Dover Greens – Phase 1

Prepared for **Dover Greens**
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Introduction and Instruction to Owner/Operator

This Erosion and Sediment Control / Pollution Prevention Manual has been developed as a base for the Stormwater Pollution Prevention Plan (SWPPP) to be prepared by the Owner/Operator as required under New York's State Pollutant Discharge Elimination System (SPDES) Permit for Construction Activites (GP-0-15-002). This manual provides the following information, as required for the SWPPP by the SPDES Permit:

- Site Description
- Development Description
- Drainage Characteristics
- Soil Characteristics
- Construction Phasing Information
- Pollution Prevention Practices
- Erosion and Sediment Control BMPs
- Operations and Maintenance Plans
- Grading, Drainage and Erosion Control Plans
- SPDES Permit and Fact Sheet
- Notice of Intent (NOI) Form (to be finalized and Certified by the Owner/Operator)
- Notice of Termination (NOT) Form
- Inspection Forms, Monitoring and Reporting Requirements
- Contractor Certification Form

The SWPPP must be prepared prior to filing of the Notice of Intent (NOI). If the SWPPP conforms to the Department's technical standards and the activities will not discharge a pollutant of concern to an impaired water or a TMDL watershed, authorization to discharge under this permit may occur five (5) business days after the date on which the NOI is received by the Department. For activities which do not comply with the technical standards or for construction site activities subject to a TMDL, authorization to discharge begins no sooner than sixty (60) business days from receipt of the NOI by the DEC unless notified otherwise. NOI forms can be found on the NYS DEC website (http://www.dec.ny.gov/) and must be mailed to the NYSDEC Central Office in Albany (Division of Water, 625 Broadway, 4th Floor, Albany, NY 12233-3505).

In order to complete the pre-construction SWPPP, the Owner/Operator must complete the following:

- Certify that they have read and understand the terms of the SPDES Permit.
- Review this manual and update and/or revise as necessary.

- Update location and types of erosion and sediment control materials as required by the site.
- Include designation letters to authorize implementation of the SWPPP.
- Designate areas for stockpiles, sanitary facilities, dumpsters, wash-down, lay-down and construction trailers and appropriate erosion and sediment control features (these can be hand drawn on a copy of the site plan).
- Designate project contact person(s) and include contact information.

The SWPPP is a dynamic document, and must be continually updated by the Owner/Operator throughout construction. This manual does not comprise a complete SWPPP. It is the responsibility of the Owner/Operator to update this manual and perform the activities herein, including, but not limited to:

- Post a sign at the site construction entrance that includes a copy of the Notice of Intent and a brief description of the project, location of the SWPPP, and a person to contact should the public want to review the SWPPP.
- Perform inspections and maintenance as designated in this manual, and as required as the project phases change.
- Prepare and certify inspection reports and include reports in the SWPPP.
- Update plans, as necessary, to denote major site changes and/or changes in the site BMPs.
- Update Plans to reflect changes in stockpile, sanitary facility, lay-down and other site areas.
- Maintain schedule of dates of major earthwork, stabilization and/or erosion control installations.
- Document any spills.
- Document off-site sedimentation resulting from this construction.

The Owner/Operator completed SWPPP must be updated throughout construction, until a Notice of Termination (NOT) Form has been submitted to the DEC. From the date of submital of the NOT form, the SWPPP documents must be maintained by the Site operator for a period of five years.

I
Notice of Intent (NOI) Form

The Department of Enivronmental Conservation must receive the completed NOI at least five (5) business days prior to the start of construction. VHB has supplied some of the information necessary for portions of this form. The remainder of the information must be completely filled out, reviewed, and submitted by the owner and construction site operator. The completed NOI Form must be certified and submitted by the owner/operator in order for it to take effect.

II

Contractor Certifications and Designation Letters

It is a requirement of the SPDES Permit that all those implementing the SWPPP certify that they have read and understand the permit. Certification Forms are included in this manual.

In addition, those implementing the SWPPP must be certified as designees of the contract firm's owner as described in Part III, Subsection A of the SPDES Permit. A copy of the New York State SPDES Permit GP-0-15-002 is included in Section XI of this manual.

CERTIFICATION OF PROJECT CONSTRUCTION CONTRACTORS

Dover Greens
207 Hutchinson Avenue
Town of Dover, NY 12594

The following certification shall be signed by each contractor and subcontractor responsible for on-site activities, or any other subcontractor who will perform any action that may reasonably be expected to cause or have the potential to cause pollution of the waters of New York.

"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. "

Owner/Operator	**Trained Contractor**	**Trained Subcontractor**
_____	_____	_____
Signature and Date	Signature and Date	Signature and Date
_____	_____	_____
Title	Title	Title
_____	_____	_____
_____	_____	_____
_____	_____	_____
Company and Address	Company and Address	Company and Address

Trained Subcontractor	**Trained Subcontractor**	**Trained Subcontractor**
_____	_____	_____
Signature and Date	Signature and Date	Signature and Date
_____	_____	_____
Title	Title	Title
_____	_____	_____
_____	_____	_____
_____	_____	_____
Company and Address	Company and Address	Company and Address

III
Project Figures

Figure 1. Site Location Map

Figure 2. FEMA Floodplain Map

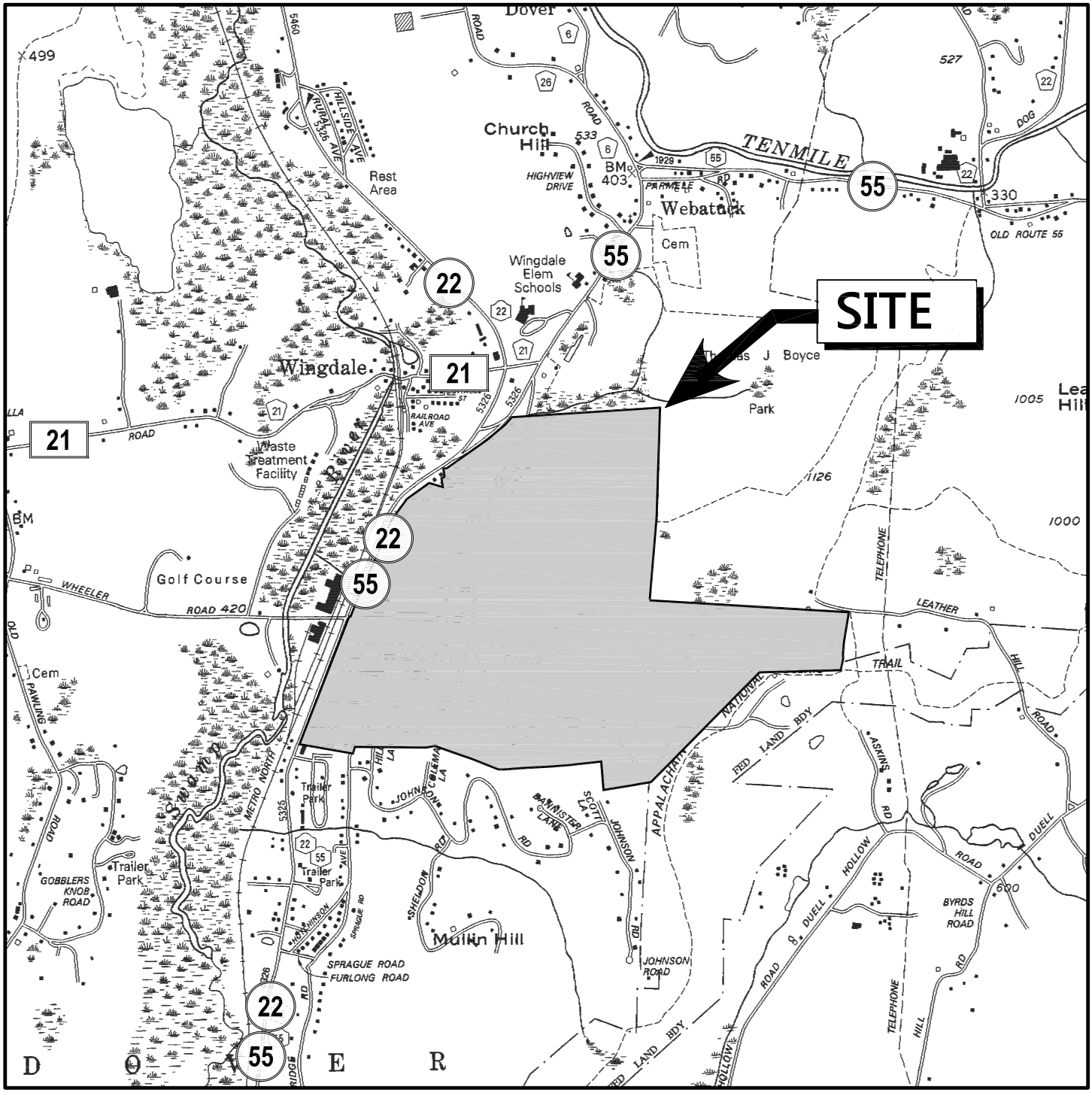


Figure 1: Site Location Map
207 Hutchinson Avenue
Town of Dover, Dutchess County
New York 12594
Scale: 1" = 2000'

N

0 2000 4000 Feet

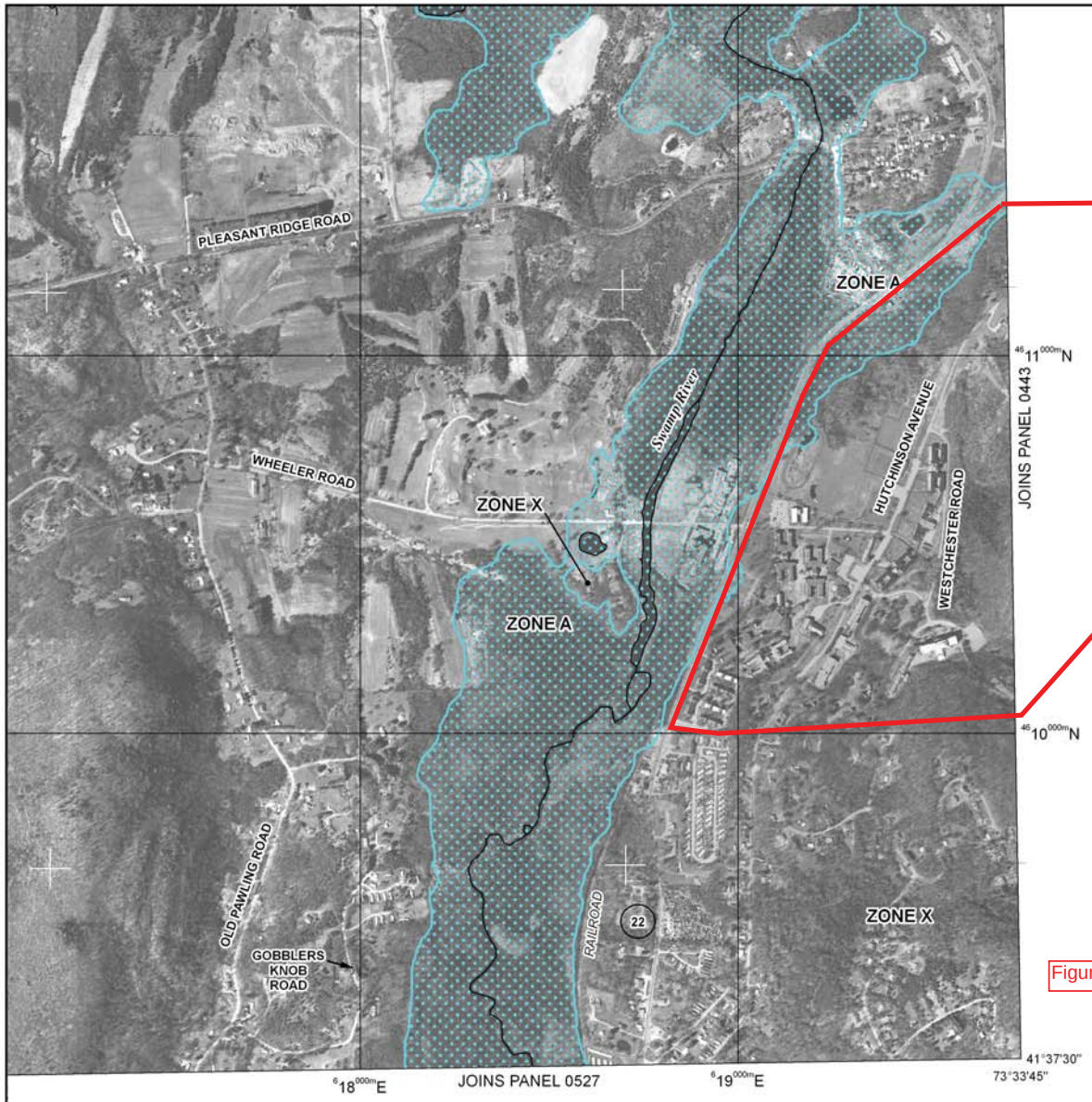


Figure 2: FEMA Floodplain Map

For d
Map

To d
agen

MAP SCALE 1" = 1000'

500 0 1000 2000 FEET

METER

NFIP

PANEL 0440E

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

for DUTCHESS COUNTY, NEW YORK
(ALL JURISDICTIONS)

CONTAINS:

COMMUNITY	NUMBER
DOVER, TOWN OF	361335

PANEL 440 OF 602
MAP SUFFIX: E
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
36027C0440E

EFFECTIVE DATE
MAY 2, 2012

Federal Emergency Management Agency

IV
Project Description

Site Location and Summary

The project site is located in the southern end of the Town of Dover in Dutchess County NY, along the NYS Route 22 as shown in Figure 1. The site consists of 513.75 acres within tax parcels 7159-00-162702, 7159-00-65920, and 7059-00-814768. The project is not located within a TMDL watershed nor does it discharge into a 303(d) listed waterbody. The proposed project is a redevelopment project.

Existing Conditions

The site is currently abandoned and was previously part of the Harlem Valley Psychiatric Center (HVPC) campus. The HVPC contained 83 principal and accessory structures totaling approximately 2.15 million square feet of floor area. The majority of the buildings were constructed during the 1920's and 1930's, with some earlier construction closer to the turn of the century.

In general, the site rainfall runoff drains west toward the existing wetland and NYS Route 22. There are 10 Study Points (Point A, B, C, D, E, F, G, H, J and K) for the existing condition drainage analysis. Refer to the existing drainage area map in Attachment D1 for the study points and drainage areas.

According to the Flood Insurance Rate Map (FIRM) prepared by Federal Emergency Management Agency (FEMA) includes as Figure 2, a very small portion of the project site along the NYS Route 22 is located within the 100-year floodplain. However no construction is proposed within the 100-year floodplain area. [FIRM map number 36027C0440E, effective date May 2, 2012]

According to the NRCS soil survey for Dutchess County, NY, the majority hydrology soil groups for the studied drainage areas are hydrology soil group A and C, only a portion of the studied drainage area is hydrology soil group D. A NRCS soils report is included in Attachment C.

Proposed Conditions

The proposed construction includes the first phase of redevelopment of the site to be called Dover Greens, a fully functioning campus with educational facilities, research and development business incubators, and partner organizations. Majority of the existing buildings will be remained with some of them will be rehabilitated for new usage. New parking lots are proposed to be constructed throughout the site to accommodate students, staff and visitors.

Proposed drainage pattern will remains as existing condition which the rainfall runoff drains west toward the existing wetland and NYS Route 22.

The same 10 Study Points (Point A, B, C, D, E, F, G, H, J and K) are utilized for the proposed condition drainage analysis. Refer to the proposed drainage area map in Attachment D1 for the study points and drainage areas.

Water Quality

Runoff from the proposed development will be sheet flowed and or collected via the proposed drainage pipe system and drains toward proposed bioretention basin, pervious paver and stormwater pond for water quality treatment. Nine bioretention basins are proposed for drainage areas within Study Point A, C, D, E, F, G, J and K. Stormwater pond is proposed for Study Point B and pervious pavers are proposed within the redevelopment for Point H. All bioretention basins, pervious paver and stormwater pond are designed to treat the required WQv. Soil infiltration rate has been field verified to be greater than 0.5" per hour and has minimum three feet separation from the groundwater. Refer to Attachment D2 for the water quality calculations.

Water Quantity

The proposed stormwater pond for Point B is also for water quantity purposes. It consists of an outlet control structure to control the peak rates of the proposed conditions. Refer to Attachment D3 for the HydroCAD drainage analysis for the existing and proposed conditions.

From HydroCAD analysis, all the proposed conditions peak flows at study points B are less than the existing peak flows for all storms ranging from the 1-year to the 100-year design frequencies.

Summary Tables #1 and #2 below show the comparison of flows produced under existing and developed conditions for study Point B.

Table 1 – Existing Conditions Peak Flows

		Peak Discharges (cfs) of Various Storm Frequency		
Study Point	Area (ac)	1-yr	10-yr	100-yr
B	15.0	1.06	12.73	46.21

Table 2 – Proposed Conditions Peak Flows

		Peak Discharges (cfs) of Various Storm Frequency		
Study Point	Area (ac)	1-yr	10-yr	100-yr
B	15.2	0.97	7.3	43.93

There is **NO INCREASE** in peak discharge for the all storm events up to the 100- year storm under the proposed conditions.

Detention dry wells are proposed for water quantity purposes for Study Point A, C, D, E, F, G and H. Detention dry wells are suitable for these study points due to the limited existing spaces and minor proposed developments. The dry wells are designed to temporarily store the entire additional 25-year runoff volume due to the proposed developments. Runoff store within the dry wells will infiltrate into the soil. Soil infiltration rate has been field verified to be greater than 0.5" per hour and has minimum three feet separation from the groundwater. Refer to Attachment D4 for details calculations. Summary Tables #3 below show the runoff volume summary provided by the dry wells for various Study Points.

Table 3: Runoff Volume Summary Provided by Dry Wells for various Study Points

Study Point	Runoff Volume (cubic feet)		
	Needed	Provided	Extra Volume
A	1,709	1,760	50
C	5,383	5,429	46
D	1,791	1,810	19
E	5,111	5,128	17
F	3,906	4,022	116
G	1,831	2,111	281
H	2455	2514	59

The existing Brewster Drive located along the western end of the property will be slightly realigned and modified. Since the proposed development is insignificant, no water quantity measure is proposed for the areas (Point J and K).

Six Step Process for Stormwater Site Planning and Practices Selection

The NYS Stormwater Management Design Manual (SMDM) required a six-step process that integrates site planning, usage of green infrastructure practices and standard stormwater management practices to treat stormwater. The six steps process are:

1. Site Planning to preserve natural area and reduce impervious cover,
2. Calculate initial required Water Quality Volume for the site,
3. Provide Runoff Reduction by incorporating green infrastructure technique and standard stormwater management practice (SMP) with Runoff Reduction Volume (RRv) capacity,
4. Calculate minimum RRv required,
5. Provide standard SMP's to treat remaining portion of water quality volume (WQv) not addressed by green infrastructure and stanrdard SMP's with RRv capacity, and
6. Provide volume and peak rate control practices where required.

Following further discuss each of the six steps process in details.

Step 1: Site Planning

During site planning process, the designer try to conserve natural resources and reduce proposed impervious coverage to reduce the impact of water quality from proposed development.

Preservation of Natural Resources includes:

- Preservation of undisturbed areas
- Minimizing site clearing and grading
- Avoiding sensitive area
- Open space design

Reduction of impervious coverage includes:

- Roadway reduction
- Sidewalk reduction
- Driveway reduction
- Building footprint reduction
- Parking reduction

Step 2: Required Water Quality Volume (WQv)

Required WQv is directly related to the amount of impervious cover constructed at the site. It was calculated for the site based on 90% rule as per Chapter 4 of New York State Stormwater Management Design Manual (NYS-SMDM). Following equation is used to calculate the water quality volume:

$$WQv\ (ac\text{-}ft) = \frac{(P)(Rv)(A)}{12}$$

Where: P = 90% Rainfall Event = 1.4 inches

Rv = 0.05 + 0.009(I)

I = Percentage of impervious cover

A = Drainage area in acres

For redevelopment site, the required water quality volume can be reduced by providing 25% from existing impervious area and 100% from newly created impervious area.

Step 3: Runoff Reduction Technique and Standard SMPs with RRv Capacity

RRv requirement can be achieved through application of green infrastructure and standard SWM with runoff reduction capacity. If RRv provided by these techniques is greater than the required WQv, the RRv requirement is met. If the RRv is less than the required WQv, the designer must at a minimum, reduce a percentage of the runoff from impervious areas to be constructed on site. However, RRv is not required for the redevelopment portion of the project.

Below are the list of green infrastructure techniques and or standard SMP with runoff reduction capacity and an evaluation of its use for this project.

Conservation of Natural Area

Conserving the natural area can avoid the unnecessary disturbance of the natural soil and maintain the water quality. The proposed development is located at the existing disturbed area which the natural soil has already been disturbed. This method is not applicable for the runoff reduction calculation.

Sheetflow to Riparian Buffers / Filter Strips

There is an existing wetland along the NYS Route 22. The proposed development maintain the sheetflow area along the wetland buffer thus provide the natural runoff reduction capability. However since the sheetflow area along the wetland is not part of the study points, the runoff reduction provided by this method is not considered.

Vegetated Open Swales

The proposed vegetated swale along the proposed soccer field provide the natural runoff reduction capability. There are also many minor vegetated swale within the proposed development that encourage the runoff reduction.

Tree Planting/Tree Box

There are many tree will be planted for the site however the no RRv credit was taken due to its minor contribution to the calculation and is a more conservative approach.

Disconnection of Rooftop Runoff

RRv is not applied for this green infrastructure technique because most of the building are existing buildings.

Stream Daylighting

RRv is not applied for this green infrastructure technique because there are no stream or pipe to be day lighted.

Bioretention Basin/ Rain Garden

Nine bioretention basins are proposed out of the 10 study point drainage areas. The bioretention basins are sized for the entire required water quality volume.

Green Roof

RRv is not applied for this green infrastructure technique because the existing buildings will be remained under proposed conditions.

Stormwater Planters

There are many tree will be planted for the site however no RRv credit was taken due to its minor contribution to the calculation and is a more conservative approach.

Rain Barrels/Cisterns

RRv is not applied for this green infrastructure technique because the existing buildings will be remained under proposed conditions.

Porous Pavement/Pervious Paver

Pervious paver is proposed at the proposed parking spaces within the drainage area for Study Point H. The pervious paver area is designed to treat the entire required water quality volume.

**** All the bioretention basins and pervious paver are designed based on the entire required water quality volume, hence, meeting both the WQv and RRv.**

Step 4: Minimum Runoff Reduction Volume (RRv)

The percent runoff reduction of the impervious area to be constructed on site is based on the Hydrologic Soil Groups present on the site, and is determined by the Specific Reduction Factor (S). The following equation is used to determine the minimum runoff reduction volume:

$$RRv\ (ac\text{-}ft) = \frac{(P)(Rv^*)(Aic)(S)}{12}$$

Where: P = 90% Rainfall Event in inches

Rv* = 0.05 + 0.009(I) = 0.95 where I is 100% impervious

Aic = total area of new impervious cover

S = hydrologic soil ground (HSG) specific reduction factor (S)

Most of the hydrologic soil ground for the site is HSG A and C, only a minor portion is HSG D. The Specific Reduction Factor (S) is 0.55, 0.3 and 0.2 for HSG A, HSG C and HSG D respectively.

Step 5: Water Quality Volume by Standard or NYSDEC Certified Stormwater Management Practice

Required water quality volume can also be treated by standard stromwater management practices or stormwater management manufactured treatment device certified by NYSDEC. Following is the stormwater management practices applied to the project.

Stormwater Pond

Forebay and permanent pool of the pond provides water quality volume. Forebays are sized to contain at least 10% of the water quality volume, and shall be four to six feet deep. Combined forebay and permanent pool are sized to contain the entire required water quality volume for drainage area within Study Point B.

Step 6: Volume and Peak Rate Control Practices

After satisfying the required water quality volume, designer need to satisfy the channel protection volume (CPv), overbank flood control and extreme flood control. Design criteria for channel protection volume, overbank flood control and extreme flood control are 1-year storm, 10-year storm and 100-year storm respectively. However, for redevelopment project the channel protection requirement is relaxed.

Channel protection volume, overbank flood control and extreme flood control requirements are satisfied though utilizing the proposed stormwater pond and detention dry well systems.

General Project Construction Stages

Site development will occur in three overlapping stages:

1. Site Preparation,
2. Construction, and
3. Final grading and Stabilization.

Site Preparation Stage

Prior to beginning any construction activities, construction fences will be installed as shown on the attached project plans. Silt fencing and/or hay bale barriers will be entrenched to eliminate sediment underflow. Fencing will be placed around trees to be protected and will be at a minimum at the drip line of the longest branches. The erosion control barriers will be inspected and maintained routinely throughout the duration of the project. Following the installation of erosion and sediment controls, the site grading and excavation will occur.

The following steps will be followed to ensure that the controls are installed correctly and will be effective.

Resource Protection

- Evaluate, mark and protect important trees and associated rooting zones, wetlands, on-site septic systems absorption fields, etc.
- Fencing will be placed around trees to be protected and will be at a minimum at the drip line of the longest branches.
- Protect existing vegetated areas suitable for filter strips, especially in perimeter areas.
- Protect stream buffers and phasing lines as neccessary.

Surface Water Protection

- Identify the drainage area in the plan. Divide the site into natural drainage areas.
- Divert the off-site clean runoff from entering disturbed areas.
- Identify bodies of water located either on site or in the vicinity of the site.
- Plan appropriate practices to protect on-site or downstream surface water and its buffer.

Stabilized Construction Exit

- Establish a temporary construction entrance to capture mud and debris from construction vehicles before they enter the public highway.
- Stabilize bare areas (entrances, construction routes, equipment parking areas) immediately as work takes place. Top these areas with gravel or maintain vegetative cover.

- Sediment tracked onto public streets should be removed or cleaned on a daily basis.
- A description of the Stabilized Construction Exit is included in Section VI Required Erosion and Sediment Control Practices.

Perimeter Sediment Controls

- Silt fence material and installation must comply with the standard drawing and specifications.
- Silt fencing and hay bale barriers will be entrenched to eliminate sediment underflow.
- Silt fences will be installed based on appropriate spacing intervals. This interval will decrease as the slope increases. Silt fence should be placed on or parallel to contours where there is no concentration of water flowing to the silt fence and where erosion occurs in the form of sheet erosion. On sloped areas, the area below the final silt fence shall be undisturbed ground.
- Principal sediment basins will be installed after construction site is assessed.
- Additional sediment traps and barriers will be installed as needed during grading.
- Erosion control blankets will be stapled and/or staked into place on slopes 2:1 or greater.
- The erosion control barriers will be inspected and maintained routinely throughout the duration of the project.

Runoff Control

- Install practices after sediment traps are installed and before land grading starts.
- Control the runoff in each small drainage area before flow reaches runoff from entire site.
- Divert offsite or clean runoff from disturbed areas.
- Convey surface flows from highly erodible soil and steep slopes to more suitable stable areas.
- Runoff from existing or proposed cut and fill slopes should be redirected to reduce water velocity without causing erosion.
- Final site drainage should be designed to prevent erosion, concentrated flows to adjacent properties, uncontrolled overflow, and ponding.

Runoff Conveyance System

- Stabilize conveyance system.
- Channels and streambanks need to be seeded at the outlet points.
- Install check dams to slow down the velocity of concentrated flow.
- Protect existing natural drainage systems and streams by maintaining vegetative buffers and by implementing other appropriate practices.

Groundwater Recharge Measures

- Install practices to infiltrate the runoff on the site as much as possible.
- Provide groundwater recharge to maintain the hydrologic regime of the downstream water bodies and simulate predevelopment hydrology.

Construction Stage

The proposed building, access drive, utility/infrastructure, stormwater management system, and landscaping will be constructed during this phase. Temporary swales and berms will be constructed and maintained and relocated by the contractor as necessary to control and direct runoff to temporary basins during this phase.

Grading

- Limit the initial clearing and earth disturbance to that necessary to install sediment control measures. Excavation for footings, clearing, or other earth disturbance may only take place after the sediment and erosion controls are installed.
- Stockpile the topsoil removed from the site. The topsoil should be protected, stabilized and sited in a location away from the storm drains and waterbodies, and saved on-site for reuse if not contaminated.
- Changes in grade or removal of vegetation should not disturb established buffers and should not be allowed within any regulated distance from wetlands, the high water line of a body of water affected by tidal action, or other such protected zones.
- Avoid unnecessry disturbance of steep slopes.
- An undisturbed buffer should be maintained to control runoff from steep slopes within sensitive areas.
- Proposed grading should not impair existing surface drainage resulting in a potential erosion hazard impacting adjacent land or waterbodies.

Erosion Control (Stabilization)

- Implement erosion control practices to keep the soil in place.
- Stabilization should be completed immediately for the surface of all perimeter controls and perimeter slopes.
- When activities temporarily cease during construction, soil stockpiles and exposed soil should be stabilized by seed, mulch or other appropriate measures as soon as possible, but in no case more than 14 days after construction activity has ceased.
- Apply temporary or permanent stabilization measures immediately on all disturbed areas where work is delayed or completed.

- Where the initiation of stabilization measures by the 14th day after construction activity temporarily or permanently ceased is precluded by snow cover or frozen ground conditions, stabilization measures shall be initiated as soon as practicable;
- For an area to be disturbed is more than five (5) acres at one time; in areas where soil disturbance activity has been temporarily or permanently ceased, temporary and/or permanent soil stabilization measures shall be installed and/or implemented within seven (7) days from the date the soil disturbance activity ceased. The soil stabilization measures selected shall be in conformance with the most current version of the technical standard, New York State Standards and Specification for Erosion and Sediment Control.
- Consult the local Soil and Water Conservation District for proper timing and application rate of seed, fertilizer and mulch.

Sediment Control

- At any location where surface runoff from disturbed or graded areas may flow off the construction area, sediment control measures must be installed to prevent sediment from being transported off site. No grading, filling or other disturbance is allowed within existing drainage swales.
- Swales or other areas that transport concentrated flow should be appropriately stabilized.
- Downspout or sump pump discharges must have acceptable outfalls that are protected by splash blocks, sod, or piping as required by site conditions (i.e., no concentrated flow directed over fill slopes).

Maintenance and Inspections

- Identify the type, number and frequency of maintenance actions required for stormwater management and erosion control during construction and for permanent practices that remain on the site once construction is finalized.
- Inspections must be performed every 7 calendar days.
- For construction where soil disturbance activities are greater than five (5) acres of soil at any one time, the inspection must be performed at least two (2) times every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.
- Inspections must verify that all practices are adequately operational, maintained properly, and that sediment is removed from all control structures.
- Inspections must look for evidence of the soil erosion on the site, potential of pollutants entering drainage systems, problems at discharge points (such as turbidity in receiving water), and signs of soil and mud transport from the site to the public road at the entrance.
- Routine maintenance must be identified on the schedule and performed on a regular basis and as soon as a problem is identified.
- Identify the person or entities responsible for conducting the maintenance actions during construction and post-construction.

- Retain a copy of the inspection on-site with the SWPPP.
- Color photographs shall be taken during inspection and shall be included in the inspection report.
- Inspection and maintenance shall be in compliance with Part IV of the SPDES Permit requirements.

Final Grading and Stabilization Stage

Final site grading and stabilization will be completed as soon as practicable to eliminate exposed soils and potential sources of erosion. Areas to be paved will be covered by bituminous pavement after final subgrades are established. All litter, as well as debris generated by construction activities, will be removed by hand from the site and adjacent undeveloped areas.

Finalize Grading & Landscaping

- Identify the final grading and stabilization plan once the construction is completed.
- All open areas, including borrow and spoil areas must be stabilized.
- Plan a permanent top soil, seed, sod, mulch, riprap or other stabilization practices in the remaining disturbed areas as appropriate.
- Stabilization must be undertaken no later than 14 days after construction activity has ceased except as noted in the GP-0-15-002.
- Remove the temporary control measures.
- Provide soil decompaction or minimizing unneccessary soil compaction on site.

Post-construction Controls

- Identify the permanent structural or non-structural practices that will remain on the site.
- Ensure that the permanent structural or non-structural practices utilized during construction are properly designed to suit the post-construction site conditions.
- In finalizing the plan, evaluate the post-construction runoff condition on the site.
- Minimize the risk of concentrated flow and erosion.
- On-site runoff controls help reduce the risk of increased runoff velocity, erosion and point source discharge. In addition to the standard runoff and erosion control practices identified in NY Standards for Erosion and Sediment Control, some of the techniques discussed under on-site runoff control in the discussion of Site Preparation may be applied.

Project Materials

The materials or substances below are expected to be present on-site during the construction period:

Structural Steel	*Welding Supplies*
Concrete	*Petroleum-Based Products*
Metal Studs	*Paints*
Cleaning Solvents	*Wood*
Detergents	*Fertilizer*

This materials list will be updated by the contractor, as necessary, prior to and during the construction process.

Non-Industrial Discharges

The following non-stormwater discharges may occur on this construction site:

- Fire hydrant flushing;
- Potable water including uncontaminated water line flushing;
- Pavement wash water where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents are not used;
- Uncontaminated air conditioning or compressor condensate;
- Uncontaminated ground water or spring water;
- Foundation or footing drains where flows are not contaminated with process materials such as solvents; and
- Uncontaminated excavation dewatering;

V

Required Erosion and Sediment Control

The Owner/Operator will be responsible for ensuring that the specified stormwater pollution control measures are installed, maintained, relocated and added to as necessary. Details of recommended stormwater pollution control techniques are provided below.

Erosion and Sediment Controls

The purpose of an erosion and Sediment control program is to minimize temporary impacts to downgradient wetlands during the construction phase of the project by retaining sediment on site to the maximum extent practicable. The program incorporates BMPs specified in guidelines developed by the DEC[1] and complies with the requirements of the SPDES General Permit for Storm Water Discharges from Construction Activities.

Proper implementation of the erosion and Sediment control program will:

- minimize exposed soil areas through temporary seeding and construction sequencing;
- place structures to manage stormwater runoff and erosion; and
- establish a permanent vegetative cover or other forms of stabilization as soon as practicable.

All manufactured control measures must be installed and maintained in accordance with the manufacturer's specifications. The following sections describe the erosion and Sediment controls that will be used on this site. The Owner/Operator will implement and add to these site conditions, when required.

Stabilization Practices

Stabilization practices to be used on this site include mulching and temporary seeding. Stabilization practices will be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased. The project has been designed to preserve existing vegetation where possible.

1 New York State Department of Environmental Conservation (DEC). *New York Stormwater Management Design Manual*, January 2015 and *New York Standards and Specifications for Erosion and Sediment Control*, August 2005

Site Layout

A naturally occurring vegetated buffer that will be flagged on site before construction will provide protection for the on-site wetland areas and resources adjacent to the site in addition to the various selected BMPs.

Mulching

Straw mulching will be employed on all inactive and disturbed areas that will remain unstabilized for more than 14 days. Mulch materials will be spread uniformly by hand or machine at a rate of approximately 100 pounds per 1,000 square feet. Mulch will be spread such that at least 75 percent of the ground surface is covered. Mulching may be used with temporary or permanent seeding, or with slope stabilization techniques. Hydro mulch may also be used for temporary soil stabilization

- For an area to be disturbed is more than five (5) acres at one time; in areas where soil disturbance activity has been temporarily or permanently ceased, temporary and/or permanent soil stabilization measures shall be installed and/or implemented within seven (7) days from the date the soil disturbance activity ceased. The soil stabilization measures selected shall be in conformance with the most current version of the technical standard, New York State Standards and Specification for Erosion and Sediment Control.

Erosion Control Slope Blankets

Upon completion of final grading, any areas not covered by pavement, other forms of stabilization or landscaping and which are on slopes of 2:1 and greater will be protected with erosion control slope blankets and seeded with an erosion control seed mix. The blanket will be installed from the top of the slope, with the upper edge of the blanket secured in a trench. Blankets shall be unrolled down the slope or swale in the direction of the water flow. Edges of blanket shall be stapled with approximately four inches of overlap where two or more strip widths are required. The end of an upper blanket shall overlap the end of a lower blanket by at least six inches and both ends shall be stapled in place. The blankets will be staked and/or stapled into place as per manufacturer's recommendations.

Temporary Seeding

A temporary vegetative cover will be established on areas of exposed soils (including stockpiles) that remain inactive and unstabilized for a period of more than 14 days for slopes. The seeded surfaces will be covered with a layer of straw mulch or hydro mulch as described above.

Permanent Seeding

Upon completion of final grading, any areas not covered by pavement, other forms of stabilization, or other methods of landscaping will be seeded with an erosion control seed mix. Loamed and seeded areas will be mulched with hay to prevent erosion prior to germination of the seed.

Structural Practices

Structural erosion and Sediment controls to be used on the site include the following:

Hay Bale and Silt Fence Barriers

Prior to any ground disturbance, a professional engineer or land surveyor will certify that a barrier of staked hay bales and silt fence is in place at the downgradient limit of work in accordance with the plan filed with the Conservation Commission (see relevant plans). When necessary, additional hay bale and silt fence barriers will be installed immediately downgradient of erosion-prone areas, such as the base of steep exposed slopes and around the base of stockpiles, throughout the construction phase of the project. The barriers will be entrenched into the substrate to prevent underflow.

The erosion control barriers will be inspected weekly and after every storm event. Any sediment that collects behind the barriers will be removed and will be either reused at the site or disposed of at a suitable offsite location. Any damaged sections of silt fence or hay bales will be repaired or replaced.

Catch Basin Inlet Protection

The inlets of proposed catch basins will be protected from sediment inflow during the work period by following the guideline specify by New York State Standards and Specifications for Erosion and Sediment Control (aka blue book) or approved equal.

Stabilized Construction Exits

Stone anti-tracking pads will be installed at each access point to the work area to prevent the off-site transport of sediment by construction vehicles. The stabilized construction exits will be at least fifty feet long and will consist of a 6-inch thick layer of crushed stone (1.5 to 2.5 inches in diameter). The stone will be placed over a layer of non-woven filter fabric. The anti-tracking pads will remain in place until a binder coat of pavement has been established in areas to be paved.

Diversion Channels

Diversions will also be used to collect runoff from construction areas and convey it to a temporary sediment basin or trap. Diversion Channels must be constructed properly with stabilized beds using crushed stone, plastic or other approved materials, crushed stone check dams as necessary.

Temporary diversions will remain in place until slopes are permanently stabilized or graded level. If vegetation of the diversion channel is required to avoid erosion of the channel, the channel will be temporarily stabilized to ensure viability of the grass seed.

Temporary Sediment Basins

Temporary sediment basins will be designed either as excavations or bermed stormwater detention structures (depending on grading) that will retain runoff for a sufficient period of time to allow suspended soil particles to settle out prior to discharge. These temporary basins will be located at the low points on the site and will receive runoff via temporary diversion swales. A perforated riser surrounded by a crushed stone filter will control discharge from the basin. Points of discharge from sediment basins will be stabilized to minimize erosion.

Riprap Outlet Protection

The purpose of riprap outlet protection is to reduce velocity and energy of water such that the flow will not erode the receiving downstream reach. The riprap outlet protection is placed at the outlet of the culvert, drainage pipe, channels.

VI
Additional Erosion and Sediment Controls

The following controls may be implemented at the site if necessary.

Interior Site Erosion Controls

Additional erosion controls may be used in the central portions of the site in the event that excessive erosion occurs. Placement of temporary silt fence, hay bales or earthen berms may be used to control the movement of material within the site. If such controls are deemed necessary for adequate protection, they will be installed perpendicular to the flow direction to contain sediment. These measures will be installed to prevent perimeter erosion controls and diversion swales from becoming compromised.

Dust Control

Fugitive dust from large areas of unstabilized soil can be a problem during construction. On dry and windy days when dust generation is a concern, a water truck will traverse the site and spray water as necessary to prevent dust from forming.

VII
Water Quality and Water Quantity Controls

The Owner/Operator will be responsible for ensuring that the specified water quality and water quantity control measures are installed and maintained as necessary. Details of recommended stormwater pollution control techniques are provided below.

Water Quality Controls

Water quality control measures are designed to minimize impact to receiving waterbodies from stormwater pollution. As stormwater runoff travels across impervious surfaces, it collects pollutants such as sediments, oil, and trash and carries them to a receiving waterbody. Properly installed and maintained stormwater best management practices (BMPs) can capture these pollutants and reduce the impact that the proposed development has on the environment. The BMPs selected for this project were designed based on guidelines developed in the New York State Stormwater Management Design Manual[2].

Proper implementation of the water quality control measures will:

- reduce post-construction sediment impacts; and
- promote infiltration of stormwater to maintain pre-construction hydrology

All manufactured control measures must be installed and maintained in accordance with the manufacturer's specifications. The following sections describe the water quality controls that will be used on this site. The Owner/Operator will implement and add to these site conditions, when required.

2 New York State Department of Environmental Conservation (DEC). *New York Stormwater Management Design Manual*, January 2015

Non-structural Practices

Pavement Sweeping

The sweeping program will remove sediments and contaminants directly from paved surfaces before their release into stormwater runoff. Pavement sweeping has been demonstrated to be an effective initial treatment for reducing pollutant loading.

Catch Basin Cleaning

Sediments and other contaminants that are not removed by pavement sweeping are transported by stormwater runoff to the site's catch basin system. Once in the catch basin, they settle to the bottom of the system. This material will be removed on a regular basis to prevent contaminants from migrating out of the drainage system during high flow events or reducing the infiltration capacity of the devices.

Structural Practices

Structural erosion and Sediment controls to be used on the site include the following:

Stormwater Pond

Forebay and permanent pool of the pond provides water quality volume. Forebays are sized to contain at least 10% of the water quality volume, and shall be four to six feet deep. Combined forebay and permanent pool are sized to contain at least 50% of the water quality volume.

Water Quantity Controls

Water quantity controls are implemented to manage the discharge rate of stormwater runoff generated from the proposed development. The primary goals of stormwater quantity management are to make sure the 10-year storm (overbank flood) and 100-year storm (Extreme flood) flow rates under proposed conditions are equal or less than the existing conditions.

Detention Practices

Stormwater Pond

Storage above the water quality elevation in the stormwater pond is used for the water quantity detention. The storage volume and a set of outlet opening that is consists of orifice(s), weir(s) and emergency spillway are the major component in this water quantity

control measure. The outlet openings are designed such that all the proposed flow rates under proposed conditions are equal or less than the existing conditions.

Detention Dry Well

Dry well is a standard SMP practice with infiltration capacity. Dry well temporarily store the water quantity volume and infiltrate into the ground.

VIII

Maintenance, Inspections and Project Documentation

The SPDES Construction General Permit requires that the Owner/Operator be responsible for implementing, inspecting and maintaining each of the stormwater controls described in the plan. In addition, the Owner/Operator must document compliance with the Permit throughout construction.

Inspections

The operator shall have a qualified professional conduct an assessment of the site prior to the commencement of construction and certify in an inspection report that the appropriate erosion and sediment controls described in the SWPPP and required by this permit have been adequately installed or implemented to ensure overall preparedness of the site for the commencement of construction.

Following the commencement of construction, site inspections shall be conducted by the qualified professional at least every 7 calendar days. If the soil disturbance is greater than five (5) acres at any one time, the qualified inspector shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days. During each inspection, the qualified professional shall record the information required by Part IV.C.4 of the Permit. Color photographs shall be taken during inspection and shall be included in the inspection report

Inspections shall include all areas of the site disturbed by construction activity and areas used for materials storage that are exposed to precipitation. The Inspector must look for evidence of, or the potential for, pollutants entering the storm water system, inspect the BMPs installed as part of the Plan, inspect the site drainage outfalls and inspect the site egress points for tracking. If, in the course of the inspection, the inspector identifies an eroded area or an area impacted by sedimentation, additional erosion and Sediment controls will be implemented, and the SWPPP will be revised to include these changes.

For each inspection, the Inspector must complete a written inspection report in accordance with the Permit. The operator shall maintain a record of all inspection reports in a site log book. The site log book shall be maintained on site and be made available to the permitting authority upon request. Prior to the commencement of construction, the operator shall certify in the site log book that the SWPPP, prepared in accordance with Part III of this permit, meets

all Federal, State and local erosion and sediment control requirements. The operator shall post at the site, in a publicly-accessible location, a summary of the site inspection activities on a monthly basis.

The completed forms become part of the Owner/Operator's SWPPP and should be maintained for five years after the filing of the Notice of Termination. Prior to filing of the Notice of Termination or the end of permit term, the operator shall have the qualified professional perform a final site inspection. The qualified professional shall certify that the site has undergone final stabilization 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.

Maintenance

All erosion and sediment controls and other protective measures identified in the SWPPP must be maintained in effective operating condition. If site inspections identify BMPs that are not operating effectively, maintenance, modification or replacement with an alternative or additional BMPs must be performed as soon as possible, and before the next storm event whenever practicable. If implementation before the next storm event is impracticable, the situation must be documented in the SWPPP and alternative BMPs must be implemented as soon as possible.

The following maintenance program is proposed to ensure the effectiveness of the structural controls during the construction phase of this project:

- The on-site representative will inspect all sediment and erosion control structures and records of the inspections will be prepared and maintained on-site by the Owner/Operator.
- Silt shall be removed from behind barriers if greater than 6-inches deep or as needed.
- Paved areas of the site will be swept on an as needed basis during the site construction.
- Damaged or deteriorated items will be repaired immediately after identification.
- The underside of hay bales should be kept in close contact with the earth and reset as necessary.
- Sediment from sediment traps or sedimentation ponds, if applicable, must be removed when design capacity has been reduced by 50 percent or every five to six years.
- Sediment that is collected in structures shall be disposed of properly and covered if stored on-site.
- Erosion control structures shall remain in place until all disturbed earth has been securely stabilized. After removal of structures, disturbed areas shall be re-graded and stabilized as necessary.
- A conspicuous and legible sign of not less than 18 inches by 24 inches shall be erect or post in the immediate vicinity of each stormwater management practices bearing the following information:

Stormwater Management Practice – (name of practice)
Project Identification - (SPDES Construction Permit #, other)
Must Be Maintained In Accordance With O&M Plan
DO NOT REMOVE OR ALTER

- Refer to Attachment A and B for the construction inspection and maintenance inspection checklist for each stormwater management practices.

If, in the course of the inspection, the inspector identifies an eroded area or an area impacted by sedimentation, additional erosion and sediment controls will be implemented, and the SWPPP will be revised to include these changes.

Documentation

The following records must be maintained as part of the Owner/Operator's SWPPP:

- Dates when major grading activities occur;
- Dates when construction activities temporarily or permanently cease on a portion of the site;
- Dates when stabilization measures are initiated;
- Inspection dates and processes.

IX

Spill Prevention Plan and Response Procedures

All construction personnel will be instructed regarding spill prevention practices and procedures. Notices stating these practices will be posted in the office trailer, and the site construction supervisor will be responsible for seeing that these procedures are followed.

Material Management Practices

The following material management practices will be used to reduce the risk of spills or other accidental exposure of materials and substances to stormwater runoff. These include good housekeeping practices and guidelines for the handling of hazardous products.

The following good housekeeping practices will be followed on-site during the construction period.

- An effort will be made to store only enough products required to do the job.
- All materials stored on-site will be stored in a neat, orderly manner in their appropriate containers, and (if possible) under a roof or other enclosure.
- Products will be kept in their original containers with the original manufacturer's label.
- Substances will not be mixed with one another unless recommended by the manufacturer.
- Whenever possible, all of a product will be used before disposing of the container.
- Manufacturer's recommendations for proper use and disposal will be followed.
- The site superintendent will inspect the storage area daily to ensure proper use and disposal of materials on-site.

The following practices will reduce the risks associated with hazardous materials (e.g., petroleum products, solvents):

- A copy of all Material Safety Data Sheets (MSDS) for materials or products used during construction will be kept in the office trailer.
- Products will be kept in original containers unless they are not re-sealable.

- Original labels and material safety data (MSD sheets) will be retained; they contain important product information.
- If surplus product must be disposed, manufacturer's or local- and state-recommended methods for proper disposal will be followed.

Product-Specific Practices

The following product-specific practices will be followed on-site. Recommendations are provided for petroleum products, fertilizers, solvents, paints, and other hazardous substances, and concrete.

Petroleum Products

All on-site vehicles will be monitored for leaks and will receive regular preventive maintenance to reduce the chance of leakage. No vehicle maintenance or handling of petroleum products will occur within 100 feet of a wetland or waterway. Petroleum products will be stored in tightly sealed containers that are clearly labeled. Any asphalt substances used on-site will be applied according to manufacturer's recommendations. No petroleum-based or asphalt substances will be stored within 100 feet of a wetland or waterway.

Fertilizers

Fertilizers will be applied only in the minimum amounts recommended by the manufacturer. Once applied, the fertilizer will be worked into the soil to limit exposure to stormwater. Storage will be in a covered shed; and the contents of any partially used bags will be transferred to a sealable, plastic bin to avoid spills. No fertilizer storage will occur within 100 feet of a wetland or waterway.

Solvents, Paints, and other Hazardous Substances

All containers will be tightly sealed and stored when not required for use. Excess materials will not be discharged to the storm sewer system, but will be properly disposed according to manufacturer's instructions or state and local regulations. No storage will occur within 100 feet of a wetland or waterway.

Concrete Trucks

Concrete trucks will not be allowed to wash out or discharge surplus concrete or drum wash water within 100 feet of wetland resources or into catch basins that are already in place.

Spill Control/Notification Practices

In addition to the good housekeeping and material management practices discussed above, the following practices will be followed for spill control, notification and cleanup.

- Manufacturer's recommended methods for spill cleanup will be clearly posted and site personnel will be informed of the procedures and the location of the information and cleanup supplies.
- Materials and equipment necessary for spill cleanup will be kept in the material storage area on-site. Equipment and materials will include, but will not be limited to, shovels, wheelbarrows, brooms, dustpans, mops, rags, gloves, goggles, kitty litter or Speedi-Dry, sand, sawdust, and plastic and metal trash containers specifically designated for this purpose.
- All spills will be cleaned up immediately after discovery.
- The spill area will be kept well ventilated and personnel will wear protective clothing to prevent injury from contact with a hazardous substance.
- Spills of toxic or hazardous material in excess of reportable quantities, as established by the New York State Department of Environmental Conservation (NYSDEC), will be reported to the NYSDEC Spill Hotline: 1-800-457-7362 (within NYS) or 1-518 457-7362 (from outside NYS) or to the National Response Center: 1-800-424-8802. The Emergency Spill Response Procedure is attached.
- The construction superintendent responsible for the daily operations will be the spill prevention and cleanup coordinator. He will designate at least three other site personnel to receive spill prevention and cleanup training. The names of the responsible spill personnel will be posted in the material storage area and in the on-site office trailer.

Source Control

Trash removal, designated trash storage areas, pavement sweeping and the controlled use of fertilizer and deicing agents on the site will reduce the pollutant load in the site's stormwater management system.

Construction Trash Removal

Daily loose trash removal will prevent litter, construction debris, and construction chemicals exposed to stormwater from becoming a pollutant source for stormwater discharges. All loose trash will be placed in appropriate storage containers until disposed of properly off-site.

Covered Trash/Storage Areas

Areas to be used for storing dumpsters, compactors or other raw or waste materials will be covered to prevent contact with stormwater.

Pavement Sweeping

Pavement sweeping may be required daily or even more frequently during construction where sediment tracking from construction equipment is a problem.

Fertilizer

Only slow-release organic fertilizers will be used in landscaped areas. This will limit the amount of nutrients that could enter the stormwater and wetland systems. Fertilizer use will be reduced once the proposed landscaping is established.

Waste Disposal

All waste materials will be collected and stored in securely lidded metal dumpsters leased from a licensed solid waste management company and the dumpster will be emptied as necessary. Trash will be hauled by a licensed contractor and disposed in accordance with federal, state, and local environmental regulations. No trash or construction waste will be buried on-site, and all personnel will be instructed regarding the correct procedure for waste disposal. Notices stating these practices will be posted in the office trailer and the site construction supervisor will be responsible for seeing that these procedures are followed.

Hazardous Waste

All hazardous waste materials (e.g., petroleum products, solvents) will be disposed in the manner specified by local and state regulation, or by the manufacturer. Site personnel will be instructed in these practices, and the site construction supervisor will be responsible for seeing that these procedures are followed.

Sanitary Waste

All sanitary waste will be collected from the portable units by a licensed contractor a minimum of three times weekly, and disposed in compliance with state and local regulation.

Spill Response Procedure

Initial Notification

In the event of a spill, the facility and/or construction manager or supervisor will be notified immediately.

Facility Manager: (name) _____

(phone) _____

Construction Manager: (name) _____

(phone) _____

Assessment - Initial Containment

The supervisor or manager will assess the incident and initiate containment control measures with the appropriate spill containment equipment included in the spill kit kept on-site. The supervisor will first contact the *Town of Dover* Fire Department and then notify the *Town of Dover* Police Department and *Dutchess County* Public Health Commission. The fire department is ultimately responsible for matters of public health and safety and should be notified immediately.

Fire Department: 911 or *(845) 877-6891*

Police Department: *(845) 877-3031*

Dutchess County Public Health Commission: *(845) 486-3400*
(845) 431-6465 (after hours)

Further Notification

Based on the assessment from the Fire Chief, additional notification to a cleanup contractor may be made. The New York Department of Environmental Conservation and the EPA may be notified depending upon the nature and severity of the spill. The Fire Chief will be responsible for determining the level of cleanup and notification required. The attached list of emergency phone numbers shall be posted in the main construction/facility office and readily accessible to all employees.

NYSDEC Spill Hotline: 1-800-457-7362 (within NYS)

National Response Center: 1-800-424-8802 / (518) 457-7362 (outside NYS)

For further information, contact:

New York State Department of Environmental Conservation

Division of Environmental Remediation

Bureau of Spill Prevention & Response

625 Broadway – 11th Floor

Albany, NY 12233-7020

(518) 402-9546

HAZARDOUS WASTE / OIL SPILL REPORT

Date____/____/____ Time_____ AM / PM

Exact location (Transformer #)_____

Type of equipment_____ Make_____ Size_____

S / N_____ Weather Conditions_____

On or near water ☐ Yes If yes, name of body of water_____

☐ No

Type of chemical / oil spilled_____

Amount of chemical / oil spilled_____

Cause of spill_____

Measures taken to contain or clean up spill_____

Amount of chemical / oil recovered_____ Method_____

Material collected as a result of clean up

_____ drums containing_____

_____ drums containing_____

_____ drums containing_____

Location and method of debris disposal_____

Name and address of any person, firm, or corporation suffering damages_____

Procedures, method, and precautions instituted to prevent a similar occurrence from recurring_____

Spill reported to General Office by_____ Time_____ AM / PM

Spill reported to DEC / National Response Center by_____

DEC Date____/____/____ Time_____ AM / PM Inspector_____

NRC Date____/____/____ Time_____ AM / PM Inspector_____

Additional comments_____

EMERGENCY RESPONSE EQUIPMENT
INVENTORY

The following equipment and materials shall be maintained at all times and stored in a secure area for construction activities emergency response need.

--	SORBENT PADS	5 PADS
--	SAND BAGS (empty)	10
--	SPEEDI-DRI ABSORBENT	5 40# BAGS
--	SHOVEL	1
--	PICK	1
--	PRY BAR	1

The following items shall be placed in a convenient, readily accessible location on site.

--	HAY BALES & GRADE STAKES	10
--	SAND	2 CUBIC YARDS

EMERGENCY NOTIFICATION PHONE NUMBERS

1. SUPERVISOR/MANAGER
   NAME: _____ BEEPER: _____
   PHONE: _____ HOME PHONE: _____

   ALTERNATE:
   NAME: _____ BEEPER: _____
   PHONE: _____ HOME PHONE: _____

2. *Town of Dover* FIRE DEPARTMENT
   EMERGENCY: 911 or *(845) 877-6891*

   Town of Dover POLICE DEPARTMENT
   GENERAL NUMBER: *(845) 877-3031*

3. CLEANUP CONTRACTOR: _____
   ADDRESS: _____
   PHONE: _____

4. NEW YORK DEPARTMENT OF ENVIRONMENTAL CONSERVATION
   EMERGENCY: 1-800-457-7362
   OUTSIDE NEW YORK: 1-518 457-7362

5. NATIONAL RESPONSE CENTER
   PHONE: 1-800-424-8802

   ALTERNATE: U.S. ENVIRONMENTAL PROTECTION AGENCY
   BUSINESS: 1-212-637-3660

6. *Dutchess County* PUBLIC HEALTH COMMISSION – ENVIRONMENTAL PROTECTION
   PHONE: *(845) 486-3400*
   (845) 431-6465 (after hours)

X

Notice of Termination Form

New York State Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505
(NOTE: Submit completed form to address above)

NOTICE OF TERMINATION for Storm Water Discharges Authorized under the SPDES General Permit for Construction Activity

Please indicate your permit identification number: NYR ___ ___ ___ ___ ___ ___

I. Owner or Operator Information

1. Owner/Operator Name:

2. Street Address:

3. City/State/Zip:

4. Contact Person: | 4a.Telephone:

5. Contact Person E-Mail:

II. Project Site Information

5. Project/Site Name:

6. Street Address:

7. City/Zip:

8. County:

III. Reason for Termination

9a. ☐ All disturbed areas have achieved final stabilization in accordance with the general permit and SWPPP.
***Date final stabilization completed** (month/year): _____

9b. ☐ Permit coverage has been transferred to new owner/operator. Indicate new owner/operator's permit identification number: NYR ___ ___ ___ ___ ___ ___
(Note: Permit coverage can not be terminated by owner identified in I.1. above until new owner/operator obtains coverage under the general permit)

9c. ☐ Other (Explain on Page 2)

IV. Final Site Information:

10a. Did this construction activity require the development of a SWPPP that includes post-construction stormwater management practices? ☐ yes ☐ no (If no, go to question 10f.)

10b. Have all post-construction stormwater management practices included in the final SWPPP been constructed? ☐ yes ☐ no (If no, explain on Page 2)

10c. Identify the entity responsible for long-term operation and maintenance of practice(s)?

_____

NOTICE OF TERMINATION for Storm Water Discharges Authorized under the SPDES General Permit for Construction Activity - continued

10d. Has the entity responsible for long-term operation and maintenance been given a copy of the operation and maintenance plan required by the general permit? ☐ yes ☐ no

10e. Indicate the method used to ensure long-term operation and maintenance of the post-construction stormwater management practice(s):

☐ Post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain practice(s) have been deeded to the municipality.

☐ Executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s).

☐ For post-construction stormwater management practices that are privately owned, the deed of record has been modified to include a deed covenant that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan.

☐ For post-construction stormwater management practices that are owned by a public or private institution (e.g. school, college, university), or government agency or authority, policy and procedures are in place that ensures operation and maintenance of the practice(s) in accordance with the operation and maintenance plan.

10f. Provide the total area of impervious surface (i.e. roof, pavement, concrete, gravel, etc.) constructed within the disturbance area? _____ (acres)

11. Is this project subject to the requirements of a regulated, traditional land use control MS4? ☐ yes ☐ no
(If Yes, complete section VI - "MS4 Acceptance" statement

V. Additional Information/Explanation:
(Use this section to answer questions 9c. and 10b., if applicable)

VI. MS4 Acceptance - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative (Note: Not required when 9b. is checked -transfer of coverage)

I have determined that it is acceptable for the owner or operator of the construction project identified in question 5 to submit the Notice of Termination at this time.

Printed Name:

Title/Position:

Signature:	Date:

NOTICE OF TERMINATION for Storm Water Discharges Authorized under the SPDES General Permit for Construction Activity - continued

VII. Qualified Inspector Certification - Final Stabilization:

I hereby certify that all disturbed areas have achieved final stabilization as defined in the current version of the general permit, and that all temporary, structural erosion and sediment control measures have been removed. 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.

Printed Name:	
Title/Position:	
Signature:	Date:

VIII. Qualified Inspector Certification - Post-construction Stormwater Management Practice(s):

I hereby certify that all post-construction stormwater management practices have been constructed in conformance with the SWPPP. 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.

Printed Name:	
Title/Position:	
Signature:	Date:

IX. Owner or Operator Certification

I hereby certify that this document was prepared by me or under my direction or supervision. My determination, based upon my inquiry of the person(s) who managed the construction activity, or those persons directly responsible for gathering the information, is that the information provided in this document is true, accurate and complete. 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.

Printed Name:	
Title/Position:	
Signature:	Date:

(NYS DEC Notice of Termination - January 2010)

XI

SPDES Permit & Fact Sheet

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SPDES GENERAL PERMIT
FOR STORMWATER DISCHARGES

From

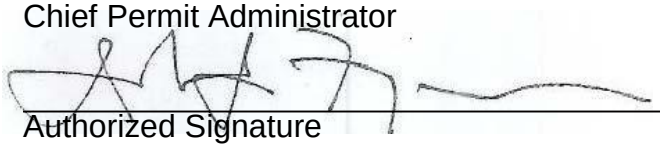
CONSTRUCTION ACTIVITY

Permit No. GP-0-15-002

Issued Pursuant to Article 17, Titles 7, 8 and Article 70
of the Environmental Conservation Law

Effective Date: January 29, 2015 Expiration Date: January 28, 2020

John J. Ferguson
Chief Permit Administrator



1 / 12 / 15

Authorized Signature Date

Address: NYS DEC
Division of Environmental Permits
625 Broadway, 4th Floor
Albany, N.Y. 12233-1750

PREFACE

Pursuant to Section 402 of the Clean Water Act ("CWA"), stormwater *discharges* from certain *construction activities* are unlawful unless they are authorized by a *National Pollutant Discharge Elimination System ("NPDES")* permit or by a state permit program. New York's *State Pollutant Discharge Elimination System ("SPDES")* is a NPDES-approved program with permits issued in accordance with the *Environmental Conservation Law ("ECL").*

This general permit ("permit") is issued pursuant to Article 17, Titles 7, 8 and Article 70 of the ECL. An *owner or operator* may obtain coverage under this permit by submitting a Notice of Intent ("NOI") to the Department. Copies of this permit and the NOI for New York are available by calling (518) 402-8109 or at any New York State Department of Environmental Conservation ("the Department") regional office (see Appendix G).They are also available on the Department's website at:

http://www.dec.ny.gov/

An *owner or operator* of a *construction activity* that is eligible for coverage under this permit must obtain coverage prior to the *commencement of construction activity*. Activities that fit the definition of "*construction activity*", as defined under 40 CFR 122.26(b)(14)(x), (15)(i), and (15)(ii), constitute construction of a point source and therefore, pursuant to Article 17-0505 of the ECL, the *owner or operator* must have coverage under a SPDES permit prior to *commencing construction activity*. They cannot wait until there is an actual *discharge* from the construction site to obtain permit coverage.

***Note: The italicized words/phrases within this permit are defined in Appendix A.**

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SPDES GENERAL PERMIT FOR STORMWATER DISCHARGES
FROM CONSTRUCTION ACTIVITIES

Part I. PERMIT COVERAGE AND LIMITATIONS

A. Permit Application

This permit authorizes stormwater *discharges* to *surface waters of the State* from the following *construction activities* identified within 40 CFR Parts 122.26(b)(14)(x), 122.26(b)(15)(i) and 122.26(b)(15)(ii), provided all of the eligibility provisions of this permit are met:

1. *Construction activities* involving soil disturbances of one (1) or more acres; including disturbances of less than one acre that are part of a *larger common plan of development or sale* that will ultimately disturb one or more acres of land; excluding *routine maintenance activity* that is performed to maintain the original line and grade, hydraulic capacity or original purpose of a facility;

2. *Construction activities* involving soil disturbances of less than one (1) acre where the Department has determined that a *SPDES* permit is required for stormwater *discharges* based on the potential for contribution to a violation of a *water quality standard* or for significant contribution of *pollutants* to *surface waters of the State.*

3. *Construction activities* located in the watershed(s) identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

B. Effluent Limitations Applicable to Discharges from Construction Activities

*Discharge*s authorized by this permit must achieve, at a minimum, the effluent limitations in Part I.B.1. (a) – (f) of this permit. These limitations represent the degree of effluent reduction attainable by the application of best practicable technology currently available.

1. Erosion and Sediment Control Requirements - The *owner or operator* must select, design, install, implement and maintain control measures to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. The selection, design, installation, implementation, and maintenance of these control measures must meet the non-numeric effluent limitations in Part I.B.1.(a) – (f) of this permit and be in accordance with the New York State Standards and Specifications for Erosion and Sediment Control, dated August 2005, using sound engineering judgment. Where control measures are not designed in conformance with the design criteria included in the technical standard, the *owner or operator* must include in the Stormwater Pollution Prevention Plan (“SWPPP”) the reason(s) for the deviation or alternative design and provide information

which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

a. **Erosion and Sediment Controls.** Design, install and maintain effective erosion and sediment controls to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. At a minimum, such controls must be designed, installed and maintained to:

   (i) *Minimize* soil erosion through application of runoff control and soil stabilization control measure to *minimize pollutant discharge*s;

   (ii) Control stormwater *discharge*s to *minimize* channel and streambank erosion and scour in the immediate vicinity of the *discharge* points;

   (iii) *Minimize* the amount of soil exposed during *construction activity*;

   (iv) *Minimize* the disturbance of *steep slopes*;

   (v) *Minimize* sediment *discharge*s from the site;

   (vi) Provide and maintain natural buffers around surface waters, direct stormwater to vegetated areas and maximize stormwater infiltration to reduce *pollutant discharge*s, unless *infeasible*;

   (vii) *Minimize* soil compaction. Minimizing soil compaction is not required where the intended function of a specific area of the site dictates that it be compacted; and

   (viii) Unless *infeasible*, preserve a sufficient amount of topsoil to complete soil restoration and establish a uniform, dense vegetative cover.

b. **Soil Stabilization**. In 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. For construction sites that *directly discharge* to one of the 303(d) segments listed in Appendix E or is located in one of the watersheds listed in Appendix C, the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven (7) days from the date the current soil disturbance activity ceased. See Appendix A for definition of *Temporarily Ceased*.

c. **Dewatering**. *Discharge*s from dewatering activities, including *discharge*s

from dewatering of trenches and excavations, must be managed by appropriate control measures.

d. **Pollution Prevention Measures**. Design, install, implement, and maintain effective pollution prevention measures to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. At a minimum, such measures must be designed, installed, implemented and maintained to:

(i) *Minimize* the *discharge* of *pollutants* from equipment and vehicle washing, wheel wash water, and other wash waters. This applies to washing operations that use clean water only. Soaps, detergents and solvents cannot be used;

(ii) *Minimize* the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste and other materials present on the site to precipitation and to stormwater. Minimization of exposure is not required in cases where the exposure to precipitation and to stormwater will not result in a *discharge* of *pollutants*, or where exposure of a specific material or product poses little risk of stormwater contamination (such as final products and materials intended for outdoor use) ; and

(iii) Prevent the *discharge* of *pollutants* from spills and leaks and implement chemical spill and leak prevention and response procedures.

e. **Prohibited *Discharge*s.** The following *discharge*s are prohibited:

(i) Wastewater from washout of concrete;

(ii) Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials;

(iii) Fuels, oils, or other *pollutants* used in vehicle and equipment operation and maintenance;

(iv) Soaps or solvents used in vehicle and equipment washing; and

(v) Toxic or hazardous substances from a spill or other release.

f. Surface Outlets. When discharging from basins and impoundments, the outlets shall be designed, constructed and maintained in such a manner that sediment does not leave the basin or impoundment and that erosion

at or below the outlet does not occur.

C. Post-construction Stormwater Management Practice Requirements

1. The *owner or operator* of a *construction activity* that requires post-construction stormwater management practices pursuant to Part III.C. of this permit must select, design, install, and maintain the practices to meet the *performance criteria* in the New York State Stormwater Management Design Manual ("Design Manual"), dated January 2015, using sound engineering judgment. Where post-construction stormwater management practices ("SMPs") are not designed in conformance with the *performance criteria* in the Design Manual, the *owner or operator* must include in the SWPPP the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

2. The *owner or operator* of a *construction activity* that requires post-construction stormwater management practices pursuant to Part III.C. of this permit must design the practices to meet the applicable *sizing criteria* in Part I.C.2.a., b., c. or d. of this permit.

a. ***Sizing Criteria* for *New Development***

(i) Runoff Reduction Volume ("RRv"): Reduce the total Water Quality Volume ("WQv") by application of RR techniques and standard SMPs with RRv capacity. The total WQv shall be calculated in accordance with the criteria in Section 4.2 of the Design Manual.

(ii) Minimum RRv and Treatment of Remaining Total WQv: *Construction activities* that cannot meet the criteria in Part I.C.2.a.(i) of this permit due to *site limitations* shall direct runoff from all newly constructed *impervious areas* to a RR technique or standard SMP with RRv capacity unless *infeasible*. The specific *site limitations* that prevent the reduction of 100% of the WQv shall be documented in the SWPPP. For each *impervious area* that is not directed to a RR technique or standard SMP with RRv capacity, the SWPPP must include documentation which demonstrates that all options were considered and for each option explains why it is considered *infeasible.*

In no case shall the runoff reduction achieved from the newly constructed *impervious areas* be less than the Minimum RRv as calculated using the criteria in Section 4.3 of the Design Manual. The remaining portion of the total WQv

that cannot be reduced shall be treated by application of standard SMPs.

(iii) Channel Protection Volume ("Cpv"): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event; remaining after runoff reduction. The Cpv requirement does not apply when:

(1) Reduction of the entire Cpv is achieved by application of runoff reduction techniques or infiltration systems, or

(2) The site *discharge*s directly to tidal waters, or fifth order or larger streams.

(iv) Overbank Flood Control Criteria ("Qp"): Requires storage to attenuate the post-development 10-year, 24-hour peak *discharge* rate (Qp) to predevelopment rates. The Qp requirement does not apply when:

(1) the site *discharge*s directly to tidal waters or fifth order or larger streams, or

(2) A downstream analysis reveals that overbank control is not required.

(v) Extreme Flood Control Criteria ("Qf"): Requires storage to attenuate the post-development 100-year, 24-hour peak *discharge* rate (Qf) to predevelopment rates. The Qf requirement does not apply when:

(1) the site *discharge*s directly to tidal waters or fifth order or larger streams, or

(2) A downstream analysis reveals that overbank control is not required.

b. ***Sizing Criteria* for *New Development* in Enhanced Phosphorus Removal Watershed**

(i) Runoff Reduction Volume (RRv): Reduce the total Water Quality Volume (WQv) by application of RR techniques and standard SMPs with RRv capacity. The total WQv is the runoff volume from the 1-year, 24 hour design storm over the post-developed watershed and shall be calculated in accordance with the criteria in Section 10.3 of the Design Manual.

(ii) Minimum RRv and Treatment of Remaining Total WQv: *Construction activities* that cannot meet the criteria in Part I.C.2.b.(i) of this permit due to *site limitations* shall direct runoff from all newly constructed *impervious areas* to a RR technique or

standard SMP with RRv capacity unless *infeasible*. The specific *site limitations* that prevent the reduction of 100% of the WQv shall be documented in the SWPPP. For each *impervious area* that is not directed to a RR technique or standard SMP with RRv capacity, the SWPPP must include documentation which demonstrates that all options were considered and for each option explains why it is considered *infeasible.*

In no case shall the runoff reduction achieved from the newly constructed *impervious areas* be less than the Minimum RRv as calculated using the criteria in Section 10.3 of the Design Manual. The remaining portion of the total WQv that cannot be reduced shall be treated by application of standard SMPs.

(iii) Channel Protection Volume (Cpv): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event; remaining after runoff reduction. The Cpv requirement does not apply when:

(1) Reduction of the entire Cpv is achieved by application of runoff reduction techniques or infiltration systems, or

(2) The site *discharge*s directly to tidal waters, or fifth order or larger streams.

(iv) Overbank Flood Control Criteria (Qp): Requires storage to attenuate the post-development 10-year, 24-hour peak *discharge* rate (Qp) to predevelopment rates. The Qp requirement does not apply when:

(1) the site *discharge*s directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that overbank control is not required.

(v) Extreme Flood Control Criteria (Qf): Requires storage to attenuate the post-development 100-year, 24-hour peak *discharge* rate (Qf) to predevelopment rates. The Qf requirement does not apply when:

(1) the site *discharge*s directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that overbank control is not required.

c. ***Sizing Criteria* for *Redevelopment Activity***

(Part I.C.2.c.i)

(i) Water Quality Volume (WQv): The WQv treatment objective for *redevelopment activity* shall be addressed by one of the following options. *Redevelopment activities* located in an Enhanced Phosphorus Removal Watershed (see Part III.B.3. and Appendix C of this permit) shall calculate the WQv in accordance with Section 10.3 of the Design Manual. All other *redevelopment activities* shall calculate the WQv in accordance with Section 4.2 of the Design Manual.

(1) Reduce the existing *impervious cover* by a minimum of 25% of the total disturbed, *impervious area*. The Soil Restoration criteria in Section 5.1.6 of the Design Manual must be applied to all newly created pervious areas, or
(2) Capture and treat a minimum of 25% of the WQv from the disturbed, *impervious area* by the application of standard SMPs; or reduce 25% of the WQv from the disturbed, *impervious area* by the application of RR techniques or standard SMPs with RRv capacity., or
(3) Capture and treat a minimum of 75% of the WQv from the disturbed, *impervious area* as well as any additional runoff from tributary areas by application of the alternative practices discussed in Sections 9.3 and 9.4 of the Design Manual., or
(4) Application of a combination of 1, 2 and 3 above that provide a weighted average of at least two of the above methods. Application of this method shall be in accordance with the criteria in Section 9.2.1(B) (IV) of the Design Manual.

If there is an existing post-construction stormwater management practice located on the site that captures and treats runoff from the *impervious area* that is being disturbed, the WQv treatment option selected must, at a minimum, provide treatment equal to the treatment that was being provided by the existing practice(s) if that treatment is greater than the treatment required by options 1 – 4 above.

(ii) Channel Protection Volume (Cpv): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site.

(iii) Overbank Flood Control Criteria (Qp): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site.

(Part I.C.2.c.iv)

(iv) Extreme Flood Control Criteria (Qf): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site.

d. ***Sizing Criteria* for Combination of *Redevelopment Activity* and *New Development***

Construction projects that include both *New Development* and *Redevelopment Activity* shall provide post-construction stormwater management controls that meet the *sizing criteria* calculated as an aggregate of the *Sizing Criteria* in Part I.C.2.a. or b. of this permit for the *New Development* portion of the project and Part I.C.2.c of this permit for *Redevelopment Activity* portion of the project.

D. Maintaining Water Quality

The Department expects that compliance with the conditions of this permit will control *discharge*s necessary to meet applicable *water quality standards*. It shall be a violation of the *ECL* for any discharge to either cause or contribute to a violation of *water quality standards* as contained in Parts 700 through 705 of Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York, such as:

1. There shall be no increase in turbidity that will cause a substantial visible contrast to natural conditions;

2. There shall be no increase in suspended, colloidal or settleable solids that will cause deposition or impair the waters for their best usages; and

3. There shall be no residue from oil and floating substances, nor visible oil film, nor globules of grease.

If there is evidence indicating that the stormwater *discharge*s authorized by this permit are causing, have the reasonable potential to cause, or are contributing to a violation of the *water quality standards*; the *owner or operator* must take appropriate corrective action in accordance with Part IV.C.5. of this general permit and document in accordance with Part IV.C.4. of this general permit. To address the *water quality standard* violation the *owner or operator* may need to provide additional information, include and implement appropriate controls in the SWPPP to correct the problem, or obtain an individual SPDES permit.

If there is evidence indicating that despite compliance with the terms and conditions of this general permit it is demonstrated that the stormwater *discharge*s authorized by this permit are causing or contributing to a violation of *water quality standards*, or

if the Department determines that a modification of the permit is necessary to prevent a violation of *water quality standards*, the authorized *discharge*s will no longer be eligible for coverage under this permit. The Department may require the *owner or operator* to obtain an individual SPDES permit to continue discharging.

E. Eligibility Under This General Permit

1. This permit may authorize all *discharges* of stormwater from *construction activity* to *surface waters of the State* and *groundwaters* except for ineligible *discharges* identified under subparagraph F. of this Part.

2. Except for non-stormwater *discharges* explicitly listed in the next paragraph, this permit only authorizes stormwater *discharge*s from *construction activities*.

3. Notwithstanding paragraphs E.1 and E.2 above, the following non-stormwater *discharges* may be authorized by this permit: *discharge*s from firefighting activities; fire hydrant flushings; waters to which cleansers or other components have not been added that are used to wash vehicles or control dust in accordance with the SWPPP, routine external building washdown which does not use detergents; pavement washwaters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents are not used; air conditioning condensate; uncontaminated *groundwater* or spring water; uncontaminated *discharge*s from construction site de-watering operations; and foundation or footing drains where flows are not contaminated with process materials such as solvents. For those entities required to obtain coverage under this permit, and who *discharge* as noted in this paragraph, and with the exception of flows from firefighting activities, these *discharge*s must be identified in the SWPPP. Under all circumstances, the *owner or operator* must still comply with *water quality standards* in Part I.D of this permit.

4. The *owner or operator* must maintain permit eligibility to *discharge* under this permit. Any *discharges* that are not compliant with the eligibility conditions of this permit are not authorized by the permit and the *owner or operator* must either apply for a separate permit to cover those ineligible *discharges* or take steps necessary to make the *discharge* eligible for coverage.

F. Activities Which Are Ineligible for Coverage Under This General Permit

All of the following are **not** authorized by this permit:

(Part I.F)

1. *Discharge*s after *construction activities* have been completed and the site has undergone *final stabilization*;

2. *Discharge*s that are mixed with sources of non-stormwater other than those expressly authorized under subsection E.3. of this Part and identified in the SWPPP required by this permit;

3. *Discharges* that are required to obtain an individual SPDES permit or another SPDES general permit pursuant to Part VII.K. of this permit;

4. *Construction activities* or *discharges* from *construction activities* that may adversely affect an endangered or threatened species unless the *owner or operator* has obtained a permit issued pursuant to 6 NYCRR Part 182 for the project or the Department has issued a letter of non-jurisdiction for the project. All documentation necessary to demonstrate eligibility shall be maintained on site in accordance with Part II.C.2 of this permit.

5. *Discharges* which either cause or contribute to a violation of *water quality standards* adopted pursuant to the *ECL* and its accompanying regulations;

6. *Construction activities* for residential, commercial and institutional projects:

   a. Where the *discharge*s from the *construction activities* are tributary to waters of the state classified as AA or AA-s; and

   b. Which disturb one or more acres of land with no existing *impervious cover*; and

   c. Which are undertaken on land with a Soil Slope Phase that is identified as an E or F, or the map unit name is inclusive of 25% or greater slope, on the United States Department of Agriculture (“USDA”) Soil Survey for the County where the disturbance will occur.

7. *Construction activities* for linear transportation projects and linear utility projects:

   a. Where the *discharge*s from the *construction activities* are tributary to waters of the state classified as AA or AA-s; and

   b. Which disturb two or more acres of land with no existing *impervious cover*; and

   c. Which are undertaken on land with a Soil Slope Phase that is identified as an E or F, or the map unit name is inclusive of 25% or greater slope, on the USDA Soil Survey for the County where the disturbance will occur.

(Part I.F.8)

8. *Construction activities* that have the potential to affect an *historic property*, unless there is documentation that such impacts have been resolved. The following documentation necessary to demonstrate eligibility with this requirement shall be maintained on site in accordance with Part II.C.2 of this permit and made available to the Department in accordance with Part VII.F of this permit:

   a. Documentation that the *construction activity* is not within an archeologically sensitive area indicated on the sensitivity map, and that the *construction activity* is not located on or immediately adjacent to a property listed or determined to be eligible for listing on the National or State Registers of Historic Places, and that there is no new permanent building on the construction site within the following distances from a building, structure, or object that is more than 50 years old, or if there is such a new permanent building on the construction site within those parameters that NYS Office of Parks, Recreation and Historic Preservation (OPRHP), a Historic Preservation Commission of a Certified Local Government, or a qualified preservation professional has determined that the building, structure, or object more than 50 years old is not historically/archeologically significant.

      - 1-5 acres of disturbance - 20 feet
      - 5-20 acres of disturbance - 50 feet
      - 20+ acres of disturbance - 100 feet, or

   b. DEC consultation form sent to OPRHP, and copied to the NYS DEC Agency Historic Preservation Officer (APO), and
      (i) the State Environmental Quality Review (SEQR) Environmental Assessment Form (EAF) with a negative declaration or the Findings Statement, with documentation of OPRHP's agreement with the resolution; or
      (ii) documentation from OPRHP that the *construction activity* will result in No Impact; or
      (iii) documentation from OPRHP providing a determination of No Adverse Impact; or
      (iv) a Letter of Resolution signed by the owner/operator, OPRHP and the DEC APO which allows for this *construction activity* to be eligible for coverage under the general permit in terms of the State Historic Preservation Act (SHPA); or

   c. Documentation of satisfactory compliance with Section 106 of the National Historic Preservation Act for a coterminous project area:
      (i) No Affect
      (ii) No Adverse Affect

(Part I.F.8.c.iii)

(iii) Executed Memorandum of Agreement, or

d. Documentation that:

(i) SHPA Section 14.09 has been completed by NYS DEC or another state agency.

9. *Discharge*s from *construction activities* that are subject to an existing SPDES individual or general permit where a SPDES permit for *construction activity* has been terminated or denied; or where the *owner or operator* has failed to renew an expired individual permit.

II. Part II. OBTAINING PERMIT COVERAGE

A. Notice of Intent (NOI) Submittal

1. An *owner or operator* of a *construction activity* that is <u>not</u> subject to the requirements of a *regulated, traditional land use control MS4* must first prepare a SWPPP in accordance with all applicable requirements of this permit and then submit a completed NOI form to the Department in order to be authorized to *discharge* under this permit. An *owner or operator* shall use either the electronic (eNOI) or paper version of the NOI that the Department prepared. Both versions of the NOI are located on the Department's website (http://www.dec.ny.gov/). The paper version of the NOI shall be signed in accordance with Part VII.H. of this permit and submitted to the following address.

NOTICE OF INTENT
NYS DEC, Bureau of Water Permits
625 Broadway, 4th Floor
Albany, New York 12233-3505

2. An *owner or operator* of a *construction activity* that is subject to the requirements of a *regulated, traditional land use control MS4* must first prepare a SWPPP in accordance with all applicable requirements of this permit and then have its SWPPP reviewed and accepted by the *regulated, traditional land use control MS4* prior to submitting the NOI to the Department. The *owner or operator* shall have the "MS4 SWPPP Acceptance" form signed in accordance with Part VII.H., and then submit that form along with a completed NOI to the Department. An *owner or operator* shall use either the electronic (eNOI) or paper version of the NOI.

The paper version of the NOI shall be signed in accordance with Part VII.H. of this permit and submitted to the address in Part II.A.1.

(Part II.A.2)

The requirement for an *owner or operator* to have its SWPPP reviewed and accepted by the *MS4* prior to submitting the NOI to the Department does not apply to an *owner or operator* that is obtaining permit coverage in accordance with the requirements in Part II.E. (Change of *Owner or Operator*) or where the *owner or operator* of the *construction activity* is the *regulated, traditional land use control MS4*.

3. The *owner or operator* shall have the SWPPP preparer sign the "SWPPP Preparer Certification" statement on the NOI prior to submitting the form to the Department.

4. As of the date the NOI is submitted to the Department, the *owner or operator* shall make the NOI and SWPPP available for review and copying in accordance with the requirements in Part VII.F. of this permit.

B. Permit Authorization

1. An *owner or operator* shall not *commence construction activity* until their authorization to *discharge* under this permit goes into effect.

2. Authorization to *discharge* under this permit will be effective when the *owner or operator* has satisfied all of the following criteria:

   a. project review pursuant to the State Environmental Quality Review Act ("SEQRA") have been satisfied, when SEQRA is applicable. See the Department's website (http://www.dec.ny.gov/) for more information,

   b. where required, all necessary Department permits subject to the *Uniform Procedures Act ("UPA")* (see 6 NYCRR Part 621) have been obtained, unless otherwise notified by the Department pursuant to 6 NYCRR 621.3(a)(4). *Owners or operators* of *construction activities* that are required to obtain *UPA* permits must submit a preliminary SWPPP to the appropriate DEC Permit Administrator at the Regional Office listed in Appendix F at the time all other necessary *UPA* permit applications are submitted. The preliminary SWPPP must include sufficient information to demonstrate that the *construction activity* qualifies for authorization under this permit,

   c. the final SWPPP has been prepared, and

   d. a complete NOI has been submitted to the Department in accordance with the requirements of this permit.

3. An *owner or operator* that has satisfied the requirements of Part II.B.2 above

(Part II.B.3)

will be authorized to *discharge* stormwater from their *construction activity* in accordance with the following schedule:

a. For *construction activities* that are not subject to the requirements of a *regulated, traditional land use control MS4*:

(i) Five (5) business days from the date the Department receives a complete electronic version of the NOI (eNOI) for *construction activities* with a SWPPP that has been prepared in conformance with the design criteria in the technical standard referenced in Part III.B.1 and the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C.; or

(ii) Sixty (60) business days from the date the Department receives a complete NOI (electronic or paper version) for *construction activities* with a SWPPP that has not been prepared in conformance with the design criteria in technical standard referenced in Part III.B.1. or, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C., the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, or;

(iii) Ten (10) business days from the date the Department receives a complete paper version of the NOI for *construction activities* with a SWPPP that has been prepared in conformance with the design criteria in the technical standard referenced in Part III.B.1 and the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C.

b. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4*:

(i) Five (5) business days from the date the Department receives both a complete electronic version of the NOI (eNOI) and signed "*MS4* SWPPP Acceptance" form, or

(ii) Ten (10) business days from the date the Department receives both a complete paper version of the NOI and signed "MS4 SWPPP Acceptance" form.

4. The Department may suspend or deny an *owner's or operator's* coverage

under this permit if the Department determines that the SWPPP does not meet the permit requirements. In accordance with statute, regulation, and the terms and conditions of this permit, the Department may deny coverage under this permit and require submittal of an application for an individual SPDES permit based on a review of the NOI or other information pursuant to Part II.

5. Coverage under this permit authorizes stormwater *discharges* from only those areas of disturbance that are identified in the NOI. If an *owner or operator* wishes to have stormwater *discharges* from future or additional areas of disturbance authorized, they must submit a new NOI that addresses that phase of the development, unless otherwise notified by the Department. The *owner or operator* shall not *commence construction activity* on the future or additional areas until their authorization to *discharge* under this permit goes into effect in accordance with Part II.B. of this permit.

C. General Requirements For Owners or Operators With Permit Coverage

1. The *owner or operator* shall ensure that the provisions of the SWPPP are implemented from the *commencement of construction activity* until all areas of disturbance have achieved *final stabilization* and the Notice of Termination ("NOT") has been submitted to the Department in accordance with Part V. of this permit. This includes any changes made to the SWPPP pursuant to Part III.A.4. of this permit.

2. The *owner or operator* shall maintain a copy of the General Permit (GP-0-15-002), NOI, *NOI Acknowledgment Letter*, SWPPP, MS4 SWPPP Acceptance form, inspection reports, and all documentation necessary to demonstrate eligibility with this permit at the construction site until all disturbed areas have achieved *final stabilization* and the NOT has been submitted to the Department. The documents must be maintained in a secure location, such as a job trailer, on-site construction office, or mailbox with lock. The secure location must be accessible during normal business hours to an individual performing a compliance inspection.

3. The *owner or operator* of a *construction activity* shall not disturb greater than five (5) acres of soil at any one time without prior written authorization from the Department or, in areas under the jurisdiction of a *regulated, traditional land use control MS4,* the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*). At a minimum, the *owner or operator* must comply with the following requirements in order to be authorized to disturb greater than five (5) acres of soil at any one time:

   a. The *owner or operator* shall

(Part II.C.3.a)

have a *qualified inspector* conduct **at least** two (2) site inspections in accordance with Part IV.C. of this permit every seven (7) calendar days, for as long as greater than five (5) acres of soil remain disturbed. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

b. In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven (7) days from the date the current soil disturbance activity ceased. The soil stabilization measures selected shall be in conformance with the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated August 2005.

c. The *owner or operator* shall prepare a phasing plan that defines maximum disturbed area per phase and shows required cuts and fills.

d. The *owner or operator* shall install any additional site specific practices needed to protect water quality.

e. The *owner or operator* shall include the requirements above in their SWPPP.

4. In accordance with statute, regulations, and the terms and conditions of this permit, the Department may suspend or revoke an *owner's or operator's* coverage under this permit at any time if the Department determines that the SWPPP does not meet the permit requirements. Upon a finding of significant non-compliance with the practices described in the SWPPP or violation of this permit, the Department may order an immediate stop to all activity at the site until the non-compliance is remedied. The stop work order shall be in writing, describe the non-compliance in detail, and be sent to the *owner or operator*.

5. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4*, the *owner or operator* shall notify the *regulated, traditional land use control MS4* in writing of any planned amendments or modifications to the post-construction stormwater management practice component of the SWPPP required by Part III.A. 4. and 5. of this permit. Unless otherwise notified by the *regulated, traditional land use control MS4*, the *owner or operator* shall have the SWPPP amendments or modifications reviewed and accepted by the *regulated, traditional land use control MS4* prior to commencing construction of the post-construction stormwater management practice

(Part II.D)

D. Permit Coverage for Discharges Authorized Under GP-0-10-001

1. Upon renewal of SPDES General Permit for Stormwater Discharges from *Construction Activity* (Permit No. GP-0-10-001), an *owner or operator* of *a construction activity* with coverage under GP-0-10-001, as of the effective date of GP-0-15-002, shall be authorized to *discharge* in accordance with GP-0-15-002, unless otherwise notified by the Department.

   An *owner or operator* may continue to implement the technical/design components of the post-construction stormwater management controls provided that such design was done in conformance with the technical standards in place at the time of initial project authorization. However, they must comply with the other, non-design provisions of GP-0-15-002.

E. Change of *Owner or Operator*

2. When property ownership changes or when there is a change in operational control over the construction plans and specifications, the original *owner or operator* must notify the new *owner or operator*, in writing, of the requirement to obtain permit coverage by submitting a NOI with the Department. Once the new *owner or operator* obtains permit coverage, the original *owner or operator* shall then submit a completed NOT with the name and permit identification number of the new *owner or operator* to the Department at the address in Part II.A.1. of this permit. If the original *owner or operator* maintains ownership of a portion of the *construction activity* and will disturb soil, they must maintain their coverage under the permit.

Permit coverage for the new *owner or operator* will be effective as of the date the Department receives a complete NOI, provided the original *owner or operator* was not subject to a sixty (60) business day authorization period that has not expired as of the date the Department receives the NOI from the new *owner or operator*.

(Part III)

III. Part III. STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

A. General SWPPP Requirements

1. A SWPPP shall be prepared and implemented by the *owner or operator* of each *construction activity* covered by this permit. The SWPPP must document the selection, design, installation, implementation and maintenance of the control measures and practices that will be used to meet the effluent limitations in Part I.B. of this permit and where applicable, the post-construction stormwater management practice requirements in Part I.C. of this permit. The SWPPP shall be prepared prior to the submittal of the NOI. The NOI shall be submitted to the Department prior to the *commencement of construction activity*. A copy of the completed, final NOI shall be included in the SWPPP.

2. The SWPPP shall describe the erosion and sediment control practices and where required, post-construction stormwater management practices that will be used and/or constructed to reduce the *pollutants* in stormwater *discharges* and to assure compliance with the terms and conditions of this permit. In addition, the SWPPP shall identify potential sources of pollution which may reasonably be expected to affect the quality of stormwater *discharges*.

3. All SWPPPs that require the post-construction stormwater management practice component shall be prepared by a *qualified professional* that is knowledgeable in the principles and practices of stormwater management and treatment.

4. The *owner or operator* must keep the SWPPP current so that it at all times accurately documents the erosion and sediment controls practices that are being used or will be used during construction, and all post-construction stormwater management practices that will be constructed on the site. At a minimum, the *owner or operator* shall amend the SWPPP:

   a. whenever the current provisions prove to be ineffective in minimizing *pollutants* in stormwater *discharges* from the site;

   b. whenever there is a change in design, construction, or operation at the construction site that has or could have an effect on the *discharge* of *pollutants*; and

   c. to address issues or deficiencies identified during an inspection by the *qualified inspector,* the Department or other regulatory authority.

5. The Department may notify the *owner or operator* at any time that the

(Part III.A.5)

SWPPP does not meet one or more of the minimum requirements of this permit. The notification shall be in writing and identify the provisions of the SWPPP that require modification. Within fourteen (14) calendar days of such notification, or as otherwise indicated by the Department, the *owner or operator* shall make the required changes to the SWPPP and submit written notification to the Department that the changes have been made. If the *owner or operator* does not respond to the Department's comments in the specified time frame, the Department may suspend the *owner's or operator's* coverage under this permit or require the *owner or operator* to obtain coverage under an individual SPDES permit in accordance with Part II.C.4. of this permit.

6. Prior to the *commencement of construction activity*, the *owner or operator* must identify the contractor(s) and subcontractor(s) that will be responsible for installing, constructing, repairing, replacing, inspecting and maintaining the erosion and sediment control practices included in the SWPPP; and the contractor(s) and subcontractor(s) that will be responsible for constructing the post-construction stormwater management practices included in the SWPPP. The *owner or operator* shall have each of the contractors and subcontractors identify at least one person from their company that will be responsible for implementation of the SWPPP. This person shall be known as the *trained contractor.* The *owner or operator* shall ensure that at least one *trained contractor* is on site on a daily basis when soil disturbance activities are being performed.

   The *owner or operator* shall have each of the contractors and subcontractors identified above sign a copy of the following certification statement below before they commence any *construction activity*:

   > "I hereby certify under penalty of law 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 *discharge*s from *construction activities* and that it is unlawful for any person to cause or contribute to a violation of *water quality standards*. Furthermore, I am aware that there are significant penalties for submitting false information, that I do not believe to be true, including the possibility of fine and imprisonment for knowing violations"

   In addition to providing the certification statement above, the certification page must also identify the specific elements of the SWPPP that each contractor and subcontractor will be responsible for and include the name and title of the person providing the signature; the name and title of the

trained contractor responsible for SWPPP implementation; the name, address and telephone number of the contracting firm; the address (or other identifying description) of the site; and the date the certification statement is signed. The *owner or operator* shall attach the certification statement(s) to the copy of the SWPPP that is maintained at the construction site. If new or additional contractors are hired to implement measures identified in the SWPPP after construction has commenced, they must also sign the certification statement and provide the information listed above.

7. For projects where the Department requests a copy of the SWPPP or inspection reports, the *owner or operator* shall submit the documents in both electronic (PDF only) and paper format within five (5) business days, unless otherwise notified by the Department.

B. Required SWPPP Contents

1. Erosion and sediment control component - All SWPPPs prepared pursuant to this permit shall include erosion and sediment control practices designed in conformance with the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated August 2005. Where erosion and sediment control practices are not designed in conformance with the design criteria included in the technical standard, the *owner or operator* must demonstrate *equivalence* to the technical standard. At a minimum, the erosion and sediment control component of the SWPPP shall include the following:

   a. Background information about the scope of the project, including the location, type and size of project;

   b. A site map/construction drawing(s) for the project, including a general location map. At a minimum, the site map shall show the total site area; all improvements; areas of disturbance; areas that will not be disturbed; existing vegetation; on-site and adjacent off-site surface water(s); floodplain/floodway boundaries; wetlands and drainage patterns that could be affected by the *construction activity*; existing and final contours ; locations of different soil types with boundaries; material, waste, borrow or equipment storage areas located on adjacent properties; and location(s) of the stormwater *discharge*(s);

   c. A description of the soil(s) present at the site, including an identification of the Hydrologic Soil Group (HSG);

   d. A construction phasing plan and sequence of operations describing the intended order of *construction activities*, including clearing and grubbing, excavation and grading, utility and infrastructure installation and any other

activity at the site that results in soil disturbance;

e. A description of the minimum erosion and sediment control practices to be installed or implemented for each *construction activity* that will result in soil disturbance. Include a schedule that identifies the timing of initial placement or implementation of each erosion and sediment control practice and the minimum time frames that each practice should remain in place or be implemented;

f. A temporary and permanent soil stabilization plan that meets the requirements of this general permit and the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated August 2005, for each stage of the project, including initial land clearing and grubbing to project completion and achievement of *final stabilization*;

g. A site map/construction drawing(s) showing the specific location(s), size(s), and length(s) of each erosion and sediment control practice;

h. The dimensions, material specifications, installation details, and operation and maintenance requirements for all erosion and sediment control practices. Include the location and sizing of any temporary sediment basins and structural practices that will be used to divert flows from exposed soils;

i. A maintenance inspection schedule for the contractor(s) identified in Part III.A.6. of this permit, to ensure continuous and effective operation of the erosion and sediment control practices. The maintenance inspection schedule shall be in accordance with the requirements in the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated August 2005;

j. A description of the pollution prevention measures that will be used to control litter, construction chemicals and construction debris from becoming a *pollutant* source in the stormwater *discharges*;

k. A description and location of any stormwater *discharges* associated with industrial activity other than construction at the site, including, but not limited to, stormwater *discharges* from asphalt plants and concrete plants located on the construction site; and

l. Identification of any elements of the design that are not in conformance with the design criteria in the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated August 2005. Include the reason for the deviation or alternative design

and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

2. Post-construction stormwater management practice component – The *owner or operator* of any construction project identified in Table 2 of Appendix B as needing post-construction stormwater management practices shall prepare a SWPPP that includes practices designed in conformance with the applicable *sizing criteria* in Part I.C.2.a., c. or d. of this permit and the *performance criteria* in the technical standard, New York State Stormwater Management Design Manual dated January 2015

   Where post-construction stormwater management practices are not designed in conformance with the *performance criteria* in the technical standard, the *owner or operator* must include in the SWPPP the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

   The post-construction stormwater management practice component of the SWPPP shall include the following:

   a. Identification of all post-construction stormwater management practices to be constructed as part of the project. Include the dimensions, material specifications and installation details for each post-construction stormwater management practice;

   b. A site map/construction drawing(s) showing the specific location and size of each post-construction stormwater management practice;

   c. A Stormwater Modeling and Analysis Report that includes:

      (i) Map(s) showing pre-development conditions, including watershed/subcatchments boundaries, flow paths/routing, and design points;

      (ii) Map(s) showing post-development conditions, including watershed/subcatchments boundaries, flow paths/routing, design points and post-construction stormwater management practices;

      (iii) Results of stormwater modeling (i.e. hydrology and hydraulic analysis) for the required storm events. Include supporting calculations (model runs), methodology, and a summary table that compares pre and post-development runoff rates and volumes for the different storm events;

      (iv) Summary table, with supporting calculations, which demonstrates

that each post-construction stormwater management practice has been designed in conformance with the *sizing criteria* included in the Design Manual;

(v) Identification of any *sizing criteria* that is not required based on the requirements included in Part I.C. of this permit; and

(vi) Identification of any elements of the design that are not in conformance with the *performance criteria* in the Design Manual. Include the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the Design Manual;

d. Soil testing results and locations (test pits, borings);

e. Infiltration test results, when required; and

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.

3. Enhanced Phosphorus Removal Standards - All construction projects identified in Table 2 of Appendix B that are located in the watersheds identified in Appendix C shall prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the applicable *sizing criteria* in Part I.C.2. b., c. or d. of this permit and the *performance criteria,* Enhanced Phosphorus Removal Standards included in the Design Manual. At a minimum, the post-construction stormwater management practice component of the SWPPP shall include items 2.a - 2.f. above.

C. Required SWPPP Components by Project Type

Unless otherwise notified by the Department, *owners or operators* of *construction activities* identified in Table 1 of Appendix B are required to prepare a SWPPP that only includes erosion and sediment control practices designed in conformance with Part III.B.1 of this permit. *Owners or operators* of the *construction activities* identified in Table 2 of Appendix B shall prepare a SWPPP that also includes post-construction stormwater management practices designed in conformance with Part III.B.2 or 3 of this permit.

(Part IV)

IV. Part IV. INSPECTION AND MAINTENANCE REQUIREMENTS

A. General Construction Site Inspection and Maintenance Requirements

1. The *owner or operator* must ensure that all erosion and sediment control practices (including pollution prevention measures) and all post-construction stormwater management practices identified in the SWPPP are inspected and maintained in accordance with Part IV.B. and C. of this permit.

2. The terms of this permit shall not be construed to prohibit the State of New York from exercising any authority pursuant to the ECL, common law or federal law, or prohibit New York State from taking any measures, whether civil or criminal, to prevent violations of the laws of the State of New York, or protect the public health and safety and/or the environment.

B. Contractor Maintenance Inspection Requirements

1. The *owner or operator* of each *construction activity* identified in Tables 1 and 2 of Appendix B shall have a *trained contractor* inspect the erosion and sediment control practices and pollution prevention measures being implemented within the active work area daily to ensure that they are being maintained in effective operating condition at all times. If deficiencies are identified, the contractor shall begin implementing corrective actions within one business day and shall complete the corrective actions in a reasonable time frame.

2. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and *temporary stabilization* measures have been applied to all disturbed areas, the *trained contractor* can stop conducting the maintenance inspections. The *trained contractor* shall begin conducting the maintenance inspections in accordance with Part IV.B.1. of this permit as soon as soil disturbance activities resume.

3. For construction sites where soil disturbance activities have been shut down with partial project completion, the *trained contractor* can stop conducting the maintenance inspections if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational.

C. Qualified Inspector Inspection Requirements

(Part IV.C)

The *owner or operator* shall have a *qualified inspector* conduct site inspections in conformance with the following requirements:

[Note: The *trained contractor* identified in Part III.A.6. and IV.B. of this permit **cannot** conduct the *qualified inspector* site inspections unless they meet the *qualified inspector* qualifications included in Appendix A. In order to perform these inspections, the *trained contractor* would have to be a:

- licensed Professional Engineer,
- Certified Professional in Erosion and Sediment Control (CPESC),
- Registered Landscape Architect, or
- someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity].

1. A *qualified inspector* shall conduct site inspections for all *construction activities* identified in Tables 1 and 2 of Appendix B, with the exception of:

   a. the construction of a single family residential subdivision with 25% or less *impervious cover* at total site build-out that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E;

   b. the construction of a single family home that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E;

   c. construction on agricultural property that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres; and

   d. *construction activities* located in the watersheds identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

2. Unless otherwise notified by the Department, the *qualified inspector* shall conduct site inspections in accordance with the following timetable:

   a. For construction sites where soil disturbance activities are on-going, the *qualified inspector* shall conduct a site inspection at least once every seven (7) calendar days.

   b. For construction sites where soil disturbance activities are on-going and

the *owner or operator* has received authorization in accordance with Part II.C.3 to disturb greater than five (5) acres of soil at any one time, the *qualified inspector* shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

c. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and *temporary stabilization* measures have been applied to all disturbed areas, the *qualified inspector* shall conduct a site inspection at least once every thirty (30) calendar days. The *owner or operator* shall notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix F) or, in areas under the jurisdiction of a *regulated, traditional land use control MS4,* the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*) in writing prior to reducing the frequency of inspections.

d. For construction sites where soil disturbance activities have been shut down with partial project completion, the *qualified inspector* can stop conducting inspections if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational. The *owner or operator* shall notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix F) or, in areas under the jurisdiction of a *regulated, traditional land use control MS4,* the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*) in writing prior to the shutdown. If soil disturbance activities are not resumed within 2 years from the date of shutdown, the *owner or operator* shall have the *qualified inspector* perform a final inspection and certify that all disturbed areas have achieved *final stabilization,* and all temporary, structural erosion and sediment control measures have been removed*;* and that all post-construction stormwater management practices have been constructed in conformance with the SWPPP by signing the "*Final Stabilization*" and "Post-Construction Stormwater Management Practice" certification statements on the NOT. The *owner or operator* shall then submit the completed NOT form to the address in Part II.A.1 of this permit.

e. For construction sites that directly *discharge* to one of the 303(d) segments listed in Appendix E or is located in one of the watersheds listed in Appendix C, the *qualified inspector* shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall

be separated by a minimum of two (2) full calendar days.

3. At a minimum, the *qualified inspector* shall inspect all erosion and sediment control practices and pollution prevention measures to ensure integrity and effectiveness, all post-construction stormwater management practices under construction to ensure that they are constructed in conformance with the SWPPP, all areas of disturbance that have not achieved *final stabilization,* all points of *discharge* to natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the construction site, and all points of *discharge* from the construction site.

4. The *qualified inspector* shall prepare an inspection report subsequent to each and every inspection. At a minimum, the inspection report shall include and/or address the following:

a. Date and time of inspection;

b. Name and title of person(s) performing inspection;

c. A description of the weather and soil conditions (e.g. dry, wet, saturated) at the time of the inspection;

d. A description of the condition of the runoff at all points of *discharge* from the construction site. This shall include identification of any *discharges* of sediment from the construction site. Include *discharges* from conveyance systems (i.e. pipes, culverts, ditches, etc.) and overland flow;

e. A description of the condition of all natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the construction site which receive runoff from disturbed areas. This shall include identification of any *discharges* of sediment to the surface waterbody;

f. Identification of all erosion and sediment control practices and pollution prevention measures that need repair or maintenance;

g. Identification of all erosion and sediment control practices and pollution prevention measures that were not installed properly or are not functioning as designed and need to be reinstalled or replaced;

h. Description and sketch of areas with active soil disturbance activity, areas that have been disturbed but are inactive at the time of the inspection, and areas that have been stabilized (temporary and/or final) since the last inspection;

(Part IV.C.4.i)

i. Current phase of construction of all post-construction stormwater management practices and identification of all construction that is not in conformance with the SWPPP and technical standards;

j. Corrective action(s) that must be taken to install, repair, replace or maintain erosion and sediment control practices and pollution prevention measures; and to correct deficiencies identified with the construction of the post-construction stormwater management practice(s);

k. Identification and status of all corrective actions that were required by previous inspection; and

l. Digital photographs, with date stamp, that clearly show the condition of all practices that have been identified as needing corrective actions. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report being maintained onsite within seven (7) calendar days of the date of the inspection. The *qualified inspector* shall also take digital photographs, with date stamp, that clearly show the condition of the practice(s) after the corrective action has been completed. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report that documents the completion of the corrective action work within seven (7) calendar days of that inspection.

5. Within one business day of the completion of an inspection, the *qualified inspector* shall notify the *owner or operator* and appropriate contractor or subcontractor identified in Part III.A.6. of this permit of any corrective actions that need to be taken. The contractor or subcontractor shall begin implementing the corrective actions within one business day of this notification and shall complete the corrective actions in a reasonable time frame.

6. All inspection reports shall be signed by the *qualified inspector.* Pursuant to Part II.C.2. of this permit, the inspection reports shall be maintained on site with the SWPPP.

V. Part V. TERMINATION OF PERMIT COVERAGE

A. Termination of Permit Coverage

1. An *owner or operator* that is eligible to terminate coverage under this permit must submit a completed NOT form to the address in Part II.A.1 of this permit. The NOT form shall be one which is associated with this permit, signed in accordance with Part VII.H of this permit.

(Part V.A.2)

2. An *owner or operator* may terminate coverage when one or more the following conditions have been met:

   a. Total project completion - All *construction activity* identified in the SWPPP has been completed; and all areas of disturbance have achieved *final stabilization*; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices have been constructed in conformance with the SWPPP and are operational;

   b. Planned shutdown with partial project completion - All soil disturbance activities have ceased; and all areas disturbed as of the project shutdown date have achieved *final stabilization*; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational;

   c. A new *owner or operator* has obtained coverage under this permit in accordance with Part II.E. of this permit.

   d. The *owner or operator* obtains coverage under an alternative SPDES general permit or an individual SPDES permit.

3. For *construction activities* meeting subdivision 2a. or 2b. of this Part, the *owner or operator* shall have the *qualified inspector* perform a final site inspection prior to submitting the NOT. The *qualified inspector* shall, by signing the "*Final Stabilization*" and "Post-Construction Stormwater Management Practice certification statements on the NOT, certify that all the requirements in Part V.A.2.a. or b. of this permit have been achieved.

4. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4* and meet subdivision 2a. or 2b. of this Part, the *owner or operator* shall have the *regulated, traditional land use control MS4* sign the "MS4 Acceptance" statement on the NOT in accordance with the requirements in Part VII.H. of this permit. The *regulated, traditional land use control MS4* official, by signing this statement, has determined that it is acceptable for the *owner or operator* to submit the NOT in accordance with the requirements of this Part. The *regulated, traditional land use control MS4* can make this determination by performing a final site inspection themselves or by accepting the *qualified inspector*'s final site inspection certification(s) required in Part V.A.3. of this permit.

(Part V.A.5)

5. For *construction activities* that require post-construction stormwater management practices and meet subdivision 2a. of this Part, the *owner or operator* must, prior to submitting the NOT, ensure one of the following:

   a. the post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain such practice(s) have been deeded to the municipality in which the practice(s) is located,

   b. an executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s),

   c. for post-construction stormwater management practices that are privately owned, the *owner or operator* has a mechanism in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan, such as a deed covenant in the *owner or operator's* deed of record,

   d. for post-construction stormwater management practices that are owned by a public or private institution (e.g. school, university, hospital), government agency or authority, or public utility; the *owner or operator* has policy and procedures in place that ensures operation and maintenance of the practices in accordance with the operation and maintenance plan.

VI. Part VI. REPORTING AND RETENTION OF RECORDS

A. Record Retention

The *owner or operator* shall retain a copy of the NOI, NOI Acknowledgment Letter, SWPPP, MS4 SWPPP Acceptance form and any inspection reports that were prepared in conjunction with this permit for a period of at least five (5) years from the date that the Department receives a complete NOT submitted in accordance with Part V. of this general permit.

B. Addresses

With the exception of the NOI, NOT, and MS4 SWPPP Acceptance form (which must be submitted to the address referenced in Part II.A.1 of this permit), all written correspondence requested by the Department, including individual permit applications, shall be sent to the address of the appropriate DOW Water (SPDES) Program contact at the Regional Office listed in Appendix F.

(Part VII)

VII. Part VII. STANDARD PERMIT CONDITIONS

A. Duty to Comply

The *owner or operator* must comply with all conditions of this permit. All contractors and subcontractors associated with the project must comply with the terms of the SWPPP. Any non-compliance with this permit constitutes a violation of the Clean Water Act (CWA) and the ECL and is grounds for an enforcement action against the *owner or operator* and/or the contractor/subcontractor; permit revocation, suspension or modification; or denial of a permit renewal application. Upon a finding of significant non-compliance with this permit or the applicable SWPPP, the Department may order an immediate stop to all *construction activity* at the site until the non-compliance is remedied. The stop work order shall be in writing, shall describe the non-compliance in detail, and shall be sent to the *owner or operator*.

If any human remains or archaeological remains are encountered during excavation, the *owner or operator* must immediately cease, or cause to cease, all *construction activity* in the area of the remains and notify the appropriate Regional Water Engineer (RWE). *Construction activity* shall not resume until written permission to do so has been received from the RWE.

B. Continuation of the Expired General Permit

This permit expires five (5) years from the effective date. If a new general permit is not issued prior to the expiration of this general permit, an *owner or operator* with coverage under this permit may continue to operate and *discharge* in accordance with the terms and conditions of this general permit, if it is extended pursuant to the State Administrative Procedure Act and 6 NYCRR Part 621, until a new general permit is issued.

C. Enforcement

Failure of the *owner or operator,* its contractors, subcontractors, agents and/or assigns to strictly adhere to any of the permit requirements contained herein shall constitute a violation of this permit. There are substantial criminal, civil, and administrative penalties associated with violating the provisions of this permit. Fines of up to $37,500 per day for each violation and imprisonment for up to fifteen (15) years may be assessed depending upon the nature and degree of the offense.

D. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for an *owner or operator* in an enforcement action that it would have been necessary to halt or reduce the *construction activity* in order to maintain compliance with the conditions of this permit.

E. Duty to Mitigate

The *owner or operator* and its contractors and subcontractors shall take all reasonable steps to *minimize* or prevent any *discharge* in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

F. Duty to Provide Information

The *owner or operator* shall furnish to the Department, within a reasonable specified time period of a written request, all documentation necessary to demonstrate eligibility and any information to determine compliance with this permit or to determine whether cause exists for modifying or revoking this permit, or suspending or denying coverage under this permit, in accordance with the terms and conditions of this permit. The NOI, SWPPP and inspection reports required by this permit are public documents that the *owner or operator* must make available for review and copying by any person within five (5) business days of the *owner or operator* receiving a written request by any such person to review these documents. Copying of documents will be done at the requester's expense.

G. Other Information

When the *owner or operator* becomes aware that they failed to submit any relevant facts, or submitted incorrect information in the NOI or in any of the documents required by this permit , or have made substantive revisions to the SWPPP (e.g. the scope of the project changes significantly, the type of post-construction stormwater management practice(s) changes, there is a reduction in the sizing of the post-construction stormwater management practice, or there is an increase in the disturbance area or *impervious area*), which were not reflected in the original NOI submitted to the Department, they shall promptly submit such facts or information to the Department using the contact information in Part II.A. of this permit. Failure of the *owner or operator* to correct or supplement any relevant facts within five (5) business days of becoming aware of the deficiency shall constitute a violation of this permit.

H. Signatory Requirements

1. All NOIs and NOTs shall be signed as follows:

   a. For a corporation these forms shall be signed by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:

      (i) a president, secretary, treasurer, or vice-president of the

corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or

(ii) the manager of one or more manufacturing, production or operating facilities, provided the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

b. For a partnership or sole proprietorship these forms shall be signed by a general partner or the proprietor, respectively; or

c. For a municipality, State, Federal, or other public agency these forms shall be signed by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:

(i) the chief executive officer of the agency, or

(ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).

2. The SWPPP and other information requested by the Department shall be signed by a person described in Part VII.H.1. of this permit or by a duly authorized representative of that person. A person is a duly authorized representative only if:

a. The authorization is made in writing by a person described in Part VII.H.1. of this permit;

b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, position of *equivalent* responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named

(Part VII.H.2.b)

individual or any individual occupying a named position) and,

c. The written authorization shall include the name, title and signature of the authorized representative and be attached to the SWPPP.

3. All inspection reports shall be signed by the *qualified inspector* that performs the inspection.

4. The MS4 SWPPP Acceptance form shall be signed by the principal executive officer or ranking elected official from the *regulated, traditional land use control MS4,* or by a duly authorized representative of that person.

It shall constitute a permit violation if an incorrect and/or improper signatory authorizes any required forms, SWPPP and/or inspection reports.

I. Property Rights

The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges, nor does it authorize any injury to private property nor any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations. *Owners or operators* must obtain any applicable conveyances, easements, licenses and/or access to real property prior to *commencing construction activity*.

J. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

K. Requirement to Obtain Coverage Under an Alternative Permit

1. The Department may require any *owner or operator* authorized by this permit to apply for and/or obtain either an individual SPDES permit or another SPDES general permit. When the Department requires any *discharge*r authorized by a general permit to apply for an individual SPDES permit, it shall notify the *discharge*r in writing that a permit application is required. This notice shall include a brief statement of the reasons for this decision, an application form, a statement setting a time frame for the *owner or operator* to file the application for an individual SPDES permit, and a deadline, not sooner than 180 days from *owner or operator* receipt of the notification letter, whereby the authorization to

discharge under this general permit shall be terminated. Applications must be submitted to the appropriate Permit Administrator at the Regional Office. The Department may grant additional time upon demonstration, to the satisfaction of the Department, that additional time to apply for an alternative authorization is necessary or where the Department has not provided a permit determination in accordance with Part 621 of this Title.

2. When an individual SPDES permit is issued to a discharger authorized to *discharge* under a general SPDES permit for the same *discharge*(s), the general permit authorization for outfalls authorized under the individual SPDES permit is automatically terminated on the effective date of the individual permit unless termination is earlier in accordance with 6 NYCRR Part 750.

L. Proper Operation and Maintenance

The *owner or operator* shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the *owner or operator* to achieve compliance with the conditions of this permit and with the requirements of the SWPPP.

M. Inspection and Entry

The *owner or operator* shall allow an authorized representative of the Department, EPA, applicable county health department, or, in the case of a construction site which *discharges* through an *MS4*, an authorized representative of the *MS4* receiving the discharge, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the *owner's or operator's* premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this permit;

2. Have access to and copy at reasonable times, any records that must be kept under the conditions of this permit; and

3. Inspect at reasonable times any facilities or equipment (including monitoring and control equipment), practices or operations regulated or required by this permit.

4. Sample or monitor at reasonable times, for purposes of assuring permit compliance or as otherwise authorized by the Act or ECL, any substances or parameters at any location.

(Part VII.N)

N. Permit Actions

This permit may, at any time, be modified, suspended, revoked, or renewed by the Department in accordance with 6 NYCRR Part 621. The filing of a request by the *owner or operator* for a permit modification, revocation and reissuance, termination, a notification of planned changes or anticipated noncompliance does not limit, diminish and/or stay compliance with any terms of this permit.

O. Definitions

Definitions of key terms are included in Appendix A of this permit.

P. Re-Opener Clause

1. If there is evidence indicating potential or realized impacts on water quality due to any stormwater discharge associated with *construction activity* covered by this permit, the *owner or operator* of such discharge may be required to obtain an individual permit or alternative general permit in accordance with Part VII.K. of this permit or the permit may be modified to include different limitations and/or requirements.

2. Any Department initiated permit modification, suspension or revocation will be conducted in accordance with 6 NYCRR Part 621, 6 NYCRR 750-1.18, and 6 NYCRR 750-1.20.

Q. Penalties for Falsification of Forms and Reports

In accordance with 6NYCRR Part 750-2.4 and 750-2.5, any person who knowingly makes any false material statement, representation, or certification in any application, record, report or other document filed or required to be maintained under this permit, including reports of compliance or noncompliance shall, upon conviction, be punished in accordance with ECL §71-1933 and or Articles 175 and 210 of the New York State Penal Law.

R. Other Permits

Nothing in this permit relieves the *owner or operator* from a requirement to obtain any other permits required by law.

VIII. **APPENDIX A**

Definitions

Alter Hydrology from Pre to Post-Development Conditions - means the post-development peak flow rate(s) has increased by more than 5% of the pre-developed condition for the design storm of interest (e.g. 10 yr and 100 yr).

Combined Sewer - means a sewer that is designed to collect and convey both “sewage” and “stormwater”.

Commence (Commencement of) Construction Activities - means the initial disturbance of soils associated with clearing, grading or excavation activities; or other construction related activities that disturb or expose soils such as demolition, stockpiling of fill material, and the initial installation of erosion and sediment control practices required in the SWPPP. See definition for “*Construction Activity(ies)*” also.

***Construction Activity*(ies) -** means any clearing, grading, excavation, filling, demolition or stockpiling activities that result in soil disturbance. Clearing activities can include, but are not limited to, logging equipment operation, the cutting and skidding of trees, stump removal and/or brush root removal. Construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility.

Direct Discharge (to a specific surface waterbody) - means that runoff flows from a construction site by overland flow and the first point of discharge is the specific surface waterbody, or runoff flows from a construction site to a separate storm sewer system and the first point of discharge from the separate storm sewer system is the specific surface waterbody.

Discharge(s) - means any addition of any pollutant to waters of the State through an outlet or point source.

Environmental Conservation Law (ECL) - means chapter 43-B of the Consolidated Laws of the State of New York, entitled the Environmental Conservation Law.

Equivalent (Equivalence) – means that the practice or measure meets all the performance, longevity, maintenance, and safety objectives of the technical standard and will provide an equal or greater degree of water quality protection.

Final Stabilization - means that all soil disturbance activities have ceased and a uniform, perennial vegetative cover with a density of eighty (80) percent over the entire pervious surface has been established; or other equivalent stabilization measures, such as permanent landscape mulches, rock rip-rap or washed/crushed stone have been applied

on all disturbed areas that are not covered by permanent structures, concrete or pavement.

General SPDES permit - means a SPDES permit issued pursuant to 6 NYCRR Part 750-1.21 and Section 70-0117 of the ECL authorizing a category of discharges.

Groundwater(s) - means waters in the saturated zone. The saturated zone is a subsurface zone in which all the interstices are filled with water under pressure greater than that of the atmosphere. Although the zone may contain gas-filled interstices or interstices filled with fluids other than water, it is still considered saturated.

Historic Property – means any building, structure, site, object or district that is listed on the State or National Registers of Historic Places or is determined to be eligible for listing on the State
or National Registers of Historic Places.

Impervious Area (Cover) - means all impermeable surfaces that cannot effectively infiltrate rainfall. This includes paved, concrete and gravel surfaces (i.e. parking lots, driveways, roads, runways and sidewalks); building rooftops and miscellaneous impermeable structures such as patios, pools, and sheds.

Infeasible – means not technologically possible, or not economically practicable and achievable in light of best industry practices.

Larger Common Plan of Development or Sale - means a contiguous area where multiple separate and distinct *construction activities* are occurring, or will occur, under one plan. The term “plan” in “larger common plan of development or sale” is broadly defined as any announcement or piece of documentation (including a sign, public notice or hearing, marketing plan, advertisement, drawing, permit application, State Environmental Quality Review Act (SEQRA) environmental assessment form or other documents, zoning request, computer design, etc.) or physical demarcation (including boundary signs, lot stakes, surveyor markings, etc.) indicating that *construction activities* may occur on a specific plot.

For discrete construction projects that are located within a larger common plan of development or sale that are at least 1/4 mile apart, each project can be treated as a separate plan of development or sale provided any interconnecting road, pipeline or utility project that is part of the same “common plan” is not concurrently being disturbed.

Minimize – means reduce and/or eliminate to the extent achievable using control measures (including best management practices) that are technologically available and economically practicable and achievable in light of best industry practices.

Municipal Separate Storm Sewer (MS4) - a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters,

ditches, man-made
channels, or storm drains):

(i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to surface waters of the State*;*

(ii) Designed or used for collecting or conveying stormwater;

(iii) Which is not a *combined sewer*; and

(iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

National Pollutant Discharge Elimination System (NPDES) - means the national system for the issuance of wastewater and stormwater permits under the Federal Water Pollution Control Act (Clean Water Act).

New Development – means any land disturbance that does meet the definition of Redevelopment Activity included in this appendix.

NOI Acknowledgment Letter - means the letter that the Department sends to an owner or operator to acknowledge the Department's receipt and acceptance of a complete Notice of Intent. This letter documents the owner's or operator's authorization to discharge in accordance with the general permit for stormwater discharges from *construction activity*.

Owner or Operator - means the person, persons or legal entity which owns or leases the property on which the *construction activity* is occurring; and/or an entity that has operational control over the construction plans and specifications, including the ability to make modifications to the plans and specifications.

Performance Criteria – means the design criteria listed under the "Required Elements" sections in Chapters 5, 6 and 10 of the technical standard, New York State Stormwater Management Design Manual, dated January 2015. It does not include the Sizing Criteria (i.e. WQv, RRv, Cpv, Qp and Qf) in Part I.C.2. of the permit.

Pollutant - means dredged spoil, filter backwash, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand and industrial, municipal, agricultural waste and ballast discharged into water; which may cause or might reasonably be expected to cause pollution of the waters of the state in contravention of the standards or guidance values adopted as provided in 6 NYCRR Parts 700 et seq .

Qualified Inspector - means a person that is knowledgeable in the principles and practices of erosion and sediment control, such as a licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, or other Department endorsed individual(s).

It can also mean someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided that person has training in the principles and practices of erosion and sediment control. Training in the principles and practices of erosion and sediment control means that the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect has received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect shall receive four (4) hours of training every three (3) years.

It can also mean a person that meets the *Qualified Professional* qualifications in addition to the *Qualified Inspector* qualifications.

Note: Inspections of any post-construction stormwater management practices that include structural components, such as a dam for an impoundment, shall be performed by a licensed Professional Engineer.

Qualified Professional - means a person that is knowledgeable in the principles and practices of stormwater management and treatment, such as a licensed Professional Engineer, Registered Landscape Architect or other Department endorsed individual(s). Individuals preparing SWPPPs that require the post-construction stormwater management practice component must have an understanding of the principles of hydrology, water quality management practice design, water quantity control design, and, in many cases, the principles of hydraulics. All components of the SWPPP that involve the practice of engineering, as defined by the NYS Education Law (see Article 145), shall be prepared by, or under the direct supervision of, a professional engineer licensed to practice in the State of New York..

Redevelopment Activity(ies) – means the disturbance and reconstruction of existing impervious area, including impervious areas that were removed from a project site within five (5) years of preliminary project plan submission to the local government (i.e. site plan, subdivision, etc.).

Regulated, Traditional Land Use Control MS4 - means a city, town or village with land use control authority that is required to gain coverage under New York State DEC's SPDES General Permit For Stormwater Discharges from Municipal Separate Stormwater Sewer Systems (MS4s).

Routine Maintenance Activity - means *construction activity* that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility, including, but not limited to:

- Re-grading of gravel roads or parking lots,
- Stream bank restoration projects (does not include the placement of spoil material),
- Cleaning and shaping of existing roadside ditches and culverts that maintains the approximate original line and grade, and hydraulic capacity of the ditch,
- Cleaning and shaping of existing roadside ditches that does not maintain the approximate original grade, hydraulic capacity and purpose of the ditch if the changes to the line and grade, hydraulic capacity or purpose of the ditch are installed to improve water quality and quantity controls (e.g. installing grass lined ditch),
- Placement of aggregate shoulder backing that makes the transition between the road shoulder and the ditch or embankment,
- Full depth milling and filling of existing asphalt pavements, replacement of concrete pavement slabs, and similar work that does not expose soil or disturb the bottom six (6) inches of subbase material,
- Long-term use of equipment storage areas at or near highway maintenance facilities,
- Removal of sediment from the edge of the highway to restore a previously existing sheet-flow drainage connection from the highway surface to the highway ditch or embankment,
- Existing use of Canal Corp owned upland disposal sites for the canal, and
- Replacement of curbs, gutters, sidewalks and guide rail posts.

Site limitations – means site conditions that prevent the use of an infiltration technique and or infiltration of the total WQv. Typical site limitations include: seasonal high groundwater, shallow depth to bedrock, and soils with an infiltration rate less than 0.5 inches/hour. The existence of site limitations shall be confirmed and documented using actual field testing (i.e. test pits, soil borings, and infiltration test) or using information from the most current United States Department of Agriculture (USDA) Soil Survey for the County where the project is located.

Sizing Criteria – means the criteria included in Part I.C.2 of the permit that are used to size post-construction stormwater management control practices. The criteria include; Water Quality Volume (WQv), Runoff Reduction Volume (RRv), Channel Protection Volume (Cpv), Overbank Flood (Qp), and Extreme Flood (Qf).

State Pollutant Discharge Elimination System (SPDES) - means the system established pursuant to Article 17 of the ECL and 6 NYCRR Part 750 for issuance of permits authorizing discharges to the waters of the state.

Steep Slope – means land area with a Soil Slope Phase that is identified as an E or F, or

the map unit name is inclusive of 25% or greater slope, on the United States Department of Agriculture ("USDA") Soil Survey for the County where the disturbance will occur.

Surface Waters of the State - shall be construed to include lakes, bays, sounds, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Atlantic ocean within the territorial seas of the state of New York and all other bodies of surface water, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters that do not combine or effect a junction with natural surface waters), which are wholly or partially within or bordering the state or within its jurisdiction. Waters of the state are further defined in 6 NYCRR Parts 800 to 941.

Temporarily Ceased – means that an existing disturbed area will not be disturbed again within 14 calendar days of the previous soil disturbance.

Temporary Stabilization - means that exposed soil has been covered with material(s) as set forth in the technical standard, New York Standards and Specifications for Erosion and Sediment Control, to prevent the exposed soil from eroding. The materials can include, but are not limited to, mulch, seed and mulch, and erosion control mats (e.g. jute twisted yarn, excelsior wood fiber mats).

Total Maximum Daily Loads (TMDLs) - A TMDL is the sum of the allowable loads of a single pollutant from all contributing point and nonpoint sources. It is a calculation of the maximum amount of a pollutant that a waterbody can receive on a daily basis and still meet *water quality standards*, and an allocation of that amount to the pollutant's sources. A TMDL stipulates wasteload allocations (WLAs) for point source discharges, load allocations (LAs) for nonpoint sources, and a margin of safety (MOS).

Trained Contractor - means an employee from the contracting (construction) company, identified in Part III.A.6., that has received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the *trained contractor* shall receive four (4) hours of training every three (3) years.

It can also mean an employee from the contracting (construction) company, identified in Part III.A.6., that meets the *qualified inspector* qualifications (e.g. licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, or someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity).

The *trained contractor* is responsible for the day to day implementation of the SWPPP.

Uniform Procedures Act (UPA) Permit - means a permit required under 6 NYCRR Part

621 of the Environmental Conservation Law (ECL), Article 70.

Water Quality Standard - means such measures of purity or quality for any waters in relation to their reasonable and necessary use as promulgated in 6 NYCRR Part 700 et seq.

IX. APPENDIX B

Required SWPPP Components by Project Type

Table 1
CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT ONLY INCLUDES EROSION AND SEDIMENT CONTROLS

The following construction activities that involve soil disturbances of one (1) or more acres of land, but less than five (5) acres:

- Single family home not located in one of the watersheds listed in Appendix C or not *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions with 25% or less impervious cover at total site build-out and not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E
- Construction of a barn or other agricultural building, silo, stock yard or pen.

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Installation of underground, linear utilities; such as gas lines, fiber-optic cable, cable TV, electric, telephone, sewer mains, and water mains
- Environmental enhancement projects, such as wetland mitigation projects, stormwater retrofits and stream restoration projects
- Bike paths and trails
- Sidewalk construction projects that are not part of a road/ highway construction or reconstruction project
- Slope stabilization projects
- Slope flattening that changes the grade of the site, but does not significantly change the runoff characteristics
- Spoil areas that will be covered with vegetation
- Land clearing and grading for the purposes of creating vegetated open space (i.e. recreational parks, lawns, meadows, fields), excluding projects that *alter hydrology from pre to post development* conditions
- Athletic fields (natural grass) that do not include the construction or reconstruction of *impervious area* and do not *alter hydrology from pre to post development* conditions
- Demolition project where vegetation will be established and no redevelopment is planned
- Overhead electric transmission line project that does not include the construction of permanent access roads or parking areas surfaced with *impervious cover*
- Structural practices as identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State", excluding projects that involve soil disturbances of less than five acres and construction activities that include the construction or reconstruction of impervious area

The following construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land:

- All construction activities located in the watersheds identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

Table 2

CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT INCLUDES POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Single family home located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions that involve soil disturbances of between one (1) and five (5) acres of land with greater than 25% impervious cover at total site build-out
- Single family residential subdivisions that involve soil disturbances of five (5) or more acres of land, and single family residential subdivisions that involve soil disturbances of less than five (5) acres that are part of a larger common plan of development or sale that will ultimately disturb five or more acres of land
- Multi-family residential developments; includes townhomes, condominiums, senior housing complexes, apartment complexes, and mobile home parks
- Airports
- Amusement parks
- Campgrounds
- Cemeteries that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Commercial developments
- Churches and other places of worship
- Construction of a barn or other agricultural building(e.g. silo) and structural practices as identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State" that include the construction or reconstruction of *impervious area*, excluding projects that involve soil disturbances of less than five acres.
- Golf courses
- Institutional, includes hospitals, prisons, schools and colleges
- Industrial facilities, includes industrial parks
- Landfills
- Municipal facilities; includes highway garages, transfer stations, office buildings, POTW's and water treatment plants
- Office complexes
- Sports complexes
- Racetracks, includes racetracks with earthen (dirt) surface
- Road construction or reconstruction
- Parking lot construction or reconstruction
- Athletic fields (natural grass) that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Athletic fields with artificial turf
- Permanent access roads, parking areas, substations, compressor stations and well drilling pads, surfaced with *impervious cover,* and constructed as part of an over-head electric transmission line project , wind-power project, cell tower project, oil or gas well drilling project, sewer or water main project or other linear utility project
- All other construction activities that include the construction or reconstruction of *impervious area* or *alter the hydrology from pre to post development* conditions, and are not listed in Table 1

X. APPENDIX C

Watersheds Where Enhanced Phosphorus Removal Standards Are Required

Watersheds where *owners or operators* of construction activities identified in Table 2 of Appendix B must prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the Enhanced Phosphorus Removal Standards included in the technical standard, New York State Stormwater Management Design Manual ("Design Manual").

- Entire New York City Watershed located east of the Hudson River **-** Figure 1
- Onondaga Lake Watershed **-** Figure 2
- Greenwood Lake Watershed **-**Figure 3
- Oscawana Lake Watershed – Figure 4
- Kinderhook Lake Watershed – Figure 5

Figure 1 - New York City Watershed East of the Hudson

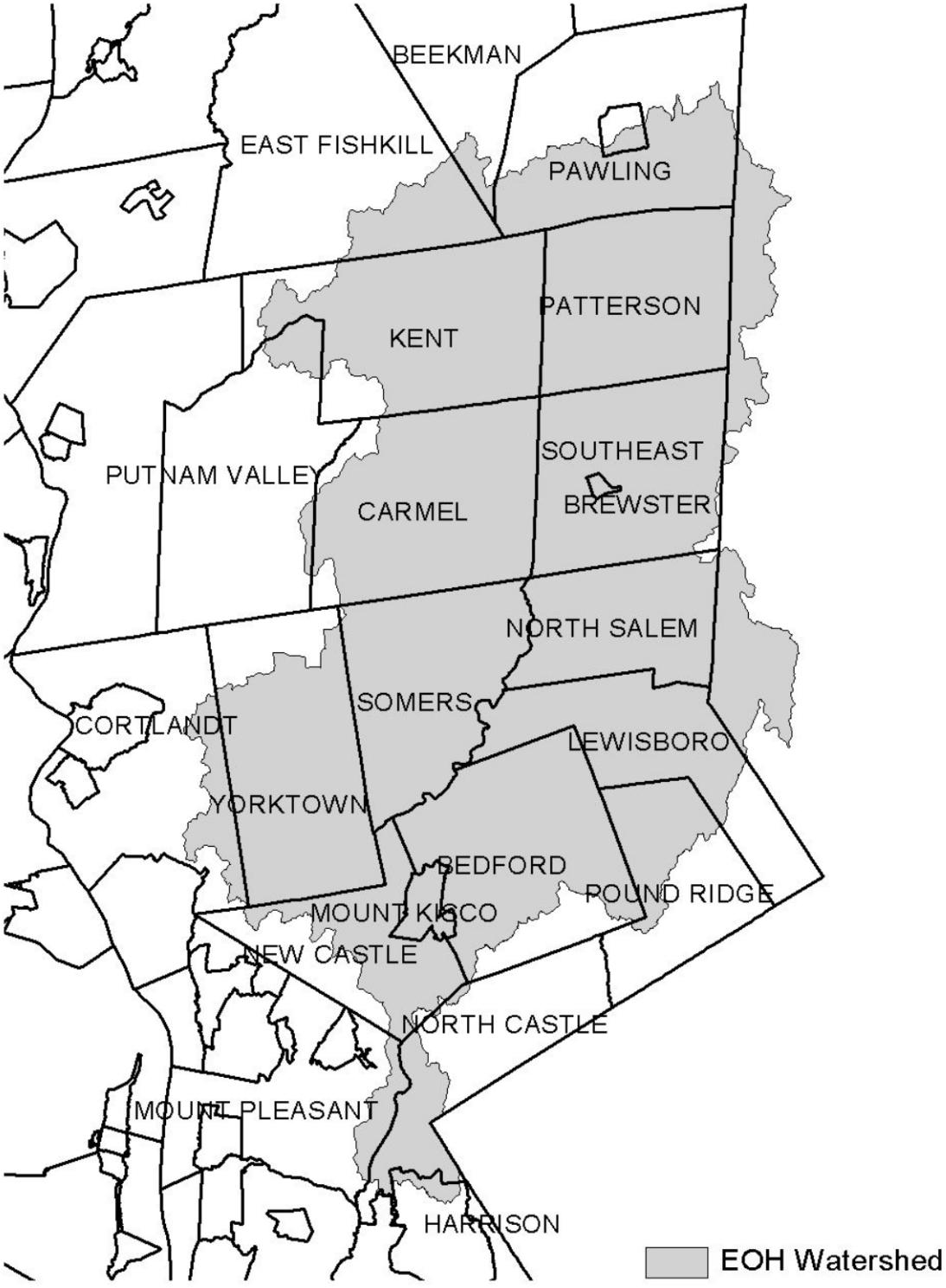


Figure 2 - Onondaga Lake Watershed

Figure 3 - Greenwood Lake Watershed

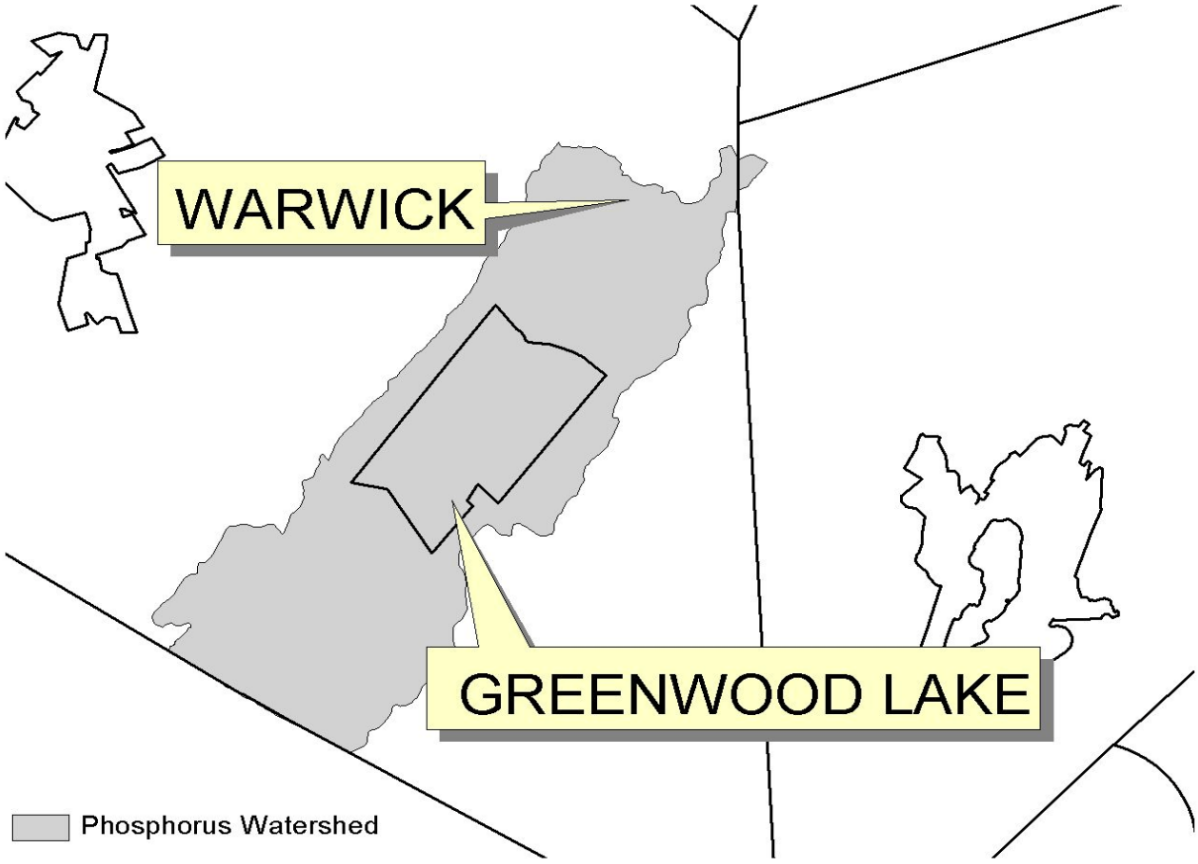


Figure 4 - Oscawana Lake Watershed

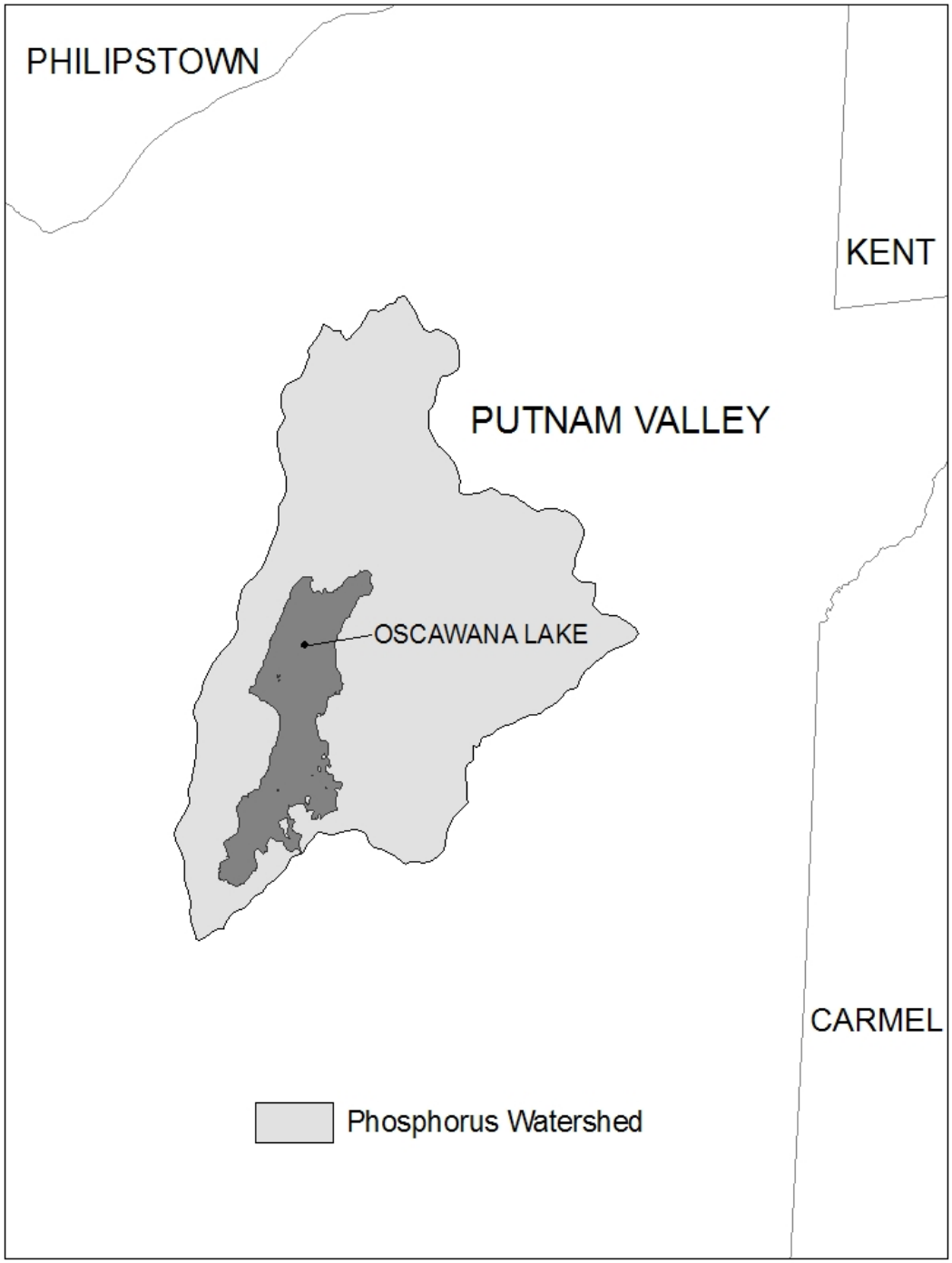
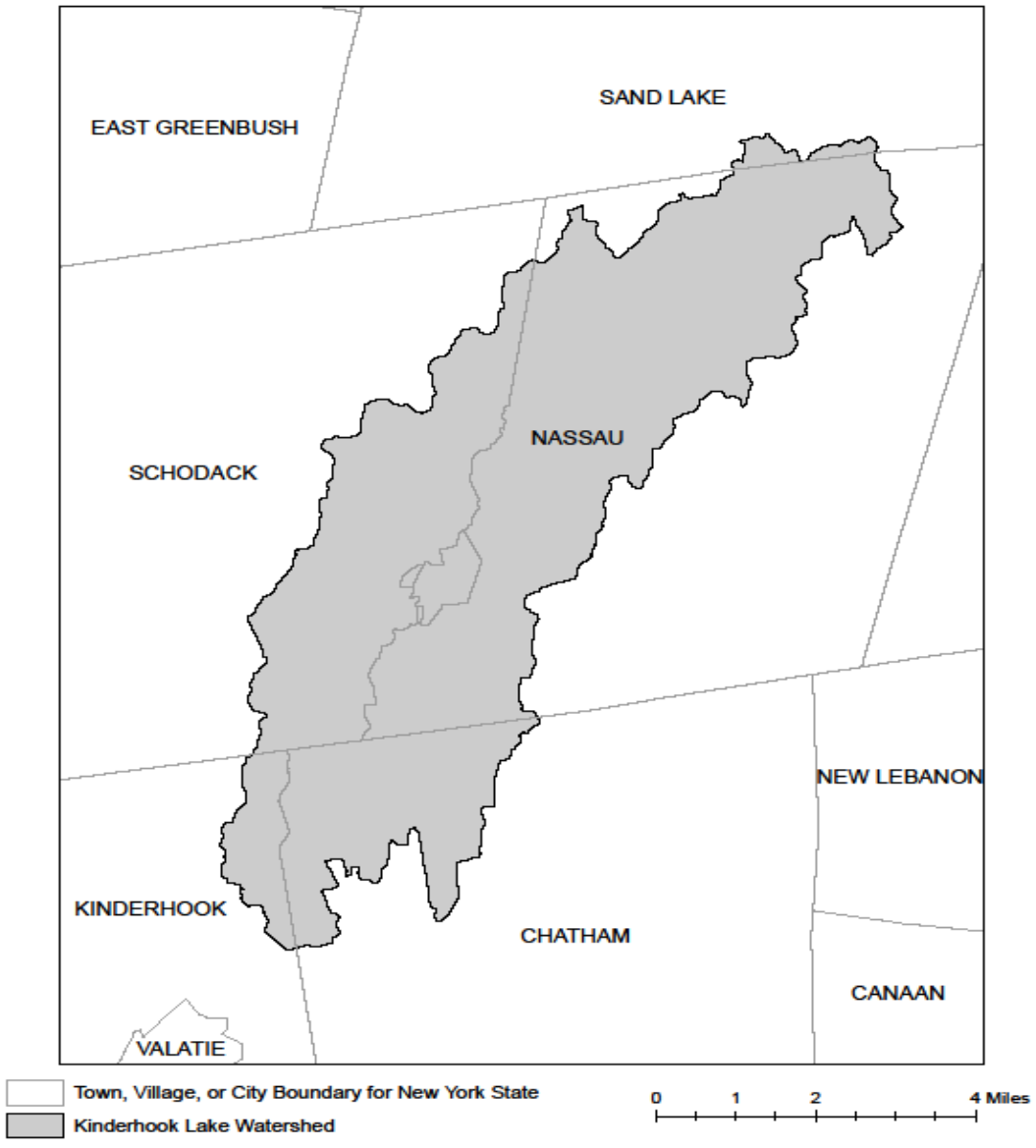


Figure 5: Kinderhook Lake Watershed



XI. APPENDIX D

Watersheds where *owners or operators* of construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land must obtain coverage under this permit.

Entire New York City Watershed that is located east of the Hudson River **-** See Figure 1 in Appendix C

XII. APPENDIX E

List of 303(d) segments impaired by pollutants related to *construction activity* (e.g. silt, sediment or nutrients). *Owners or operators* of single family home and single family residential subdivisions with 25% or less total impervious cover at total site build-out that involve soil disturbances of one or more acres of land, but less than 5 acres, and *directly discharge* to one of the listed segments below shall prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the New York State Stormwater Management Design Manual ("Design Manual"), dated January 2015.

COUNTY	WATERBODY
Albany	Ann Lee (Shakers) Pond, Stump Pond
Albany	Basic Creek Reservoir
Allegheny	Amity Lake, Saunders Pond
Bronx	Van Cortlandt Lake
Broome	Whitney Point Lake/Reservoir
Broome	Fly Pond, Deer Lake
Broome	Minor Tribs to Lower Susquehanna (north)
Cattaraugus	Allegheny River/Reservoir
Cattaraugus	Case Lake
Cattaraugus	Linlyco/Club Pond
Cayuga	Duck Lake
Chautauqua	Chautauqua Lake, North
Chautauqua	Chautauqua Lake, South
Chautauqua	Bear Lake
Chautauqua	Chadakoin River and tribs
Chautauqua	Lower Cassadaga Lake
Chautauqua	Middle Cassadaga Lake
Chautauqua	Findley Lake
Clinton	Great Chazy River, Lower, Main Stem
Columbia	Kinderhook Lake
Columbia	Robinson Pond
Dutchess	Hillside Lake
Dutchess	Wappinger Lakes
Dutchess	Fall Kill and tribs
Erie	Green Lake
Erie	Scajaquada Creek, Lower, and tribs
Erie	Scajaquada Creek, Middle, and tribs
Erie	Scajaquada Creek, Upper, and tribs
Erie	Rush Creek and tribs
Erie	Ellicott Creek, Lower, and tribs
Erie	Beeman Creek and tribs
Erie	Murder Creek, Lower, and tribs
Erie	South Branch Smoke Cr, Lower, and tribs
Erie	Little Sister Creek, Lower, and tribs
Essex	Lake George (primary county: Warren)
Genesee	Black Creek, Upper, and minor tribs
Genesee	Tonawanda Creek, Middle, Main Stem
Genesee	Oak Orchard Creek, Upper, and tribs
Genesee	Bowen Brook and tribs
Genesee	Bigelow Creek and tribs
Genesee	Black Creek, Middle, and minor tribs
Genesee	LeRoy Reservoir
Greene	Schoharie Reservoir
Greene	Sleepy Hollow Lake
Herkimer	Steele Creek tribs
Kings	Hendrix Creek
Lewis	Mill Creek/South Branch and tribs
Livingston	Conesus Lake
Livingston	Jaycox Creek and tribs
Livingston	Mill Creek and minor tribs
Livingston	Bradner Creek and tribs
Livingston	Christie Creek and tribs
Monroe	Lake Ontario Shoreline, Western
Monroe	Mill Creek/Blue Pond Outlet and tribs
Monroe	Rochester Embayment - East
Monroe	Rochester Embayment - West
Monroe	Unnamed Trib to Honeoye Creek
Monroe	Genesee River, Lower, Main Stem
Monroe	Genesee River, Middle, Main Stem
Monroe	Black Creek, Lower, and minor tribs
Monroe	Buck Pond
Monroe	Long Pond
Monroe	Cranberry Pond
Monroe	Mill Creek and tribs
Monroe	Shipbuilders Creek and tribs
Monroe	Minor tribs to Irondequoit Bay
Monroe	Thomas Creek/White Brook and tribs
Nassau	Glen Cove Creek, Lower, and tribs
Nassau	LI Tribs (fresh) to East Bay
Nassau	East Meadow Brook, Upper, and tribs
Nassau	Hempstead Bay
Nassau	Hempstead Lake
Nassau	Grant Park Pond
Nassau	Beaver Lake
Nassau	Camaans Pond
Nassau	Halls Pond
Nassau	LI Tidal Tribs to Hempstead Bay
Nassau	Massapequa Creek and tribs
Nassau	Reynolds Channel, east
Nassau	Reynolds Channel, west
Nassau	Silver Lake, Lofts Pond
Nassau	Woodmere Channel
Niagara	Hyde Park Lake
Niagara	Lake Ontario Shoreline, Western
Niagara	Bergholtz Creek and tribs
Oneida	Ballou, Nail Creeks
Onondaga	Ley Creek and tribs
Onondaga	Onondaga Creek, Lower and tribs

APPENDIX E

List of 303(d) segments impaired by pollutants related to construction activity, cont'd.

COUNTY	WATERBODY	COUNTY	WATERBODY
Onondaga	Onondaga Creek, Middle and tribs	Suffolk	Great South Bay, West
Onondaga	Onondaga Creek, Upp, and minor tribs	Suffolk	Mill and Seven Ponds
Onondaga	Harbor Brook, Lower, and tribs	Suffolk	Moriches Bay, East
Onondaga	Ninemile Creek, Lower, and tribs	Suffolk	Moriches Bay, West
Onondaga	Minor tribs to Onondaga Lake	Suffolk	Quantuck Bay
Onondaga	Onondaga Creek, Lower, and tribs	Suffolk	Shinnecock Bay (and Inlet)
Ontario	Honeoye Lake	Sullivan	Bodine, Montgomery Lakes
Ontario	Hemlock Lake Outlet and minor tribs	Sullivan	Davies Lake
Ontario	Great Brook and minor tribs	Sullivan	Pleasure Lake
Orange	Monhagen Brook and tribs	Sullivan	Swan Lake
Orange	Orange Lake	Tompkins	Cayuga Lake, Southern End
Orleans	Lake Ontario Shoreline, Western	Tompkins	Owasco Inlet, Upper, and tribs
Oswego	Pleasant Lake	Ulster	Ashokan Reservoir
Oswego	Lake Neatahwanta	Ulster	Esopus Creek, Upper, and minor tribs
Putnam	Oscawana Lake		
Putnam	Palmer Lake	Ulster	Esopus Creek, Lower, Main Stem
Putnam	Lake Carmel	Ulster	Esopus Creek, Middle, and minor tribs
Queens	Jamaica Bay, Eastern, and tribs (Queens)		
Queens	Bergen Basin	Warren	Lake George
Queens	Shellbank Basin	Warren	Tribs to L.George, Village of L George
Rensselaer	Nassau Lake		
Rensselaer	Snyders Lake	Warren	Huddle/Finkle Brooks and tribs
Richmond	Grasmere, Arbutus and Wolfes Lakes	Warren	Indian Brook and tribs
Rockland	Congers Lake, Swartout Lake	Warren	Hague Brook and tribs
Rockland	Rockland Lake	Washington	Tribs to L.George, East Shr Lk George
Saratoga	Ballston Lake		
Saratoga	Round Lake	Washington	Cossayuna Lake
Saratoga	Dwaas Kill and tribs	Washington	Wood Cr/Champlain Canal, minor tribs
Saratoga	Tribs to Lake Lonely		
Saratoga	Lake Lonely	Wayne	Port Bay
Schenectady	Collins Lake	Wayne	Marbletown Creek and tribs
Schenectady	Duane Lake	Westchester	Lake Katonah
Schenectady	Mariaville Lake	Westchester	Lake Mohegan
Schoharie	Engleville Pond	Westchester	Lake Shenorock
Schoharie	Summit Lake	Westchester	Reservoir No.1 (Lake Isle)
Schuyler	Cayuta Lake	Westchester	Saw Mill River, Middle, and tribs
St. Lawrence	Fish Creek and minor tribs	Westchester	Silver Lake
St. Lawrence	Black Lake Outlet/Black Lake	Westchester	Teatown Lake
Steuben	Lake Salubria	Westchester	Truesdale Lake
Steuben	Smith Pond	Westchester	Wallace Pond
Suffolk	Millers Pond	Westchester	Peach Lake
Suffolk	Mattituck (Marratooka) Pond	Westchester	Mamaroneck River, Lower
Suffolk	Tidal tribs to West Moriches Bay	Westchester	Mamaroneck River, Upp, and tribs
Suffolk	Canaan Lake	Westchester	Sheldrake River and tribs
Suffolk	Lake Ronkonkoma	Westchester	Blind Brook, Lower
Suffolk	Beaverdam Creek and tribs	Westchester	Blind Brook, Upper, and tribs
Suffolk	Big/Little Fresh Ponds	Westchester	Lake Lincolndale
Suffolk	Fresh Pond	Westchester	Lake Meahaugh
Suffolk	Great South Bay, East	Wyoming	Java Lake
Suffolk	Great South Bay, Middle	Wyoming	Silver Lake

Note: The list above identifies those waters from the final New York State "2014 Section 303(d) List of Impaired Waters Requiring a TMDL/Other Strategy", dated January 2015, that are impaired by silt, sediment or nutrients.

XIII. APPENDIX F

LIST OF NYS DEC REGIONAL OFFICES

Region	COVERING THE FOLLOWING COUNTIES:	DIVISION OF ENVIRONMENTAL PERMITS (DEP) PERMIT ADMINISTRATORS	DIVISION OF WATER (DOW) WATER (SPDES) PROGRAM
1	NASSAU AND SUFFOLK	50 CIRCLE ROAD STONY BROOK, NY 11790 TEL. (631) 444-0365	50 CIRCLE ROAD STONY BROOK, NY 11790-3409 TEL. (631) 444-0405
2	BRONX, KINGS, NEW YORK, QUEENS AND RICHMOND	1 HUNTERS POINT PLAZA, 47-40 21ST ST. LONG ISLAND CITY, NY 11101-5407 TEL. (718) 482-4997	1 HUNTERS POINT PLAZA, 47-40 21ST ST. LONG ISLAND CITY, NY 11101-5407 TEL. (718) 482-4933
3	DUTCHESS, ORANGE, PUTNAM, ROCKLAND, SULLIVAN, ULSTER AND WESTCHESTER	21 SOUTH PUTT CORNERS ROAD NEW PALTZ, NY 12561-1696 TEL. (845) 256-3059	100 HILLSIDE AVENUE, SUITE 1W WHITE PLAINS, NY 10603 TEL. (914) 428 - 2505
4	ALBANY, COLUMBIA, DELAWARE, GREENE, MONTGOMERY, OTSEGO, RENSSELAER, SCHENECTADY AND SCHOHARIE	1150 NORTH WESTCOTT ROAD SCHENECTADY, NY 12306-2014 TEL. (518) 357-2069	1130 NORTH WESTCOTT ROAD SCHENECTADY, NY 12306-2014 TEL. (518) 357-2045
5	CLINTON, ESSEX, FRANKLIN, FULTON, HAMILTON, SARATOGA, WARREN AND WASHINGTON	1115 STATE ROUTE 86, PO BOX 296 RAY BROOK, NY 12977-0296 TEL. (518) 897-1234	232 GOLF COURSE ROAD WARRENSBURG, NY 12885-1172 TEL. (518) 623-1200
6	HERKIMER, JEFFERSON, LEWIS, ONEIDA AND ST. LAWRENCE	STATE OFFICE BUILDING 317 WASHINGTON STREET WATERTOWN, NY 13601-3787 TEL. (315) 785-2245	STATE OFFICE BUILDING 207 GENESEE STREET UTICA, NY 13501-2885 TEL. (315) 793-2554
7	BROOME, CAYUGA, CHENANGO, CORTLAND, MADISON, ONONDAGA, OSWEGO, TIOGA AND TOMPKINS	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7438	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7500
8	CHEMUNG, GENESEE, LIVINGSTON, MONROE, ONTARIO, ORLEANS, SCHUYLER, SENECA, STEUBEN, WAYNE AND YATES	6274 EAST AVON-LIMA ROAD AVON, NY 14414-9519 TEL. (585) 226-2466	6274 EAST AVON-LIMA RD. AVON, NY 14414-9519 TEL. (585) 226-2466
9	ALLEGANY, CATTARAUGUS, CHAUTAUQUA, ERIE, NIAGARA AND WYOMING	270 MICHIGAN AVENUE BUFFALO, NY 14203-2999 TEL. (716) 851-7165	270 MICHIGAN AVE. BUFFALO, NY 14203-2999 TEL. (716) 851-7070

FACT SHEET

For

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SPDES GENERAL PERMIT
FOR STORMWATER DISCHARGES
from
CONSTRUCTION ACTIVITY

Permit No. GP-0-15-002

Issued Pursuant to Article 17, Titles 7, 8 and Article 70
of the Environmental Conservation Law

January 2015

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INTRODUCTION

The New York State Department of Environmental Conservation (NYSDEC) has renewed the SPDES General Permit for Stormwater Discharges from Construction Activity as GP-0-15-002. The new general permit is effective on January 29, 2015. GP-0-15-002 replaces the previous general permit, GP-0-10-001 which expires on January 28, 2015.

The SPDES General Permit for Stormwater Discharges from Construction Activity (GP-0-15-002) is a five (5) year permit intended to cover discharges of stormwater to surface waters of the State from construction activities as defined in 40 CFR Part 122.26(b)(14)(x) and (b)(15)(i - ii). This general permit may also authorize discharges of stormwater to groundwater in cases where the NYSDEC has determined that a permit is necessary.

Pursuant to Section 402 of the Clean Water Act ("CWA"), stormwater discharges from certain construction activities (including discharges through a municipal separate storm sewer system) are unlawful unless they are authorized by a National Pollutant Discharge Elimination System (NPDES) permit or by a state permit program. New York's State Pollutant Discharge Elimination System (SPDES) is a NPDES-approved program with permits issued in accordance with the Environmental Conservation Law ("ECL"). An owner or operator of a construction activity must obtain permit coverage through either an individual SPDES permit which address the stormwater discharges or obtain coverage under the SPDES General Permit for Stormwater Discharges from Construction Activity (GP-0-15-002) prior to the commencement of construction activity.

GENERAL CHANGES

Addition of EPA's Construction and Development Effluent Guidelines (ELGs): Part I.B.1 of the general permit contains new source performance standards (ELGs) as required by 40 CFR 450.21. The ELGs apply primarily to the selection, design, and implementation of the erosion and sediment controls (i.e. during construction controls) to be used on the site. These are technology based effluent limitations that represent the degree of reduction attainable by the application of best practicable technology currently available. These non-numeric effluent limits require an owner or operator to ensure that water quality standards are being met and the discharge of pollutants are minimized through the selection, design and implementation of erosion and sediment control measures. As newly defined in the general permit, the term "minimize" means to reduce and/or eliminate to the extent achievable using control measures that are technologically available and economically achievable (BAT) and practicable (BPT) in light of best industry practice. The control measures specified in the New York State Standards & Specifications for Erosion & Sediment Control ("Blue Book") have been determined to be technologically available and economically achievable and practicable. The erosion and sediment control measures documented in the Stormwater Pollution Prevention Plan (SWPPP) must be installed and implemented to achieve the effluent limits contained in Part I.B.

Addition of Sizing Criteria from the New York State Stormwater Management Design Manual ("Design Manual"): Part I.C. of the general permit specifies the criteria for post construction stormwater management practices.

> **Performance Criteria** - Part I.C.1 clarifies when deviations from the Design Manual are allowed. The general permit specifies that where post construction stormwater management practices are not designed in conformance with the *performance criteria* contained in the Design Manual, the owner or operator must demonstrate that the deviation or alternative design is equivalent to the Design Manual. The general permit defines *performance criteria* to be that criteria listed under "required elements" in sections in Chapters 5, 6 and 10 of the Design Manual. The general permit defines e*quivalent (equivalence)* to mean that the practice or measure meets all performance, longevity, maintenance and safety objectives of the technical standard and will provide an equal or greater degree of water quality protection.
>
> **Sizing Criteria -** Part I.C.2 requires that post-construction stormwater management practices must meet the applicable sizing criteria contained in Part I.C.2(a),(b),(c) or (d) of the general permit. The sizing criteria are defined as the criteria included in Chapters 4, 9 and 10 of the Design Manual (i.e. WQv, RRv, CPv, Qp and Qf). Associated changes to the Design Manual were also made to ensure consistency between the general permit and Design Manual and to provide clarifications to the requirements. Deviations from the sizing criteria are

not allowed. If an owner cannot meet the required sizing criteria they would need to apply for coverage under an individual SPDES permit. The Department has been applying this criterion in the review of the Notice of Intent (NOI) since the Phase II program went into effect in 2003.

Discharges to Impaired Waters: For construction sites that directly discharge to one of the 303(d) segments listed in Appendix E[1] or is located in one of the watersheds listed in Appendix C, the general permit now requires more frequent inspections by a qualified inspector (see Part IV.C.2.e.) and shortened timeframes for stabilization of exposed soils (see Part I.B.1.b.) to ensure that discharges to impaired waters are in compliance with the terms and conditions of the general permit. The Department believes that this additional oversight will provide the protection necessary for impaired waters that will allow construction activities to be covered under the General Permit rather than excluding them from eligibility. This is consistent with how EPA addressed this issue in their 2012 Construction General Permit ("CGP"). The Department expects that compliance with the conditions and effluent limitations in the general permit will result in stormwater discharges being controlled as necessary to meet applicable water quality standards for ALL waters.

Authorization Period using eNOI: The general permit modifies Part II.B.3(a) and (b) to reflect that electronic filing of the NOI will be authorized within 5 business days from the date DEC receives a complete NOI for projects that conform to the New York State Standards and Specifications for Erosion and Sediment Control, dated August 2005; and the New York State Stormwater Management Design Manual, dated January 2015 ("technical standards") for projects that require post-construction stormwater management practices pursuant to Part III.C of the general permit. The timeframe for authorization of coverage for paper NOIs has been increased from 5 to 10 business days for projects that conform to the technical standards. No changes proposed for projects that deviate from the technical standards (60 business days)

State Historic Preservation Act (SHPA) Review Process/Consultation with Office of Parks Recreation & Historic Preservation (OPRHP): A Letter of Resolution (LOR) has been finalized with OPRHP on the general permit that satisfies DEC's obligation under the NYS Historic Preservation Act, Section 14.09, 9 NYCRR 428.4 for both the renewal and implementation of the general permit. The LOR formalizes and fine tunes a process for owners/operators to identify and address potential impacts on archeological and historic resources well in advance of submission of the NOI. Construction activities that have the potential to affect historic and/or archeological resources are not eligible for coverage under the general permit unless there is documentation that such impacts have been resolved prior to submission of the NOI. The general permit requires that documentation demonstrating that potential impacts will be avoided or mitigated are in place at the time the NOI is submitted. Part I.F.8 of

[1] Appendix E of the general permit has been updated to list the 2014 303(d) waterbodies impaired by silt, sediment or nutrients.

the general permit specifies the documentation necessary to demonstrate eligibility. The NOI will require the owner/operator to specify the documentation used to demonstrate that potential impacts will be avoided or mitigated and certify that the documentation demonstrating eligibility is available upon request and will be maintained on site. Part II.C.2 specifies that the required documentation must be maintained on-site and available for inspection along with the SWPPP documents. Part VII.F of the general permit requires that the owner or operator provide copies of the documentation demonstrating eligibility to DEC within a reasonable specified time period of a written request. The LOR identifies certain categories of projects as exempt from SHPA review.(see Attachment 2 of the LOR). All other projects will be required to follow DEC's screening and consultation process that was developed with OPRHP. The final LOR (including attachments) and supporting guidance documents (i.e. Flow Charts) will be available on the following Department webpage:
http://www.dec.ny.gov/chemical/43133.html.

Watersheds Where Enhanced Phosphorus Removal Standards are Required: The Total Maximum Daily Load (TMDL) for Phosphorus in Kinderhook Lake was approved by EPA in September 2011. The approved report specifies that all new development throughout the watershed will be covered by enhanced phosphorus design requirements when GP-0-10-001 is renewed in 2015 as GP-0-15-002. In order to ensure compliance with the requirements necessary to implement this TMDL, the general permit adds the Kinderhook Lake Watershed to the list of watersheds specified in Appendix C where application of the Enhanced Phosphorus Removal Standards (Chapter 10 of the New York State Stormwater Management Design Manual) is required.

Trained Contractor Inspections: Part IV.B of the general permit has been updated to specify that the "Trained Contractor" shall perform the required maintenance inspections of the erosion and sediment controls being used on the site. This inspection requirement applies to all construction projects that are subject to the general permit.

Attachment A
BMP Construction Inspection Checklist

Stormwater/Wetland Pond Construction Inspection Checklist

Project:
Location:
Site Status:

Date:

Time:

Inspector:

CONSTRUCTION SEQUENCE	SATISFACTORY/ UNSATISFACTORY	COMMENTS
Pre-Construction/Materials and Equipment		
Pre-construction meeting		
Pipe and appurtenances on-site prior to construction and dimensions checked		
1. Material (including protective coating, if specified)		
2. Diameter		
3. Dimensions of metal riser or pre-cast concrete outlet structure		
4. Required dimensions between water control structures (orifices, weirs, etc.) are in accordance with approved plans		
5. Barrel stub for prefabricated pipe structures at proper angle for design barrel slope		
6. Number and dimensions of prefabricated anti-seep collars		
7. Watertight connectors and gaskets		
8. Outlet drain valve		
Project benchmark near pond site		
Equipment for temporary de-watering		

CONSTRUCTION SEQUENCE	SATISFACTORY/ UNSATISFACTORY	COMMENTS
2. Subgrade Preparation		
Area beneath embankment stripped of all vegetation, topsoil, and organic matter		
3. Pipe Spillway Installation		
Method of installation detailed on plans		
A. Bed preparation		
Installation trench excavated with specified side slopes		
Stable, uniform, dry subgrade of relatively impervious material (If subgrade is wet, contractor shall have defined steps before proceeding with installation)		
Invert at proper elevation and grade		
B. Pipe placement		
Metal / plastic pipe		
1. Watertight connectors and gaskets properly installed		
2. Anti-seep collars properly spaced and having watertight connections to pipe		
3. Backfill placed and tamped by hand under “haunches” of pipe		
4. Remaining backfill placed in max. 8 inch lifts using small power tamping equipment until 2 feet cover over pipe is reached		

CONSTRUCTION SEQUENCE	SATISFACTORY/ UNSATISFACTORY	COMMENTS
3. Pipe Spillway Installation		
Concrete pipe		
1. Pipe set on blocks or concrete slab for pouring of low cradle		
2. Pipe installed with rubber gasket joints with no spalling in gasket interface area		
3. Excavation for lower half of anti-seep collar(s) with reinforcing steel set		
4. Entire area where anti-seep collar(s) will come in contact with pipe coated with mastic or other approved waterproof sealant		
5. Low cradle and bottom half of anti-seep collar installed as monolithic pour and of an approved mix		
6. Upper half of anti-seep collar(s) formed with reinforcing steel set		
7. Concrete for collar of an approved mix and vibrated into place (protected from freezing while curing, if necessary)		
8. Forms stripped and collar inspected for honeycomb prior to backfilling. Parge if necessary.		
C. Backfilling		
Fill placed in maximum 8 inch lifts		
Backfill taken minimum 2 feet above top of anti-seep collar elevation before traversing with heavy equipment		

CONSTRUCTION SEQUENCE	SATISFACTORY/ UNSATISFACTORY	COMMENTS
4. Riser / Outlet Structure Installation		
Riser located within embankment		
A. Metal riser		
Riser base excavated or formed on stable subgrade to design dimensions		
Set on blocks to design elevations and plumbed		
Reinforcing bars placed at right angles and projecting into sides of riser		
Concrete poured so as to fill inside of riser to invert of barrel		
B. Pre-cast concrete structure		
Dry and stable subgrade		
Riser base set to design elevation		
If more than one section, no spalling in gasket interface area; gasket or approved caulking material placed securely		
Watertight and structurally sound collar or gasket joint where structure connects to pipe spillway		
C. Poured concrete structure		
Footing excavated or formed on stable subgrade, to design dimensions with reinforcing steel set		
Structure formed to design dimensions, with reinforcing steel set as per plan		
Concrete of an approved mix and vibrated into place (protected from freezing while curing, if necessary)		
Forms stripped & inspected for “honeycomb” prior to backfilling; parge if necessary		

CONSTRUCTION SEQUENCE	SATISFACTORY/ UNSATISFACTORY	COMMENTS
5. Embankment Construction		
Fill material		
Compaction		
Embankment		
1. Fill placed in specified lifts and compacted with appropriate equipment		
2. Constructed to design cross-section, side slopes and top width		
3. Constructed to design elevation plus allowance for settlement		
6. Impounded Area Construction		
Excavated / graded to design contours and side slopes		
Inlet pipes have adequate outfall protection		
Forebay(s)		
Pond benches		
7. Earth Emergency Spillway Construction		
Spillway located in cut or structurally stabilized with riprap, gabions, concrete, etc.		
Excavated to proper cross-section, side slopes and bottom width		
Entrance channel, crest, and exit channel constructed to design grades and elevations		

CONSTRUCTION SEQUENCE	SATISFACTORY / UNSATISFACTORY	COMMENTS
8. Outlet Protection		
A. End section		
Securely in place and properly backfilled		
B. Endwall		
Footing excavated or formed on stable subgrade, to design dimensions and reinforcing steel set, if specified		
Endwall formed to design dimensions with reinforcing steel set as per plan		
Concrete of an approved mix and vibrated into place (protected from freezing, if necessary)		
Forms stripped and structure inspected for "honeycomb" prior to backfilling; parge if necessary		
C. Riprap apron / channel		
Apron / channel excavated to design cross-section with proper transition to existing ground		
Filter fabric in place		
Stone sized as per plan and uniformly place at the thickness specified		
9. Vegetative Stabilization		
Approved seed mixture or sod		
Proper surface preparation and required soil amendments		
Excelsior mat or other stabilization, as per plan		

CONSTRUCTION SEQUENCE	SATISFACTORY/ UNSATISFACTORY	COMMENTS
10. Miscellaneous		
Drain for ponds having a permanent pool		
Trash rack / anti-vortex device secured to outlet structure		
Trash protection for low flow pipes, orifices, etc.		
Fencing (when required)		
Access road		
Set aside for clean-out maintenance		
11. Stormwater Wetlands		
Adequate water balance		
Variety of depth zones present		
Approved pondscaping plan in place Reinforcement budget for additional plantings		
Plants and materials ordered 6 months prior to construction		
Construction planned to allow for adequate planting and establishment of plant community (April-June planting window)		
Wetland buffer area preserved to maximum extent possible		

Comments:

Actions to be Taken:

Bioretention Construction Inspection Checklist

Project:
Location:
Site Status:

Date:

Time:

Inspector:

CONSTRUCTION SEQUENCE	SATISFACTORY/ UNSATISFACTORY	COMMENTS
1. Pre-Construction		
Pre-construction meeting		
Runoff diverted		
Facility area cleared		
If designed as exfilter, soil testing for permeability		
Facility location staked out		
2. Excavation		
Size and location		
Lateral slopes completely level		
If designed as exfilter, ensure that excavation does not compact susoils.		
Longitudinal slopes within design range		

CONSTRUCTION SEQUENCE	SATISFACTORY / UNSATISFACTORY	COMMENTS
3. Structural Components		
Stone diaphragm installed correctly		
Outlets installed correctly		
Underdrain		
Pretreatment devices installed		
Soil bed composition and texture		
4. Vegetation		
Complies with planting specs		
Topsoil adequate in composition and placement		
Adequate erosion control measures in place		
5. Final Inspection		
Dimensions		
Proper stone diaphragm		
Proper outlet		
Soil/ filter bed permeability testing		
Effective stand of vegetation and stabilization		
Construction generated sediments removed		
Contributing watershed stabilized before flow is diverted to the practice		

Comments:

Actions to be Taken:

Attachment B
BMP Maintenance Inspection Checklist

Stormwater Pond/Wetland Operation, Maintenance and Management Inspection Checklist

Project _____
Location: _____
Site Status: _____

Date: _____
Time: _____

Inspector: _____

Maintenance Item	Satisfactory/ Unsatisfactory	Comments
1. Embankment and emergency spillway (Annual, After Major Storms)		
1. Vegetation and ground cover adequate		
2. Embankment erosion		
3. Animal burrows		
4. Unauthorized planting		
5. Cracking, bulging, or sliding of dam		
a. Upstream face		
b. Downstream face		
c. At or beyond toe		
downstream		
upstream		
d. Emergency spillway		
6.Pond, toe & chimney drains clear and functioning		
7.Seeps/leaks on downstream face		
8.Slope protection or riprap failure		
9. Vertical/horizontal alignment of top of dam “As-Built”		

Maintenance Item	Satisfactory/ Unsatisfactory	Comments
10. Emergency spillway clear of obstructions and debris		
11. Other (specify)		
2. Riser and principal spillway (Annual)		
Type: Reinforced concrete _____ Corrugated pipe _____ Masonry _____ 1. Low flow orifice obstructed		
2. Low flow trash rack. a. Debris removal necessary		
b. Corrosion control		
3. Weir trash rack maintenance a. Debris removal necessary		
b. corrosion control		
4. Excessive sediment accumulation insider riser		
5. Concrete/masonry condition riser and barrels a. cracks or displacement		
b. Minor spalling (<1")		
c. Major spalling (rebars exposed)		
d. Joint failures		
e. Water tightness		
6. Metal pipe condition		
7. Control valve a. Operational/exercised		
b. Chained and locked		
8. Pond drain valve a. Operational/exercised		
b. Chained and locked		
9. Outfall channels functioning		
10. Other (specify)		

Maintenance Item	Satisfactory/ Unsatisfactory	Comments
3. Permanent Pool (Wet Ponds) (monthly)		
1. Undesirable vegetative growth		
2. Floating or floatable debris removal required		
3. Visible pollution		
4. Shoreline problem		
5. Other (specify)		
4. Sediment Forebays		
1.Sedimentation noted		
2. Sediment cleanout when depth < 50% design depth		
5. Dry Pond Areas		
1. Vegetation adequate		
2. Undesirable vegetative growth		
3. Undesirable woody vegetation		
4. Low flow channels clear of obstructions		
5. Standing water or wet spots		
6. Sediment and / or trash accumulation		
7. Other (specify)		
6. Condition of Outfalls (Annual , After Major Storms)		
1. Riprap failures		
2. Slope erosion		
3. Storm drain pipes		
4.Endwalls / Headwalls		
5. Other (specify)		
7. Other (Monthly)		
1. Encroachment on pond, wetland or easement area		

Maintenance Item	Satisfactory/ Unsatisfactory	Comments
2. Complaints from residents		
3.Aesthetics a. Grass growing required		
b. Graffiti removal needed		
c. Other (specify)		
4. Conditions of maintenance access routes.		
5. Signs of hydrocarbon build-up		
6. Any public hazards (specify)		
8. Wetland Vegetation (Annual)		
1. Vegetation healthy and growing Wetland maintaining 50% surface area coverage of wetland plants after the second growing season. (If unsatisfactory, reinforcement plantings needed)		
2. Dominant wetland plants: Survival of desired wetland plant species Distribution according to landscaping plan?		
3. Evidence of invasive species		
4. Maintenance of adequate water depths for desired wetland plant species		
5. Harvesting of emergent plantings needed		
6. Have sediment accumulations reduced pool volume significantly or are plants “choked” with sediment		
7. Eutrophication level of the wetland.		
8. Other (specify)		

Comments:

Actions to be Taken:

Bioretention Operation, Maintenance and Management Inspection Checklist

Project:
Location:
Site Status:

Date:

Time:

Inspector:

MAINTENANCE ITEM	SATISFACTORY / UNSATISFACTORY	COMMENTS
1. Debris Cleanout (Monthly)		
Bioretention and contributing areas clean of debris		
No dumping of yard wastes into practice		
Litter (branches, etc.) have been removed		
2. Vegetation (Monthly)		
Plant height not less than design water depth		
Fertilized per specifications		
Plant composition according to approved plans		
No placement of inappropriate plants		
Grass height not greater than 6 inches		
No evidence of erosion		
3. Check Dams/Energy Dissipaters/Sumps (Annual, After Major Storms)		
No evidence of sediment buildup		

MAINTENANCE ITEM	SATISFACTORY / UNSATISFACTORY	COMMENTS
Sumps should not be more than 50% full of sediment		
No evidence of erosion at downstream toe of drop structure		
4. Dewatering (Monthly)		
Dewaters between storms		
No evidence of standing water		
5. Sediment Deposition (Annual)		
Swale clean of sediments		
Sediments should not be > 20% of swale design depth		
6. Outlet/Overflow Spillway (Annual, After Major Storms)		
Good condition, no need for repair		
No evidence of erosion		
No evidence of any blockages		
7. Integrity of Filter Bed (Annual)		
Filter bed has not been blocked or filled inappropriately		

Comments:

Actions to be Taken:

Attachment C
USDA Soil Report

United States Department of Agriculture

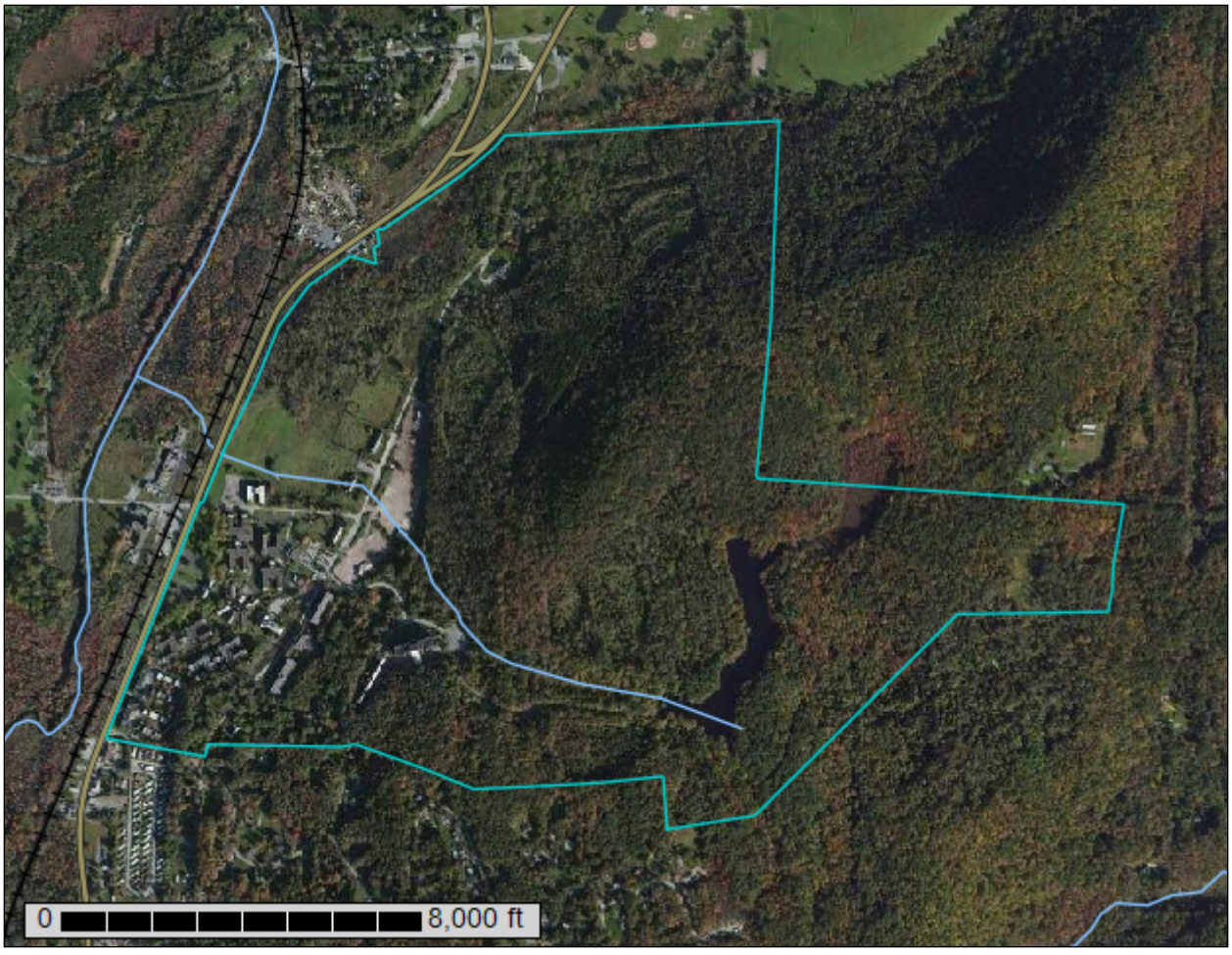
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Dutchess County, New York

29273.00_Olivet - Olivet Center Master Plan



June 22, 2015

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the

individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

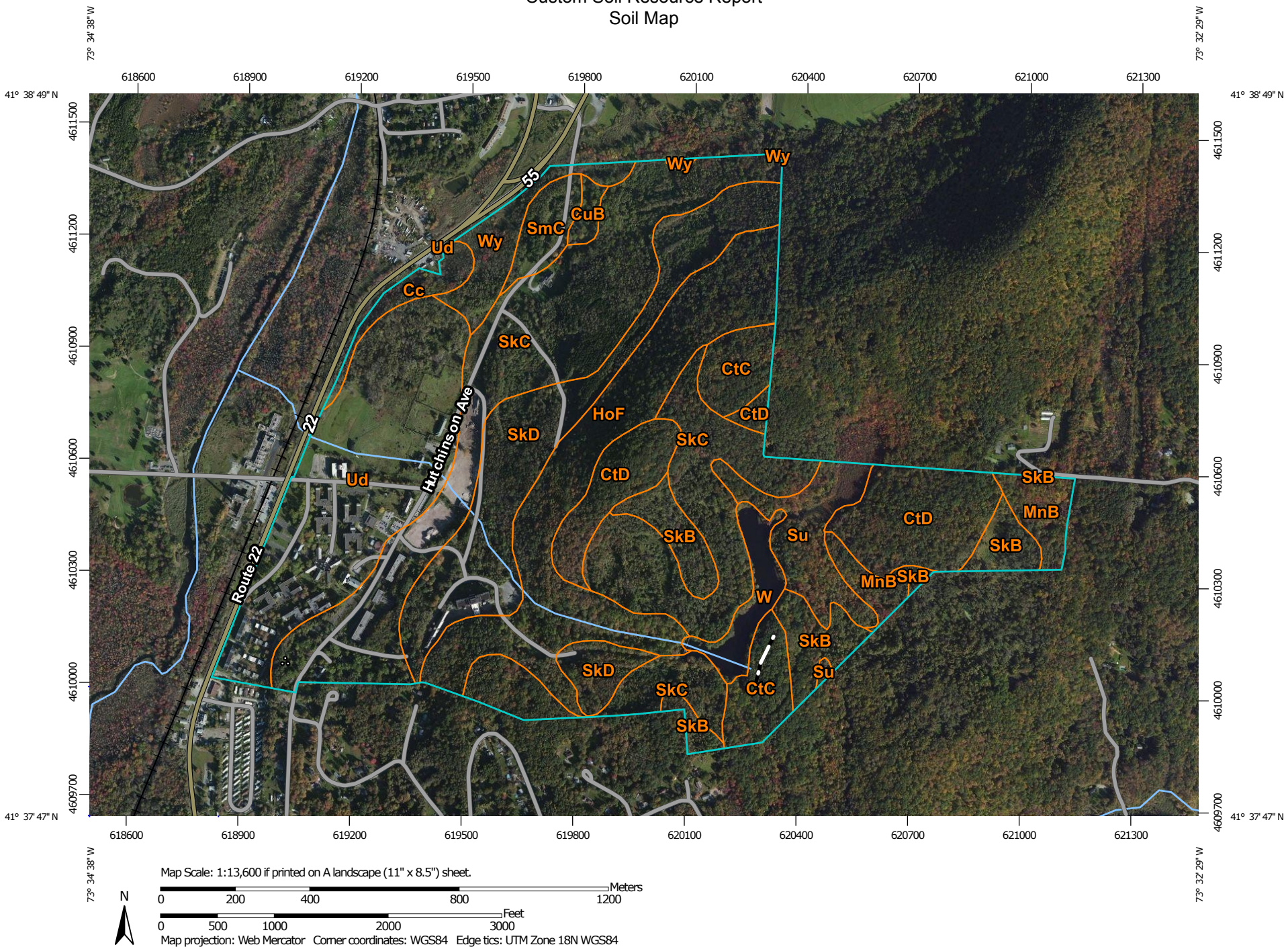
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Dutchess County, New York
Survey Area Data: Version 11, Sep 15, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 28, 2011—Oct 9, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Dutchess County, New York (NY027)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
Cc	Catden muck, 0 to 2 percent slopes	6.5	1.3%
CtC	Chatfield-Hollis complex, rolling, very rocky	20.2	4.0%
CtD	Chatfield-Hollis complex, hilly, very rocky	40.8	8.0%
CuB	Copake gravelly silt loam, undulating	2.6	0.5%
HoF	Hollis-Chatfield-Rock outcrop complex, very steep	66.7	13.1%
MnB	Massena silt loam, 3 to 8 percent slopes	12.9	2.5%
SkB	Stockbridge silt loam, 3 to 8 percent slopes	27.1	5.3%
SkC	Stockbridge silt loam, 8 to 15 percent slopes	143.4	28.2%
SkD	Stockbridge silt loam, 15 to 25 percent slopes	60.1	11.8%
SmC	Stockbridge-Farmington complex, rolling, rocky	8.2	1.6%
Su	Sun silt loam	19.3	3.8%
Ud	Udorthents, smoothed	76.9	15.1%
W	Water	10.4	2.1%
Wy	Wayland silt loam	12.8	2.5%
Totals for Area of Interest		**508.0**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas

for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of

the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Dutchess County, New York

Cc—Catden muck, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2t2qk
Elevation: 0 to 1,430 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Catden and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Catden

Setting

Landform: Bogs, kettles, depressions, depressions, depressions, marshes, swamps, fens
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope, tread
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Highly decomposed herbaceous organic material and/or highly decomposed woody organic material

Typical profile

Oa1 - 0 to 2 inches: muck
Oa2 - 2 to 79 inches: muck

Properties and qualities

Slope: 0 to 1 percent
Percent of area covered with surface fragments: 0.0 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Available water storage in profile: Very high (about 26.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D

Minor Components

Canandaigua

Percent of map unit: 5 percent
Landform: Depressions

Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope, tread
Down-slope shape: Concave
Across-slope shape: Concave

Natchaug

Percent of map unit: 5 percent
Landform: Depressions, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope, tread
Down-slope shape: Concave
Across-slope shape: Concave

Timakwa

Percent of map unit: 5 percent
Landform: Swamps
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope, tread
Down-slope shape: Linear, concave
Across-slope shape: Linear, concave

Alden

Percent of map unit: 5 percent
Landform: Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope, tread
Down-slope shape: Concave
Across-slope shape: Concave

CtC—Chatfield-Hollis complex, rolling, very rocky

Map Unit Setting

National map unit symbol: 9rf7
Elevation: 100 to 1,000 feet
Mean annual precipitation: 41 to 47 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 115 to 195 days
Farmland classification: Not prime farmland

Map Unit Composition

Hollis and similar soils: 40 percent
Chatfield and similar soils: 40 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Chatfield

Setting

Landform: Ridges, hills
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Crest

Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy till derived mainly from granite, gneiss, or schist

Typical profile

H1 - 0 to 9 inches: fine sandy loam
H2 - 9 to 30 inches: loam
H3 - 30 to 34 inches: unweathered bedrock

Properties and qualities

Slope: 5 to 16 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to high (0.00 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 1 percent
Available water storage in profile: Low (about 4.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B

Description of Hollis

Setting

Landform: Hills, ridges
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: A thin mantle of loamy till derived mainly from schist, granite, and gneiss

Typical profile

H1 - 0 to 3 inches: loam
H2 - 3 to 15 inches: loam
H3 - 15 to 19 inches: unweathered bedrock

Properties and qualities

Slope: 5 to 16 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to high (0.00 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 1.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D

Minor Components

Charlton
Percent of map unit: 10 percent

Rock outcrop
Percent of map unit: 5 percent

Georgia
Percent of map unit: 3 percent

Sun
Percent of map unit: 1 percent
Landform: Depressions

Massena
Percent of map unit: 1 percent

CtD—Chatfield-Hollis complex, hilly, very rocky

Map Unit Setting
National map unit symbol: 9rf8
Elevation: 100 to 1,000 feet
Mean annual precipitation: 41 to 47 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 115 to 195 days
Farmland classification: Not prime farmland

Map Unit Composition
Chatfield and similar soils: 40 percent
Hollis and similar soils: 40 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hollis

Setting
Landform: Ridges, hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: A thin mantle of loamy till derived mainly from schist, granite, and gneiss

Typical profile
H1 - 0 to 3 inches: loam
H2 - 3 to 15 inches: loam
H3 - 15 to 19 inches: unweathered bedrock

Properties and qualities

Slope: 15 to 30 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to high (0.00 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 1.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D

Description of Chatfield

Setting

Landform: Hills, ridges
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy till derived mainly from granite, gneiss, or schist

Typical profile

H1 - 0 to 9 inches: fine sandy loam
H2 - 9 to 30 inches: loam
H3 - 30 to 34 inches: unweathered bedrock

Properties and qualities

Slope: 15 to 30 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to high (0.00 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 1 percent
Available water storage in profile: Low (about 4.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B

Minor Components

Charlton

Percent of map unit: 10 percent

Sun

Percent of map unit: 5 percent
Landform: Depressions

Rock outcrop
Percent of map unit: 5 percent

CuB—Copake gravelly silt loam, undulating

Map Unit Setting
National map unit symbol: 9rfb
Mean annual precipitation: 41 to 47 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 115 to 195 days
Farmland classification: All areas are prime farmland

Map Unit Composition
Copake and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Copake

Setting
Landform: Deltas, terraces, outwash plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy over calcareous sandy and gravelly glaciofluvial deposits

Typical profile
H1 - 0 to 6 inches: gravelly silt loam
H2 - 6 to 36 inches: gravelly loam
H3 - 36 to 80 inches: stratified very gravelly coarse sand to gravelly loamy fine sand

Properties and qualities
Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Available water storage in profile: Moderate (about 6.3 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: A

Minor Components

Hoosic
Percent of map unit: 10 percent

Halsey
Percent of map unit: 5 percent
Landform: Depressions

Fredon
Percent of map unit: 5 percent
Landform: Depressions

HoF—Hollis-Chatfield-Rock outcrop complex, very steep

Map Unit Setting
National map unit symbol: 9rgh
Elevation: 100 to 1,000 feet
Mean annual precipitation: 41 to 47 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 115 to 195 days
Farmland classification: Not prime farmland

Map Unit Composition
Hollis and similar soils: 40 percent
Chatfield and similar soils: 25 percent
Rock outcrop: 25 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hollis

Setting
Landform: Hills, ridges
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: A thin mantle of loamy till derived mainly from schist, granite, and gneiss

Typical profile
H1 - 0 to 3 inches: loam
H2 - 3 to 15 inches: loam
H3 - 15 to 19 inches: unweathered bedrock

Properties and qualities
Slope: 45 to 60 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Somewhat excessively drained

Capacity of the most limiting layer to transmit water (Ksat): Very low to high (0.00 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 1.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D

Description of Chatfield

Setting

Landform: Ridges, hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy till derived mainly from granite, gneiss, or schist

Typical profile

H1 - 0 to 9 inches: fine sandy loam
H2 - 9 to 30 inches: loam
H3 - 30 to 34 inches: unweathered bedrock

Properties and qualities

Slope: 45 to 70 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to high (0.00 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 1 percent
Available water storage in profile: Low (about 4.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B

Description of Rock Outcrop

Typical profile

H1 - 0 to 60 inches: unweathered bedrock

Properties and qualities

Slope: 45 to 70 percent
Depth to restrictive feature: 0 inches to lithic bedrock
Capacity of the most limiting layer to transmit water (Ksat): Very low to very high (0.00 to 19.98 in/hr)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s

Minor Components

Charlton
Percent of map unit: 5 percent

Sun
Percent of map unit: 5 percent
Landform: Depressions

MnB—Massena silt loam, 3 to 8 percent slopes

Map Unit Setting
National map unit symbol: 9rhb
Elevation: 100 to 1,000 feet
Mean annual precipitation: 41 to 47 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 115 to 195 days
Farmland classification: Prime farmland if drained

Map Unit Composition
Massena and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Massena

Setting
Landform: Drumlinoid ridges, hills, till plains
Landform position (two-dimensional): Footslope, summit
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Loamy till dominated by siliceous rocks with varying proportions of limestone

Typical profile
H1 - 0 to 7 inches: silt loam
H2 - 7 to 33 inches: loam
H3 - 33 to 72 inches: fine sandy loam

Properties and qualities
Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)
Depth to water table: About 12 to 18 inches
Frequency of flooding: None

Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Available water storage in profile: Moderate (about 7.0 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: C/D

Minor Components

Sun
Percent of map unit: 10 percent
Landform: Depressions

Georgia
Percent of map unit: 5 percent

Punsit
Percent of map unit: 5 percent

SkB—Stockbridge silt loam, 3 to 8 percent slopes

Map Unit Setting
National map unit symbol: 9rhv
Mean annual precipitation: 41 to 47 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 115 to 195 days
Farmland classification: All areas are prime farmland

Map Unit Composition
Stockbridge and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Stockbridge

Setting
Landform: Drumlinoid ridges, hills, till plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Calcareous loamy till

Typical profile
H1 - 0 to 6 inches: silt loam
H2 - 6 to 23 inches: silt loam
H3 - 23 to 80 inches: silt loam

Properties and qualities
Slope: 3 to 8 percent

Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Available water storage in profile: Moderate (about 8.4 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C

Minor Components

Georgia
Percent of map unit: 5 percent

Massena
Percent of map unit: 4 percent

Galway
Percent of map unit: 4 percent

Charlton
Percent of map unit: 3 percent

Bernardston
Percent of map unit: 2 percent

Farmington
Percent of map unit: 1 percent

Sun
Percent of map unit: 1 percent
Landform: Depressions

SkC—Stockbridge silt loam, 8 to 15 percent slopes

Map Unit Setting
National map unit symbol: 9rhw
Mean annual precipitation: 41 to 47 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 115 to 195 days
Farmland classification: Farmland of statewide importance

Map Unit Composition
Stockbridge and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Stockbridge

Setting

Landform: Till plains, drumlinoid ridges, hills
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Calcareous loamy till

Typical profile

H1 - 0 to 6 inches: silt loam
H2 - 6 to 23 inches: silt loam
H3 - 23 to 80 inches: silt loam

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Available water storage in profile: Moderate (about 8.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C

Minor Components

Georgia

Percent of map unit: 5 percent

Massena

Percent of map unit: 4 percent

Galway

Percent of map unit: 4 percent

Charlton

Percent of map unit: 3 percent

Bernardston

Percent of map unit: 2 percent

Sun

Percent of map unit: 1 percent
Landform: Depressions

Farmington

Percent of map unit: 1 percent

SkD—Stockbridge silt loam, 15 to 25 percent slopes

Map Unit Setting

National map unit symbol: 9rhx
Mean annual precipitation: 41 to 47 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 115 to 195 days
Farmland classification: Not prime farmland

Map Unit Composition

Stockbridge and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Stockbridge

Setting

Landform: Till plains, drumlinoid ridges, hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Calcareous loamy till

Typical profile

H1 - 0 to 6 inches: silt loam
H2 - 6 to 23 inches: silt loam
H3 - 23 to 80 inches: silt loam

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Available water storage in profile: Moderate (about 8.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C

Minor Components

Bernardston

Percent of map unit: 5 percent

Charlton
Percent of map unit: 5 percent

Galway
Percent of map unit: 4 percent

Georgia
Percent of map unit: 4 percent

Farmington
Percent of map unit: 1 percent

Sun
Percent of map unit: 1 percent
Landform: Depressions

SmC—Stockbridge-Farmington complex, rolling, rocky

Map Unit Setting

National map unit symbol: 9rj0
Elevation: 100 to 900 feet
Mean annual precipitation: 41 to 47 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 115 to 195 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Stockbridge and similar soils: 50 percent
Farmington and similar soils: 30 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Stockbridge

Setting

Landform: Till plains, drumlinoid ridges, hills
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Calcareous loamy till

Typical profile

H1 - 0 to 6 inches: silt loam
H2 - 6 to 23 inches: silt loam
H3 - 23 to 80 inches: silt loam

Properties and qualities

Slope: 5 to 16 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Available water storage in profile: Moderate (about 8.4 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C

Description of Farmington

Setting
Landform: Ridges, benches, till plains
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy till or congeliturbate derived from limestone, dolomite, shale, and sandstone, and in many places mixed with wind and water deposits

Typical profile
H1 - 0 to 7 inches: loam
H2 - 7 to 15 inches: very fine sandy loam
H3 - 15 to 19 inches: unweathered bedrock

Properties and qualities
Slope: 5 to 16 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Available water storage in profile: Very low (about 2.1 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D

Minor Components

Galway
Percent of map unit: 10 percent

Georgia
Percent of map unit: 5 percent

Massena
Percent of map unit: 3 percent

Sun
Percent of map unit: 1 percent

Landform: Depressions

Rock outcrop
Percent of map unit: 1 percent

Su—Sun silt loam

Map Unit Setting
National map unit symbol: 9rj3
Elevation: 600 to 1,800 feet
Mean annual precipitation: 41 to 47 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 115 to 195 days
Farmland classification: Farmland of statewide importance

Map Unit Composition
Sun and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Sun

Setting
Landform: Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Loamy till derived primarily from limestone and sandstone, with a component of schist, shale, or granitic rocks in some areas

Typical profile
H1 - 0 to 4 inches: silt loam
H2 - 4 to 22 inches: loam
H3 - 22 to 80 inches: gravelly loam

Properties and qualities
Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Occasional
Calcium carbonate, maximum in profile: 15 percent
Available water storage in profile: Moderate (about 6.2 inches)

Interpretive groups
Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: C/D

Minor Components

Sun, stony
Percent of map unit: 5 percent
Landform: Depressions

Canandaigua
Percent of map unit: 5 percent
Landform: Depressions

Palms
Percent of map unit: 5 percent
Landform: Marshes, swamps

Massena
Percent of map unit: 5 percent

Ud—Udorthents, smoothed

Map Unit Setting
National map unit symbol: 9rj7
Mean annual precipitation: 41 to 47 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 115 to 195 days
Farmland classification: Not prime farmland

Map Unit Composition
Udorthents, smoothed, and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Udorthents, Smoothed

Typical profile
H1 - 0 to 4 inches: gravelly loam
H2 - 4 to 70 inches: very gravelly loam

Properties and qualities
Slope: 0 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.06 to 5.95 in/hr)
Depth to water table: About 36 to 72 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Available water storage in profile: Low (about 5.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A

Minor Components

Udorthents, wet substratum

Percent of map unit: 10 percent

Urban land

Percent of map unit: 10 percent

Unnamed soils, undisturbed

Percent of map unit: 4 percent

Rock outcrop

Percent of map unit: 1 percent

W—Water

Map Unit Setting

National map unit symbol: 9rjc
Mean annual precipitation: 41 to 47 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 115 to 195 days
Farmland classification: Not prime farmland

Map Unit Composition

Water: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Wy—Wayland silt loam

Map Unit Setting

National map unit symbol: 9rjf
Elevation: 200 to 1,500 feet
Mean annual precipitation: 41 to 47 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 115 to 195 days
Farmland classification: Not prime farmland

Map Unit Composition

Wayland and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wayland

Setting

Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Silty and clayey alluvium washed from uplands that contain some calcareous drift

Typical profile

H1 - 0 to 9 inches: silt loam
H2 - 9 to 80 inches: silt loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: Frequent
Frequency of ponding: Frequent
Calcium carbonate, maximum in profile: 1 percent
Available water storage in profile: High (about 11.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: C/D

Minor Components

Linlithgo

Percent of map unit: 5 percent

Pawling

Percent of map unit: 5 percent
Landform: Depressions

Fluvaquents

Percent of map unit: 3 percent
Landform: Flood plains

Palms

Percent of map unit: 3 percent
Landform: Marshes, swamps

Carlisle

Percent of map unit: 2 percent
Landform: Swamps, marshes

Udifluvents

Percent of map unit: 2 percent

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Hydrologic Soil Group and Surface Runoff

This table gives estimates of various soil water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas.

Surface runoff refers to the loss of water from an area by flow over the land surface. Surface runoff classes are based on slope, climate, and vegetative cover. The concept indicates relative runoff for very specific conditions. It is assumed that the surface of the soil is bare and that the retention of surface water resulting from irregularities in the ground surface is minimal. The classes are negligible, very low, low, medium, high, and very high.

Report—Hydrologic Soil Group and Surface Runoff

Absence of an entry indicates that the data were not estimated. The dash indicates no documented presence.

Hydrologic Soil Group and Surface Runoff–Dutchess County, New York			
Map symbol and soil name	**Pct. of map unit**	**Surface Runoff**	**Hydrologic Soil Group**
Cc—Catden muck, 0 to 2 percent slopes			
Catden	80	Negligible	B/D

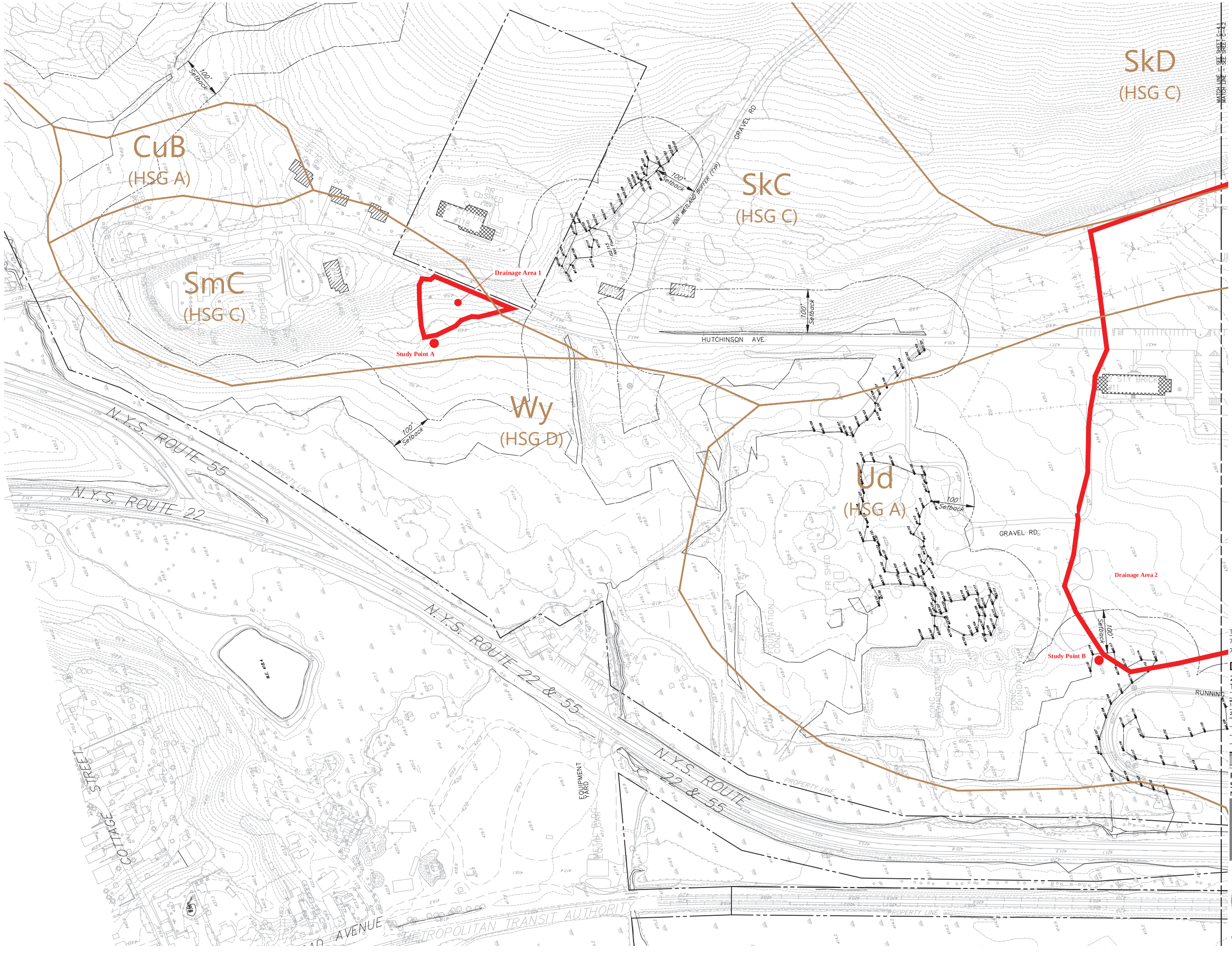
Hydrologic Soil Group and Surface Runoff–Dutchess County, New York			
Map symbol and soil name	**Pct. of map unit**	**Surface Runoff**	**Hydrologic Soil Group**
CtC—Chatfield-Hollis complex, rolling, very rocky			
Chatfield	40	—	B
Hollis	40	—	D
CtD—Chatfield-Hollis complex, hilly, very rocky			
Chatfield	40	—	B
Hollis	40	—	D
CuB—Copake gravelly silt loam, undulating			
Copake	80	—	A
HoF—Hollis-Chatfield-Rock outcrop complex, very steep			
Hollis	40	—	D
Chatfield	25	—	B
Rock outcrop	25	—	—
MnB—Massena silt loam, 3 to 8 percent slopes			
Massena	80	—	C/D
SkB—Stockbridge silt loam, 3 to 8 percent slopes			
Stockbridge	80	—	C
SkC—Stockbridge silt loam, 8 to 15 percent slopes			
Stockbridge	80	—	C
SkD—Stockbridge silt loam, 15 to 25 percent slopes			
Stockbridge	80	—	C
SmC—Stockbridge-Farmington complex, rolling, rocky			
Stockbridge	50	—	C
Farmington	30	—	D
Su—Sun silt loam			
Sun	80	—	C/D
Ud—Udorthents, smoothed			
Udorthents, smoothed	75	—	A
W—Water			
Water	100	—	—
Wy—Wayland silt loam			
Wayland	80	—	C/D

Data Source Information

Soil Survey Area: Dutchess County, New York
Survey Area Data: Version 11, Sep 15, 2014

Attachment D
Drainage Drawings and Calculations

Attachment D1
Existing and Proposed Drainage Area Maps



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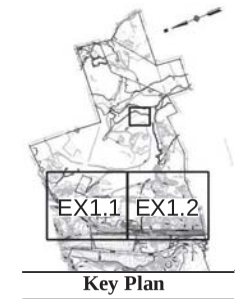

Key Plan

Drainage Area Boundary

(HSG C) Soil Boundary

80 0 80 160
SCALE IN FEET

Tax Parcels
7159-00-162702
7159-00-065920

Dover Greens - Phase 1

207 Hutchinson Avenue
Town of Dover, Dutchess Co., N.Y. 12594

No.	Revision	Date	Appvd.
1	REVISED LAYOUT	04/25/2016	MWJ
2	TOWN COMMENTS	05/23/2016	MWJ

Designed by JC | Checked by MWJ

Issued for: Preliminary Site Plan Revew — Not Approved for Construction
Date: September 3, 2015

Drawing Title
Existing Drainage Area Plan 1

Drawing Number
EX 1.1

Sheet of

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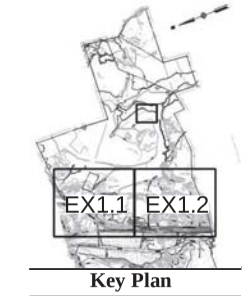


Key Plan

SkC
(HSG C)

SkB
(HSG C)

SkC
(HSG C)

Ud
(HSG A)

Drainage Area Boundary

(HSG C) Soil Boundary

Drainage Area 3
Drainage Area 4
Drainage Area 5
Drainage Area 6
Drainage Area 7
Drainage Area 8
Drainage Area 9
Drainage Area 10

Study Point C
Study Point D
Study Point E
Study Point F
Study Point G
Study Point H
Study Point J
Study Point K

WESTCHESTER RD
PORTCHESTER WAY
NEW ROCHELLE RD
HUTCHINSON AVE.
DOVER LN
PATTERSON DR
BREWSTER DR
MT KISCO LN
CARMEL LN
PUTNAM LN
DUTCHESS CT
WHITE PLAINS RD
PEEKSKILL
N.Y.S. ROUTE 22 & 55
METROPOLITAN TRANSIT AUTHORITY PROPERTY LINE
100' WETLANDS BUFFER (TYP)
100' Setback

80 0 80 160
SCALE IN FEET

Tax Parcels
7159-00-162702
7159-00-065920

Dover Greens - Phase 1

207 Hutchinson Avenue
Town of Dover, Dutchess Co., N.Y. 12594

No.	Revision	Date	Appvd.
1	REVISED LAYOUT	04/25/2016	MWJ
2	TOWN COMMENTS	05/23/2016	MWJ

Designed by JC | Checked by MWJ

Issued for: Preliminary Site Plan Revew
Not Approved for Construction

Date: September 3, 2015

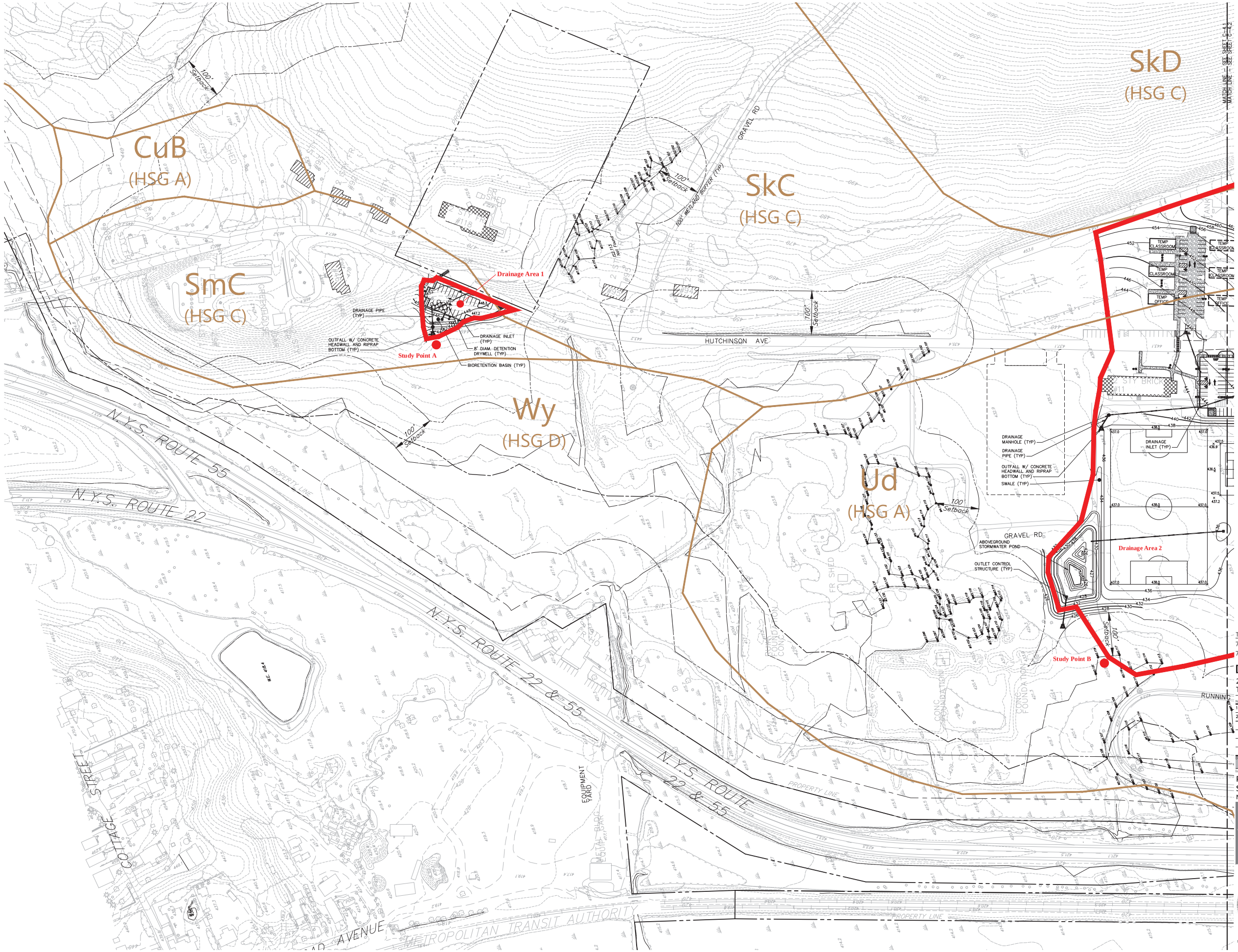
Drawing Title: Existing Drainage Area Plan 2

Drawing Number: EX 1.2

Sheet of

Michael W. Junghans
N.Y. Professional Engineer
NY Lic. No. 072072

Project Number: 29273.00



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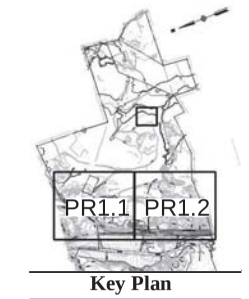

Key Plan

Drainage Area Boundary

(HSG C) Soil Boundary

80 0 80 160
SCALE IN FEET

Tax Parcels
7159-00-162702
7159-00-065920

Dover Greens - Phase 1

207 Hutchinson Avenue
Town of Dover, Dutchess Co., N.Y. 12594

No.	Revision	Date	Approved
1	REVISED LAYOUT	04/25/2016	MWJ
2	TOWN COMMENTS	05/23/2016	MWJ

Designed by JC | Checked by MWJ

Issued for: Preliminary
Site Plan Revew
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Date: September 3, 2015

Drawing Title: Proposed Drainage Area Plan 1

Drawing Number: PR 1.1

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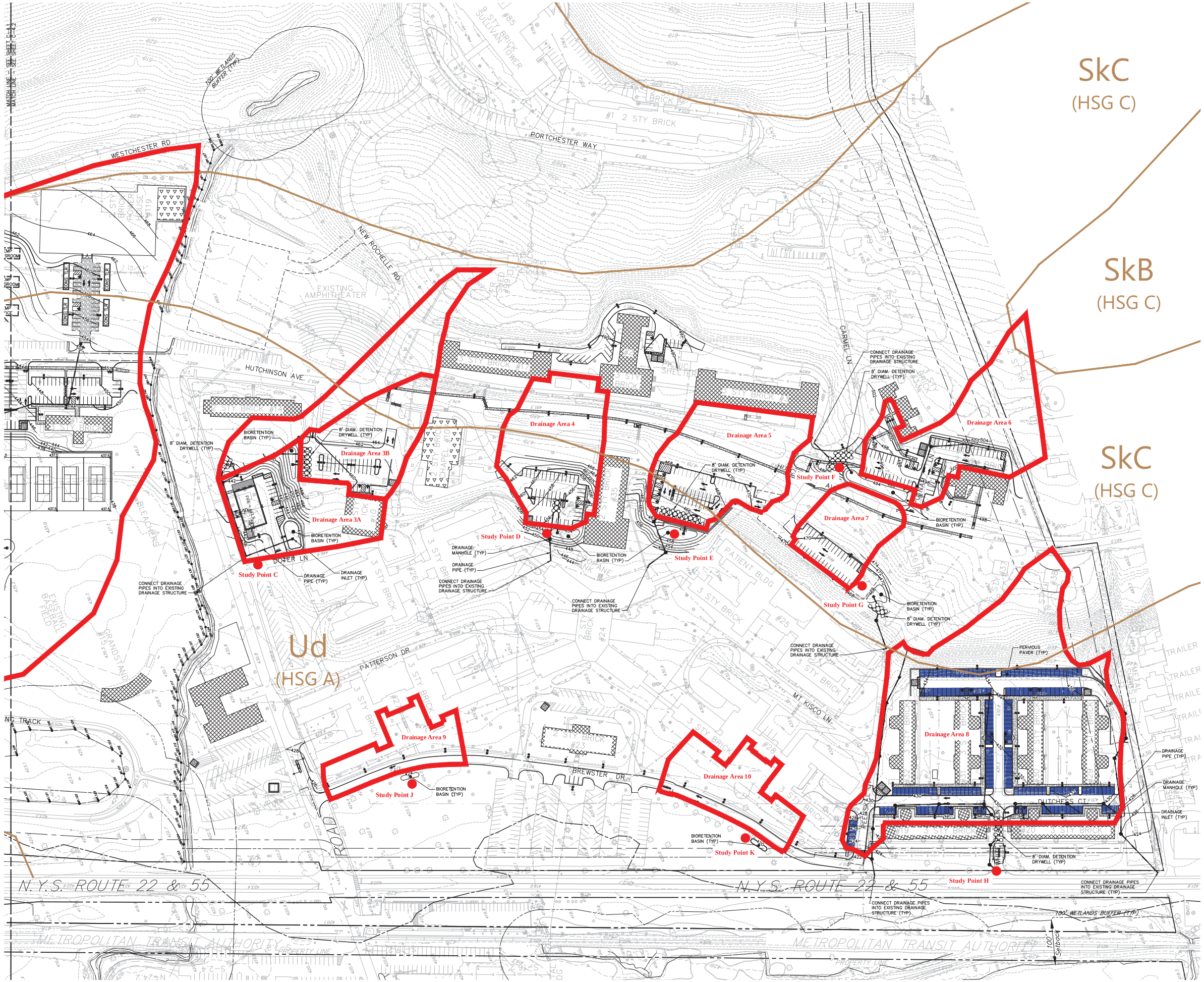
NY Lic. No. 072072

Project Number: 29273.00



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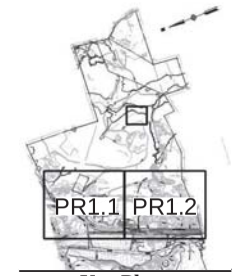

Key Plan

Drainage Area Boundary

(HSG C) Soil Boundary

Pervious Paver Area

80 0 80 160
SCALE IN FEET

Tax Parcels
7159-00-162702
7159-00-065920

Dover Greens - Phase 1
207 Hutchinson Avenue
Town of Dover, Dutchess Co., N.Y. 12594

No.	Revision	Date	Appvd.
1	REVISED LAYOUT	04/25/2016	MWJ
2	TOWN COMMENTS	05/23/2016	MWJ

Designed by JC Checked by MWJ

Issued for: Preliminary — Date: September 3, 2015
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Not Approved for Construction

Drawing Title
Proposed Drainage Area Plan 2

Drawing Number
PR 1.2

Sheet of

Project Number
29273.00

Michael W. Junghans
N.Y. Professional Engineer
NY Lic. No. 072072

Attachment D2
Water Quality and Runoff Reduction Calculations

VHB Engineering, Surveying and
Landscape Architecture, P.C.
50 Main Street, Suite 360
White Plains, New York 10606

Date: 7/5/2016
Project:
Project No: 29273

Calculated By: JC
Checked By:

Water Quality Calculation - Drainage Area 1

P:	1.4	= 90% Rainfall Event Number from Figure #1
Rv:	0.5260	= 0.05 + 0.009(I)
I:	53	= Impervious coverage percentage
I:	0.19	= impervious area (in acres)
A:	0.363	= Total Drainage Area (in acres)

WQv: **0.022** = Req'd Water Quality Volume (in ac-ft)

$= \frac{(P)(Rv)(A)}{12}$

Total Required Water Quality Volume

WQv:	**0.022**	**(ac-ft)**
WQv:	**970**	**(cu. ft)**

Compute Minimum Runoff Reduction Volume

RRv (min) = (P * 0.95 * Ai) / 12
Where Ai = S * Aic
Aic = Total area of new Impervious
S =specific reduction factor
P = 1.40 inches

Soil Type C
New impervious area = 0.19 AC
S = 0.3

RRv (min) = (P * 0.95 * Ai) / 12
RRv (min) = **0.006** ac-ft

Bioretention Basin 1 Design

Determine Size of Bioretention Filter Area

$A_f = (WQ_v)(d_f)/[(k)(h_f+d_f)(t_f)]$

A_f: = Surface area of filter bed (ft^2)

Required WQ_v = 0.022 ac-ft
Required WQ_v = 970.4 ft^3

d_f:	2.5	= Filter bed depth in feet
k:	0.5	= Coefficient of permeability of filter media (ft/day)
h_f:	0.25	= Average height of water above filter bed (ft)
t_f:	2	= Design filter bed drain time (days) (2 days is recommended)

$A_f = (WQ_v)(d_f)/[(k)(h_f+d_f)(t_f)]$
A_f = **882.2** ft^2

Filter Area Provided = 888.0 ft^2

Set Design Elevation and Dimensions

Filter Bed Elevation =	446	ft
Filter Bed Area =	888	sq ft
Side Slope of Bioretention =		1 on 3
Top berm elevation =	447.0	ft

Design Pretreatment

Provide 2' wide stone diaphragm as pretreatment for sheetflow as recommened in NYSDEC manual)

Size Underdrain Pipe

Length of underdrain = (10% of A_i) / 3'

= 30 ft

Use 6" perforated PVC with length of 30 ft at invert 442.8 ft

Overdrain Design to Convey Larger Storm

10-year Flow, Q10 = 1.36 cfs

Use a 2' x 3' catch basin inlet to convery the larger storm

Width of weir = 10 ft.

$Q_{es} = CLH^{3/2}$

1.36 = 3.1*L*(Hp^1.5)

Hp = **0.12** ft

Top of Catch Basin = 446.5 ft

Design High Water Elevation = Catch Basin Elev. + Hp

= 446.5 + 0.12

= 446.6

Top of Bioretention Berm Elevation = 447.0 ok

Project #: 29273 | Calculated by: JC
Project: Olivet | Checked by:
Location: Dover, NY | Date: 7/5/16

Stormwater Pond Design -Drainage Area 2

Water Quality Volume Calculations -Redevelopment Impervious (25% WQv)

P:	1.4	= 90% Rainfall Event Number from Figure #1
Rv:	0.2981	= 0.05 + 0.009(I)
I:	28	= Impervious coverage percentage
I:	4.19	= impervious area (in acres)
A:	15.2	= Total Drainage Area (in acres)

WQv: 0.529 = Req'd Water Quality Volume (in ac-ft)

$$= \frac{(P)(Rv)(A)}{12}$$

25% WQv: **0.132** (in ac-ft)

Water Quality Volume Calculations -New Impervious (100% WQv)

P:	1.4	= 90% Rainfall Event Number from Figure #1
Rv:	0.0891	= 0.05 + 0.009(I)
I:	4	= Impervious coverage percentage
I:	0.66	= impervious area (in acres)
A:	15.2	= Total Drainage Area (in acres)

WQv: **0.158** = Req'd Water Quality Volume (in ac-ft)

$$= \frac{(P)(Rv)(A)}{12}$$

Total Required Water Quality Volume

WQv: 0.290 (ac-ft)

Determine Pretreatment Volume

Forebay Requirements

Minimum Size: 10% of WQv = *0.0290* ac-ft
1263.766 ft^3

Determine Permanent Pool Volume

Permanent Pool Requirements:

Minimum Size: 90% of WQv = *0.2611* ac-ft
= 11373.9 ft^3

Determine Pond Geometry, Storage Available for Permanent Pool and WQv

Forebay Storage Volume:

								1	2
Contour Elev. (ft)	Contour Area Proposed (ft^2)	Average (ft^2)	Proposed (ac)	Average (ac)	Depth (ft)	Volume (ft^3)	Volume (ac-ft)	Cumulative Volume (ac-ft)	Req'd Forebay Volume (ac-ft)
422	100		0.0023						
		250		0.0057	2	500	0.0115	0.0115	0.0290
424	400		0.0092						
		643		0.0147	2	1285	0.0295	0.0410	0.0290
426	885		0.0203						

Permanent Pool Storage Volume (including Forebay Volumes)

									1	2
Contour Elev. (ft)	Contour Area Proposed (ft^2)	Average (ft^2)	Proposed (ac)	Average (ac)	Depth (ft)	Volume (ft^3)	Volume (ac-ft)	Volume Forebay Provided (ac-ft)	Cumulative Total Volume (ac-ft)	Req'd Permanent Pool Volume (ac-ft)
420	890		0.0204							
		1175		0.0270	2	2350	0.0539	0.0000	0.0539	0.2611
422	1460		0.0335							
		1800		0.0413	2	3600	0.0826	0.0115	0.1481	0.2611
424	2140		0.0491							
		2540		0.0583	2	5080	0.1166	0.0410	0.3057	0.2611
426	2940		0.0675							

Set Permanent Pool Elevation (WQ_{PPE}) = 426.00 ft.

NOTE: Forebay and permanent pool provide 100% of water quality volume.

Basin Volume (above Permanent Pool Elevation)

Contour Elev. (ft)	Contour Area Proposed (ft^2)	Average (ft^2)	Proposed (ac)	Average (ac)	Depth (ft)	Volume (ft^3)	Volume (ac-ft)	Cumulative Volume above Permanent Pool (ac-ft)
426	3825		0.0878					
		6682		0.1534	1	6682	0.1534	0.1534
427	9538		0.2190					
		10170		0.2335	1	10170	0.2335	0.3869
428	10802		0.2480					
		12166		0.2793	2	24332	0.5586	0.9454
430	13530		0.3106					
		15310		0.3515	2	30620	0.7029	1.6484
432	17090		0.3923					

Calculate Safe Passage of Qf_{100} (100-year Storm) and Set Top of Embankment Elevation

Note: Refer to HydroCAD output for these analysis.

Qf100 (100-year Storm) water elevation = 430.33

Top of Embankment is set at elevation = 432.00

Freeboard provided = 1.67 ft

VHB Engineering, Surveying and
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Date: 7/5/2016
Project:
Project No: 29273

Calculated By: JC
Checked By:

Water Quality Calculation - Drainage Area 3A

Water Quality Volume Calculations -Redevelopment Impervious (25% WQv)

P:	1.4	= 90% Rainfall Event Number from Figure #1
Rv:	0.5381	= 0.05 + 0.009(I)
I:	54	= Impervious coverage percentage
I:	0.28	= impervious area (in acres)
A:	0.52	= Total Drainage Area (in acres)

WQv: **0.033** = Req'd Water Quality Volume (in ac-ft)

$$= \frac{(P)(Rv)(A)}{12}$$

25% WQv: **0.008** (in ac-ft)

Water Quality Volume Calculations -New Impervious (100% WQv)

P:	1.4	= 90% Rainfall Event Number from Figure #1
Rv:	0.3855	= 0.05 + 0.009(I)
I:	37	= Impervious coverage percentage
I:	0.31	= impervious area (in acres)
A:	0.837	= Total Drainage Area (in acres)

WQv: **0.038** = Req'd Water Quality Volume (in ac-ft)

$$= \frac{(P)(Rv)(A)}{12}$$

Total Required Water Quality Volume

WQv:	**0.046**	**(ac-ft)**
WQv:	**1995**	**(cu. ft)**

Compute Minimum Runoff Reduction Valume

RRv (min) = (P * 0.95 * Ai) / 12
Where Ai = S * Aic
Aic = Total area of new Impervious
S =specific reduction factor
P = 1.40 inches

Soil Type A
New impervious area = 0.31 AC
S = 0.55

RRv (min) = (P * 0.95 * Ai) / 12

RRv (min) =	**0.019**	ac-ft

Bioretention Basin 3A Design

Determine Size of Bioretention Filter Area

$A_f = (WQ_v)(d_f)/[(k)(h_f+d_f)(t_f)]$

A_f: = Surface area of filter bed (ft^2)

Required WQ_v = 0.046 ac-ft
Required WQ_v = 1995.2 ft^3

d_f:	2.5	= Filter bed depth in feet
k:	0.5	= Coefficient of permeability of filter media (ft/day)
h_f:	0.25	= Average height of water above filter bed (ft)
t_f:	2	= Design filter bed drain time (days) (2 days is recommended)

$A_f = (WQ_v)(d_f)/[(k)(h_f+d_f)(t_f)]$
$A_f =$ **1813.8** ft^2

Filter Area Provided =	1830.0	ft^2

Set Design Elevation and Dimensions

Filter Bed Elevation =	440	ft
Filter Bed Area =	1830	sq ft
Side Slope of Bioretention =		1 on 3
Top berm elevation =	441.3	ft

Design Pretreatment

Provide 2' wide stone diaphragm as pretreatment for sheetflow as recommened in NYSDEC manual)

Size Underdrain Pipe

Length of underdrain = (10% of A_f) / 3'
= 61 ft

Use 6" perforated PVC with length of 30 ft at invert 436.8 ft

Overdrain Design to Convey Larger Storm

10-year Flow, Q10 = 4.07 cfs

Use a 2' x 3' catch basin inlet to convery the larger storm
Width of weir = 10 ft.
$Q_{es} = CLH^{3/2}$
4.07 = 3.1*L*(Hp^1.5)
Hp = **0.26** ft
Top of Catch Basin = 440.5 ft
Design High Water Elevation = Catch Basin Elev. + Hp
= 440.5 + 0.26
= 440.8
Top of Bioretention Berm Elevation = 441.3 ok

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Date: 7/5/2016
Project:
Project No: 29273

Calculated By: JC
Checked By:

Water Quality Calculation - Drainage Area 3B

Water Quality Volume Calculations -Redevelopment Impervious (25% WQv)

P:	1.4	= 90% Rainfall Event Number from Figure #1
Rv:	0.6358	= 0.05 + 0.009(I)
I:	65	= Impervious coverage percentage
I:	0.74	= impervious area (in acres)
A:	1.14	= Total Drainage Area (in acres)

WQv: **0.085** = Req'd Water Quality Volume (in ac-ft)

$$= \frac{(P)(Rv)(A)}{12}$$

25% WQv: **0.021** (in ac-ft)

Total Required Water Quality Volume

WQv:	**0.021**	**(ac-ft)**
WQv:	**921**	**(cu. ft)**

Compute Minimum Runoff Reduction Valume

RRv not required for redevelopment

Bioretention Basin 3B Design

Determine Size of Bioretention Filter Area

$A_f = (WQ_v)(d_f)/[(k)(h_f+d_f)(t_f)]$

A_f: = Surface area of filter bed (ft^2)

Required WQ_v = 0.021 ac-ft
Required WQ_v = 920.9 ft^3

d_f:	2.5	= Filter bed depth in feet
k:	0.5	= Coefficient of permeability of filter media (ft/day)
h_f:	0.25	= Average height of water above filter bed (ft)
t_f:	2	= Design filter bed drain time (days) (2 days is recommended)

$A_f = (WQ_v)(d_f)/[(k)(h_f+d_f)(t_f)]$
$A_f =$ **837.1** ft^2

Filter Area Provided =	850.0	ft^2

Set Design Elevation and Dimensions

Filter Bed Elevation =	456	ft
Filter Bed Area =	850	sq ft
Side Slope of Bioretention =		1 on 3
Top berm elevation =	457.3	ft

Design Pretreatment

Provide 2' wide stone diaphragm as pretreatment for sheetflow as recommened in NYSDEC manual)

Size Underdrain Pipe

Length of underdrain = (10% of A_i) / 3'

= 28 ft

Use 6" perforated PVC with length of 30 ft at invert 452.8 ft

Overdrain Design to Convey Larger Storm

10-year Flow, Q10 = 4.56 cfs

Use a 2' x 3' catch basin inlet to convery the larger storm

Width of weir = 10 ft.

$Q_{es} = CLH^{3/2}$

4.56 = 3.1*L*(Hp^1.5)

Hp = **0.28** ft

Top of Catch Basin = 456.5 ft

Design High Water Elevation = Catch Basin Elev. + Hp

= 456.5 + 0.28

= 456.8

Top of Bioretention Berm Elevation = 457.3 ok

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White Plains, New York 10606

Date: 7/5/2016
Project:
Project No: 29273

Calculated By: JC
Checked By:

Water Quality Calculation - Drainage Area 4

Water Quality Volume Calculations -Redevelopment Impervious (25% WQv)

P:	1.4	= 90% Rainfall Event Number from Figure #1
Rv:	0.3838	= 0.05 + 0.009(I)
I:	37	= Impervious coverage percentage
I:	0.56	= impervious area (in acres)
A:	1.51	= Total Drainage Area (in acres)

WQv: **0.068** = Req'd Water Quality Volume (in ac-ft)

$$= \frac{(P)(Rv)(A)}{12}$$

25% WQv: **0.017** (in ac-ft)

Water Quality Volume Calculations -New Impervious (100% WQv)

P:	1.4	= 90% Rainfall Event Number from Figure #1
Rv:	0.9500	= 0.05 + 0.009(I)
I:	100	= Impervious coverage percentage
I:	0.10	= impervious area (in acres)
A:	0.1	= Total Drainage Area (in acres)

WQv: **0.011** = Req'd Water Quality Volume (in ac-ft)

$$= \frac{(P)(Rv)(A)}{12}$$

Total Required Water Quality Volume

WQv:	**0.028**	**(ac-ft)**
WQv:	**1219**	**(cu. ft)**

Compute Minimum Runoff Reduction Valume

RRv (min) = (P * 0.95 * Ai) / 12
Where Ai = S * Aic
Aic = Total area of new Impervious
S =specific reduction factor
P = 1.40 inches

Soil Type A
New impervious area = 0.10 AC
S = 0.55

RRv (min) = (P * 0.95 * Ai) / 12

RRv (min) =	**0.006**	ac-ft

Bioretention Basin 4 Design

Determine Size of Bioretention Filter Area

$A_f = (WQ_v)(d_f)/[(k)(h_f+d_f)(t_f)]$

A_f: = Surface area of filter bed (ft^2)

Required WQ_v = 0.028 ac-ft
Required WQ_v = 1219.0 ft^3

d_f:	2.5	= Filter bed depth in feet
k:	0.5	= Coefficient of permeability of filter media (ft/day)
h_f:	0.25	= Average height of water above filter bed (ft)
t_f:	2	= Design filter bed drain time (days) (2 days is recommended)

$A_f = (WQ_v)(d_f)/[(k)(h_f+d_f)(t_f)]$
$A_f =$ **1108.2** ft^2

Filter Area Provided =	1110.0	ft^2

Set Design Elevation and Dimensions

Filter Bed Elevation =	454	ft
Filter Bed Area =	1110	sq ft
Side Slope of Bioretention =		1 on 3
Top berm elevation =	455.3	ft

Design Pretreatment

Provide 2' wide stone diaphragm as pretreatment for sheetflow as recommened in NYSDEC manual)

Size Underdrain Pipe

Length of underdrain = (10% of A_f) / 3'
= 37 ft

Use 6" perforated PVC with length of 30 ft at invert 450.8 ft

Overdrain Design to Convey Larger Storm

10-year Flow, Q10 = 5.29 cfs

Use a 2' x 3' catch basin inlet to convery the larger storm
Width of weir = 10 ft.
$Q_{es} = CLH^{3/2}$
5.29 = 3.1*L*(Hp^1.5)
Hp = **0.31** ft
Top of Catch Basin = 454.5 ft
Design High Water Elevation = Catch Basin Elev. + Hp
= 454.5 + 0.31
= 454.8
Top of Bioretention Berm Elevation = 455.3 ok

VHB Engineering, Surveying and
Landscape Architecture, P.C.
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White Plains, New York 10606

Date: 7/5/2016
Project:
Project No: 29273

Calculated By: JC
Checked By:

Water Quality Calculation - Drainage Area 5

Water Quality Volume Calculations -Redevelopment Impervious (25% WQv)

P:	1.4	= 90% Rainfall Event Number from Figure #1
Rv:	0.3482	= 0.05 + 0.009(I)
I:	33	= Impervious coverage percentage
I:	0.54	= impervious area (in acres)
A:	1.63	= Total Drainage Area (in acres)

WQv: **0.066** = Req'd Water Quality Volume (in ac-ft)

$$= \frac{(P)(Rv)(A)}{12}$$

25% WQv: **0.017** (in ac-ft)

Water Quality Volume Calculations -New Impervious (100% WQv)

P:	1.4	= 90% Rainfall Event Number from Figure #1
Rv:	0.9500	= 0.05 + 0.009(I)
I:	100	= Impervious coverage percentage
I:	0.29	= impervious area (in acres)
A:	0.287	= Total Drainage Area (in acres)

WQv: **0.032** = Req'd Water Quality Volume (in ac-ft)

$$= \frac{(P)(Rv)(A)}{12}$$

Total Required Water Quality Volume

WQv:	**0.048**	**(ac-ft)**
WQv:	**2107**	**(cu. ft)**

Compute Minimum Runoff Reduction Valume

RRv (min) = (P * 0.95 * Ai) / 12
Where Ai = S * Aic
Aic = Total area of new Impervious
S =specific reduction factor
P = 1.40 inches

Soil Type A
New impervious area = 0.29 AC
S = 0.55

RRv (min) = (P * 0.95 * Ai) / 12

RRv (min) =	**0.017**	ac-ft

Bioretention Basin 5 Design

Determine Size of Bioretention Filter Area

$A_f = (WQ_v)(d_f)/[(k)(h_f+d_f)(t_f)]$

A_f: = Surface area of filter bed (ft^2)

Required WQ_v = 0.048 ac-ft
Required WQ_v = 2106.6 ft^3

d_f:	2.5	= Filter bed depth in feet
k:	0.5	= Coefficient of permeability of filter media (ft/day)
h_f:	0.25	= Average height of water above filter bed (ft)
t_f:	2	= Design filter bed drain time (days) (2 days is recommended)

$A_f = (WQ_v)(d_f)/[(k)(h_f+d_f)(t_f)]$
$A_f =$ **1915.1** ft^2

Filter Area Provided =	1950.0	ft^2

Set Design Elevation and Dimensions

Filter Bed Elevation =	458	ft
Filter Bed Area =	1950	sq ft
Side Slope of Bioretention =		1 on 3
Top berm elevation =	459.3	ft

Design Pretreatment

Provide 2' wide stone diaphragm as pretreatment for sheetflow as recommened in NYSDEC manual)

Size Underdrain Pipe

Length of underdrain = (10% of A_f) / 3'
= 65 ft

Use 6" perforated PVC with length of 30 ft at invert 454.8 ft

Overdrain Design to Convey Larger Storm

10-year Flow, Q10 = 5.71 cfs

Use a 2' x 3' catch basin inlet to convery the larger storm

Width of weir = 10 ft.
$Q_{es} = CLH^{3/2}$
5.71 = 3.1*L*(Hp^1.5)
Hp = **0.32** ft
Top of Catch Basin = 458.5 ft
Design High Water Elevation = Catch Basin Elev. + Hp
= 458.5 + 0.32
= 458.8
Top of Bioretention Berm Elevation = 459.3 ok

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White Plains, New York 10606

Date: 7/5/2016
Project:
Project No: 29273

Calculated By: JC
Checked By:

Water Quality Calculation - Drainage Area 6

Water Quality Volume Calculations -New Impervious (100% WQv)

P:	1.4	= 90% Rainfall Event Number from Figure #1
Rv:	0.3300	= 0.05 + 0.009(I)
I:	31	= Impervious coverage percentage
I:	0.56	= impervious area (in acres)
A:	1.8	= Total Drainage Area (in acres)

WQv: **0.069** = Req'd Water Quality Volume (in ac-ft)

$$= \frac{(P)(Rv)(A)}{12}$$

Total Required Water Quality Volume

WQv:	**0.069**	**(ac-ft)**
WQv:	**3019**	**(cu. ft)**

Compute Minimum Runoff Reduction Valume

RRv (min) = (P * 0.95 * Ai) / 12
Where Ai = S * Aic
Aic = Total area of new Impervious
S =specific reduction factor
P = 1.40 inches

Soil Type C
New impervious area = 0.56 AC
S = 0.3

RRv (min) = (P * 0.95 * Ai) / 12
RRv (min) = **0.019** ac-ft

Bioretention Basin 6 Design

Determine Size of Bioretention Filter Area

$A_f = (WQ_v)(d_f)/[(k)(h_f+d_f)(t_f)]$

A_f: = Surface area of filter bed (ft^2)

Required WQ_v = 0.069 ac-ft
Required WQ_v = 3018.7 ft^3

d_f:	2.5	= Filter bed depth in feet
k:	0.5	= Coefficient of permeability of filter media (ft/day)
h_f:	0.25	= Average height of water above filter bed (ft)
t_f:	2	= Design filter bed drain time (days) (2 days is recommended)

$A_f = (WQ_v)(d_f)/[(k)(h_f+d_f)(t_f)]$
A_f = **2744.3** ft^2

Filter Area Provided =	2750.0	ft^2

Set Design Elevation and Dimensions

Filter Bed Elevation =	494	ft
Filter Bed Area =	2750	sq ft
Side Slope of Bioretention =		1 on 3
Top berm elevation =	495.3	ft

Design Pretreatment

Provide 2' wide stone diaphragm as pretreatment for sheetflow as recommened in NYSDEC manual)

Size Underdrain Pipe

Length of underdrain = (10% of A_i) / 3'

= 92 ft

Use 6" perforated PVC with length of 30 ft at invert 490.8 ft

Overdrain Design to Convey Larger Storm

10-year Flow, Q10 = 6.30 cfs

Use a 2' x 3' catch basin inlet to convery the larger storm

Width of weir = 10 ft.

$Q_{es} = CLH^{3/2}$

6.30 = 3.1*L*(Hp^1.5)

Hp = **0.35** ft

Top of Catch Basin = 494.5 ft

Design High Water Elevation = Catch Basin Elev. + Hp

= 494.5 + 0.35

= 494.8

Top of Bioretention Berm Elevation = 495.3 ok

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Date: 7/5/2016
Project:
Project No: 29273

Calculated By: JC
Checked By:

Water Quality Calculation - Drainage Area 7

Water Quality Volume Calculations -Redevelopment Impervious (25% WQv)

P:	1.4	= 90% Rainfall Event Number from Figure #1
Rv:	0.2209	= 0.05 + 0.009(I)
I:	19	= Impervious coverage percentage
I:	0.15	= impervious area (in acres)
A:	0.79	= Total Drainage Area (in acres)

WQv: **0.020** = Req'd Water Quality Volume (in ac-ft)

$$= \frac{(P)(Rv)(A)}{12}$$

25% WQv: **0.005** (in ac-ft)

Water Quality Volume Calculations -New Impervious (100% WQv)

P:	1.4	= 90% Rainfall Event Number from Figure #1
Rv:	0.9500	= 0.05 + 0.009(I)
I:	100	= Impervious coverage percentage
I:	0.21	= impervious area (in acres)
A:	0.21	= Total Drainage Area (in acres)

WQv: **0.023** = Req'd Water Quality Volume (in ac-ft)

$$= \frac{(P)(Rv)(A)}{12}$$

Total Required Water Quality Volume

WQv:	**0.028**	**(ac-ft)**
WQv:	**1236**	**(cu. ft)**

Compute Minimum Runoff Reduction Valume

RRv (min) = (P * 0.95 * Ai) / 12
Where Ai = S * Aic
Aic = Total area of new Impervious
S =specific reduction factor
P = 1.40 inches

Soil Type C
New impervious area = 0.21 AC
S = 0.3

RRv (min) = (P * 0.95 * Ai) / 12

RRv (min) =	**0.007**	ac-ft

Bioretention Basin7 Design

Determine Size of Bioretention Filter Area

$A_f = (WQ_v)(d_f)/[(k)(h_f+d_f)(t_f)]$

A_f: = Surface area of filter bed (ft^2)

Required WQ_v = 0.028 ac-ft
Required WQ_v = 1235.6 ft^3

d_f:	2.5	= Filter bed depth in feet
k:	0.5	= Coefficient of permeability of filter media (ft/day)
h_f:	0.25	= Average height of water above filter bed (ft)
t_f:	2	= Design filter bed drain time (days) (2 days is recommended)

$A_f = (WQ_v)(d_f)/[(k)(h_f+d_f)(t_f)]$
$A_f =$ **1123.2** ft^2

Filter Area Provided =	1150.0	ft^2

Set Design Elevation and Dimensions

Filter Bed Elevation =	468	ft
Filter Bed Area =	1150	sq ft
Side Slope of Bioretention =		1 on 3
Top berm elevation =	469.2	ft

Design Pretreatment

Provide 2' wide stone diaphragm as pretreatment for sheetflow as recommened in NYSDEC manual)

Size Underdrain Pipe

Length of underdrain = (10% of A_f) / 3'
= 38 ft

Use 6" perforated PVC with length of 30 ft at invert 464.8 ft

Overdrain Design to Convey Larger Storm

10-year Flow, Q10 = 2.77 cfs

Use a 2' x 3' catch basin inlet to convery the larger storm

Width of weir = 10 ft.
$Q_{es} = CLH^{3/2}$
2.77 = 3.1*L*(Hp^1.5)
Hp = **0.20** ft
Top of Catch Basin = 468.5 ft
Design High Water Elevation = Catch Basin Elev. + Hp
= 468.5 + 0.20
= 468.7
Top of Bioretention Berm Elevation = 469.2 ok

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Date: 7/5/2016
Project:
Project No: 29273

Calculated By: JC
Checked By:

Water Quality Calculation - Drainage Area 8

Water Quality Volume Calculations -Redevelopment Impervious (25% WQv)

P:	1.4	= 90% Rainfall Event Number from Figure #1
Rv:	0.2573	= 0.05 + 0.009(I)
I:	23	= Impervious coverage percentage
I:	1.32	= impervious area (in acres)
A:	5.73	= Total Drainage Area (in acres)

WQv: **0.172** = Req'd Water Quality Volume (in ac-ft)

$$= \frac{(P)(Rv)(A)}{12}$$

25% WQv: **0.043** (in ac-ft)

Water Quality Volume Calculations -New Impervious (100% WQv)

P:	1.4	= 90% Rainfall Event Number from Figure #1
Rv:	0.9500	= 0.05 + 0.009(I)
I:	100	= Impervious coverage percentage
I:	0.12	= impervious area (in acres)
A:	0.12	= Total Drainage Area (in acres)

WQv: **0.013** = Req'd Water Quality Volume (in ac-ft)

$$= \frac{(P)(Rv)(A)}{12}$$

Total Required Water Quality Volume

WQv:	**0.056**	**(ac-ft)**
WQv:	**2453**	**(cu. ft)**

Pervious Paver 8 Design

Calculate the available storage volume in the storage reserviour

Storage Volume = A * n * dt
where:
n = porosity = 0.4
dt= gravel bed/reservior depth = 1 ft
A= porous pavement area = 32500 sq ft
= 0.746 ac
Storage Volume = 13000 cu-ft

Storage Volume =	**13000 cu ft**	**>**	**2453**	**(ok)**

Determine Storage Available for Treatment of Additional Impervious Area or Higher Storm

Available Storage = Reservior Storage Volume - WQv
Available Storage = 13000 - 2453

Available Storage =	**10547 cu. ft.**

Determine Height WQv Would Reach Within the Storage Chamber

$$d = \frac{WQv / A}{0.4} = \frac{0.056}{0.75 \times 0.4}$$

d = 0.2 ft

d =	**2.3**	**inches**

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Date: 7/5/2016
Project:
Project No: 29273

Calculated By: JC
Checked By:

Water Quality Calculation - Drainage Area 9

Water Quality Volume Calculations -Redevelopment Impervious (25% WQv)

P:	1.4	= 90% Rainfall Event Number from Figure #1
Rv:	0.2780	= 0.05 + 0.009(I)
I:	25	= Impervious coverage percentage
I:	0.19	= impervious area (in acres)
A:	0.75	= Total Drainage Area (in acres)

WQv: **0.024** = Req'd Water Quality Volume (in ac-ft)

$= \frac{(P)(Rv)(A)}{12}$

25% WQv: **0.006** (in ac-ft)

Total Required Water Quality Volume

WQv:	**0.006**	**(ac-ft)**
WQv:	**265**	**(cu. ft)**

Compute Minimum Runoff Reduction Valume

RRv not required for redevelopment

Bioretention Basin 9 Design

Determine Size of Bioretention Filter Area

$A_f = (WQ_v)(d_f)/[(k)(h_f+d_f)(t_f)]$

A_f: = Surface area of filter bed (ft^2)

Required WQ_v = 0.006 ac-ft
Required WQ_v = 264.9 ft^3

d_f:	2.5	= Filter bed depth in feet
k:	0.5	= Coefficient of permeability of filter media (ft/day)
h_f:	0.25	= Average height of water above filter bed (ft)
t_f:	2	= Design filter bed drain time (days) (2 days is recommended)

$A_f = (WQ_v)(d_f)/[(k)(h_f+d_f)(t_f)]$
A_f = **240.8** ft^2

Filter Area Provided =	390.0	ft^2

Set Design Elevation and Dimensions

Filter Bed Elevation =	424	ft
Filter Bed Area =	390	sq ft
Side Slope of Bioretention =		1 on 3
Top berm elevation =	425.2	ft

Design Pretreatment

Provide 2' wide stone diaphragm as pretreatment for sheetflow as recommened in NYSDEC manual)

Size Underdrain Pipe

Length of underdrain = (10% of A_i) / 3'

= 13 ft

Use 6" perforated PVC with length of 30 ft at invert 420.8 ft

Overdrain Design to Convey Larger Storm

10-year Flow, Q10 = 1.88 cfs

Use a 2' x 3' catch basin inlet to convery the larger storm

Width of weir = 10 ft.

$Q_{es} = CLH^{3/2}$

1.88 = 3.1*L*(Hp^1.5)

Hp = **0.15** ft

Top of Catch Basin = 424.5 ft

Design High Water Elevation = Catch Basin Elev. + Hp

= 424.5 + 0.15

= 424.7

Top of Bioretention Berm Elevation = 425.2 ok

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Date: 7/5/2016
Project:
Project No: 29273

Calculated By: JC
Checked By:

Water Quality Calculation - Drainage Area 10

Water Quality Volume Calculations -Redevelopment Impervious (25% WQv)

P:	1.4	= 90% Rainfall Event Number from Figure #1
Rv:	0.2271	= 0.05 + 0.009(I)
I:	20	= Impervious coverage percentage
I:	0.19	= impervious area (in acres)
A:	0.94	= Total Drainage Area (in acres)

WQv: **0.025** = Req'd Water Quality Volume (in ac-ft)

$$= \frac{(P)(Rv)(A)}{12}$$

25% WQv: **0.006** (in ac-ft)

Total Required Water Quality Volume

WQv:	**0.006**	**(ac-ft)**
WQv:	**271**	**(cu. ft)**

Compute Minimum Runoff Reduction Valume

RRv not required for redevelopment

Bioretention Basin 10 Design

Determine Size of Bioretention Filter Area

$A_f = (WQ_v)(d_f)/[(k)(h_f+d_f)(t_f)]$

A_f: = Surface area of filter bed (ft^2)

Required WQ_v = 0.006 ac-ft
Required WQ_v = 271.3 ft^3

d_f:	2.5	= Filter bed depth in feet
k:	0.5	= Coefficient of permeability of filter media (ft/day)
h_f:	0.25	= Average height of water above filter bed (ft)
t_f:	2	= Design filter bed drain time (days) (2 days is recommended)

$A_f = (WQ_v)(d_f)/[(k)(h_f+d_f)(t_f)]$
$A_f =$ **246.6** ft^2

Filter Area Provided =	390.0	ft^2

Set Design Elevation and Dimensions

Filter Bed Elevation =	420	ft
Filter Bed Area =	390	sq ft
Side Slope of Bioretention =		1 on 3
Top berm elevation =	421.2	ft

Design Pretreatment

Provide 2' wide stone diaphragm as pretreatment for sheetflow as recommened in NYSDEC manual)

Size Underdrain Pipe

Length of underdrain = (10% of A_i) / 3'

= 13 ft

Use 6" perforated PVC with length of 30 ft at invert 416.8 ft

Overdrain Design to Convey Larger Storm

10-year Flow, Q10 = 2.35 cfs

Use a 2' x 3' catch basin inlet to convery the larger storm

Width of weir = 10 ft.

$Q_{es} = CLH^{3/2}$

2.35 = 3.1*L*(Hp^1.5)

Hp = **0.18** ft

Top of Catch Basin = 420.5 ft

Design High Water Elevation = Catch Basin Elev. + Hp

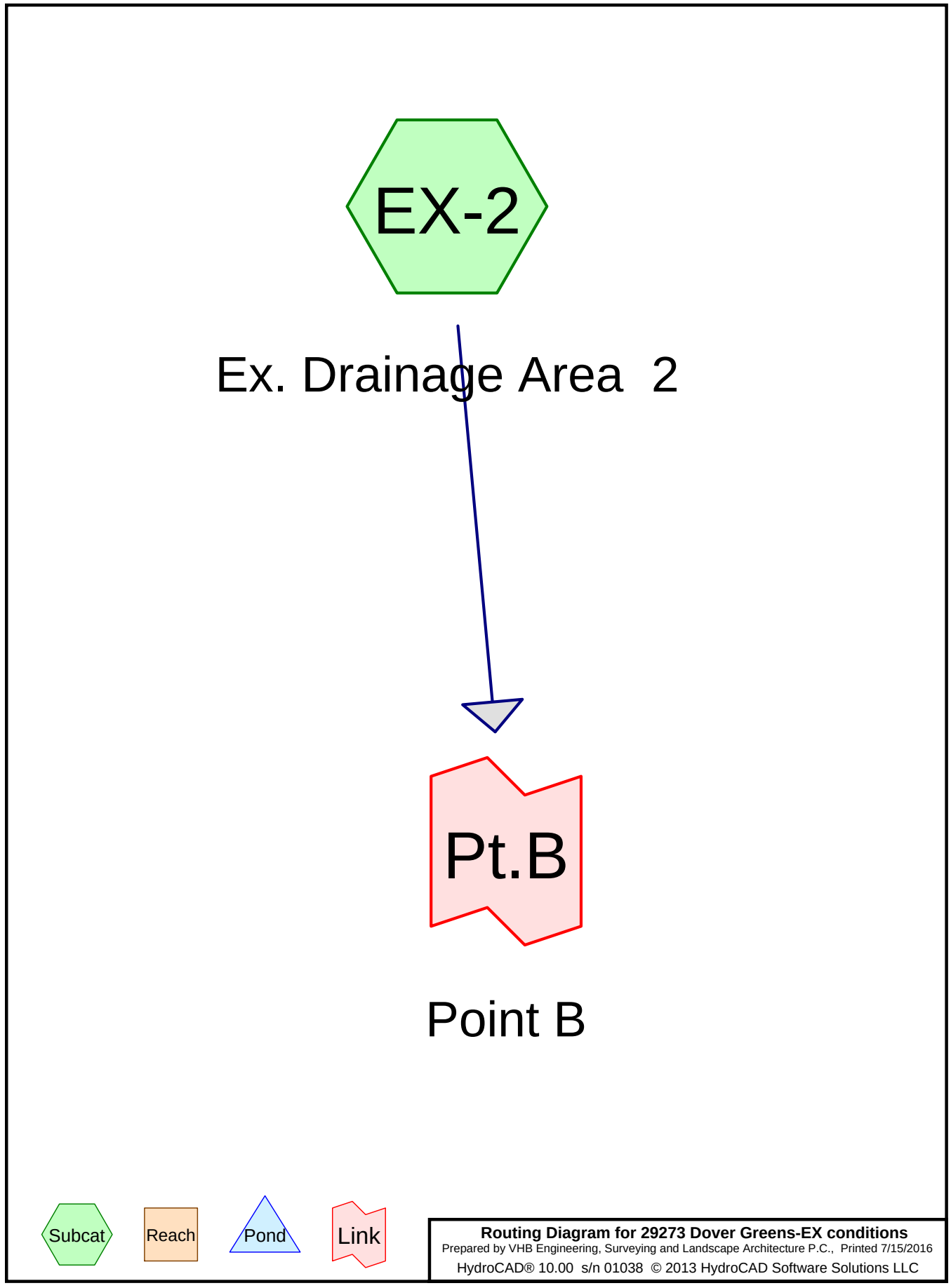
= 420.5 + 0.18

= 420.7

Top of Bioretention Berm Elevation = 421.2 ok

Attachment D3
Existing and Proposed Conditions
HydroCAD Reports

Attachment D3(a)
Existing Conditions HydroCAD Report


EX-2
Ex. Drainage Area 2
Pt.B
Point B
Subcat
Reach
Pond
Link
Routing Diagram for 29273 Dover Greens-EX conditions
Prepared by VHB Engineering, Surveying and Landscape Architecture P.C., Printed 7/15/2016
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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
9.290	39	>75% Grass cover, Good, HSG A (EX-2)
1.053	74	>75% Grass cover, Good, HSG C (EX-2)
4.420	98	Paved parking, HSG C (EX-2)
0.247	30	Woods, Good, HSG A (EX-2)
15.010	**59**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
9.537	HSG A	EX-2
0.000	HSG B	
5.473	HSG C	EX-2
0.000	HSG D	
0.000	Other	
15.010		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
9.290	0.000	1.053	0.000	0.000	10.343	>75% Grass cover, Good	EX-2
0.000	0.000	4.420	0.000	0.000	4.420	Paved parking	EX-2
0.247	0.000	0.000	0.000	0.000	0.247	Woods, Good	EX-2
9.537	**0.000**	**5.473**	**0.000**	**0.000**	**15.010**	**TOTAL AREA**	

Time span=0.00-100.00 hrs, dt=0.05 hrs, 2001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EX-2: Ex. Drainage Area 2 Runoff Area=15.010 ac 29.45% Impervious Runoff Depth=0.21"
Flow Length=1,401' Tc=20.2 min CN=59 Runoff=1.06 cfs 0.260 af

Link Pt.B: Point B Inflow=1.06 cfs 0.260 af
Primary=1.06 cfs 0.260 af

Total Runoff Area = 15.010 ac Runoff Volume = 0.260 af Average Runoff Depth = 0.21"
70.55% Pervious = 10.590 ac 29.45% Impervious = 4.420 ac

Summary for Subcatchment EX-2: Ex. Drainage Area 2

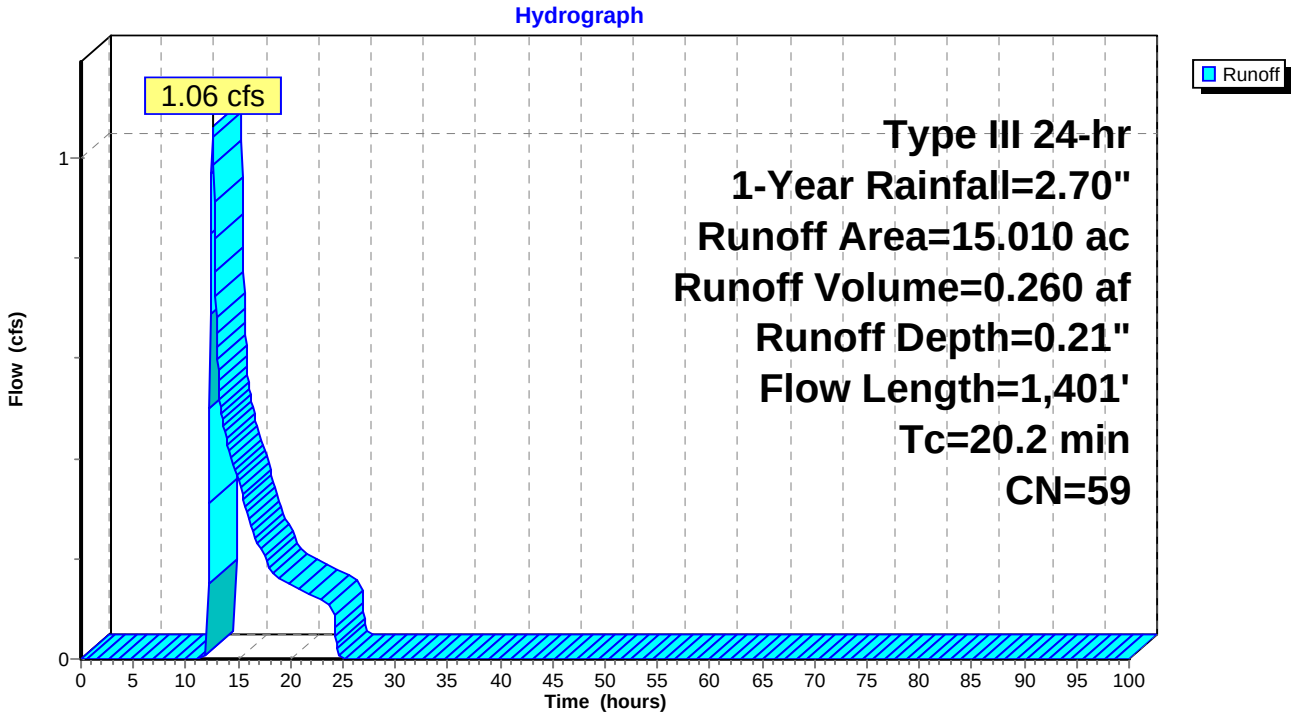
Runoff = 1.06 cfs @ 12.55 hrs, Volume= 0.260 af, Depth= 0.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.70"

Area (ac)	CN	Description
1.053	74	>75% Grass cover, Good, HSG C
4.420	98	Paved parking, HSG C
0.247	30	Woods, Good, HSG A
9.290	39	>75% Grass cover, Good, HSG A
15.010	59	Weighted Average
10.590		70.55% Pervious Area
4.420		29.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	100	0.1300	0.25		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.30"
1.0	273	0.0476	4.43		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
12.6	1,028	0.0380	1.36		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
20.2	1,401	Total			

Subcatchment EX-2: Ex. Drainage Area 2

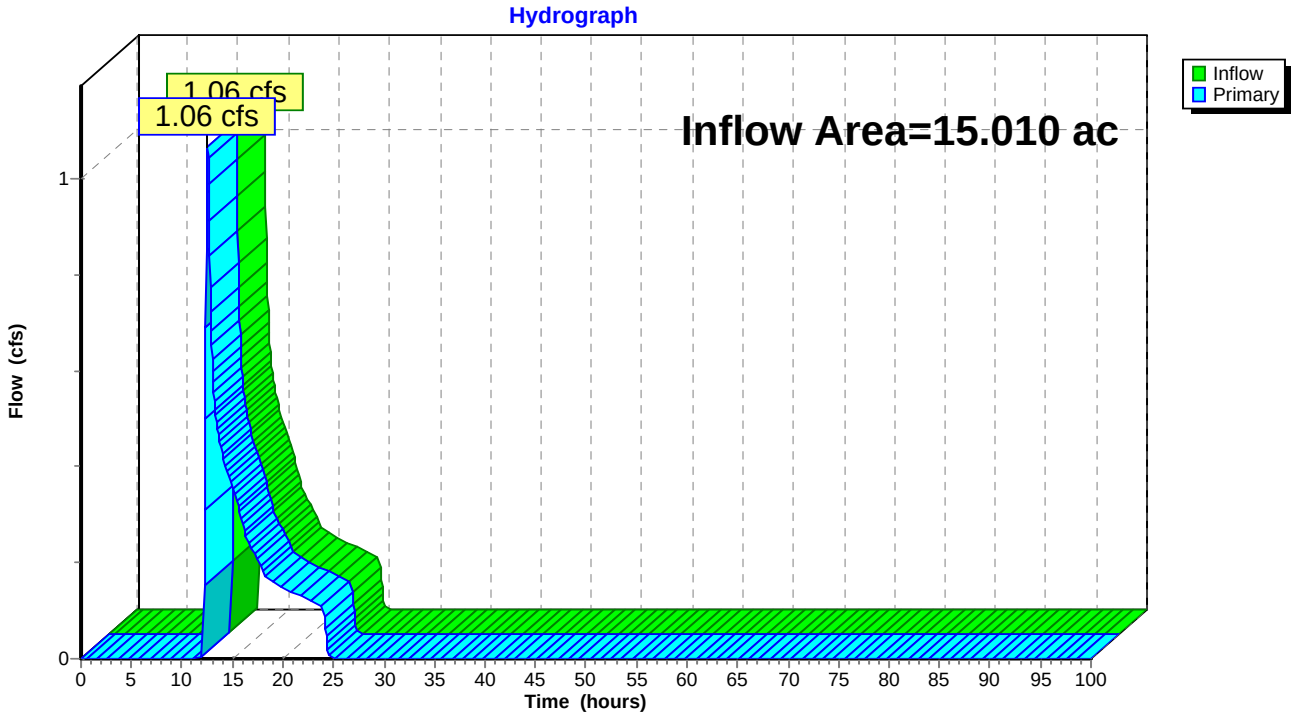


Summary for Link Pt.B: Point B

Inflow Area = 15.010 ac, 29.45% Impervious, Inflow Depth = 0.21" for 1-Year event
Inflow = 1.06 cfs @ 12.55 hrs, Volume= 0.260 af
Primary = 1.06 cfs @ 12.55 hrs, Volume= 0.260 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

Link Pt.B: Point B



Time span=0.00-100.00 hrs, dt=0.05 hrs, 2001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EX-2: Ex. Drainage Area 2 Runoff Area=15.010 ac 29.45% Impervious Runoff Depth=1.23"
Flow Length=1,401' Tc=20.2 min CN=59 Runoff=12.73 cfs 1.544 af

Link Pt.B: Point B Inflow=12.73 cfs 1.544 af
Primary=12.73 cfs 1.544 af

Total Runoff Area = 15.010 ac Runoff Volume = 1.544 af Average Runoff Depth = 1.23"
70.55% Pervious = 10.590 ac 29.45% Impervious = 4.420 ac

Summary for Subcatchment EX-2: Ex. Drainage Area 2

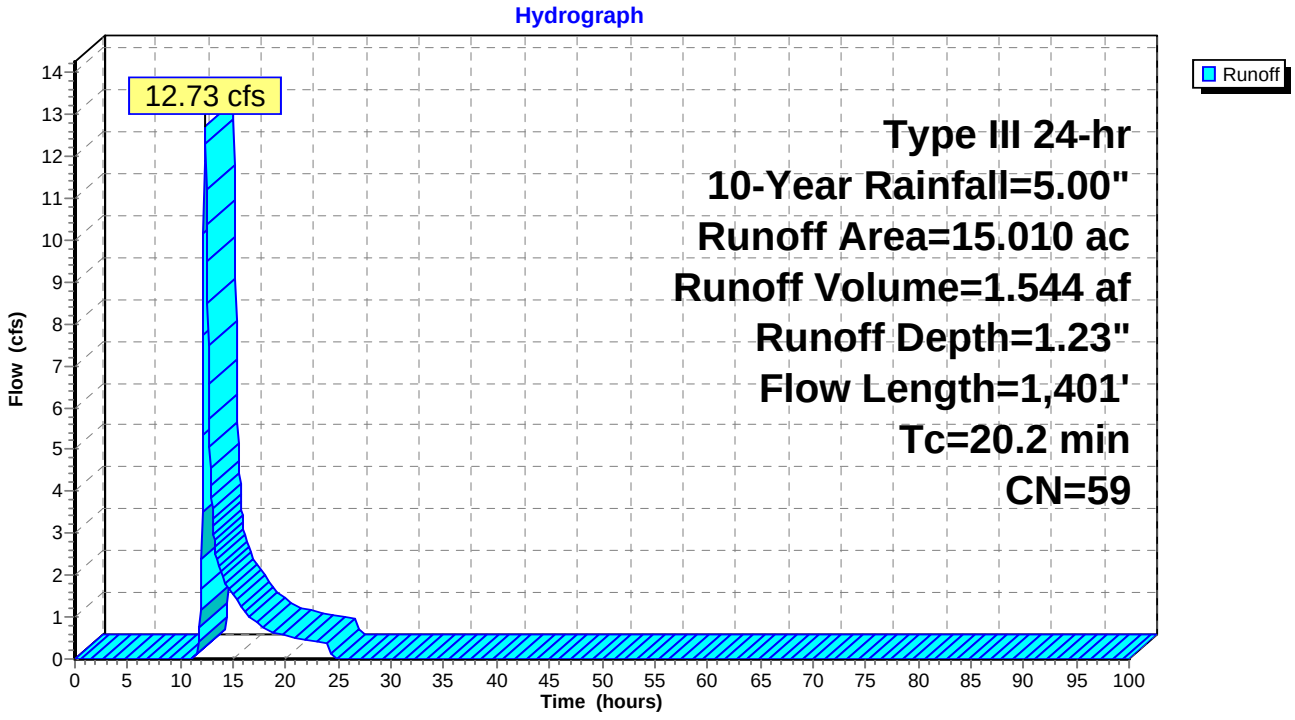
Runoff = 12.73 cfs @ 12.32 hrs, Volume= 1.544 af, Depth= 1.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=5.00"

Area (ac)	CN	Description
1.053	74	>75% Grass cover, Good, HSG C
4.420	98	Paved parking, HSG C
0.247	30	Woods, Good, HSG A
9.290	39	>75% Grass cover, Good, HSG A
15.010	59	Weighted Average
10.590		70.55% Pervious Area
4.420		29.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	100	0.1300	0.25		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.30"
1.0	273	0.0476	4.43		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
12.6	1,028	0.0380	1.36		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
20.2	1,401	Total			

Subcatchment EX-2: Ex. Drainage Area 2

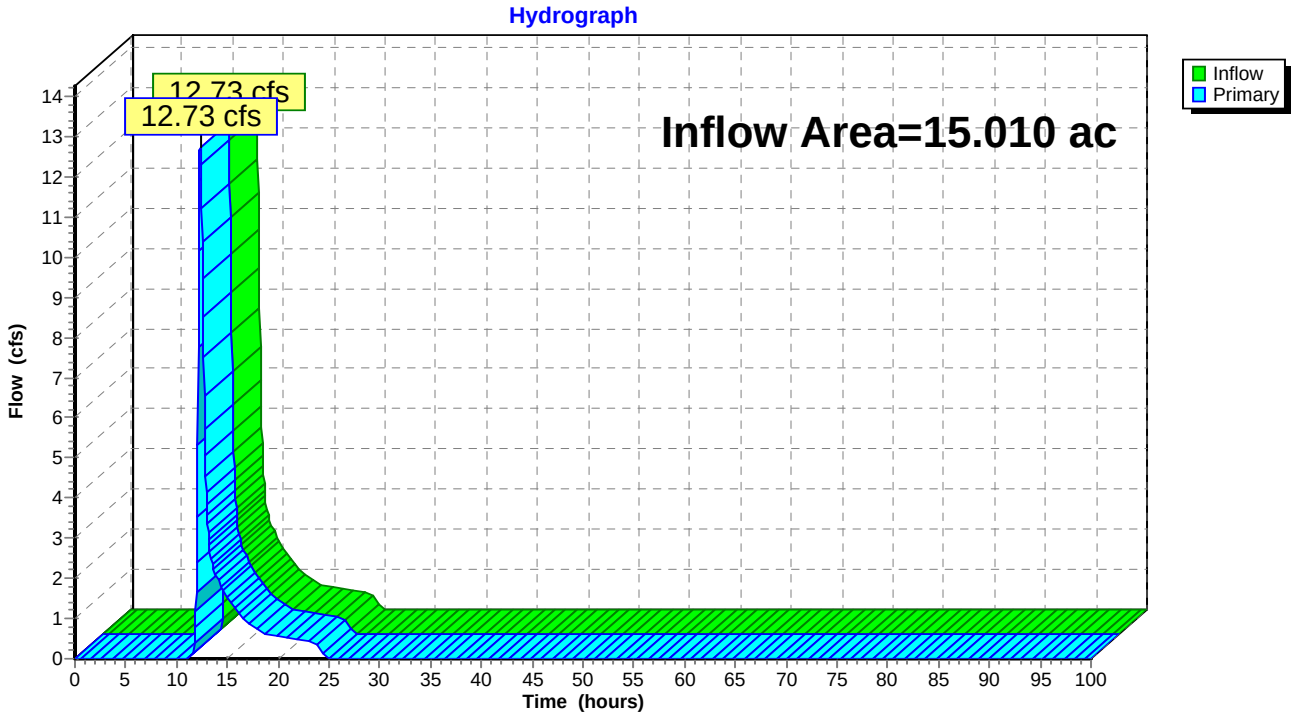


Summary for Link Pt.B: Point B

Inflow Area = 15.010 ac, 29.45% Impervious, Inflow Depth = 1.23" for 10-Year event
Inflow = 12.73 cfs @ 12.32 hrs, Volume= 1.544 af
Primary = 12.73 cfs @ 12.32 hrs, Volume= 1.544 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

Link Pt.B: Point B



Time span=0.00-100.00 hrs, dt=0.05 hrs, 2001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EX-2: Ex. Drainage Area 2 Runoff Area=15.010 ac 29.45% Impervious Runoff Depth=3.98"
Flow Length=1,401' Tc=20.2 min CN=59 Runoff=46.21 cfs 4.976 af

Link Pt.B: Point B Inflow=46.21 cfs 4.976 af
Primary=46.21 cfs 4.976 af

Total Runoff Area = 15.010 ac Runoff Volume = 4.976 af Average Runoff Depth = 3.98"
70.55% Pervious = 10.590 ac 29.45% Impervious = 4.420 ac

Summary for Subcatchment EX-2: Ex. Drainage Area 2

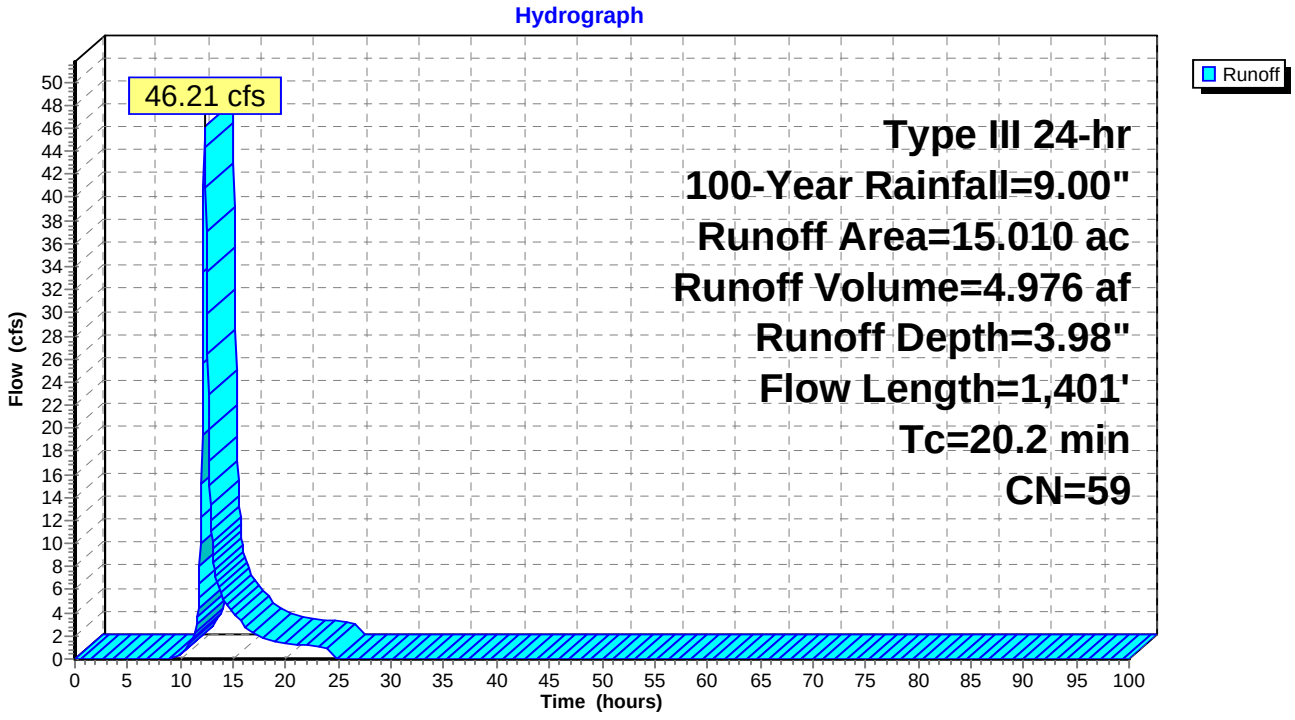
Runoff = 46.21 cfs @ 12.29 hrs, Volume= 4.976 af, Depth= 3.98"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=9.00"

Area (ac)	CN	Description
1.053	74	>75% Grass cover, Good, HSG C
4.420	98	Paved parking, HSG C
0.247	30	Woods, Good, HSG A
9.290	39	>75% Grass cover, Good, HSG A
15.010	59	Weighted Average
10.590		70.55% Pervious Area
4.420		29.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	100	0.1300	0.25		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.30"
1.0	273	0.0476	4.43		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
12.6	1,028	0.0380	1.36		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
20.2	1,401	Total			

Subcatchment EX-2: Ex. Drainage Area 2

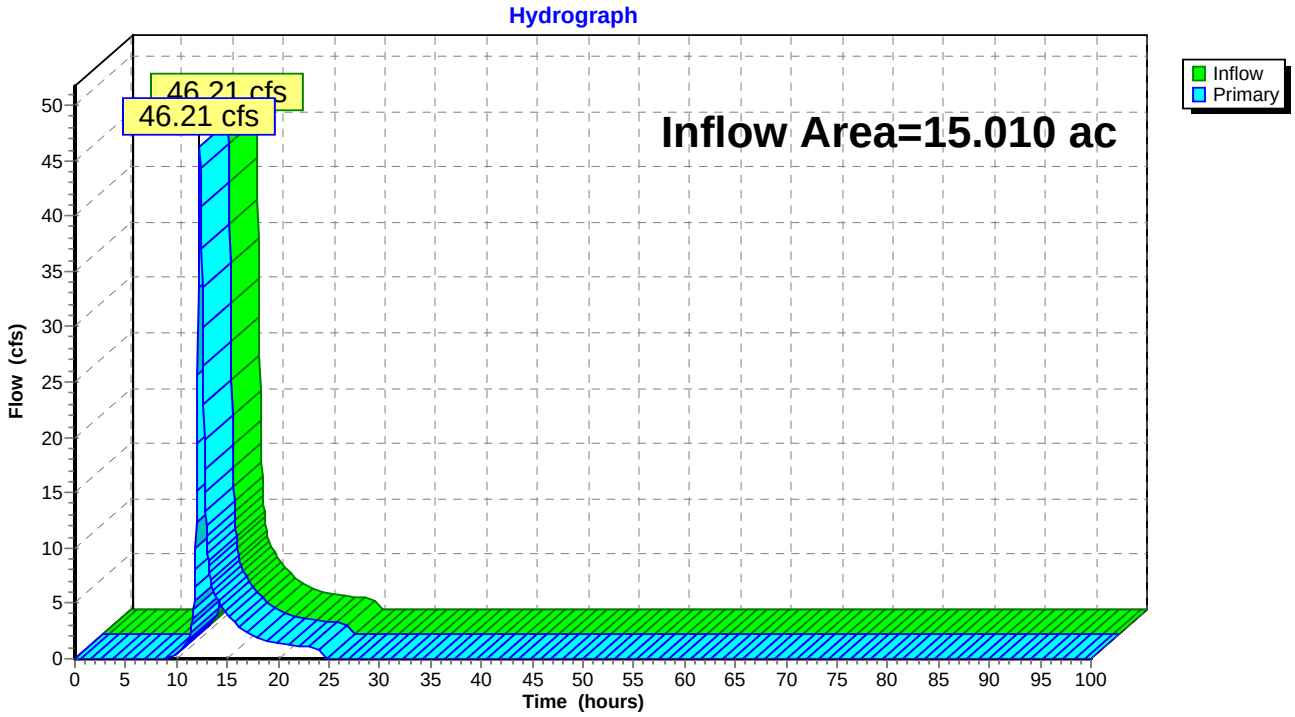


Summary for Link Pt.B: Point B

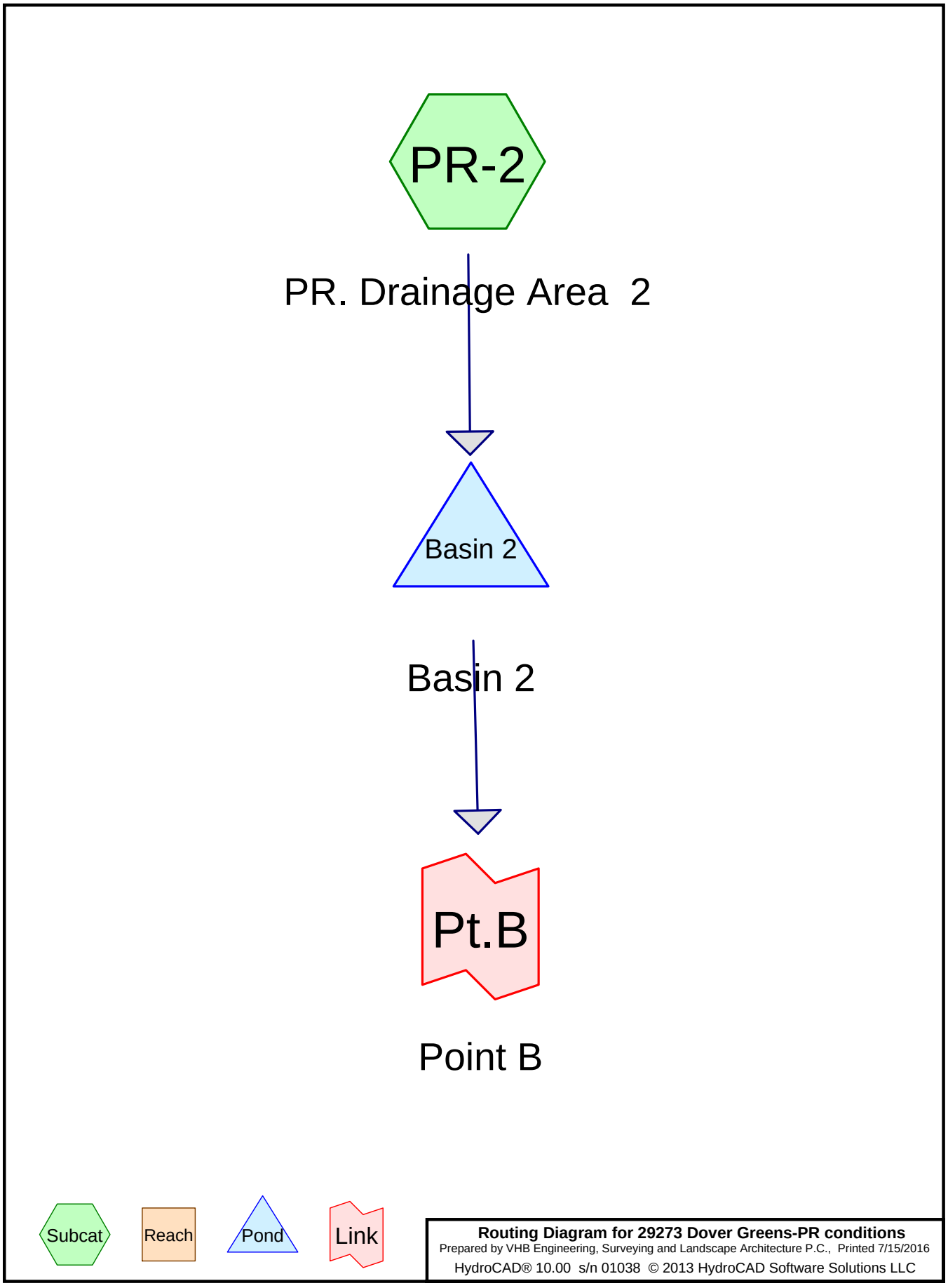
Inflow Area = 15.010 ac, 29.45% Impervious, Inflow Depth = 3.98" for 100-Year event
Inflow = 46.21 cfs @ 12.29 hrs, Volume= 4.976 af
Primary = 46.21 cfs @ 12.29 hrs, Volume= 4.976 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

Link Pt.B: Point B



Attachment D3(b)
Proposed Conditions HydroCAD Report



Routing Diagram for 29273 Dover Greens-PR conditions

Prepared by VHB Engineering, Surveying and Landscape Architecture P.C., Printed 7/15/2016

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
8.386	39	>75% Grass cover, Good, HSG A (PR-2)
1.735	74	>75% Grass cover, Good, HSG C (PR-2)
4.850	98	Paved parking, HSG C (PR-2)
0.247	30	Woods, Good, HSG A (PR-2)
15.218	**62**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
8.633	HSG A	PR-2
0.000	HSG B	
6.585	HSG C	PR-2
0.000	HSG D	
0.000	Other	
15.218		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
8.386	0.000	1.735	0.000	0.000	10.121	>75% Grass cover, Good	PR-2
0.000	0.000	4.850	0.000	0.000	4.850	Paved parking	PR-2
0.247	0.000	0.000	0.000	0.000	0.247	Woods, Good	PR-2
8.633	**0.000**	**6.585**	**0.000**	**0.000**	**15.218**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	PR-2	0.00	0.00	586.0	0.0200	0.013	18.0	0.0	0.0
2	Basin 2	426.00	425.50	60.0	0.0083	0.012	30.0	0.0	0.0

Time span=0.00-100.00 hrs, dt=0.05 hrs, 2001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PR-2: PR. Drainage Area 2 Runoff Area=15.218 ac 31.87% Impervious Runoff Depth=0.29"
Flow Length=1,573' Tc=17.1 min CN=62 Runoff=1.96 cfs 0.362 af

Pond Basin 2: Basin 2 Peak Elev=426.47' Storage=0.058 af Inflow=1.96 cfs 0.362 af
Outflow=0.97 cfs 0.362 af

Link Pt.B: Point B Inflow=0.97 cfs 0.362 af
Primary=0.97 cfs 0.362 af

Total Runoff Area = 15.218 ac Runoff Volume = 0.362 af Average Runoff Depth = 0.29"
68.13% Pervious = 10.368 ac 31.87% Impervious = 4.850 ac

Summary for Subcatchment PR-2: PR. Drainage Area 2

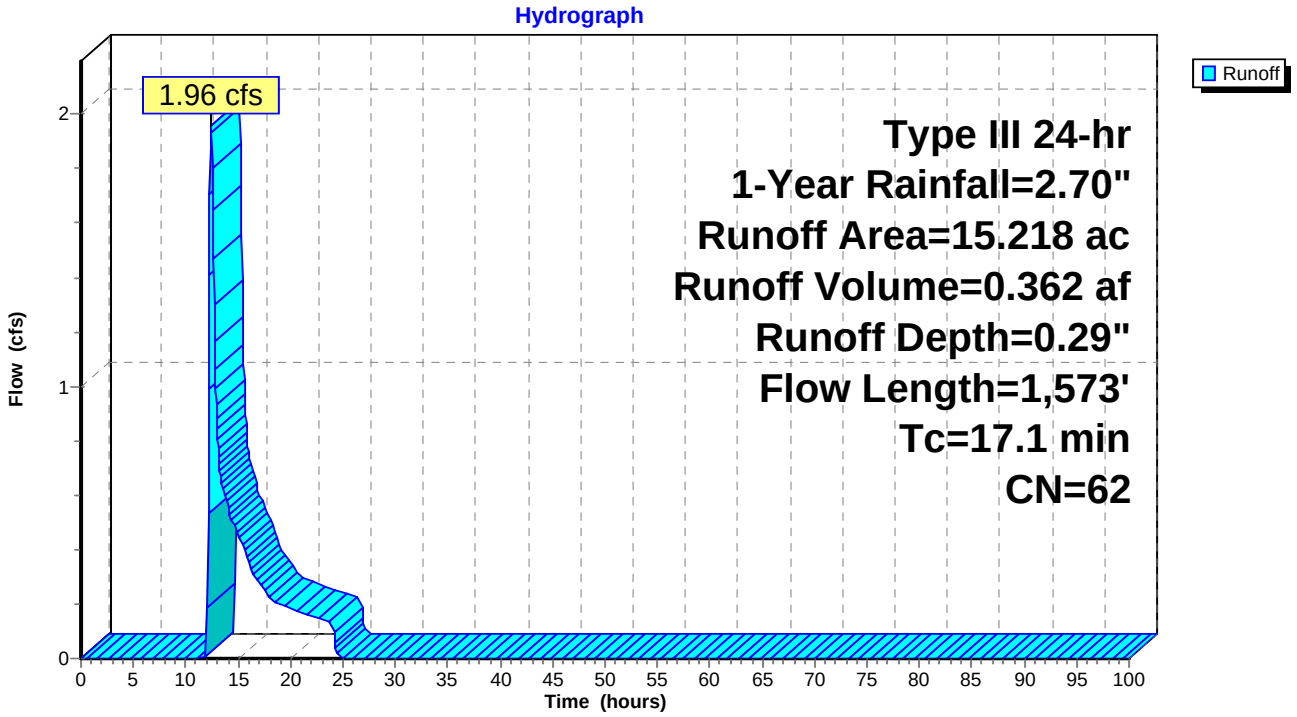
Runoff = 1.96 cfs @ 12.43 hrs, Volume= 0.362 af, Depth= 0.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.70"

Area (ac)	CN	Description
1.735	74	>75% Grass cover, Good, HSG C
4.850	98	Paved parking, HSG C
0.247	30	Woods, Good, HSG A
8.386	39	>75% Grass cover, Good, HSG A
15.218	62	Weighted Average
10.368		68.13% Pervious Area
4.850		31.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	100	0.1300	0.25		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.30"
1.6	427	0.0510	4.58		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.2	586	0.0200	8.41	14.86	**Pipe Channel,** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013
7.7	460	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
17.1	1,573	Total			

Subcatchment PR-2: PR. Drainage Area 2



Summary for Pond Basin 2: Basin 2

Inflow Area = 15.218 ac, 31.87% Impervious, Inflow Depth = 0.29" for 1-Year event
Inflow = 1.96 cfs @ 12.43 hrs, Volume= 0.362 af
Outflow = 0.97 cfs @ 12.87 hrs, Volume= 0.362 af, Atten= 51%, Lag= 26.1 min
Primary = 0.97 cfs @ 12.87 hrs, Volume= 0.362 af

Routing by Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Peak Elev= 426.47' @ 12.87 hrs Surf.Area= 0.154 ac Storage= 0.058 af

Plug-Flow detention time= 67.7 min calculated for 0.362 af (100% of inflow)
Center-of-Mass det. time= 66.9 min (1,010.5 - 943.6)

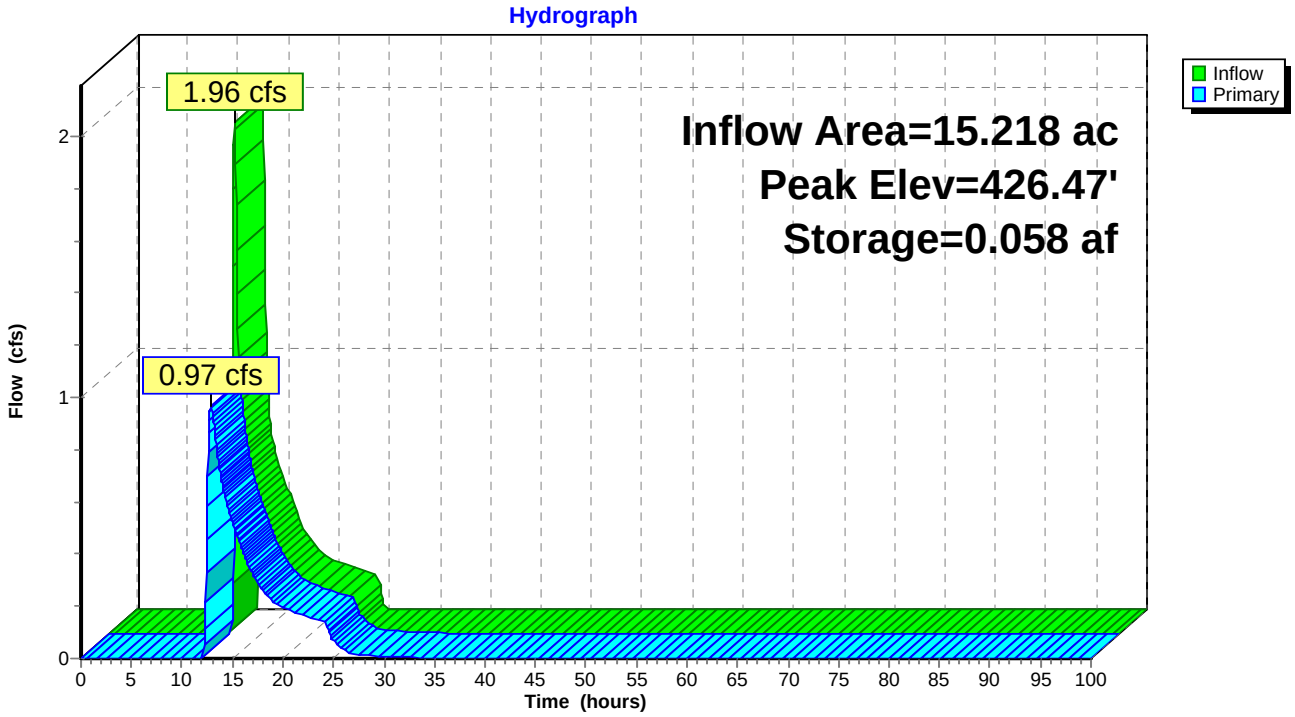
Volume	Invert	Avail.Storage	Storage Description
#1	426.00'	1.652 af	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
426.00	0.096	0.000	0.000
427.00	0.220	0.158	0.158
428.00	0.248	0.234	0.392
430.00	0.310	0.558	0.950
432.00	0.392	0.702	1.652

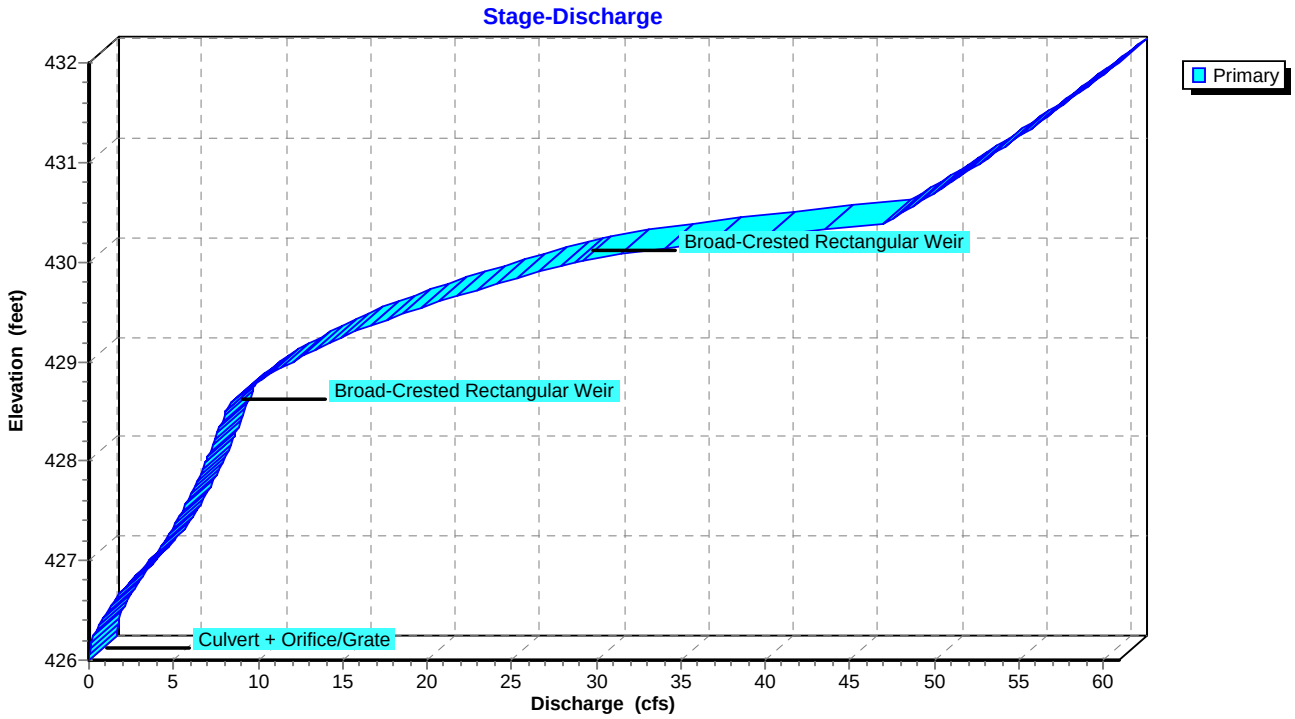
Device	Routing	Invert	Outlet Devices
#1	Primary	426.00'	**30.0" Round Culvert** L= 60.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 426.00' / 425.50' S= 0.0083 '/' Cc= 0.900 n= 0.012, Flow Area= 4.91 sf
#2	Device 1	426.00'	**15.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	428.50'	**3.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32
#4	Device 1	430.00'	**16.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=0.97 cfs @ 12.87 hrs HW=426.47' (Free Discharge)
└**1=Culvert** (Passes 0.97 cfs of 1.48 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 0.97 cfs @ 2.32 fps)
  ├**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)
  └**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

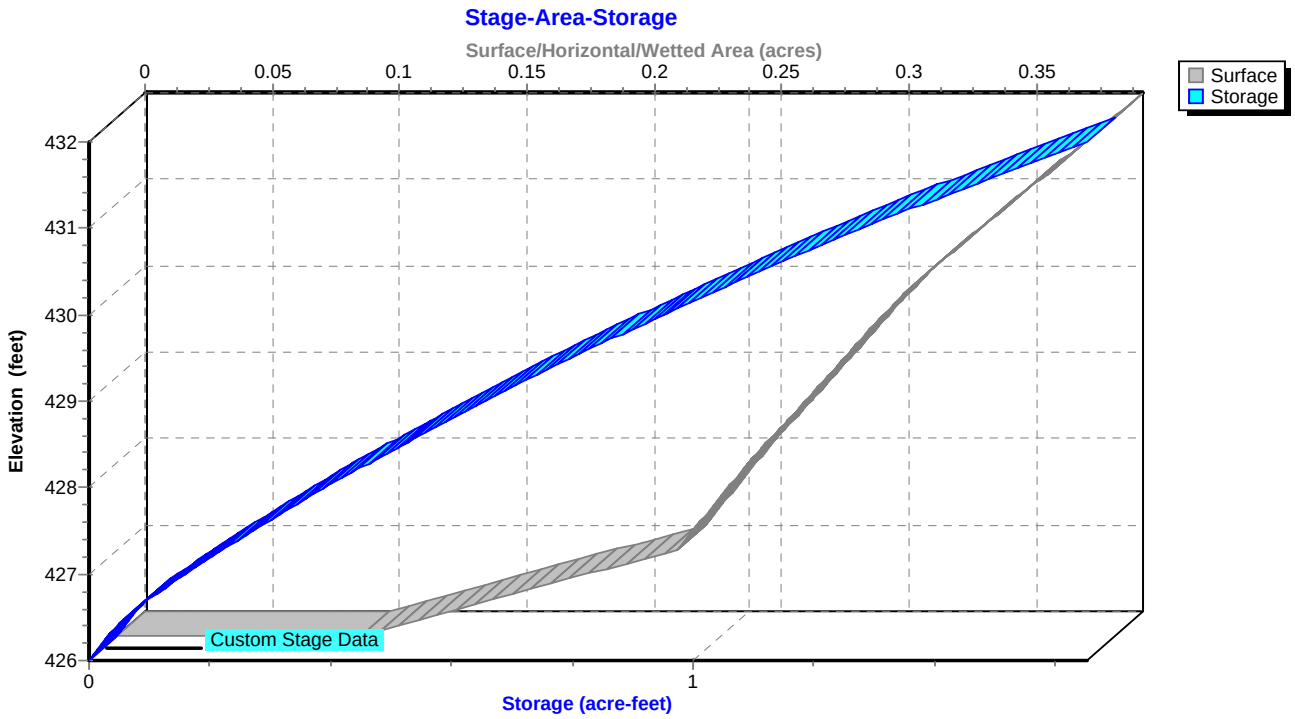
Pond Basin 2: Basin 2



Pond Basin 2: Basin 2



Pond Basin 2: Basin 2

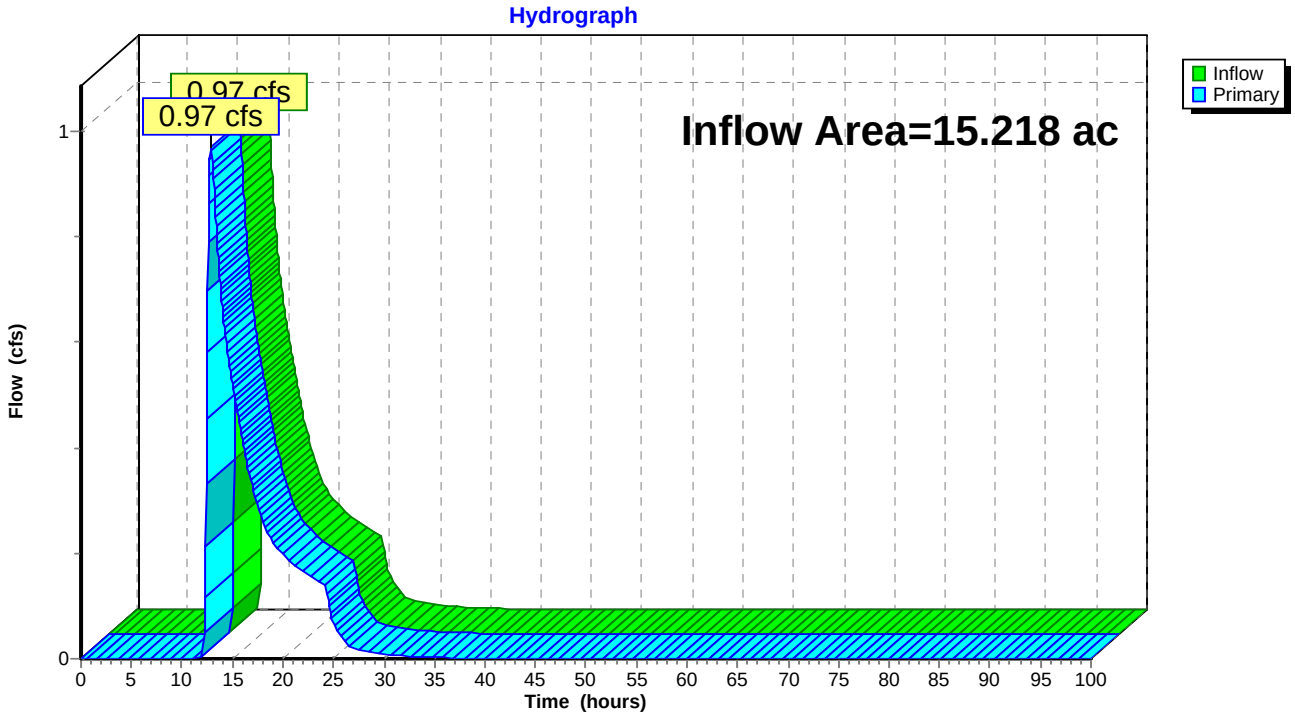


Summary for Link Pt.B: Point B

Inflow Area = 15.218 ac, 31.87% Impervious, Inflow Depth = 0.29" for 1-Year event
Inflow = 0.97 cfs @ 12.87 hrs, Volume= 0.362 af
Primary = 0.97 cfs @ 12.87 hrs, Volume= 0.362 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

Link Pt.B: Point B



Time span=0.00-100.00 hrs, dt=0.05 hrs, 2001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PR-2: PR. Drainage Area 2 Runoff Area=15.218 ac 31.87% Impervious Runoff Depth=1.44"
Flow Length=1,573' Tc=17.1 min CN=62 Runoff=16.80 cfs 1.824 af

Pond Basin 2: Basin 2 Peak Elev=428.15' Storage=0.430 af Inflow=16.80 cfs 1.824 af
Outflow=7.30 cfs 1.824 af

Link Pt.B: Point B Inflow=7.30 cfs 1.824 af
Primary=7.30 cfs 1.824 af

Total Runoff Area = 15.218 ac Runoff Volume = 1.824 af Average Runoff Depth = 1.44"
68.13% Pervious = 10.368 ac 31.87% Impervious = 4.850 ac

Summary for Subcatchment PR-2: PR. Drainage Area 2

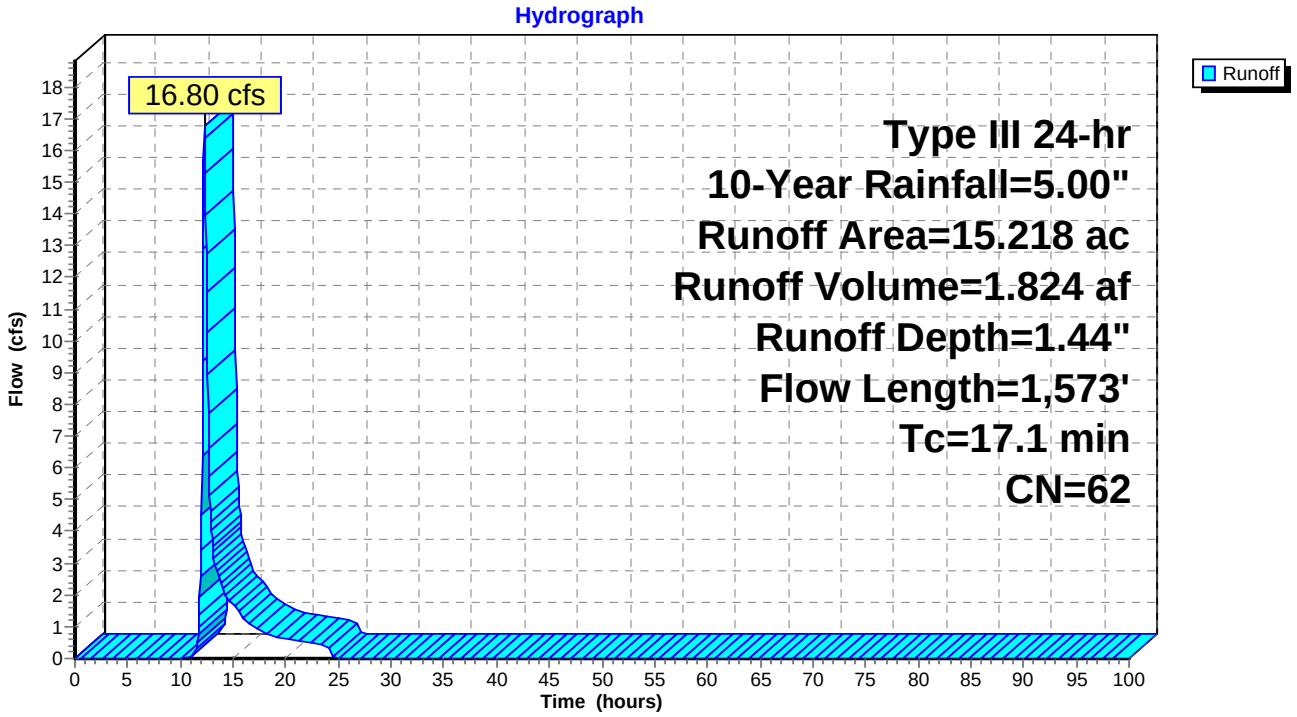
Runoff = 16.80 cfs @ 12.26 hrs, Volume= 1.824 af, Depth= 1.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=5.00"

Area (ac)	CN	Description
1.735	74	>75% Grass cover, Good, HSG C
4.850	98	Paved parking, HSG C
0.247	30	Woods, Good, HSG A
8.386	39	>75% Grass cover, Good, HSG A
15.218	62	Weighted Average
10.368		68.13% Pervious Area
4.850		31.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	100	0.1300	0.25		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.30"
1.6	427	0.0510	4.58		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.2	586	0.0200	8.41	14.86	**Pipe Channel,** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013
7.7	460	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
17.1	1,573	Total			

Subcatchment PR-2: PR. Drainage Area 2



Summary for Pond Basin 2: Basin 2

Inflow Area = 15.218 ac, 31.87% Impervious, Inflow Depth = 1.44" for 10-Year event
Inflow = 16.80 cfs @ 12.26 hrs, Volume= 1.824 af
Outflow = 7.30 cfs @ 12.67 hrs, Volume= 1.824 af, Atten= 57%, Lag= 24.4 min
Primary = 7.30 cfs @ 12.67 hrs, Volume= 1.824 af

Routing by Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Peak Elev= 428.15' @ 12.67 hrs Surf.Area= 0.253 ac Storage= 0.430 af

Plug-Flow detention time= 41.2 min calculated for 1.823 af (100% of inflow)
Center-of-Mass det. time= 41.7 min (921.3 - 879.6)

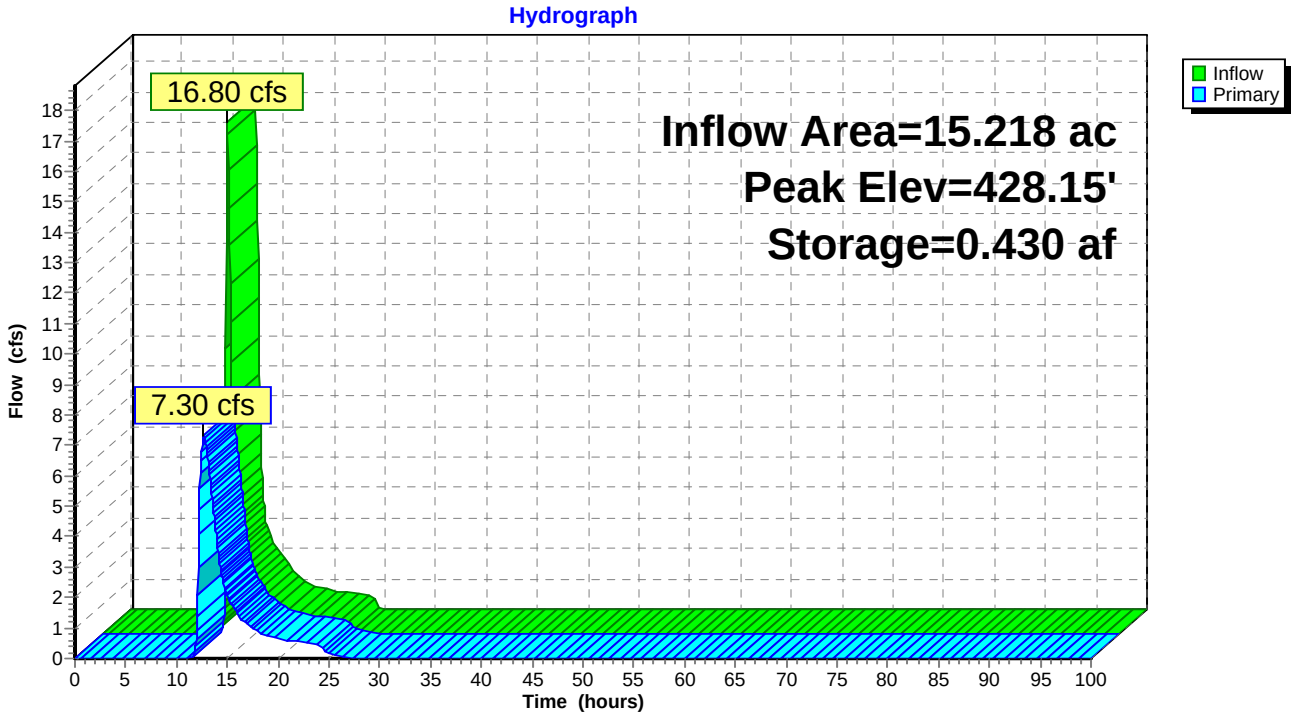
Volume	Invert	Avail.Storage	Storage Description
#1	426.00'	1.652 af	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
426.00	0.096	0.000	0.000
427.00	0.220	0.158	0.158
428.00	0.248	0.234	0.392
430.00	0.310	0.558	0.950
432.00	0.392	0.702	1.652

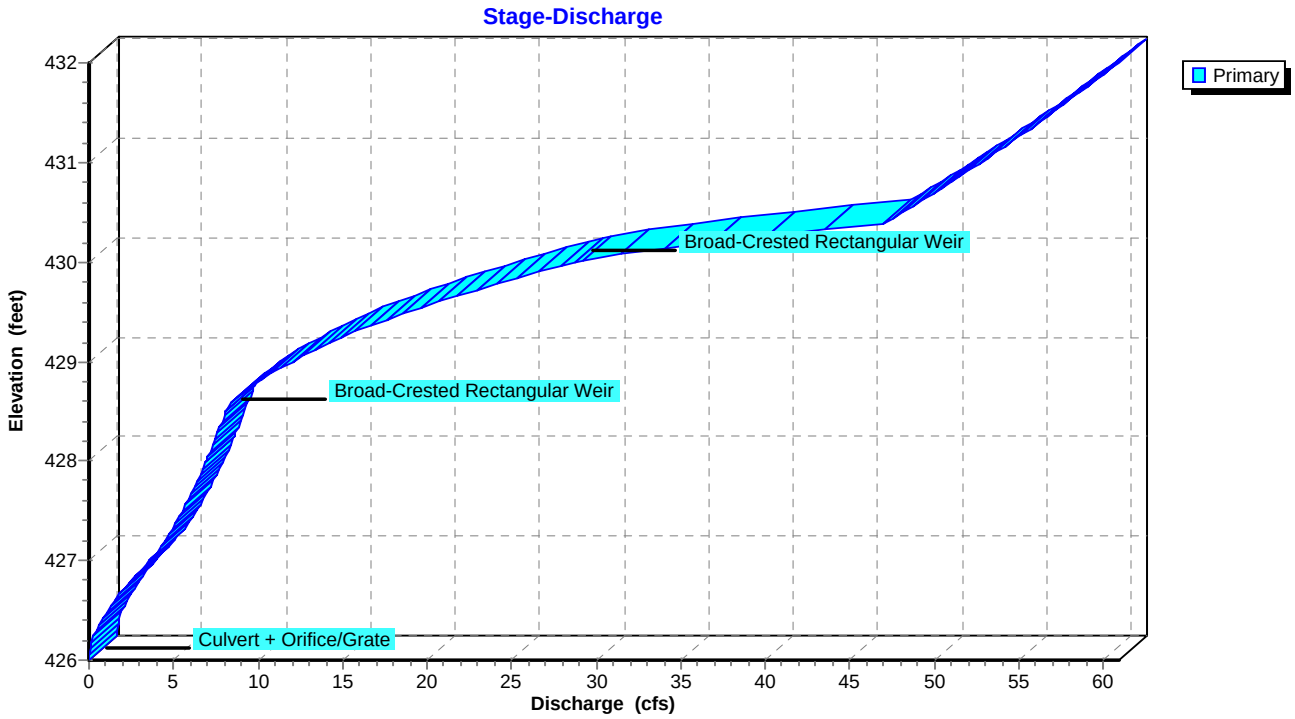
Device	Routing	Invert	Outlet Devices
#1	Primary	426.00'	**30.0" Round Culvert** L= 60.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 426.00' / 425.50' S= 0.0083 '/' Cc= 0.900 n= 0.012, Flow Area= 4.91 sf
#2	Device 1	426.00'	**15.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	428.50'	**3.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32
#4	Device 1	430.00'	**16.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=7.30 cfs @ 12.67 hrs HW=428.15' (Free Discharge)
└**1=Culvert** (Passes 7.30 cfs of 21.67 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 7.30 cfs @ 5.95 fps)
  ├**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)
  └**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

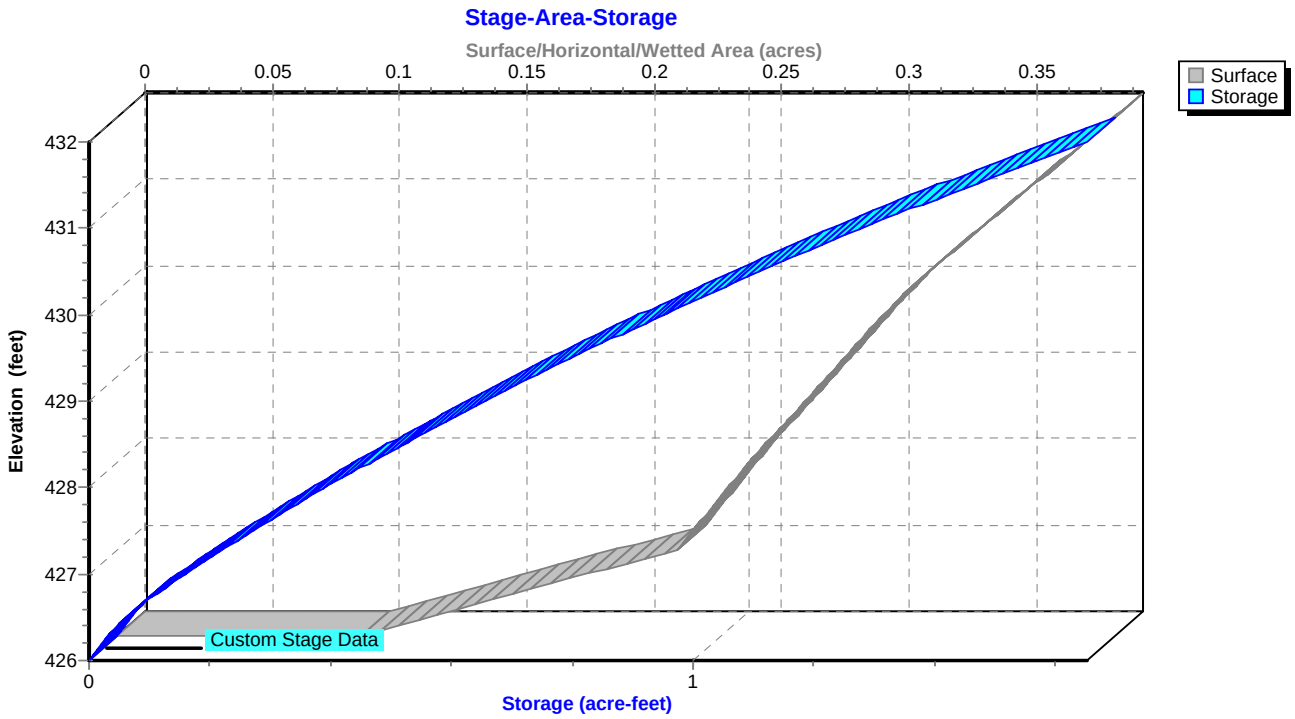
Pond Basin 2: Basin 2



Pond Basin 2: Basin 2



Pond Basin 2: Basin 2

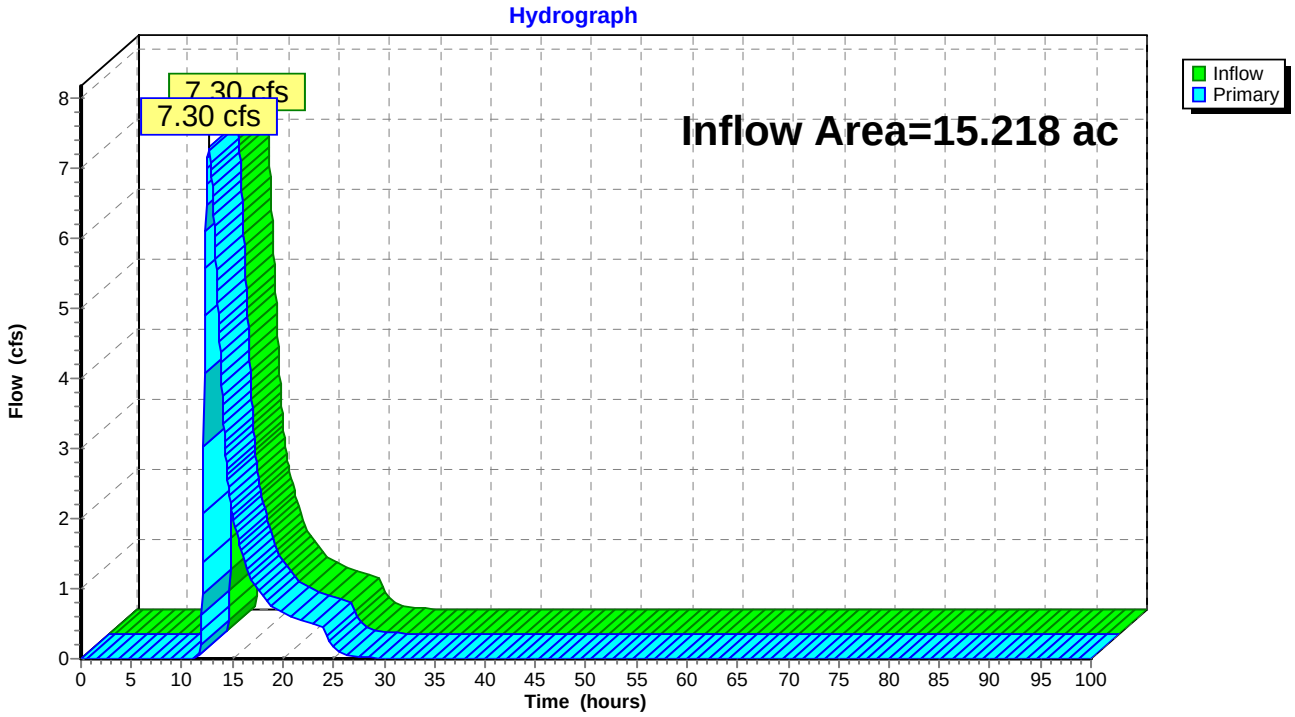


Summary for Link Pt.B: Point B

Inflow Area = 15.218 ac, 31.87% Impervious, Inflow Depth = 1.44" for 10-Year event
Inflow = 7.30 cfs @ 12.67 hrs, Volume= 1.824 af
Primary = 7.30 cfs @ 12.67 hrs, Volume= 1.824 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

Link Pt.B: Point B



Time span=0.00-100.00 hrs, dt=0.05 hrs, 2001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PR-2: PR. Drainage Area 2 Runoff Area=15.218 ac 31.87% Impervious Runoff Depth=4.35"
Flow Length=1,573' Tc=17.1 min CN=62 Runoff=55.12 cfs 5.513 af

Pond Basin 2: Basin 2 Peak Elev=430.33' Storage=1.053 af Inflow=55.12 cfs 5.513 af
Outflow=43.93 cfs 5.513 af

Link Pt.B: Point B Inflow=43.93 cfs 5.513 af
Primary=43.93 cfs 5.513 af

Total Runoff Area = 15.218 ac Runoff Volume = 5.513 af Average Runoff Depth = 4.35"
68.13% Pervious = 10.368 ac 31.87% Impervious = 4.850 ac

Summary for Subcatchment PR-2: PR. Drainage Area 2

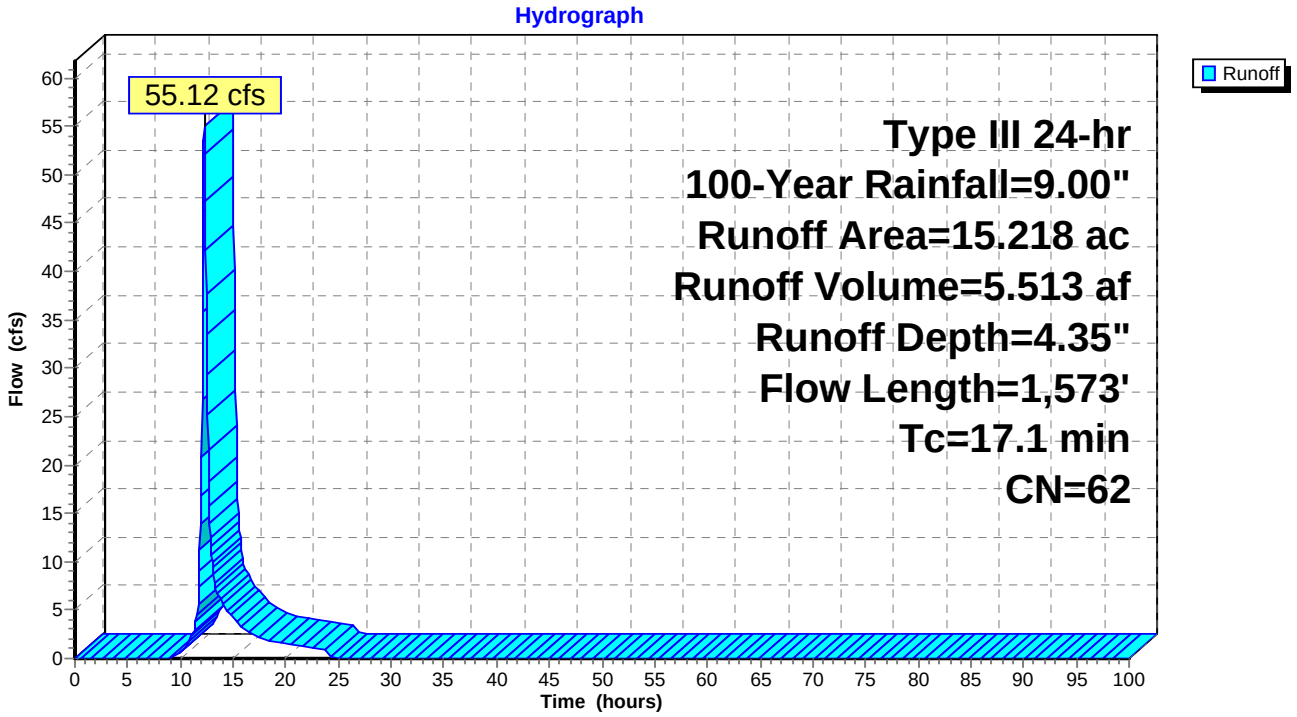
Runoff = 55.12 cfs @ 12.24 hrs, Volume= 5.513 af, Depth= 4.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=9.00"

Area (ac)	CN	Description
1.735	74	>75% Grass cover, Good, HSG C
4.850	98	Paved parking, HSG C
0.247	30	Woods, Good, HSG A
8.386	39	>75% Grass cover, Good, HSG A
15.218	62	Weighted Average
10.368		68.13% Pervious Area
4.850		31.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	100	0.1300	0.25		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.30"
1.6	427	0.0510	4.58		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.2	586	0.0200	8.41	14.86	**Pipe Channel,** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013
7.7	460	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
17.1	1,573	Total			

Subcatchment PR-2: PR. Drainage Area 2



Summary for Pond Basin 2: Basin 2

Inflow Area = 15.218 ac, 31.87% Impervious, Inflow Depth = 4.35" for 100-Year event
Inflow = 55.12 cfs @ 12.24 hrs, Volume= 5.513 af
Outflow = 43.93 cfs @ 12.39 hrs, Volume= 5.513 af, Atten= 20%, Lag= 8.9 min
Primary = 43.93 cfs @ 12.39 hrs, Volume= 5.513 af

Routing by Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs
Peak Elev= 430.33' @ 12.39 hrs Surf.Area= 0.323 ac Storage= 1.053 af

Plug-Flow detention time= 33.4 min calculated for 5.510 af (100% of inflow)
Center-of-Mass det. time= 33.8 min (879.9 - 846.2)

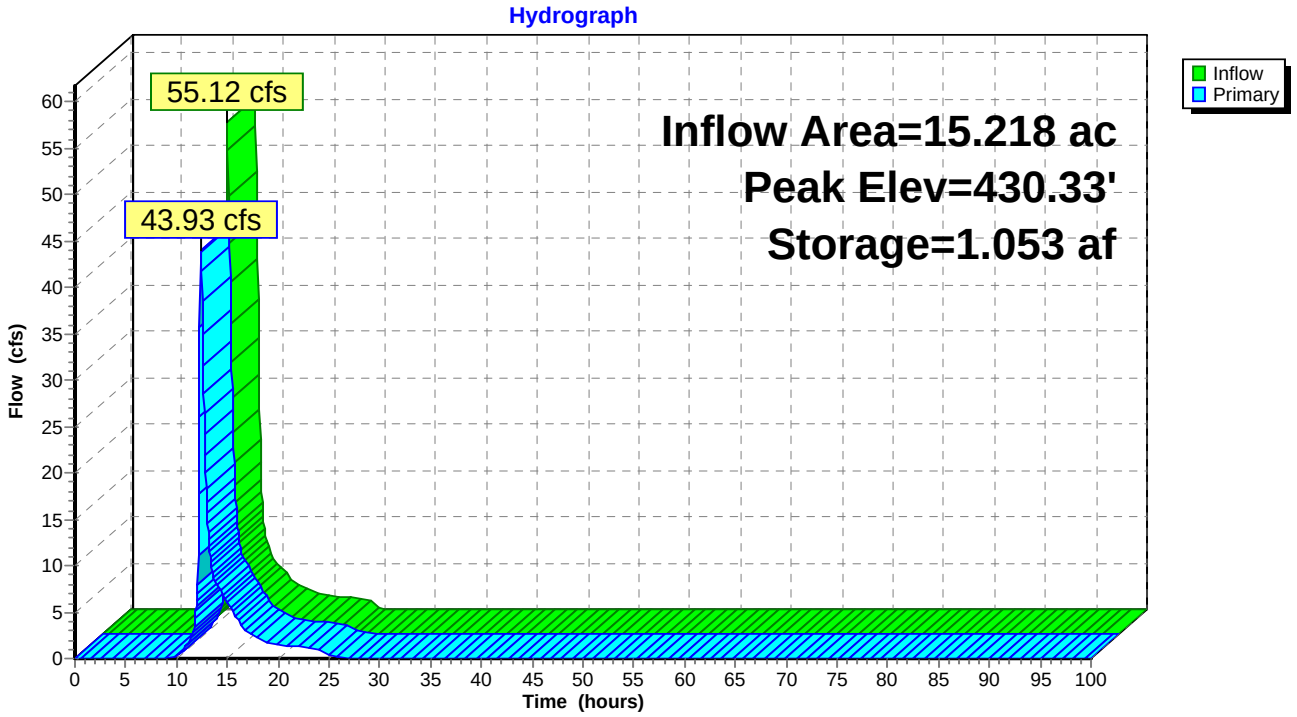
Volume	Invert	Avail.Storage	Storage Description
#1	426.00'	1.652 af	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
426.00	0.096	0.000	0.000
427.00	0.220	0.158	0.158
428.00	0.248	0.234	0.392
430.00	0.310	0.558	0.950
432.00	0.392	0.702	1.652

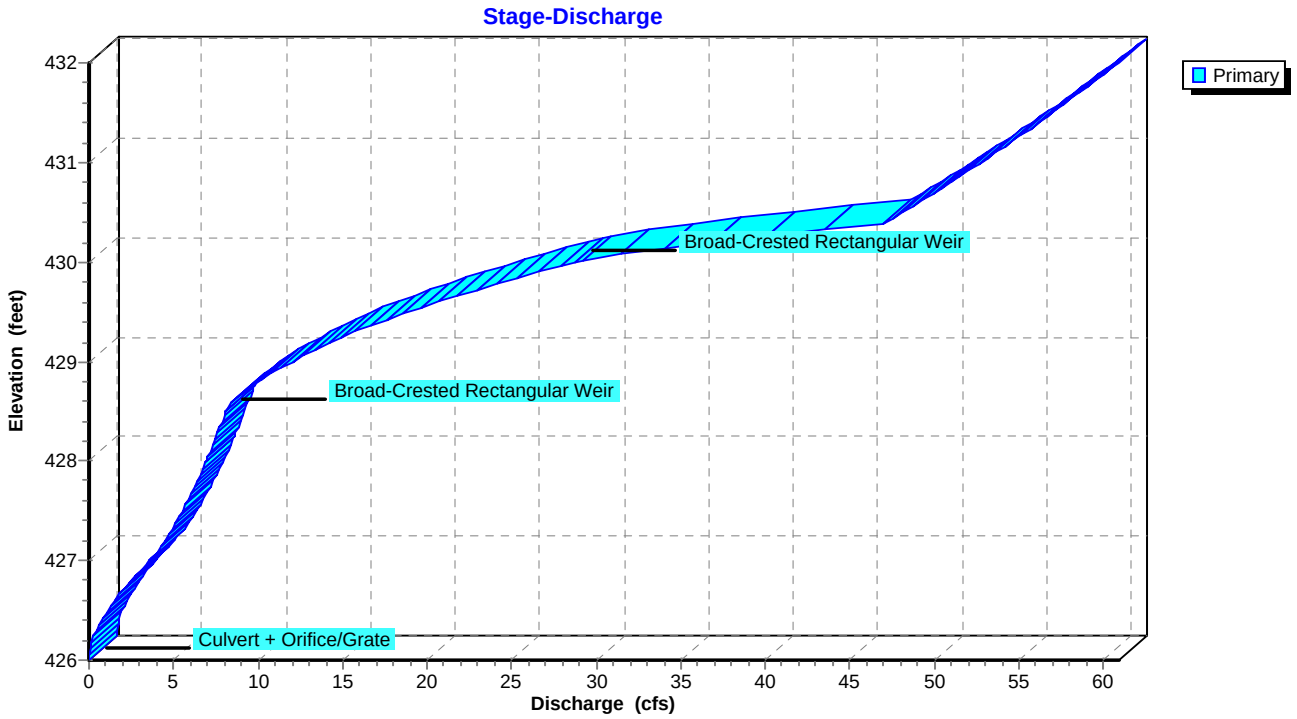
Device	Routing	Invert	Outlet Devices
#1	Primary	426.00'	**30.0" Round Culvert** L= 60.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 426.00' / 425.50' S= 0.0083 '/' Cc= 0.900 n= 0.012, Flow Area= 4.91 sf
#2	Device 1	426.00'	**15.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	428.50'	**3.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32
#4	Device 1	430.00'	**16.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=43.70 cfs @ 12.39 hrs HW=430.32' (Free Discharge)
└**1=Culvert** (Passes 43.70 cfs of 46.41 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 11.36 cfs @ 9.26 fps)
  ├**3=Broad-Crested Rectangular Weir** (Weir Controls 24.42 cfs @ 4.47 fps)
  └**4=Broad-Crested Rectangular Weir** (Weir Controls 7.92 cfs @ 1.54 fps)

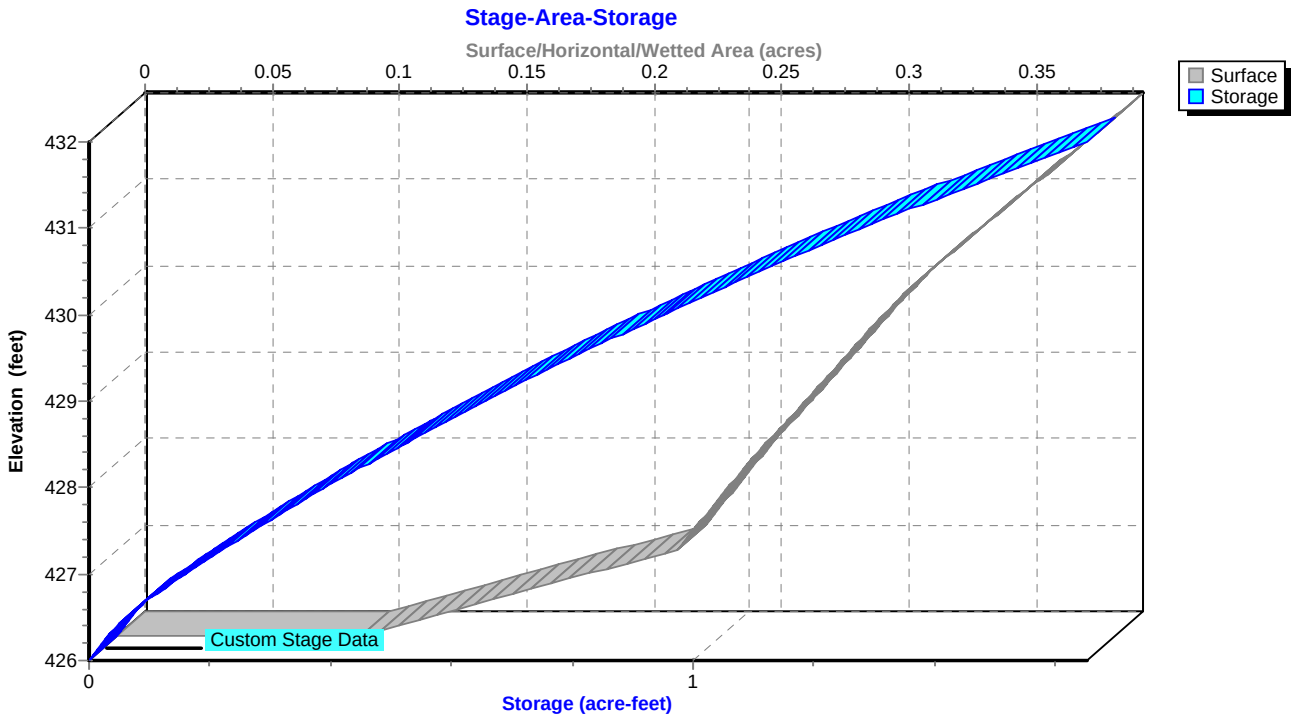
Pond Basin 2: Basin 2



Pond Basin 2: Basin 2



Pond Basin 2: Basin 2

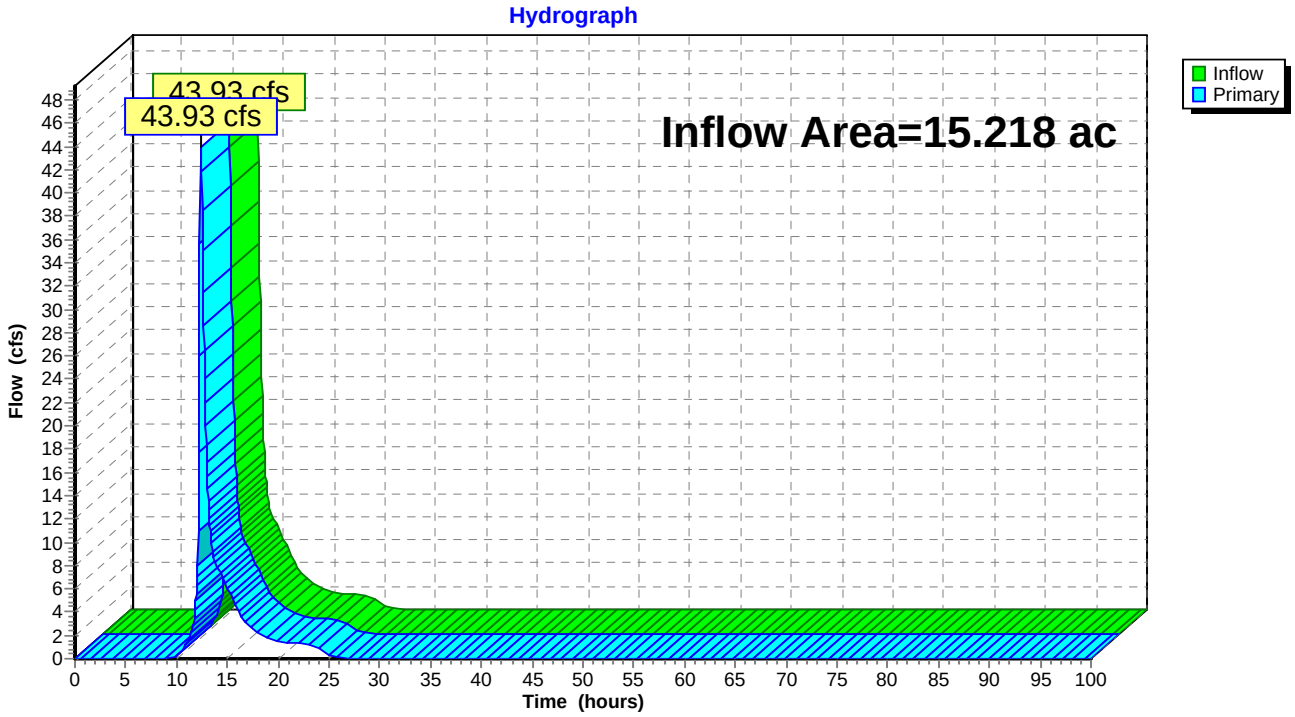


Summary for Link Pt.B: Point B

Inflow Area = 15.218 ac, 31.87% Impervious, Inflow Depth = 4.35" for 100-Year event
Inflow = 43.93 cfs @ 12.39 hrs, Volume= 5.513 af
Primary = 43.93 cfs @ 12.39 hrs, Volume= 5.513 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.05 hrs

Link Pt.B: Point B



Attachment D4
Detention Dry Well Calculations

VHB Engineering, Surveying and
Landscape Architecture, P.C.
50 Main Street, Suite 360
White Plains, New York 10606

Date: 7/5/2016
Project:
Project No: 29273

Calculated By: JC
Checked By:

Runoff Volume Calculation

DESIGN PARAMETERS	SYMBOL	UNITS	Point A	C	D	E	F	G	H
TOTAL DRAINAGE AREA (Existing)	**A**	acres	0.364	3.764	1.517	1.628	1.799	0.789	5.728
TOTAL DRAINAGE AREA (Proposed)	**A**	acres	0.364	3.764	1.517	1.628	1.799	0.789	5.728
RAINFALL EVENT (25-year recurrence, 24-hr. duration)	**P25**	inches	6.00	6.00	6.00	6.00	6.00	6.00	6.00
EXISTING RUNOFF CURVE NUMBER (weighted)	**CN**		73.6	67.3	70.8	77.5	74.6	78.9	65.1
PROPOSED RUNOFF CURVE NUMBER (weighted)	**CN**		86.3	71.5	74.3	85.9	80.6	85.1	66.5
DESIGN CALCULATIONS									
EXISTING CONDITION									
INITIAL ABSTRACTION I_a=200/CN-2	**I_a**	inches	0.716	0.974	0.823	0.580	0.680	0.534	1.071
RATIO R=I_a/P25	**R**		0.12	0.16	0.14	0.10	0.11	0.09	0.18
RUNOFF (TR-55) Q=((P25-I_a)^2)/(P25+4*I_a)	**Q**	inches	3.15	2.55	2.88	3.53	3.24	3.67	2.36
RUNOFF VOLUME V_r=Q*A*3630 (TR-55 25 year)	**EV_r**	***cu. ft.***	***4,158***	***34,884***	***15,879***	***20,866***	***21,194***	***10,513***	***49,131***
PROPOSED CONDITION									
INITIAL ABSTRACTION I_a=200/CN-2	**I_a**	inches	0.317	0.797	0.693	0.329	0.481	0.351	1.010
RATIO R=I_a/P25	**R**		0.05	0.13	0.12	0.05	0.08	0.06	0.17
RUNOFF (TR-55) Q=((P25-I_a)^2)/(P25+4*I_a)	**Q**	inches	4.45	2.95	3.21	4.39	3.84	4.31	2.48
RUNOFF VOLUME V_r=Q*A*3630 (TR-55 25 year)	**PV_r**	***cu. ft.***	***5,868***	***40,267***	***17,670***	***25,977***	***25,100***	***12,344***	***51,586***
25-year runoff volume due to proposed development		***cu. ft.***	**1709**	**5383**	**1791**	**5111**	**3906**	**1831**	**2455**

VHB Engineering, Surveying and
Landscape Architecture, P.C.
50 Main Street, Suite 360
White Plains, New York 10606

Date: 7/12/2016
Project:
Project No: 29273

Calculated By: JC
Checked By:

Dry Well System 1 Volume Calculations - Point A

Drywell Design Parameters

n=	7	(number of drywell)
d=	8	(diameter of the drywell)
h=	5	(depth of the drywell)

Volume Needed to Store Additional 25-Year Runoff from Proposed Development (cu. ft)

Vol Required = 1709 cu. ft.

Volume Provided to Store Additional 25-Year Runoff from Proposed Development (cu. ft)

$$\text{Vol Provided by Each Drywell} = \frac{3.142 * (\text{Diameter})^2 \times \text{Depth}}{4}$$

$$= 251.36 \text{ cu. ft}$$

Total Volume Provided = 1759.52 cu. ft

Total Volume Provided > Total Volume Needed OK

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White Plains, New York 10606

Date: 7/12/2016
Project:
Project No: 29273

Calculated By: JC
Checked By:

Dry Well System 3 Volume Calculations - Point C

Drywell Design Parameters

n=	18	(number of drywell)
d=	8	(diameter of the drywell)
h=	6	(depth of the drywell)

Volume Needed to Store Additional 25-Year Runoff from Proposed Development (cu. ft)

Vol Required = 5383 cu. ft.

Volume Provided to Store Additional 25-Year Runoff from Proposed Development (cu. ft)

$$\text{Vol Provided by Each Drywell} = \frac{3.142 * (\text{Diameter})^2 \times \text{Depth}}{4}$$

$$= 301.63 \text{ cu. ft}$$

Total Volume Provided = 5429.376 cu. ft

Total Volume Provided > Total Volume Needed OK

VHB Engineering, Surveying and
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50 Main Street, Suite 360
White Plains, New York 10606

Date: 7/12/2016
Project:
Project No: 29273

Calculated By: JC
Checked By:

Dry Well System 4 Volume Calculations - Point D

Drywell Design Parameters

n=	6	(number of drywell)
d=	8	(diameter of the drywell)
h=	6	(depth of the drywell)

Volume Needed to Store Additional 25-Year Runoff from Proposed Development (cu. ft)

Vol Required = 1791 cu. ft.

Volume Provided to Store Additional 25-Year Runoff from Proposed Development (cu. ft)

$$\text{Vol Provided by Each Drywell} = \frac{3.142 * (\text{Diameter})^2 \times \text{Depth}}{4}$$

$$= 301.63 \text{ cu. ft}$$

Total Volume Provided = 1809.792 cu. ft

Total Volume Provided > Total Volume Needed OK

VHB Engineering, Surveying and
Landscape Architecture, P.C.
50 Main Street, Suite 360
White Plains, New York 10606

Date: 7/12/2016
Project:
Project No: 29273

Calculated By: JC
Checked By:

Dry Well System 5 Volume Calculations - Point E

Drywell Design Parameters

n=	17	(number of drywell)
d=	8	(diameter of the drywell)
h=	6	(depth of the drywell)

Volume Needed to Store Additional 25-Year Runoff from Proposed Development (cu. ft)

Vol Required = 5111 cu. ft.

Volume Provided to Store Additional 25-Year Runoff from Proposed Development (cu. ft)

$$\text{Vol Provided by Each Drywell} = \frac{3.142 * (\text{Diameter})^2 \times \text{Depth}}{4}$$

$$= 301.63 \text{ cu. ft}$$

Total Volume Provided = 5127.744 cu. ft

Total Volume Provided > Total Volume Needed OK

VHB Engineering, Surveying and
Landscape Architecture, P.C.
50 Main Street, Suite 360
White Plains, New York 10606

Date: 7/12/2016
Project:
Project No: 29273

Calculated By: JC
Checked By:

Dry Well System 6 Volume Calculations - Point F

Drywell Design Parameters

n=	16	(number of drywell)
d=	8	(diameter of the drywell)
h=	5	(depth of the drywell)

Volume Needed to Store Additional 25-Year Runoff from Proposed Development (cu. ft)

Vol Required = 3906 cu. ft.

Volume Provided to Store Additional 25-Year Runoff from Proposed Development (cu. ft)

$$\text{Vol Provided by Each Drywell} = \frac{3.142 * (\text{Diameter})^2 \times \text{Depth}}{4}$$

$$= 251.36 \text{ cu. ft}$$

Total Volume Provided = 4021.76 cu. ft

Total Volume Provided > Total Volume Needed OK

VHB Engineering, Surveying and
Landscape Architecture, P.C.
50 Main Street, Suite 360
White Plains, New York 10606

Date: 7/12/2016
Project:
Project No: 29273

Calculated By: JC
Checked By:

Dry Well System 7 Volume Calculations - Point G

Drywell Design Parameters

n=	7	(number of drywell)
d=	8	(diameter of the drywell)
h=	6	(depth of the drywell)

Volume Needed to Store Additional 25-Year Runoff from Proposed Development (cu. ft)

Vol Required = 1831 cu. ft.

Volume Provided to Store Additional 25-Year Runoff from Proposed Development (cu. ft)

$$\text{Vol Provided by Each Drywell} = \frac{3.142 * (\text{Diameter})^2 \times \text{Depth}}{4}$$

$$= 301.63 \text{ cu. ft}$$

Total Volume Provided = 2111.424 cu. ft

Total Volume Provided > Total Volume Needed OK

VHB Engineering, Surveying and
Landscape Architecture, P.C.
50 Main Street, Suite 360
White Plains, New York 10606

Date: 7/12/2016
Project:
Project No: 29273

Calculated By: JC
Checked By:

Dry Well System 8 Volume Calculations - Point H

Drywell Design Parameters

n=	10	(number of drywell)
d=	8	(diameter of the drywell)
h=	5	(depth of the drywell)

Volume Needed to Store Additional 25-Year Runoff from Proposed Development (cu. ft)

Vol Required = 2455 cu. ft.

Volume Provided to Store Additional 25-Year Runoff from Proposed Development (cu. ft)

$$\text{Vol Provided by Each Drywell} = \frac{3.142 * (\text{Diameter})^2 \times \text{Depth}}{4}$$

$$= 251.36 \text{ cu. ft}$$

Total Volume Provided = 2513.6 cu. ft

Total Volume Provided > Total Volume Needed OK

Attachment E
MS4 Acceptance Form

New York State 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:
2. Contact Person:
3. Street Address:
4. City/State/Zip:
II. Project Site Information
5. Project/Site Name:
6. Street Address:
7. City/State/Zip:
III. Stormwater Pollution Prevention Plan (SWPPP) Review and Acceptance Information
8. SWPPP Reviewed by:
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:

(NYS DEC - MS4 SWPPP Acceptance Form - January 2010)

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