Amended Stormwater Pollution Prevention Plan

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Wappinger Subaru Building Expansion

Town of Wappinger, Dutchess County, New York

DATE: DECEMBER 2025
LAST REVISED: MARCH 2026
PROJECT NO. 2254625

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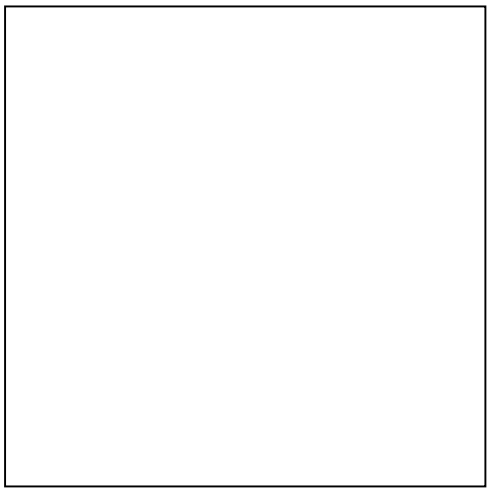
PREPARER OF THE SWPPP

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Name and Title[1]: Kyle Ahearn, PE

Date: Issued: March 2026



[1] *This is a signature of a New York State licensed Professional Engineer employed by LaBella Associates that is duly authorized to sign and seal Stormwater Pollution Prevention Plans (SWPPPs), NOIs, and NOTs prepared under their direct supervision. Refer to Appendix B for the SWPPP Preparer Certification Form, and Appendix I for the LaBella Certifying Professionals Letter.*

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1.0 EXECUTIVE SUMMARY

This Amended Stormwater Pollution Prevention Plan (SWPPP) has been prepared for major activities associated with construction of Subaru Wappinger building expansion in the Town of Wappinger. This SWPPP includes the elements necessary to comply with the national baseline general permit for construction activities enacted by the U.S. Environmental Protection Agency (EPA) under the National Pollutant Discharge Elimination System (NPDES) program and all local governing agency requirements. This SWPPP must be executed and permit coverage must be obtained prior to the commencement of construction activity.

VIP Subaru Wappingers LLC is seeking amended site plan and amended special use permit approval from the Town Planning Board to expand service operations of the Subaru dealership with the construction of a 17,960 square-foot addition for additional motor vehicle service and parts storage. The project site is located at 1162 US Route 9 on a 6.3-acre parcel within the Highway Business (HB) Zoning District, under the tax parcel of 6157-04-659168.

In January of 2015 Prestige Family of Fine Cars, ("Prestige") received Site Plan Approval from the Town of Wappinger Planning Board for a Mini-Cooper car dealership which included the construction of an approximately 20,000 square-foot car sales and service center, along with associated parking for the use. As part of the Site Plan Approval, Prestige prepared a Storm Water Pollution and Prevention Plan (SWPPP) in order to treat and manage stormwater associated with the new development. The 2015 SWPPP designed various stormwater treatment practices on-site along with attenuation practices to reduce peak flows. Several porous pavement areas were installed throughout the parking areas.

Two pocket ponds interconnected with an equalizer pipe were installed on the west side of the project site adjacent to US Route 9 for additional treatment and attenuation. A detention pond was also installed on the northeast side of the site. Runoff from the western part of the site, including the existing building, is conveyed into the two pocket ponds prior to discharging into the stormwater system located adjacent to US Route 9. Runoff from the east part travels to various porous pavement treatment systems, prior to overflowing to an existing detention pond. This detention pond is piped to the existing stormwater collection system located adjacent to US Route 9.

In May of 2022 Prestige received Amended Site Plan and Special Permit Approval to construct a 11,075 SF building expansion (9,703 SF expansion for motor vehicle service and parts storage, and 1,372 SF expansion to the existing showroom), along with corresponding grading, stormwater, and other necessary site changes. This proposed expansion was never constructed, and the approval has since lapsed. At this time a similar expansion is proposed.

This SWPPP has been developed in accordance with the "New York State Department of Environmental Conservation (NYSDEC) State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity," Permit No. GP-0-25-001, effective January 29, 2025 through January 28, 2030. The SWPPP and accompanying plans identify and detail stormwater management, pollution prevention, and erosion and sediment control measures necessary during and following completion of construction.

This SWPPP and the accompanying plans entitled "Wappinger Subaru Building Expansion" have been submitted as a set. These engineering drawings are considered an integral part of this SWPPP. Therefore, this SWPPP is not considered complete without them. References made herein to "the plans" or to a specific "sheet" refer to these drawings.

This report considers the impacts associated with the intended development with the purpose of:

1. Maintaining existing drainage patterns as much as possible while continuing the conveyance of upland watershed runoff;
2. Controlling increases in the rate of stormwater runoff resulting from the proposed development so as not to adversely alter downstream conditions; and
3. Mitigating potential stormwater quality impacts and preventing soil erosion and sedimentation resulting from stormwater runoff generated both during and after construction.

The analysis and design completed and documented in this report is intended to be part of the application made for a commercial redevelopment project with an increase in impervious area completed on behalf of the Owner/Operator.

1.1 Project Description

Wappinger Subaru is proposing redevelopment project with an increase in impervious area, to include: an expansion of the building on the east side, with a minimal increase in impervious area, associated with the re-arrangement of the existing parking lot. The total project area of disturbance proposed is 1.73 acres. The project will disturb one (1) or more acres and as such, preparation of this SWPPP is required under GP-0-25-001. A Site Location Map has been provided in Appendix A, as Figure A-1.

This type of project is included in Table 2 of Appendix B of GP-0-25-001; and the project site is not located in one of the watersheds listed in Appendix C of GP-0-25-001. Therefore, this SWPPP includes post-construction stormwater management practices, as well as erosion and sediment controls.

This project is located within the Town Of Wappinger regulated, traditional land use control Municipal Separate Stormwater Sewer System (MS4). Therefore, an MS4 SWPPP Acceptance Form is required to accompany NOIs submitted to the NYSDEC.

Runoff from the project site will discharge to a unnamed tributary to the Hughsonville Creek, which is not included in the list of Section 303(d) water bodies included in Appendix D of GP-0-25-001.

Project construction activities will consist primarily of site grading, paving, building construction, and the installation of storm drainage infrastructure necessary to support the proposed redevelopment project with an increase in impervious area. Construction phase pollutant sources anticipated at the site are disturbed (exposed) soil, vehicle fuels and lubricants, chemicals associated with building construction, and building materials. Without adequate control there is the potential for each type of pollutant to be transported by stormwater.

1.2 Stormwater Pollution Controls

The stormwater pollution controls outlined herein have been designed and evaluated in accordance with the following standards and guidelines:

- New York State Stormwater Management Design Manual, dated July 31, 2024 (Design Manual).
- New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016 (SSESC).

Stormwater quality will be enhanced through the implementation of temporary and permanent erosion and sediment control measures, the proposed stormwater management practices, and other construction-phase pollution controls outlined herein.

The proposed stormwater management approach consisting of pipes, open drainage ways, and on-site stormwater management practices will adequately collect, treat, and convey the stormwater runoff.

Porous Pavement and Wet Ponds will be used to manage and treat stormwater runoff generated by the proposed redevelopment project with an increase in impervious area.

Pre- and post-development surface runoff rates have been evaluated for the 1-, 10-, and 100-year 24-hour storm events. Comparison of pre- and post-development watershed conditions demonstrates that the peak rate of runoff from the project site will not be increased.

An executed maintenance agreement will be in place with the Town of Wappinger for the maintenance of the post-construction stormwater management practice(s).

2.0 SITE CHARACTERISTICS

2.1 State Environmental Quality Review

The construction activity is subject to State Environmental Quality Review (SEQR). The project is considered an Unlisted action. As such, SEQR coordination has been initiated A copy of the SEQR documentation, in accordance with Part I.A.5. of GP-0-25-001, will be provided in Appendix A, as Figure A-4A upon receipt.

2.2 Land Use and Topography

The project site is located within the Highway Business zoning district. Car Dealership is a permitted use subject to a site plan and special use permit within this district.

The overall site is slightly sloping, with slopes ranging from 0 to 33 percent. Site elevations range from approximately 550 feet above mean sea level (MSL) to 580 feet MSL. The existing facility is rather flat given it is a constructed car dealership.

2.3 Soils and Groundwater

The US Department of Agriculture (USDA) Web Soil Survey (http://websoilsurvey.nrcs.usda.gov/app/) was used to obtain surficial soil conditions for the study area, as follows:

Table 1: USDA Soil Data

Map Symbol & Description	Hydrologic Soil Group	Permeability (inches/hour)	Erosion Factor K	Depth to Water Table (feet)	Depth to Bedrock (feet)
DwB – Dutchess- Cardigan complex, undulating, rocky, 1 to 6 percent slopes (93% of site)	B	0.6-2.0	0.32	>6 feet	1.75-3.5 feet or >6 feet

Map Symbol & Description	Hydrologic Soil Group	Permeability (inches/hour)	Erosion Factor K	Depth to Water Table (feet)	Depth to Bedrock (feet)
Ur - Urban Land (7% of site)	B	N/A	N/A	N/A	N/A

Upon review of the soil data presented in Table 1, the project site does not contain soils with a soil slope phase of D with a map unit name that inclusive of slopes greater than 25%, and does not contain soils with a soil slope phase of E or F.

The project site is composed of HSG B soils, as shown in the table below. For the small area of urban land soil type, a consistent 'B' soil type was used for purposes of the HydroCAD report.

Table 2: Project Site HSG Data

HSG B
100%

The Soil Conservation Service defines the hydrologic soil groups as follows:

Type B Soils: Soils having a moderate infiltration rate when thoroughly wet and consisting mainly of moderately deep to deep, moderately well to well drained soils with moderately fine to moderately course textures. These soils have a moderate rate of water transmission.

The soils map for the study area is presented in Appendix A, as Figure A-2.

2.4 Watershed Designation

The project site is not located in a restricted watershed identified in Appendix C of GP-0-25-001.

2.5 Receiving Water Bodies

The nearest natural classified water course into which runoff from the project site will discharge is the un-named tributary to the Hughsonville Creek. The tributary is classified by NYSDEC as a Class B water course, and is not included in the Section 303(d) list of impaired waters found in Appendix D of GP-0-25-001.

2.6 Aquifer Designation

The project site is not located over a US EPA designated Sole Source aquifer; nor is it located over a Primary or Principal aquifer listed in the NYSDEC Technical and Operational Guidance Series (TOGS) 2.1.3 (1980).

2.7 Wetlands

A search on the NYSDEC Environmental Resource Mapper on December 8, 2025, and a review of GIS data, determined that there are areas associated with informational freshwater wetland mapping on or adjacent to the project site. A more detailed write up on the project in relation to the aquatic resources can be found in the SEQRA tech memo.

2.8 Flood Plains

According to the National Flood Insurance Program Flood Insurance Rate Map (FIRM), Town of Wappinger, New York, Community Panel Number 36027C0458E, the project site lies within Flood Zone X, areas determined to be outside 500-year floodplain

2.9 Listed, Endangered, or Threatened Species

According to the NYSDEC Environmental Resource Map (Figure 6), there are known occurrences of rare species on or in the vicinity of the project site. According to the FEAF Mapper's automated responses, there are known occurrences of the Indiana Bat and Blanding's Turtle on or in the vicinity of the project site. According to the United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC), there is potential for the following species in the vicinity of the project site: Indiana Bat (endangered) and Northern Long-Eared Bat (threatened). Additionally, the IPaC states that potential habitat for monarch butterflies, a candidate species, may be found on the Project Site; however, candidate species are not regulated by the USFWS (See Attachment A). The IPaC also states that there are no critical habitats at the proposed site.
The main impact of concern for bats is the cutting or removal of potential roost trees. The site has been previously cleared and no trees will be removed for the parking lot expansion.
The Blanding's turtle has been listed as threatened on the NYS DEC website. Typical habitats for this species include vernal pools and emergent wetlands, as well as sandy soils in upland regions where turtles nest. The site contains a stormwater pond and is fully developed with a car dealership. According to a March 23, 2022 letter from Ecological Solutions, "the property has operated as a car dealership for almost 10 years and has no potential Blanding's turtle habitat. Natural habitat that remains on the site is a small upland forest buffer at the rear of the property and is not Blanding's turtle habitat. No impacts will occur to this species from the proposed expansion and no mitigation measures are required." Therefore, no significant adverse impact on this species is anticipated to occur.

2.10 Historic Places

Historic Preservation (NYSOPRHP) Cultural Resource Information System (CRIS) mapping, there are no National or State Historic Register sites on or adjacent to the project site and the project site is not located within a known archaeologically sensitive area. The site is largely disturbed by the development of the previous car dealership, including the existing septic, stormwater pond and other grading impacts. Based on this information, the proposed project is not anticipated to result in any significant adverse impacts related to historical and archaeological resources.

2.11 Rainfall Data

Rainfall data utilized in the modeling and analysis was obtained from the Cornell University online Extreme Precipitation in New York & New England website (http://precip.eas.cornell.edu/). A local IDF file was imported, and specific mass curves were generated, in HydroCAD to evaluate the pre- and post-development stormwater runoff characteristics. Rainfall data specific to the portion of Dutchess County under consideration, for various 24-hour storm events, is presented in the following Table:

Table 3: Rainfall Data

Storm Event Return Period	24-Hour Rainfall (inches)
1-year	2.61
10-year	4.67
100-year	8.22

2.12 Pre-development Watershed Conditions

The pre-development project site is covered predominantly by pavement, buildings, grass, and fragmented woods. Analysis of pre-development conditions considered existing drainage patterns, soil types, ground cover, and topography. Porous pavement treatments installed with the 2015 approved plans are denoted on the Pre-Development Watershed Map, as Figure 5 attached with this drainage report.

The results of the computer modeling used to analyze the overall watershed under pre-development conditions are presented in the Pre-Development HydroCAD model in Appendix D. A summary of the pre-development watershed runoff rates at each design point is presented in Table 12 below. The Pre-Development Watershed Delineation Map has been provided as Figure 5.

2.13 Post-development Watershed Conditions

The post-development project site is very similar to the pre-development conditions with an addition to the existing building in the rear of the site, and some parking modifications. The site is still covered predominantly by pavement, buildings, grass, and fragmented woods. The analysis of post-development conditions considered existing drainage patterns, soil types, ground cover to remain, planned site development, site grading and, stormwater management facilities proposed as part of site improvements. The Post-Development Watershed Delineation Map has been provided as Figure 6.

The results of the computer modeling used to analyze the overall watershed under post-development conditions are presented in Appendix E. A summary of the post-development watershed runoff rates at each design point is presented in Table 12.

2.14 Description of Design Points

The study area consists of an overall watershed that encompasses approximately 4.3 acres inside the 6.3-acre project site. The overall watershed was broken down into smaller watersheds, or subcatchments, to allow for analysis of runoff conditions at several locations throughout the study area. One design point was evaluated to understand the peak flows. A description of the design point is provided below.

- Design Point 1: Both the western portion of the site and eastern portion overflow into a collection system that enters an existing catch basin adjacent to US Route 9. This catch basin was evaluated as the design point to ensure peak flows were not increased leaving the site.

3.0 STORMWATER MANAGEMENT PLANNING

Chapter 3 of the Design Manual outlines a six-step planning process for site planning and selection of stormwater management practices that must be implemented for both new development and redevelopment projects. This process is intended to develop a design that maintains pre-construction hydrologic conditions through the application of environmentally sound development principles, as well as treatment and control of runoff discharges from the site. The following sections outline the step-by-step process and how it has been applied to this project.

The goals of this Stormwater Management Plan are to analyze the peak rate of runoff under pre- and post-development conditions, to maintain the pre-development rate of runoff in order to minimize impacts to adjacent or downstream properties, and to minimize the impact to the quality of runoff exiting the site.

The Design Manual provides both water quality and water quantity objectives to be met by projects requiring a "Full SWPPP". These objectives will be met by applying stormwater control practices to limit peak runoff rates and improve the quality of runoff leaving the developed site.

3.1 STEP 1 – Site Planning

During the Site Planning process, the project site is evaluated for implementation of the green infrastructure planning measures identified in Table 3.1 of the Design Manual, in order to preserve natural resources and reduce impervious cover. Appendix C provides a description of each green infrastructure planning measure, along with a project specific evaluation.

3.2 STEP 2 – Calculate Water Quality Treatment Volume (WQv)

Stormwater runoff from impervious surfaces is recognized as a significant contributor of pollution that can adversely affect the quality of receiving water bodies. Therefore, treatment of stormwater runoff is important since most runoff related water quality contaminants are transported from land, particularly the impervious surfaces, during the initial stages of storm events.

3.2.1 NYSDEC Requirements for Water Quality Volume

The Design Manual requires that water quality treatment be provided for the initial flush of runoff from every storm. The NYSDEC refers to the amount of runoff to be treated as the "Water Quality Volume" (WQv). Section 4.2 of the Design Manual defines the Water Quality Volume as follows:

$$WQv = \frac{[(P)(R_v)(A)]}{12}$$

Where: P = 90% Rainfall Event Number
R_v = 0.05 + 0.009 (I)
I = Impervious Cover (Percent)
A = Contributing Area in Acres

This definition ensures that, all other things being equal, the Water Quality Volume will increase along with the impervious cover percentage.

3.2.2 Methodology for New Development

The Water Quality Volume equation has been applied to the drainage area tributary to each of the stormwater quality practices proposed for this project. The practices have been sized to accommodate the Water Quality Volume, as per the performance criteria presented in Chapter 5 and Chapter 6 of the Design Manual. Water quality volume calculations for each of the proposed practices are presented in Appendix C. The WQv required for the site is directly related to the 17,968 sf increase in impervious area. Of this increase in impervious area, the re-design of the porous pavement areas at the east end of the site, will allocate for 16,147 sf of the increased impervious area. The remaining 1,821 sf of increased impervious will be treated in the pocket ponds at the west end of the site.

Table 4: Required WQv Summary

Required WQv	
1,738 cf	0.040 af

3.3 STEP 3 – Apply RR Techniques and Standard SMPs with RRv Capacity to Reduce Total WQv

Land use change and development in the watershed increases the volume of runoff. As such, reductions in the amount of runoff from new development, accomplished through the implementation of a stormwater management plan for the site, will play an important role in the success or failure of the watershed-wide stormwater management plan. Runoff reduction techniques can be applied to manage, reduce, and treat stormwater, while maintaining and restoring natural hydrology through infiltration, evapo-transpiration, and the capture and reuse of stormwater. Volume reduction techniques by themselves typically are not sufficient to provide adequate attenuation of stormwater runoff, but they can decrease the size of the peak runoff rate reduction facilities.

3.3.1 NYSDEC Requirements for New Development

The Design Manual states that runoff reduction shall be achieved through infiltration, groundwater recharge, reuse, recycle, and/or evaporation/evapotranspiration of 100-percent of the post-development water quality volume to replicate pre-development hydrology. Runoff control techniques provide treatment in a distributed manner before runoff reaches the collection system, by maintaining pre-construction infiltration, peak runoff flow, discharge volume, as well as minimizing concentrated flow. This can be accomplished by applying a combination of Runoff Reduction Techniques, standard Stormwater Management Practices (SMPs) with RRv capacity, and good operation and maintenance.

3.3.2 Methodology

In order to reduce the required WQv and meet the RRv criteria, a site specific evaluation must be performed to determine the most practical means of reducing runoff volume by application of a combination of RR techniques and standard SMPs with RRv capacity.

3.3.3 Application of RR Techniques

The following Table demonstrates a summary of the RR technique being applied for this project, and both the water quality and runoff reduction volumes they provide. The RR Technique has been

designed in accordance with Chapter 5 of the Design Manual. Refer to the contract drawings for practice dimensions, material specifications, and installation details. Practice specific calculations are presented in Appendix C.

The 2015 Approved Stormwater Pollution and Prevention Plan included four area of pervious pavement to treat impervious runoff on the east side of the property. Porous Pavement areas #1-3 are not modified as part of this application and meet treatment requirements for tributary drainage area. Porous Pavement area #4 was re-designed to meet treatment requirements. Details related to the WQv requirements for Porous Pavement area #4 can be found below.

Table 5: Summary of RR Techniques being Applied

RR Technique	NYSDEC Design	RRv Capacity	WQv Required (CF)	WQv Reduced/RRv Provided (CF)
Runoff Reduction Techniques (Area Reduction)				
Porous Pavement (PP4) (without underdrains)	RR-9	100%	1,255	1,255
RR Technique Totals			**1,255**	**1,255**

3.3.4 RRv Performance Summary

A summary of the RRv provided is presented in the following table:

Table 6: RRv Summary

WQv Required (CF) (increase in impervious cover)	RRv Provided WQv Reduced (CF)	% RRv Provided/ WQv Reduced
1,738	1,255	72.2%

As indicated in the above table, the RRv provided is not greater than or equal to the RRv required for the project site. A good faith effort has been made to reduce runoff to the greatest extent practical. However, the project site has shallow depth to bedrock, shallow depth to groundwater, soils with an infiltration rate less than 0.5 in/hr, which prevents reduction of the total WQv. As such, Appendix C provides a project specific evaluation for each RR technique and standard SMP with RRv capacity, demonstrating why these practices are infeasible.

3.4 STEP 4 – Calculate the Minimum RRv Required

Projects that cannot achieve 100% of the runoff reduction requirement due to site limitations, shall provide a minimum runoff reduction volume as calculated by the following equation:

$$RRv_{min} = \frac{[(P)(R_v*)(Aic)(S)]}{12}$$

Where:

RRv_{min} = Runoff Reduction Volume (in acre-feet)
P = 90% Rainfall Event Number
Aic = Total area of new impervious cover (acres)
Rv* = 0.05+0.009(I), where I is 100% impervious

S = Hydrologic Soil Group (HSG) Specific Reduction Factor where:
HSG A = 0.55 HSG C = 0.30
HSG B = 0.40 HSG D = 0.20

Based upon the soil survey data, the site consists of soils having a hydrologic soil type of B, As such, a specific reduction factor of 0.40 has been applied. Calculation of the required minimum RRv is presented in Appendix C.

Table 7: Minimum RRv Summary

Minimum RRv Required (CF)	RRv Provided/ WQv Reduced (CF)	% of Minimum RRv Provided
695	1,255	181%

As indicated in the above table, the RRv provided is greater than the minimum RRv required for the project site. Therefore, the runoff reduction volume criteria has been met for the project and the design can proceed to Step 5.

3.5 STEP 5 – Apply Standard SMPs to Address Remaining Water Quality Volume

If the entire Water Quality Volume is not treated through implementation of RR techniques and standard SMPs with RRv capacity, then the design must achieve the remaining WQv through the standard SMPs listed in Table 3.3 of the Design Manual.

Table 8: Summary of WQv Provided

Step 2 WQv Required (CF)	Step 3 WQv Reduction by RR Techniques & Standard SMPs w/ RRv Capacity (CF)[1]	Step 5 Reduced WQv to be Treated by Standard SMPs (CF)[2]
New Development WQv		
1,738	1,255	483

Footnotes:
[1]Step 3: WQv Reduction = RRv Provided + WQv Treated by Standard SMP with RRv Capacity
[2]Step 5: Reduced WQv to be Treated = WQv Required – WQv Reduced

Based upon the results listed in the above Table, the entire WQv has not been treated by application of RR techniques and standard SMPs with RRv capacity. As such, the standard SMPs (without RRv capacity) described in the following sections, have been incorporated into the stormwater management plan for this project, to meet the WQv objective.

3.5.1 Wet Pond (P-2)

Wet ponds typically consist of two general components - a forebay and a permanent wet pool. The forebay provides pretreatment by capturing coarse sediment particles in order to minimize the need to remove the sediments from the primary wet pool. The wet pool serves as the primary treatment mechanism and where much of the retention capacity exists.

When sized to store the water quality volume, a pond system will retain all of the water from storms that generate runoff less than or equal to the water quality volume and result in a significantly increased period of time available for treatment. For storms that generate runoff greater than the water quality volume, wet ponds still provide a reduced level of treatment through conventional settling and filtration for the additional runoff volume that is conveyed through the pond. When properly designed, the permanent pool reduces the velocity of incoming water to prevent re-suspension of particles and promote settling of newly introduced suspended solids. The energy dissipating and treatment properties of the permanent pool are enhanced by aquatic vegetation, which is an essential part of the stormwater pond design.

The Wet Pond(s) (P-2) was/were designed according to the criteria set forth in Section 6.1 "Stormwater Ponds" of the Design Manual.

The following Table summarizes both the Water Quality Volume requirements and the treatment volumes provided.

Table 9: Summary of Pond WQ Practices

SWM Practice ID	NYSDEC Design Variant	Calculated Remaining WQv to be Treated (CF)	Existing WQv Provided[1]	Proposed WQv Provided	New WQv Treated
PND-01	P-1	483	5,249	7,380	2,131
Footnotes: [1]*Taken from HydroCAD*					

3.6 STEP 6 - Apply Volume and Peak Rate Control

This report presents the pre-development and post-development features and conditions associated with the rate of surface water runoff within the study area. For both cases, the drainage patterns, drainage structures, soil types, and ground cover types are considered in this study.

3.6.1 NYSDEC Requirements for New Development

Chapter 4 of the Design Manual requires that projects meet three separate stormwater quantity criteria:

1. The Channel Protection (CPv) requirement is designed to protect stream channels from erosion. This is accomplished by providing 24 hours of extended detention for the 1-year, 24-hour storm event. The Manual defines the CPv detention time as the center of mass detention time through each stormwater management practice.

2. The Overbank Flood Control (Qp) requirement is designed to prevent an increase in the frequency and magnitude of flow events that exceed the bank-full capacity of a channel, and therefore must spill over into the floodplain. This is accomplished by providing detention storage to ensure that, at each Design Point, the post-development 10-year 24-hour peak discharge rate does not exceed the corresponding pre-development rate.

3. The Extreme Flood Control (Qf) requirement is designed to prevent the increased risk of flood damage from large storm events, to maintain the boundaries of the pre-development 100-year floodplain, and to protect the physical integrity of stormwater management practices. This is accomplished by providing detention storage to ensure that, at each Design Point, the post-development 100-year 24-hour peak discharge rate does not exceed the corresponding pre-development rate.

3.6.2 Methodology

In order to demonstrate that the NYSDEC detention requirements are being met, the Design Manual requires that a hydrologic and hydraulic analysis of the pre- and post-development conditions be performed using the Natural Resources Conservation Service Technical Release 20 (TR-20) and Technical Release 55 (TR-55) methodologies. HydroCAD, developed by HydroCAD Software Solutions LLC of Tamworth, New Hampshire, is a Computer-Aided-Design (CAD) program for analyzing the hydrologic and hydraulic characteristics of a given watershed and associated stormwater management facilities. HydroCAD uses the TR-20 algorithms and TR-55 methods to create and route runoff hydrographs.

HydroCAD has the capability of computing hydrographs (which represent discharge rates characteristic of specified watershed conditions, precipitation, and geologic factors) combining hydrographs and routing flows though pipes, streams and ponds. HydroCAD can also calculate the center of mass detention time for various hydraulic features. Documentation for HydroCAD can be found on their website: http://www.hydrocad.net/.

For this analysis, the watershed and drainage system was broken down into a network consisting of three types of components as described below:

1. Subcatchment: A relatively homogeneous area of land, which produces a volume and rate of runoff unique to that area.
2. Reach: Uniform streams, channels, or pipes that convey stormwater from one point to another.
3. Pond: Natural or man-made impoundment, which temporarily stores stormwater runoff and empties in a manner determined by its geometry and the hydraulic structure located at its outlets.

Subcatchments, reaches, and ponds are represented by hexagons, squares, and triangles, respectively, on the watershed routing diagrams provided with the computations included in Appendix D and Appendix E.

The analysis of hydrologic and hydraulic conditions and proposed stormwater management facilities, servicing the study area, was performed by dividing the tributary watershed into relatively homogeneous subcatchments. The separation of the watershed into subcatchments was dictated by watershed conditions, methods of collection, conveyance, and points of discharge. Watershed characteristics for each subcatchment were then assessed from United States Geological Service (USGS) 7.5-minute topographic maps, aerial photographs, a topographical survey, soil surveys, site investigations, and land use maps.

Proposed stormwater management practices were designed and evaluated in accordance with the Design Manual and local regulatory requirements. A local IDF file was imported, and specific mass curves were generated, in HydroCAD to evaluate the pre- and post-development stormwater runoff characteristics for various 24-hour storm events identified in the following Table.

Table 10: Design Events

Facility	24-hour Storm Event
Storm Sewer	10-year
Stormwater Management Practice(s)	1-year
	10-year
	100-year
Flood Conditions	100-year

3.6.3 Performance Summary

A comparison of the total required and provided CPv for the 1-year 24-hour storm event is shown in the following table:

Table 11: CPv Summary

Design Point (DP)	Required CPv (af)	Provided CPv (af)
1	0.440	0.443

A comparison of the pre- and post-development watershed conditions was performed for all Design Points and storm events evaluated herein. For all Design Points and design storms, this comparison demonstrates that the peak rate of runoff will not be increased. Therefore, the project will not have a significant adverse impact on the adjacent or downstream properties or receiving water courses.

The existing 3" orifice used for CPv purposes in the western pocket ponds still meet CPv requirements and can discharge the 1-year storm.

The results of the computer modeling used to analyze the pre- and post-development watersheds are presented in Appendix D and Appendix E, respectively. The following Table summarizes the results of this analysis.

Table 12: Summary of Pre- and Post-Development Peak Discharge Rates

	Pre- vs. Post-Development Discharge Rate (cfs)					
Design Point (DP)	1-year 24-hour storm event		10-year 24-hour storm event		100-year 24-hour storm event	
	Pre	Post	Pre	Post	Pre	Post
1	.31	.31	1.5	1.45	9.74	9.69

3.7 Climate Change Consideration

This report presents the consideration for future physical risks due to climate change, in accordance with Part III.A.2 of the permit. Overall site planning, control measures and practices, conveyance systems and detention systems were evaluated against the seven (7) physical risks identified by NYSDEC due to climate change pursuant to the Community Risk and Resiliency Act (CRRA), 6 NYCRR

490, and associated guidance. Appendix C provides a description of each consideration, specific to the project.

4.0 CONSTRUCTION SEQUENCE

This project has not received written approval from the Town of Wappinger allowing the disturbance of more than five acres of land at any one time. Therefore, if the Contractor's construction sequence requires the disturbance of more than five acres at any one time, written approval must be obtained from written approval from the Town of Wappinger prior to disturbing more than five acres at once.

5.0 CONSTRUCTION-PHASE POLLUTION CONTROL

The SWPPP and accompanying plans identify the temporary and permanent erosion and sediment control measures that have been incorporated into the design of this project. These measures will be implemented during construction, to minimize soil erosion and control sediment transport off-site, and after construction, to control the quality and quantity of stormwater runoff from the developed site.

Erosion control measures, designed to minimize soil loss, and sediment control measures, intended to retain eroded soil and prevent it from reaching water bodies or adjoining properties, have been developed in accordance with the following documents:

- NYSDEC SPDES General Permit for Stormwater Discharges From Construction Activity, Permit No. GP-0-25-001 (effective January 29, 2025 through January 28, 2030)
- New York State Standards and Specifications for Erosion and Sediment Control, NYSDEC (November 2016)

The SWPPP and accompanying plans outline the construction scheduling for implementing the erosion and sediment control measures. These documents include limitations on the duration of soil exposure, criteria and specifications for placement and installation of the erosion and sediment control measures, a maintenance schedule, and specifications for the implementation of erosion and sediment control practices and procedures.

Temporary and permanent erosion and sediment control measures that shall be applied during construction generally include:

1. Minimizing soil erosion and sedimentation by stabilization of disturbed areas and by removing sediment from construction site discharges.
2. Preservation of existing vegetation to the greatest extent practical. Following the completion of construction activities in any portion of the site, permanent vegetation shall be established on all exposed soils.
3. Site preparation activities to minimize the area and duration of soil disruption.
4. Establishment of permanent traffic corridors to ensure that "routes of convenience" are avoided.

5.1 Temporary Erosion and Sediment Control Measures

The temporary erosion and sediment control measures described in the following sections are included as part of the construction documents.

5.1.1 Stabilized Construction Access

Prior to construction, stabilized construction access(es) will be installed, per accompanying plans, to reduce the tracking of sediment onto public roadways.

Construction traffic must enter and exit the site at the stabilized construction access(es). The intent is to trap dust and mud that would otherwise be carried off-site by construction traffic.

The access(es) shall be maintained in a condition, which will control tracking of sediment onto public rights-of-way or streets. When necessary, additional aggregate will be placed atop the filter fabric to assure the minimum thickness is maintained. All sediment and/or soil spilled, dropped, or washed onto public rights-of-way must be removed immediately. Periodic inspection and needed maintenance shall be provided after each substantial rainfall event.

5.1.2 Dust Control

Water trucks shall be used as needed during construction to reduce dust generated on-site. Dust control must be provided by the Contractor(s) to a degree that is acceptable to the Owner, and in compliance with the applicable local and state dust control requirements.

5.1.3 Temporary Soil Stockpile

Materials, such as topsoil, will be temporarily stockpiled (if necessary) on the site during the construction process. Stockpiles shall be located in an area away from storm drainage, water bodies and/or courses, and will be properly protected from erosion by a surrounding silt fence barrier.

5.1.4 Silt Fencing

Prior to the initiation of and during construction activities, a geotextile filter fabric (or silt fence) will be established downgradient of all disturbed areas. These barriers may extend into non-impact areas to provide adequate protection of adjacent lands.

Clearing and grubbing will be performed only as necessary for the installation of the sediment control barrier. To facilitate effectiveness of the silt fencing, daily inspections and inspections immediately after significant storm events will be performed by the Contractor(s). Maintenance of the fence will be performed as needed.

5.1.5 Temporary Seeding

For areas undergoing clearing, grading, and disturbance as part of construction activities, where work has temporarily ceased, temporary soil stabilization measures must be initiated by the end of the next business day and completed within fourteen (14) days from the date the soil disturbance activity has temporarily ceased.

5.1.6 Stone and Block Drop Inlet Protection

Concrete blocks surrounded by wire mesh and crushed stone will be placed around both existing catch basins, and proposed catch basins once they have been installed, to prevent sediment from entering the catch basins and storm sewer system. During construction, crushed stone shall be replaced as necessary to ensure proper function.

5.1.7 Manufactured Insert Inlet Protection

Install insert inlet protection beneath the grate of all catch basins, to prevent sediment from entering the catch basins and storm sewer system. Remove sediment accumulation and repair or replace insert as necessary to ensure proper function.

5.1.8 Filter Fabric Drop Inlet Protection

Install filter fabric or silt fence with wooden stakes at the perimeter of existing or proposed catch basins located in lawn areas, to prevent sediment from entering the catch basins and storm sewer system. Remove sediment accumulation and repair or replace fabric as necessary to ensure proper function.

5.1.9 Erosion Control Blanket

Erosion control blankets shall be installed in accordance with manufacturer's requirements on all slopes exceeding 3:1. Erosion control blankets provide temporary erosion protection, rapid vegetative establishment, and long-term erosion resistance to shear stresses generated by high runoff flow velocities associated with steep slopes.

Temporary sediment traps depicted on the accompanying plans have been designed to provide 3,600 CF of storage per acre of tributary watershed.

5.1.10 Dewatering Operations

Dewatering will be used to intercept sediment-laden stormwater or pumped groundwater and allow it to settle out of the pumped discharge prior to being discharged from the site. Water from dewatering operations shall be treated to eliminate the discharge of sediment and other pollutants. Water resulting from dewatering operations shall be directed to temporary sediment traps or dewatering devices. Temporary sediment traps and dewatering bags will be provided, installed, and maintained at downgradient locations to control sediment deposits to downstream surfaces.

5.1.11 Fiber Roll

Prior to the initiation of and during construction activities, fiber rolls (12" minimum diameter) will be established downgradient of all disturbed areas to reduce sheet flow on slopes. These rolls may extend into non-impact areas to provide adequate protection of adjacent lands. Spacing will conform to NYSDEC specification for straw bale dike.

Clearing and grubbing will be performed only as necessary for the installation of the fiber rolls. To facilitate effectiveness, daily inspections and inspections immediately after significant storm events will be performed by the Contractor(s) and maintenance will be performed as needed.

5.1.12 Compost Filter Sock

Prior to the initiation of and during construction activities, a compost filter sock (or silt sock) will be established downgradient of all disturbed areas. These filters may extend into non-impact areas to provide adequate protection of adjacent lands. The spacing of the compost filter sock, which will depend on the ground slope and diameter of the sock, shall be based upon New York State or EPA guidance.

Clearing and grubbing will be performed only as necessary for the installation of the sediment control filter; and unlike sediment control barriers, trenching is not required. The ends of the filter sock should be directed upslope, to prevent stormwater from running around the end of the sock. The preferred anchoring method is to drive stakes through the center of the sock at regular intervals;

alternatively, stakes can be placed on the downstream side of the sock. To facilitate effectiveness of the compost filter sock, daily inspections and inspections immediately after significant storm events will be performed by the Contractor(s) to ensure that they are intact and the area behind the sock is not filled with sediment. Maintenance of the sock will be performed as needed.

5.2 Permanent Erosion and Sediment Control Measures

The permanent erosion and sediment control measures described in the following sections are included as part of the construction documents.

5.2.1 Establishment of Permanent Vegetation

Disturbed areas that will be vegetated must be seeded in accordance with the contract documents. The type of seed, mulch, and maintenance measures as described in the contract documents shall also be followed.

Permanent soil stabilization measures must be initiated by the end of the next business day and completed within fourteen (14) days from the date the soil disturbance activity has permanently ceased.

Final site stabilization is achieved when all soil-disturbing activities at the site have been completed and a uniform, perennial vegetative cover with a density of 80 percent has been established or equivalent stabilization measures (such as the use of mulches or geotextiles) have been employed on all unpaved areas and areas not covered by permanent structures.

5.2.2 Rock Outlet Protection

Rock outlet protection shall be installed at the locations as indicated and detailed on the accompanying plans. The installation of rock outlet protection will reduce the velocity and energy of water, such that the flow will not erode downstream surfaces.

5.2.3 Permanent Turf Reinforcement

Permanent turf reinforcement mats (TRMs) provide long-term erosion protection and vegetation establishment assistance while permanently reinforcing vegetation. TRMs shall be installed on slopes/channels where specified. TRM's provide two key advantages. First, their unique fiber shape and 3-D pattern create a thick matrix of voids that trap seed, soil, and water in place for quicker, thicker vegetation growth. Secondly, they provide additional reinforcement that doubles the vegetation's natural erosion protection abilities by remaining a permanent part of the application and anchoring mature plants to the soil for superior, long-term erosion resistance.

5.3 Other Pollutant Controls

Part I.C.1 of GP-0-25-001 prohibits discharges from construction material wastewater, pollutants used in vehicle and equipment operation and maintenance, vehicle and equipment washing and toxic or hazardous substances.

The following table identifies materials and/or chemicals commonly used and/or stored on construction sites and should be addressed in the site-specific spill prevention and response plan:

Table 13: Common Construction Pollutants

Material/Chemical	Physical Description	Stormwater Pollutants	Location*
Pesticides (insecticides, fungicides, herbicides, rodenticides)	Various colored to colorless liquid, powder, pellets, or grains	Chlorinated hydrocarbons, organophosphates, carbamates, arsenic	Herbicides used for noxious weed control
Fertilizer	Liquid or solid grains	Nitrogen, phosphorous	Newly seeded areas
Cleaning solvents	Colorless, blue, or yellow-green liquid	Perchloroethylene, methylene chloride, trichloroethylene, petroleum distillates	No equipment cleaning allowed in project limits
Asphalt	Black solid	Oil, petroleum distillates	Streets and roofing
Concrete	White solid/grey liquid	Limestone, sand, pH, chromium	Curb and gutter, building construction
Curing compounds	Creamy white liquid	Naphtha	Curb and gutter
Hydraulic oil/fluids	Brown oily petroleum hydrocarbon	Mineral oil	Leaks or broken hoses from equipment
Gasoline	Colorless, pale brown or pink petroleum hydrocarbon	Benzene, ethyl benzene, toluene, xylene, MTBE	Secondary containment / staging area
Diesel Fuel	Clear, blue-green to yellow liquid	Petroleum distillate, oil & grease, naphthalene, xylenes	Secondary containment / staging area
Kerosene	Pale yellow liquid petroleum hydrocarbon	Coal oil, petroleum distillates	Secondary containment / staging area
Antifreeze/coolant	Clear green/yellow liquid	Ethylene glycol, propylene glycol, heavy metals (copper, lead, zinc)	Leaks or broken hoses from equipment
Sanitary toilets	Various colored liquid	Bacteria, parasites, and viruses	Staging area
Construction materials			
Granular fill	Various colored solids	Sediment	Stockpile / fill areas
Subbase course	Gray/brown solid	Sediment, dust	Stockpile
Topsoil	Brown solid	Sediment	Stockpile
Mulch	Various colored solid	Sediment, debris	Staging area
Seed	Brown/yellow solid	Nutrients, debris	Staging area
HDPE Storm Pipe	Black solid		Staging area
SDR-35, SDR-21 PVC Pipe	Various colored solid		Staging area
Metals Frames and Grates	Gray solid		Staging area
Joint Sealant	Light gray viscous solid	Polyurethane	Staging area

*(Area where material/chemical is used on-site)

5.4 Construction Housekeeping Practices

During the construction phase, the Contractor(s) will implement the following measures:

5.4.1 Sediment Sweeping/Vacuuming

Any sediment that is tracked by construction vehicles or erosion onto adjacent public or private impervious surfaces must be swept or vacuumed, utilizing self-propelled and/or walk-behind equipment, and removed on a daily basis. Kick brooms and sweeper attachments are not an acceptable means of sweeping. Sweeping or vacuuming should not take place while tracked sediment is wet. If tracked sediment is compacted, the sediment must be scraped loose prior to sweeping or vacuuming.

5.4.2 Material Stockpiles

Material resulting from clearing and grubbing operations that will be stockpiled on-site, must be adequately protected with downgradient erosion and sediment controls.

5.4.3 Equipment Cleaning and Maintenance

The Contractor(s) will designate areas for equipment cleaning, maintenance, and repair. The Contractor(s) and subcontractor(s) will utilize those areas. The areas will be protected by a temporary perimeter berm.

5.4.4 Detergents

The use of detergents for large-scale washing is prohibited (i.e., vehicles, buildings, pavement surfaces, etc.)

5.4.5 Spill Prevention and Response

A Spill Prevention and Response Plan shall be developed, for the pollutants identified in Section 5.3, for the site by the Contractor(s) that addresses the following:

1. Reducing chance of spills
2. Stopping the source of spills
3. Containing and cleaning up spills
4. Disposing of materials contaminated by spills
5. Training personnel responsible for spill prevention/response
6. Material handling procedures
7. Material storage requirements

The plan shall detail the steps required in the event of an accidental spill and shall identify contact names and phone numbers of people and agencies that must be notified.

The plan shall include Safety Data Sheets (SDS) for all materials to be stored on-site. All workers on-site will be required to be trained on safe handling and spill prevention procedures for all materials used during construction. Regular tailgate safety meetings shall be held and all workers that are expected on the site during the week shall be required to attend.

5.4.6 Concrete Washout Areas

A temporary concrete washout area shall be provided for every project where concrete will be poured or otherwise formed on-site and shall consist of an excavated or above-ground lined construction pit

where concrete trucks or equipment can be washed out after their loads have been discharged. Waste generated from concrete wash water that shall not be allowed to flow into drainage ways, inlets, receiving waters, highway right-of-way, or any location other than the designated concrete washout area(s). Proper signage shall be placed adjacent to the facility to designate the "Concrete Washout Area". Locate the facility a minimum of 100-feet from drainage swales, storm drain inlets, wetlands, streams, and other surface waters. Prevent surface water from entering the washout area.

The hardened residue from the concrete wash areas will be disposed of in the same manner as other non-hazardous construction waste materials. Maintenance of the washout area shall include removal of hardened material when 75% of the storage capacity is filled, and a minimum freeboard of 12 inches shall be maintained. The Contractor will be responsible for seeing that these procedures are followed. The project may require the use of multiple concrete washout areas based on the frequency of concrete pours.

5.4.7 Material Storage

Construction materials shall be stored in a dedicated staging area. The staging area shall be located in an area that prevents negative impacts of construction materials on stormwater quality.

Chemicals, paints, solvents, fertilizers, and other toxic material must be stored in waterproof containers. Except during application, the contents must be kept in trucks or within storage facilities. Runoff containing such material must be collected, removed from the site, treated, and disposed of at an approved solid waste or chemical disposal facility.

6.0 INSPECTIONS, MAINTENANCE, AND REPORTING

6.1 Inspection and Maintenance Requirements

6.1.1 Pre-Construction Inspection and Certification

Prior to the commencement of construction, the Qualified Inspector/Qualified Professional shall conduct an assessment of the site and certify that the appropriate erosion and sediment control measures have been adequately installed and implemented. The Contractor shall contact the Qualified Inspector/Qualified Professional once the erosion and sediment control measures have been installed.

6.1.2 Construction Phase Inspections and Maintenance

A Qualified Inspector/Qualified Professional, as defined in Appendix A of the General Permit GP-0-25-001, shall conduct regular site inspections between the time this SWPPP is implemented and final site stabilization. Site inspections shall occur at an interval of at least once every seven (7) calendar days.

The purpose of site inspections is to assess performance of pollutant controls. Based on these inspections, the Qualified Inspector/Qualified Professional will decide whether it is necessary to modify this SWPPP, add or relocate sediment barriers, or whatever else may be needed in order to prevent pollutants from leaving the site via stormwater runoff. The general contractor has the duty to cause pollutant control measures to be repaired, modified, maintained, supplemented, or whatever else is necessary in order to achieve effective pollutant control.

Examples of particular items to evaluate during site inspections are listed below. This list is not intended to be comprehensive. During each inspection the inspector must evaluate overall pollutant

control system performance as well as particular details of individual system components. Additional factors should be considered as appropriate to the circumstances.

1. Locations where vehicles enter and exit the site must be inspected for evidence of off-site sediment tracking. A stabilized construction access will be constructed where vehicles enter and exit. This access will be maintained or supplemented as necessary to prevent sediment from leaving the site on vehicles.
2. Sediment barriers must be inspected and, if necessary, they must be enlarged or cleaned in order to provide additional capacity. All material from behind sediment barriers will be stockpiled on the up slope side. Additional sediment barriers must be constructed as needed.
3. Inspections will evaluate disturbed areas and areas used for storing materials that are exposed to rainfall for evidence of, or the potential for, pollutants entering the drainage system. If necessary, the materials must be covered or original covers must be repaired or supplemented. Also, protective berms must be constructed, if needed, in order to contain runoff from material storage areas.
4. Grassed areas will be inspected to confirm that a healthy stand of grass is maintained. The site has achieved final stabilization once all areas are covered with building foundation or pavement, or have a stand of grass with at least 80 percent density. The density of 80 percent or greater must be maintained to be considered as stabilized. Areas must be watered, fertilized, and reseeded as needed to achieve this goal.
5. All discharge points must be inspected to determine whether erosion control measures are effective in preventing significant impacts to receiving waters.

The inspection reports must be completed entirely and additional remarks should be included if needed to fully describe a situation. An important aspect of the inspection report is the description of additional measures that need to be taken to enhance plan effectiveness. The inspection report must identify whether the site was in compliance with the SWPPP at the time of inspection and specifically identify all incidents of non-compliance.

Within one (1) business day of the completion of an inspection, the *Qualified Inspector/Qualified Professional* shall notify the Owner/Operator and appropriate contractor or subcontractor of any corrective actions that need to be taken. For corrective actions not requiring engineering design, the contractor must begin implementing corrective actions within one business day and complete the corrective actions within five business days. For corrective actions requiring engineering design, the engineering design process must begin within five business days and the contractor must complete the corrective action in a reasonable time frame but no later than 60 calendar days.

In addition to the inspections performed by the *Qualified Inspector/Qualified Professional*, the Contractor shall perform routine inspections that include a visual check of all erosion and sediment control measures. All inspections and maintenance shall be performed in accordance with the inspection and maintenance schedule provided on the accompanying plans. Sediment removed from erosion and sediment control measures will be exported from the site, stockpiled for later use, or used immediately for general non-structural fill.

It is the responsibility of the general contractor to assure the adequacy of site pollutant discharge controls. Actual physical site conditions or contractor practices could make it necessary to install more structural controls than are shown on the accompanying plans. (For example, localized concentrations of runoff could make it necessary to install additional sediment barriers, sediment traps, etc.) Assessing the need for additional controls and implementing them or adjusting existing controls will be a continuing aspect of this SWPPP until the site achieves final stabilization.

6.1.3 Temporary Suspension of Construction Activities

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 frequency of Qualified Inspector/Qualified Professional inspections can be reduced to once every 30 calendar days. Prior to reducing the frequency of inspections, the Owner/Operator shall notify the NYSDEC Region 3 stormwater contact person and the Town of Wappinger in writing.

6.1.4 Partial Project Completion

For construction sites where soil disturbance activities have been shut down with partial project completion, 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 inspections by the Qualified Inspector/Qualified Professional can stop. Prior to the shutdown, the Owner/Operator shall notify the NYSDEC Region 3 stormwater contact person and the Town of Wappinger in writing.

If soil disturbance activities have not resumed within two years from the date of shutdown, a Notice of Termination (NOT) shall be properly completed and submitted to the NYSDEC.

6.1.5 Post-Construction Inspections and Maintenance

Inspections and maintenance of final stabilization measures and post-construction stormwater management practices shall be performed in accordance with Appendix G, once all disturbed areas are stabilized and all stormwater management systems are in place and operable.

6.2 Reporting Requirements

6.2.1 Inspection Reports

Pursuant to Part IV.C of GP-0-25-001, inspection reports shall be prepared for the duration of construction, as outlined herein, and shall be signed by the *Qualified Inspector* or *Qualified Professional*. A sample inspection form is provided in Appendix F.

At a minimum, each inspection report shall record the following information:

1. Permit identification number; and
2. Date and time of inspection; and
3. Name and title of person(s) performing inspection; and
4. A description of the weather and soil conditions (e.g. dry, wet, saturated) at the time of the inspection, including the temperature at the time of the inspection; and
5. A description of the condition of the runoff at all points of discharge from the construction site. This must 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; and
6. A description of the condition of all surface waters of the State located within, or immediately adjacent to, the property boundaries of the construction site which receive runoff from disturbed areas. This must include identification of any discharges of sediment to the surface waters of the State; and

7. Identification of all erosion and sediment control practices and pollution prevention measures that need repair or maintenance; and
8. 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; and
9. Description and sketch (map) 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; and
10. Estimates, in square feet or acres, of the following areas:
    a. Total area with active soil disturbance (not requiring either temporary stabilization or final stabilization); and
    b. Total area with inactive soil disturbance (requiring either temporary stabilization or final stabilization); and
    c. Total area that has achieved temporary stabilization; and
    d. Total area that has achieved final stabilization; and
11. Current stage of construction of all SMPs and identification of all construction activity on site that is not in conformance with the SWPPP and technical standards; and
12. 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 SMP(s); and
13. Identification and status of all corrective actions that were required by previous inspection; and
14. Digital photographs, with date stamp, that clearly show the condition of all practices that have been identified as needing corrective actions. The qualified inspector must attach 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 must 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 must 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.

6.2.2 Site Log Book

Pursuant to Part I.E.3 of GP-0-25-001, the Owner/Operator shall retain a copy of the General Permit, NOI, NOI Acknowledgment Letter, MS4 SWPPP Acceptance Form (if applicable), inspection reports, contractor and subcontractor certification forms, and all documentation necessary to demonstrate eligibility under the permit, at the construction site from commencement of construction activity until the date that all areas of disturbance have achieved final stabilization and the Notice of Termination has been submitted to the NYSDEC.

The Site Log Book shall be maintained on-site in a secure location (i.e. job trailer, on-site construction office, or mailbox with lock) and must be accessible during normal business hours to an individual performing a compliance inspection.

6.2.3 Post Construction Records and Archiving

Following construction, the Owner/Operator shall retain copies of the SWPPP, the complete construction Site Log Book, and records of all data used to complete the NOI to be covered by this permit, for a period of at least five years from the date that the site is finally stabilized. This period may be extended by the NYSDEC, at its sole discretion, at any time upon written notification.

Records shall be maintained of all post construction inspections and maintenance work performed in accordance with the requirements outlined in Appendix G.

7.0 SWPPP IMPLEMENTATION RESPONSIBILITIES

A summary of the responsibilities and obligations of all parties involved with compliance with the NYSDEC SPDES General Permit GP-0-25-001 conditions is outlined in the subsequent sections. For a complete listing of the definitions, responsibilities, and obligations, refer to the SPDES General Permit GP-0-25-001 presented in Appendix J.

7.1 Owner's/Operator's Responsibilities

1. Ensure that control measures are selected, designed, installed, implemented and maintained to minimize the discharge of pollutants and prevent a violation of the water quality standards, meeting the non-numeric effluent limitations in Part II.B.1.(a)-(e) of the SPDES General Permit and in accordance with the New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016.

2. Applies to projects with post-construction stormwater management practices Ensure that practices are selected, designed, installed, and maintained to meet the performance criteria in the Design Manual. Practices must be designed to meet the applicable sizing criteria in Part II.C.2.a., b., c. or d. of GP-0-25-001.

3. Retain the services of a "Qualified Inspector" or "Qualified Professional" as defined under GP-0-25-001, to provide the services outlined in Section 7.5 "Qualified Inspector's/Qualified Professional's Responsibilities."

4. Retain the services of a "Qualified Professional," as defined under GP-0-25-001, to provide the services outlined in Section 2.3 "Owner's/Operator's Engineers Responsibilities."

5. Have an authorized corporate officer sign the Owner/Operator Certification Form to accompany the eNOI. A copy of the completed NOI is included in Appendix B.

6. Submit the electronic version of the NOI (eNOI) along with the MS4 SWPPP acceptance form using the NYSDEC's website (http://www.dec.ny.gov/chemical/43133.html).

7. Pay the required initial and annual fees upon receipt of invoices from NYSDEC. These invoices are generally issued in the fall of each year. The initial fee is calculated as $110.00 per acre disturbed plus $675.00 per acre of net increase in impervious cover, and the annual fee is $110.00.

8. Prior to the commencement of construction activity, identify the contractor(s) and subcontractor(s) that will be responsible for installing, constructing, repairing, replacing,

inspecting, and maintaining the erosion control practices included in the SWPPP and the contractor(s) and subcontractor(s) that will be responsible for constructing the SMPs included in the SWPPP. Each of the contractors and subcontractors must identify at least one person from their company to be the trained contractor that will be responsible for implementation of the SWPPP. Ensure that at least one trained contractor is on site daily when soil disturbance activities are being performed.

9. Schedule a pre-construction meeting which shall include the Town of Wappinger representative, Owner's/Operator's Engineer, Qualified Inspector, Contractor, and their sub-contractors to discuss responsibilities as they relate to the implementation of this SWPPP.

10. Retain the services of an independent certified materials testing and inspection firm operating under the direction of a licensed Professional Engineer to perform regular tests, inspections, and certifications of the construction materials used in the construction of all post-construction stormwater management practices.

11. Retain the services of a NYS licensed land surveyor to perform an as-built topographic survey of the completed post-construction stormwater management facilities.

12. Require the Contractor to fully implement the SWPPP prepared for the site by the Owner/Operator's Engineer to 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 NYSDEC.

13. The Owner/Operator is authorized to commence construction activity as of the authorization date indicated in the Letter of Authorization (LOA), which is sent by NYSDEC after a complete eNOI is submitted.

14. Within five (5) business days of receipt of the LOA, send an electronic copy of the LOA to the MS4 operator(s) with review authority.

15. Forward a copy of the LOA received from DEC to the Owner's/Operator's Engineer for project records, and to the Contractor for display at the construction site.

16. As of the date the LOA is received, the Owner/Operator must make the eNOI, SWPPP and LOA available for review and copying in accordance with the requirements in Part VII.H. of GP-0-25-001. When applicable, as of the date an updated LOA is received, the Owner/Operator must make the updated LOA available for review and copying in accordance with the requirements in Part VII.H.

17. The Owner/Operator must ensure compliance with all requirements of GP-0-25-001 and that the provisions of the SWPPP, including any changes made to the SWPPP in accordance with Part III.A.5., are properly implemented and maintained from the commencement of construction activity until all area of disturbance have achieved final stabilization; and the Owner/Operator's coverage under the permit is terminated in accordance with Part V.A.5.a.

18. As of the date of the commencement of construction activities until Part I.E.2.a. and b. have been met, the Owner/Operator must maintain at the construction site, a copy of all documentation necessary to demonstrate eligibility with GP-0-25-001, a copy of GP-0-25-001, the SWPPP, the signed SWPPP Preparer Certification Form, the signed MS4 SWPPP Acceptance Form, NYCDEP SWPPP Acceptance/Approval Form, MS4 No Jurisdiction Form,

signed Owner/Operator Certification Form, eNOI, and LOA, and LOA transmittal to the MS4 Operator in accordance with Part I.D.3.c.

19. The Owner/Operator must maintain at the construction site, until Part I.E.2.a and b. have been met, as of the date the documents become final or are received, a copy of the responsible contractor's or subcontractor's certification statement(s) in accordance with Part III.A.7, and inspection reports in accordance with Part IV.C.4. and 6., Request to Continue Coverage and the Letter of Continued Coverage (LOCC) in accordance with Part I.F.2. and 4., and the updated LOA(s) in accordance with Part I.E.9.

20. The Owner/Operator must maintain the documents 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. The documents must be paper documents unless electronic documents are accessible to the inspector during an inspection to the same extent as a paper copy stored at the site would be. If electronic documents are kept on site, the Owner/Operator must maintain functional equipment on site available to an inspector during normal hours of operation such that an inspector may view the electronic documents in a format that can be red in a similar manner as a paper record and in a legally dependable format with no less evidentiary value than their paper equivalent.

21. Upon finding a significant non-compliance with the practices described in the SWPPP or violation of GP-0-25-001, NYSDEC may order an immediate stop to all construction activity at the site until the non-compliance is remedied. The stop work order must be in writing, describe the non-compliance in detail, and be sent to the Owner/Operator. Forward a copy of any stop work order received immediately to the Owner's/Operator's Engineer and to the Contractor.

22. If any human remains or archaeological remains are encountered during excavation, the Owner/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.

23. To be authorized to implement modifications to the information previously submitted in the eNOI, the Owner/Operator must notify NYSDEC via email at Stormwater_info@dec.ny.gov requesting access to update the eNOI, update the eNOI to reflect the modifications and resubmit the eNOI in accordance with Part I.D., and receive an updated LOA.

24. The eNOI, SWPPP, LOA, updated LOAs, and inspection reports required by GP-0-25-001 are public documents that the Owner/Operator must make available for review and copying by any person within five (5) business days of the Owner/Operator receiving a written request by any such person to review these documents. Copying of documents will be done at the requester's expense.

25. The Owner/Operator must terminate coverage when the project reaches total project completion, has a planned shutdown with partial project completion, is changing Owner/Operator or has obtained coverage under an alternative general SPDES permit or an individual SPDES permit.

26. Have a qualified inspector perform a final site inspection prior to submitting the eNOT.

27. Have the MS4 sign the MS4 Acceptance statement on the eNOT in accordance with the requirements in Part VII.J.

28. Prior to submitting a Notice of Termination, ensure

    SMP(s) that are privately owned, the Owner/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/Operator's deed of record.

29. Submit a complete Notice of Termination form electronically using the NYSDEC eNOT. Coverage is terminated as of the termination date indicated in the Letter of Termination (LOT), which is sent by NYSDEC after a complete eNOT is submitted.

30. Request and receive all SWPPP records from the Owner's/Operator's Engineer and archive those records, along with the LOT, for a period of at least five (5) years from the date that NYSDEC accepts a complete NOT submitted.

31. Implement the Post-Construction Inspections and Maintenance procedures outlined in Appendix G.

32. The Owner/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/Operator shall amend the SWPPP, including construction drawings:

    a) Whenever the current provisions prove to be ineffective in minimizing pollutants in stormwater discharges from the project 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.

    d) To document the final construction conditions.

33. 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, in conformance with Part I.G.. For construction activities subject to the requirements of a regulated, traditional land use control MS4, the original owner or operator must also notify the MS4, in writing, of the change in ownership at least 30 calendar days prior to the change in ownership.

7.2 Owner's/Operator's Engineer's Responsibilities

1. Prepare the SWPPP using good engineering practices, best management practices, and in compliance with all federal, state, and local regulatory requirements.

2. Prepare the electronic Notice of Intent (eNOI) (see Appendix B) and sign the "SWPPP Preparer Certification Form." Forward the Owner/Operator Certification Form to the Owner/Operator for signature.

3. Provide copies of the SWPPP to the Town of Wappinger once all signatures and attachments are complete.

4. Enter Contractor's information in Section 7.5 "SWPPP Participants" once a Contractor is selected by the Owner/Operator.

5. Participate in a pre-construction meeting which shall include the Town of Wappinger representative, Owner/Operator, Qualified Inspector, Contractor, and all subcontractors to discuss responsibilities as they relate to the implementation of this SWPPP.

6. Update the SWPPP each time there is a significant modification to the pollution prevention measures or a change of the principal Contractor working on the project who may disturb site soil.

7.3 Contractor's Responsibilities

1. Sign the SWPPP Contractor's Certification Form contained within Appendix B and forward to the Owner's/Operator's Engineer for inclusion in the Site Log Book.

2. Identify at least one Trained Contractor that will be responsible for implementation of this SWPPP. Ensure that at least one Trained Contractor is on site on a daily basis when soil disturbance activities are being performed. The Trained Contractor shall 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 conditions at all times. For corrective actions not requiring engineering design, the contractor must begin implementing corrective actions within one business day and complete the corrective actions within five business days. For corrective actions requiring engineering design, the engineering design process must begin within five business days and the contractor must complete the corrective action in a reasonable time frame but no later than 60 calendar days.

3. Provide the names and addresses of all subcontractors working on the project site. Require all subcontractors who will be involved with construction activities that will result in soil disturbance to identify at least one Trained Contractor that will be on site on a daily basis when soil disturbance activities are being performed; and to sign a copy of the Subcontractor's Certification Form contained within Appendix B, then forward to the Owner's/Operator's Engineer for inclusion into the Site Log Book. This information must be retained as part of the Site Log Book.

4. Maintain a Spill Prevention and Response Plan in accordance with requirements outlined in Section 5 of this SWPPP. This plan shall be provided to the Owner's/Operator's Engineer for inclusion in the Site Log Book, prior to mobilization on-site.

5. Participate in a pre-construction meeting which shall include the Town of Wappinger representative, Owner/Operator, Owner's/Operator's Engineer, Qualified Inspector, and all subcontractors to discuss responsibilities as they relate to the implementation of this SWPPP.

6. If Contractor plans on utilizing adjacent properties for material, waste, borrow, or equipment storage areas, or if Contractor plans to engage in industrial activity other than construction (such as operating asphalt and/or concrete plants) at the site, Contractor shall submit appropriate documentation to the Owner's/Operator's Engineer so that the SWPPP can be modified accordingly.

7. Implement site stabilization, erosion and sediment control measures, and other requirements of the SWPPP.

8. In accordance with the requirements in the most current version of the NYS Standards and Specifications for Erosion and Sediment Control, conduct inspections of erosion and sediment control measures installed at the site to ensure that they remain in effective operating condition at all times. Prepare and retain written documentation of inspections as well as of all repairs/maintenance activities performed. This information must be retained as part of the Site Log Book.

9. Begin implementing corrective actions within one (1) business day of receipt of notification by the Qualified Inspector/Qualified Professional of any corrective actions. For corrective actions not requiring engineering design, the contractor must begin implementing corrective actions within one business day and complete the corrective actions within five business days. For corrective actions requiring engineering design, the engineering design process must begin within five business days and the contractor must complete the corrective action in a reasonable time frame but no later than 60 calendar days.

10. Maintain a record of the date(s) and location(s) that soil restoration is performed in accordance with the accompanying plans and NYSDEC Division of Water's publication "Deep-Ripping and Decompaction," dated April 2008. A copy of this publication is provided in Appendix H. The record that is to be maintained shall be a copy of the overall site grading plan delineating the area(s) and date(s) that the soil was restored.

11. Upon completion of all construction at the site, the contractor responsible for overall SWPPP Compliance shall sign the certification on their Contractor Certification Form indicating that: a.) all temporary erosion and sediment control measures have been removed from the site, b.) the on-site soils disturbed by construction activity have been restored in accordance with the SWPPP and the NYSDEC Division of Water's publication "Deep-Ripping and Decompaction," and c.) all permanent stormwater management practices required by the SWPPP have been installed in accordance with the contract documents.

7.4 Qualified Inspector's/Qualified Professional's Responsibilities

1. Participate in a pre-construction meeting with the Town of Wappinger representative, Owner/Operator, Owner/Operator's Engineer, Contractor, and their subcontractors to discuss responsibilities as they relate to the implementation of this SWPPP.

2. Conduct an initial assessment of the site prior to the commencement of construction and certify in an inspection report that the appropriate erosion and sediment control measures described within this SWPPP have been adequately installed and implemented to ensure overall preparedness of the site.

3. Provide on-site inspections to determine compliance with the SWPPP. Site inspections shall occur at an interval of at least once every seven calendar days. A written inspection report shall be provided to the Owner/Operator and general contractor within one business day of the completion of the inspection, with any deficiencies identified. A sample inspection form is provided in Appendix F.

4. Prepare an inspection report subsequent to each and every inspection that shall include/address the items listed in Part IV.C.4 of GP-0-25-001. Sign all inspection reports and maintain on site with the SWPPP.

5. Notify the owner/operator and appropriate contractor or subcontractor of any corrective actions that need to be taken.

6. Prepare a construction Site Log Book to be used as a record of all inspection reports generated throughout the duration of construction. Ensure that the construction Site Log Book is maintained and kept up-to-date throughout the duration of construction.

7. Review the Contractor's SWPPP records on a periodic basis to ensure compliance with the requirements for daily reports, soil restoration, inspections, and maintenance logs.

8. Based on the as-built survey and material testing certifications performed by others, the Qualified Professional shall perform evaluations of the completed stormwater management practices to determine whether they were constructed in accordance with this SWPPP.

9. The Qualified Professional shall conduct a final site assessment and prepare a certification letter to the Owner/Operator indicating that, upon review of the material testing and inspection reports prepared by the firm retained by the Owner/Operator, review of the completed topographic survey, and evaluation of the completed stormwater management facilities, the stormwater management facilities have been constructed substantially in accordance with the contract documents and should function as designed.

10. Prepare the Notice of Termination (NOT). The Qualified Professional shall sign the NOT Certifications VI (Final Stabilization) and VII (Post-construction Stormwater Management Practices) and forward the NOT to the Owner/Operator for signature on Certification VIII (Owner/Operator Certification).

11. The owner's or operator's coverage is terminated as of the termination date indicated in the Letter of Termination (LOT), which is sent by NYSDEC after a complete eNOT is submitted.

12. Transfer the SWPPP documents, along with all NOI's, LOA, permit certificates, NOT's, LOT, construction Site Log Book, and written records required by the General Permit to the Owner/Operator for archiving.

7.5 SWPPP Participants

1. Owner's/Operator's Engineer [1]:

Kyle Ahearn, PE
LaBella Associates, DPC
21 Fox Street
Poughkeepsie, NY 12601
Phone: (845) 454-3980

2. Owner/Operator [2]:

Joel Sporn
VIP Subaru Wappingers LLC
31954 Hempstead Tpke
Levittown NY, 11756
Phone: 631-478-8595

3. Contractor [3,4]

Name and Title: _____

Company Name: _____

Mailing Address: _____

_____

Phone: _____

Fax: _____

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APPENDIX A: FIGURES

A-1: Site Location Map
A-2: Soils Map
A-3: Historic Places Screening Map
A-4: Environmental Resource Map
A-5: Pre-Development Drainage Map
A-6: Post-Development Drainage Map

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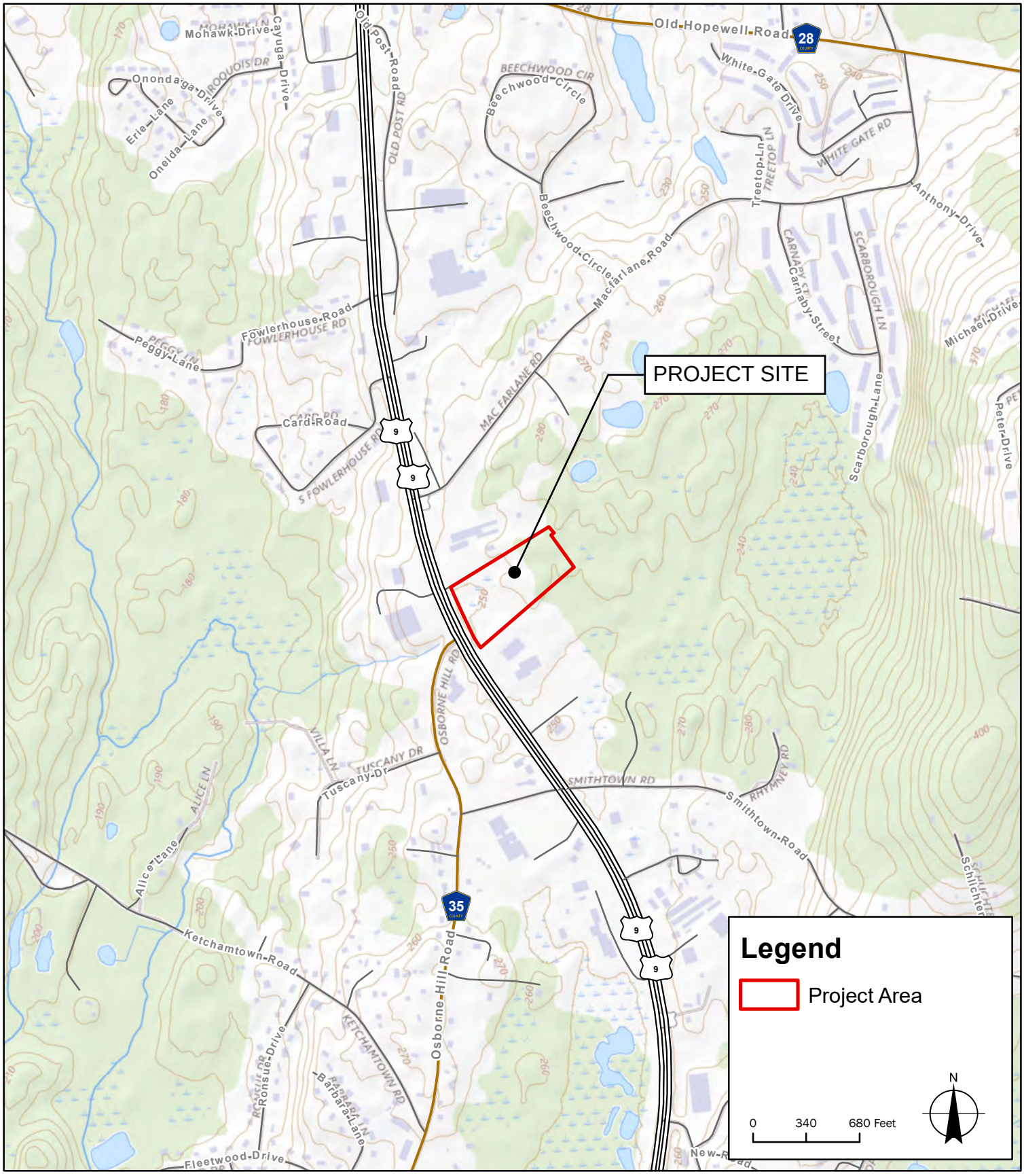

Creator: KP Reviewer:

Path: Z:\Projects\82100-82199\82136.0 Wappinger Subaru\GIS\maps\Figure1_USGSLocation.mxd

Sources:
1. Dutchess County Tax Parcels
2. USGS Topo Map

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Town of Wappinger

Wappinger Subaru

LaBella Project No: 2254625
Date: December 2025

LOCATION MAP

FIGURE 1

Creator: RL-B Reviewer:

Path: E:\NY_Projects\82136\Figure4_Soils.mxd

Sources:
1. Project Site: Dutchess County office of Real Property, 2015
2. Tax Parcels: Dutchess County office of Real Property, 2015
3. Orthoimagery: NYS GIS Program Office, 2021
4. Roads: NYS GIS Program Office, 2021
5. Soils: USDA NRCS, 2019

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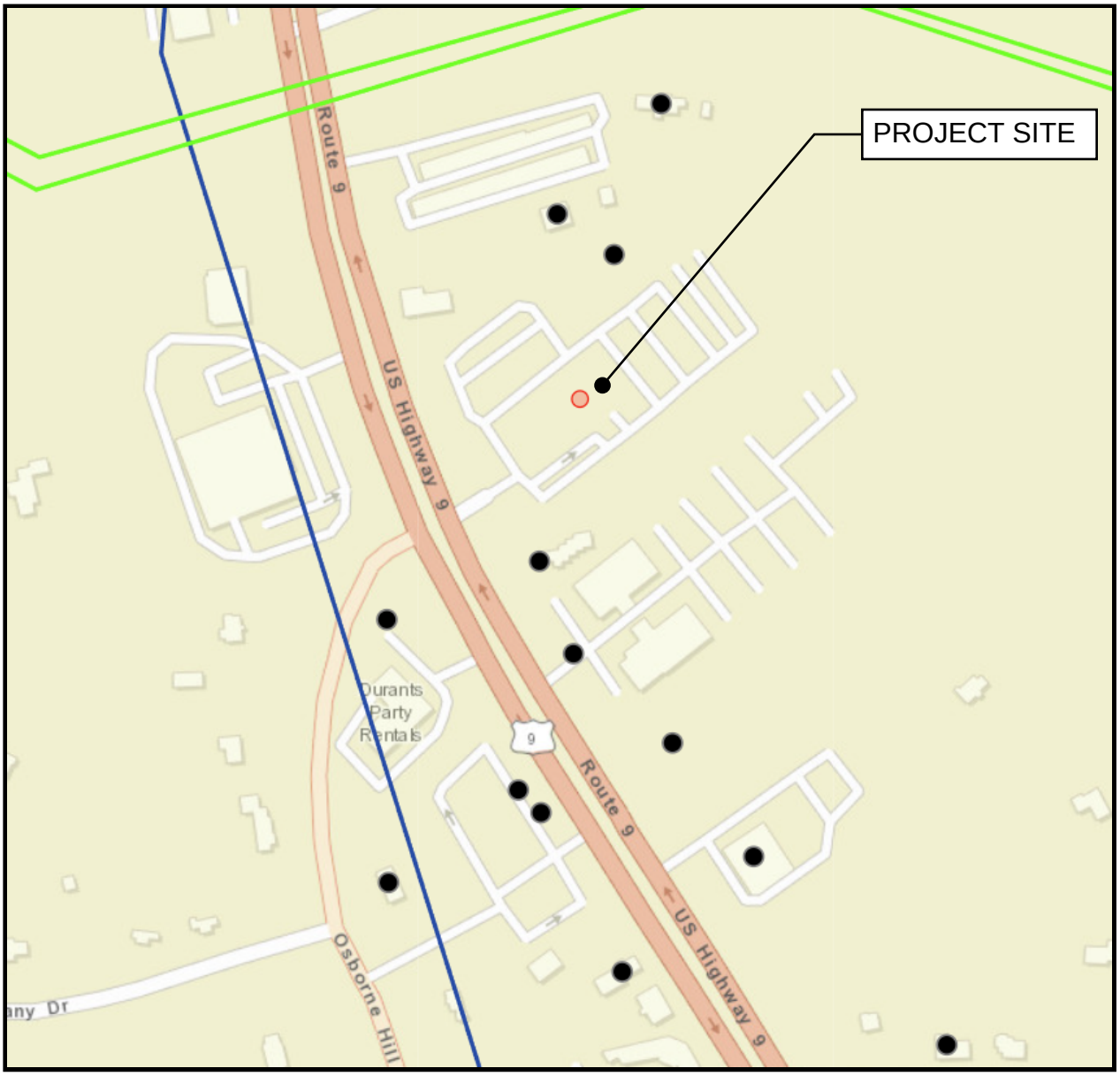
Town of Wappinger

Wappinger Subaru

LaBella Project No: 2254625
Date: December 2025

SOILS MAP

FIGURE 2



Consultation Projects (View)

Survey Archaeology Areas (View)

Survey Building Areas (View)

LPC Historic Districts

Archeologically Sensitive Areas

National Register Building Sites (View)

USN Building Districts (View)

LPC Landmarks

USN Building Points (View)

- Eligible
- Listed
- Not Eligible
- Not Eligible - Demolished
- Undetermined

Cemeteries

Sources:
1. NYS Cultural Resource Information System (CRIS)

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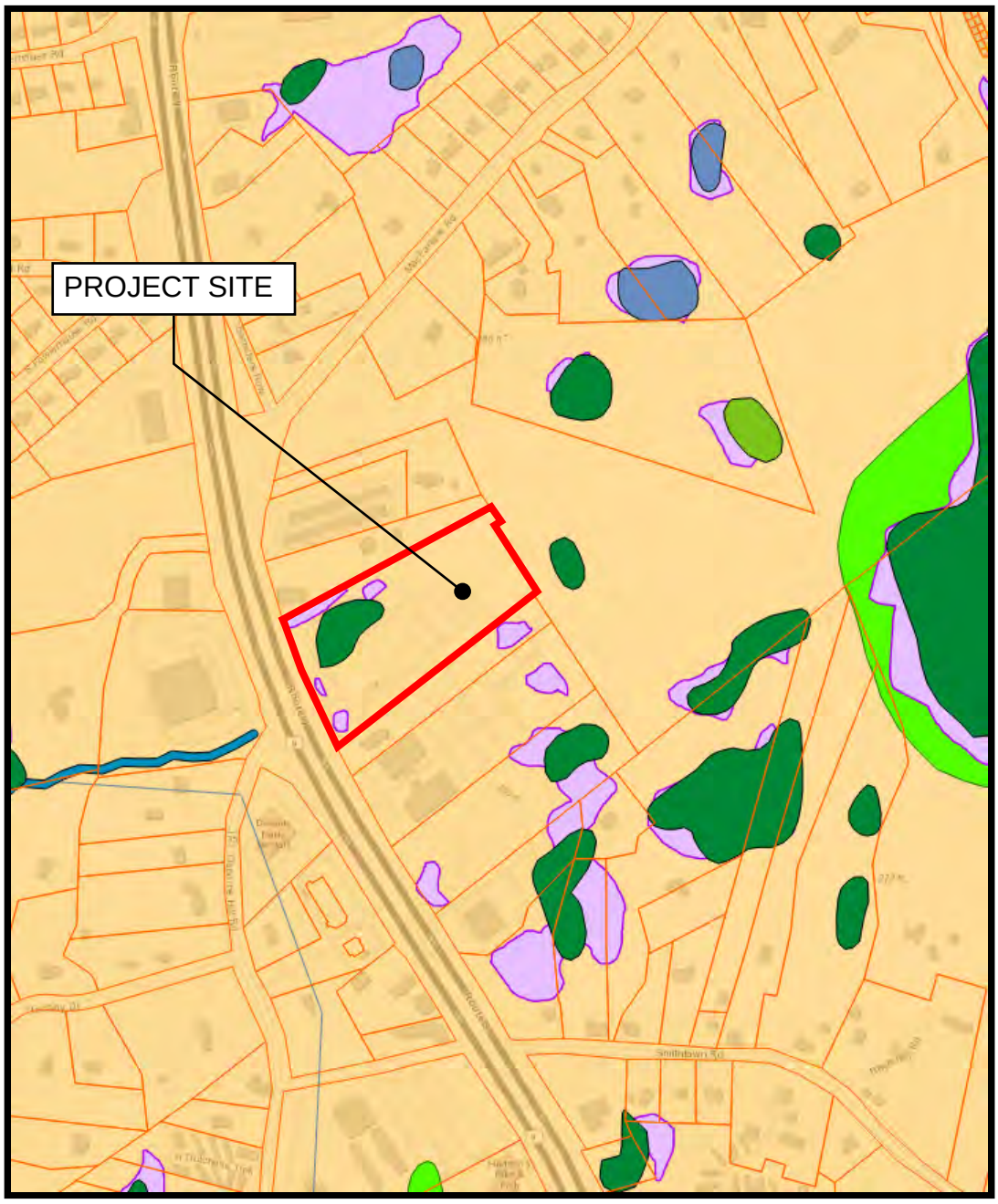
Town of Wappinger

Wappinger Subaru

LaBella Project No: 2254625
Date: December 2025

HISTORIC RESOURCES MAP

FIGURE 3



Map Layers

- Unique Geological Features
- Waterbody Classifications for Rivers/Streams
- Waterbody Classifications for Lakes

Waterbody Inventory/Priority Waterbodies List

- Lakes and Reservoirs
- Estuaries
- Rivers and Streams
- Shorelines

Imperiled Mussels

- Mussel Screening Ponded Waters
- Mussel Screening Streams
- Significant Natural Communities
- Natural Communities Near This Location
- Rare Plants or Animals
- Ten Year Travel Time
- Special Groundwater Protection Areas
- Base Flood Elevation Plus 72/75 Inches Sea-level Rise
- Base Flood Elevation Plus 72/75 Inches Sea-level Rise
- Base Flood Elevation Plus 72/75 Inches Sea-level Rise
- Base Flood Elevation Plus 72/75 Inches Sea-level Rise
- Limit to Moderate Wave Action
- Limit to Moderate Wave Action
- Limit to Moderate Wave Action

Wetland Layers

- Previously Mapped Freshwater Wetlands
- Informational Freshwater Wetland Mapping

National Wetlands Inventory

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

Sources:

1. NYSDEC Environmental Resource Mapper, 2025

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Town of Wappinger

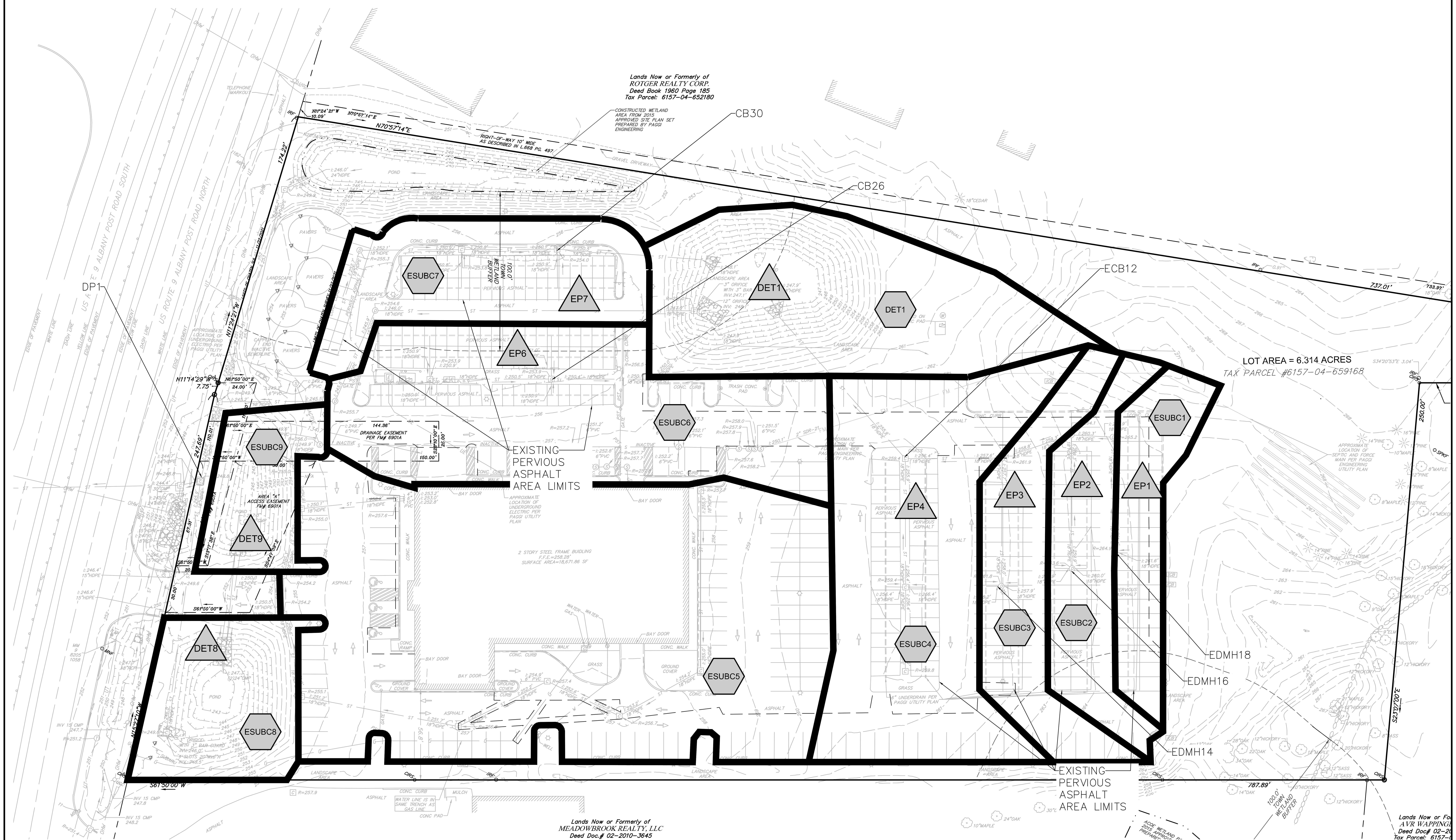
Wappinger Subaru

LaBella Project No: 2254625
Date: December 2025

ENVIRONMENTAL RESOURCE MAP

FIGURE 4

E- SUBCATCHMENT BOUNDARIES
E- TIME OF CONCENTRATION FLOW PATH
SUBCATCHMENT
REACH



1 PREDEVELOPMENT WATERSHED MAP
SCALE: 1"=30'

Drawing Name: \\cash.lab\v\Projects\Westbury Jeep\2254625 - Wappinger Subaru Bldg Expansion\05_Design\Civil\LD-LA\Stormwater\Parts\05_PRE_DEV_2254625_00_FIG5.dwg
Xref's Attached: XSTORM_2254625 redo; XBASEMAP_2254625; LBA-30x42-Arch E1; LBA-24x36-Arch D
Date Printed: Mar 12, 2026, 1:06pm

LaBella
Powered by partnership.
21 Fox Street
Poughkeepsie, NY 12601
845-454-3980
labellapc.com

NOT FOR CONSTRUCTION

CERTIFICATE OF AUTHORIZATION NUMBER:
PROFESSIONAL ENGINEERING: 0021272
LAND SURVEYING: 0021271
GEOLOGICAL: 0021659

VIP SUBARU
WAPPINGER, LLC
31954 HEMPSTEAD TPKE
LEVITTOWN, NY 11756

WAPPINGER SUBARU
BUILDING EXPANSION
1162 US RT. 9
WAPPINGERS FALLS, NY 12590
TOWN OF WAPPINGER
DUTCHESS COUNTY

NO:	DATE:	DESCRIPTION:
1	03/16/26	REVISED PER TOWN & DOH COMMENTS

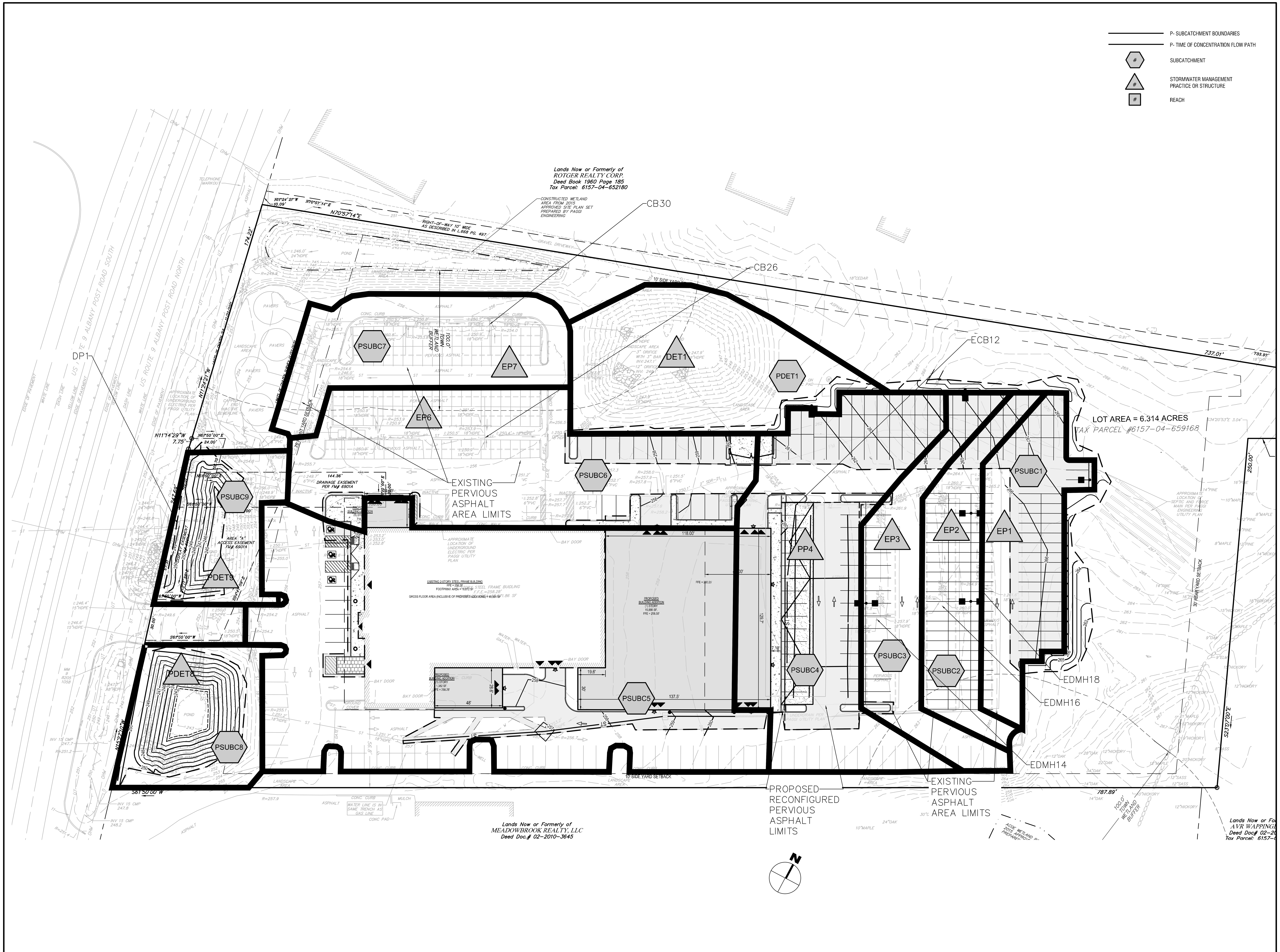
Revisions

PROJECT NUMBER: 2254625
DRAWN BY:
REVIEWED BY:
ISSUED FOR: PLANNING BOARD REVIEW
DATE: 12/17/2025
DRAWING NAME:

PREDEVELOPMENT WATERSHED MAP

DRAWING NUMBER:

FIG A-5



LaBella
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21 Fox Street
Poughkeepsie, NY 12601
845-454-3980

labellapc.com

NOT FOR CONSTRUCTION

CERTIFICATE OF AUTHORIZATION NUMBER:
PROFESSIONAL ENGINEERING: 0021272
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VIP SUBARU
WAPPINGER, LLC
31954 HEMPSTEAD TPKE
LEVITTOWN, NY 11756

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BUILDING EXPANSION
1162 US RT. 9
WAPPINGERS FALLS, NY 12590
TOWN OF WAPPINGER
DUTCHESS COUNTY

NO:	DATE:	DESCRIPTION:
1	03/16/26	REVISED PER TOWN & DOH COMMENTS

Revisions

PROJECT NUMBER: 2254625

DRAWN BY:

REVIEWED BY:

ISSUED FOR: PLANNING BOARD REVIEW

DATE: 12/17/2025

DRAWING NAME:

POSTDEVELOPMENT WATERSHED MAP

DRAWING NUMBER:

FIG A-6

APPENDIX B:
FORMS

Notice of Intent (NOI)
MS4 SWPPP Acceptance Form
SWPPP Preparer Certification Form
Owner/Operator Certification Form
Contractor and Subcontractor Certification Forms
Notice of Termination (NOT)

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Construction General Permit (CGP) Electronic Notice of Intent (eNOI) GP-0-25-001

version 1.17

(Submission #: HQK-T5E6-BRT2Q, version 1)

Details

Originally Started By	LaBella Poughkeepsie
Alternate Identifier	Wappinger Subaru Building Expansion—Region 3
Submission ID	HQK-T5E6-BRT2Q
Status	Draft
Active Steps	Form Submitted

Form Input

Eligibility

Disturbance Threshold

1. Will the construction activity involve soil disturbances listed in Part I.A.1 of GP-0-25-001?
Yes

1.a. Will any runoff from the site enter a sewer system classified as a combined sewer?
No

1.b. Is this a remediation project being done under a Department approved work plan (i.e. CERCLA, RCRA, Voluntary Cleanup Agreement, etc.) with a SWPPP which meets the substantive requirements of GP-0-25-001?
No

1.c. Is the construction activity related to a stormwater discharge that does not require a permit as described in 40 CFR 122.3(e), e.g. non-point source agriculture or silviculture activities?
No

Other SPDES Permits

2. Will the discharge from the construction activity meet all conditions listed in Part I.A.2 of GP-0-25-001?
Yes

Threatened and Endangered Species

3. Will the construction activity potentially adversely affect a species that is endangered or threatened per Part I.A.3.?
No

State Historic Preservation Act (SHPA)

4. Is the construction activity designated by the Commissioner of the Office of Parks, Recreation and Historic Preservation (OPRHP), pursuant to 9 NYCRR §§428.12 or 428.13 as exempt from the SHPA review (see Attachment 2 of the Letter of Resolution between NYSDEC and OPRHP, dated January 9, 2015)?
No

4.a. Will the construction activity:

a) occur within an archeologically sensitive area indicated on the sensitivity map, or

b) have the potential to affect a property that is listed or determined to be eligible for listing on the Na or State Registers of Historic Places, or

c) include a new permanent building on the construction site within the following distances from a building, structure, or object that is more than 50 years old and OPRHP, a Historic Preservation Commission of a Certified Local Government, or a qualified preservation professional has determinec historically/archeologically significant building, structure, or object:

- 1-5 acres of disturbance—20 feet
- 5-20 acres of disturbance—50 feet
- 20+ acres of disturbance—100 feet?

No

4.b. Is there documentation at the construction site demonstrating:

a) that the construction activity is not within an archeologically sensitive area indicated on the sensiti map, and that the construction activity is not immediately adjacent to a property listed or determined t eligible for listing on the National or State Registers of Historic Places, and

b) that there is no new permanent building to be built 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 OPRHP, a Historic Preserva Commission of a Certified Local Government, or a qualified preservation professional has determinec 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?

Yes

State Environmental Quality Review (SEQR)

5. Is the construction activity subject to SEQR (Part I.A.5.), or the equivalent environmental review from another NYS or federal agency (Part I.A.6.)?
Yes

5.a. Has the owner/operator obtained documentation that the project review pursuant to SEQR, or the equivalent, has been satisfied per Part I.A.5. or I.A.6. of GP-0-25-001?
Yes

Uniform Procedures Act (UPA) Permits

6. Has the owner/operator obtained all necessary UPA permits from NYSDEC, or the equivalent from another NYS or federal agency per Part I.A.7.a. of GP-0-25-001? Select "Yes" if no UPA permits, or the equivalent, are required for this construction activity.
Yes

Steep Slope

7. Is the construction activity within the watershed of surface waters of the State classified as AA or AA-S identified utilizing the Stormwater Interactive Map on NYSDEC's website?
No

Owner/Operator Information

8. Owner/Operator Name
VIP Subaru Wappinger, LLC

9. Owner/Operator Contact Person Information

First and Last Name	Phone	E-mail
Joel Sporn	631-478-8595	jsporn@westburyjeep.com

10. Owner/Operator Mailing Address

3195 HEMPSTEAD TPKE
LEVITTOWN, NY 11756-1318
USA

11. Is the billing contact different from the Owner/Operator Contact?
No

12. What type of organization is the owner/operator?
Corporation

12.b. Is the owner/operator registered with the Department of State to do business in New York State?
Yes

12.b.i. Department of State ID #
7607295

The Department of State ID can be found using the following link:
Department of State | Division of Corporations

Site Information

13. Project/Site Name
Wappinger Subaru Building Expansion

14. Site Address

1162 ROUTE 9
WAPPINGERS FL, NY 12590-4967
Dutchess

DEC Region
3

15. Site Latitude & Longitude
41.5678203,-73.9067646

Project Details

16. This eNOI submission is for:
A construction activity not part of a common plan of development or sale in accordance with Part I.D.1.a.

17. Does the project type fall under Table 1 or Table 2 of Appendix B of GP-0-25-001? If any portion of the construction activity falls under Table 2, regardless of the size of the disturbance, select "Table 2".
Table 2

18. Consistent with Part III.B.1.c.i. of GP-0-25-001, provide a concise overview of the project. Describe existing and proposed conditions, and include any other relevant information.
VIP Subaru Wappingers LLC is seeking amended site plan and amended special use permit approval from the Town Planning Board to expand service operations of the Subaru dealership with the construction of a 17,960 square-foot addition for additional motor vehicle service and parts storage. The project site is located at 1162 US Route 9 on a 6.3-acre parcel within the Highway Business (HB) Zoning District, under the tax parcel of 6157-04-659168.

Enter the total project site acreage, the acreage to be disturbed, and the future impervious area (acreage) within the disturbed area, rounded to the nearest tenth of an acre.

19. Total Site Area (acres)
6.3

20. Total Area to be Disturbed (acres)
1.7

21. Existing Impervious Area to be Disturbed (acres)
0.0

22. Future Impervious Area Within Disturbed Area (acres)
0.4

Nature of the project:
New Construction

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

---

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

A (%)
0

B (%)
100

C (%)
0

D (%)
0

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

Start Date
09/01/2026

End Date
09/01/2028

26. Identify the nearest surface waterbody(ies) to which construction site runoff will discharge.
Tributary to the Hughsonville Creek

27. Type of waterbody identified in question 26?
Stream/Creek Off Site

28. Has the surface waterbody in question 26 been identified as a 303(d) segment in Appendix D of GP-0-25-001?
No

29. Is this project located in one of the Watersheds identified in Appendix C of GP-0-25-001?
No

30. Will the project disturb soils within a State regulated wetland or the protected 100 foot adjacent area?
No

31. Does the site runoff enter a separate storm sewer system (including roadside drains, swales, ditches, culverts, etc)?
Yes

31.a. What is the name of the municipality/entity that owns the separate storm sewer system? If the separate sewer system is owned by an MS4 Operator, enter the MS4 Operator name.
NYSDOT (Existing Connection)

32. Will future use of this site be an agricultural property as defined by the NYS Agriculture and Markets Law?
No

33. Is this property owned by a state authority, state agency, federal government or local government?
No

Required SWPPP Components

General SWPPP Requirements

34. Has a SWPPP been developed in conformance with the requirements in Part III. of GP-0-25-001?
Yes

35. Does the SWPPP demonstrate consideration of the future physical risks due to climate change pursuant to the CRRA, 6 NYCRR Part 490, and associated guidance per Part III.A.2. of GP-0-25-001?
Yes

36. Has the required Erosion and Sediment Control component of the SWPPP been developed in conformance with the current NYS Standards and Specifications for Erosion and Sediment Control (aka Blue Book)?
Yes

37. Has the post-construction stormwater management practice component of the SWPPP been developed in conformance with the NYS Stormwater Management Design Manual?
Yes

37.a. Which version of the NYS Stormwater Management Design Manual was used to develop the SWPPP?
2024

SWPPP Preparer

---

39. The Stormwater Pollution Prevention Plan (SWPPP) was prepared by:
Professional Engineer (P.E.)

40. Name of the person who prepared the SWPPP
Kyle Ahearn

41. SWPPP Preparer Organization Name
LaBella Associates

42. SWPPP Preparer Contact Information

First and Last Name	Phone	E-mail
Kyle Ahearn	845-454-3980	kahearn@labellapc.com

43. SWPPP Preparer Address

21 FOX ST
POUGHKEEPSIE, NY 12601-4724

Download SWPPP Preparer Certification Form

Please take the following steps to prepare and upload your preparer certification form:

1) Click on the link below to download a blank certification form
2) The certified SWPPP preparer should sign this form
3) Upload the completed form
Download SWPPP Preparer Certification Form

44. Please upload the SWPPP Preparer Certification

NONE PROVIDED

Comment

NONE PROVIDED

44.a. Has the SWPPP Preparer Certification Form been signed by the SWPPP preparer in accordance with Part VII.J of GP-0-25-001?
Yes

Erosion & Sediment Control Criteria

45. Has a construction sequence schedule for the planned management practices been prepared?
Yes

Post-Construction Criteria

Site Planning and Soil Restoration

46. Identify all site planning practices that were used to prepare the final site plan/layout for the project.
Preservation of Undisturbed Area
Preservation of Buffers
Reduction of Clearing and Grading

47. Indicate which of the following soil restoration criteria was used to address the requirements in Section 5.1.6 ("Soil Restoration") of the Design Manual.
All disturbed areas will be restored in accordance with the Soil Restoration requirements in Table 5.3 of the Design Manual (see page 5-22).

Water Quality Criteria

49. Water Quality Sizing Criteria

Total WQv required (acre-feet)	Total RRv provided (acre-feet)	Minimum RRv (acre-feet)	Total WQv provided (acre-feet)	Sum of RRv and WQv provided
.04	.029	.016	.049	0.078

49.a. Use this space to summarize the specific site limitations and justification for not reducing 100% of WQv required.
the RRv provided is not greater than or equal to the RRv required for
the project site. A good faith effort has been made to reduce runoff to the greatest extent practical. However, the project site has shallow depth to bedrock, shallow depth to groundwater, soils with an infiltration rate less than 0.5 in/hr, which prevents reduction of the total WQv. As such, Appendix C provides a project specific evaluation for each RR technique and standard SMP with RRv capacity, demonstrating why these practices are infeasible.

Water Quantity Criteria

51. Does one of the waiver conditions apply to the channel protection for this construction activity?
No

51.b.i. CPv Required (acre-feet)
.44

51.b.ii. CPv Provided (acre-feet)
.443

52. Does one of the waiver conditions apply to the Qp and Qf for this construction activity?
No

Overbank Flood Control Criteria (Qp)

52.b.i. Pre-Development (CFS)
1.5

52.b.ii. Post-Development (CFS)
1.45

Total Extreme Flood Control Criteria (Qf)

52.b.iii. Pre-Development (CFS)
9.74

52.b.iv. Post-Development (CFS)
9.69

Operation and Maintenance

53. Has a long-term Operation and Maintenance Plan for the post-construction stormwater management practice(s) been developed?
Yes

53.a. Identify the entity responsible for the long-term Operation and Maintenance.
VIP Subaru Wappinger

Post-Construction SMP Identification

54. Post-Construction RR Techniques and Standard SMPs

RR Techniques and SMPs	Contributing Impervious Area (acres)	Total Contributing Area (acres)
Wet Pond (P-2)	0.1	
Porous Pavement (RR-9)	0.3	

55. Alternative SMPs

Type of Alternative SMP	Manufacturer of the Alternative SMP	Name of the Alternative SMP	Contributing Impervious Area (acres)
NONE PROVIDED	*NONE PROVIDED*	*NONE PROVIDED*	*NONE PROVIDED*

Other Permits

56. Identify other permits, existing and new, that are required for this project/facility.
None

57. Is this NOI for a change in owner/operator per Part I.G.?
No

MS4 SWPPP Acceptance

59. Will the construction activities be within the municipal boundary(ies) of Traditional Land Use Control MS4 Operator(s) and discharge to the MS4(s)?
Yes

59.a. Which form is required per Part I.D.2.b.ii.?
MS4 SWPPP Acceptance Form

MS4 SWPPP Acceptance Form Download

Download the MS4 SWPPP Acceptance Form from the link below.
MS4 SWPPP Acceptance Form

60. MS4 Acceptance or No Jurisdiction Form Upload

NONE PROVIDED

Comment

NONE PROVIDED

60.a. Has the form been signed by the principal executive officer or ranking elected official—or duly authorized representative of that person—in accordance with Part VII.J. and submitted along with this NOI?
Yes

Owner/Operator Certification

Owner/Operator Certification Form Download

Download the Owner/Operator Certification Form by clicking the link below.
Owner/Operator Certification Form

61. Upload Owner/Operator Certification Form

NONE PROVIDED

Comment

NONE PROVIDED

61.a. Has the Owner/Operator Certification Form from Appendix J been signed by the owner/operator, or a representative of the owner/operator in accordance with Part VII.J of GP-0-25-001 and uploaded to the eNOI?
Yes

Additional Project Information

62. Enter any additional pertinent project information in the text box below.

NONE PROVIDED

Status History

	User	Processing Status
3/4/2026 3:21:00 PM	LaBella Poughkeepsie	Draft

Processing Steps

Step Name	Assigned To/Completed By	Date Completed
Form Submitted		
Issue SPDES Permit ID	Daniel von Schilgen	

MS4 SWPPP Acceptance Form

for construction activities seeking authorization under the

SPDES General Permit for Stormwater Discharges from Construction Activity, GP-0-25-001 (CGP)

(In accordance with CGP Part I.D.2.b., the completed form must be attached to the eNOI and submitted to NYSDEC electronically.)

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 Operator:
12. MS4 SPDES Permit Identification Number: NYR20A
13. Street Address:
14. City/State/Zip:
15. Telephone Number:

MS4 SWPPP Acceptance Form - continued

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

I hereby certify that the final Stormwater Pollution Prevention Plan (SWPPP) for the construction project identified in section II. of this form has been reviewed and meets the substantive requirements in the SPDES General Permit for Stormwater Discharges from Construction Activity, GP-0-25-001 (CGP). Note: The MS4 Operator, 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 Operator does not relieve the owner/operator or their SWPPP preparer of responsibility or liability for errors or omissions in the plan.

Printed Name[1]:

Title/Position:

Signature:

Date:

VI. Additional Information

[1] Printed name of the principal executive officer or ranking elected official for the MS4 Operator or their duly authorized representative in accordance with CGP Part VII.J.2.

SWPPP Preparer Certification Form

SPDES General Permit for Stormwater Discharges from Construction Activity, GP-0-25-001 (CGP)

(In accordance with CGP Part I.D.2.b., the completed form must be attached to the eNOI and submitted to NYSDEC electronically.)

Project/Site Name:

eNOI Submission ID:

Owner/Operator Name:

Certification Statement – SWPPP Preparer

I hereby certify that the Stormwater Pollution Prevention Plan (SWPPP) has been prepared in accordance with the requirements of GP-0-25-001. I certify under penalty of law that the SWPPP and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SWPPP Preparer First Name | MI | SWPPP Preparer Last Name

Signature

Date

Revised: January 2025

Owner/Operator Certification Form

SPDES General Permit for Stormwater Discharges from Construction Activity, GP-0-25-001 (CGP)

(In accordance with CGP Part I.D.2.b. or Part I.F.2. and 3., the completed form must be attached to the eNOI or the Request to Continue Coverage, and submitted to NYSDEC electronically.

Project/Site Name: _____

eNOI Submission ID: _____

eNOI Submitted by: ☐ **Owner/Operator** ☐ **SWPPP Preparer** ☐ **Other**

Certification Statement - Owner/Operator

I hereby certify that I read, and will comply with, the GP-0-25-001 permit requirements. I understand that authorization to discharge under the permit for the project/site named above is dependent on receipt of a Letter of Authorization (LOA) or a Letter of Continued Coverage (LOCC) from the New York State Department of Environmental Conservation (NYSDEC) in accordance with CGP Part I.D.3.b. or Part I.F.4. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Owner/Operator First Name MI Owner/Operator Last Name

_____

Signature

_____

Date

Revised: January 2025

NEW YORK STATE | Department of Environmental Conservation

eNOT Owner or Operator Certification

for construction activities seeking termination from the

SPDES General Permit for Stormwater Discharges from Construction Activity, GP-0-25-001 (CGP)

(The completed form must be attached to the eNOT, which must be submitted to NYSDEC electronically in accordance with CGP Part V.A.5.)

I. Project Owner/Operator Information

a. Owner/Operator Name:

b. Contact Person:

c. Street Address:

d. City/State/Zip:

II. Project Site Information

a. Project/Site Name:

b. Street Address:

c. City/State/Zip:

d. CGP SPDES Permit ID:

III. Certification Statement

I certify that I have met the requirements of CGP Part V.A.1., 2., 3., and 4. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

a. Printed name of the Owner or Operator:

b. Title/Position:

c. Signature:

d. Date:

eNOT Qualified Inspector Certification – Final Stabilization

for construction activities seeking termination from the

SPDES General Permit for Stormwater Discharges from Construction Activity, GP-0-25-001 (CGP)

(The completed form must be attached to the eNOT, which must be submitted to NYSDEC electronically in accordance with CGP Part V.A.5.)

I. Project Owner/Operator Information

a. Owner/Operator Name:

b. Contact Person:

c. Street Address:

d. City/State/Zip:

II. Project Site Information

a. Project/Site Name:

b. Street Address:

c. City/State/Zip:

d. CGP SPDES Permit ID:

III. Certification Statement

I hereby certify that all the requirements in CGP Part V.A.1.a.i., ii., and iii. or CGP Part V.A.1.b.i., ii., and iii. have been achieved. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

a. Printed name of the Qualified Inspector:

b. Title/Position:

c. Signature:

d. Date:

eNOT Qualified Inspector Certification – SMPs

for construction activities seeking termination from the

SPDES General Permit for Stormwater Discharges from Construction Activity, GP-0-25-001 (CGP)

(The completed form must be attached to the eNOT, which must be submitted to NYSDEC electronically in accordance with CGP Part V.A.5.)

I. Project Owner/Operator Information

a. Owner/Operator Name:

b. Contact Person:

c. Street Address:

d. City/State/Zip:

II. Project Site Information

a. Project/Site Name:

b. Street Address:

c. City/State/Zip:

d. CGP SPDES Permit ID:

III. Certification Statement

I hereby certify that all the requirements in CGP Part V.A.1.a.iv. or CGP Part V.A.1.b.iv. have been achieved. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

a. Printed name of the Qualified Inspector:

b. Title/Position:

c. Signature:

d. Date:

Stormwater Pollution Prevention Plan
Contractor Certification Statement
(Responsible for overall SWPPP Compliance)

Wappinger Subaru Building Expansion
1162 Route 9, Town of Wappinger, Dutchess County, New York

This is to certify that the following contracting firm will be responsible for installing, constructing, repairing, inspecting and/or maintaining the erosion and sediment control practices and post-construction stormwater management control practices required by the SWPPP.

Contracting Firm Information

Name: _____

Address: _____

Telephone & Fax: _____

Trained Contractor(s)[1] Responsible for SWPPP Implementation (Provide name, title, and date of last training)

_____

_____

Prior to commencement of construction activity, the following certification shall be issued:

I hereby certify under penalty of law that I understand and agree to comply with the requirements 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 requirements of the most current version of the New York State Pollutant Discharge Elimination System (SPDES) Construction General Permit (CGP) 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 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

Printed Name: _____

Title/Position: _____

Signature: _____ Date: _____

Upon completion of construction activities, the following certification shall be issued, prior to issuance of the NOT:

I hereby certify that that all permanent stormwater management practices required by the SWPPP have been installed in accordance with the contract documents. I further certify that all temporary erosion and sediment control measures have been removed from the site, and that the on-site soils disturbed by construction activity have been restored in accordance with the SWPPP and the NYSDEC Division of Water's publication "Deep-Ripping and Decompaction".

Printed Name: _____

Title/Position: _____

Signature: _____ Date: _____

[1] "Trained Contractor" means an employee from a contracting (construction) company 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 that meets the "qualified inspector" qualifications (e.g. licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, New York State Erosion and Sediment Control Certificate Program holder, 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" will be responsible for the day to day implementation of the SWPPP.

Stormwater Pollution Prevention Plan
Subcontractor Certification Statement
(whose work involves soil disturbance)

Wappinger Subaru Building Expansion
1162 Route 9, Town of Wappinger, Dutchess County, New York

Each Subcontractor whose work will involve soil disturbance of any kind is required to complete and sign this Certification Statement before commencing any construction activity at the site. This completed Certification Statement(s) shall be maintained at the construction site in the Site Log Book.

Subcontracting Firm Information

Name: _____

Address: _____

_____

Telephone & Fax: _____

Trained Contractor(s)[2] Responsible for SWPPP Implementation (Provide name, title, and date of last training)

_____

_____

Prior to commencement of construction activities, the following certification shall be issued:

I hereby certify under penalty of law that I understand and agree to comply with the requirements 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 requirements of the most current version of the New York State Pollutant Discharge Elimination System (SPDES) Construction General Permit (CGP) 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 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

Printed Name: _____

Title/Position: _____

Signature: _____ Date: _____

[2] "Trained Contractor" means an employee from a contracting (construction) company 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 that meets the "qualified inspector" qualifications (e.g. licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, New York State Erosion and Sediment Control Certificate Program holder, 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" will be responsible for the day to day implementation of the SWPPP.

APPENDIX C:
PROJECT EVALUATION

LaBella
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Appendix C - Table A
Climate Change Considerations

Physical Risk	Project Site Consideration			
	Overall Site Planning	Location, Elevation and Sizing of Control Measures and Practices	Location, Elevation and Sizing of Conveyance System(s)	Location, Elevation and Sizing of Detention System(s)
Increasing temperature	The project proposes green infrastructure techniques to combat heat island effect.	SMP(s) have been sized per the design manual. The elevation of ponding controls in the practice is limited by the requirements in the design manual.	Conveyance systems have been sized per the design manual.	System(s) have been designed with outlet controls to temporarily detain runoff and release it at a controlled rate over an extended period of time.
Increasing precipitation Increasing precipitation variability Increasing frequency and severity of flooding	The project proposes runoff reduction techniques to reduce the volume discharging from the project site and promoting groundwater recharge.	SMP(s) have been sized per the design manual. The elevation of ponding controls in the practice is limited by the requirements in the design manual.	Conveyance systems have been sized per the design manual.	System(s) have been designed with outlet controls to temporarily detain runoff and release it at a controlled rate over an extended period of time.
Rising sea level	Due to the site location, the property is not expected to be directly impacted by sea levels rising.	Due to the site location, the property is not expected to be directly impacted by sea levels rising.	Due to the site location, the property is not expected to be directly impacted by sea levels rising.	Due to the site location, the property is not expected to be directly impacted by sea levels rising.
Increasing storm surge	Due to the site location, the property is not expected to be directly impacted by storm surge	Due to the site location, the property is not expected to be directly impacted by storm surge	Due to the site location, the property is not expected to be directly impacted by storm surge	Due to the site location, the property is not expected to be directly impacted by storm surge
Shifting ecology	The plantings selected for the project are native species that meet design requirements.	The SMPs selected will utilize native species that meet design requirements.	The conveyance system proposed is a closed storm sewer network discharging to stormwater basins and groundwater, Therefore, this risk is not applicable to the conveyance system.	The detention system will utilize plantings of native species that meet design requirements.

Appendix C - Table A
Step 1 - Evaluation of Green Infrastructure Planning Measures

Group	Practice	Description	Application	Project Specific Evaluation
Preservation of Natural Resources	**Preservation of Undisturbed Areas**	Delineate and place into permanent conservation undisturbed forests, native vegetated areas, riparian corridors, wetlands, and natural terrain.	**Considered & Not Applied**	The proposed site layout has been designed to limit land disturbance to the greatest extent practical. The project does not propose permanent conservation of this area at this time.
	Preservation of Buffers	Define, delineate and preserve naturally vegetated buffers along perennial streams, rivers, shorelines and wetlands.	**N/A**	There are no perennial streams, rivers, shorelines and/or wetlands located on the project site.
	Reduction of Clearing and Grading	Limit clearing and grading to the minimum amount needed for roads, driveways, foundations, utilities and stormwater management facilities.	**Considered & Applied**	Clearing and grading will be limited to the area of disturbance, which has been limited to the greatest extent practical for the proposed development.
	Locating Development in Less Sensitive Areas	Avoid sensitive resource areas such as floodplains, steep slopes, erodible soils, wetlands, mature forests and critical habitats by locating development to fit the terrain in areas that will create the least impact.	**Considered & Applied**	There are no perennial streams, rivers, shorelines and/or wetlands located on the project site. Nor are there significant forested areas.
	Open Space Design	Use clustering, conservation design or open space design to reduce impervious cover, preserve more open space and protect water resources.	**Considered & Applied**	The site layout has been designed to maximize open space and limit site disturbance.
	Soil Restoration	Restore the original properties and porosity of the soil by deep till and amendment with compost to reduce the generation of runoff and enhance the runoff reduction performance of practices such as downspout disconnections, grass channels, filter strips, and tree clusters.	**Considered & Applied**	Full soil restoration is proposed for all areas of disturbance that will not become hardscape. All areas will be stabilized with seed & mulch, and landscaped areas will be provided.
Reduction of Impervious Cover	**Roadway Reduction**	Minimize roadway widths and lengths to reduce site impervious area	**N/A**	There are no proposed roadways as part of the proposed development.
	Sidewalk Reduction	Minimize sidewalk lengths and widths to reduce site impervious area	**Considered & Applied**	Sidewalk widths and lengths have been minimized to the greatest extent practical
	Driveway Reduction	Minimize driveway lengths and widths to reduce site impervious area	**Considered & Not Applied**	Reducing the driveway width is not feasible for the intended use.
	Cul-de-sac Reduction	Minimize the number of cul-de-sacs and incorporate landscaped areas to reduce their impervious cover.	**N/A**	There are no cul-de-sacs proposed for the development.
	Building Footprint Reduction	Reduce the impervious footprint of residences and commercial buildings by using alternate or taller buildings while maintaining the same floor to area ratio.	**Considered & Not Applied**	The proposed convenience store/Dunkin Donuts use proposed is not conducive to multiple-story buildings in the proposed location.
	Parking Reduction	Reduce imperviousness on parking lots by eliminating unneeded spaces, providing compact car spaces and efficient parking lanes, minimizing stall dimensions, using porous pavement surfaces in overflow parking areas, and using multi-storied parking decks where appropriate.	**Considered & Applied**	On-site parking has been allocated to provide a sufficient number of spaces for the intended use.

Appendix C - Table B
Step 2 - Determine Water Quality Treatment Volume (WQv)

Calculate Individual Stormwater Management Practice WQv

Subcatchment Area	Development Type	Total Area *(Acres)*	Existing Impervious Area (Acres)	Existing Impervious Area to Remain *(Acres)*	New Impervious Area *(Acres)*	Percent Impervious *%*	Rv	WQv *(ft^3)*	SMP or Green Infrastructure
Total Site	New Development	0.360	0.000	0.000	0.360	100%	0.95	1,738	

Appendix C - Table C
Step 3 - Determine Minimum Required Runoff Reduction Volume (RRv)

Section 4.3 of the NYSDEC Stormwater Management Design Manual describes the Runoff Reduction Volume equation as:

RRv = (P x Rv* x Ai) / 12

where: RRv = Runoff Reduction Volume (acre-feet)
P = 90% Rainfall Event Number (inches) (interpolated from Design Manual Fig 4.1)
Rv = 0.05 + 0.009 (I), where I is 100% impervious = 0.95 constant
Ai = (S x Aic) = Impervious cover targeted for runoff reduction
Aic = Total area of new impervious cover (acres)
S = Hydrologic Soil Group (HSG) Specific Reduction Factor
where:

HSG A=	0.55	HSG C=	0.30
HSG B=	0.40	HSG D=	0.20

The following table presents the RRv calculations for each of the proposed stormwater management practices (SMPs).

Enter the Soils Data for the site

Soil Group	Acres	S
A	0.000	55%
B	0.360	40%
C	0.000	30%
D	0.000	20%
Total Area	0.360	acres

Calculate the Minimum RRv

S =	**0.400**	
Impervious =	0.360	*acre*
Precipitation	1.40	*in*
Rv	0.950	
Minimum RRv	**695**	ft^3
	0.016	af

Appendix C - Table D
Step 3 - Evaluation of Green Infrastructure Techniques

Design Variant	Practice	Description	Applicable	Project Specific Evaluation/Justification
RR-1	**Conservation of Natural Areas**	Retain the pre-development hydrologic and water quality characteristics of undisturbed natural areas, stream and wetland buffers by restoring and/or permanently conserving these areas on a site.	**Considered & Not Applied**	Approximately 6.1+/- Acres of land will remain undisturbed, in its natural state, which accounts for 72.6% of the total project parcell. The pre-development hydrologic and water quality characteristics of the undisturbed natural areas and the stream buffer will be maintained. The project does not propose permanent conservation of these areas at this time.
RR-2	**Sheet flow to Riparian Buffers or Filter Strips**	Undisturbed natural areas such as forested conservation areas and stream buffers or vegetated filter strips and riparian buffers can be used to treat and control stormwater runoff from some areas of a development project.	**Considered & Not Applied**	Topography is unsuitable for this application.
RR-3	**Tree Planting / Tree Box**	Plant or conserve trees to reduce stormwater runoff, increase nutrient uptake, and provide bank stabilization. Trees can be used for applications such as landscaping, stormwater management practice areas, and conservation areas.	**Considered & Applied**	The project proposes the preservation of existing mature trees, as well as the planting of numerous trees throughout the site, in order to reduce stormwater runoff, increase nutrient uptake, and provide bank stabilization.
RR-4	**Disconnection of Rooftop Runoff**	Direct runoff from residential rooftop areas and upland overland runoff flow to designated pervious areas to reduce runoff volumes and rates.	**Considered & Not Applied**	Rooftop disconnect is not applicable, since this is a commercial building project. However, roof runoff is being directed to stormwater planters.
RR-5	**Vegetated Swale**	The natural drainage paths, or properly designed vegetated channels, can be used instead of constructing underground storm sewers or concrete open channels to increase time of concentration, reduce the peak discharge, and provide infiltration.	**Considered & Not Applied**	Grass-lined swales will be utilized in this project. However, site topography makes them unsuitable for water quality and runoff reduction purposes.
RR-6	**Rain Garden**	Manage and treat small volumes of stormwater runoff using a conditioned planting soil bed and planting materials to filter runoff stored within a shallow depression.	**Considered & Not Applied**	Due to the limited tributary area to rain gardens (less than or equal to 1,000SF), a stormwater planter facility will be implemented instead of rain gardens. These facilities act similarly to rain gardens by providing both filtration and infiltration of runoff, in addition to providing RRv capacity.
RR-7	**Stormwater Planter**	Small landscaped stormwater treatment devices that can be designed as infiltration or filtering practices. Stormwater planters use soil infiltration and biogeochemical processes to decrease stormwater quantity and improve water quality.	**Considered & Applied**	Stormwater planter is proposed in several locations around the proposed building, and will capture all of the new roof area.
RR-8	**Rain Barrels/Cisterns**	Capture and store stormwater runoff to be used for irrigation systems or filtered and reused for non-contact activities.	**Considered & Not Applied**	Rain Barrels/Cisterns are not proposed on-site due to the need for active management/maintenance and initial capital cost. However, underground attenuation facilities will be utilized to control peak discharge rates.
RR-9	**Porous Pavement**	Pervious types of pavements that provide an alternative to conventional paved surfaces, designed to infiltrate rainfall through the surface, thereby reducing stormwater runoff from a site and providing some pollutant uptake in the underlying soils.	**Considered & Not Applied**	Porous Pavement is not proposed due to extensive maintenance requirements and initial capital cost. However, Filterra units will be implemented. These facilities act similarly to porous pavement by treating parking lot runoff, in addition to providing RRv capacity.
RR-10	**Green Roof**	Capture runoff by a layer of vegetation and soil installed on top of a conventional flat or sloped roof. The rooftop vegetation allows evaporation and evapotranspiration processes to reduce volume and discharge rate of runoff entering conveyance system.	**Considered & Not Applied**	A green roof is not proposed on-site due to significant structural, insurance, and maintenance considerations.
	Stream Daylighting	Stream Daylight previously-culverted/piped streams to restore natural habitats, better attenuate runoff by increasing the storage size, promoting infiltration, and help reduce pollutant loads.	**N/A**	No stream daylighting opportunities are present on this site.

Appendix C - Table E

Summary Table: Runoff Reduction Volume and Treated volumes

Runoff Reduction Techiques/Standard SMPs			Total Contributing Area (acres)	Total Contributing Impervious Area (acres)	WQv Reguired (WQv) cf	WQv Reduced (RRv) cf	WQv Treated cf
Area/Volume Reduction	Conservation of Natural Areas	RR-1	0.00	0.00			
	Sheetflow to Riparian Buffers/Filter Strips	RR-2	0.00	0.00			
	Tree Planting/Tree Pit	RR-3	0.00	0.00			
	Disconnection of Rooftop Runoff	RR-4		0.00			
	Vegetated Swale	RR-5	0.00	0.00		0	
	Rain Garden	RR-6	0.00	0.00		0	
	Stormwater Planter	RR-7	0.00	0.00		0	**0**
	Rain Barrel/Cistern	RR-8	0.00	0.00		0	
	Porous Pavement	**RR-9**	**0.26**	**0.26**	**1,255**	**1,255**	
	Green Roof (Intensive & Extensive)	RR-10	0.00	0.00		0	
Standard SMPs w/RRv Capacity	Infiltration Trench	I-1	0.00	0.00		0	0
	Infiltration Basin	I-2	0.00	0.00			
	Dry Well	I-3	0.00	0.00			
	Underground Infiltration System	I-4	0.00	0.00			
	Bioretention & Infiltration Bioretention no underdrains	F-5	0.00	0.00			
	Bioretention & Infiltration Bioretention with underdrains	**F-5**	**0.00**	**0.00**			
	Dry Swale	O-1	0.00	0.00			
Standard SMPs	Micropool Extended Detention (P-1)	P-1	0.00	0.00			0
	Wet Pond (P-2)	**P-2**	**0.10**	**0.10**	**483**		**2,131cf**
	Wet Extended Detention (P-3)	P-3	0.00	0.00			0
	Multiple Pond System (P-4)	P-4	0.00	0.00			0
	Pocket Pond (P-5)	P-5	0.00	0.00			0
	Surface Sand Filter (F-1)	F-1	0.00	0.00			0
	Underground Sand Filter (F-2)	F-2	0.00	0.00			0
	Perimeter Sand Filter (F-3)	F-3	0.00	0.00			0
	Organic Filter (F-4)	F-4	0.00	0.00			0
	Shallow Wetland (W-1)	W-1	0.00	0.00			0
	Extended Detention Wetland (W-2)	W-2	0.00	0.00			0
	Pond/Wetland System (W-3)	W-3	0.00	0.00			0
	Pocket Wetland (W-4)	W-4	0.00	0.00			0
	Wet Swale (O-2)	O-2	0.00	0.00			0
Alternative Practices	Hydrodynamic Separator		0.00	0.00			
	Filterra Bioretention Systems		0.00	0.00			
	Wet Vault		0.00	0.00			0
	Media Filter		0.00	0.00			0
	Underground Infiltration System		0.00	0.00			0
Totals by Area Reduction →			0.00	0.00		0	
Totals by Volume Reduction →			**0.26**	**0.26**		**1,255**	0
Totals by Standard SMP w/RRV →			0.00	0.00		0	0
Totals by Standard SMP →			**0.10**	**0.10**			**2,131**
Totals by Alternative Practices →			0.00	0.00			0
Totals (Area + Volume + all SMPs) →			**0.36**	**0.36**	**1,738**	**1,255**	**2,131**

Appendix C - Table F
Step 2 - Determine Water Quality Treatment Volume (WQv)

Calculate Individual Stormwater Management Practice WQv

Subcatchment Area	Development Type	Total Area *(Acres)*	Existing Impervious Area (Acres)	Existing Impervious Area to Remain *(Acres)*	New Impervious Area *(Acres)*	Percent Impervious *%*	Rv	WQv *(ft^3)*	SMP or Green Infrastructure
Pervious Pavement (New Impervious)	New Development	0.260	0.000	0.000	0.260	100%	0.95	1,255	Porous Pavement

Pervious Pavement Area 4 (PP4)	
Square Footage:	8,546
Depth of stone reservoir below overdrain (ft)	0.75
Void Ratio	0.4
Treatment Capacity WQv (cf):	2563.8

The treatment capacity provided allocates for the complete drainage area to the pervious pavement area PP4, inclusive of the new impervious area.

Calculate Individual Stormwater Management Practice WQv									
Subcatchment Area	**Development Type**	**Total Area** *(Acres)*	**Existing Impervious Area** (Acres)	**Existing Impervious Area to Remain** *(Acres)*	**New Impervious Area** *(Acres)*	**Percent Impervious** *%*	**Rv**	**WQv** *(ft^3)*	**SMP or Green Infrastructure**
Pocket Ponds DET 8& DET9 (New Impervious)	New Development	0.100	0.000	0.000	0.100	100%	0.95	483	Wet Pond

Western Pocket Ponds (Det8 & Det9)	
Pre-Devolopment Treatment Capacity from HydroCAD (volume below lowest orifice):	5,249cf
Post-Development Treatment Capacity from HydroCAD (volume below lowest orifice):	7,380cf
Provided WQv Treatment	2,131cf

APPENDIX D:
PRE-DEVELOPMENT STORMWATER MODELING

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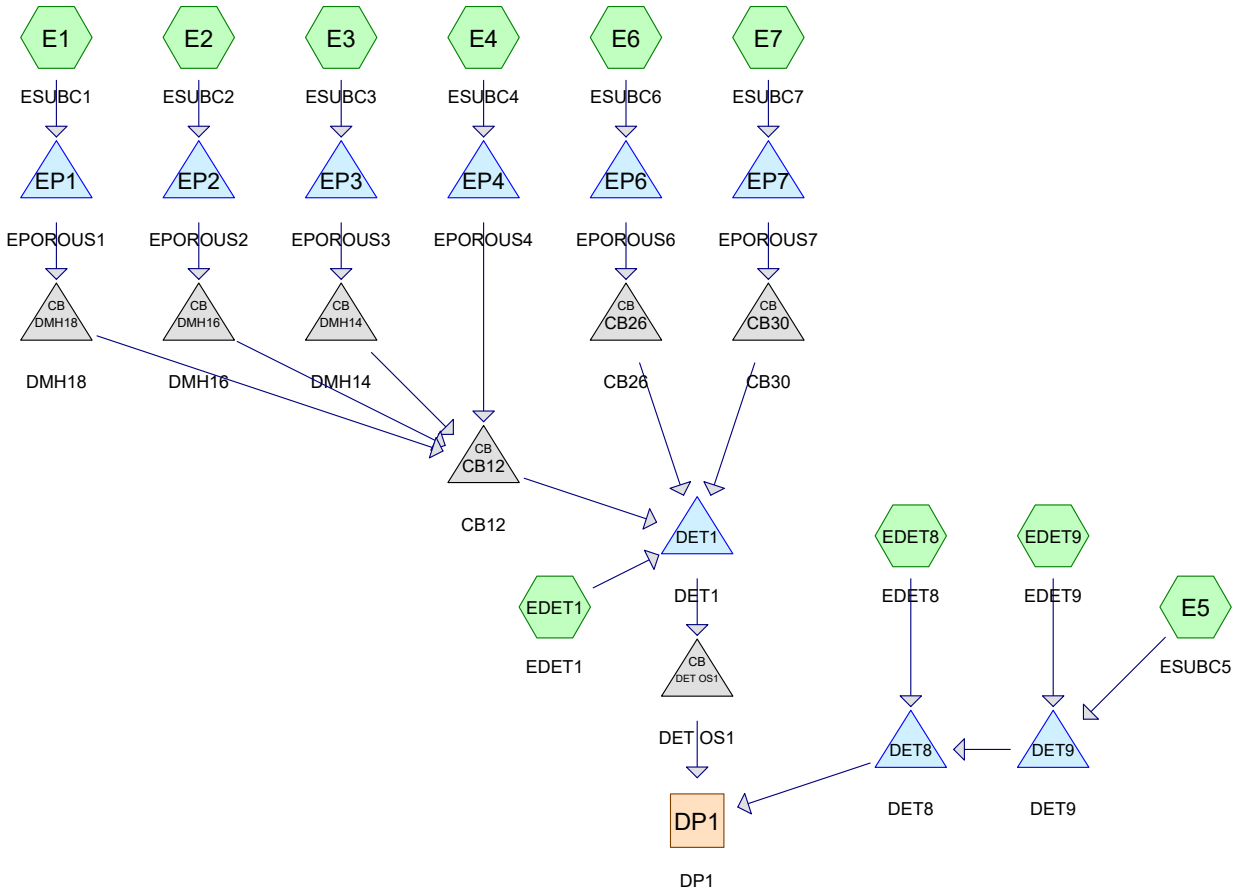

Routing Diagram for 2254625_Pre_Dev
Prepared by Labella Associates, Printed 3/4/2026

Summary for Subcatchment E1: ESUBC1

Runoff = 0.46 cfs @ 11.95 hrs, Volume= 0.022 af, Depth> 1.58"
Routed to Pond EP1 : EPOROUS1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 1-yr Rainfall=2.61"

Area (sf)	CN	Description
5,590	98	Paved parking, HSG B
1,809	69	50-75% Grass cover, Fair, HSG B
7,399	91	Weighted Average
1,809		24.45% Pervious Area
5,590		75.55% Impervious Area

Summary for Subcatchment E2: ESUBC2

Runoff = 0.66 cfs @ 11.95 hrs, Volume= 0.033 af, Depth> 1.91"
Routed to Pond EP2 : EPOROUS2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 1-yr Rainfall=2.61"

Area (sf)	CN	Description
8,298	98	Paved parking, HSG B
791	69	50-75% Grass cover, Fair, HSG B
9,089	95	Weighted Average
791		8.70% Pervious Area
8,298		91.30% Impervious Area

Summary for Subcatchment E3: ESUBC3

Runoff = 0.77 cfs @ 11.95 hrs, Volume= 0.039 af, Depth> 1.91"
Routed to Pond EP3 : EPOROUS3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 1-yr Rainfall=2.61"

Area (sf)	CN	Description
9,429	98	Paved parking, HSG B
1,162	69	50-75% Grass cover, Fair, HSG B
10,591	95	Weighted Average
1,162		10.97% Pervious Area
9,429		89.03% Impervious Area

Summary for Subcatchment E4: ESUBC4

Runoff = 1.85 cfs @ 11.95 hrs, Volume= 0.092 af, Depth> 1.83"
Routed to Pond EP4 : EPOROUS4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 1-yr Rainfall=2.61"

Area (sf)	CN	Description
23,081	98	Paved parking, HSG B
3,264	69	50-75% Grass cover, Fair, HSG B
26,345	94	Weighted Average
3,264		12.39% Pervious Area
23,081		87.61% Impervious Area

Summary for Subcatchment E5: ESUBC5

Runoff = 4.43 cfs @ 11.95 hrs, Volume= 0.229 af, Depth> 2.09"
Routed to Pond DET9 : DET9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 1-yr Rainfall=2.61"

Area (sf)	CN	Description
55,130	98	Paved parking, HSG B
2,212	69	50-75% Grass cover, Fair, HSG B
57,342	97	Weighted Average
2,212		3.86% Pervious Area
55,130		96.14% Impervious Area

Summary for Subcatchment E6: ESUBC6

Runoff = 1.96 cfs @ 11.95 hrs, Volume= 0.099 af, Depth> 1.91"
Routed to Pond EP6 : EPOROUS6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 1-yr Rainfall=2.61"

Area (sf)	CN	Description
24,355	98	Paved parking, HSG B
2,643	69	50-75% Grass cover, Fair, HSG B
26,998	95	Weighted Average
2,643		9.79% Pervious Area
24,355		90.21% Impervious Area

Summary for Subcatchment E7: ESUBC7

Runoff = 0.96 cfs @ 11.95 hrs, Volume= 0.048 af, Depth> 1.91"
Routed to Pond EP7 : EPOROUS7

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 1-yr Rainfall=2.61"

Area (sf)	CN	Description
11,996	98	Paved parking, HSG B
1,134	69	50-75% Grass cover, Fair, HSG B
13,130	95	Weighted Average
1,134		8.64% Pervious Area
11,996		91.36% Impervious Area

Summary for Subcatchment EDET1: EDET1

Runoff = 0.27 cfs @ 11.97 hrs, Volume= 0.017 af, Depth> 0.40"
Routed to Pond DET1 : DET1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 1-yr Rainfall=2.61"

Area (sf)	CN	Description
22,293	69	50-75% Grass cover, Fair, HSG B
22,293		100.00% Pervious Area

Summary for Subcatchment EDET8: EDET8

Runoff = 0.12 cfs @ 11.97 hrs, Volume= 0.008 af, Depth> 0.40"
Routed to Pond DET8 : DET8

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 1-yr Rainfall=2.61"

Area (sf)	CN	Description
9,817	69	50-75% Grass cover, Fair, HSG B
9,817		100.00% Pervious Area

Summary for Subcatchment EDET9: EDET9

Runoff = 0.08 cfs @ 11.97 hrs, Volume= 0.005 af, Depth> 0.40"
Routed to Pond DET9 : DET9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 1-yr Rainfall=2.61"

Area (sf)	CN	Description
6,258	69	50-75% Grass cover, Fair, HSG B
6,258		100.00% Pervious Area

Summary for Reach DP1: DP1

Inflow Area = 4.345 ac, 72.85% Impervious, Inflow Depth > 0.56" for 1-yr event
Inflow = 0.32 cfs @ 12.92 hrs, Volume= 0.204 af
Outflow = 0.32 cfs @ 12.92 hrs, Volume= 0.204 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Pond CB12: CB12

Inflow Area = 1.226 ac, 86.85% Impervious, Inflow Depth = 0.00" for 1-yr event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond DET1 : DET1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 255.90' @ 5.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	258.00'	**18.0" Round Culvert** L= 141.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 258.00' / 256.40' S= 0.0113 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Primary	255.90'	**18.0" Round Culvert** L= 118.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 255.90' / 247.90' S= 0.0678 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=255.90' (Free Discharge)
1=Culvert (Controls 0.00 cfs)
2=Culvert (Controls 0.00 cfs)

Summary for Pond CB26: CB26

Inflow Area = 0.620 ac, 90.21% Impervious, Inflow Depth = 0.00" for 1-yr event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond DET1 : DET1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 250.40' @ 5.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	250.40'	**18.0" Round Culvert** L= 114.0' CPP, projecting, no headwall, Ke= 0.900

Inlet / Outlet Invert= 250.40' / 247.90' S= 0.0219 '/' Cc= 0.900
n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=250.40' (Free Discharge)
1=Culvert (Controls 0.00 cfs)

Summary for Pond CB30: CB30

Inflow Area = 0.301 ac, 91.36% Impervious, Inflow Depth = 0.00" for 1-yr event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond DET1 : DET1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 250.50' @ 5.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	250.50'	**18.0" Round Culvert**
			L= 89.0' CPP, projecting, no headwall, Ke= 0.900
			Inlet / Outlet Invert= 250.50' / 248.10' S= 0.0270 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=250.50' (Free Discharge)
1=Culvert (Controls 0.00 cfs)

Summary for Pond DET OS1: DET OS1

Inflow Area = 2.659 ac, 71.43% Impervious, Inflow Depth = 0.00" for 1-yr event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Reach DP1 : DP1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 247.00' @ 5.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	247.00'	**18.0" Round Culvert**
			L= 384.0' CPP, projecting, no headwall, Ke= 0.900
			Inlet / Outlet Invert= 247.00' / 244.80' S= 0.0057 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=247.00' (Free Discharge)
1=Culvert (Controls 0.00 cfs)

Summary for Pond DET1: DET1

Inflow Area = 2.659 ac, 71.43% Impervious, Inflow Depth > 0.08" for 1-yr event
Inflow = 0.27 cfs @ 11.97 hrs, Volume= 0.017 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond DET OS1 : DET OS1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 246.77' @ 20.00 hrs Surf.Area= 1,904 sf Storage= 748 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	246.00'	38,763 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
246.00	28	0	0
247.00	2,451	1,240	1,240
248.00	3,227	2,839	4,079
249.00	3,985	3,606	7,685
250.00	4,811	4,398	12,083
251.00	5,700	5,256	17,338
252.00	6,650	6,175	23,513
253.00	7,675	7,163	30,676
254.00	8,500	8,088	38,763

Device	Routing	Invert	Outlet Devices
#1	Primary	247.10'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	248.10'	**12.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=246.00' (Free Discharge)
↑—**1=Orifice/Grate** (Controls 0.00 cfs)
└—**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond DET8: DET8

Inflow Area = 1.685 ac, 75.09% Impervious, Inflow Depth > 1.69" for 1-yr event
Inflow = 3.53 cfs @ 12.00 hrs, Volume= 0.238 af
Outflow = 0.32 cfs @ 12.92 hrs, Volume= 0.204 af, Atten= 91%, Lag= 55.4 min
Primary = 0.32 cfs @ 12.92 hrs, Volume= 0.204 af
Routed to Reach DP1 : DP1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Starting Elev= 246.00' Surf.Area= 2,032 sf Storage= 3,721 cf
Peak Elev= 247.90' @ 12.92 hrs Surf.Area= 3,245 sf Storage= 8,708 cf (4,987 cf above start)

Plug-Flow detention time= 347.6 min calculated for 0.118 af (50% of inflow)
Center-of-Mass det. time= 130.5 min (890.3 - 759.8)

Volume	Invert	Avail.Storage	Storage Description
#1	243.00'	17,413 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
243.00	416	0	0
244.00	1,016	716	716
245.00	1,481	1,249	1,965
246.00	2,032	1,757	3,721
247.00	2,634	2,333	6,054
248.00	3,311	2,973	9,027
249.00	4,120	3,716	12,742
250.00	5,221	4,671	17,413

Device	Routing	Invert	Outlet Devices
#1	Primary	246.00'	**18.0" Round Culvert** L= 100.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 246.00' / 245.90' S= 0.0010 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Device 1	246.00'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	248.50'	**20.0" W x 6.0" H Vert. Orifice/Grate X 4.00** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.32 cfs @ 12.92 hrs HW=247.90' (Free Discharge)
└─**1=Culvert** (Passes 0.32 cfs of 5.71 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.32 cfs @ 6.42 fps)
  └─**3=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond DET9: DET9

Inflow Area = 1.460 ac, 86.68% Impervious, Inflow Depth > 1.92" for 1-yr event
Inflow = 4.50 cfs @ 11.95 hrs, Volume= 0.234 af
Outflow = 3.43 cfs @ 12.00 hrs, Volume= 0.230 af, Atten= 24%, Lag= 2.9 min
Primary = 3.43 cfs @ 12.00 hrs, Volume= 0.230 af
Routed to Pond DET8 : DET8

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Starting Elev= 247.30' Surf.Area= 1,230 sf Storage= 1,655 cf
Peak Elev= 248.08' @ 12.00 hrs Surf.Area= 1,687 sf Storage= 2,793 cf (1,138 cf above start)

Plug-Flow detention time= 109.0 min calculated for 0.192 af (82% of inflow)
Center-of-Mass det. time= 13.0 min (756.9 - 743.9)

Volume	Invert	Avail.Storage	Storage Description
#1	245.00'	6,691 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
245.00	251	0	0
246.00	658	455	455
247.00	1,057	858	1,312
248.00	1,632	1,345	2,657
249.00	2,300	1,966	4,623
249.80	2,870	2,068	6,691

Device	Routing	Invert	Outlet Devices
#1	Primary	247.30'	**24.0" Round Culvert X 2.00** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 247.30' / 247.30' S= 0.0000 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=3.41 cfs @ 12.00 hrs HW=248.08' (Free Discharge)
1=Culvert (Barrel Controls 3.41 cfs @ 2.23 fps)

Summary for Pond DMH14: DMH14

Inflow Area = 0.243 ac, 89.03% Impervious, Inflow Depth = 0.00" for 1-yr event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond CB12 : CB12

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 258.00' @ 5.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	258.00'	**18.0" Round Culvert** L= 141.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 258.00' / 256.40' S= 0.0113 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=258.00' (Free Discharge)
1=Culvert (Controls 0.00 cfs)

Summary for Pond DMH16: DMH16

Inflow Area = 0.209 ac, 91.30% Impervious, Inflow Depth = 0.00" for 1-yr event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond CB12 : CB12

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 259.90' @ 5.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	259.90'	**18.0" Round Culvert**

L= 187.0' CPP, projecting, no headwall, Ke= 0.900
Inlet / Outlet Invert= 259.90' / 256.40' S= 0.0187 '/' Cc= 0.900
n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=259.90' (Free Discharge)
1=Culvert (Controls 0.00 cfs)

Summary for Pond DMH18: DMH18

Inflow Area = 0.170 ac, 75.55% Impervious, Inflow Depth = 0.00" for 1-yr event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond CB12 : CB12

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 261.60' @ 5.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	261.60'	**18.0" Round Culvert**
			L= 207.0' CPP, projecting, no headwall, Ke= 0.900
			Inlet / Outlet Invert= 261.60' / 256.40' S= 0.0251 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=261.60' (Free Discharge)
1=Culvert (Controls 0.00 cfs)

Summary for Pond EP1: EPOROUS1

Inflow Area = 0.170 ac, 75.55% Impervious, Inflow Depth > 1.58" for 1-yr event
Inflow = 0.46 cfs @ 11.95 hrs, Volume= 0.022 af
Outflow = 0.44 cfs @ 11.96 hrs, Volume= 0.022 af, Atten= 3%, Lag= 0.5 min
Discarded = 0.44 cfs @ 11.96 hrs, Volume= 0.022 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond DMH18 : DMH18

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 261.41' @ 11.96 hrs Surf.Area= 2,390 sf Storage= 12 cf

Plug-Flow detention time= 0.4 min calculated for 0.022 af (100% of inflow)
Center-of-Mass det. time= 0.4 min (773.2 - 772.8)

Volume	Invert	Avail.Storage	Storage Description
#1	261.40'	1,749 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
			4,374 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
261.40	2,390	0	0
263.23	2,390	4,374	4,374

Device	Routing	Invert	Outlet Devices
#1	Primary	262.15'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#2	Discarded	261.40'	**12.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.66 cfs @ 11.96 hrs HW=261.41' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.66 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=261.40' (Free Discharge)
└**1=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond EP2: EPOROUS2

Inflow Area = 0.209 ac, 91.30% Impervious, Inflow Depth > 1.91" for 1-yr event
Inflow = 0.66 cfs @ 11.95 hrs, Volume= 0.033 af
Outflow = 0.64 cfs @ 11.96 hrs, Volume= 0.033 af, Atten= 3%, Lag= 0.5 min
Discarded = 0.64 cfs @ 11.96 hrs, Volume= 0.033 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond DMH16 : DMH16

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 259.81' @ 11.96 hrs Surf.Area= 4,055 sf Storage= 17 cf

Plug-Flow detention time= 0.5 min calculated for 0.033 af (100% of inflow)
Center-of-Mass det. time= 0.4 min (753.0 - 752.7)

Volume	Invert	Avail.Storage	Storage Description
#1	259.80'	2,968 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 7,421 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
259.80	4,055	0	0
261.63	4,055	7,421	7,421

Device	Routing	Invert	Outlet Devices
#1	Primary	260.55'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#2	Discarded	259.80'	**12.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=1.13 cfs @ 11.96 hrs HW=259.81' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 1.13 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=259.80' (Free Discharge)
└**1=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond EP3: EPOROUS3

Inflow Area = 0.243 ac, 89.03% Impervious, Inflow Depth > 1.91" for 1-yr event
Inflow = 0.77 cfs @ 11.95 hrs, Volume= 0.039 af
Outflow = 0.75 cfs @ 11.96 hrs, Volume= 0.039 af, Atten= 3%, Lag= 0.4 min
Discarded = 0.75 cfs @ 11.96 hrs, Volume= 0.039 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond DMH14 : DMH14

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 258.21' @ 11.96 hrs Surf.Area= 3,492 sf Storage= 19 cf

Plug-Flow detention time= 0.5 min calculated for 0.039 af (100% of inflow)
Center-of-Mass det. time= 0.4 min (753.0 - 752.7)

Volume	Invert	Avail.Storage	Storage Description
#1	258.20'	2,444 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 6,111 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
258.20	3,492	0	0
259.95	3,492	6,111	6,111

Device	Routing	Invert	Outlet Devices
#1	Primary	258.95'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#2	Discarded	258.20'	**12.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.97 cfs @ 11.96 hrs HW=258.21' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.97 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=258.20' (Free Discharge)
↑—**1=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond EP4: EPOROUS4

Inflow Area = 0.605 ac, 87.61% Impervious, Inflow Depth > 1.83" for 1-yr event
Inflow = 1.85 cfs @ 11.95 hrs, Volume= 0.092 af
Outflow = 1.41 cfs @ 11.95 hrs, Volume= 0.092 af, Atten= 24%, Lag= 0.0 min
Discarded = 1.41 cfs @ 11.95 hrs, Volume= 0.092 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond CB12 : CB12

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 256.75' @ 11.99 hrs Surf.Area= 5,059 sf Storage= 110 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.4 min (758.3 - 757.9)

Volume	Invert	Avail.Storage	Storage Description
#1	256.70'	3,541 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 8,853 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
256.70	5,059	0	0
258.45	5,059	8,853	8,853

Device	Routing	Invert	Outlet Devices
#1	Primary	257.45'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#2	Discarded	256.70'	**12.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=1.41 cfs @ 11.95 hrs HW=256.74' (Free Discharge)
2=Exfiltration (Exfiltration Controls 1.41 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=256.70' (Free Discharge)
1=Orifice/Grate (Controls 0.00 cfs)

Summary for Pond EP6: EPOROUS6

Inflow Area = 0.620 ac, 90.21% Impervious, Inflow Depth > 1.91" for 1-yr event
Inflow = 1.96 cfs @ 11.95 hrs, Volume= 0.099 af
Outflow = 1.72 cfs @ 11.98 hrs, Volume= 0.099 af, Atten= 12%, Lag= 1.3 min
Discarded = 1.72 cfs @ 11.98 hrs, Volume= 0.099 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond CB26 : CB26

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 250.88' @ 11.98 hrs Surf.Area= 5,939 sf Storage= 75 cf

Plug-Flow detention time= 0.5 min calculated for 0.099 af (100% of inflow)
Center-of-Mass det. time= 0.4 min (753.0 - 752.7)

Volume	Invert	Avail.Storage	Storage Description
#1	250.85'	3,967 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 9,918 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
250.85	5,939	0	0
252.52	5,939	9,918	9,918

Device	Routing	Invert	Outlet Devices
#1	Primary	251.88'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#2	Discarded	250.85'	**12.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=1.65 cfs @ 11.98 hrs HW=250.88' (Free Discharge)
2=Exfiltration (Exfiltration Controls 1.65 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=250.85' (Free Discharge)
1=Orifice/Grate (Controls 0.00 cfs)

Summary for Pond EP7: EPOROUS7

Inflow Area = 0.301 ac, 91.36% Impervious, Inflow Depth > 1.91" for 1-yr event
Inflow = 0.96 cfs @ 11.95 hrs, Volume= 0.048 af
Outflow = 0.93 cfs @ 11.96 hrs, Volume= 0.048 af, Atten= 3%, Lag= 0.4 min
Discarded = 0.93 cfs @ 11.96 hrs, Volume= 0.048 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond CB30 : CB30

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 250.87' @ 11.96 hrs Surf.Area= 3,500 sf Storage= 22 cf

Plug-Flow detention time= 0.4 min calculated for 0.048 af (100% of inflow)
Center-of-Mass det. time= 0.3 min (753.0 - 752.7)

Volume	Invert	Avail.Storage	Storage Description
#1	250.85'	2,338 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 5,845 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
250.85	3,500	0	0
252.52	3,500	5,845	5,845

Device	Routing	Invert	Outlet Devices
#1	Primary	251.88'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#2	Discarded	250.85'	**12.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.97 cfs @ 11.96 hrs HW=250.87' (Free Discharge)
2=Exfiltration (Exfiltration Controls 0.97 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=250.85' (Free Discharge)
1=Orifice/Grate (Controls 0.00 cfs)

Summary for Subcatchment E1: ESUBC1

Runoff = 0.87 cfs @ 11.95 hrs, Volume= 0.048 af, Depth> 3.38"
Routed to Pond EP1 : EPOROUS1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 10-yr Rainfall=4.67"

Area (sf)	CN	Description
5,590	98	Paved parking, HSG B
1,809	69	50-75% Grass cover, Fair, HSG B
7,399	91	Weighted Average
1,809		24.45% Pervious Area
5,590		75.55% Impervious Area

Summary for Subcatchment E2: ESUBC2

Runoff = 1.15 cfs @ 11.95 hrs, Volume= 0.065 af, Depth> 3.75"
Routed to Pond EP2 : EPOROUS2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 10-yr Rainfall=4.67"

Area (sf)	CN	Description
8,298	98	Paved parking, HSG B
791	69	50-75% Grass cover, Fair, HSG B
9,089	95	Weighted Average
791		8.70% Pervious Area
8,298		91.30% Impervious Area

Summary for Subcatchment E3: ESUBC3

Runoff = 1.34 cfs @ 11.95 hrs, Volume= 0.076 af, Depth> 3.75"
Routed to Pond EP3 : EPOROUS3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 10-yr Rainfall=4.67"

Area (sf)	CN	Description
9,429	98	Paved parking, HSG B
1,162	69	50-75% Grass cover, Fair, HSG B
10,591	95	Weighted Average
1,162		10.97% Pervious Area
9,429		89.03% Impervious Area

Summary for Subcatchment E4: ESUBC4

Runoff = 3.29 cfs @ 11.95 hrs, Volume= 0.185 af, Depth> 3.66"
Routed to Pond EP4 : EPOROUS4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 10-yr Rainfall=4.67"

Area (sf)	CN	Description
23,081	98	Paved parking, HSG B
3,264	69	50-75% Grass cover, Fair, HSG B
26,345	94	Weighted Average
3,264		12.39% Pervious Area
23,081		87.61% Impervious Area

Summary for Subcatchment E5: ESUBC5

Runoff = 7.45 cfs @ 11.95 hrs, Volume= 0.429 af, Depth> 3.91"
Routed to Pond DET9 : DET9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 10-yr Rainfall=4.67"

Area (sf)	CN	Description
55,130	98	Paved parking, HSG B
2,212	69	50-75% Grass cover, Fair, HSG B
57,342	97	Weighted Average
2,212		3.86% Pervious Area
55,130		96.14% Impervious Area

Summary for Subcatchment E6: ESUBC6

Runoff = 3.42 cfs @ 11.95 hrs, Volume= 0.194 af, Depth> 3.75"
Routed to Pond EP6 : EPOROUS6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 10-yr Rainfall=4.67"

Area (sf)	CN	Description
24,355	98	Paved parking, HSG B
2,643	69	50-75% Grass cover, Fair, HSG B
26,998	95	Weighted Average
2,643		9.79% Pervious Area
24,355		90.21% Impervious Area

Summary for Subcatchment E7: ESUBC7

Runoff = 1.66 cfs @ 11.95 hrs, Volume= 0.094 af, Depth> 3.75"
Routed to Pond EP7 : EPOROUS7

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 10-yr Rainfall=4.67"

Area (sf)	CN	Description
11,996	98	Paved parking, HSG B
1,134	69	50-75% Grass cover, Fair, HSG B
13,130	95	Weighted Average
1,134		8.64% Pervious Area
11,996		91.36% Impervious Area

Summary for Subcatchment EDET1: EDET1

Runoff = 1.22 cfs @ 11.96 hrs, Volume= 0.066 af, Depth> 1.54"
Routed to Pond DET1 : DET1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 10-yr Rainfall=4.67"

Area (sf)	CN	Description
22,293	69	50-75% Grass cover, Fair, HSG B
22,293		100.00% Pervious Area

Summary for Subcatchment EDET8: EDET8

Runoff = 0.54 cfs @ 11.96 hrs, Volume= 0.029 af, Depth> 1.54"
Routed to Pond DET8 : DET8

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 10-yr Rainfall=4.67"

Area (sf)	CN	Description
9,817	69	50-75% Grass cover, Fair, HSG B
9,817		100.00% Pervious Area

Summary for Subcatchment EDET9: EDET9

Runoff = 0.34 cfs @ 11.96 hrs, Volume= 0.018 af, Depth> 1.54"
Routed to Pond DET9 : DET9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 10-yr Rainfall=4.67"

Area (sf)	CN	Description
6,258	69	50-75% Grass cover, Fair, HSG B
6,258		100.00% Pervious Area

Summary for Reach DP1: DP1

Inflow Area = 4.345 ac, 72.85% Impervious, Inflow Depth > 1.12" for 10-yr event
Inflow = 2.61 cfs @ 12.20 hrs, Volume= 0.404 af
Outflow = 2.61 cfs @ 12.20 hrs, Volume= 0.404 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Pond CB12: CB12

Inflow Area = 1.226 ac, 86.85% Impervious, Inflow Depth = 0.00" for 10-yr event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond DET1 : DET1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 255.90' @ 5.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	258.00'	**18.0" Round Culvert** L= 141.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 258.00' / 256.40' S= 0.0113 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Primary	255.90'	**18.0" Round Culvert** L= 118.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 255.90' / 247.90' S= 0.0678 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=255.90' (Free Discharge)
1=Culvert (Controls 0.00 cfs)
2=Culvert (Controls 0.00 cfs)

Summary for Pond CB26: CB26

Inflow Area = 0.620 ac, 90.21% Impervious, Inflow Depth = 0.00" for 10-yr event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond DET1 : DET1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 250.40' @ 5.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	250.40'	**18.0" Round Culvert** L= 114.0' CPP, projecting, no headwall, Ke= 0.900

Inlet / Outlet Invert= 250.40' / 247.90' S= 0.0219 '/' Cc= 0.900
n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=250.40' (Free Discharge)
1=Culvert (Controls 0.00 cfs)

Summary for Pond CB30: CB30

Inflow Area = 0.301 ac, 91.36% Impervious, Inflow Depth = 0.00" for 10-yr event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond DET1 : DET1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 250.50' @ 5.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	250.50'	**18.0" Round Culvert** L= 89.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 250.50' / 248.10' S= 0.0270 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=250.50' (Free Discharge)
1=Culvert (Controls 0.00 cfs)

Summary for Pond DET OS1: DET OS1

Inflow Area = 2.659 ac, 71.43% Impervious, Inflow Depth > 0.11" for 10-yr event
Inflow = 0.05 cfs @ 15.24 hrs, Volume= 0.024 af
Outflow = 0.05 cfs @ 15.24 hrs, Volume= 0.024 af, Atten= 0%, Lag= 0.0 min
Primary = 0.05 cfs @ 15.24 hrs, Volume= 0.024 af
Routed to Reach DP1 : DP1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 247.11' @ 15.24 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	247.00'	**18.0" Round Culvert** L= 384.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 247.00' / 244.80' S= 0.0057 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.05 cfs @ 15.24 hrs HW=247.11' (Free Discharge)
1=Culvert (Barrel Controls 0.05 cfs @ 1.23 fps)

Summary for Pond DET1: DET1

Inflow Area = 2.659 ac, 71.43% Impervious, Inflow Depth > 0.30" for 10-yr event
Inflow = 1.22 cfs @ 11.96 hrs, Volume= 0.066 af
Outflow = 0.05 cfs @ 15.24 hrs, Volume= 0.024 af, Atten= 96%, Lag= 196.7 min
Primary = 0.05 cfs @ 15.24 hrs, Volume= 0.024 af
Routed to Pond DET OS1 : DET OS1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 247.27' @ 15.24 hrs Surf.Area= 2,657 sf Storage= 1,917 cf

Plug-Flow detention time= 276.8 min calculated for 0.024 af (36% of inflow)
Center-of-Mass det. time= 172.3 min (985.9 - 813.6)

Volume	Invert	Avail.Storage	Storage Description
#1	246.00'	38,763 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
246.00	28	0	0
247.00	2,451	1,240	1,240
248.00	3,227	2,839	4,079
249.00	3,985	3,606	7,685
250.00	4,811	4,398	12,083
251.00	5,700	5,256	17,338
252.00	6,650	6,175	23,513
253.00	7,675	7,163	30,676
254.00	8,500	8,088	38,763

Device	Routing	Invert	Outlet Devices
#1	Primary	247.10'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	248.10'	**12.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.05 cfs @ 15.24 hrs HW=247.27' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.05 cfs @ 1.38 fps)
2=Orifice/Grate (Controls 0.00 cfs)

Summary for Pond DET8: DET8

Inflow Area = 1.685 ac, 75.09% Impervious, Inflow Depth > 3.36" for 10-yr event
Inflow = 6.69 cfs @ 11.99 hrs, Volume= 0.472 af
Outflow = 2.61 cfs @ 12.20 hrs, Volume= 0.381 af, Atten= 61%, Lag= 12.4 min
Primary = 2.61 cfs @ 12.20 hrs, Volume= 0.381 af
Routed to Reach DP1 : DP1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Starting Elev= 246.00' Surf.Area= 2,032 sf Storage= 3,721 cf
Peak Elev= 248.72' @ 12.20 hrs Surf.Area= 3,894 sf Storage= 11,621 cf (7,900 cf above start)

Plug-Flow detention time= 236.9 min calculated for 0.294 af (62% of inflow)
Center-of-Mass det. time= 92.3 min (843.5 - 751.3)

Volume	Invert	Avail.Storage	Storage Description
#1	243.00'	17,413 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
243.00	416	0	0
244.00	1,016	716	716
245.00	1,481	1,249	1,965
246.00	2,032	1,757	3,721
247.00	2,634	2,333	6,054
248.00	3,311	2,973	9,027
249.00	4,120	3,716	12,742
250.00	5,221	4,671	17,413

Device	Routing	Invert	Outlet Devices
#1	Primary	246.00'	**18.0" Round Culvert** L= 100.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 246.00' / 245.90' S= 0.0010 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Device 1	246.00'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	248.50'	**20.0" W x 6.0" H Vert. Orifice/Grate X 4.00** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.59 cfs @ 12.20 hrs HW=248.72' (Free Discharge)
└**1=Culvert** (Passes 2.59 cfs of 8.44 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 0.38 cfs @ 7.76 fps)
  └**3=Orifice/Grate** (Orifice Controls 2.21 cfs @ 1.51 fps)

Summary for Pond DET9: DET9

Inflow Area = 1.460 ac, 86.68% Impervious, Inflow Depth > 3.68" for 10-yr event
Inflow = 7.79 cfs @ 11.95 hrs, Volume= 0.448 af
Outflow = 6.26 cfs @ 12.00 hrs, Volume= 0.443 af, Atten= 20%, Lag= 2.6 min
Primary = 6.26 cfs @ 12.00 hrs, Volume= 0.443 af
Routed to Pond DET8 : DET8

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Starting Elev= 247.30' Surf.Area= 1,230 sf Storage= 1,655 cf
Peak Elev= 248.36' @ 12.00 hrs Surf.Area= 1,873 sf Storage= 3,288 cf (1,633 cf above start)

Plug-Flow detention time= 72.8 min calculated for 0.403 af (90% of inflow)
Center-of-Mass det. time= 9.5 min (747.2 - 737.7)

Volume	Invert	Avail.Storage	Storage Description
#1	245.00'	6,691 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
245.00	251	0	0
246.00	658	455	455
247.00	1,057	858	1,312
248.00	1,632	1,345	2,657
249.00	2,300	1,966	4,623
249.80	2,870	2,068	6,691

Device	Routing	Invert	Outlet Devices
#1	Primary	247.30'	**24.0" Round Culvert X 2.00** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 247.30' / 247.30' S= 0.0000 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=6.17 cfs @ 12.00 hrs HW=248.35' (Free Discharge)
1=Culvert (Barrel Controls 6.17 cfs @ 2.68 fps)

Summary for Pond DMH14: DMH14

Inflow Area = 0.243 ac, 89.03% Impervious, Inflow Depth = 0.00" for 10-yr event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond CB12 : CB12

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 258.00' @ 5.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	258.00'	**18.0" Round Culvert** L= 141.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 258.00' / 256.40' S= 0.0113 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=258.00' (Free Discharge)
1=Culvert (Controls 0.00 cfs)

Summary for Pond DMH16: DMH16

Inflow Area = 0.209 ac, 91.30% Impervious, Inflow Depth = 0.00" for 10-yr event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond CB12 : CB12

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 259.90' @ 5.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	259.90'	**18.0" Round Culvert**

L= 187.0' CPP, projecting, no headwall, Ke= 0.900
Inlet / Outlet Invert= 259.90' / 256.40' S= 0.0187 '/' Cc= 0.900
n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=259.90' (Free Discharge)
1=Culvert (Controls 0.00 cfs)

Summary for Pond DMH18: DMH18

Inflow Area = 0.170 ac, 75.55% Impervious, Inflow Depth = 0.00" for 10-yr event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond CB12 : CB12

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 261.60' @ 5.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	261.60'	**18.0" Round Culvert**
			L= 207.0' CPP, projecting, no headwall, Ke= 0.900
			Inlet / Outlet Invert= 261.60' / 256.40' S= 0.0251 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=261.60' (Free Discharge)
1=Culvert (Controls 0.00 cfs)

Summary for Pond EP1: EPOROUS1

Inflow Area = 0.170 ac, 75.55% Impervious, Inflow Depth > 3.38" for 10-yr event
Inflow = 0.87 cfs @ 11.95 hrs, Volume= 0.048 af
Outflow = 0.66 cfs @ 11.95 hrs, Volume= 0.048 af, Atten= 24%, Lag= 0.0 min
Discarded = 0.66 cfs @ 11.95 hrs, Volume= 0.048 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond DMH18 : DMH18

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 261.46' @ 11.99 hrs Surf.Area= 2,390 sf Storage= 54 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.5 min (754.5 - 754.1)

Volume	Invert	Avail.Storage	Storage Description
#1	261.40'	1,749 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
			4,374 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
261.40	2,390	0	0
263.23	2,390	4,374	4,374

Device	Routing	Invert	Outlet Devices
#1	Primary	262.15'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#2	Discarded	261.40'	**12.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.66 cfs @ 11.95 hrs HW=261.44' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.66 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=261.40' (Free Discharge)
└**1=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond EP2: EPOROUS2

Inflow Area = 0.209 ac, 91.30% Impervious, Inflow Depth > 3.75" for 10-yr event
Inflow = 1.15 cfs @ 11.95 hrs, Volume= 0.065 af
Outflow = 1.12 cfs @ 11.96 hrs, Volume= 0.065 af, Atten= 3%, Lag= 0.5 min
Discarded = 1.12 cfs @ 11.96 hrs, Volume= 0.065 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond DMH16 : DMH16

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 259.82' @ 11.96 hrs Surf.Area= 4,055 sf Storage= 30 cf

Plug-Flow detention time= 0.5 min calculated for 0.065 af (100% of inflow)
Center-of-Mass det. time= 0.4 min (741.3 - 741.0)

Volume	Invert	Avail.Storage	Storage Description
#1	259.80'	2,968 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 7,421 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
259.80	4,055	0	0
261.63	4,055	7,421	7,421

Device	Routing	Invert	Outlet Devices
#1	Primary	260.55'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#2	Discarded	259.80'	**12.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=1.13 cfs @ 11.96 hrs HW=259.82' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 1.13 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=259.80' (Free Discharge)
└**1=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond EP3: EPOROUS3

Inflow Area = 0.243 ac, 89.03% Impervious, Inflow Depth > 3.75" for 10-yr event
Inflow = 1.34 cfs @ 11.95 hrs, Volume= 0.076 af
Outflow = 0.97 cfs @ 11.95 hrs, Volume= 0.076 af, Atten= 28%, Lag= 0.0 min
Discarded = 0.97 cfs @ 11.95 hrs, Volume= 0.076 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond DMH14 : DMH14

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 258.27' @ 12.00 hrs Surf.Area= 3,492 sf Storage= 94 cf

Plug-Flow detention time= 0.6 min calculated for 0.076 af (100% of inflow)
Center-of-Mass det. time= 0.5 min (741.5 - 741.0)

Volume	Invert	Avail.Storage	Storage Description
#1	258.20'	2,444 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 6,111 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
258.20	3,492	0	0
259.95	3,492	6,111	6,111

Device	Routing	Invert	Outlet Devices
#1	Primary	258.95'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#2	Discarded	258.20'	**12.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.97 cfs @ 11.95 hrs HW=258.24' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.97 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=258.20' (Free Discharge)
↑—**1=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond EP4: EPOROUS4

Inflow Area = 0.605 ac, 87.61% Impervious, Inflow Depth > 3.66" for 10-yr event
Inflow = 3.29 cfs @ 11.95 hrs, Volume= 0.185 af
Outflow = 1.41 cfs @ 11.90 hrs, Volume= 0.185 af, Atten= 57%, Lag= 0.0 min
Discarded = 1.41 cfs @ 11.90 hrs, Volume= 0.185 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond CB12 : CB12

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 257.03' @ 12.06 hrs Surf.Area= 5,059 sf Storage= 666 cf

Plug-Flow detention time= 1.8 min calculated for 0.184 af (100% of inflow)
Center-of-Mass det. time= 1.7 min (746.0 - 744.3)

Volume	Invert	Avail.Storage	Storage Description
#1	256.70'	3,541 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 8,853 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
256.70	5,059	0	0
258.45	5,059	8,853	8,853

Device	Routing	Invert	Outlet Devices
#1	Primary	257.45'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#2	Discarded	256.70'	**12.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=1.41 cfs @ 11.90 hrs HW=256.75' (Free Discharge)
2=Exfiltration (Exfiltration Controls 1.41 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=256.70' (Free Discharge)
1=Orifice/Grate (Controls 0.00 cfs)

Summary for Pond EP6: EPOROUS6

Inflow Area = 0.620 ac, 90.21% Impervious, Inflow Depth > 3.75" for 10-yr event
Inflow = 3.42 cfs @ 11.95 hrs, Volume= 0.194 af
Outflow = 1.65 cfs @ 11.90 hrs, Volume= 0.194 af, Atten= 52%, Lag= 0.0 min
Discarded = 1.65 cfs @ 11.90 hrs, Volume= 0.194 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond CB26 : CB26

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 251.09' @ 12.05 hrs Surf.Area= 5,939 sf Storage= 570 cf

Plug-Flow detention time= 1.3 min calculated for 0.193 af (100% of inflow)
Center-of-Mass det. time= 1.2 min (742.2 - 741.0)

Volume	Invert	Avail.Storage	Storage Description
#1	250.85'	3,967 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 9,918 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
250.85	5,939	0	0
252.52	5,939	9,918	9,918

Device	Routing	Invert	Outlet Devices
#1	Primary	251.88'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#2	Discarded	250.85'	**12.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=1.65 cfs @ 11.90 hrs HW=250.88' (Free Discharge)
↑**2=Exfiltration** (Exfiltration Controls 1.65 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=250.85' (Free Discharge)
↑**1=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond EP7: EPOROUS7

Inflow Area = 0.301 ac, 91.36% Impervious, Inflow Depth > 3.75" for 10-yr event
Inflow = 1.66 cfs @ 11.95 hrs, Volume= 0.094 af
Outflow = 0.97 cfs @ 11.95 hrs, Volume= 0.094 af, Atten= 42%, Lag= 0.0 min
Discarded = 0.97 cfs @ 11.95 hrs, Volume= 0.094 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond CB30 : CB30

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 250.98' @ 12.02 hrs Surf.Area= 3,500 sf Storage= 185 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.7 min (741.7 - 741.0)

Volume	Invert	Avail.Storage	Storage Description
#1	250.85'	2,338 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 5,845 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
250.85	3,500	0	0
252.52	3,500	5,845	5,845

Device	Routing	Invert	Outlet Devices
#1	Primary	251.88'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#2	Discarded	250.85'	**12.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.97 cfs @ 11.95 hrs HW=250.92' (Free Discharge)
↑**2=Exfiltration** (Exfiltration Controls 0.97 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=250.85' (Free Discharge)
↑**1=Orifice/Grate** (Controls 0.00 cfs)

Summary for Subcatchment E1: ESUBC1

Runoff = 1.52 cfs @ 11.95 hrs, Volume= 0.093 af, Depth> 6.55"
Routed to Pond EP1 : EPOROUS1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 100-yr Rainfall=8.22"

Area (sf)	CN	Description
5,590	98	Paved parking, HSG B
1,809	69	50-75% Grass cover, Fair, HSG B
7,399	91	Weighted Average
1,809		24.45% Pervious Area
5,590		75.55% Impervious Area

Summary for Subcatchment E2: ESUBC2

Runoff = 1.92 cfs @ 11.95 hrs, Volume= 0.120 af, Depth> 6.90"
Routed to Pond EP2 : EPOROUS2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 100-yr Rainfall=8.22"

Area (sf)	CN	Description
8,298	98	Paved parking, HSG B
791	69	50-75% Grass cover, Fair, HSG B
9,089	95	Weighted Average
791		8.70% Pervious Area
8,298		91.30% Impervious Area

Summary for Subcatchment E3: ESUBC3

Runoff = 2.24 cfs @ 11.95 hrs, Volume= 0.140 af, Depth> 6.90"
Routed to Pond EP3 : EPOROUS3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 100-yr Rainfall=8.22"

Area (sf)	CN	Description
9,429	98	Paved parking, HSG B
1,162	69	50-75% Grass cover, Fair, HSG B
10,591	95	Weighted Average
1,162		10.97% Pervious Area
9,429		89.03% Impervious Area

Summary for Subcatchment E4: ESUBC4

Runoff = 5.53 cfs @ 11.95 hrs, Volume= 0.344 af, Depth> 6.82"
Routed to Pond EP4 : EPOROUS4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 100-yr Rainfall=8.22"

Area (sf)	CN	Description
23,081	98	Paved parking, HSG B
3,264	69	50-75% Grass cover, Fair, HSG B
26,345	94	Weighted Average
3,264		12.39% Pervious Area
23,081		87.61% Impervious Area

Summary for Subcatchment E5: ESUBC5

Runoff = 12.22 cfs @ 11.95 hrs, Volume= 0.772 af, Depth> 7.03"
Routed to Pond DET9 : DET9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 100-yr Rainfall=8.22"

Area (sf)	CN	Description
55,130	98	Paved parking, HSG B
2,212	69	50-75% Grass cover, Fair, HSG B
57,342	97	Weighted Average
2,212		3.86% Pervious Area
55,130		96.14% Impervious Area

Summary for Subcatchment E6: ESUBC6

Runoff = 5.70 cfs @ 11.95 hrs, Volume= 0.356 af, Depth> 6.90"
Routed to Pond EP6 : EPOROUS6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 100-yr Rainfall=8.22"

Area (sf)	CN	Description
24,355	98	Paved parking, HSG B
2,643	69	50-75% Grass cover, Fair, HSG B
26,998	95	Weighted Average
2,643		9.79% Pervious Area
24,355		90.21% Impervious Area

Summary for Subcatchment E7: ESUBC7

Runoff = 2.77 cfs @ 11.95 hrs, Volume= 0.173 af, Depth> 6.90"
Routed to Pond EP7 : EPOROUS7

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 100-yr Rainfall=8.22"

Area (sf)	CN	Description
11,996	98	Paved parking, HSG B
1,134	69	50-75% Grass cover, Fair, HSG B
13,130	95	Weighted Average
1,134		8.64% Pervious Area
11,996		91.36% Impervious Area

Summary for Subcatchment EDET1: EDET1

Runoff = 3.10 cfs @ 11.96 hrs, Volume= 0.176 af, Depth> 4.14"
Routed to Pond DET1 : DET1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 100-yr Rainfall=8.22"

Area (sf)	CN	Description
22,293	69	50-75% Grass cover, Fair, HSG B
22,293		100.00% Pervious Area

Summary for Subcatchment EDET8: EDET8

Runoff = 1.37 cfs @ 11.96 hrs, Volume= 0.078 af, Depth> 4.14"
Routed to Pond DET8 : DET8

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 100-yr Rainfall=8.22"

Area (sf)	CN	Description
9,817	69	50-75% Grass cover, Fair, HSG B
9,817		100.00% Pervious Area

Summary for Subcatchment EDET9: EDET9

Runoff = 0.87 cfs @ 11.96 hrs, Volume= 0.050 af, Depth> 4.14"
Routed to Pond DET9 : DET9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 100-yr Rainfall=8.22"

Area (sf)	CN	Description
6,258	69	50-75% Grass cover, Fair, HSG B
6,258		100.00% Pervious Area

Summary for Reach DP1: DP1

Inflow Area = 4.345 ac, 72.85% Impervious, Inflow Depth > 2.43" for 100-yr event
Inflow = 9.83 cfs @ 12.04 hrs, Volume= 0.880 af
Outflow = 9.83 cfs @ 12.04 hrs, Volume= 0.880 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Pond CB12: CB12

Inflow Area = 1.226 ac, 86.85% Impervious, Inflow Depth = 0.07" for 100-yr event
Inflow = 0.32 cfs @ 12.15 hrs, Volume= 0.007 af
Outflow = 0.32 cfs @ 12.15 hrs, Volume= 0.007 af, Atten= 0%, Lag= 0.0 min
Primary = 0.32 cfs @ 12.15 hrs, Volume= 0.007 af
Routed to Pond DET1 : DET1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 256.18' @ 12.15 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	258.00'	**18.0" Round Culvert** L= 141.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 258.00' / 256.40' S= 0.0113 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Primary	255.90'	**18.0" Round Culvert** L= 118.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 255.90' / 247.90' S= 0.0678 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.32 cfs @ 12.15 hrs HW=256.18' (Free Discharge)
1=Culvert (Controls 0.00 cfs)
2=Culvert (Inlet Controls 0.32 cfs @ 1.42 fps)

Summary for Pond CB26: CB26

Inflow Area = 0.620 ac, 90.21% Impervious, Inflow Depth = 0.00" for 100-yr event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond DET1 : DET1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 250.40' @ 5.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	250.40'	**18.0" Round Culvert** L= 114.0' CPP, projecting, no headwall, Ke= 0.900

Inlet / Outlet Invert= 250.40' / 247.90' S= 0.0219 '/' Cc= 0.900
n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=250.40' (Free Discharge)
1=Culvert (Controls 0.00 cfs)

Summary for Pond CB30: CB30

Inflow Area = 0.301 ac, 91.36% Impervious, Inflow Depth = 0.00" for 100-yr event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond DET1 : DET1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 250.50' @ 5.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	250.50'	**18.0" Round Culvert** L= 89.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 250.50' / 248.10' S= 0.0270 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=250.50' (Free Discharge)
1=Culvert (Controls 0.00 cfs)

Summary for Pond DET OS1: DET OS1

Inflow Area = 2.659 ac, 71.43% Impervious, Inflow Depth > 0.57" for 100-yr event
Inflow = 0.25 cfs @ 12.92 hrs, Volume= 0.126 af
Outflow = 0.25 cfs @ 12.92 hrs, Volume= 0.126 af, Atten= 0%, Lag= 0.0 min
Primary = 0.25 cfs @ 12.92 hrs, Volume= 0.126 af
Routed to Reach DP1 : DP1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 247.24' @ 12.92 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	247.00'	**18.0" Round Culvert** L= 384.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 247.00' / 244.80' S= 0.0057 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.25 cfs @ 12.92 hrs HW=247.24' (Free Discharge)
1=Culvert (Barrel Controls 0.25 cfs @ 2.01 fps)

Summary for Pond DET1: DET1

Inflow Area = 2.659 ac, 71.43% Impervious, Inflow Depth > 0.83" for 100-yr event
Inflow = 3.10 cfs @ 11.96 hrs, Volume= 0.184 af
Outflow = 0.25 cfs @ 12.92 hrs, Volume= 0.126 af, Atten= 92%, Lag= 57.8 min
Primary = 0.25 cfs @ 12.92 hrs, Volume= 0.126 af
Routed to Pond DET OS1 : DET OS1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 248.16' @ 12.92 hrs Surf.Area= 3,350 sf Storage= 4,612 cf

Plug-Flow detention time= 223.1 min calculated for 0.126 af (68% of inflow)
Center-of-Mass det. time= 148.5 min (934.5 - 786.0)

Volume	Invert	Avail.Storage	Storage Description
#1	246.00'	38,763 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
246.00	28	0	0
247.00	2,451	1,240	1,240
248.00	3,227	2,839	4,079
249.00	3,985	3,606	7,685
250.00	4,811	4,398	12,083
251.00	5,700	5,256	17,338
252.00	6,650	6,175	23,513
253.00	7,675	7,163	30,676
254.00	8,500	8,088	38,763

Device	Routing	Invert	Outlet Devices
#1	Primary	247.10'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	248.10'	**12.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.25 cfs @ 12.92 hrs HW=248.16' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 0.23 cfs @ 4.66 fps)
└**2=Orifice/Grate** (Orifice Controls 0.02 cfs @ 0.85 fps)

Summary for Pond DET8: DET8

Inflow Area = 1.685 ac, 75.09% Impervious, Inflow Depth > 6.35" for 100-yr event
Inflow = 11.95 cfs @ 11.99 hrs, Volume= 0.893 af
Outflow = 9.68 cfs @ 12.04 hrs, Volume= 0.754 af, Atten= 19%, Lag= 2.8 min
Primary = 9.68 cfs @ 12.04 hrs, Volume= 0.754 af
Routed to Reach DP1 : DP1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Starting Elev= 246.00' Surf.Area= 2,032 sf Storage= 3,721 cf
Peak Elev= 249.13' @ 12.04 hrs Surf.Area= 4,265 sf Storage= 13,293 cf (9,572 cf above start)

Plug-Flow detention time= 143.6 min calculated for 0.666 af (75% of inflow)
Center-of-Mass det. time= 45.8 min (791.3 - 745.5)

Volume	Invert	Avail.Storage	Storage Description
#1	243.00'	17,413 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
243.00	416	0	0
244.00	1,016	716	716
245.00	1,481	1,249	1,965
246.00	2,032	1,757	3,721
247.00	2,634	2,333	6,054
248.00	3,311	2,973	9,027
249.00	4,120	3,716	12,742
250.00	5,221	4,671	17,413

Device	Routing	Invert	Outlet Devices
#1	Primary	246.00'	**18.0" Round Culvert** L= 100.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 246.00' / 245.90' S= 0.0010 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Device 1	246.00'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	248.50'	**20.0" W x 6.0" H Vert. Orifice/Grate X 4.00** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=9.63 cfs @ 12.04 hrs HW=249.12' (Free Discharge)
└─**1=Culvert** (Barrel Controls 9.63 cfs @ 5.45 fps)
  ├─**2=Orifice/Grate** (Passes < 0.41 cfs potential flow)
  └─**3=Orifice/Grate** (Passes < 9.55 cfs potential flow)

Summary for Pond DET9: DET9

Inflow Area = 1.460 ac, 86.68% Impervious, Inflow Depth > 6.75" for 100-yr event
Inflow = 13.09 cfs @ 11.95 hrs, Volume= 0.821 af
Outflow = 10.85 cfs @ 11.99 hrs, Volume= 0.815 af, Atten= 17%, Lag= 2.5 min
Primary = 10.85 cfs @ 11.99 hrs, Volume= 0.815 af
Routed to Pond DET8 : DET8

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Starting Elev= 247.30' Surf.Area= 1,230 sf Storage= 1,655 cf
Peak Elev= 248.72' @ 11.99 hrs Surf.Area= 2,114 sf Storage= 4,009 cf (2,354 cf above start)

Plug-Flow detention time= 46.6 min calculated for 0.774 af (94% of inflow)
Center-of-Mass det. time= 7.1 min (741.4 - 734.3)

Volume	Invert	Avail.Storage	Storage Description
#1	245.00'	6,691 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
245.00	251	0	0
246.00	658	455	455
247.00	1,057	858	1,312
248.00	1,632	1,345	2,657
249.00	2,300	1,966	4,623
249.80	2,870	2,068	6,691

Device	Routing	Invert	Outlet Devices
#1	Primary	247.30'	**24.0" Round Culvert X 2.00** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 247.30' / 247.30' S= 0.0000 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=10.64 cfs @ 11.99 hrs HW=248.71' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 10.64 cfs @ 3.17 fps)

Summary for Pond DMH14: DMH14

Inflow Area = 0.243 ac, 89.03% Impervious, Inflow Depth = 0.00" for 100-yr event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond CB12 : CB12

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 258.00' @ 5.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	258.00'	**18.0" Round Culvert** L= 141.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 258.00' / 256.40' S= 0.0113 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=258.00' (Free Discharge)
↑—**1=Culvert** (Controls 0.00 cfs)

Summary for Pond DMH16: DMH16

Inflow Area = 0.209 ac, 91.30% Impervious, Inflow Depth = 0.00" for 100-yr event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond CB12 : CB12

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 259.90' @ 5.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	259.90'	**18.0" Round Culvert**

L= 187.0' CPP, projecting, no headwall, Ke= 0.900
Inlet / Outlet Invert= 259.90' / 256.40' S= 0.0187 '/' Cc= 0.900
n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=259.90' (Free Discharge)
1=Culvert (Controls 0.00 cfs)

Summary for Pond DMH18: DMH18

Inflow Area = 0.170 ac, 75.55% Impervious, Inflow Depth = 0.00" for 100-yr event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond CB12 : CB12

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 261.60' @ 5.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	261.60'	**18.0" Round Culvert**
			L= 207.0' CPP, projecting, no headwall, Ke= 0.900
			Inlet / Outlet Invert= 261.60' / 256.40' S= 0.0251 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=261.60' (Free Discharge)
1=Culvert (Controls 0.00 cfs)

Summary for Pond EP1: EPOROUS1

Inflow Area = 0.170 ac, 75.55% Impervious, Inflow Depth > 6.55" for 100-yr event
Inflow = 1.52 cfs @ 11.95 hrs, Volume= 0.093 af
Outflow = 0.66 cfs @ 11.90 hrs, Volume= 0.093 af, Atten= 56%, Lag= 0.0 min
Discarded = 0.66 cfs @ 11.90 hrs, Volume= 0.093 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond DMH18 : DMH18

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 261.73' @ 12.07 hrs Surf.Area= 2,390 sf Storage= 314 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 1.7 min (743.8 - 742.1)

Volume	Invert	Avail.Storage	Storage Description
#1	261.40'	1,749 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
			4,374 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
261.40	2,390	0	0
263.23	2,390	4,374	4,374

Device	Routing	Invert	Outlet Devices
#1	Primary	262.15'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#2	Discarded	261.40'	**12.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.66 cfs @ 11.90 hrs HW=261.45' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.66 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=261.40' (Free Discharge)
└**1=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond EP2: EPOROUS2

Inflow Area = 0.209 ac, 91.30% Impervious, Inflow Depth > 6.90" for 100-yr event
Inflow = 1.92 cfs @ 11.95 hrs, Volume= 0.120 af
Outflow = 1.13 cfs @ 11.90 hrs, Volume= 0.120 af, Atten= 41%, Lag= 0.0 min
Discarded = 1.13 cfs @ 11.90 hrs, Volume= 0.120 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond DMH16 : DMH16

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 259.94' @ 12.02 hrs Surf.Area= 4,055 sf Storage= 225 cf

Plug-Flow detention time= 0.9 min calculated for 0.120 af (100% of inflow)
Center-of-Mass det. time= 0.7 min (735.0 - 734.2)

Volume	Invert	Avail.Storage	Storage Description
#1	259.80'	2,968 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 7,421 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
259.80	4,055	0	0
261.63	4,055	7,421	7,421

Device	Routing	Invert	Outlet Devices
#1	Primary	260.55'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#2	Discarded	259.80'	**12.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=1.13 cfs @ 11.90 hrs HW=259.82' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 1.13 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=259.80' (Free Discharge)
└**1=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond EP3: EPOROUS3

Inflow Area = 0.243 ac, 89.03% Impervious, Inflow Depth > 6.90" for 100-yr event
Inflow = 2.24 cfs @ 11.95 hrs, Volume= 0.140 af
Outflow = 0.97 cfs @ 11.90 hrs, Volume= 0.140 af, Atten= 57%, Lag= 0.0 min
Discarded = 0.97 cfs @ 11.90 hrs, Volume= 0.140 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond DMH14 : DMH14

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 258.53' @ 12.07 hrs Surf.Area= 3,492 sf Storage= 467 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 1.7 min (735.9 - 734.2)

Volume	Invert	Avail.Storage	Storage Description
#1	258.20'	2,444 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 6,111 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
258.20	3,492	0	0
259.95	3,492	6,111	6,111

Device	Routing	Invert	Outlet Devices
#1	Primary	258.95'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#2	Discarded	258.20'	**12.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.97 cfs @ 11.90 hrs HW=258.25' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.97 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=258.20' (Free Discharge)
↑—**1=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond EP4: EPOROUS4

Inflow Area = 0.605 ac, 87.61% Impervious, Inflow Depth > 6.82" for 100-yr event
Inflow = 5.53 cfs @ 11.95 hrs, Volume= 0.344 af
Outflow = 1.73 cfs @ 12.15 hrs, Volume= 0.344 af, Atten= 69%, Lag= 11.8 min
Discarded = 1.41 cfs @ 11.75 hrs, Volume= 0.337 af
Primary = 0.32 cfs @ 12.15 hrs, Volume= 0.007 af
Routed to Pond CB12 : CB12

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 257.70' @ 12.15 hrs Surf.Area= 5,059 sf Storage= 2,015 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 5.9 min (742.1 - 736.1)

Volume	Invert	Avail.Storage	Storage Description
#1	256.70'	3,541 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 8,853 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
256.70	5,059	0	0
258.45	5,059	8,853	8,853

Device	Routing	Invert	Outlet Devices
#1	Primary	257.45'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#2	Discarded	256.70'	**12.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=1.41 cfs @ 11.75 hrs HW=256.72' (Free Discharge)
↑**2=Exfiltration** (Exfiltration Controls 1.41 cfs)

Primary OutFlow Max=0.32 cfs @ 12.15 hrs HW=257.70' (Free Discharge)
↑**1=Orifice/Grate** (Orifice Controls 0.32 cfs @ 1.69 fps)

Summary for Pond EP6: EPOROUS6

Inflow Area = 0.620 ac, 90.21% Impervious, Inflow Depth > 6.90" for 100-yr event
Inflow = 5.70 cfs @ 11.95 hrs, Volume= 0.356 af
Outflow = 1.65 cfs @ 11.80 hrs, Volume= 0.356 af, Atten= 71%, Lag= 0.0 min
Discarded = 1.65 cfs @ 11.80 hrs, Volume= 0.356 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond CB26 : CB26

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 251.66' @ 12.17 hrs Surf.Area= 5,939 sf Storage= 1,926 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 4.9 min (739.2 - 734.2)

Volume	Invert	Avail.Storage	Storage Description
#1	250.85'	3,967 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 9,918 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
250.85	5,939	0	0
252.52	5,939	9,918	9,918

Device	Routing	Invert	Outlet Devices
#1	Primary	251.88'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#2	Discarded	250.85'	**12.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=1.65 cfs @ 11.80 hrs HW=250.87' (Free Discharge)
2=Exfiltration (Exfiltration Controls 1.65 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=250.85' (Free Discharge)
1=Orifice/Grate (Controls 0.00 cfs)

Summary for Pond EP7: EPOROUS7

Inflow Area = 0.301 ac, 91.36% Impervious, Inflow Depth > 6.90" for 100-yr event
Inflow = 2.77 cfs @ 11.95 hrs, Volume= 0.173 af
Outflow = 0.97 cfs @ 11.90 hrs, Volume= 0.173 af, Atten= 65%, Lag= 0.0 min
Discarded = 0.97 cfs @ 11.90 hrs, Volume= 0.173 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond CB30 : CB30

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 251.38' @ 12.11 hrs Surf.Area= 3,500 sf Storage= 748 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 3.0 min (737.3 - 734.2)

Volume	Invert	Avail.Storage	Storage Description
#1	250.85'	2,338 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 5,845 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
250.85	3,500	0	0
252.52	3,500	5,845	5,845

Device	Routing	Invert	Outlet Devices
#1	Primary	251.88'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#2	Discarded	250.85'	**12.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.97 cfs @ 11.90 hrs HW=250.92' (Free Discharge)
2=Exfiltration (Exfiltration Controls 0.97 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=250.85' (Free Discharge)
1=Orifice/Grate (Controls 0.00 cfs)

APPENDIX E:
POST DEVELOPMENT STORMWATER MODELING

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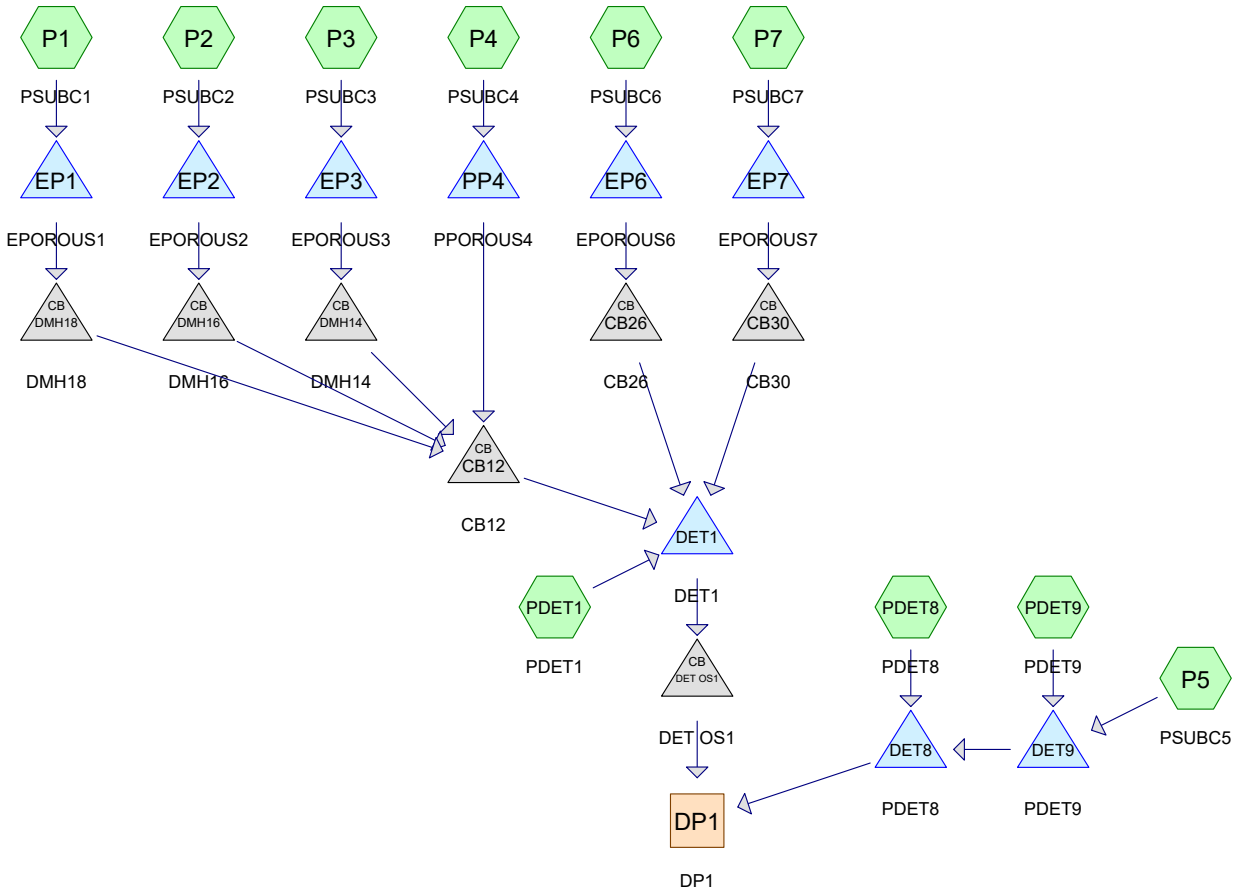

Subcat Reach Pond Link

Routing Diagram for 2254625_Post_Dev - pond
Prepared by Labella Associates, Printed 3/4/2026

Summary for Subcatchment P1: PSUBC1

Runoff = 0.92 cfs @ 11.95 hrs, Volume= 0.048 af, Depth> 2.17"
Routed to Pond EP1 : EPOROUS1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 1-yr Rainfall=2.61"

Area (sf)	CN	Description
11,609	98	Paved parking, HSG B
74	69	50-75% Grass cover, Fair, HSG B
11,683	98	Weighted Average
74		0.63% Pervious Area
11,609		99.37% Impervious Area

Summary for Subcatchment P2: PSUBC2

Runoff = 0.74 cfs @ 11.95 hrs, Volume= 0.039 af, Depth> 2.17"
Routed to Pond EP2 : EPOROUS2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 1-yr Rainfall=2.61"

Area (sf)	CN	Description
9,348	98	Paved parking, HSG B
0	69	50-75% Grass cover, Fair, HSG B
9,348	98	Weighted Average
9,348		100.00% Impervious Area

Summary for Subcatchment P3: PSUBC3

Runoff = 0.84 cfs @ 11.95 hrs, Volume= 0.044 af, Depth> 2.17"
Routed to Pond EP3 : EPOROUS3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 1-yr Rainfall=2.61"

Area (sf)	CN	Description
10,516	98	Paved parking, HSG B
105	69	50-75% Grass cover, Fair, HSG B
10,621	98	Weighted Average
105		0.99% Pervious Area
10,516		99.01% Impervious Area

Summary for Subcatchment P4: PSUBC4

Runoff = 2.07 cfs @ 11.95 hrs, Volume= 0.109 af, Depth> 2.17"
Routed to Pond PP4 : PPOROUS4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 1-yr Rainfall=2.61"

Area (sf)	CN	Description
26,027	98	Paved parking, HSG B
195	69	50-75% Grass cover, Fair, HSG B
26,222	98	Weighted Average
195		0.74% Pervious Area
26,027		99.26% Impervious Area

Summary for Subcatchment P5: PSUBC5

Runoff = 4.77 cfs @ 11.95 hrs, Volume= 0.251 af, Depth> 2.17"
Routed to Pond DET9 : PDET9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 1-yr Rainfall=2.61"

Area (sf)	CN	Description
59,684	98	Paved parking, HSG B
716	69	50-75% Grass cover, Fair, HSG B
60,400	98	Weighted Average
716		1.19% Pervious Area
59,684		98.81% Impervious Area

Summary for Subcatchment P6: PSUBC6

Runoff = 2.01 cfs @ 11.95 hrs, Volume= 0.103 af, Depth> 2.00"
Routed to Pond EP6 : EPOROUS6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 1-yr Rainfall=2.61"

Area (sf)	CN	Description
24,538	98	Paved parking, HSG B
2,240	69	50-75% Grass cover, Fair, HSG B
26,778	96	Weighted Average
2,240		8.37% Pervious Area
24,538		91.63% Impervious Area

Summary for Subcatchment P7: PSUBC7

Runoff = 0.96 cfs @ 11.95 hrs, Volume= 0.048 af, Depth> 1.91"
Routed to Pond EP7 : EPOROUS7

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 1-yr Rainfall=2.61"

Area (sf)	CN	Description
11,996	98	Paved parking, HSG B
1,134	69	50-75% Grass cover, Fair, HSG B
13,130	95	Weighted Average
1,134		8.64% Pervious Area
11,996		91.36% Impervious Area

Summary for Subcatchment PDET1: PDET1

Runoff = 0.21 cfs @ 11.97 hrs, Volume= 0.014 af, Depth> 0.40"
Routed to Pond DET1 : DET1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 1-yr Rainfall=2.61"

Area (sf)	CN	Description
17,541	69	50-75% Grass cover, Fair, HSG B
17,541		100.00% Pervious Area

Summary for Subcatchment PDET8: PDET8

Runoff = 0.12 cfs @ 11.97 hrs, Volume= 0.008 af, Depth> 0.40"
Routed to Pond DET8 : PDET8

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 1-yr Rainfall=2.61"

Area (sf)	CN	Description
9,817	69	50-75% Grass cover, Fair, HSG B
9,817		100.00% Pervious Area

Summary for Subcatchment PDET9: PDET9

Runoff = 0.08 cfs @ 11.97 hrs, Volume= 0.005 af, Depth> 0.40"
Routed to Pond DET9 : PDET9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 1-yr Rainfall=2.61"

Area (sf)	CN	Description
6,258	69	50-75% Grass cover, Fair, HSG B
6,258		100.00% Pervious Area

Summary for Reach DP1: DP1

Inflow Area = 4.403 ac, 80.15% Impervious, Inflow Depth > 0.57" for 1-yr event
Inflow = 0.31 cfs @ 13.02 hrs, Volume= 0.211 af
Outflow = 0.31 cfs @ 13.02 hrs, Volume= 0.211 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Pond CB12: CB12

Inflow Area = 1.329 ac, 99.35% Impervious, Inflow Depth = 0.00" for 1-yr event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond DET1 : DET1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 255.90' @ 5.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	258.00'	**18.0" Round Culvert** L= 141.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 258.00' / 256.40' S= 0.0113 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Primary	255.90'	**18.0" Round Culvert** L= 118.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 255.90' / 247.90' S= 0.0678 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=255.90' (Free Discharge)
1=Culvert (Controls 0.00 cfs)
2=Culvert (Controls 0.00 cfs)

Summary for Pond CB26: CB26

Inflow Area = 0.615 ac, 91.63% Impervious, Inflow Depth = 0.00" for 1-yr event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond DET1 : DET1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 250.40' @ 5.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	250.40'	**18.0" Round Culvert** L= 114.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 250.40' / 247.90' S= 0.0219 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=250.40' (Free Discharge)
1=Culvert (Controls 0.00 cfs)

Summary for Pond CB30: CB30

Inflow Area = 0.301 ac, 91.36% Impervious, Inflow Depth = 0.00" for 1-yr event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond DET1 : DET1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 250.50' @ 5.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	250.50'	**18.0" Round Culvert** L= 89.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 250.50' / 248.10' S= 0.0270 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=250.50' (Free Discharge)
1=Culvert (Controls 0.00 cfs)

Summary for Pond DET OS1: DET OS1

Inflow Area = 2.647 ac, 81.54% Impervious, Inflow Depth = 0.00" for 1-yr event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Reach DP1 : DP1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 247.00' @ 5.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	247.00'	**18.0" Round Culvert** L= 384.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 247.00' / 244.80' S= 0.0057 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=247.00' (Free Discharge)
1=Culvert (Controls 0.00 cfs)

Summary for Pond DET1: DET1

Inflow Area = 2.647 ac, 81.54% Impervious, Inflow Depth > 0.06" for 1-yr event
Inflow = 0.21 cfs @ 11.97 hrs, Volume= 0.014 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond DET OS1 : DET OS1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 246.69' @ 20.00 hrs Surf.Area= 1,688 sf Storage= 588 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	246.00'	38,763 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
246.00	28	0	0
247.00	2,451	1,240	1,240
248.00	3,227	2,839	4,079
249.00	3,985	3,606	7,685
250.00	4,811	4,398	12,083
251.00	5,700	5,256	17,338
252.00	6,650	6,175	23,513
253.00	7,675	7,163	30,676
254.00	8,500	8,088	38,763

Device	Routing	Invert	Outlet Devices
#1	Primary	247.10'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	248.10'	**12.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=246.00' (Free Discharge)
└**1=Orifice/Grate** (Controls 0.00 cfs)
└**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond DET8: PDET8

Inflow Area = 1.756 ac, 78.04% Impervious, Inflow Depth > 1.76" for 1-yr event
Inflow = 3.64 cfs @ 12.00 hrs, Volume= 0.258 af
Outflow = 0.31 cfs @ 13.02 hrs, Volume= 0.211 af, Atten= 91%, Lag= 61.2 min
Primary = 0.31 cfs @ 13.02 hrs, Volume= 0.211 af
Routed to Reach DP1 : DP1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Starting Elev= 246.00' Surf.Area= 2,351 sf Storage= 5,194 cf
Peak Elev= 247.90' @ 13.02 hrs Surf.Area= 3,565 sf Storage= 10,780 cf (5,586 cf above start)

Plug-Flow detention time= 424.7 min calculated for 0.092 af (35% of inflow)
Center-of-Mass det. time= 135.2 min (891.4 - 756.3)

Volume	Invert	Avail.Storage	Storage Description
#1	242.50'	19,940 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
242.50	747	0	0
243.00	924	418	418
244.00	1,332	1,128	1,546
245.00	1,807	1,570	3,115
246.00	2,351	2,079	5,194
247.00	2,962	2,657	7,851
248.00	3,634	3,298	11,149
249.00	4,364	3,999	15,148
250.00	5,221	4,793	19,940

Device	Routing	Invert	Outlet Devices
#1	Primary	246.00'	**18.0" Round Culvert** L= 100.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 246.00' / 245.90' S= 0.0010 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Device 1	246.00'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	248.50'	**20.0" W x 6.0" H Vert. Orifice/Grate X 4.00** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.31 cfs @ 13.02 hrs HW=247.90' (Free Discharge)
└**1=Culvert** (Passes 0.31 cfs of 5.70 cfs potential flow)
  └**2=Orifice/Grate** (Orifice Controls 0.31 cfs @ 6.41 fps)
  └**3=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond DET9: PDET9

Inflow Area = 1.530 ac, 89.54% Impervious, Inflow Depth > 2.00" for 1-yr event
Inflow = 4.84 cfs @ 11.95 hrs, Volume= 0.255 af
Outflow = 3.53 cfs @ 12.00 hrs, Volume= 0.251 af, Atten= 27%, Lag= 3.1 min
Primary = 3.53 cfs @ 12.00 hrs, Volume= 0.251 af
Routed to Pond DET8 : PDET8

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Starting Elev= 247.30' Surf.Area= 1,526 sf Storage= 2,183 cf
Peak Elev= 248.09' @ 12.00 hrs Surf.Area= 1,977 sf Storage= 3,573 cf (1,389 cf above start)

Plug-Flow detention time= 124.1 min calculated for 0.200 af (78% of inflow)
Center-of-Mass det. time= 15.3 min (753.5 - 738.2)

Volume	Invert	Avail.Storage	Storage Description
#1	245.00'	8,514 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
245.00	415	0	0
246.00	864	640	640
247.00	1,358	1,111	1,751
248.00	1,918	1,638	3,389
249.00	2,545	2,232	5,620
250.00	3,243	2,894	8,514

Device	Routing	Invert	Outlet Devices
#1	Primary	247.30'	**24.0" Round Culvert X 2.00** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 247.30' / 247.30' S= 0.0000 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=3.48 cfs @ 12.00 hrs HW=248.09' (Free Discharge)
1=Culvert (Barrel Controls 3.48 cfs @ 2.24 fps)

Summary for Pond DMH14: DMH14

Inflow Area = 0.244 ac, 99.01% Impervious, Inflow Depth = 0.00" for 1-yr event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond CB12 : CB12

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 258.00' @ 5.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	258.00'	**18.0" Round Culvert** L= 141.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 258.00' / 256.40' S= 0.0113 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=258.00' (Free Discharge)
1=Culvert (Controls 0.00 cfs)

Summary for Pond DMH16: DMH16

Inflow Area = 0.215 ac,100.00% Impervious, Inflow Depth = 0.00" for 1-yr event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond CB12 : CB12

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 259.90' @ 5.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	259.90'	**18.0" Round Culvert** L= 187.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 259.90' / 256.40' S= 0.0187 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=259.90' (Free Discharge)
1=Culvert (Controls 0.00 cfs)

Summary for Pond DMH18: DMH18

Inflow Area = 0.268 ac, 99.37% Impervious, Inflow Depth = 0.00" for 1-yr event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond CB12 : CB12

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 261.60' @ 5.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	261.60'	**18.0" Round Culvert** L= 207.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 261.60' / 256.40' S= 0.0251 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=261.60' (Free Discharge)
1=Culvert (Controls 0.00 cfs)

Summary for Pond EP1: EPOROUS1

Inflow Area = 0.268 ac, 99.37% Impervious, Inflow Depth > 2.17" for 1-yr event
Inflow = 0.92 cfs @ 11.95 hrs, Volume= 0.048 af
Outflow = 0.66 cfs @ 11.95 hrs, Volume= 0.048 af, Atten= 28%, Lag= 0.0 min
Discarded = 0.66 cfs @ 11.95 hrs, Volume= 0.048 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond DMH18 : DMH18

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 261.47' @ 12.00 hrs Surf.Area= 2,390 sf Storage= 64 cf

Plug-Flow detention time= 0.6 min calculated for 0.048 af (100% of inflow)
Center-of-Mass det. time= 0.5 min (736.5 - 736.0)

Volume	Invert	Avail.Storage	Storage Description
#1	261.40'	1,749 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 4,374 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
261.40	2,390	0	0
263.23	2,390	4,374	4,374

Device	Routing	Invert	Outlet Devices
#1	Primary	262.15'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#2	Discarded	261.40'	**12.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.66 cfs @ 11.95 hrs HW=261.45' (Free Discharge)
2=Exfiltration (Exfiltration Controls 0.66 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=261.40' (Free Discharge)
1=Orifice/Grate (Controls 0.00 cfs)

Summary for Pond EP2: EPOROUS2

Inflow Area = 0.215 ac,100.00% Impervious, Inflow Depth > 2.17" for 1-yr event
Inflow = 0.74 cfs @ 11.95 hrs, Volume= 0.039 af
Outflow = 0.72 cfs @ 11.96 hrs, Volume= 0.039 af, Atten= 3%, Lag= 0.5 min
Discarded = 0.72 cfs @ 11.96 hrs, Volume= 0.039 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond DMH16 : DMH16

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 259.81' @ 11.96 hrs Surf.Area= 4,055 sf Storage= 19 cf

Plug-Flow detention time= 0.5 min calculated for 0.039 af (100% of inflow)
Center-of-Mass det. time= 0.4 min (736.4 - 736.0)

Volume	Invert	Avail.Storage	Storage Description
#1	259.80'	2,968 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 7,421 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
259.80	4,055	0	0
261.63	4,055	7,421	7,421

Device	Routing	Invert	Outlet Devices
#1	Primary	260.55'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#2	Discarded	259.80'	**12.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=1.13 cfs @ 11.96 hrs HW=259.81' (Free Discharge)
2=Exfiltration (Exfiltration Controls 1.13 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=259.80' (Free Discharge)
1=Orifice/Grate (Controls 0.00 cfs)

Summary for Pond EP3: EPOROUS3

Inflow Area = 0.244 ac, 99.01% Impervious, Inflow Depth > 2.17" for 1-yr event
Inflow = 0.84 cfs @ 11.95 hrs, Volume= 0.044 af
Outflow = 0.82 cfs @ 11.96 hrs, Volume= 0.044 af, Atten= 3%, Lag= 0.4 min
Discarded = 0.82 cfs @ 11.96 hrs, Volume= 0.044 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond DMH14 : DMH14

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 258.21' @ 11.96 hrs Surf.Area= 3,492 sf Storage= 21 cf

Plug-Flow detention time= 0.5 min calculated for 0.044 af (100% of inflow)
Center-of-Mass det. time= 0.4 min (736.4 - 736.0)

Volume	Invert	Avail.Storage	Storage Description
#1	258.20'	2,444 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 6,111 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
258.20	3,492	0	0
259.95	3,492	6,111	6,111

Device	Routing	Invert	Outlet Devices
#1	Primary	258.95'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#2	Discarded	258.20'	**12.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.97 cfs @ 11.96 hrs HW=258.21' (Free Discharge)
2=Exfiltration (Exfiltration Controls 0.97 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=258.20' (Free Discharge)
1=Orifice/Grate (Controls 0.00 cfs)

Summary for Pond EP6: EPOROUS6

Inflow Area = 0.615 ac, 91.63% Impervious, Inflow Depth > 2.00" for 1-yr event
Inflow = 2.01 cfs @ 11.95 hrs, Volume= 0.103 af
Outflow = 1.72 cfs @ 11.98 hrs, Volume= 0.103 af, Atten= 15%, Lag= 1.4 min
Discarded = 1.72 cfs @ 11.98 hrs, Volume= 0.103 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond CB26 : CB26

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 250.89' @ 11.98 hrs Surf.Area= 5,939 sf Storage= 87 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.4 min (747.6 - 747.3)

Volume	Invert	Avail.Storage	Storage Description
#1	250.85'	3,967 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 9,918 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
250.85	5,939	0	0
252.52	5,939	9,918	9,918

Device	Routing	Invert	Outlet Devices
#1	Primary	251.88'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#2	Discarded	250.85'	**12.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=1.65 cfs @ 11.98 hrs HW=250.88' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 1.65 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=250.85' (Free Discharge)
└**1=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond EP7: EPOROUS7

Inflow Area = 0.301 ac, 91.36% Impervious, Inflow Depth > 1.91" for 1-yr event
Inflow = 0.96 cfs @ 11.95 hrs, Volume= 0.048 af
Outflow = 0.93 cfs @ 11.96 hrs, Volume= 0.048 af, Atten= 3%, Lag= 0.4 min
Discarded = 0.93 cfs @ 11.96 hrs, Volume= 0.048 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond CB30 : CB30

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 250.87' @ 11.96 hrs Surf.Area= 3,500 sf Storage= 22 cf

Plug-Flow detention time= 0.4 min calculated for 0.048 af (100% of inflow)
Center-of-Mass det. time= 0.3 min (753.0 - 752.7)

Volume	Invert	Avail.Storage	Storage Description
#1	250.85'	2,338 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 5,845 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
250.85	3,500	0	0
252.52	3,500	5,845	5,845

Device	Routing	Invert	Outlet Devices
#1	Primary	251.88'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#2	Discarded	250.85'	**12.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.97 cfs @ 11.96 hrs HW=250.87' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.97 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=250.85' (Free Discharge)
└**1=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond PP4: PPOROUS4

Inflow Area = 0.602 ac, 99.26% Impervious, Inflow Depth > 2.17" for 1-yr event
Inflow = 2.07 cfs @ 11.95 hrs, Volume= 0.109 af
Outflow = 2.01 cfs @ 11.96 hrs, Volume= 0.109 af, Atten= 3%, Lag= 0.4 min
Discarded = 2.01 cfs @ 11.96 hrs, Volume= 0.109 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond CB12 : CB12

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 256.71' @ 11.96 hrs Surf.Area= 8,546 sf Storage= 51 cf

Plug-Flow detention time= 0.5 min calculated for 0.109 af (100% of inflow)
Center-of-Mass det. time= 0.4 min (736.4 - 736.0)

Volume	Invert	Avail.Storage	Storage Description
#1	256.70'	5,982 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 14,956 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
256.70	8,546	0	0
258.45	8,546	14,956	14,956

Device	Routing	Invert	Outlet Devices
#1	Primary	257.45'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#2	Discarded	256.70'	**12.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=2.37 cfs @ 11.96 hrs HW=256.71' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 2.37 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=256.70' (Free Discharge)
↑—**1=Orifice/Grate** (Controls 0.00 cfs)

Summary for Subcatchment P1: PSUBC1

Runoff = 1.53 cfs @ 11.95 hrs, Volume= 0.089 af, Depth> 3.98"
Routed to Pond EP1 : EPOROUS1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 10-yr Rainfall=4.67"

Area (sf)	CN	Description
11,609	98	Paved parking, HSG B
74	69	50-75% Grass cover, Fair, HSG B
11,683	98	Weighted Average
74		0.63% Pervious Area
11,609		99.37% Impervious Area

Summary for Subcatchment P2: PSUBC2

Runoff = 1.22 cfs @ 11.95 hrs, Volume= 0.071 af, Depth> 3.98"
Routed to Pond EP2 : EPOROUS2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 10-yr Rainfall=4.67"

Area (sf)	CN	Description
9,348	98	Paved parking, HSG B
0	69	50-75% Grass cover, Fair, HSG B
9,348	98	Weighted Average
9,348		100.00% Impervious Area

Summary for Subcatchment P3: PSUBC3

Runoff = 1.39 cfs @ 11.95 hrs, Volume= 0.081 af, Depth> 3.98"
Routed to Pond EP3 : EPOROUS3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 10-yr Rainfall=4.67"

Area (sf)	CN	Description
10,516	98	Paved parking, HSG B
105	69	50-75% Grass cover, Fair, HSG B
10,621	98	Weighted Average
105		0.99% Pervious Area
10,516		99.01% Impervious Area

Summary for Subcatchment P4: PSUBC4

Runoff = 3.43 cfs @ 11.95 hrs, Volume= 0.200 af, Depth> 3.98"
Routed to Pond PP4 : PPOROUS4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 10-yr Rainfall=4.67"

Area (sf)	CN	Description
26,027	98	Paved parking, HSG B
195	69	50-75% Grass cover, Fair, HSG B
26,222	98	Weighted Average
195		0.74% Pervious Area
26,027		99.26% Impervious Area

Summary for Subcatchment P5: PSUBC5

Runoff = 7.91 cfs @ 11.95 hrs, Volume= 0.460 af, Depth> 3.98"
Routed to Pond DET9 : PDET9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 10-yr Rainfall=4.67"

Area (sf)	CN	Description
59,684	98	Paved parking, HSG B
716	69	50-75% Grass cover, Fair, HSG B
60,400	98	Weighted Average
716		1.19% Pervious Area
59,684		98.81% Impervious Area

Summary for Subcatchment P6: PSUBC6

Runoff = 3.44 cfs @ 11.95 hrs, Volume= 0.197 af, Depth> 3.84"
Routed to Pond EP6 : EPOROUS6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 10-yr Rainfall=4.67"

Area (sf)	CN	Description
24,538	98	Paved parking, HSG B
2,240	69	50-75% Grass cover, Fair, HSG B
26,778	96	Weighted Average
2,240		8.37% Pervious Area
24,538		91.63% Impervious Area

Summary for Subcatchment P7: PSUBC7

Runoff = 1.66 cfs @ 11.95 hrs, Volume= 0.094 af, Depth> 3.75"
Routed to Pond EP7 : EPOROUS7

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 10-yr Rainfall=4.67"

Area (sf)	CN	Description
11,996	98	Paved parking, HSG B
1,134	69	50-75% Grass cover, Fair, HSG B
13,130	95	Weighted Average
1,134		8.64% Pervious Area
11,996		91.36% Impervious Area

Summary for Subcatchment PDET1: PDET1

Runoff = 0.96 cfs @ 11.96 hrs, Volume= 0.052 af, Depth> 1.54"
Routed to Pond DET1 : DET1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 10-yr Rainfall=4.67"

Area (sf)	CN	Description
17,541	69	50-75% Grass cover, Fair, HSG B
17,541		100.00% Pervious Area

Summary for Subcatchment PDET8: PDET8

Runoff = 0.54 cfs @ 11.96 hrs, Volume= 0.029 af, Depth> 1.54"
Routed to Pond DET8 : PDET8

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 10-yr Rainfall=4.67"

Area (sf)	CN	Description
9,817	69	50-75% Grass cover, Fair, HSG B
9,817		100.00% Pervious Area

Summary for Subcatchment PDET9: PDET9

Runoff = 0.34 cfs @ 11.96 hrs, Volume= 0.018 af, Depth> 1.54"
Routed to Pond DET9 : PDET9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 10-yr Rainfall=4.67"

Area (sf)	CN	Description
6,258	69	50-75% Grass cover, Fair, HSG B
6,258		100.00% Pervious Area

Summary for Reach DP1: DP1

Inflow Area = 4.403 ac, 80.15% Impervious, Inflow Depth > 1.09" for 10-yr event
Inflow = 2.54 cfs @ 12.23 hrs, Volume= 0.400 af
Outflow = 2.54 cfs @ 12.23 hrs, Volume= 0.400 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Pond CB12: CB12

Inflow Area = 1.329 ac, 99.35% Impervious, Inflow Depth = 0.00" for 10-yr event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond DET1 : DET1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 255.90' @ 5.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	258.00'	**18.0" Round Culvert** L= 141.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 258.00' / 256.40' S= 0.0113 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Primary	255.90'	**18.0" Round Culvert** L= 118.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 255.90' / 247.90' S= 0.0678 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=255.90' (Free Discharge)
1=Culvert (Controls 0.00 cfs)
2=Culvert (Controls 0.00 cfs)

Summary for Pond CB26: CB26

Inflow Area = 0.615 ac, 91.63% Impervious, Inflow Depth = 0.00" for 10-yr event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond DET1 : DET1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 250.40' @ 5.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	250.40'	**18.0" Round Culvert** L= 114.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 250.40' / 247.90' S= 0.0219 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=250.40' (Free Discharge)
1=Culvert (Controls 0.00 cfs)

Summary for Pond CB30: CB30

Inflow Area = 0.301 ac, 91.36% Impervious, Inflow Depth = 0.00" for 10-yr event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond DET1 : DET1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 250.50' @ 5.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	250.50'	**18.0" Round Culvert** L= 89.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 250.50' / 248.10' S= 0.0270 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=250.50' (Free Discharge)
1=Culvert (Controls 0.00 cfs)

Summary for Pond DET OS1: DET OS1

Inflow Area = 2.647 ac, 81.54% Impervious, Inflow Depth > 0.05" for 10-yr event
Inflow = 0.03 cfs @ 17.75 hrs, Volume= 0.011 af
Outflow = 0.03 cfs @ 17.75 hrs, Volume= 0.011 af, Atten= 0%, Lag= 0.0 min
Primary = 0.03 cfs @ 17.75 hrs, Volume= 0.011 af
Routed to Reach DP1 : DP1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 247.08' @ 17.75 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	247.00'	**18.0" Round Culvert** L= 384.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 247.00' / 244.80' S= 0.0057 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.03 cfs @ 17.75 hrs HW=247.08' (Free Discharge)
1=Culvert (Barrel Controls 0.03 cfs @ 1.03 fps)

Summary for Pond DET1: DET1

Inflow Area = 2.647 ac, 81.54% Impervious, Inflow Depth > 0.23" for 10-yr event
Inflow = 0.96 cfs @ 11.96 hrs, Volume= 0.052 af
Outflow = 0.03 cfs @ 17.75 hrs, Volume= 0.011 af, Atten= 97%, Lag= 347.5 min
Primary = 0.03 cfs @ 17.75 hrs, Volume= 0.011 af
Routed to Pond DET OS1 : DET OS1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 247.22' @ 17.75 hrs Surf.Area= 2,618 sf Storage= 1,786 cf

Plug-Flow detention time= 342.4 min calculated for 0.011 af (21% of inflow)
Center-of-Mass det. time= 229.8 min (1,043.5 - 813.6)

Volume	Invert	Avail.Storage	Storage Description
#1	246.00'	38,763 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
246.00	28	0	0
247.00	2,451	1,240	1,240
248.00	3,227	2,839	4,079
249.00	3,985	3,606	7,685
250.00	4,811	4,398	12,083
251.00	5,700	5,256	17,338
252.00	6,650	6,175	23,513
253.00	7,675	7,163	30,676
254.00	8,500	8,088	38,763

Device	Routing	Invert	Outlet Devices
#1	Primary	247.10'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	248.10'	**12.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.03 cfs @ 17.75 hrs HW=247.22' (Free Discharge)
└─**1=Orifice/Grate** (Orifice Controls 0.03 cfs @ 1.16 fps)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond DET8: PDET8

Inflow Area = 1.756 ac, 78.04% Impervious, Inflow Depth > 3.43" for 10-yr event
Inflow = 6.86 cfs @ 12.00 hrs, Volume= 0.501 af
Outflow = 2.54 cfs @ 12.23 hrs, Volume= 0.389 af, Atten= 63%, Lag= 13.9 min
Primary = 2.54 cfs @ 12.23 hrs, Volume= 0.389 af
Routed to Reach DP1 : DP1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Starting Elev= 246.00' Surf.Area= 2,351 sf Storage= 5,194 cf
Peak Elev= 248.72' @ 12.23 hrs Surf.Area= 4,157 sf Storage= 13,939 cf (8,745 cf above start)

Plug-Flow detention time= 270.7 min calculated for 0.270 af (54% of inflow)
Center-of-Mass det. time= 94.2 min (844.0 - 749.8)

Volume	Invert	Avail.Storage	Storage Description
#1	242.50'	19,940 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
242.50	747	0	0
243.00	924	418	418
244.00	1,332	1,128	1,546
245.00	1,807	1,570	3,115
246.00	2,351	2,079	5,194
247.00	2,962	2,657	7,851
248.00	3,634	3,298	11,149
249.00	4,364	3,999	15,148
250.00	5,221	4,793	19,940

Device	Routing	Invert	Outlet Devices
#1	Primary	246.00'	**18.0" Round Culvert** L= 100.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 246.00' / 245.90' S= 0.0010 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Device 1	246.00'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	248.50'	**20.0" W x 6.0" H Vert. Orifice/Grate X 4.00** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.51 cfs @ 12.23 hrs HW=248.72' (Free Discharge)
└**1=Culvert** (Passes 2.51 cfs of 8.42 cfs potential flow)
  └**2=Orifice/Grate** (Orifice Controls 0.38 cfs @ 7.75 fps)
  └**3=Orifice/Grate** (Orifice Controls 2.13 cfs @ 1.49 fps)

Summary for Pond DET9: PDET9

Inflow Area = 1.530 ac, 89.54% Impervious, Inflow Depth > 3.75" for 10-yr event
Inflow = 8.25 cfs @ 11.95 hrs, Volume= 0.479 af
Outflow = 6.44 cfs @ 12.00 hrs, Volume= 0.472 af, Atten= 22%, Lag= 2.8 min
Primary = 6.44 cfs @ 12.00 hrs, Volume= 0.472 af
Routed to Pond DET8 : PDET8

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Starting Elev= 247.30' Surf.Area= 1,526 sf Storage= 2,183 cf
Peak Elev= 248.38' @ 12.00 hrs Surf.Area= 2,153 sf Storage= 4,153 cf (1,970 cf above start)

Plug-Flow detention time= 85.9 min calculated for 0.421 af (88% of inflow)
Center-of-Mass det. time= 11.2 min (745.9 - 734.7)

Volume	Invert	Avail.Storage	Storage Description
#1	245.00'	8,514 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
245.00	415	0	0
246.00	864	640	640
247.00	1,358	1,111	1,751
248.00	1,918	1,638	3,389
249.00	2,545	2,232	5,620
250.00	3,243	2,894	8,514

Device	Routing	Invert	Outlet Devices
#1	Primary	247.30'	**24.0" Round Culvert X 2.00** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 247.30' / 247.30' S= 0.0000 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=6.42 cfs @ 12.00 hrs HW=248.37' (Free Discharge)
1=Culvert (Barrel Controls 6.42 cfs @ 2.71 fps)

Summary for Pond DMH14: DMH14

Inflow Area = 0.244 ac, 99.01% Impervious, Inflow Depth = 0.00" for 10-yr event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond CB12 : CB12

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 258.00' @ 5.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	258.00'	**18.0" Round Culvert** L= 141.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 258.00' / 256.40' S= 0.0113 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=258.00' (Free Discharge)
1=Culvert (Controls 0.00 cfs)

Summary for Pond DMH16: DMH16

Inflow Area = 0.215 ac,100.00% Impervious, Inflow Depth = 0.00" for 10-yr event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond CB12 : CB12

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 259.90' @ 5.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	259.90'	**18.0" Round Culvert** L= 187.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 259.90' / 256.40' S= 0.0187 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=259.90' (Free Discharge)
1=Culvert (Controls 0.00 cfs)

Summary for Pond DMH18: DMH18

Inflow Area = 0.268 ac, 99.37% Impervious, Inflow Depth = 0.00" for 10-yr event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond CB12 : CB12

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 261.60' @ 5.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	261.60'	**18.0" Round Culvert** L= 207.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 261.60' / 256.40' S= 0.0251 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=261.60' (Free Discharge)
1=Culvert (Controls 0.00 cfs)

Summary for Pond EP1: EPOROUS1

Inflow Area = 0.268 ac, 99.37% Impervious, Inflow Depth > 3.98" for 10-yr event
Inflow = 1.53 cfs @ 11.95 hrs, Volume= 0.089 af
Outflow = 0.66 cfs @ 11.90 hrs, Volume= 0.089 af, Atten= 57%, Lag= 0.0 min
Discarded = 0.66 cfs @ 11.90 hrs, Volume= 0.089 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond DMH18 : DMH18

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 261.72' @ 12.06 hrs Surf.Area= 2,390 sf Storage= 303 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 1.6 min (733.1 - 731.5)

Volume	Invert	Avail.Storage	Storage Description
#1	261.40'	1,749 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 4,374 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
261.40	2,390	0	0
263.23	2,390	4,374	4,374

Device	Routing	Invert	Outlet Devices
#1	Primary	262.15'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#2	Discarded	261.40'	**12.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.66 cfs @ 11.90 hrs HW=261.45' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.66 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=261.40' (Free Discharge)
↑—**1=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond EP2: EPOROUS2

Inflow Area = 0.215 ac,100.00% Impervious, Inflow Depth > 3.98" for 10-yr event
Inflow = 1.22 cfs @ 11.95 hrs, Volume= 0.071 af
Outflow = 1.16 cfs @ 11.97 hrs, Volume= 0.071 af, Atten= 6%, Lag= 0.9 min
Discarded = 1.16 cfs @ 11.97 hrs, Volume= 0.071 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond DMH16 : DMH16

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 259.82' @ 11.96 hrs Surf.Area= 4,055 sf Storage= 36 cf

Plug-Flow detention time= 0.5 min calculated for 0.071 af (100% of inflow)
Center-of-Mass det. time= 0.4 min (731.9 - 731.5)

Volume	Invert	Avail.Storage	Storage Description
#1	259.80'	2,968 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 7,421 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
259.80	4,055	0	0
261.63	4,055	7,421	7,421

Device	Routing	Invert	Outlet Devices
#1	Primary	260.55'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#2	Discarded	259.80'	**12.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=1.13 cfs @ 11.97 hrs HW=259.82' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 1.13 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=259.80' (Free Discharge)
↑—**1=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond EP3: EPOROUS3

Inflow Area = 0.244 ac, 99.01% Impervious, Inflow Depth > 3.98" for 10-yr event
Inflow = 1.39 cfs @ 11.95 hrs, Volume= 0.081 af
Outflow = 0.97 cfs @ 11.95 hrs, Volume= 0.081 af, Atten= 30%, Lag= 0.0 min
Discarded = 0.97 cfs @ 11.95 hrs, Volume= 0.081 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond DMH14 : DMH14

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 258.28' @ 12.00 hrs Surf.Area= 3,492 sf Storage= 106 cf

Plug-Flow detention time= 0.7 min calculated for 0.081 af (100% of inflow)
Center-of-Mass det. time= 0.5 min (732.0 - 731.5)

Volume	Invert	Avail.Storage	Storage Description
#1	258.20'	2,444 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 6,111 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
258.20	3,492	0	0
259.95	3,492	6,111	6,111

Device	Routing	Invert	Outlet Devices
#1	Primary	258.95'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#2	Discarded	258.20'	**12.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.97 cfs @ 11.95 hrs HW=258.25' (Free Discharge)
2=Exfiltration (Exfiltration Controls 0.97 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=258.20' (Free Discharge)
1=Orifice/Grate (Controls 0.00 cfs)

Summary for Pond EP6: EPOROUS6

Inflow Area = 0.615 ac, 91.63% Impervious, Inflow Depth > 3.84" for 10-yr event
Inflow = 3.44 cfs @ 11.95 hrs, Volume= 0.197 af
Outflow = 1.65 cfs @ 11.90 hrs, Volume= 0.197 af, Atten= 52%, Lag= 0.0 min
Discarded = 1.65 cfs @ 11.90 hrs, Volume= 0.197 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond CB26 : CB26

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 251.09' @ 12.05 hrs Surf.Area= 5,939 sf Storage= 578 cf

Plug-Flow detention time= 1.3 min calculated for 0.197 af (100% of inflow)
Center-of-Mass det. time= 1.2 min (738.9 - 737.7)

Volume	Invert	Avail.Storage	Storage Description
#1	250.85'	3,967 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 9,918 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
250.85	5,939	0	0
252.52	5,939	9,918	9,918

Device	Routing	Invert	Outlet Devices
#1	Primary	251.88'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#2	Discarded	250.85'	**12.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=1.65 cfs @ 11.90 hrs HW=250.88' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 1.65 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=250.85' (Free Discharge)
└**1=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond EP7: EPOROUS7

Inflow Area = 0.301 ac, 91.36% Impervious, Inflow Depth > 3.75" for 10-yr event
Inflow = 1.66 cfs @ 11.95 hrs, Volume= 0.094 af
Outflow = 0.97 cfs @ 11.95 hrs, Volume= 0.094 af, Atten= 42%, Lag= 0.0 min
Discarded = 0.97 cfs @ 11.95 hrs, Volume= 0.094 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond CB30 : CB30

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 250.98' @ 12.02 hrs Surf.Area= 3,500 sf Storage= 185 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.7 min (741.7 - 741.0)

Volume	Invert	Avail.Storage	Storage Description
#1	250.85'	2,338 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 5,845 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
250.85	3,500	0	0
252.52	3,500	5,845	5,845

Device	Routing	Invert	Outlet Devices
#1	Primary	251.88'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#2	Discarded	250.85'	**12.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.97 cfs @ 11.95 hrs HW=250.92' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.97 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=250.85' (Free Discharge)
└**1=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond PP4: PPOROUS4

Inflow Area = 0.602 ac, 99.26% Impervious, Inflow Depth > 3.98" for 10-yr event
Inflow = 3.43 cfs @ 11.95 hrs, Volume= 0.200 af
Outflow = 2.37 cfs @ 11.95 hrs, Volume= 0.200 af, Atten= 31%, Lag= 0.0 min
Discarded = 2.37 cfs @ 11.95 hrs, Volume= 0.200 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond CB12 : CB12

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 256.78' @ 12.00 hrs Surf.Area= 8,546 sf Storage= 268 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.5 min (732.0 - 731.5)

Volume	Invert	Avail.Storage	Storage Description
#1	256.70'	5,982 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 14,956 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
256.70	8,546	0	0
258.45	8,546	14,956	14,956

Device	Routing	Invert	Outlet Devices
#1	Primary	257.45'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#2	Discarded	256.70'	**12.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=2.37 cfs @ 11.95 hrs HW=256.75' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 2.37 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=256.70' (Free Discharge)
↑—**1=Orifice/Grate** (Controls 0.00 cfs)

Summary for Subcatchment P1: PSUBC1

Runoff = 2.50 cfs @ 11.95 hrs, Volume= 0.158 af, Depth> 7.08"
Routed to Pond EP1 : EPOROUS1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 100-yr Rainfall=8.22"

Area (sf)	CN	Description
11,609	98	Paved parking, HSG B
74	69	50-75% Grass cover, Fair, HSG B
11,683	98	Weighted Average
74		0.63% Pervious Area
11,609		99.37% Impervious Area

Summary for Subcatchment P2: PSUBC2

Runoff = 2.00 cfs @ 11.95 hrs, Volume= 0.127 af, Depth> 7.08"
Routed to Pond EP2 : EPOROUS2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 100-yr Rainfall=8.22"

Area (sf)	CN	Description
9,348	98	Paved parking, HSG B
0	69	50-75% Grass cover, Fair, HSG B
9,348	98	Weighted Average
9,348		100.00% Impervious Area

Summary for Subcatchment P3: PSUBC3

Runoff = 2.27 cfs @ 11.95 hrs, Volume= 0.144 af, Depth> 7.08"
Routed to Pond EP3 : EPOROUS3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 100-yr Rainfall=8.22"

Area (sf)	CN	Description
10,516	98	Paved parking, HSG B
105	69	50-75% Grass cover, Fair, HSG B
10,621	98	Weighted Average
105		0.99% Pervious Area
10,516		99.01% Impervious Area

Summary for Subcatchment P4: PSUBC4

Runoff = 5.61 cfs @ 11.95 hrs, Volume= 0.355 af, Depth> 7.08"
Routed to Pond PP4 : PPOROUS4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 100-yr Rainfall=8.22"

Area (sf)	CN	Description
26,027	98	Paved parking, HSG B
195	69	50-75% Grass cover, Fair, HSG B
26,222	98	Weighted Average
195		0.74% Pervious Area
26,027		99.26% Impervious Area

Summary for Subcatchment P5: PSUBC5

Runoff = 12.91 cfs @ 11.95 hrs, Volume= 0.819 af, Depth> 7.08"
Routed to Pond DET9 : PDET9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 100-yr Rainfall=8.22"

Area (sf)	CN	Description
59,684	98	Paved parking, HSG B
716	69	50-75% Grass cover, Fair, HSG B
60,400	98	Weighted Average
716		1.19% Pervious Area
59,684		98.81% Impervious Area

Summary for Subcatchment P6: PSUBC6

Runoff = 5.68 cfs @ 11.95 hrs, Volume= 0.357 af, Depth> 6.97"
Routed to Pond EP6 : EPOROUS6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 100-yr Rainfall=8.22"

Area (sf)	CN	Description
24,538	98	Paved parking, HSG B
2,240	69	50-75% Grass cover, Fair, HSG B
26,778	96	Weighted Average
2,240		8.37% Pervious Area
24,538		91.63% Impervious Area

Summary for Subcatchment P7: PSUBC7

Runoff = 2.77 cfs @ 11.95 hrs, Volume= 0.173 af, Depth> 6.90"
Routed to Pond EP7 : EPOROUS7

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 100-yr Rainfall=8.22"

Area (sf)	CN	Description
11,996	98	Paved parking, HSG B
1,134	69	50-75% Grass cover, Fair, HSG B
13,130	95	Weighted Average
1,134		8.64% Pervious Area
11,996		91.36% Impervious Area

Summary for Subcatchment PDET1: PDET1

Runoff = 2.44 cfs @ 11.96 hrs, Volume= 0.139 af, Depth> 4.14"
Routed to Pond DET1 : DET1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 100-yr Rainfall=8.22"

Area (sf)	CN	Description
17,541	69	50-75% Grass cover, Fair, HSG B
17,541		100.00% Pervious Area

Summary for Subcatchment PDET8: PDET8

Runoff = 1.37 cfs @ 11.96 hrs, Volume= 0.078 af, Depth> 4.14"
Routed to Pond DET8 : PDET8

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 100-yr Rainfall=8.22"

Area (sf)	CN	Description
9,817	69	50-75% Grass cover, Fair, HSG B
9,817		100.00% Pervious Area

Summary for Subcatchment PDET9: PDET9

Runoff = 0.87 cfs @ 11.96 hrs, Volume= 0.050 af, Depth> 4.14"
Routed to Pond DET9 : PDET9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
extreme_precip_tables_output 24-hr S1 100-yr Rainfall=8.22"

Area (sf)	CN	Description
6,258	69	50-75% Grass cover, Fair, HSG B
6,258		100.00% Pervious Area

Summary for Reach DP1: DP1

Inflow Area = 4.403 ac, 80.15% Impervious, Inflow Depth > 2.37" for 100-yr event
Inflow = 9.83 cfs @ 12.06 hrs, Volume= 0.871 af
Outflow = 9.83 cfs @ 12.06 hrs, Volume= 0.871 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Pond CB12: CB12

Inflow Area = 1.329 ac, 99.35% Impervious, Inflow Depth = 0.02" for 100-yr event
Inflow = 0.15 cfs @ 12.13 hrs, Volume= 0.003 af
Outflow = 0.15 cfs @ 12.13 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min
Primary = 0.15 cfs @ 12.13 hrs, Volume= 0.003 af
Routed to Pond DET1 : DET1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 256.09' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	258.00'	**18.0" Round Culvert** L= 141.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 258.00' / 256.40' S= 0.0113 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Primary	255.90'	**18.0" Round Culvert** L= 118.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 255.90' / 247.90' S= 0.0678 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.15 cfs @ 12.13 hrs HW=256.09' (Free Discharge)
1=Culvert (Controls 0.00 cfs)
2=Culvert (Inlet Controls 0.15 cfs @ 1.16 fps)

Summary for Pond CB26: CB26

Inflow Area = 0.615 ac, 91.63% Impervious, Inflow Depth = 0.00" for 100-yr event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond DET1 : DET1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 250.40' @ 5.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	250.40'	**18.0" Round Culvert** L= 114.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 250.40' / 247.90' S= 0.0219 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=250.40' (Free Discharge)
1=Culvert (Controls 0.00 cfs)

Summary for Pond CB30: CB30

Inflow Area = 0.301 ac, 91.36% Impervious, Inflow Depth = 0.00" for 100-yr event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond DET1 : DET1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 250.50' @ 5.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	250.50'	**18.0" Round Culvert** L= 89.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 250.50' / 248.10' S= 0.0270 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=250.50' (Free Discharge)
1=Culvert (Controls 0.00 cfs)

Summary for Pond DET OS1: DET OS1

Inflow Area = 2.647 ac, 81.54% Impervious, Inflow Depth > 0.42" for 100-yr event
Inflow = 0.18 cfs @ 13.00 hrs, Volume= 0.093 af
Outflow = 0.18 cfs @ 13.00 hrs, Volume= 0.093 af, Atten= 0%, Lag= 0.0 min
Primary = 0.18 cfs @ 13.00 hrs, Volume= 0.093 af
Routed to Reach DP1 : DP1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 247.21' @ 13.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	247.00'	**18.0" Round Culvert** L= 384.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 247.00' / 244.80' S= 0.0057 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.18 cfs @ 13.00 hrs HW=247.21' (Free Discharge)
1=Culvert (Barrel Controls 0.18 cfs @ 1.84 fps)

Summary for Pond DET1: DET1

Inflow Area = 2.647 ac, 81.54% Impervious, Inflow Depth > 0.64" for 100-yr event
Inflow = 2.44 cfs @ 11.96 hrs, Volume= 0.141 af
Outflow = 0.18 cfs @ 13.00 hrs, Volume= 0.093 af, Atten= 92%, Lag= 62.8 min
Primary = 0.18 cfs @ 13.00 hrs, Volume= 0.093 af
Routed to Pond DET OS1 : DET OS1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 247.83' @ 13.00 hrs Surf.Area= 3,093 sf Storage= 3,532 cf

Plug-Flow detention time= 220.8 min calculated for 0.093 af (66% of inflow)
Center-of-Mass det. time= 142.4 min (929.6 - 787.2)

Volume	Invert	Avail.Storage	Storage Description
#1	246.00'	38,763 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
246.00	28	0	0
247.00	2,451	1,240	1,240
248.00	3,227	2,839	4,079
249.00	3,985	3,606	7,685
250.00	4,811	4,398	12,083
251.00	5,700	5,256	17,338
252.00	6,650	6,175	23,513
253.00	7,675	7,163	30,676
254.00	8,500	8,088	38,763

Device	Routing	Invert	Outlet Devices
#1	Primary	247.10'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	248.10'	**12.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.18 cfs @ 13.00 hrs HW=247.83' (Free Discharge)
└─**1=Orifice/Grate** (Orifice Controls 0.18 cfs @ 3.74 fps)
└─**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond DET8: PDET8

Inflow Area = 1.756 ac, 78.04% Impervious, Inflow Depth > 6.41" for 100-yr event
Inflow = 12.26 cfs @ 11.99 hrs, Volume= 0.938 af
Outflow = 9.71 cfs @ 12.06 hrs, Volume= 0.778 af, Atten= 21%, Lag= 4.0 min
Primary = 9.71 cfs @ 12.06 hrs, Volume= 0.778 af
Routed to Reach DP1 : DP1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Starting Elev= 246.00' Surf.Area= 2,351 sf Storage= 5,194 cf
Peak Elev= 249.15' @ 12.05 hrs Surf.Area= 4,491 sf Storage= 15,803 cf (10,609 cf above start)

Plug-Flow detention time= 156.5 min calculated for 0.658 af (70% of inflow)
Center-of-Mass det. time= 46.9 min (792.1 - 745.1)

Volume	Invert	Avail.Storage	Storage Description
#1	242.50'	19,940 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
242.50	747	0	0
243.00	924	418	418
244.00	1,332	1,128	1,546
245.00	1,807	1,570	3,115
246.00	2,351	2,079	5,194
247.00	2,962	2,657	7,851
248.00	3,634	3,298	11,149
249.00	4,364	3,999	15,148
250.00	5,221	4,793	19,940

Device	Routing	Invert	Outlet Devices
#1	Primary	246.00'	**18.0" Round Culvert** L= 100.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 246.00' / 245.90' S= 0.0010 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Device 1	246.00'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	248.50'	**20.0" W x 6.0" H Vert. Orifice/Grate X 4.00** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=9.69 cfs @ 12.06 hrs HW=249.14' (Free Discharge)
└─**1=Culvert** (Barrel Controls 9.69 cfs @ 5.48 fps)
  └─**2=Orifice/Grate** (Passes < 0.41 cfs potential flow)
  └─**3=Orifice/Grate** (Passes < 9.85 cfs potential flow)

Summary for Pond DET9: PDET9

Inflow Area = 1.530 ac, 89.54% Impervious, Inflow Depth > 6.81" for 100-yr event
Inflow = 13.78 cfs @ 11.95 hrs, Volume= 0.868 af
Outflow = 11.19 cfs @ 12.00 hrs, Volume= 0.860 af, Atten= 19%, Lag= 2.6 min
Primary = 11.19 cfs @ 12.00 hrs, Volume= 0.860 af
Routed to Pond DET8 : PDET8

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Starting Elev= 247.30' Surf.Area= 1,526 sf Storage= 2,183 cf
Peak Elev= 248.75' @ 12.00 hrs Surf.Area= 2,385 sf Storage= 4,993 cf (2,810 cf above start)

Plug-Flow detention time= 56.1 min calculated for 0.807 af (93% of inflow)
Center-of-Mass det. time= 8.4 min (741.2 - 732.8)

Volume	Invert	Avail.Storage	Storage Description
#1	245.00'	8,514 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
245.00	415	0	0
246.00	864	640	640
247.00	1,358	1,111	1,751
248.00	1,918	1,638	3,389
249.00	2,545	2,232	5,620
250.00	3,243	2,894	8,514

Device	Routing	Invert	Outlet Devices
#1	Primary	247.30'	**24.0" Round Culvert X 2.00** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 247.30' / 247.30' S= 0.0000 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=11.05 cfs @ 12.00 hrs HW=248.74' (Free Discharge)
1=Culvert (Barrel Controls 11.05 cfs @ 3.20 fps)

Summary for Pond DMH14: DMH14

Inflow Area = 0.244 ac, 99.01% Impervious, Inflow Depth = 0.00" for 100-yr event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond CB12 : CB12

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 258.00' @ 5.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	258.00'	**18.0" Round Culvert** L= 141.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 258.00' / 256.40' S= 0.0113 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=258.00' (Free Discharge)
1=Culvert (Controls 0.00 cfs)

Summary for Pond DMH16: DMH16

Inflow Area = 0.215 ac,100.00% Impervious, Inflow Depth = 0.00" for 100-yr event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond CB12 : CB12

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 259.90' @ 5.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	259.90'	**18.0" Round Culvert** L= 187.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 259.90' / 256.40' S= 0.0187 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=259.90' (Free Discharge)
1=Culvert (Controls 0.00 cfs)

Summary for Pond DMH18: DMH18

Inflow Area = 0.268 ac, 99.37% Impervious, Inflow Depth = 0.12" for 100-yr event
Inflow = 0.15 cfs @ 12.13 hrs, Volume= 0.003 af
Outflow = 0.15 cfs @ 12.13 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min
Primary = 0.15 cfs @ 12.13 hrs, Volume= 0.003 af
Routed to Pond CB12 : CB12

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 261.79' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	261.60'	**18.0" Round Culvert** L= 207.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 261.60' / 256.40' S= 0.0251 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.15 cfs @ 12.13 hrs HW=261.79' (Free Discharge)
1=Culvert (Inlet Controls 0.15 cfs @ 1.16 fps)

Summary for Pond EP1: EPOROUS1

Inflow Area = 0.268 ac, 99.37% Impervious, Inflow Depth > 7.08" for 100-yr event
Inflow = 2.50 cfs @ 11.95 hrs, Volume= 0.158 af
Outflow = 0.81 cfs @ 12.13 hrs, Volume= 0.158 af, Atten= 67%, Lag= 10.9 min
Discarded = 0.66 cfs @ 11.80 hrs, Volume= 0.156 af
Primary = 0.15 cfs @ 12.13 hrs, Volume= 0.003 af
Routed to Pond DMH18 : DMH18

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 262.31' @ 12.13 hrs Surf.Area= 2,390 sf Storage= 872 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 5.3 min (734.8 - 729.5)

Volume	Invert	Avail.Storage	Storage Description
#1	261.40'	1,749 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 4,374 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
261.40	2,390	0	0
263.23	2,390	4,374	4,374

Device	Routing	Invert	Outlet Devices
#1	Primary	262.15'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#2	Discarded	261.40'	**12.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.66 cfs @ 11.80 hrs HW=261.43' (Free Discharge)
2=Exfiltration (Exfiltration Controls 0.66 cfs)

Primary OutFlow Max=0.15 cfs @ 12.13 hrs HW=262.31' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.15 cfs @ 1.36 fps)

Summary for Pond EP2: EPOROUS2

Inflow Area = 0.215 ac,100.00% Impervious, Inflow Depth > 7.08" for 100-yr event
Inflow = 2.00 cfs @ 11.95 hrs, Volume= 0.127 af
Outflow = 1.13 cfs @ 11.90 hrs, Volume= 0.127 af, Atten= 44%, Lag= 0.0 min
Discarded = 1.13 cfs @ 11.90 hrs, Volume= 0.127 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond DMH16 : DMH16

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 259.96' @ 12.03 hrs Surf.Area= 4,055 sf Storage= 255 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.8 min (730.3 - 729.5)

Volume	Invert	Avail.Storage	Storage Description
#1	259.80'	2,968 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 7,421 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
259.80	4,055	0	0
261.63	4,055	7,421	7,421

Device	Routing	Invert	Outlet Devices
#1	Primary	260.55'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#2	Discarded	259.80'	**12.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=1.13 cfs @ 11.90 hrs HW=259.82' (Free Discharge)
2=Exfiltration (Exfiltration Controls 1.13 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=259.80' (Free Discharge)
1=Orifice/Grate (Controls 0.00 cfs)

Summary for Pond EP3: EPOROUS3

Inflow Area = 0.244 ac, 99.01% Impervious, Inflow Depth > 7.08" for 100-yr event
Inflow = 2.27 cfs @ 11.95 hrs, Volume= 0.144 af
Outflow = 0.97 cfs @ 11.90 hrs, Volume= 0.144 af, Atten= 57%, Lag= 0.0 min
Discarded = 0.97 cfs @ 11.90 hrs, Volume= 0.144 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond DMH14 : DMH14

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 258.55' @ 12.07 hrs Surf.Area= 3,492 sf Storage= 484 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 1.7 min (731.2 - 729.5)

Volume	Invert	Avail.Storage	Storage Description
#1	258.20'	2,444 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 6,111 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
258.20	3,492	0	0
259.95	3,492	6,111	6,111

Device	Routing	Invert	Outlet Devices
#1	Primary	258.95'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#2	Discarded	258.20'	**12.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.97 cfs @ 11.90 hrs HW=258.25' (Free Discharge)
2=Exfiltration (Exfiltration Controls 0.97 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=258.20' (Free Discharge)
1=Orifice/Grate (Controls 0.00 cfs)

Summary for Pond EP6: EPOROUS6

Inflow Area = 0.615 ac, 91.63% Impervious, Inflow Depth > 6.97" for 100-yr event
Inflow = 5.68 cfs @ 11.95 hrs, Volume= 0.357 af
Outflow = 1.65 cfs @ 11.80 hrs, Volume= 0.357 af, Atten= 71%, Lag= 0.0 min
Discarded = 1.65 cfs @ 11.80 hrs, Volume= 0.357 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond CB26 : CB26

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 251.66' @ 12.17 hrs Surf.Area= 5,939 sf Storage= 1,913 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 4.9 min (737.3 - 732.5)

Volume	Invert	Avail.Storage	Storage Description
#1	250.85'	3,967 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 9,918 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
250.85	5,939	0	0
252.52	5,939	9,918	9,918

Device	Routing	Invert	Outlet Devices
#1	Primary	251.88'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#2	Discarded	250.85'	**12.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=1.65 cfs @ 11.80 hrs HW=250.87' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 1.65 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=250.85' (Free Discharge)
└**1=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond EP7: EPOROUS7

Inflow Area = 0.301 ac, 91.36% Impervious, Inflow Depth > 6.90" for 100-yr event
Inflow = 2.77 cfs @ 11.95 hrs, Volume= 0.173 af
Outflow = 0.97 cfs @ 11.90 hrs, Volume= 0.173 af, Atten= 65%, Lag= 0.0 min
Discarded = 0.97 cfs @ 11.90 hrs, Volume= 0.173 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond CB30 : CB30

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 251.38' @ 12.11 hrs Surf.Area= 3,500 sf Storage= 748 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 3.0 min (737.3 - 734.2)

Volume	Invert	Avail.Storage	Storage Description
#1	250.85'	2,338 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 5,845 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
250.85	3,500	0	0
252.52	3,500	5,845	5,845

Device	Routing	Invert	Outlet Devices
#1	Primary	251.88'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#2	Discarded	250.85'	**12.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.97 cfs @ 11.90 hrs HW=250.92' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 0.97 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=250.85' (Free Discharge)
└**1=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond PP4: PPOROUS4

Inflow Area = 0.602 ac, 99.26% Impervious, Inflow Depth > 7.08" for 100-yr event
Inflow = 5.61 cfs @ 11.95 hrs, Volume= 0.355 af
Outflow = 2.37 cfs @ 11.90 hrs, Volume= 0.355 af, Atten= 58%, Lag= 0.0 min
Discarded = 2.37 cfs @ 11.90 hrs, Volume= 0.355 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Pond CB12 : CB12

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 257.05' @ 12.07 hrs Surf.Area= 8,546 sf Storage= 1,210 cf

Plug-Flow detention time= 2.0 min calculated for 0.354 af (100% of inflow)
Center-of-Mass det. time= 1.8 min (731.3 - 729.5)

Volume	Invert	Avail.Storage	Storage Description
#1	256.70'	5,982 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 14,956 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
256.70	8,546	0	0
258.45	8,546	14,956	14,956

Device	Routing	Invert	Outlet Devices
#1	Primary	257.45'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#2	Discarded	256.70'	**12.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=2.37 cfs @ 11.90 hrs HW=256.75' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 2.37 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=256.70' (Free Discharge)
↑—**1=Orifice/Grate** (Controls 0.00 cfs)

APPENDIX F:
SWPPP INSPECTION REPORT
(SAMPLE FORM)

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Prepared by:
LaBella Associates
21 Fox Street
Poughkeepsie, NY 12601
(845) 454-3980

SWPPP INSPECTION REPORT NUMBER XX
VIP Subaru Wappinger LLC
Subaru Wappinger Building Expansion
1162 Route 9, TOWN OF Wappinger, Dutchess COUNTY, NY
PERMIT NUMBER

Performed: 2/1/2025 @ 12:00 AM
Report Issued: 2/1/2025

Status: SATISFACTORY (All erosion control measures are installed and in working order)

Qualified Inspector (name and title)	Qualified Professional (name and title)
Date	Date
Signature	Signature

NYSDEC Documentation and SWPPP Forms

5-Acre Waiver: 5-acre waiver approved by NYSDEC and > 5 acres disturbed

303d Status: Project does not directly discharge to a 303d impaired waterbody

Number of Inspections required: 1 / week

Location of SWPPP and Site Log Book on-site:

YES	NO	N/A	CONTAINED IN SITE LOG BOOK?
☐	☐	☐	Preconstruction Assessment
☐	☐	☐	Copy of eNOI
☐	☐	☐	Letter of Authorization
☐	☐	☐	SWPPP Preparer Certification Form
☐	☐	☐	Owner/Operator Certification Form
☐	☐	☐	MS4 SWPPP Acceptance Form
☐	☐	☐	MS4 No Jurisdiction Form
☐	☐	☐	NYCDEP SWPPP Acceptance Form
☐	☐	☐	Contractor and Subcontractor Certifications
☐	☐	☐	SPDES General Permit
☐	☐	☐	5 Acre Waiver Authorization
☐	☐	☐	eNOT

Comments:

Site Conditions

Total area with active soil disturbance (not requiring either temporary or final stabilization): XX Acres
Total area with inactive soil disturbance (requiring either temporary or final stabilization): XX Acres
Total area that has achieved temporary stabilization: XX Acres
Total area that has achieved final stabilization: XX Acres

Allowable Disturbed Area Per NOI and/or 5-acre waiver: XX Acres

Current Status of Construction: Description

Weather Conditions: Conditions	**Temperature:** XX ºF	**Soil Conditions:** Choose an item.

Description of Discharge Point/Surface Waters of the State	Condition of Runoff	Sediment Discharge Noted Y / N	Corrective Action

Erosion and Sediment Control Deficiencies and Corrective Actions

SWPPP Component	Functional Y / N / NA	Deficiency (See Checklist and/or note)	Deficiency Location	Initial Date	Corrective Action	Corrected Y / N
General Site Conditions						
Silt Fence						
Stabilized Construction Access						
Compost Filter Sock						
Inlet Protection						
Soil Stockpiles						
Temporary Stabilization						
Permanent Stabilization						
Dewatering Operations						
Stone Check Dams						
Rock Outlet Protection						
Sediment Traps and Basins						
Temporary Stream Crossing						
Pavement Sweeping						
Concrete Washout						
Filter Strips						
Slope Protection Measures						
Temporary Swales and Berms						
Temporary Parking Areas						
Fiber Roll						
Permanent Turf Reinforcement						
Water Bars						
Flow Diffusers						
Other:						

SWPPP Inspection Checklist and Deficiency Numbers

1	General Site Conditions
1A	Adjoining properties are not protected from erosion and sediment deposition
1B	Downstream waterways are not protected from erosion and sediment deposition
1C	All E&SC measures have not been constructed as detailed in the SWPPP
1D	Dust is not adequately controlled
1E	Storage areas contain spills, leaks, or harmful materials
1F	Garbage and waste building materials are not being managed properly
1G	Temporary control measures that are no longer needed have not been removed
1H	Permanent SWM practices not constructed per plans

2	Silt Fence
2A	Silt fence not installed on contour
2B	Silt fence not across conveyance channels
2C	Silt fence not at least 10 feet from toe of slope
2D	Silt fence not at appropriate spacing intervals based on slope
2E	Silt fence ends are not wrapped for continuous support
2F	Silt fence fabric is loose or contains rips or frayed areas
2G	Silt fence posts are unstable
2H	Silt fence is not buried 6 inches minimum
2I	Silt fence contains bulges or material buildup

3	Stabilized Construction Access
3A	Temporary construction access not installed or not per NYS standards
3B	Other access areas have not been stabilized immediately as work takes place
3C	Sediment has tracked onto public streets and is not being cleaned daily
3D	Stone is not clean enough to effectively remove mud from vehicles
3E	Adequate drainage not provided to prevent ponding

4	Compost Filter Sock
4A	Filter sock not installed on contour
4B	Filter sock terminal ends do not extended 8' upslope at 45˚ angle
4C	Inappropriate diameter based on slope steepness and slope length
4D	Filter sock not anchored at 10' intervals
4E	More than 50% sediment has built up

5	Inlet Protection
5A	Inlet protection not installed or installation is not per SWPPP or Blue Book specifications
5B	Incorrect type(s) of inlet control installed or is inappropriate for location
5C	Drainage area for inlet protection is greater than 1 acre
5D	Sediment has not been removed when 50% of storage volume has been achieved
5E	A 2" x 4" wood frame and wood posts has not been installed
5F	Filter fabric is not buried a minimum of 1 foot below ground or secured to frame/posts
5G	Posts are unstable, fabric is loose, and contains rips or frayed areas
5H	Post spacing exceeds maximum 3' spacing

6	Soil Stockpiles
6A	No sediment controls at downhill slope

7	Temporary Stabilization
7A	Areas inactive for 14 days or more have not been stabilized (If <5 acres disturbed)
7B	Areas inactive for 7 days or more have not been stabilized (If >5 acres disturbed or 303d)
7C	Soil preparation has not been applied as specified in the SWPPP or the Blue Book
7D	Rolled EC products specified for steep slopes or channels have not been installed

8	Permanent Stabilization
8A	Lawn in disturbed areas has not been established to 80% germination
8B	Soil preparation has not been applied as specified in the SWPPP or the Blue Book
8C	Rolled EC products specified for steep slopes or channels have not been installed

9	Dewatering Operations
9A	Upstream and downstream berms are not installed or functioning poorly
9B	Clean water from upstream pool is not being pumped to the downstream pool
9C	Sediment laden water from work area is not being discharged to a silt-trapping device
9D	Groundwater from excavations managed improperly (No sumps/sediment control)

10	Stone Check Dam
10A	Not installed per standards
10B	Channel is unstable (flow is eroding soil underneath or around the structure)
10C	Check dam in poor condition (rocks not in place or lack of geotextile fabric)
10D	Sediment needs to be removed

11	Rock Outlet Protection
11A	Rock outlet protection not installed per plan or Blue Book
11B	Rock outlet protection not installed concurrently with pipe installation

12	Sediment Traps and Basins
12A	Outlet structure constructed improperly
12B	Geotextile fabric has not been placed beneath rock fill
12C	Depth of sediment in basin has exceeded allowable threshold
12D	Basin and outlet structure not constructed per the approved plan
12E	Basin side slopes are not stabilized with seed/mulch
12F	More than 50% capacity has built up

13	Temporary Stream Crossing
13A	Construction crossings at concentrated flow areas have not been culverted

14	Pavement Sweeping
14A	Pavement has not been swept daily and sediment has traveled into road

Stormwater Management Practice Deficiencies and Corrective Actions

Practice	Sign Y / N	Current Phase of Construction	Items Not in Conformance with SWPPP	Deficiency Location	Initial Date	Corrective Action	Corrected Y / N
Practice 1:							
Practice 2:							
Practice 3:							
Practice 4:							
Practice 5:							
Practice 6:							

Deficiencies and Corrective Action Photo Log

Photo 1 *Date – Deficiency in need of repair or maintenance:*	***Photo 1A*** *Date – Corrective Action:*
Photo 2 *Date – Deficiency in need of repair or maintenance:*	***Photo 2A*** *Date – Corrective Action:*
Photo 3 *Date – Deficiency in need of repair or maintenance:*	***Photo 3A*** *Date – Corrective Action:*

Deficiencies and Corrective Action Photo Log (continued)

Photo 4 *Date – Deficiency in need of repair or maintenance:*	***Photo 4A*** *Date – Corrective Action:*
Photo 5 *Date – Deficiency in need of repair or maintenance:*	***Photo 5A*** *Date – Corrective Action:*
Photo 6 *Date – Deficiency in need of repair or maintenance:*	***Photo 6A*** *Date – Corrective Action:*

Disturbance / Photo Location Map

Replace this page to include an 11x17 erosion control plan sketch to scale showing:

1. Areas with active soil disturbance activity
2. Areas that have been disturbed but are inactive at the time of the inspection
3. Areas that have been stabilized (temporary and/or final) since the last inspection
4. Limit of disturbance line per the SWPPP and the grading plan
5. Photo locations

Use Bluebeam template with standard colors to indicate limits

APPENDIX G:
POST CONSTRUCTION INSPECTIONS AND MAINTENANCE

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NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Permeable Pavement Stormwater Management Practices Level 1 Inspection Checklist

SMP ID #		**SMP Owner**		☐ Private ☐ Public
SMP Location (Address; Latitude & Longitude)				
	Latitude		**Longitude**	

Party Responsible for Maintenance	**System Type**		**Type of Site**
☐ Same as SMP Owner ☐ Other _____	☐ Seasonal ☐ Continuous Use ☐ Other	☐ Above Ground ☐ Below Ground	☐ Commercial ☐ Industrial ☐ Residential ☐ State

Inspection Date		**Inspection Time**	
Inspector			
Date of Last Inspection			

PP Drainage Area

Look for areas that are uphill from the Permeable pavement.

Problem (Check if Present)		**Follow-Up Actions**
	☐ Bare soil, erosion of the ground (rills washing out the dirt)	☐ Seed and straw areas of bare soil to establish vegetation. ☐ Fill in erosion areas with soil, compact, and seed and straw to establish vegetation. ☐ If a rill or small channel is forming, try to redirect water flowing to this area by creating a small berm or adding topsoil to areas that are heavily compacted. ☐ Other:

PP Drainage Area

Look for areas that are uphill from the Permeable pavement.

Problem (Check if Present)		Follow-Up Actions
		☐ Kick-Out to Level 2 Inspection: Large areas of soil have been eroded, or larger channels are forming. May require rerouting of flow paths.
	☐ Piles of grass clippings, mulch, dirt, salt, or other materials	☐ Remove or cover piles of grass clippings, mulch, dirt, etc. ☐ Other:
	☐ Open containers of oil, grease, paint, or other substances	☐ Cover or properly dispose of materials; consult your local solid waste authority for guidance on materials that may be toxic or hazardous. ☐ Other:

PP Surface

Examine the entire permeable pavement surface.

Problem (Check if Present)	Follow-Up Actions
 ☐ Dirt and grit accumulating on pavement surface	☐ For small areas (e.g., driveways, patios), try a leaf blower or sweep the area to remove the dirt/grit from the Permeable pavement and properly dispose of the material. ☐ If dirt/grit remain in the joint areas between paver blocks, agitate with a rough brush and vacuum the surface with a wet/dry vac. ☐ Remove and replace clogged blocks in segmented pavers. ☐ For larger areas (e.g., parking lots, courtyards), hire a vacuum sweeper to restore the surface to a cleaner condition. ☐ Other: ☐ Kick-Out to Level 2 Inspection: Grit is widespread and cannot be removed by manual sweeping.
 ☐ Grass and weeds are growing on the permeable pavement surface (applies only to pavement types that are not intended to be covered in vegetation).	☐ If paver type is not intended to be covered in vegetation, remove the grass/weeds either mechanically (pulling, by hand or with a flame weeder) or with a herbicide approved for use in or near water (consult your local Extension Office for suggestions). ☐ Follow the actions listed above for removing dirt/grit from the pavement surface. ☐ Other: ☐ Kick-Out to Level 2 Inspection: Grass/weeds cover more than 25% of surface area.
 ☐ Slumping, sinking, cracking, or breaking of the pavement surface *(Source: CSN, 2013)*	☐ For small areas (e.g., patios, small driveway), it may be possible to remove the damaged pavers, check and fill in the underlying gravel, and replace with new materials. ☐ Other: ☐ Kick-Out to Level 2 Inspection: Problem affects more than a small, isolated area. Will typically require a qualified contractor to fix it. ☐ Problem recurs or occurs in multiple small locations.
 ☐ Water stands on Permeable pavement for days after a rainstorm; the Permeable pavement is clogged and doesn't let water through. *(Source: CSN, 2013)*	☐ Kick-Out to Level 2 Inspection: This is generally a serious problem, and it will be necessary to activate a Level 2 Inspection.

Additional Notes:

Inspector:_____ Date: _____

Complete the following if follow-up/corrective actions were identified during this inspection:

Certified Completion of Follow-Up Actions:

"I hereby certify that the follow-up/corrective actions identified in the inspection performed on _____ (DATE) have been completed and any required maintenance deficiencies have been adequately corrected."

Inspector/Operator: _____ Date: _____

Permeable Pavement Stormwater Management Practices Level 2 Inspection Checklist

SMP ID #		**SMP Owner**		☐ Private ☐ Public
SMP Location (Address; Latitude & Longitude)				
	Latitude		**Longitude**	

Party Responsible for Maintenance	**System Type**		**Type of Site**
☐ Same as SMP Owner ☐ Other _____	☐ Seasonal ☐ Continuous Use ☐ Other	☐ Above Ground ☐ Below Ground	☐ Commercial ☐ Industrial ☐ Residential ☐ State

Inspection Date		**Inspection Time**	
Inspector			
Date of Last Inspection			

Level 2 Inspection: PERMEABLE PAVEMENT

Recommended Repairs and Required Skills	Triggers for Level 3 Inspection
Observed Condition: Bare Soil or Erosion in the Drainage Area	
☐ Condition 1: Extensive problem spots, but no channels or rills forming Reseed problem areas. If problem persists or grass does not take, consider hiring a landscape contractor. ☐ Condition 2: Problem is extensive, and rills/channels are beginning to form May be necessary to divert or redirect water that is causing the erosion problem. If it appears that simple regrading—such as installing a berm or leveling a low spot–will fix the problem, make repairs and check to ensure that the problem is repaired after the next storm.	• Large rills or gullies are forming in the drainage area. • An attempt to regrade the drainage area has been unsuccessful • Fixing the problem would require major regrading (i.e., redirecting more than a 100-square-foot area. • It is not clear why the problem is occurring. ☐ Level 3 inspection necessary
Observed Condition: Dirt or Grit Accumulating, or Grass Growing on Pavement Surface	
☐ Condition 1: Grit beginning to form but is isolated to a small area or does not fill the joints between paver blocks Try to agitate and sweep by hand, or hire a contractor with a vacuum sweeper. Also investigate the drainage area for potential sediment sources. If no obvious sources are found, discuss winter sanding and salting operations with the property owner to identify whether this could be the source. ☐ Condition 2: Grit is forming and cannot be removed with agitation and hand sweeping Hire a vendor with a regenerative air vacuum sweeper, maximum power 2,500 rpm; avoid sweepers that use water.	• More than 2 inches of sand/dirt/grit are on some of the pavement surface. • More than 25% of the pavement surface is covered with sand/dirt/grit to the extent that joints between paver blocks are filled. • Regenerative air sweeper cannot remove grit. ☐ Level 3 inspection necessary

Level 2 Inspection: PERMEABLE PAVEMENT

Recommended Repairs and Required Skills	Triggers for Level 3 Inspection
Observed Condition: Structural Damage	
☐ Condition 1: Portions of porous asphalt or permeable pavers are damaged, and the cause is known to be at the surface. If the damage is from a single event such as heavy equipment or heavy fallen objects, or the surface has been damaged by wear over time, hire a contractor experienced in permeable pavement installation to repair the damaged areas. ☐ Condition 2: Damage to other structures, such as drainage infrastructure If possible, repair or replace damaged items, or hire a contractor with permeable pavement experience if the damaged infrastructure is within the pavement surface.	• More than 25% of the surface needs to be repaired or replaced. • It appears that the underlying material has "caved in," indicating an underlying water conveyance or soil stabilization issue. • Problem is repaired but recurs within less than five years. ☐ Level 3 inspection necessary
Observed Condition: Ponding on the Pavement Surface	
☐ Condition 1: Underdrains (if present) may be clogged Check to see whether underdrains are clogged by inspecting cleanouts (if present) or catch basins and looking for debris. If underdrains appear clogged, it may be necessary to hire a router service to ream out the underdrains. ☐ Condition 2: At time of Level 2 inspection, water is not ponded, and there is no obvious clogging of the surface. Conduct a flood test to determine whether the ponding is an ongoing problem.	• Water stands on the pavement surface more than 72 hours after a storm, and the problem cannot be resolved by unclogging underdrains. • More than 25% of the pavement surface is covered with sand/dirt/grit to the extent that joints between paver blocks are filled. ☐ Level 3 inspection necessary

Notes:

Inspector:_____ Date: _____

Complete the following if follow-up/corrective actions were identified during this inspection:

Certified Completion of Follow-Up Actions:

"I hereby certify that the follow-up/corrective actions identified in the inspection performed on _____ (DATE) have been completed and any required maintenance deficiencies have been adequately corrected."

Inspector/Operator: _____ Date: _____

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Pond and Wetland Stormwater Management Practices Level 1 Inspection Checklist

SMP ID #		**SMP Owner**		☐ Private ☐ Public
SMP Location (Address; Latitude & Longitude)				
	Latitude		**Longitude**	

Party Responsible for Maintenance	**System Type**		**Type of Site**
☐ Same as SMP Owner ☐ Other _____	☐ Seasonal ☐ Continuous Use ☐ Other	☐ Above Ground ☐ Below Ground	☐ Commercial ☐ Industrial ☐ Residential ☐ State

Inspection Date		**Inspection Time**	
Inspector			
Date of Last Inspection			

PW Drainage Area

Look for areas that are uphill from the pond.

Problem (Check if Present)	**Follow-Up Actions**
☐ Bare soil, erosion of the ground (rills washing out the dirt)	☐ Seed and straw areas of bare soil to establish vegetation. ☐ Fill in eroded areas with soil, compact, seed and mulch with straw to establish vegetation. ☐ Other:

☐ Bare soil, erosion of the ground (rills washing out the dirt)	☐ Kick-Out to Level 2 Inspection: If a rill or small channel is forming, try to redirect water flowing to this area by creating a small berm or adding topsoil to areas that are heavily compacted. ☐ If large areas of soil have been eroded or larger channels are forming, this may require rerouting of flow paths or use of an erosion-control seed mat or blanket to reestablish acceptable ground cover or anchor sod where it is practical.
 ☐ Piles of grass clippings, mulch, dirt, salt, or other materials	☐ Remove or cover piles of grass clippings, mulch, dirt, etc. ☐ Remove excessive vegetation or woody debris that can block drainage systems. ☐ Other:
 ☐ Open containers of oil, grease, paint, or other substances exposed to rain in the drainage area	☐ Cover or properly dispose of materials; consult your local solid waste authority for guidance on materials that may be toxic or hazardous. ☐ Other:

Pond Inlets

Look for all areas where water flows into the pond during storms. Note that there may be multiple points of inflow and types of structures (e.g., pipes, open ditches, etc.).

Problem (Check if Present)	Follow-Up Actions
 ☐ Inlets are buried, covered or filled with silt, debris, or trash, or blocked by excessive vegetation.	☐ If the problem can be remedied with hand tools and done in a safe manner, remove vegetation, trash, woody debris, etc. from blocking inlet structures. ☐ Other: ☐ Kick-Out to Level 2 or 3 Inspection: If the amount of material is too large to handle OR there are ANY safety concerns about working in standing water, soft sediment, etc., the work will likely have to be performed by a qualified contractor.

Pond Inlets

Look for all areas where water flows into the pond during storms. Note that there may be multiple points of inflow and types of structures (e.g., pipes, open ditches, etc.).

Problem (Check if Present)		Follow-Up Actions
	☐ Inlets are buried, covered or filled with silt, debris, or trash, or blocked by excessive vegetation.	☐ Kick-Out to Level 2 or 3 Inspection: If the amount of material is too large to handle OR there are ANY safety concerns about working in standing water, soft sediment, etc., the work will likely have to be performed by a qualified contractor.
	☐ Inlets are broken, and, with pieces of pipe or concrete falling into the pond, there is erosion around the inlet, there is open space under the pipe, or there is erosion where the inlet meets the pond	☐ Kick-Out to Level 2 Inspection: These types of structural or erosion problems are more serious and will require a qualified contractor to repair.

PW Pond Area and Embankments

Examine both interior and exterior pond banks as well as the pond body. Observe from the inlet pipes to the outfall structure and emergency overflow.

Problem (Check if Present)		Follow-Up Actions
	☐ The pretreatment area(s) or forebay(s) are filled with sediment, trash, vegetation, or other debris.	☐ If the problem can be remedied with hand tools and done in a safe manner, use a flat shovel or other equipment to remove small amounts of sediment. ☐ Remove trash and excessive vegetation from forebays if this can be done in a safe manner. ☐ Other:

PW Pond Area and Embankments

Examine both interior and exterior pond banks as well as the pond body. Observe from the inlet pipes to the outfall structure and emergency overflow.

Problem (Check if Present)		Follow-Up Actions
	☐ The pretreatment area(s) or forebay(s) are filled with sediment, trash, vegetation, or other debris.	☐ Kick-Out to Level 2 Inspection: Large amounts of sediment or debris will have to be removed by a qualified contractor. ANY condition that poses a safety concern for working in standing water or soft sediments should be referred to a Level 2 Inspection or qualified contractor.
	☐ The pond area itself has accumulated sediment, trash, debris, or excessive vegetation that is choking the flow of the water, OR the pond area is covered with algae or aquatic plants.	☐ Level 1 includes handling only small amounts of material that can be removed by hand, or with rakes or other hand tools. Do not attempt any repair that poses a safety issue. ☐ Other: ☐ Kick-Out to Level 2 Inspection: Most cases will call for a Level 2 Inspection and/or a qualified contractor. ☐ You are not sure what type and amount of vegetation is supposed to be in the pond. ☐ The algae or aquatic plants should be identified so that proper control techniques can be applied.
	☐ The side slopes of the pond are unstable, eroding, and have areas of bare dirt.	☐ If there are only minor areas, try filling in small rills or gullies with topsoil, compacting, and seeding and mulching all bare dirt areas with an appropriate seed. Alternatively, try using herbaceous plugs to get vegetation established in tricky areas, such as steep slopes. ☐ Other: ☐ Kick-Out to Level 2 Inspection: Erosion and many bare dirt areas on steep side slopes will require a Level 2 Inspection and repair by a qualified contractor.

PW Pond Area and Embankments

Examine both interior and exterior pond banks as well as the pond body. Observe from the inlet pipes to the outfall structure and emergency overflow.

Problem (Check if Present)		Follow-Up Actions
 	☐ The riser structure is clogged with trash, debris, sediment, vegetation, etc., OR is open, unlocked, or has a steep drop and poses a safety concern. The pond level may have dropped below its "normal" level.	☐ If you can safely access the riser on foot or with a small boat, clear minor amounts of debris and remove it from the pond area for safe disposal. ☐ Other: ☐ Kick-Out to Level 2 Inspection: The riser cannot be accessed safely, the amount of debris is substantial, or the riser seems to be completely clogged and the water level has risen too high. ☐ There are safety issues with the riser and concern about access to pipes, drops, or any other life safety concern. ☐ The riser is leaning, broken, settling or slumping, corroded, eroded or any other structural problem.
	☐ The dam/embankment is slumping, sinking, settling, eroding, or has medium or large trees growing on it.	☐ If there are small isolated areas, try to fix them by adding clean material (clay and topsoil) and seeding and mulching. ☐ Periodically mow embankments to enable inspection of the banks and to minimize establishment of woody vegetation. ☐ Remove any woody vegetation that has already established on embankments. ☐ Other: ☐ Kick-Out to Level 2 Inspection: Most of these situations will require a Level 2 Inspection or evaluation and repair by a qualified contractor. Seepage through the dam or problems with the pipe through the dam can be a serious issue that should be addressed to avoid possible dam failure.

PW Pond Area and Embankments

Examine both interior and exterior pond banks as well as the pond body. Observe from the inlet pipes to the outfall structure and emergency overflow.

Problem (Check if Present)		Follow-Up Actions
	☐ The emergency spillway or outfall (if it exists) has ☐ Erosion, settlement, or loss of material. Rock-lined spillways have excessive debris or vegetation.	☐ Clear light debris and vegetation. ☐ Other: ☐ Kick-Out to Level 2 Inspection: Displacement of rock lining, excessive vegetation and erosion/settlement may warrant review and decision by Level 2 Inspector to check against original plan. ☐ Any uncertainty about the integrity of the emergency spillway should be referred to a Level 2 Inspector. ☐ Erosion or settlement such that design has been compromised should be reviewed by an engineer.

PW Pond Outlet

Examine the outlet of the pipe on the downstream side of the dam/embankment where it empties into a stream, channel, or drainage system.

Problem (Check if Present)	Follow-Up Actions
 ☐ The pond outlet is clogged with sediment, trash, debris, vegetation, or is eroding, caving in, slumping, or falling apart.	☐ If there is a minor blockage, remove the debris or vegetation to allow free flow of water. ☐ Remove any accumulated trash at the outlet. ☐ Outlet: ☐ Kick-Out to Level 2 Inspection: ☐ If the area at the outlet cannot be easily accessed or if the blockage is substantial, a Level 2 Inspection is warranted. ☐ Erosion at and downstream of the outfall should be evaluated by a qualified professional. ☐ Any structural problems, such as broken pipes, structures falling into the stream, or holes or tunnels around the outfall pipe, should be evaluated by a Level 2 Inspector and will require repair by a qualified contractor. ☐ The pool of water at the outlet pipe is discolored, has an odor, or has excessive algae or vegetative growth.

Additional Notes:

Inspector:_____ Date: _____

Complete the following if follow-up/corrective actions were identified during this inspection:

Certified Completion of Follow-Up Actions:

"I hereby certify that the follow-up/corrective actions identified in the inspection performed on _____ (DATE) have been completed and any required maintenance deficiencies have been adequately corrected."

Inspector/Operator: _____ Date: _____

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Pond and Wetland Stormwater Management Practices Level 2 Inspection Checklist

SMP ID #		**SMP Owner**		☐ Private ☐ Public
SMP Location (Address; Latitude & Longitude)				
	Latitude		**Longitude**	

Party Responsible for Maintenance	**System Type**		**Type of Site**
☐ Same as SMP Owner ☐ Other _____	☐ Seasonal ☐ Continuous Use ☐ Other	☐ Above Ground ☐ Below Ground	☐ Commercial ☐ Industrial ☐ Residential ☐ State

Inspection Date		**Inspection Time**	
Inspector			
Date of Last Inspection			

Level 2 Inspection: PONDS and WETLANDS

Recommended Repairs and Required Skills	Triggers for Level 3 Inspection
Observed Condition: Bare Soil or Erosion in the Drainage Area	
☐ Condition 1: Extensive problem spots, but no channels or rills forming Reseed problem areas. If problem persists or grass does not take, consider hiring a landscape contractor. ☐ Condition 2: Problem is extensive, and rills/channels are beginning to form May be necessary to divert or redirect water that is causing the erosion problem. If it appears that simple regrading—such as installing a berm or leveling a low spot–will fix the problem, make repairs and ensure that the problem is repaired after the next storm.	• Large rills or gullies are forming in the drainage area. • An attempt to regrade the drainage area has been unsuccessful. • Fixing the problem would require major regrading (i.e., redirecting more than a 100-square-foot area. • It is not clear why the problem is occurring. ☐ Level 3 inspection necessary
Observed Condition: Manholes or Inlet Pipe Buried or Covered with Vegetation	
☐ Condition 1: Nearest manhole and inlet pipe not found Consult as-built drawings to get to closest suspected location and use metal detector to search for metal manhole cover. If unsuccessful, identify nearest drain inlets and approximate pipe direction to locate next manhole. ☐ Condition 2: Manhole located and inspected Never enter a manhole, except by following confined-space entry protocols. If outlet pipe is not visible or greater than 25% full of sediment/debris or trash, it will typically require a qualified contractor to flush, clean and clear blockages. ☐ Condition 3: Inlet pipe not found at pond Clear vegetation and brush that may be covering the inlet pipe. Buried inlet pipes may be found through use of a metal probe. ☐ Condition 4: Inlet pipe buried in sediment or blocked by vegetation Once located, the pipe path can be cleared of vegetation with brush hook or other brush tools. Light digging may clear sediment from the end of the pipe.	• To locate buried manholes and lost storm lines, it is sometimes necessary to hire a pipeline inspection contractor with televising equipment or ground-penetrating radar and enter at the closest upstream access point. • Locating a buried inlet pipe may require wading in the edge of the pond and using a metal probe and brush axe to find and expose the pipe. • If other than light digging is necessary to remove accumulated sediment, a contractor with heavy equipment may be required. ☐ Level 3 inspection necessary

Level 2 Inspection: PONDS and WETLANDS	
Recommended Repairs and Required Skills	**Triggers for Level 3 Inspection**
Observed Condition: Pipe or Headwall Settlement, Erosion, Corrosion or Failure	
☐ Condition 1: Pipe or headwall settlement or failure Severe sinkholes, settlement or corrosion should be kicked out to Level 3 Inspection. ☐ Condition 2: Flow not confined to pipe and visible outside pipe wall With flashlight, observe the inside of the pipe and note its condition. Take photographs. Look for sinkholes developing that indicate pipe failure beneath the surface. Kick out to Level 3 inspection.	• Where blockages are visible, a decision is needed on whether to clear them or leave in place. If a third of the pipe is full of sediment, it should be removed by a contractor with pipe-cleaning equipment. • Corrosion of inlet pipes that allows flow around the pipe exterior is a structural concern because it can lead to settlement, sinkholes and undermining pond embankment. Evidence of this type of failure may require specialized pipe-inspection equipment and investigation by an engineer. ☐ Level 3 inspection necessary
Observed Condition: Pond Conditions	
☐ Condition 1: Pond pre-treatment zone is full of sediment or not constructed as shown on as-built drawings. ☐ Condition 2: Excessive buildup of sediment or overgrowth If the pre-treatment area or pond pool is overgrown or filled with sediment so that the original design is compromised, corrective measures are required. If plants have died, then replanting is necessary. If none of the original design exists due to alteration or sediment, kick out to Level 3 inspection.	• It may require inspection by an engineer to determine next steps for clearing, replanting or reconstruction. • Erosion or settlement such that design has been compromised should be reviewed by an engineer. Recurring erosion may require redesign and/or regrading to direct flow away from eroding area. • If sediment has filled more than 50% of the pond's capacity, dredging is likely needed and should be evaluated by a qualified contractor. • Removal or control of excessive algae or aquatic plants can be assessed by a qualified pond maintenance company. ☐ Level 3 inspection necessary

Notes:

Inspector:_____ Date: _____

Complete the following if follow-up/corrective actions were identified during this inspection:

Certified Completion of Follow-Up Actions:

"I hereby certify that the follow-up/corrective actions identified in the inspection performed on _____ (DATE) have been completed and any required maintenance deficiencies have been adequately corrected."

Inspector/Operator: _____ Date: _____

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APPENDIX H:
NYSDEC "DEEP-RIPPING AND DECOMPACTION," APRIL 2008

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New York State
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Water

Deep-Ripping and Decompaction

April 2008

Document Prepared by:

John E. Lacey,
Land Resource Consultant and Environmental Compliance Monitor
(Formerly with the Division of Agricultural Protection and Development Services,
NYS Dept. of Agriculture & Markets)

New York State
Department of Environmental Conservation

Alternative Stormwater Management
Deep-Ripping and Decompaction

Description

The two-phase practice of 1) "Deep Ripping;" and 2) "Decompaction" (deep subsoiling), of the soil material as a step in the cleanup and restoration/landscaping of a construction site, helps mitigate the physically induced impacts of soil compression; i.e.: soil compaction or the substantial increase in the bulk density of the soil material.

Deep Ripping and Decompaction are key factors which help in restoring soil pore space and permeability for water infiltration. Conversely, the physical actions of cut-and-fill work, land grading, the ongoing movement of construction equipment and the transport of building materials throughout a site alter the architecture and structure of the soil, resulting in: the mixing of layers (horizons) of soil materials, compression of those materials and diminished soil porosity which, if left unchecked, severely impairs the soil's water holding capacity and vertical drainage (rainfall infiltration), from the surface downward.

In a humid climate region, compaction damage on a site is virtually guaranteed over the duration of a project. Soil in very moist to wet condition when compacted, will have severely reduced permeability. Figure 1 displays the early stage of the deep-ripping phase (Note that all topsoil was stripped prior to construction access, and it remains stockpiled until the next phase – decompaction – is complete). A heavy-duty tractor is pulling a three-shank ripper on the first of several series of incrementally deepening passes through the construction access corridor's densely compressed subsoil material. Figure 2 illustrates the approximate volumetric composition of a loam surface soil when conditions are good for plant growth, with adequate natural pore space for fluctuating moisture conditions.

Fig. 1. A typical deep ripping phase of this practice, during the first in a series of progressively deeper "rips" through severely compressed subsoil.

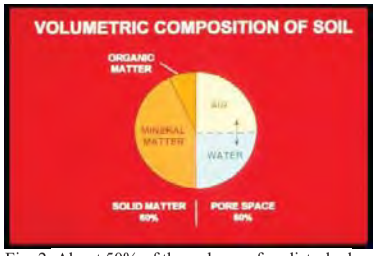

Fig. 2. About 50% of the volume of undisturbed loam surface soil is pore space, when soil is in good condition for plant growth. Brady, 2002.

Recommended Application of Practice

The objective of Deep Ripping and Decompaction is to effectively fracture (vertically and lateralllly) through the thickness of the physically compressed subsoil material (see Figure 3), restoring soil porosity and permeability and aiding infiltration to help reduce runoff. Together with topsoil stripping, the "two-phase" practice of Deep Ripping and Decompaction first became established as a "best management practice" through ongoing success on commercial farmlands affected by heavy utility construction right-of-way projects (transmission pipelines and large power lines).

Fig. 3. Construction site with significant compaction of the deep basal till subsoil extends 24 inches below this exposed cut-and-fill work surface.

Soil permeability, soil drainage and cropland productivity were restored. For broader construction application, the two-phase practice of Deep Ripping and Decompaction is best adapted to areas impacted with significant soil compaction, on contiguous open portions of large construction sites and inside long, open construction corridors used as temporary access over the duration of construction. Each mitigation area should have minimal above-and-below-ground obstructions for the easy avoidance and maneuvering of a large tractor and ripping/decompacting implements. Conversely, the complete two-phase practice is not recommended in congested or obstructed areas due to the limitations on tractor and implement movement.

Benefits

Aggressive "deep ripping" through the compressed thickness of exposed subsoil before the replacement/respreading of the topsoil layer, followed by "decompaction," i.e.: "sub-soiling," through the restored topsoil layer down into the subsoil, offers the following benefits:

- Increases the project (larger size) area's direct surface infiltration of rainfall by providing the open site's mitigated soil condition and lowers the demand on concentrated runoff control structures
- Enhances direct groundwater recharge through greater dispersion across and through a broader surface than afforded by some runoff-control structural measures
- Decreases runoff volume generated and provides hydrologic source control
- May be planned for application in feasible open locations either alone or in

conjunction with plans for structural practices (e.g., subsurface drain line or infiltration basin) serving the same or contiguous areas

- Promotes successful long-term revegetation by restoring soil permeability, drainage and water holding capacity for healthy (rather than restricted) root-system development of trees, shrubs and deep rooted ground cover, minimizing plant drowning during wet periods and burnout during dry periods.

Feasibility/Limitations

The effectiveness of Deep Ripping and Decompaction is governed mostly by site factors such as: the original (undisturbed) soil's hydrologic characteristics; the general slope; local weather/timing (soil moisture) for implementation; the space-related freedom of equipment/implement maneuverability (noted above in **Recommended Application of Practice**), and by the proper selection and operation of tractor and implements (explained below in **Design Guidance**). The more notable site-related factors include:

Soil

In the undisturbed condition, each identified soil type comprising a site is grouped into one of four categories of soil hydrology, Hydrologic Soil Group A, B, C or D, determined primarily by a range of characteristics including soil texture, drainage capability when thoroughly wet, and depth to water table. The natural rates of infiltration and transmission of soil-water through the undisturbed soil layers for Group A is "high" with a low runoff potential while soils in Group B are moderate in infiltration and the transmission of soil-water with a moderate runoff potential, depending somewhat on slope. Soils in Group C have slow rates of infiltration and transmission of soil-water and a moderately high runoff potential influenced by soil texture and slope; while soils in Group D have exceptionally slow rates of infiltration and transmission of soil-water, and high runoff potential.

In Figure 4, the profile displays the undisturbed horizons of a soil in Hydrologic Soil Group C and the naturally slow rate of infiltration through the subsoil. The slow rate of infiltration begins immediately below the topsoil horizon (30 cm), due to the limited amount of macro pores, e.g.: natural subsoil fractures, worm holes and root channels. Infiltration after the construction-induced mixing and compression of such subsoil material is virtually absent; but can be restored back to this natural level with the two-phase practice of deep ripping and decompaction, followed by the permanent establishment of an appropriate, deep taproot

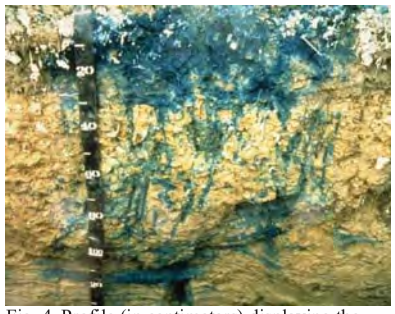

Fig. 4. Profile (in centimeters) displaying the infiltration test result of the natural undisturbed horizons of a soil in Hydrologic Soil Group C.

lawn/ground cover to help maintain the restored subsoil structure. Infiltration after construction-induced mixing and compression of such subsoil material can be notably rehabilitated with the Deep Ripping and Decompaction practice, which prepares the site for the appropriate long-term lawn/ground cover mix including deep taproot plants such as clover, fescue or trefoil, etc. needed for all rehabilitated soils.

Generally, soils in Hydrologic Soil Groups A and B, which respectively may include deep, well-drained, sandy-gravelly materials or deep, moderately well-drained basal till materials, are among the easier ones to restore permeability and infiltration, by deep ripping and decompaction. Among the many different soils in Hydrologic Soil Group C are those unique glacial tills having a natural fragipan zone, beginning about 12 to 18 inches (30 – 45cm), below surface. Although soils in Hydrologic Soil Group C do require a somewhat more carefully applied level of the Deep Ripping and Decompaction practice, it can greatly benefit such affected areas by reducing the runoff and fostering infiltration to a level equal to that of pre-disturbance.

Soils in Hydrologic Soil Group D typically have a permanent high water table close to the surface, influenced by a clay or other highly impervious layer of material. In many locations with clay subsoil material, the bulk density is so naturally high that heavy trafficking has little or no added impact on infiltration; and structural runoff control practices rather than Deep Ripping and Decompaction should be considered.

The information about Hydrologic Soil Groups is merely a general guideline. Site-specific data such as limited depths of cut-and-fill grading with minimal removal or translocation of the inherent subsoil materials (as analyzed in the county soil survey) or, conversely, the excavation and translocation of deeper, unconsolidated substratum or consolidated bedrock materials (unlike the analyzed subsoil horizons' materials referred to in the county soil survey) should always be taken into account.

Sites made up with significant quantities of large rocks, or having a very shallow depth to bedrock, are not conducive to deep ripping and decompation (subsoiling); and other measures may be more practical.

Slope

The two-phase application of 1) deep ripping and 2) decompaction (deep subsoiling), is most practical on flat, gentle and moderate slopes. In some situations, such as but not limited to temporary construction access corridors, inclusion areas that are moderately steep along a project's otherwise gentle or moderate slope may also be deep ripped and decompacted. For limited instances of moderate steepness on other projects, however, the post-construction land use and the relative alignment of the potential ripping and decompaction work in relation to the lay of the slope should be reviewed for safety and practicality. In broad construction areas predominated by moderately steep or steep slopes, the practice is generally not used.

Local Weather/Timing/Soil Moisture

Effective fracturing of compressed subsoil material from the exposed work surface, laterally and vertically down through the affected zone is achieved only when the soil material is moderately dry to moderately moist. Neither one of the two-phases, deep ripping nor decompaction (deep

subsoiling), can be effectively conducted when the soil material (subsoil or replaced topsoil) is in either a "plastic" or "liquid" state of soil consistency. Pulling the respective implements legs through the soil when it is overly moist only results in the "slicing and smearing" of the material or added "squeezing and compression" instead of the necessary fracturing. Ample drying time is needed for a "rippable" soil condition not merely in the material close to the surface, but throughout the material located down to the bottom of the physically compressed zone of the subsoil.

The "poor man's Atterberg field test" for soil plasticity is a simple "hand-roll" method used for quick, on-site determination of whether or not the moisture level of the affected soil material is low enough for: effective deep ripping of subsoil; respreading of topsoil in a friable state; and final decompaction (deep subsoiling). Using a sample of soil material obtained from the planned bottom depth of ripping, e.g.: 20 - 24 inches below exposed subsoil surface, the sample is hand rolled between the palms down to a 1/8-inch diameter thread. (Use the same test for stored topsoil material before respreading on the site.) If the respective soil sample crumbles apart in segments no greater than 3/8 of an inch long, by the time it is rolled down to 1/8 inch diameter, it is low enough in moisture for deep ripping (or topsoil replacement), and decompaction. Conversely, as shown in Figure 5, if the rolled sample stretches out in increments greater than 3/8 of an inch long before crumbling, it is in a "plastic" state of soil consistency and is too wet for subsoil ripping (as well as topsoil replacement) and final decompaction.

Fig. 5. Augered from a depth of 19 inches below the surface of the replaced topsoil, this subsoil sample was hand rolled to a 1/8-inch diameter. The test shows the soil at this site stretches out too far without crumbling; it indicates the material is in a plastic state of consistence, too wet for final decompaction (deep subsoiling) at this time.

Design Guidance

Beyond the above-noted site factors, a vital requirement for the effective Deep Ripping and Decompaction (deep subsoiling), is implementing the practice in its distinct, two-phase process:

1) Deep rip the affected thickness of exposed subsoil material (see Figure 10 and 11), aggressively fracturing it before the protected topsoil is reapplied on the site (see Figure 12); and

2) Decompact (deep subsoil), simultaneously through the restored topsoil layer and the upper half of the affected subsoil (Figure 13). The second phase, "decompaction," mitigates the partial recompaction which occurs during the heavy process of topsoil spreading/grading. Prior to deep ripping and decompacting the site, all construction activity, including construction equipment and material storage, site cleanup and trafficking (Figure 14), should be finished; and the site closed off to further disturbance. Likewise, once the practice is underway and the area's soil permeability and

rainfall infiltration are being restored, a policy limiting all further traffic to permanent travel lanes is maintained.

The other critical elements, outlined below, are: using the proper implements (deep, heavy-duty rippers and subsoilers), and ample pulling-power equipment (tractors); and conducting the practice at the appropriate speed, depth and pattern(s) of movement.

Note that an appropriate plan for the separate practice of establishing a healthy perennial ground cover, with deep rooting to help maintain the restored soil structure, should be developed in advance. This may require the assistance of an agronomist or landscape horticulturist.

Implements

Avoid the use of all undersize implements. The small-to-medium, light-duty tool will, at best, only "scarify" the uppermost surface portion of the mass of compacted subsoil material. The term "chisel plow" is commonly but incorrectly applied to a broad range of implements. While a few may be adapted for the moderate subsoiling of non-impacted soils, the majority are less durable and used for only lighter land-fitting (see Figure 6).

Fig. 6. A light duty chisel implement, not adequate for either the deep ripping or decompaction (deep subsoiling) phase.

Fig. 7. One of several variations of an agricultural ripper. This unit has long, rugged shanks mounted on a steel V-frame for deep, aggressive fracturing through Phase 1.

Use a "heavy duty" agricultural-grade, deep ripper (see Figures 7,9,10 and 11) for the first phase: the lateral and vertical fracturing of the mass of exposed and compressed subsoil, down and through, to the bottom of impact, prior to the replacement of the topsoil layer. (Any oversize rocks which are uplifted to the subsoil surface during the deep ripping phase are picked and removed.) Like the heavy-duty class of implement for the first phase, the decompaction (deep subsoiling) of Phase 2 is conducted with the heavy-duty version of the deep subsoiler. More preferable is the angled-leg variety of deep subsoiler (shown in Figures 8 and 13). It minimizes the inversion of the subsoil and topsoil layers while laterally and vertically fracturing the upper half of the previously ripped subsoil layer and all of the topsoil layer by delivering a momentary, wave-like "lifting and shattering" action up through the soil layers as it is pulled.

Pulling-Power of Equipment

Use the following rule of thumb for tractor horsepower (hp) whenever deep ripping and decompacting a significantly impacted site: For both types of implement, have at least 40 hp of tractor pull available for each mounted shank/ leg.

Using the examples of a 3-shank and a 5-shank implement, the respective tractors should have 120 and 200 hp available for fracturing down to the final depth of 20-to-24 inches per phase. Final depth for the deep ripping in Phase 1 is achieved incrementally by a progressive series of passes (see Depth and Patterns of Movement, below); while for Phase 2, the full operating depth of the deep subsoiler is applied from the beginning.

The operating speed for pulling both types of implement should not exceed 2 to 3 mph. At this slow and managed rate of operating speed, maximum functional performance is sustained by the tractor and the implement performing the soil fracturing. Referring to Figure 8, the implement is the 6-leg version of the deep angled-leg subsoiler. Its two outside legs are "chained up" so that only four legs will be engaged (at the maximum depth), requiring no less than 160 hp, (rather than 240 hp) of pull. The 4-wheel drive, articulated-frame tractor in Figure 8 is 174 hp. It will be decompacting this unobstructed, former construction access area simultaneously through 11 inches of replaced topsoil and the upper 12 inches of the previously deep-ripped subsoil. In constricted areas of Phase 1) Deep Ripping, a medium-size tractor with adequate hp, such as the one in Figure 9 pulling a 3-shank deep ripper, may be more maneuverable.

Fig. 8. A deep, angled-leg subsoiler, ideal for Phase 2 decompaction of after the topsoil layer is graded on top of the ripped subsoil.

Fig. 9. This medium tractor is pulling a 3-shank deep ripper. The severely compacted construction access corridor is narrow, and the 120 hp tractor is more maneuverable for Phase 1 deep ripping (subsoil fracturing), here.

Some industrial-grade variations of ripping implements are attached to power graders and bulldozers. Although highly durable, they are generally not recommended. Typically, the shanks or "teeth" of these rippers are too short and stout; and they are mounted too far apart to achieve the well-distributed type of lateral and vertical fracturing of the soil materials necessary to restore soil permeability and infiltration. In addition, the power graders and bulldozers, as pullers, are far less maneuverable for turns and patterns than the tractor.

Depth and Patterns of Movement

As previously noted both Phase 1 Deep Ripping through significantly compressed, exposed subsoil and Phase 2 Decompaction (deep subsoiling) through the replaced topsoil and upper subsoil need to be performed at maximum capable depth of each implement. With an implement's guide wheels attached, some have a "normal" maximum operating depth of 18 inches, while others may go deeper. In many situations, however, the tractor/implement operator must first remove the guide wheels and other non essential elements from the implement. This adapts the ripper or the deep subsoiler for skillful pulling with its frame only a few inches above surface, while the shanks or legs, fracture the soil material 20-to-24 inches deep.

There may be construction sites where the depth of the exposed subsoil's compression is moderate, e.g.: 12 inches, rather than deep. This can be verified by using a ¾ inch cone penetrometer and a shovel to test the subsoil for its level of compaction, incrementally, every three inches of increasing depth. Once the full thickness of the subsoil's compacted zone is finally "pieced" and there is a significant drop in the psi measurements of the soil penetrometer, the depth/thickness of compaction is determined. This is repeated at several representative locations of the construction site. If the thickness of the site's subsoil compaction is verified as, for example, ten inches, then the Phase 1 Deep Ripping can be correspondingly reduced to the implement's minimum operable depth of 12 inches. However, the Phase 2 simultaneous Decompation (subsoiling) of an 11 inch thick layer of replaced topsoil and the upper subsoil should run at the subsoiling implements full operating depth.

Fig. 10. An early pass with a 3-shank deep ripper penetrating only 8 inches into this worksite's severely compressed subsoil.

Fig. 11. A repeat run of the 3-shank ripper along the same patterned pass area as Fig. 9; here, incrementally reaching 18 of the needed 22 inches of subsoil fracture.

Typically, three separate series (patterns) are used for both the Phase 1 Deep Ripping and the Phase 2 Decompaction on significantly compacted sites. For Phase 1, each series begins with a moderate depth of rip and, by repeat-pass, continues until full depth is reached. Phase 2 applies the full depth of Decompation (subsoiling), from the beginning.

Every separate series (pattern) consists of parallel, forward-and-return runs, with each progressive

pass of the implement's legs or shanks evenly staggered between those from the previous pass. This compensates for the shank or leg-spacing on the implement, e.g., with 24-to-30 inches between each shank or leg. The staggered return pass ensures lateral and vertical fracturing actuated every 12 to 15 inches across the densely compressed soil mass.

Large, Unobstructed Areas
For larger easy areas, use the standard patterns of movement:

- The first series (pattern) of passes is applied lengthwise, parallel with the longest spread of the site; gradually progressing across the site's width, with each successive pass.

- The second series runs obliquely, crossing the first series at an angle of about 45 degrees.

- The third series runs at right angle (or 90 degrees), to the first series to complete the fracturing and shattering on severely compacted sites, and avoid leaving large unbroken blocks of compressed soil material. (In certain instances, the third series may be optional, depending on how thoroughly the first two series loosen the material and eliminate large chunks/blocks of material as verified by tests with a ¾-inch cone penetrometer.)

Fig. 12. Moderately dry topsoil is being replaced on the affected site now that Phase 1 deep ripping of the compressed subsoil is complete.

Fig. 13. The same deep, angled-leg subsoiler shown in Fig. 7 is engaged at maximum depth for Phase 2, decompaction (deep soiling), of the replaced topsoil and the upper subsoil materials.

Corridors
In long corridors of limited width and less maneuverability than larger sites, e.g.: along compacted areas used as temporary construction access, a modified series of pattern passes are used.

- First, apply the same initial lengthwise, parallel series of passes described above.

- A second series of passes makes a broad "S" shaped pattern of rips, continually and gradually alternating the "S" curves between opposite edges inside the compacted corridor.

- The third and final series again uses the broad, alternating S pattern, but it is "flip-flopped" to continually cross the previous S pattern along the corridor's centerline. This final series of the S pattern curves back along the edge areas skipped by the second series.

Maintenance and Cost

Once the two-phase practice of Deep Ripping and Decompation is completed, two items are essential for maintaining a site's soil porosity and permeability for infiltration. They are: planting and maintaining the appropriate ground cover with deep roots to maintain the soil structure (see Figure 15); and keeping the site free of traffic or other weight loads.

Note that site-specific choice of an appropriate vegetative ground-cover seed mix, including the proper seeding ratio of one or more perennial species with a deep taproot system and the proper amount of lime and soil nutrients (fertilizer mix) adapted to the soil-needs, are basic to the final practice of landscaping, i.e: surface tillage, seeding/planting/fertilizing and culti-packing or mulching is applied. The "maintenance" of an effectively deep-ripped and decompacted area is generally limited to the successful perennial (long-term) landscape ground cover; as long as no weight-bearing force of soil compaction is applied.

Fig. 14. The severely compacted soil of a temporary construction yard used daily by heavy equipment for four months; shown before deep ripping, topsoil replacement, and decompaction.

Fig. 15. The same site as Fig. 14 after deep ripping of the exposed subsoil, topsoil replacement, decompaction through the topsoil and upper subsoil and final surface tillage and revegetation to maintain soil permeability and infiltration.

The Deep Ripping and Decompaction practice is, by necessity, more extensive than periodic subsoiling of farmland.The cost of deep ripping and decompacting (deep subsoiling), will vary according to the depth and severity of soil-material compression and the relative amount of tractor and implement time that is required. In some instances, depending on open maneuverability, two-to-three acres of compacted project area may be deep-ripped in one day. In other situations of more severe compaction and - or less maneuverability, as little as one acre may be fully ripped in a day. Generally, if the Phase 1) Deep Ripping is fully effective, the Phase 2) Decompaction should be completed in 2/3 to 3/4 of the time required for Phase 1.

Using the example of two acres of Phase 1) Deep Ripping in one day, at $1800 per day, the net cost is $900 per acre. If the Phase 2) Decompacting or deep subsoiling takes 3/4 the time as Phase 1, it costs $675 per acre for a combined total of $1575 per acre to complete the practice (these figures do not include the cost of the separate practice of topsoil stripping and replacement). Due to the many variables, it must be recognized that cost will be determined by the specific conditions or constraints of the site and the availability of proper equipment.

Resources

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- Baver, L.D. 1948. *Soil Physics.* John Wiley & Sons.
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- Ellis, B. (Editor). 1997. Safe & Easy Lawn Care: The Complete Guide to Organic Low Maintenance Lawn. Houghton Mifflin.
- Harpstead, M.I., T.J. Sauer, and W.F. Bennett. 2001. *Soil Science Simplified. 4th ed.* Iowa State University Press.
- Magdoff, F., and H. van Es. 2000. *Building Soils for Better Crops. 2nd ed.* Sustainable Agricultural Networks
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- Plaster, E.J. 1992. *Soil Science & Management. 3rd ed.* Delmar Publishers.
- Union Gas Limited, Ontario, Canada. 1984. *Rehabilitation of Agricultural Lands, Dawn-Kerwood Loop Pipeline; Technical Report.* Ecological Services for Planning, Ltd.; Robinson, Merritt & Devries, Ltd. and Smith, Hoffman Associates, Ltd.
- US Department of Agriculture in cooperation with Cornell University Agricultural Experiment Station. Various years. *Soil Survey of (various names) County, New York.* USDA.

Internet Access:

- Examples of implements:

V-Rippers. Access by internet search of *John Deere Ag -New Equipment for 915* (larger-frame model) *V-Rippe*; and, *for 913* (smaller-frame model) *V-Ripper*. Deep, angled-leg subsoiler. Access by internet search of: B*igham Brothers Shear Bolt Paratill-Subsoiler.* http://salesmanual.deere.com/sales/salesmanual/en_NA/primary_tillage/2008/feature/rippers/915v_pattern_frame.html?sbu=ag&link=prodcat Last visited March 08.

- Soils data of USDA Natural Resources Conservation Service. *NRCS Web Soil Survey.* http://websoilsurvey.nrcs.usda.gov/app/ and *USDA-NRCS Official Soil Series Descriptions; View by Name.* http://ortho.ftw.nrcs.usda.gov/cgi-bin/osd/osdname.cgi . *Last visited Jan. 08.*
- Soil penetrometer information. Access by internet searches of: *Diagnosing Soil Compaction using a Penetrometer (soil compaction tester), PSU Extension;* as well as *Dickey-john Soil Compaction Tester.* http://www.dickey-johnproducts.com/pdf/SoilCompactionTest.pdf and http://cropsoil.psu.edu/Extension/Facts/uc178pdf Last visited Sept. 07

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APPENDIX I:
LABELLA CERTIFYING PROFESSIONALS LETTER

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February 21, 2025

RE: LaBella Certifying Professionals for NYSDEC SPDES GP-0-25-001

To Whom it May Concern:

In accordance with the NYSDEC SPDES General Permit GP-0-25-001, Part VII.J.2, Kyle Ahearn, PE, a New York State Qualified Professional employed by LaBella Associates, is duly authorized to sign and seal Stormwater Pollution Prevention Plans (SWPPPs), Notice of Intents (NOIs) and Notice of Terminations (NOTs).

Respectfully submitted,

LaBella Associates

Timothy Webber
Vice President, Civil Division Director

Kyle Ahearn, PE
Senior Civil Engineer

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APPENDIX J:
NYSDEC SPDES GENERAL PERMIT GP-0-25-001

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NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL
CONSERVATION (NYSDEC)

SPDES GENERAL PERMIT
FOR STORMWATER DISCHARGES

From

CONSTRUCTION ACTIVITY

Permit No. GP-0-25-001

Construction General Permit (CGP)

Issued Pursuant to Article 17, Titles 7, 8 and Article 70

of the Environmental Conservation Law

Effective Date: January 29, 2025 Expiration Date: January 28, 2030

Scott E. Sheeley

Chief Permit Administrator

Scott E. Sheeley JAN. 29, 2025

Authorized Signature Date

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

PREFACE

Pursuant to Section 402 of the Clean Water Act (CWA), and 40 CFR 122.26(b)(14)(x), (15)(i), and (15)(ii), *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 State administers the approved State Pollutant Discharge Elimination System (SPDES) program with permits issued in accordance with the New York State Environmental Conservation Law (ECL) Article 17, Titles 7 and 8, and Article 70, as well as 6 NYCRR Parts 621 and 750.

Construction activities constitute construction of a *point source* and, therefore, pursuant to ECL sections 17-0505, 17-0701, and 17-0803, the *owner or operator* must have coverage under a SPDES permit prior to *commencement of construction activities*. The *owner or operator* 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 CONSTRUCTION GENERAL PERMIT (CGP) GP-0-25-001
FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES

Table of Contents

Part I. How to Obtain Coverage and General Requirements

To be covered under this permit, the *owner or operator* must meet all eligibility requirements in Part I.A. and follow the requirements for obtaining permit coverage in Part I.D., F., or G.

A. Eligibility Requirements

For a *common plan of development or sale*, the *phase(s)* that meet the eligibility requirements in Part I.A. may obtain coverage under this permit even if other *phase(s)* of the same *common plan of development or sale* do not meet the eligibility requirements and require an individual SPDES permit.

1. The *owner's or operator's construction activities* involve soil disturbances of:
    a. one or more acres; or
    b. less than one acre which are part of a *common plan of development or sale* that will ultimately disturb one or more acres; or
    c. less than one acre where NYSDEC 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*.
        i. 5,000 square feet or more, but less than one acre, and are in the New York City Watershed located east of the Hudson River, Appendix C Figure 1; or
        ii. 20,000 square feet or more, but less than one acre, within the municipal boundaries of the City of New York (NYC); or
        iii. less than 20,000 square feet which are part of a *common plan of development or sale* that will ultimately disturb 20,000 square feet or more, but less than one acre, within the municipal boundaries of NYC; or
        iv. that creates 5,000 square feet or more of *impervious area* within the municipal boundaries of NYC.

2. *Discharges* from the *owner's or operator's construction activities* are/were not:
    a. already covered by a different SPDES permit; or
    b. covered under a different SPDES permit that was denied, terminated, or revoked; or
    c. identified in an expired individual SPDES permit that was not renewed; or
    d. required to obtain an individual SPDES permit or another general SPDES permit in accordance with Part VII.K.
3. If *construction activities* may adversely affect a species that is endangered or threatened, the *owner or operator* must obtain a:
    a. permit issued pursuant to 6 NYCRR Part 182 for the project; or
    b. letter issued by NYSDEC of non-jurisdiction pursuant to 6 NYCRR Part 182 for the project.
4. If *construction activities* have the potential to affect an *historic property*, the *owner or operator* must obtain one of the following:
    a. documentation that the *construction activity* is not within an archeological buffer 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:
        i. 1-5 acres of disturbance - 20 feet; or
        ii. 5-20 acres of disturbance - 50 feet; or

iii. 20+ acres of disturbance - 100 feet.

b. NYSDEC consultation form sent to OPRHP,[1] and copied to NYSDEC's Agency Historic Preservation Officer (APO), and

i. the State Environmental Quality Review Act (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 or 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).

c. documentation of satisfactory compliance with Section 106 of the National Historic Preservation Act for a coterminous project area:

i. No Affect; or

ii. No Adverse Affect; or

iii. Executed Memorandum of Agreement.

d. documentation that SHPA Section 14.09 has been completed by NYSDEC or another state agency.

5. If *construction activities* are subject to SEQR, the *owner or operator* must obtain documentation that SEQR has been satisfied.

6. If *construction activities* are not subject to SEQR, but subject to the equivalent environmental review from another New York State or federal agency, the

[1] The consultation form can be submitted, along with other project information, through OPRHP's Cultural Resource Information System (CRIS) portal. If submitted through CRIS, paper copies of the consultation form need not be mailed.

owner or operator must obtain documentation that project review, pursuant to a process equivalent to SEQR from another New York State or federal agency, has been satisfied.

7. If *construction activities* require Uniform Procedures Act (UPA) Permits (see 6 NYCRR Part 621) from NYSDEC, or the equivalent from another New York State or federal agency, the *owner or operator* must:

a. obtain all such necessary permits; or

b. receive notification from NYSDEC pursuant to 6 NYCRR 621.3(a)(4) excepting Part I.A.7.a.

8. *Construction activities* are not eligible if they meet the following criteria in Part I.A.8.a. or b.:

a. For linear transportation and linear utility project types, the *construction activities*:

i. are within the watershed of *surface waters of the State* classified as AA or AA-S identified utilizing the Stormwater Interactive Map on NYSDEC's website; and

ii. are undertaken on land with no existing *impervious cover*; and

iii. disturb two or more acres of *steep slope*.

b. For all other project types, the *construction activities*:

i. are within the watershed of *surface waters of the State* classified as AA or AA-S identified utilizing the Stormwater Interactive Map on NYSDEC's website; and

ii. are undertaken on land with no existing *impervious cover*; and

iii. disturb one or more acres of *steep slope*.

B. Types of *Discharges* Authorized

1. The following *stormwater discharges* are authorized under this permit:

   a. *Stormwater discharges*, including *stormwater* runoff, snowmelt runoff, and surface runoff and drainage, associated with *construction activity*, are authorized under this permit provided that appropriate *stormwater* controls are designed, installed, and maintained in accordance with Part **II.** and Part **III.**

   b. *Stormwater discharges* from construction support activities at the *construction site* (including concrete or asphalt batch plants, equipment staging yards, material storage areas, excavated material disposal areas, and borrow areas) if the following requirements are met:

      i. The support activity is directly related to the *construction site* required to have permit coverage for *stormwater discharges*; and

      ii. The support activity is not a commercial operation, nor does it serve multiple unrelated *construction sites*; and

      iii. The support activity does not continue to operate beyond the completion of the *construction activity* at the site it supports; and

      iv. *Stormwater* controls are implemented in accordance with Part **II.** and Part **III.** for *discharges* from the support activity areas.

2. The following non-*stormwater discharges* associated with *construction activity* are authorized under this permit:

   a. Non-*stormwater discharges* listed in 6 NYCRR 750-1.2(a)(29)(vi), with the following exception: "*Discharges* from firefighting activities are authorized only when the firefighting activities are emergencies/unplanned"; and

   b. Non-*stormwater discharges* of waters to which other components have not been added that are used in accordance with the *SWPPP* to control dust or irrigate vegetation in stabilized areas; and

   c. Uncontaminated *discharges* from *dewatering* operations

3. Authorized *discharges* of *stormwater* or authorized *discharges* of non-*stormwater*, commingled with a *discharge* authorized by a different SPDES permit and/or a *discharge* that does not require SPDES permit authorization, are also authorized under this permit.

C. Prohibited *Discharges*

1. Non-*stormwater discharges* prohibited under this permit include but are not limited to:

   a. Wastewater from washout of concrete; and

   b. Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds, and other construction materials; and

   c. Fuels, oils, or other *pollutants* used in vehicle and equipment operation and maintenance; and

   d. Soaps, solvents, or detergents used in vehicle and equipment washing or external building washdown; and

   e. Toxic or hazardous substances from a spill or other release.

D. Electronic Notice of Intent (eNOI) Submittal

To receive authorization in accordance with Part I.D.3.b., the *owner or operator* must submit a complete eNOI in accordance with the requirements in Part **I.D.** The eNOI contains questions to: ensure eligibility requirements in Part I.A. have been met; obtain *owner or operator* contact information; obtain the total area to be disturbed and the existing/future *impervious areas* (rounded to the nearest tenth of an acre); confirm *Traditional Land Use Control MS4 Operator* jurisdiction over construction projects; satisfy the EPA eRule requirements; confirm that the Water Quality-Based Effluent Limitations in Part **II.** have been met; demonstrate consideration of the future risks due to climate change in accordance with Part **III.**A.2.; and confirm that the other *Stormwater Pollution Prevention Plan (SWPPP)* requirements in Part **III.** have been met.

1. An eNOI may be submitted for:

   a. *construction activities* that are not part of a *common plan of development or sale*; or

b. an entire *common plan of development or sale*; or

c. separate *phase(s)* of a *common plan of development or sale* if the following requirements are met:

i. the *common plan of development or sale* meets the eligibility requirements of Part I.A.5. or 6.; and

ii. the *phase(s)* meet(s) all other eligibility requirements of Part I.A.; and

iii. Part III.C. Required *SWPPP* Components by Project Type is based on the *common plan of development or sale*, not the *phase(s)*; or

d. *tree clearing* that is associated with, or will support, a *renewable energy* generation, transmission, or storage project that meets Part I.A.5. and 6., if the *tree clearing*:

i. meets all other eligibility requirements of Part I.A.; and

ii. will occur in NYSDEC's Regions 3-9; and

iii. is not within ¼ mile of a bat hibernaculum protected pursuant to 6 NYCRR Part 182; and

iv. will occur between November 1st and March 31st.

2. As prerequisites for submitting an eNOI, the *owner or operator* must:

a. prepare a *SWPPP* for Part I.D.1.a., b., c., or d. in accordance with Part III.; and

b. based on the following criteria, upload the following signature forms signed in accordance with Part VII.J. to the eNOI prior to submission:

i. for all eNOIs:

1. the SWPPP Preparer Certification Form, Appendix F, signed by the *SWPPP* preparer; and

2. the Owner/Operator Certification Form, Appendix J, signed by the *owner or operator*; and

ii. if an eNOI includes *construction activities* within the municipal boundary(ies) of *Traditional Land Use Control MS4 Operator(s)* that will *discharge* to the *MS4(s)*:

1. determine if the *Traditional Land Use Control MS4 Operator(s)* have review authority. A *Traditional Land Use Control MS4 Operator* does not have review authority where:

a. the *owner or operator* of the *construction activities* in Part I.D.2.b.ii. is the same entity as the *Traditional Land Use Control MS4 Operator* identified in Part I.D.2.b.ii.; or

b. there is a statute exempting the *owner or operator* from zoning review by the *Traditional Land Use Control MS4 Operator*; or

c. there is no such statute per Part I.D.2.b.ii.1.b., the *Traditional Land Use Control MS4 Operator* concludes, after public hearing, that it does not have zoning review authority in accordance with Legal Memorandum LU14 Updated January 2020 "Governmental Immunity from Zoning and Other Legislation"; and

2. if the *Traditional Land Use Control MS4 Operator(s)* have review authority, submit the *SWPPP* to the *Traditional Land Use Control MS4 Operator(s)* for review and have:

a. if outside the municipal boundaries of NYC: the MS4 SWPPP Acceptance Form, Appendix G, signed by the principal executive officer or ranking elected official from the *Traditional Land Use Control MS4 Operator,* or by a duly authorized representative of that person in accordance with Part VII.J.2.; or

b. if within the municipal boundaries of NYC: The City of New York Department of Environmental Protection (NYCDEP) SWPPP Acceptance/Approval Form, Appendix H, signed by the principal executive officer or ranking elected official from the Traditional Land Use Control MS4 Operator, or by a duly authorized representative of that person in accordance with Part VII.J.2.; and

3. if the *Traditional Land Use Control MS4 Operator* does not have review authority, have the MS4 No Jurisdiction Form, Appendix I, signed by the principal executive officer or ranking elected official from the *Traditional Land Use Control MS4 Operator,* or by a duly authorized representative of that person in accordance with Part VII.J.2.

3. Submitting an eNOI:

   a. The *owner or operator* must submit a complete Notice of Intent electronically using a NYSDEC approved form.[2]

   b. The *owner or operator* is authorized to *commence construction activity* as of the authorization date indicated in the Letter of Authorization (LOA), which is sent by NYSDEC after a complete eNOI is submitted.

      i. If an eNOI is received for a *SWPPP* that deviates from one of the technical standards but demonstrates *equivalence* in accordance with Part III.B.1.a.ii. or Part III.B.2.b.ii., if the *SWPPP* includes *construction activities* that are not within the municipal boundary(ies) of *Traditional Land Use Control MS4 Operator(s)*, and/or if the *SWPPP* includes *construction activities* within the municipal boundary(ies) of *Traditional Land Use Control MS4 Operator(s)* that do not have review authority in accordance with Part I.D.2.b.ii.1., the authorization date indicated in the LOA will be 60 business days after the eNOI submission date.

[2] Unless NYSDEC grants a waiver in accordance with 40 CFR 127.15(c) or (d). All waiver requests must be submitted to Stormwater_info@dec.ny.gov or NYSDEC, Bureau of Water Permits, 625 Broadway, 4th Floor, Albany, New York 12233-3505.

c. If *Traditional Land Use Control MS4 Operator(s)* have review authority in accordance with Part I.D.2.b.ii.2., the *owner or operator* must, within five business days of receipt of the LOA, send an electronic copy of the LOA to the *Traditional Land Use Control MS4 Operator(s)* with review authority.

E. General Requirements for *Owners or Operators* with Permit Coverage

1. As of the date the LOA is received, the *owner or operator* must make the eNOI, *SWPPP*, and LOA available for review and copying in accordance with the requirements in Part VII.H. When applicable, as of the date an updated LOA is received, the *owner or operator* must make the updated LOA available for review and copying in accordance with the requirements in Part VII.H.

2. The *owner or operator* must ensure compliance with all requirements of this permit and that the provisions of the *SWPPP*, including any changes made to the *SWPPP* in accordance with Part III.A.5., are properly implemented and maintained from the *commencement of construction activity* until:

   a. all areas of disturbance have achieved *final stabilization;* and

   b. the owner's or operator's coverage under this permit is terminated in accordance with Part V.A.5.a.

3. As of the date of the *commencement of construction activities* until Part I.E.2.a. and b. have been met, the *owner or operator* must maintain at the *construction site*, a copy of:

   a. all documentation necessary to demonstrate eligibility with this permit; and

   b. this permit; and

   c. the *SWPPP*; and

   d. the signed SWPPP Preparer Certification Form; and

   e. the signed MS4 SWPPP Acceptance Form or signed NYCDEP SWPPP Acceptance/Approval Form or signed MS4 No Jurisdiction Form (when applicable); and

   f. the signed Owner/Operator Certification Form; and

g. the eNOI; and

h. the LOA; and

i. the LOA transmittal to the Traditional Land Use Control MS4 Operator in accordance with Part I.D.3.c. (when applicable).

4. The *owner or operator* must maintain at the *construction site*, until Part I.E.2.a. and b. have been met, as of the date the documents become final or are received, a copy of the:

   a. responsible contractor's or subcontractor's certification statement(s) in accordance with Part III.A.7.; and

   b. inspection reports in accordance with Part IV.C.4. and 6.; and

   c. Request to Disturb Greater Than Five Acres and the Authorization Letter to Disturb Greater Than Five Acres in accordance with Part I.E.6. (when applicable); and

   d. Request to Continue Coverage and the Letter of Continued Coverage (LOCC) in accordance with Part I.F.2. and 4. (when applicable); and

   e. The updated LOA(s) in accordance with Part I.E.9. (when applicable).

5. The *owner or operator* must maintain the documents in Part I.E.3. and 4. 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. The documents must be paper documents unless electronic documents are accessible to the inspector during an inspection to the same extent as a paper copy stored at the site would be. If electronic documents are kept on site, the *owner or operator* must maintain functional equipment on site available to an inspector during normal hours of operation such that an inspector may view the electronic documents in a format that can be read in a similar manner as a paper record and in a legally dependable format with no less evidentiary value than their paper equivalent.

6. The *owner or operator* must meet the following requirements prior to disturbing greater than five acres of soil at any one time:

   a. The *owner or operator* must submit a written Request to Disturb Greater Than Five Acres to:

   i. NYSDEC's Regional Office Division of Water staff based on the project location, Appendix E, if a *Traditional Land Use Control MS4 Operator* does not have review authority in accordance with Part I.D.2.b.ii.1.; or

   ii. the *Traditional Land Use Control MS4 Operator*, if a *Traditional Land Use Control MS4 Operator* has review authority in accordance with Part I.D.2.b.ii.1.; or

   iii. NYSDEC's Regional Office Division of Water staff based on the project location, Appendix E, and each involved *Traditional Land Use Control MS4 Operator*, if the project spans multiple municipalities with more than one *Traditional Land Use Control MS4 Operator* involved with review authority in accordance with Part I.D.2.b.ii.1.

   b. The written Request to Disturb Greater Than Five Acres must include:

      i. The SPDES permit identification number (Permit ID); and

      ii. Full technical justification demonstrating why alternative methods of construction that would result in five acres of soil disturbance or less at any one time are not feasible; and

      iii. The phasing plan for the project and sequencing plans for all *phases* from the *SWPPP* in accordance with Part III.B.1.d.; and

      iv. Plans with locations and details of erosion and sediment control practices such that the heightened concern for erosion when disturbing greater than five acres at one time has been addressed; and

      v. Acknowledgment that "the *owner or operator* will comply with the requirements in Part IV.C.2.b."; and

      vi. Acknowledgment that "the *owner or operator* will comply with the requirements in Part II.B.1.b."

   c. The *owner or operator* must be in receipt of an Authorization Letter to Disturb Greater Than Five Acres, which will include when the

authorization begins and ends and indicate a maximum area (acres) of soil disturbance allowed at any one time, from:

i. NYSDEC, if Part I.E.6.a.i. or iii. apply; or

ii. the *Traditional Land Use Control MS4 Operator*, if Part I.E.6.a.ii. applies.

7. Upon a finding of significant non-compliance with the practices described in the *SWPPP* or violation of this permit, NYSDEC may order an immediate stop to all *construction activity* at the site until the non-compliance is remedied. The stop work order must be in writing, describe the non-compliance in detail, and be sent to the *owner or operator*.

8. 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).[3] *Construction activity* shall not resume until written permission to do so has been received from the RWE.

9. To be authorized to implement modifications to the information previously submitted in the eNOI, the *owner or operator* must:

   a. notify NYSDEC via email at Stormwater_info@dec.ny.gov requesting access to update the eNOI; and

   b. update the eNOI to reflect the modifications and resubmit the eNOI in accordance with Part I.D.; and

   c. receive an updated LOA.

10. The eNOI, *SWPPP*, LOA, updated LOAs (when applicable), 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 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.

[3] The Regional Water Manager where a DEC Region does not have a RWE.

F. Permit Coverage for *Discharges* Authorized Under GP-0-20-001

When applicable:

1. Upon the effective date of this permit, an *owner or operator* of *a construction activity*, with coverage under GP-0-20-001, will have interim coverage under GP-0-25-001 for 45 calendar days starting on the effective date of GP-0-25-001 so long as the *owner or operator* maintains compliance with all applicable requirements of this permit.

2. Within 30 calendar days of the effective date of this permit, the *owner or operator*, with coverage under GP-0-20-001, must submit a complete Request to Continue Coverage electronically using a NYSDEC approved form,[4] which contains the information identified in Part I.F.3. below, if:

   a. the *owner or operator* continues to implement the SMP component in conformance with the technical standards in place at the time of initial project authorization; and

   b. the *owner or operator* will comply with all non-design requirements of GP-0-25-001.

3. The Request to Continue Coverage form contains questions to: ensure eligibility requirements in Part I.A. have been met; verify *owner or operator* contact information; verify the permit identification number; verify the original eNOI submission ID, if applicable; verify Part I.F.2.a. and b.; verify the version of the Design Manual that the technical/design components conform to; and receive an updated Owner/Operator Certification Form, Appendix I.

4. The *owner or operator* has obtained continued coverage under GP-0-25-001 as of the date indicated in the LOCC, which is sent by NYSDEC after a complete Request to Continue Coverage form is submitted.

5. If the owner or operator does not submit the Request to Continue Coverage form in accordance with Part I.F.2. and 3., coverage under this permit is automatically terminated after interim coverage expires.

[4] Unless NYSDEC grants a waiver in accordance with 40 CFR 127.15(c) or (d). All waiver requests must be submitted to Stormwater_info@dec.ny.gov or NYSDEC, Bureau of Water Permits, 625 Broadway, 4th Floor, Albany, New York 12233-3505.

G. Change of *Owner or Operator*

When applicable:

1. When property ownership changes, or when there is a change in operational control over the construction plans and specifications, the following process applies:

   a. The new *owner or operator* must meet the applicable prerequisites for submitting an eNOI in accordance with Part I.D.2.; and

   b. The new *owner or operator* must submit an eNOI in accordance with Part I.D.3.; and

   c. Permit coverage for the new *owner or operator* will be effective upon receipt of the LOA in accordance with Part I.D.3.b.; and

   d. The new *owner or operator*, upon receipt of their LOA, must provide their Permit ID to the original *owner or operator*; and

   e. If the original *owner or operator* will no longer be the *owner or operator* of the *construction activity* identified in the original *owner's or operator's* eNOI, the original *owner or operator*, upon receipt of the new *owner's or operator's* Permit ID in accordance with Part I.G.1.d., must submit to NYSDEC a completed eNOT in accordance with Part V. that includes the name and Permit ID of the new *owner or operator*; or

   f. If the original *owner or operator* maintains ownership of a portion of the *construction activity*, the original *owner or operator* must maintain their coverage under the permit by modifying their eNOI; modifications to the eNOI must include:

      i. the revised area of disturbance and/or *impervious area(s)*; and

      ii. the revised SMP information, if applicable; and

      iii. a narrative description of what has changed; and

      iv. the new *owner's or operator's* Permit ID for the portion of the project removed from the eNOI.

   Owners or operators must follow Part I.E.9. to modify the eNOI.

Part II. Water Quality-Based Effluent Limitations

A. Maintaining Water Quality

NYSDEC expects that compliance with the requirements of this permit will control *discharges* 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 the following *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:

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

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

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

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

If, despite compliance with the requirements of this permit, it is demonstrated that the *stormwater discharges* authorized by this permit are causing or contributing to a violation of *water quality standards*, or if NYSDEC determines that a modification of this permit is necessary to prevent a violation of *water quality standards*, the authorized *discharges* will no longer be eligible for coverage under this permit, and the *owner or operator* must obtain an individual SPDES permit prior to further *discharges* from the *construction site*.

B. Effluent Limitations Applicable to *Discharges* from *Construction Activities*

Discharges authorized by this permit must achieve, at a minimum, the effluent limitations in Part II.B.1.a., b., c., d., and e. 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 II.B.1.a., b., c., d., and e. and be in accordance with the New York State Standards and Specifications for Erosion and Sediment Control (BB), dated November 2016, 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 *SWPPP* the reason(s) for the deviation, or alternative design, and provide information in the *SWPPP* demonstrating that the deviation or alternative design is *equivalent* to the technical standard.

   a. **Erosion and Sediment Controls.** At a minimum, erosion and sediment controls must be selected, designed, installed, implemented, and maintained to:

      i. *Minimize* soil erosion through application of runoff control and soil stabilization control measure to *minimize pollutant discharges*; and

      ii. Control *stormwater discharges*, including both peak flow rates and total *stormwater* volume, to *minimize* channel and *streambank* erosion and scour in the immediate vicinity of the *discharge* points; and

      iii. *Minimize* the amount of soil exposed during *construction activity*; and

      iv. *Minimize* the disturbance of *steep slope*; and

      v. *Minimize* sediment *discharges* from the site; and

      vi. Provide and maintain *natural buffers* around surface waters, direct *stormwater* to vegetated areas and maximize *stormwater* infiltration to reduce *pollutant discharges*, unless *infeasible*; and

      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; and

      ix. *Minimize* dust. On areas of exposed soil, *minimize* dust through the appropriate application of water or other dust suppression techniques to control the generation of *pollutants* that could be discharged from the site.

   b. **Soil Stabilization.** In areas where soil disturbance activity has ceased, whether permanently or *temporarily ceased*, the application of soil stabilization measures must be initiated by the end of the next business day and completed within 14 calendar 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 D, or are located in one of the watersheds listed in Appendix C, or are authorized to disturb greater than five acres in accordance with Part I.E.5.a.viii., the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven calendar days from the date the soil disturbance activity ceased.

   c. **Dewatering.** *Discharges* from *dewatering* activities, including *discharges* from *dewatering* of trenches and excavations, must be managed by appropriate control measures.

   d. **Pollution Prevention Measures.** Select, 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 selected, designed, installed, implemented, and maintained to:

      i. *Minimize* the *discharge* of *pollutants* from equipment and vehicle washing, wheel wash water, and other wash waters. Soaps, detergents and solvents cannot be used; and

      ii. *Minimize* the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, hazardous and toxic 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. **Surface Outlets.** When discharging from basins and impoundments, the surface outlets must 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 (SMP) Requirements

1. The *owner or operator* of a *construction activity* that requires post-construction SMPs, in accordance with Part III.C., must select, design, install, implement, and maintain the SMPs to meet the *performance criteria* in the New York State Stormwater Management Design Manual, dated July 31, 2024 (DM), using sound engineering judgment. Where SMPs are not designed in conformance with the *performance criteria* in the DM, 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 SMPs in accordance with Part III.C., must design the practices to meet the applicable *sizing criteria* in Part II.C.2.a., b., c., or d.

a. Sizing Criteria for *New Development*

i. Runoff Reduction Volume (RRv) and Water Quality Volume (WQv):

1. Reduce the total WQv by application of RR techniques and standard SMPs with RRv capacity. The total WQv must be calculated in accordance with the criteria in Section 4.2 of the DM; or

2. Minimum RRv and Treatment of Remaining Total WQv: *Construction activities* that cannot meet the requirements in Part II.C.2.a.i.1. due to *site limitations* must 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 must 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 4.4 of the DM. The remaining portion of the total WQv that cannot be reduced must be treated by application of standard SMPs.

ii. Channel Protection Volume (CPv): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event, remaining after runoff reduction. Where a CPv control orifice is provided, the minimum orifice size must be 3 inches, with acceptable external trash rack or orifice protection. 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 1-year post-development peak *discharge* is less than or equal to 2.0 cfs without detention or velocity controls; or

3. The site *directly discharges* into a fifth order or larger water body (stream, river, or lake), or tidal waters, where the increase in smaller flows will not impact the stream bank or channel integrity. However, the point of *discharge* must be adequately protected against scour and erosion by the increased peak *discharge*.

iii. *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 *directly discharges* to tidal waters or fifth order or larger streams, or

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

iv. 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 *directly discharges* 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 Watersheds

i. Runoff Reduction Volume (RRv) and Water Quality Volume (WQv):

1. Reduce the 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 must be calculated in accordance with the criteria in Section 4.3 of the DM; or

2. Minimum RRv and Treatment of Remaining Total WQv: *Construction activities* that cannot meet the criteria in Part II.C.2.b.i.1. due to *site limitations* must 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 must 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 4.5 of the DM. The remaining portion of the total WQv that cannot be reduced must be treated by application of standard SMPs.

ii. Channel Protection Volume (CPv): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event, remaining after runoff reduction. Where a CPv control orifice is provided, the minimum orifice size must be 3 inches, with acceptable external trash rack or orifice protection. 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 1-year post-development peak *discharge* is less than or equal to 2.0 cfs; or

3. The site *directly discharges* to tidal waters, or a fifth order or larger water body (stream, river, or lake) where the increase in smaller flows will not impact the stream bank or channel integrity. However, the point of *discharge* must be adequately protected against scour and erosion by the increased peak *discharge*.

iii. *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 *directly discharges* to tidal waters or fifth order or larger streams; or

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

iv. 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 *directly discharges* 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*

i. Water Quality Volume (WQv): The WQv treatment objective for *redevelopment activity* must be addressed by one of the following options, as outlined in Section 9.2.1. *Redevelopment activities* located in an Enhanced Phosphorus Removal Watershed (see Part III.B.3. and Appendix C) must calculate the WQv in accordance with Section 4.3 of the DM. All other *redevelopment activities* must calculate the WQv in accordance with Section 4.2 of the DM.

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 DM must be applied to all newly created pervious areas; or

2. Capture and treat 100% of the required WQv, for a minimum of 25% of the disturbed redevelopment *impervious area*, by implementation of standard SMPs or reduced by application of runoff reduction techniques; or

3. Capture and treat 100% of the required WQv, for a minimum of 75% of the disturbed redevelopment *impervious area*, by implementation of a volume-based alternative SMP, as defined in Section 9.4 of the DM; or

4. Capture and treat 100% of the required WQv, for a minimum of 75% of the disturbed redevelopment *impervious area*, by implementation of a flow-through alternative SMP sized to treat the peak rate of runoff from the WQv design storm; or

5. Application of a combination of 1 through 4 above that provide a weighted average of at least two of the above methods. Application of this method must be in accordance with the criteria in Section 9.2.1(A)(V) of the DM; or

6. If there is an existing SMP 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 through 5 above.

ii. Channel Protection Volume (CPv) is not required if there is 0% change to hydrology that increases the *discharge* rate and volume from the project site.

iii. *Overbank* Flood Control (Qp) is not required if there is 0% change to hydrology that increases the *discharge* rate from the project site.

iv. Extreme Flood Control (Qf) is not required if there is 0% change to hydrology that increases 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*, must use SMPs that meet the *sizing criteria* calculated as an aggregate of the *sizing criteria* in Part II.C.2.a. or b. for the *new development* portion of the project and Part II.C.2.c. for the *redevelopment activity* portion of the project.

Part III. Stormwater Pollution Prevention Plan (SWPPP)

A. General *SWPPP* Requirements

1. A *SWPPP* must be prepared and implemented by the *owner or operator* of all *construction activity* covered by this permit. All authorized *discharges* must be identified in the *SWPPP*. 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 II.B. and, where applicable, the SMP requirements in Part II.C.

2. The *SWPPP* must demonstrate consideration in narrative format of the future physical risks due to climate change pursuant to the Community Risk and Resiliency Act (CRRA), 6 NYCRR Part 490, and associated guidance.

   a. The owner or operator must consider:

      i. the following physical risks due to climate change:

         (i) increasing temperature; and

         (ii) increasing precipitation; and

         (iii) increasing variability in precipitation, including chance of drought; and

         (iv) increasing frequency and severity of flooding; and

         (v) rising sea level; and

         (vi) increasing storm surge; and

         (vii) shifting ecology.

      ii. for each of the following:

         (i) overall site planning; and

         (ii) location, elevation, and sizing of:

            a. control measures and practices; and

            b. conveyance system(s); and

            c. detention system(s).

3. The *SWPPP* must describe the erosion and sediment control practices and where required, SMPs that will be used and/or constructed to reduce the *pollutants* in *stormwater discharges* and to assure compliance with the

requirements of this permit. In addition, the *SWPPP* must identify potential sources of pollution which may reasonably be expected to affect the quality of *stormwater discharges*.

4. All *SWPPPs*, that require the SMP component in accordance with Part III.B.2., must be prepared by a *qualified professional*.

5. The *owner or operator* must keep the *SWPPP* current so that, at all times, it accurately documents the erosion and sediment control practices that are being used or will be used during construction, and all SMPs that will be constructed on the site. At a minimum, the *owner or operator* must modify the *SWPPP*, including construction drawings:

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

   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,* NYSDEC, or other regulatory authority; and

   d. to document the final construction conditions in an as-built drawing.

6. NYSDEC may notify the *owner or operator* at any time that the *SWPPP* does not meet one or more of the minimum requirements of this permit. The notification must 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 NYSDEC, the *owner or operator* must make the required changes to the *SWPPP* and submit written notification to NYSDEC that the changes have been made. If the *owner or operator* does not respond to NYSDEC's comments in the specified time frame, NYSDEC 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.D.4.

7. 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 SMPs included in the *SWPPP*. The *owner or operator* must have each of the contractors and subcontractors identify at least one person from their company to be *trained contractor* that will be responsible for implementation of the *SWPPP*. The *owner or operator* must ensure that at least one *trained contractor* is on site daily when soil disturbance activities are being performed.

The *owner or operator* must have each of the contractors and subcontractors identified above sign a copy of the following certification statement below before the *commencement of construction activities*:

> "I hereby certify under penalty of law that I understand and agree to comply with the requirements 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 requirements of the most current version of the New York State Pollutant Discharge Elimination System (SPDES) Construction General Permit (CGP) 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 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* must 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 the *commencement of construction activities*, they must also sign the certification statement and provide the information listed above prior to performing *construction activities*.

B. Required *SWPPP* Contents

1. Erosion and sediment control component - The *owner or operator* must prepare a *SWPPP* that includes erosion and sediment control practices.

    a. Erosion and sediment control practices must be designed:

        i. in conformance with the BB; or

        ii. *equivalent* to the BB if deviating from Part III.B.1.a.i.

    b. If the erosion and sediment control practices are designed in conformance with Part III.B.1.a.ii., the *SWPPP* must include a demonstration of *equivalence* to the BB.

    c. At a minimum, the erosion and sediment control component of the *SWPPP* must include the following:

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

        ii. A site map/construction drawing(s) with north arrows for the project, including a general location map. At a minimum, the site map must 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) and receiving surface water(s); and

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

        iv. A phasing plan for the project and sequencing plans for all *phases*, both of which must address clearing and grubbing, excavation and grading, utility and infrastructure installation, *final stabilization*,

and any other *construction activity* at the site that will result in soil disturbance.

1. The phasing plan must include:

    a. a map delineating and labeling the limits of soil disturbance for all *phases* of a project; and

    b. a table identifying the order and intended schedule of when each *phase* will begin and end its sequencing plan. The table must identify the total disturbed area for each *phase* at any one time and the total disturbed area for the overall project at any one time all on one timeline showing all overlapping quantities of disturbed area at any one time; and

2. A sequencing plan for a specific *phase* must include:

    a. a table indicating the order and intended schedule of *construction activities* within a *phase*, and corresponding construction drawings with a description of the work to be performed; and

    b. all permanent and *temporary stabilization* measures; and

v. 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; and

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

vii. 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; and

viii. A maintenance inspection schedule for the contractor(s) and subcontractor(s) identified in Part III.A.7. to ensure continuous and effective operation of the erosion and sediment control practices. The maintenance inspection schedule must be in accordance with the requirements in the BB technical standard; and

ix. 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*; and

x. 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

xi. Identification of any elements of the design that are not in conformance with the design criteria in the BB technical standard. 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. SMP component – The *owner or operator* of *construction activity* identified in Table 2 of Appendix B must prepare a *SWPPP* that includes SMPs.

    a. SMPs must be designed in conformance with the applicable *sizing criteria* in Part II.C.2.a., c., or d.; and

    b. SMPs must be designed in conformance with the *performance criteria*:

        i. in the DM; or

        ii. *equivalent* to the DM if deviating from Part III.B.2.b.i.; or

        iii. in the New York State Stormwater Management Design Manual, dated January 2015 (2015 Design Manual), or *equivalent* to it, if the following criteria are met:

1. The eNOI is submitted in accordance with Part I.D. before January 29, 2027 for *construction activities* that are either:

    a. subject to governmental review and approval:

        i. where the *owner or operator* made any application to that governmental entity prior to the effective date of this permit; and

        ii. such application included a *SWPPP* developed using the 2015 Design Manual or *equivalent* to it; or

    b. not subject to governmental review and approval:

        i. where a fiscal allocation for the *construction activities* has been developed and approved by a governmental entity; and

        ii. the *SWPPP* was developed using the 2015 Design Manual or *equivalent* to it; and

c. If SMPs are designed in conformance with Part III.B.2.b.ii., the *SWPPP* must include the reason(s) for the deviation or alternative design and a demonstration of *equivalence* to the DM; and

d. If SMPs are designed in conformance with Part III.B.2.b.iii., the *SWPPP* must include supporting information or documentation demonstrating that Part III.B.2.b.iii.1.a. or b. apply; and

e. The SMP component of the *SWPPP* must include the following:

    i. Identification of all SMPs to be constructed as part of the project, including which option the SMP designs conform to, either Part III.B.2.b.i., ii., or iii. Include the dimensions, material specifications and installation details for each SMP; and

    ii. A site map/construction drawing(s) showing the specific location and size of each SMP; and

iii. 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; and

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

    (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; and

    (iv) Summary table, with supporting calculations, which demonstrates that each SMP has been designed in conformance with the *sizing criteria* included in the DM; and

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

    (vi) Identification of any elements of the design that are not in conformance with the *performance criteria* in the DM. 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 DM.

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

v. Infiltration test results, when required in accordance with Part III.B.2.a.; and

vi. An operations and maintenance plan that includes inspection and maintenance schedules and actions to ensure continuous and effective operation of each SMP. The plan must identify the entity

that will be responsible for the long-term operation and maintenance of each practice; and

3. Enhanced Phosphorus Removal Standards - The *owner or operator* of *construction activity* identified in Table 2 of Appendix B that is located in a watershed identified in Appendix C must prepare a *SWPPP* that includes SMPs designed in conformance with the applicable *sizing criteria* in Part II.C.2.b., c., or d. and the *performance criteria* Enhanced Phosphorus Removal Standards included in the DM. At a minimum, the SMP component of the *SWPPP* must meet the requirements of Part III.B.2.

C. Required *SWPPP* Components by Project Type

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 accordance with Part III.B.1. *Owners or operators* of the *construction activities*, identified in Table 2 of Appendix B, must prepare a *SWPPP* that also includes SMPs designed in accordance with Part III.B.2 or 3.

For the entire area of disturbance, including the entire *common plan of development or sale* if applicable, the owner or operator must evaluate every bullet from Appendix B Table 1 and Table 2 separately. If bullets from both Table 1 and Table 2 apply, the *SWPPP* must include erosion and sediment control practices for all *construction activities* but SMPs for only those portions of the *construction activities* that fall under Table 2 bullet(s).

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 SMPs identified in the *SWPPP*, are inspected and maintained in accordance with Part IV.B. and C.

B. Contractor Maintenance Inspection Requirements

1. The *owner or operator* of each *construction activity*, identified in Tables 1 and 2 of Appendix B, must 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 must:

a. if the corrective action does not require engineering design:

   i. begin implementing corrective actions within one business day; and

   ii. complete the corrective actions within five business days; or

b. if the corrective action requires engineering design:

   i. begin the engineering design process within five business days; and

   ii. complete the corrective action in a reasonable time frame but no later than within 60 calendar days.

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 in accordance with Part IV.B.1. The *trained contractor* must begin conducting the maintenance inspections in accordance with Part IV.B.1. 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 in accordance with Part IV.B.1. if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all SMPs required for the completed portion of the project have been constructed in conformance with the *SWPPP* and are operational.

C. *Qualified Inspector* Inspection Requirements

1. With the exception of the following *construction activities* identified in Tables 1 and 2 of Appendix B, a *qualified inspector* must conduct site inspections for all other *construction activities* identified in Tables 1 and 2 of Appendix B:

   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 or equal to 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 D; and

b. the construction of a single-family home that involves soil disturbances of one (1) or more acres but less than or equal to 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 D; and

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

d. *construction activities* located in the New York City Watershed located east of the Hudson River, see Appendix C Figure 1, that involve soil disturbances of 5,000 square feet or more, but less than one acre.

2. The *qualified inspector* must conduct site inspections in accordance with the following timetable:

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

b. For *construction sites* where soil disturbance activities are on-going and the *owner or operator* has received authorization in accordance with Part I.E.6. to disturb greater than five (5) acres of soil at any one time, the *qualified inspector* must conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections must be separated by a minimum of two (2) full calendar days; or

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* must conduct a site inspection at least once every thirty (30) calendar days. The *owner or operator* must notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix E) or, in areas under the jurisdiction of a *Traditional Land Use Control MS4 Operator,* the *Traditional Land Use Control MS4 Operator* (provided the *Traditional Land Use Control MS4 Operator* is not the *owner or operator* of the *construction activity*) by hard copy or email prior to reducing the inspections to this frequency and again by hard copy or email prior to re-commencing construction; or

d. For *construction sites* where soil disturbance activities have been shut down with partial project completion, the requirement to have the *qualified inspector* conduct inspections ceases if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all SMPs required for the completed portion of the project have been constructed in conformance with the *SWPPP* and are operational. The *owner or operator* must notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix E) or, in areas subject to the review authority of *Traditional Land Use Control MS4 Operator(s)* in accordance with Part I.D.2.b.ii.1., the *Traditional Land Use Control MS4 Operator(s)* (provided the *Traditional Land Use Control MS4 Operator(s)* are not the *owners or operators* of the *construction activity*) in writing prior to the shutdown and again in writing prior to resuming *construction activity*. If soil disturbance activities are not resumed within 2 years from the date of shutdown, the *owner or operator* must terminate coverage by meeting the requirements of Part V; or

e. For *construction sites* involving soil disturbance of one (1) or more acres that *directly discharge* to one of the 303(d) segments listed in Appendix D or is located in one of the watersheds listed in Appendix C, the *qualified inspector* must conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections must be separated by a minimum of two (2) full calendar days.

3. At a minimum, the *qualified inspector* must inspect:

a. all erosion and sediment control practices and pollution prevention measures to ensure integrity and effectiveness; and

b. all SMPs under construction to ensure that they are constructed in conformance with the *SWPPP*; and

c. all areas of disturbance that have not achieved *final stabilization*; and

d. all points of *discharge* to *surface waters of the State* located within, or immediately adjacent to, the property boundaries of the *construction site*; and

e. all points of *discharge* from the *construction site*.

4. The *qualified inspector* must prepare an inspection report subsequent to each and every inspection. At a minimum, the inspection report must include and/or address all of the following, for all *construction activities* except those listed in Part IV.C.1.:

   a. Permit identification number; and

   b. Date and time of inspection; and

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

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

   e. A description of the condition of the runoff at all points of *discharge* from the *construction site*. This must 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; and

   f. A description of the condition of all *surface waters of the State* located within, or immediately adjacent to, the property boundaries of the *construction site* which receive runoff from disturbed areas. This must include identification of any *discharges* of sediment to the *surface waters of the State*; and

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

   h. 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; and

   i. Description and sketch (map) 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; and

   j. Estimates, in square feet or acres, of the following areas:

      i. Total area with active soil disturbance (not requiring either *temporary stabilization* or *final stabilization*); and

      ii. Total area with inactive soil disturbance (requiring either *temporary stabilization* or *final stabilization*); and

      iii. Total area that has achieved *temporary stabilization*; and

      iv. Total area that has achieved *final stabilization*; and

   k. Current stage of construction of all SMPs and identification of all *construction activity* on site that is not in conformance with the *SWPPP* and technical standards; and

   l. 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 SMP(s); and

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

   n. Digital photographs, with date stamp, that clearly show the condition of all practices that have been identified as needing corrective actions. The *qualified inspector* must attach 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* must 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* must 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* must notify the *owner or operator*, and appropriate contractor or subcontractor identified in Part III.A.7., of any corrective actions that need to be taken. The contractor or subcontractor must:

   a. if the corrective action does not require engineering design:

i. begin implementing corrective actions within one business day; and

ii. complete the corrective actions within five business days; or

b. if the corrective action requires engineering design:

i. begin the engineering design process within five business days; and

ii. complete the corrective action in a reasonable time frame but no later than within 60 calendar days.

6. All inspection reports must be signed by the *qualified inspector.* In accordance with Part I.E.3., the inspection reports must be maintained on site with the *SWPPP*.

Part V. How to Terminate CGP Coverage

A. Electronic Notice of Termination (eNOT) Submittal

The eNOT contains questions to ensure requirements in Part V.A. have been met.

1. An *owner or operator* must terminate coverage when one or more of the following requirements have been met:

a. Total project completion:

i. all *construction activity* identified in the *SWPPP* has been completed; and

ii. all areas of disturbance have achieved *final stabilization*; and

iii. all temporary, structural erosion and sediment control measures have been removed; and

iv. all SMPs have been constructed in conformance with the *SWPPP* and are operational; and

v. an as-built drawing has been prepared; or

b. Planned shutdown with partial project completion:

i. all soil disturbance activities have ceased; and

ii. all areas disturbed as of the project shutdown date have achieved *final stabilization*; and

iii. all temporary, structural erosion and sediment control measures have been removed; and

iv. all SMPs required for the completed portion of the project have been constructed in conformance with the *SWPPP* and are operational; and

v. an as-built drawing has been prepared; or

c. In accordance with Part I.G. Change of Owner or Operator; or

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

2. For *construction activities* that require *qualified inspector* inspections in accordance with Part IV.C.1. and have met Part V.A.1.a. or b., the *owner or operator* must have the *qualified inspector* perform a final site inspection prior to submitting the eNOT. The *qualified inspector* must, by signing the "Final Stabilization" and "Post-Construction Stormwater Management Practice(s)" certification statements on the eNOT, certify that all the requirements in Part V.A.1.a. or b. have been achieved.

3. For *construction activities* that are subject to the review authority of *Traditional Land Use Control MS4 Operator(s)* in accordance with Part I.D.2.b.ii.1. and meet Part V.A.1.a. or b., the *owner or operator* must have the *Traditional Land Use Control MS4 Operator(s)* sign the "MS4 Acceptance" statement on the eNOT in accordance with the requirements in Part VII.J. A *Traditional Land Use Control MS4 Operator* official, by signing this statement, determined that it is acceptable for the *owner or operator* to submit the eNOT in accordance with the requirements of this Part. A *Traditional Land Use Control MS4 Operator* can make this determination by performing a final site inspection themselves or by accepting the *qualified inspector*'s final site inspection certification(s) when required in Part V.A.2.

4. For *construction activities* that require SMPs and meet Part V.A.1.a. or b., the *owner or operator* must, prior to submitting the eNOT, ensure one of the following:

   a. for SMP(s) that were constructed by a private entity, but will be owned, operated, and maintained by a public entity, the SMP(s) and any right-of-way(s) needed to operate and maintain such practice(s) have been deeded to the municipality in which the practice(s) is located; or

   b. for SMP(s) that are privately owned, but will be operated and maintained by a public entity, an executed operation and maintenance agreement is in place with the municipality that will operate and maintain the SMP(s); or

   c. for SMP(s) 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; or

   d. for SMP(s) 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 policies and procedures in place that ensure operation and maintenance of the practices in accordance with the operation and maintenance plan.

5. An *owner or operator* that has met the requirements of Part V.A.1., 2., 3., and 4. must request termination of coverage under this permit by submitting a complete Notice of Termination form electronically using a NYSDEC approved form.[5]

   a. The owner's or operator's coverage is terminated as of the termination date indicated in the Letter of Termination (LOT), which is sent by NYSDEC after a complete eNOT is submitted.

[5] Unless NYSDEC grants a waiver in accordance with 40 CFR 127.15(c) or (d). All waiver requests must be submitted to Stormwater_info@dec.ny.gov or NYSDEC, Bureau of Water Permits, 625 Broadway, 4th Floor, Albany, New York 12233-3505.

Part VI. Record Retention and Reporting

A. Record Retention

The *owner or operator* must retain a copy of the documents listed in Part I.E.3. and a copy of the LOT for a period of at least five years from the date that NYSDEC accepts a complete NOT submitted in accordance with Part V.

B. Reporting

Except for the eNOI, the signature forms associated with the eNOI, and the eNOT, all other written correspondence requested by NYSDEC, including individual permit applications, must be sent to the address of the appropriate DOW (SPDES) Program contact at the Regional Office listed in Appendix E.

Part VII. Standard Permit Requirements

For the purposes of this permit, examples of contractors and subcontractors include: third-party maintenance and construction contractors.

A. Duty to Comply

The *owner or operator*, and all contractors or subcontractors, must comply with all requirements of this permit. Any non-compliance with the requirements of this permit constitutes a violation of the New York State Environmental Conservation Law (ECL), and its implementing regulations, and is grounds for enforcement action. Filing of a request for termination of coverage under this permit, or a notification of planned changes or anticipated non-compliance, does not limit, diminish or stay compliance with any requirements of this permit.

B. Need to Halt or Reduce Activity Not a Defense

The necessity to halt or reduce the *construction activity* regulated by this permit, in order to maintain compliance with the requirements of this permit, must not be a defense in an enforcement action.

C. Penalties

There are substantial criminal, civil, and administrative penalties associated with violating the requirements of this permit. Fines of up to $37,500 per day for each

violation and imprisonment for up to 15 years may be assessed depending upon the nature and degree of the offense.

D. False Statements

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 monitoring reports or reports of compliance or noncompliance must, upon conviction, be punished in accordance with ECL §71-1933 and or New York State Penal Law Articles 175 and 210.

E. Re-Opener Clause

Upon issuance of this permit, a determination has been made on the basis of a submitted Notice of Intent, plans, or other available information, that compliance with the specified permit requirements will reasonably protect classified water use and assure compliance with applicable *water quality standards*. Satisfaction of the requirements of this permit notwithstanding, if operation pursuant to this permit causes or contributes to a condition in contravention of State *water quality standards* or guidance values, or if NYSDEC determines that a modification is necessary to prevent impairment of the best use of the waters or to assure maintenance of *water quality standards* or compliance with other provisions of ECL Article 17 or the Clean Water Act (CWA), or any regulations adopted pursuant thereto, NYSDEC may require such modification and the Commissioner may require abatement action to be taken by the *owner or operator* and may also prohibit such operation until the modification has been implemented.

F. Duty to Mitigate

The *owner or operator*, and its contractors and subcontractors, must 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.

G. Requiring Another General Permit or Individual SPDES Permit

NYSDEC may require any *owner or operator* authorized to *discharge* in accordance with this permit to apply for and obtain an individual SPDES permit or apply for authorization to *discharge* in accordance with another general SPDES permit.

1. Cases where an individual SPDES permit or authorization to discharge in accordance with another general SPDES permit may be required include, but is not limited to the following:

   a. the *owner or operator* is not in compliance with the conditions of this permit or does not meet the requirements for coverage under this permit; and

   b. a change has occurred in the availability of demonstrated technology or practices for the control or abatement of *pollutants* applicable to the *point source*; and

   c. new effluent limitation guidelines or new source performance standards are promulgated that are applicable to *point sources* authorized to *discharge* in accordance with this permit; and

   d. existing effluent limitation guidelines or new source performance standards that are applicable to *point sources* authorized to *discharge* in accordance with this permit are modified; and

   e. a water quality management plan containing requirements applicable to such *point sources* is approved by NYSDEC; and

   f. circumstances have changed since the time of the request to be covered so that the *owner or operator* is no longer appropriately controlled under this permit, or either a temporary or permanent reduction or elimination of the authorized *discharge* is necessary; and

   g. the *discharge* is in violation of section 17-0501 of the ECL; and

   h. the *discharge(s)* is a significant contributor of *pollutants*. In making this determination, NYSDEC may consider the following factors:

      i. the location of the *discharge(s)* with respect to *surface waters of the State*; and

      ii. the size of the *discharge(s)*; and

      iii. the quantity and nature of the *pollutants discharged* to *surface waters of the State*; and

      iv. other relevant factors including compliance with other provisions of ECL Article 17, or the CWA.

2. When NYSDEC requires any *owner or operator* authorized by this permit to apply for an individual SPDES permit as provided for in this subdivision, it must notify the *owner or operator* in writing that a permit application is required. This notice must include a brief statement of the reasons for this decision, an application

form, a statement setting a time for the *owner or operator* to file the application for an individual SPDES permit, and a deadline, not sooner than 180 days from the *owner's or operator's* receipt of the notification letter, whereby the authorization to *discharge* under this permit must be terminated. NYSDEC may grant additional time upon demonstration, to the satisfaction of the RWE,[6] that additional time to apply for an alternative authorization is necessary or where NYSDEC has not provided a permit determination in accordance with 6 NYCRR Part 621.

3. When an individual SPDES permit is issued to an *owner or operator* authorized to *discharge* under this permit for the same *discharge(s)*, this permit authorization for *construction activities* authorized under the individual SPDES permit is automatically terminated on the effective date of the individual SPDES permit unless termination is earlier in accordance with 6 NYCRR Part 750.

H. Duty to Provide Information

The *owner or operator* must furnish to NYSDEC, within five business days, unless otherwise set forth by NYSDEC, any information that NYSDEC may request to determine whether cause exists to determine compliance with this permit or to determine whether cause exists for requiring an individual SPDES permit in accordance with 6 NYCRR 750-1.21(e) (see Part VII.G. Requiring Another General Permit or Individual Permit).

The *owner or operator* must make available to NYSDEC, for inspection and copying, or furnish to NYSDEC within 25 business days of receipt of a NYSDEC request for such information, any information retained in accordance with this permit.

Except for Part I.D.4. and 5. and Part I.G., the following applies: where the *owner or operator* becomes aware that it failed to submit any relevant facts on the Notice of Intent, or submitted incorrect information in a Notice of Intent or in any report to NYSDEC, the *owner or operator* must submit such facts or corrected information to NYSDEC within five business days.

I. Extension

In the event a new permit is not issued and effective prior to the expiration of this permit, and this permit is extended pursuant to the State Administrative Procedure Act and 6 NYCRR Part 621, then the *owner or operator* with coverage under this permit may continue to operate and *discharge* in accordance with the requirements of this permit until a new permit is issued and effective.

[6] The Regional Water Manager where a DEC Region does not have a RWE.

J. Signatories and Certification

The Notice of Intent, Notice of Termination, and reports required by this permit must be signed as provided in 40 CFR §122.22.

1. All Notices of Intent and Notices of Termination must be signed as follows:

   a. For a corporation. 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 Notice of Intent or Notice of Termination requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

      Note: NYSDEC does not require specific assignments or delegations of authority to responsible corporate officers identified in 40 CFR §122.22(a)(1)(i). NYSDEC will presume that these responsible corporate officers have the requisite authority to sign the Notice of Intent or Notice of Termination unless the corporation has notified NYSDEC to the contrary. Corporate procedures governing authority to sign a Notice of Intent or Notice of Termination may provide for assignment or delegation to applicable corporate positions under 40 CFR §122.22(a)(1)(ii) rather than to specific individuals.

   b. For a partnership or sole proprietorship. By a general partner or the proprietor, respectively.

c. For a municipality, State, Federal, or other public agency. By either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:

   1. the chief executive officer of the agency; or

   2. 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. All reports required by this permit, and other information requested by NYSDEC, must be signed by a person described in Part VII.J.1., 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.J.1. or using the Duly Authorized Form, found on the DEC website; and

   b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, 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 individual or any individual occupying a named position); and

   c. The written authorization is submitted to NYSDEC.

3. Changes to authorization. If an authorization under Part VII.J.2. is no longer accurate because a different individual or position has responsibility for the overall operation of the *construction activity*, a new authorization satisfying the requirements of Part VII.J.2. must be submitted to NYSDEC prior to or together with any reports, information, or applications to be signed by an authorized representative.

4. Certification. Any person signing a document under Part VII.J.1. or 2. must make the following certification:

   I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who

manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

5. Electronic reporting. If documents described in Part VII.J.1. or 2. are submitted electronically by or on behalf of the *construction activity* with coverage under this permit, any person providing the electronic signature for such documents must meet all relevant requirements of this section, and must ensure that all of the relevant requirements of 40 CFR Part 3 (including, in all cases, subpart D to Part 3) (Cross-Media Electronic Reporting) and 40 CFR Part 127 (NPDES Electronic Reporting Requirements) are met for that submission.

K. Inspection and Entry

The *owner or operator* must allow NYSDEC, the USEPA Regional Administrator, the applicable county health department, or any authorized representatives of those entities, 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 requirements of this permit; and

2. have access to and copy at reasonable times, any records that must be kept under the requirements of this permit, including records required to be maintained for purposes of operation and maintenance; and

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

4. sample or monitor at reasonable times, for the purposes of assuring general SPDES permit compliance or as otherwise authorized by the CWA or ECL, any substances or parameters at any location; and

5. enter upon the property of any contributor to the regulated facility or activity under authority of the *owner or operator*.

L. Confidentiality of Information

The following must not be held confidential: this permit, the fact sheet for this permit, the name and address of any *owner or operator*, effluent data, the Notice of Intent, and information regarding the need to obtain an individual permit or an alternative general SPDES permit. This includes information submitted on forms themselves and any attachments used to supply information required by the forms (except information submitted on usage of substances). Upon the request of the *owner or operator*, NYSDEC must make determinations of confidentiality in accordance with 6 NYCRR Part 616, except as set forth in the previous sentence. Any information accorded confidential status must be disclosed to the Regional Administrator upon his or her written request. Prior to disclosing such information to the Regional Administrator, NYSDEC will notify the Regional Administrator of the confidential status of such information.

M. Other Permits May Be Required

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

N. NYSDEC Orders or Civil Decrees/Judgments

The issuance of this permit by the NYSDEC, and the coverage under this permit by the *owner or operator*, does not supersede, revoke, or rescind any existing order on consent or civil Decree/Judgment, or modification to any such documents or to any order issued by the Commissioner, or any of the terms, conditions, or requirements contained in such order or modification therefore, unless expressly noted.

O. Property Rights

Coverage under this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State, or local laws or regulations, nor does it obviate the necessity of obtaining the assent of any other jurisdiction as required by law for the *discharge* authorized.

P. Compliance with Interstate Standards

If the *construction activity* covered by this permit originates within the jurisdiction of an interstate water pollution control agency, then the *construction activity* must also comply with any applicable effluent standards or *water quality standards* promulgated by that interstate agency and as set forth in this permit for such *construction activities*.

Q. Oil and Hazardous Substance Liability

Coverage under this permit does not affect the imposition of responsibilities upon, or the institution of any legal action against, the *owner or operator* under section 311 of the CWA, which must be in conformance with regulations promulgated pursuant to section 311 governing the applicability of section 311 of the CWA to *discharges* from facilities with *NPDES* permits, nor must such issuance preclude the institution of any legal action or relieve the *owner or operator* from any responsibilities, liabilities, or penalties to which the *owner or operator* is or may be subject pursuant to the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. section 9601 et seq. (CERCLA).

R. 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, must not be affected thereby.

S. NYSDEC Approved Forms

The *owner or operator* must provide all relevant information that is requested by NYSDEC, and required by this permit, on all NYSDEC approved forms.

APPENDIX A – Abbreviations and Definitions

Abbreviations

APO – Agency Preservation Officer
BB – New York State Standards and Specifications for Erosion and Sediment Control (Blue Book), dated November 2016
BMP – Best Management Practice
CPESC – Certified Professional in Erosion and Sediment Control
CPv – Channel Protection Volume
CWA – Clean Water Act (or the Federal Water Pollution Control Act, 33 U.S.C. §1251 et seq)
DM – New York State Stormwater Management Design Manual (Design Manual), dated July 31, 2024
DOW – Division of Water
EAF – Environmental Assessment Form
ECL – chapter 43-B of the Consolidated Laws of the State of New York, entitled the Environmental Conservation Law
EPA – U.S. Environmental Protection Agency
HSG – Hydrologic Soil Group
MS4 – Municipal Separate Storm Sewer System
NOI – Notice of Intent
NOT – Notice of Termination
NPDES – National Pollutant Discharge Elimination System
NYC – The City of New York
NYCDEP – The City of New York Department of Environmental Protection
NYSDEC – The New York State Department of Environmental Conservation
OPRHP – Office of Parks, Recreation and Historic Places
Qf – Extreme Flood
Qp – Overbank Flood
RR – Runoff Reduction
RRv – Runoff Reduction Volume
RWE – Regional Water Engineer
SEQR – State Environmental Quality Review Act
SHPA – State Historic Preservation Act
SMP – Post-Construction Stormwater Management Practice
SPDES – State Pollutant Discharge Elimination System
SWPPP – Stormwater Pollution Prevention Plan
TMDL – Total Maximum Daily Load
UPA – Uniform Procedures Act
USDA – United States Department of Agriculture
WQv – Water Quality Volume

Definitions

All definitions in this section are solely for the purposes of this permit. If a word is not italicized in the permit, use its common definition.

Agricultural Building – a structure designed and constructed to house farm implements, hay, grain, poultry, livestock or other horticultural products; excluding any structure designed, constructed or used, in whole or in part, for human habitation, as a place of employment where agricultural products are processed, treated or packaged, or as a place used by the public.

Agricultural Property – the land for construction of a barn, *agricultural building*, silo, stockyard, pen or other structural practices identified in Table II in the "Agricultural Best Management Practice Systems Catalogue" (dated June 2023).

Alter Hydrology from Pre- to Post-Development Conditions – 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 System – a sewer system which conveys sewage and *stormwater* through a single pipe system to a publicly owned treatment works.

Commence (Commencement of) Construction Activities – 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.

Common Plan of Development or Sale – a contiguous area where multiple separate and distinct *construction activities* are occurring, or may occur, under one plan. The "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 (SEQR) environmental assessment form or other documents, zoning request, computer design, etc.) or physical demarcation (including boundary signs, lot stakes, surveyor markings, etc.) indicating *construction activities* may occur on a specific plot. A *common plan of development or sale* is comprised of two or more *phases*.

Common plan of development or sale does not include separate and distinct *construction activities* that are occurring, or may occur, under one plan that are at least 1/4 mile apart provided any interconnecting road, pipeline or utility project that is part of the same "common plan" is not concurrently being disturbed.

Construction Activity(ies) – identified within 40 CFR 122.26(b)(14)(x), 122.26(b)(15)(i), and 122.26(b)(15)(ii), any clearing, grading, excavation, filling, demolition or stockpiling activities that result in soil disturbance. Clearing activities can include, but are not limited to, mechanized 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, which is excluded from the calculation of the soil disturbance for a project. Routine maintenance includes, but is not limited to:

- Re-grading of gravel roads or parking lots; and
- Cleaning and shaping of existing roadside ditches and culverts that maintains the approximate original line and grade, and maintains or improves the hydraulic capacity of the ditch; and
- Replacement of existing culverts that maintains the approximate original line and grade, and maintains or improves the hydraulic capacity of a ditch; and
- Replacement of existing bridges that maintains the approximate original line and grade, and maintains or improves the hydraulic capacity beneath the bridges; and
- 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); and
- Placement of aggregate shoulder backing that stabilizes the transition between the road shoulder and the ditch or *embankment*; and
- 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; and
- Long-term use of equipment storage areas at or near highway maintenance facilities; and
- 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*; and
- Existing use of Canal Corp owned upland disposal sites for the canal, and
- Replacement of curbs, gutters, sidewalks and guide rail posts; and
- Maintenance of ski trails including brush hog use and mowing; and
- Above ground snowmaking pipe replacement; and
- Replacement of existing utility poles; etc.

Construction Site – the land area where *construction activity(ies)* will occur. See also the definitions for "*Commence (Commencement of) Construction Activities"* and "*Common Plan of Development or Sale."*

Dewatering – the act of draining rainwater and/or groundwater from building foundations, vaults or excavations/trenches.

Directly Discharge(s)(ing) (to a specific surface waterbody) – 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)(d) – any addition of any *pollutant* to waters of the State through an outlet or *point source*.

Embankment – an earthen or rock slope that supports a road/highway.

Equivalent (Equivalence) – 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 – 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.

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

Infeasible – not technologically possible, or not economically practicable and achievable considering best industry practices.

Minimize(ing)(ation) – 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 System (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):

1. owned or operated by a State, city, town, village, 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*; and

2. designed or used for collecting or conveying *stormwater*; and

3. which is not a *combined sewer system*; and

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

Natural Buffer(s) – an undisturbed area with natural cover running along a surface water (e.g. wetland, stream, river, lake, etc.).

New Development – any land disturbance that does not meet the definition of *Redevelopment Activity* included in this appendix.

New York State Erosion and Sediment Control Certificate Program – a certificate program that establishes and maintains a process to identify and recognize individuals who are capable of developing, designing, inspecting and maintaining erosion and sediment control plans on projects that disturb soils in New York State. The certificate program is administered by the New York State Conservation District Employees Association.

Nonpoint Source(s) – any source of water pollution or *pollutants* which is not a discrete conveyance or *point source* permitted pursuant to Title 7 or 8 of Article 17 of the Environmental Conservation Law (see ECL Section 17-1403).

Overbank – flow events that exceed the capacity of the stream channel and spill out into the adjacent floodplain.

Owner or Operator – the person, persons, or legal entity which owns or leases the property on which the *construction activity* is occurring; an entity that has operational control over the construction plans and specifications, including the ability to make modifications to the plans and specifications; and/or an entity that has day-to-day operational control of those activities at a project that are necessary to ensure compliance with the permit requirements.

Performance Criteria – the six performance criteria for each group of SMPs in Chapters 5 and 6 of the technical standard, New York State Stormwater Management Design Manual (DM), dated July 31, 2024. These include feasibility, conveyance, pretreatment, treatment, landscaping, and maintenance. It does not include the *Sizing Criteria* (i.e. WQv, RRv, CPv, Qp and Qf) in Part I.C.2. of the permit.

Phase – a defined area in which *construction activities* are occurring or will occur separate from other defined area(s).

Point Source – any discernible, confined, and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, vessel or other floating craft, or landfill leachate collection system from which *pollutants* are or may be *discharged*.

Pollutant(s) – 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 – 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, *New York State Erosion and Sediment Control Certificate Program* holder or other NYSDEC 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 NYSDEC endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other NYSDEC 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 SMPs that include structural components, such as a dam for an impoundment, shall be performed by a licensed Professional Engineer.

Qualified Professional – 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 NYSDEC endorsed individual(s). Individuals preparing *SWPPPs* that require the SMP 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) – 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.).

Renewable Energy – electricity or thermal energy generated by renewable energy systems through use of the following technologies: solar thermal, photovoltaics, on land and offshore wind, hydroelectric, geothermal electric, geothermal ground source heat, tidal energy, wave energy, ocean thermal, and fuel cells which do not utilize a fossil fuel resource in the process of generating electricity.

Site Limitations – 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 – the criteria included in Part I.C.2 of the permit that are used to size SMPs. The criteria include; Water Quality Volume (WQv), Runoff Reduction Volume (RRv), Channel Protection Volume (Cpv), *Overbank* Flood (Qp), and Extreme Flood (Qf).

Steep Slope – land area designated on the current United States Department of Agriculture (USDA) Soil Survey as Soil Slope Phase D, (provided the map unit name or description is inclusive of slopes greater than 25%), or Soil Slope Phase E or F, (regardless of the map unit name), or a combination of the three designations.

Stormwater – that portion of precipitation that, once having fallen to the ground, is in excess of the evaporative or infiltrative capacity of soils, or the retentive capacity of surface features, which flows or will flow off the land by surface runoff to waters of the State.

Streambank – the terrain alongside the bed of a creek or stream. The bank consists of the sides of the channel, between which the flow is confined.

Stormwater Pollution Prevention Plan (SWPPP) – a project specific report, including construction drawings, that among other things: describes the *construction activity(ies)*, identifies the potential sources of pollution at the *construction site*; describes and shows the *stormwater* controls that will be used to control the *pollutants* (i.e. erosion and sediment controls; for many projects, includes SMPs); and identifies procedures the *owner or operator* will implement to comply with the requirements of the permit. See Part III of the permit for a complete description of the information that must be included in the *SWPPP*.

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

Temporary Stabilization – 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 Load (TMDL) – 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 and still meet *water quality standards*, and an allocation of that amount to the *pollutant's* sources. A TMDL stipulates Waste Load Allocations (WLA) for *point source discharges*, Load Allocations (LA) for *nonpoint sources*, and a margin of safety (MOS).

Traditional Land Use Control MS4 Operator – a city, town, or village with land use control authority that is authorized to *discharge* under New York State DEC's SPDES General Permit For Stormwater Discharges from Municipal Separate Stormwater Sewer Systems (MS4s) or the City of New York's Individual SPDES Permit for their Municipal Separate Storm Sewer Systems (NY-0287890).

Trained Contractor – an employee from the contracting (construction) company, identified in Part III.A.7., that has received four (4) hours of NYSDEC endorsed training

in proper erosion and sediment control principles from a Soil and Water Conservation District, or other NYSDEC 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.7., that meets the *qualified inspector* qualifications (e.g. licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, *New York State Erosion and Sediment Control Certificate Program* holder, or someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of NYSDEC endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other NYSDEC endorsed entity).

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

Tree Clearing – *construction activities* limited to felling and removal of trees.

Tree clearing does not include hand felling and leaving the trees in place with no support from mechanized equipment, which is not considered *construction activity* requiring coverage under this permit.

Water Quality Standard – 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.

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 and not *directly discharging* to one of the 303(d) segments listed in Appendix D • 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 D • Construction of a barn or other *agricultural building*, silo, stock yard or pen. • Structural agricultural conservation practices as identified in Table II in the "Agricultural Best Management Practice Systems Catalogue" (dated June 2023) that include construction or reconstruction of *impervious area* or *alter hydrology from pre- to post-development* conditions.
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 New York City Watershed located east of the Hudson River, see Appendix C Figure 1, that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.
Within the municipal boundaries of NYC: • Stand-alone road reconstruction, where the total soil disturbance from only that road construction, is less than one (1) acre of land.
The following *construction activities*: • 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, *stormwater* retrofits, stream restoration, and resiliency projects that reconstruct shoreline areas to address sea level rise • Pond construction • Linear bike paths running through areas with vegetative cover, including bike paths surfaced with an *impervious cover* • Cross-country ski trails, walking/hiking trails, and mountain biking trails, including a de minimis parking lot (maximum 10 spaces total, sized for passenger cars) with 35 feet minimum preservation of undisturbed area downgradient from the parking lot • Dam rehabilitation (the structure of the dam itself) • Sidewalks, bike paths, or walking paths, surfaced with an *impervious cover*, that are not part of residential, commercial, or institutional development; • Sidewalks, bike paths, or walking paths, surfaced with an *impervious cover*, that include incidental shoulder or curb work along an existing highway to support construction of the sidewalk, bike path, or walking path.

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

The following *construction activities*:

- Slope stabilization
- 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
- Vegetated open space (i.e. recreational parks, lawns, meadows, fields, downhill ski trails) that do not *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 where vegetation will be established, and no *redevelopment activity* is planned[1]
- Installation or replacement of either an overhead electric transmission line or a ski lift tower that does not include the construction of permanent access roads or parking areas surfaced with *impervious cover*.
- Solar array field areas that have tables elevated off the ground, spaced one table width apart, do not *alter hydrology from pre- to post-development conditions*, and address water quality volume and runoff reduction volume by maintaining sheet flow on slopes less than 8%.
- Structural agricultural conservation practices as identified in Table II in the "Agricultural Best Management Practice Systems Catalogue" (dated June 2023) that do not include construction or reconstruction of *impervious area* and do not *alter hydrology from pre- to post-development* conditions.
- Temporary access roads, median crossovers, detour roads, lanes, or other temporary *impervious areas* that will be restored to pre-construction conditions once the *construction activity* is complete (in this context, "temporary" means the *impervious area* will be in place for two years or less)
- Other *construction activities* that do not include the construction or reconstruction of *impervious area*, and do not *alter hydrology from pre- to post-development* conditions, and are not listed in Table 2.

1. If the site is redeveloped in the future, a new eNOI must be submitted.

Table 2
***CONSTRUCTION ACTIVITIES* THAT REQUIRE THE PREPARATION OF A *SWPPP* THAT INCLUDES**
POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES (SMPS)

The following *construction activities*:

- 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 D
- Single-family home that disturbs five (5) or more acres of land
- 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 D
- 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 between 20,000 square feet and one (1) acre of land within the municipal boundaries of NYC 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 *common plan of development or sale* that will ultimately disturb five (5) or more acres of land
- Multi-family residential developments; includes duplexes, townhomes, condominiums, senior housing complexes, apartment complexes, and mobile home parks
- Creation of 5,000 square feet or more of *impervious area* in the municipal boundaries of NYC
- Airports
- Amusement parks
- Breweries, cideries, and wineries, including establishments constructed on agricultural land
- 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) that involves soil disturbance greater than five acres.
- Structural agricultural conservation practices as identified in Table II in the "Agricultural Best Management Practice Systems Catalogue" (dated June 2023) that involves soil disturbance greater than five acres and include the construction or reconstruction of *impervious area* or *alter hydrology from pre- to post-development* conditions.
- Facility buildings, including ski lodges, restroom buildings, pumphouses, ski lift terminals, and maintenance and groomer garages
- Institutional development; includes hospitals, prisons, schools and colleges
- Industrial facilities; includes industrial parks
- Landfills; including creation of landfills or capping landfills.
- Municipal facilities; includes highway garages, transfer stations, office buildings, POTWs, water treatment plants, and water storage tanks
- Golf courses
- Office complexes

Table 2 (Continued)

***CONSTRUCTION ACTIVITIES* THAT REQUIRE THE PREPARATION OF A *SWPPP* THAT INCLUDES POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES (SMPs)**

The following *construction activities*:

- Permanent laydown yards and equipment storage lots
- Playgrounds that include the construction or reconstruction of *impervious area*
- Sports complexes
- Racetracks; includes racetracks with earthen (dirt) surfaces
- Road construction or reconstruction, outside the municipal boundaries of NYC
- Road construction within the municipal boundaries of NYC
- Stand-alone road reconstruction, within the municipal boundaries of NYC where the total soil disturbance from that road reconstruction involves soil disturbance of one (1) acre or more of land
- Parking lot construction or reconstruction (as with all Table 2 bullets, this includes parking lots constructed as part of the *construction activities* listed in Table 1, unless a Table 1 bullet specifies otherwise)
- 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 overhead electric transmission line, wind-power, cell tower, oil or gas well drilling, sewer or water main, ski lift, or other linear utility project
- Sidewalks, bike paths, or walking paths, surfaced with an *impervious cover*, that are part of a residential, commercial or institutional development
- Sidewalks, bike paths, or walking paths, surfaced with an *impervious cover*, that are part of highway construction or reconstruction
- Solar array field areas on slopes greater than 8% that cannot maintain sheet flow using management practices identified in the BB or the DM
- Solar array field areas on slopes less than 8% that will *alter the hydrology from pre- to post-development* conditions
- Solar array field areas with tables that are not elevated high enough to achieve *final stabilization* beneath the tables
- Traditional *impervious areas* associated with solar development (e.g. roads, buildings, transformers)
- Utility pads surfaced with *impervious cover*, including electric vehicle charging stations
- 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

APPENDIX C – Watersheds Requiring Enhanced Phosphorus Removal

Watersheds where *owners or operators* of *construction activities* identified in Table 2 of Appendix B must prepare a *SWPPP* that includes SMPs designed in conformance with the Enhanced Phosphorus Removal Standards included in the DM technical standard.

- 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

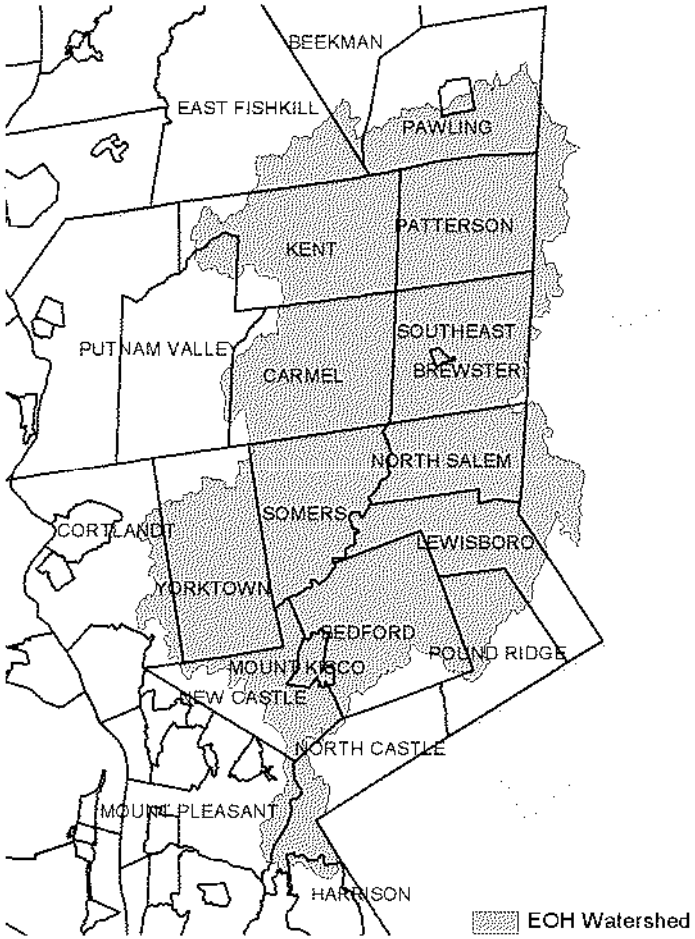


Figure 2 - Onondaga Lake Watershed

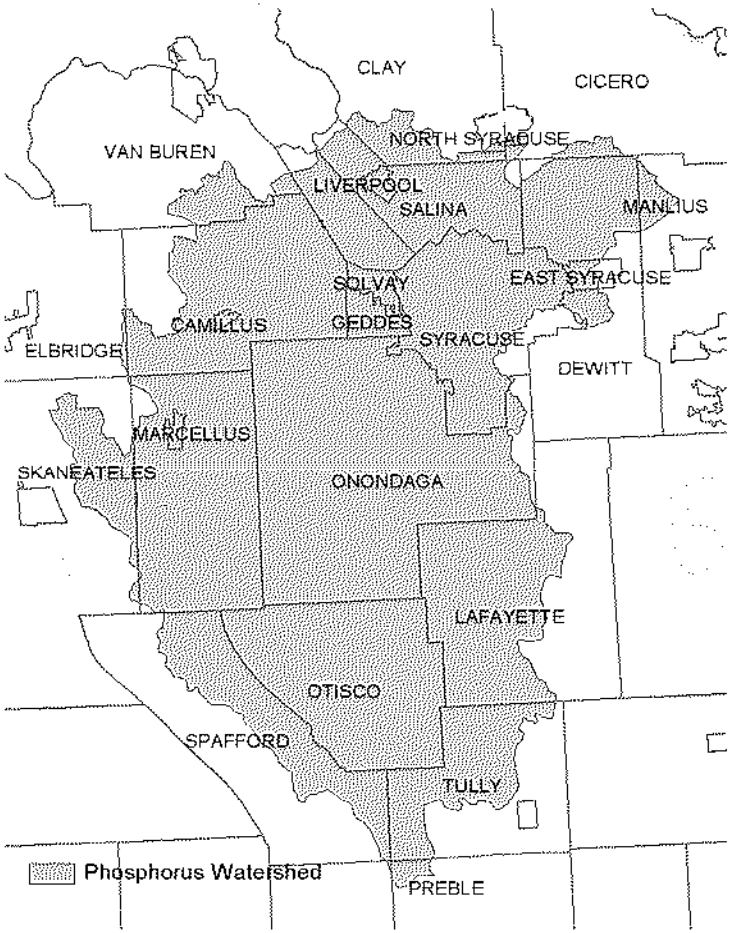


Figure 3 - Greenwood Lake Watershed

Figure 4 - Oscawana Lake Watershed

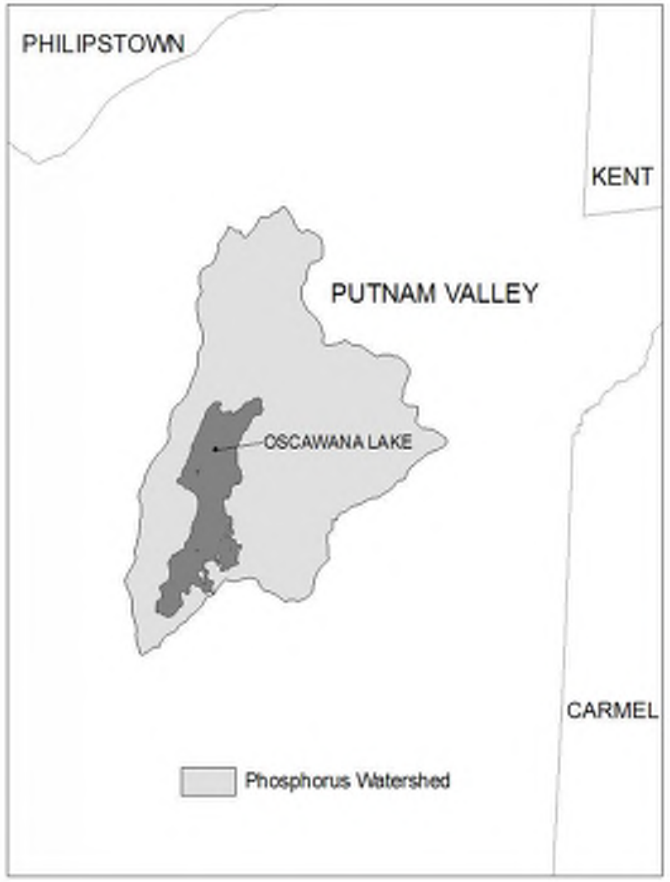
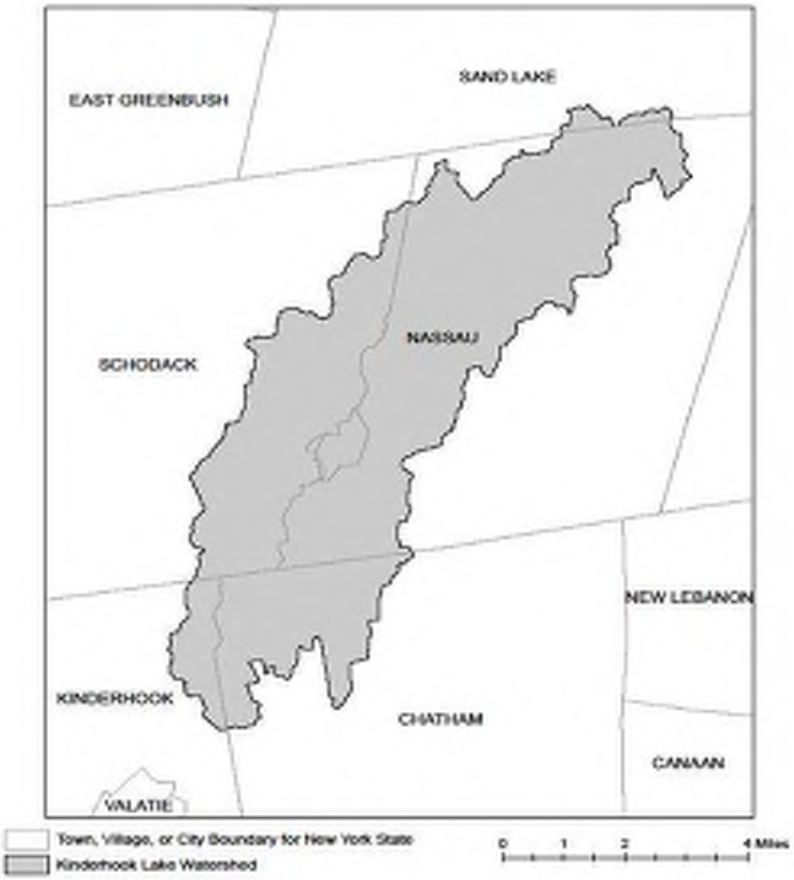


Figure 5 - Kinderhook Lake Watershed



APPENDIX D – Impaired Waterbodies (by Construction Related Pollutants)

List of waterbodies impaired by *pollutants* related to *construction activity*, including turbidity, silt/sediment, and nutrients (e.g. nitrogen, phosphorus). This list is a subset of "The Final New York State 2018 Section 303(d) List of Impaired Waters Requiring a TMDL" dated June 2020.

County	Waterbody	Pollutant
Albany	Ann Lee (Shakers) Pond, Stump Pond (1201-0096)	Phosphorus
Albany	Lawsons Lake (1301-0235)	Phosphorus
Allegany	Amity Lake, Saunders Pond (0403-0054)	Phosphorus
Allegany	Andover Pond (0403-0056)	Phosphorus
Bronx	Reservoir No.1/Lake Isle (1702-0075)	Phosphorus
Bronx	Van Cortlandt Lake (1702-0008)	Phosphorus
Broome	Blueberry, Laurel Lakes (1404-0033)	Phosphorus
Broome	Fly Pond, Deer Lake (1404-0038)	Phosphorus
Broome	Minor Tribs to Lower Susquehanna (0603-0044)	Phosphorus
Broome	Whitney Point Lake/Reservoir (0602-0004)	Phosphorus
Cattaraugus	Allegheny River/Reservoir (0201-0023)	Phosphorus
Cattaraugus	Beaver Lake/Alma Pond (0201-0073)	Phosphorus
Cattaraugus	Case Lake (0201-0020)	Phosphorus
Cattaraugus	Linlyco/Club Pond (0201-0035)	Phosphorus
Cayuga	Duck Lake (0704-0025)	Phosphorus
Cayuga	Owasco Inlet, Upper, and tribs (0706-0014)	Nutrients
Chautauqua	Chadakoin River and tribs (0202-0018)	Phosphorus
Chautauqua	Hulburt/Clymer Pond (0202-0079)	Phosphorus
Chautauqua	Middle Cassadaga Lake (0202-0002)	Phosphorus
Clinton	Great Chazy River, Lower, Main Stem (1002-0001)	Silt/Sediment
Columbia	Robinson Pond (1308-0003)	Phosphorus
Cortland	Dean Pond (0602-0077)	Phosphorus
Dutchess	Fallkill Creek (1301-0087)	Phosphorus
Dutchess	Hillside Lake (1304-0001)	Phosphorus
Dutchess	Wappingers Lake (1305-0001)	Phosphorus
Dutchess	Wappingers Lake (1305-0001)	Silt/Sediment
Erie	Beeman Creek and tribs (0102-0030)	Phosphorus
Erie	Delaware Park Pond (0101-0026)	Phosphorus
Erie	Ellicott Creek, Lower, and tribs (0102-0018)	Phosphorus
Erie	Ellicott Creek, Lower, and tribs (0102-0018)	Silt/Sediment
Erie	Green Lake (0101-0038)	Phosphorus
Erie	Little Sister Creek, Lower, and tribs (0104-0045)	Phosphorus
Erie	Murder Creek, Lower, and tribs (0102-0031)	Phosphorus

Erie	Rush Creek and tribs (0104-0018)	Phosphorus
Erie	Scajaquada Creek, Lower, and tribs (0101-0023)	Phosphorus
Erie	Scajaquada Creek, Middle, and tribs (0101-0033)	Phosphorus
Erie	Scajaquada Creek, Upper, and tribs (0101-0034)	Phosphorus
Erie	South Branch Smoke Cr, Lower, and tribs (0101-0036)	Phosphorus
Erie	South Branch Smoke Cr, Lower, and tribs (0101-0036)	Silt/Sediment
Genesee	Bigelow Creek and tribs (0402-0016)	Phosphorus
Genesee	Black Creek, Middle, and minor tribs (0402 0028)	Phosphorus
Genesee	Black Creek, Upper, and minor tribs (0402-0048)	Phosphorus
Genesee	Bowen Brook and tribs (0102-0036)	Phosphorus
Genesee	LeRoy Reservoir (0402-0003)	Phosphorus
Genesee	Mill Pond (0402-0050)	Phosphorus
Genesee	Oak Orchard Cr, Upper, and tribs (0301-0014)	Phosphorus
Genesee	Oatka Creek, Middle, and minor tribs (0402-0031)	Phosphorus
Genessee	Tonawanda Cr, Middle, Main Stem (0102-0002)	Phosphorus
Greene	Schoharie Reservoir (1202-0012)	Silt/Sediment
Greene	Sleepy Hollow Lake (1301-0059)	Silt/Sediment
Herkimer	Steele Creek tribs (1201-0197)	Phosphorus
Herkimer	Steele Creek tribs (1201-0197)	Silt/Sediment
Kings	Hendrix Creek (1701-0006) 18	Nitrogen
Kings	Prospect Park Lake (1701-0196)	Phosphorus
Lewis	Mill Creek/South Branch, and tribs (0801-0200)	Nutrients
Livingston	Christie Creek and tribs (0402-0060)	Phosphorus
Livingston	Conesus Lake (0402-0004)	Phosphorus
Livingston	Mill Creek and minor tribs (0404-0011)	Silt/Sediment
Monroe	Black Creek, Lower, and minor tribs (0402-0033)	Phosphorus
Monroe	Buck Pond (0301-0017)	Phosphorus
Monroe	Cranberry Pond (0301-0016)	Phosphorus
Monroe	Durand, Eastman Lakes (0302-0037)	Phosphorus
Monroe	Lake Ontario Shoreline, Western (0301-0069) 9	Phosphorus
Monroe	Long Pond (0301-0015)	Phosphorus
Monroe	Mill Creek and tribs (0302-0025)	Phosphorus 2
Monroe	Mill Creek/Blue Pond Outlet and tribs (0402-0049)	Phosphorus
Monroe	Minor Tribs to Irondequoit Bay (0302-0038)	Phosphorus
Monroe	Rochester Embayment - East (0302-0002) [9]	Phosphorus
Monroe	Rochester Embayment - West (0301-0068) 9	Phosphorus
Monroe	Shipbuilders Creek and tribs (0302-0026)	Phosphorus 2
Monroe	Thomas Creek/White Brook and tribs (0302-0023)	Phosphorus

Nassau	Bannister Creek/Bay (1701-0380)	Nitrogen
Nassau	Beaver Lake (1702-0152)	Phosphorus
Nassau	Browswere Bay (1701-0383)	Nitrogen
Nassau	Camaans Pond (1701-0052)	Phosphorus
Nassau	East Meadow Brook, Upper, and tribs (1701-0211)	Silt/Sediment
Nassau	East Rockaway Channel (1701-0381)	Nitrogen
Nassau	Glen Cove Creek, Lower, and tribs (1702-0146)	Silt/Sediment
Nassau	Grant Park Pond (1701-0054)	Phosphorus
Nassau	Hempstead Bay, Broad Channel (1701-0032)	Nitrogen
Nassau	Hempstead Lake (1701-0015)	Phosphorus
Nassau	Hewlett Bay (1701-0382)	Nitrogen
Nassau	Hog Island Channel (1701-0220)	Nitrogen
Nassau	Massapequa Creek, Upper, and tribs (1701-0174)	Phosphorus
Nassau	Milburn/Parsonage Creeks, Upp, and tribs (1701-0212)	Phosphorus
Nassau	Reynolds Channel, East (1701-0215) [12]	Nitrogen
Nassau	Reynolds Channel, West (1701-0216) 12	Nitrogen
Nassau	Tidal Tribs to Hempstead Bay (1701-0218)	Nitrogen
Nassau	Tribs (fresh) to East Bay (1701-0204)	Silt/Sediment
Nassau	Tribs (fresh) to East Bay (1701-0204)	Phosphorus
Nassau	Tribs to Smith Pond/Halls Pond (1701-0221)	Phosphorus
Nassau	Woodmere Channel (1701-0219)	Nitrogen
New York	Harlem Meer (1702-0103)	Phosphorus
New York	The Lake in Central Park (1702-0105)	Phosphorus
Niagara	Bergholtz Creek and tribs (0101-0004)	Phosphorus
Niagara	Hyde Park Lake (0101-0030)	Phosphorus
Niagara	Lake Ontario Shoreline, Western (0301-0053) 9	Phosphorus
Niagara	Lake Ontario Shoreline, Western (0301-0072) 9	Phosphorus
Oneida	Ballou, Nail Creeks (1201-0203)	Phosphorus
Onondaga	Ley Creek and tribs (0702-0001) 10	Nutrients (phosphorus)
Onondaga	Minor Tribs to Onondaga Lake (0702-0022) 10	Nutrients (phosphorus)
Onondaga	Minor Tribs to Onondaga Lake (0702-0022) 10	Nitrogen (NH3, NO2)
Onondaga	Onondaga Creek, Lower (0702-0023) 10	Nutrients (phosphorus)
Onondaga	Onondaga Creek, Lower, and tribs (0702-0023)	Turbidity
Onondaga	Onondaga Creek, Middle, and tribs (0702-0004)	Turbidity
Onondaga	Onondaga Creek, Upper, and tribs (0702-0024)	Turbidity
Ontario	Great Brook and minor tribs (0704-0034)	Phosphorus 2
Ontario	Great Brook and minor tribs (0704-0034)	Silt/Sediment

Ontario	Hemlock Lake Outlet and minor tribs (0402-0013)	Phosphorus
Ontario	Honeoye Lake (0402-0032)	Phosphorus
Orange	Brown Pond Reservoir (1303-0013)	Phosphorus
Orange	Lake Washington (1303-0012)	Phosphorus
Orange	Minor Tribs to Middle Wallkill (1306-0061)	Phosphorus
Orange	Monhagen Brook and tribs (1306-0074)	Phosphorus
Orange	Orange Lake (1301-0008) [16]	Phosphorus
Orange	Quaker Creek and tribs (1306-0025)	Phosphorus
Orange	Wallkill River, Middle, Main Stem (1306-0038)	Phosphorus
Orange	Wallkill River, Upper, and Minor tribs (1306-0017)	Phosphorus
Orleans	Glenvwood Lake (0301-0041)	Phosphorus
Orleans	Lake Ontario Shoreline, Western (0301-0070) 9	Phosphorus
Orleans	Lake Ontario Shoreline, Western (0301-0071) 9	Phosphorus
Oswego	Lake Neatahwanta (0701-0018)	Nutrients (phosphorus)
Oswego	Pleasant Lake (0703-0047)	Phosphorus
Putnam	Lost Lake, Putnam Lake (1302-0053)	Phosphorus
Putnam	Minor Tribs to Croton Falls Reservoir (1302-0001)	Phosphorus
Queens	Bergen Basin (1701-0009) 18	Nitrogen
Queens	Jamaica Bay, Eastern, and tribs, Queens (1701-0005) 18	Nitrogen
Queens	Kissena Lake (1702-0258)	Phosphorus
Queens	Meadow Lake (1702-0030)	Phosphorus
Queens	Shellbank Basin (1701-0001) 18	Nitrogen
Queens	Willow Lake (1702-0031)	Phosphorus
Rensselaer	Nassau Lake (1310-0001)	Phosphorus
Rensselaer	Snyders Lake (1301-0043)	Phosphorus
Richmond	Grassmere Lake/Bradys Pond (1701-0357)	Phosphorus
Rockland	Congers Lake, Swartout Lake (1501-0019)	Phosphorus
Rockland	Rockland Lake (1501-0021)	Phosphorus
Saratoga	Ballston Lake (1101-0036)	Phosphorus
Saratoga	Dwaas Kill and tribs (1101-0007)	Phosphorus
Saratoga	Dwaas Kill and tribs (1101-0007)	Silt/Sediment
Saratoga	Lake Lonely (1101-0034)	Phosphorus
Saratoga	Round Lake (1101-0060)	Phosphorus
Saratoga	Tribs to Lake Lonely (1101-0001)	Phosphorus
Schenectady	Collins Lake (1201-0077)	Phosphorus
Schenectady	Duane Lake (1311-0006)	Phosphorus
Schenectady Lake	Mariaville Lake (1201-0113)	Phosphorus
Schuyler	Cayuta Lake (0603-0005)	Phosphorus

Seneca	Reeder Creek and tribs (0705-0074)	Phosphorus
St.Lawrence	Black Lake Outlet, Black Lake (0906-0001)	Phosphorus
St.Lawrence	Fish Creek and minor tribs (0906-0026)	Phosphorus
Steuben	Smith Pond (0502-0012)	Phosphorus
Suffolk	Agawam Lake (1701-0117)	Phosphorus
Suffolk	Big/Little Fresh Ponds (1701-0125)	Phosphorus
Suffolk	Canaan Lake (1701-0018)	Phosphorus
Suffolk	Canaan Lake (1701-0018)	Silt/Sediment
Suffolk	Fresh Pond (1701-0241)	Phosphorus
Suffolk	Great South Bay, East (1701-0039)	Nitrogen
Suffolk	Great South Bay, Middle (1701-0040)	Nitrogen
Suffolk	Great South Bay, West (1701-0173)	Nitrogen
Suffolk	Lake Ronkonkoma (1701-0020)	Phosphorus
Suffolk	Mattituck/Marratooka Pond (1701-0129)	Phosphorus
Suffolk	Mill and Seven Ponds (1701-0113)	Phosphorus
Suffolk	Millers Pond (1702-0013)	Phosphorus
Suffolk	Moriches Bay, East (1701-0305)	Nitrogen
Suffolk	Moriches Bay, West (1701-0038)	Nitrogen
Suffolk	Quantuck Bay (1701-0042)	Nitrogen
Suffolk	Shinnecock Bay and Inlet (1701-0033)	Nitrogen
Suffolk	Tidal Tribs to West Moriches Bay (1701-0312)	Nitrogen
Sullivan	Bodine, Mongomery Lakes (1401-0091)	Phosphorus
Sullivan	Davies Lake (1402-0047)	Phosphorus
Sullivan	Evens Lake (1402-0004)	Phosphorus
Sullivan	Pleasure Lake (1402-0055)	Phosphorus
Sullivan	Swan Lake (1401-0063)	Phosphorus
Tompkins	Cayuga Lake, Southern End (0705-0040)	Phosphorus
Tompkins	Cayuga Lake, Southern End (0705-0040)	Silt/Sediment
Ulster	Ashokan Reservoir (1307-0004)	Silt/Sediment
Ulster	Esopus Creek, Lower, Main Stem (1307-0010) [17]	Turbidity
Ulster	Esopus Creek, Middle, Main Stem (1307-0003) 17	Turbidity
Ulster	Esopus Creek, Upper, and minor tribs (1307-0007)[3]	Silt/Sediment
Ulster	Wallkill River, Lower, Main Stem (1306-0027)	Phosphorus
Warren	Hague Brook and tribs (1006-0006)	Silt/Sediment
Warren	Huddle/Finkle Brooks and tribs (1006-0003)	Silt/Sediment
Warren	Indian Brook and tribs (1006-0002)	Silt/Sediment
Warren	Lake George (1006-0016) and tribs	Silt/Sediment
Warren	Tribs to Lake George, East Shore (1006-0020)	Silt/Sediment
Warren	Tribs to Lake George, Lk.George Village (1006-0008)	Silt/Sediment

Washington	Wood Cr/Champlain Canal and tribs (1005-0036)	Phosphorus
Westchester	Lake Katonah (1302-0136)	Phosphorus
Westchester	Lake Lincolndale (1302-0089)	Phosphorus
Westchester	Lake Meahagh (1301-0053)	Phosphorus
Westchester	Lake Mohegan (1301-0149)	Phosphorus
Westchester	Lake Shenorock (1302-0083)	Phosphorus
Westchester	Mamaroneck River, Lower (1702-0071)	Silt/Sediment
Westchester	Mamaroneck River, Upp, & minor tribs (1702-0123)	Silt/Sediment
Westchester	Saw Mill River (1301-0007)	Phosphorus
Westchester	Saw Mill River, Middle, and tribs (1301-0100)	Phosphorus
Westchester	Sheldrake River (1702-0069)	Phosphorus
Westchester	Sheldrake River (1702-0069)	Silt/Sedimnt
Westchester	Silver Lake (1702-0040)	Phosphorus
Westchester	Teatown Lake (1302-0150)	Phosphorus
Westchester	Truesdale Lake (1302-0054)	Phosphorus
Westchester	Wallace Pond (1301-0140)	Phosphorus

APPENDIX E – List of NYSDEC 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	220 White Plains Road, Suite 110 Tel. (914) 428 - 2505
4	Albany, Columbia, Delaware, Greene, Montgomery, Otsego, Rensselaer, Schenectady and Schoharie	1130 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	5786 WIDEWATERS PARKWAY SYRACUSE, NY 13214-1867 TEL. (315) 426-7438	5786 WIDEWATERS PARKWAY SYRACUSE, NY 13214-1867 TEL. (315) 426-7500
8	CHEMUNG, GENESEE, LIVINGSTON, MONROE, ONTARIO, ORLEANS, SCHUYLER, SENECA, STEUBEN, WAYNE AND YATES	6274 EAST AVON-LIMA ROADAVON, 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	700 DELAWARE AVENUE BUFFALO, NY 14209-2999 TEL. (716) 851-7165	700 DELAWARE AVENUE BUFFALO, NY 14209-2999 TEL. (716) 851-7070

APPENDIX F – SWPPP Preparer Certification Form

The SWPPP Preparer Certification Form required by this permit begins on the following page.

SWPPP Preparer Certification Form

SPDES General Permit for Stormwater Discharges from Construction Activity, GP-0-25-001 (CGP)

(In accordance with CGP Part I.D.2.b., the completed form must be attached to the eNOI and submitted to NYSDEC electronically.)

Project/Site Name:

eNOI Submission ID:

Owner/Operator Name:

Certification Statement – SWPPP Preparer

I hereby certify that the Stormwater Pollution Prevention Plan (SWPPP) has been prepared in accordance with the requirements of GP-0-25-001. I certify under penalty of law that the SWPPP and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SWPPP Preparer First Name | MI | SWPPP Preparer Last Name

Signature | Date

Revised: January 2025

APPENDIX G – MS4 SWPPP Acceptance Form

The MS4 SWPPP Acceptance Form required by this permit begins on the following page.

NEW YORK STATE | Department of Environmental Conservation

MS4 SWPPP Acceptance Form

for construction activities seeking authorization under the

SPDES General Permit for Stormwater Discharges from Construction Activity, GP-0-25-001 (CGP)

(In accordance with CGP Part I.D.2.b., the completed form must be attached to the eNOI and submitted to NYSDEC electronically.)

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 Operator:
12. MS4 SPDES Permit Identification Number: NYR20A
13. Street Address:
14. City/State/Zip:
15. Telephone Number:

MS4 SWPPP Acceptance Form - continued
V. Certification Statement - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative
I hereby certify that the final Stormwater Pollution Prevention Plan (SWPPP) for the construction project identified in section II. of this form has been reviewed and meets the substantive requirements in the SPDES General Permit for Stormwater Discharges from Construction Activity, GP-0-25-001 (CGP). Note: The MS4 Operator, 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 Operator does not relieve the owner/operator or their SWPPP preparer of responsibility or liability for errors or omissions in the plan.
Printed Name[1]:
Title/Position:
Signature:
Date:
VI. Additional Information

[1] Printed name of the principal executive officer or ranking elected official for the MS4 Operator or their duly authorized representative in accordance with CGP Part VII.J.2.

APPENDIX H – NYCDEP SWPPP Acceptance/Approval Form

The City of New York Department of Environmental Protection (NYCDEP) SWPPP Acceptance/Approval form required by this permit begins on the following page.

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Bureau of Environmental Planning and Analysis
59-17 Junction Blvd., 9th Floor; Flushing, NY 11373

SWPPP Acceptance/Approval

Application Number:

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/Approval
8. SWPPP Reviewed by:
9. Title/Position: /
10. Date Final SWPPP Reviewed and Accepted:
11. Acceptance/Approval Expiration Date:
IV. Regulated MS4 Information for projects that require coverage under the NY State Pollution Discharge Elimination System General Permit for Stormwater Discharges from Construction Activity
12. Name of MS4: *CITY OF NEW YORK*
13. MS4 SPDES Permit Identification Number: *NY-0287890*
14. Contact Person:
15. Street Address: *59-17 Junction Blvd. 9th Floor*
16. City/State/Zip: *Flushing, NY 11373*
17. Telephone Number:

Projects in the MS4 area must submit a copy of this SWPPP Acceptance with a Notice of Intent for coverage under the NY SPDES General Permit for Stormwater Discharges from Construction Activity to: NYS Department of Environmental Conservation, Division of Water; 625 Broadway, 4th Floor; Albany, New York 12233-3505.

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Bureau of Environmental Planning and Analysis
59-17 Junction Blvd., 9th Floor; Flushing, NY 11373

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. Conditions of Acceptance/Approval and Additional Information

Projects in the MS4 area must submit a copy of this SWPPP Acceptance with a Notice of Intent for coverage under the NY SPDES General Permit for Stormwater Discharges from Construction Activity to: NYS Department of Environmental Conservation, Division of Water; 625 Broadway, 4th Floor; Albany, New York 12233-3505.

APPENDIX I – MS4 No Jurisdiction Form

The MS4 No Jurisdiction Form required by this permit begins on the following page.

NEW YORK STATE | Department of Environmental Conservation

MS4 No Jurisdiction Form

for construction activities seeking authorization under the

SPDES General Permit for Stormwater Discharges from Construction Activity, GP-0-25-001 (CGP)

(In accordance with CGP Part I.D.2.b., the completed form must be attached to the eNOI and submitted to NYSDEC electronically.)

I. Project Owner/Operator Information

a. Owner/Operator Name:

b. Contact Person:

c. Street Address:

d. City/State/Zip:

II. Project Site Information

a. Project/Site Name:

b. Street Address:

c. City/State/Zip:

d. eNOI Submission ID:

III. Traditional Land Use Control MS4 Operator Information

a. Name of MS4 Operator:

b. MS4 SPDES Permit ID Number: NYR20A

c. Street Address:

d. City/State/Zip:

e. Telephone Number:

IV. Certification Statement

In accordance with CGP Part I.D.2.b.ii.3., I hereby certify that the Traditional Land Use Control MS4 Operator identified in section III. of this form does not have review authority over the construction project identified in section II. of this form, which is owned/operated by the entity identified in section I. of this form. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

a. Printed name of the principal executive officer or ranking elected official for the MS4 Operator or their duly authorized representative in accordance with CGP Part VII.J.2.:

b. Title/Position:

c. Signature:

d. Date:

APPENDIX J – Owner/Operator Certification Form

The Owner/Operator Certification Form required by this permit begins on the following page.

NEW YORK STATE | Department of Environmental Conservation

Owner/Operator Certification Form

SPDES General Permit for Stormwater Discharges from Construction Activity, GP-0-25-001 (CGP)

(In accordance with CGP Part I.D.2.b. or Part I.F.2. and 3., the completed form must be attached to the eNOI or the Request to Continue Coverage, and submitted to NYSDEC electronically.

Project/Site Name: _____

eNOI Submission ID: _____

eNOI Submitted by: ☐ **Owner/Operator** ☐ **SWPPP Preparer** ☐ **Other**

Certification Statement - Owner/Operator

I hereby certify that I read, and will comply with, the GP-0-25-001 permit requirements. I understand that authorization to discharge under the permit for the project/site named above is dependent on receipt of a Letter of Authorization (LOA) or a Letter of Continued Coverage (LOCC) from the New York State Department of Environmental Conservation (NYSDEC) in accordance with CGP Part I.D.3.b. or Part I.F.4. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Owner/Operator First Name MI Owner/Operator Last Name

_____

Signature

_____

Date

Revised: January 2025