TOWN OF CARMEL
PLANNING BOARD

60 McAlpin Avenue
Mahopac, New York 10541
Tel. (845) 628-1500 – Ext.190
www.ci.carmel.ny.us

PLANNING BOARD AGENDA
MAY 12, 2022 – 7:00 P.M.

		TAX MAP #	PUB. HEARING	MAP DATE	COMMENTS
RESOLUTION					
1.	Western Bluff Subdivision – 350 West Shore Drive	66.14-1-20		4/10/22	Preliminary Approval - 3 Lot Subdivision
SITE PLAN					
2.	Demag & Ademi – 552 Route 6	75.12-2-1 & 2		5/2/22	Amended Site Plan
3.	Platinum Propane – 1035 Route 6	65.10-2-11		5/2/22	Site Plan
MISCELLANEOUS					
4.	Itzla Subdivision – 9 Mechanic Street	55.14-1-6		12/5/19	Extension of Final Subdivision Approval
5.	Minutes – 04/14/22 & 4/27/22				

ARCHITECTURAL VISIONS PLLC
A GREENBERG DESIGN GROUP

May 2, 2022

Craig Paeprer, Chairman and Members of the Carmel Planning Board
60 McAlpin Ave
Mahopac, NY 10541

RE: Site Plan for Demag & Ademi
552 Route 6
TM#: 75.12-2-1 & 2

Dear Mr. Paeprer and the Members of the Carmel Planning Board,

The following is my response to the Building Inspectors memo of 4/27:

1. Based on the parking there can be no more than 39 seats at any one time. See note on drawings.
2. It was not my intention to have any utilities pass through the walk-in box. As shown on the drawings, the gas and electric lines will be relocated so as not to pass though the walk-in box.
3. The storage units behind the building will be removed.
4. Drawing A-1 indicates that both of the existing bathrooms are ADA compliant.
5. I have contacted the existing owner with regard to the easement for the trash enclosure.
6. The dimensions of the sign have been added to the drawings.

The following is my response the Town Planner's memo dated 4/27:

1. All of the items as indicated on his memo have been addressed.

The following is my response to the Town Engineer's Memo dated 4/25:

1. Attached is the approval from the Putnam County Health Department
2. I have not gotten any response from the Mahopac Fire Department.
3. I have contacted the owner of the property regarding the stormwater easement.
4. A water and waste water report will be submitted. Water/sewer lines are shown.
5. Grease trap presently exists.
6. Pavement markings and signs have been added to the Site Plan.

Very truly yours,

Joel Greenberg, AIA, NACRB

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Mahopac, New York 10541
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U.S. GREEN BUILDING COUNCIL MEMBER

ARCHITECTURAL VISIONS PLLC
A GREENBERG DESIGN GROUP

April 15, 2022

Craig Paeprer, Chairman and Members of the Carmel Planning Board
60 McAlpin Ave
Mahopac, NY 10541

RE: Water and Waste Water Analysis
Site Plan for Demag & Ademi
552 Route 6
TM#: 75.12-2-1 & 2

Dear Mr. Paeprer and the Members of the Carmel Planning Board,

The following is the analysis for the water and waste water for the above mentioned building.

Two tenants ago, when the tenant was the Brooklyn Café, the Putnam County Department of Health had the approved total gallons per day at 1,750GPD (50 persons x35 gallons per person per day).

The tenant that just vacated the premises had a total usage of 1,060GPD i.e. Bar at 18 persons x20GPPPD and 20 seats at 35GPPPD.

The new tenant is proposing 39 seats at 35GPPPD for a total of 1,365GPD. Therefore, the proposed usage of 1,365GPD is less than the 1,750GPD used by the Brooklyn Café, so the proposed usage is 385 Gallons less than the Brooklyn Café used.

Therefore, it is my opinion that the water and waste water usage is more than adequate since it is less than the usage of the Brooklyn Café.

Very truly yours,

Joel Greenberg, AIA, NACRB

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U.S. GREEN BUILDING COUNCIL MEMBER

joel.greenberg arch-visions.com

From: Lisa Seymour <Lisa.Seymour@putnamcountyny.gov>
Sent: Wednesday, April 20, 2022 3:38 PM
To: joel.greenberg arch-visions.com
Subject: Lakeview Market & Deli

Hi Joel, See you tomorrow. Lakeview Market & Deli was approved for 50 seats by the Health Department. We usually continue with the same seating approval number for the new facility unless the town designates an alternative number and notifies us.

Lisa,

Site Insp. Thurs. 4/21/2022 11:30am @ former Lakeview.

Joel

Joel Greenberg, AIA, NCARB
Architectural Visions, PLLC
2 Muscoot Rd N.
Mahopac, NY 10541
(845) 628 - 6613 P
(845) 628 - 2807 F

Lisa

Lisa Seymour
Public Health Sanitarian II
Putnam County Department of Health
1 Geneva Road, Brewster, NY 10509
Tel: (845) 808-1390 ext. 43162
Cell: (845) 656-8786
Fax: (845) 278-7921
www.putnamcountyny.com/health
A PHAB-ACCREDITED HEALTH DEPARTMENT
Follow us on social media:
www.facebook.com/putnamhealth
www.twitter.com/PutnamHealthNY

TOWN OF CARMEL PLANNING BOARD APPROVAL:

APPROVAL HEREBY GRANTED THIS _____ DAY OF _____.

SIGNED THIS_____DAY OF_____20_____BY:

CHAIRMAN_____

VICE CHAIRMAN_____

IF BUILDING PERMIT IS NOT ISSUED WITHIN 12 MONTHS FROM THE ABOVE DATE, THIS APPROVAL BECOMES NULL AND VOID.

AREA MAP

SCALE: 1" = 200'

EXISTING SITE PLAN
(NO CHANGES PROPOSED)

SCALE: 1" = 10'

BASED ON SURVEY BY:
DAVID ODELL P.L.S.
LAND SURVEYING COMPANY
12 COLLIER DRIVE EAST
CARMEL NY, 10512

DATED MARCH 13, 2008

NOTES:

TERRACE TO BE USED DURING THE SUMMER MONTHS FOR SEATING AND WAITING AREA. THE TOTAL NUMBER OF SERVING SEATS INSIDE AND OUTSIDE WILL NOT EXCEED 39.

EXISTING PLANTINGS TO REMAIN, NO NEW PLANTINGS PROPOSED.

EXISTING EXTERIOR LIGHTING TO REMAIN. NO PROPOSED EXTERIOR LIGHTING.

NO EXTERIOR SITEWORK OR SITE DISTURBANCES PROPOSED.

NO EXTERIOR CHANGES PROPOSED TO BUILDING EXCEPT CHANGING LETTERING ON EXISTING SIGN & ADD IDENTICAL SIGN FOR MARKET ON BLDG FRONT ROOF.

MONITORING WELLS WERE TERMINATED.

AS PER APPROVED SITE PLAN ADDED JULY 22ND, 2009

EXISTING PATIO LIGHTING

NEW FREE STANDING SIGN (31.5SF, 9'X3.5')

EXISTING FREESTANDING SIGN WITH NEW LETTERING

NEW SIGN (38.5SF, 8.5'X4.5') TO MATCH EXISTING

EXISTING SIGN (38.5SF, 8.5'X4.5') WITH NEW LETTERING

FRONT BUILDING SIGNAGE

SITE DATA NOTES:

1. OWNER:
LUPINACCI MAZZOLA HOLDING CORP
552 ROUTE 6
MAHOPAC, NY 10541

OWNER ADDRESS:
LUPINACCI MAZZOLA HOLDING CORP
278 ROUTE 202
SOMERS NY, 10589

2. ZONE:
C

3. PROPOSED PROJECT USE:
STONE HOUSE GRILL AND STONE HOUSE MARKET

4. TAX MAP NO,

SECTION	75,12
BLOCK	2
LOT	1 & 2

5. WATER/ SEWER: PUBLIC WATER/ SEWER

6. ZONING REQUIREMENTS

ITEM	REQUIRED	PROVIDED OR EXISTING	VARIANCES GRANTED
GROSS SITE AREA (MIN)	40,000 SQFT	15,010 SQFT	24,990 SQFT VARIANCE
LOT DEPTH (MIN)	200 FT.	219.0 FT.	
LOT WIDTH (MIN)	200 FT.	69.0 FT.	131.0 FT VARIANCE
FRONT YARD EAST (MIN)	40 FT.	31.7 FT.	8.3 FT VARIANCE
FRONT YARD WEST (MIN)	40 FT.	8.0 FT.	32.0 FT VARIANCE
FRONT YARD SOUTH (MIN)	40 FT.	165.4 FT.	
REAR YARD NORTH (MIN)	30 FT.	10.7 FT.	19.3 FT VARIANCE
SIDE YARD (MIN)	25 FT.	NONE	
HEIGHT (MAX)	35 FT.	21.5 FT.	
FREE STANDING SIGN	BLDG MUST BE 20FT FROM PROPOERTY LINE	8.0 FT.	12.0 FT VARIANCE
FLOOR AREA OF BLDG	5,000 SQFT	1874.80 SQFT	3,125.20 FT VARIANCE
LOT COVERAGE	30%	12.75%	
PARKING	GRILLE: 1 P.S. PER 3 SEATS MARKET: 1 P.S. / 200 S.F.	39 SEATS / 3 = 13 400 S.F. / 200 = 2	=15 PARKING SPACES NEEDED 13 PARKING SPACES PROVIDED 2 HC PARKING SPACES PROVIDED 15 TOTAL PARKING SPACES PROVIDED

STRUCTURAL DESIGN LOADS

DESIGN LOADS
FLOOR LIVE LOAD: 40 psf

SNOW LOADING
GROUND SNOW LOAD: 50 psf

WIND LOADING
BASIC WIND SPEED: 110 mph
WIND EXPOSURE CATAGORY: C

SEISMIC DESIGN
SEISMIC DESIGN CATEGORY: D1
SITE CLASS: D
SEISMIC USE GROUP: I

ALL VARIANCES GRANTED BY THE ZBA ON 9 / 2 / 2008

ARCHITECTURAL VISIONS PLLC
2 MUSCOOT ROAD NORTH
MAHOPAC NY, 10541
P: 845-628-4613
F: 845-628-2807
JOELGREENBERG@ARCHVISIONS.COM

COMMERICIAL RENOVATION FOR:
DEMAG & ADEMI

PROJECT ADDRESS
552 ROUTE 6
MAHOPAC, NY 10541
TAX MAP# 75.12-2-1 & 2

MAILING ADDRESS
3 WEBB'S COURT
BALDWIN PLACE, NY 10505

EXISTING SITE PLAN

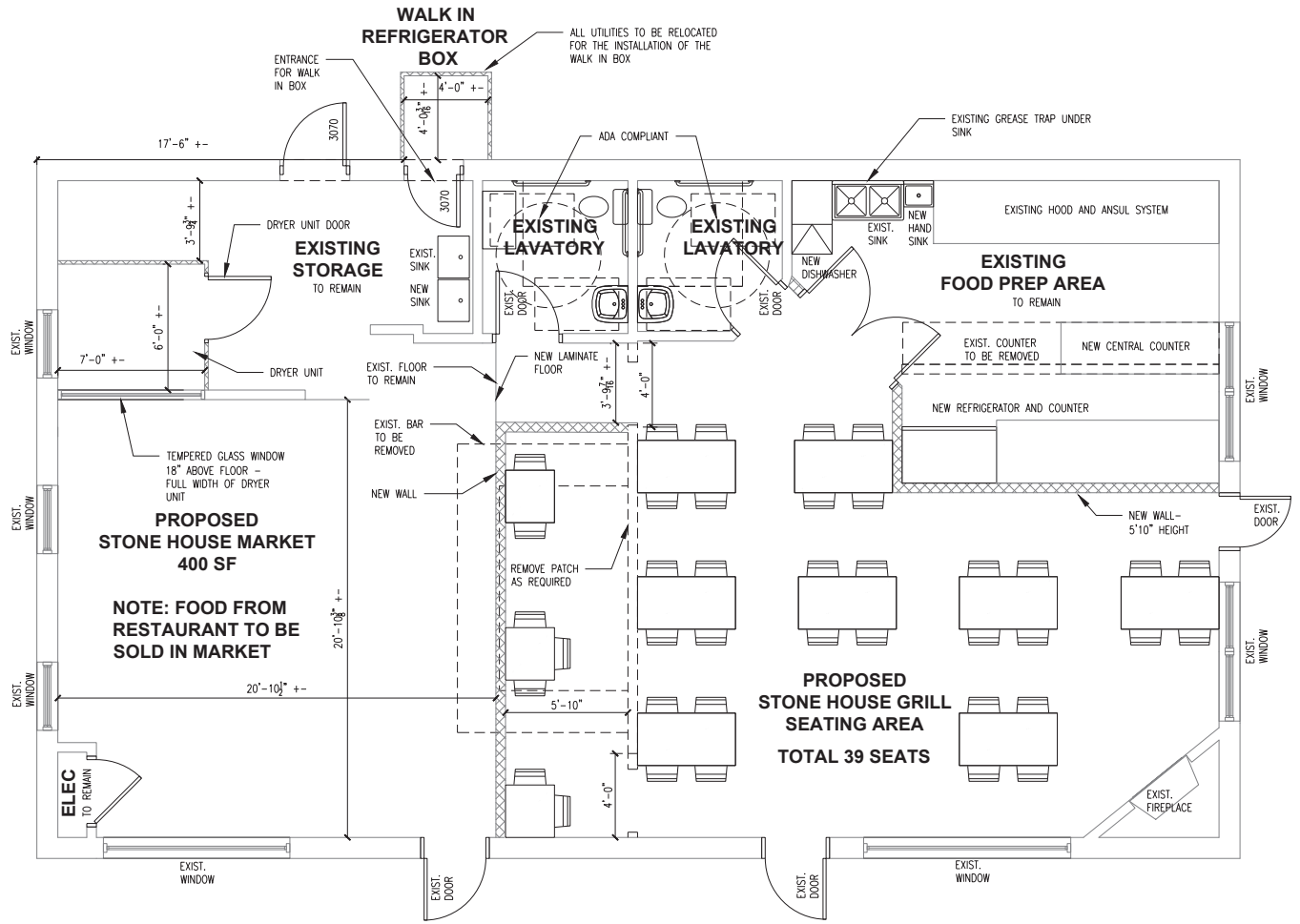
ISSUANCE
FOR REVIEW 4/16/2008
6/26/2008
7/21/2008
10/02/2008
05/21/2009
06/29/2009
03/31/2022
04/04/2022
04/12/2022
05/02/2022

SCALE
AS NOTED

DRAWN BY
JF / MCK / JLG

PROJECT NO.
03-22-030

S-1



NOTE: NO EXTERIOR ARCHITECTURAL CHANGES TO THE EXISTING BUILDING

EXCEPT: 1 SIGN PROPOSED FOR THE STONE HOUSE MARKET & NEW LETTERS FOR EXISTING SIGN

1 PROPOSED FLOOR PLAN
1/4"=1'-0"

ARCHITECTURAL VISIONS PLLC
2 MUSCOOT ROAD NORTH
MAHOPAC NY, 10541
JOEL.GREENBERG@ARCH-VISIONS.COM
P: 845-628-6613
F: 845-628-2807

PROJECT: DEMAJ, KRESHNIK & ADEMI, SKENDER

PROJECT ADDRESS
552 RT. 6
MAHOPAC, NY 10541

MAILING ADDRESS
3 WEEKS CT,
BALDWIN PLACE
NY 10505

TAX MAP NO. 75.12-2-1 & 2

FLOOR PLAN

ISSUANCE	DATE
FOR REVIEW	03/31/2022
	04/18/2022
	05/02/2022

SCALE
AS NOTED

DRAWN BY/CHKD BY
MCK/ VTP / JLG

PROJECT NO.
03-22-030

A-100

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

May 2, 2022

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

RE: 1035 Rt 6 – Platinum Propane
Town of Carmel
TM# 65.10-2-11

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 2, 2022. (5 copies).
- Stormwater Pollution Prevention Plan, dated May 2, 2022. (2 copies).
- 30,000 Gallon Liquid Propane Tank Specification Sheet from Highland Tank.
- Example photos of propane filling stations.

In response to comments received from Director of Code Enforcement, Michael Carnazza, dated April 12, 2022, we offer the following responses:

- This accurately summarizes the applicant's proposal, with the exception that the lean-to structure will both screen the filling area from Route 6 and will also house propane delivery trucks during non-working / delivery hours.

- The applicant has indicated that, per the National Propane Gas Association (NPGA), this facility would be considered a plant, which is defined as facility for the bulk storage of liquid propane (LP). The applicant has indicated that a "terminal" would be defined as a larger facility for the transport, processing, and short term-storage of and of LP. The applicant will work with Hiltz Propane Systems to install the buried propane tanks in accordance with the applicable standards, including the latest version of NFPA 58. Propane tanks are permitted to be installed underground with setback distances in accordance with Chapter 3 of NFPA 58.

- The typing error has been corrected. The existing dwelling is estimated at 1,650sf +-. The applicant's architect is preparing schematic floor plans of the existing building and will provide a final square footage prior to the May 12 meeting of the Planning Board.

- There are no proposed changes to the layout of the existing building as it is to be simply converted for use as an office space. A diagrammatic floor plan of the existing building will be included with our next submission. A plan for the lean to was provided with the initial submission. The filling station will consist of a concrete slab, a pump and meter and the required plumbing and the applicant is working with the system installer to provide details with a future submission. The applicant has provided a photo of an example filling station with this submission for reference. Note that this photograph also shows tanks adjacent to the filling station, which will not be the case for this project as the proposed tanks will be buried.

- The need for variances for the front yard setback and minimum floor area are acknowledged and the applicant would request that the Planning Board make the referral to the ZBA so the variances can be sought. A loading space is indicated on the plan at the filling station.

In response to comments received from Town Engineer Richard Franzetti, PE, dated April 4, 2022, we offer the following responses:

General Comments

- The noted referrals are acknowledged.

- The required permits are acknowledged with the exception of the NYCDEP relative to stormwater pollution protection, as the project will create less than 2 acres of disturbance in the watershed. It is proposed to continue use of the existing septic system for the house and a change of use will be processed with the PCDOH and NYCDEP jointly.

- The requirement for post-construction stormwater controls are noted and the stormwater design has been advanced as shown in the enclosed site plans.

- It is unclear what is meant by this comment. The fire department will have full access to all sides of the proposed lean to and the existing building is also accessible. If there is a specific concern regarding access the applicant is happy to consider options.

- Traffic and vehicle movements are shown on drawing D-1.

    - Site distance calculations are shown on drawing SP-1.

    - A driveway profile will be provided with a future submission as the entrance plan for te NYSDOT is advanced.

    - Driveway slopes at the entrance are indicated on drawing SP-2.

    - The applicant would prefer not to perform a traffic study at this time as the project does not exceed the thresholds defining the proposed improvements as causing a "significant increase" in traffic under SEQR, and because this project is to be reviewed by the NYSDOT as part of a required highway work permit for the new commercial entrance. As the project use will cause a minimal increase in traffic and as these impacts will be closely studied by the NYSDOT, a traffic study at this time would seem unnecessary.

- The need for a stormwater maintenance agreement is acknowledged.

- The potential requirement of a performance bond is acknowledged.

Detailed Comments

- Pavement markings are indicated in the enclosed plans.

- Proposed signs and pavement markings are shown on the revised plans.

- A construction sequence has been provided on drawing SP-3.

- There are no specific trees to be protected on the site.

- All existing and proposed utilities are shown on the enclosed plans. Additional survey work is in progress and the exact location of the utility poles and overhead wires along the frontage will be provided with our next submission.

- A note indicating that all plantings shall be verified by the Wetlands Inspector has been added to the drawing SP-1.

- A note indicating that all plantings shall be installed per §142 of the town code has been added to drawing SP-1.

- Plants to be cleared along the frontage have been indicated on drawing EX-1.

- A note indicating that all curbs, sidewalks, and asphalt shall meet the Town code have been added to drawing EX-1.

- The asphalt section has been modified as requested.

- The applicant seeks to balance cut and fill to the extent practical, and a cut fill analysis will be performed prior to construction.

- The requested note regarding certified fill has been added to drawing SP-2.

- The requirement for a SWPPP, MS4 Acceptance form and NOI are acknowledged. A SWPPP is provided herewith for review including draft copies of the NOI and MS4 Acceptance form as appendices within.

- Design criteria for the stormwater management practices is included in the project SWPPP.

- Construction fence is now shown around all stormwater management practices. Infiltration calculations are provided in the enclosed SWPPP. The stormwater design has been advanced and clarified including consideration of the overflow from the infiltration system.

In response to comments received from Town Planner, Cleary Consulting, dated April 14, 2022, we offer the following responses:

Site Plan Review Comments

- This comment is acknowledged. It is the applicant's position that the proposed use falls under "Wholesale storage and distributive establishments," which is a permitted use in the zone.

- This comment is noted. The applicant requests that the project be referred to the ZBA so we can pursue the variances that are noted.

- This comment is noted. An initial site visit was conducted with the NYSDOT, and an initial submission will be made pending updated survey information in the NYSDOT right of way. A sight distance analysis with selective clearing is shown on drawing SP-1.

- This comment is noted. If the Mr. Carnazza has a different view of the appropriate parking requirement interpretation, the applicant is happy to consider altering the parking layout.

- The proposed propane operation will be a wholesale operation. No retail services are proposed.

- Typically, one to three delivery trucks could be on site, but currently no more than four are anticipated. Additionally, a more or less weekly bulk delivery from a tanker would be anticipated. See the vehicle maneuvers on drawing D-1. Typically, there will one employee on site in the office, and up to three delivery drivers depending on the daily schedule.

- A loading space is shown at the fueling area. See drawing SP-1.

- As noted above, the trucks anticipated to be maneuvering through the site are a weekly bulk delivery of propane, which would come on a tanker, and daily loading by smaller propane trucks for delivery. See the maneuvers on drawing D-1. It would appear that the radii provided will be sufficient for the regular circulation of smaller propane delivery trucks and more intermittent circulation of a larger tanker truck.

- The applicant is conferring with their propane consultant on any outside permits or licenses and be able to discuss at the May 12 meeting.

- Plantings have been made specific and quantified. See drawing SP-1.

- The plantings along the frontage have been revised as requested.

- Bioretention plantings have been made specific. See drawing SP-1.

- The proposed outdoor lighting has been added to drawing SP-1.

Please place the project on the May 12, 2022 Planning Board agenda for a 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: _____
Zachary M. Pearson, PE
Senior Associate Engineer

ZMP/adt

Enclosures

cc: (All via email only) Joseph Covais, Michael Velardo, Mahopac Fire Department

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

STORMWATER POLLUTION PREVENTION PLAN

Prepared For

Platinum Propane – Mahopac

1035 Route 6
Carmel, NY 10541
May 2, 2022

Owner Information:

Hillside Property Holdings, LLC
2 Depot Plaza, Suite 401
Bedford Hills, NY 10507

NOTE: This report in conjunction with the project plans prepared by others make up the complete Stormwater Management Report.

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

CONTENTS

1.0 INTRODUCTION

1.1 Project Description

The subject project is located on a 12.0 ± acres at 1035 Route 6 in the Town of Carmel. The parcel and its surroundings are delineated on the attached Location Map (Figure 1), is designated as Tax Map Number 65.10-2-11, and is located in the C-Commercial zoning district. The property is currently developed with an existing residential dwelling, driveway and additional site features. Stormwater runoff on the existing property generally drains from east to west towards an onsite Town Wetland.

This project proposes to redevelop the property and convert the existing dwelling into an office space for their propane business. Also, the project proposed to construct a 1,500 s.f. open air lean to structure for the storage of their service vehicles, a propane loading area, 30,000 gallon buried propane tanks and associated driveway & parking areas. The project is a redevelopment project with a total increase in impervious area of 0.4 +/- areas

It is proposed to capture and treat the stormwater runoff associated with the proposed impervious areas as well as most of the redeveloped impervious areas. The project site is located in the Croton Falls Reservoir Watershed.

The following permits are required for the project:

TOWN OF CARMEL
Planning Board Site Plan Approval Environmental Conservation Board Approval
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SWPPP General Permit Coverage (GP-0-20-001)
PUTNAM COUNTY DEPARTMENT OF HEALTH
Well Relocation Approval

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.

1.2 Existing Site Conditions (Pre-Development)

The subject property is located on Route 6 in the Town of Carmel. The site is currently developed with an existing residential dwelling, driveway and additional site features. The remaining portions of the site consist of wooded areas.

The stormwater runoff from the existing property generally drains from east to west to an existing town wetland. The stormwater analysis included in the subject SWPPP utilizes one Design Line along the wetland boundary. The design line has been used to assess the peak rate of runoff from the property and ensure any peak flow from the proposed improvements are mitigated at the Design Line. The Pre & Post-Development Drainage Map (Figure 2 & 3 of this report) shows the location of the Design Line. The pre-development contributing areas to the Design Line are identified as subcatchment 1.0S.

The designations of the onsite soils located within the proposed limits of disturbance consist of Paxton Fine Sandy Loam (PnC), Woodbridge Loam (WdB) and Charfield-Carlton complex (CsD) as identified on the Soil Conservation Service Web Soil Survey. The PnC and WdB soils are identified with a hydrologic soil group C. The CsD soil is identified with a hydrologic soil group B. The soils boundaries are shown on Figure 2 and 3 of this report. Onsite soil testing within the stormwater areas revealed the potential for infiltration practices in certain areas. Therefore, the proposed stormwater analysis has been designed to utilize infiltration areas and a bioretention filter as discussed below.

1.3 Proposed Site Conditions (Post Development)

This project proposes to redevelop the property and convert the existing dwelling into an office space for their propane business. Also, the project proposed to construct a 1,500 s.f. open air lean to structure for the storage of their service vehicles, a propane loading area, 30,000 gallon buried propane tanks and associated driveway & parking areas. The project is a redevelopment project with a total increase in impervious area of 0.4 +/- areas. The newly created impervious surfaces will be captured and treated in the SMPs discussed further in later sections of this report. The proposed SMPs will be designed to capture and treat runoff from the new impervious surfaces in accordance with the *New York State Stormwater Management Design Manual* (Design Manual) including Chapter 10.

Stormwater runoff from certain areas of the proposed site is classified as a hotspot by the Design Manual. These areas include the asphalt areas around the proposed lean to building and propane loading areas. Stormwater runoff from these areas is restricted from being discharged to an infiltration practice and as such will be conveyed to the proposed bioretention filter. Non-hotspot stormwater runoff associated with the proposed project, including the asphalt driveway, parking areas and roof from the proposed lean to building, will be collected and conveyed to two (2) underground infiltration systems and bioretention areas.

It is proposed to maintain the existing drainage patterns on the site to the maximum extent practical. Stormwater treatment for the proposed project will be accomplished with the use of two (2) Infiltration Systems (1.1P & 1.2P) and a Bioretention Filter (1.3P) prior to the discharging to the Design Points. Both the Infiltration Systems and the Bioretention Filter have been sized to capture and treat the Water Quality Volume from the proposed and redeveloped impervious surfaces. The contributing areas to the infiltration systems area shown as Subcatchment 1.1S and 1.2S on Figure 3. The contributing area to the Bioretention Filter is shown as Subcatchment 1.3S on Figure 3. The remaining subcatchments are shown as 1.4S & 1.5S.

As shown in the following sections of this report, the stormwater quality and quantity for the proposed development have been treated in accordance with the requirements of the General Permit, GP-0-20-001. 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* (Blue Book) to protect the existing waterbodies and drainage features during construction activities.

2.0 STORMWATER MANAGEMENT

The proposed stormwater management system for the Platinum Propane - Mahopac project has been designed to meet the requirements of local, regional, and state stormwater ordinances and guidelines, including but not limited to the Town of Carmel, 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).
- *Town of Carmel Code, Chapter 156-80 – Stormwater Control*.

Since the subject project proposes the disturbance of more than 1 acre, the General Permit require post construction stormwater management controls for the project. As such, the latest edition of the NYSDEC *New York State Stormwater Management Design Manual* (Design Manual), including Chapter 10: *Enhanced Phosphorus Removal Standards* (Chapter 10), was referenced for the design of the proposed stormwater collection, conveyance and treatment system. A discussion of the requirements of Chapter 10 is included below.

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). 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 increase in impervious area. Per the requirements of Chapter 9 of the NYSSMDM, all new impervious areas are required to be treated in accordance with the requirements of Chapter 4 and 10 for both stormwater quality and quantity. Per Chapter 9, 25% of the water

quality from the existing impervious area within the subcatchments reaching the stormwater practice is required to be treated to meet the WQv requirements for redevelopment projects. As shown in the calculations Appendix A of this report, the 25% of the existing impervious areas were accounted for in the WQv sizing of the stormwater treatment practices.

To meet the above referenced requirements, the following post construction stormwater management practices are proposed for the project:

Table 2.0.1 – Proposed SMP Design Criteria Summary Table

Proposed SMP ID	NYSSMDM Ch. 6 Design Designation	Contributing Subcatchments	NYSDEC Uniform Stormwater Sizing Criteria Satisfied
SMP 1.1P	I-4, Underground Infiltration System	1.1S	RRv / WQ_v
SMP 1.2P	I-4, Underground Infiltration System	1.2S	RRv / WQ_v
SMP 1.3P	F-5, Bioretention Filter	1.3S	RRv / WQ_v

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, please refer to Appendices B and C.

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
- T_c (time of concentration) flow path information
- Watershed Area in Acres

Stormwater Basins

- 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 stormwater management practice, see Appendices B & C. The 1-year, 10-year, and 100-year 24-hour design storm were obtained from the New York State Stormwater Management Design Manual. The values provided are for 24-hour design storms.

Table 2.0.1 – Precipitation Values for Corresponding Design Storms

Design Storm	24-Hour Rainfall
1-Year	2.8"
10-Year	4.9"
100-Year	8.8"

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 their associated CN values utilized in this report.

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

Land Use/Ground Cover	CN Value
Paved Parking and Roofs, All Soils	98
>75% Grass Cover, C Soils	74
Woods, Good, HSG B	55
Woods, Good, HSG C	70

2.1 Chapter 10: Enhanced Phosphorus Removal Standards

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. Therefore, the use of infiltration practices and a bioretention filter (classified as Standard SMP's with RRv capacity) have been utilized to treat the stormwater runoff from the proposed impervious surfaces and satisfy RRv minimum requirements. 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 practices and bioretention filter have been designed in accordance with Section 10.4.4 of Chapter 10 thus satisfying the requirements of this goal.

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 proposed infiltration practices and bioretention filter have been designed in accordance with section 10.4.4 of Chapter 10 thus satisfying the requirements of this goal.

2.2 NYSDEC Water Quality Volume (WQ_v)

The proposed Stormwater Management Practices (SMPs) have been sized to capture all of the proposed impervious cover and a portion of existing impervious cover onsite. As mentioned above in this report, as a redevelopment project, 25% of the existing impervious areas were accounted for in

the WQv sizing of the stormwater treatment practices. The SMPs have been sized in accordance with Chapter 4 & 10 of the Design Manual, as it has been sized to capture and treat the entire water quality volume (WQ_v) from the proposed impervious areas and 25 % of the WQ_v from the redeveloped 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 practices have 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 WQ_v is the runoff volume produced during the 1-year 24-hour design storm.

Table 2.2.1, 2.2.2, 2.2.3 & 2.2.4 below summarizes the WQv treatment and Required Elements for the proposed infiltration systems and bioretention filter, sized in accordance with Chapters 3 and 6 of the NYSSMDM for the proposed practice. Subcatchment 1.1S, 1.2S & 1.3S contains all the proposed impervious surfaces associated with the development.

The infiltration system (1.1P) is designed as an offline practice and to fully infiltrate the WQv from the contributing area. A flowsplitter is proposed upstream of the infiltrator to make the practice offline. The flowsplitter is sized to convey at a minimum the peak WQv flow to the infiltration system, while allowing portions of larger storms to bypass the infiltration units as allowed by the Design Manual. Pretreatment has been provided for the infiltration system (1.1P) and the bioretention filter (1.3P) in the form of hydrodynamic separators. Pretreatment has not been provided for the infiltration system (1.2P) because all of the contributing area consists of roof runoff. As such, pretreatment is not required.

The peak flow was also used to size the propsoed hydrodynamic separators used as pretreatment for the infiltration units and bioretention filters. The data (including capacities) for the hydrodynamic separators are included in Appendix G. The tables below summarize the WQv peak flows and hydrodynamic separate flow rates.

The proposed infiltration systems and bioretention filters have been designed to treat the WQv in accordance with the Design Manual. Chapter 9 & 10 were used to determine the water quality volume for the 1-year 24-hour design storm for each of the contributing areas to the treatment practices:

Table 2.2.1 - Water Quality Volume Calculation Summary

Subcatchment	WQ_v (cf)
1.1S	2,875
1.2S	305
1.3S	1,263

Table 2.2.2 – Pretreatment Hydrodynamic Separator Summary

Subcatchment	WQ_v Peak Flow (C.F.S).	Hydrodynamic Separator Model	Maximum Treatment Flow Rate (C.F.S.)
1.1S	1.0	3ft First Defense	1.02 CFS
1.3S	0.5	3ft First Defense	1.02 CFS

As noted in the table above the capacity of the hydrodynamic separator exceeds the calculated WQv peak flow.

Table 2.2.3 Infiltration Area Water Quality Volume Treatment Summary

Subcatchment	Treatment Practice	NYSDEC Design Practice Designation	Ap* (Required Infiltration Surface Area) (s.f.)	Proposed Surface Area of Infiltration System (s.f.)
1.1S	1.1P	Underground Infiltration (I-4)	2,041	2,080
1.2S	1.2P	Underground Infiltration (I-4)	258	259

* Information regarding required infiltration surface area (Ap) is calculated and shown in Appendix F

Table 2.2.4 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 Permanent Pool (c.f.)
1.3S	1.3P	F-5	1,148	1,800	947	1,000

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

It should be noted that the above tables illustrate the water quality volume storage requirements set forth in the NYSSMDM have been met for the infiltration system and the bioretention filter design. See Appendix F for the sizing calculations.

2.3 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 is addressed on the subject project by providing an infiltration practice and a bioretention filter, 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 practices with the runoff reduction capacity equal to 100% of the WQ_v and a bioretention filter as a SMPs with the runoff reduction capacity equal to 40% 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 $RRv_{minimum} = \frac{(P)(R_v)(Ai)}{12}$

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 bioretention filter see Appendix A & B. Listed in Table 2.3.1 below is a summary of the NYSDEC compliant practice, and its satisfaction of the NYSDEC RRv requirements:

Table 2.3.1 Runoff Reduction Volume Summary

RR_v *Required* = WQ_v (c.f.) From Appendix A	**RR_v *Minimum* (c.f.)** Calculated in Appendix A	**NYSDEC Practice Designation**	**Allowable % of WQv provided to be applied towards RRv**	**RRv *Provided* (c.f.)**
4,443	1,138	I-4, Underground Infiltration F-5, Bioretention Filter	100% 40%	3,685

As shown in the table above the $RRv_{provided}$ is greater than the $RRv_{minimum}$, therefore the RRv requirement has been met for the subject project. As stated earlier, the infiltration systems in addition to WQv and pretreatment have been sized to mitigate the peak flows from the proposed development.

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 completely infiltrating the one-year, 24-hour storm volume, or providing 24-hour extended detention of the one-year, 24-hour storm event, using either the center of mass or plug flow methods.

As stated in Chapter 9 of the Design Manual, Channel Protection for redevelopment activities is not required if there are no change to hydrology that increases the discharge rate from the project site. As shown in Table 2.5.1, the post construction 1-year, 24-hour discharge rate is less than the pre-construction discharge rate. Therefore providing 24-hour detention of the 1-year storm to meet the channel protection criteria is not required.

Table 2.4.1– Pre and Post-Development Peak Flows at the Design Point

	1-YEAR (Channel Protection Volume)	
	Pre	**Post**
Design Line 1	1.7	1.2

The data for the table above was taken from Appendix B & C of this SWPPP. As shown in the table above the peak flows discharging to the design lines have been mitigated for the 1-Year 24-Hour Storm. By providing a reduction in peak flows during the 1-Year, 24-hour storm, the NYSDEC requirements for Stream Channel Protection (Cp_v) have been met.

2.4 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 practices. Extreme flood control requires storage to attenuate the post-development 100-year, 24-hour peak discharge to pre-development rates. As shown in Table 2.4.1 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 2.4.1– Pre and Post-Development Peak Flows at the Design Points

24-HOUR DESIGN STORM PEAK FLOWS (c.f.s.)				
	10-YEAR (Overbank Flood Control)		100-YEAR (Extreme Flood Control)	
	Pre	Post	Pre	Post
Design Line 1	7.9	6.6	20.8	20.7

As shown in the above table the peak flows discharging to the design line in the proposed condition have been mitigated to below the existing condition levels, therefore the receiving downstream drainage system will see a reduction in peak flows during the storm events shown above and as such satisfy the Overbank and Extreme Overbank Flood Control requirements.

3.0 STORMWATER CONVEYANCE SYSTEM

The stormwater collection and conveyance systems for the project will consist of catch basins, drain inlets, yard drains, and HDPE pipe. The pipe conveyance system has been sized to collect and convey at minimum the 25-year, 1-hour design storm using the Rational Method. The Rational Method 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. See Appendix J for the sizing calculations.

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 and Construction Sequence.

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:

- Silt Fence Barriers
- Stabilized Construction Entrance
- Temporary Soil Stabilization
- Storm Drain Inlet Protection

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 in locations as shown on the plan. The design drawings will include details to guide the contractor in the construction of this entrance. 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. Siltation barriers will also be installed around drain inlets. The intent of these barriers is to prevent silt and sedimentation from entering the stormwater collection system.

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 periodic inspections. The owner will provide maintenance for all the permanent erosion and sediment control facilities.

Other than the paved or gravel surfaces, disturbed surfaces will be stabilized with vegetation within 7 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, MAINTENANCE & GENERAL HOUSEKEEPING

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. A construction sequence has been provided to guide the contractor in the installation of the erosion control measures as well as the site plan features. The erosion control plan, includes associated details and notes to aid the contractor in implementing the plan.

During construction, a Site Log Book, Appendix E, 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 (minimum once a week, two times a week should the overall disturbance exceed five acres) and 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 Building Material Staging Areas
- Establishment of Washout 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 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 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 designated 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.

During the construction phase of the project the subsurface infiltration system shall be cordoned off with construction fence to prevent undue compaction of the surrounding soils. The infiltration areas shall not be allowed to receive runoff until the contributing area to the system is completely stabilized in accordance with the erosion and sediment control notes on the project drawings. Installation of the system after the contributing area is stable will help to prevent any sediment from entering the infiltration system.

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:

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

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

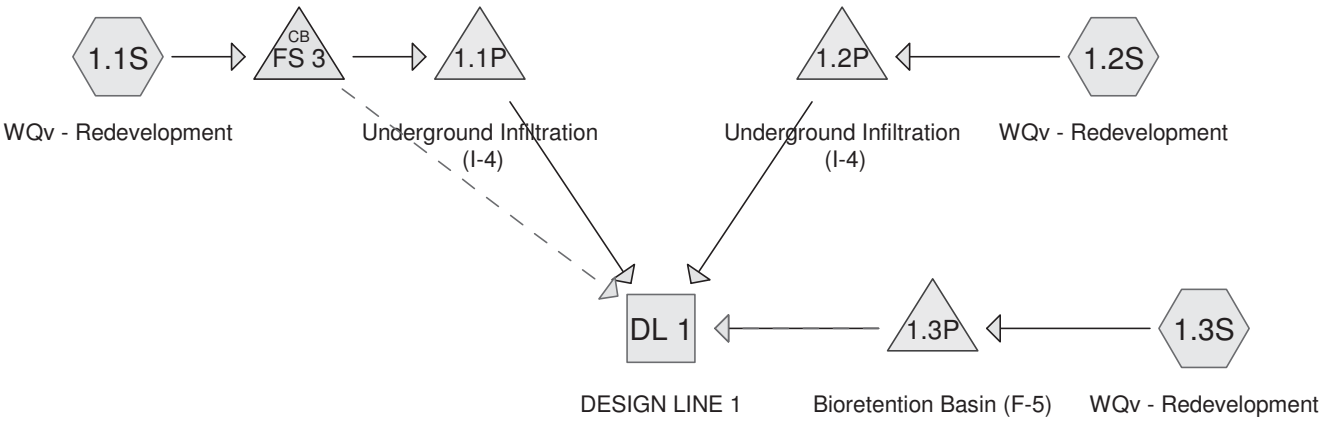
The stormwater facilities for the subject project have been designed to minimize the required maintenance. This section discusses the minimum maintenance requirements to insure long-term performance of the stormwater facilities. Initially the stormwater facilities will require an increased maintenance 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 HDPE, drainage pipe and precast concrete drainage structures. The owner will assume the maintenance responsibilities for the drainage system. Minimal maintenance is typically required for these facilities. All pipes should be checked for debris and blockages and cleaned as required. All drain inlet sumps shall be cleaned to removed deposited sediment. During the cleaning process, the pipes should be inspected for structural integrity and overall condition; repairs and/or replacement should be made as required.

Additionally, the hydrodynamic separators and infiltration system shall be checked for deposited sediment as well. Visual inspection of the separators and infiltration system shall take place yearly. The infiltration system shall be cleaned / jetted as necessary to remove deposited sediment. The deposited sediment shall be removed from the separators manually or with a vacuum truck.

APPENDIX A

Water Quality Volume (1-year) HydroCAD Output and Runoff Reduction RRv Calculation Worksheets



Subcat Reach Pond Link

Routing Diagram for Platinum Carme WQv

Prepared by Insite Engineering, Surveying and Landscape Architecture, P.C., Printed 4/29/2022

Summary for Subcatchment 1.1S: WQv - Redevelopment

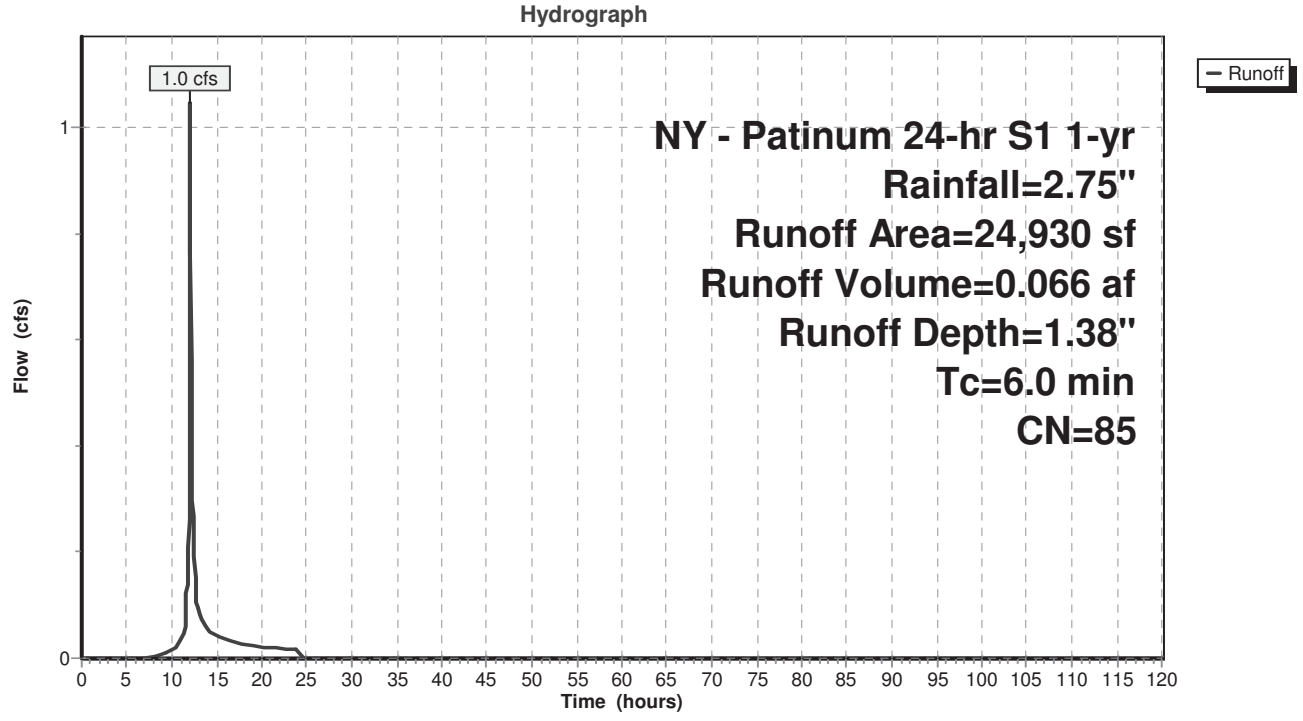
Runoff = 1.0 cfs @ 12.04 hrs, Volume= 0.066 af, Depth= 1.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - Patinum 24-hr S1 1-yr Rainfall=2.75"

	Area (sf)	CN	Description
*	1,110	98	Existing Impervious (4,440 sf)
*	10,820	98	Proposed Impervious
	13,000	74	>75% Grass cover, Good, HSG C
	24,930	85	Weighted Average
	13,000		52.15% Pervious Area
	11,930		47.85% Impervious Area

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

Subcatchment 1.1S: WQv - Redevelopment



Summary for Subcatchment 1.2S: WQv - Redevelopment

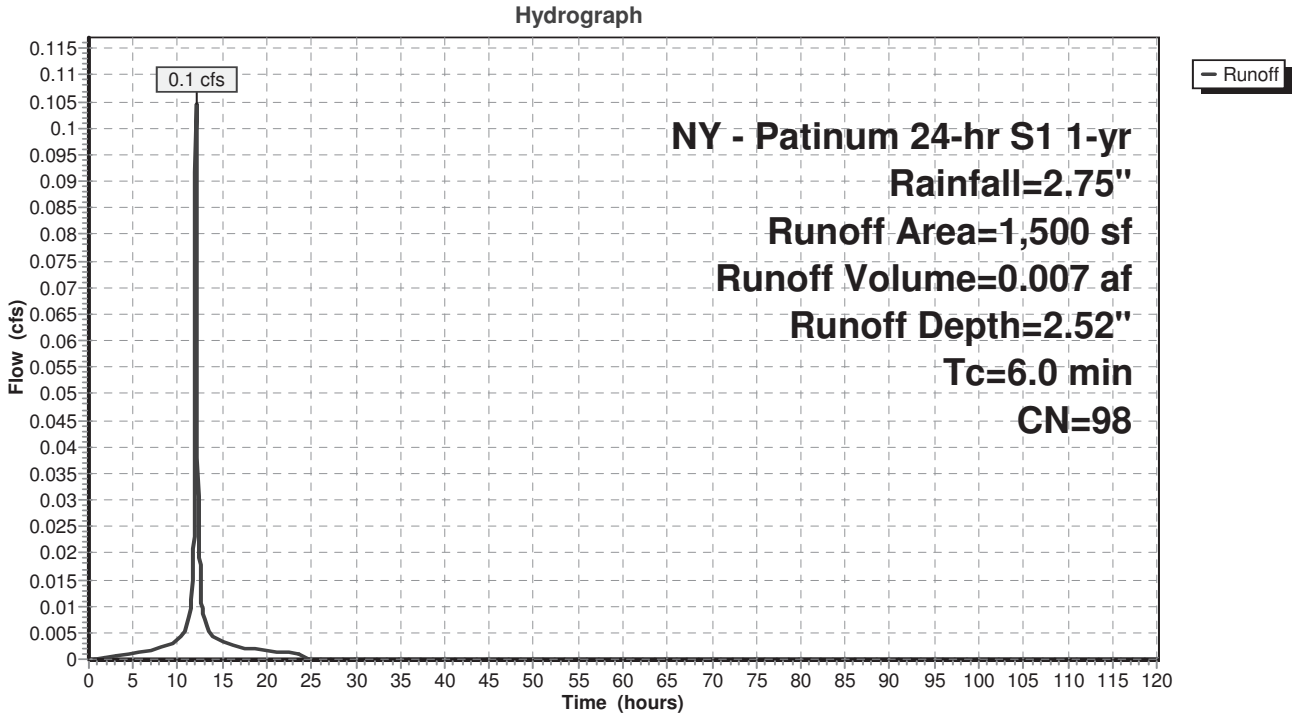
Runoff = 0.1 cfs @ 12.04 hrs, Volume= 0.007 af, Depth= 2.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - Patinum 24-hr S1 1-yr Rainfall=2.75"

Area (sf)	CN	Description
1,500	98	Paved parking, HSG C
1,500		100.00% Impervious Area

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

Subcatchment 1.2S: WQv - Redevelopment



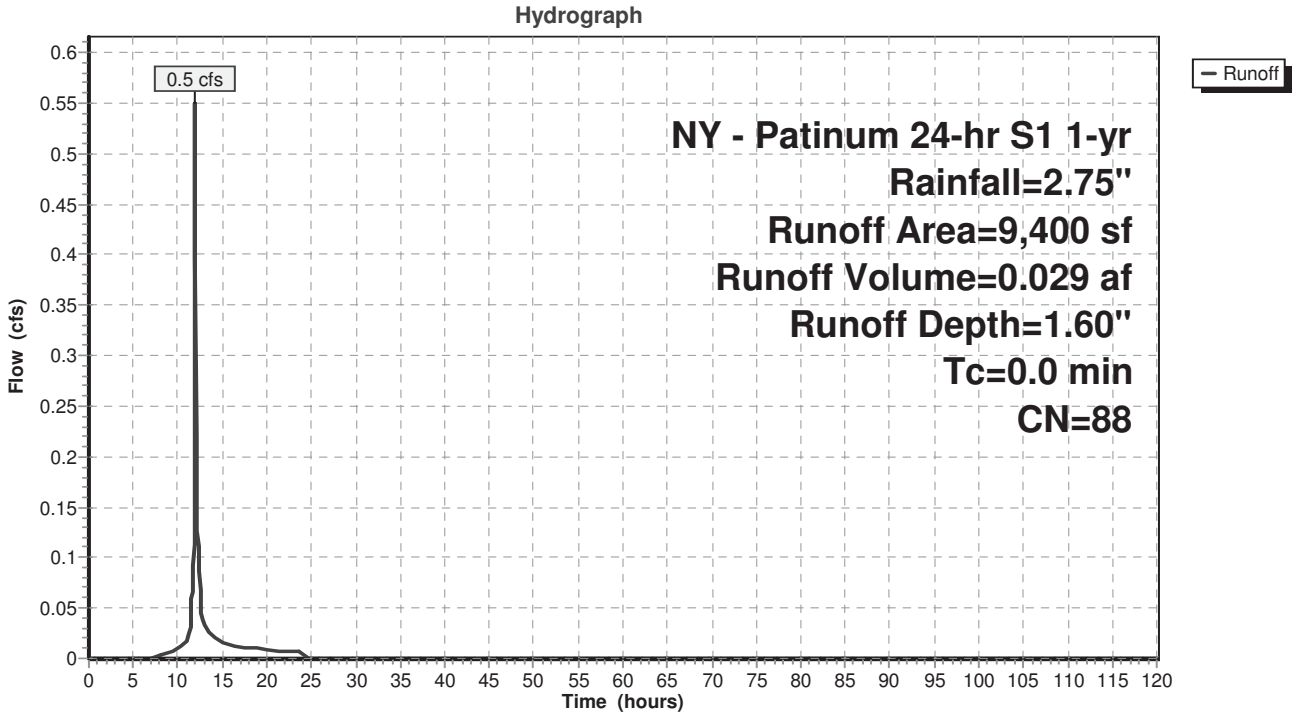
Summary for Subcatchment 1.3S: WQv - Redevelopment

Runoff = 0.5 cfs @ 11.95 hrs, Volume= 0.029 af, Depth= 1.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - Patinum 24-hr S1 1-yr Rainfall=2.75"

Area (sf)	CN	Description
5,300	98	Paved parking, HSG D
4,100	74	>75% Grass cover, Good, HSG C
9,400	88	Weighted Average
4,100		43.62% Pervious Area
5,300		56.38% Impervious Area

Subcatchment 1.3S: WQv - Redevelopment

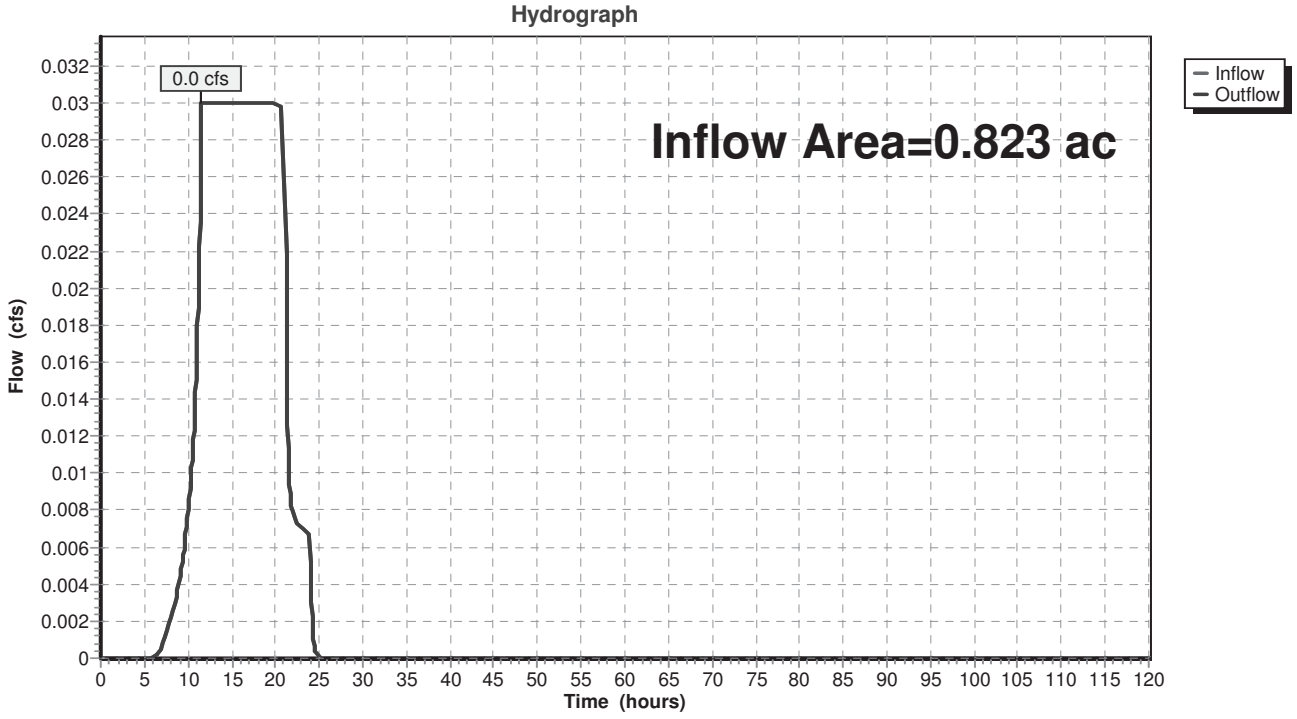


Summary for Reach DL 1: DESIGN LINE 1

Inflow Area = 0.823 ac, 52.27% Impervious, Inflow Depth = 0.42" for 1-yr event
Inflow = 0.0 cfs @ 11.55 hrs, Volume= 0.029 af
Outflow = 0.0 cfs @ 11.55 hrs, Volume= 0.029 af, Atten= 0%, Lag= 0.0 min

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

Reach DL 1: DESIGN LINE 1



Summary for Pond 1.1P: Underground Infiltration (I-4)

Inflow Area = 0.572 ac, 47.85% Impervious, Inflow Depth = 1.38" for 1-yr event
Inflow = 1.0 cfs @ 12.04 hrs, Volume= 0.066 af
Outflow = 0.1 cfs @ 11.80 hrs, Volume= 0.066 af, Atten= 91%, Lag= 0.0 min
Discarded = 0.1 cfs @ 11.80 hrs, Volume= 0.066 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
Peak Elev= 110.82' @ 12.91 hrs Surf.Area= 0.047 ac Storage= 0.022 af

Plug-Flow detention time= 77.4 min calculated for 0.066 af (100% of inflow)
Center-of-Mass det. time= 77.3 min (926.2 - 848.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	110.00'	0.039 af	**30.50'W x 66.50'L x 3.54'H Field A** 0.165 af Overall - 0.066 af Embedded = 0.099 af x 40.0% Voids
#2A	110.50'	0.066 af	**Cultec R-330XLHD** x 54 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 6 rows
		0.106 af	Total Available Storage

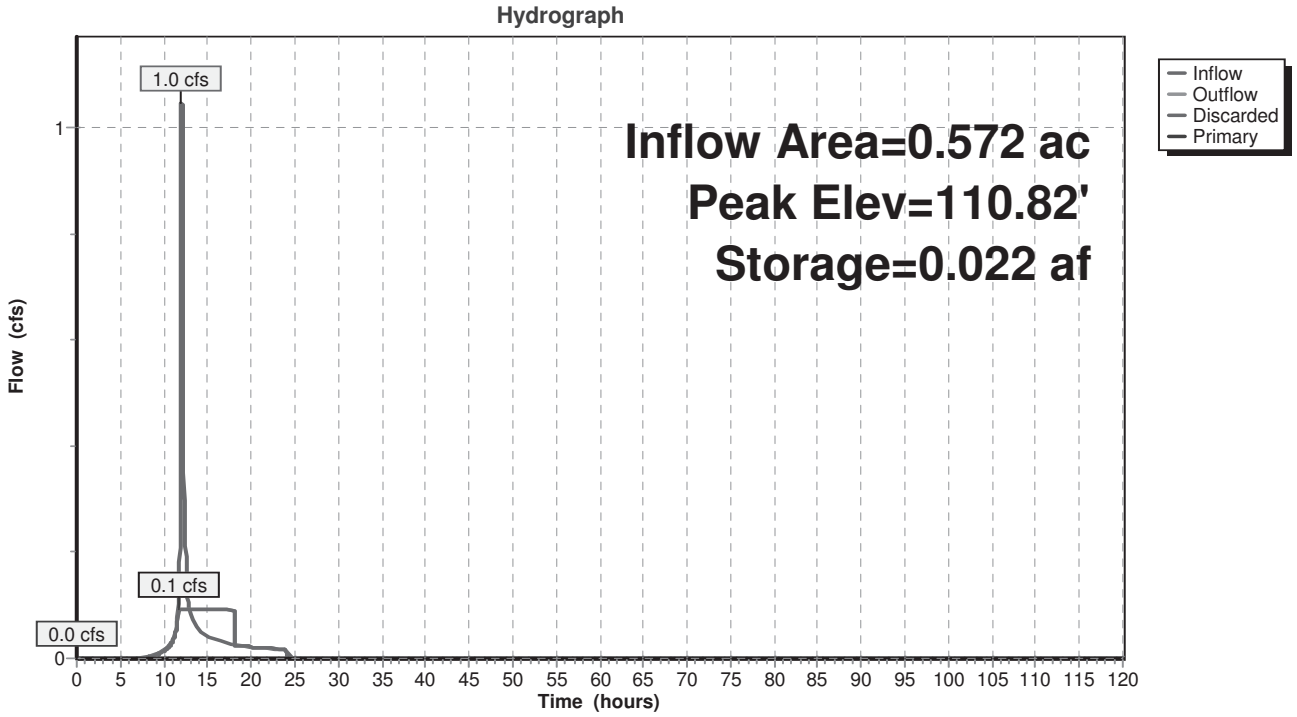
Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	112.20'	**8.0" Round Culvert** L= 16.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 112.20' / 111.10' S= 0.0688 '/' Cc= 0.900 n= 0.012, Flow Area= 0.35 sf
#2	Discarded	110.00'	**2.000 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=0.1 cfs @ 11.80 hrs HW=110.05' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.1 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=110.00' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Controls 0.0 cfs)

Pond 1.1P: Underground Infiltration (I-4)



Summary for Pond 1.2P: Underground Infiltration (I-4)

Inflow Area = 0.034 ac,100.00% Impervious, Inflow Depth = 2.52" for 1-yr event
Inflow = 0.1 cfs @ 12.04 hrs, Volume= 0.007 af
Outflow = 0.0 cfs @ 11.50 hrs, Volume= 0.007 af, Atten= 94%, Lag= 0.0 min
Discarded = 0.0 cfs @ 11.50 hrs, Volume= 0.007 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
Peak Elev= 112.32' @ 13.25 hrs Surf.Area= 0.006 ac Storage= 0.003 af

Plug-Flow detention time= 141.6 min calculated for 0.007 af (100% of inflow)
Center-of-Mass det. time= 141.5 min (903.5 - 761.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	111.50'	0.005 af	**10.83'W x 24.00'L x 3.21'H Field A** 0.019 af Overall - 0.006 af Embedded = 0.013 af x 40.0% Voids
#2A	112.00'	0.006 af	**Cultec R-280HD** x 6 Inside #1 Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap Row Length Adjustment= +1.00' x 6.07 sf x 2 rows
		0.011 af	Total Available Storage

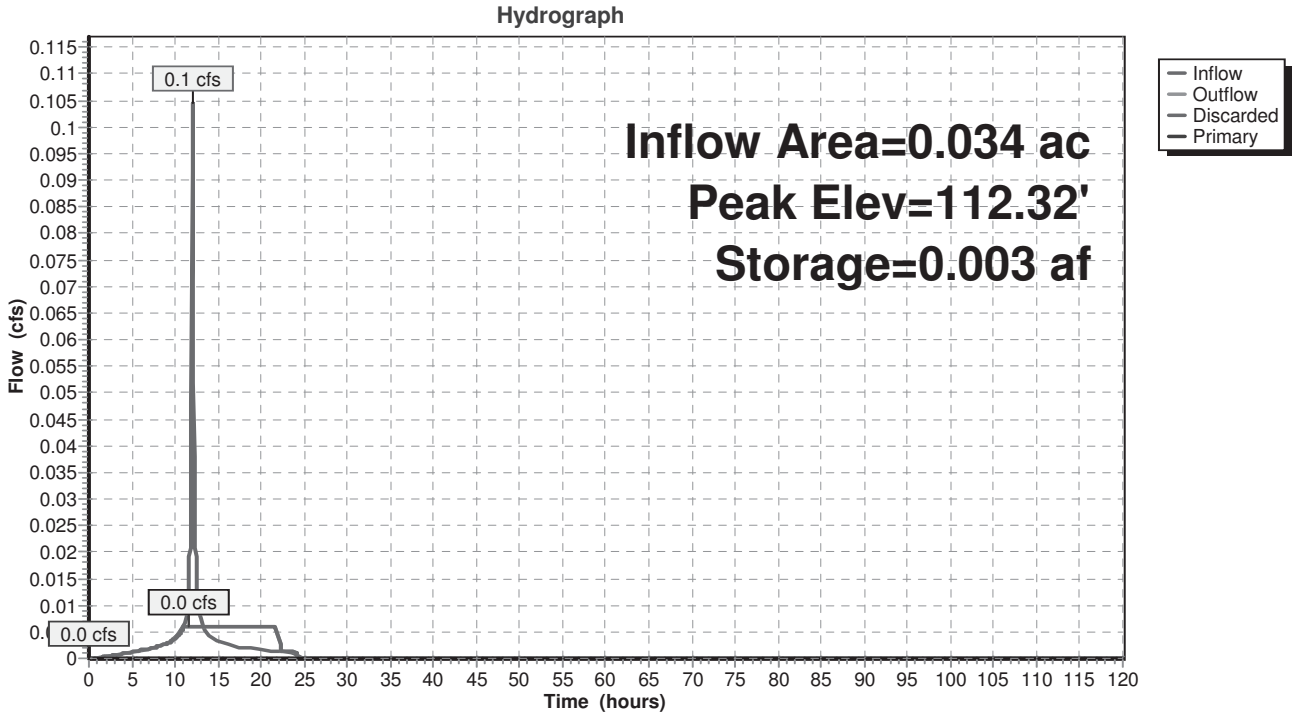
Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	113.50'	**6.0" Round Culvert** L= 65.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 113.50' / 111.50' S= 0.0308 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#2	Discarded	111.50'	**1.000 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=0.0 cfs @ 11.50 hrs HW=111.54' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=111.50' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Controls 0.0 cfs)

Pond 1.2P: Underground Infiltration (I-4)



Summary for Pond 1.3P: Bioretention Basin (F-5)

Inflow Area = 0.216 ac, 56.38% Impervious, Inflow Depth = 1.60" for 1-yr event
Inflow = 0.5 cfs @ 11.95 hrs, Volume= 0.029 af
Outflow = 0.0 cfs @ 11.55 hrs, Volume= 0.029 af, Atten= 95%, Lag= 0.0 min
Primary = 0.0 cfs @ 11.55 hrs, Volume= 0.029 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
Peak Elev= 115.25' @ 13.21 hrs Surf.Area= 1,899 sf Storage= 494 cf

Plug-Flow detention time= 142.4 min calculated for 0.029 af (100% of inflow)
Center-of-Mass det. time= 142.3 min (971.8 - 829.5)

Volume	Invert	Avail.Storage	Storage Description
#1	115.00'	2,000 cf	**Custom Stage Data (Prismatic)** Listed below

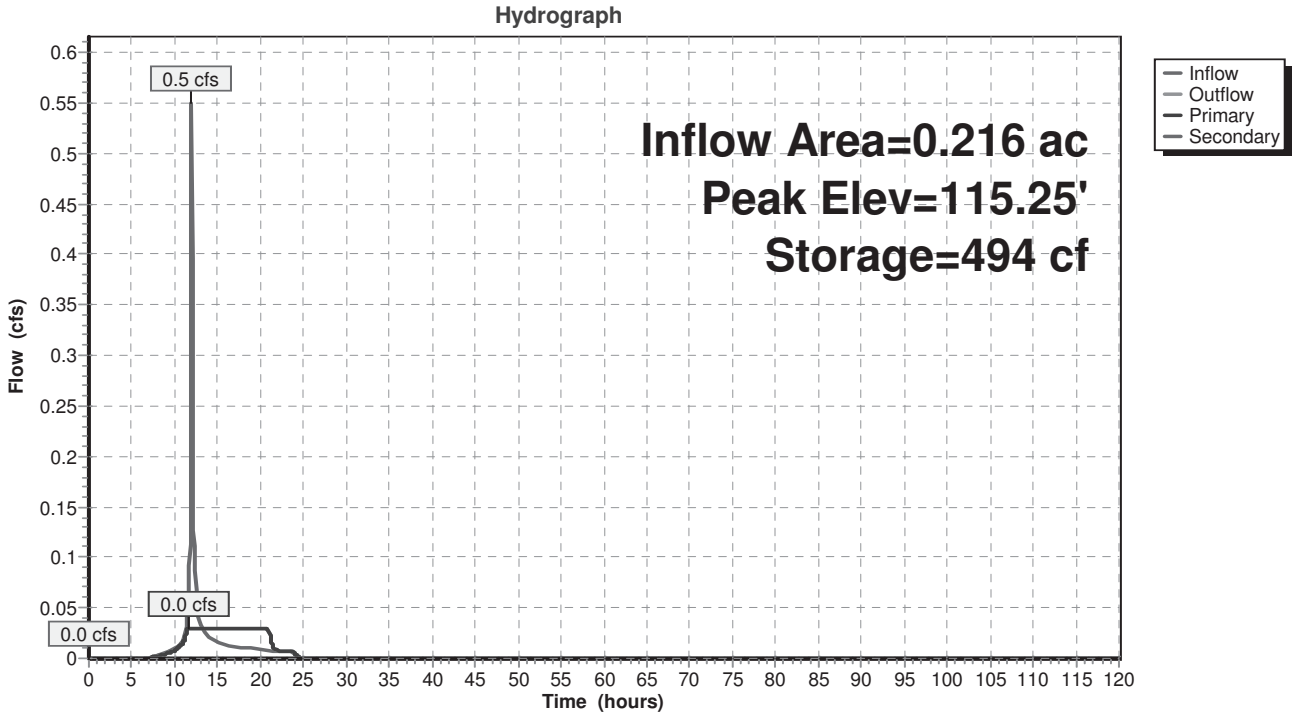
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
115.00	1,800	0	0
116.00	2,200	2,000	2,000

Device	Routing	Invert	Outlet Devices
#1	Secondary	115.50'	**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	114.50'	**8.0" Vert. Orifice/Grate** C= 0.600
#3	Device 2	115.00'	**0.0 cfs Exfiltration when above 115.00'** Phase-In= 0.01'

Primary OutFlow Max=0.0 cfs @ 11.55 hrs HW=115.01' TW=0.00' (Dynamic Tailwater)
↑—**2=Orifice/Grate** (Passes 0.0 cfs of 0.7 cfs potential flow)
↑—**3=Exfiltration** (Exfiltration Controls 0.0 cfs)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=115.00' TW=0.00' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Pond 1.3P: Bioretention Basin (F-5)



Summary for Pond FS 3:

Inflow Area = 0.572 ac, 47.85% Impervious, Inflow Depth = 1.38" for 1-yr event
Inflow = 1.0 cfs @ 12.04 hrs, Volume= 0.066 af
Outflow = 1.0 cfs @ 12.04 hrs, Volume= 0.066 af, Atten= 0%, Lag= 0.0 min
Primary = 1.0 cfs @ 12.04 hrs, Volume= 0.066 af
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

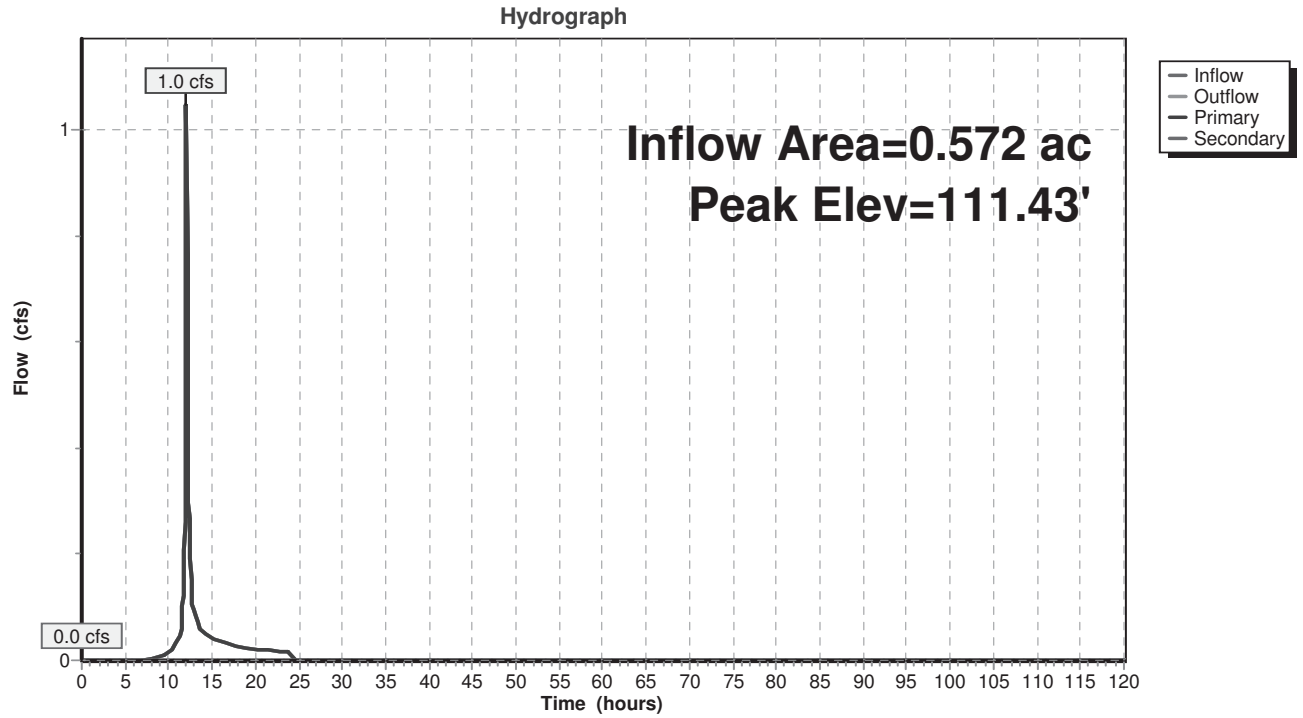
Routing by Dyn-Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Peak Elev= 111.43' @ 12.04 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	110.90'	**12.0" Round Culvert** L= 32.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 110.90' / 110.50' S= 0.0125 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Secondary	111.50'	**8.0" Round Culvert** L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 111.50' / 111.00' S= 0.0250 '/' Cc= 0.900 n= 0.012, Flow Area= 0.35 sf

Primary OutFlow Max=1.0 cfs @ 12.04 hrs HW=111.42' TW=110.45' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 1.0 cfs @ 2.46 fps)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=110.90' TW=0.00' (Dynamic Tailwater)
└**2=Culvert** (Controls 0.0 cfs)

Pond FS 3:



RRv Calculation Worksheet

Project: Platinum Propane
Project #: 22101.100
Date: 4/27/2022

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

1. RRv Initial = Water Quality Volume (WQv) *0.102 ac-ft* = *4,443 c.f.*
(refer to HydroCAD Subcatchments 1.1S for Water Quality Volume)

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

P = Rainfall (in.)	=	2.75	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	=	0.4	Acres
RRv Minimum	=	*1,138*	*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)	= 4,443	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)	3180	100%	3,180
Bioretention Practice (Standard SMP)	1,263	40%	505
[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 =			*3,685*

5. Summary

RRv Initial	=	4,443 c.f.	
RRv Required	=	4,443 c.f.	
RRv Minimum	=	1,138 c.f.	
RRv Provided	=	3,685 c.f.	
WQv Required for Downstream SMP	=	758 c.f.	(= RRv Required - RRv Provided)

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

Refer to the " Analysis of Green Infrastructure Practices" contained in Appendix F for an explanation demonstrating the maximum RRv Provided has been achieved for the site.

APPENDIX B

Pre-Development Computer Data

PRE

Subcat Reach Pond Link

Routing Diagram for Platinum Carmel Pre-Development

Prepared by Insite Engineering, Surveying and Landscape Architecture, P.C., Printed 4/29/2022

Summary for Subcatchment 1.0S: PRE

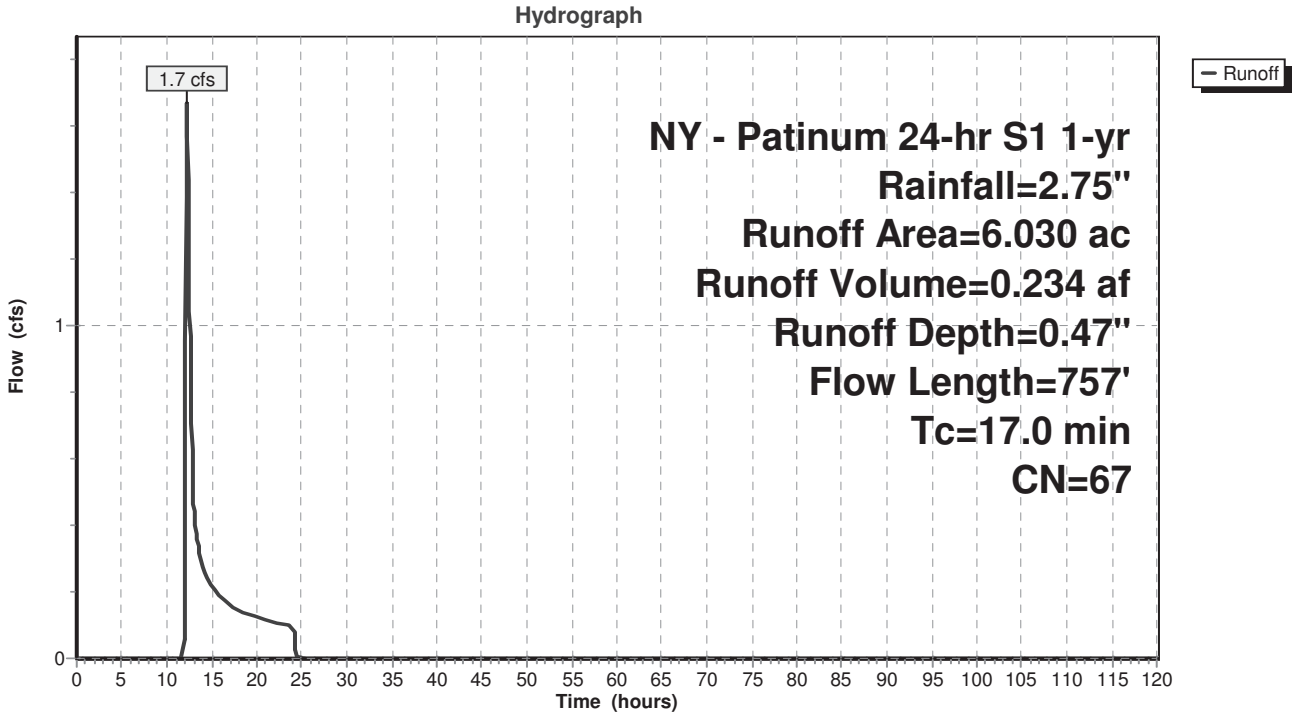
Runoff = 1.7 cfs @ 12.24 hrs, Volume= 0.234 af, Depth= 0.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - Patinum 24-hr S1 1-yr Rainfall=2.75"

Area (ac)	CN	Description
0.180	98	Paved parking, HSG C
0.630	74	>75% Grass cover, Good, HSG C
3.500	70	Woods, Good, HSG C
1.720	55	Woods, Good, HSG B
6.030	67	Weighted Average
5.850		97.01% Pervious Area
0.180		2.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	100	0.1000	0.15		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.31"
2.5	215	0.0800	1.41		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.9	130	0.2300	2.40		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.9	180	0.1000	1.58		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.6	132	0.0550	3.52		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
17.0	757	Total			

Subcatchment 1.0S: PRE



Summary for Subcatchment 1.0S: PRE

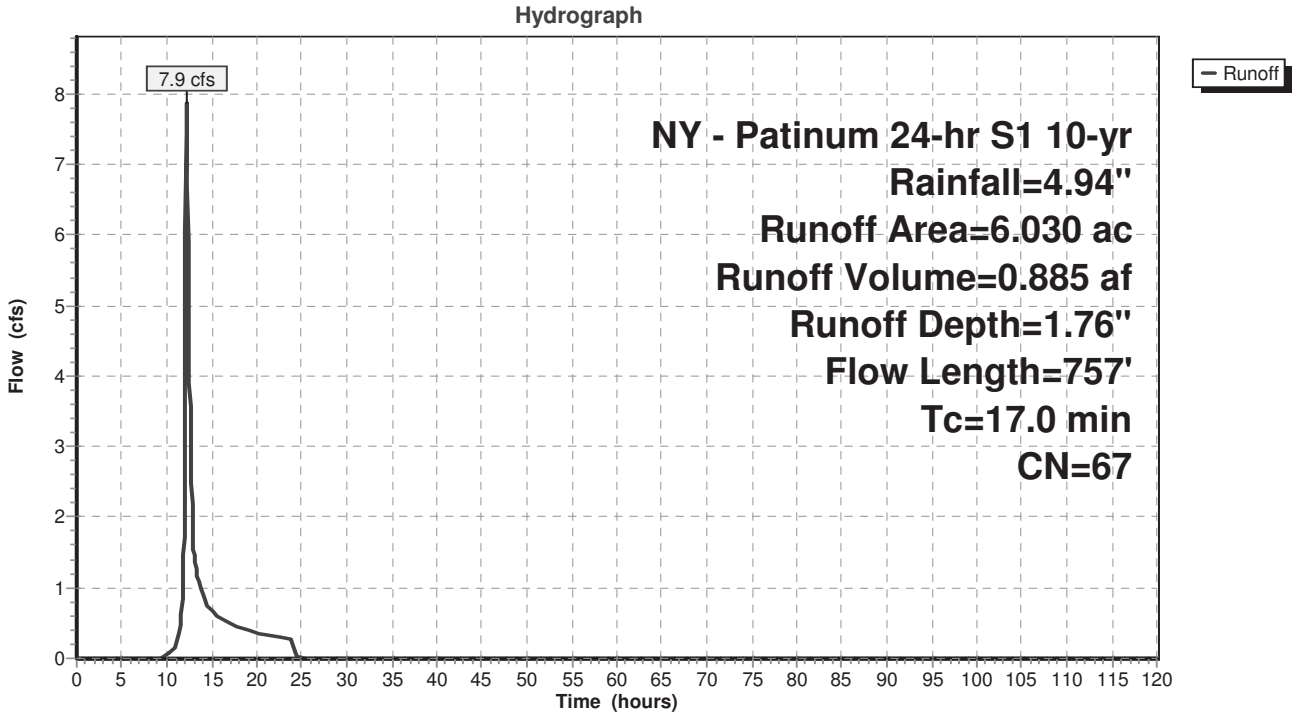
Runoff = 7.9 cfs @ 12.20 hrs, Volume= 0.885 af, Depth= 1.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - Patinum 24-hr S1 10-yr Rainfall=4.94"

Area (ac)	CN	Description
0.180	98	Paved parking, HSG C
0.630	74	>75% Grass cover, Good, HSG C
3.500	70	Woods, Good, HSG C
1.720	55	Woods, Good, HSG B
6.030	67	Weighted Average
5.850		97.01% Pervious Area
0.180		2.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	100	0.1000	0.15		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.31"
2.5	215	0.0800	1.41		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.9	130	0.2300	2.40		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.9	180	0.1000	1.58		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.6	132	0.0550	3.52		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
17.0	757	Total			

Subcatchment 1.0S: PRE



Summary for Subcatchment 1.0S: PRE

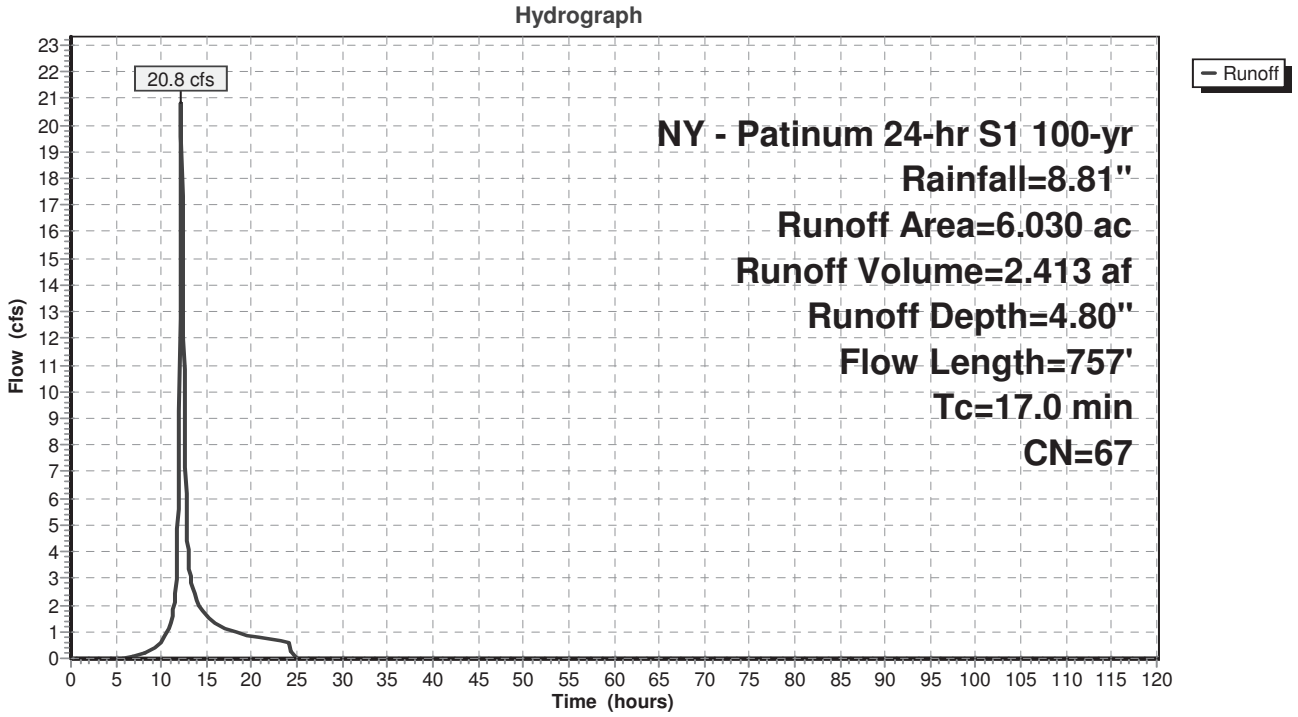
Runoff = 20.8 cfs @ 12.19 hrs, Volume= 2.413 af, Depth= 4.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - Patinum 24-hr S1 100-yr Rainfall=8.81"

Area (ac)	CN	Description
0.180	98	Paved parking, HSG C
0.630	74	>75% Grass cover, Good, HSG C
3.500	70	Woods, Good, HSG C
1.720	55	Woods, Good, HSG B
6.030	67	Weighted Average
5.850		97.01% Pervious Area
0.180		2.99% Impervious Area

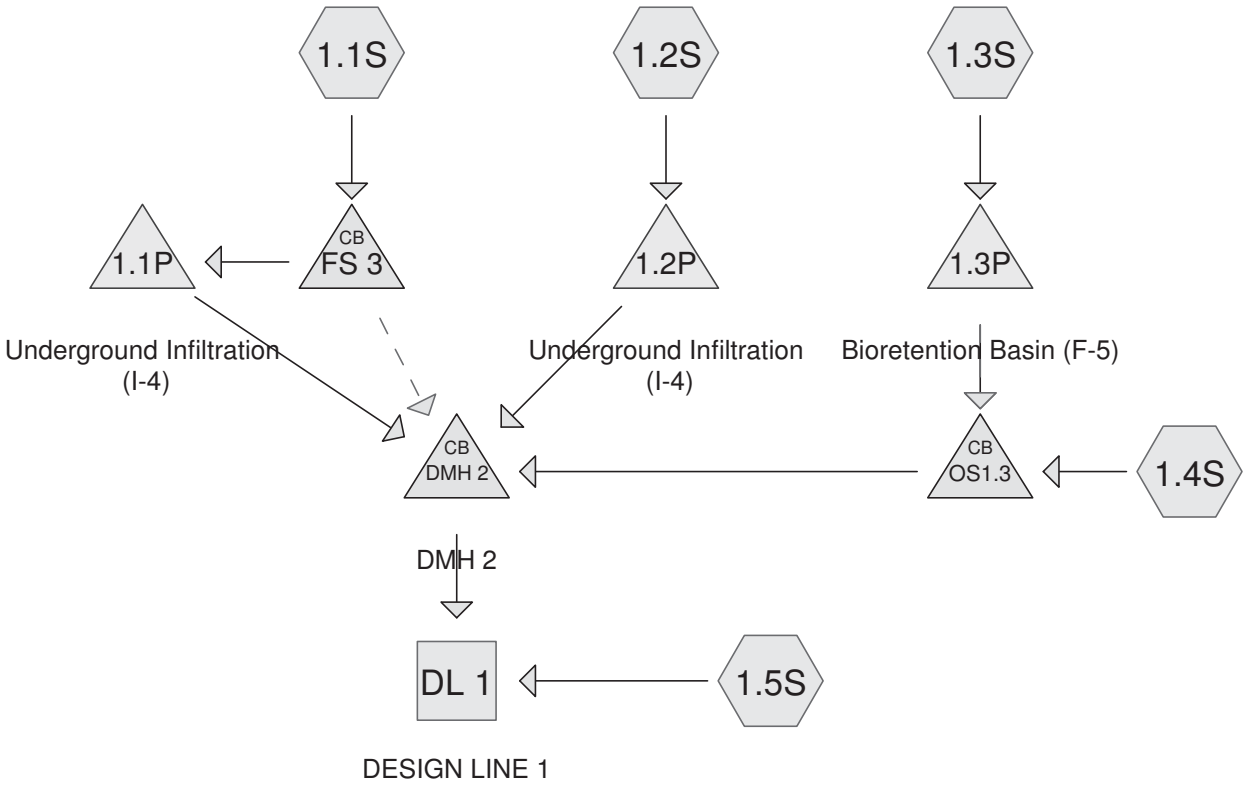
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	100	0.1000	0.15		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.31"
2.5	215	0.0800	1.41		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.9	130	0.2300	2.40		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.9	180	0.1000	1.58		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.6	132	0.0550	3.52		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
17.0	757	Total			

Subcatchment 1.0S: PRE



APPENDIX C

Post-Development Computer Data



Subcat Reach Pond Link

Routing Diagram for Platinum Carmel Post-Development

Prepared by Insite Engineering, Surveying and Landscape Architecture, P.C., Printed 4/29/2022

Summary for Subcatchment 1.1S:

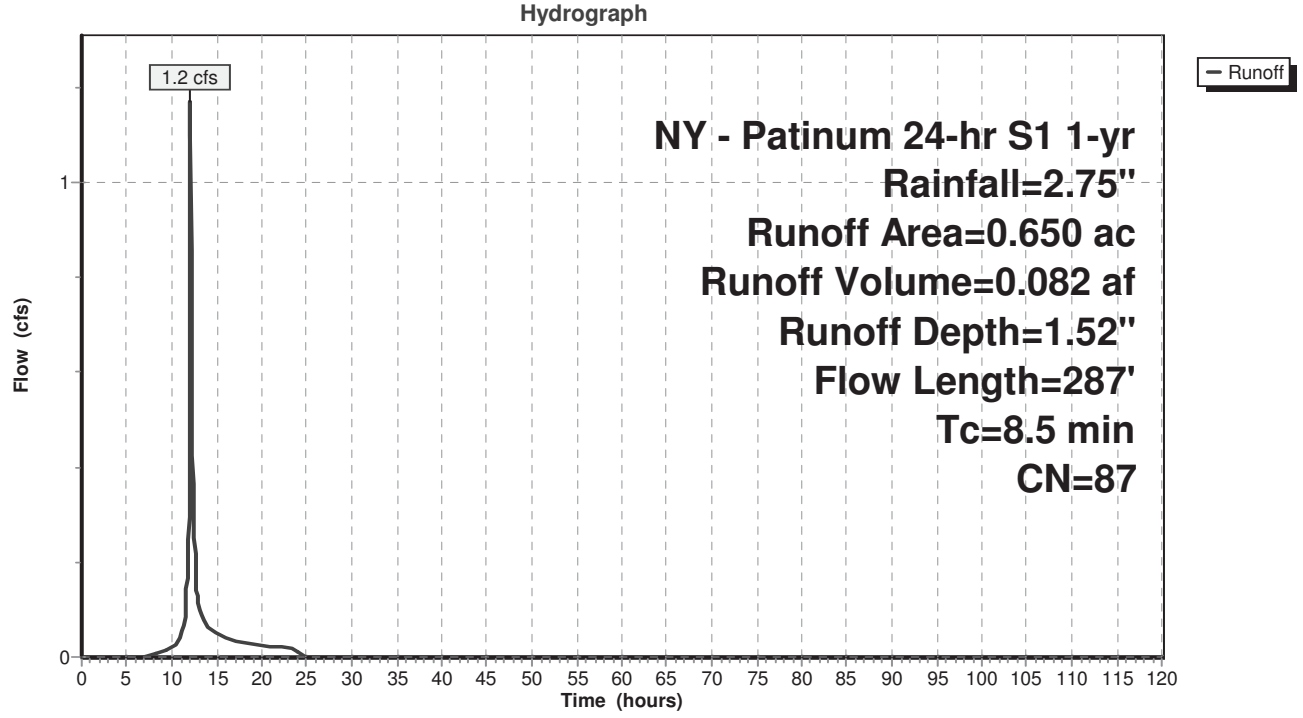
Runoff = 1.2 cfs @ 12.07 hrs, Volume= 0.082 af, Depth= 1.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - Patinum 24-hr S1 1-yr Rainfall=2.75"

Area (ac)	CN	Description
0.350	98	Paved parking, HSG C
0.300	74	>75% Grass cover, Good, HSG C
0.650	87	Weighted Average
0.300		46.15% Pervious Area
0.350		53.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	90	0.0300	0.20		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.31"
0.2	10	0.0250	0.97		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.31"
0.5	92	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.3	95	0.0100	4.91	3.86	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
8.5	287	Total			

Subcatchment 1.1S:



Summary for Subcatchment 1.2S:

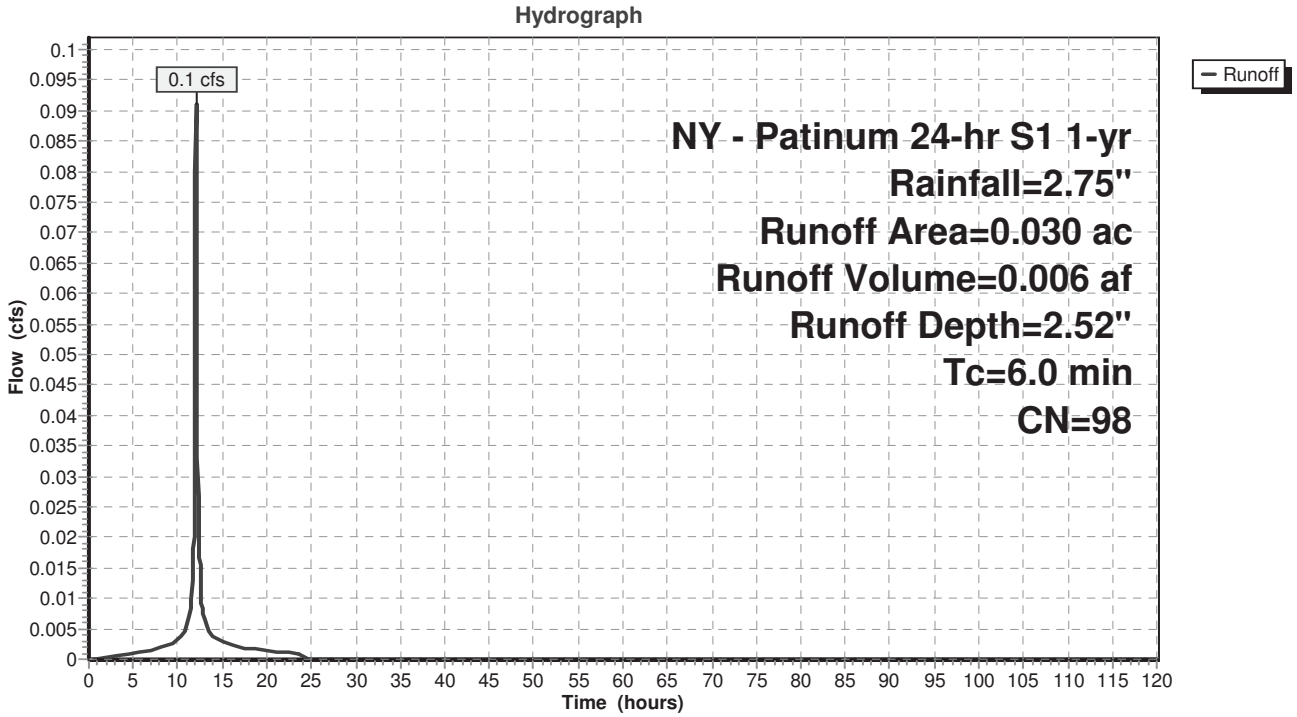
Runoff = 0.1 cfs @ 12.04 hrs, Volume= 0.006 af, Depth= 2.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - Patinum 24-hr S1 1-yr Rainfall=2.75"

Area (ac)	CN	Description
0.030	98	Paved parking, HSG C
0.030		100.00% Impervious Area

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

Subcatchment 1.2S:



Summary for Subcatchment 1.3S:

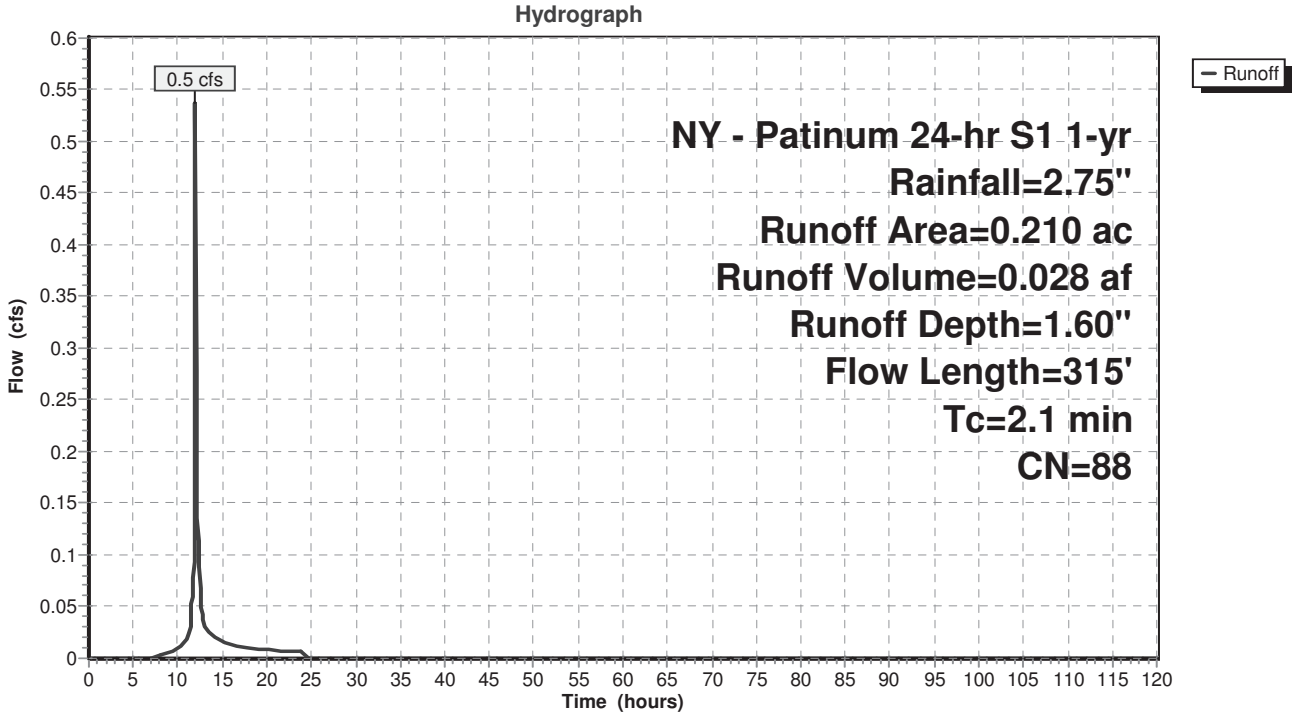
Runoff = 0.5 cfs @ 11.99 hrs, Volume= 0.028 af, Depth= 1.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - Patinum 24-hr S1 1-yr Rainfall=2.75"

Area (ac)	CN	Description
0.120	98	Paved parking, HSG C
0.090	74	>75% Grass cover, Good, HSG C
0.210	88	Weighted Average
0.090		42.86% Pervious Area
0.120		57.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	85	0.0150	1.21		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.31"
0.9	230	0.0080	4.40	3.45	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
2.1	315	Total			

Subcatchment 1.3S:



Summary for Subcatchment 1.4S:

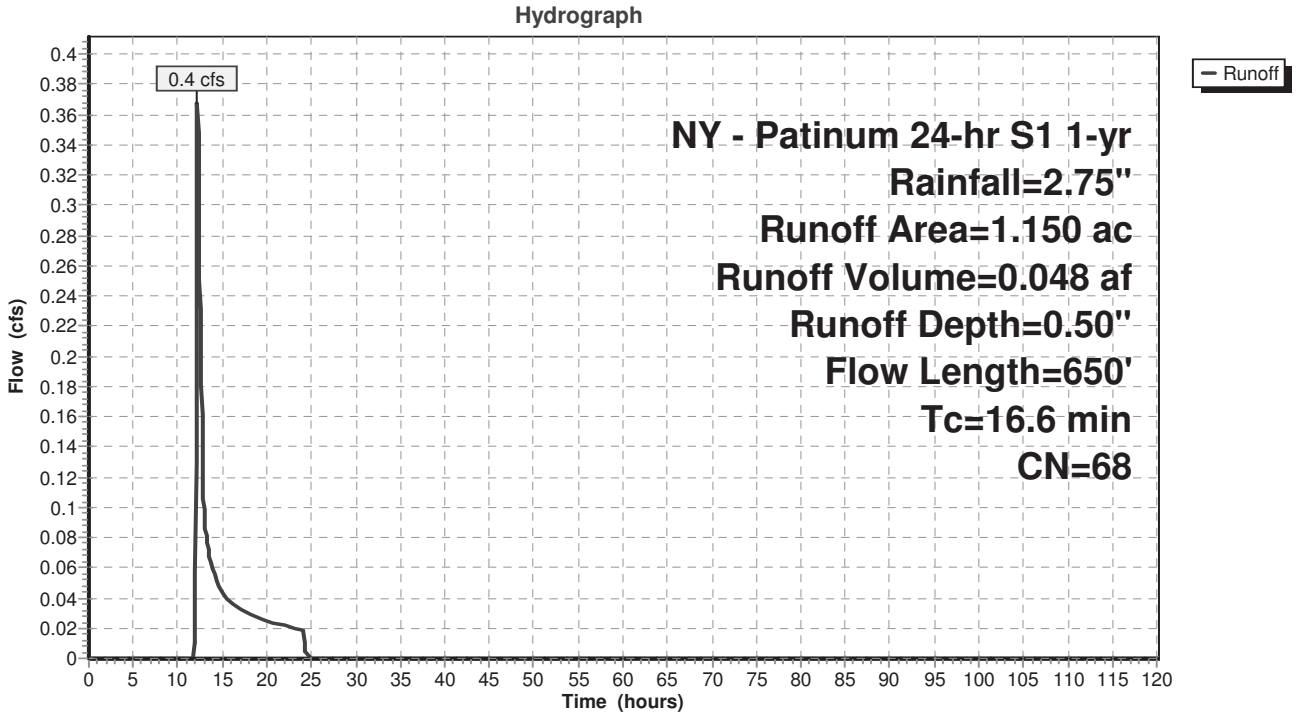
Runoff = 0.4 cfs @ 12.22 hrs, Volume= 0.048 af, Depth= 0.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - Patinum 24-hr S1 1-yr Rainfall=2.75"

Area (ac)	CN	Description
0.150	74	>75% Grass cover, Good, HSG C
0.790	70	Woods, Good, HSG C
0.210	55	Woods, Good, HSG B
1.150	68	Weighted Average
1.150		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	100	0.1000	0.15		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.31"
5.3	475	0.0900	1.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.1	35	0.0150	5.08	17.79	**Channel Flow,** Area= 3.5 sf Perim= 6.0' r= 0.58' n= 0.025 Earth, clean & winding
0.1	40	0.0100	4.91	3.86	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
16.6	650	Total			

Subcatchment 1.4S:



Summary for Subcatchment 1.5S:

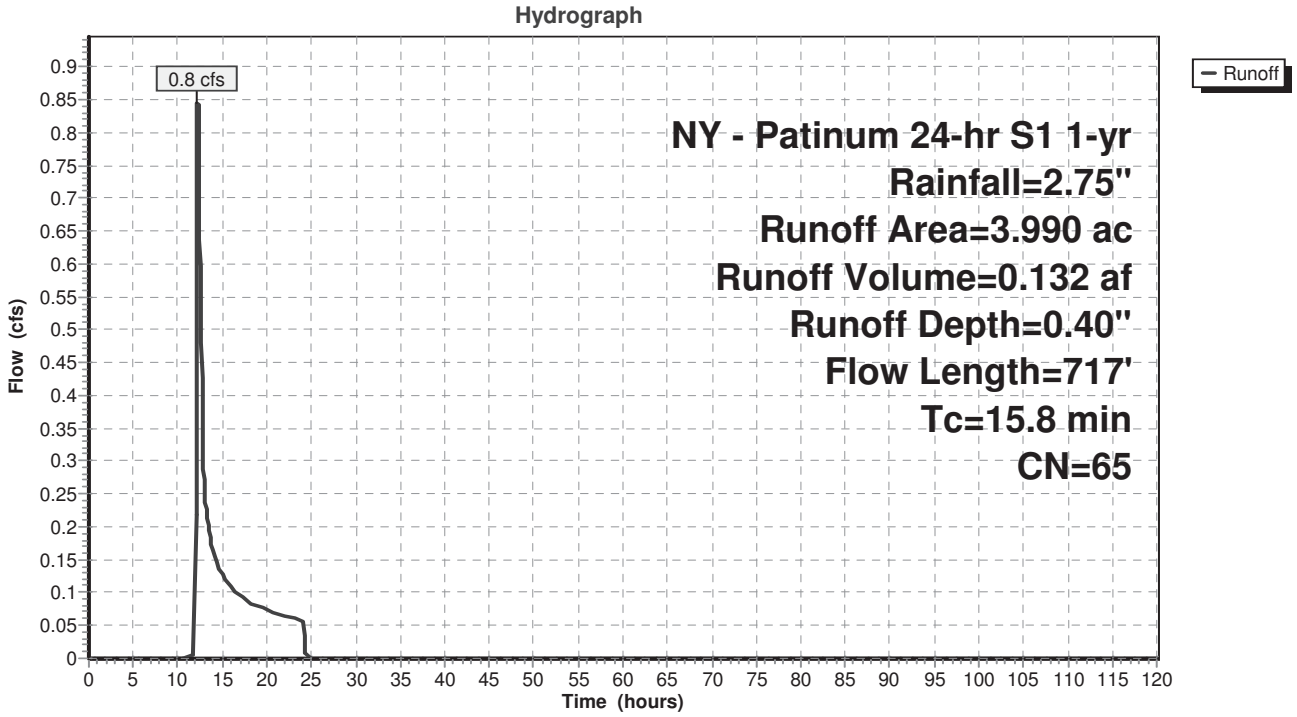
Runoff = 0.8 cfs @ 12.24 hrs, Volume= 0.132 af, Depth= 0.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - Patinum 24-hr S1 1-yr Rainfall=2.75"

Area (ac)	CN	Description
0.040	98	Paved parking, HSG C
0.560	74	>75% Grass cover, Good, HSG C
1.880	70	Woods, Good, HSG C
1.510	55	Woods, Good, HSG B
3.990	65	Weighted Average
3.950		99.00% Pervious Area
0.040		1.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	100	0.1000	0.15		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.31"
2.5	215	0.0800	1.41		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.8	120	0.2300	2.40		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.2	60	0.1500	5.81		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.5	72	0.0100	2.66	7.99	**Channel Flow,** Area= 3.0 sf Perim= 10.0' r= 0.30' n= 0.025 Earth, clean & winding
0.7	150	0.0500	3.35		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
15.8	717	Total			

Subcatchment 1.5S:

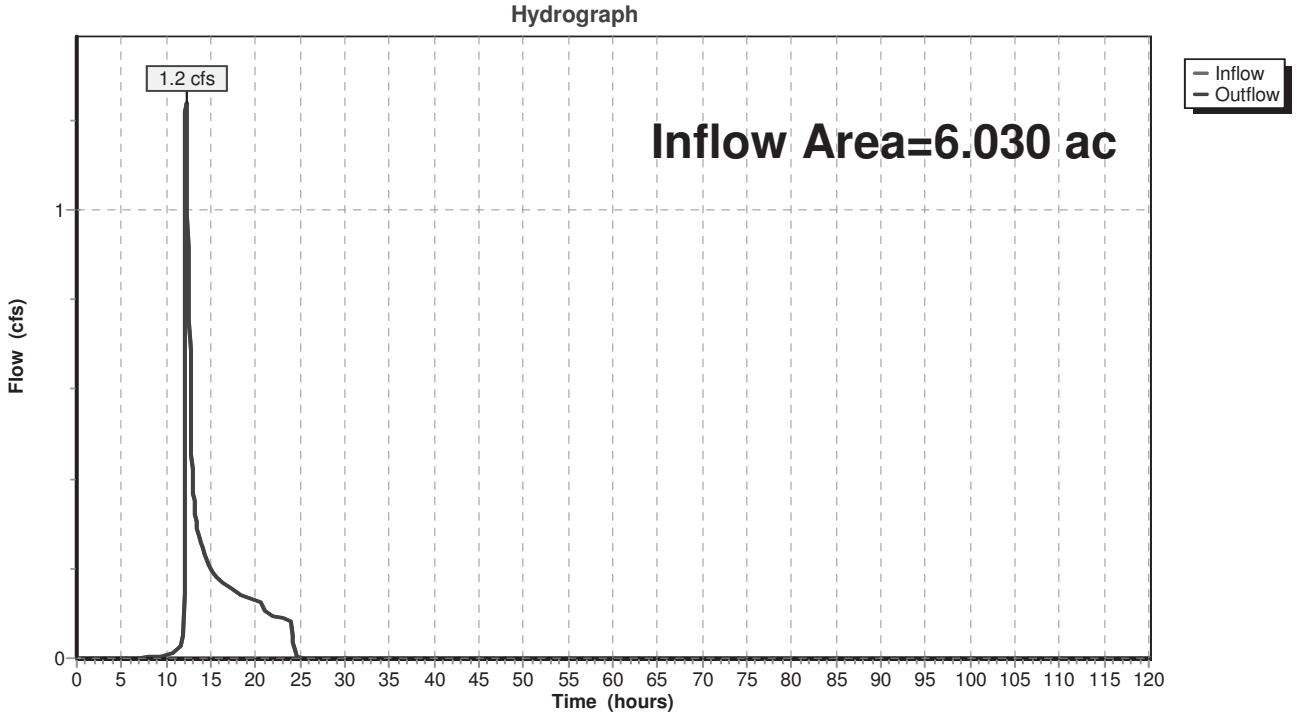


Summary for Reach DL 1: DESIGN LINE 1

Inflow Area = 6.030 ac, 8.96% Impervious, Inflow Depth = 0.41" for 1-yr event
Inflow = 1.2 cfs @ 12.23 hrs, Volume= 0.208 af
Outflow = 1.2 cfs @ 12.23 hrs, Volume= 0.208 af, Atten= 0%, Lag= 0.0 min

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

Reach DL 1: DESIGN LINE 1



Summary for Pond 1.1P: Underground Infiltration (I-4)

Inflow Area = 0.650 ac, 53.85% Impervious, Inflow Depth = 1.52" for 1-yr event
Inflow = 1.2 cfs @ 12.07 hrs, Volume= 0.082 af
Outflow = 0.1 cfs @ 11.75 hrs, Volume= 0.082 af, Atten= 92%, Lag= 0.0 min
Discarded = 0.1 cfs @ 11.75 hrs, Volume= 0.082 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
Peak Elev= 111.04' @ 13.22 hrs Surf.Area= 0.047 ac Storage= 0.030 af

Plug-Flow detention time= 115.7 min calculated for 0.082 af (100% of inflow)
Center-of-Mass det. time= 115.7 min (957.8 - 842.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	110.00'	0.039 af	**30.50'W x 66.50'L x 3.54'H Field A** 0.165 af Overall - 0.066 af Embedded = 0.099 af x 40.0% Voids
#2A	110.50'	0.066 af	**Cultec R-330XLHD** x 54 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 6 rows
		0.106 af	Total Available Storage

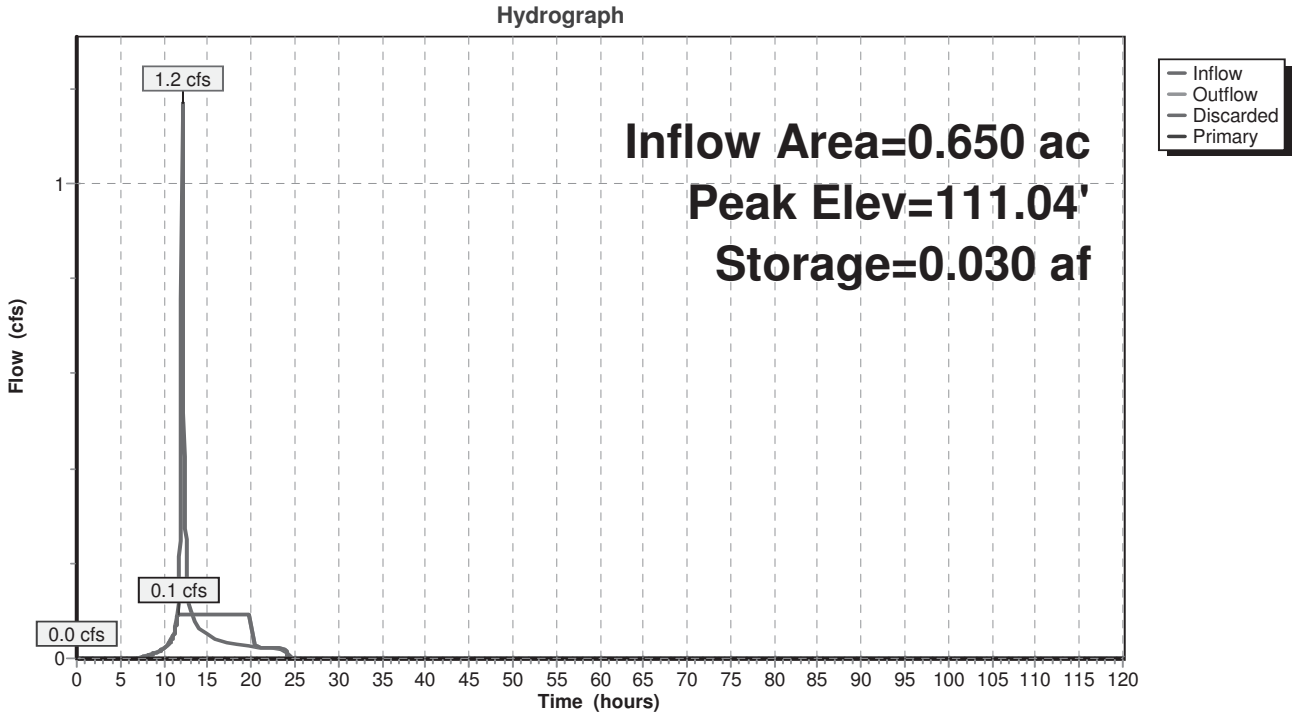
Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	112.20'	**8.0" Round Culvert** L= 16.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 112.20' / 111.10' S= 0.0687 '/' Cc= 0.900 n= 0.012, Flow Area= 0.35 sf
#2	Discarded	110.00'	**2.000 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=0.1 cfs @ 11.75 hrs HW=110.05' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.1 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=110.00' TW=110.30' (Dynamic Tailwater)
↑—**1=Culvert** (Controls 0.0 cfs)

Pond 1.1P: Underground Infiltration (I-4)



Summary for Pond 1.2P: Underground Infiltration (I-4)

Inflow Area = 0.030 ac,100.00% Impervious, Inflow Depth = 2.52" for 1-yr event
Inflow = 0.1 cfs @ 12.04 hrs, Volume= 0.006 af
Outflow = 0.0 cfs @ 11.60 hrs, Volume= 0.006 af, Atten= 93%, Lag= 0.0 min
Discarded = 0.0 cfs @ 11.60 hrs, Volume= 0.006 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
Peak Elev= 112.21' @ 13.04 hrs Surf.Area= 0.006 ac Storage= 0.002 af

Plug-Flow detention time= 110.1 min calculated for 0.006 af (100% of inflow)
Center-of-Mass det. time= 110.1 min (872.1 - 761.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	111.50'	0.005 af	**10.83'W x 24.00'L x 3.21'H Field A** 0.019 af Overall - 0.006 af Embedded = 0.013 af x 40.0% Voids
#2A	112.00'	0.006 af	**Cultec R-280HD** x 6 Inside #1 Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap Row Length Adjustment= +1.00' x 6.07 sf x 2 rows
		0.011 af	Total Available Storage

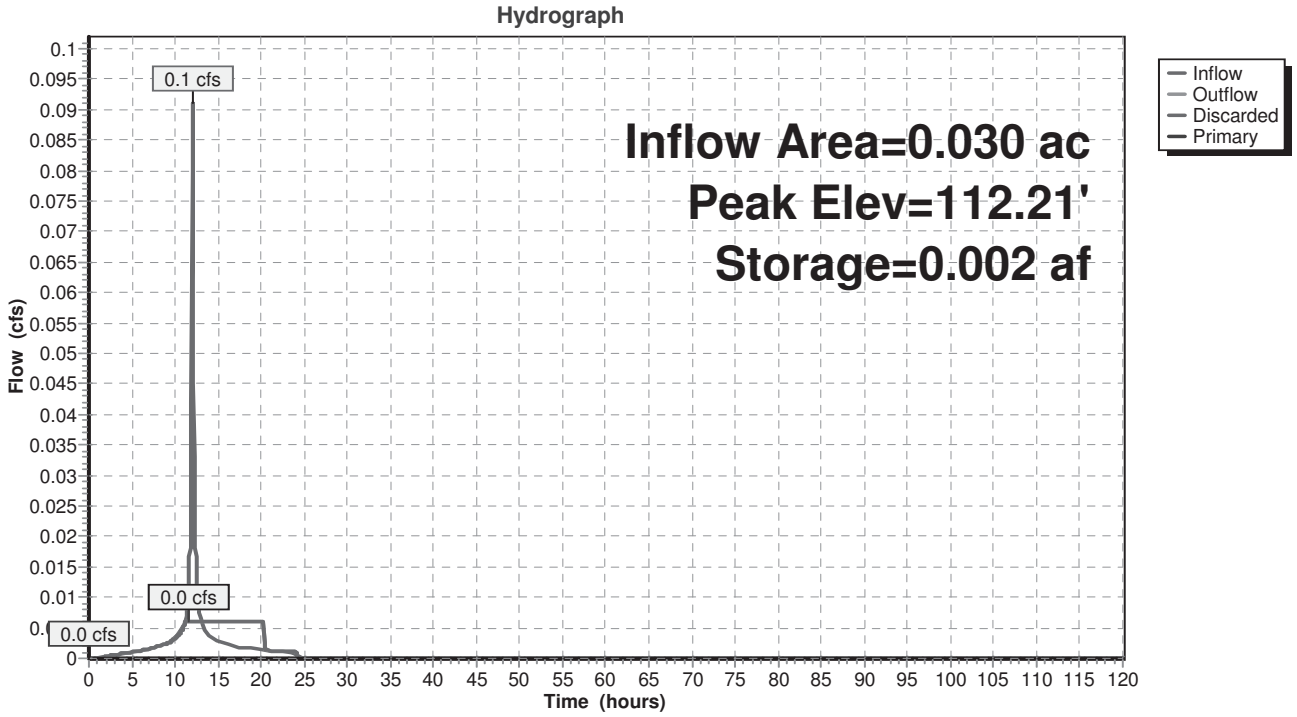
Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	113.50'	**6.0" Round Culvert** L= 65.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 113.50' / 111.50' S= 0.0308 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#2	Discarded	111.50'	**1.000 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=0.0 cfs @ 11.60 hrs HW=111.54' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=111.50' TW=110.30' (Dynamic Tailwater)
↑—**1=Culvert** (Controls 0.0 cfs)

Pond 1.2P: Underground Infiltration (I-4)



Summary for Pond 1.3P: Bioretention Basin (F-5)

Inflow Area = 0.210 ac, 57.14% Impervious, Inflow Depth = 1.60" for 1-yr event
Inflow = 0.5 cfs @ 11.99 hrs, Volume= 0.028 af
Outflow = 0.0 cfs @ 11.55 hrs, Volume= 0.028 af, Atten= 94%, Lag= 0.0 min
Primary = 0.0 cfs @ 11.55 hrs, Volume= 0.028 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
Peak Elev= 115.24' @ 13.19 hrs Surf.Area= 1,895 sf Storage= 476 cf

Plug-Flow detention time= 135.8 min calculated for 0.028 af (100% of inflow)
Center-of-Mass det. time= 135.7 min (967.2 - 831.5)

Volume	Invert	Avail.Storage	Storage Description
#1	115.00'	2,000 cf	**Custom Stage Data (Prismatic)** Listed below

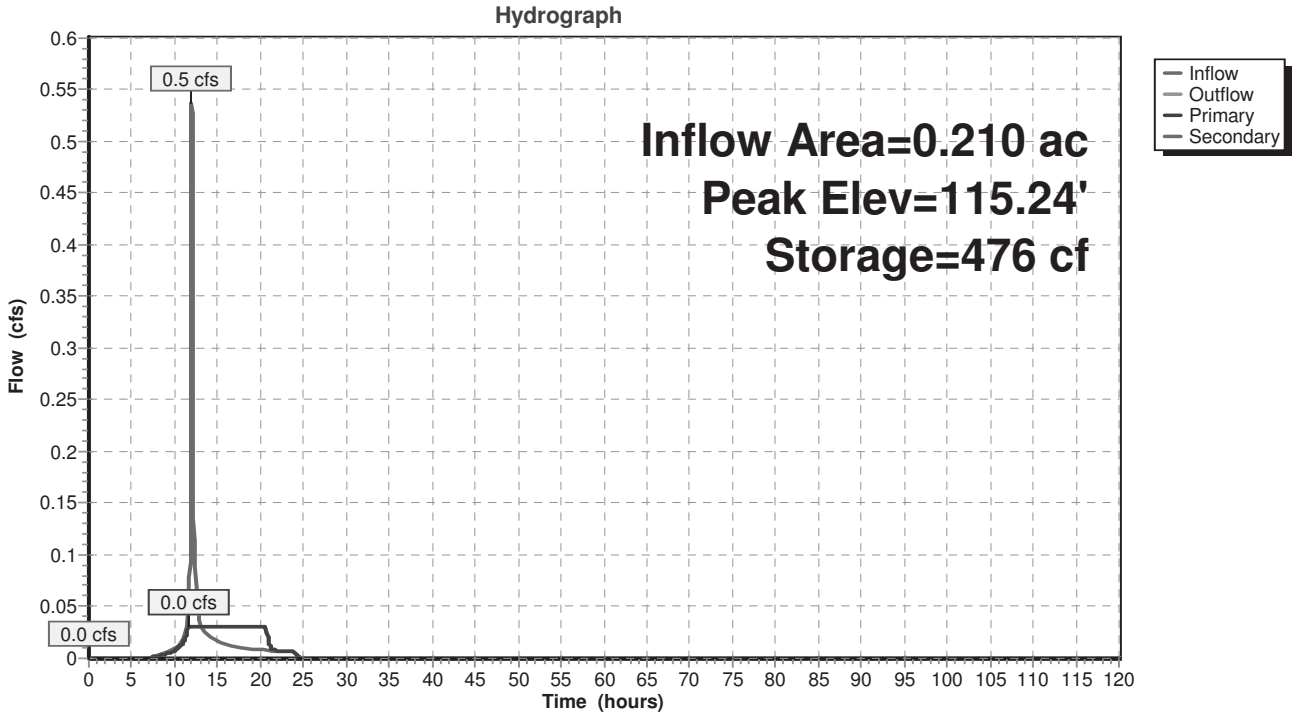
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
115.00	1,800	0	0
116.00	2,200	2,000	2,000

Device	Routing	Invert	Outlet Devices
#1	Secondary	115.50'	**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	111.40'	**8.0" Vert. Orifice/Grate** C= 0.600
#3	Device 2	115.00'	**0.0 cfs Exfiltration when above 115.00'** Phase-In= 0.01'

Primary OutFlow Max=0.0 cfs @ 11.55 hrs HW=115.01' TW=111.39' (Dynamic Tailwater)
↑—**2=Orifice/Grate** (Passes 0.0 cfs of 3.0 cfs potential flow)
↑—**3=Exfiltration** (Exfiltration Controls 0.0 cfs)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=115.00' TW=111.30' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Pond 1.3P: Bioretention Basin (F-5)



Summary for Pond DMH 2: DMH 2

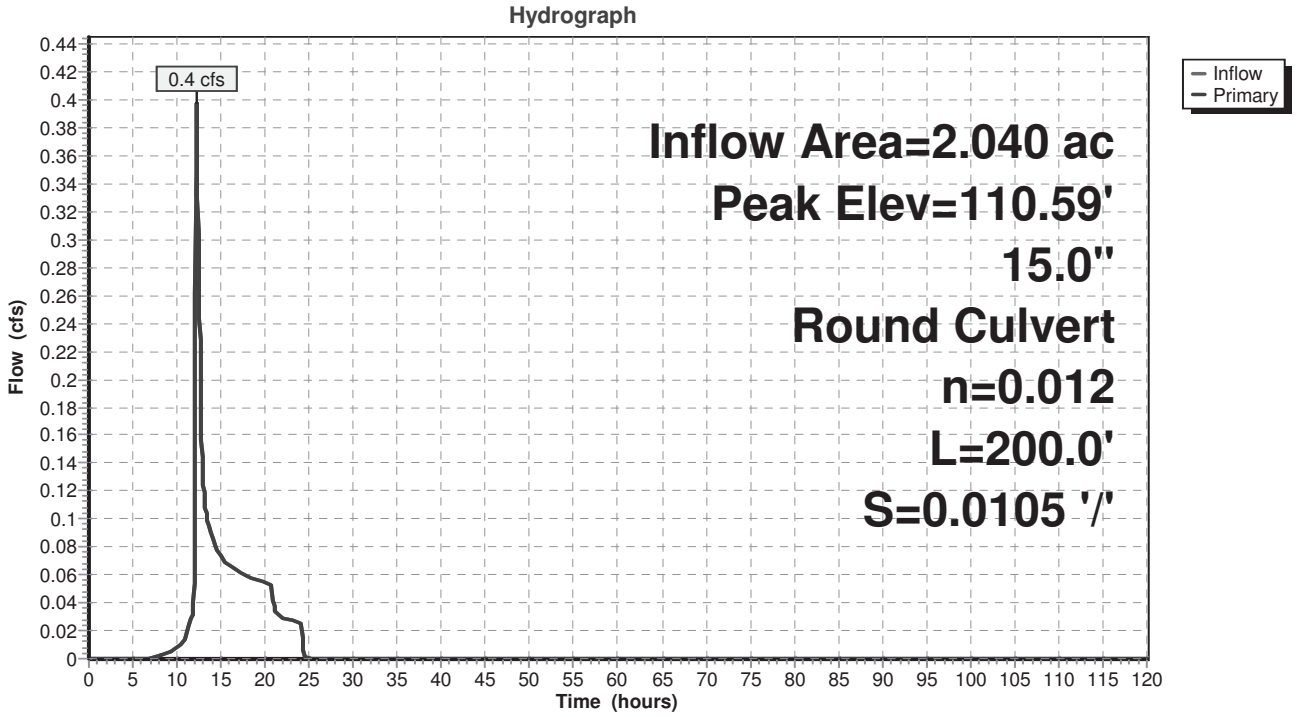
Inflow Area = 2.040 ac, 24.51% Impervious, Inflow Depth = 0.45" for 1-yr event
Inflow = 0.4 cfs @ 12.22 hrs, Volume= 0.076 af
Outflow = 0.4 cfs @ 12.22 hrs, Volume= 0.076 af, Atten= 0%, Lag= 0.0 min
Primary = 0.4 cfs @ 12.22 hrs, Volume= 0.076 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Peak Elev= 110.59' @ 12.22 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	110.30'	**15.0" Round Culvert** L= 200.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 110.30' / 108.20' S= 0.0105 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=0.4 cfs @ 12.22 hrs HW=110.59' TW=0.00' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 0.4 cfs @ 1.83 fps)

Pond DMH 2: DMH 2



Summary for Pond FS 3:

Inflow Area = 0.650 ac, 53.85% Impervious, Inflow Depth = 1.52" for 1-yr event
Inflow = 1.2 cfs @ 12.07 hrs, Volume= 0.082 af
Outflow = 1.2 cfs @ 12.07 hrs, Volume= 0.082 af, Atten= 0%, Lag= 0.0 min
Primary = 1.2 cfs @ 12.07 hrs, Volume= 0.082 af
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

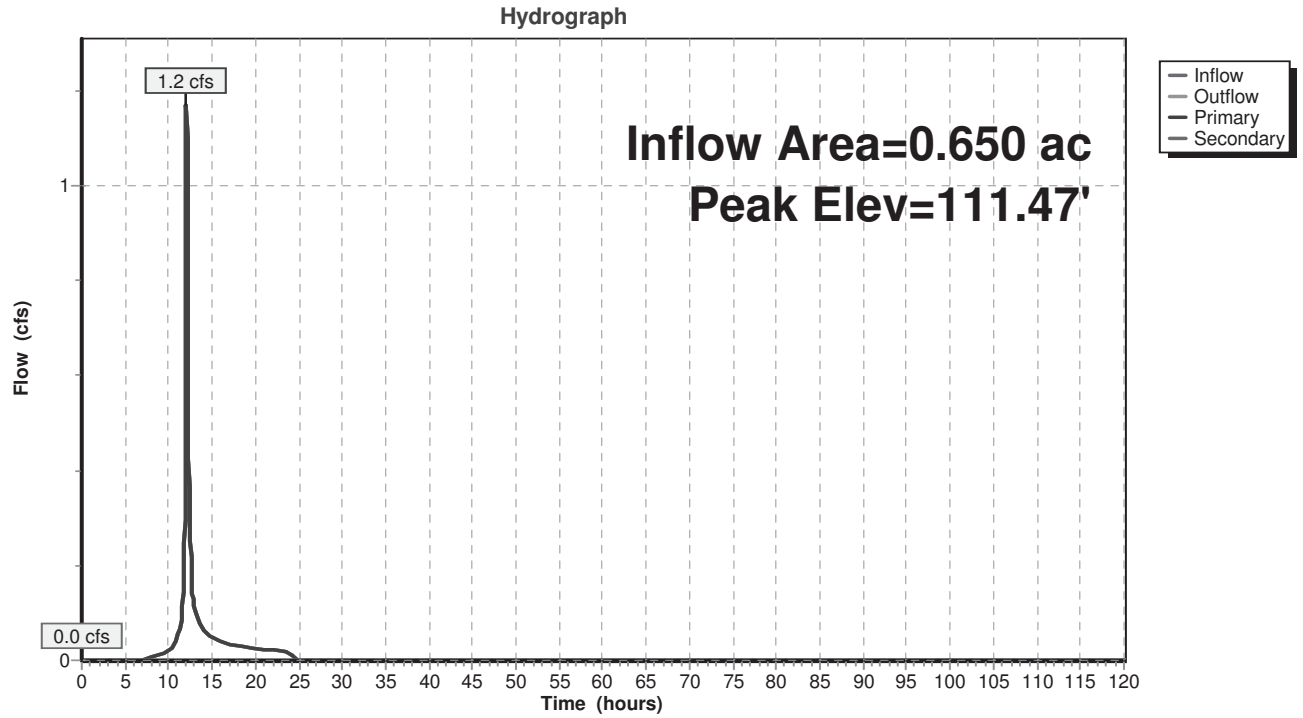
Routing by Dyn-Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Peak Elev= 111.47' @ 12.07 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	110.90'	**12.0" Round Culvert** L= 32.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 110.90' / 110.50' S= 0.0125 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Secondary	111.50'	**8.0" Round Culvert** L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 111.50' / 111.00' S= 0.0250 '/' Cc= 0.900 n= 0.012, Flow Area= 0.35 sf

Primary OutFlow Max=1.1 cfs @ 12.07 hrs HW=111.45' TW=110.54' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 1.1 cfs @ 2.53 fps)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=110.90' TW=110.30' (Dynamic Tailwater)
└**2=Culvert** (Controls 0.0 cfs)

Pond FS 3:



Summary for Pond OS1.3:

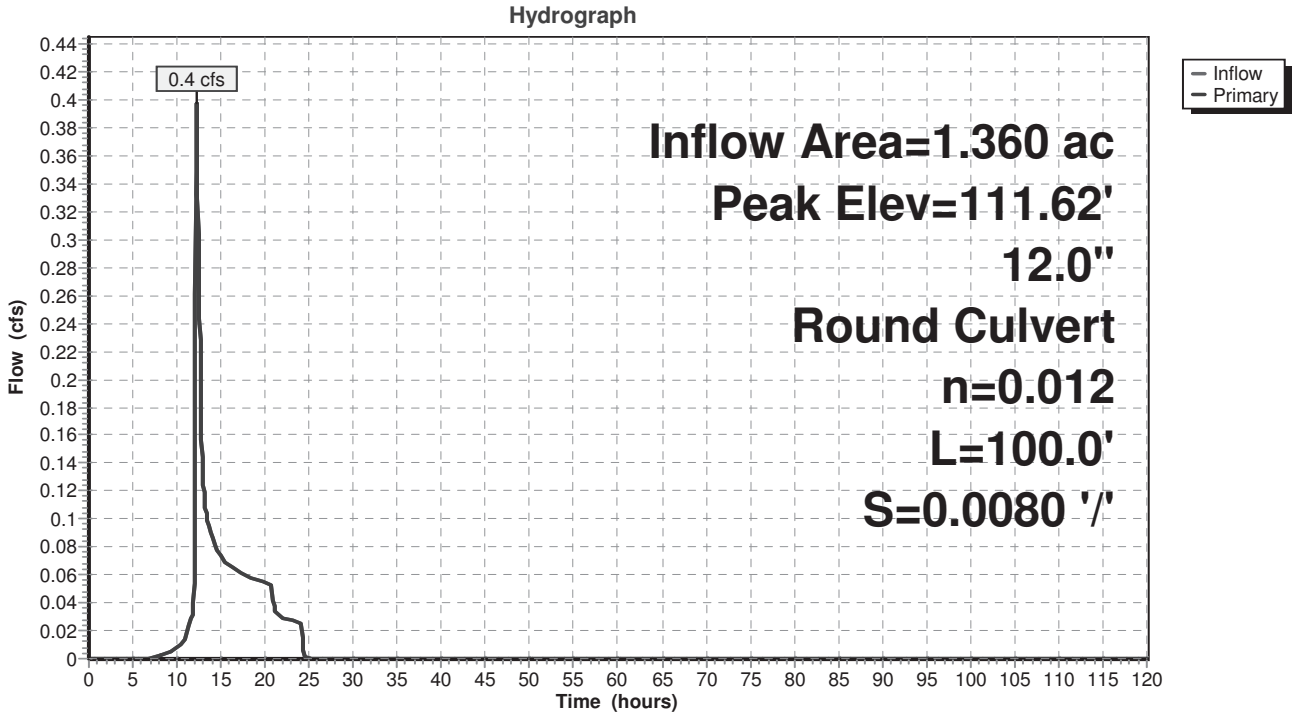
Inflow Area = 1.360 ac, 8.82% Impervious, Inflow Depth = 0.67" for 1-yr event
Inflow = 0.4 cfs @ 12.22 hrs, Volume= 0.076 af
Outflow = 0.4 cfs @ 12.22 hrs, Volume= 0.076 af, Atten= 0%, Lag= 0.0 min
Primary = 0.4 cfs @ 12.22 hrs, Volume= 0.076 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Peak Elev= 111.62' @ 12.22 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	111.30'	**12.0" Round Culvert** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 111.30' / 110.50' S= 0.0080 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.4 cfs @ 12.22 hrs HW=111.61' TW=110.59' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.4 cfs @ 2.78 fps)

Pond OS1.3:



Summary for Subcatchment 1.1S:

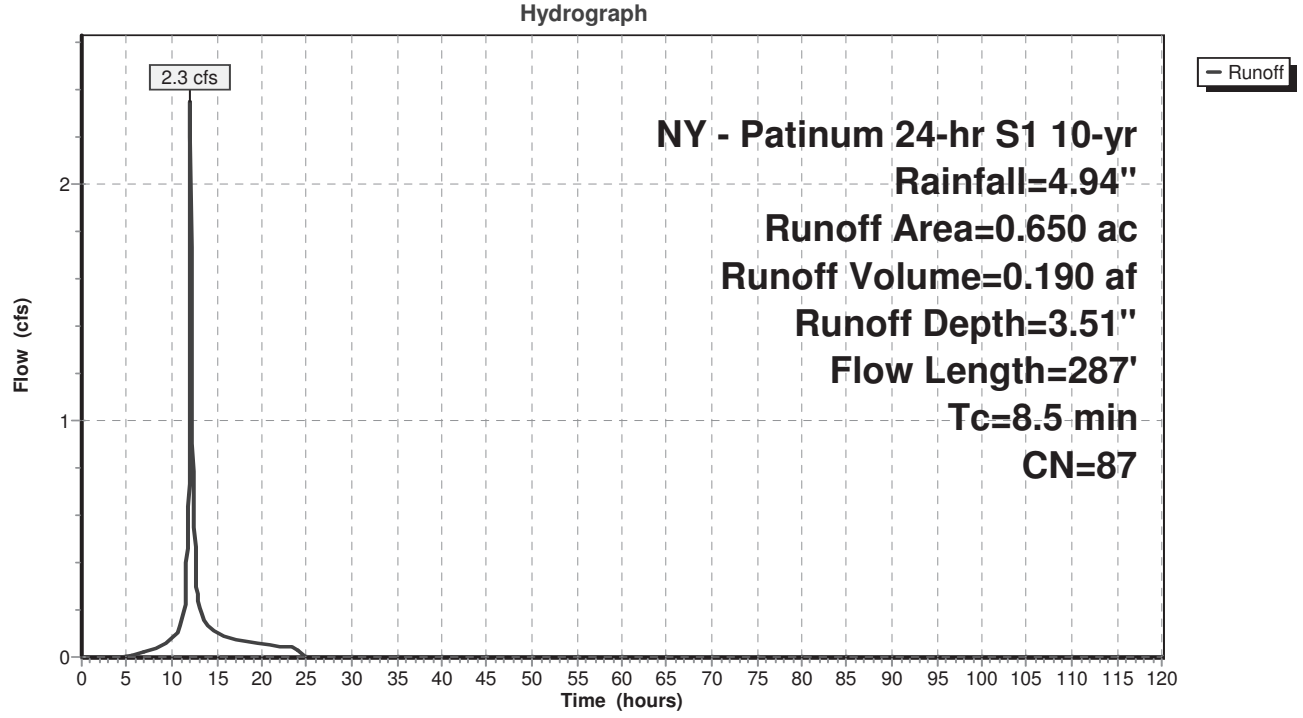
Runoff = 2.3 cfs @ 12.07 hrs, Volume= 0.190 af, Depth= 3.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - Patinum 24-hr S1 10-yr Rainfall=4.94"

Area (ac)	CN	Description
0.350	98	Paved parking, HSG C
0.300	74	>75% Grass cover, Good, HSG C
0.650	87	Weighted Average
0.300		46.15% Pervious Area
0.350		53.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	90	0.0300	0.20		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.31"
0.2	10	0.0250	0.97		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.31"
0.5	92	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.3	95	0.0100	4.91	3.86	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
8.5	287	Total			

Subcatchment 1.1S:



Summary for Subcatchment 1.2S:

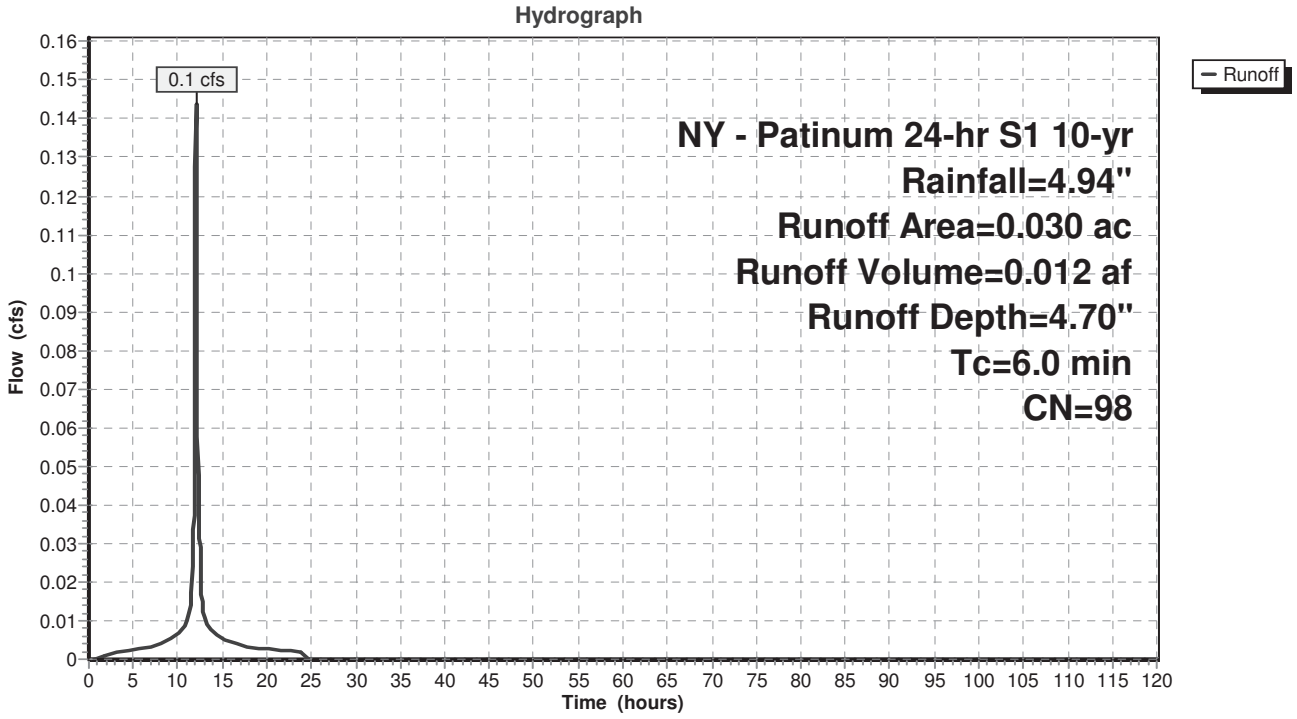
Runoff = 0.1 cfs @ 12.04 hrs, Volume= 0.012 af, Depth= 4.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - Patinum 24-hr S1 10-yr Rainfall=4.94"

Area (ac)	CN	Description
0.030	98	Paved parking, HSG C
0.030		100.00% Impervious Area

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

Subcatchment 1.2S:



Summary for Subcatchment 1.3S:

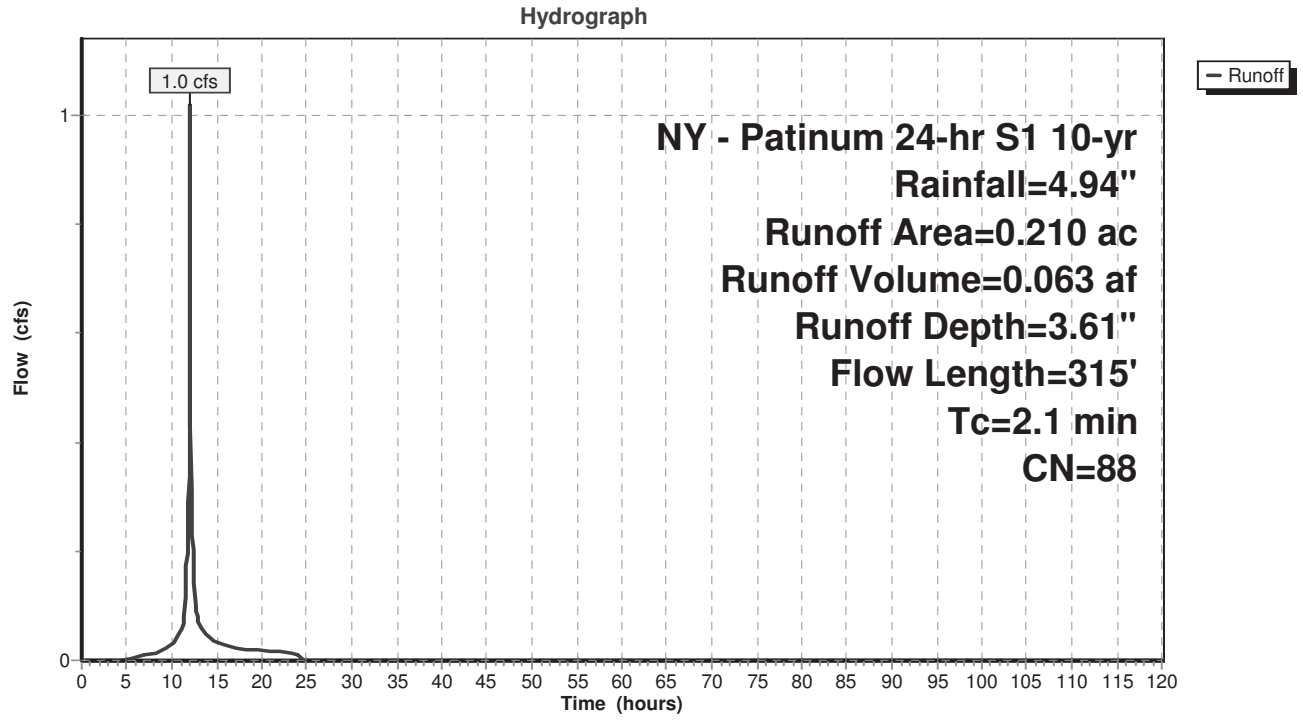
Runoff = 1.0 cfs @ 11.99 hrs, Volume= 0.063 af, Depth= 3.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - Patinum 24-hr S1 10-yr Rainfall=4.94"

Area (ac)	CN	Description
0.120	98	Paved parking, HSG C
0.090	74	>75% Grass cover, Good, HSG C
0.210	88	Weighted Average
0.090		42.86% Pervious Area
0.120		57.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	85	0.0150	1.21		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.31"
0.9	230	0.0080	4.40	3.45	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
2.1	315	Total			

Subcatchment 1.3S:



Summary for Subcatchment 1.4S:

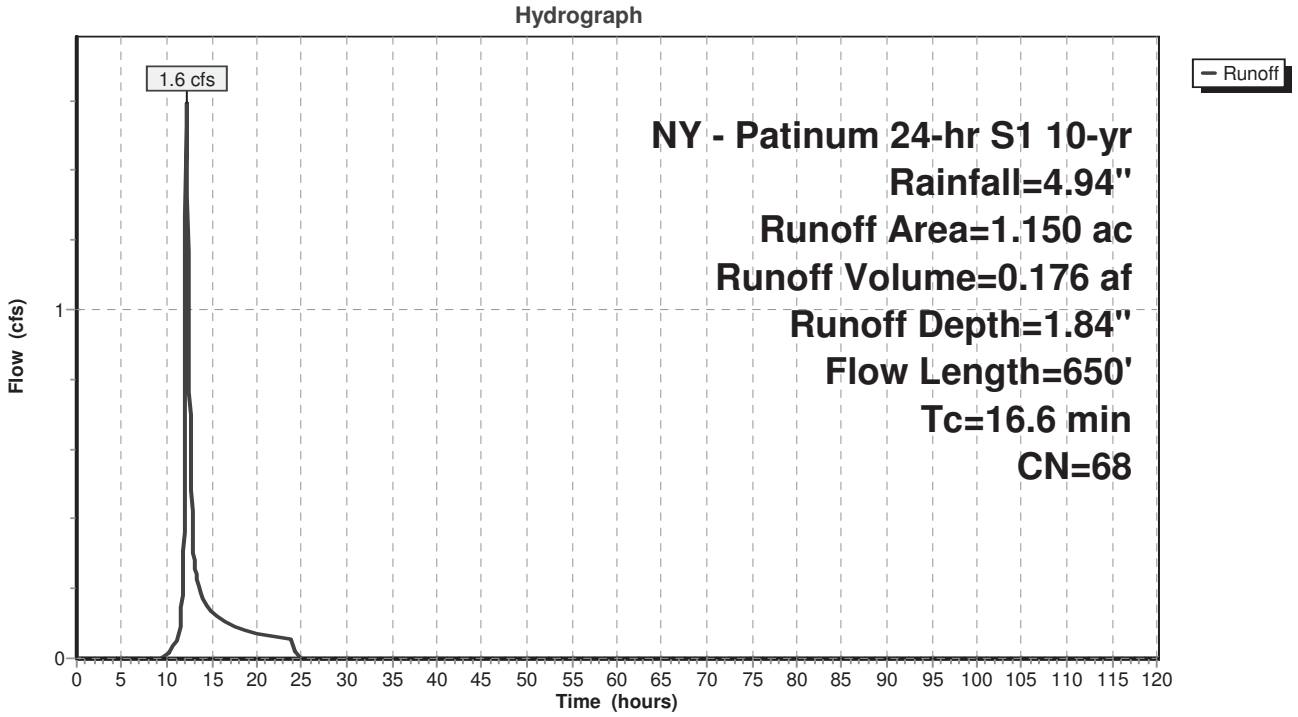
Runoff = 1.6 cfs @ 12.20 hrs, Volume= 0.176 af, Depth= 1.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - Patinum 24-hr S1 10-yr Rainfall=4.94"

Area (ac)	CN	Description
0.150	74	>75% Grass cover, Good, HSG C
0.790	70	Woods, Good, HSG C
0.210	55	Woods, Good, HSG B
1.150	68	Weighted Average
1.150		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	100	0.1000	0.15		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.31"
5.3	475	0.0900	1.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.1	35	0.0150	5.08	17.79	**Channel Flow,** Area= 3.5 sf Perim= 6.0' r= 0.58' n= 0.025 Earth, clean & winding
0.1	40	0.0100	4.91	3.86	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
16.6	650	Total			

Subcatchment 1.4S:



Summary for Subcatchment 1.5S:

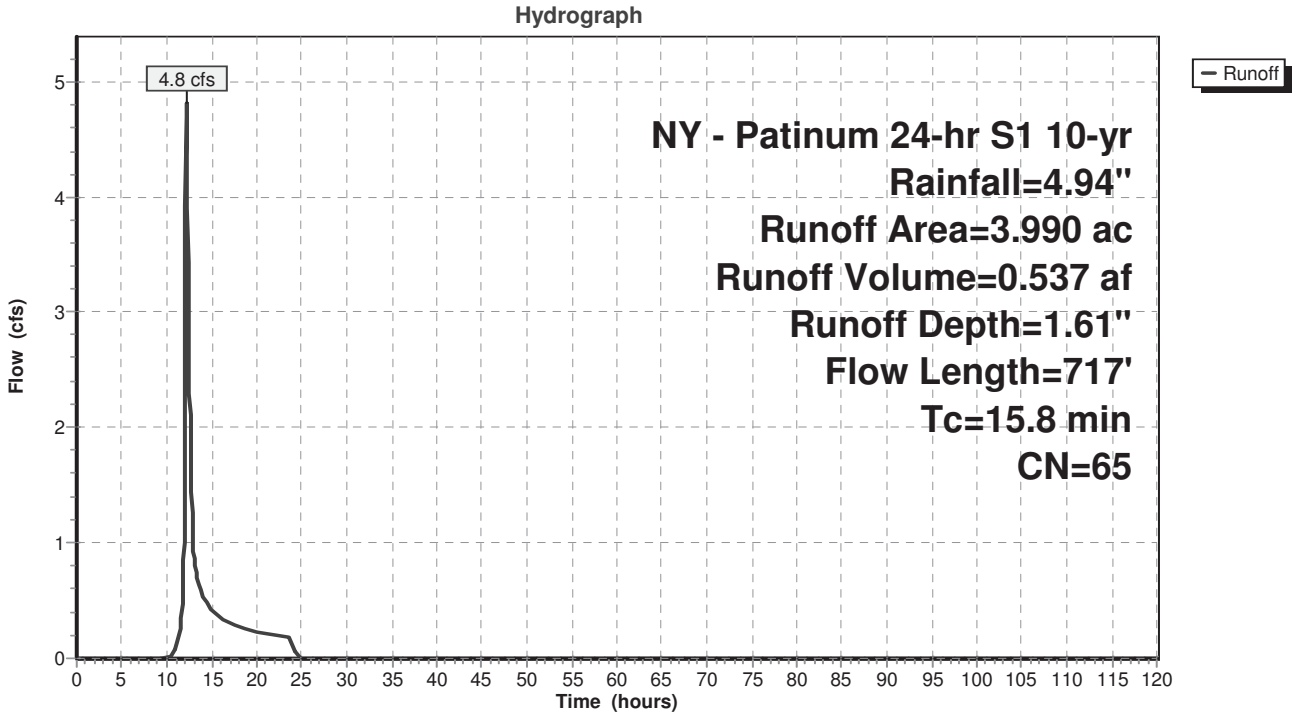
Runoff = 4.8 cfs @ 12.19 hrs, Volume= 0.537 af, Depth= 1.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - Patinum 24-hr S1 10-yr Rainfall=4.94"

Area (ac)	CN	Description
0.040	98	Paved parking, HSG C
0.560	74	>75% Grass cover, Good, HSG C
1.880	70	Woods, Good, HSG C
1.510	55	Woods, Good, HSG B
3.990	65	Weighted Average
3.950		99.00% Pervious Area
0.040		1.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	100	0.1000	0.15		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.31"
2.5	215	0.0800	1.41		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.8	120	0.2300	2.40		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.2	60	0.1500	5.81		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.5	72	0.0100	2.66	7.99	**Channel Flow,** Area= 3.0 sf Perim= 10.0' r= 0.30' n= 0.025 Earth, clean & winding
0.7	150	0.0500	3.35		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
15.8	717	Total			

Subcatchment 1.5S:

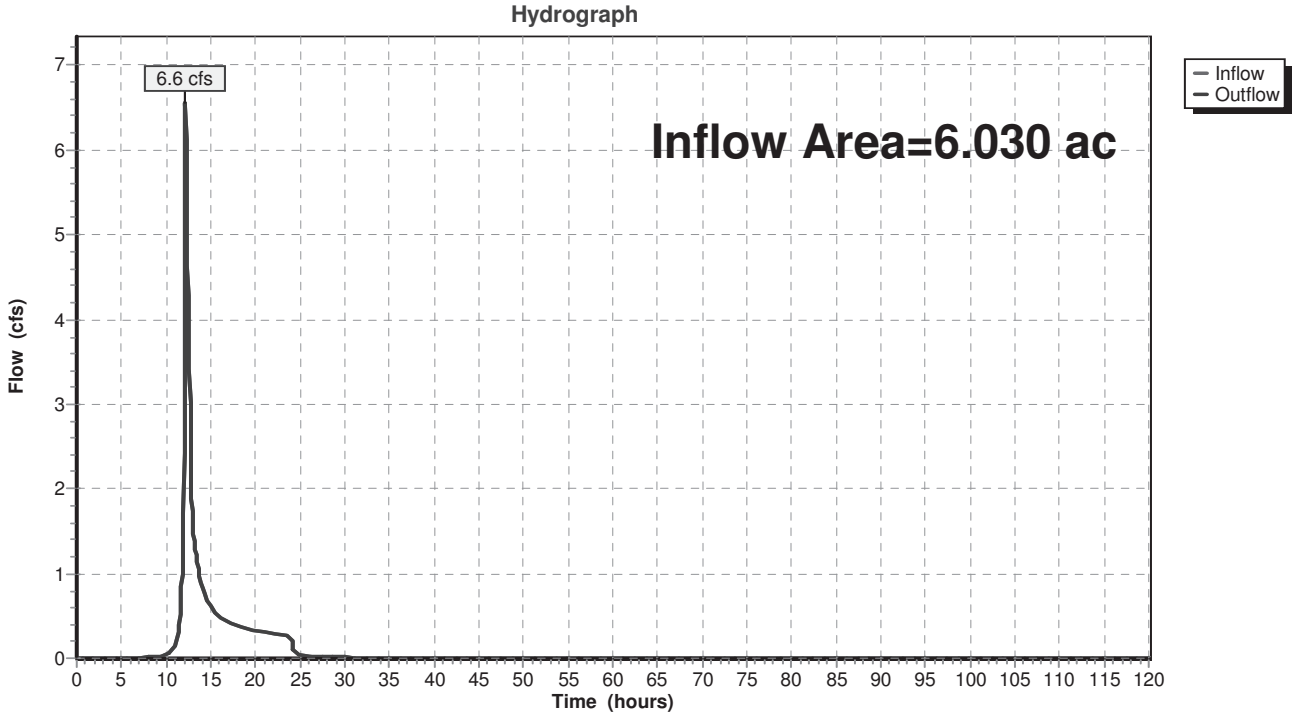


Summary for Reach DL 1: DESIGN LINE 1

Inflow Area = 6.030 ac, 8.96% Impervious, Inflow Depth = 1.63" for 10-yr event
Inflow = 6.6 cfs @ 12.19 hrs, Volume= 0.819 af
Outflow = 6.6 cfs @ 12.19 hrs, Volume= 0.819 af, Atten= 0%, Lag= 0.0 min

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

Reach DL 1: DESIGN LINE 1



Summary for Pond 1.1P: Underground Infiltration (I-4)

Inflow Area = 0.650 ac, 53.85% Impervious, Inflow Depth = 2.72" for 10-yr event
Inflow = 2.2 cfs @ 12.07 hrs, Volume= 0.147 af
Outflow = 0.1 cfs @ 10.80 hrs, Volume= 0.147 af, Atten= 96%, Lag= 0.0 min
Discarded = 0.1 cfs @ 10.80 hrs, Volume= 0.147 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
Peak Elev= 111.91' @ 12.51 hrs Surf.Area= 0.047 ac Storage= 0.064 af

Plug-Flow detention time= 237.5 min calculated for 0.147 af (100% of inflow)
Center-of-Mass det. time= 237.5 min (1,062.1 - 824.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	110.00'	0.039 af	**30.50'W x 66.50'L x 3.54'H Field A** 0.165 af Overall - 0.066 af Embedded = 0.099 af x 40.0% Voids
#2A	110.50'	0.066 af	**Cultec R-330XLHD** x 54 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 6 rows
		0.106 af	Total Available Storage

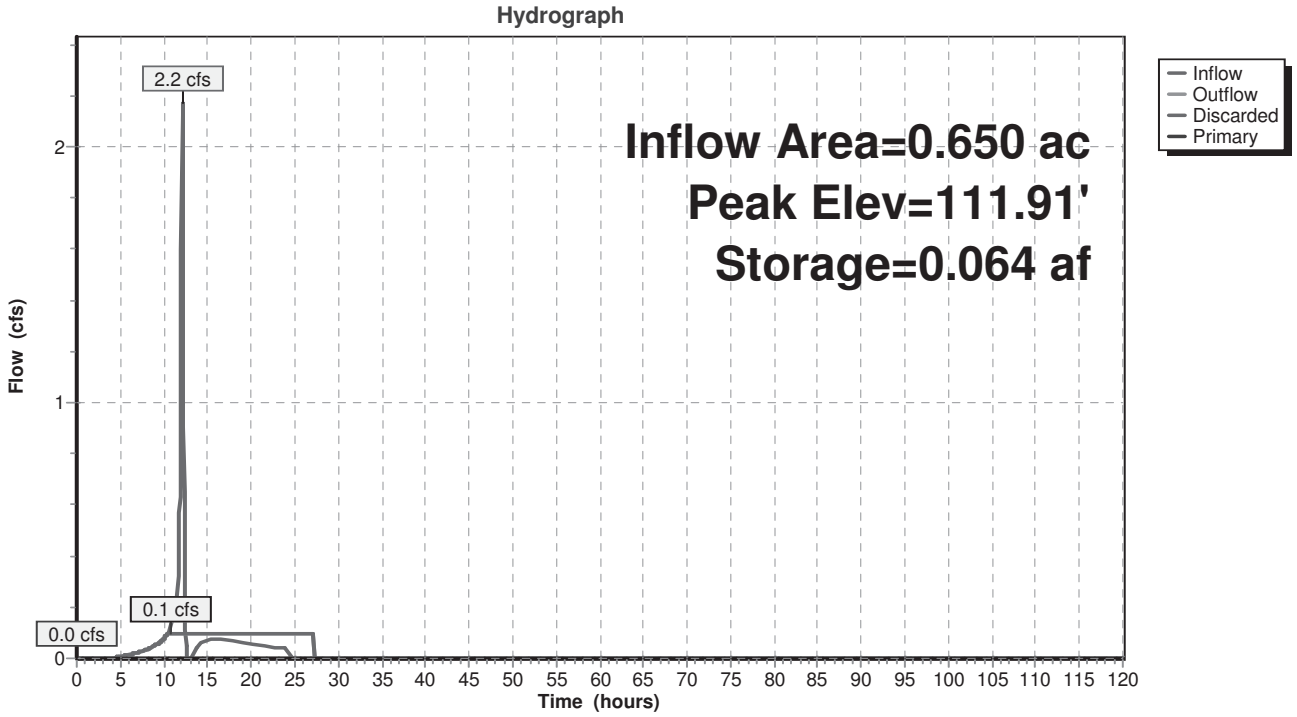
Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	112.20'	**8.0" Round Culvert** L= 16.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 112.20' / 111.10' S= 0.0687 '/' Cc= 0.900 n= 0.012, Flow Area= 0.35 sf
#2	Discarded	110.00'	**2.000 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=0.1 cfs @ 10.80 hrs HW=110.04' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.1 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=110.00' TW=110.30' (Dynamic Tailwater)
↑—**1=Culvert** (Controls 0.0 cfs)

Pond 1.1P: Underground Infiltration (I-4)



Summary for Pond 1.2P: Underground Infiltration (I-4)

Inflow Area = 0.030 ac,100.00% Impervious, Inflow Depth = 4.70" for 10-yr event
Inflow = 0.1 cfs @ 12.04 hrs, Volume= 0.012 af
Outflow = 0.0 cfs @ 10.60 hrs, Volume= 0.012 af, Atten= 96%, Lag= 0.0 min
Discarded = 0.0 cfs @ 10.60 hrs, Volume= 0.012 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
Peak Elev= 112.82' @ 14.42 hrs Surf.Area= 0.006 ac Storage= 0.005 af

Plug-Flow detention time= 294.9 min calculated for 0.012 af (100% of inflow)
Center-of-Mass det. time= 294.9 min (1,044.2 - 749.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	111.50'	0.005 af	**10.83'W x 24.00'L x 3.21'H Field A** 0.019 af Overall - 0.006 af Embedded = 0.013 af x 40.0% Voids
#2A	112.00'	0.006 af	**Cultec R-280HD** x 6 Inside #1 Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap Row Length Adjustment= +1.00' x 6.07 sf x 2 rows
		0.011 af	Total Available Storage

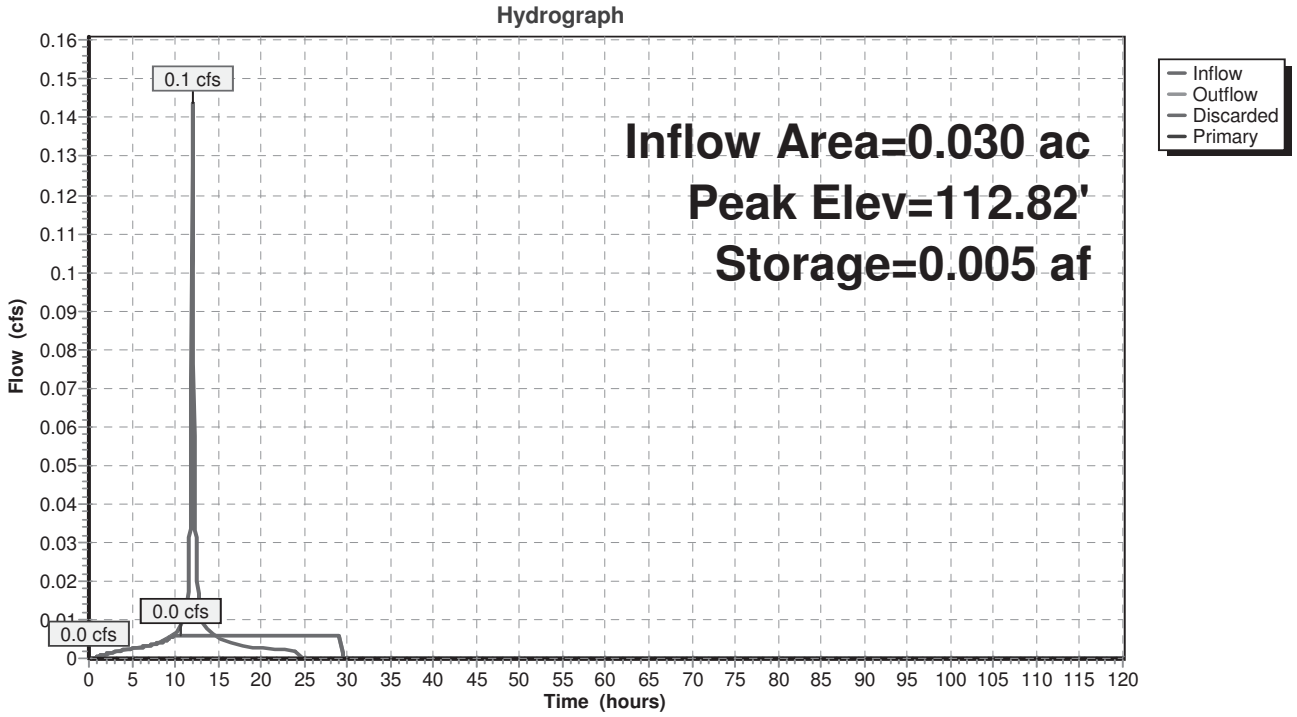
Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	113.50'	**6.0" Round Culvert** L= 65.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 113.50' / 111.50' S= 0.0308 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#2	Discarded	111.50'	**1.000 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=0.0 cfs @ 10.60 hrs HW=111.54' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=111.50' TW=110.30' (Dynamic Tailwater)
↑—**1=Culvert** (Controls 0.0 cfs)

Pond 1.2P: Underground Infiltration (I-4)



Summary for Pond 1.3P: Bioretention Basin (F-5)

Inflow Area = 0.210 ac, 57.14% Impervious, Inflow Depth = 3.61" for 10-yr event
Inflow = 1.0 cfs @ 11.99 hrs, Volume= 0.063 af
Outflow = 0.2 cfs @ 12.49 hrs, Volume= 0.063 af, Atten= 83%, Lag= 30.2 min
Primary = 0.0 cfs @ 10.30 hrs, Volume= 0.055 af
Secondary = 0.1 cfs @ 12.49 hrs, Volume= 0.009 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Peak Elev= 115.53' @ 12.49 hrs Surf.Area= 2,014 sf Storage= 1,068 cf

Plug-Flow detention time= 287.7 min calculated for 0.063 af (100% of inflow)
Center-of-Mass det. time= 287.8 min (1,094.0 - 806.2)

Volume	Invert	Avail.Storage	Storage Description
#1	115.00'	2,000 cf	**Custom Stage Data (Prismatic)** Listed below

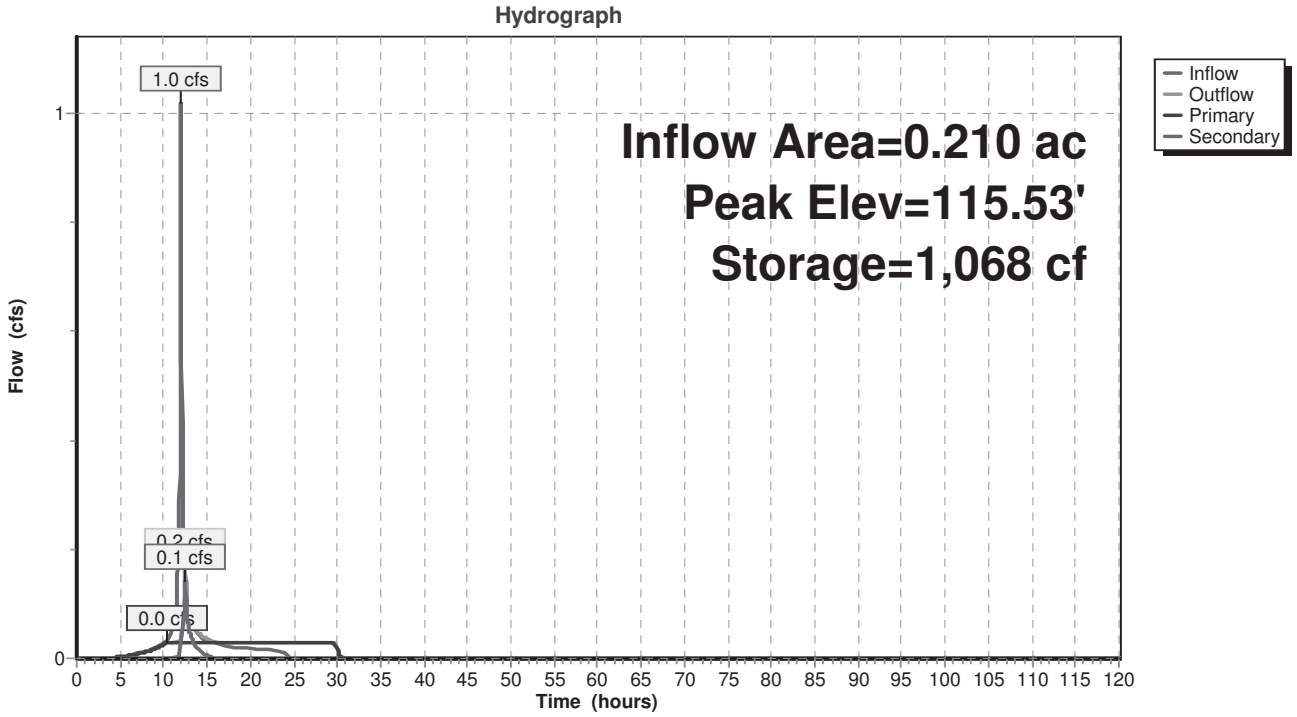
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
115.00	1,800	0	0
116.00	2,200	2,000	2,000

Device	Routing	Invert	Outlet Devices
#1	Secondary	115.50'	**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	111.40'	**8.0" Vert. Orifice/Grate** C= 0.600
#3	Device 2	115.00'	**0.0 cfs Exfiltration when above 115.00'** Phase-In= 0.01'

Primary OutFlow Max=0.0 cfs @ 10.30 hrs HW=115.01' TW=111.41' (Dynamic Tailwater)
↑—**2=Orifice/Grate** (Passes 0.0 cfs of 3.0 cfs potential flow)
↑—**3=Exfiltration** (Exfiltration Controls 0.0 cfs)

Secondary OutFlow Max=0.1 cfs @ 12.49 hrs HW=115.53' TW=111.83' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 0.1 cfs @ 0.51 fps)

Pond 1.3P: Bioretention Basin (F-5)



Summary for Pond DMH 2: DMH 2

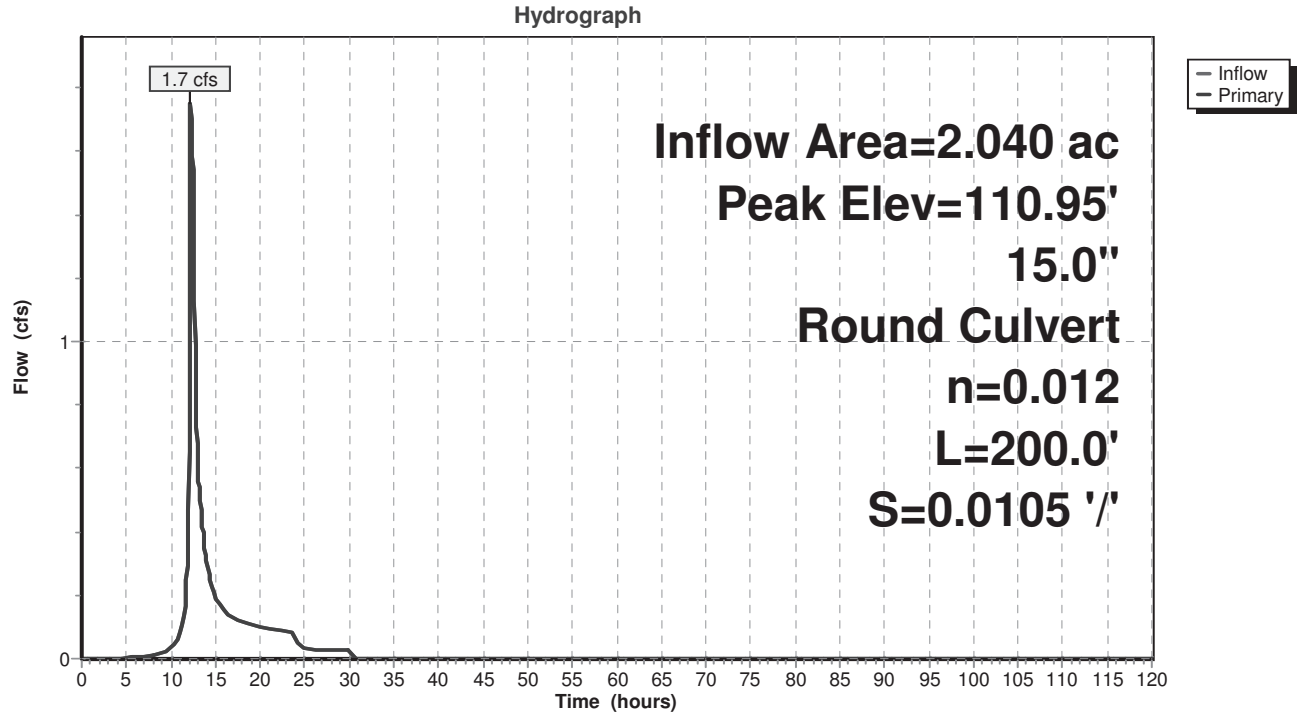
Inflow Area = 2.040 ac, 24.51% Impervious, Inflow Depth = 1.66" for 10-yr event
Inflow = 1.7 cfs @ 12.21 hrs, Volume= 0.282 af
Outflow = 1.7 cfs @ 12.21 hrs, Volume= 0.282 af, Atten= 0%, Lag= 0.0 min
Primary = 1.7 cfs @ 12.21 hrs, Volume= 0.282 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Peak Elev= 110.95' @ 12.21 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	110.30'	**15.0" Round Culvert** L= 200.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 110.30' / 108.20' S= 0.0105 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=1.7 cfs @ 12.21 hrs HW=110.94' TW=0.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.7 cfs @ 2.73 fps)

Pond DMH 2: DMH 2



Summary for Pond FS 3:

Inflow Area = 0.650 ac, 53.85% Impervious, Inflow Depth = 3.51" for 10-yr event
Inflow = 2.3 cfs @ 12.07 hrs, Volume= 0.190 af
Outflow = 2.3 cfs @ 12.07 hrs, Volume= 0.190 af, Atten= 0%, Lag= 0.0 min
Primary = 2.2 cfs @ 12.07 hrs, Volume= 0.147 af
Secondary = 0.5 cfs @ 12.54 hrs, Volume= 0.043 af

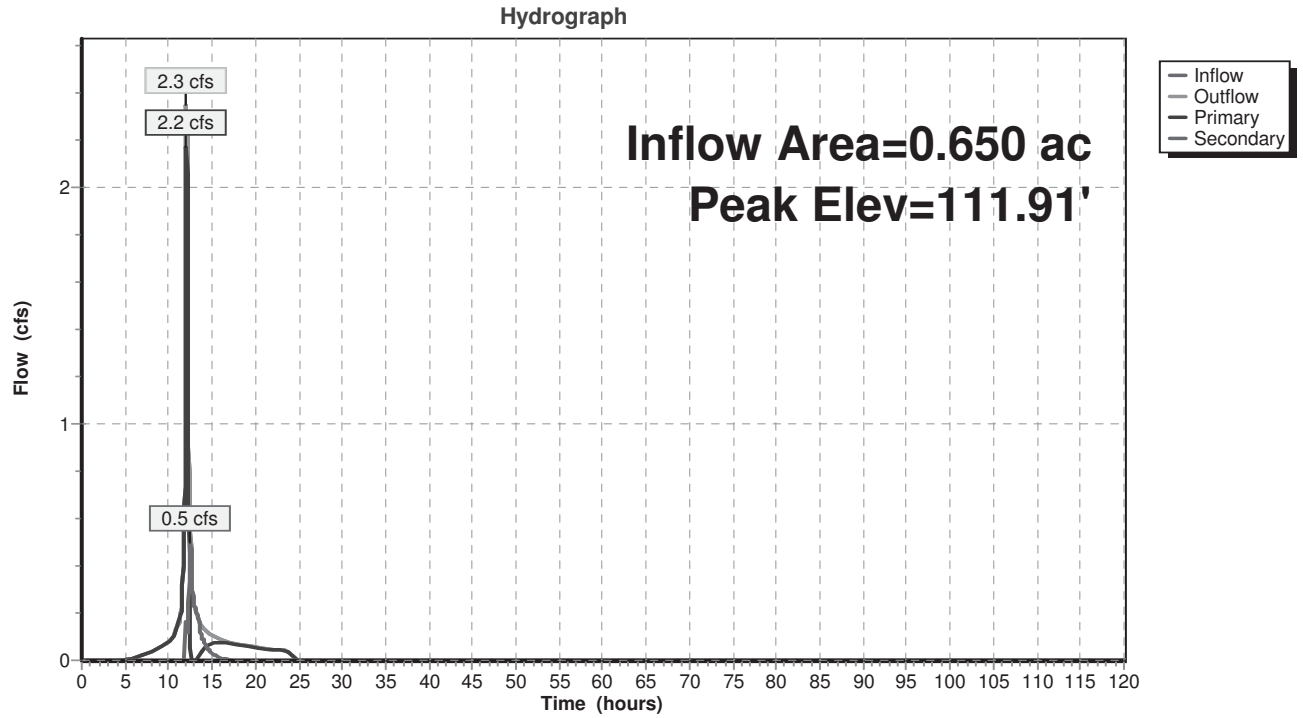
Routing by Dyn-Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Peak Elev= 111.91' @ 12.54 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	110.90'	**12.0" Round Culvert** L= 32.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 110.90' / 110.50' S= 0.0125 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Secondary	111.50'	**8.0" Round Culvert** L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 111.50' / 111.00' S= 0.0250 '/' Cc= 0.900 n= 0.012, Flow Area= 0.35 sf

Primary OutFlow Max=2.0 cfs @ 12.07 hrs HW=111.72' TW=111.16' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 2.0 cfs @ 4.02 fps)

Secondary OutFlow Max=0.5 cfs @ 12.54 hrs HW=111.91' TW=110.88' (Dynamic Tailwater)
└**2=Culvert** (Inlet Controls 0.5 cfs @ 2.18 fps)

Pond FS 3:



Summary for Pond OS1.3:

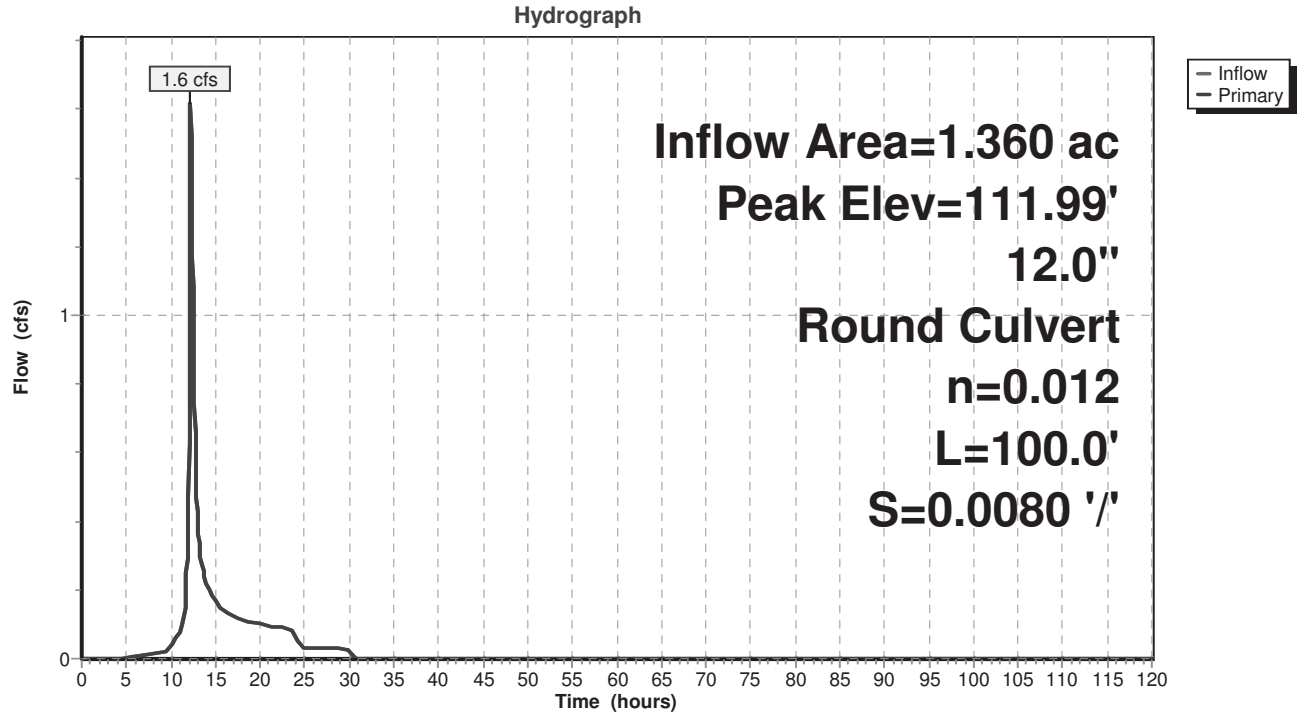
Inflow Area = 1.360 ac, 8.82% Impervious, Inflow Depth = 2.11" for 10-yr event
Inflow = 1.6 cfs @ 12.20 hrs, Volume= 0.239 af
Outflow = 1.6 cfs @ 12.20 hrs, Volume= 0.239 af, Atten= 0%, Lag= 0.0 min
Primary = 1.6 cfs @ 12.20 hrs, Volume= 0.239 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Peak Elev= 111.99' @ 12.20 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	111.30'	**12.0" Round Culvert** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 111.30' / 110.50' S= 0.0080 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.6 cfs @ 12.20 hrs HW=111.99' TW=110.94' (Dynamic Tailwater)
↑**1=Culvert** (Barrel Controls 1.6 cfs @ 3.91 fps)

Pond OS1.3:



Summary for Subcatchment 1.1S:

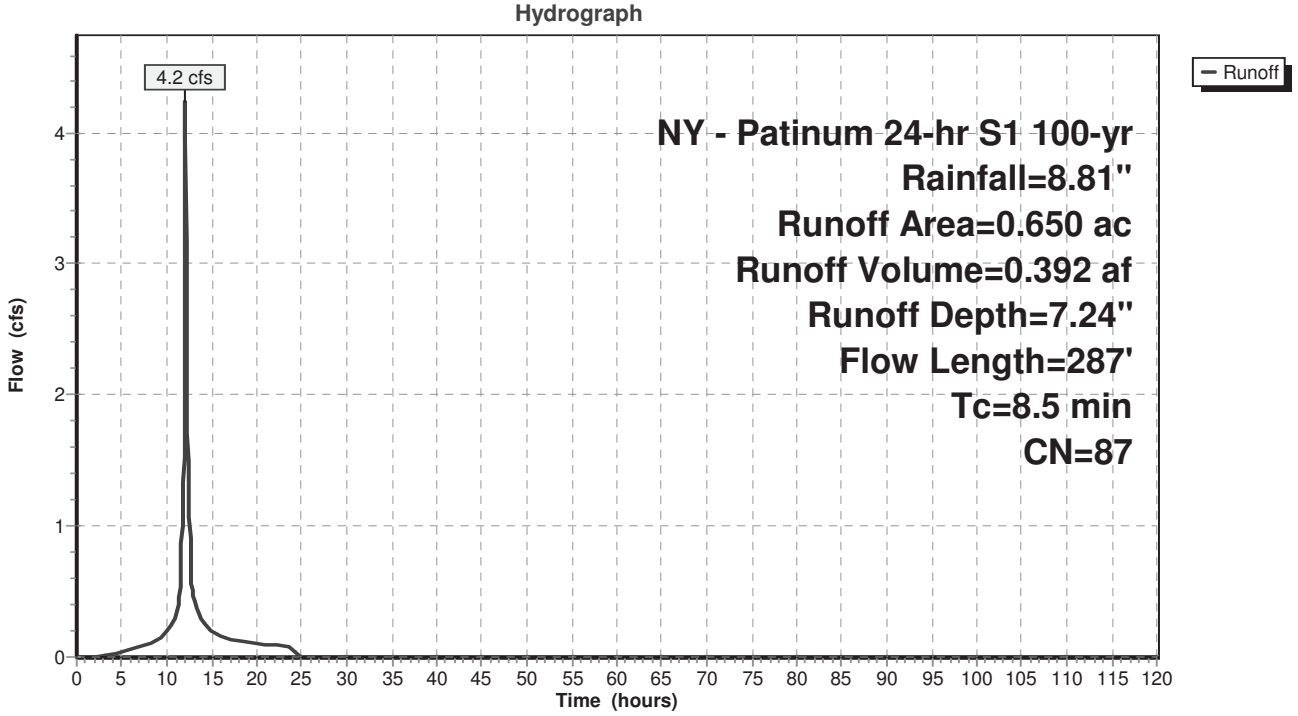
Runoff = 4.2 cfs @ 12.07 hrs, Volume= 0.392 af, Depth= 7.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - Patinum 24-hr S1 100-yr Rainfall=8.81"

Area (ac)	CN	Description
0.350	98	Paved parking, HSG C
0.300	74	>75% Grass cover, Good, HSG C
0.650	87	Weighted Average
0.300		46.15% Pervious Area
0.350		53.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	90	0.0300	0.20		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.31"
0.2	10	0.0250	0.97		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.31"
0.5	92	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.3	95	0.0100	4.91	3.86	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
8.5	287	Total			

Subcatchment 1.1S:



Summary for Subcatchment 1.2S:

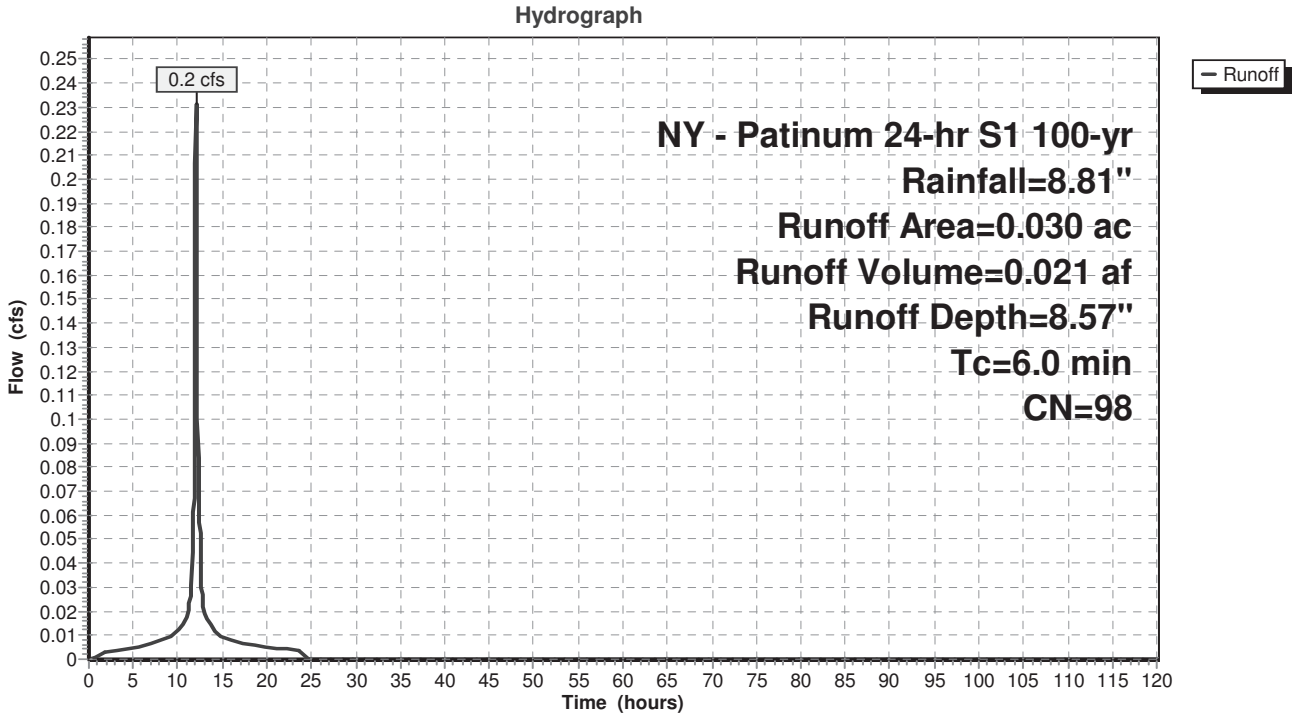
Runoff = 0.2 cfs @ 12.04 hrs, Volume= 0.021 af, Depth= 8.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - Patinum 24-hr S1 100-yr Rainfall=8.81"

Area (ac)	CN	Description
0.030	98	Paved parking, HSG C
0.030		100.00% Impervious Area

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

Subcatchment 1.2S:



Summary for Subcatchment 1.3S:

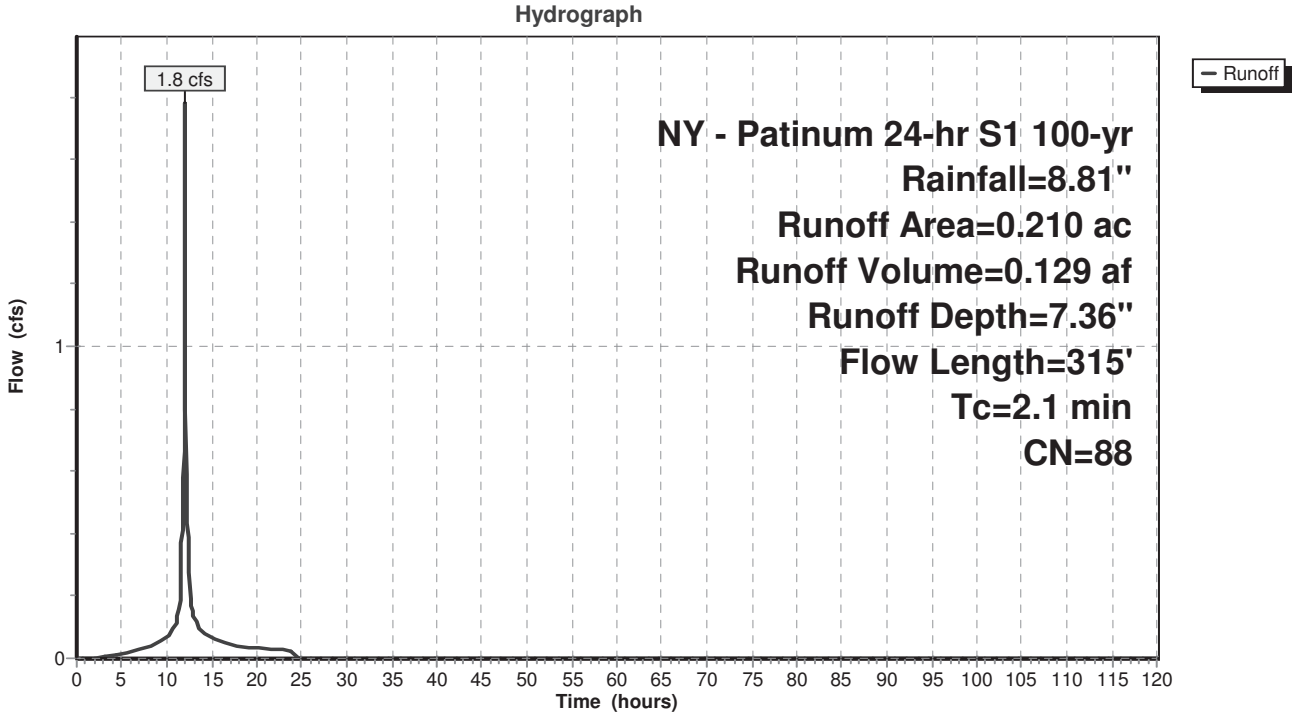
Runoff = 1.8 cfs @ 11.99 hrs, Volume= 0.129 af, Depth= 7.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - Patinum 24-hr S1 100-yr Rainfall=8.81"

Area (ac)	CN	Description
0.120	98	Paved parking, HSG C
0.090	74	>75% Grass cover, Good, HSG C
0.210	88	Weighted Average
0.090		42.86% Pervious Area
0.120		57.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	85	0.0150	1.21		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.31"
0.9	230	0.0080	4.40	3.45	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
2.1	315	Total			

Subcatchment 1.3S:



Summary for Subcatchment 1.4S:

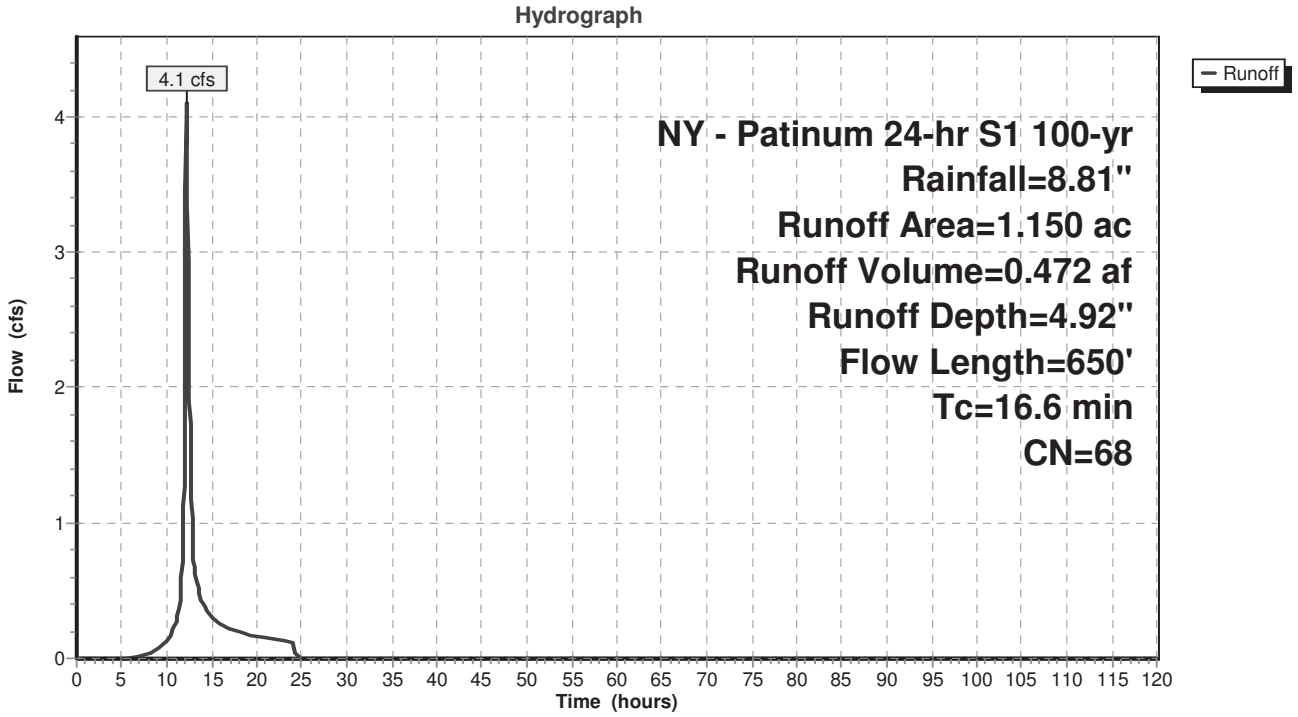
Runoff = 4.1 cfs @ 12.19 hrs, Volume= 0.472 af, Depth= 4.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - Patinum 24-hr S1 100-yr Rainfall=8.81"

Area (ac)	CN	Description
0.150	74	>75% Grass cover, Good, HSG C
0.790	70	Woods, Good, HSG C
0.210	55	Woods, Good, HSG B
1.150	68	Weighted Average
1.150		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	100	0.1000	0.15		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.31"
5.3	475	0.0900	1.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.1	35	0.0150	5.08	17.79	**Channel Flow,** Area= 3.5 sf Perim= 6.0' r= 0.58' n= 0.025 Earth, clean & winding
0.1	40	0.0100	4.91	3.86	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
16.6	650	Total			

Subcatchment 1.4S:



Summary for Subcatchment 1.5S:

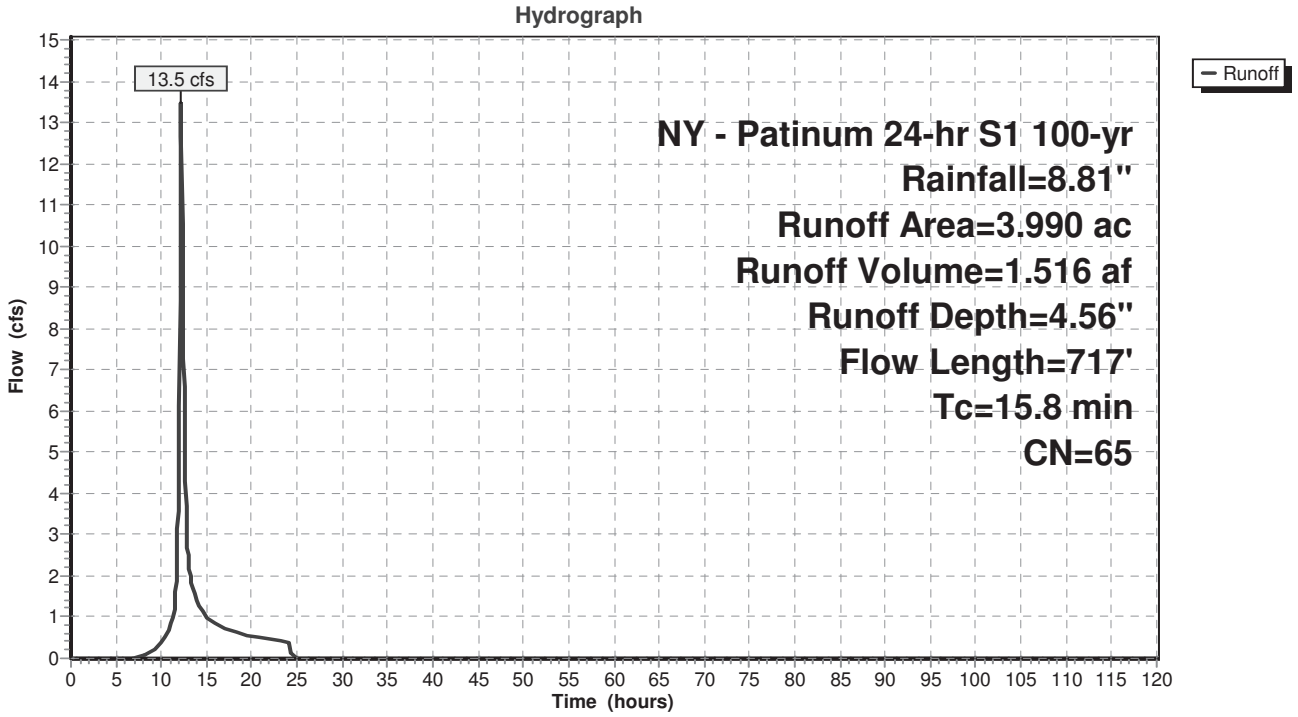
Runoff = 13.5 cfs @ 12.17 hrs, Volume= 1.516 af, Depth= 4.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
NY - Patinum 24-hr S1 100-yr Rainfall=8.81"

Area (ac)	CN	Description
0.040	98	Paved parking, HSG C
0.560	74	>75% Grass cover, Good, HSG C
1.880	70	Woods, Good, HSG C
1.510	55	Woods, Good, HSG B
3.990	65	Weighted Average
3.950		99.00% Pervious Area
0.040		1.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	100	0.1000	0.15		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.31"
2.5	215	0.0800	1.41		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.8	120	0.2300	2.40		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.2	60	0.1500	5.81		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.5	72	0.0100	2.66	7.99	**Channel Flow,** Area= 3.0 sf Perim= 10.0' r= 0.30' n= 0.025 Earth, clean & winding
0.7	150	0.0500	3.35		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
15.8	717	Total			

Subcatchment 1.5S:

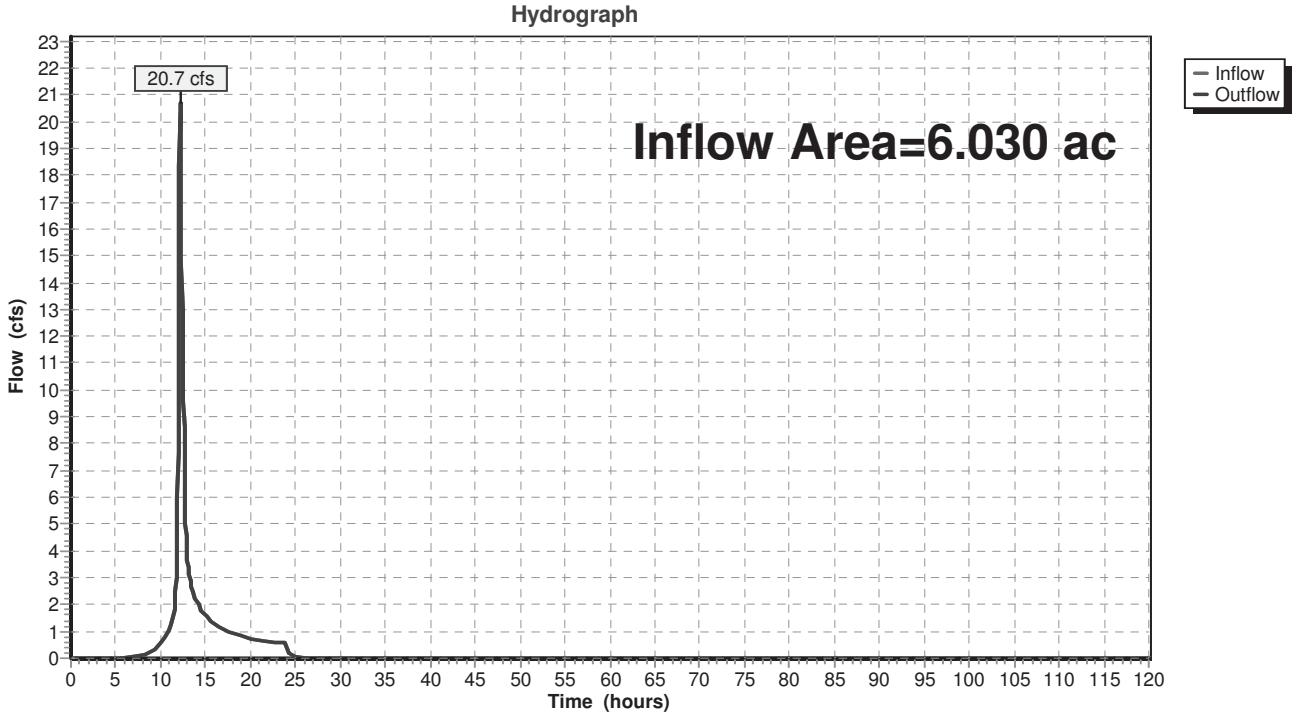


Summary for Reach DL 1: DESIGN LINE 1

Inflow Area = 6.030 ac, 8.96% Impervious, Inflow Depth = 4.61" for 100-yr event
Inflow = 20.7 cfs @ 12.17 hrs, Volume= 2.318 af
Outflow = 20.7 cfs @ 12.17 hrs, Volume= 2.318 af, Atten= 0%, Lag= 0.0 min

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

Reach DL 1: DESIGN LINE 1



Summary for Pond 1.1P: Underground Infiltration (I-4)

Inflow Area = 0.650 ac, 53.85% Impervious, Inflow Depth = 4.14" for 100-yr event
Inflow = 2.7 cfs @ 12.06 hrs, Volume= 0.224 af
Outflow = 1.2 cfs @ 12.21 hrs, Volume= 0.224 af, Atten= 55%, Lag= 8.9 min
Discarded = 0.1 cfs @ 8.25 hrs, Volume= 0.194 af
Primary = 1.1 cfs @ 12.21 hrs, Volume= 0.030 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Peak Elev= 112.97' @ 12.21 hrs Surf.Area= 0.047 ac Storage= 0.095 af

Plug-Flow detention time= 237.8 min calculated for 0.224 af (100% of inflow)
Center-of-Mass det. time= 237.9 min (1,015.9 - 778.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	110.00'	0.039 af	**30.50'W x 66.50'L x 3.54'H Field A** 0.165 af Overall - 0.066 af Embedded = 0.099 af x 40.0% Voids
#2A	110.50'	0.066 af	**Cultec R-330XLHD** x 54 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 6 rows
		0.106 af	Total Available Storage

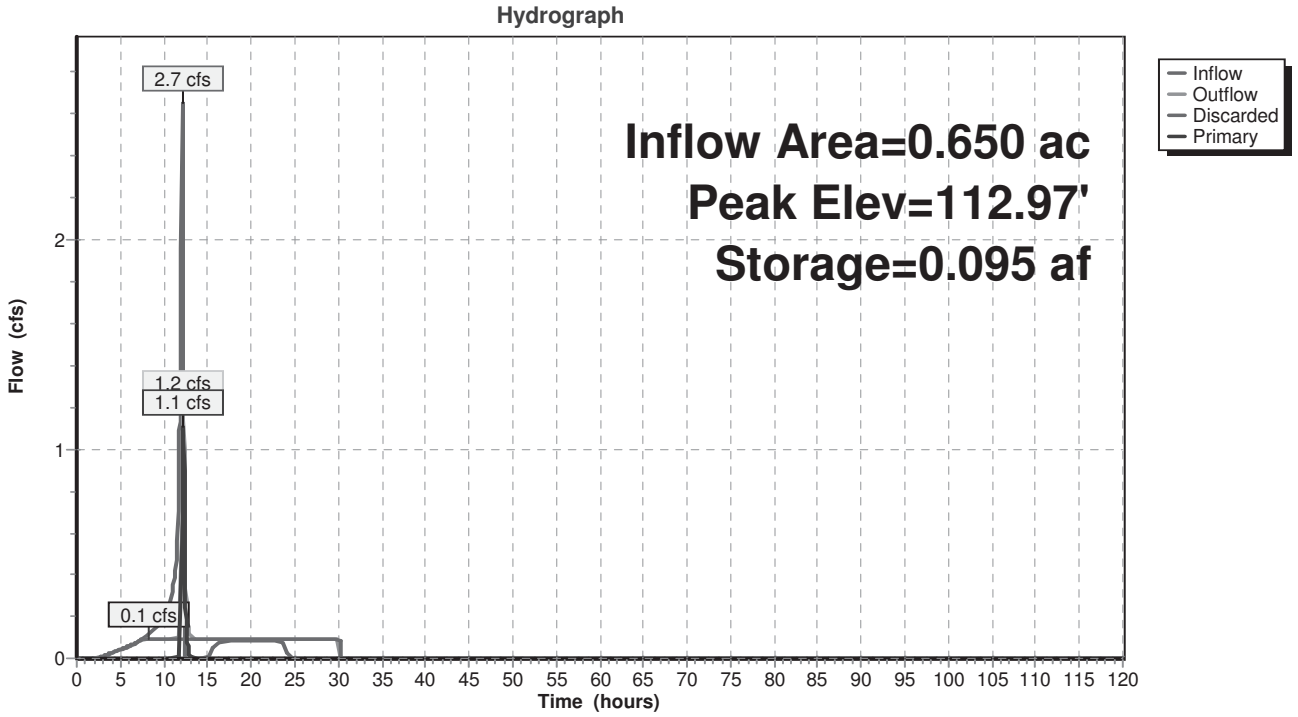
Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	112.20'	**8.0" Round Culvert** L= 16.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 112.20' / 111.10' S= 0.0687 '/' Cc= 0.900 n= 0.012, Flow Area= 0.35 sf
#2	Discarded	110.00'	**2.000 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=0.1 cfs @ 8.25 hrs HW=110.04' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.1 cfs)

Primary OutFlow Max=1.1 cfs @ 12.21 hrs HW=112.96' TW=112.36' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 1.1 cfs @ 3.14 fps)

Pond 1.1P: Underground Infiltration (I-4)



Summary for Pond 1.2P: Underground Infiltration (I-4)

Inflow Area = 0.030 ac,100.00% Impervious, Inflow Depth = 8.57" for 100-yr event
Inflow = 0.2 cfs @ 12.04 hrs, Volume= 0.021 af
Outflow = 0.1 cfs @ 12.47 hrs, Volume= 0.021 af, Atten= 76%, Lag= 25.9 min
Discarded = 0.0 cfs @ 7.80 hrs, Volume= 0.018 af
Primary = 0.0 cfs @ 12.47 hrs, Volume= 0.004 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Peak Elev= 113.63' @ 12.47 hrs Surf.Area= 0.006 ac Storage= 0.008 af

Plug-Flow detention time= 416.7 min calculated for 0.021 af (100% of inflow)
Center-of-Mass det. time= 416.9 min (1,157.1 - 740.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	111.50'	0.005 af	**10.83'W x 24.00'L x 3.21'H Field A** 0.019 af Overall - 0.006 af Embedded = 0.013 af x 40.0% Voids
#2A	112.00'	0.006 af	**Cultec R-280HD** x 6 Inside #1 Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap Row Length Adjustment= +1.00' x 6.07 sf x 2 rows
		0.011 af	Total Available Storage

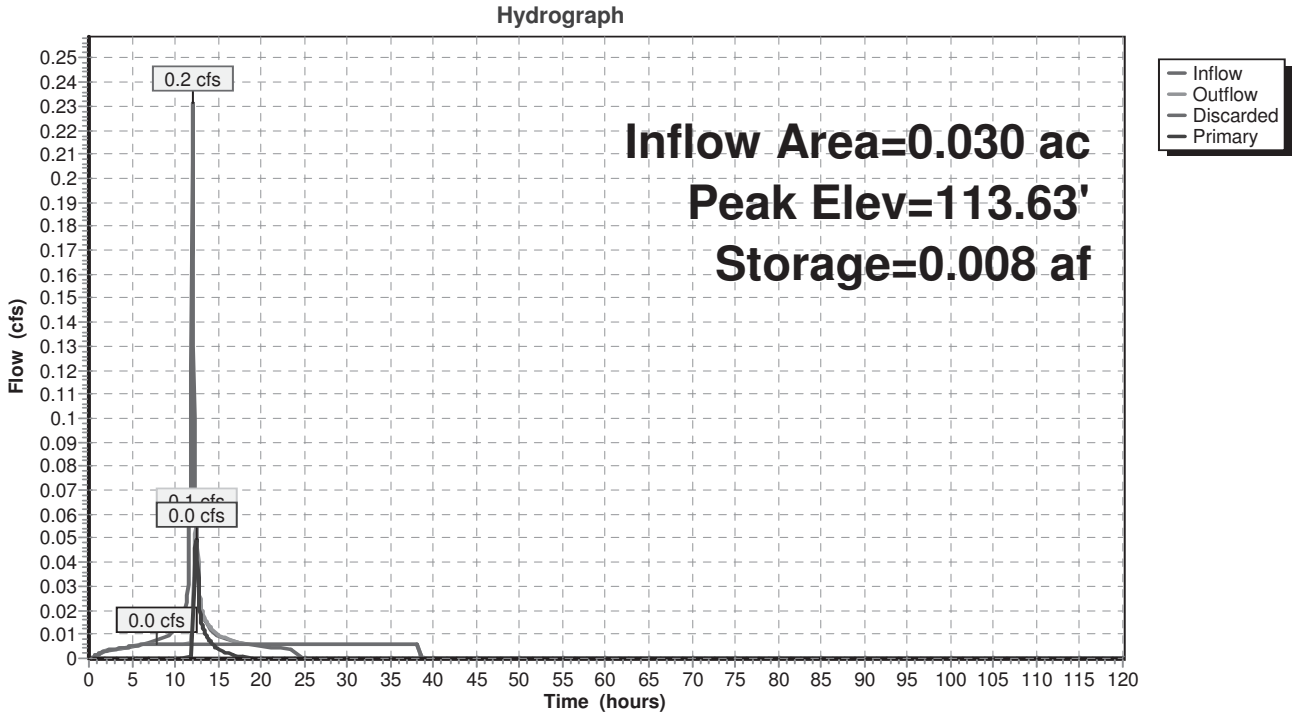
Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	113.50'	**6.0" Round Culvert** L= 65.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 113.50' / 111.50' S= 0.0308 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#2	Discarded	111.50'	**1.000 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=0.0 cfs @ 7.80 hrs HW=111.53' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 12.47 hrs HW=113.63' TW=111.41' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.0 cfs @ 1.22 fps)

Pond 1.2P: Underground Infiltration (I-4)



Summary for Pond 1.3P: Bioretention Basin (F-5)

Inflow Area = 0.210 ac, 57.14% Impervious, Inflow Depth = 7.36" for 100-yr event
Inflow = 1.8 cfs @ 11.99 hrs, Volume= 0.129 af
Outflow = 1.5 cfs @ 12.02 hrs, Volume= 0.129 af, Atten= 18%, Lag= 2.3 min
Primary = 0.0 cfs @ 7.40 hrs, Volume= 0.070 af
Secondary = 1.4 cfs @ 12.02 hrs, Volume= 0.059 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Peak Elev= 115.66' @ 12.02 hrs Surf.Area= 2,064 sf Storage= 1,321 cf

Plug-Flow detention time= 191.3 min calculated for 0.129 af (100% of inflow)
Center-of-Mass det. time= 191.3 min (974.7 - 783.4)

Volume	Invert	Avail.Storage	Storage Description
#1	115.00'	2,000 cf	**Custom Stage Data (Prismatic)** Listed below

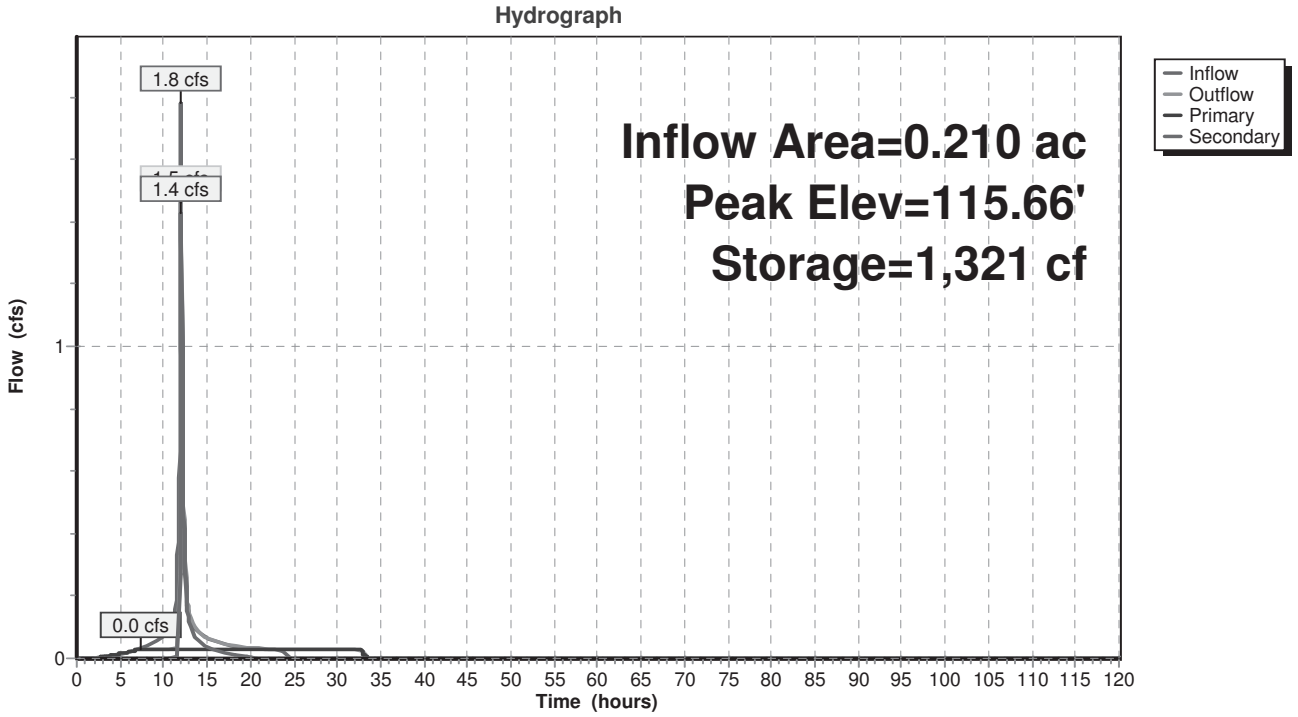
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
115.00	1,800	0	0
116.00	2,200	2,000	2,000

Device	Routing	Invert	Outlet Devices
#1	Secondary	115.50'	**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	111.40'	**8.0" Vert. Orifice/Grate** C= 0.600
#3	Device 2	115.00'	**0.0 cfs Exfiltration when above 115.00'** Phase-In= 0.01'

Primary OutFlow Max=0.0 cfs @ 7.40 hrs HW=115.01' TW=111.41' (Dynamic Tailwater)
↑**2=Orifice/Grate** (Passes 0.0 cfs of 3.0 cfs potential flow)
↑**3=Exfiltration** (Exfiltration Controls 0.0 cfs)

Secondary OutFlow Max=1.4 cfs @ 12.02 hrs HW=115.65' TW=112.84' (Dynamic Tailwater)
↑**1=Broad-Crested Rectangular Weir** (Weir Controls 1.4 cfs @ 1.10 fps)

Pond 1.3P: Bioretention Basin (F-5)



Summary for Pond DMH 2: DMH 2

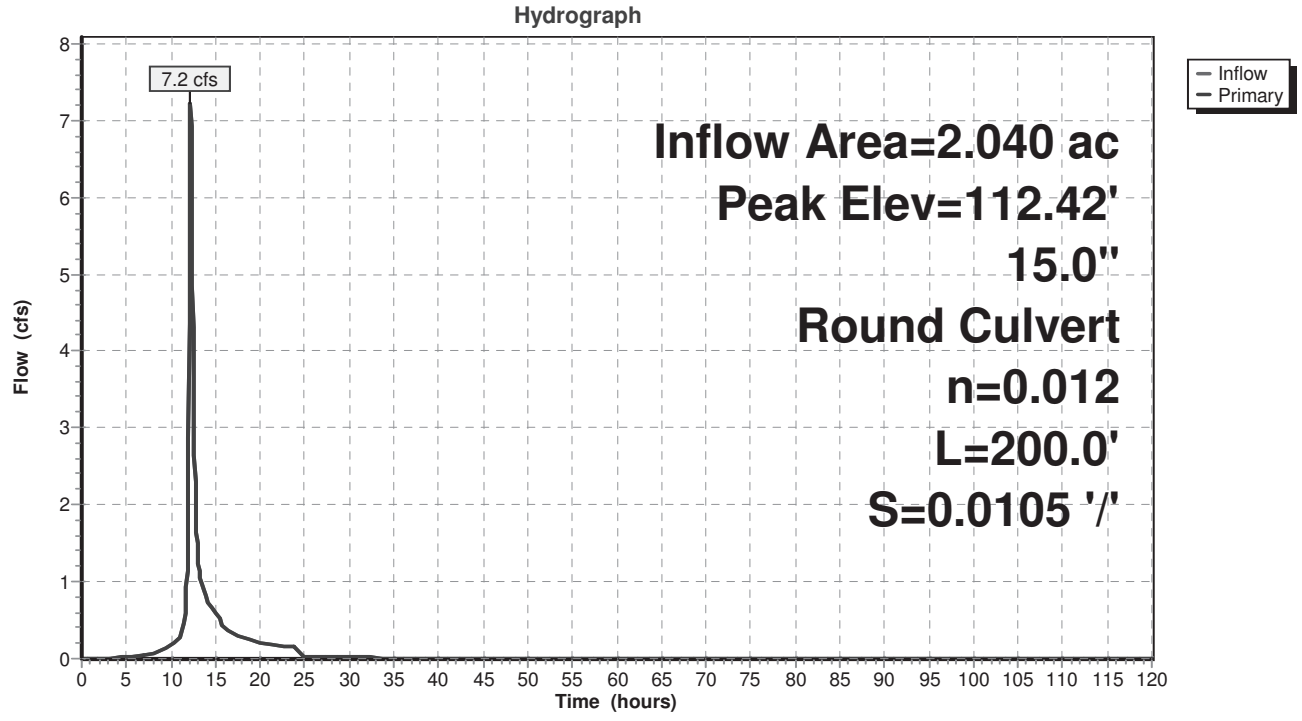
Inflow Area = 2.040 ac, 24.51% Impervious, Inflow Depth = 4.72" for 100-yr event
Inflow = 7.2 cfs @ 12.17 hrs, Volume= 0.802 af
Outflow = 7.2 cfs @ 12.17 hrs, Volume= 0.802 af, Atten= 0%, Lag= 0.0 min
Primary = 7.2 cfs @ 12.17 hrs, Volume= 0.802 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Peak Elev= 112.42' @ 12.17 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	110.30'	**15.0" Round Culvert** L= 200.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 110.30' / 108.20' S= 0.0105 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=7.2 cfs @ 12.17 hrs HW=112.40' TW=0.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 7.2 cfs @ 5.84 fps)

Pond DMH 2: DMH 2



Summary for Pond FS 3:

Inflow Area = 0.650 ac, 53.85% Impervious, Inflow Depth = 7.24" for 100-yr event
Inflow = 4.2 cfs @ 12.07 hrs, Volume= 0.392 af
Outflow = 4.2 cfs @ 12.07 hrs, Volume= 0.392 af, Atten= 0%, Lag= 0.0 min
Primary = 2.7 cfs @ 12.06 hrs, Volume= 0.224 af
Secondary = 1.7 cfs @ 12.09 hrs, Volume= 0.168 af

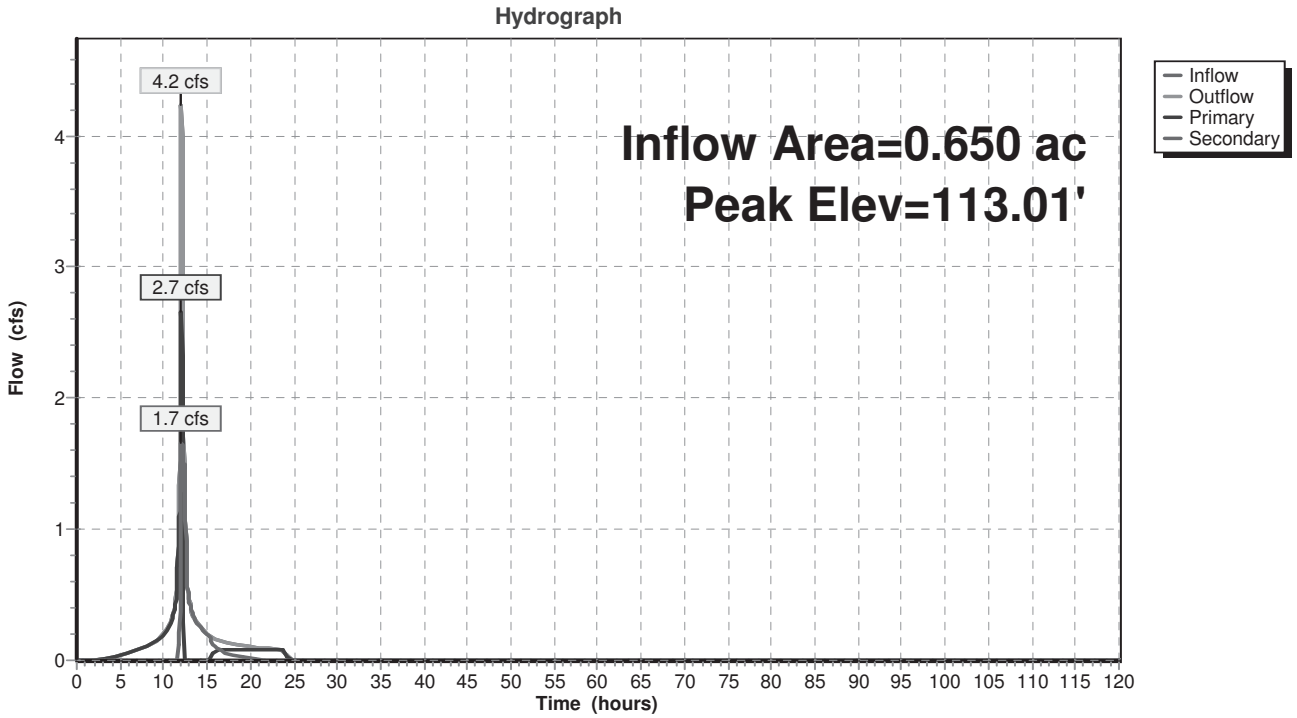
Routing by Dyn-Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Peak Elev= 113.01' @ 12.23 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	110.90'	**12.0" Round Culvert** L= 32.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 110.90' / 110.50' S= 0.0125 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Secondary	111.50'	**8.0" Round Culvert** L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 111.50' / 111.00' S= 0.0250 '/' Cc= 0.900 n= 0.012, Flow Area= 0.35 sf

Primary OutFlow Max=1.7 cfs @ 12.06 hrs HW=112.67' TW=112.47' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 1.7 cfs @ 2.14 fps)

Secondary OutFlow Max=1.3 cfs @ 12.09 hrs HW=112.77' TW=112.18' (Dynamic Tailwater)
└**2=Culvert** (Inlet Controls 1.3 cfs @ 3.70 fps)

Pond FS 3:



Summary for Pond OS1.3:

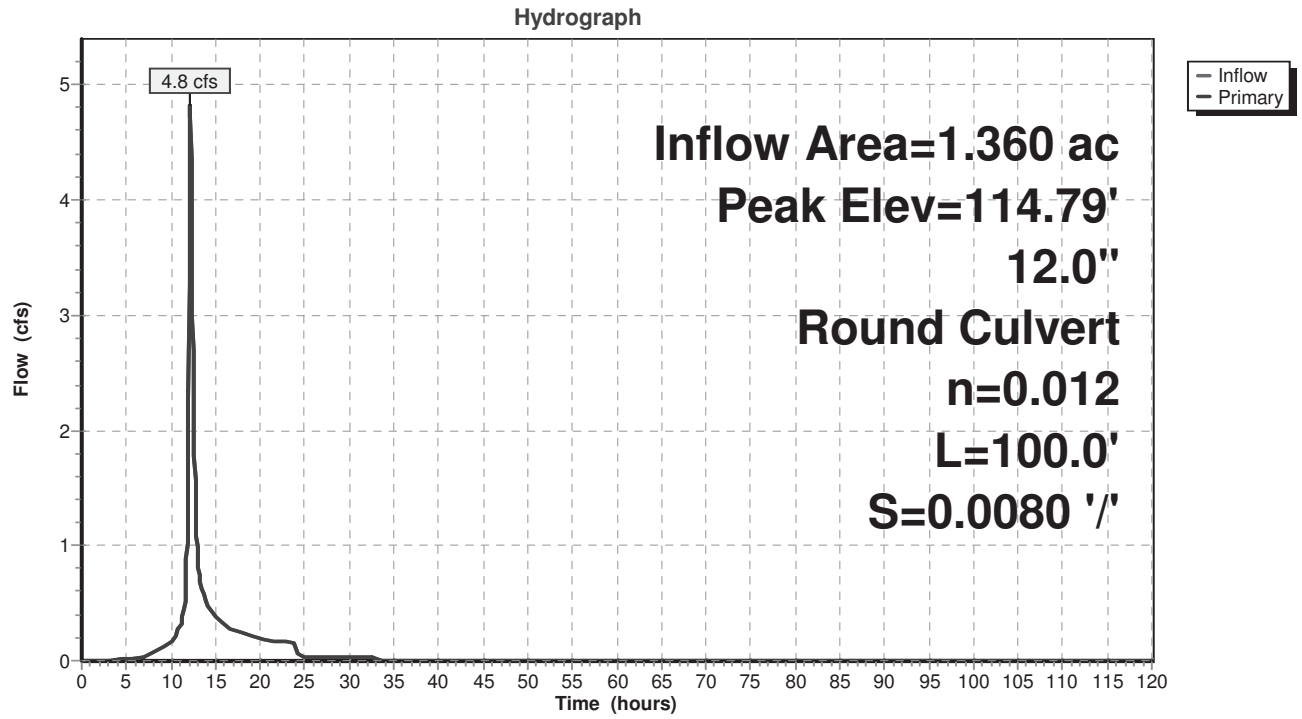
Inflow Area = 1.360 ac, 8.82% Impervious, Inflow Depth = 5.30" for 100-yr event
Inflow = 4.8 cfs @ 12.17 hrs, Volume= 0.601 af
Outflow = 4.8 cfs @ 12.17 hrs, Volume= 0.601 af, Atten= 0%, Lag= 0.0 min
Primary = 4.8 cfs @ 12.17 hrs, Volume= 0.601 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Peak Elev= 114.79' @ 12.18 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	111.30'	**12.0" Round Culvert** L= 100.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 111.30' / 110.50' S= 0.0080 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=4.7 cfs @ 12.17 hrs HW=114.70' TW=112.40' (Dynamic Tailwater)
1=Culvert (Outlet Controls 4.7 cfs @ 5.96 fps)

Pond OS1.3:



APPENDIX D

Project and Owner Information

Site Data:

Platinum Propane - Mahopac
1035 Route 6
Carmel, New York

Owner Information:
Hillside Property Holdings, LLC
2 Depot Plaza, Suite 401
Bedford Hills, NY 10507

Party Responsible for Implementation of the Stormwater Pollution Prevention Plan:

To be determined prior to construction

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

Inspector to be determined at time of construction

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 F

NYSDEC Infiltration System Calculations

Subcatchment 1.1S for Treatment in Infiltration System 1.1P

- Infiltration sizing to treat the NYSDEC WQv for the each of the contributing areas from the proposed improvements

Water Quality Volume (WQ_v)

WQv = 1,372 cubic feet

Surface Area of Infiltration Trenches:

$$A_p = \frac{V_w}{nd_t}$$

The following applies for the infiltration system:

V_w = WQv = 2,875 cf

n = 0.64 (weighted average of porosity for infiltration system, including the voids within the infiltration unit itself and the stone surrounding unit)

d_t = 2.2 ft (depth of infiltration system bottom of gravel to overflow pipe)

Therefore,

$$A_p = \frac{2{,}875 \text{ cf}}{0.64\ (2.2 \text{ ft})}$$

A_p = 2,041 square-feet required

The square footage of the infiltration system 1.1P as shown on the project plans and in Appendix C is 2,080 sf > 2,041 sf required, therefore the infiltration system has been sized in general accordance with the NYSDEC Design Manual.

Subcatchment 1.2S for Treatment in Infiltration System 1.2P

- Infiltration sizing to treat the NYSDEC WQv for the each of the contributing areas from the proposed improvements

Water Quality Volume (WQ_v)

WQv = 305 cubic feet

Surface Area of Infiltration Trenches:

$$A_p = \frac{V_w}{nd_t}$$

The following applies for the infiltration system:

V_w = WQv = 305 cf

n = 0.59 (weighted average of porosity for infiltration system, including the voids within the infiltration unit itself and the stone surrounding unit)

d_t = 2.0 ft (depth of infiltration system bottom of gravel to overflow pipe)

Therefore,

$$A_p = \frac{305 \text{ cf}}{0.59\ (2.0 \text{ ft})}$$

A_p = 258 square-feet required

The square footage of the infiltration system 1.2P as shown on the project plans and in Appendix C is 259 sf > 258 sf required, therefore the infiltration system has been sized in general accordance with the NYSDEC Design Manual.

SMP 1.1P - NYSDEC Bioretention Filter (Design F-4)

Project: Platinum
Project #: 22101.100
Date: 4/27/2022

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

1a. WQv Required for Downstream SMP = 0.029 ac-ft 1,263 c.f.

1b. Subcatchment % Imperviousness = 56.0% %

2. Required Practice Volume

2a. Total required volume = 75% of WQv (in filter and pretreatment) = 947 c.f.

2b. Total volume provided in filter = = 1,000 c.f.
(Calculated using Stage - Volume information in HydroCAD output. Volume calculated at elevation 115.5)

3. Pretreatment Requirements:
Pretreatment will be provided by a hydrodynamic separator

4. Required Filter Area:

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

df= 2.50 ft.
hf= 0.25 ft.
k= 0.50 ft./day
tf= 2.00 days
Required Filter Area= 1148 s.f.

4b. Provided Filter Area = 1,800 s.f.

4c. Volume provided in filter= 1,000 c.f.
(Calculated using Stage - Volume information in HydroCAD output. Volume calculated at elevation 115.5)

APPENDIX G

Hydrodynamic Separator Sizing

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
PHILIP D. MURPHY
Governor
SHEILA Y. OLIVER
Lt. Governor
DIVISION OF WATERSHED PROTECTION AND RESTORATION
BUREAU OF NJPDES STORMWATER PERMITTING & WATER QUALITY MANAGEMENT
P.O. Box 420 Mail Code 401-02B
Trenton, New Jersey 08625-0420
609-633-7021 / Fax: 609-777-0432
www.njstormwater.org
SHAWN M. LATOURETTE
Commissioner

July 19, 2021

Mr. Jeremy Fink
Pr. Product Development Engineer
Hydro International
94 Hutchins Drive
Portland, ME 04102

Re: MTD Lab Certification
First Defense® Optimum Vortex Separator by Hydro International
Online Installation

TSS Removal Rate 50%

Dear Mr. Fink:

The Stormwater Management rules under N.J.A.C. 7:8-5.2(f) and 5.2(j) allow the use of manufactured treatment devices (MTDs) for compliance with the design and performance standards at N.J.A.C. 7:8-5 if the pollutant removal rates have been verified by the New Jersey Corporation for Advanced Technology (NJCAT) and have been certified by the New Jersey Department of Environmental Protection (NJDEP). Bio Clean Environmental, Inc. has requested an MTD Laboratory Certification for the First Defense® Optimum Vortex Separator (FD Optimum).

The project falls under the "Procedure for Obtaining Verification of a Stormwater Manufactured Treatment Device from New Jersey Corporation for Advance Technology" dated January 25, 2013. The applicable protocol is the "New Jersey Laboratory Testing Protocol to Assess Total Suspended Solids Removal by a Hydrodynamic Sedimentation Manufactured Treatment Device" dated January 25, 2013.

NJCAT verification documents submitted to the NJDEP indicate that the requirements of the protocol have been met or exceeded. The NJCAT letter also included a recommended certification TSS removal rate and the required maintenance plan. The NJCAT Verification Report dated June 2021 with the Verification Appendix for this device is published online at http://www.njcat.org/verification-process/technology-verification-database.html.

The NJDEP certifies the use of the First Defense® Optimum Vortex Separator by Hydro International at a TSS removal rate of 50% when designed, operated and maintained in accordance with the information provided in the Verification Appendix and the following conditions:

1. The maximum treatment flow rate (MTFR) for the manufactured treatment device (MTD) is calculated using the New Jersey Water Quality Design Storm (1.25 inches in 2 hrs) in N.J.A.C. 7:8-5.5.

2. The FD Optimum shall be installed using the same configuration reviewed by NJCAT and shall be sized in accordance with the criteria specified in in item 6 below.

3. This FD Optimum cannot be used in series with another MTD or a media filter (such as a sand filter), to achieve an enhanced removal rate for total suspended solids (TSS) removal under N.J.A.C. 7:8-5.5.

4. Additional design criteria for MTDs can be found in Chapter 11.3 of the New Jersey Stormwater Best Management Practices (NJ Stormwater BMP) Manual which can be found online at www.njstormwater.org.

5. The maintenance plan for a site using this device shall incorporate, at a minimum, the maintenance requirements for the FD Optimum, which is attached to this document. However, it is recommended to review the maintenance manual at https://www.hydro-int.com/en/resources/first-defense-operations-maintenance-manual for any changes to the maintenance requirements.

6. Sizing Requirements:

   The example below demonstrates the sizing procedure for the FD Optimum:

   Example: A 0.25-acre impervious site is to be treated to 50% TSS removal using a FD Optimum. The impervious site runoff (Q) based on the New Jersey Water Quality Design Storm was determined to be 0.79 cfs.

   Maximum Treatment Flow Rate (MTFR) Evaluation:

   The site runoff (Q) was based on the following:
   time of concentration = 10 minutes
   i=3.2 in/hr (page 21, Fig. 5-10 of Chapter 5 of the NJ Stormwater BMP Manual)
   c=0.99 (curve number for impervious)
   Q=ciA=0.99x3.2x0.25=0.79 cfs

   Given the site runoff is 0.79 cfs and based on Table 1 below, the FD Optimum 3-ft model with a MTFR of 1.02 cfs would be the smallest model approved that could be used for this site that could remove 50% of the TSS from the impervious area without exceeding the MTFR.

   The sizing table corresponding to the available system models is noted below. Additional specifications regarding each model can be found in the Verification Appendix under Table A-1 and Table A-2.

Table 1. FD Optimum Model and MTFRs

FD Optimum Model	Manhole Diameter (ft)	MTFR (cfs)
3-ft	3	1.02
4-ft	4	1.81
5-ft	5	2.83
6-ft	6	4.07
7-ft	7	5.53
8-ft	8	7.23
10-ft	10	11.33

Be advised a detailed maintenance plan is mandatory for any project with a Stormwater BMP subject to the Stormwater Management Rules, N.J.A.C. 7:8. The plan must include all the items identified in the Stormwater Management Rules, N.J.A.C. 7:8-5.8. Such items include, but are not limited to, the list of inspection and maintenance equipment and tools, specific corrective and preventative maintenance tasks, indication of problems in the system, and training of maintenance personnel. Additional information can be found in Chapter 8: Maintenance and Retrofit of Stormwater Management Measures.

If you have any questions regarding the above information, please contact Lisa Schaefer of my office at lisa.schaefer@dep.nj.gov.

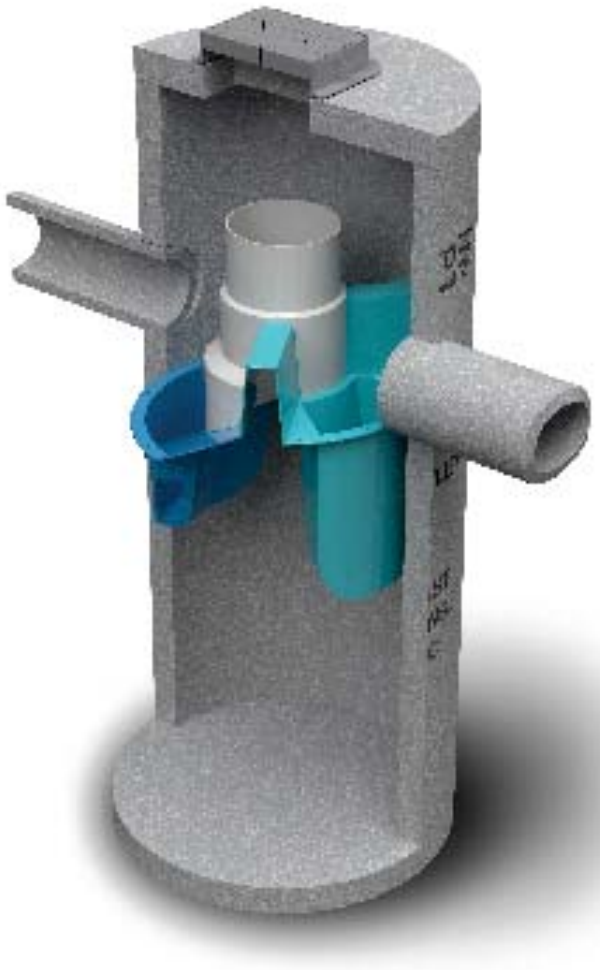
Sincerely,

Gabriel Mahon, Chief
Bureau of NJPDES Stormwater Permitting & Water Quality Management
Division of Watershed Protection and Restoration
New Jersey Department of Environmental Protection

Attachment: Maintenance Plan

cc: Richard Magee, NJCAT

Hydro International



Operation and Maintenance Manual

First Defense® High Capacity and First Defense®Optimum

Vortex Separator for Stormwater Treatment

Table of Contents

Hydro International (Stormwater), 94 Hutchins Drive, Portland ME 04102
Tel: (207) 756-6200 Fax: (207) 756-6212 Web: www.hydro-int.com

I. First Defense® by Hydro International

Introduction

The First Defense® is an enhanced vortex separator that combines an effective and economical stormwater treatment chamber with an integral peak flow bypass. It efficiently removes total suspended solids (TSS), trash and hydrocarbons from stormwater runoff without washing out previously captured pollutants. The First Defense® is available in several model configurations to accommodate a wide range of pipe sizes, peak flows and depth constraints.

The two product models described in this guide are the First Defense® High Capacity and the First Defense® Optimum; they are inspected and maintained identically.

Operation

The First Defense® operates on simple fluid hydraulics. It is self-activating, has no moving parts, no external power requirement and is fabricated with durable non-corrosive components. No manual procedures are required to operate the unit and maintenance is limited to monitoring accumulations of stored pollutants and periodic clean-outs. The First Defense® has been designed to allow for easy and safe access for inspection, monitoring and clean-out procedures. Neither entry into the unit nor removal of the internal components is necessary for maintenance, thus safety concerns related to confined-space-entry are avoided.

Pollutant Capture and Retention

The internal components of the First Defense® have been designed to optimize pollutant capture. Sediment is captured and retained in the base of the unit, while oil and floatables are stored on the water surface in the inner volume (Fig.1).

The pollutant storage volumes are isolated from the built-in bypass chamber to prevent washout during high-flow storm events. The sump of the First Defense® retains a standing water level between storm events. This ensures a quiescent flow regime at the onset of a storm, preventing resuspension and washout of pollutants captured during previous events.

Accessories such as oil absorbent pads are available for enhanced oil removal and storage. Due to the separation of the oil and floatable storage volume from the outlet, the potential for washout of stored pollutants between clean-outs is minimized.

Applications

- Stormwater treatment at the point of entry into the drainage line
- Sites constrained by space, topography or drainage profiles with limited slope and depth of cover
- Retrofit installations where stormwater treatment is placed on or tied into an existing storm drain line
- Pretreatment for filters, infiltration and storage

Advantages

- Inlet options include surface grate or multiple inlet pipes
- Integral high capacity bypass conveys large peak flows without the need for “offline” arrangements using separate junction manholes
- Long flow path through the device ensures a long residence time within the treatment chamber, enhancing pollutant settling
- Delivered to site pre-assembled and ready for installation

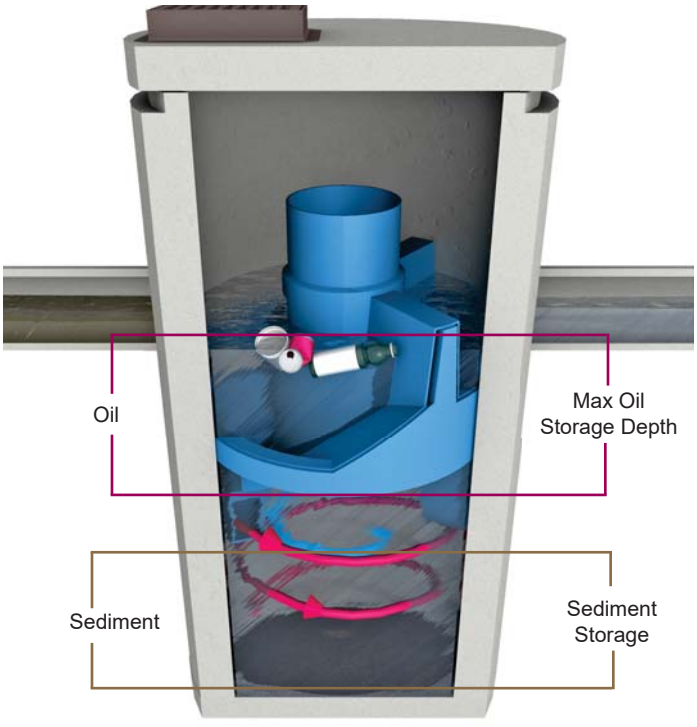


Fig.1 Pollutant storage volumes in the First Defense®.

II. Model Sizes & Configurations

The First Defense® inlet and internal bypass arrangements are available in several model sizes and configurations. The components have modified geometries allowing greater design flexibility to accommodate various site constraints.

All First Defense® models include the internal components that are designed to remove and retain total suspended solids (TSS), gross solids, floatable trash and hydrocarbons (Fig.2). First Defense® model sizes (diameter) are shown in Table 1.

III. Maintenance

First Defense® Components

1. **Built-In Bypass**
2. **Inlet Pipe**
3. **Inlet Chute**
4. **Floatables Draw-off Port**
5. **Outlet Pipe**
6. **Floatables Storage**
7. **Sediment Storage**
8. **Inlet Grate or Cover**

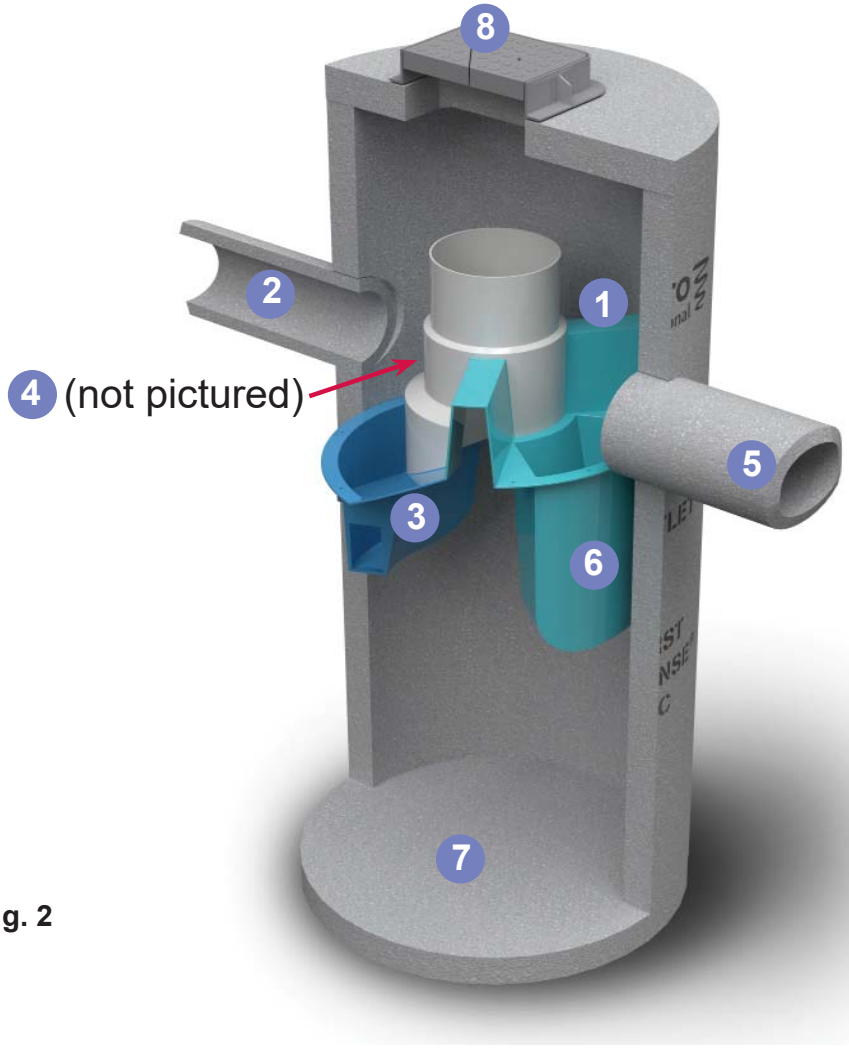


Fig. 2

Table 1

First Defense® Model Sizes
(ft / m) diameter
3 / 0.9
4 / 1.2
5 / 1.5
6 / 1.8
7 / 2.1
8 / 2.4
10 / 3.0

Overview

The First Defense® protects the environment by removing a wide range of pollutants from stormwater runoff. Periodic removal of these captured pollutants is essential to the continuous, long-term functioning of the First Defense®. The First Defense® will capture and retain sediment and oil until the sediment and oil storage volumes are full to capacity. When sediment and oil storage capacities are reached, the First Defense® will no longer be able to store removed sediment and oil.

The First Defense® allows for easy and safe inspection, monitoring and clean-out procedures. A commercially or municipally owned sump-vac is used to remove captured sediment and floatables. Access ports are located in the top of the manhole.

Maintenance events may include Inspection, Oil & Floatables Removal, and Sediment Removal. Maintenance events do not require entry into the First Defense®, nor do they require the internal components of the First Defense® to be removed. In the case of inspection and floatables removal, a vactor truck is not required. However, a vactor truck is required if the maintenance event is to include oil removal and/or sediment removal.

Maintenance Equipment Considerations

The internal components of the First Defense® have a centrally located circular shaft through which the sediment storage sump can be accessed with a sump vac hose. The open diameter of this access shaft is 15 inches in diameter (Fig.3). Therefore, the nozzle fitting of any vactor hose used for maintenance should be less than 15 inches in diameter.

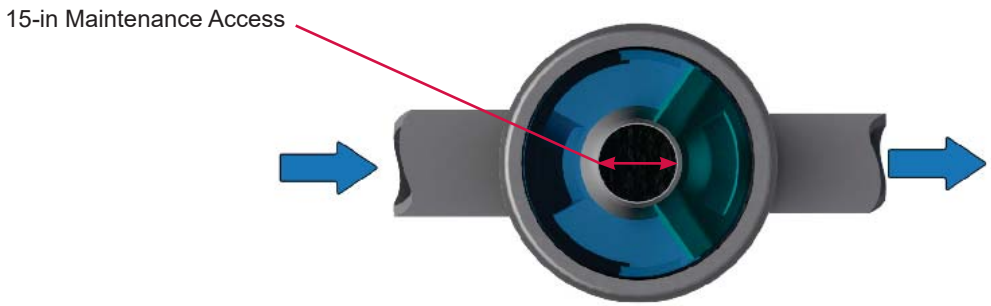


Fig.3 The central opening to the sump of the First Defense®is 15 inches in diameter.

Determining Your Maintenance Schedule

The frequency of clean out is determined in the field after installation. During the first year of operation, the unit should be inspected every six months to determine the rate of sediment and floatables accumulation. A simple probe such as a Sludge-Judge® can be used to determine the level of accumulated solids stored in the sump. This information can be recorded in the maintenance log (see page 9) to establish a routine maintenance schedule.

The vactor procedure, including both sediment and oil / flotables removal, for First Defense® typically takes less than 30 minutes and removes a combined water/oil volume of about 765 gallons.

Inspection Procedures

1. Set up any necessary safety equipment around the access port or grate of the First Defense® as stipulated by local ordinances. Safety equipment should notify passing pedestrian and road traffic that work is being done.

2. Remove the grate or lid to the manhole.

3. Without entering the vessel, look down into the chamber to inspect the inside. Make note of any irregularities. Fig.4 shows the standing water level that should be observed.

4. Without entering the vessel, use the pole with the skimmer net to remove floatables and loose debris from the components and water surface.

5. Using a sediment probe such as a Sludge Judge®, measure the depth of sediment that has collected in the sump of the vessel.

6. On the Maintenance Log (see page 9), record the date, unit location, estimated volume of floatables and gross debris removed, and the depth of sediment measured. Also note any apparent irregularities such as damaged components or blockages.

7. Securely replace the grate or lid.

8. Take down safety equipment.

9. Notify Hydro International of any irregularities noted during inspection.

Floatables and Sediment Clean Out

Floatables clean out is typically done in conjunction with sediment removal. A commercially or municipally owned sump-vac is used to remove captured sediment and floatables (Fig.4).

Floatables and loose debris can also be netted with a skimmer and pole. The access port located at the top of the manhole provides unobstructed access for a vactor hose to be lowered to the base of the sump.

Scheduling

- Floatables and sump clean out are typically conducted once a year during any season.

- Floatables and sump clean out should occur as soon as possible following a spill in the contributing drainage area.

Fig.4 Floatables are removed with a vactor hose

Recommended Equipment

- Safety Equipment (traffic cones, etc)
- Crow bar or other tool to remove grate or lid
- Pole with skimmer or net (if only floatables are being removed)
- Sediment probe (such as a Sludge Judge®)
- Vactor truck (flexible hose recommended)
- First Defense® Maintenance Log

Floatables and Sediment Clean Out Procedures

1. Set up any necessary safety equipment around the access port or grate of the First Defense® as stipulated by local ordinances. Safety equipment should notify passing pedestrian and road traffic that work is being done.

2. Remove the grate or lid to the manhole.

3. Without entering the vessel, look down into the chamber to inspect the inside. Make note of any irregularities.

4. Remove oil and floatables stored on the surface of the water with the vactor hose or with the skimmer or net

5. Using a sediment probe such as a Sludge Judge®, measure the depth of sediment that has collected in the sump of the vessel and record it in the Maintenance Log (page 9).

6. Once all floatables have been removed, drop the vactor hose to the base of the sump. Vactor out the sediment and gross debris off the sump floor

7. Retract the vactor hose from the vessel.

8. On the Maintenance Log provided by Hydro International, record the date, unit location, estimated volume of floatables and gross debris removed, and the depth of sediment measured. Also note any apparent irregularities such as damaged components, blockages, or irregularly high or low water levels.

9. Securely replace the grate or lid.

Maintenance at a Glance

Inspection	- Regularly during first year of installation - Every 6 months after the first year of installation
Oil and Floatables Removal	- Once per year, with sediment removal - Following a spill in the drainage area
Sediment Removal	- Once per year or as needed - Following a spill in the drainage area
NOTE: For most clean outs the entire volume of liquid does not need to be removed from the manhole. Only remove the first few inches of oils and floatables from the water surface to reduce the total volume of liquid removed during a clean out.	

First Defense® Installation Log

HYDRO INTERNATIONAL REFERENCE NUMBER:	
SITE NAME:	
SITE LOCATION:	
OWNER:	CONTRACTOR:
CONTACT NAME:	CONTACT NAME:
COMPANY NAME:	COMPANY NAME:
ADDRESS:	ADDRESS:
TELEPHONE:	TELEPHONE:
FAX:	FAX:

INSTALLATION DATE: / /

MODEL SIZE (CIRCLE ONE): [3-FT] [4-FT] [5-FT] [6-FT] [7-FT] [8-FT] [10-FT]

INLET (CIRCLE ALL THAT APPLY): GRATED INLET (CATCH BASIN) INLET PIPE (FLOW THROUGH)

Hydro International (Stormwater), 94 Hutchins Drive, Portland ME 04102
Tel: (207) 756-6200 Fax: (207) 756-6212 Web: www.hydro-int.com

First Defense® Inspection and Maintenance Log

Date	Initials	Depth of Floatables and Oils	Sediment Depth Measured	Volume of Sediment Removed	Site Activity and Comments

Hydro International (Stormwater), 94 Hutchins Drive, Portland ME 04102
Tel: (207) 756-6200 Fax: (207) 756-6212 Web: www.hydro-int.com

APPENDIX H

Draft Notice of Intent and MS4 SWPPP Acceptance Form

0644089821

DRAFT

NOTICE OF INTENT

New York State Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505

NYR _____ (for DEC use only)

Stormwater Discharges Associated with Construction Activity Under State Pollutant Discharge Elimination System (SPDES) General Permit # GP-0-20-001

All sections must be completed unless otherwise noted. Failure to complete all items may result in this form being returned to you, thereby delaying your coverage under this General Permit. Applicants must read and understand the conditions of the permit and prepare a Stormwater Pollution Prevention Plan prior to submitting this NOI. Applicants are responsible for identifying and obtaining other DEC permits that may be required.

-IMPORTANT-
RETURN THIS FORM TO THE ADDRESS ABOVE
OWNER/OPERATOR MUST SIGN FORM

Owner/Operator Information

Owner/Operator (Company Name/Private Owner Name/Municipality Name)
Hillside Property Holdings, LLC

Owner/Operator Contact Person Last Name (NOT CONSULTANT)
Covais

Owner/Operator Contact Person First Name
Joseph

Owner/Operator Mailing Address
2 Depot Plaza, Suite 401

City
Bedford Hills

State: NY
Zip: 10507-

Phone (Owner/Operator): 914-424-0722
Fax (Owner/Operator): ---

Email (Owner/Operator)
joe@goplatinumpropane.com

FED TAX ID
- (not required for individuals)

Project Site Information

Project/Site Name
Platinum Propane - Mahopac

Street Address (NOT P.O. BOX)
1035 Route 6, Carmel, NY

Side of Street
○ **North** ○ **South** ☑ **East** ○ **West**

City/Town/Village (THAT ISSUES BUILDING PERMIT)
Mahopac

State
NY

Zip

County

DEC Region
3

Name of Nearest Cross Street
Nicole Way

Distance to Nearest Cross Street (Feet)
600

Project In Relation to Cross Street
○ **North** ○ **South** ☑ **East** ○ **West**

Tax Map Numbers
Section-Block-Parcel
65.10-2-11

Tax Map Numbers

1. Provide the Geographic Coordinates for the project site in NYTM Units. To do this you **must** go to the NYSDEC Stormwater Interactive Map on the DEC website at:

www.dec.ny.gov/imsmaps/stormwater/viewer.htm

Zoom into your Project Location such that you can accurately click on the centroid of your site. Once you have located your project site, go to the tool boxes on the top and choose "i"(identify). Then click on the center of your site and a new window containing the X, Y coordinates in UTM will pop up. Transcribe these coordinates into the boxes below. For problems with the interactive map use the help function.

X Coordinates (Easting)
607000

Y Coordinates (Northing)
4583388

2. What is the nature of this construction project?

○ **New Construction**

☑ **Redevelopment with increase in impervious area**

○ **Redevelopment with no increase in impervious area**

3. Select the predominant land use for both pre and post development conditions.
SELECT ONLY ONE CHOICE FOR EACH

Pre-Development Existing Land Use

- ○ FOREST
- ○ PASTURE/OPEN LAND
- ○ CULTIVATED LAND
- ✔ SINGLE FAMILY HOME
- ○ SINGLE FAMILY SUBDIVISION
- ○ TOWN HOME RESIDENTIAL
- ○ MULTIFAMILY RESIDENTIAL
- ○ INSTITUTIONAL/SCHOOL
- ○ INDUSTRIAL
- ○ COMMERCIAL
- ○ ROAD/HIGHWAY
- ○ RECREATIONAL/SPORTS FIELD
- ○ BIKE PATH/TRAIL
- ○ LINEAR UTILITY
- ○ PARKING LOT
- ○ OTHER

Post-Development Future Land Use

- ○ SINGLE FAMILY HOME — Number of Lots
- ○ SINGLE FAMILY SUBDIVISION
- ○ TOWN HOME RESIDENTIAL
- ○ MULTIFAMILY RESIDENTIAL
- ○ INSTITUTIONAL/SCHOOL
- ○ INDUSTRIAL
- ✔ COMMERCIAL
- ○ MUNICIPAL
- ○ ROAD/HIGHWAY
- ○ RECREATIONAL/SPORTS FIELD
- ○ BIKE PATH/TRAIL
- ○ LINEAR UTILITY (water, sewer, gas, etc.)
- ○ PARKING LOT
- ○ CLEARING/GRADING ONLY
- ○ DEMOLITION, NO REDEVELOPMENT
- ○ WELL DRILLING ACTIVITY *(Oil, Gas, etc.)
- ○ OTHER

***Note**: for gas well drilling, non-high volume hydraulic fractured wells only

4. In accordance with the larger common plan of development or sale, enter the total project site area; the total area to be disturbed; existing impervious area to be disturbed (for redevelopment activities); and the future impervious area constructed within the disturbed area. (Round to the nearest tenth of an acre.)

Total Site Area	Total Area To Be Disturbed	Existing Impervious Area To Be Disturbed	Future Impervious Area Within Disturbed Area
12.	1.3	0.1	0.5

5. Do you plan to disturb more than 5 acres of soil at any one time? **Yes** ✔ **No**

6. Indicate the percentage of each Hydrologic Soil Group(HSG) at the site.

A	B	C	D
0 %	29 %	0 %	71 %

7. Is this a phased project? ○ **Yes** ✔ **No**

8. Enter the planned start and end dates of the disturbance activities.

Start Date	End Date
07/01/2022	11/01/2022

9. Identify the nearest surface waterbody(ies) to which construction site runoff will discharge.

Name: Town Wetland

9a. Type of waterbody identified in Question 9?

- [ ] Wetland / State Jurisdiction On Site (Answer 9b)
- [ ] Wetland / State Jurisdiction Off Site
- [x] Wetland / Federal Jurisdiction On Site (Answer 9b)
- [ ] Wetland / Federal Jurisdiction Off Site
- [ ] Stream / Creek On Site
- [ ] Stream / Creek Off Site
- [ ] River On Site
- [ ] River Off Site
- [ ] Lake On Site
- [ ] Lake Off Site
- [ ] Other Type On Site
- [ ] Other Type Off Site

9b. How was the wetland identified?

- [x] Regulatory Map
- [ ] Delineated by Consultant
- [ ] Delineated by Army Corps of Engineers
- [ ] Other (identify)

10. Has the surface waterbody(ies) in question 9 been identified as a 303(d) segment in Appendix E of GP-0-20-001? ○ **Yes** ● **No**

11. Is this project located in one of the Watersheds identified in Appendix C of GP-0-20-001? ☑ **Yes** ○ **No**

12. Is the project located in one of the watershed areas associated with AA and AA-S classified waters? ☑ **Yes** ○ **No**
If no, skip question 13.

13. Does this construction activity disturb land with no existing impervious cover and where the Soil Slope Phase is identified as an E or F on the USDA Soil Survey? ○ **Yes** ☑ **No**
If Yes, what is the acreage to be disturbed?

14. Will the project disturb soils within a State regulated wetland or the protected 100 foot adjacent area? ○ **Yes** ☑ **No**

15. Does the site runoff enter a separate storm sewer system (including roadside drains, swales, ditches, culverts, etc)? ○ **Yes** ◉ **No** ○ **Unknown**

16. What is the name of the municipality/entity that owns the separate storm sewer system?

N / A

17. Does any runoff from the site enter a sewer classified as a Combined Sewer? ○ **Yes** ◉ **No** ○ **Unknown**

18. Will future use of this site be an agricultural property as defined by the NYS Agriculture and Markets Law? ○ **Yes** ◉ **No**

19. Is this property owned by a state authority, state agency, federal government or local government? ○ **Yes** ◉ **No**

20. Is this a remediation project being done under a Department approved work plan? (i.e. CERCLA, RCRA, Voluntary Cleanup Agreement, etc.) ○ **Yes** ◉ **No**

21. Has the required Erosion and Sediment Control component of the SWPPP been developed in conformance with the current NYS Standards and Specifications for Erosion and Sediment Control (aka Blue Book)? ◉ **Yes** ○ **No**

22. Does this construction activity require the development of a SWPPP that includes the post-construction stormwater management practice component (i.e. Runoff Reduction, Water Quality and Quantity Control practices/techniques)? ● **Yes** ○ **No**
If No, skip questions 23 and 27-39.

23. Has the post-construction stormwater management practice component of the SWPPP been developed in conformance with the current NYS Stormwater Management Design Manual? ● **Yes** ○ **No**

24. The Stormwater Pollution Prevention Plan (SWPPP) was prepared by:

- [x] **Professional Engineer (P.E.)**
- [ ] **Soil and Water Conservation District (SWCD)**
- [ ] **Registered Landscape Architect (R.L.A)**
- [ ] **Certified Professional in Erosion and Sediment Control (CPESC)**
- [ ] **Owner/Operator**
- [ ] **Other**

SWPPP Preparer

Insite Engineering

Contact Name (Last, Space, First)

Pearson, P.E., Zachary

Mailing Address

3 Garrett Place

City

Carmel

State NY Zip 10512-

Phone 845-225-9690

Fax 845-225-9717

Email

zpearson@insite-eng.com

SWPPP Preparer Certification

I hereby certify that the Stormwater Pollution Prevention Plan (SWPPP) for this project has been prepared in accordance with the terms and conditions of the GP-0-20-001. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of this permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

First Name Zachary **MI** M

Last Name Pearson, P.E.

Signature

Date / /

25. Has a construction sequence schedule for the planned management practices been prepared? ☑ Yes ○ No

26. Select **all** of the erosion and sediment control practices that will be employed on the project site:

Temporary Structural

- Check Dams
- Construction Road Stabilization
- ✔ Dust Control
- Earth Dike
- Level Spreader
- Perimeter Dike/Swale
- Pipe Slope Drain
- Portable Sediment Tank
- Rock Dam
- Sediment Basin
- Sediment Traps
- ✔ Silt Fence
- ✔ Stabilized Construction Entrance
- ✔ Storm Drain Inlet Protection
- Straw/Hay Bale Dike
- Temporary Access Waterway Crossing
- Temporary Stormdrain Diversion
- Temporary Swale
- Turbidity Curtain
- Water bars

Biotechnical

- Brush Matting
- Wattling

Vegetative Measures

- Brush Matting
- Dune Stabilization
- Grassed Waterway
- ✔ Mulching
- Protecting Vegetation
- Recreation Area Improvement
- ✔ Seeding
- ✔ Sodding
- Straw/Hay Bale Dike
- Streambank Protection
- Temporary Swale
- ✔ Topsoiling
- Vegetating Waterways

Permanent Structural

- Debris Basin
- Diversion
- Grade Stabilization Structure
- ✔ Land Grading
- Lined Waterway (Rock)
- Paved Channel (Concrete)
- Paved Flume
- Retaining Wall
- Riprap Slope Protection
- ✔ Rock Outlet Protection
- Streambank Protection

Other

Post-construction Stormwater Management Practice (SMP) Requirements

Important: Completion of Questions 27-39 is not required if response to Question 22 is No.

27. Identify all site planning practices that were used to prepare the final site plan/layout for the project.

- [ ] **Preservation of Undisturbed Areas**
- [x] **Preservation of Buffers**
- [ ] **Reduction of Clearing and Grading**
- [ ] **Locating Development in Less Sensitive Areas**
- [ ] **Roadway Reduction**
- [x] **Sidewalk Reduction**
- [ ] **Driveway Reduction**
- [ ] **Cul-de-sac Reduction**
- [ ] **Building Footprint Reduction**
- [ ] **Parking Reduction**

27a. Indicate which of the following soil restoration criteria was used to address the requirements in Section 5.1.6("Soil Restoration") of the Design Manual (2010 version).

- (✓) All disturbed areas will be restored in accordance with the Soil Restoration requirements in Table 5.3 of the Design Manual (see page 5-22).

- ( ) Compacted areas were considered as impervious cover when calculating the **WQv Required**, and the compacted areas were assigned a post-construction Hydrologic Soil Group (HSG) designation that is one level less permeable than existing conditions for the hydrology analysis.

28. Provide the total Water Quality Volume (WQv) required for this project (based on final site plan/layout).

Total WQv Required

0.102 **acre-feet**

29. Identify the RR techniques (Area Reduction), RR techniques(Volume Reduction) and Standard SMPs with RRv Capacity in Table 1 (See Page 9) that were used to reduce the Total WQv Required(#28).

Also, provide in Table 1 the total impervious area that contributes runoff to each technique/practice selected. For the Area Reduction Techniques, provide the total contributing area (includes pervious area) and, if applicable, the total impervious area that contributes runoff to the technique/practice.

Note: Redevelopment projects shall use Tables 1 and 2 to identify the SMPs used to treat and/or reduce the WQv required. If runoff reduction techniques will not be used to reduce the required WQv, skip to question 33a after identifying the SMPs.

Table 1 - Runoff Reduction (RR) Techniques and Standard Stormwater Management Practices (SMPs)

	Total Contributing Area (acres)		Total Contributing Impervious Area(acres)
RR Techniques (Area Reduction)			
Conservation of Natural Areas (RR-1)		and/or	
Sheetflow to Riparian Buffers/Filters Strips (RR-2)		and/or	
Tree Planting/Tree Pit (RR-3)		and/or	
Disconnection of Rooftop Runoff (RR-4)		and/or	
RR Techniques (Volume Reduction)			
Vegetated Swale (RR-5)			
Rain Garden (RR-6)			
Stormwater Planter (RR-7)			
Rain Barrel/Cistern (RR-8)			
Porous Pavement (RR-9)			
Green Roof (RR-10)			
Standard SMPs with RRv Capacity			
Infiltration Trench (I-1)			
Infiltration Basin (I-2)			
Dry Well (I-3)			
Underground Infiltration System (I-4)			0.073
Bioretention (F-5)			0.029
Dry Swale (O-1)			
Standard SMPs			
Micropool Extended Detention (P-1)			
Wet Pond (P-2)			
Wet Extended Detention (P-3)			
Multiple Pond System (P-4)			
Pocket Pond (P-5)			
Surface Sand Filter (F-1)			
Underground Sand Filter (F-2)			
Perimeter Sand Filter (F-3)			
Organic Filter (F-4)			
Shallow Wetland (W-1)			
Extended Detention Wetland (W-2)			
Pond/Wetland System (W-3)			
Pocket Wetland (W-4)			
Wet Swale (O-2)			

Table 2 - Alternative SMPs (DO NOT INCLUDE PRACTICES BEING USED FOR PRETREATMENT ONLY)

Alternative SMP	Total Contributing Impervious Area(acres)
○ **Hydrodynamic**	
○ **Wet Vault**	
○ **Media Filter**	
○ **Other**	

Provide the name and manufacturer of the Alternative SMPs (i.e. proprietary practice(s)) being used for WQv treatment.

Name

Manufacturer

Note: Redevelopment projects which do not use RR techniques, shall use questions 28, 29, 33 and 33a to provide SMPs used, total WQv required and total WQv provided for the project.

30. Indicate the Total RRv provided by the RR techniques (Area/Volume Reduction) and Standard SMPs with RRv capacity identified in question 29.

Total RRv provided

0.085 **acre-feet**

31. Is the Total RRv provided (#30) greater than or equal to the total WQv required (#28).

○ **Yes** ☑ **No**

If Yes, go to question 36.
If No, go to question 32.

32. Provide the Minimum RRv required based on HSG.
[Minimum RRv Required = (P)(0.95)(Ai)/12, Ai=(S)(Aic)]

Minimum RRv Required

0.026 **acre-feet**

32a. Is the Total RRv provided (#30) greater than or equal to the Minimum RRv Required (#32)?

☑ **Yes** ○ **No**

If Yes, go to question 33.
Note: Use the space provided in question #39 to summarize the specific site limitations and justification for not reducing 100% of WQv required (#28). A detailed evaluation of the specific site limitations and justification for not reducing 100% of the WQv required (#28) must also be included in the SWPPP.
If No, sizing criteria has not been met, so NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

33. Identify the Standard SMPs in Table 1 and, if applicable, the Alternative SMPs in Table 2 that were used to treat the remaining total WQv(=Total WQv Required in 28 - Total RRv Provided in 30).

Also, provide in Table 1 and 2 the total impervious area that contributes runoff to each practice selected.

Note: Use Tables 1 and 2 to identify the SMPs used on Redevelopment projects.

33a. Indicate the Total WQv provided (i.e. WQv treated) by the SMPs identified in question #33 and Standard SMPs with RRv Capacity identified in question 29.

WQv Provided

0.017 **acre-feet**

Note: For the standard SMPs with RRv capacity, the WQv provided by each practice = the WQv calculated using the contributing drainage area to the practice - RRv provided by the practice. (See Table 3.5 in Design Manual)

34. Provide the sum of the Total RRv provided (#30) and the WQv provided (#33a).

.102

35. Is the sum of the RRv provided (#30) and the WQv provided (#33a) greater than or equal to the total WQv required (#28)? ◉ **Yes** ○ **No**

If Yes, go to question 36.
If No, sizing criteria has not been met, so NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

36. Provide the total Channel Protection Storage Volume (CPv) required and provided or select waiver (36a), if applicable.

CPv Required

0.116 **acre-feet**

CPv Provided

0.116 **acre-feet**

36a. The need to provide channel protection has been waived because:

○ Site discharges directly to tidal waters or a fifth order or larger stream.

○ Reduction of the total CPv is achieved on site through runoff reduction techniques or infiltration systems.

37. Provide the Overbank Flood (Qp) and Extreme Flood (Qf) control criteria or select waiver (37a), if applicable.

Total Overbank Flood Control Criteria (Qp)

Pre-Development

7.9 **CFS**

Post-development

6.6 **CFS**

Total Extreme Flood Control Criteria (Qf)

Pre-Development

20.8 **CFS**

Post-development

20.7 **CFS**

37a. The need to meet the Qp and Qf criteria has been waived because:

- ○ Site discharges directly to tidal waters or a fifth order or larger stream.
- ○ Downstream analysis reveals that the Qp and Qf controls are not required

38. Has a long term Operation and Maintenance Plan for the post-construction stormwater management practice(s) been developed? ☑ **Yes** ○ **No**

If Yes, Identify the entity responsible for the long term Operation and Maintenance

39. Use this space to summarize the specific site limitations and justification for not reducing 100% of WQv required(#28). (See question 32a) This space can also be used for other pertinent project information.

The areas around the proposed lean to buildings and vehicle storage are considered hotspots. As such, infiltration practices are not permitted and a bioretention filter has been proposed to treat these areas. Therefore, only 40% of the RRv can be provided for this portion of the project.

40. Identify other DEC permits, existing and new, that are required for this project/facility.

Air Pollution Control

Coastal Erosion

Hazardous Waste

Long Island Wells

Mined Land Reclamation

Solid Waste

Navigable Waters Protection / Article 15

Water Quality Certificate

Dam Safety

Water Supply

Freshwater Wetlands/Article 24

Tidal Wetlands

Wild, Scenic and Recreational Rivers

Stream Bed or Bank Protection / Article 15

Endangered or Threatened Species(Incidental Take Permit)

Individual SPDES

SPDES Multi-Sector GP NYR

Other

✔ None

41. Does this project require a US Army Corps of Engineers Wetland Permit? ○ **Yes** ◉ **No**
If Yes, Indicate Size of Impact. .

42. Is this project subject to the requirements of a regulated, traditional land use control MS4? ◉ **Yes** ○ **No**
(If No, skip question 43)

43. Has the "MS4 SWPPP Acceptance" form been signed by the principal executive officer or ranking elected official and submitted along with this NOI? ○ **Yes** ○ **No**

44. If this NOI is being submitted for the purpose of continuing or transferring coverage under a general permit for stormwater runoff from construction activities, please indicate the former SPDES number assigned. NYR

Owner/Operator Certification

I have read or been advised of the permit conditions and believe that I understand them. I also understand that, under the terms of the permit, there may be reporting requirements. I hereby certify that this document and the corresponding documents were prepared under my direction or supervision. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I further understand that coverage under the general permit will be identified in the acknowledgment that I will receive as a result of submitting this NOI and can be as long as sixty (60) business days as provided for in the general permit. I also understand that, by submitting this NOI, I am acknowledging that the SWPPP has been developed and will be implemented as the first element of construction, and agreeing to comply with all the terms and conditions of the general permit for which this NOI is being submitted.

Print First Name **MI**

Print Last Name

Owner/Operator Signature

Date / /

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

NYS Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505

MS4 Stormwater Pollution Prevention Plan (SWPPP) Acceptance Form

for

Construction Activities Seeking Authorization Under SPDES General Permit

*(NOTE: Attach Completed Form to Notice Of Intent and Submit to Address Above)

I. Project Owner/Operator Information
1. Owner/Operator Name: Hillside Property Holdings, LLC
2. Contact Person:
3. Street Address: 2 Depot Plaza, Suite 401
4. City/State/Zip: Bedford Hills, NY 10507
II. Project Site Information
5. Project/Site Name: Platinum Propane - Mahopac
6. Street Address: 1035 Route 6
7. City/State/Zip: Carmel, NY 10541
III. Stormwater Pollution Prevention Plan (SWPPP) Review and Acceptance Information
8. SWPPP Reviewed by: Town of Carmel
9. Title/Position:
10. Date Final SWPPP Reviewed and Accepted:
IV. Regulated MS4 Information
11. Name of MS4:
12. MS4 SPDES Permit Identification Number: NYR20A _____
13. Contact Person:
14. Street Address:
15. City/State/Zip:
16. Telephone Number:

MS4 SWPPP Acceptance Form - continued

V. Certification Statement - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative

I hereby certify that the final Stormwater Pollution Prevention Plan (SWPPP) for the construction project identified in question 5 has been reviewed and meets the substantive requirements in the SPDES General Permit For Stormwater Discharges from Municipal Separate Storm Sewer Systems (MS4s). Note: The MS4, through the acceptance of the SWPPP, assumes no responsibility for the accuracy and adequacy of the design included in the SWPPP. In addition, review and acceptance of the SWPPP by the MS4 does not relieve the owner/operator or their SWPPP preparer of responsibility or liability for errors or omissions in the plan.

Printed Name:

Title/Position:

Signature:

Date:

VI. Additional Information

(NYS DEC - MS4 SWPPP Acceptance Form - January 2015)

APPENDIX I

Pipe Sizing Calculations

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

DRAINAGE SYSTEM CALCULATIONS
Design Storm: 100-Year

PROJECT: **Platinum Propane - Mahopac**
JOB NUMBER: **22101.100**
BY: JWM DATE: 4-27-2022
CHK: ZMP DATE: 4-27-2022

STRUCTURE		IMPERVIOUS AREA			PERVIOUS AREA			CA	TIME OF CONC. (min.)			I	Q (cfs)		PIPE DESIGN				
FROM	TO	A (ac.)	C	CA	A (ac.)	C	CA		INLET	PIPE	TOTAL		DESIGN	CAP.	V(ft/s)	n	s (%)	L (ft)	DIA (in)
CB 6	CB 5	**0.10**	0.9	0.09	**0.15**	0.3	0.05	0.14	**7**	-	7	**8.6**	1.2	3.5	4.0	**0.012**	**0.8**	**22**	**12**
CB 5	CB 4	**0.10**	0.9	0.09	**0.15**	0.3	0.05	0.14	**7**	-	7	**8.6**	1.2	3.2	3.8	**0.012**	**0.7**	**22**	**12**
CB 4	FS 3	**0.15**	0.9	0.14	**0.15**	0.3	0.05	0.33	**<7**	-	7	**8.6**	2.8	3.9	5.4	**0.012**	**1.0**	**95**	**12**
FS 3	HDS 1.1	**Pipe Sized in HydroCAD**																	
HDS 1.1	SMP 1.1P	**Pipe Sized in HydroCAD**																	
SMP 1.1P	DMH 2	**Pipe Sized in HydroCAD**																	
FS 3	DMH 2	**Pipe Sized in HydroCAD**																	
CB 10	CB 9	**0.05**	0.9	0.05	**0.00**	0.3	0.00	0.05	**<6**	-	6	**9.1**	0.5	4.0	3.4	**0.012**	**1.1**	**28**	**12**
CB 9	CB 8	**0.05**	0.9	0.05	**0.00**	0.3	0.00	0.10	**<6**	-	6	**9.1**	0.9	3.2	3.5	**0.012**	**0.7**	**102**	**12**
CB 8	HDS 1.3	**0.03**	0.9	0.03	**0.00**	0.3	0.00	0.16	**<6**	-	6	**9.1**	1.5	3.5	4.2	**0.012**	**0.8**	**60**	**12**
HDS 1.3	ES 7	**0.00**	0.9	0.00	**0.00**	0.3	0.00	0.16	**<6**	-	6	**9.1**	1.5	4.2	4.9	**0.012**	**1.2**	**28**	**12**
CB 8A	CB 8	**0.03**	0.9	0.03	**0.00**	0.3	0.00	0.03	**<6**	-	6	**9.1**	0.3	3.9	2.9	**0.012**	**1.0**	**26**	**12**
SDI 11	OS 1.3	**0.00**	0.9	0.00	**1.15**	0.3	0.35	0.35	**14**	-	14	**7.4**	2.6	6.8	8.1	**0.012**	**3.1**	**40**	**12**
OS 1.3	DMH 2	**Pipe Sized in HydroCAD**																	
DMH 2	LS 1	**Pipe Sized in HydroCAD**																	
SMP 1.2P	DMH 2	**Pipe Sized in HydroCAD**																	

APPENDIX J

Draft Stormwater Maintenance Agreement

156 Attachment 2

Town of Carmel

Sample Stormwater Facility Maintenance Agreement
[Amended 4-8-2015 by L.L. No. 1-2015]

Whereas, the Town of Carmel, County of Putnam, State of New York and Platinum Propane - Mahopac want to enter into an agreement to provide for the long-term maintenance and continuation of stormwater control measures approved by the Municipality for the below named project, and

Whereas, the Municipality and the Platinum Propane – Mahopac desire that the stormwater control measures be built in accordance with the approved project plans and thereafter be maintained, cleaned, repaired, replaced and continued in perpetuity in order to ensure optimum performance of the components.

Therefore, the Municipality and the Platinum Propane - Mahopac agree as follows:

1. This agreement inures to the benefit of the Municipality and binds the Platinum Propane - Mahopac, its successors and assigns, to the maintenance provisions depicted in the approved project plans which are attached as Schedule A of this agreement.

2. The Platinum Propane – Mahopac shall maintain, clean, repair, replace and continue the stormwater control measures depicted in Schedule A as necessary to ensure optimum performance of the measures to design specifications. The stormwater control measures shall include, but shall not be limited to, the following: drainage ditches, swales, rain gardens, flow spreaders, drop inlets, pipes, and culverts.

3. The Platinum Propane – Mahopac shall be responsible for all expenses related to the maintenance of the stormwater control measures and shall establish a means for the collection and distribution of expenses among parties for any commonly owned facilities.

4. The Platinum Propane - Mahopac shall provide for the periodic inspection of the stormwater control measures, not less than once in every five-year period, to determine the condition and integrity of the measures. Such inspection shall be performed by a professional engineer licensed by the State of New York. The inspecting engineer shall prepare and submit to the Municipality, within 30 days of the inspection, a written report of the findings, including recommendations for those actions necessary for the continuation of the stormwater control measures.

5. The Platinum Propane - Mahopac shall not authorize, undertake or permit alteration, abandonment, modification or discontinuation of the stormwater control measures except in accordance with written approval of the Municipality.

6. The Platinum Propane - Mahopac shall undertake necessary repairs and replacement of the stormwater control measures at the direction of the Municipality or in accordance with the recommendations of the inspecting engineer.

7. The Platinum Propane - Mahopac shall provide to the Municipality, within 30 days of the date of this agreement, a security for the maintenance and continuation of the stormwater control measures in the form of a bond, letter of credit or escrow account.

8. This agreement shall be recorded in the Office of the County Clerk, County of Putnam, together with the deed for the subject premises.

9. In the event that the Municipality determines that the Platinum Propane - Mahopac has failed to construct or maintain the stormwater control measures in accordance with the project plan or has failed to undertake corrective action specified by the Municipality or by the inspecting engineer, the Municipality is authorized to undertake such steps as reasonably necessary for the preservation, continuation or maintenance of the stormwater control measures and to affix the expenses thereof as a lien against the property.

10. Nothing within this agreement shall be construed to impose any affirmative obligation or covenant of performance on the Municipality.

11. This agreement is effective _____.

Owner's Representative: _____.

Representative Signature: _____.

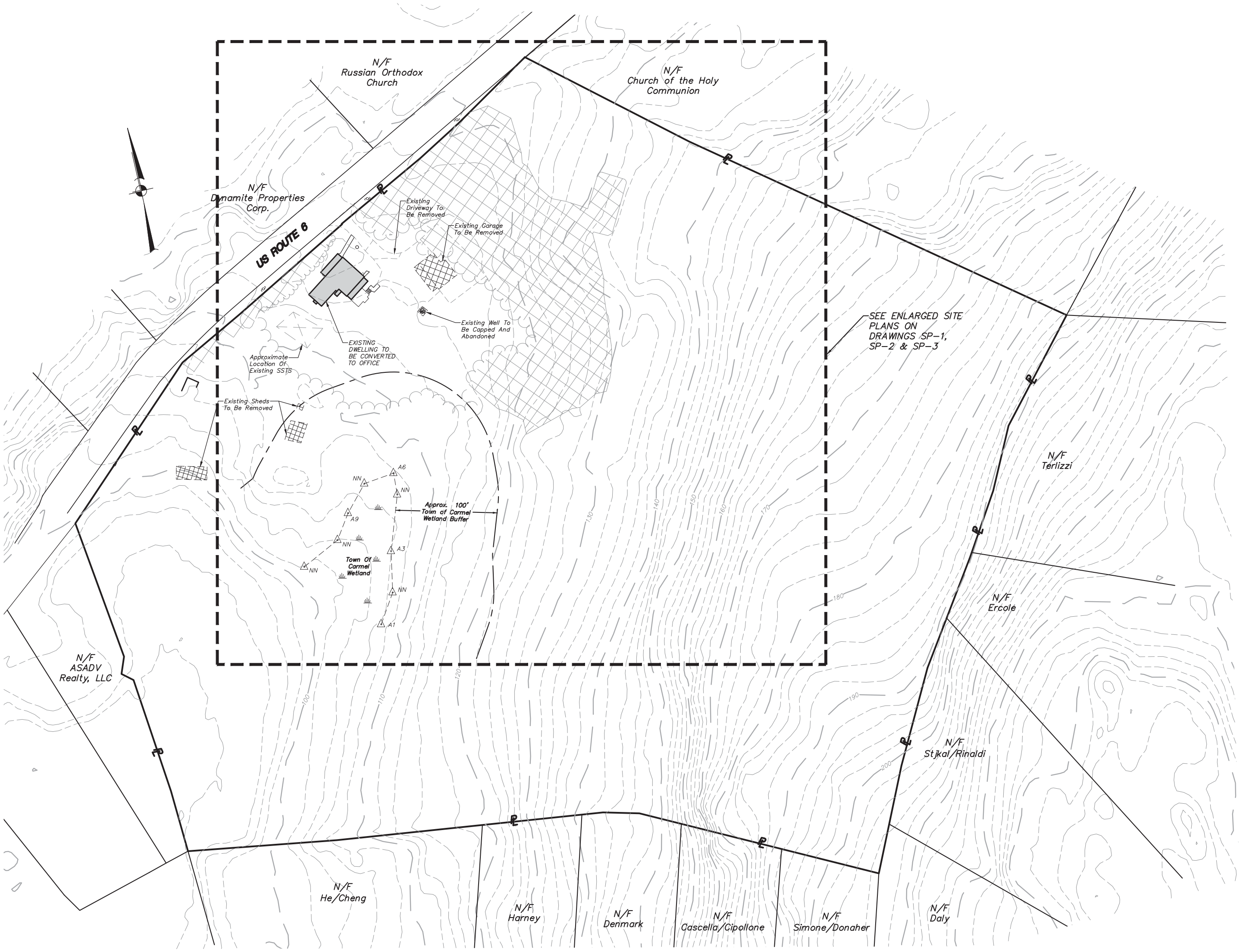
FIGURES

PROJECT:
PLATINUM PROPANE– MAHOPAC
1035 ROUTE 6, TOWN OF CARMEL, PUTNAM COUNTY, NEW YORK

DRAWING:
IMPERVIOUS AREA 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

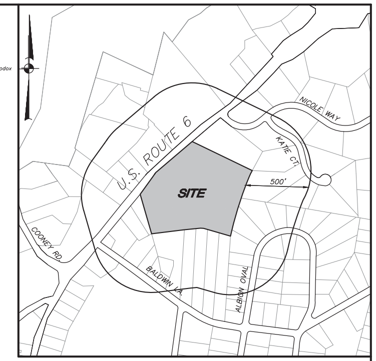
DATE:	4–20–22
SCALE:	1" = 500'
PROJECT NO.:	22101.100
FIGURE:	FIG–1



500' ADJOINERS:

TOWN OF CARMEL:

1. 1000 Rt. 6 Mahopac, LLC
2. ASADV Realty, LLC
3. Abdias C Arango-Lopez
4. Synod Of Bishops Of Russian Orthodox
5. Khaled Y Maani
6. 14 Nicole Way, Inc.
7. Ella M Rodriguez
8. Kathleen Edwards
9. Ellen Marie Zottoli
10. Nunzio Terlizzi
11. Carl Linquist
12. Vincent Censi
13. Nicandro Realty
14. Church Of The Holy Communion
15. Mike Guo
16. Matthew J Schiavi Jr.
17. Cesar O Valcarcel
18. William Silkowski
19. Deirdre Atton
20. Komal Garewal
21. Luisa DiNardi
22. Ana Bonilla
23. Dynamite Properties Corp.
24. Synod Of Bishops Of The
25. Lourdes L Valle
26. Carl W Bacon
27. Joseph Minnix
28. Debra Potter Revoc Trust
29. Salvatore F Palmiero
30. Susan Stark
31. Thomas M Daly
32. Christopher J Mulholland
33. Jinette Grullon
34. John & Joanne Ercole
35. Laura S Smith
36. Timothy L Denmark
37. Danielle M Canora
38. Charles Dolson
39. Richard Sestito
40. Robert Stejskal
41. Mary Lou DeSiervi
42. Melanie Cordero
43. Qi Liang Chen
44. Joseph Depace
45. Michael Simone
46. Mahopac Drive In Theatre
47. Barry Rosolen
48. Danielle Lemmey
49. Qing He
50. Ryan Harney
51. Denis J Clifford
52. Patricia Simone
53. Michael Caruso
54. Lemonbean LLC



LOCATION MAP SCALE: 1" = 500'±

OWNER/APPLICANT:

Hillside Property Holdings, LLC
2 Depot Plaza, Suite 401
Bedford Hills, NY 10507

SITE DATA:

Zone: C-Commercial
Total Acreage 12.0 AC
Tax Map No.: 65.10-2-11

GENERAL NOTES:

1. Boundary information shown hereon is taken from field survey taken by Insite Engineering, Surveying, & Landscape Architecture, P.C. on February 16, 2022.
2. Site features shown hereon are taken from a survey entitled, "Topographic Survey Prepared for Nicandro Realty Co.,Inc." by Edward T. Gannon, P.L.S., dated October 17, 2019.
3. Topogaphy shown hereon is taken from the NYS GIS Clearinghouse.
4. Wetland flags were placed by Jim Bates of Ecological Analysis and field surveyed by Insite Engineering Surveying & Landscape Architecture P.C. on February 16, 2022.
5. Tree and brush line shown hereon are taken from field observation and orthoimagery.
6. Curbs, sidewalks, manholes, guiderails, and drainage shall conform to the requirements of Chapter 128 of the Town of Carmel Code.

LEGEND

- EXISTING PROPERTY LINE
- EXISTING BUILDING
- EXISTING BUILDING TO BE REMOVED
- EXISTING WETLAND
- EXISTING WETLAND FLAGS
- EXISTING WETLAND BUFFER
- 100 EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- 698.6 EXISTING SPOT GRADE
- EXISTING UTILITY POLE
- EXISTING WELL
- EXISTING SSTS
- EXISTING BRUSH LINE
- EXISTING TREELINE
- EXISTING TREELINE TO BE REMOVED

GRAPHIC SCALE

0 25 50 100

(IN FEET)
1 inch = 50 ft.

ALTERATION OF THIS DOCUMENT, UNLESS UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, IS A VIOLATION OF SECTION 7209 OF ARTICLE 145 OF THE EDUCATION LAW.

NO.	DATE	REVISION	BY
1	5-2-22	REVISED PER PLANNING BOARD COMMENTS	JLT

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:

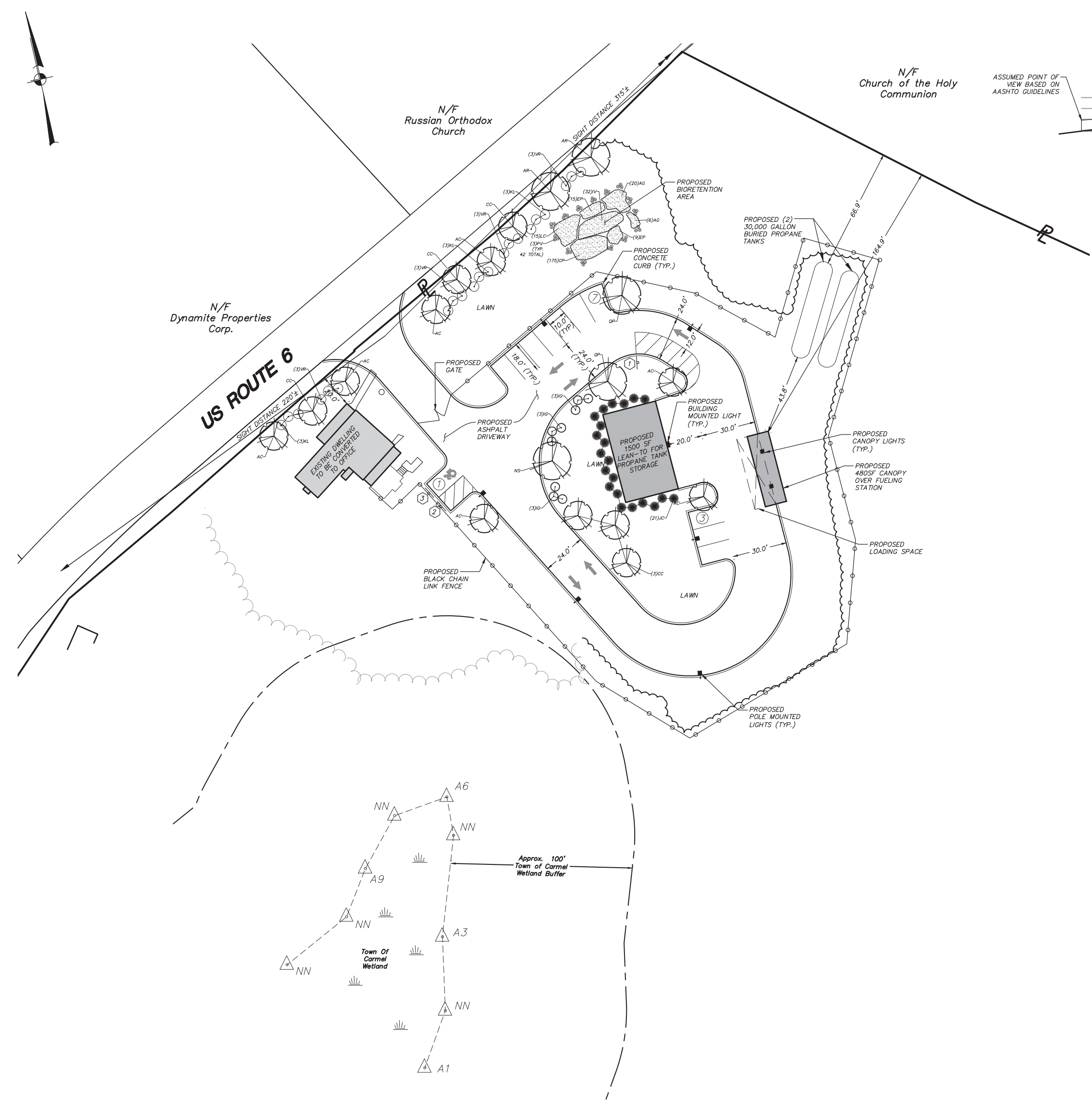
PLATINUM PROPANE - MAHOPAC

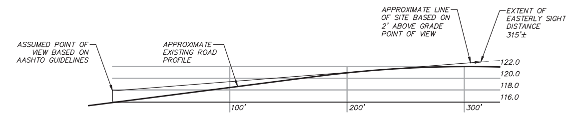
1035 ROUTE 6, TOWN OF CARMEL, PUTNAM COUNTY, NEW YORK

DRAWING:

EXISTING CONDITONS PLAN

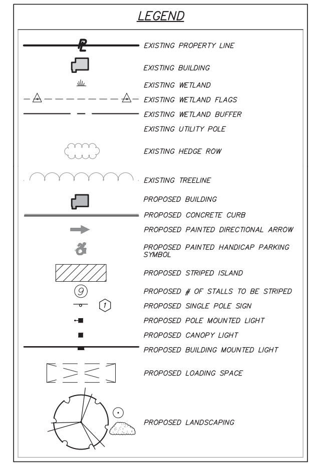
PROJECT NUMBER	22101.100	PROJECT MANAGER	Z.M.P.	DRAWING NO.	SHEET
DATE	3-30-22	DRAWN BY	J.L.T.	EX-1	1/7
SCALE	1" = 50'	CHECKED BY	A.D.T.		





EASTERLY SIGHT DISTANCE PROFILE

SCALE: H: 1" = 50'
V: 1" = 10'
Note: Approximate existing road profile generated from topography taken from the NYSGIS Clearinghouse.



PLANT LIST

KEY	QTY.	BOTANICAL/COMMON NAME	SIZE	ROOT/SPACING
		SHADE TREE		
AR	3	Acer rubrum/ Red Maple 3	1 1/2" CAL	B&B
NS	1	Nyssa sylvatica/ Black Tupelo 1	1 1/2" CAL	B&B
QP	2	Quercus palustris/ Pin Oak 2	1 1/2" CAL	B&B
		FLOWERING TREES		
AC	7	Amelanchier arborea/ Serviceberry 7	1 1/4" CAL	B&B
CC	6	Cercis canadensis/ Eastern Redbud 6	1 1/4" CAL	B&B
		SHRUBS		
IG	9	Ilex glabra compacta / Compact Inkberry 9		#3 CONT.
JC	21	Juniperus chinensus/ Seagreen Juniper 20		#5 CONT.
KL	9	Kalmia latifolia / Mountain Laurel 9		#3 CONT.
VR	12	Viburnum rhytidophyllum/ Leatherleaf Viburnum 12		#3 CONT.
		BIORETENTION PLANTINGS		
AG	26	Andropogon gerardii/ Big Bluestem 26		PLUG/3'
CP	175	Carex pennsylvanica/ Pennsylvania Sedge 175		PLUG/1'
EP	24	Echinacea purpurea/ Purple Coneflower 24		PLUG/3'
IV	32	Iris versicolor/ Northern Blueflag 32		PLUG/3'
LC	15	Lobelia cardinalis/ Cardinal Flower 15		PLUG/3'
PC	42	Panicum virgatum/ Switchgrass 42		#1 CONT./AS SHOWN

C-ZONE REQUIREMENTS

	REQUIRED/ PERMITTED	PROPOSED
Minimum Lot Area:	40,000 s.f.	522,598 s.f.
Minimum Width:	200'	729'
Minimum Depth:	200'	722'
Minimum Yard Setbacks:		
Front:	40'	20'
Side:	25'	165'
Rear:	30'	436'
Maximum Building Height:	60'	<60'
Minimum Required Floor Area:	5,000 s.f.	1,650± s.f.*
Maximum Lot Coverage:	40%	0.7%

* Pre-existing nonconforming condition. Variance Required.

PARKING SUMMARY

OFFICE USE
1 SPACE PER 200 S.F. @ 1,650 S.F. = 9 SPACES

WHOLESALE/WAREHOUSE/STORAGE/HEAVY COMMERCIAL USE
1 SPACE PER 1,000 S.F. @ 1,500 S.F. = 2 SPACES

TOTAL PROVIDED SPACES = 11 SPACES

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 #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.

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.

SIGN DATA TABLE

LOCATION NO.	TEXT	M.U.T.C.D. NUMBER	SIZE OF SIGN (s.f.)	DESCRIPTION
1	DO NOT ENTER	R5–1C	30" x 30"	White on Red
2	NO PARKING ANY TIME	R7–1	12" x 18"	Red on White
3	RESERVED PARKING	NY R7–8*	12" x 18"	Green on White Blue Symbol
	VAN ACCESSIBLE	R7–8P	12" x 6"	Green on White

NOTES:

1. The Town of Carmel Wetland Inspector to verify all plantings.
2. All planting shall be installed in accordance with Chapter 142 of the Town of Carmel Code.

GRAPHIC SCALE
0 15 30 60
(IN FEET)
1 inch = 30 ft.

NO.	DATE	REVISION	BY
1	5–2–22	REVISED PER PLANNING BOARD COMMENTS	JLT

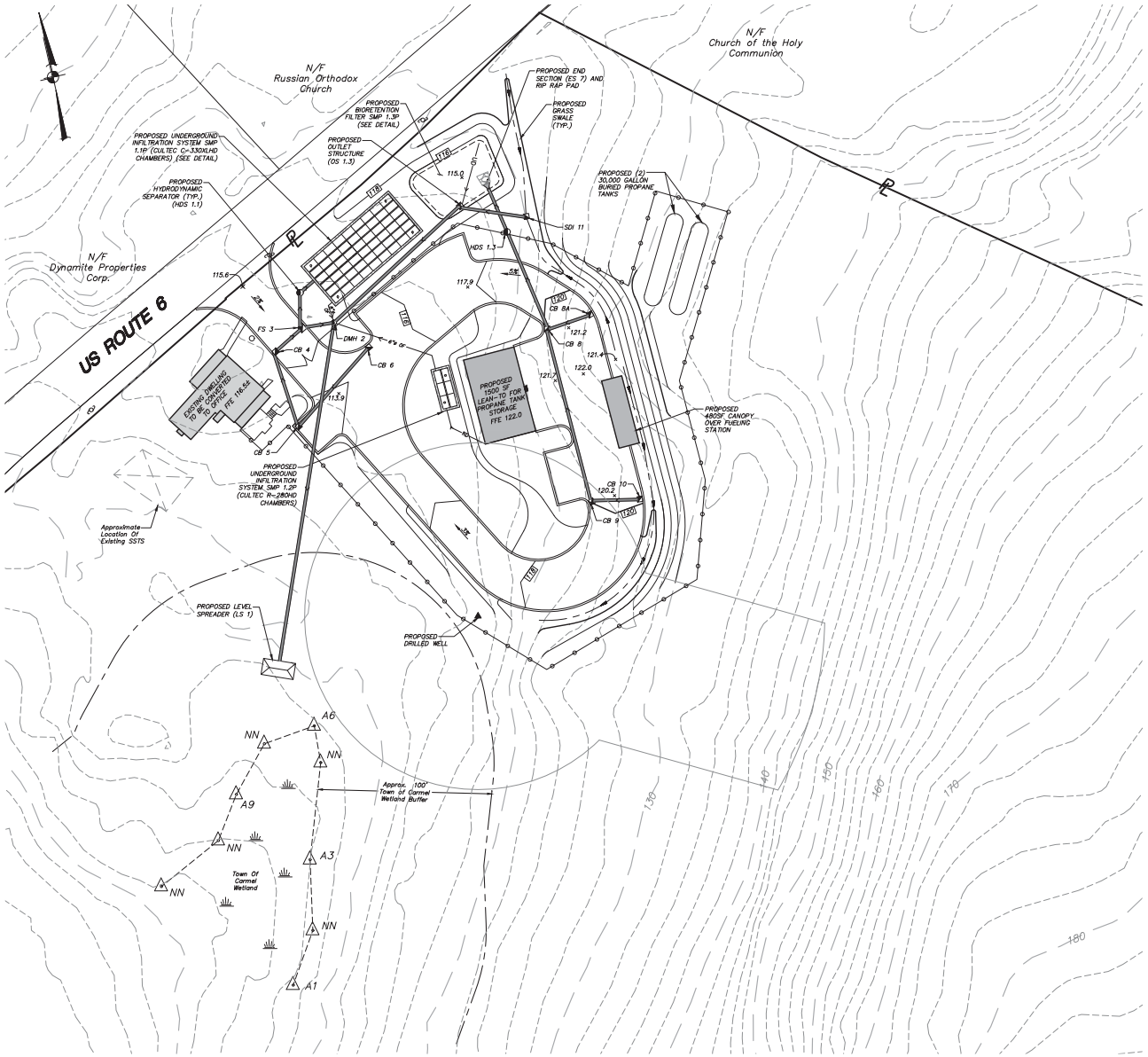
INSITE
ENGINEERING, SURVEYING & LANDSCAPE ARCHITECTURE, P.C.
3 Garrett Place
Carmel, NY 10512
(845) 225–9690
(845) 225–9717 fax
www.insite–eng.com

PROJECT:
PLATINUM PROPANE – MAHOPAC
1035 ROUTE 6, TOWN OF CARMEL, PUTNAM COUNTY, NEW YORK

DRAWING:
LANDSCAPE & LAYOUT PLAN

PROJECT NUMBER	22101.100	PROJECT MANAGER	Z.M.P.
DATE	3–30–22	DRAWN BY	J.L.T.
SCALE	1" = 30'	CHECKED BY	A.D.T.

DRAWING NO. SP–1
SHEET 2 / 7



NOTES:

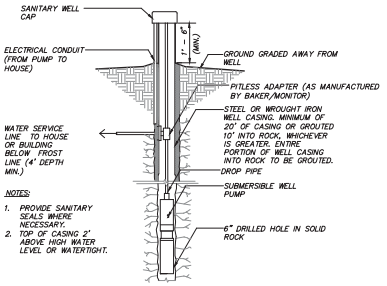
1. Any fill to be brought on to the site must be certified per NYSDEC guidelines and certification shall be provided to the Design Engineer and Town of Carmel Town Engineer.

PROPOSED DRAINAGE TABLE

STRUCTURE	RIM.	INV.	PIPE	LENGTH	SLOPE
CB 6	115.0	111.9			
CB 5	113.5	111.4	12" HDPE	62 L.F.	0.8%
CB 4	114.8	111.1	12" HDPE	45 L.F.	0.7%
FS 3	114.7	110.9	12" HDPE	22 L.F.	0.9%
HDS 1.1	115.8	110.7	12" HDPE	20 L.F.	1.0%
SMP 1.1P	–	110.5	12" HDPE	12 L.F.	1.7%
SMP 1.1P	–	110.5	8" HDPE	16 L.F.	6.9%
DMH 2	115.8	111.1			
FS 3	114.7	111.5	12" HDPE	20 L.F.	1.3%
DMH 2	115.8	111.0			
CB 10	120.0	117.0	12" HDPE	28 L.F.	1.1%
CB 9	120.0	116.7	12" HDPE	102 L.F.	0.7%
CB 8	120.3	116.0	12" HDPE	60 L.F.	0.5%
HDS 1.3	119.0	115.5	12" HDPE	25 L.F.	1.2%
ES 7	–	115.2			
CB 8A	120.9	117.8	12" HDPE	26 L.F.	3.1%
CB 8	120.3	117.0			
SDI 11	119.0	112.1	12" HDPE	40 L.F.	1.5%
OS 1.3	116.0	111.2	12" HDPE	100 L.F.	1.3%
DMH 2	115.6	110.2	12" HDPE	198 L.F.	1.0%
LS 1	–	108.2			
SMP 1.2	–	113.5	6" HDPE	65 L.F.	3.1%
DMH 2	115.6	111.3			

LEGEND

- EXISTING PROPERTY LINE
- EXISTING BUILDING
- EXISTING WETLAND
- EXISTING WETLAND FLAGS
- EXISTING WETLAND BUFFER
- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- EXISTING SPOT GRADE
- EXISTING SSTS
- PROPOSED BUILDING
- PROPOSED CONCRETE CURB
- PROPOSED 10' CONTOUR
- PROPOSED 2' CONTOUR
- PROPOSED SPOT ELEVATION
- PROPOSED GRASS SWALE
- PROPOSED DRAINAGE MANHOLE
- PROPOSED DRAINAGE MANHOLE
- PROPOSED CATCH BASIN
- PROPOSED OUTLET STRUCTURE
- PROPOSED END SECTION
- PROPOSED DRAINAGE PIPE
- PROPOSED WELL



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.)

GRAPHIC SCALE

0 15 30 60

(IN FEET)
1 inch = 30 ft.

NO.	DATE	REVISION	BY
1	5-2-22	REVISED PER PLANNING BOARD COMMENTS	JLT

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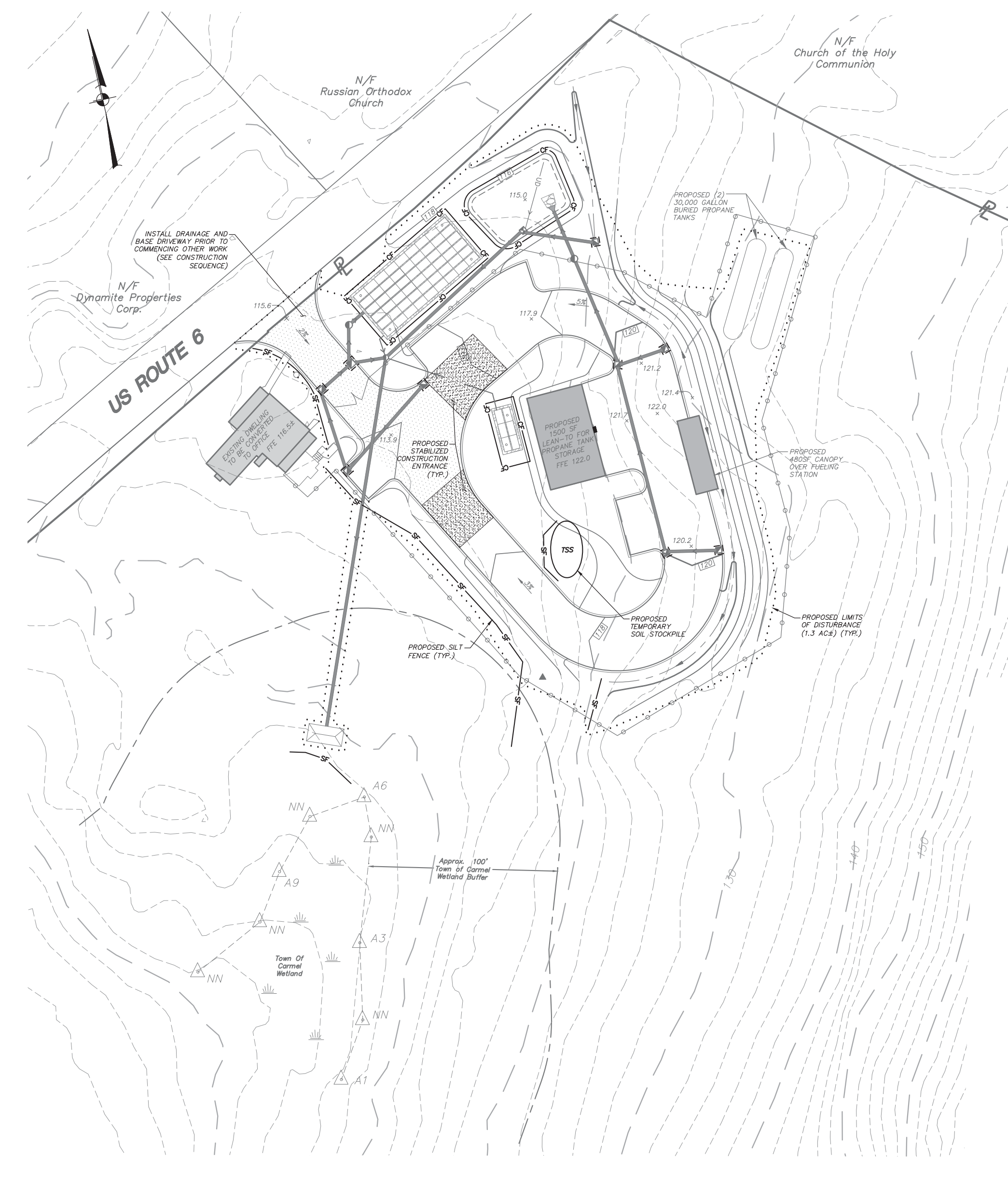
PROJECT:
PLATINUM PROPANE - MAHOPAC
1035 ROUTE 6, TOWN OF CARMEL, PUTNAM COUNTY, NEW YORK

DRAWING:
GRADING & UTILITIES PLAN

PROJECT NUMBER	22101.100	PROJECT MANAGER	Z.M.P.
DATE	3-30-22	DRAWN BY	J.L.T.
SCALE	1" = 30'	CHECKED BY	A.D.T.

DRAWING NO. SP-2
SHEET 3 / 7



LEGEND

- EXISTING PROPERTY LINE
- EXISTING BUILDING
- EXISTING WETLAND
- EXISTING WETLAND FLAGS
- EXISTING WETLAND BUFFER
- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- EXISTING SPOT GRADE
- PROPOSED BUILDING
- PROPOSED CONCRETE CURB
- PROPOSED 10' CONTOUR
- PROPOSED 2' CONTOUR
- PROPOSED SPOT ELEVATION
- PROPOSED GRASS SWALE
- PROPOSED DRAINAGE MANHOLE
- PROPOSED CATCH BASIN
- PROPOSED OUTLET STRUCTURE
- PROPOSED END SECTION
- PROPOSED DRAINAGE PIPE
- PROPOSED SILT FENCE
- PROPOSED LIMITS OF DISTURBANCE
- PROPOSED TEMPORARY SOIL STOCKPILE
- PROPOSED STABILIZED CONSTRUCTION ENTRANCE

REQUIRED EROSION CONTROL SWPPP CONTENTS:

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–l of General Permit GP–0–20–001:

a. Background Information: The applicant seeks to convert an existing residence into an office space for a propane business. Additionally, the applicant is seeking to construct a 1,500 sf three–sided, open air lean to structure for the storage of their service vehicles, a propane loading area with a 40'x12' canopy, two (2) 30,000 gallon buried propane tanks, and the associated driveway, parking and stormwater management practices.

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 Woodbridge Loam (WdB) and Paxton Fine Sandy Loam (PnC), 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 Erosion and Sediment 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 heron 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 cited 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."

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 fourteen (14) 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 1 business day of final grading. All seeded areas to receive a minimum 4" topsoil (from stockpile area) and be seeded and mulched as follows:
   - Seed mixture to be planted between March 21 and May 20, or between 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 2:1 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 and 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 Village Engineer shall be installed by the contractor.
20. Erosion and sediment control measures shall remain in place until all disturbed areas are suitably stabilized.

GRAPHIC SCALE

0 15 30 60

(IN FEET)
1 inch = 30 ft.

REQUIRED POST–CONSTRUCTION STORMWATER MANAGEMENT PRACTICE COMPONENTS:

1. 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–J 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 sizing criteria, identification of 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 project Stormwater Pollution Prevention Plan.

   d. Soil testing results and locations. This SWPPP requirement is shown hereon.

   e. Infiltration testing results. This SWPPP requirement is shown hereon.

   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 project Stormwater Pollution Prevention Plan serves to satisfy this requirement.

CONSTRUCTION SEQUENCE:

1. Per New York State Law, the contractor shall call DigSafely New York at 1–800–962–7962 two (2) full days prior to performing any excavation work.
2. Install stabilized construction entrance/anti–tracking pad in the locations shown in the plans.
3. Install silt fence in general locations indicated on the plan.
4. Remove the portion of the driveway between the road and stabilized construction entrances as shown on the plan
5. Install drainage structures and piping in that location, and provide inlet protection.
6. Base that portion of the proposed driveway.
7. Begin clearing and grubbing operations associated with buildings, and remainder of the driveway.
8. Strip and stockpile topsoil on site for later use in lawn and landscape areas.
9. Begin excavation for foundations and construction of stormwater management practices, parking and driveways.
10. Begin building construction and installation of well.
11. Install Infiltration Area, remaining Drains Inlets and connect Roof Leader Drains to drainage system.
12. All embankments are to be graded and seeded immediately upon being laid back.
13. Upon completion of grading operations, install finished driveway surfaces.
14. Topsoil, seed, and mulch all disturbed areas as soon as practical in accordance with the Erosion and Sediment Control Notes contained on this page.

NO.	DATE	REVISION	BY
1	5–2–22	REVISED PER PLANNING BOARD COMMENTS	JLT

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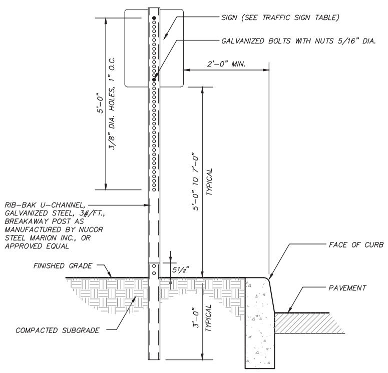
PROJECT:
PLATINUM PROPANE – MAHOPAC
1035 ROUTE 6, TOWN OF CARMEL, PUTNAM COUNTY, NEW YORK

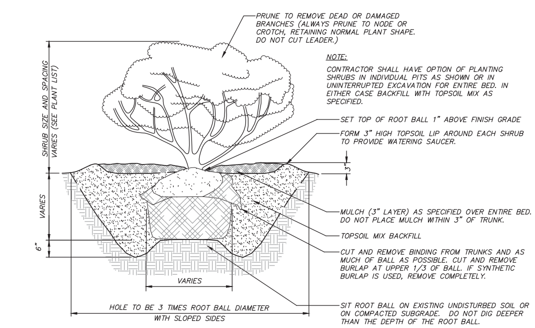
DRAWING:
EROSION CONTROL PLAN

PROJECT NUMBER	22101.100	PROJECT MANAGER	Z.M.P.	DRAWING NO.	SHEET
DATE	3–30–22	DRAWN BY	J.L.T.	SP–3	4 / 7
SCALE	1" = 30'	CHECKED BY	A.D.T.		


SIGN (SEE TRAFFIC SIGN TABLE)
GALVANIZED BOLTS WITH NUTS 5/16" DIA.
2'-0" MIN.
5'-0"
3/8" DIA. HOLES, 1" O.C.
5'-0" TO 7'-0" TYPICAL
RIB-BAK U-CHANNEL, GALVANIZED STEEL, 3#/FT., BREAKAWAY POST AS MANUFACTURED BY NUCOR STEEL MARION INC., OR APPROVED EQUAL
FACE OF CURB
FINISHED GRADE
5½"
PAVEMENT
3'-0" TYPICAL
COMPACTED SUBGRADE

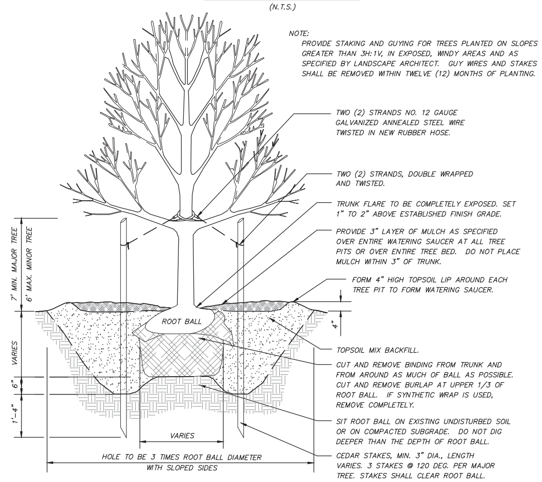
NOTE: FOR HANDICAP PARKING SIGNAGE, SIGNS SHALL BE INSTALLED AT A CLEAR HEIGHT OF BETWEEN 5'-0" AND 7'-0" ABOVE GRADE OF PARKING SPACE AND SUCH THAT SIGNS SHALL NOT BE OBSCURED BY A VEHICLE PARKED IN THE SPACE.

TRAFFIC SIGN DETAIL
(N.T.S.)


PRUNE TO REMOVE DEAD OR DAMAGED BRANCHES (ALWAYS PRUNE TO NODE OR CROTCH, RETAINING NORMAL PLANT SHAPE. DO NOT CUT LEADER.)
NOTE:
CONTRACTOR SHALL HAVE OPTION OF PLANTING SHRUBS IN INDIVIDUAL PITS AS SHOWN OR IN UNINTERRUPTED EXCAVATION FOR ENTIRE BED. IN EITHER CASE BACKFILL WITH TOPSOIL MIX AS SPECIFIED.
SHRUB SIZE AND SPACING VARIES (SEE PLANT LIST)
SET TOP OF ROOT BALL 1" ABOVE FINISH GRADE
FORM 3" HIGH TOPSOIL LIP AROUND EACH SHRUB TO PROVIDE WATERING SAUCER.
3"
VARIES
MULCH (3" LAYER) AS SPECIFIED OVER ENTIRE BED. DO NOT PLACE MULCH WITHIN 3" OF TRUNK.
TOPSOIL MIX BACKFILL
6"
CUT AND REMOVE BINDING FROM TRUNKS AND AS MUCH OF BALL AS POSSIBLE. CUT AND REMOVE BURLAP AT UPPER 1/3 OF BALL. IF SYNTHETIC BURLAP IS USED, REMOVE COMPLETELY.
VARIES
HOLE TO BE 3 TIMES ROOT BALL DIAMETER WITH SLOPED SIDES
SIT ROOT BALL ON EXISTING UNDISTURBED SOIL OR ON COMPACTED SUBGRADE. DO NOT DIG DEEPER THAN THE DEPTH OF ROOT BALL.

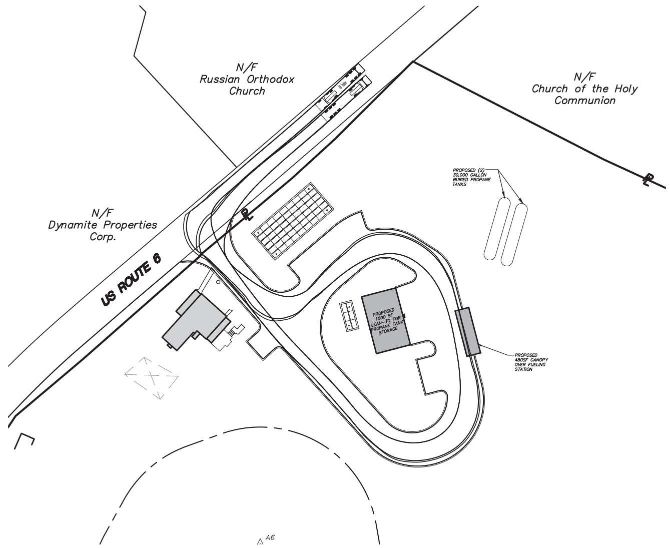
SHRUB PLANTING DETAIL
(N.T.S.)

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 (12) MONTHS OF PLANTING.

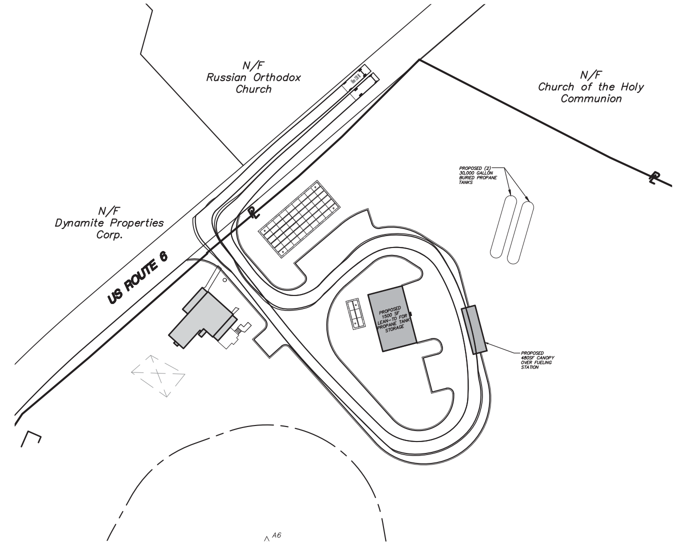

TWO (2) STRANDS NO. 12 GAUGE GALVANIZED ANNEALED STEEL WIRE TWISTED IN NEW RUBBER HOSE.
TWO (2) STRANDS, DOUBLE WRAPPED AND TWISTED.
TRUNK FLARE TO BE COMPLETELY EXPOSED. SET 1" TO 2" ABOVE ESTABLISHED FINISH GRADE.
7' MIN. MAJOR TREE
6' MAX. MINOR TREE
PROVIDE 3" LAYER OF MULCH AS SPECIFIED OVER ENTIRE WATERING SAUCER AT ALL TREE PITS OR OVER ENTIRE TREE BED. DO NOT PLACE MULCH WITHIN 3" OF TRUNK.
FORM 4" HIGH TOPSOIL LIP AROUND EACH TREE PIT TO FORM WATERING SAUCER.
4"
ROOT BALL
VARIES
TOPSOIL MIX BACKFILL.
6"
CUT AND REMOVE BINDING FROM TRUNK AND FROM AROUND AS MUCH OF BALL AS POSSIBLE. CUT AND REMOVE BURLAP AT UPPER 1/3 OF ROOT BALL. IF SYNTHETIC WRAP IS USED, REMOVE COMPLETELY.
1'-4"
SIT ROOT BALL ON EXISTING UNDISTURBED SOIL OR ON COMPACTED SUBGRADE. DO NOT DIG DEEPER THAN THE DEPTH OF ROOT BALL.
VARIES
CEDAR STAKES, MIN. 3" DIA., LENGTH VARIES. 3 STAKES @ 120 DEG. PER MAJOR TREE. STAKES SHALL CLEAR ROOT BALL.
HOLE TO BE 3 TIMES ROOT BALL DIAMETER WITH SLOPED SIDES

TREE PLANTING DETAIL
(N.T.S.)

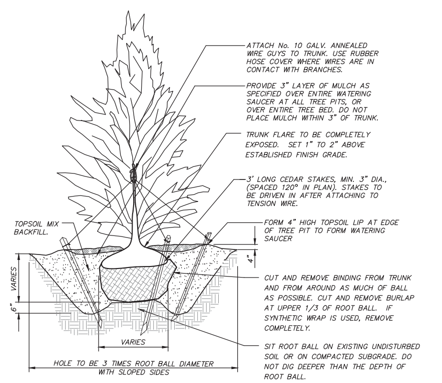
ALTERATION OF THIS DOCUMENT, UNLESS UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, IS A VIOLATION OF SECTION 7209 OF ARTICLE 145 OF THE EDUCATION LAW.



VEHICLE MANUVER PLAN–PROPANE TANKER
1" = 50'

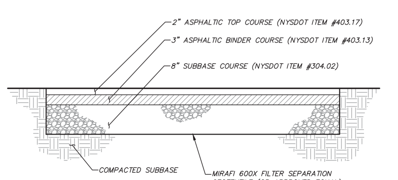


VEHICLE MANUVER PLAN–PROPANE DELIVERY TANKER
1" = 50'

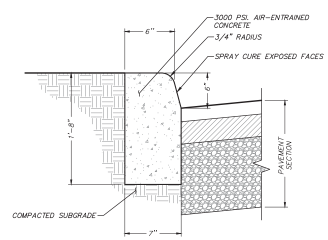

ATTACH No. 10 GALV. ANNEALED WIRE GUYS TO TRUNK. USE RUBBER HOSE COVER WHERE WIRES ARE IN CONTACT WITH BRANCHES.
PROVIDE 3" LAYER OF MULCH AS SPECIFIED OVER ENTIRE WATERING SAUCER AT ALL TREE PITS, OR OVER ENTIRE TREE BED. DO NOT PLACE MULCH WITHIN 3" OF TRUNK.
TRUNK FLARE TO BE COMPLETELY EXPOSED. SET 1" TO 2" ABOVE ESTABLISHED FINISH GRADE.
3' LONG CEDAR STAKES, MIN. 3" DIA., (SPACED 120° IN PLAN). STAKES TO BE DRIVEN IN AFTER ATTACHING TO TENSION WIRE.
TOPSOIL MIX BACKFILL.
FORM 4" HIGH TOPSOIL LIP AT EDGE OF TREE PIT TO FORM WATERING SAUCER
4"
VARIES
6"
CUT AND REMOVE BINDING FROM TRUNK AND FROM AROUND AS MUCH OF BALL AS POSSIBLE. CUT AND REMOVE BURLAP AT UPPER 1/3 OF ROOT BALL. IF SYNTHETIC WRAP IS USED, REMOVE COMPLETELY.
VARIES
SIT ROOT BALL ON EXISTING UNDISTURBED SOIL OR ON COMPACTED SUBGRADE. DO NOT DIG DEEPER THAN THE DEPTH OF ROOT BALL.
HOLE TO BE 3 TIMES ROOT BALL DIAMETER WITH SLOPED SIDES

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.)

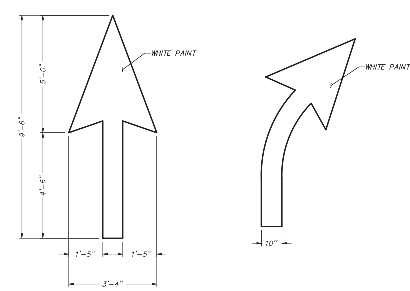


ASPHALT ROADWAY PAVEMENT DETAIL
(N.T.S.)



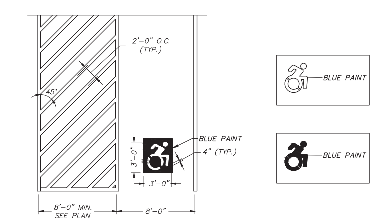
NOTE:
ISOLATION JOINTS 1/2" WIDE SHALL BE INSTALLED IN THE CURB 20'-0" APART AND SHALL BE FILLED WITH CELLULAR COMPRESSION MATERIALS RECESSED 1/4" IN FROM FRONT FACE AND TOP OF CURB.

CONCRETE CURB DETAIL
(N.T.S.)



NOTE:
INSTALLATION TO CONFORM WITH CURRENT NYSDOT STANDARDS AND SPECIFICATIONS.

DIRECTIONAL ARROWS DETAIL
(N.T.S.)



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

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

NO.	DATE	REVISION	BY
1	5-2-22	REVISED PER PLANNING BOARD COMMENTS	JLT

INSITE
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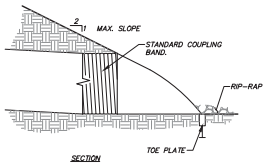
PROJECT:
PLATINUM PROPANE – MAHOPAC
1035 ROUTE 6, TOWN OF CARMEL, PUTNAM COUNTY, NEW YORK

DRAWING:
DETAILS

PROJECT NUMBER	22101.100	PROJECT MANAGER	Z.M.P.	DRAWING NO.	SHEET
DATE	3-30-22	DRAWN BY	J.L.T.	D-1	5 / 7
SCALE	AS SHOWN	CHECKED BY	A.D.T.		



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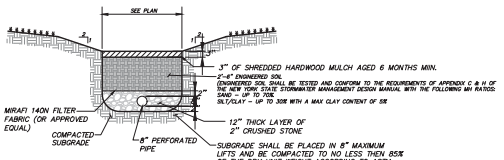

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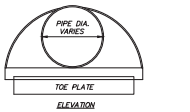
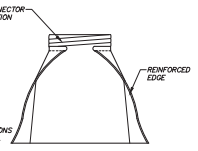


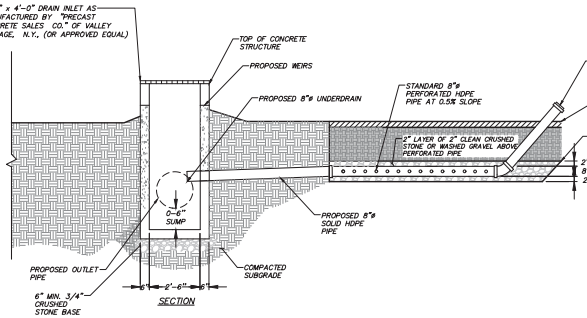
ELEVATION



NOTE:
END SECTION CONNECTIONS TO CONFORM TO MANUF. RECOMMENDATIONS FOR VARIOUS PIPE SIZES

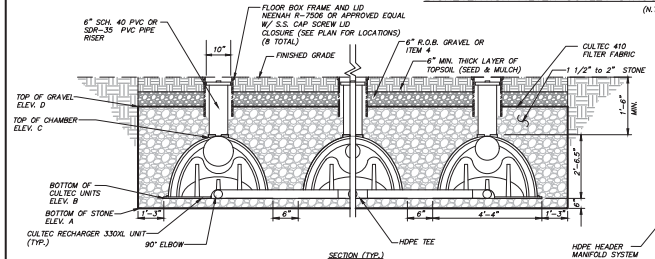
PLAN

END SECTION DETAIL
(N.T.S.)



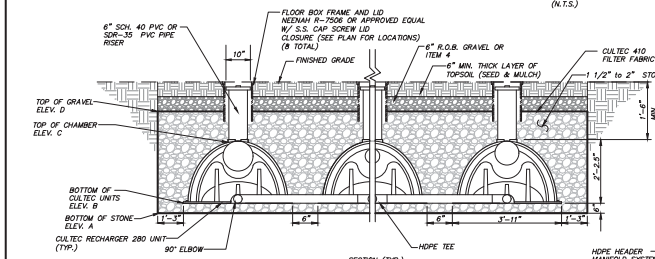
SECTION

BIORETENTION FILTER OUTLET STRUCTURE DETAIL (NYSDEC DESIGN F-5)
(N.T.S.)



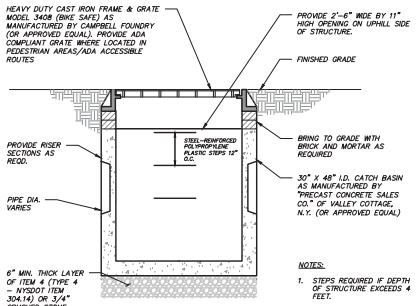
UNDERGROUND SYSTEM DESIGNATION	SYSTEM FOOTPRINT (S.F.)	CULTEC UNIT NODE #	QUANTITY OF CHAMBERS	OVERALL SYSTEM DIMENSIONS (LENGTHxWIDTH)	ELEV A (BOTTOM OF STONE)	ELEV B (BOTTOM OF CHAMBER)	ELEV C (TOP OF CHAMBER)	ELEV D (TOP OF STONE)
1.1P	2,028	R-330XLHD	54	66.5' x 30.5'	110.0	110.5	113.0	113.5

STORMWATER UNDERGROUND INFILTRATION SYSTEM 1.1P DETAIL
(N.T.S.)



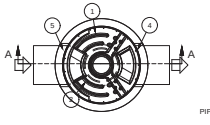
UNDERGROUND SYSTEM DESIGNATION	SYSTEM FOOTPRINT (S.F.)	CULTEC UNIT NODE #	QUANTITY OF CHAMBERS	OVERALL SYSTEM DIMENSIONS (LENGTHxWIDTH)	ELEV A (BOTTOM OF STONE)	ELEV B (BOTTOM OF CHAMBER)	ELEV C (TOP OF CHAMBER)	ELEV D (TOP OF STONE)
1.2P	252	R-280HD	6	10.5' x 24'	111.5	112.0	114.2	114.7

STORMWATER UNDERGROUND INFILTRATION SYSTEM 1.2P DETAIL
(N.T.S.)



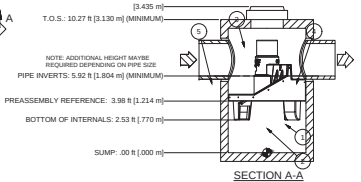
NOTES:
1. STEPS REQUIRED IF DEPTH OF STRUCTURE EXCEEDS 4 FEET.
2. STRUCTURE AND GRATE TO BE DESIGNED FOR H-20 LOADING.

SIDE DRAIN INLET DETAIL
(N.T.S.)



PLAN VIEW

HYDRO FRAME AND COVER (INCLUDED)
GRADE RINGS BY OTHERS AS REQUIRED



SECTION A-A

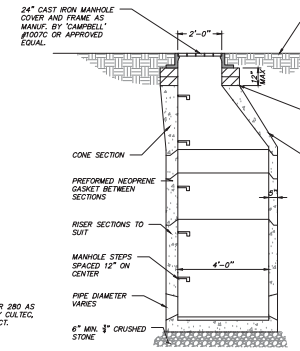
1. MANHOLE WALL AND SLAB THICKNESSES ARE NOT TO SCALE.
2. CONTACT HYDRO INTERNATIONAL FOR A BOTTOM OF STRUCTURE ELEVATION PRIOR TO SETTING FIRST DEFENSE MANHOLE.
3. CONTRACTOR TO CONFIRM RIM, PIPE INVERTS, PIPE DIA. AND PIPE ORIENTATION PRIOR TO RELEASE OF UNIT TO FABRICATION.

PRODUCT SPECIFICATION:
1. PEAK HYDRAULIC FLOW: 32.0 cfs (906 l/s)
2. MIN SEDIMENT STORAGE CAPACITY: 1.6 cu. yd. (1.2 cu. m.)
3. OIL STORAGE CAPACITY: 496 gal. (1878 liters)
4. MAXIMUM INLET/OUTLET PIPE DIAMETERS: 30 in. (750 mm)
5. THE TREATMENT SYSTEM SHALL USE AN INDUCED VORTEX TO SEPARATE POLLUTANTS FROM STORMWATER RUNOFF.
6. MORE PRODUCT INFORMATION INCLUDING REGULATORY ACCEPTANCES, PLEASE VISIT https://hydro-int.com/en/products/first-defense

GENERAL NOTES:
1. General Arrangement drawings only. Contact Hydro International for site specific drawings.
2. The diameter of the inlet and outlet pipes may be no more than 30".
3. Multiple inlet pipes possible (refer to project plan).
4. Inlet/outlet pipe angle can vary to align with drainage network (refer to project plan.s)
5. Peak flow rate and minimum height limited by available cover and pipe diameter.
6. Larger sediment storage capacity may be provided with a deeper sump depth.

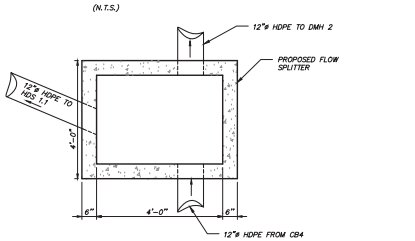
PARTS LIST				
ITEM	QTY	SIZE (in)	SIZE (mm)	DESCRIPTION
1	1	36	900	I.D. PRECAST MANHOLE
2	1			INTERNAL COMPONENTS (PRE-INSTALLED)
3	1	30	750	FRAME AND COVER (ROUND)
4	1	18 (MAX)	450 (MAX)	OUTLET PIPE (BY OTHERS)
5	1	18 (MAX)	450 (MAX)	INLET PIPE (BY OTHERS)

FIRST DEFENSE HYDRODYNAMIC SEPARATOR FD-3 (HDS 1.1 & HDS 1.3)

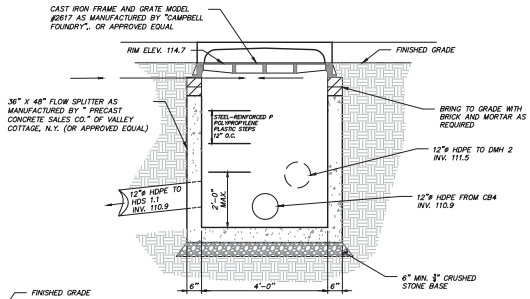


NOTE:
1. STRUCTURE AND COVER TO BE DESIGNED FOR H-20 LOADING.

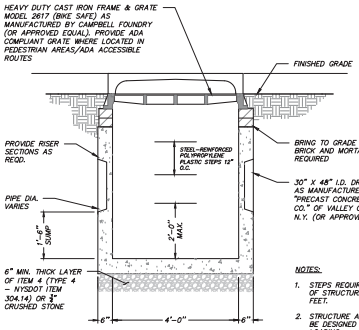
DRAINAGE MANHOLE DETAIL
(N.T.S.)



PLAN



SECTION



NOTES:
1. STEPS REQUIRED IF DEPTH OF STRUCTURE EXCEEDS 4 FEET.
2. STRUCTURE AND GRATE TO BE DESIGNED FOR H-20 LOADING.

30" X 48" CATCH BASIN DETAIL
(N.T.S.)

FLOW SPLITTER FS 3 DETAIL
(N.T.S.)

NO.	DATE	REVISION	BY
1	5-2-22	REVISED PER PLANNING BOARD COMMENTS	JLT

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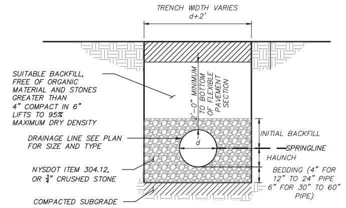
PROJECT:
PLATINUM PROPANE – MAHOPAC
1035 ROUTE 6, TOWN OF CARMEL, PUTNAM COUNTY, NEW YORK

DRAWING:
DETAILS

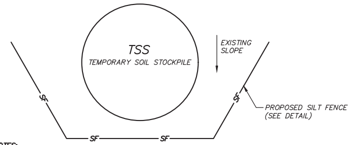
PROJECT NUMBER	22101.100	PROJECT MANAGER	Z.M.P.
DATE	3-30-22	DRAWN BY	J.L.T.
SCALE	AS SHOWN	CHECKED BY	A.D.T.

DRAWING NO. D-2
SHEET 6 / 7



DRAINAGE LINE TRENCH DETAIL

(N.T.S.)

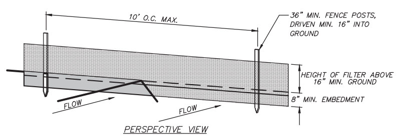


NOTES:

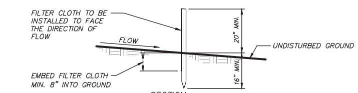
1. AREA CHOSEN FOR STOCKPILE LOCATION SHALL BE DRY AND STABLE.
2. MAXIMUM SLOPE OF STOCKPILE SHALL BE 2:1.
3. UPON COMPLETION OF SOIL STOCKPILING, EACH PILE SHALL BE IMMEDIATELY SEEDED WITH K31 PERENNIAL TALL FESCUE.
4. ALL STOCKPILES SHALL BE PROTECTED WITH SILT FENCING INSTALLED ON THE DOWNGRADIENT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

TEMPORARY SOIL STOCKPILE DETAIL

(N.T.S.)



PERSPECTIVE VIEW



SECTION

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.

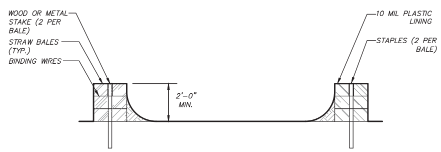
POSTS: STEEL EITHER T OR U TYPE OR 2" HARDWOOD

FILTER CLOTH: FILTER X, MIRAFI 100X, STABILINKA T140N, OR APPROVED EQUAL

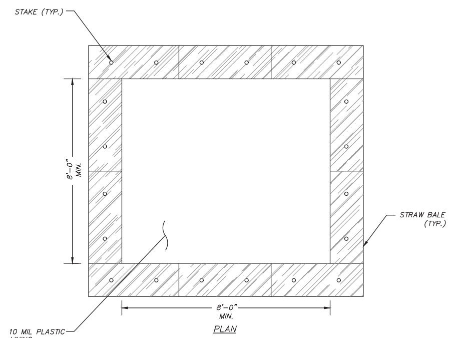
PREFABRICATED UNIT: GEOFAB, ENVIROFENCE, OR APPROVED EQUAL

SILT FENCE DETAIL

(N.T.S.)



SECTION



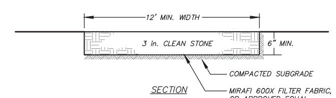
PLAN

CONCRETE WASHOUT AREA DETAIL

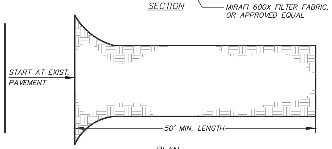
(N.T.S.)

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.



SECTION



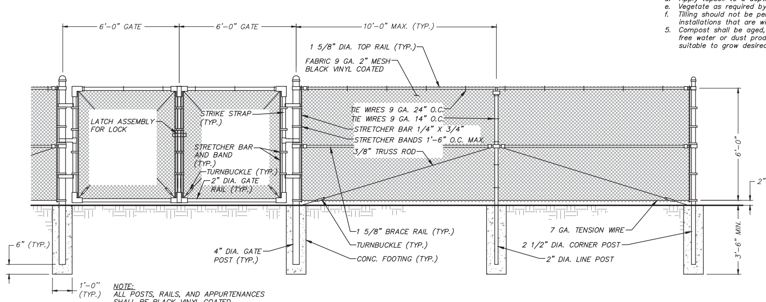
PLAN

INSTALLATION NOTES

1. STONE SIZE – USE 3" 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.)



NOTE: ALL POSTS, RAILS, AND APPURTENANCES SHALL BE BLACK VINYL COATED.

CHAIN LINK FENCE DETAIL

(N.T.S.)

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 PROTECTION	–	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 TRAP/BASIN	–	Inspect	Inspect	Clean/Mulch/ Repair/Reseed	See Permanent Stormwater Facilities Maintenance Schedule on Drawing D–6
CONCRETE TRUCK WASHOUT AREA	–	Inspect	Inspect	Remove Concrete From Site when Full and Re–establish	Remove

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

Note: The party responsible for implementation of the maintenance schedule:
during construction is: Contractor (To be Determined)
after construction is: Hillside Property Holdings, LLC, 2 Depot Plaza Suite 401, Bedford Hills, NY 10507

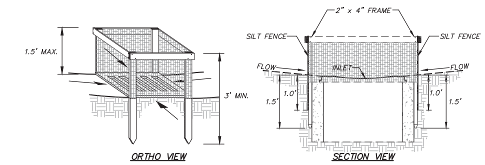
SOIL RESTORATION REQUIREMENTS[1,2]

(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 STRICKEN 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[5] (de–compaction and compost enhancement)[6]		
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. Apply 3 inches of compost over subsoil.
b. 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.
c. Rock–pick until uplifted stone/rock materials of four inches and larger size area cleaned off the site.
d. Apply topsoil to a depth of 6 inches.
e. Vegetate as required by seeding notes located on the project drawings.
f. 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 visible free water or dust produced when handling, pass through a half inch screen and have a pH suitable to grow desired plants.



ORTHO VIEW

SECTION VIEW

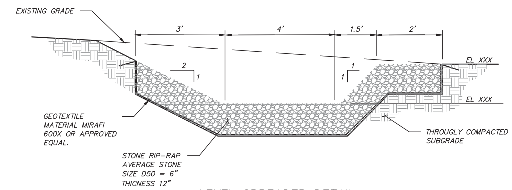
INSTALLATION NOTES

1. FILTER FABRIC SHALL HAVE AN EOS OF 40–85. BURLAP MAYBE 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

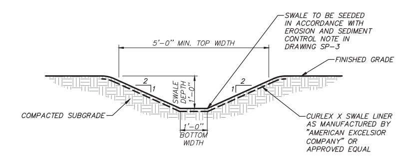
FILTER FABRIC INLET PROTECTION DETAIL

(N.T.S.)



LEVEL SPREADER DETAIL

(N.T.S.)



GRASS SWALE DETAIL

(N.T.S.)

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: PLATINUM PROPANE – MAHOPAC

1035 ROUTE 6, TOWN OF CARMEL, PUTNAM COUNTY, NEW YORK

DRAWING: DETAILS

PROJECT NUMBER	22101.100	PROJECT MANAGER	Z.M.P.
DATE	5–2–22	DRAWN BY	J.L.T.
SCALE	AS SHOWN	CHECKED BY	A.D.T.

DRAWING NO. D–3

SHEET 7 / 7

TANK BUOYANCY CALCULATIONS:

TANK BUOYANCY WITH 100% SUBMERSION:

F_b = 0.134 CU.FT./GAL x 30,000 GAL. x 62.4 LB/CU.FT.= 250,848 LB.

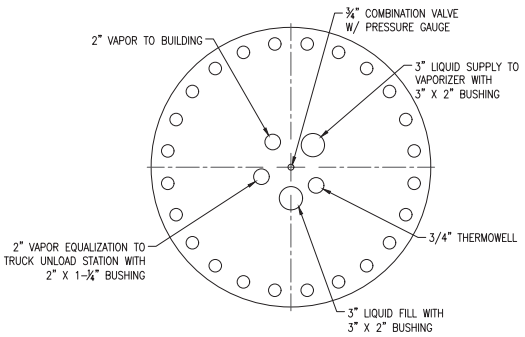
BALLAST FORCE = TANK WEIGHT + CONCRETE WEIGHT + SOIL OVERBURDEN WEIGHT

(NOTE: CONCRETE WEIGHT SUBMERGED, SOIL WEIGHT SATURATED)

= 65,000 LB + 28,053 LB, + 210,258 LB = 303,311 LB

NET BUOYANCY: 250,848 LB − 303,311 LB = −52,463 LB

SAFETY FACTOR APPROXIMATELY 1.21

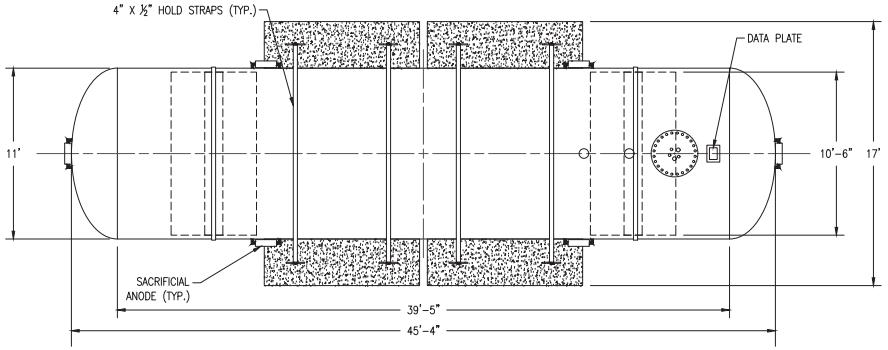


MANWAY DETAILS
SCALE: 1:8

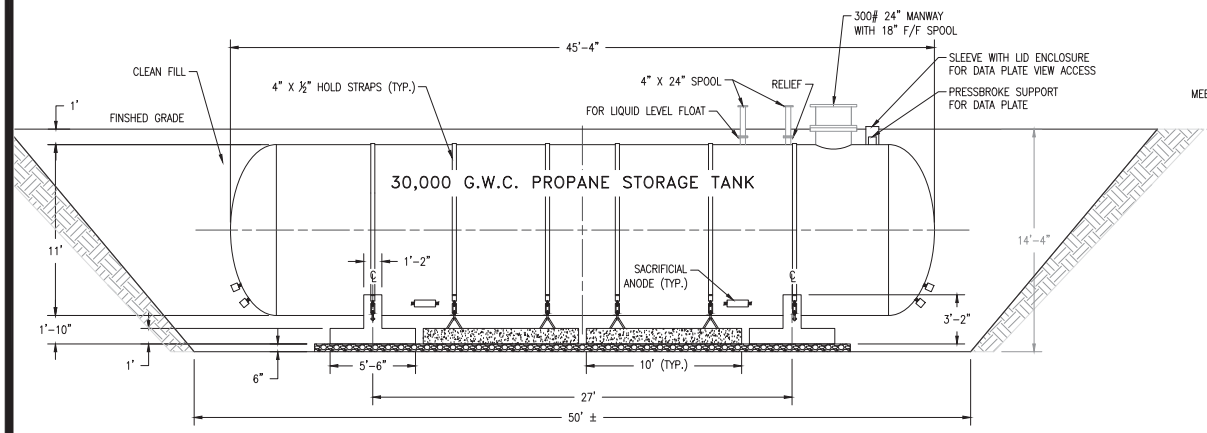
Highland Tank®
www.highlandtank.com

NB	2807
	CERTIFIED BY: HIGHLAND TANK OF CENTRAL MICHIGAN LLC
	4701 WHITE LAKE ROAD, CLARKSTON, MI 48347
U	MINIMUM DESIGN METAL TEMPERATURE
	−20 °F AT 250 PSI
W	MAX. ALLOWABLE WORKING PRESSURE
	250 PSI AT 150 °F
RT−4	MANUFACTURER SERIAL NO.
	4139
	YEAR BUILT: 2018
	SERVICE: UNDERGROUND
	WATER CAPACITY: 30,000 US GALLONS
	MAX FILL: 89%
	SHELL THICKNESS: 0.875" NOM. 0.8296" MIN.
	HEAD THICKNESS: 1" NOM. 0.8244" MIN.
	OVERALL LENGTH: 45' − 4" APPROX.
	OUTSIDE DIA: 132"
	HEAD DESIGN: 2:1 ELLIPTICAL
	OUTSIDE SURFACE AREA: 1,687 SQ/FT
	"THIS CONTAINER SHALL NOT CONTAIN A PRODUCT THAT HAS A VAPOR PRESSURE IN EXCESS OF 215 PSIG AT 100 °F"

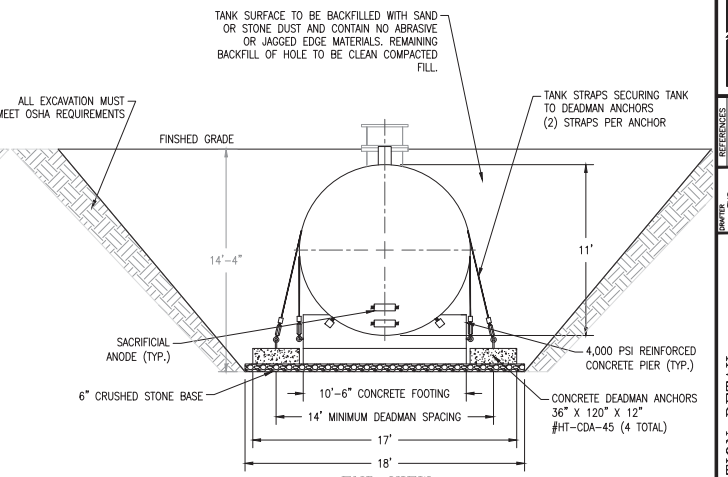
DATA PLATE
SCALE: 1:1



TOP VIEW



SIDE ELEVATION VIEW



END VIEW

MARK	DATE	BY	REVISION

CHESMONT ENGINEERING
A HILTZ COMPANY
693 WEST MARKET STREET
MARIETTA, PENNSYLVANIA 17547
PHONE: (717) 799−4322
PHONE: (610) 594−9200

REFERENCES

DRAFTER: TNS
DRAWING: C.S.M.
DATE: 5/10/2021
SCALE: 1/4" = 1'
CHECKED: _

ELEVATION DETAIL

DWG.NO. 2021024−E1

PUTNAM ENGINEERING, PLLC.
Engineers and Architects

May 2, 2022

Mr. Craig Paeprer
Chairman, Town of Carmel Planning Board
60 McAlpin Avenue
Mahopac, NY 10541

Re: Itzla Final Subdivision Approval
9 Mechanic Street
T.M. 55.14-1-6

Dear Chairman Paeprer and Members of the Board:

On behalf of my client I request placement on the next available agenda for consideration of Final Subdivision Approval Extension.

Sincerely,

PUTNAM ENGINEERING, PLLC

Paul M. Lynch
PML/rrm

4 OLD ROUTE 6, BREWSTER, NEW YORK 10509 • (845) 279-6789 • FAX (845) 279-6769