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 657.50' / 656.50' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 4.91 sf

Primary OutFlow Max=1.8 cfs @ 12.08 hrs HW=660.32' TW=655.66' (Dynamic Tailwater)
└**2=Culvert** (Outlet Controls 1.8 cfs @ 9.24 fps)

Secondary OutFlow Max=14.9 cfs @ 12.09 hrs HW=660.33' TW=0.00' (Dynamic Tailwater)
└**3=Culvert** (Passes 14.9 cfs of 29.7 cfs potential flow)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 14.9 cfs @ 3.19 fps)

Pond 5.1AP: Pretreatment Basin



Summary for Pond 5.1P: Infiltration Basin

Inflow Area = 6.800 ac, 72.06% Impervious, Inflow Depth = 2.81" for 10-yr event
Inflow = 1.8 cfs @ 12.08 hrs, Volume= 1.590 af
Outflow = 0.6 cfs @ 22.74 hrs, Volume= 1.590 af, Atten= 67%, Lag= 639.6 min
Discarded = 0.6 cfs @ 22.74 hrs, Volume= 1.590 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 657.52' @ 22.74 hrs Surf.Area= 13,003 sf Storage= 27,577 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 462.1 min (1,441.2 - 979.1)

Volume	Invert	Avail.Storage	Storage Description
#1	655.00'	64,950 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

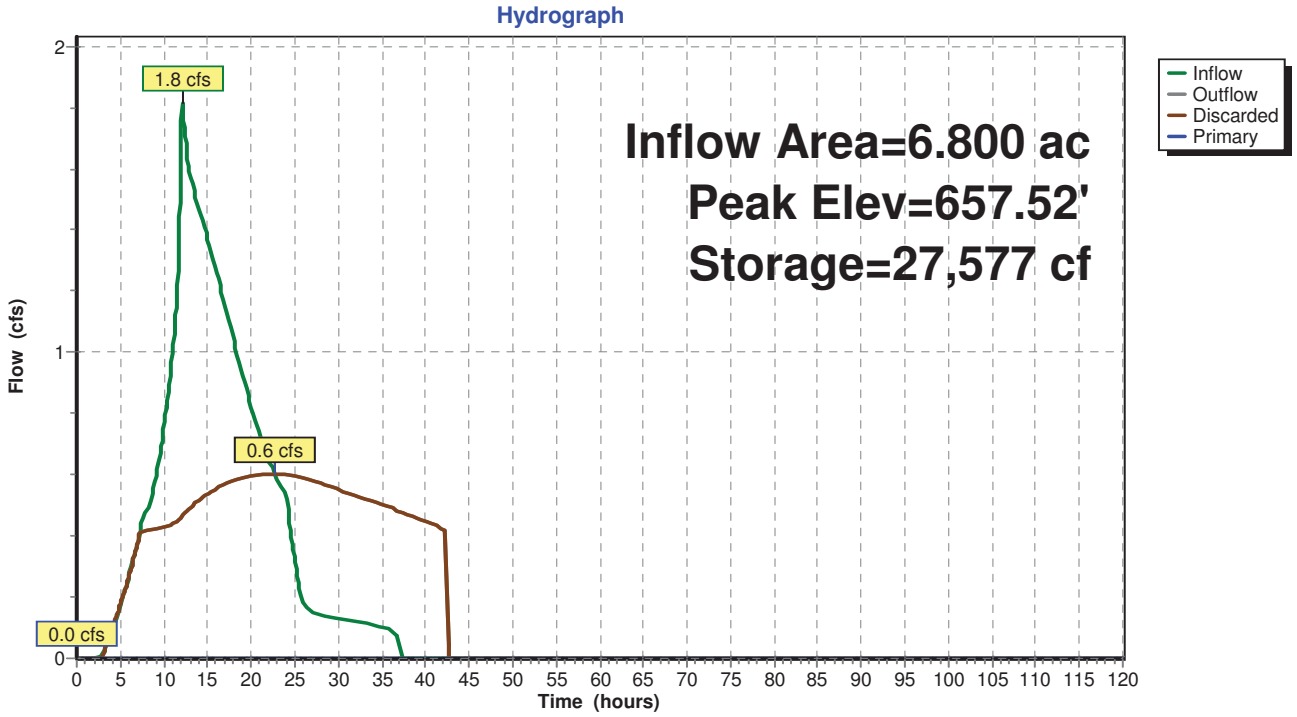
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
655.00	9,000	0	0
656.00	10,500	9,750	9,750
660.00	17,100	55,200	64,950

Device	Routing	Invert	Outlet Devices
#1	Device 2	659.00'	**4.0' long x 0.5' breadth Broad-Crested Rectangular Weir X 2.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#2	Primary	653.00'	**15.0" Round Culvert** L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 653.00' / 652.50' S= 0.0500 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#3	Discarded	655.00'	**2.000 in/hr Exfiltration over Horizontal area**

Discarded OutFlow Max=0.6 cfs @ 22.74 hrs HW=657.52' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 0.6 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=655.00' TW=0.00' (Dynamic Tailwater)
└**2=Culvert** (Passes 0.0 cfs of 6.9 cfs potential flow)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Pond 5.1P: Infiltration Basin



Summary for Subcatchment 1.0S:

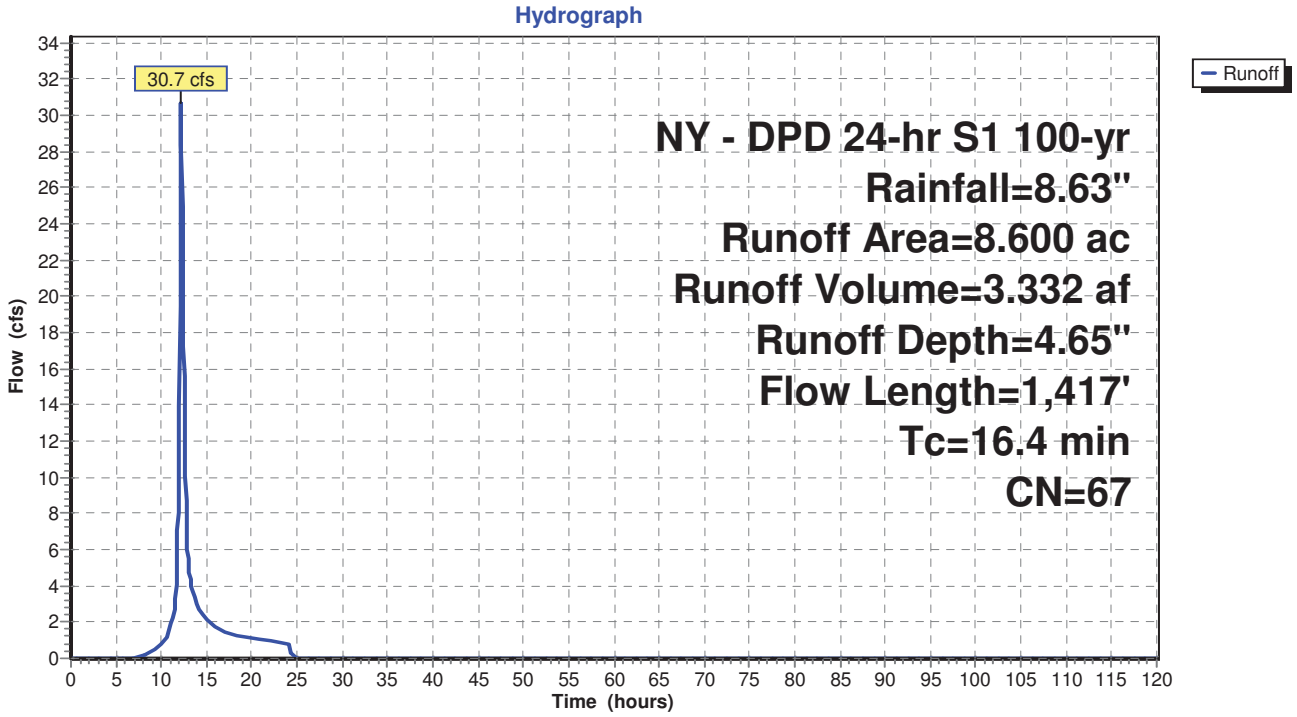
Runoff = 30.7 cfs @ 12.19 hrs, Volume= 3.332 af, Depth= 4.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - DPD 24-hr S1 100-yr Rainfall=8.63"

Area (ac)	CN	Description
0.200	74	>75% Grass cover, Good, HSG C
1.200	71	Meadow, non-grazed, HSG C
4.500	70	Woods, Good, HSG C
0.500	72	Woods/grass comb., Good, HSG C
1.800	55	Woods, Good, HSG B
0.400	61	>75% Grass cover, Good, HSG B
8.600	67	Weighted Average
8.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.9	100	0.0150	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.27"
1.1	225	0.0500	3.35		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
1.6	162	0.1100	1.66		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.5	90	0.3000	2.74		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.3	840	0.0300	6.10	36.62	**Channel Flow,** Area= 6.0 sf Perim= 10.0' r= 0.60' n= 0.030 Earth, grassed & winding
16.4	1,417	Total			

Subcatchment 1.0S:



Summary for Subcatchment 2.0S:

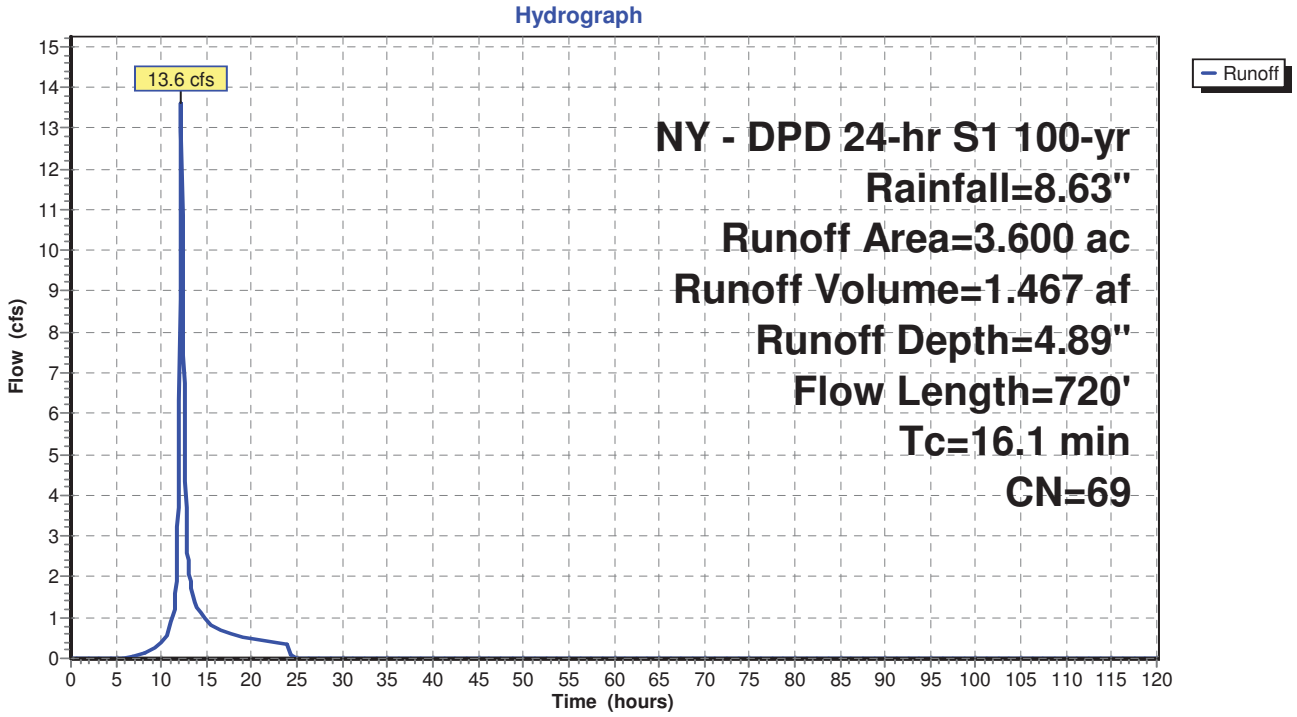
Runoff = 13.6 cfs @ 12.18 hrs, Volume= 1.467 af, Depth= 4.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - DPD 24-hr S1 100-yr Rainfall=8.63"

Area (ac)	CN	Description
1.400	70	Woods, Good, HSG C
1.500	74	>75% Grass cover, Good, HSG C
0.500	55	Woods, Good, HSG B
0.200	61	>75% Grass cover, Good, HSG B
3.600	69	Weighted Average
3.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.9	100	0.0150	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.27"
2.6	220	0.0800	1.41		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.4	150	0.0250	5.80	23.19	**Channel Flow,** Area= 4.0 sf Perim= 10.0' r= 0.40' n= 0.022 Earth, clean & straight
2.2	250	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
16.1	720	Total			

Subcatchment 2.0S:



Summary for Subcatchment 3.0S:

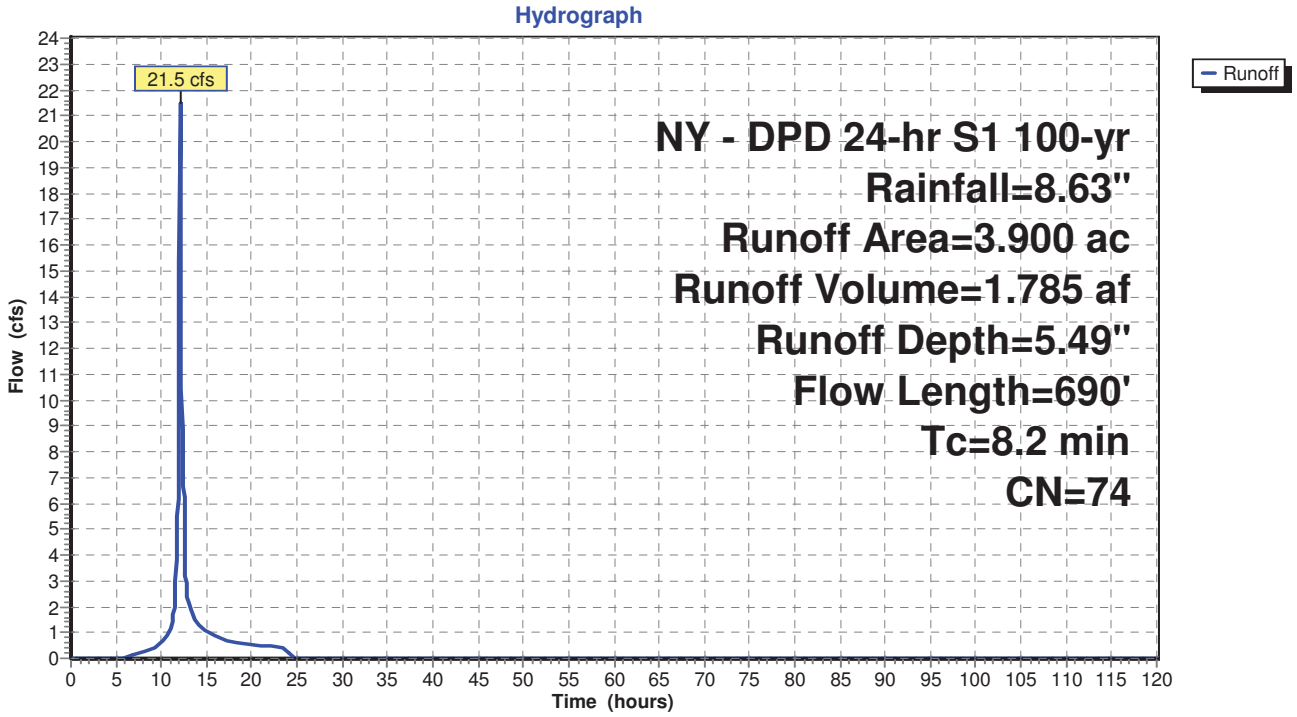
Runoff = 21.5 cfs @ 12.07 hrs, Volume= 1.785 af, Depth= 5.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - DPD 24-hr S1 100-yr Rainfall=8.63"

Area (ac)	CN	Description
0.500	98	Paved parking, HSG C
1.100	74	>75% Grass cover, Good, HSG C
1.900	70	Woods, Good, HSG C
0.200	55	Woods, Good, HSG B
0.100	61	>75% Grass cover, Good, HSG B
0.100	80	>75% Grass cover, Good, HSG D
3.900	74	Weighted Average
3.400		87.18% Pervious Area
0.500		12.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.2	80	0.2000	0.41		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.27"
2.3	20	0.2000	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.27"
0.9	100	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.3	330	0.0250	4.25	17.01	**Channel Flow,** Area= 4.0 sf Perim= 10.0' r= 0.40' n= 0.030 Earth, grassed & winding
0.5	160	0.0100	4.91	3.86	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
8.2	690	Total			

Subcatchment 3.0S:



Summary for Subcatchment 3.1S:

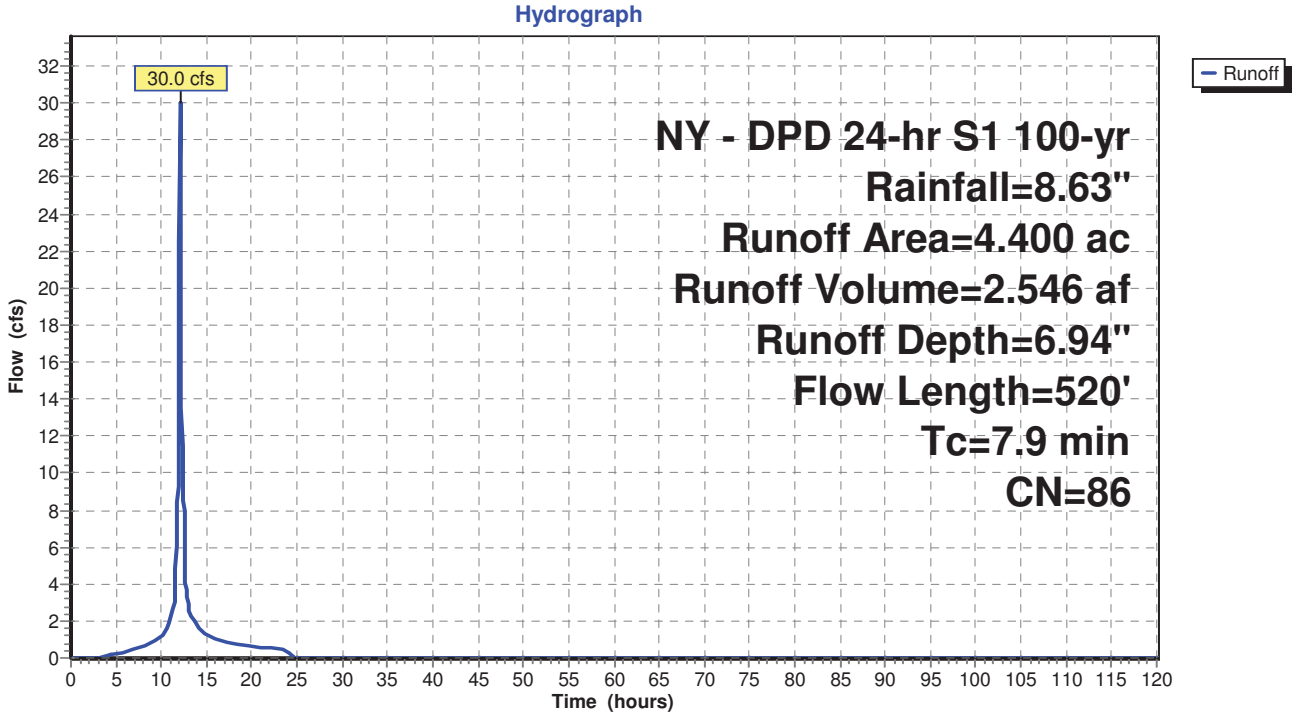
Runoff = 30.0 cfs @ 12.06 hrs, Volume= 2.546 af, Depth= 6.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - DPD 24-hr S1 100-yr Rainfall=8.63"

Area (ac)	CN	Description
2.200	98	Paved parking, HSG D
2.200	74	>75% Grass cover, Good, HSG C
4.400	86	Weighted Average
2.200		50.00% Pervious Area
2.200		50.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	100	0.0800	0.30		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.27"
1.2	110	0.0100	1.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
1.1	310	0.0100	4.91	3.86	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
7.9	520	Total			

Subcatchment 3.1S:



Summary for Subcatchment 4.0S:

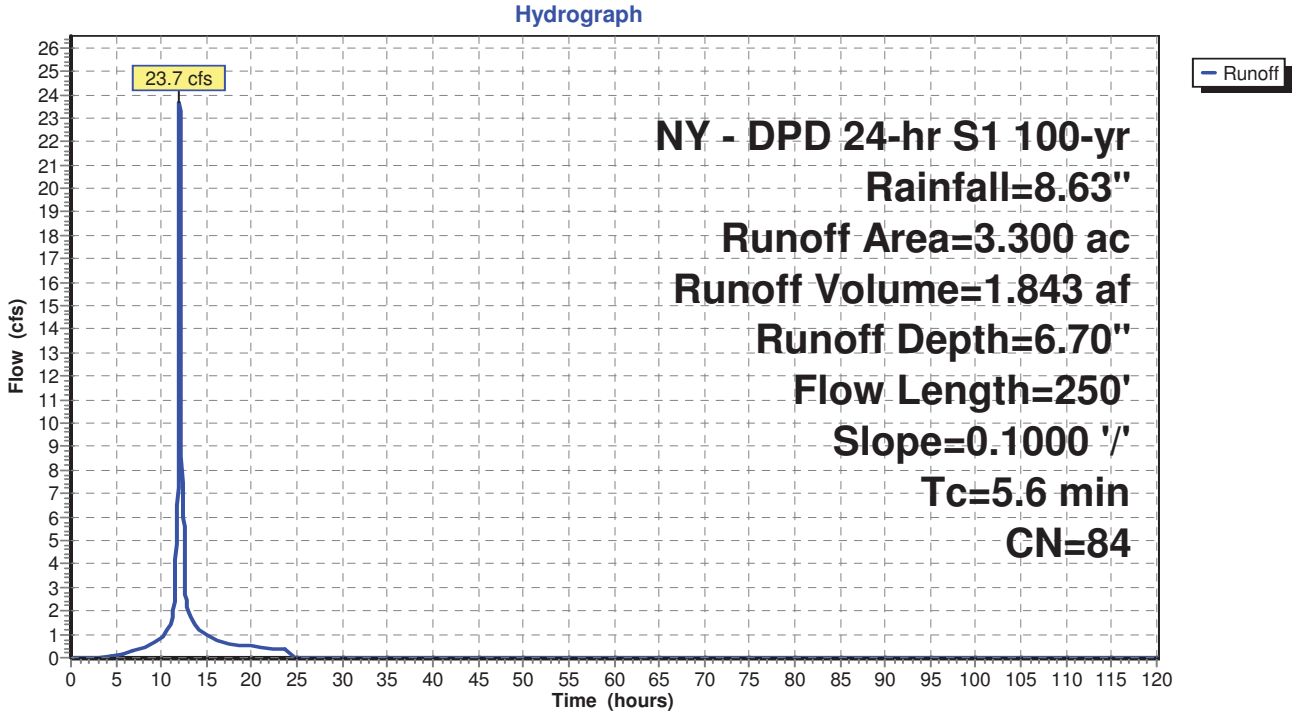
Runoff = 23.7 cfs @ 12.04 hrs, Volume= 1.843 af, Depth= 6.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - DPD 24-hr S1 100-yr Rainfall=8.63"

Area (ac)	CN	Description
1.400	98	Paved parking, HSG C
1.100	74	>75% Grass cover, Good, HSG C
0.300	80	>75% Grass cover, Good, HSG D
0.500	72	Woods/grass comb., Good, HSG C
3.300	84	Weighted Average
1.900		57.58% Pervious Area
1.400		42.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.1	100	0.1000	0.33		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.27"
0.5	150	0.1000	4.74		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
5.6	250	Total			

Subcatchment 4.0S:



Summary for Subcatchment 4.1S:

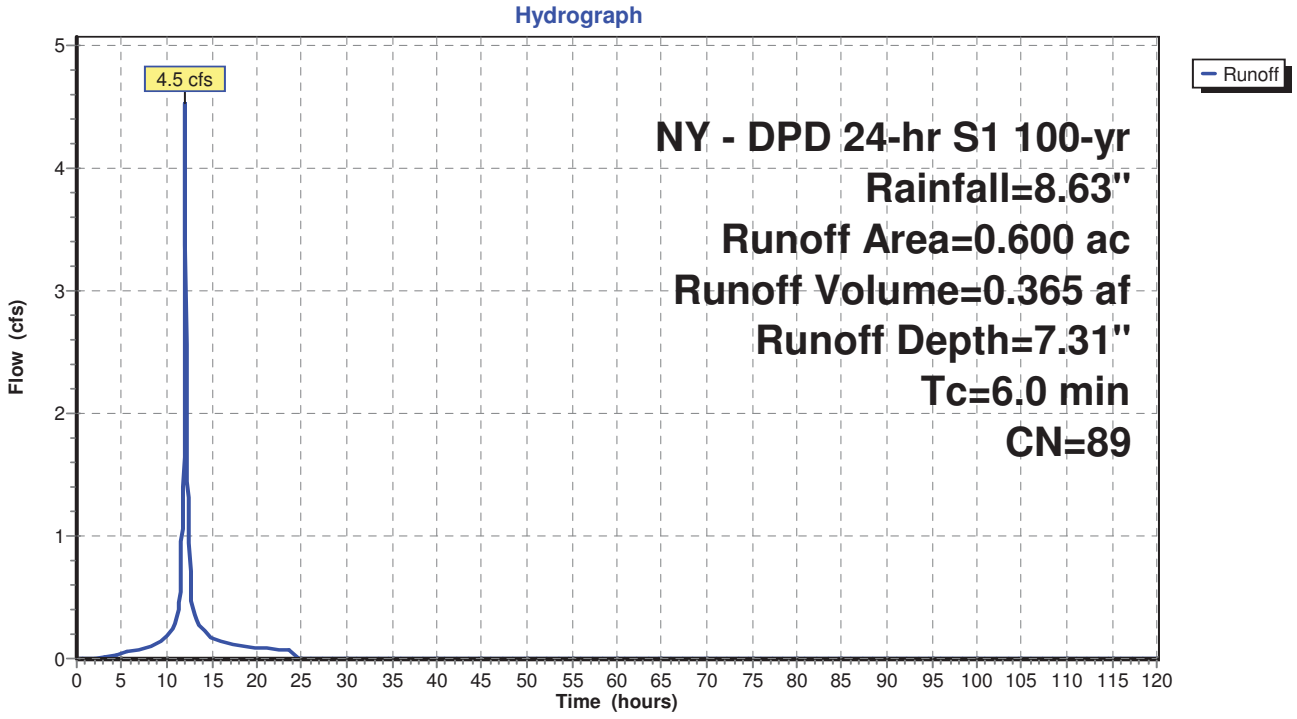
Runoff = 4.5 cfs @ 12.04 hrs, Volume= 0.365 af, Depth= 7.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - DPD 24-hr S1 100-yr Rainfall=8.63"

Area (ac)	CN	Description
0.300	98	Paved parking, HSG D
0.300	80	>75% Grass cover, Good, HSG D
0.600	89	Weighted Average
0.300		50.00% Pervious Area
0.300		50.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 4.1S:



Summary for Subcatchment 5.0S:

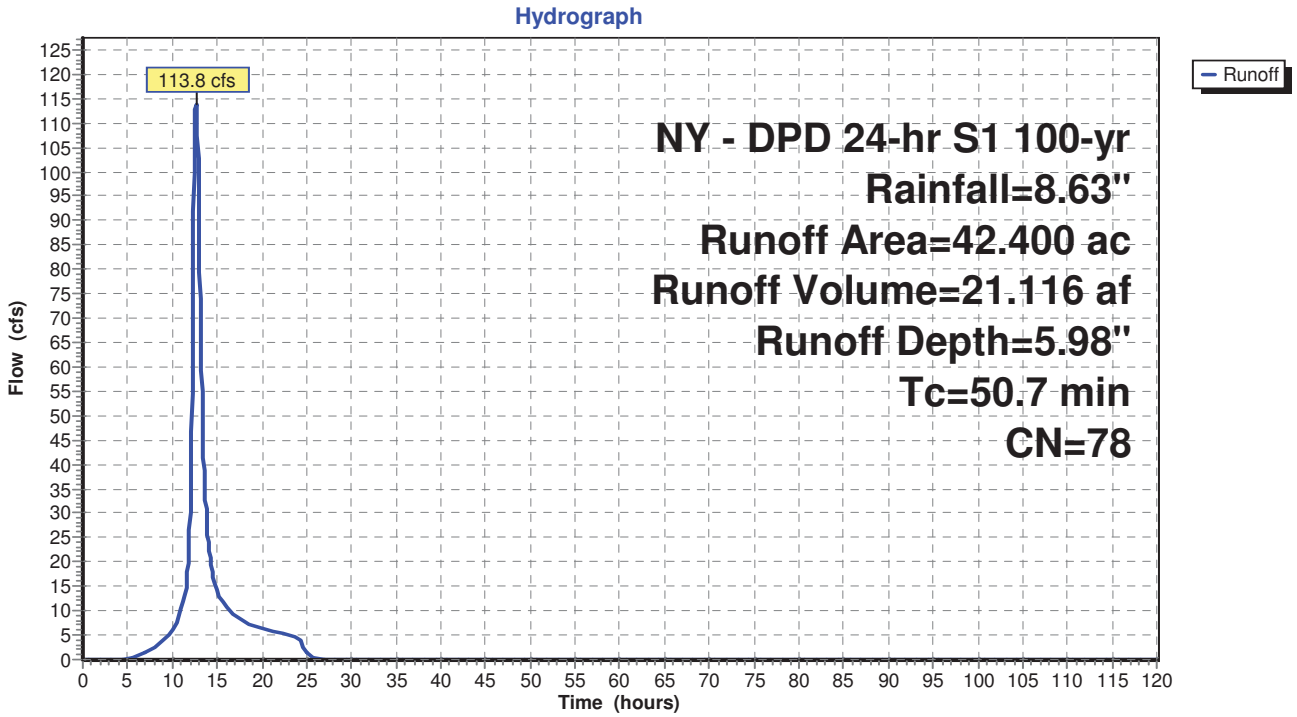
Runoff = 113.8 cfs @ 12.65 hrs, Volume= 21.116 af, Depth= 5.98"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - DPD 24-hr S1 100-yr Rainfall=8.63"

Area (ac)	CN	Description
6.000	98	Paved parking, HSG C
1.600	98	Water Surface, HSG D
8.900	74	>75% Grass cover, Good, HSG C
7.300	71	Meadow, non-grazed, HSG C
8.700	70	Woods, Good, HSG C
1.000	72	Woods/grass comb., Good, HSG C
8.700	77	Woods, Good, HSG D
0.200	80	>75% Grass cover, Good, HSG D
42.400	78	Weighted Average
34.800		82.08% Pervious Area
7.600		17.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
50.7					**Direct Entry,**

Subcatchment 5.0S:



Summary for Subcatchment 5.1S:

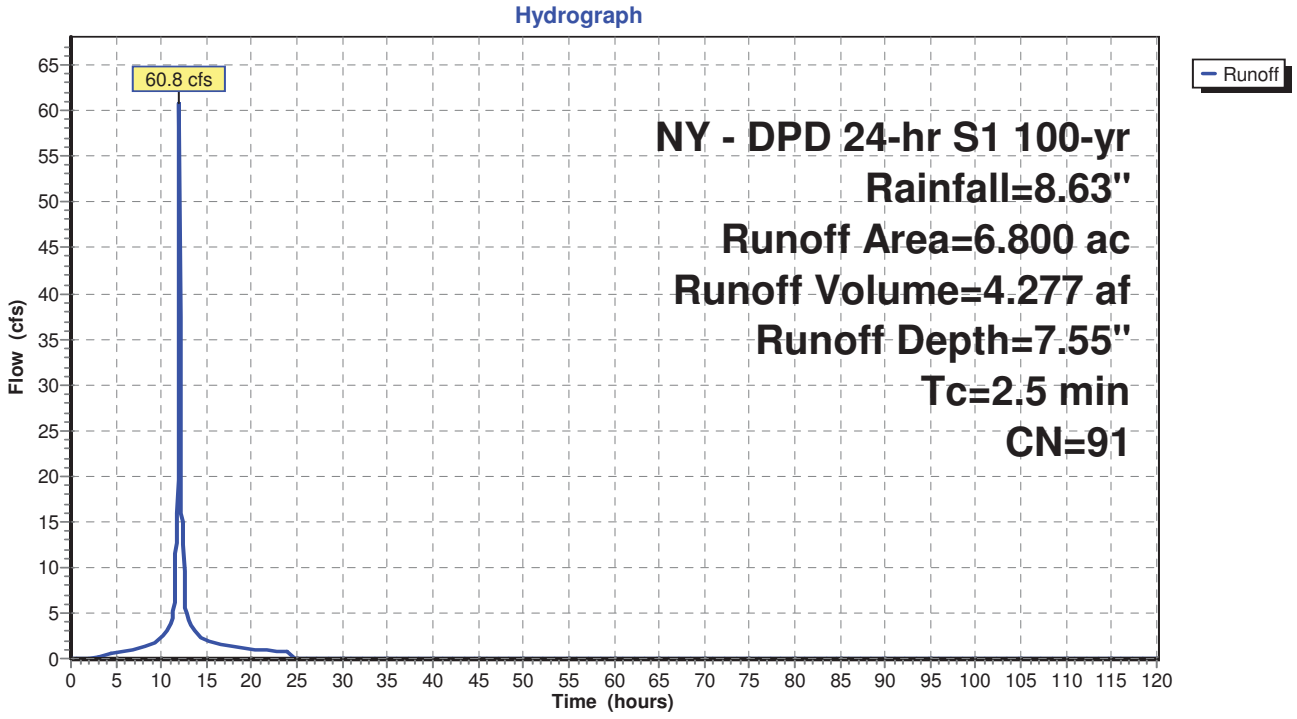
Runoff = 60.8 cfs @ 11.99 hrs, Volume= 4.277 af, Depth= 7.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - DPD 24-hr S1 100-yr Rainfall=8.63"

Area (ac)	CN	Description
4.900	98	Paved parking, HSG D
1.900	74	>75% Grass cover, Good, HSG C
6.800	91	Weighted Average
1.900		27.94% Pervious Area
4.900		72.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5					**Direct Entry,**

Subcatchment 5.1S:

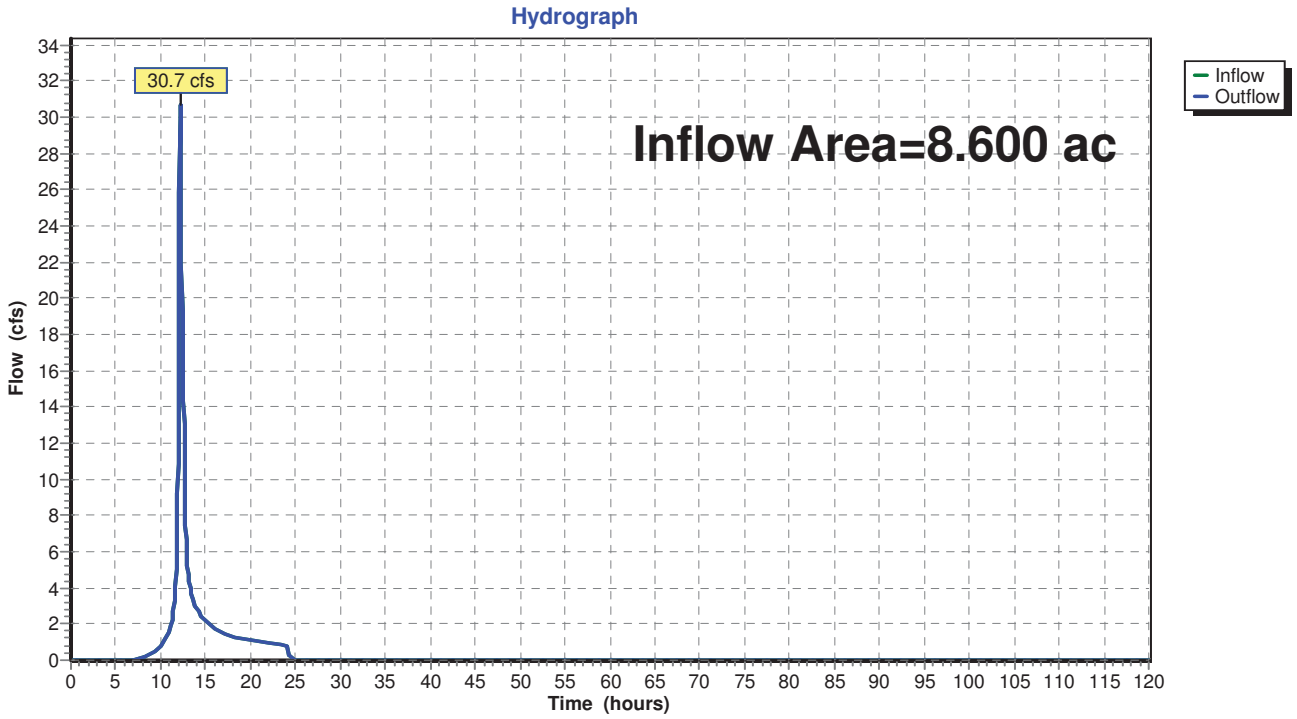


Summary for Reach DP 1: Design Point 1

Inflow Area = 8.600 ac, 0.00% Impervious, Inflow Depth = 4.65" for 100-yr event
Inflow = 30.7 cfs @ 12.19 hrs, Volume= 3.332 af
Outflow = 30.7 cfs @ 12.19 hrs, Volume= 3.332 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs / 2

Reach DP 1: Design Point 1

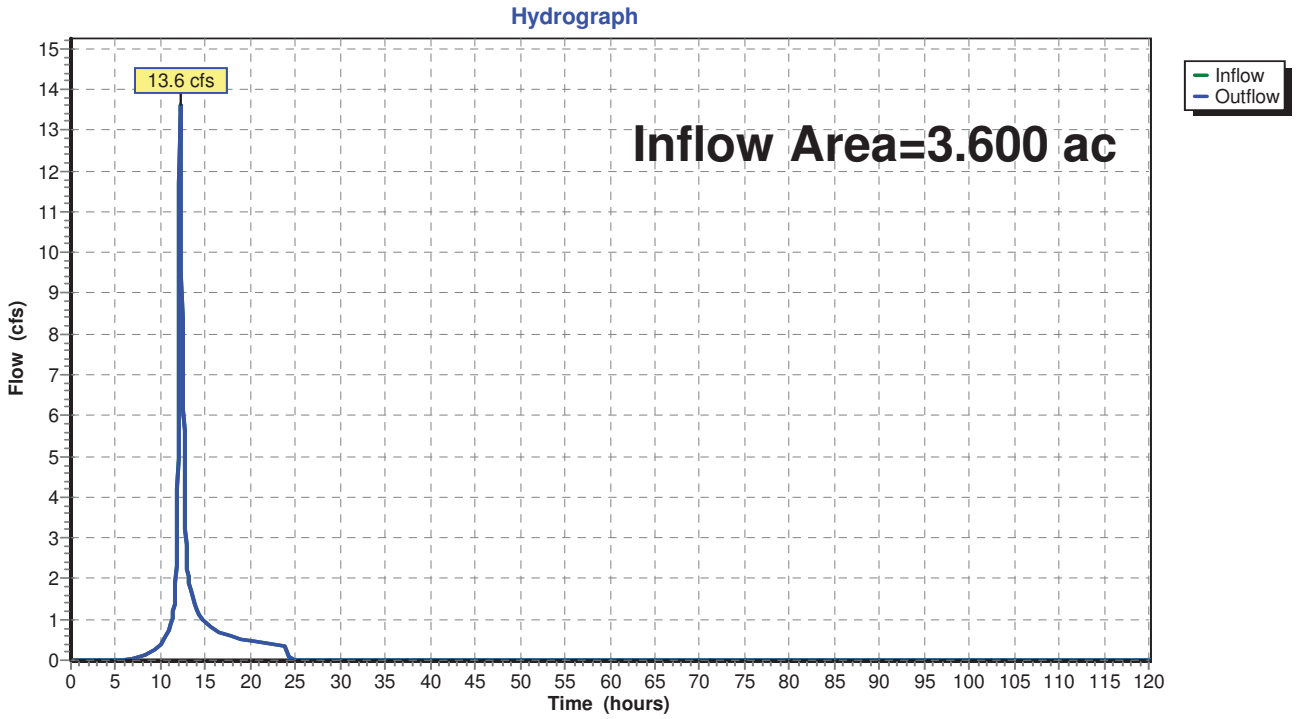


Summary for Reach DP 2: Design Point 2

Inflow Area = 3.600 ac, 0.00% Impervious, Inflow Depth = 4.89" for 100-yr event
Inflow = 13.6 cfs @ 12.18 hrs, Volume= 1.467 af
Outflow = 13.6 cfs @ 12.18 hrs, Volume= 1.467 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs / 2

Reach DP 2: Design Point 2

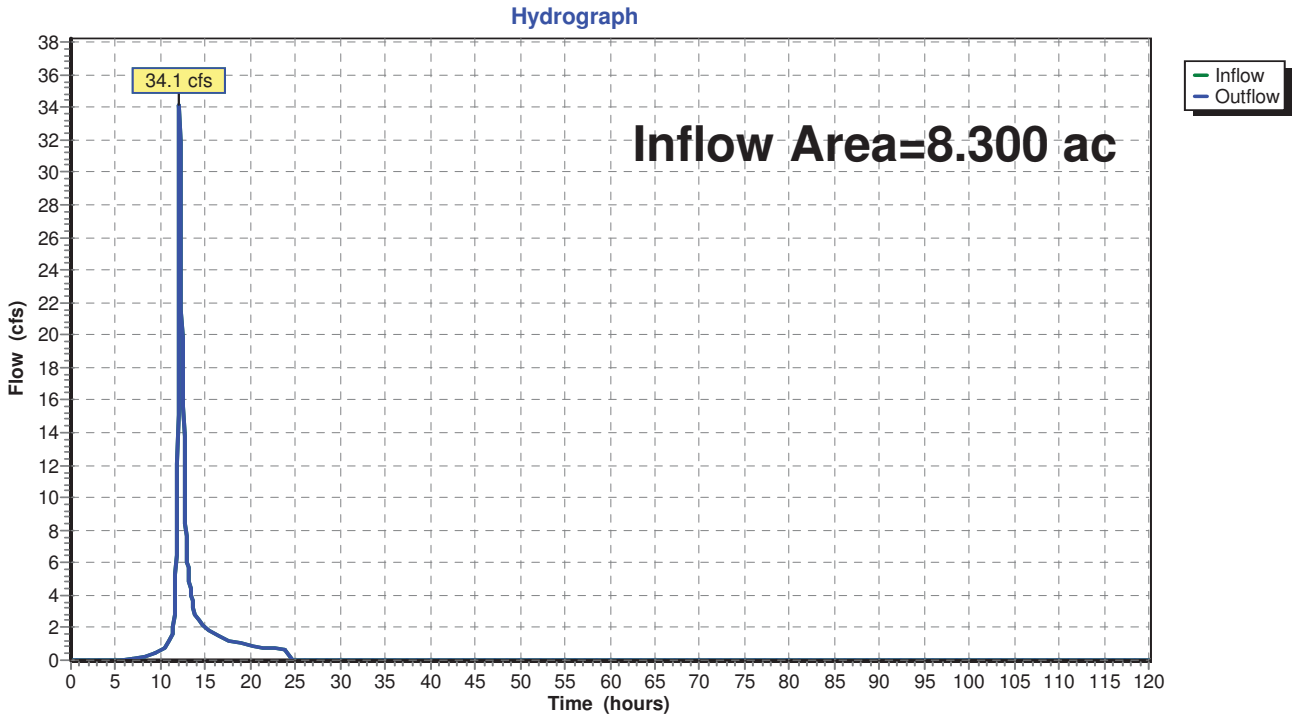


Summary for Reach DP 3: Design Point 3

Inflow Area = 8.300 ac, 32.53% Impervious, Inflow Depth = 4.87" for 100-yr event
Inflow = 34.1 cfs @ 12.10 hrs, Volume= 3.366 af
Outflow = 34.1 cfs @ 12.10 hrs, Volume= 3.366 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs / 2

Reach DP 3: Design Point 3

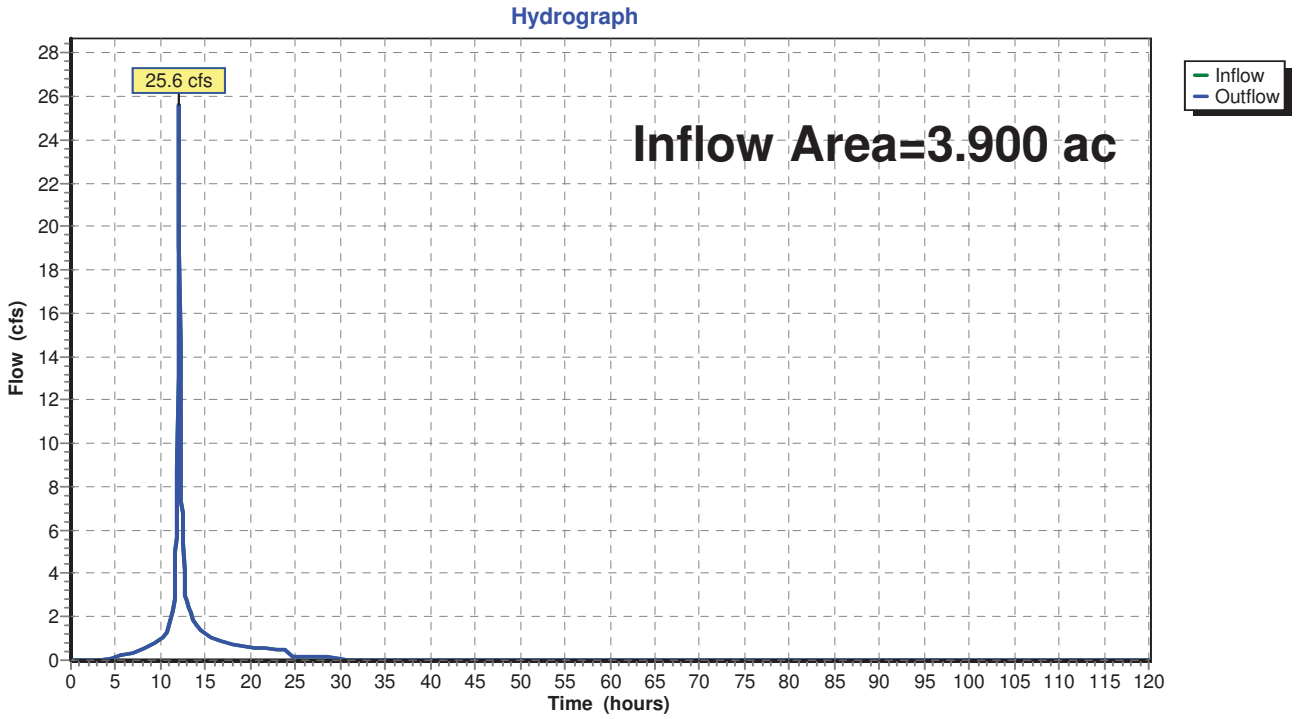


Summary for Reach DP 4: Design Point 4

Inflow Area = 3.900 ac, 43.59% Impervious, Inflow Depth = 6.80" for 100-yr event
Inflow = 25.6 cfs @ 12.04 hrs, Volume= 2.209 af
Outflow = 25.6 cfs @ 12.04 hrs, Volume= 2.209 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs / 2

Reach DP 4: Design Point 4

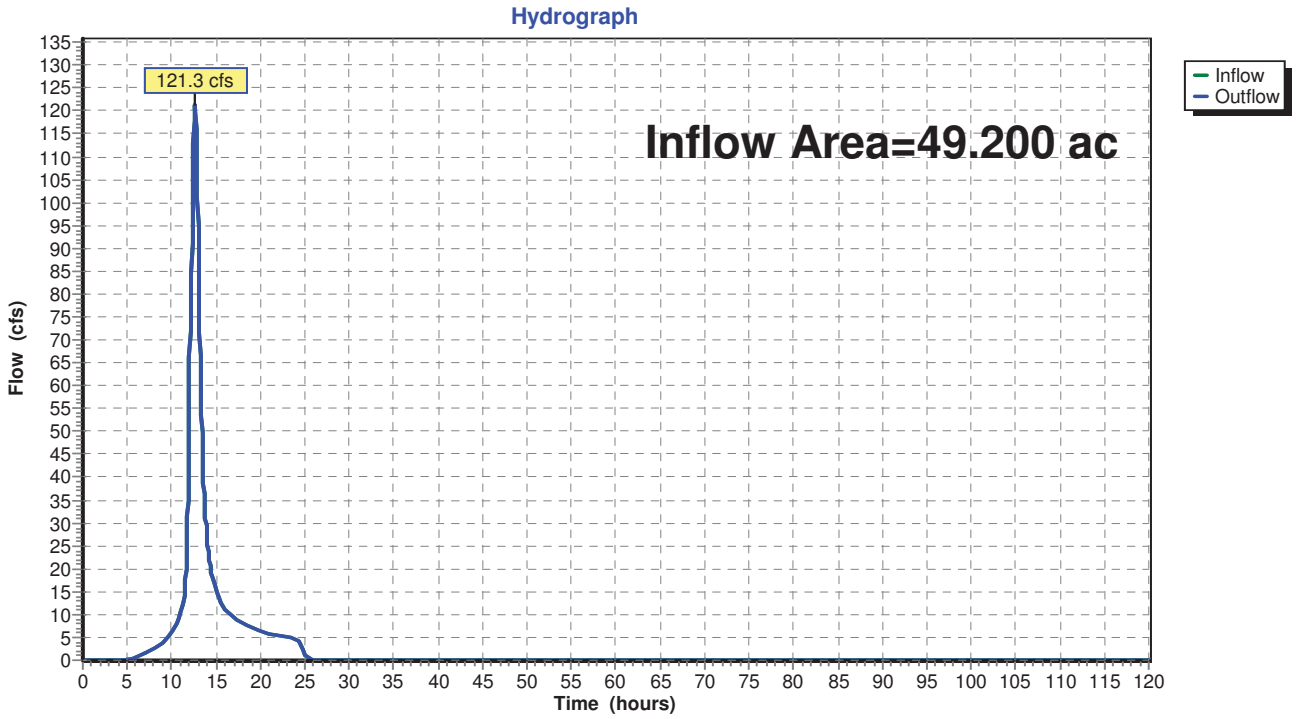


Summary for Reach DP 5: Design Point 5

Inflow Area = 49.200 ac, 25.41% Impervious, Inflow Depth = 5.67" for 100-yr event
Inflow = 121.3 cfs @ 12.60 hrs, Volume= 23.229 af
Outflow = 121.3 cfs @ 12.60 hrs, Volume= 23.229 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs / 2

Reach DP 5: Design Point 5



Summary for Pond 1.4 FS: Flow Splitter

Inflow Area = 0.600 ac, 50.00% Impervious, Inflow Depth = 7.31" for 100-yr event
Inflow = 4.2 cfs @ 12.08 hrs, Volume= 0.365 af
Outflow = 4.2 cfs @ 12.08 hrs, Volume= 0.365 af, Atten= 0%, Lag= 0.0 min
Primary = 2.1 cfs @ 12.08 hrs, Volume= 0.324 af
Secondary = 2.1 cfs @ 12.08 hrs, Volume= 0.042 af

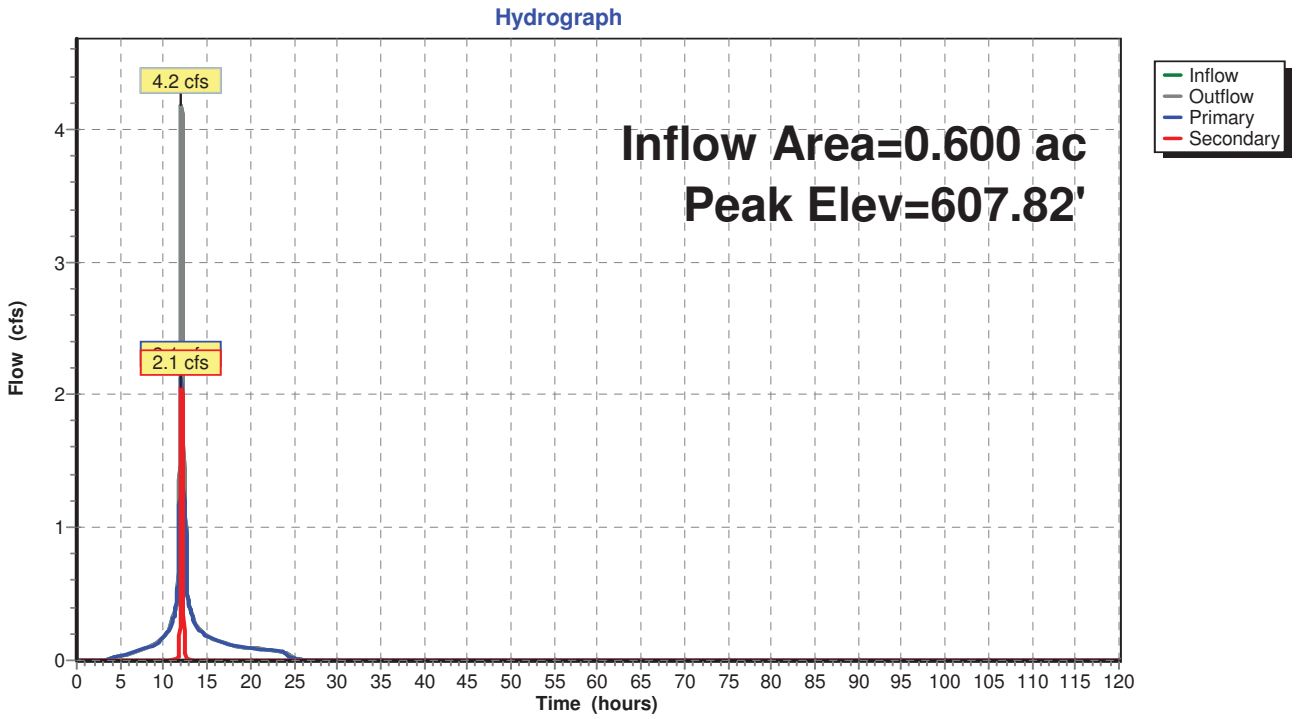
Routing by Dyn-Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 607.82' @ 12.08 hrs
Flood Elev= 608.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	607.00'	**12.0" Vert. Orifice/Grate** C= 0.600
#2	Device 3	607.50'	**4.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#3	Secondary	604.50'	**15.0" Round Culvert** L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 604.50' / 604.00' S= 0.0250 '/' Cc= 0.900 n= 0.120, Flow Area= 1.23 sf

Primary OutFlow Max=2.1 cfs @ 12.08 hrs HW=607.81' TW=606.54' (Dynamic Tailwater)
└**1=Orifice/Grate** (Orifice Controls 2.1 cfs @ 3.07 fps)

Secondary OutFlow Max=2.0 cfs @ 12.08 hrs HW=607.81' TW=0.00' (Dynamic Tailwater)
└**3=Culvert** (Passes 2.0 cfs of 2.5 cfs potential flow)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 2.0 cfs @ 1.60 fps)

Pond 1.4 FS: Flow Splitter



Summary for Pond 3.1AP: Pretreatment Basin

Inflow Area = 4.400 ac, 50.00% Impervious, Inflow Depth = 6.94" for 100-yr event
Inflow = 30.0 cfs @ 12.06 hrs, Volume= 2.546 af
Outflow = 17.6 cfs @ 12.19 hrs, Volume= 2.546 af, Atten= 41%, Lag= 8.0 min
Primary = 1.5 cfs @ 12.17 hrs, Volume= 0.965 af
Secondary = 16.1 cfs @ 12.19 hrs, Volume= 1.581 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 610.87' @ 12.19 hrs Surf.Area= 6,883 sf Storage= 23,448 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 113.2 min (908.1 - 794.9)

Volume	Invert	Avail.Storage	Storage Description
#1	606.00'	24,350 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

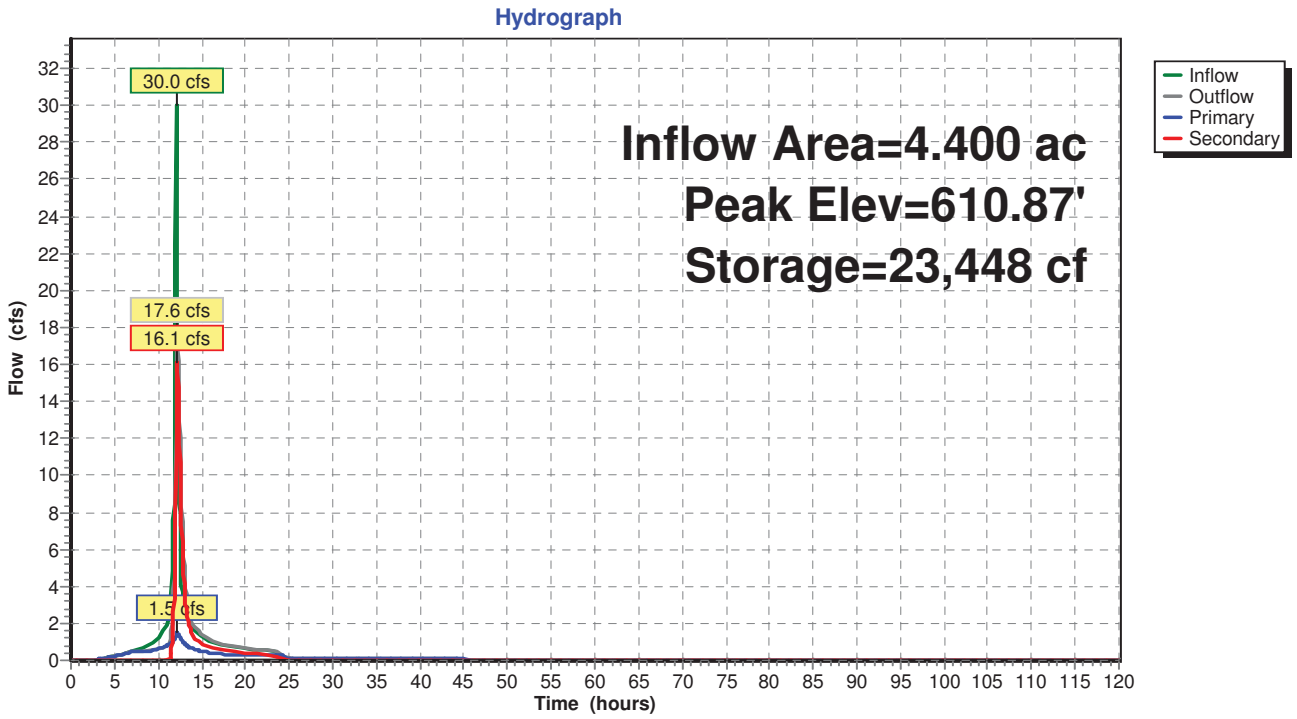
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
606.00	2,900	0	0
608.00	4,400	7,300	7,300
610.00	6,100	10,500	17,800
611.00	7,000	6,550	24,350

Device	Routing	Invert	Outlet Devices
#1	Device 3	608.00'	**1.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#2	Primary	605.50'	**6.0" Round Culvert** L= 40.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 605.50' / 605.00' S= 0.0125 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#3	Secondary	605.50'	**24.0" Round Culvert** L= 50.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 605.50' / 604.00' S= 0.0300 '/' Cc= 0.900 n= 0.012, Flow Area= 3.14 sf

Primary OutFlow Max=1.5 cfs @ 12.17 hrs HW=610.85' TW=607.20' (Dynamic Tailwater)
└**2=Culvert** (Outlet Controls 1.5 cfs @ 7.48 fps)

Secondary OutFlow Max=16.1 cfs @ 12.19 hrs HW=610.87' TW=0.00' (Dynamic Tailwater)
└**3=Culvert** (Passes 16.1 cfs of 31.6 cfs potential flow)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 16.1 cfs @ 5.62 fps)

Pond 3.1AP: Pretreatment Basin



Summary for Pond 3.1P: Infiltration Basin

Inflow Area = 4.400 ac, 50.00% Impervious, Inflow Depth = 2.63" for 100-yr event
Inflow = 1.5 cfs @ 12.17 hrs, Volume= 0.965 af
Outflow = 0.3 cfs @ 17.82 hrs, Volume= 0.965 af, Atten= 79%, Lag= 338.6 min
Discarded = 0.3 cfs @ 17.82 hrs, Volume= 0.965 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 608.16' @ 17.82 hrs Surf.Area= 6,788 sf Storage= 15,750 cf

Plug-Flow detention time= 578.5 min calculated for 0.965 af (100% of inflow)
Center-of-Mass det. time= 578.4 min (1,600.6 - 1,022.2)

Volume	Invert	Avail.Storage	Storage Description
#1	605.00'	34,800 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

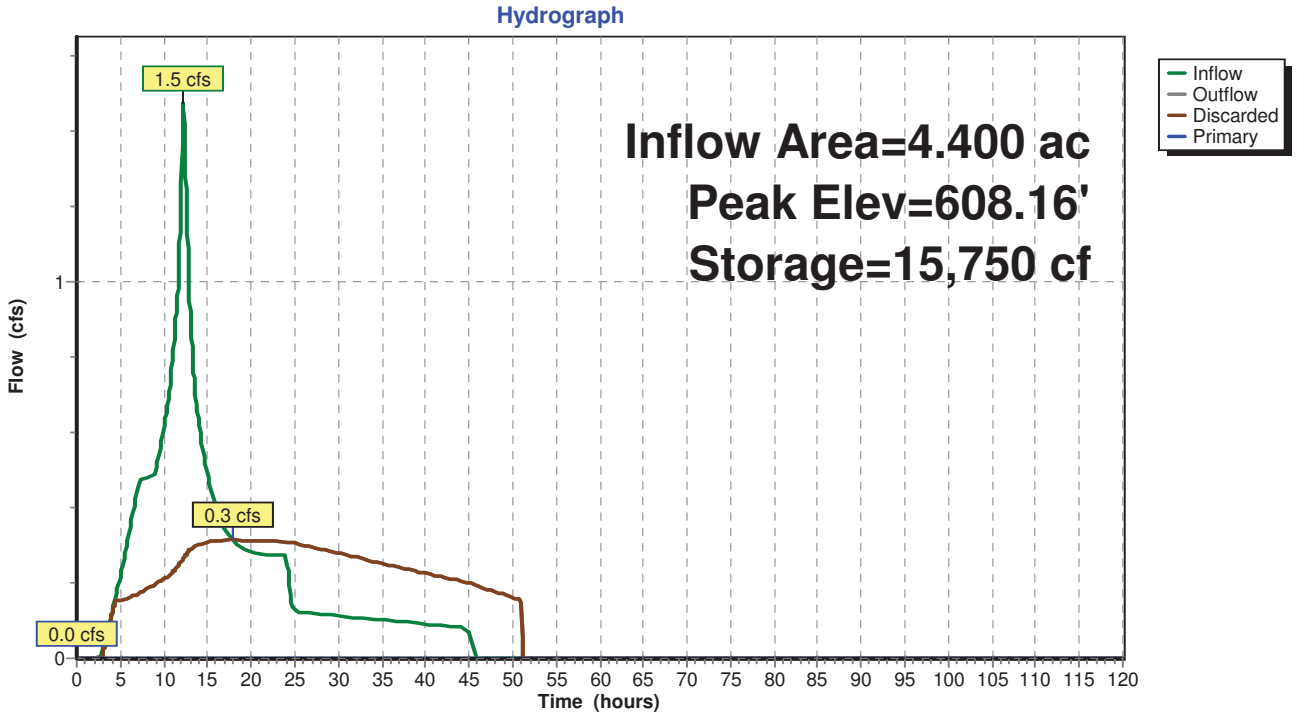
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
605.00	3,300	0	0
606.00	4,300	3,800	3,800
608.00	6,600	10,900	14,700
610.00	9,000	15,600	30,300
610.50	9,000	4,500	34,800

Device	Routing	Invert	Outlet Devices
#1	Device 2	609.10'	**2.5' long x 0.5' breadth Broad-Crested Rectangular Weir X 2.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#2	Primary	603.00'	**15.0" Round Culvert** L= 50.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 603.00' / 602.00' S= 0.0200 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#3	Discarded	605.00'	**2.000 in/hr Exfiltration over Horizontal area** Phase-In= 0.01'

Discarded OutFlow Max=0.3 cfs @ 17.82 hrs HW=608.16' (Free Discharge)
↑└**3=Exfiltration** (Exfiltration Controls 0.3 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=605.00' TW=0.00' (Dynamic Tailwater)
↑└**2=Culvert** (Passes 0.0 cfs of 6.9 cfs potential flow)
↑└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Pond 3.1P: Infiltration Basin



Summary for Pond 4.1AP1: Wet Swale

Inflow Area = 0.600 ac, 50.00% Impervious, Inflow Depth = 7.31" for 100-yr event
Inflow = 4.5 cfs @ 12.04 hrs, Volume= 0.365 af
Outflow = 4.2 cfs @ 12.08 hrs, Volume= 0.365 af, Atten= 8%, Lag= 2.3 min
Primary = 0.2 cfs @ 12.67 hrs, Volume= 0.171 af
Secondary = 4.0 cfs @ 12.08 hrs, Volume= 0.194 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs / 2
Starting Elev= 607.00' Surf.Area= 700 sf Storage= 275 cf
Peak Elev= 607.97' @ 12.07 hrs Surf.Area= 1,282 sf Storage= 1,237 cf (962 cf above start)

Plug-Flow detention time= 37.4 min calculated for 0.359 af (98% of inflow)
Center-of-Mass det. time= 18.1 min (800.9 - 782.8)

Volume	Invert	Avail.Storage	Storage Description
#1	606.50'	1,275 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

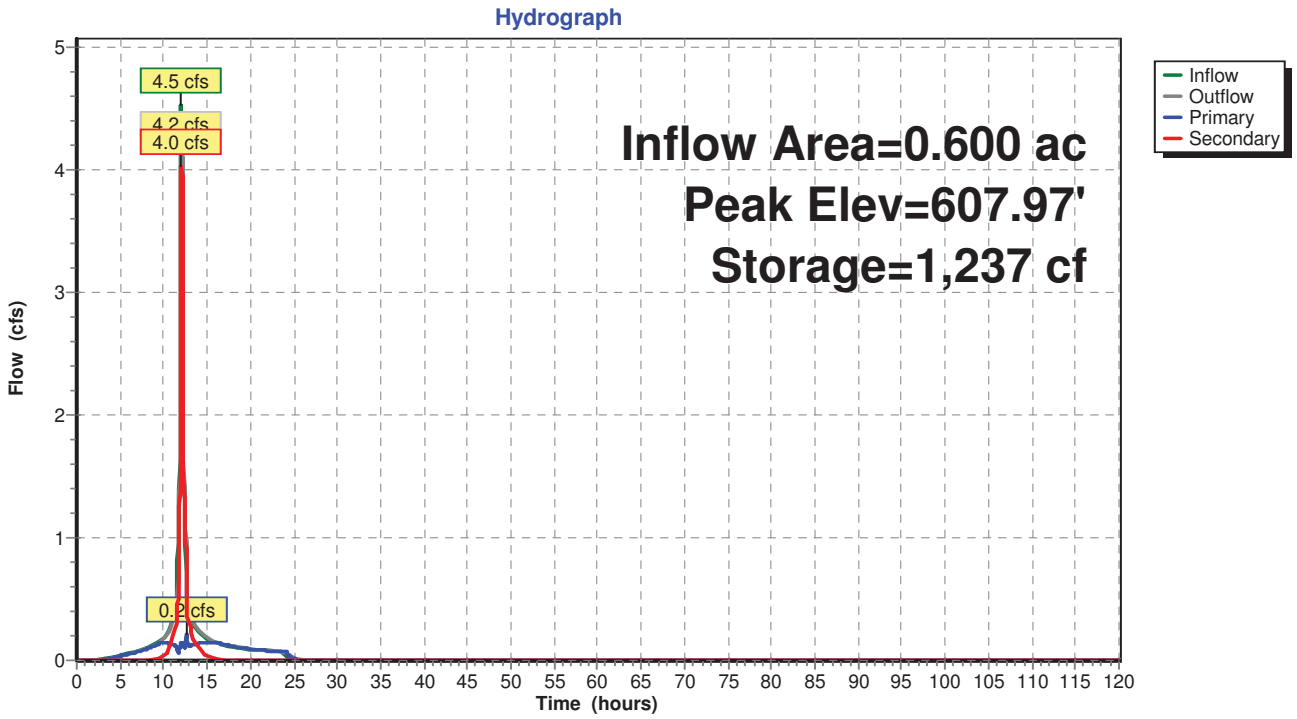
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
606.50	400	0	0
608.00	1,300	1,275	1,275

Device	Routing	Invert	Outlet Devices
#1	Primary	607.00'	**4.0" Vert. Orifice/Grate** C= 0.600
#2	Secondary	607.30'	**4.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.0 cfs @ 12.67 hrs HW=607.44' TW=607.45' (Dynamic Tailwater)
↑—**1=Orifice/Grate** (Controls 0.0 cfs)

Secondary OutFlow Max=4.2 cfs @ 12.08 hrs HW=607.95' TW=607.81' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 4.2 cfs @ 1.60 fps)

Pond 4.1AP1: Wet Swale



Summary for Pond 4.1BP: Bioretention

Inflow Area = 0.600 ac, 50.00% Impervious, Inflow Depth = 6.49" for 100-yr event
Inflow = 2.1 cfs @ 12.08 hrs, Volume= 0.324 af
Outflow = 0.5 cfs @ 12.75 hrs, Volume= 0.324 af, Atten= 75%, Lag= 40.1 min
Primary = 0.5 cfs @ 12.75 hrs, Volume= 0.324 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 606.91' @ 12.75 hrs Surf.Area= 6,099 sf Storage= 5,086 cf

Plug-Flow detention time= 229.7 min calculated for 0.324 af (100% of inflow)
Center-of-Mass det. time= 229.7 min (1,040.0 - 810.3)

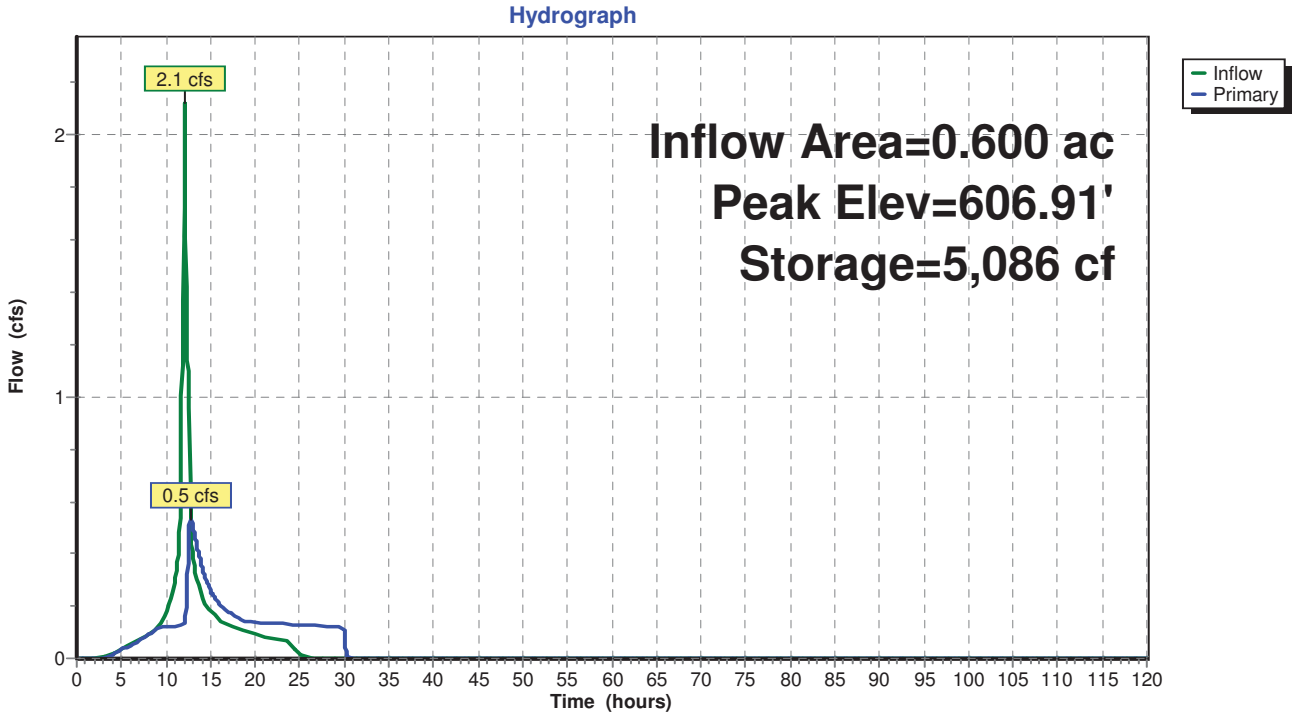
Volume	Invert	Avail.Storage	Storage Description
#1	606.00'	5,650 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
606.00	5,100	0	0
607.00	6,200	5,650	5,650

Device	Routing	Invert	Outlet Devices
#1	Device 3	606.00'	**1.000 in/hr Exfiltration over Surface area** Phase-In= 0.01'
#2	Device 3	606.60'	**12.0" Vert. Orifice/Grate** C= 0.600
#3	Primary	602.50'	**8.0" Round Culvert** L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 602.50' / 602.20' S= 0.0300 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=0.5 cfs @ 12.75 hrs HW=606.91' TW=0.00' (Dynamic Tailwater)
└─**3=Culvert** (Passes 0.5 cfs of 3.4 cfs potential flow)
  ├─**1=Exfiltration** (Exfiltration Controls 0.1 cfs)
  └─**2=Orifice/Grate** (Orifice Controls 0.4 cfs @ 1.89 fps)

Pond 4.1BP: Bioretention



Summary for Pond 5.1AP: Pretreatment Basin

Inflow Area = 6.800 ac, 72.06% Impervious, Inflow Depth = 7.55" for 100-yr event
Inflow = 60.8 cfs @ 11.99 hrs, Volume= 4.277 af
Outflow = 39.5 cfs @ 12.06 hrs, Volume= 4.277 af, Atten= 35%, Lag= 3.9 min
Primary = 1.8 cfs @ 12.05 hrs, Volume= 2.163 af
Secondary = 37.7 cfs @ 12.06 hrs, Volume= 2.113 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 661.29' @ 12.06 hrs Surf.Area= 9,888 sf Storage= 33,003 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 113.7 min (885.7 - 772.0)

Volume	Invert	Avail.Storage	Storage Description
#1	656.00'	40,300 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

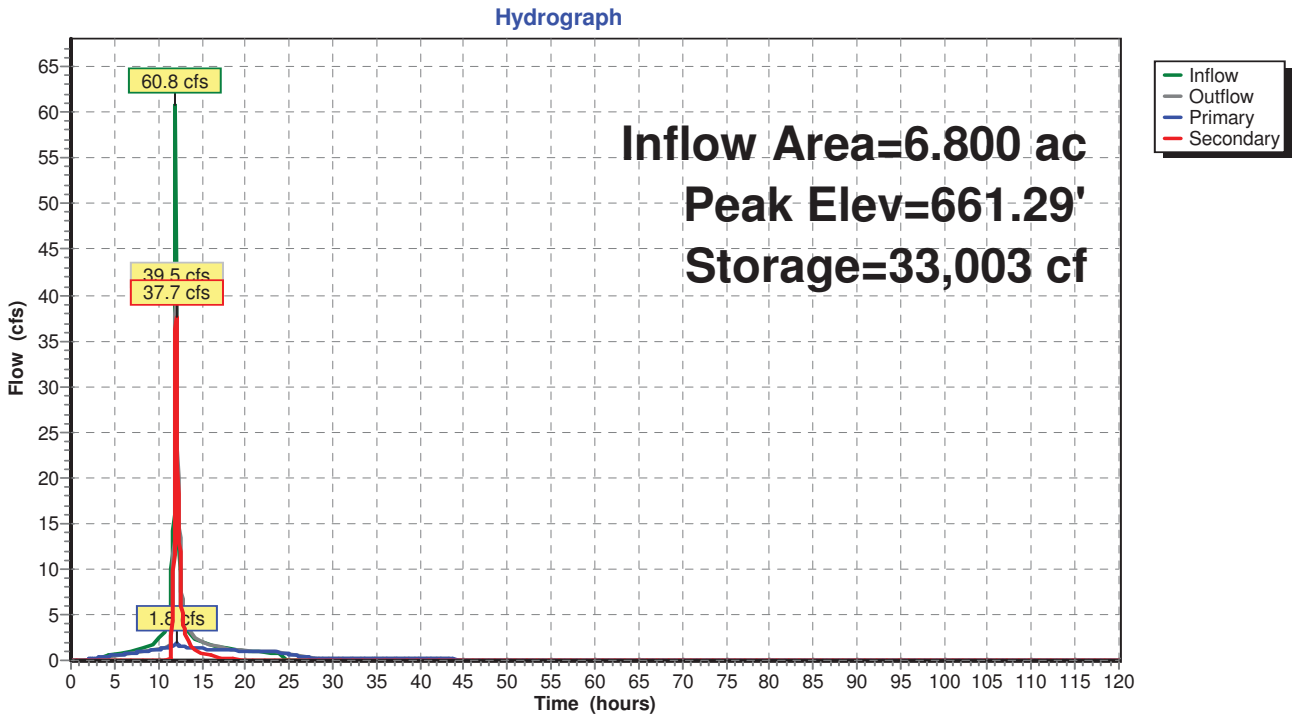
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
656.00	2,500	0	0
658.00	5,000	7,500	7,500
660.00	8,600	13,600	21,100
662.00	10,600	19,200	40,300

Device	Routing	Invert	Outlet Devices
#1	Device 3	659.40'	**2.5' long x 0.5' breadth Broad-Crested Rectangular Weir X 2.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#2	Primary	655.50'	**6.0" Round Culvert** L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 655.50' / 655.00' S= 0.0167 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#3	Secondary	657.50'	**30.0" Round Culvert** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 657.50' / 656.50' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 4.91 sf

Primary OutFlow Max=1.8 cfs @ 12.05 hrs HW=661.28' TW=656.45' (Dynamic Tailwater)
└**2=Culvert** (Outlet Controls 1.8 cfs @ 9.40 fps)

Secondary OutFlow Max=37.5 cfs @ 12.06 hrs HW=661.27' TW=0.00' (Dynamic Tailwater)
└**3=Culvert** (Inlet Controls 37.5 cfs @ 7.65 fps)
└**1=Broad-Crested Rectangular Weir** (Passes 37.5 cfs of 42.5 cfs potential flow)

Pond 5.1AP: Pretreatment Basin



Summary for Pond 5.1P: Infiltration Basin

Inflow Area = 6.800 ac, 72.06% Impervious, Inflow Depth = 3.82" for 100-yr event
Inflow = 1.8 cfs @ 12.05 hrs, Volume= 2.163 af
Outflow = 0.7 cfs @ 25.05 hrs, Volume= 2.164 af, Atten= 64%, Lag= 779.7 min
Discarded = 0.7 cfs @ 25.05 hrs, Volume= 2.164 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 658.28' @ 25.05 hrs Surf.Area= 14,257 sf Storage= 37,936 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 592.4 min (1,603.6 - 1,011.2)

Volume	Invert	Avail.Storage	Storage Description
#1	655.00'	64,950 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

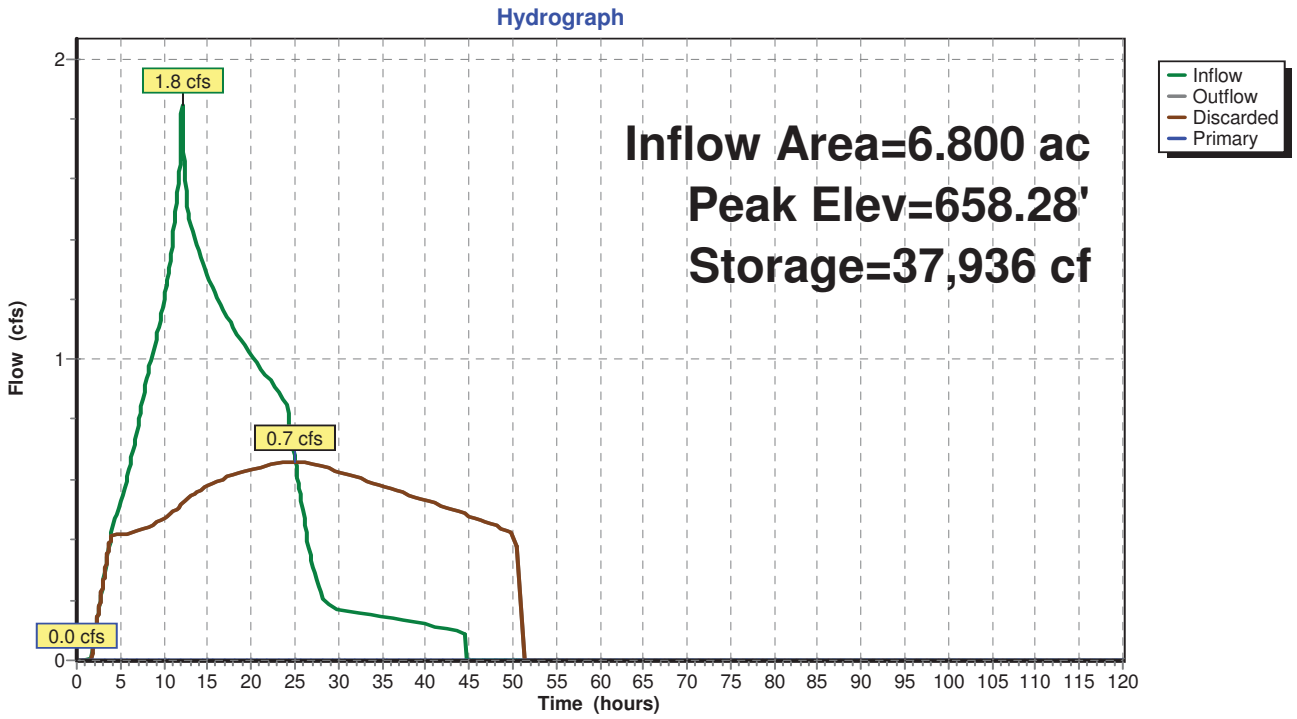
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
655.00	9,000	0	0
656.00	10,500	9,750	9,750
660.00	17,100	55,200	64,950

Device	Routing	Invert	Outlet Devices
#1	Device 2	659.00'	**4.0' long x 0.5' breadth Broad-Crested Rectangular Weir X 2.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#2	Primary	653.00'	**15.0" Round Culvert** L= 10.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 653.00' / 652.50' S= 0.0500 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#3	Discarded	655.00'	**2.000 in/hr Exfiltration over Horizontal area**

Discarded OutFlow Max=0.7 cfs @ 25.05 hrs HW=658.28' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 0.7 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=655.00' TW=0.00' (Dynamic Tailwater)
└**2=Culvert** (Passes 0.0 cfs of 6.9 cfs potential flow)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Pond 5.1P: Infiltration Basin



APPENDIX D

NYSDEC SPDES for Construction Activities Construction Site Log Book

APPENDIX F
CONSTRUCTION SITE INSPECTION AND MAINTENANCE LOG BOOK

STATE POLLUTANT DISCHARGE ELIMINATION SYSTEM FOR CONSTRUCTION ACTIVITIES

SAMPLE CONSTRUCTION SITE LOG BOOK

Table of Contents

I. **PRE-CONSTRUCTION MEETING DOCUMENTS**

Project Name _____

Permit No. _____ **Date of Authorization** _____

Name of Operator _____

Prime Contractor _____

a. **Preamble to Site Assessment and Inspections**

The Following Information To Be Read By All Person's Involved in The Construction of Stormwater Related Activities:

The Operator agrees to have a qualified inspector[1] conduct an assessment of the site prior to the commencement of construction[2] and certify in this inspection report that the appropriate erosion and sediment controls described in the SWPPP have been adequately installed or implemented to ensure overall preparedness of the site for the commencement of construction.

Prior to the commencement of construction, the Operator shall certify in this site logbook that the SWPPP has been prepared in accordance with the State's standards and meets all Federal, State and local erosion and sediment control requirements. A preconstruction meeting should be held to review all of the SWPPP requirements with construction personnel.

When construction starts, site inspections shall be conducted by the qualified inspector at least every 7 calendar days. The Operator shall maintain a record of all inspection reports in this site logbook. The site logbook shall be maintained on site and be made available to the permitting authorities upon request.

Prior to filing the Notice of Termination or the end of permit term, the Operator shall have a qualified inspector perform a final site inspection. The qualified inspector shall certify that the site has undergone final stabilization[3] using either vegetative or structural stabilization methods and that all temporary erosion and sediment controls (such as silt fencing) not needed for long-term erosion control have been removed. In addition, the Operator must identify and certify that all permanent structures described in the SWPPP have been constructed and provide the owner(s) with an operation and maintenance plan that ensures the structure(s) continuously functions as designed.

1 Refer to "Qualified Inspector" inspection requirements in the current SPDES General Permit for Stormwater Discharges from Construction Activity for complete list of inspection requirements.
2 "Commencement of construction" means the initial removal of vegetation and disturbance of soils associated with clearing, grading or excavating activities or other construction activities.
3 "Final stabilization" means that all soil-disturbing activities at the site have been completed and a uniform, perennial vegetative cover with a density of eighty (80) percent has been established or equivalent stabilization measures (such as the use of mulches or geotextiles) have been employed on all unpaved areas and areas not covered by permanent structures.

b. Pre-construction Site Assessment Checklist
(NOTE: Provide comments below as necessary)

1. Notice of Intent, SWPPP, and Contractors Certification:

Yes No NA

[ ] [ ] [ ] Has a Notice of Intent been filed with the NYS Department of Conservation?
[ ] [ ] [ ] Is the SWPPP on-site? Where?_____
[ ] [ ] [ ] Is the Plan current? What is the latest revision date?_____
[ ] [ ] [ ] Is a copy of the NOI (with brief description) onsite? Where?_____
[ ] [ ] [ ] Have all contractors involved with stormwater related activities signed a contractor's certification?

2. Resource Protection

Yes No NA

[ ] [ ] [ ] Are construction limits clearly flagged or fenced?
[ ] [ ] [ ] Important trees and associated rooting zones, on-site septic system absorption fields, existing vegetated areas suitable for filter strips, especially in perimeter areas, have been flagged for protection.
[ ] [ ] [ ] Creek crossings installed prior to land-disturbing activity, including clearing and blasting.

3. Surface Water Protection

Yes No NA

[ ] [ ] [ ] Clean stormwater runoff has been diverted from areas to be disturbed.
[ ] [ ] [ ] Bodies of water located either on site or in the vicinity of the site have been identified and protected.
[ ] [ ] [ ] Appropriate practices to protect on-site or downstream surface water are installed.
[ ] [ ] [ ] Are clearing and grading operations divided into areas <5 acres?

4. Stabilized Construction Access

Yes No NA

[ ] [ ] [ ] A temporary construction entrance to capture mud and debris from construction vehicles before they enter the public highway has been installed.
[ ] [ ] [ ] Other access areas (entrances, construction routes, equipment parking areas) are stabilized immediately as work takes place with gravel or other cover.
[ ] [ ] [ ] Sediment tracked onto public streets is removed or cleaned on a regular basis.

5. Sediment Controls

Yes No NA

[ ] [ ] [ ] Silt fence material and installation comply with the standard drawing and specifications.
[ ] [ ] [ ] Silt fences are installed at appropriate spacing intervals
[ ] [ ] [ ] Sediment/detention basin was installed as first land disturbing activity.
[ ] [ ] [ ] Sediment traps and barriers are installed.

6. Pollution Prevention for Waste and Hazardous Materials

Yes No NA

[ ] [ ] [ ] The Operator or designated representative has been assigned to implement the spill prevention avoidance and response plan.
[ ] [ ] [ ] The plan is contained in the SWPPP on page _____
[ ] [ ] [ ] Appropriate materials to control spills are onsite. Where? _____

II. CONSTRUCTION DURATION INSPECTIONS

a. Directions:

Inspection Forms will be filled out during the entire construction phase of the project.

Required Elements:

1) On a site map, indicate the extent of all disturbed site areas and drainage pathways. Indicate site areas that are expected to undergo initial disturbance or significant site work within the next 14-day period;

2) Indicate on a site map all areas of the site that have undergone temporary or permanent stabilization;

3) Indicate all disturbed site areas that have not undergone active site work during the previous 14-day period;

4) Inspect all sediment control practices and record the approximate degree of sediment accumulation as a percentage of sediment storage volume (for example, 10 percent, 20 percent, 50 percent);

5) Inspect all erosion and sediment control practices and record all maintenance requirements such as verifying the integrity of barrier or diversion systems (earthen berms or silt fencing) and containment systems (sediment basins and sediment traps). Identify any evidence of rill or gully erosion occurring on slopes and any loss of stabilizing vegetation or seeding/mulching. Document any excessive deposition of sediment or ponding water along barrier or diversion systems. Record the depth of sediment within containment structures, any erosion near outlet and overflow structures, and verify the ability of rock filters around perforated riser pipes to pass water; and

6) Immediately report to the Operator any deficiencies that are identified with the implementation of the SWPPP.

SITE PLAN/SKETCH

_____ _____

Inspector (print name) **Date of Inspection**

_____ _____

Qualified Inspector (print name) **Qualified Inspector Signature**

The above signed acknowledges that, to the best of his/her knowledge, all information provided on the forms is accurate and complete.

Maintaining Water Quality

Yes No NA
[ ] [ ] [ ] Is there an increase in turbidity causing a substantial visible contrast to natural conditions at the outfalls?
[ ] [ ] [ ] Is there residue from oil and floating substances, visible oil film, or globules or grease at the outfalls?
[ ] [ ] [ ] All disturbance is within the limits of the approved plans.
[ ] [ ] [ ] Have receiving lake/bay, stream, and/or wetland been impacted by silt from project?

Housekeeping

1. General Site Conditions

Yes No NA
[ ] [ ] [ ] Is construction site litter, debris and spoils appropriately managed?
[ ] [ ] [ ] Are facilities and equipment necessary for implementation of erosion and sediment control in working order and/or properly maintained?
[ ] [ ] [ ] Is construction impacting the adjacent property?
[ ] [ ] [ ] Is dust adequately controlled?

2. Temporary Stream Crossing

Yes No NA
[ ] [ ] [ ] Maximum diameter pipes necessary to span creek without dredging are installed.
[ ] [ ] [ ] Installed non-woven geotextile fabric beneath approaches.
[ ] [ ] [ ] Is fill composed of aggregate (no earth or soil)?
[ ] [ ] [ ] Rock on approaches is clean enough to remove mud from vehicles & prevent sediment from entering stream during high flow.

3. Stabilized Construction Access

Yes No NA
[ ] [ ] [ ] Stone is clean enough to effectively remove mud from vehicles.
[ ] [ ] [ ] Installed per standards and specifications?
[ ] [ ] [ ] Does all traffic use the stabilized entrance to enter and leave site?
[ ] [ ] [ ] Is adequate drainage provided to prevent ponding at entrance?

Runoff Control Practices

1. Excavation Dewatering

Yes No NA
[ ] [ ] [ ] Upstream and downstream berms (sandbags, inflatable dams, etc.) are installed per plan.
[ ] [ ] [ ] Clean water from upstream pool is being pumped to the downstream pool.
[ ] [ ] [ ] Sediment laden water from work area is being discharged to a silt-trapping device.
[ ] [ ] [ ] Constructed upstream berm with one-foot minimum freeboard.

Runoff Control Practices (continued)

2. Flow Spreader

Yes No NA

[ ] [ ] [ ] Installed per plan.
[ ] [ ] [ ] Constructed on undisturbed soil, not on fill, receiving only clear, non-sediment laden flow.
[ ] [ ] [ ] Flow sheets out of level spreader without erosion on downstream edge.

3. Interceptor Dikes and Swales

Yes No NA

[ ] [ ] [ ] Installed per plan with minimum side slopes 2H:1V or flatter.
[ ] [ ] [ ] Stabilized by geotextile fabric, seed, or mulch with no erosion occurring.
[ ] [ ] [ ] Sediment-laden runoff directed to sediment trapping structure

4. Stone Check Dam

Yes No NA

[ ] [ ] [ ] Is channel stable? (flow is not eroding soil underneath or around the structure).
[ ] [ ] [ ] Check is in good condition (rocks in place and no permanent pools behind the structure).
[ ] [ ] [ ] Has accumulated sediment been removed?.

5. Rock Outlet Protection

Yes No NA

[ ] [ ] [ ] Installed per plan.
[ ] [ ] [ ] Installed concurrently with pipe installation.

Soil Stabilization

1. Topsoil and Spoil Stockpiles

Yes No NA

[ ] [ ] [ ] Stockpiles are stabilized with vegetation and/or mulch.
[ ] [ ] [ ] Sediment control is installed at the toe of the slope.

2. Revegetation

Yes No NA

[ ] [ ] [ ] Temporary seedings and mulch have been applied to idle areas.
[ ] [ ] [ ] 4 inches minimum of topsoil has been applied under permanent seedings

Sediment Control Practices

1. Silt Fence and Linear Barriers

Yes No NA

[ ] [ ] [ ] Installed on Contour, 10 feet from toe of slope (not across conveyance channels).
[ ] [ ] [ ] Joints constructed by wrapping the two ends together for continuous support.
[ ] [ ] [ ] Fabric buried 6 inches minimum.
[ ] [ ] [ ] Posts are stable, fabric is tight and without rips or frayed areas.
Sediment accumulation is ___% of design capacity.

Sediment Control Practices (continued)

2. Storm Drain Inlet Protection (Use for Stone & Block; Filter Fabric; Curb; or, Excavated; Filter Sock or Manufactured practices)

Yes No NA

[ ] [ ] [ ] Installed concrete blocks lengthwise so open ends face outward, not upward.
[ ] [ ] [ ] Placed wire screen between No. 3 crushed stone and concrete blocks.
[ ] [ ] [ ] Drainage area is 1acre or less.
[ ] [ ] [ ] Excavated area is 900 cubic feet.
[ ] [ ] [ ] Excavated side slopes should be 2:1.
[ ] [ ] [ ] 2" x 4" frame is constructed and structurally sound.
[ ] [ ] [ ] Posts 3-foot maximum spacing between posts.
[ ] [ ] [ ] Fabric is embedded 1 to 1.5 feet below ground and secured to frame/posts with staples at max 8-inch spacing.
[ ] [ ] [ ] Posts are stable, fabric is tight and without rips or frayed areas.
[ ] [ ] [ ] Manufactured insert fabric is free of tears and punctures.
[ ] [ ] [ ] Filter Sock is not torn or flattened and fill material is contained within the mesh sock.

Sediment accumulation ___% of design capacity.

3. Temporary Sediment Trap

Yes No NA

[ ] [ ] [ ] Outlet structure is constructed per the approved plan or drawing.
[ ] [ ] [ ] Geotextile fabric has been placed beneath rock fill.
[ ] [ ] [ ] Sediment trap slopes and disturbed areas are stabilized.

Sediment accumulation is ___% of design capacity.

4. Temporary Sediment Basin

Yes No NA

[ ] [ ] [ ] Basin and outlet structure constructed per the approved plan.
[ ] [ ] [ ] Basin side slopes are stabilized with seed/mulch.
[ ] [ ] [ ] Drainage structure flushed and basin surface restored upon removal of sediment basin facility.
[ ] [ ] [ ] Sediment basin dewatering pool is dewatering at appropriate rate.

Sediment accumulation is ___% of design capacity.

Note: Not all erosion and sediment control practices are included in this listing. Add additional pages to this list as required by site specific design. All practices shall be maintained in accordance with their respective standards.

Construction inspection checklists for post-development stormwater management practices can be found in Appendix F of the New York Stormwater Management Design Manual.

CONSTRUCTION DURATION INSPECTIONS

b. Modifications to the SWPPP (To be completed as described below)

The Operator shall amend the SWPPP whenever:

1. There is a significant change in design, construction, operation, or maintenance which may have a significant effect on the potential for the discharge of pollutants to the waters of the United States and which has not otherwise been addressed in the SWPPP; or
2. The SWPPP proves to be ineffective in:
   a. Eliminating or significantly minimizing pollutants from sources identified in the SWPPP and as required by this permit; or
   b. Achieving the general objectives of controlling pollutants in stormwater discharges from permitted construction activity; and
3. Additionally, the SWPPP shall be amended to identify any new contractor or subcontractor that will implement any measure of the SWPPP.

Modification & Reason:

b. Operators Certification

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. Further, I hereby certify that the SWPPP meets all Federal, State, and local erosion and sediment control requirements. I am aware that false statements made herein are punishable as a class A misdemeanor pursuant to Section 210.45 of the Penal Law. "

Name (please print):_____

Title _____ **Date:**_____

Address: _____

Phone: _____ **Email:**_____

Signature:_____

c. Qualified Professional's Credentials & Certification

" I hereby certify that I meet the criteria set forth in the General Permit to conduct site inspections for this project and that the appropriate erosion and sediment controls described in the SWPPP and as described in the following Pre-construction Site Assessment Checklist have been adequately installed or implemented, ensuring the overall preparedness of this site for the commencement of construction."

Name (please print): _____

Title _____ **Date:** _____

Address: _____

Phone: _____ **Email:** _____

Signature: _____

d. Contractors Certification Statement

"I hereby certify that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the qualified inspector during a site inspection. I also understand that the owner or operator must comply with the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings."

_____

Signature of Contractor Date

_____

Print Name Title

_____

Signature of Trained Contractor Date

_____

Print Name of Trained Contractor Title

Name of Contracting Firm _____

Street Address _____

City, State, Zip _____

Telephone No. _____

A copy of this statement shall be retained as part of the Stormwater Pollution Prevention Plan (SWPPP) for a period off at least five (5) years after the subject property is stabilized.

APPENDIX E

Project and Owner Information

Site Data:

4 Baldwin Place Road
Town of Carmel, New York 10541
Area: 30.53 acres ±

Owner Information:

Bernad Creations LTD
124 Ridge Road
Montgomery, NY 12549

Parties Responsible for Implementation of the Short and Long Term Maintenance Plan:

Bernad Creations LTD
124 Ridge Road
Montgomery, NY 12549

and or the current owner(s) of the subject property.

Qualified Professional Responsible for Inspection of the Stormwater Pollution Prevention Plan:

Insite Engineering, Surveying & Landscape Architecture, P.C.
3 Garrett Place
Carmel, New York 10512
845-225-96

APPENDIX F

Bioretention Filter Sizing Calculation

SMP 4.1BP - NYSDEC Bioretention Filter (Design F-4)

Project: DPD
Project #: 22242.100
Date: 5/12/2023

INSITE ENGINEERING, SURVEYING & LANDSCAPE ARCHITECTURE, P.C.

1a. WQv Required for Downstream SMP = 0.082 ac-ft 3,572 c.f.

1b. Subcatchment % Imperviousness = 50.0% %

2. Required Practice Volume

2a. Total required volume = 75% of WQv (in filter and pretreatment) = 2,679 c.f.

2b. Total volume provided in filter = = 2,688 c.f.

3. Pretreatment Requirements:

Pretreatment will be provided by a gravel diaphraghm and grass filter strip.

4. Required Filter Area:

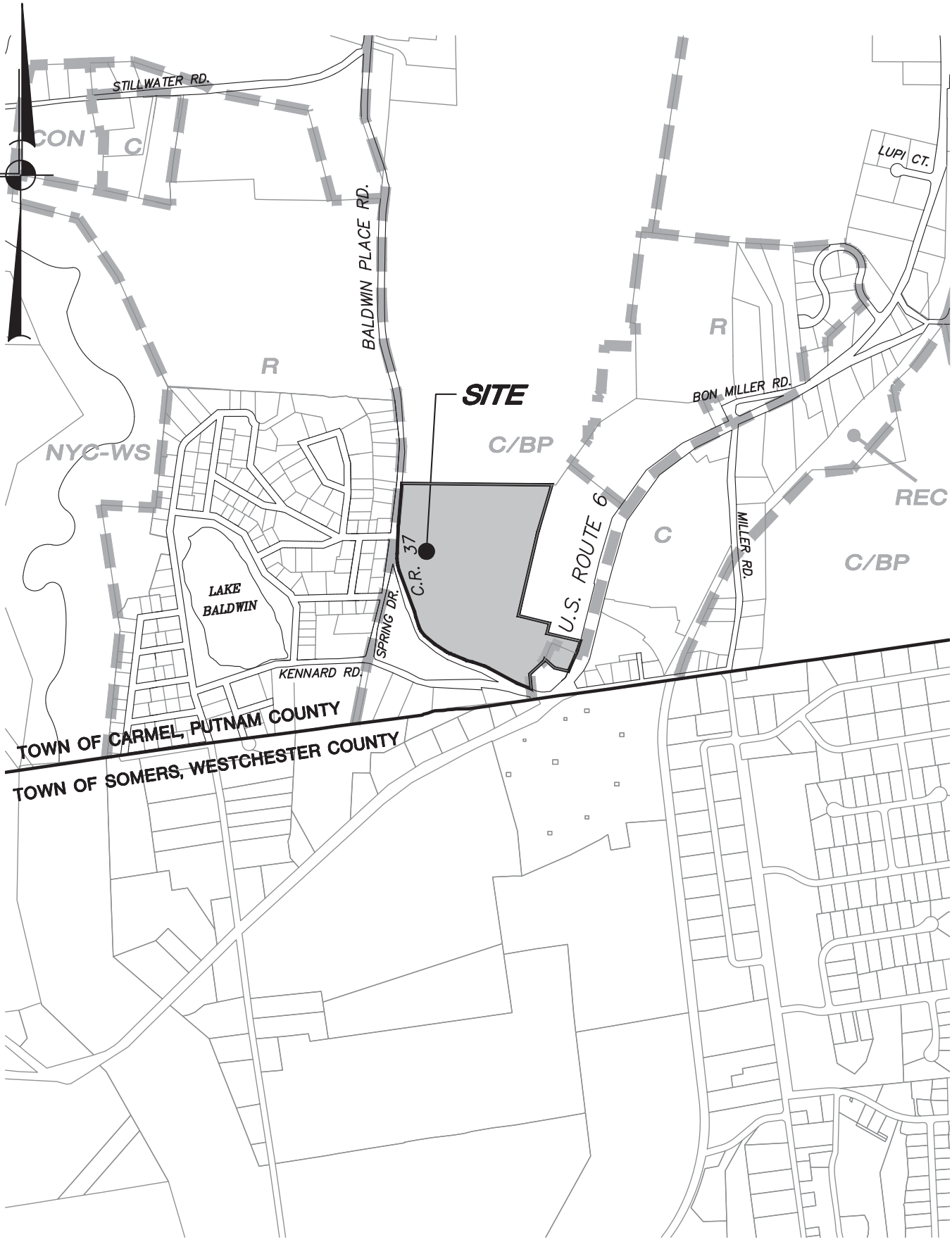
4a. Required Filter Area = $\frac{WQv\ (df)}{k\ (hf + df) + tf}$

df=	2.50	ft.
hf=	0.25	ft.
k=	0.50	ft./day
tf=	2.00	days
Required Filter Area=	3247	s.f.

4b. Provided Filter Area = 5,100 s.f.

4c. Volume provided in filter= 2,688 c.f.

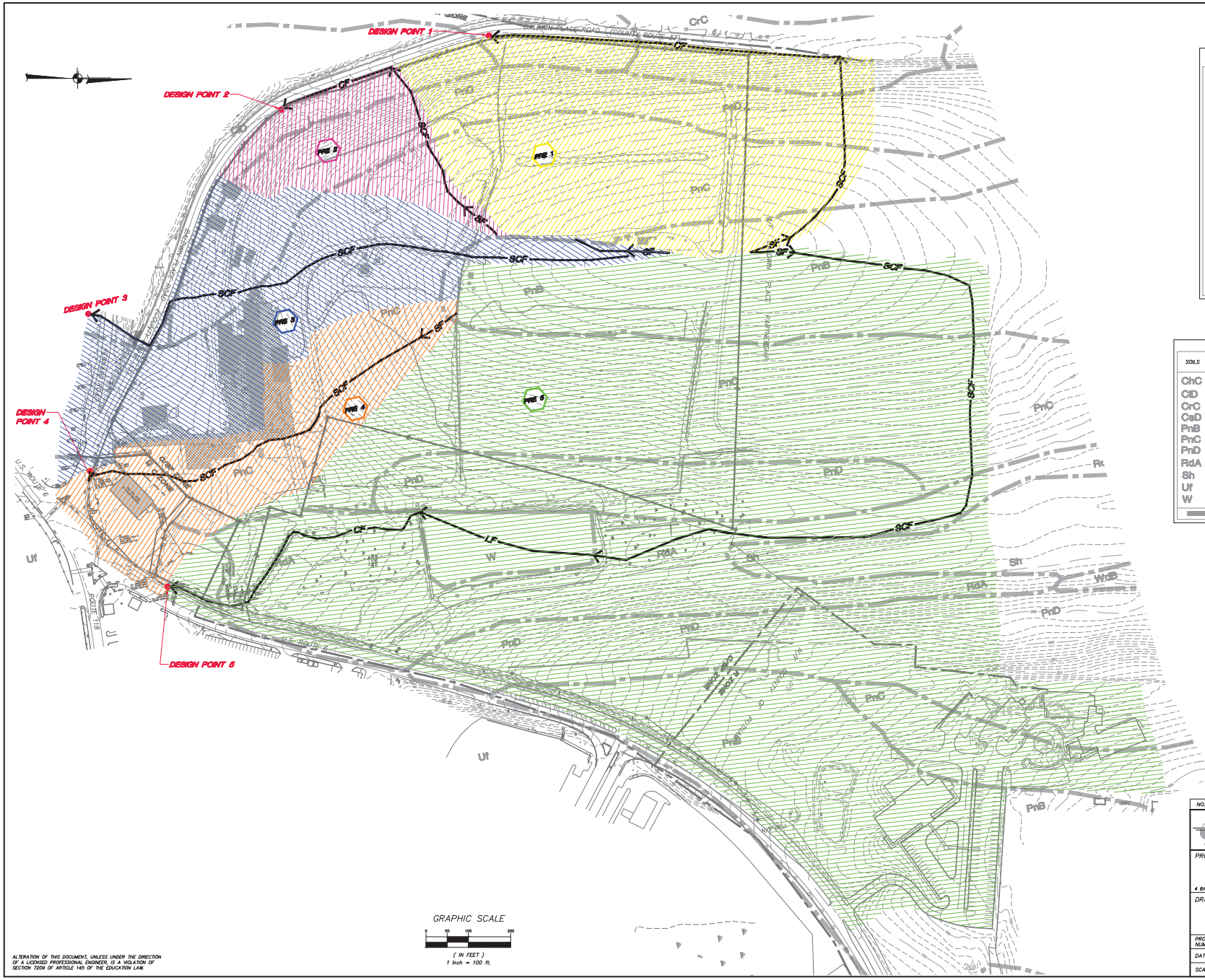
FIGURES



PROJECT:	DPD – SELF STORAGE
	4 BALDWIN PLACE ROAD, TOWN OF CARMEL, PUTNAM CO., NEW YORK
DRAWING:	LOCATION MAP

PREPARED BY:
INSITE
ENGINEERING, SURVEYING & LANDSCAPE ARCHITECTURE, P.C.
3 Garrett Place • Carmel, New York 10512
Phone (845) 225-9690 • Fax (845) 225-9717
www.insite-eng.com

DATE:	2-28-23
SCALE:	1" = 1000'
PROJECT NO.:	22242.100
FIGURE:	1



LEGEND

SUB 6	SUBCATCHMENT
SF →	TIME OF CONCENTRATION SHEET FLOW
SCF →	TIME OF CONCENTRATION SHALLOW CONCENTRATED FLOW
CF →	TIME OF CONCENTRATION CHANNEL FLOW
PF →	TIME OF CONCENTRATION PIPE FLOW
LF →	TIME OF CONCENTRATION LAKE FLOW
DESIGN POINT	DESIGN POINT
	SUBCATCHMENT CONTRIBUTING AREA

SOILS LEGEND

SOILS	DESCRIPTION	HYDROLOGICAL GROUP
ChC	Charlton loam, 8% to 15% slopes	B
CtD	Charlton loam, 15% to 25% slopes, very stony	B
CrC	Charlton–Chatfield complex, rolling, very rocky	B
CsD	Chatfield–Charlton complex, hilly, very rocky	B
PnB	Paxton fine sandy loam, 2% to 8% slopes	C
PnC	Paxton fine sandy loam, 8% to 15% slopes	C
PnD	Paxton fine sandy loam, 15% to 25% slopes	C
RdA	Ridgebury loam, 0% to 3% slopes	D
Sh	Sun loam	D
Uf	Urban Land	D
W	Water	
	NRCS Soil Boundary Line	

GRAPHIC SCALE

0 50 100 200

(IN FEET)
1 inch = 100 ft.

NO.	DATE	REVISION	BY

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ENGINEERING, SURVEYING & LANDSCAPE ARCHITECTURE, P.C.
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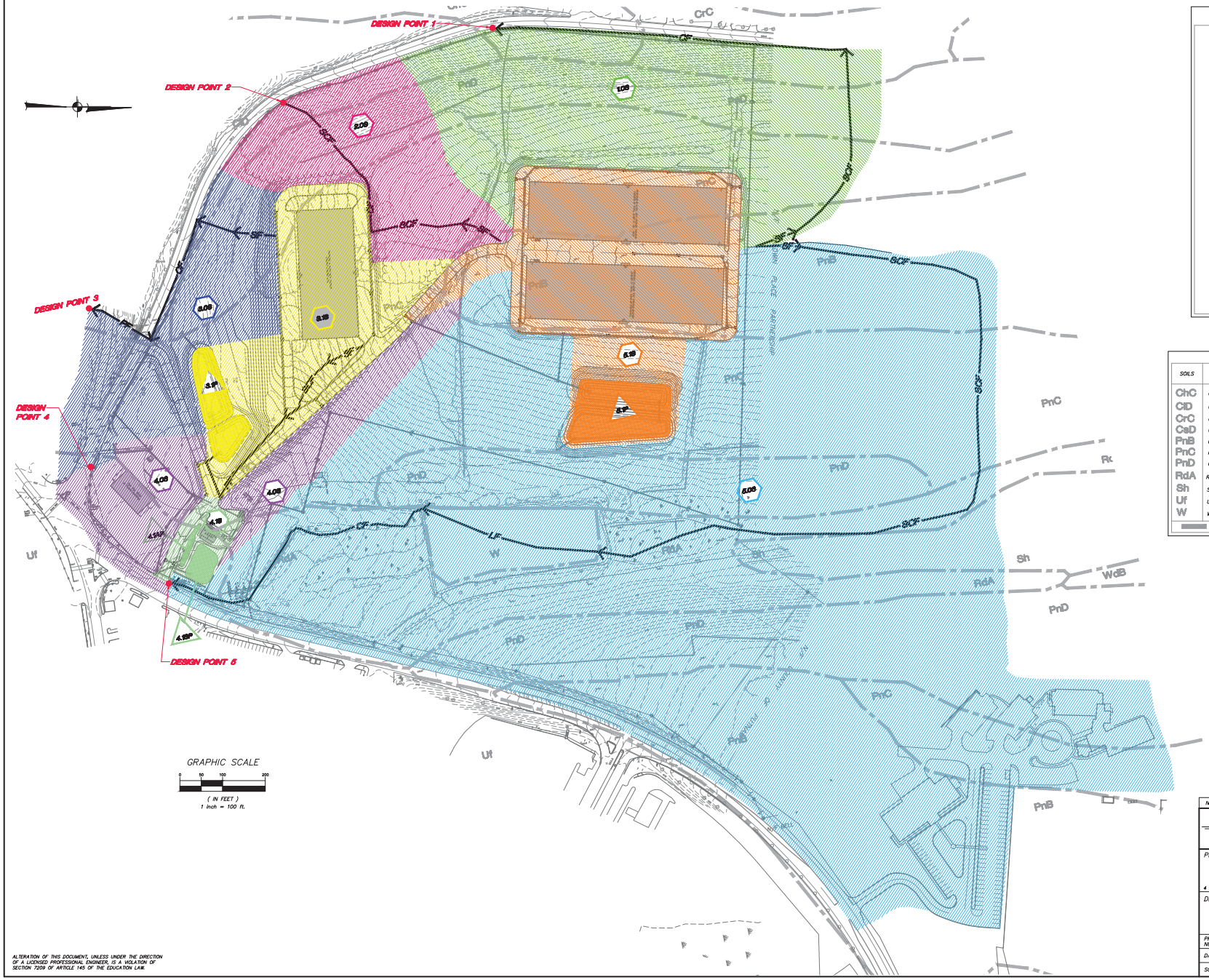
Carmel, NY 10512
(845) 225-9690
(845) 225-9717 fax
www.insite-eng.com

PROJECT:
DPD – SELF STORAGE
4 BALDWIN PLACE ROAD, TOWN OF CARMEL, PUTNAM CO., NEW YORK

DRAWING:
PRE-DEVELOPMENT DRAINAGE MAP

PROJECT NUMBER	22242.100	PROJECT MANAGER	R.D.W
DATE	5-12-23	DRAWN BY	J.J.S
SCALE	1" = 100'	CHECKED BY	J.W.M

DRAWING NO.
FIG-2



LEGEND

- 1.1S — SUBCATCHMENT
- 1.1P — STORMWATER MANAGEMENT PRACTICE
- SF — TIME OF CONCENTRATION SHEET FLOW
- SCF — TIME OF CONCENTRATION SHALLOW CONCENTRATED FLOW
- CF — TIME OF CONCENTRATION CHANNEL FLOW
- PF — TIME OF CONCENTRATION PIPE FLOW
- LF — TIME OF CONCENTRATION LAKE FLOW
- DESIGN POINT — DESIGN POINT
- SUBCATCHMENT CONTRIBUTING AREA
- STORMWATER MANAGEMENT AREA

SOILS LEGEND

SOILS	DESCRIPTION	HYDROLOGICAL GROUP
ChC	Charlton loam, 8% to 15% slopes	B
CtD	Charlton loam, 15% to 25% slopes, very stony	B
CrC	Charlton–Chatfield complex, rolling, very rocky	B
CsD	Chatfield–Charlton complex, hilly, very rocky	B
PnB	Paxton fine sandy loam, 2% to 8% slopes	C
PnC	Paxton fine sandy loam, 8% to 15% slopes	C
PnD	Paxton fine sandy loam, 15% to 25% slopes	C
RdA	Ridgebury loam, 0% to 3% slopes	D
Sh	Sun loam	D
Uf	Urban Land	D
W	Water	

NRCS Soil Boundary Line

GRAPHIC SCALE

0 50 100 200

(IN FEET)
1 inch = 100 ft.

NO.	DATE	REVISION	BY

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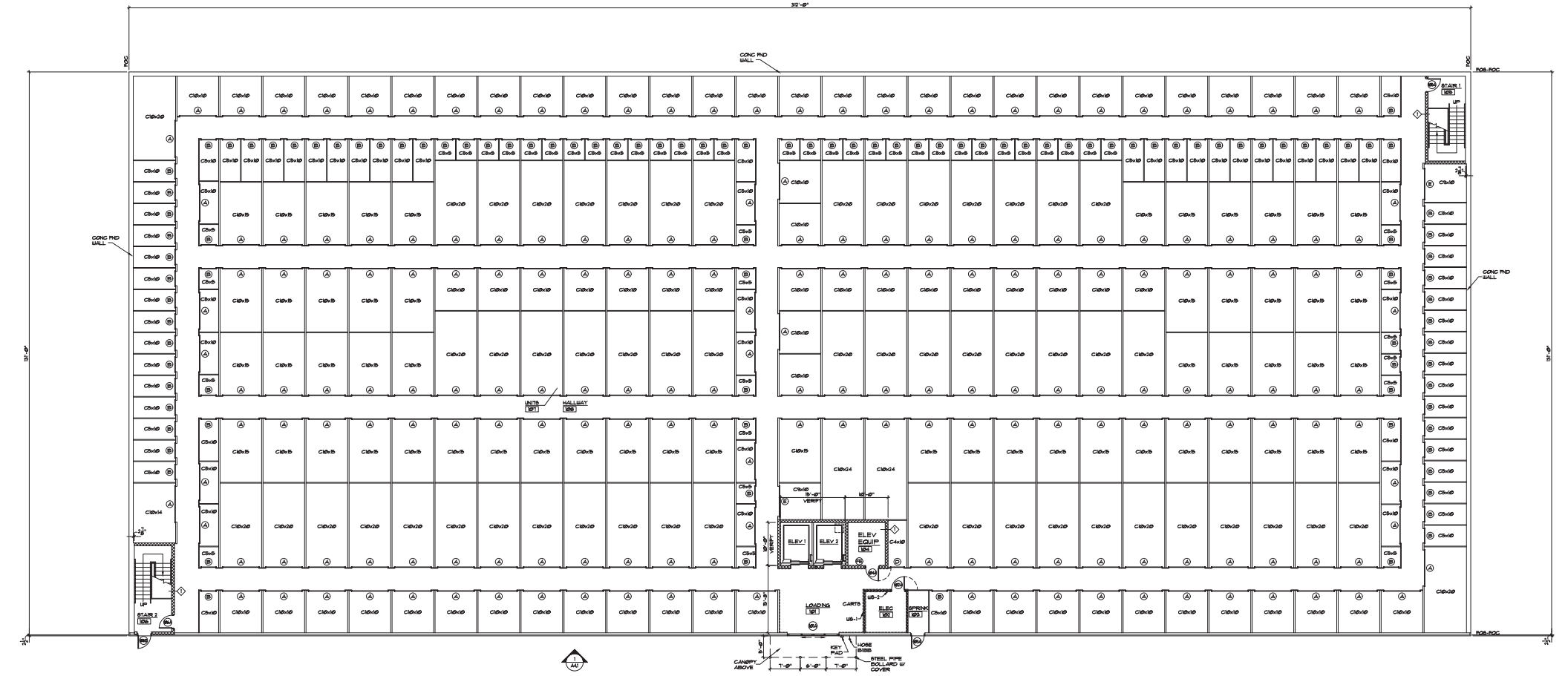
PROJECT:
DPD – SELF STORAGE
4 BALDWIN PLACE ROAD, TOWN OF CARMEL, PUTNAM CO., NEW YORK

DRAWING:
POST DEVELOPMENT DRAINAGE MAP

PROJECT NUMBER	22242.100	PROJECT MANAGER	R.D.W
DATE	5-12-23	DRAWN BY	J.J.S
SCALE	1" = 100'	CHECKED BY	J.P.M

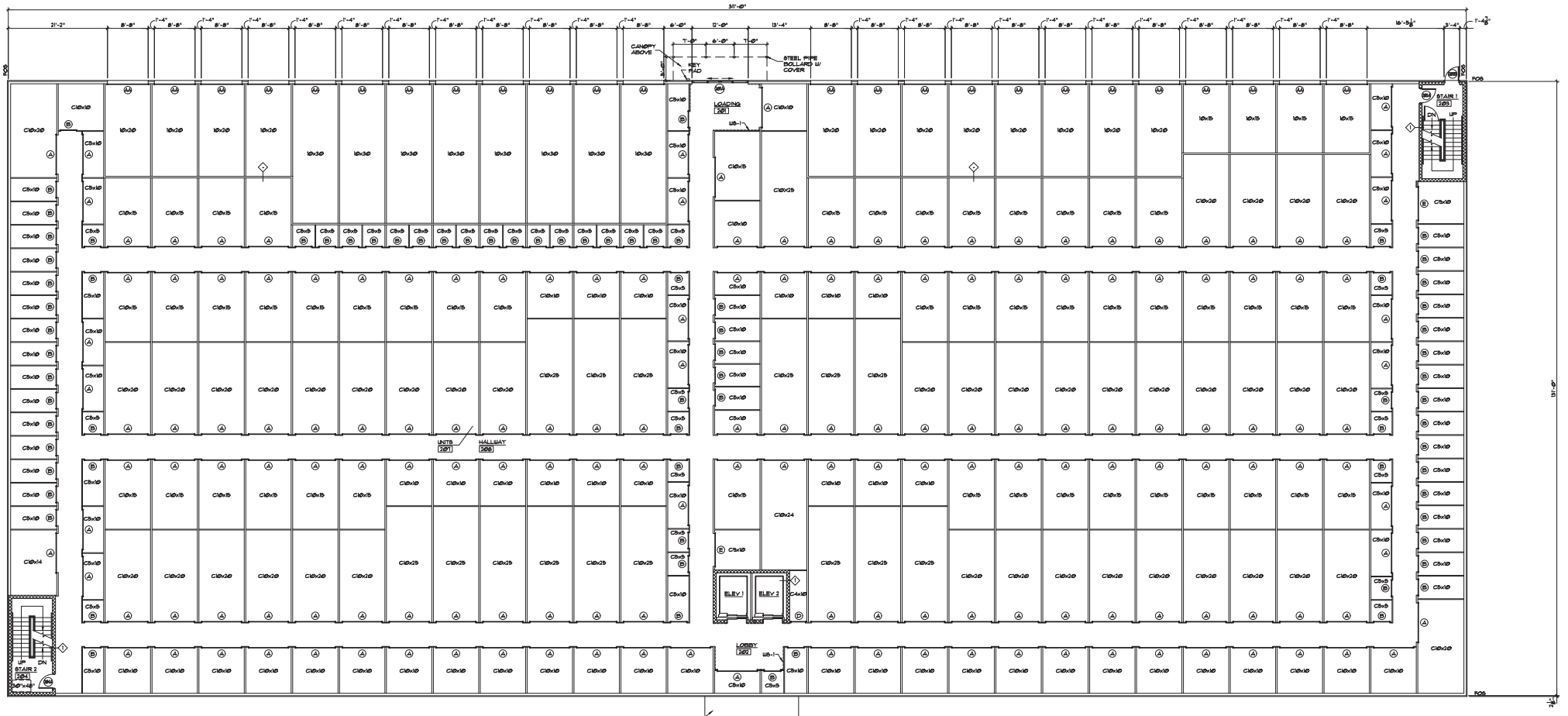
DRAWING NO.
FIG-3



N

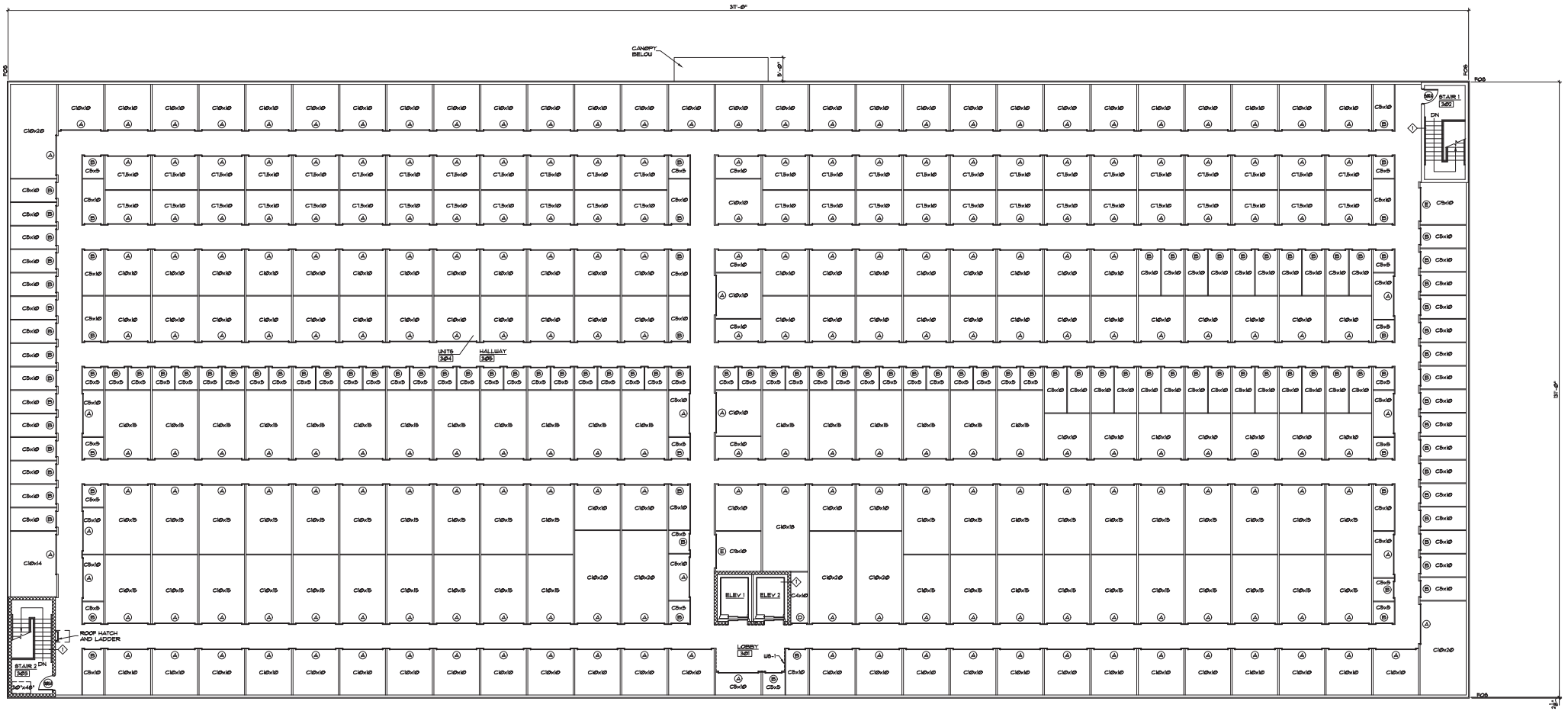
1 / AU FIRST FLOOR PLAN

SCALE: 1/8"=1'-0"



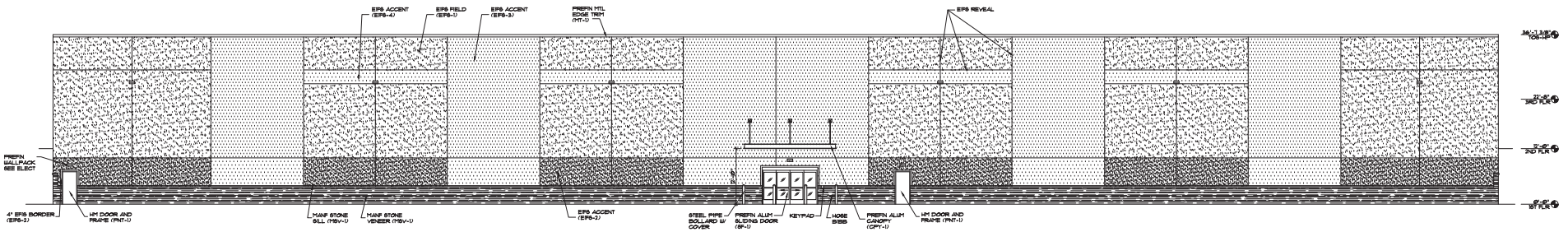
N

1 SECOND FLOOR PLAN-BLDG A
A12 SCALE: 1/8"=1'-0"

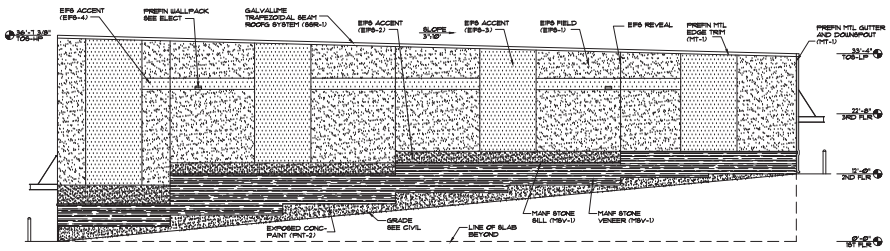


THIRD FLOOR PLAN-BLDG A

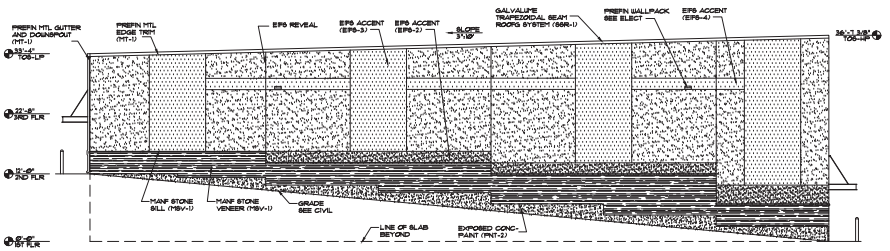
SCALE: 1/8"=1'-0"



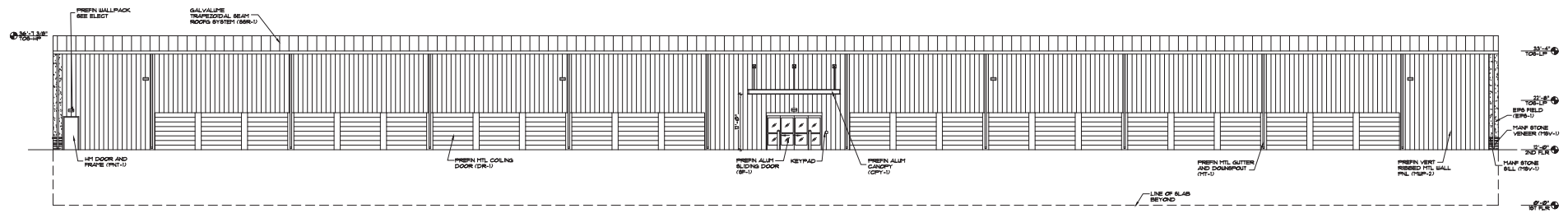
1 A4.1 SOUTH ELEVATION
SCALE: 1/8"=1'-0"



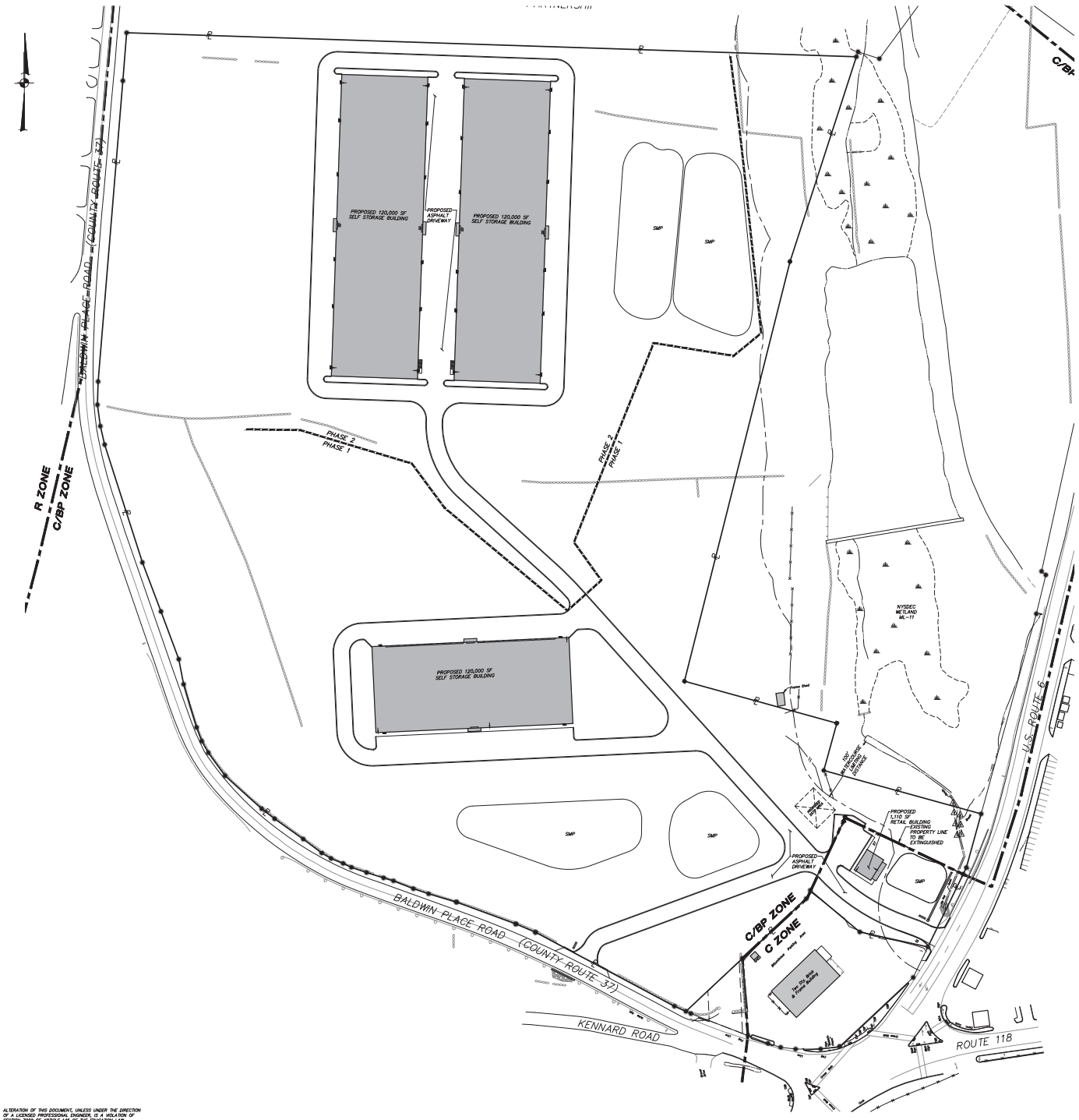
2 A4.1 EAST ELEVATION
SCALE: 1/8"=1'-0"



3 A4.1 WEST ELEVATION
SCALE: 1/8"=1'-0"



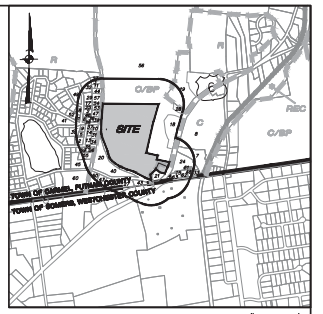
4 A4.1 NORTH ELEVATION
SCALE: 1/8"=1'-0"



500' ADJOINERS:

TOWN OF SOUTHEAST:

1. Crossroads at Baldwin Place
2. Julie Rotta
3. Barbara Horree
4. 103 Baldwin Place LLC
5. Sylvester Malangone
6. Pietro Pensabene
7. Michael Barile
8. Mahopac Improvement Owner LLC
9. Nellie Fortunato
10. Julie McKean
11. Ermal Abazi
12. Jorge Tenesaguayo
13. Frank Del Campo
14. Sid Peechatt
15. Stakmann Co., LLC
16. Andrew Mercatante
17. Barbara Barbato Irrev Family Trust
18. Gaby Chen
19. Senior Housing at Mahopac Hill
20. Robert Rotti, II
21. 102 Rt. 6 LLC
22. Bernod Creations Ltd
23. Dale Bell
24. Putnam Bluff LLC
25. Town Of Carmel
26. Lodovik Burkji
27. Michael Fennessy
28. Hudson Valley Fed Credit Union
29. Peter Hatzgs
30. Edin Browne
31. Mhali Skrlanca
32. Joseph Grace
33. Joseph Mrabie
34. Ljet Nikocevic
35. Robinanne Wallace
36. Peter Fortunato
37. Mathew Longinetti
38. Stanley Jacobs
39. Steven Delatorre
40. Anthony Santangelo, Jr.
41. Joseph Bondi
42. Michael Lean
43. Margaret Ferrara
44. Ermal Abazi
45. Damian McManus
46. John Biddle
47. Deborah DeLuca-Parchen
48. Baldwin Place Realty LLC
49. Jonny Reinoso
50. Vincent Serio
51. Gabriela Ghitu
52. Pong Pong Fu
53. Frank Varrichchio
54. Frank Lisi
55. Nikola Majewski
56. Baldwin Hills Realty LLC
57. Joseph Covarretto Irrev Trust
58. Rui DaCosta
59. Robert Stauffer
60. Town of Carmel
61. Putnam Bluff LLC
62. Baldwin Place Realty LLC
63. Stakmann Co., LLC



LOCATION MAP SCALE: 1" = 1,000'±

OWNER:

Bernod Creations Ltd
124 Ridge Road
Montgomery, NY 12549

APPLICANT:

Diamond Point Development
880 Marietta Highway
Suite 630-243
Roswell, GA 30075

SITE DATA:

Total Acreage 30.53 AC.±
Tax Map Nos.:
1. 86.10-1-2 29.86 AC.± (C/BP Zone)
2. 86.10-1-3 0.67 AC.± (C Zone)
Proposed Use: Self Storage & Retail

GENERAL NOTES:

1. Property line, topography, site features and wetlands shown hereon are taken from survey work conducted by Insite Engineering, Surveying & Landscape Architecture, P.C., on March 13, 2023.
2. Curbs, sidewalks, manholes, guide rails, and drainage shall conform to the requirements of § 128 of the Town of Carmel Code.
3. All driveways shall be in accordance with § 128 of the Town of Carmel Code.

GRAPHIC SCALE

0 30 60 120

(IN FEET)
1 inch = 60 ft.

NO.	DATE	REVISION	BY

INSITE
ENGINEERING, SURVEYING & LANDSCAPE ARCHITECTURE, P.C.
3 Garrett Place
Carmel, NY 10512
(845) 225-9690
(845) 225-9717 fax
www.insite-eng.com

PROJECT:
DPD – SELF STORAGE
4 BALDWIN PLACE ROAD, TOWN OF CARMEL, PUTNAM COUNTY, NY

DRAWING:
OVERALL PLAN

PROJECT NUMBER	22242.100	PROJECT MANAGER	R.D.W.	DRAWING NO.	SHEET
DATE	5-15-23	DRAWN BY	M.E.U.	OP-1	1 / X
SCALE	1" = 60'	CHECKED BY	A.D.T.		

Z:\22242\100\01 A Baldwin Place 4400 OP.dwg, 5/10/2023 9:04:54 AM, sunhe, 1:1

GRAPHIC SCALE
0 30 60
(IN FEET)
1 inch = 40 ft.

NO.	DATE	REVISION	BY
1	5-15-23	REVISED PER PB COMMENTS	MEU

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Carmel, NY 10512
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PROJECT:
DPD – SELF STORAGE
4 BALDWIN PLACE ROAD, TOWN OF CARMEL, PUTNAM COUNTY, NY
DRAWING:
EXISTING CONDITIONS PLAN

PROJECT NUMBER	22242.100	PROJECT MANAGER	R.D.W.	DRAWING NO.	SHEET
DATE	3-8-23	DRAWN BY	M.E.U.	EX-1.1	2
SCALE	1" = 40'	CHECKED BY	A.D.T.		X

GRAPHIC SCALE

0 20 40 60

(IN FEET)
1 inch = 40 ft.

NO.	DATE	REVISION	BY
1	5-15-23	REVISED PER PB COMMENTS	MEU

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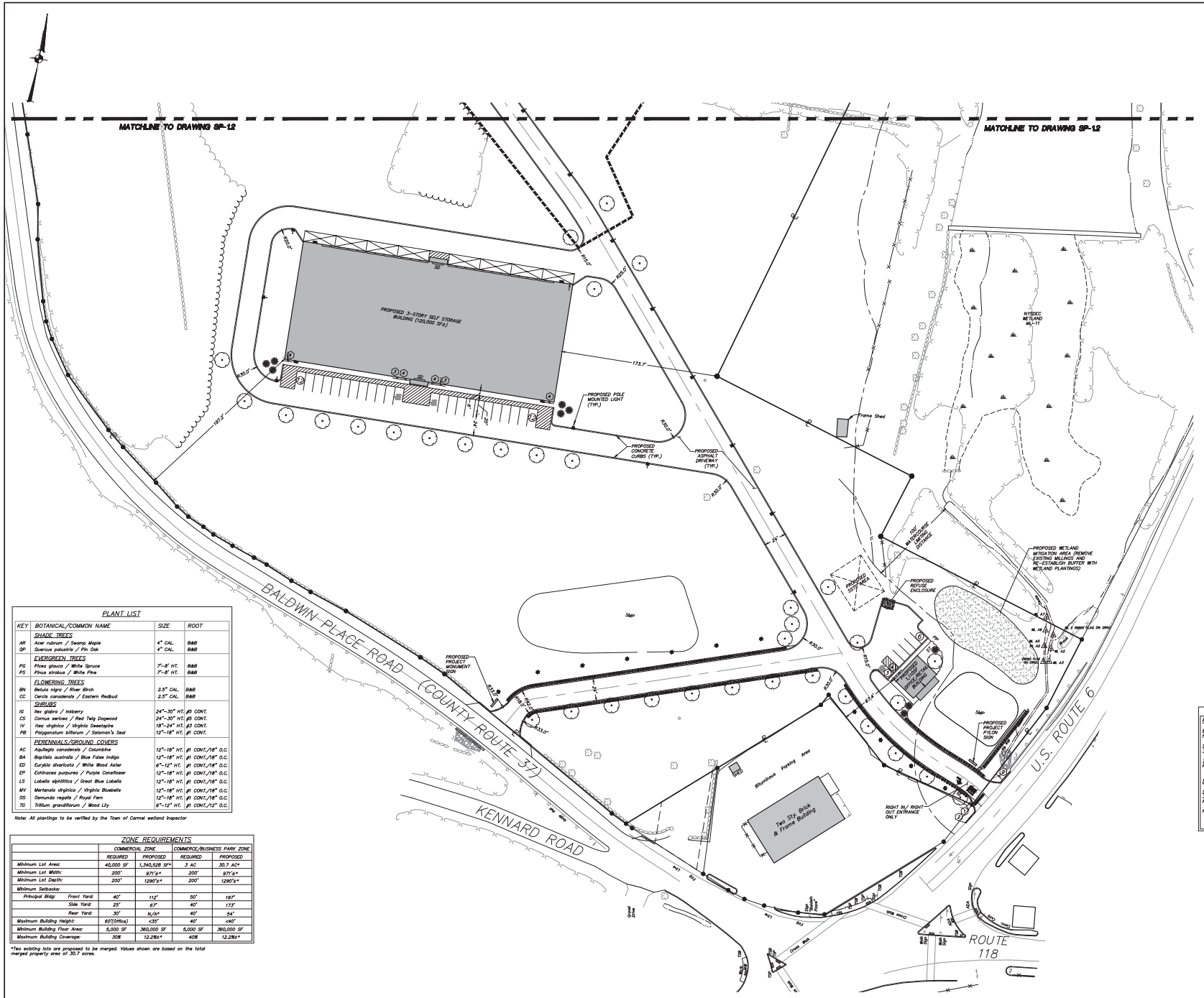
PROJECT:
DPD – SELF STORAGE
4 BALDWIN PLACE ROAD, TOWN OF CARMEL, PUTNAM COUNTY, NY

DRAWING:
EXISTING CONDITIONS PLAN

PROJECT NUMBER	22242.100	PROJECT MANAGER	R.D.W.	DRAWING NO.	SHEET
DATE	3-8-23	DRAWN BY	M.E.U.	EX-1.2	3 / X
SCALE	1" = 40'	CHECKED BY	A.D.T.		



LEGEND

- EXISTING PROPERTY LINE
- EXISTING EASEMENT
- EXISTING STONE WALL
- EXISTING WETLAND LINE AND SYMBOL
- EXISTING WETLAND BUFFER
- EXISTING WATERCOURSE
- EXISTING BRUSH LINE
- EXISTING TREE LINE
- PROPOSED # OF STALLS TO BE STRIPED
- PROPOSED CONCRETE CURB
- PROPOSED DROP CURB & RAMP
- PROPOSED EDGE OF SIDEWALK
- PROPOSED RETAINING WALL
- PROPOSED PAINTED CROSSWALK
- PROPOSED PAINTED STOPBAR
- PROPOSED DOUBLE YELLOW LINE
- PROPOSED SINGLE BROKEN WHITE LINE
- PROPOSED PAINTED DIRECTIONAL ARROW
- PROPOSED PAINTED HANDICAP PARKING SYMBOL
- PROPOSED ADA COMPLIANT RAMP
- PROPOSED STRIPED ISLAND
- PROPOSED LOADING SPACE
- PROPOSED RECYCLE / TRASH CONTAINER / REFUSE ENCLOSURE
- PROPOSED SINGLE POLE SIGN
- PROPOSED DOUBLE POLE SIGN
- PROPOSED DOUBLE SIDED SIGN
- PROPOSED BOLLARD
- PROPOSED GUIDE RAIL
- PROPOSED POLE MOUNTED LIGHT
- PROPOSED POST MOUNTED LIGHT
- PROPOSED BUILDING MOUNTED LIGHT
- PROPOSED DOOR LOCATION
- PROPOSED OVERHEAD DOOR LOCATION
- PROPOSED LANDSCAPING
- PROPOSED TREELINE

SIGN DATA TABLE

LOCATION NO.	TEXT	MUTCD NUMBER	SIZE OF SIGN (s.f.)	DESCRIPTION
1	STOP	R1-1C	30" x 30"	White on Red
2		R3-2	30" x 30"	White Background Black Arrow Red Symbol Black Border
3	ENTRANCE IN OUT	NY R7-8	12" x 18"	Green on White Blue Symbol
	NO PARKING ANY TIME	R7-8P	12" x 6"	Green on White
4	NO PARKING ANY TIME	R7-1	12" x 18"	Red on White

LIGHTING NOTES:

1. All lighting shall be as noted on the plan or approved equal.
2. Style and finish of all luminaires to be selected by owner.
3. Proposed lights will run on photocells during regular business hours, and will run on motion sensors after hours.
4. Type, location, and shading of all proposed lighting shall prevent the spillover of light onto all adjacent residential properties.
5. All light fixtures to be full cutoff to comply with dark sky guidelines.

PARKING / LOADING SUMMARY

PARKING:

RETAIL
1,110 SF @ 1 PARKING SPACE/200SF = 6 REQUIRED

SELF STORAGE
360,000 SF @ 1 PARKING SPACE/10,000SF = 36 SPACES REQUIRED

TOTAL PARKING SPACES REQUIRED = 42 SPACES
PROVIDED = 42 SPACES

LOADING:

SELF STORAGE
360,000 SF @ 1 FOR THE FIRST 10,000 SF, PLUS 1 FOR EVERY ADDITIONAL 20,000 SF = 18 LOADING SPACES REQUIRED
PROVIDED = 32 LOADING SPACES

PLANT LIST

KEY	BOTANICAL/COMMON NAME	SIZE	ROOT
	SHADE TREES		
AR	Acer rubrum / Swamp Maple	4" CAL.	B&B
QP	Quercus palustris / Pin Oak	4" CAL.	B&B
	EVERGREEN TREES		
PG	Picea glauca / White Spruce	7'-8' HT.	B&B
PS	Pinus strobus / White Pine	7'-8' HT.	B&B
	FLOWERING TREES		
BN	Betula nigra / River Birch	2.5" CAL.	B&B
CC	Cercis canadensis / Eastern Redbud	2.5" CAL.	B&B
	SHRUBS		
IG	Ilex glabra / Inkberry	24"-30" HT.	#5 CONT.
CS	Cornus sericea / Red Twig Dogwood	24"-30" HT.	#5 CONT.
IV	Itea virginica / Virginia Sweetspire	18"-24" HT.	#3 CONT.
PB	Polygonatum biflorum / Solomon's Seal	12"-18" HT.	#1 CONT.
	PERENNIALS/GROUND COVERS		
AC	Aquilegia canadensis / Columbine	12"-18" HT.	#1 CONT./18" O.C.
BA	Baptisia australis / Blue False Indigo	12"-18" HT.	#1 CONT./18" O.C.
ED	Eurybia divaricata / White Wood Aster	6"-12" HT.	#1 CONT./18" O.C.
EP	Echinacea purpurea / Purple Coneflower	12"-18" HT.	#1 CONT./18" O.C.
LS	Lobelia siphilitica / Great Blue Lobelia	12"-18" HT.	#1 CONT./18" O.C.
MV	Mertensia virginica / Virginia Bluebells	12"-18" HT.	#1 CONT./18" O.C.
OS	Osmunda regalis / Royal Fern	12"-18" HT.	#1 CONT./18" O.C.
TG	Trillium grandiflorum / Wood Lily	6"-12" HT.	#1 CONT./12" O.C.

Note: All plantings to be verified by the Town of Carmel wetland inspector

ZONE REQUIREMENTS

	COMMERCIAL ZONE		COMMERCE/BUSINESS PARK ZONE	
	REQUIRED	PROPOSED	REQUIRED	PROPOSED
Minimum Lot Area:	40,000 SF	1,340,528 SF*	3 AC	30.7 AC*
Minimum Lot Width:	200'	971'±*	200'	971'±*
Minimum Lot Depth:	200'	1290'±*	200'	1290'±*
Minimum Setbacks:				
Principal Bldg: Front Yard:	40'	112'	50'	197'
Side Yard:	25'	67'	40'	173'
Rear Yard:	30'	N/A*	40'	54'
Maximum Building Height:	60'(Office)	<35'	40'	<40'
Minimum Building Floor Area:	5,000 SF	360,000 SF	5,000 SF	360,000 SF
Maximum Building Coverage:	30%	12.2%±*	40%	12.2%±*

*Two existing lots are proposed to be merged. Values shown are based on the total merged property area of 30.7 acres.

GRAPHIC SCALE
0 20 40 80
(IN FEET)
1 inch = 40 ft.

NO.	DATE	REVISION	BY
1	5-15-23	REVISED PER PB COMMENTS	MEU

INSITE
ENGINEERING, SURVEYING & LANDSCAPE ARCHITECTURE, P.C.
3 Garrett Place
Carmel, NY 10512
(845) 225-9690
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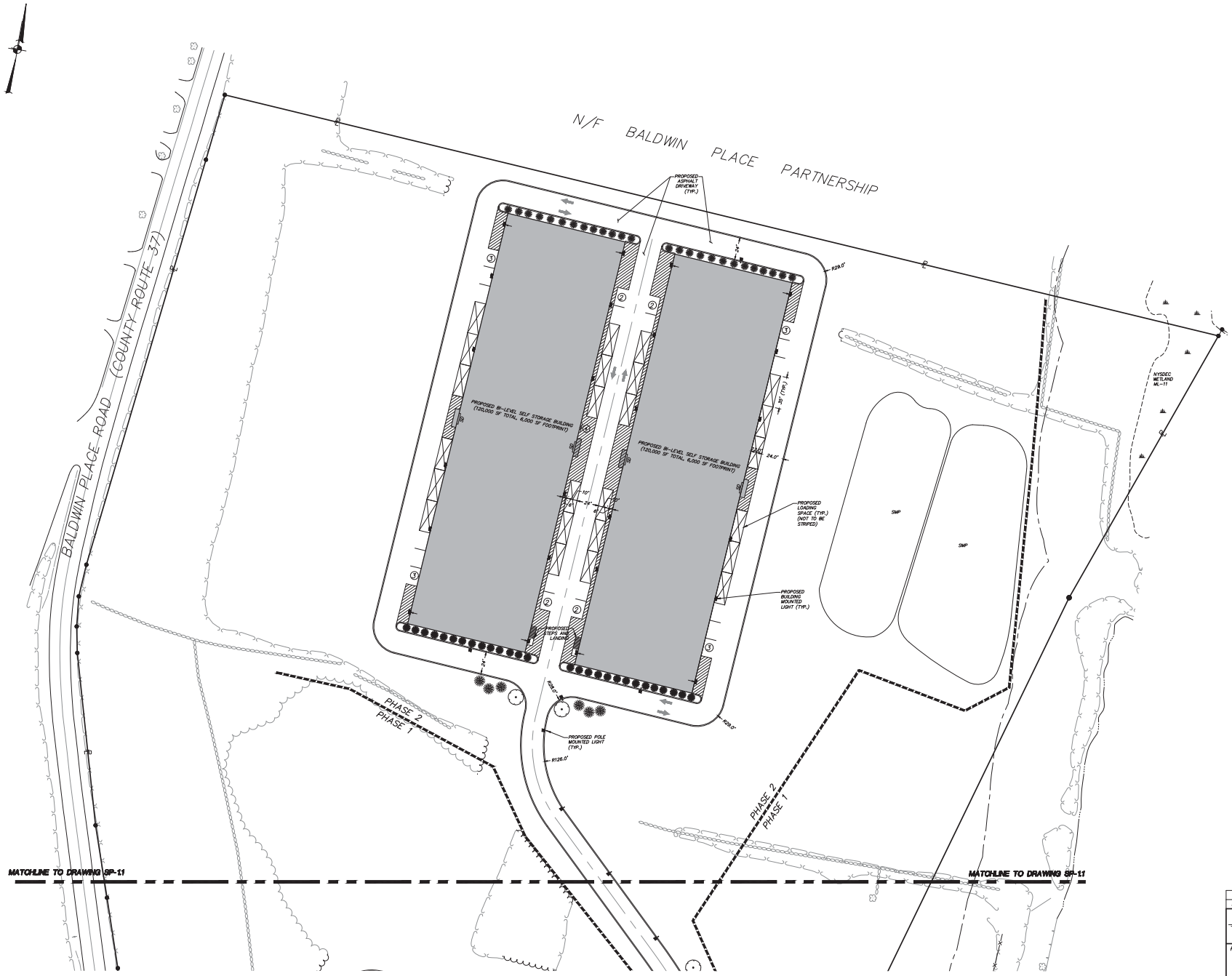
PROJECT:
DPD – SELF STORAGE
4 BALDWIN PLACE ROAD, TOWN OF CARMEL, PUTNAM COUNTY, NY

DRAWING:
LAYOUT & LANDSCAPE PLAN

PROJECT NUMBER	22242.100	PROJECT MANAGER	R.D.W.	DRAWING NO.	SHEET
DATE	3-8-23	DRAWN BY	M.E.U.	SP-1.1	4
SCALE	1" = 40'	CHECKED BY	A.D.T.		X



LEGEND

- EXISTING PROPERTY LINE
- EXISTING EASEMENT
- EXISTING STONE WALL
- EXISTING WETLAND LINE AND SYMBOL
- EXISTING WETLAND BUFFER
- EXISTING WATERCOURSE
- EXISTING BRUSH LINE
- EXISTING TREE LINE
- PROPOSED # OF STALLS TO BE STRIPED
- PROPOSED CONCRETE CURB
- PROPOSED DROP CURB & RAMP
- PROPOSED EDGE OF SIDEWALK
- PROPOSED RETAINING WALL
- PROPOSED PAINTED CROSSWALK
- PROPOSED PAINTED STOPBAR
- PROPOSED DOUBLE YELLOW LINE
- PROPOSED SINGLE BROKEN WHITE LINE
- PROPOSED PAINTED DIRECTIONAL ARROW
- PROPOSED PAINTED HANDICAP PARKING SYMBOL
- PROPOSED ADA COMPLIANT RAMP
- PROPOSED STRIPED ISLAND
- PROPOSED LOADING SPACE
- PROPOSED RECYCLE / TRASH CONTAINER / REFUSE ENCLOSURE
- PROPOSED SINGLE POLE SIGN
- PROPOSED DOUBLE POLE SIGN
- PROPOSED DOUBLE SIDED SIGN
- PROPOSED BOLLARD
- PROPOSED GUIDE RAIL
- PROPOSED POLE MOUNTED LIGHT
- PROPOSED POST MOUNTED LIGHT
- PROPOSED BUILDING MOUNTED LIGHT
- PROPOSED DOOR LOCATION
- PROPOSED OVERHEAD DOOR LOCATION
- PROPOSED LANDSCAPING
- PROPOSED TREELINE

GRAPHIC SCALE

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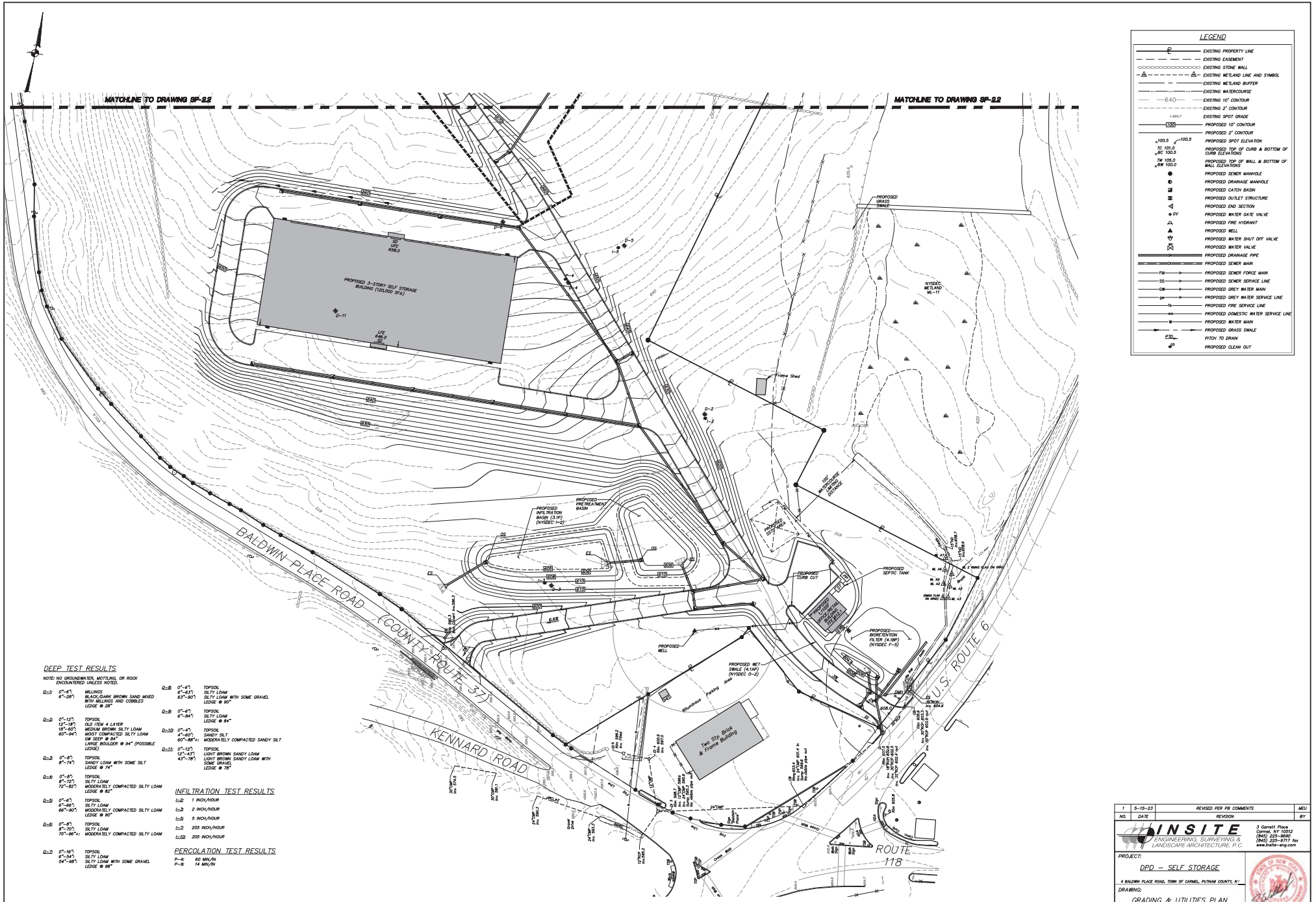
DATE	3-8-23	DRAWN BY	D.S.W.	SP-1.2	5 / X
SCALE	1" = 40'	CHECKED BY	A.D.T.		



LEGEND

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- EXISTING WETLAND BUFFER
- EXISTING WATERCOURSE
- 640 EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- +604.7 EXISTING SPOT GRADE
- 100 PROPOSED 10' CONTOUR
- PROPOSED 2' CONTOUR
- 100.5 / 100.5 PROPOSED SPOT ELEVATION
- TC 101.0 / BC 100.5 PROPOSED TOP OF CURB & BOTTOM OF CURB ELEVATIONS
- TW 105.0 / BW 100.0 PROPOSED TOP OF WALL & BOTTOM OF WALL ELEVATIONS
- PROPOSED SEWER MANHOLE
- PROPOSED DRAINAGE MANHOLE
- PROPOSED CATCH BASIN
- PROPOSED OUTLET STRUCTURE
- PROPOSED END SECTION
- GV PROPOSED WATER GATE VALVE
- PROPOSED FIRE HYDRANT
- PROPOSED WELL
- PROPOSED WATER SHUT OFF VALVE
- PROPOSED WATER VALVE
- PROPOSED DRAINAGE PIPE
- PROPOSED SEWER MAIN
- FM PROPOSED SEWER FORCE MAIN
- SS PROPOSED SEWER SERVICE LINE
- GW PROPOSED GREY WATER MAIN
- gw PROPOSED GREY WATER SERVICE LINE
- fs PROPOSED FIRE SERVICE LINE
- ws PROPOSED DOMESTIC WATER SERVICE LINE
- W PROPOSED WATER MAIN
- PROPOSED GRASS SWALE
- PTD PITCH TO DRAIN
- PROPOSED CLEAN OUT

DEEP TEST RESULTS

NOTE: NO GROUNDWATER, MOTTLING, OR ROCK ENCOUNTERED UNLESS NOTED.

D–1:	0"–6":	MILLINGS
	6"–28":	BLACK/DARK BROWN SAND MIXED WITH MILLINGS AND COBBLES LEDGE @ 28"
D–2:	0"–12":	TOPSOIL
	12"–18":	OLD ITEM 4 LAYER
	18"–60":	MEDIUM BROWN SILTY LOAM
	60"–94":	MOIST COMPACTED SILTY LOAM GW SEEP @ 84" LARGE BOULDER @ 94" (POSSIBLE LEDGE)
D–3:	0"–8":	TOPSOIL
	8"–74":	SANDY LOAM WITH SOME SILT LEDGE @ 74"
D–4:	0"–8":	TOPSOIL
	8"–72":	SILTY LOAM
	72"–82":	MODERATELY COMPACTED SILTY LOAM LEDGE @ 82"
D–5:	0"–6":	TOPSOIL
	6"–66":	SILTY LOAM
	66"–90":	MODERATELY COMPACTED SILTY LOAM LEDGE @ 90"
D–6:	0"–8":	TOPSOIL
	8"–70":	SILTY LOAM
	70"–96"+:	MODERATELY COMPACTED SILTY LOAM
D–7:	0"–16":	TOPSOIL
	6"–54":	SILTY LOAM
	54"–98":	SILTY LOAM WITH SOME GRAVEL LEDGE @ 98"
D–8:	0"–6":	TOPSOIL
	6"–63":	SILTY LOAM
	63"–90":	SILTY LOAM WITH SOME GRAVEL LEDGE @ 90"
D–8:	0"–6":	TOPSOIL
	6"–84":	SILTY LOAM LEDGE @ 84"
D–10:	0"–4":	TOPSOIL
	4"–60":	SANDY SILT
	60"–88"+:	MODERATELY COMPACTED SANDY SILT
D–11:	0"–12":	TOPSOIL
	12"–43":	LIGHT BROWN SANDY LOAM
	43"–78":	LIGHT BROWN SANDY LOAM WITH SOME GRAVEL LEDGE @ 78"

INFILTRATION TEST RESULTS

I–2:	1 INCH/HOUR
I–3:	2 INCH/HOUR
I–5:	5 INCH/HOUR
I–7:	205 INCH/HOUR
I–10:	205 INCH/HOUR

PERCOLATION TEST RESULTS

P–4:	60 MIN/IN
P–9:	14 MIN/IN

GRAPHIC SCALE

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4 BALDWIN PLACE ROAD, TOWN OF CARMEL, PUTNAM COUNTY, NY

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GRADING & UTILITIES PLAN

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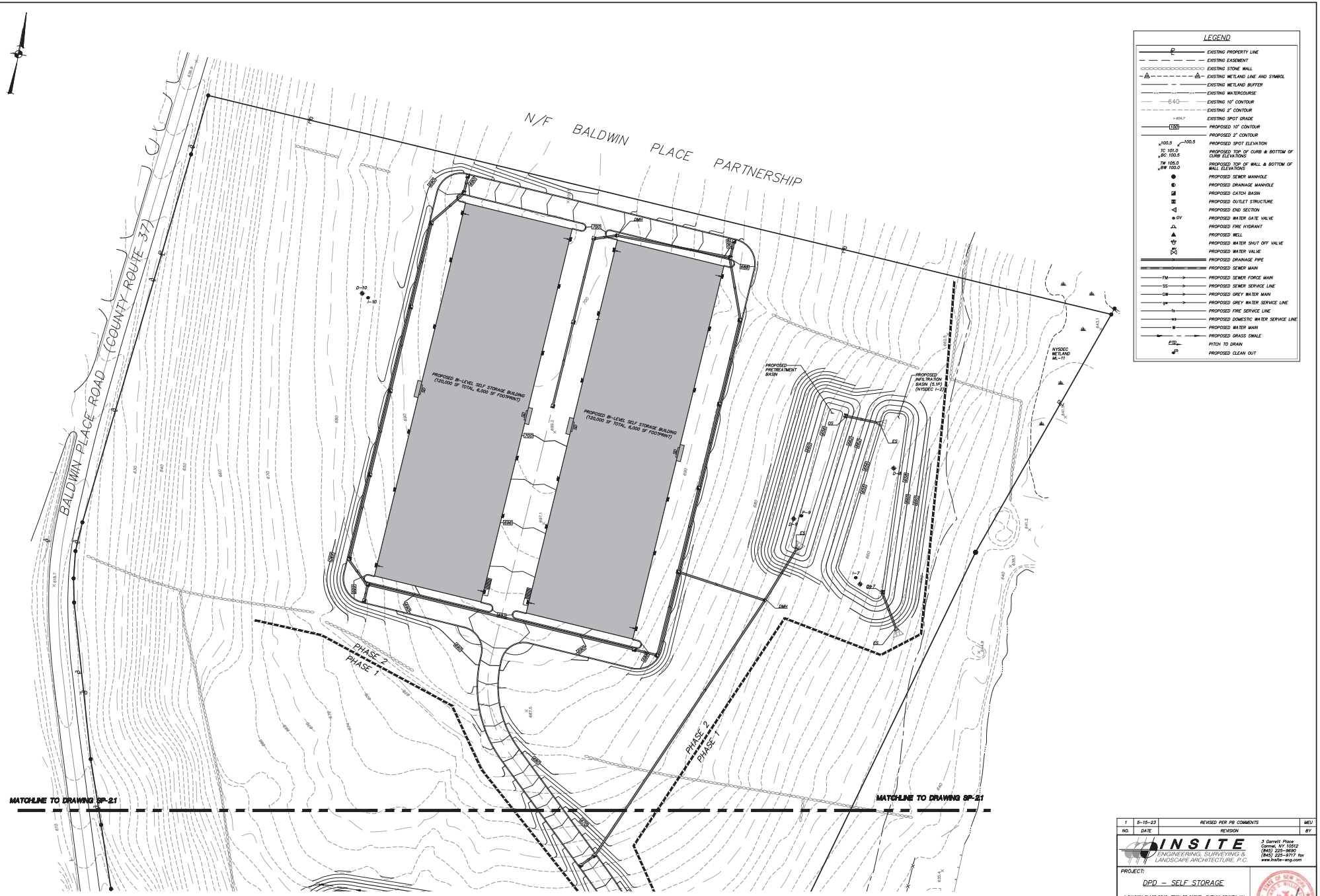

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- PROPOSED WATER MAIN
- PROPOSED GRASS SWALE
- PITCH TO DRAIN
- PROPOSED CLEAN OUT

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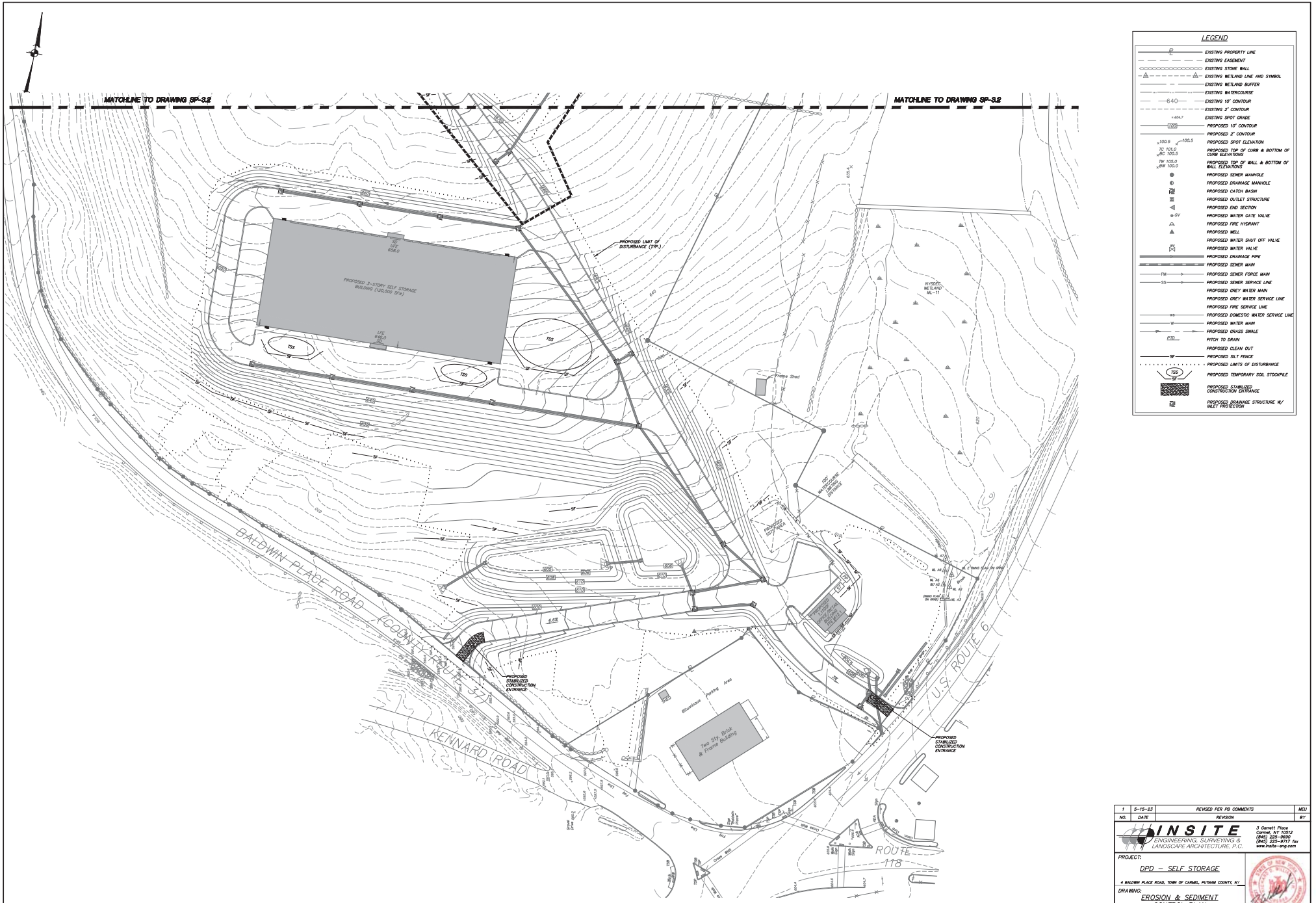

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- PROPOSED LIMITS OF DISTURBANCE
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- PROPOSED STABILIZED CONSTRUCTION ENTRANCE
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DRAWING:
EROSION & SEDIMENT CONTROL PLAN

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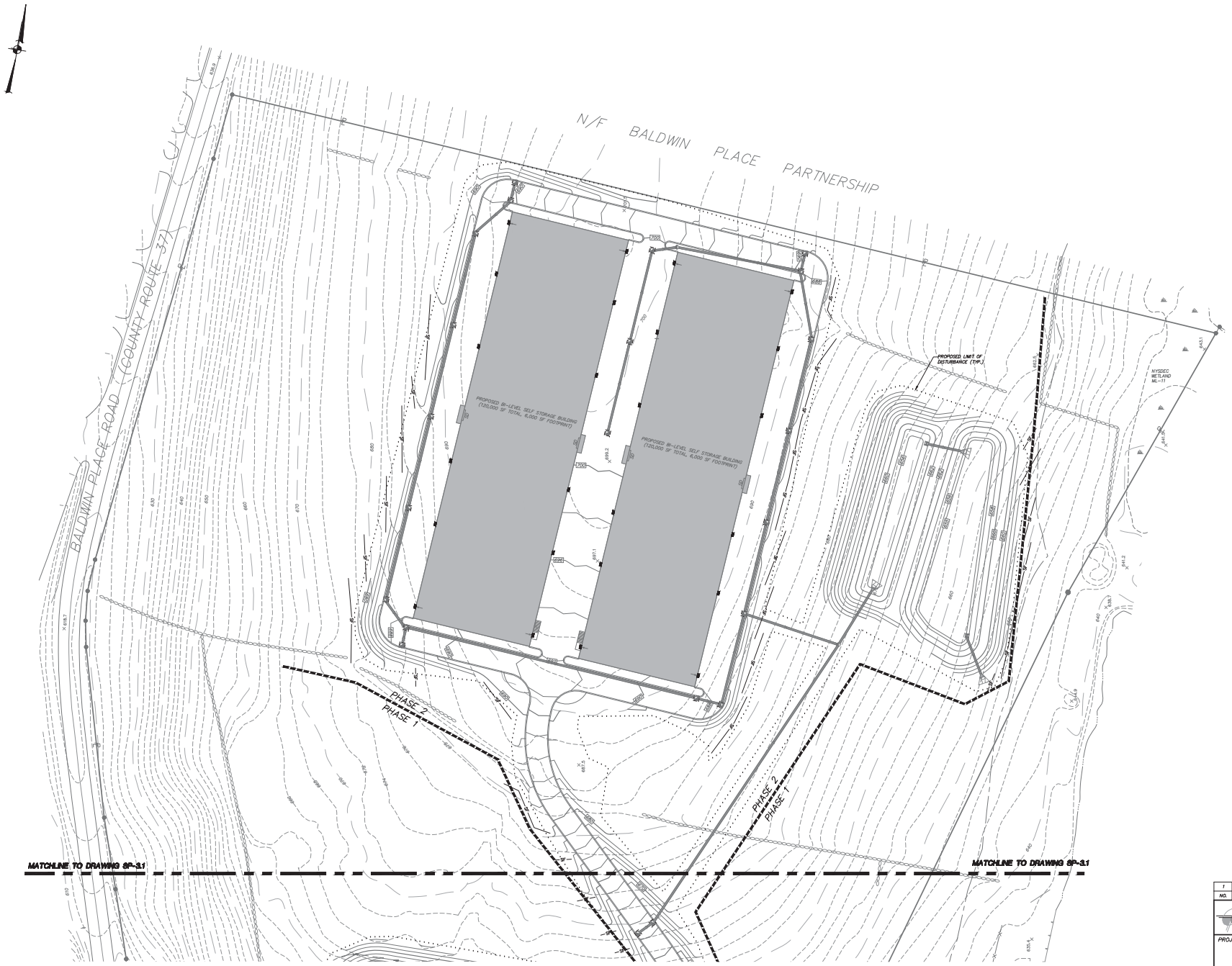

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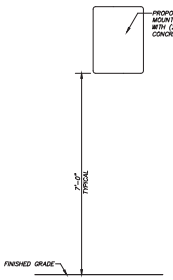
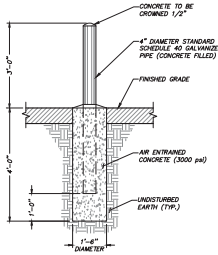


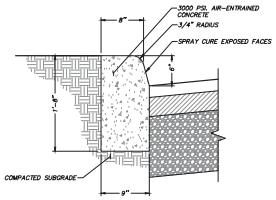
NOTE: FOR HANDICAP PARKING SIGNAGE, SIGNS SHALL BE INSTALLED AT A CLEAR HEIGHT OF BETWEEN 5'-0" AND 7'-0" ABOVE GRADE OF PARKING SPACE AND SUCH THAT SIGNS SHALL NOT BE OBSCURED BY A VEHICLE PARKED IN THE SPACE.

BUILDING MOUNTED SIGN DETAIL
(N.T.S.)



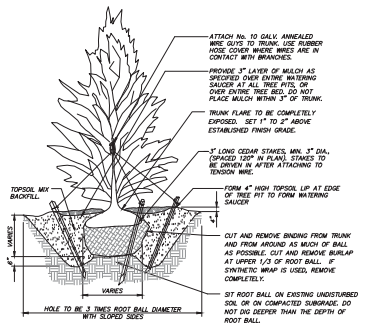
NOTE:
BOLLARD SLEEVES STYLE AND COLOR TO BE DETERMINED BY OWNER.

STEEL BOLLARD DETAIL



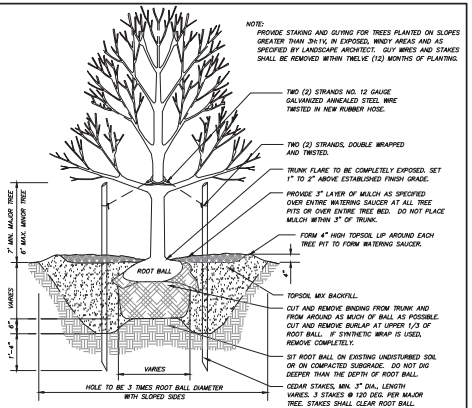
NOTE:
TRANSVERSE JOINTS 1/2" WIDE SHALL BE INSTALLED IN THE CURB 10'-0" APART AND SHALL BE FILLED WITH CELLULAR COMPRESSION MATERIALS AS SPECIFIED, RECESSED 1/4" IN FROM FRONT FACE AND TOP OF CURB.

CONCRETE CURB DETAIL
(N.T.S.)

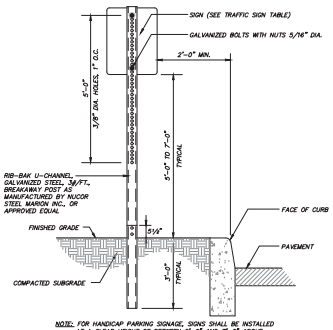


NOTE:
PROVIDE STAKING AND GUYING FOR TREES PLANTED ON SLOPES GREATER THAN 3H:1V, IN EXPOSED, WINDY AREAS AND AS SPECIFIED BY LANDSCAPE ARCHITECT. GUY WIRES AND STAKES SHALL BE REMOVED WITHIN TWELVE MONTHS OF PLANTING.

EVERGREEN TREE PLANTING DETAIL
(N.T.S.)



TREE PLANTING DETAIL
(N.T.S.)



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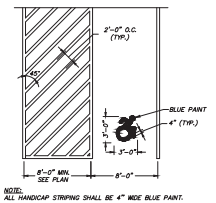
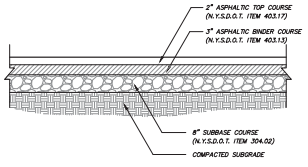
TRAFFIC SIGN DETAIL
(N.T.S.)

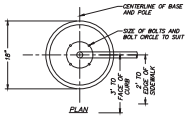


NOTE:
ALL HANDICAP STRIPING SHALL BE 4" WIDE BLUE PAINT.

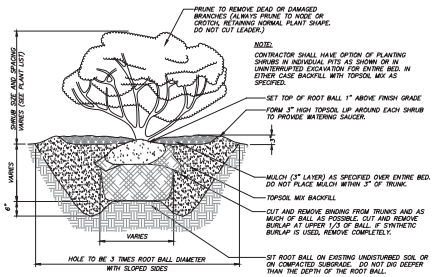
PAINTED NYS ACCESSIBLE PARKING DETAIL
(N.T.S.)



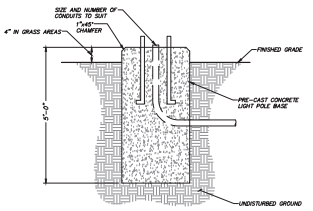
SITE PAVEMENT SECTION DETAIL
(N.T.S.)



PLAN



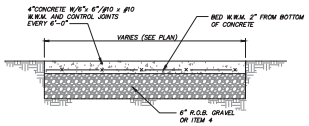
SHRUB PLANTING DETAIL
(N.T.S.)



ELEVATION

NOTES:
1. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE BOLT PATTERN AND CONDUIT SIZES WITH LIGHTING SUPPLIER AND ELECTRICAL DESIGN.
2. IF THE LIGHT POLE IS BEHIND THE CURB IT SHALL SIT 3" ON CENTER BEHIND THE FACE OF CURB. OR IF IT IS BEHIND A SIDEWALK IT SHALL SIT 2" ON CENTER BEHIND THE EDGE OF THE SIDEWALK

LIGHT POLE BASE DETAIL
(N.T.S.)



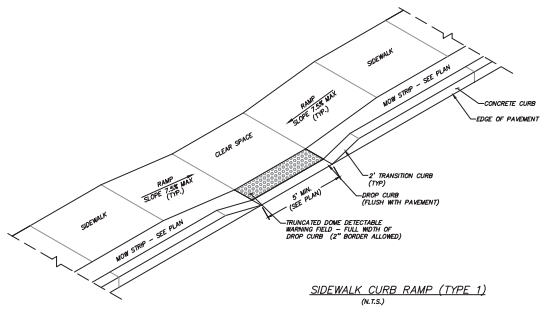
CONCRETE SIDEWALK DETAIL
(N.T.S.)

GENERAL SITE SEEDING NOTES:

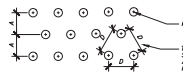
1. All proposed seeded areas to receive 4" min. depth of topsoil. Soil amendments and fertilizer application rates shall be determined based on specific testing of topsoil material.
2. Upon final grading and placement of topsoil and any required soil amendments, areas to receive permanent vegetation cover in combination with suitable mulch as follows:
   - select seed mixture per drawings and seeding notes.
   - fertilizer applied at the manufacturer's recommended rate using Lesco 10–0–18 (no phosphorous) fertilizer or equivalent.
   - mulch: salt hay or small grain straw applied at a rate of 90 lbs./1000 s.f. or 2 tons/acre, to be applied and anchored according to New York State Standards and Specifications for Erosion and Sediment Control, August 2005.
   - If the season prevents the establishment of a permanent vegetation cover, the disturbed areas will be mulched with straw or equivalent.
3. The seed mixes as specified on these drawings are as follows:
   A. Seed Mix for lawn areas and mow strip along roads at a rate of 100 lbs. per acre:
      Kentucky Bluegrass 20%
      Creeping Red Fescue 40%
      Perennial Ryegrass 20%
      Annual Ryegrass 20%
   B. Seed Mix for Wildflower Meadow areas and SSTS area as shown on the drawings at a rate of 15 lbs. per acre:
      Low-Growing Wildflower & Grass Mix (ERNMX-156) from Ernst Conservation Seeds of Meadville, PA.
   C. Seed Mix for Meadow areas as shown on the drawings, including tops of berms and backslopes of embankments of stormwater basins at a rate of 25 lbs. per acre:
      New England Conservation/Wildlife Mix from New England Wetland Plants, Inc. of Amherst, MA.
   D. Seed Mix #2 for areas as shown on the drawings and slope areas 2:1 at a rate of 35 lbs. per acre:
      New England Erosion Control/Restoration Mix (for Dry Sites) from New England Wetland Plants, Inc. of Amherst, MA.
   E. Seed Mix for Wildflower areas as shown on the drawings at a rate of 23 lbs. per acre:
      New England Wildflower Mix from New England Wetland Plants, Inc. of Amherst, MA.
   F. Seed Mix for dry slopes along road sides as shown on the drawings at a rate of 35 lbs. per acre:
      New England Roadside Matrix Upland Seed Mix by New England Wetland Plants, Inc. of Amherst, MA.
   G. Seed Mix for wet meadows and low areas along road side as shown on drawings at a rate of 30 lbs. per acre:
      New England Roadside Matrix Wet Meadow Seed Mix by New England Wetland Plants, Inc. of Amherst, MA.
4. See Drawing D–X "Site Details" for Stormwater Basin seeding.

GENERAL PLANTING NOTES:

1. All proposed planting beds to receive a 12" min. depth of topsoil. Soil amendments and fertilizer application rates shall be determined based on specific testing of topsoil material.
2. Any new soils added will be amended as required by results of soil testing and placed using a method that will not cause compaction.
3. No fertilizer shall be added in stormwater basin plantings. Nutrient requirements to be met by incorporation of acceptable organic matter.
4. All plant material to be nursery grown.
5. Plants shall conform with ANSI Z60.1 American Standard for Nursery Stock in all ways including dimensions.
6. Plant material shall be taken from healthy nursery stock.
7. All plants shall be grown under climate conditions similar to those in the locality of the project.
8. Plants shall be planted in all locations designed on the plan or as staked in the field by the Landscape Architect.
9. The location and layout of landscape plants shown on the site plan shall take precedence in any discrepancies between the quantities of plants shown on the plans and the quantity of plants in the Plant List.
10. Provide a 3" layer of shredded pine bark mulch (or as specified) over entire watering saucer at all tree pits or over entire planting bed. Do not place mulch within 3" of tree or shrub trunks.
11. All landscape plantings shall be maintained in a healthy condition at all times. Any dead or diseased plants shall immediately be replaced "in kind" by the contractor (during warranty period) or project owner.
12. See Drawing D–X "Site Details" for Stormwater Basin plantings.



SIDEWALK CURB RAMP (TYPE 1)
(N.T.S.)

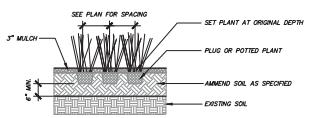


GRASS PLANT SPACING PLAN

SPACING "D"	ROW "A"	PLANTS PER SQ. FT.
24" O.C.	20.8"	0.29
18" O.C.	15.6"	0.50
12" O.C.	10.4"	1.15
10" O.C.	8.7"	1.66
8" O.C.	6.9"	2.60

NOTES
PLANT QUANTITIES WERE DETERMINED BY MULTIPLYING AREA (SQ. FT.) BY NUMBER OF PLANTS PER SQ. FT. FOR REQUIRED SPACING

QUANTITY OF PLANTS AND SPACING AS NOTED IN PLANTING SCHEDULE



PERENNIAL / ORNAMENTAL GRASS PLANTING DETAIL
(N.T.S.)

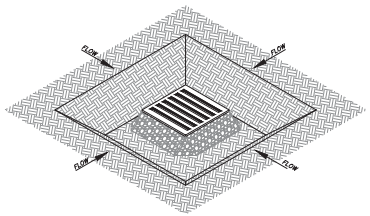
NO.	DATE	REVISION	BY
1	5-15-23	REVISED PER PB COMMENTS	MEU

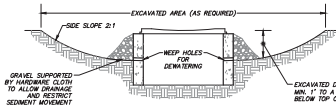
INSITE
ENGINEERING, SURVEYING & LANDSCAPE ARCHITECTURE, P.C.
3 Garrett Place
Carmel, NY 10512
(845) 225-9690
(845) 225-9717 fax
www.insite-eng.com

PROJECT:
DPD – SELF STORAGE
4 BALDWIN PLACE ROAD, TOWN OF CARMEL, PUTNAM COUNTY, NY

DRAWING:
DETAILS

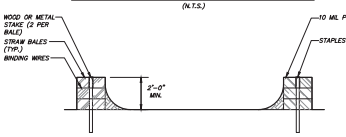
PROJECT NUMBER	22242.100	PROJECT MANAGER	R.D.W.	DRAWING NO.	SHEET
DATE	3-8-23	DRAWN BY	D.S.W.	D-1	10
SCALE	AS SHOWN	CHECKED BY	A.D.T.		X





1. CLEAR THE AREA OF ALL DEBRIS THAT WILL HINDER EXCAVATION
2. GRADE APPROACH TO THE INLET UNIFORMLY AROUND THE BASIN
3. WEEP HOLES SHALL BE PROTECTED BY GRAVEL
4. UPON STABILIZATION OF CONTRIBUTING DRAINAGE AREA, SEAL WEEP HOLES, FILL EXCAVATION WITH STABLE SOIL TO FINAL GRADE, COMPACT IT PROPERLY, AND STABILIZE WITH PERMANENT SEEDING
5. MAXIMUM DRAINAGE AREA = 1 ACRE

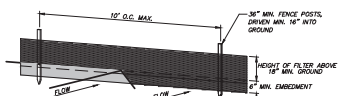
EXCAVATED DROP INLET PROTECTION DETAIL
(N.T.S.)

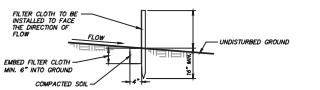


CONCRETE WASHOUT AREA DETAIL
(N.T.S.)

NOTES

1. TEMPORARY CONCRETE WASHOUT TYPE ABOVE GRADE WILL BE CONSTRUCTED AS SHOWN ABOVE, WITH RECOMMENDED MINIMUM LENGTH AND MINIMUM WIDTH OF 8 FT.
2. THE WASHOUT WILL BE MINIMUM OF 100 FT FROM DRAINAGE SWALES, STORM DRAIN INLETS, WETLANDS, STREAMS AND OTHER SURFACE WATERS.
3. PLASTIC LINING WILL BE FREE OF HOLES, TEARS, OR OTHER DEFECTS THAT COMPROMISE THE IMPERMEABILITY OF THE MATERIAL.



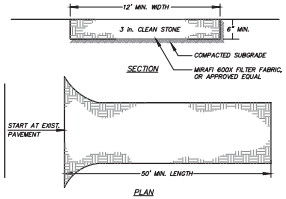


CONSTRUCTION NOTES FOR FABRICATED SILT FENCE

1. FILTER CLOTH TO BE FASTENED SECURELY TO POSTS AT TOP AND MID SECTION.
2. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.
3. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

POSTS: STEEL EITHER T OR U TYPE OR 2" HARDWOOD
FILTER CLOTH: FILTER X, MIRAFI 100X, STABILINKA T140N, OR APPROVED EQUAL
PREFABRICATED UNIT: GEOFAB, ENVIROFENCE, OR APPROVED EQUAL

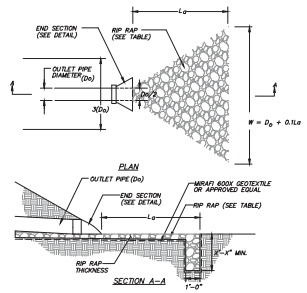
SILT FENCE DETAIL
(N.T.S.)



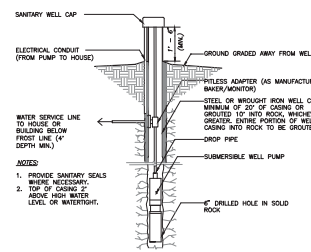
INSTALLATION NOTES

1. STONE SIZE – USE 1" STONE
2. LENGTH – AS REQUIRED, BUT NOT LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY.)
3. THICKNESS – NOT LESS THAN SIX (6) INCHES.
4. WIDTH – 12 FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCUR.
5. FILTER CLOTH – WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE. FILTER CLOTH WILL NOT BE REQUIRED ON A SINGLE FAMILY RESIDENCE LOT.
6. SURFACE WATER – ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE, IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT OF WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND, AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHT OF WAY MUST BE REMOVED IMMEDIATELY.
8. WASHING – WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT OF WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

STABILIZED CONSTRUCTION ENTRANCE DETAIL
(N.T.S.)



ROCK OUTLET PROTECTION DETAIL
(N.T.S.)



NOTES:

1. PROVIDE SANITARY SEALS WHERE NECESSARY.
2. TOP OF CASING 2' ABOVE HIGH WATER LEVEL OR WATERTIGHT.

PUTNAM COUNTY WELL DETAIL
(N.T.S.)

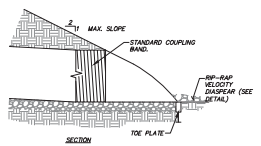
SOIL RESTORATION REQUIREMENTS[1,2]

(ONSITE SOILS WITHIN THE LIMIT OF DISTURBANCE BELONG TO THE HYDROLOGIC SOIL GROUP (HSG) D)

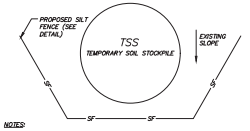
THE CONTRACTOR SHALL BE REQUIRED TO PERFORM THE FOLLOWING SOIL RESTORATION TECHNIQUES PRIOR TO INSTALLING TOPSOIL, SEED AND MULCH. ITEMS STRUCKEN IN THE FOLLOWING TABLE DO NOT NEED TO BE PERFORMED.

TYPE OF SOIL DISTURBANCE	SOIL RESTORATION REQUIREMENT		COMMENTS/EXAMPLES
No soil disturbance	Restoration not permitted		Preservation of Natural Features
Minimal soil disturbance	Restoration not required		Clearing and grubbing
Areas where topsoil is stripped only – no change in grade	HSG A & B: Apply 6" of topsoil	HSG C & D: Aerate[3] and apply 6" of topsoil	Protect area from any ongoing construction activities
Areas of cut or fill	HSG A & B: Aerate[3] and apply 6" of topsoil	HSG C & D: Apply full Soil Restoration[4]	
Heavy traffic areas on site (especially in a zone 5–25 feet around buildings but not within a 5 foot perimeter around foundation walls.)	Apply full Soil Restoration[4] (de-compaction and compost enhancement)[5]		
Areas where runoff reduction and/or infiltration practices are applied	Restoration not required, but may be applied for appropriate practices.		Keep construction equipment from crossing these areas. To protect newly installed practices from any ongoing construction activities construction a single phase operation fence area.
Redevelopment projects	Soil restoration is required on redevelopment projects in areas where existing impervious area will be converted to pervious area.		

1. AERATION INCLUDES THE USE OF MACHINES SUCH AS TRACTOR–DRAWN IMPLEMENTS WITH COULTERS MAKING A NARROW SLIT IN THE SOIL, A ROLLER WITH MANY SPIKES MAKING INDENTATIONS IN THE SOIL, OR PRONGS WHICH FUNCTION LIKE A MINI–SUBSOILER.
2. PER DEEP RIPPING AND DE–COMPACTION, DEC 2008.
3. AERATION INCLUDES THE USE OF MACHINES SUCH AS TRACTOR–DRAWN IMPLEMENTS WITH COULTERS MAKING A NARROW SLIT IN THE SOIL, A ROLLER WITH MANY SPIKES MAKING INDENTATIONS IN THE SOIL, OR PRONGS WHICH FUNCTIONS LIKE A MINI–SUBSOILER.
4. DURING PERIODS OF RELATIVELY LOW TO MODERATE SUBSOIL MOISTURE, THE DISTURBED SOILS ARE RETURNED TO ROUGH GRADE AND THE FOLLOWING SOIL RESTORATION STEPS APPLIED:
   a. TILL SUBSOIL TO A DEPTH OF AT LEAST 12 INCHES USING A CAT–MOUNTED RIPPER, TRACTOR–MOUNTED DISC, OR TILLER, MIXING, AND CIRCULATING AIR AND COMPOST INTO SUBSOILS.
   b. ROCK–PICK UNTIL UNCUT STONE/ROCK MATERIALS OF FOUR INCHES AND LARGER SIZE ARE CLEANED OFF THE SITE.
   c. APPLY TOPSOIL TO A DEPTH OF 6 INCHES.
   d. VEGETATE AS REQUIRED BY SEEDING NOTES LOCATED ON THE PROJECT DRAWINGS.
   e. TILLING SHOULD NOT BE PERFORMED WITHIN THE DRIP LINE OF ANY EXISTING TREES OR OVER ANY UTILITY INSTALLATIONS THAT ARE WITHIN 24 INCHES OF THE SURFACE.
5. COMPOST SHALL BE AGED, FROM PLANT DERIVED MATERIALS, FREE OF VIABLE WEED SEEDS, HAVE NO VIABLE PLANT MATERIAL OR DUST PRODUCED WHEN HANDLING, PASS THROUGH A HALF INCH SCREEN AND HAVE A PH SUITABLE TO GROW DESIRED PLANTS.



HDPE END SECTION DETAIL
(N.T.S.)



NOTES:

1. AREA CHOSEN FOR STOCKPILE LOCATION SHALL BE DRY AND STABLE.
2. MAXIMUM SLOPE OF STOCKPILE SHALL BE 2:1.
3. UPON COMPLETION OF SOIL STOCKPILING, EACH PILE SHALL BE IMMEDIATELY SEEDED WITH K31 PERENNIAL TALL FESCUE.
4. ALL STOCKPILES SHALL BE PROTECTED WITH SILT FENCING INSTALLED ON THE DOWNGRADIENT SIDE.

TEMPORARY SOIL STOCKPILE DETAIL
(N.T.S.)

REQUIRED SWPPP CONTENTS PER GP–0–20–001:

1. Pursuant to the NYSDEC "SPDES General Permit for Stormwater Discharges from Construction Activity" (GP–0–20–001), all Stormwater Pollution Prevention Plan's (SWPPP) shall include erosion and sediment control practices designed in conformance with the most current version of the technical standard, "New York Standards and Specifications for Erosion and Sediment Control." Where erosion and sediment control practices are not designed in conformance with this technical standard, the owner or operator must demonstrate equivalence to the technical standard. The following list of required SWPPP components is provided in accordance with Part III.B.1a–i of General Permit GP–0–20–001:

Background Information: The subject project consists of the construction of a self–storage facility.

   a. The applicant proposes to construct 9 self–storage buildings and a 1,110 sf± office building which would be constructed on the tax map lot number. Access to the site will be provided via the existing curb cuts on the US Route 6 and Baldwin Place Road with a new internal driveway network being constructed. A proposed drilled well and septic system will service the project. A Stormwater Pollution Prevention Plan has been paused.
   b. Site map / construction drawing: These plans serve to satisfy this SWPPP requirement.
   c. Description of the soils present at the site: Onsite soils located within the proposed limits of disturbance consist of Paxton fine sandy loam (PnB, PnC, PnD), as identified on the Soil Conservation Service Web Soil Survey. These soil types belong to the Hydrologic Soil Group C.
   d. Construction phasing plan / sequence of operations: The Construction Sequence and phasing found on these plans provide the required phasing. A Construction Sequence and Erosion and Sediment Control Maintenance Schedule has been provided. The Sedimentation and Erosion Control Notes contained hereon outline a general sequence of operations for the proposed project. In general all erosion and sediment control facilities shall be installed prior to commencement with land disturbing activities, and areas of disturbance shall be limited to the shortest period of time as practicable.
   e. Description of erosion and sediment control practices: This plan, and details / notes shown hereon serve to satisfy this SWPPP requirement.
   f. Temporary and permanent soil stabilization plan: The Sedimentation and Erosion Control Notes and Details provided herein identify temporary and permanent stabilization measures to be employed with respect to specific elements of the project, and at the various stages of development.
   g. Site map / construction drawing: This plan serves to satisfy this SWPPP requirement.
   h. The dimensions, material specifications, installation details, and operation and maintenance requirements for all erosion and sediment control practices: The details, Erosion and Sediment Control Notes, and Erosion and Sediment Control Maintenance Schedule serve to satisfy this SWPPP requirement.
   i. An inspection schedule: Inspections are to be performed twice weekly and by a qualified professional as required by the General Permit GP–0–20–001. In addition the NYSDEC Trained Contractor shall perform additional inspections as listed in the Sedimentation and Erosion Control Notes.
   j. A description of pollution prevention measures that will be used to control litter, construction chemicals and construction debris: In general, all construction litter / debris shall be collected and removed from the site. The general contractor shall supply either waste barrels or dumpster for proper waste disposal. Any construction chemicals utilized during construction shall either be removed from site daily by the contractor or stored in a structurally sound and weatherproof building. No hazardous waste shall be disposed of onsite, and shall ultimately be disposed of in accordance with all federal, state and local regulations. Material Safety Data Sheets (MSDS), material inventory, and emergency contact numbers shall be maintained by the general contractor for all construction chemicals utilized onsite. Finally, temporary sanitary facilities (portable toilets) shall be provided onsite during the entire length of construction, and inspected weekly for evidence of leaking holding tanks.
   k. A description and location of any stormwater discharges associated with industrial activity other than construction at the site: There are no known industrial stormwater discharges present or proposed at the site.
   l. Identification of any elements of the design that are not in conformance with the technical standard, "New York Standards and Specifications for Erosion and Sediment Control." All proposed elements of this SWPPP have been designed in accordance with the "New York Standards and Specifications for Erosion and Sediment Control."

2. Pursuant to the NYSDEC "SPDES General Permit for Stormwater Discharges from Construction Activity" (GP–0–20–001), all construction projects needing post–construction stormwater management practices shall prepare a SWPPP that also includes practices designed in conformance with the most current version of the technical standard, New York State Stormwater Management Design Manual ("Design Manual"). Where post–construction stormwater management practices are not designed in conformance with this technical standard, the owner or operator must demonstrate equivalence to the technical standard. The following list of SWPPP components is provided in accordance with Part III.B.2a–f and III.B.3:
   a. Identification of all post–construction stormwater management practices to be constructed as part of the project: This plan, and details/notes shown hereon serve to satisfy this SWPPP requirement.
   b. A site map/construction drawing(s) showing the specific location and size of each post–construction stormwater management practice: This plan, and details/notes shown hereon serve to satisfy this SWPPP requirement.
   c. A Stormwater Modeling and Analysis Report including pre–development conditions, post–development conditions, the results of the stormwater modeling, a summary table demonstrating that each practice has been designed in conformance with the Design Manual, documentation and justification for any deviations from the Design Manual, and identification of any design criteria that are not required. The required analysis is provided in the report titled Amended Stormwater Pollution Prevention Plan for DPD Self Storage.
   d. Soil testing results and locations. This SWPPP requirement is provided in the report titled Amended Stormwater Pollution Prevention Plan for DPD Self Storage.
   e. Infiltration testing results. This SWPPP requirement is provided in the report titled Amended Stormwater Pollution Prevention Plan for DPD Self Storage.
   f. An operations and maintenance plan that includes inspection and maintenance schedules and actions to ensure continuous and effective operation of each post–construction stormwater management practice. The plan shall identify the entity that will be responsible for the long term operation and maintenance of each practice. The Permanent Stormwater Facilities Maintenance Schedule provided on these plans serves to satisfy this requirement.

3. Enhanced Phosphorus Removal Standards – Beginning on September 30, 2008, all construction projects identified in Table 2 of Appendix B that are located in the watersheds identified in Appendix C shall prepare a SWPPP that includes post–construction stormwater management practices designed in conformance with the Enhanced Phosphorus Removal Standards included in the most current version of the technical standard, New York Stormwater Management Design Manual. At a minimum, the post–construction stormwater management practice component of the SWPPP shall include a 1 – 2 inch wet pool. The enhanced phosphorus practices for this project have been sized according to chapter 10 of the Design Manual Enhanced Phosphorus Removal Standards. Please see 2.a – 2.f above.

CONSTRUCTION SEQUENCE:

1. Install stabilized construction entrance/anti–tracking pad at driveway entrance.
2. Install silt fence in general locations indicated on the plan.
3. Begin clearing and grubbing operations associated with house, driveway and SSTS.
4. Strip and stockpile topsoil on site for later use in lawn and landscape areas.
5. Begin excavation for foundation, individual lot grading, and construction of individual driveway off of the common driveway.
6. Begin house construction and installation of SSTS and well.
7. Install infiltration Trench and connect Roof Leader Drains.
8. Upon completion of grading operations, install finished driveway surfaces.
9. Topsoil, seed, and mulch all disturbed areas as soon as practical in accordance with the Erosion and Sediment Control Notes contained on this page.

EROSION & SEDIMENT CONTROL NOTES:

1. The owner's field representative (O.F.R.) will be responsible for the implementation and maintenance of erosion and sediment control measures on this site prior to and during construction.
2. All construction activities involving the removal or disposition of soil are to be provided with appropriate protective measures to minimize erosion and contain sediment disposition within. Minimum soil erosion and sediment control measures shall be implemented as shown on the plans and shall be installed in accordance with "New York Standards and Specifications For Erosion and Sediment Control," latest edition.
3. Wherever feasible, natural vegetation should be retained and protected. Disturbance shall be minimized in the areas required to perform construction. No more than 5 acres of unprotected soil shall be exposed at any one time.
4. When land is exposed during development, the exposure shall be kept to the shortest practical period of time. In the areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven (7) days from the date the current soil disturbance activity ceased. Disturbance shall be minimized to the areas required to perform construction.
5. Silt fence shall be installed as shown on the plans prior to beginning any clearing, grubbing or earthwork.
6. All topsoil to be stripped from the area being developed shall be stockpiled and immediately seeded for temporary stabilization. Ryegrass (annual or perennial) at a rate of 30 lbs. per acre shall be used for temporary seeding in spring, summer or early fall. "Aristook" Winter Rye (cereal rye) shall be used for temporary seeding in late fall and winter.
7. Any disturbed areas not subject to further disturbance or construction traffic, permanent or temporary, shall have soil stabilization measures initiated for permanent vegetation cover in combination with a suitable mulch within one business day of final grading. All seeded areas to receive a minimum 4" to 6" layer of topsoil (amended as necessary) and be seeded at a rate of 4 lbs. per 1,000 sq. ft. for planted between April 1st to May 31st and August 15 and October 15 or as directed by project representative at a rate of 100 pounds per acre in the following proportions:
   - Kentucky Bluegrass 20%
   - Creeping Red Fescue 40%
   - Perennial Ryegrass 20%
   - Annual Ryegrass 20%
   - Mulch: Salt hay or small grain straw applied at a rate of 90 lbs./1000 S.F. or 2 tons/acre, to be applied and anchored according to "New York Standards and Specification For Erosion and Sediment Control," latest edition.
8. Grass seed mix may be applied by either mechanical or hydroseeding methods.Seeding shall be performed in accordance with the current edition of the "NYSDOT Standard Specification, Construction and Materials, Section 610–3.02, Method No. 1". Hydroseeding shall be performed using materials and methods as approved by the site engineer.
9. Cut or fill slopes steeper than 3:1 shall be stabilized immediately after grading with Curlex I Single Net Erosion Control Blanket, or approved equal.
10. Paved roadways shall be kept clean at all times.
11. The site shall at all times be graded and maintained such that all stormwater runoff is diverted to soil erosion and sediment control facilities.
12. All storm drainage outlets shall be stabilized, as required, before the discharge points become operational.
13. Stormwater from disturbed areas must be passed through erosion control barriers before discharge beyond disturbed areas or discharged into other drainage systems.
14. Erosion and sediment control measures shall be inspected and maintained on a daily basis by the O.F.R. to insure that channels, temporary and permanent ditches and pipes are clear of debris, that embankments and berms have not been breached and that all straw bales at silt fences are intact. Any failure of erosion and sediment control measures shall be immediately repaired by the contractor and inspected for approval by the O.F.R. and/or site engineer.
15. Dust shall be controlled by sprinkling or other approved methods as necessary, or as directed by the O.F.R.
16. Cut and fills shall not endanger adjoining property, nor divert water onto the property of others.
17. All fills shall be placed and compacted in 6" lifts to provide stability of material and to prevent settlement.
18. The O.F.R. shall inspect downstream conditions for evidence of sedimentation on a weekly basis and after rainstorms.
19. As warranted by field conditions, special additional erosion and sediment control measures, as specified by the site engineer and/or the Town Engineer shall be installed by the contractor.
20. Erosion and sediment control measures shall remain in place until all disturbed areas are suitably stabilized.

EROSION AND SEDIMENT CONTROL MAINTENANCE SCHEDULE

	MONITORING REQUIREMENTS			MAINTENANCE REQUIREMENTS	
PRACTICE	DAILY	WEEKLY	AFTER RAINFALL	DURING CONSTRUCTION	AFTER CONSTRUCTION
SILT FENCE BARRIER	–	Inspect	Inspect	Clean/Replace	Remove
STABILIZED CONSTRUCTION ENTRANCE	Inspect	–	Inspect	Clean/Replace Stone and Fabric	Remove
DUST CONTROL	Inspect	–	Inspect	Mulching/ Spraying Water	N/A
*VEGETATIVE ESTABLISHMENT	–	Inspect	Inspect	Water/Reseed/ Remulch	Reseed to 80% Coverage
INLET PROTION	–	Inspect	Inspect	Clean/Repair/ Replace	Remove
SOIL STOCKPILES	–	Inspect	Inspect	Mulching/ Silt Fence Repair	Remove
SWALES	–	Inspect	Inspect	Clean/Mulch/ Repair	Mow Permanent Grass/Replace/ Repair Rip Rap
CHECK DAMS	–	Inspect	Inspect	Clean/Replace Stones/Repair	Clean/Replace Stones/Repair
CONCRETE DRAINAGE STRUCTURES	–	Inspect	Inspect	Clean Sumps/ Remove Debris/ Repair/Replace	Clean Sumps/ Remove Debris/ Repair/Replace
DRAINAGE PIPES	–	Inspect	Inspect	Clean/Repair	Clean/Repair
ROAD & PAVEMENT	–	Inspect	Inspect	Clean	Clean
*STORMWATER RAIN/BASIN	–	Inspect	Inspect	Clean/Mulch/ Repair/Reseed	See Permanent Stormwater Facilities Maintenance Schedule on Drawing SP–3.1

* Permanent vegetation is considered stabilized when 80% of the plant density is established. Erosion control measures shall remain in place until all disturbed areas are permanently stabilized.

Note: The party responsible for implementation of the maintenance schedule during and after construction is:
Remod Creations Ltd
124 Ridge Road
Montgomery, NY 12549
and/or the current owner(s) of the subject property.

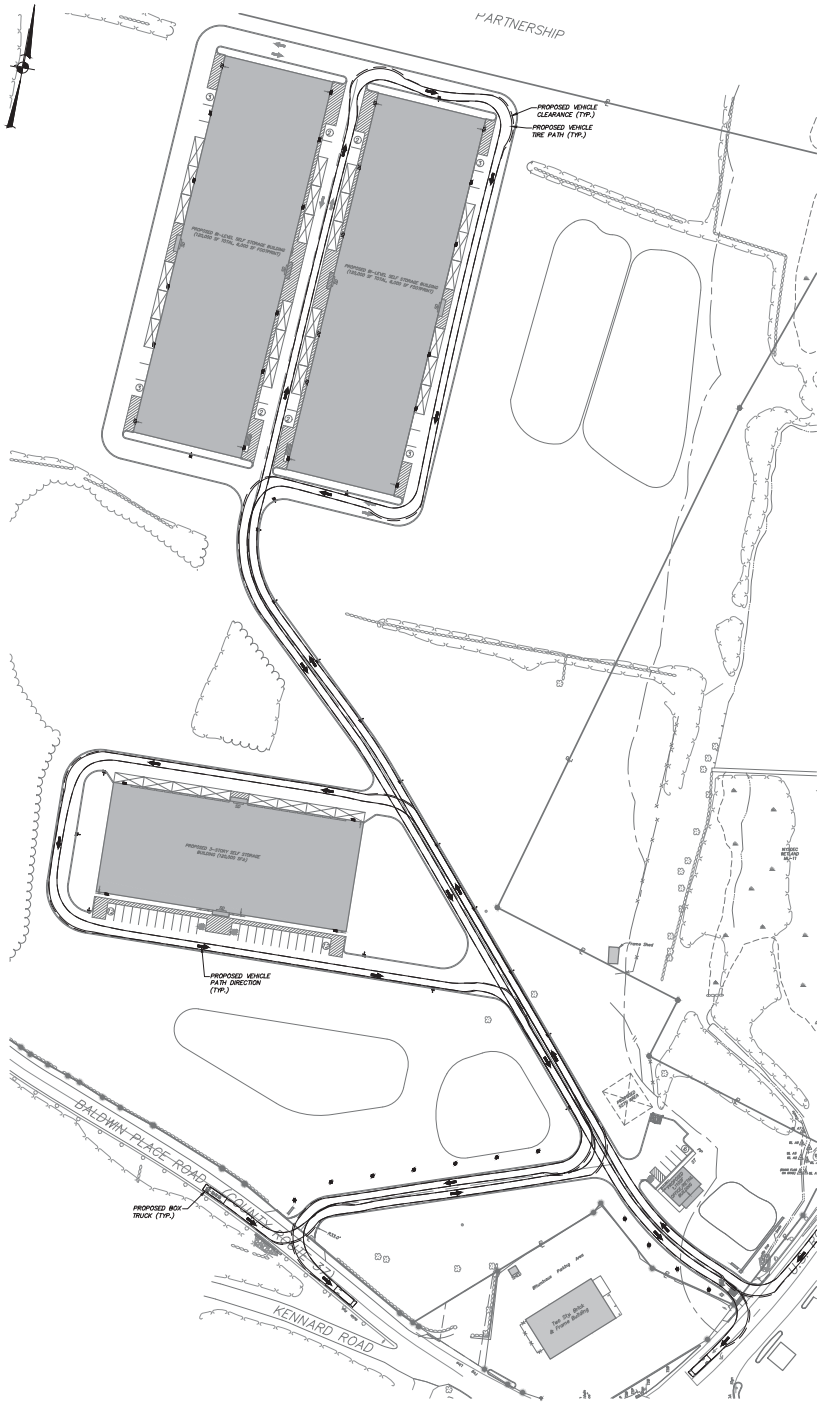
NO.	DATE	REVISION	BY
1	5–15–23	REVISED PER PB COMMENTS	MEU

INSITE ENGINEERING, SURVEYING & LANDSCAPE ARCHITECTURE, P.C.
3 Garrett Place
Carmel, NY 10512
(845) 225–9690
(845) 225–9717 fax
www.insite–eng.com

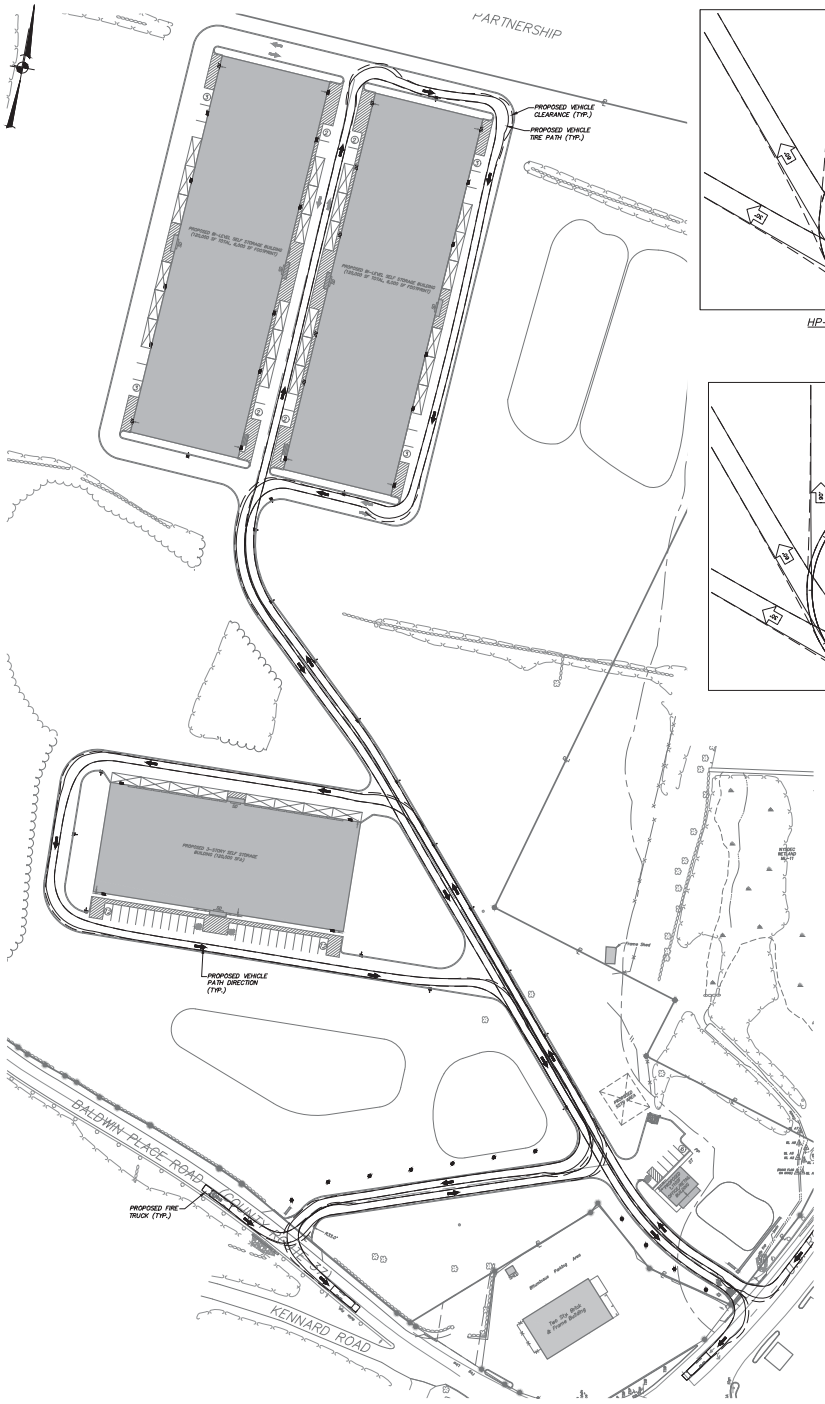
PROJECT:
DPD – SELF STORAGE
4 BALDWIN PLACE ROAD, TOWN OF CARMEL, PUTNAM COUNTY, NY

DRAWING:
DETAILS

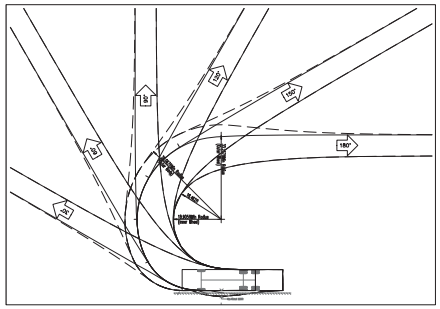
PROJECT NUMBER	22242.100	PROJECT MANAGER	R.D.W.	DRAWING NO.	SHEET
DATE	3–8–23	DRAWN BY	D.S.W.	D–2	11 / X
SCALE	AS SHOWN	CHECKED BY	A.D.T.		



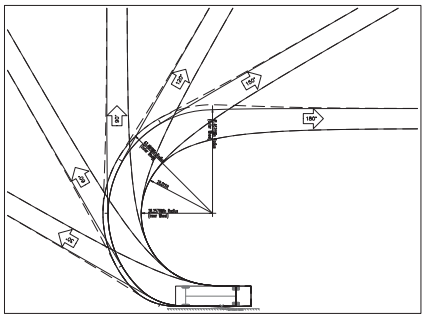
SU-30 BOX TRUCK VEHICLE MANEUVER



HP-100 AERIAL FIRE TRUCK VEHICLE MANEUVER



HP-100 AERIAL FIRE TRUCK TEMPLATE



SU-30 BOX TRUCK TEMPLATE

GRAPHIC SCALE

0 30 60 120

(IN FEET)
1 inch = 60 ft.

NO.	DATE	REVISION	BY

INSITE
ENGINEERING, SURVEYING & LANDSCAPE ARCHITECTURE, P.C.
3 Garrett Place
Carmel, NY 10512
(845) 225-9090
(845) 225-9717 fax
www.insite-eng.com

PROJECT:
DPD – SELF STORAGE
4 BALDWIN PLACE ROAD, TOWN OF CARMEL, PUTNAM COUNTY, NY

DRAWING:
VEHICLE MANEUVERING PLAN

PROJECT NUMBER	22242.100	PROJECT MANAGER	R.D.W.
DATE	5-15-23	DRAWN BY	J.F.R.
SCALE	1" = 60'	CHECKED BY	A.D.T.

DRAWING NO. D-3

SHEET 12 / 12

KELLARD SESSIONS

John Kellard, P.E.
David Sessions, RLA, AICP
Joseph M. Cermele, P.E., CFM
Jan K. Johannessen, AICP

VIA HAND-DELIVERED

May 9, 2023

Planning Board
Town of Carmel
60 McAlpin Avenue
Mahopac, New York 10541

Attn: Craig Paeprer, Chairman

RE: Western Bluff Subdivision
350 West Shore Drive
Section 66.14, Block 1, Lot 20

Dear Chairman Paeprer:

Please find enclosed five (5) copies of the following plans and documents in support of Final Subdivision Approval for the above-referenced project:

- Subdivision Plat drawings with endorsement of approval by Putnam County Department of Health, dated April 26, 2023:
  - Western Bluff Subdivision Map prepared for Meredith A. Kling, prepared by Ward Carpenter Engineers Inc., dated November 19, 2019, and last revised March 29, 2023
  - Integrated Plot Plan Western Bluff Subdivision, prepared by Kellard Sessions Consulting, dated December 20, 2019 and last revised March 29, 2023
- Subdivision Construction Plans for Western Bluff Subdivision, prepared by Kellard Sessions Consulting, dated (last revised) March 29, 2023:
  - Cover Sheet
  - Sheet 1/10 Existing Conditions Plan
  - Sheet 2/10 Subdivision Layout Plan
  - Sheet 3/10 Sediment & Erosion Control Plan
  - Sheet 4/10 Tree Removal & Landscape Plan
  - Sheet 5/10 Construction Details
  - Sheet 6/10 Construction Details

- Sheet 7/10 Sediment & Erosion Control Details & Notes
- Sheet 8/10 Driveway Profiles
- Sheet 9/10 Driveway Profiles
- Sheet 10/10 Construction Management Plan

- Check #572 in the amount of $4,750.00 for Application Fee for Final Subdivision Approval (1 copy)

- Preliminary Subdivision Approval Resolution (#22-09), dated May 12, 2022

- Easement Agreements between property owners, prepared by the applicant's attorney Dempsey & Langan (submitted under a separate cover):

  - Access and Utility Easement on Lot #3 in favor of Lots #1 and #2

  - Access and Utility Easement on Lot #2 in favor of Lot #1

  - Drainage and Maintenance Easement on Lot #3 in favor of Lot #2

The applicant has prepared a Final Subdivision Plat in accordance with Section 131-14 of the Town of Carmel Subdivision of Land Regulations and Putnam County Department of Health Regulations. The plat has been approved and signed by the Commissioner of Health. Copies of the signed plats are included with this submission.

There are no public improvements or public/municipal easements associated with the project. The project will, however, require two (2) Access and Utility Easements and one (1) Drainage Easement between the owners of the three (3) lots. Easement agreements have been prepared by the applicant's attorney Dempsey & Langan. Easement agreements are included within this submission.

The Stormwater Pollution Prevention Plan (SWPPP) for the project was approved by the New York City Department of Environmental Protection (NYCDEP) on April 18, 2021. A Notice of Intent (NOI) will be filed with New York State Department of Environmental Conservation (NYSDEC) upon final approval and prior to the start of construction. The SWPPP was previously submitted.

A Street Opening Permit was obtained from the Putnam County Department of Highways and Facilities for the new curb cut and drainage improvements within the County right-of-way. The Putnam County Permit was previously submitted.

Please accept this submission as our Application for First Subdivision Approval on behalf of Meredith A. Kling. I would respectfully request that our application for Final Subdivision Approval be scheduled on the next available meeting on the Town Planning Board.

Very Truly Yours,

John Kellard, P.E.
Kellard Sessions Consulting

JK/gt

Enclosures

cc: Thomas Kling
Dominick Santucci

PUTNAM COUNTY DEPARTMENT OF HEALTH
1 Geneva Road, Brewster, NY 10509 ■ 845-808-1390
www.putnamcountyny.gov/health
A PHAB-ACCREDITED HEALTH DEPARTMENT

Kevin M. Byrne
COUNTY EXECUTIVE

Michael J. Nesheiwat, MD
INTERIM COMMISSIONER OF HEALTH

April 26, 2023

Meredith A. Kling
430 Colony Drive
Whiteland, IN 46184

Dear Ms. King :

This certificate is issued under the provisions of the Public Health Law in connection with the approval of plans on April 26, 2023 for the realty subdivision known as Western Bluff Subdivision.

The following data was furnished in connection with the submission of the plans:

Location: 350 West Shore Drive, (T) Carmel

Acres (Approx.): 15 acres No. of lots: 3 Size (Approx.): 5 acres

Owners Intends To: Build Houses and Sell Lots

Topography: Gentle to Steep

Depth To Groundwater: Not encountered When: N/A

Soil: Sandy Loam, Fine Sands, Gravel

Grading (Cut or Fill): Cut volume: 6,214 cubic yards/Fill Volume: 7090 cubic yards

Drainage: Drainage System (catch basins, drain manholes, detention basin)

Water Supply: Private (Individual) Wells

Sewage Treatment: Private (Individual) SSTS

APPROVAL OF THIS SUBDIVISON IS GRANTED ON CONDITION (continued)

1. That the proposed facilities for water supply and sewage disposal are installed in conformity with said plans.

2. That no lot or remaining land (if applicable) shall be subdivided without plans for such resubdivision being submitted to and approved by the Putnam County Health Department.

3. That the developer shall furnish each purchaser of a lot on which water supply and/or sewage treatment facilities were installed with a reproduction of the approved plans and an accurate as-built plan depicting all installed sanitary facilities.

4. That the developer shall furnish each purchaser of a lot on which there was no water supply and/or sewage treatment facilities installed with a reproduction of the approved subdivision and/or construction permit plans and shall notify the purchaser of the necessity of installing such facilities in accordance with approved construction permit plans.

5. That the sanitary facilities on these lots shall be inspected for compliance with the approved plans at the time of construction by a P.E., R.A., or exempt L.L.S. and a certificate of construction compliance is to be submitted to the Putnam County Health Department for approval prior to occupancy.

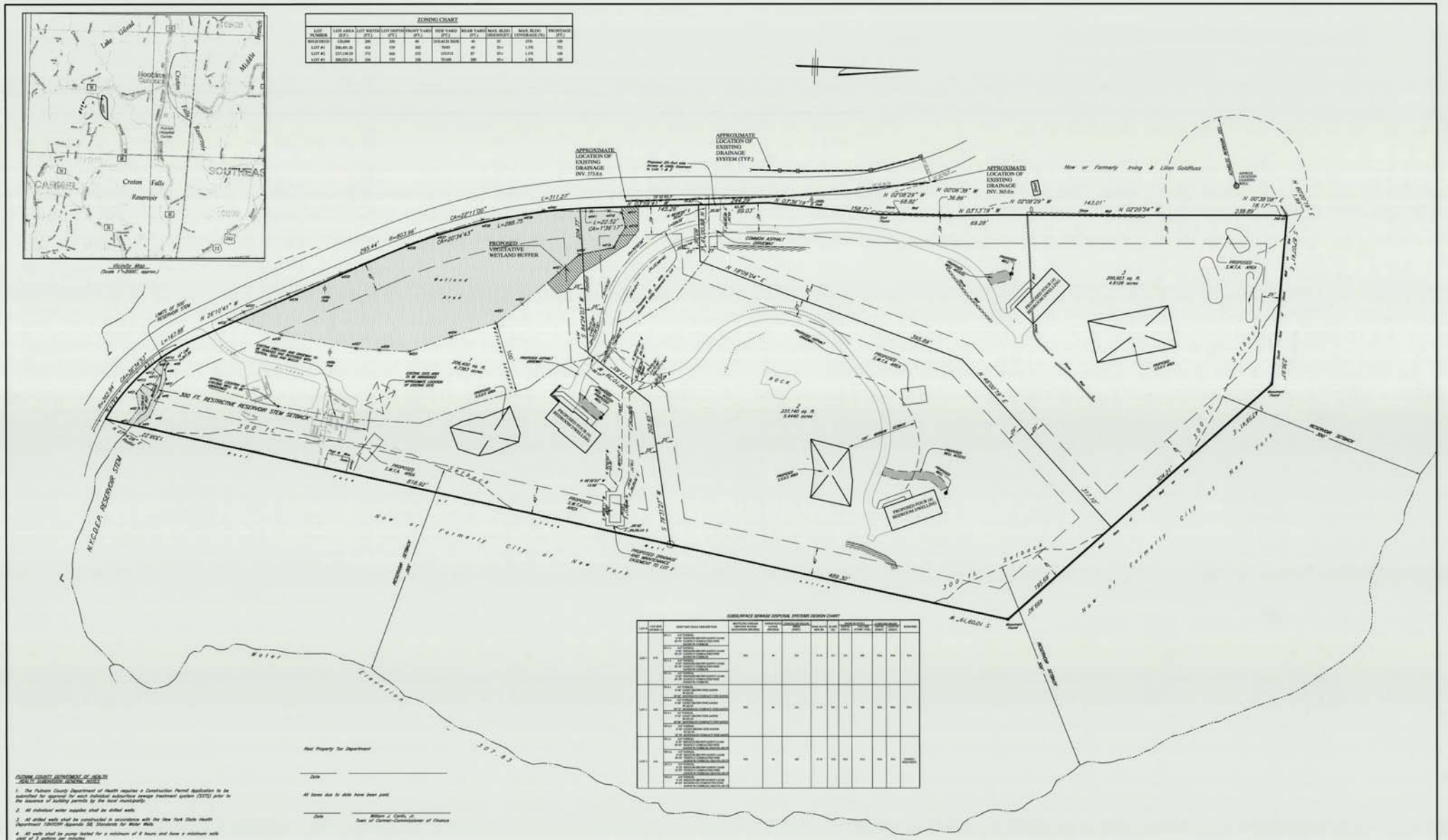
6. That individual wells and sewage treatment systems shall no longer be constructed or used for household domestic purposes when public facilities become available. Connection to the public sewage system is required within one year of the system(s) becoming available.

7. That plan approval is limited to 5 years and expires on **April 26, 2028**.

8. That the approved plans must be filed with the Putnam County Clerk prior to offering lots for sale and within 90 days of the date of plan approval.

By: Joseph S. Paravati Jr., P.E.
Senior Public Health Engineer

cc: John Kellard, P.E.
File



ZONING CHART									
LOT NUMBER	LOT AREA (S.F.)	LOT WIDTH (FT.)	LOT DEPTH (FT.)	FRONT YARD (FT.)	SIDE YARD (FT.)	REAR YARD (FT.)	MAX. BLDG. HEIGHT (FT.)	MAX. BLDG. COVERAGE (%)	FRONTAGE (FT.)
REQUIRED	120,000	200	200	40	25/AGG 50/85	40	35	15%	100
LOT #1	206,400.26	424	539	302	79/85	40	35+/-	1.5%	721
LOT #2	237,138.00	372	666	372	133/313	87	35+/-	1.4%	169
LOT #3	380,233.26	346	727	338	70/109	289	35+/-	1.3%	100

Job # 50935-51911-54337-55962

LDD 50935\dwg\54337-SANTUCCI-SUBDIVISION.dwg

LEGEND

- EXISTING PROPERTY LINE
- PROPOSED PROPERTY LINE
- LIMITS OF DISTURBANCE (3.85 ACRES ±)
- EXISTING 10' CONTOURS
- EXISTING 2' CONTOURS
- PROPOSED 10' CONTOUR
- PROPOSED 2' CONTOUR
- EXISTING WETLAND
- WETLAND BUFFER
- RESERVOIR BUFFER
- EXISTING STREAM
- EXISTING TREE
- EXISTING STRUCTURES TO BE REMOVED
- SLOPES 15% - 25%
- SLOPES 25% AND GREATER
- PROPOSED PRIMARY SEPTIC FIELDS
- PROPOSED EXPANSION SEPTIC FIELDS
- PROPOSED STORMWATER SYSTEMS
- PROPOSED DRAINAGE LINE
- PROPOSED CATCH BASIN
- PROPOSED UTILITIES SERVICE

PUTNAM COUNTY DEPARTMENT OF HEALTH REALTY SUBDIVISION GENERAL NOTES

1. THE PUTNAM COUNTY DEPARTMENT OF HEALTH REQUIRES A CONSTRUCTION PERMIT APPLICATION BE SUBMITTED FOR APPROVAL FOR EACH INDIVIDUAL SUBSURFACE SEWAGE TREATMENT SYSTEM (SSTS) PRIOR TO THE ISSUANCE OF BUILDING PERMITS BY THE LOCAL MUNICIPALITY.
2. ALL INDIVIDUAL WATER SUPPLIES SHALL BE DRILLED WELLS.
3. ALL DRILLED WELLS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE NEW YORK STATE HEALTH DEPARTMENT 10NYCRR APPENDIX 5B, STANDARDS FOR WATER WELLS.
4. ALL WELLS SHALL BE PUMP TESTED FOR A MINIMUM OF 6 HOURS AND HAVE A MINIMUM SAFE YIELD OF 5 GALLONS PER MINUTE.
5. THE PUTNAM COUNTY DEPARTMENT OF HEALTH APPROVAL IS BASED ON LOCATIONS OF SSTS, WELLS, HOUSE AND DRIVEWAY LOCATIONS BEING MAINTAINED AS SHOWN. ALL MODIFICATIONS TO HAVE PRIOR PUTNAM COUNTY DEPARTMENT OF HEALTH APPROVAL.
6. UNAUTHORIZED MODIFICATIONS MADE TO THIS DRAWING AFTER THE DATE OF PUTNAM COUNTY HEALTH DEPARTMENT APPROVAL OR ANY MISINFORMATION AND/OR ERRONEOUS DATA VOIDS SAID APPROVAL.
7. NO CUT OR FILL IS PERMITTED IN THE SSTS AREA, EXCEPT IF SO SPECIFIED ON THE APPROVED PLAN.
8. ALL STONE WALLS IN AND WITHIN 10 FEET OF THE SSTS AREA SHALL BE REMOVED TO THEIR ENTIRE DEPTH AND THE RESULTING VOID REPLACED WITH SIMILAR ON SITE SOIL.
9. PURCHASERS OF LOTS TO BE FURNISHED WITH A TRUE COPY OF THIS PLAN AS APPROVED BY THE PUTNAM COUNTY DEPARTMENT OF HEALTH TOGETHER WITH A COPY OF THE CERTIFICATE OF APPROVAL.
10. THE CONDITIONS NOTED ON THE PUTNAM COUNTY DEPARTMENT OF HEALTH CERTIFICATE OF APPROVAL ARE AN INTEGRAL PART OF THIS SUBDIVISION APPROVAL AND COMPLIANCE IS REQUIRED.
11. THE AREAS DELINEATED FOR PRIMARY AND RESERVE SSTS AREAS ARE TO BE PHYSICALLY MARKED ON THE GROUND AND NO EARTH MOVING OR CONSTRUCTION EQUIPMENT, BUILDING EQUIPMENT OR EXCAVATED EARTH IS TO BE ALLOWED IN THESE AREAS EXCEPT AS REQUIRED FOR CONSTRUCTION OF THE SYSTEM.
12. IT IS THE INTENTION OF THIS PLAN THAT WELLS TO BE A MINIMUM OF 100 FEET FROM ABSORPTION TRENCHES, EXCEPT WHEN A WELL IS DOWNHILL AND IN DIRECT LINE OF DRAINAGE WITH THE SSTS, THEN THE MINIMUM DISTANCE SHALL BE 200 FEET.
13. FLOW FROM ALL PROPOSED DWELLINGS TO THE SSTS AREAS TO BE BY GRAVITY EXCEPT IF SO NOTED IN THE SSTS SCHEDULE.
14. THE SSTS DESIGNS DO NOT PROVIDE FOR THE INSTALLATION OF GARBAGE GRINDERS. SUCH INSTALLATIONS REQUIRE ADDITIONAL DESIGN AND THE APPROVAL OF THE PUTNAM COUNTY HEALTH DEPARTMENT.
15. APPROVAL IS HEREWITH GRANTED FOR A TOTAL OF 3 LOTS ONLY, NAMELY LOTS 1, 2, AND 3 AND THESE LOTS ONLY.

AS-BUILT SURVEY NOTES:

1. PRIOR TO THE ISSUANCE OF A BUILDING PERMIT, THE FOUNDATION LOCATION SHALL BE SURVEY LOCATED (BY USE OF OFF-SETS) BY A NYS LICENSED LAND SURVEYOR AND SHALL CORRESPOND TO THE APPROVED PLANS; CORRESPONDENCE FROM THE SURVEYOR SHALL BE PROVIDED TO THE BUILDING DEPARTMENT CERTIFYING THE SAME.
2. PRIOR TO FRAMING, AN AS-BUILT SURVEY OF THE FOUNDATION SHALL BE SUBMITTED TO THE BUILDING DEPARTMENT. THE SURVEY SHALL BE PREPARED BY THE NYS LICENSED LAND SURVEYOR, SHALL INCLUDE ELEVATIONS AND PROPERTY LINE SETBACK DIMENSIONS TO DEMONSTRATE COMPLIANCE WITH THESE APPROVED PLANS, AND SHALL BE PREPARED TO THE SATISFACTION OF THE TOWN ENGINEER AND BUILDING INSPECTOR.
3. THE OWNER/OPERATOR SHALL SUBMIT AN AS-BUILT SURVEY OF ANY STORMWATER MANAGEMENT FACILITY LOCATED ON-SITE AFTER FINAL CONSTRUCTION IS COMPLETED. THIS SURVEY MUST SHOW THE FINAL DESIGN SPECIFICATION FOR ALL STORMWATER MANAGEMENT FACILITIES AND MUST BE CERTIFIED BY A NYS PROFESSIONAL ENGINEER.

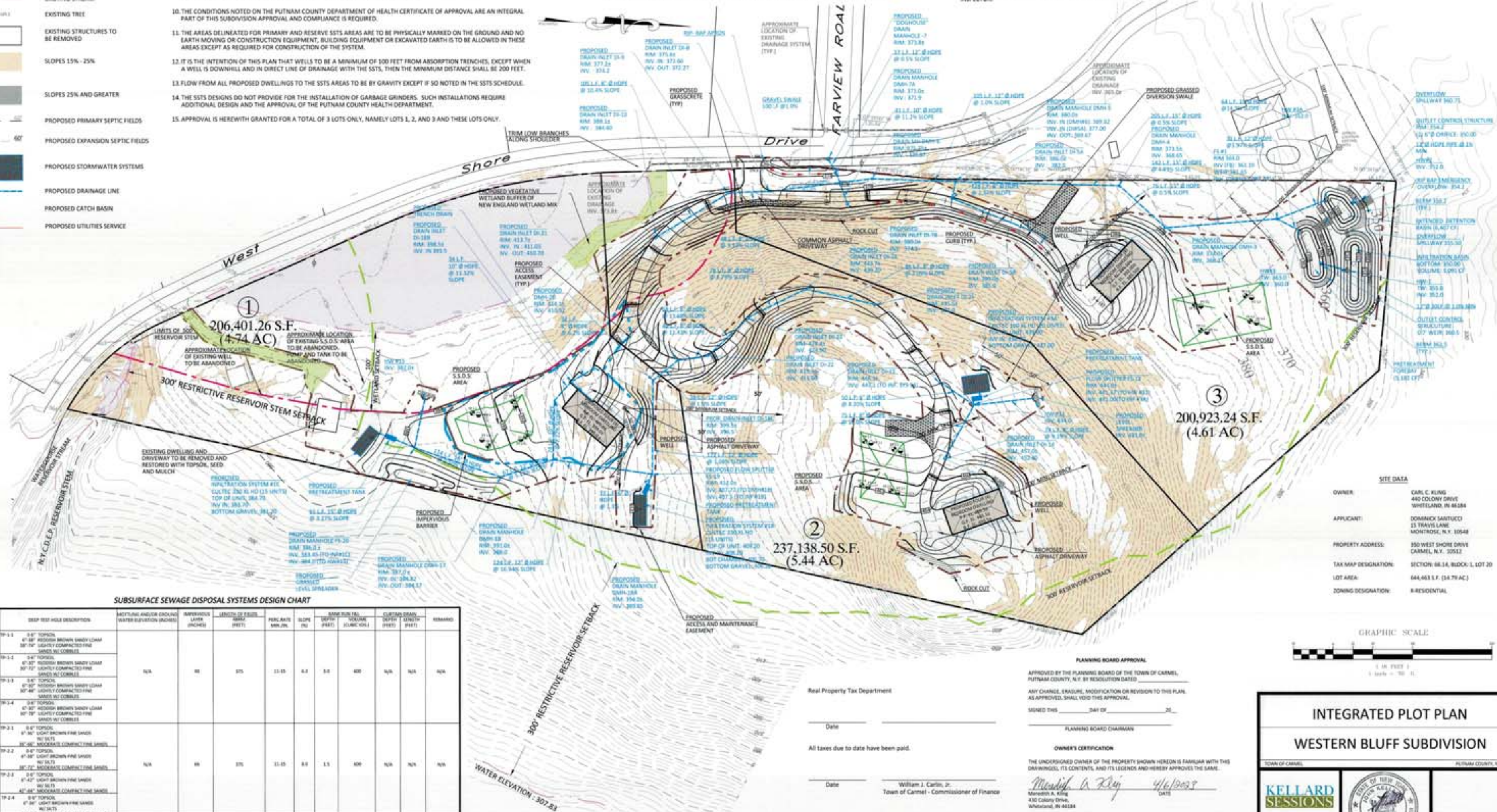
NOTES:

1. EXISTING STONEWALL: "STONES TO BE REMOVED SHOULD BE UTILIZED ON-SITE TO SUPPLEMENT EXISTING WALLS THAT WILL REMAIN."
2. WETLANDS FIELD VERIFIED BY BRUCE BARBER, TOWN WETLAND CONSULTANT ON SEPTEMBER 12, 2006.
3. NO KNOWN WELLS WITHIN 100 FEET OR 200 FEET IN DIRECT LINE OF DRAINAGE OF PROPOSED SEPTIC AREA.
4. NO KNOWN POTENTIAL SOURCES OF CONTAMINATION WITHIN 200 FEET IN GENERAL DIRECT LINE OF DRAINAGE OF PROPOSED WELL.
5. NO EXISTING S.S.T.A.'S OR WELLS WITHIN RESTRICTIVE DISTANCES OF PROPOSED S.S.T.A. OR WELL.

1. THE GROSS SITE AREA EQUALS 14.79 ± ACRES.
2. TOTAL SITE DISTURBANCE EQUALS 5.0 ± ACRES.
3. ACCORDING TO THE TAX ASSESSOR, THE SUBJECT SITE CONSISTS OF THE FOLLOWING TAX PARCEL IDENTIFICATION NUMBERS: 66.14-1-20.
4. SURVEY DATA SHOWN HEREON IS OBTAINED FROM MAP PREPARED BY WARD CARPENTER ENGINEERS, INC. DATED APRIL 9, 2003.
5. TOPOGRAPHIC DATA SHOWN HEREON IS OBTAINED FROM A TOPOGRAPHIC SURVEY PREPARED FOR CARL KLING, PREPARED BY WARD CARPENTER ENGINEER, INC. DATED OCTOBER 28, 2014.
6. SOIL BOUNDARIES SHOWN HEREON ARE TAKEN FROM WESTCHESTER AND PUTNAM SOIL SURVEY.
7. THE SUBJECT SITE IS LOCATED IN THE R-RESIDENTIAL ZONING DISTRICT.
8. THE SUBJECT SITE IS LOCATED IN THE CARMEL SCHOOL DISTRICT.
9. THE SUBJECT SITE IS LOCATED IN THE CARMEL WETLAND AND WATERCOURSE, GROUND AND SURFACE WATER PROTECTION AND HILLSIDE MANAGEMENT OVERLAY DISTRICT(S).
10. THE SUBJECT SITE IS LOCATED IN THE CROTON FALLS WATERSHED BASIN.
11. WETLANDS FIELD VERIFIED BY RICHARD FRANZETTI, P.E., TOWN WETLAND INSPECTOR.

LOCATION MAP

N.T.S.



SITE DATA

OWNER:	CARL C. KLING 440 COLONY DRIVE WHITELAND, IN 46184
APPLICANT:	DOMINICK SANTUCCI 15 TRAVIS LANE MONTROSE, N.Y. 10548
PROPERTY ADDRESS:	350 WEST SHORE DRIVE CARMEL, N.Y. 10512
TAX MAP DESIGNATION:	SECTION: 66.14, BLOCK: 1, LOT 20
LOT AREA:	644,463 S.F. (14.79 AC.)
ZONING DESIGNATION:	R-RESIDENTIAL

GRAPHIC SCALE

(IN FEET)
1 inch = 50 ft.

SUBSURFACE SEWAGE DISPOSAL SYSTEMS DESIGN CHART

LOT #	LOT SIZE (ACRES ±)	DEEP TEST HOLE DESCRIPTION	MOTTLING AND/OR GROUND WATER ELEVATION (INCHES)	IMPERVIOUS LAYER (INCHES)	LENGTH OF FIELDS ABSAS (FEET)	PERC RATE MIN./IN.	SLOPE (%)	BANK RUN FILL DEPTH (FEET)	BANK RUN FILL VOLUME (CUBIC YDS.)	CURTAIN DRAIN DEPTH (FEET)	CURTAIN DRAIN LENGTH (FEET)	REMARKS
LOT 1	4.74	TP-1-1 0-6" TOPSOIL 6"-38" REDDISH BROWN SANDY LOAM 38"-74" LIGHTLY COMPACTED FINE SANDS W/ COBBLES TP-1-2 0-6" TOPSOIL 6"-30" REDDISH BROWN SANDY LOAM 30"-72" LIGHTLY COMPACTED FINE SANDS W/ COBBLES TP-1-3 0-6" TOPSOIL 6"-30" REDDISH BROWN SANDY LOAM 30"-48" LIGHTLY COMPACTED FINE SANDS W/ COBBLES TP-1-4 0-6" TOPSOIL 6"-30" REDDISH BROWN SANDY LOAM 30"-78" LIGHTLY COMPACTED FINE SANDS W/ COBBLES	N/A	98	375	11-15	6.3	3.0	400	N/A	N/A	N/A
LOT 2	5.44	TP-2-1 0-6" TOPSOIL 6"-36" LIGHT BROWN FINE SANDS W/ SILTS 36"-66" MODERATE COMPACT FINE SANDS TP-2-2 0-6" TOPSOIL 6"-38" LIGHT BROWN FINE SANDS W/ SILTS 38"-72" MODERATE COMPACT FINE SANDS TP-2-3 0-6" TOPSOIL 6"-42" LIGHT BROWN FINE SANDS W/ SILTS 42"-84" MODERATE COMPACT FINE SANDS TP-2-4 0-6" TOPSOIL 6"-36" LIGHT BROWN FINE SANDS W/ SILTS 36"-78" MODERATE COMPACT FINE SANDS	N/A	66	375	11-15	8.0	1.5	400	N/A	N/A	N/A
LOT 3	4.61	TP-3-1 0-6" TOPSOIL 6"-30" MEDIUM BROWN SANDY LOAM 30"-92" TIGHTLY COMPACTED FINE SANDS W/ COBBLES, GRAVEL, SILTS TP-3-2 0-6" TOPSOIL 6"-30" MEDIUM BROWN SANDY LOAM 30"-92" TIGHTLY COMPACTED FINE SANDS W/ COBBLES, GRAVEL, SILTS TP-3-3 0-6" TOPSOIL 6"-22" MEDIUM BROWN SANDY LOAM 22"-87" TIGHTLY COMPACTED FINE SANDS W/ COBBLES, GRAVEL, SILTS TP-3-4 0-6" TOPSOIL 6"-44" MEDIUM BROWN SANDY LOAM 44"-82" MODERATE COMPACTED FINE SANDS W/ COBBLES, GRAVEL, SILTS	N/A	82	600	31-45	10.8	N/A	N/A	N/A	N/A	DOSING REQUIRED

Real Property Tax Department

Date

All taxes due to date have been paid.

Date

William J. Carlin, Jr.
Town of Carmel - Commissioner of Finance

ZONING CHART

LOT NUMBER	LOT AREA (S.F.)	LOT WIDTH (FT.)	LOT DEPTH (FT.)	FRONT YARD (FT.)	SIDE YARD (FT.)	REAR YARD (FT.)	MAX. BLDG HEIGHT(FT.)	MAX. BLDG COVERAGE (%)	FRONTAGE (FT.)
REQUIRED	120,000	200	200	40	25/EACH SIDE	40	35	15%	100
LOT #1	206,401.26	424	539	302	79/93	65	35<	1.3%	752
LOT #2	237,138.50	372	666	552	153/315	87	35<	1.1%	168
LOT #3	200,923.24	248	737	328	75/109	289	35<	1.3%	100

PLANNING BOARD APPROVAL

APPROVED BY THE PLANNING BOARD OF THE TOWN OF CARMEL, PUTNAM COUNTY, N.Y. BY RESOLUTION DATED ____________

ANY CHANGE, ERASURE, MODIFICATION OR REVISION TO THIS PLAN, AS APPROVED, SHALL VOID THIS APPROVAL.

SIGNED THIS ________ DAY OF ________________ 20__

PLANNING BOARD CHAIRMAN

OWNER'S CERTIFICATION

THE UNDERSIGNED OWNER OF THE PROPERTY SHOWN HEREON IS FAMILIAR WITH THIS DRAWING(S), ITS CONTENTS, AND ITS LEGENDS AND HEREBY APPROVES THE SAME.

Meredith A. Kling (signature) 4/6/2023
Meredith A. Kling
430 Colony Drive,
Whiteland, IN 46184
DATE

Putnam County Health Department
Carmel, New York

Approved subject to the provision of a private water supply and private sewage treatment system for each habitable lot in accordance with the Putnam County Sanitary Code and as shown on the Realty Subdivision Plan as filed with the Putnam County Department of Health. Consent is hereby given for the filing of this map in the Office of the County Clerk in accordance with the provisions of Sections 1116 and 1117 of the Public Health Law.

By: (signature) P.E. SPHE Date: 4/26/23
Environmental Health Services
Expiration Date: 4/26/28

INTEGRATED PLOT PLAN

WESTERN BLUFF SUBDIVISION

TOWN OF CARMEL — PUTNAM COUNTY, NEW YORK

KELLARD SESSIONS
CONSULTING ENGINEERING & LANDSCAPE ARCHITECTURE PLANNING, D.P.C.

REV.	REVISIONS
8.	
7.	
6.	
5.	
4.	
3.	
2.	MARCH 29, 2023 P.C.D.H. COMMENTS
1.	SEPTEMBER 22, 2022 P.C.D.H. COMMENTS

Sheet 1 / 1

PROJECT I.D.: CASANTUCCI100

DATE: DECEMBER 20, 2019

PRELIMINARY SUBDIVISION APPROVAL
RESOLUTION OF THE
PLANNING BOARD OF THE TOWN OF CARMEL
#22-09, May 12, 2022

Tax Map #66.14-1-20
WESTERN BLUFF SUBDIVISION

WHEREAS, an application for Planning Board approval of an preliminary subdivision plat has been submitted by Dominick Santucci (hereinafter referred to as the "Applicant"); and

WHEREAS, the subject parcel encompasses 14.79 acres located off West Shore Drive, and is more specifically known and designated as Tax Map #66.14-1-20 (hereinafter referred to as the "Site"); and

WHEREAS, the Site is located in the R – Residential zoning district; and

WHEREAS, the tract currently supports a single-family residence, which will be demolished; and

WHEREAS, the action involves the subdivision of the property to create 3 single-family lots of 4.74 acres, 5.44 acres and 4.61 acres respectively. Lot 1 will continue to be served by an existing driveway, and Lots 2 and 3 would be served by a new single curb-cut on West Shore Drive located across from Farview Road, which then branches off into two separate driveways serving each lot. The three new residences will be served by individual wells and subsurface septic disposal systems (hereinafter referred to as the "Project"); and

WHEREAS, the Preliminary Subdivision Plan consists of the following plans prepared by Kellard Sessions, dated January 13, 2017, last revised January 3, 2022:

1/9	Cover Sheet
2/9	Existing Conditions Plan
3/9	Sediment & Erosion Control Plan
4/9	Tree removal & Landscaping Plan
5/9	Construction Details
6/9	Construction Details
7/9	Sediment & Erosion Control Details & Notes
8/9	Driveway Profiles
8/9	Drainage Profiles

WHEREAS, a public hearing was held, pursuant to Section 276 of the Town Law on the proposed subdivision at Town Hall, Mahopac. All persons wishing to speak on the application were provided an opportunity to be heard; and

WHEREAS, on September 26, 2018, pursuant to NYCRR 617, Article 8 of the New York State Environmental Conservation Law, (SEQR) the Planning Board serving as Lead Agency for this

Action adopted a Negative Declaration indicating that the proposed action would not result in any adverse environmental impacts; and

WHEREAS, the requirements for preliminary subdivision plat approval contained in the "Subdivision of Land Regulations of the Town of Carmel" have been met by said subdivision application.

NOW THEREFORE BE IT RESOLVED, that the Planning Board of the Town of Carmel hereby classifies the Proposed Action as a "Minor Subdivision" pursuant to §131-3 of the Land Subdivision Regulations

BE IT FURTHER RESOLVED, upon full consideration of the above, the Planning Board of the Town of Carmel hereby grants Preliminary Subdivision Plat Approval for the application submitted by Dominick Santucci, as depicted on the plans identified above, subject to the following conditions:

CONDITIONS PRIOR TO FINAL PLAT APPROVAL

The following conditions shall be completed by the Applicant prior to the approval of the Final Subdivision Plat by the Planning Board.

1. The Final Subdivision Plat and associated plans shall be prepared in accordance with §131-14 of the Town of Carmel Subdivision of Land Regulations

2. The Town Engineer shall determine that all proposed site engineering improvements are satisfactory and suitable for consideration for final approval.

3. All required easements shall be prepared to the satisfaction of the Planning Board Attorney, and submitted in support of the Final Subdivision Plat.

4. The Final Subdivision Plat shall document compliance with the requirements of the NYCDEP and NYSDEC for the Storm Water Pollution Prevention Plan

5. Putnam County Health Department approval shall be obtained for water and sanitary disposal systems.

6. A Street Opening Permit is required from the Putnam County Department of Highway and Facilities.

7. The Applicant shall apply for coverage under the NYSDEC General Permit for Construction Activities (GP-0-20-001).

8. A stormwater bond and maintenance guarantee pursuant to §156.87 of the Town Code shall be provided, as required.

9. The new dwellings and other site improvements shall be restricted to the building envelopes shown on the Final Subdivision Plat and Plans. Substantial changes, as determined by the Building Inspector and Town Planning Consultant, in the

location of dwellings, driveways, drainage improvements, and other site improvements, shall require the review and approval of the Planning Board.

10. All site utilities shall be installed underground.

11. The project shall maintain a 0% increase in the rate of runoff.

12. The following note shall be added to all deeds conveying lands for the subdivision plat: There shall be no construction, grading, filing, excavating, clearing or other regulated activity as defined by the Town of Carmel on this property within the freshwater wetland area or 100-foot adjacent area at any time without having first secured the necessary permission and permit. This restriction shall bind the Grantees, their successors and assigns and shall be expressly set forth in all subsequent deeds to this property.

13. In accordance with the provisions of §131-25A(3) of the Subdivision of Land Regulations, the Applicant shall pay a fee-in-lieu of the parkland dedication.

14. A construction management plan shall be submitted along with the Final Subdivision Plat. Said plan shall govern all aspects of the construction of the subdivision, including all limitations, restrictions and prohibitions as well as all measures to mitigate impacts of surrounding properties.

15. The applicant shall provide a certified cost estimate, prepared by a licensed Professional Engineer, covering all proposed public improvements for the purpose of setting a performance bond.

BE IT FURTHER RESOLVED, that this Preliminary Subdivision Approval shall expire within one hundred eighty (180) days of the date of this resolution unless a Final Subdivision Plat is filed in accordance with §131-14 of the Town of Carmel Subdivision of Land Regulations, unless such time is extended by the Planning Board.

BE IT FURTHER RESOLVED, that no construction, utility or site work of any kind is authorized pursuant to this resolution of Preliminary Subdivision Approval.

BE IT FINALLY RESOLVED, that this Preliminary Subdivision Approval resolution shall have an effective date of May 12, 2022.

PLANNING BOARD
TOWN OF CARMEL

_____
Chairman

_____
Dated:

FINAL SUBDIVISION PLAN

FOR

WESTERN BLUFF SUBDIVISION

TOWN OF CARMEL, PUTNAM COUNTY, NEW YORK

DATE: JANUARY 13, 2017
REVISED: MAY 01, 2017
REVISED: MAY 15, 2017
REVISED: JANUARY 19, 2018
REVISED: JULY 5, 2018
REVISED: OCTOBER 31, 2018
REVISED: MAY 7, 2019
REVISED: JANUARY 20, 2020
REVISED: OCTOBER 20, 2020
REVISED: NOVEMBER 8, 2021
REVISED: JANUARY 3, 2022
REVISED: MARCH 29, 2023

GENERAL NOTES:

1. THE PROJECT INCLUDES ACCESS AND UTILITY EASEMENTS AND A STORMWATER EASEMENT.
   - ACCESS AND UTILITY EASEMENT OVER LOT #3 IN FAVOR OF LOTS #1 AND #2
   - ACCESS AND UTILITY EASEMENT OVER LOT #2 IN FAVOR OF LOT #1
   - ACCESS AND UTILITY EASEMENT OVER LOT #1 IN FAVOR OF LOT #2

   PLEASE SEE SUBDIVISION MAP WESTERN BLUFF SUBDIVISION PREPARED FOR MEREDITH A. KLING FOR ALL EASEMENTS.

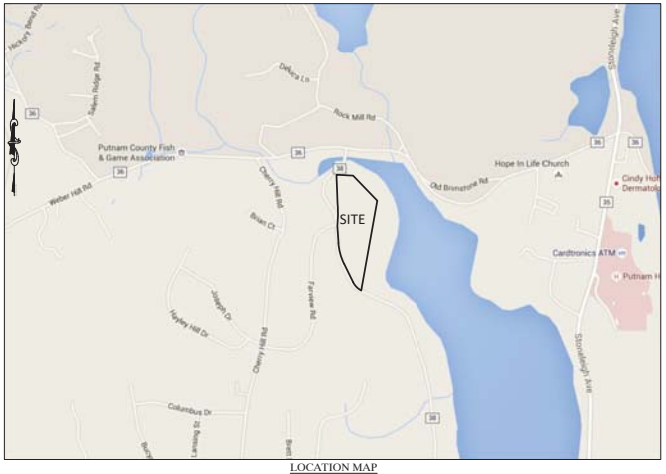
2. THE PROJECT DOES NOT INCLUDE A RESERVATION OF OPEN SPACE, THEREFORE, IN ACCORDANCE WITH SECTION 131-25A(3) OF THE TOWN OF CARMEL TOWN CODE A PAYMENT IS REQUIRED IN LIEU OF A RESERVATION OF LAND, FROM THE APPLICANT.

3. ALL DRIVEWAYS MUST COMPLY WITH SECTION 128 OF THE TOWN OF CARMEL TOWN CODE.

4. ALL PROPOSED PLANTINGS SHALL BE INSTALLED IN CONFORMANCE WITH SECTION 142 OF THE TOWN OF CARMEL TOWN CODE. ALL PLANTINGS SHALL BE VERIFIED BY THE TOWN OF CARMEL WETLAND INSPECTOR.

SITE DATA

OWNER:	CARL C. KLING 440 COLONY DRIVE WHITELAND, IN 46184
APPLICANT:	DOMINICK SANTUCCI 15 TRAVIS LANE MONTROSE, N.Y. 10548
PROPERTY ADDRESS:	350 WEST SHORE DRIVE CARMEL, N.Y.
TAX MAP DESIGNATION:	SECTION: 66.14, BLOCK: 1, LOT 20
LOT AREA:	644,463 S.F. (14.79 AC.)
ZONING DESIGNATION:	R-RESIDENTIAL



LOCATION MAP
N.T.S

SHEET INDEX

APPROVED BY THE PUTNUM COUNTY DEPARTMENT OF HIGHWAYS & FACILITIES ON THE DATE SHOWN BELOW; ANY CHANGES TO THIS PLAT AFTER SAID DATE VOIDS THIS APPROVAL. NO CONSTRUCTION SHALL BEGIN WITHOUT FIRST OBTAINING A PUTNAM COUNTY 'ROAD WORK PERMIT'.

COMMISSIONER OF HIGHWAYS & FACILITIES: _____ DATE:_____

KELLARD SESSIONS
CIVIL ENGINEERING | LANDSCAPE ARCHITECTURE | SITE & ENVIRONMENTAL PLANNING
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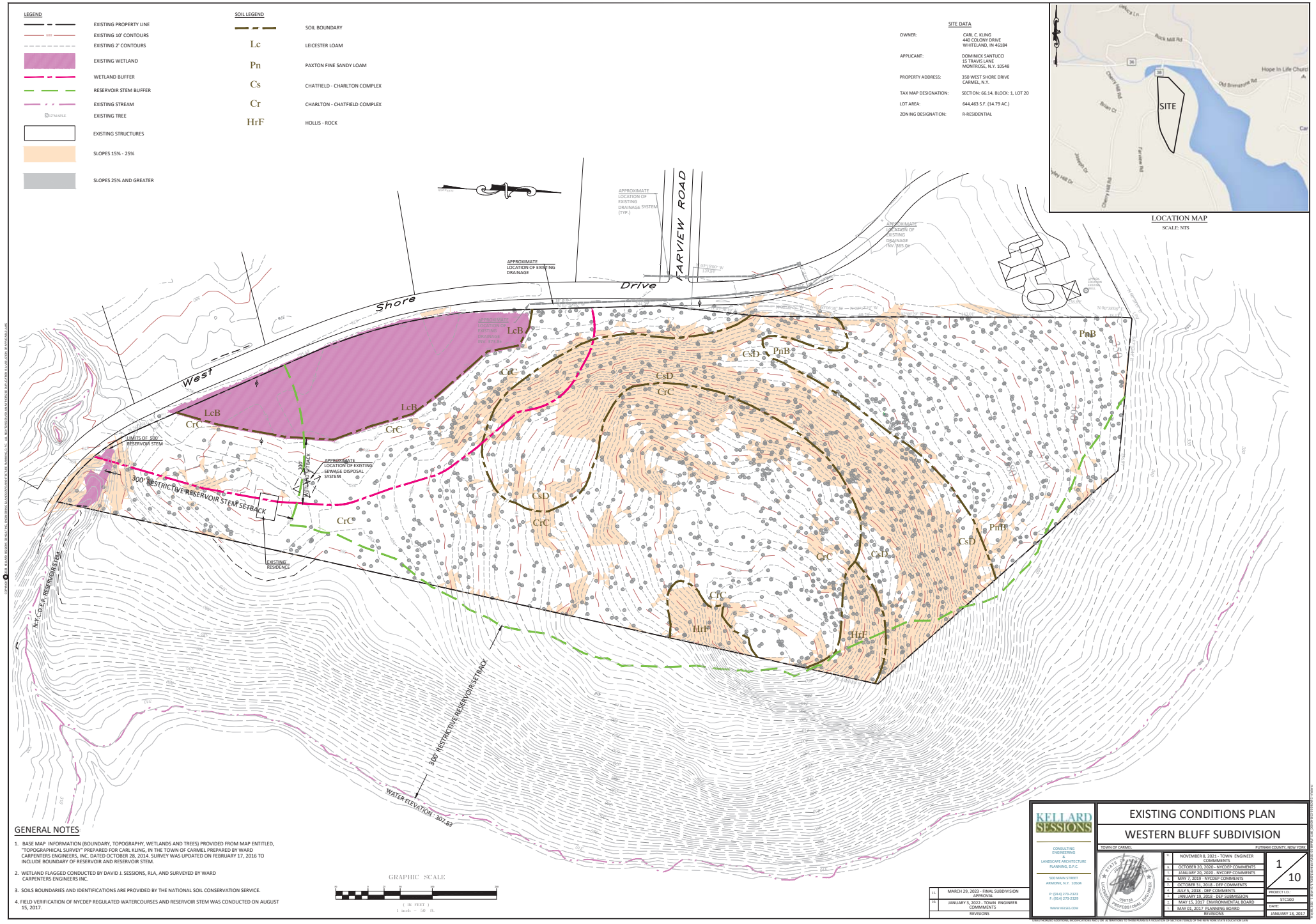

GENERAL NOTES

1. BASE MAP INFORMATION (BOUNDARY, TOPOGRAPHY, WETLANDS AND TREES) PROVIDED FROM MAP ENTITLED, "TOPOGRAPHICAL SURVEY" PREPARED FOR CARL KLING, IN THE TOWN OF CARMEL PREPARED BY WARD CARPENTERS ENGINEERS, INC. DATED OCTOBER 28, 2014. SURVEY WAS UPDATED ON FEBRUARY 17, 2016 TO INCLUDE BOUNDARY OF RESERVOIR AND RESERVOIR STEM.
2. WETLAND FLAGGED CONDUCTED BY DAVID J. SESSIONS, RLA, AND SURVEYED BY WARD CARPENTERS ENGINEERS INC.
3. SOILS BOUNDARIES AND IDENTIFICATIONS ARE PROVIDED BY THE NATIONAL SOIL CONSERVATION SERVICE.
4. FIELD VERIFICATION OF NYCDEP REGULATED WATERCOURSES AND RESERVOIR STEM WAS CONDUCTED ON AUGUST 15, 2017.

11	MARCH 29, 2023 - FINAL SUBDIVISION APPROVAL
10	JANUARY 3, 2022 - TOWN ENGINEER COMMMENTS
	REVISIONS

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EXISTING CONDITIONS PLAN
WESTERN BLUFF SUBDIVISION

TOWN OF CARMEL — PUTNAM COUNTY, NEW YORK

9	NOVEMBER 8, 2021 - TOWN ENGINEER COMMMENTS
8	OCTOBER 20, 2020 - NYCDEP COMMENTS
7	JANUARY 20, 2020 - NYCDEP COMMENTS
6	MAY 7, 2019 - NYCDEP COMMENTS
5	OCTOBER 11, 2018 - DEP COMMENTS
4	JULY 5, 2018 - DEP COMMENTS
3	JANUARY 15, 2018 - DEP SUBMISSION
2	MAY 15, 2017 ENVIRONMENTAL BOARD
1	MAY 01, 2017 PLANNING BOARD
	REVISIONS

LICENSED PROFESSIONAL ENGINEER — 084735 — STATE OF NEW YORK

1 / 10

PROJECT I.D.: STC100

DATE: JANUARY 13, 2017

LEGEND

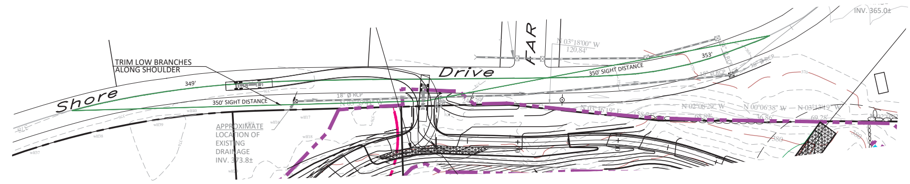
- EXISTING PROPERTY LINE
- PROPOSED PROPERTY LINE
- ZONING SETBACK LINE
- LIMITS OF DISTURBANCE (3.85 ACRES ±)
- EXISTING 10' CONTOURS
- EXISTING 2' CONTOURS
- PROPOSED 10' CONTOUR
- PROPOSED 2' CONTOUR
- EXISTING WETLAND
- WETLAND BUFFER
- RESERVOIR BUFFER
- EXISTING STREAM
- EXISTING TREE
- EXISTING STRUCTURES TO BE REMOVED
- SLOPES 15% - 25%
- SLOPES 25% AND GREATER
- PROPOSED PRIMARY SEPTIC FIELDS
- PROPOSED EXPANSION SEPTIC FIELDS
- PROPOSED STORMWATER SYSTEMS
- PROPOSED DRAINAGE LINE
- PROPOSED CATCH BASIN
- PROPOSED SIGHT LINE DISTANCE
- PROPOSED ELECTRIC SERVICE
- PROPOSED GRASSCRETE

DEEP TEST PIT RESULTS - WITNESSED BY DEP 11/21/17

TEST PIT	DEPTH FROM SURFACE(INCH)	SOIL DESCRIPTION
D-1-1	0-8" 8"-29" 29"-90"	TOPSOIL ORANGE/BROWN SANDS GRAY MEDIUM TO FINE SANDS LEDGE @ 90"
D-1-2	0-8" 8"-38" 38"-72"	TOPSOIL ORANGE/BROWN SANDS GRAY MEDIUM TO FINE SANDS LEDGE @ 72"
D-2-1	0-4" 4"-32" 32"-60"	TOPSOIL ORANGE/BROWN LOAMY LANDS W/ SILT GRAY SANDS; FINE SILT LEDGE @ 60"
D-2-2	0-4" 4"-33" 33"-72"	TOPSOIL ORANGE/BROWN LOAMY LANDS W/ SILT GRAY SANDS; FINE SILT
D-3-1	0-4" 4"-32" 32"-90"	TOPSOIL SILTY SANDS, MODERATELY COMPACT LIGHT BROWN SILTY LOAM, VERY COMPACT
D-3-2	0-4" 4"-32" 32"-86"	TOPSOIL SILTY SANDS, MODERATELY COMPACT LIGHT BROWN SILTY LOAM, VERY COMPACT
D-3-3	0-8" 8"-24" 24"-54"	TOPSOIL ORANGE/BROWN LOAMY SANDS MODERATELY COMPACT TRACES OF SILT, SANDS W/ GRAVEL MOTTLING @ 36"
D-3-4	0-18" 18"-40"	DARK BROWN TOPSOIL TIGHTLY COMPACT SILT, SOME SANDS W/ BOULDERS MOTTLING @ 24"

PERCOLATION TEST RESULTS 11/21/17

PERC HOLE #	PERC RATE
P1	3.00 MIN/INCH
P2	1.60 MIN/INCH
P3	2.61 MIN/INCH
P4	3.33 MIN/INCH



VEHICLE TURNING ANALYSIS AND SIGHT LINE DISTANCE

SSD Calculations

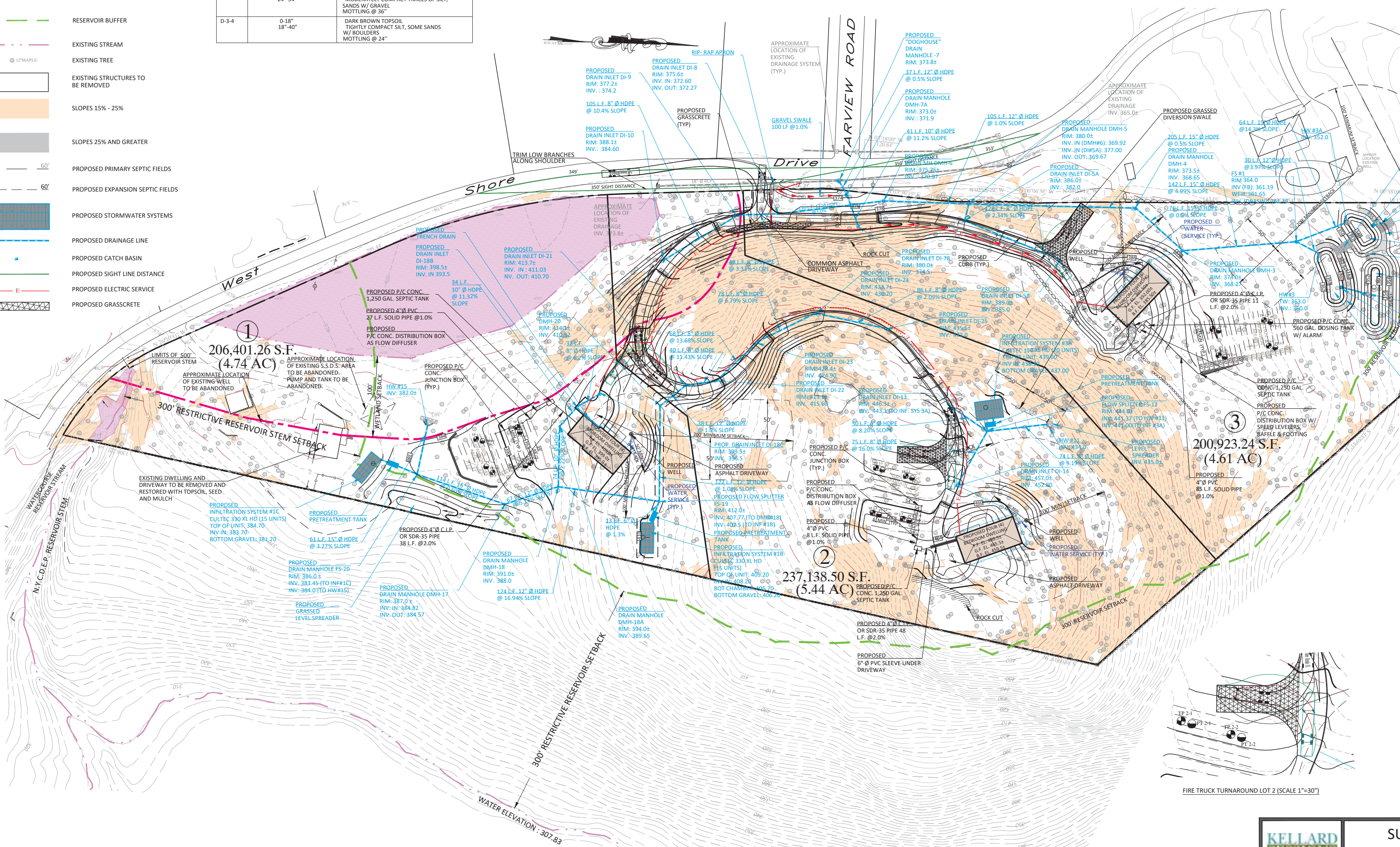
SSD = d + b

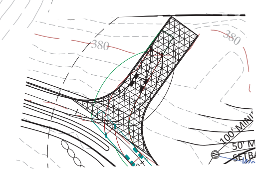
breaking reaction length -> b = V x t

sight line distance -> d = (v^2)/(30[(a/32.2) +G])

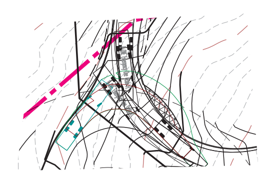
Northbound		Southbound	
V=45 mph or 66 fps		V=45 mph or 66 fps	
a= 11.2		a= 11.2	
t=2.5 sec		t=2.5 sec	
G=0.02		G=0.0125	
b (NB)=	165 ft	b (NB)=	165 ft
d (NB)=	184 ft	d (NB)=	188 ft
SSD (NB)=	349 ft*	SSD (NB)=	353 ft*

*Distance along centerline of roadway





FIRE TRUCK TURNAROUND LOT 3 (SCALE 1"=30")



FIRE TRUCK TURNAROUND LOT 1 (SCALE 1"=30")

FIRE TRUCK TURNAROUND LOT 2 (SCALE 1"=30")

ZONING CHART

LOT NUMBER	LOT AREA (S.F.)	LOT WIDTH (FT.)	LOT DEPTH (FT.)	FRONT YARD (FT.)	SIDE YARD (FT.)	REAR YARD (FT.)	MAX. BLDG HEIGHT(FT.)	MAX. BLDG COVERAGE (%)	FRONTAGE (FT.)
REQUIRED	120,000	200	200	40	25/EACH SIDE	40	35	15%	100
LOT #1	206,401.26	424	539	302	79/93	65	35<	1.3%	752
LOT #2	237,138.50	372	666	552	153/315	87	35<	1.1%	168
LOT #3	200,923.24	248	737	328	75/109	289	35<	1.3%	100

GRAPHIC SCALE

(IN FEET)
1 inch = 50 ft.

No.	REVISIONS
15.	MARCH 29, 2023 - FINAL SUBDIVISION APPROVAL
14.	JANUARY 3, 2021 - TOWN ENGINEER COMMENTS
13.	NOVEMBER 8, 2021- TOWN ENGINEER COMMENTS
12.	OCTOBER 20, 2020 - NYCDEP COMMENTS
11.	JANUARY 20, 2020 - NYCDEP COMMENTS

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SUBDIVISION LAYOUT PLAN

WESTERN BLUFF SUBDIVISION

TOWN OF CARMEL PUTNAM COUNTY, NEW YORK

STATE OF NEW YORK JOHN KELLARD LICENSED PROFESSIONAL ENGINEER 058736

No.	REVISIONS
10.	MAY 7, 2019 - NYCDEP COMMENTS
9.	OCTOBER 31, 2018 - DEP COMMENTS
8.	JULY 5, 2018 - DEP COMMENTS
7.	JANUARY 19, 2018 - DEP SUBMISSION
6.	MAY 15, 2017 ENVIRONMENTAL BOARD
5.	APRIL 25, 2017 PLANNING BOARD
4.	JANUARY 13, 2017
3.	JULY 20, 2016
2.	JULY 14, 2016
1.	JUNE 21, 2016

2 / 10

PROJECT I.D.: STC100

DATE: JANUARY 9, 2015

LEGEND

- EXISTING PROPERTY LINE
- PROPOSED PROPERTY LINE
- ZONING SETBACK LINE
- LIMITS OF DISTURBANCE (3.85 ACRES ±)
- EXISTING 10' CONTOURS
- EXISTING 2' CONTOURS
- PROPOSED 10' CONTOUR
- PROPOSED 2' CONTOUR
- EXISTING WETLAND
- WETLAND BUFFER
- RESERVOIR BUFFER
- EXISTING STREAM
- EXISTING TREE
- EXISTING STRUCTURES
- SILT FENCE
- TEMPORARY SOIL STOCKPILE
- STABILIZED CONSTRUCTION ENTRANCE
- EROSION CONTROL MATTING
- SLOPES 25% +

EROSION CONTROL MAINTENANCE SCHEDULE

DEVICE	WEEKLY	BI-MONTHLY	MONTHLY	AFTER SIGNIFICANT RAINFALL
STABILIZED CONSTRUCTION ENTRANCE	INSPECT	INSPECT	INSPECT/CLEAN	INSPECT/CLEAN
SILT FENCE	INSPECT	INSPECT	INSPECT/CLEAN	INSPECT/CLEAN
SOIL STOCKPILE	INSPECT	INSPECT	INSPECT	INSPECT/CLEAN
EROSION CONTROL BLANKET	INSPECT	INSPECT	INSPECT	INSPECT
INLET PROTECTION	INSPECT	INSPECT	INSPECT	INSPECT/CLEAN

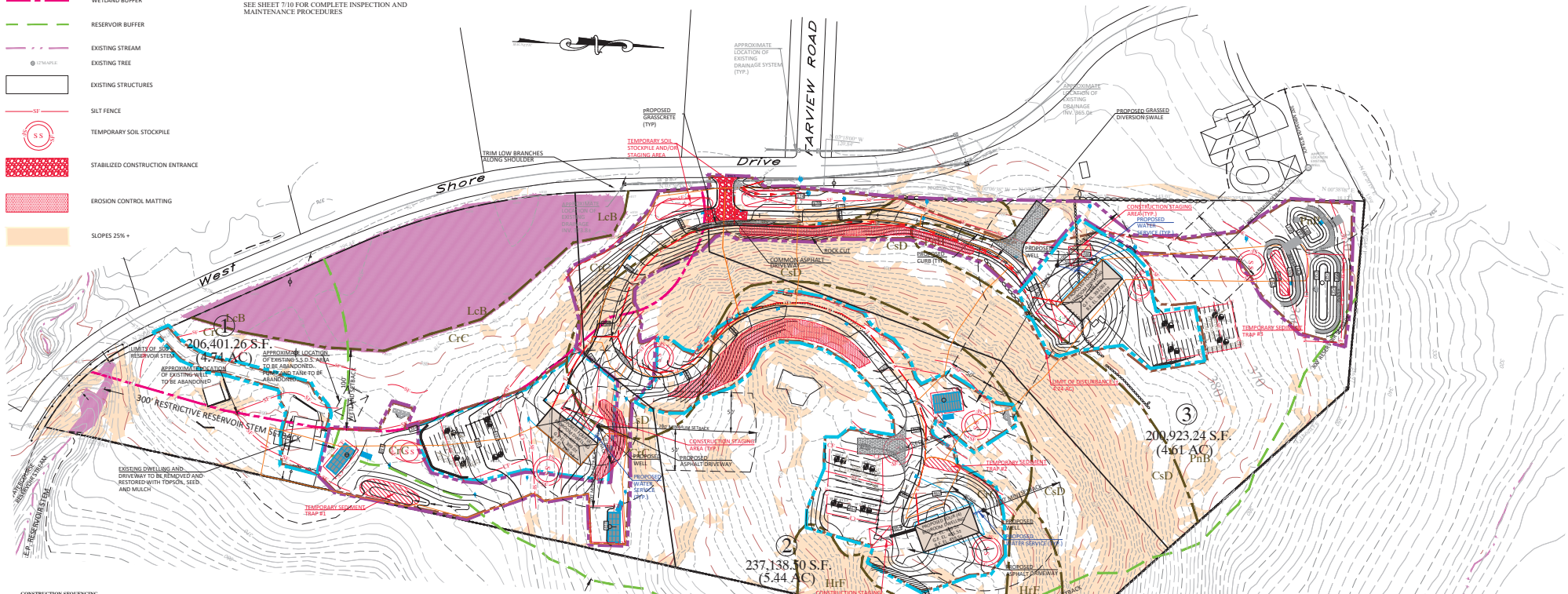
SEE SHEET 7/10 FOR COMPLETE INSPECTION AND MAINTENANCE PROCEDURES

CUT & FILL ANALYSIS

	CUT VOLUME	FILL VOLUME	NET
TOTAL	6,214 CY	7,090 CY	876 CY (FILL)
PHASE 1	5,282 CY	1,000 CY	4,282 CY (CUT)
PHASE 2	932 CY	6,090 CY	5,158 CY (FILL)

SOIL LEGEND

	SOIL BOUNDARY
LcB	LEICESTER LOAM
PnB & PnC	PAXTON FINE SANDY LOAM
CsD	CHATFIELD - CHARLTON COMPLEX
CrC	CHARLTON - CHATFIELD COMPLEX
HrF	HOLLIS - ROCK



CONSTRUCTION SEQUENCING

1. A PRECONSTRUCTION MEETING WITH THE NYCDEP, TOWN REPRESENTATIVES, CONTRACTOR, OWNER, AND ENGINEER SHALL BE SCHEDULED AT LEAST 48-HOURS BEFORE THE START OF CONSTRUCTION ACTIVITIES.
2. ALL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE INSPECTED AS INDICATED IN THE EROSION AND SEDIMENT CONTROL MAINTENANCE SCHEDULE. IF DEFICIENCIES ARE IDENTIFIED, THE CONTRACTOR SHALL BEGIN IMPLEMENTING CORRECTIVE ACTIONS IN ONE BUSINESS DAY AND SHALL COMPLETE THE CORRECTIVE ACTIONS IN A REASONABLE TIME FRAME.
3. PRIOR TO ANY CONSTRUCTION, STAKEOUT PROPERTY LINES AND CONSERVATION AREAS AND LIMITS OF DISTURBANCE FOR PHASE OF INTEREST. MARK LIMITS OF DISTURBANCE IN FIELD WITH ORANGE CONSTRUCTION FENCING OR FLAGGING.

PHASE 1 - COMMON INFRASTRUCTURE (2.46 ACRES)

1. INSTALL STABILIZED CONSTRUCTION ENTRANCES AT THE PROPOSED INTERSECTION WITH WEST SHORE DRIVE.
2. INSTALL SILT FENCE DOWN GRADIENT TO ALL DISTURBED AREAS PART OF THIS PHASE AND UP GRADIENT TO PROPOSED INFILTRATION BASIN AND LOT 3 SEPTIC FIELD AREA.
3. INSTALL TREE PROTECTION MEASURES
4. PLACE CONSTRUCTION STAGING AREA AT LOT 3 PER PHASING PLAN.
5. PLACE CONSTRUCTION FENCE AROUND PROPOSED LOCATION OF INFILTRATION BASIN AND PROPOSED SEPTIC SYSTEM ABSORPTION FIELDS WITHIN AND NEAR TO THE LIMITS OF PHASE 1. PROTECT THESE AREAS FROM TRAFFIC DURING CONSTRUCTION ACTIVITIES.
6. CONSTRUCT DETENTION BASIN PER DESIGN DRAWINGS. USE FOREBAY AS A TEMPORARY SEDIMENT BASIN DURING CONSTRUCTION.
7. STABILIZE ALL GRADED AND DISTURBED AREAS WITHIN DIVERSION SWALE AREA.
8. CLEAR REMAINING TREES WITHIN PHASE LIMITS (ONLY STUMP OR GRUB IN ACTIVE AREAS THAT ARE REQUIRED FOR GRADING OR INFRASTRUCTURE CONSTRUCTION).
9. EXCAVATE AND CONSTRUCT PRETREATMENT SEDIMENT BASIN PER DESIGN DRAWINGS (EXCEPT DO NOT CONSTRUCT WEIR AND SPILLWAY DOWN TO INFILTRATION AREA). ONCE STABILIZED, CONSTRUCT THE TEMPORARY OUTLET TO SEDIMENT BASIN. THE PRETREATMENT SEDIMENT FOREBAY / SHALL BE USED AS PRETREATMENT TO SEDIMENT BASIN DURING CONSTRUCTION.
10. CONSTRUCT PIPE NETWORK AND STRUCTURES IN REVERSE ORDER GOING UPHILL, STARTING FROM THE DRAINAGE OUTLET HW3, HW 3A, FS 1, DMH3, DMH4, DMH5, DMH6, DI8, DI9 AND DI 10 INSTALL EROSION MATTING OVER STEEP SLOPES AS SPECIFIED ON DESIGN DRAWINGS.
11. INFILTRATION SYSTEM #1B WILL BE INSTALLED ALONG WITH THE PRETREATMENT TANK, FS19, DMH 20 AND THE CONNECTING PIPING. A PIPE STUB WILL BE INSTALLED TO THE PROPERTY LINE FOR FUTURE CONNECTION DURING LOT 2 DEVELOPMENT.
12. INSTALL INLET PROTECTION AT ALL OPEN GRATED DRAINAGE INLETS TO PROTECT DOWN GRADIENT CONVEYANCE SYSTEMS.
13. KEEP ANY INSTALLED INFILTRATION PRACTICE OFFLINE UNTIL THE DRAINAGE AREA IS STABILIZED.
14. ROUGH GRADE COMMON ROAD THAT WILL SERVICE LOTS 1, 2, &3.
15. INSTALL EROSION MATTING ALONG ROAD EMBANKMENT PER PLANS.
16. INSTALL COMMON ROAD BINDER COURSE AND CURBING.
17. ENSURE AREAS OUTSIDE OF THE ROAD AND THAT WILL NOT BE DISTURBED IN THE IMMEDIATE FUTURE ARE STABILIZED WITH VEGETATION (TOPSOIL, SEED AND MULCH AS NECESSARY).

GRAPHIC SCALE

(IN FEET)
1 inch = 50 ft.

PHASE 2 - INDIVIDUAL LOT DEVELOPMENT (3.03 ACRES)

1. STAKE OUT AND FLAG PROPERTY LINES, LIMITS OF DISTURBANCE, AND ABSORPTION FIELD AREAS FOR INDIVIDUAL LOT(S) OF INTEREST.
2. INSTALL SILT FENCE DOWN GRADIENT TO ALL DISTURBED AREAS PART OF THIS PHASE.
3. INSTALL TREE PROTECTION MEASURES
4. PROTECT PRIMARY AND RESERVE SEPTIC ABSORPTION FIELD AREA WITH CONSTRUCTION FENCING AND SILT FENCE UPGRADIENT TO ABSORPTION FIELD AREAS.
5. CLEAR TREES WITHIN PHASE LIMITS (ONLY STUMP OR GRUB IN ACTIVE AREAS THAT ARE REQUIRED FOR GRADING OR CONSTRUCTION).
6. ROUGH GRADE LOTS AND DRIVEWAYS.
7. INSTALL REMAINING INFRASTRUCTURE THAT WILL TIE INTO THE COMMON STORMWATER CONVEYANCE SYSTEM. LOT 1: HW 15, FS-20, DMH 17, DMH 18, DMH 18A, DH18B, DH18C LOT 2: HW 11, FS-12, DI 14, DI 15, DI 21,AND DI 22
8. INSTALL DRAINAGE INLET PROTECTION AS NECESSARY.
9. TOPSOIL, SEED, AND MULCH DISTURBED AREAS OUTSIDE OF CONSTRUCTION TRAFFIC AREAS.
10. INSTALL RESIDENTIAL HOUSES PER THE DIRECTION AND APPROVAL OF ALL REGULATORY AND GOVERNING AGENCIES.
11. INSTALL ANY REMAINING DRAINAGE FACILITIES SHOWN ON THE DESIGN PLANS.
12. KEEP THE INFILTRATION SYSTEM OFFLINE UNTIL THE CONTRIBUTING DRAINAGE AREAS HAVE BEEN STABILIZED.
13. INSTALL WELL AND SEWAGE DISPOSAL SYSTEMS PER THE DIRECTION AND APPROVAL OF ALL REGULATORY AND GOVERNING AGENCIES.
14. FINISH INDIVIDUAL LOT GRADING AS NECESSARY. TOPSOIL, SEED, AND MULCH AS NECESSARY.
15. PUT INFILTRATION SYSTEMS ONLINE ONLY AFTER CONTRIBUTING DRAINAGE AREAS HAVE BEEN STABILIZED.
16. INSTALL FINAL DRIVEWAY ASPHALT AS NECESSARY.

PHASE 3 - FINAL SITE CLEANUP AND INFILTRATION BASIN CONVERSION (NO NEW DISTURBANCE)

1. AFTER LOTS 1 THROUGH 3 HAVE BEEN DEVELOPED AND ALL AREAS ARE PERMANENTLY STABILIZED TO THE SATISFACTION OF THE TOWN ENGINEER AND NYCDEP, INSTALL THE TOP PAVEMENT COURSE TO THE SHARED COMMON DRIVEWAY.
2. AFTER ALL LOTS (LOTS 1 THROUGH 3) HAVE BEEN DEVELOPED AND ALL AREAS ARE PERMANENTLY STABILIZED, THE INFILTRATION BASIN SHALL BE PUT ONLINE.
3. ONCE BASINS ARE STABILIZED, CONSTRUCT OUTLET WORKS PER DESIGN DRAWINGS.
4. ONCE ALL DISTURBED AREAS ARE STABILIZED, CONVERT THE TEMPORARY SEDIMENT BASIN TO THE PERMANENT DETENTION BASIN. ONCE THE DISTURBED AREA HAS BEEN PERMANENTLY STABILIZED, THE ENTIRE DRAINAGE NETWORK SHALL BE CLEANED TO REMOVE ANY SEDIMENT IN THE CATCH BASINS SUMPS OR PIPE NETWORKS. ALL BASIN OUTLET WORKS SHALL BE MAINTAINED AND CLEANED. REMOVE ANY DEBRIS AT RIPRAP OUTFALLS.
5. AFTER ALL ABOVE WORK IS COMPLETE AND AT THE DIRECTION AND APPROVAL OF THE TOWN ENGINEER AND THE NYCDEP, INSTALL THE OVERFLOW SYSTEM AT THE PRETREATMENT SEDIMENT FOREBAY TO DIRECT CLEAN DRAINAGE TO THE INFILTRATION BASIN.
6. CONTRACTOR SHALL PERFORM FINAL SITE CLEAN UP TO ENSURE ALL SILT FENCE, TREE PROTECTION, CONSTRUCTION DEBRIS IS REMOVED.
7. IN ACCORDANCE WITH GP-0-15-002, A FINAL STABILIZATION INSPECTION AND INSPECTION OF LONG-TERM STORMWATER MANAGEMENT FACILITIES BY A QUALIFIED INSPECTOR IS REQUIRED. IF APPLICABLE, SIGN-OFF BY THE LOCAL MS4 MAY BE REQUIRED BEFORE THE NOTICE OF TERMINATION (NOT) CAN BE FILED WITH NYSDEC.
8. THE GENERAL PERMIT FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES STATES THAT IT IS UNLAWFUL FOR ANY PERSON TO CAUSE OR CONTRIBUTE TO A VIOLATION OF WATER QUALITY STANDARDS. STABILIZATION MEANS COVERING OR MAINTAINING AN EXISTING COVER OVER SOIL. COVER CAN BE VEGETATIVE (E.G. GRASS, TREES, SEED AND MULCH, SHRUBS OR TURF) OR NON-VEGETATIVE (E.G. GEO-TEXTILES, RIPRAP, GABIONS, PAVEMENT, OR CRUSHED STONE) PER SPDES GENERAL PERMIT FOR STORMWATER RUNOFF FROM CONSTRUCTION ACTIVITIES, GP-0-15-002.

INDIVIDUAL LOT CONTINGENCY NOTE

IN THE EVENT THE OWNER / DEVELOPER DECIDE NOT TO DEVELOP ALL LOTS AND INTEND ON FILING THE NOTICE OF TERMINATION WITH THE NYSDEC, ALL AREAS SHALL BE STABILIZED TO THE SATISFACTION OF THE TOWN ENGINEER AND NYCDEP. THE DEVELOPER MUST CONSTRUCT ALL PERMANENT STORMWATER PRACTICES AND PLACE THESE PRACTICES ON-LINE PRIOR TO CLOSING THE NYSDEC PERMIT. FUTURE DISTURBANCE OR LAND DEVELOPMENT OPERATIONS WILL REQUIRE NEW APPROVALS

12.	MARCH 29, 2023 - FINAL SUBDIVISION APPROVAL
11.	JANUARY 3, 2021- TOWN ENGINEER COMMENTS
10.	NOVEMBER 8, 2021- TOWN ENGINEER COMMENTS

REVISIONS

KELLARD SESSIONS
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SEDIMENT & EROSION CONTROL PLAN
WESTERN BLUFF SUBDIVISION

TOWN OF CARMEL — PUTNAM COUNTY, NEW YORK

9.	OCTOBER 20, 2020 - NYCDEP COMMENTS
8.	OCTOBER 20, 2020 - NYCDEP COMMENTS
7.	JANUARY 20, 2020 - NYCDEP COMMENTS
6.	MAY 7, 2019 - NYCDEP COMMENTS
5.	OCTOBER 31, 2018 - DEP COMMENTS
4.	OCTOBER 4, 2018 - NYSDEC SPDES REVIEW
3.	JULY 5, 2018 - DEP COMMENTS
2.	JANUARY 15, 2018 - DEP SUBMISSION
1.	MAY 15, 2017 ENVIRONMENTAL BOARD

REVISIONS

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PROJECT I.D.: STC100

DATE: JANUARY 13, 2017

LEGEND

- EXISTING PROPERTY LINE
- PROPOSED PROPERTY LINE
- LIMITS OF DISTURBANCE (3.85 ACRES ±)
- EXISTING 10' CONTOURS
- EXISTING 2' CONTOURS
- PROPOSED 10' CONTOUR
- PROPOSED 2' CONTOUR
- EXISTING WETLAND
- WETLAND BUFFER
- RESERVOIR BUFFER
- EXISTING STREAM
- EXISTING TREE
- EXISTING TREE TO BE REMOVED
- EXISTING TREE TO BE PROTECTED
- EXISTING STRUCTURES

New England Erosion Control/Restoration Mix for Dry Sites		
Apply the mix by hydro-seeding, mechanical spreader, or spread by hand. Spring or late Summer seeding is recommended.		
Mulch with weed-free straw to conserve moisture.		
Common Name	**Indicator Status**	***Scientific Name***
Creeping Red Fescue	FACU	*Festuca rubra*
Canada Wild Rye	FACU	*Elymus canadensis*
Annual Ryegrass	FACU	*Lolium multiflorum*
Perennial Ryegrass	FACU	*Lolium perenne*
Blue Grama	NI	*Bouteloua gracilis*
Little Bluestem	FACU-	*Schizachyrium scoparium*
Indian Grass	FACU	*Sorghastrum nutans*
Rough Bentgrass	FAC	*Agrostis scabra*
Upland Bentgrass	FACU	*Agrostis perennans*
Application Rate: 35 lbs./ac. 1,250 sq. ft./lb.		

Seed Mixtures	
New England Wet Mix	
Apply the mix by hydro-seeding, mechanical spreader, or spread by hand. Spring seeding is recommended.	
Mulch with weed-free straw to conserve moisture.	
Common Name	***Scientific Name***
Fox Sedge	*Carex vulpinoidea*
Lurid Sedge	*Carex lurida*
Blunt Broom Sedge	*Carex scoparia*
Sensitive Fern	*Onoclea sensibilis*
Blue Vervain	*Verbena hastata*
Hop Sedge	*Carex lupulina*
Green Bulrush	*Scirpus atrovirens*
Nodding Bur Marigold	*Bidens cernua*
Bristly Sedge	*Carex comosa*
Fringed Sedge	*Carex crinita*
American Mannagrass	*Glyceria grandis*
Wool Grass	*Scirpus cyperinus*
Soft Rush	*Juncus effusus*
Spotted Joe Pye Weed	*Eupatorium maculatum*
Boneset	*Eupartorium perfoliatum*
Mud Plantain	*Alisma subcordatum*
New England Aster	*Aster novae-angliae*
Rattlesnake Grass	*Glyceria canadensis*
Soft Stem Bulrush	*Scirpus validus*
Swamp Milkweed	*Asclepias incarnata*
Monkey Flower	*Mimulus ringens*
Application Rate: 18 lbs./ac. 2,500 sq. ft./lb.	

GRAPHIC SCALE

(IN FEET)
1 inch = 50 ft.

10.	MARCH 29, 2023 - FINAL SUBDIVISION APPROVAL
9.	JANUARY 3, 2021- TOWN ENGINEER COMMENTS
	REVISIONS

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TREE REMOVAL & LANDSCAPE PLAN

WESTERN BLUFF SUBDIVISION

TOWN OF CARMEL — PUTNAM COUNTY, NEW YORK

STATE OF NEW YORK · JOHN KELLARD · LICENSED PROFESSIONAL ENGINEER · 058736

8.	NOVEMBER 8, 2021 - TOWN ENGINEER COMMENTS
7.	OCTOBER 20, 2020 - NYCDEP COMMENTS
6.	JANUARY 20, 2020 - NYCDEP COMMENTS
5.	MAY 7, 2019 - NYCDEP COMMENTS
4.	OCTOBER 31, 2018 - DEP COMMENTS
3.	JULY 5, 2018 - DEP COMMENTS
2.	JANUARY 19, 2018 - DEP SUBMISSION
1.	MAY 15, 2017 ENVIRONMENTAL BOARD
	REVISIONS

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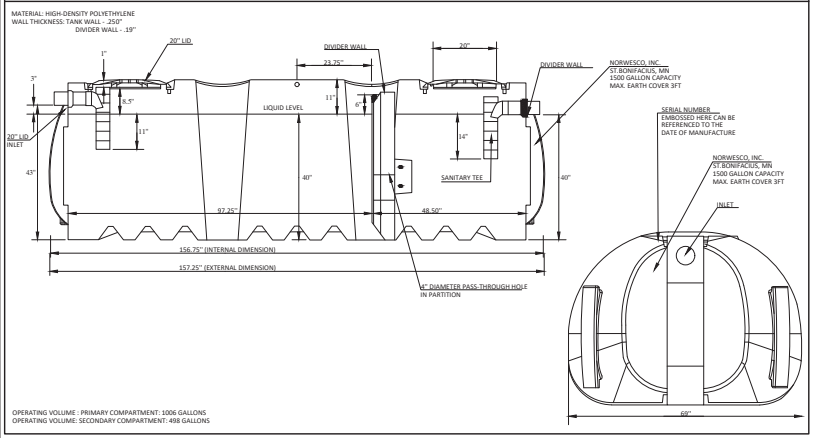
PROJECT I.D.: STC100

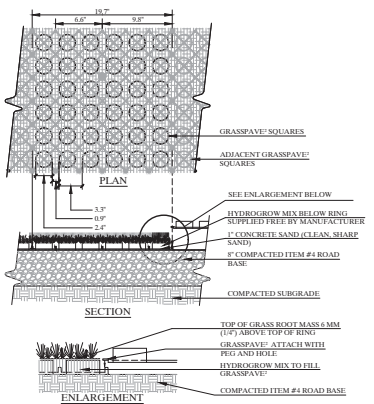
DATE: JANUARY 13, 2017

May 09, 2023 - 3:23pm G:\STC100\Submission\2023-05-09 PB\STC100_DESIGN-2023-05-09.DWG - vfederici

1500 GALLON LOW PROFILE PRE-TREATMENT TANK DETAIL (N.T.S.)



GRASSLPAVE² DETAIL (N.T.S.)



NOTE: GRASS SEED MIX SHALL BE SPECIFIED BY THE PROJECT LANDSCAPE ARCHITECT.

SPECIFICATIONS

UNITS UNIT SIZE - 50 CM X 50 CM X 2.5 CM (20" X 20" X 1")
AVAILABLE IN 9 STANDARD ROLL SIZES UNIT

WEIGHT - 538 GRAMS (19 OZ.) OR 2.2 KG (4.8 POUNDS)

STRENGTH - 402 KG/CM (5720 PSI)

COLOR - BLACK (STANDARD)

RESIN - 100% POST-CONSUMER RECYCLED HDPE/LDPE

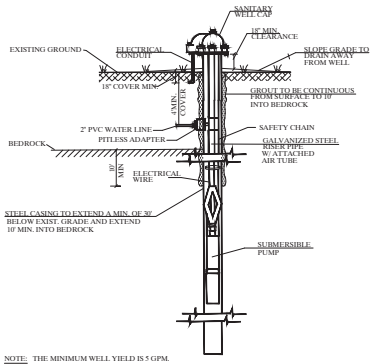
FABRIC WEIGHT - 3.5 OZ/SY (120 GM/M)

TENSILE - 120 LB/FT (585 KG/M)

FLOW - 275 GAL/MIN/SF (11,200 L/MIN/M)

OPTIONS - CUSTOM FABRIC TO 6 OZ AVAILABLE.

DRILLED WELL DETAIL (N.T.S.)

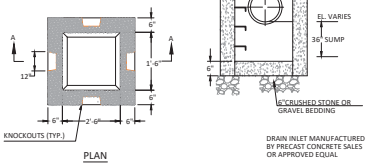


NOTE: THE MINIMUM WELL YIELD IS 5 GPM. YIELDS LESS THAN 5 GPM MUST BE IMMEDIATELY REPORTED TO THE DEPARTMENT.

PRECAST DRAIN INLET (N.T.S.)

GENERAL NOTES:

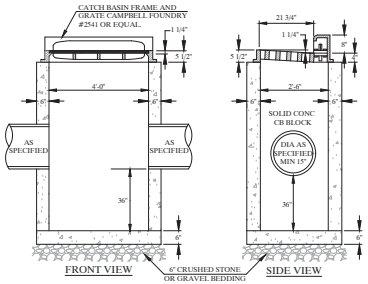
1. CONCRETE TO TEST 4000 P.S.I. @ 28 DAYS
2. REINFORCEMENT MEETS A.S.T.M A-615, GRADE 60, A.S.T.M. A-185.
3. ALL DRAINAGE INLET STRUCTURES LOCATED IN PAVED OR GRAVELED AREAS TO HAVE FLAT GRATES. ALL OTHERS (WITHIN GRASS SWALES) TO RECEIVE CONCAVE GRATES.



DRAIN INLET MANUFACTURED BY PRECAST CONCRETE SALES OR APPROVED EQUAL

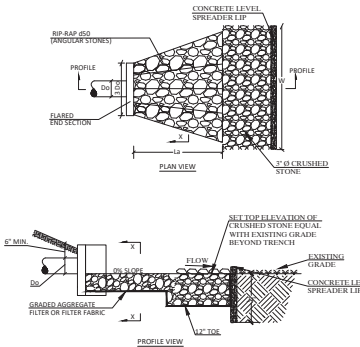
HS-20-44 LOADING DESIGN REQUIRED

CATCH BASIN DETAIL (N.T.S.)



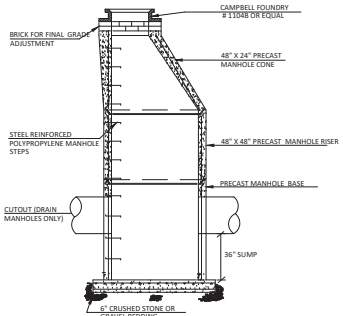
NOTE:
TYPE A CATCH BASIN AS SHOWN HERE ON WILL BE UTILIZED WHERE THE NEED FOR A DROP INLET EXISTS. THE CURB TYPE CASTING SHALL BE SUBSTITUTED WITH CAMPBELL FOUNDRY FRAME AND GRATE # 3433 OR EQUAL.

RIP RAP OUTLET PROTECTION WITH LEVEL SPREADER DETAIL (N.T.S.)



OUTLET PROTECTION LOCATION	$Q_{25\text{-}yr}$ (cfs)	Do (in)	3Do (ft)	La (min.) (ft)	W (ft)	d50 (in)
HW 1	1.67	12	3.0	8	9	4
HW 2	2.36	12	3.0	8	9	4
HW 3	2.17	12	3.0	8	9	4
HW 3A	2.95	15	3.75	10	8	6
HW 11	1.21	8	2.0	6	7	4
HW 15	1.52	15	3.75	10	8	6

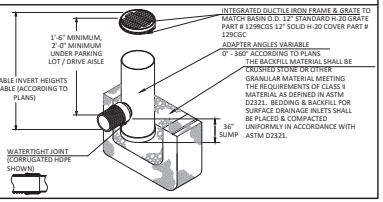
PRECAST DRAIN MANHOLE DETAIL (N.T.S.)



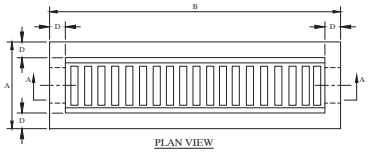
NOTES:

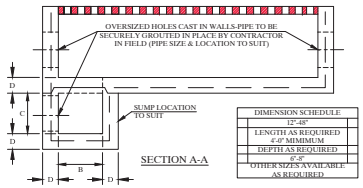
1. ALL JOINTS ON PRECAST UNITS ARE TO BE 'O' RING RUBBER GASKETS WITH EXTERIOR MORTARED JOINTS.
2. ALL MANHOLE STEPS ARE TO BE CAST IN PLACE DURING CONSTRUCTION.
3. MANHOLE STEPS ARE TO BE ALUMINUM OR APPROVED EQUAL.

NYOPLAST DRAINAGE BASIN DETAIL (N.T.S.)



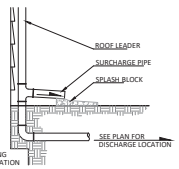
TRENCH DRAIN WITH SUMP DETAIL (N.T.S.)



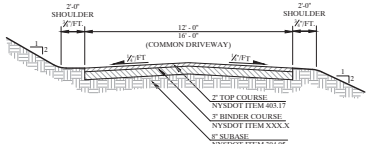


DIMENSION SCHEDULE
12"-48"
LENGTH AS REQUIRED 4'-0" MINIMUM
DEPTH AS REQUIRED 6'-0"
OTHER SIZES AVAILABLE AS REQUIRED

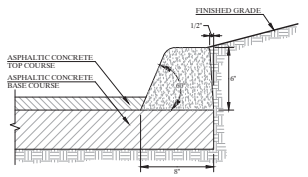
ROOF LEADER DETAIL (N.T.S.)



DRIVEWAY SECTION DETAIL (N.T.S.)



ASPHALTIC CONCRETE CURB DETAIL (N.T.S.)



REVISIONS	
3.	MARCH 29, 2023 - FINAL SUBDIVISION APPROVAL
2.	JANUARY 3, 2021- TOWN ENGINEER COMMENTS

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CONSTRUCTION DETAILS
WESTERN BLUFF SUBDIVISION

TOWN OF CARMEL — PUTNAM COUNTY, NEW YORK

REVISIONS	
9.	NOVEMBER 8, 2021 - TOWN ENGINEER COMMENTS
8.	OCTOBER 20, 2020 - NYCDEP COMMENTS
7.	JANUARY 20, 2020 - NYCDEP COMMENTS
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3.	JANUARY 15, 2018 - DEP SUBMISSION
1.	MAY 15, 2017 ENVIRONMENTAL BOARD

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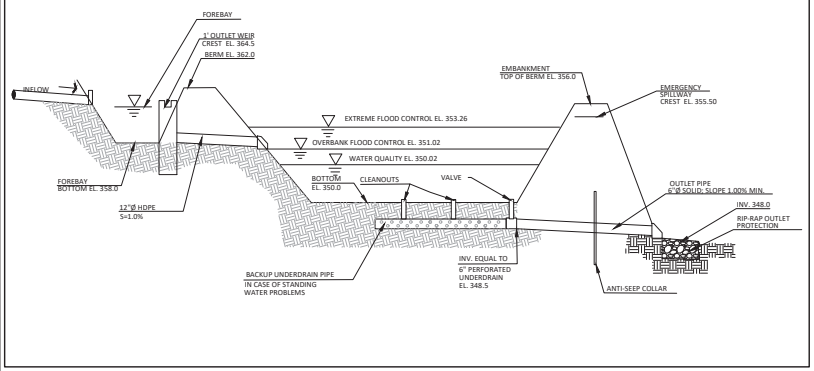
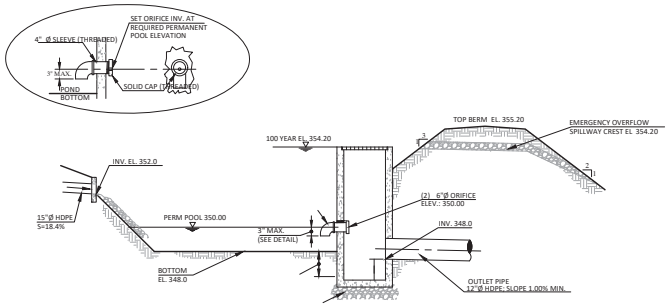
PROJECT I.D.: STC100

DATE: JANUARY 13, 2017

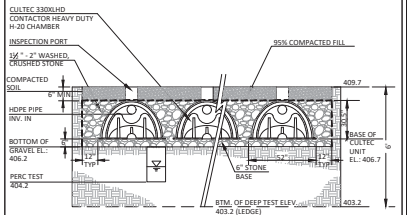
INFILTRATION BASIN (I-2) DETAIL (N.T.S.)



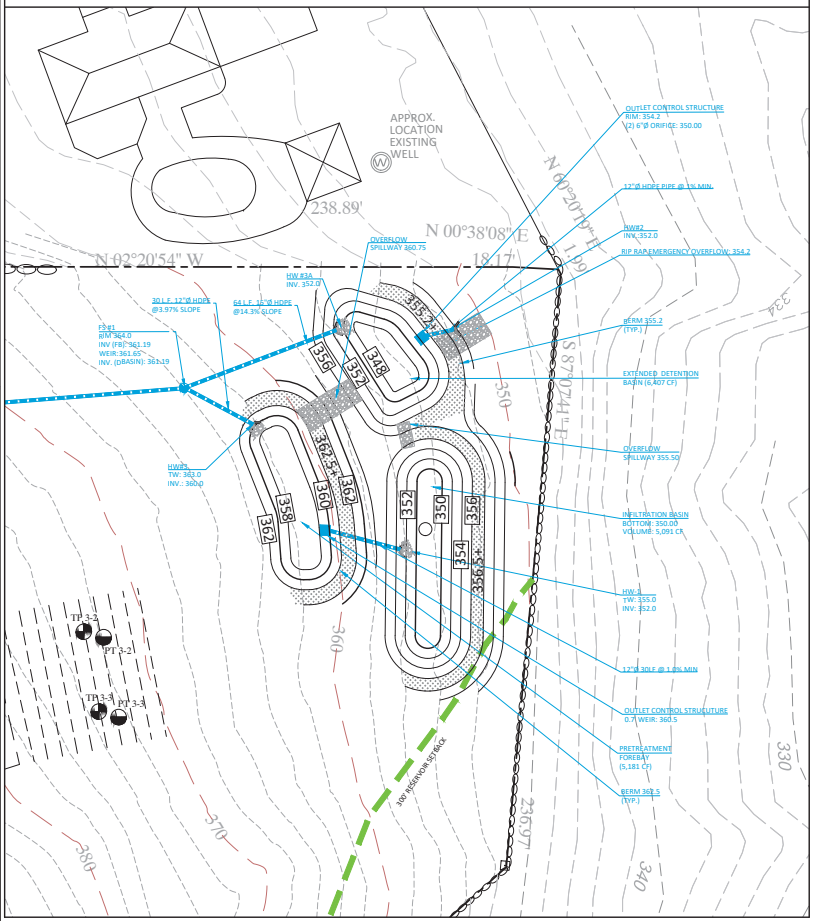
DETENTION BASIN DETAIL (N.T.S.)



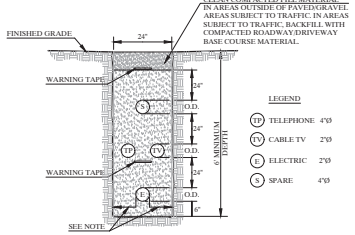
INFILTRATION SYSTEM 1B (N.T.S.)



INFILTRATION BASIN (I-2) DETAIL (SCALE: 1" = 20')



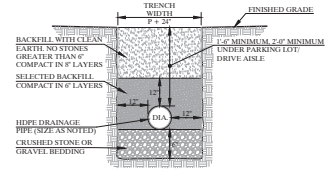
SERVICE TRENCH DETAIL (N.T.S.)



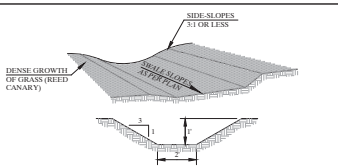
NOTES:

1. ELECTRIC PRIMARY CONDUIT MUST BE 6" MINIMUM FROM SIDE OF TRENCH. IF MORE THAN ONE CONDUIT IS INSTALLED, MAINTAIN A 1-1/2" SEPARATION FROM EACH ELECTRIC CONDUIT.
2. ELECTRIC SECONDARY/SERVICE CONDUIT MUST BE 2" MINIMUM FROM SIDE OF TRENCH. IF MORE THAN ONE CONDUIT IS INSTALLED, MAINTAIN A 1-1/2" SEPARATION FROM EACH ELECTRIC CONDUIT.

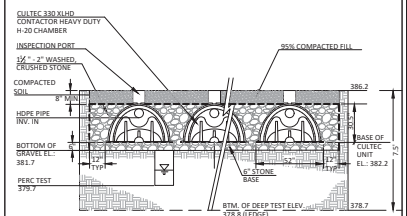
DRAINAGE TRENCH DETAIL (N.T.S.)



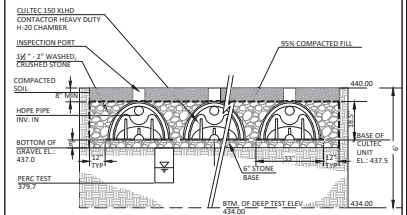
GRASSED SWALE DETAIL (N.T.S.)



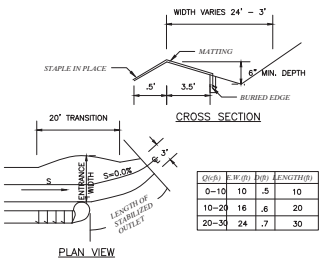
INFILTRATION SYSTEM 1C (N.T.S.)



INFILTRATION SYSTEM 3A (N.T.S.)



LEVEL SPREADER DETAIL (N.T.S.)



Q(cfs)	T.W.(ft)	h(ft)	LENGTH(ft)
0–10	10	.5	10
10–20	16	.6	20
20–30	24	.7	30

CONSTRUCTION SPECIFICATIONS

1. *THE MATTING SHOULD BE A MINIMUM OF 3FT. WIDE EXTENDING 6 INCHES OVER THE LIP AND BURIED 6 INCHES DEEP IN A VERTICAL TRENCH ON THE LOWER EDGE. THE UPPER EDGE SHOULD BUTT AGAINST SMOOTHLY CUT SOD AND BE SECURELY HELD IN PLACE WITH CLOSELY SPACED HEAVY DUTY WIRE STAPLES AT LEAST 12 INCHES IN LENGTH.*
2. *ENSURE THAT THE LIP IS LEVEL TO UNIFORMLY SPREAD DISCHARGE.*
3. *THE LIP SHALL BE CONSTRUCTED ON UNDISTURBED SOIL NOT FILL.*
4. *A 20 FOOT TRANSITION SECTION WILL BE CONSTRUCTED FROM THE DIVERSION CHANNEL TO THE SPREADER TO SMOOTHLY BLEND THE DIFFERENT DIMENSION AND GRADES.*
5. *THE RUNOFF DISCHARGE WILL BE OUTLETED ONTO A STABILIZED VEGETATED SLOPE NOT EXCEEDING 10%.*
6. *SEED AND MULCH THE DISTURBED AREA IMMEDIATELY AFTER CONSTRUCTION.*

NO.	REVISIONS
10.	MARCH 29, 2023 - FINAL SUBDIVISION APPROVAL
9.	JANUARY 3, 2021- TOWN ENGINEER COMMENTS

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CONSTRUCTION DETAILS

WESTERN BLUFF SUBDIVISION

TOWN OF CARMEL — PUTNAM COUNTY, NEW YORK

NO.	REVISIONS
8.	NOVEMBER 8, 2021 - TOWN ENGINEER COMMENTS
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1.	MAY 15, 2017 ENVIRONMENTAL BOARD

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PROJECT NO.: STC100

DATE: JANUARY 13, 2017

EROSION AND SEDIMENT CONTROL PLAN

All proposed soil erosion and sediment control practices have been designed in accordance with the following publications:

- New York Standards and Specifications for Erosion and Sediment Control, latest edition
- New York State SPDES General Permit for Stormwater Discharges from Construction Activity (GP-0-20-001)
- [illegible]

The primary aim of the soil erosion and sediment control plan is to reduce soil erosion from areas stripped of vegetation during and after construction and to prevent silt from reaching the drainage structures, Cultec infiltration systems, wetland systems and downstream properties. The Cultec infiltration systems shall not be put into service until the contributing drainage areas to the systems have been stabilized. As outlined in the construction sequencing notes below and on the Sediment & Erosion Control Plans, the Sediment & Erosion Control Plan is an integral component of the construction phasing and sequencing and will be implemented to control sediment and re-establish vegetation as soon as practicable. The plan will be implemented prior to the commencement of any earthmoving activities.

Each contractor/subcontractor(s) and trained contractor involved in the soil disturbance and/or stormwater management practices shall sign and date a copy of the contractor certification prior to undertaking any land development activity.

The owner/operator shall maintain a copy of the NYSDEC SPDES General Permit for Stormwater Discharges from Construction Activity, GP-0-20-001, the Notice of Intent (NOI), the NOI acknowledgment letter, the Stormwater Pollution Prevention Plan Report for Western Bluff Subdivision, the MS4 SWPPP Acceptance Form and inspection reports from the qualified inspector at the construction site until all disturbed areas have achieved final stabilization and the Notice of Termination (NOT) has been filed with the NYSDEC.

The applicant or developer or their representative shall be on site at all times when construction or grading activity takes place. A qualified inspector shall conduct site inspections at least twice every seven (7) calendar days. The qualified inspector shall inspect and document the effectiveness of all erosion and sediment control practices. The qualified inspector shall prepare an [illegible]

Management Officer and also copied to the site logbook. The qualified inspector must be a licensed Professional Engineer, a Certified Professional in Erosion and Sediment Control (CPESC), a Registered Landscape Architect or someone working under the direct supervision of, and at the same company as, the Licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of NYSDEC endorsed training in proper erosion and sediment control principles from a soil and water conservation district.

The proposed soil erosion and sediment control devices include the planned erosion control practices outlined below. Maintenance procedures for each erosion control practice are also provided herein. The owner or operator must ensure that all erosion and sediment control practices identified herein are maintained in effective operating condition at all times.

In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of next business day and completed within 7 days.

Copies of the Inspection and Maintenance Checklists are provided in the Stormwater Pollution Prevention Plan report.

STABILIZED CONSTRUCTION ENTRANCE

A stabilized construction entrance shall be installed at the project entrance as indicated on the plans. The purpose of the stabilized construction entrance is to prevent vehicles leaving the site from tracking sediment, mud or any other construction-related materials from the site onto West Shore Drive.

Maintenance/Inspection

The Contractor shall maintain the construction entrance in a manner which prevents or significantly reduces the tracking of sediment/soil onto West Shore Drive. The Contractor shall inspect the construction entrance daily and after each rain event for displacement or loss of aggregate. The Contractor shall top-dress the construction entrance when displacement/loss of aggregate occurs, or if the aggregate becomes clogged or silted to the extent that the entrance can no longer perform its intended function. The Contractor shall inspect the vicinity of the construction entrance several times a day and immediately remove any sediment dropped or washed onto West Shore Drive.

SILT FENCE

Silt fence (geotextile filter cloth) shall be placed in locations depicted on the approved plans. The purpose of the silt fence is to reduce the velocity of sediment-laden stormwater from small drainage areas and to intercept the transported sediment load. In general, silt fence shall be used at the perimeter of disturbed areas, toe of slopes or intermediately within slopes where obvious channel concentration of stormwater is not present. Silt fence shall always be installed parallel to the contours in order to prevent concentrated flows from developing along the silt fence.

Maintenance/Inspection

Silt fencing shall be inspected at a minimum of twice every seven (7) days. Inspections shall include ensuring that the fence material is tightly secured to the wood posts. In addition, overlapping filter fabric shall be secure and the fabric shall be maintained a minimum of eight (8) inches below grade. In the event that any "bulges" develop in the fence, that section of fence shall be replaced immediately with a new fence section. Any visible sediment build-up against the fence shall be removed and deposited on-site a minimum of 150 feet from any wetland.

INLET PROTECTION

After the driveway's drain inlets have been installed and the site is completely constructed and stabilized, these drain inlets will receive stormwater from the driveway and overland watersheds. This barrier will allow stormwater to be filtered prior to reaching the inlet grate.

Maintenance/Inspection

Inlet protection devices shall be inspected at a minimum of twice every seven (7) days. Care shall be taken to ensure that all inlet protection devices are properly located and secure and do not become displaced. Any accumulated sediments shall be removed from the device and deposited not less than 150 feet from a wetland.

TREE PROTECTION

All significant trees to be preserved located within the limits of disturbance and on the perimeter of the disturbance limits shall be protected from harm by erecting a three (3) feet high (minimum) snow fence completely surrounding the tree. Snow fence should extend to the drip-line of the tree to be preserved. Trees designated to be protected/saved shall be identified during the staking of the limits of disturbance.

Maintenance/Inspection

The snow fence shall remain at the drip-line of the tree to be preserved. The snow fence shall be inspected at a minimum of twice every seven (7) days. Any damaged portions of the fence shall be repaired or replaced. Care shall also be taken to ensure that no construction equipment is driven or parked within the drip-line of the tree to be preserved.

SOIL/MATERIAL STOCKPILING

All soil/material stripped from the construction area during grubbing and grading shall be stockpiled in locations illustrated on the approved plans, or in practical locations on-site.

Maintenance/Inspection

All stockpiles shall be inspected (for signs of erosion or problems with seed establishment) at a minimum of twice every seven (7) days. Soil stockpiles shall be protected from erosion by vegetating the stockpile with a rapidly-germinating grass seed and surrounded with either silt fence or staked weed-free haybales. In the non-growing season, the stockpiles shall be protected by a tarpaulin covering the entire stockpile.

RIP-RAP OUTLET PROTECTION

The outlets of all stormwater discharge areas will be protected from erosion by the placement of stone rip-rap at the culvert/swale outlet. The purpose of the stone outlet protection is to reduce the velocities of the discharged water such that flows will not erode the receiving area.

Maintenance/Inspection

Maintenance of the outlet protection devices shall be inspected at a minimum of twice every seven (7) days to determine if any scouring beneath the rip-rap has occurred and/or if any rip-rap has been displaced. All displaced rip-rap shall be re-positioned or replaced with new rip-rap. In addition, all leaves, twigs and brush shall be removed in the vicinity of the culvert/swale outlet to ensure that stormwater is flowing unobstructed.

SURFACE STABILIZATION

All disturbed areas will be protected from erosion with the use of vegetative measures (e.g., grass seed mix, sod) hydromulch, weed-free hay or Curlex Excelsior Erosion Control Blankets.

Erosion control barriers consisting of silt fencing shall be placed around exposed areas during construction. Any areas stripped of vegetation during construction will be vegetated and/or mulched to prevent erosion of the exposed soils. In site areas where significant erosion potential exists (steep slopes/slopes exceeding 2:1) and/or where specifically directed, Curlex Excelsior Erosion Control Blankets (Manufactured by American Excelsior or approved equal) shall be installed. Mulch is also used alone for temporary stabilization in non-growing months.

Materials that may be used for mulching include weed-free straw/ hay/salt hay, wood fiber, synthetic soil stabilizers, mulch netting, erosion control blankets or sod. A permanent vegetative cover will be established upon completion of construction of those areas which have been brought to finish grade and to remain undisturbed.

GENERAL LAND GRADING

The applicant/developer or their representatives shall be on-site at all times when construction or grading activity takes place and shall inspect and document the effectiveness of all sediment and erosion control practices.

The intent of the erosion controls is to control all disturbed areas, such that soils are protected from erosion by temporary methods and, ultimately by permanent vegetation. All cut and fill slopes shall be kept to a maximum slope of 2:1. In the event that a slope must exceed a 2:1 slope, it shall be stabilized with stone rip-rap. On fill slopes, all material will be placed in layers not to exceed 9 inches in depth and adequately compacted. Where practicable, diversion swales shall be constructed on the top of all fill embankments to divert any overland flows away from the fill slope.

DUST CONTROL

Where vegetative or mulch cover is not practicable in disturbed areas of the site, dust shall be controlled by the use of water sprinkling. The surface shall be sprayed until wet. Dust control shall continue until such time as the entire site is adequately stabilized with permanent vegetative cover.

POLLUTION PREVENTION MEASURES FOR CONSTRUCTION RELATED ACTIVITIES

Pollution prevention practices for preventing litter, construction chemicals (if applicable) and construction debris from becoming a pollutant source in stormwater discharge includes daily pickup of construction debris, inspection, designated storage areas, and physical controls such as silt fencing and inlet protection. Inspections will also be conducted to ensure that these control measures are utilized as necessary. During construction, maintenance, construction and waste materials will be stored within suitable areas/dumpsters, as appropriate, to minimize the exposure of the materials to stormwater and spill prevention. All maintenance and construction waste will be disposed of in a safe manner in accordance with all applicable regulations.

GENERAL CONSTRUCTION SEQUENCING

Outlined below is a brief listing of the construction sequencing for the project. See sheet 3/10 for detailed phasing descriptions.

[illegible]
shall hold a pre-construction meeting.

Stabilization shall be defined as covering or maintaining an existing cover over soil. Cover can be vegetative (e.g., grass, trees, seed and mulch, shrubs, or turf) or non-vegetative (e.g., geotextiles, rip-rap, or gabions, pavement, roofs, etc.).

The applicant shall notify the Town of Carmel enforcement official at least 48 hours before any of the following as required by the Stormwater Management Officer:

- Start of construction
- Survey/Stake clearing limits & sediment & erosion control measures
- Installation of sediment and erosion control measures
- Completion of site clearing of driveway, storm water facilities & utilities.
- Completion of rough grading of driveway, storm water facilities & utilities.
- Installation of driveway, related storm water facilities & utilities.
- Keep storm water facilities offline until contributing drainage areas are stabilized.
- Completion of final grading of driveway and storm water facilities.
- Close of the construction season
- Completion of final landscaping
- Successful establishment of landscaping in public areas

The owners/contractor is required to submit As-Built plans for any stormwater management practices located on site after final construction is completed. The plan must show the final design specifications for all stormwater management facilities and must be certified by a New York State licensed land surveyor or professional engineer.

Individual Lot Construction Sequencing

[illegible]

- Obtain all necessary permits/approvals.
- Conduct pre-construction meeting.
- Stake clearing limits for residential construction.
- Install perimeter erosion controls.
- Construct stabilized construction entrance.
- Commence clearing and grubbing of individual driveway, house area and drainage facilities.
- Rough grade driveway and building area.
- Install drainage, utilities and SSDS
- Installation of infiltration facilities. Keep infiltration systems off-line until contributing drainage areas are stabilized.
- Construct dwelling.
- Final grade driveway.
- Complete dwelling and accessory structures.
- Re-vegetation of disturbed areas.
- Once site is stabilized, infiltration systems to be placed on-line.
- Remove sediment and erosion controls from individual lot construction areas upon site stabilization.

POST-CONSTRUCTION STORMWATER FACILITY INSPECTION AND MAINTENANCE PROGRAM

General

[illegible]
post-construction stormwater facility inspection and maintenance program. The owner, its successors and/or assigns shall completely familiarize themselves with the plans, details and notes.

The drainage collection system, infiltration systems, bioretention area, swales, and their related appurtenances shall be [illegible]

The owner, its successors and/or assigns shall be responsible for the ongoing inspection and maintenance of the stormwater facilities. The purpose of the inspection/maintenance program is to provide basic instructions to the owner as to the proper inspection and maintenance of the stormwater facilities and related appurtenances and to help the owner identify if these facilities are not performing properly.

The applicant must execute a maintenance easement agreement/deed restriction that shall be binding on all subsequent landowners served by the stormwater management facilities. The easement shall provide for access to the facility at reasonable times for periodic inspection by the Town of Carmel to ensure that the facility is maintained in proper working condition to meet design standards and any other provisions established by the Town. The easement shall be recorded by the grantor in the office of the County Clerk and Town Clerk after approval by the Town Attorney for the Town of Carmel.

Inspection and Maintenance of Permanent Drainage Systems and BMPs

1. General Stormwater Facilities (i.e., drain inlets, vegetated swale, grass swale, bioretention area, rip-rap outlets)

   These stormwater facilities shall be inspected weekly for the first three (3) months following the completion of construction. Thereafter, these facilities shall be inspected at a minimum quarterly, and always immediately following a rain event. Upon inspection, facilities shall be immediately maintained and/or cleaned as may be required. Any site areas exhibiting soil erosion of any kind shall be immediately restored and stabilized with vegetation, mulch or rip-rap stone, depending on the area to be stabilized.

   Upon each inspection, all visible debris including, but not limited to, twigs, leaf and forest litter shall be removed from the swales and bioretention area, discharge points and frames and grates of drainage structures.

2. Vegetated Areas

   The areas within the swales and bioretention area shall be mowed periodically. Any debris, litter or fallen trees/shrubs shall be removed from within swales or bioretention area at the time of each mowing, unless such debris impedes the proper flow of water, in which case all debris shall be immediately removed upon inspection. All visible accumulated sediments shall be removed when sediments become clearly visible.

   Special care shall be taken when removing sediment so as not to disrupt the intended finished grades or stone rip-rap within the swales or bioretention area. Any displaced or removed rip-rap shall be replaced, in-kind, to maintain the slopes and original design intent of the swale or bioretention area.

3. Drain Inlets

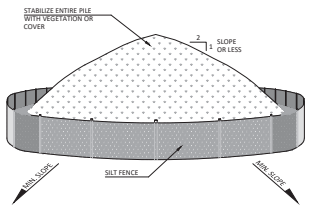
   All drain inlets have been designed to trap sediment prior to its transport to the infiltration systems and, ultimately, [illegible]
   maintained within the sumps.

   All sumps shall be inspected once per month for the first three (3) months (after drainage system has been put into [illegible]
   greater). The owner shall take measurements of the sump depth. All sumps shall be inspected once per month for the first three (3) months (after drainage system has been put into service). Thereafter, all sumps shall be inspected every [illegible]
   depth.

   If sediment has accumulated to one-half the depth of the sump, all sediment shall be removed from the sump. Sediments can be removed from the sumps with hand-labor or with a vacuum device.

Contact Person: The entity responsible for implementing the maintenance program will be the owner, its successors and/or assigns. The current owners is Carl Kling, 44 Colony Drive, Whiteland IN, 46184

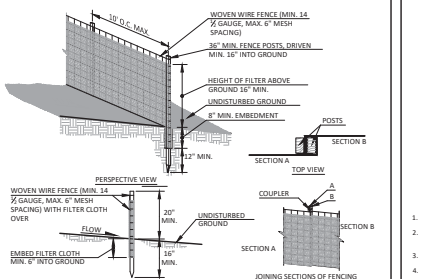
TEMPORARY SOIL STOCKPILE DETAIL (N.T.S.)



INSTALLATION NOTES

1. AREA CHOSEN FOR STOCKPILING OPERATIONS SHALL BE DRY AND STABLE.
2. MAXIMUM SLOPE OF STOCKPILE SHALL BE 1:2.
3. UPON COMPLETION OF SOIL STOCKPILING, EACH PILE SHALL BE SURROUNDED WITH SILT FENCING, THEN STABILIZED WITH VEGETATION OR COVERED.
4. SEE SPECIFICATIONS FOR INSTALLATION OF SILT FENCE.

WIRE SILT FENCE DETAIL (N.T.S.)

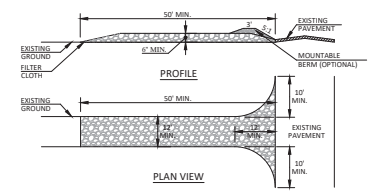


CONSTRUCTION NOTES FOR FABRICATED SILT FENCE

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP OF MID SECTION.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

POSTS: STEEL EITHER T OR U TYPE OR 2" HARDWOOD
FENCE: WOVEN WIRE, 14 ½ GA. 6" MAX. MESH OPENING
FILTER CLOTH: FILTER X, MIRAFI 100X, STABILINKA T140N, OR APPROVED EQUAL
PREFABRICATED UNIT: GEOFAB, ENVIROFENCE, OR APPROVED EQUAL

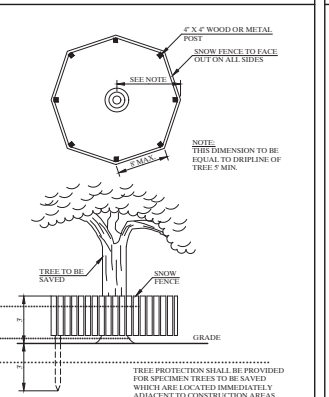
STABILIZED CONSTRUCTION ENTRANCE DETAIL (N.T.S.)



CONSTRUCTION SPECIFICATIONS

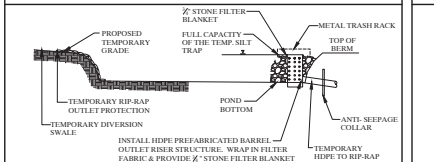
1. STONE SIZE - USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH - NOT LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY).
3. THICKNESS - NOT LESS THAN SIX (6) INCHES.
4. WIDTH - TWELVE (12) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. TWENTY-FOUR (24) FOOT IF SINGLE ENTRANCE TO SITE.
5. FILTER CLOTH - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CON- STRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACTED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON A AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

TREE PROTECTION DETAIL (N.T.S.)



TREE PROTECTION SHALL BE PROVIDED FOR SPECIMEN TREES TO BE SAVED WHICH ARE LOCATED IMMEDIATELY ADJACENT TO CONSTRUCTION AREAS OR AS DIRECTED.

TEMPORARY SEDIMENT TRAP DETAIL (N.T.S.)



NOTES:

1. TEMPORARY SEDIMENT TRAP WILL BE INSPECTED AFTER EACH STORM OF 1/2" RAINFALL OR GREATER AND RISER WILL BE CLEARED OF ANY DEBRIS OR EXCESSIVE SILT.

2. TEMPORARY SEDIMENT TRAP SHALL BE CLEANED OUT WHEN 1/2 OF CAPACITY HAS BEEN ACCUMULATED WITH SEDIMENT. ONCE SEDIMENT HAS REACHED THIS MARK, CONTRACTOR WILL IMMEDIATELY CLEAN OUT SEDIMENT TO ORIGINAL SEDIMENT TRAP GRADE.

3. BERM TO BE MECHANICALLY COMPACTED EACH FILL, 8" LIFTS TO (95 % PROCTOR DENSITY). BERM FILL SHALL BE FREE OF ROOTS, WOODY VEGETATION, OVERSIZED STONES AND RELATIVELY PERVIOUS MATERIALS SUCH AS SAND OR GRAVEL.

4. TEMPORARY SEDIMENT TRAP WILL BE STABILIZED WITH JUTE MESH DURING THE NON GROWING SEASON. DURING THE GROWING SEASON HYDROMULCH AND/ OR SEED AND STRAW MULCH.

5. THE TOP 2/3 OF THE RISER SHALL BE PERFORATED WITH ONE (1) INCH DIAMETER HOLES OR SLITS SPACED SIX (6) INCHES VERTICALLY AND HORIZONTALLY AND PLACED IN THE CONCAVE PORTION OF PIPE. NO HOLES WILL BE ALLOWED WITHIN SIX (6) INCHES OF THE HORIZONTAL BARREL.

6. THE RISER SHALL BE WRAPPED WITH 1/4 TO 1/2 INCH HARDWARE CLOTH WIRE THEN WRAPPED WITH FILTER CLOTH (HAVING AN EQUIVALENT SIEVE SIZE OF 40-80). THE FILTER CLOTH SHALL EXTEND SIX (6) INCHES ABOVE THE HIGHEST HOLE AND SIX (6) INCHES BELOW THE LOWEST HOLE. WHERE ENDS OF THE FILTER CLOTH COME TOGETHER, THEY SHALL BE OVERLAPPED, FOLDED AND STAPLED TO PREVENT BYPASS. PROVIDE 3/4" STONE FILTER BLANKET AROUND FILTER CLOTH.

7. STRAPS OR CONNECTION BANDS SHALL BE USED TO HOLD THE FILTER CLOTH AND WIRE FABRIC IN PLACE. THEY SHALL BE PLACED AT THE TOP AND BOTTOM OF THE CLOTH.

8. FILL MATERIAL AROUND THE PIPE SPILLWAY SHALL BE HAND COMPACTED IN FOUR (4) INCH LAYERS. A MINIMUM OF TWO (2) FEET OF HAND COMPACTED BACKFILL SHALL BE PLACED OVER THE PIPE SPILLWAY BEFORE CROSSING IT WITH CONSTRUCTION EQUIPMENT.

9. THE RISER PIPE SHALL BE ANCHORED WITH EITHER A CONCRETE BASE OR STEEL PLATE BASE TO PREVENT FLOTATION AND/OR WATER FROM LEAVING THE BASIN BENEATH THE RISER. FOR CONCRETE BASED THE DEPTH SHALL BE TWELVE (12) INCHES WITH THE RISER EMBEDDED NINE (9) INCHES. A 1/4 INCH MINIMUM THICKNESS STEEL PLATE SHALL BE ATTACHED TO THE RISER BY CONTINUOUS WELD AROUND THE BOTTOM TO FORM A WATERTIGHT CONNECTION AND THEN PLACE TWO (2) FEET OF STONE, GRAVEL OR TAMPED EARTH ON THE PLATE.

10. ALL PIPE CONNECTIONS SHALL BE WATERTIGHT, (SEE NOTE #9).

11. ALL SLOPES SHALL BE 2:1 OR FLATTER.

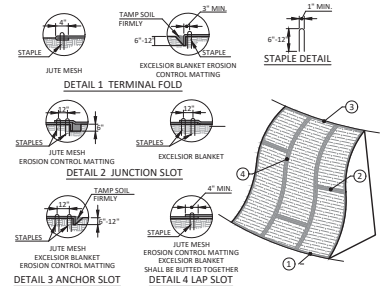
12. THE STRUCTURE SHALL BE REMOVED AND AREA STABILIZED WHEN THE DISTURBED DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

13. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND WATER POLLUTION ARE MINIMIZED.

TEMPORARY SEDIMENT TRAP	DRAINAGE AREA (ACRES)	VOLUME REQUIRED (CUBIC FEET)	VOLUME PROVIDED (CUBIC FEET)	RISER PIPE DIA. (INCHES)	OUTLET PIPE DIA. (INCHES)
1	0.6	2,160	7,430	15	12
2	0.5	1,800	1,940	15	12
3	0.8	2,880	3,658	15	12

*VOLUME REQUIRED = 3600 CF x DRAINAGE AREA(AC.)

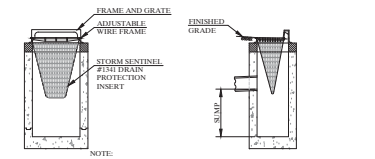
EROSION CONTROL BLANKET DETAIL (N.T.S.)



CONSTRUCTION SPECIFICATIONS

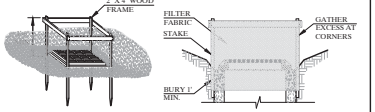
1. APPLY TO SLOPES GREATER THAN 3H:1V OR WHERE NECESSARY TO AID IN ESTABLISHING VEGETATION.
2. APPLY FERTILIZER, LIME AND SEED PRIOR TO PLACING MATTING.
3. STAPLES ARE TO BE PLACED ALTERNATELY, IN COLUMNS APPROXIMATELY 2' APART AND IN ROWS APPROXIMATELY 3' APART. APPROXIMATELY 175 STAPLES ARE REQUIRED PER 4' X 225' ROLL OF MATERIAL AND 125 STAPLES ARE REQUIRED PER 4' X 150' ROLL OF MATERIAL.
4. DISTURBED AREAS SHALL BE SMOOTHLY GRADED. EROSION CONTROL MATERIAL SHALL BE PLACED LOOSELY OVER GROUND SURFACE. DO NOT STRETCH.
5. ALL TERMINAL ENDS AND TRANSVERSE LAPS SHALL BE STAPLED AT APPROXIMATELY 12" INTERVALS.

CATCH BASIN FILTERS - INLET PROTECTION DETAIL (N.T.S.)



NOTE:
INSERTS TO BE MODEL # 1341 ADJUSTABLE CATCH BASIN INSERTS BY ENPAC OR APPROVED EQUAL.

FILTER FABRIC DROP INLET PROTECTION DETAIL (N.T.S.)

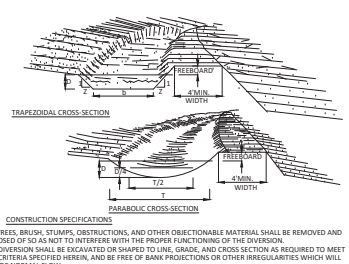


CONSTRUCTION SPECIFICATIONS

1. FILTER FABRIC SHALL HAVE AN EOS OF 40-85. BURLAP MAY BE USED FOR SHORT TERM APPLICATIONS.
2. CUT FABRIC FROM A CONTINUOUS ROLL TO ELIMINATE JOINTS. IF JOINTS ARE NEEDED THEY WILL BE OVERLAPPED TO THE NEXT STAKE.
3. STAKE MATERIALS WILL BE STANDARD 2" x 4" WOOD OR EQUIVALENT METAL WITH A MINIMUM LENGTH OF 3 FEET.
4. SPACE STAKES EVENLY AROUND INLET 3 FEET APART AND DRIVE A MINIMUM 18 INCHES DEEP. SPANS GREATER THAN 3 FEET MAY BE BRIDGED WITH THE USE OF WIRE MESH BEHIND THE FILTER FABRIC FOR SUPPORT.
5. FABRIC SHALL BE EMBEDDED 1 FOOT MINIMUM BELOW GROUND AND BACKFILLED. IT SHALL BE SECURELY FASTENED TO THE STAKES AND FRAME.
6. A 2" x 4" WOOD FRAME SHALL BE COMPLETED AROUND THE CREST OF THE FABRIC FOR OVER FLOW STABILITY.

   MAXIMUM DRAINAGE AREA = 1 ACRE

DIVERSION SWALE DETAIL (N.T.S.)



CONSTRUCTION SPECIFICATIONS

1. ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED AND DISPOSED OF SO AS NOT TO INTERFERE WITH THE PROPER FUNCTIONING OF THE DIVERSION.
2. THE DIVERSION SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE, AND CROSS SECTION AS REQUIRED TO MEET THE CRITERIA SPECIFIED HEREIN, AND BE FREE OF BANK PROJECTIONS OR OTHER IRREGULARITIES WHICH WILL IMPEDE NORMAL FLOW.
3. FILLS SHALL BE COMPACTED AS NEEDED TO PREVENT UNEQUAL SETTLEMENT THAT WOULD CAUSE DAMAGE IN THE COMPLETE DIVERSION.
4. ALL EARTH REMOVED AND NOT NEEDED IN CONSTRUCTION SHALL BE SPREAD OR DISPOSED OF SO THAT IT WILL NOT INTERFERE WITH THE FUNCTIONING OF THE DIVERSION.
5. STABILIZATION SHALL BE DONE ACCORDING TO THE APPROPRIATE STANDARD AND SPECIFICATIONS FOR VEGETATIVE PRACTICES.
   A. FOR DESIGN VELOCITIES OF LESS THAN 3.5 FT. PER. SEC., SEEDING AND MULCHING MAY BE USED FOR THE ESTABLISHMENT OF THE VEGETATION. IT IS RECOMMENDED THAT, WHEN CONDITIONS PERMIT, TEMPORARY DIVERSIONS OR OTHER MEANS SHOULD BE USED TO PREVENT WATER FROM ENTERING THE DIVERSION DURING THE ESTABLISHMENT OF THE VEGETATION.
   B. FOR DESIGN VELOCITIES OF MORE THAN 3.5 FT. PER. SEC., THE DIVERSION SHALL BE STABILIZED WITH SOD, WITH SEEDING PROTECTED BY JUTE OR EXCELSIOR MATTING OR WITH SEEDING AND MULCHING INCLUDING TEMPORARY DIVERSION OF THE WATER UNTIL THE VEGETATION IS ESTABLISHED.

10.	MARCH 29, 2023 - FINAL SUBDIVISION APPROVAL
9.	JANUARY 3, 2021- TOWN ENGINEER COMMENTS
	REVISIONS

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CONSULTING ENGINEERING & LANDSCAPE ARCHITECTURE PLANNING, D.P.C.
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SEDIMENT & EROSION CONTROL DETAILS & NOTES
WESTERN BLUFF SUBDIVISION

TOWN OF CARMEL — PUTNAM COUNTY, NEW YORK

9.	NOVEMBER 8, 2021 - TOWN ENGINEER COMMENTS
8.	OCTOBER 20, 2020 - NYCDEP COMMENTS
7.	JANUARY 20, 2020 - NYCDEP COMMENTS
6.	MAY 7, 2019 - NYCDEP COMMENTS
5.	OCTOBER 31, 2018 - DEP COMMENTS
4.	JULY 5, 2018 - DEP COMMENTS
3.	JANUARY 15, 2018 - DEP SUBMISSION
2.	MAY 15, 2017 ENVIRONMENTAL BOARD
	REVISIONS

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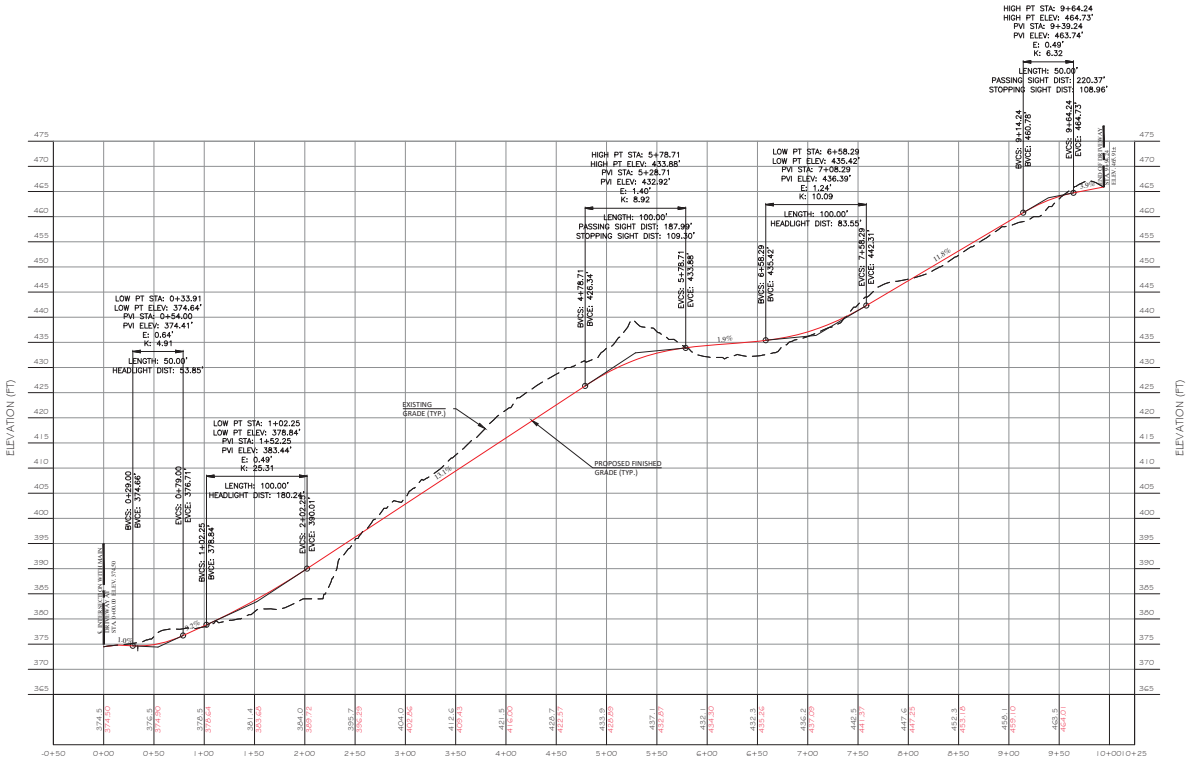
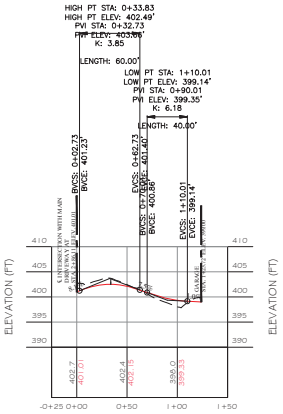
PROJECT I.D.: STC100

DATE: JANUARY 13, 2017



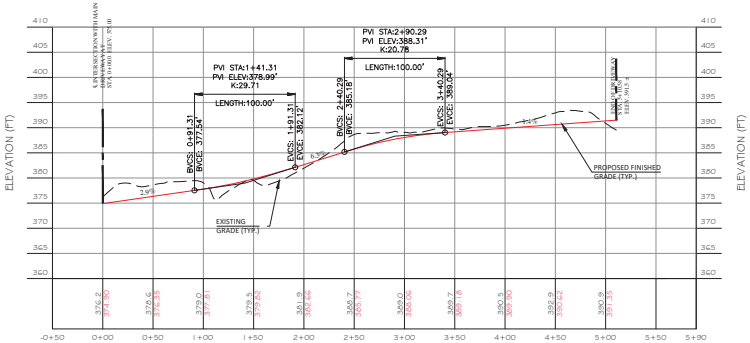
LOT #2 DRIVEWAY

PROFILE SCALE:
HORIZ: 1"=50'
VERT: 1"=10'



LOT 1-REV ALGN

PROFILE SCALE:
HORIZ: 1"=50'
VERT: 1"=10'



PROPOSED LOT 3 COMMON DRIVEWAY

PROFILE SCALE:
HORIZ: 1"=50'
VERT: 1"=10'

10.	MARCH 29, 2023 - FINAL SUBDIVISION APPROVAL
9.	JANUARY 3, 2021- TOWN ENGINEER COMMENTS
	REVISIONS

KELLARD SESSIONS
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DRIVEWAY PROFILES
WESTERN BLUFF SUBDIVISION

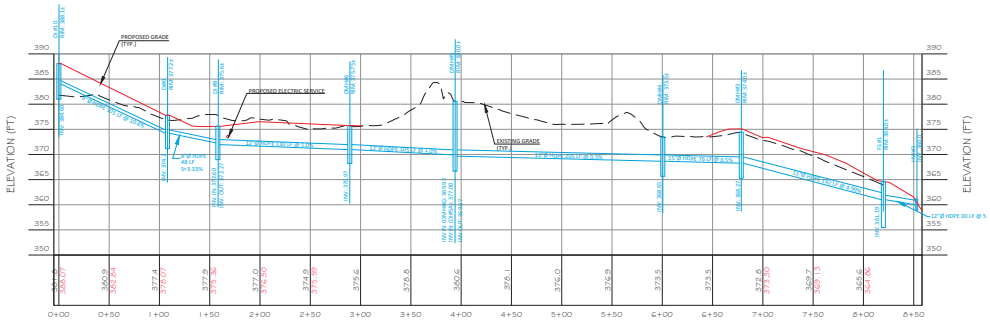
TOWN OF CARMEL — PUTNAM COUNTY, NEW YORK

9.	NOVEMBER 8, 2021 - TOWN ENGINEER COMMENTS
8.	OCTOBER 20, 2020 - NYCDEP COMMENTS
7.	JANUARY 20, 2020 - NYCDEP COMMENTS
6.	MAY 7, 2019 - NYCDEP COMMENTS
5.	OCTOBER 31, 2018 - DEP COMMENTS
4.	JULY 5, 2018 - DEP COMMENTS
3.	JANUARY 15, 2018 - DEP SUBMISSION
1.	MAY 15, 2017 ENVIRONMENTAL BOARD
	REVISIONS

8 / 10

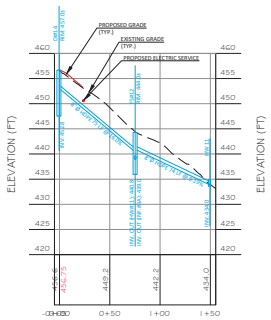
PROJECT I.D.: STC100

DATE: JANUARY 13, 2017



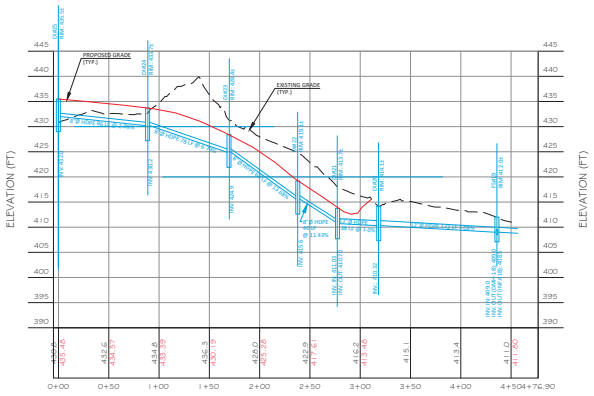
DI10-HW3

PROFILE SCALE:
HORIZ: 1"=50'
VERT: 1"=10'



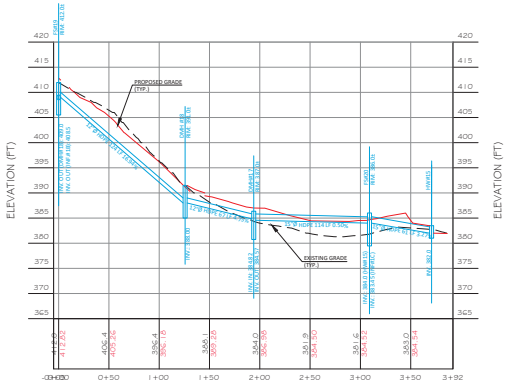
DI14-HW11

PROFILE SCALE:
HORIZ: 1"=50'
VERT: 1"=10'



DI25-FS19

PROFILE SCALE:
HORIZ: 1"=50'
VERT: 1"=10'



FS19-HW15

PROFILE SCALE:
HORIZ: 1"=50'
VERT: 1"=10'

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DRAINAGE PROFILES
WESTERN BLUFF SUBDIVISION

TOWN OF CARMEL — PUTNAM COUNTY, NEW YORK

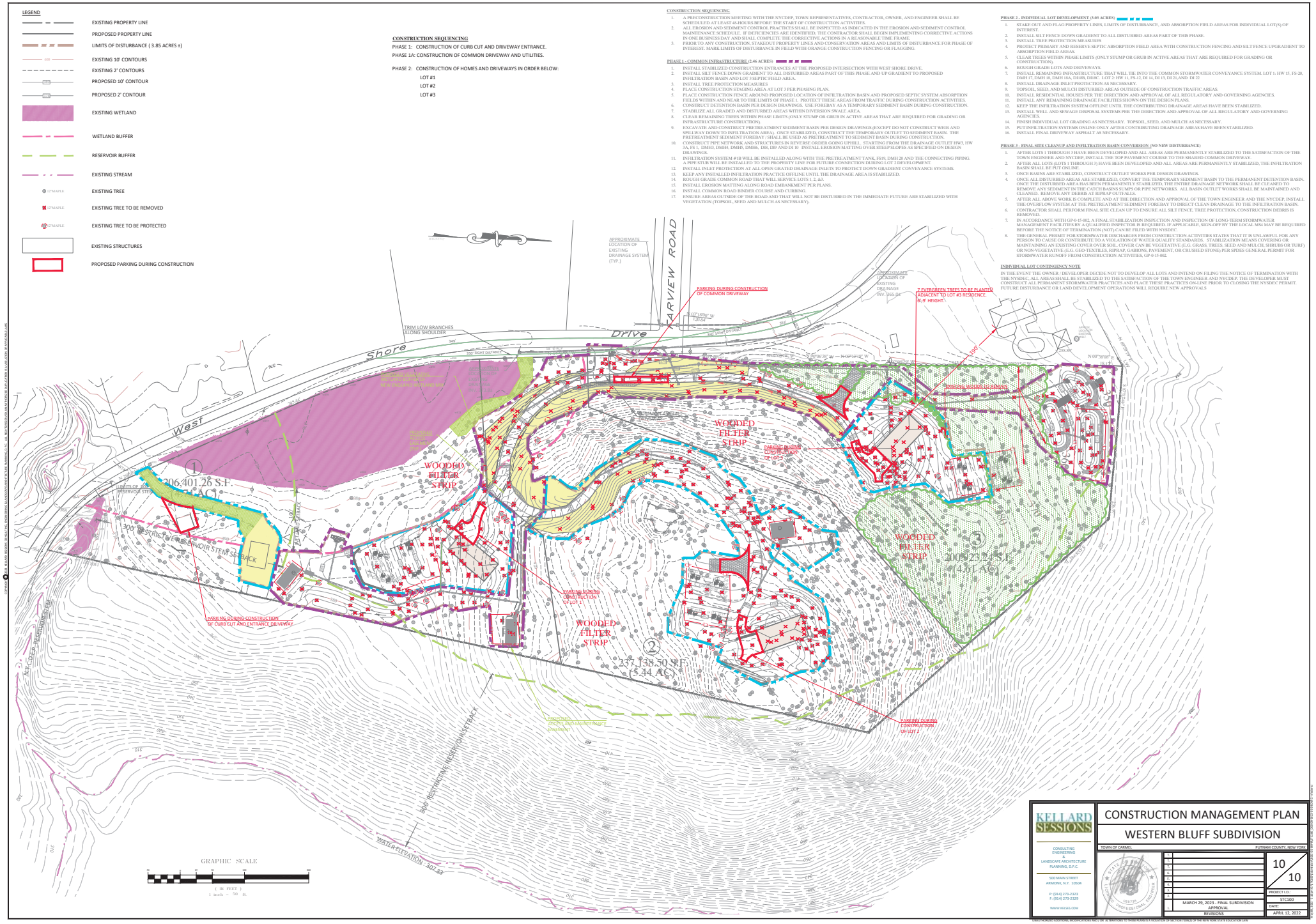
9	NOVEMBER 8, 2021 - TOWN ENGINEER COMMENTS
8	OCTOBER 20, 2020 - NYCDEP COMMENTS
7	JANUARY 20, 2020 - NYCDEP COMMENTS
6	MAY 7, 2019 - NYCDEP COMMENTS
5	OCTOBER 31, 2018 - DEP COMMENTS
4	JULY 5, 2018 - DEP COMMENTS
3	JANUARY 15, 2018 - DEP SUBMISSION
2	MAY 15, 2017 ENVIRONMENTAL BOARD
1	REVISIONS

9/10

PROJECT I.D.: STC100

DATE: JANUARY 13, 2017

10	MARCH 29, 2023 - FINAL SUBDIVISION APPROVAL
9	JANUARY 3, 2023- TOWN ENGINEER COMMENTS
	REVISIONS


LEGEND
EXISTING PROPERTY LINE
PROPOSED PROPERTY LINE
LIMITS OF DISTURBANCE (3.85 ACRES ±)
EXISTING 10' CONTOURS
EXISTING 2' CONTOURS
PROPOSED 10' CONTOUR
PROPOSED 2' CONTOUR
EXISTING WETLAND
WETLAND BUFFER
RESERVOIR BUFFER
EXISTING STREAM
EXISTING TREE
EXISTING TREE TO BE REMOVED
EXISTING TREE TO BE PROTECTED
EXISTING STRUCTURES
PROPOSED PARKING DURING CONSTRUCTION
CONSTRUCTION SEQUENCING
PHASE 1: CONSTRUCTION OF CURB CUT AND DRIVEWAY ENTRANCE.
PHASE 1A: CONSTRUCTION OF COMMON DRIVEWAY AND UTILITIES.
PHASE 2: CONSTRUCTION OF HOMES AND DRIVEWAYS IN ORDER BELOW:
LOT #1
LOT #2
LOT #3
CONSTRUCTION SEQUENCING
1. A PRECONSTRUCTION MEETING WITH THE NYCDEP, TOWN REPRESENTATIVES, CONTRACTOR, OWNER, AND ENGINEER SHALL BE SCHEDULED AT LEAST 48-HOURS BEFORE THE START OF CONSTRUCTION ACTIVITIES.
2. ALL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE INSPECTED AS INDICATED IN THE EROSION AND SEDIMENT CONTROL MAINTENANCE SCHEDULE. IF DEFICIENCIES ARE IDENTIFIED, THE CONTRACTOR SHALL BEGIN IMPLEMENTING CORRECTIVE ACTIONS IN ONE BUSINESS DAY AND SHALL COMPLETE THE CORRECTIVE ACTIONS IN A REASONABLE TIME FRAME.
3. PRIOR TO ANY CONSTRUCTION, STAKEOUT PROPERTY LINES AND CONSERVATION AREAS AND LIMITS OF DISTURBANCE FOR PHASE OF INTEREST. MARK LIMITS OF DISTURBANCE IN FIELD WITH ORANGE CONSTRUCTION FENCING OR FLAGGING.
PHASE 1 - COMMON INFRASTRUCTURE (2.46 ACRES)
1. INSTALL STABILIZED CONSTRUCTION ENTRANCES AT THE PROPOSED INTERSECTION WITH WEST SHORE DRIVE.
2. INSTALL SILT FENCE DOWN GRADIENT TO ALL DISTURBED AREAS PART OF THIS PHASE AND UP GRADIENT TO PROPOSED INFILTRATION BASIN AND LOT 3 SEPTIC FIELD AREA.
3. INSTALL TREE PROTECTION MEASURES
4. PLACE CONSTRUCTION STAGING AREA AT LOT 3 PER PHASING PLAN.
5. PLACE CONSTRUCTION FENCE AROUND PROPOSED LOCATION OF INFILTRATION BASIN AND PROPOSED SEPTIC SYSTEM ABSORPTION FIELDS WITHIN AND NEAR TO THE LIMITS OF PHASE 1. PROTECT THESE AREAS FROM TRAFFIC DURING CONSTRUCTION ACTIVITIES.
6. CONSTRUCT DETENTION BASIN PER DESIGN DRAWINGS. USE FOREBAY AS A TEMPORARY SEDIMENT BASIN DURING CONSTRUCTION.
7. STABILIZE ALL GRADED AND DISTURBED AREAS WITHIN DIVERSION SWALE AREA.
8. CLEAR REMAINING TREES WITHIN PHASE LIMITS (ONLY STUMP OR GRUB IN ACTIVE AREAS THAT ARE REQUIRED FOR GRADING OR INFRASTRUCTURE CONSTRUCTION).
9. EXCAVATE AND CONSTRUCT PRETREATMENT SEDIMENT BASIN PER DESIGN DRAWINGS (EXCEPT DO NOT CONSTRUCT WEIR AND SPILLWAY DOWN TO INFILTRATION AREA). ONCE STABILIZED, CONSTRUCT THE TEMPORARY OUTLET TO SEDIMENT BASIN. THE PRETREATMENT SEDIMENT FOREBAY / SHALL BE USED AS PRETREATMENT TO SEDIMENT BASIN DURING CONSTRUCTION.
10. CONSTRUCT PIPE NETWORK AND STRUCTURES IN REVERSE ORDER GOING UPHILL, STARTING FROM THE DRAINAGE OUTLET HW3, HW 3A, FS 1, DMH3, DMH4, DMH5, DMH6, DI8, DI9 AND DI 10 INSTALL EROSION MATTING OVER STEEP SLOPES AS SPECIFIED ON DESIGN DRAWINGS.
11. INFILTRATION SYSTEM #1B WILL BE INSTALLED ALONG WITH THE PRETREATMENT TANK, FS19, DMH 20 AND THE CONNECTING PIPING. A PIPE STUB WILL BE INSTALLED TO THE PROPERTY LINE FOR FUTURE CONNECTION DURING LOT 2 DEVELOPMENT.
12. INSTALL INLET PROTECTION AT ALL OPEN GRATED DRAINAGE INLETS TO PROTECT DOWN GRADIENT CONVEYANCE SYSTEMS.
13. KEEP ANY INSTALLED INFILTRATION PRACTICE OFFLINE UNTIL THE DRAINAGE AREA IS STABILIZED.
14. ROUGH GRADE COMMON ROAD THAT WILL SERVICE LOTS 1, 2, &3.
15. INSTALL EROSION MATTING ALONG ROAD EMBANKMENT PER PLANS.
16. INSTALL COMMON ROAD BINDER COURSE AND CURBING.
17. ENSURE AREAS OUTSIDE OF THE ROAD AND THAT WILL NOT BE DISTURBED IN THE IMMEDIATE FUTURE ARE STABILIZED WITH VEGETATION (TOPSOIL, SEED AND MULCH AS NECESSARY).
PHASE 2 - INDIVIDUAL LOT DEVELOPMENT (3.83 ACRES)
1. STAKE OUT AND FLAG PROPERTY LINES, LIMITS OF DISTURBANCE, AND ABSORPTION FIELD AREAS FOR INDIVIDUAL LOT(S) OF INTEREST.
2. INSTALL SILT FENCE DOWN GRADIENT TO ALL DISTURBED AREAS PART OF THIS PHASE.
3. INSTALL TREE PROTECTION MEASURES
4. PROTECT PRIMARY AND RESERVE SEPTIC ABSORPTION FIELD AREA WITH CONSTRUCTION FENCING AND SILT FENCE UPGRADIENT TO ABSORPTION FIELD AREAS.
5. CLEAR TREES WITHIN PHASE LIMITS (ONLY STUMP OR GRUB IN ACTIVE AREAS THAT ARE REQUIRED FOR GRADING OR CONSTRUCTION).
6. ROUGH GRADE LOTS AND DRIVEWAYS.
7. INSTALL REMAINING INFRASTRUCTURE THAT WILL TIE INTO THE COMMON STORMWATER CONVEYANCE SYSTEM. LOT 1: HW 15, FS-20, DMH 17, DMH 18, DMH 18A, DI18B, DI18C LOT 2: HW 11, FS-12, DI 14, DI 13, DI 21,AND DI 22
8. INSTALL DRAINAGE INLET PROTECTION AS NECESSARY.
9. TOPSOIL, SEED, AND MULCH DISTURBED AREAS OUTSIDE OF CONSTRUCTION TRAFFIC AREAS.
10. INSTALL RESIDENTIAL HOUSES PER THE DIRECTION AND APPROVAL OF ALL REGULATORY AND GOVERNING AGENCIES.
11. INSTALL ANY REMAINING DRAINAGE FACILITIES SHOWN ON THE DESIGN PLANS.
12. KEEP THE INFILTRATION SYSTEM OFFLINE UNTIL THE CONTRIBUTING DRAINAGE AREAS HAVE BEEN STABILIZED.
13. INSTALL WELL AND SEWAGE DISPOSAL SYSTEMS PER THE DIRECTION AND APPROVAL OF ALL REGULATORY AND GOVERNING AGENCIES.
14. FINISH INDIVIDUAL LOT GRADING AS NECESSARY. TOPSOIL, SEED, AND MULCH AS NECESSARY.
15. PUT INFILTRATION SYSTEMS ONLINE ONLY AFTER CONTRIBUTING DRAINAGE AREAS HAVE BEEN STABILIZED.
16. INSTALL FINAL DRIVEWAY ASPHALT AS NECESSARY.
PHASE 3 - FINAL SITE CLEANUP AND INFILTRATION BASIN CONVERSION (NO NEW DISTURBANCE)
1. AFTER LOTS 1 THROUGH 3 HAVE BEEN DEVELOPED AND ALL AREAS ARE PERMANENTLY STABILIZED TO THE SATISFACTION OF THE TOWN ENGINEER AND NYCDEP, INSTALL THE TOP PAVEMENT COURSE TO THE SHARED COMMON DRIVEWAY.
2. AFTER ALL LOTS (LOTS 1 THROUGH 3) HAVE BEEN DEVELOPED AND ALL AREAS ARE PERMANENTLY STABILIZED, THE INFILTRATION BASIN SHALL BE PUT ON-LINE.
3. ONCE BASINS ARE STABILIZED, CONSTRUCT OUTLET WORKS PER DESIGN DRAWINGS.
4. ONCE ALL DISTURBED AREAS ARE STABILIZED, CONVERT THE TEMPORARY SEDIMENT BASIN TO THE PERMANENT DETENTION BASIN. ONCE THE DISTURBED AREA HAS BEEN PERMANENTLY STABILIZED, THE ENTIRE DRAINAGE NETWORK SHALL BE CLEANED TO REMOVE ANY SEDIMENT IN THE CATCH BASINS SUMPS OR PIPE NETWORKS. ALL BASIN OUTLET WORKS SHALL BE MAINTAINED AND CLEANED. REMOVE ANY DEBRIS AT RIPRAP OUTFALLS.
5. AFTER ALL ABOVE WORK IS COMPLETE AND AT THE DIRECTION AND APPROVAL OF THE TOWN ENGINEER AND THE NYCDEP, INSTALL THE OVERFLOW SYSTEM AT THE PRETREATMENT SEDIMENT FOREBAY TO DIRECT CLEAN DRAINAGE TO THE INFILTRATION BASIN.
6. CONTRACTOR SHALL PERFORM FINAL SITE CLEAN UP TO ENSURE ALL SILT FENCE, TREE PROTECTION, CONSTRUCTION DEBRIS IS REMOVED.
7. IN ACCORDANCE WITH GP-0-15-002, A FINAL STABILIZATION INSPECTION AND INSPECTION OF LONG-TERM STORMWATER MANAGEMENT FACILITIES BY A QUALIFIED INSPECTOR IS REQUIRED. IF APPLICABLE, SIGN-OFF BY THE LOCAL MS4 MAY BE REQUIRED BEFORE THE NOTICE OF TERMINATION (NOT) CAN BE FILED WITH NYSDEC.
8. THE GENERAL PERMIT FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES STATES THAT IT IS UNLAWFUL FOR ANY PERSON TO CAUSE OR CONTRIBUTE TO A VIOLATION OF WATER QUALITY STANDARDS. STABILIZATION MEANS COVERING OR MAINTAINING AN EXISTING COVER OVER SOIL. COVER CAN BE VEGETATIVE (E.G. GRASS, TREES, SEED AND MULCH, SHRUBS OR TURF) OR NON-VEGETATIVE (E.G. GEO-TEXTILES, RIPRAP, GABIONS, PAVEMENT, OR CRUSHED STONE) PER SPDES GENERAL PERMIT FOR STORMWATER RUNOFF FROM CONSTRUCTION ACTIVITIES, GP-0-15-002.
INDIVIDUAL LOT CONTINGENCY NOTE
IN THE EVENT THE OWNER / DEVELOPER DECIDE NOT TO DEVELOP ALL LOTS AND INTEND ON FILING THE NOTICE OF TERMINATION WITH THE NYSDEC, ALL AREAS SHALL BE STABILIZED TO THE SATISFACTION OF THE TOWN ENGINEER AND NYCDEP. THE DEVELOPER MUST CONSTRUCT ALL PERMANENT STORMWATER PRACTICES AND PLACE THESE PRACTICES ON-LINE PRIOR TO CLOSING THE NYSDEC PERMIT. FUTURE DISTURBANCE OR LAND DEVELOPMENT OPERATIONS WILL REQUIRE NEW APPROVALS
WEST SHORE DRIVE
ARVIEW ROAD
TRIM LOW BRANCHES ALONG SHOULDER
APPROXIMATE LOCATION OF EXISTING DRAINAGE SYSTEM (TYP.)
APPROXIMATE LOCATION OF EXISTING DRAINAGE INV. 365.04
PARKING DURING CONSTRUCTION OF COMMON DRIVEWAY
7 EVERGREEN TREES TO BE PLANTED ADJACENT TO LOT #3 RESIDENCE. 8'-9' HEIGHT.
PARKING DURING CONSTRUCTION OF LOT 3
PARKING DURING CONSTRUCTION OF LOT 1
PARKING DURING CONSTRUCTION OF LOT 2
PARKING DURING CONSTRUCTION OF CURB CUT AND ENTRANCE DRIVEWAY
WOODED FILTER STRIP
WOODED FILTER STRIP
WOODED FILTER STRIP
WOODED FILTER STRIP
1
206,401.26 S.F.
(4.74 AC)
2
237,138.50 S.F.
(5.44 AC)
3
209,223.24 S.F.
(4.81 AC)
LIMITS OF DISTURBANCE
RESERVOIR STEM
300' RESTRICTIVE RESERVOIR STEM SETBACK
75' SETBACK
300' RESTRICTIVE RESERVOIR SETBACK
NET COVER RESERVOIR
PROPOSED ACCESS AND MAINTENANCE EASEMENT
WATER ELEVATION: 307.83
GRAPHIC SCALE
1 inch = 50 ft.
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CONSTRUCTION MANAGEMENT PLAN
WESTERN BLUFF SUBDIVISION
TOWN OF CARMEL
PUTNAM COUNTY, NEW YORK
MARCH 29, 2023 - FINAL SUBDIVISION APPROVAL
REVISIONS
10/10
PROJECT I.D.:
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APRIL 12, 2022