Appendix A:
NYSDEC SPDES General Permit GP-0-20-001

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NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SPDES GENERAL PERMIT
FOR STORMWATER DISCHARGES

From

CONSTRUCTION ACTIVITY

Permit No. GP- 0-20-001

Issued Pursuant to Article 17, Titles 7, 8 and Article 70

of the Environmental Conservation Law

Effective Date: January 29, 2020 Expiration Date: January 28, 2025

John J. Ferguson

Chief Permit Administrator

1-23-20

Authorized Signature Date

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

PREFACE

Pursuant to Section 402 of the Clean Water Act ("CWA"), stormwater *discharges* from certain *construction activities* are unlawful unless they are authorized by a *National Pollutant Discharge Elimination System ("NPDES")* permit or by a state permit program. New York 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, 8 and Article 70.

An *owner or operator* of a *construction activity* that is eligible for coverage under this permit must obtain coverage prior to the *commencement of construction activity*. Activities that fit the definition of "*construction activity*", as defined under 40 CFR 122.26(b)(14)(x), (15)(i), and (15)(ii), constitute construction of a *point source* and therefore, pursuant to ECL section 17-0505 and 17-0701, the *owner or operator* must have coverage under a SPDES permit prior to *commencing construction activity*. 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 GENERAL PERMIT FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES

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Part 1. PERMIT COVERAGE AND LIMITATIONS

A. Permit Application

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

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

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

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

B. Effluent Limitations Applicable to Discharges from Construction Activities

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

1. Erosion and Sediment Control Requirements - The *owner or operator* must select, design, install, implement and maintain control measures to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. The selection, design, installation, implementation, and maintenance of these control measures must meet the non-numeric effluent limitations in Part I.B.1.(a) – (f) of this permit and be in accordance with the New York State Standards and Specifications for Erosion and Sediment Control, dated 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 the *Stormwater Pollution Prevention Plan* ("SWPPP") the reason(s) for the

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

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

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

   (ii) Control stormwater *discharge*s, including both peak flowrates and total stormwater volume, to *minimize* channel and *streambank* erosion and scour in the immediate vicinity of the *discharge* points;

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

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

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

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

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

   (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 temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within fourteen (14) days from the date the current soil disturbance activity ceased. For construction sites that *directly discharge* to one of the 303(d) segments

listed in Appendix E or is located in one of the watersheds listed in Appendix C, the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven (7) days from the date the current soil disturbance activity ceased. See Appendix A for definition of *Temporarily Ceased*.

c. **Dewatering**. *Discharges* from *dewatering* activities, including *discharges* from *dewatering* of trenches and excavations, must be managed by appropriate control measures.

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

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

(ii) *Minimize* the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, 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. **Prohibited *Discharges*.** The following *discharges* are prohibited:

(i) Wastewater from washout of concrete;

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

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

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

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

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

C. Post-construction Stormwater Management Practice Requirements

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

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

a. Sizing Criteria for New Development

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

(ii) Minimum RRv and Treatment of Remaining Total WQv: Construction activities that cannot meet the criteria in Part I.C.2.a.(i) of this permit due to site limitations shall direct runoff from all newly constructed impervious areas to a RR technique or standard SMP with RRv capacity unless infeasible. The specific site limitations that prevent the reduction of 100% of the WQv shall be documented in the SWPPP.

For each impervious area that is not directed to a RR technique or standard SMP with RRv capacity, the SWPPP must include documentation which demonstrates that all options were considered and for each option explains why it is considered infeasible.

In no case shall the runoff reduction achieved from the newly constructed impervious areas be less than the Minimum RRv as calculated using the criteria in Section 4.3 of the Design Manual. The remaining portion of the total WQv that cannot be reduced shall be treated by application of standard SMPs.

(iii) Channel Protection Volume ("Cpv"): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event; remaining after runoff reduction. The Cpv requirement does not apply when:
(1) Reduction of the entire Cpv is achieved by application of runoff reduction techniques or infiltration systems, or
(2) The site discharges directly to tidal waters, or fifth order or larger streams.

(iv) *Overbank* Flood Control Criteria ("Qp"): Requires storage to attenuate the post-development 10-year, 24-hour peak discharge rate (Qp) to predevelopment rates. The Qp requirement does not apply when:
(1) the site discharges directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

(v) Extreme Flood Control Criteria ("Qf"): Requires storage to attenuate the post-development 100-year, 24-hour peak discharge rate (Qf) to predevelopment rates. The Qf requirement does not apply when:
(1) the site discharges directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

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

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

calculated in accordance with the criteria in Section 10.3 of the Design Manual.

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

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

(iii) Channel Protection Volume (Cpv): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event; remaining after runoff reduction. The Cpv requirement does not apply when:
(1) Reduction of the entire Cpv is achieved by application of runoff reduction techniques or infiltration systems, or
(2) The site *discharge*s directly to tidal waters, or fifth order or larger streams.

(iv) *Overbank* Flood Control Criteria (Qp): Requires storage to attenuate the post-development 10-year, 24-hour peak *discharge* rate (Qp) to predevelopment rates. The Qp requirement does not apply when:
(1) the site *discharge*s directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

(v) Extreme Flood Control Criteria (Qf): Requires storage to attenuate the post-development 100-year, 24-hour peak *discharge* rate (Qf) to predevelopment rates. The Qf requirement does not apply when:
(1) the site *discharge*s directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

c. Sizing Criteria for Redevelopment Activity

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

(1) Reduce the existing *impervious cover* by a minimum of 25% of the total disturbed, *impervious area*. The Soil Restoration criteria in Section 5.1.6 of the Design Manual must be applied to all newly created pervious areas, or

(2) Capture and treat a minimum of 25% of the WQv from the disturbed, *impervious area* by the application of standard SMPs; or reduce 25% of the WQv from the disturbed, *impervious area* by the application of RR techniques or standard SMPs with RRv capacity., or

(3) Capture and treat a minimum of 75% of the WQv from the disturbed, *impervious area* as well as any additional runoff from tributary areas by application of the alternative practices discussed in Sections 9.3 and 9.4 of the Design Manual., or

(4) Application of a combination of 1, 2 and 3 above that provide a weighted average of at least two of the above methods. Application of this method shall be in accordance with the criteria in Section 9.2.1(B) (IV) of the Design Manual.

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

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

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

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

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

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

D. Maintaining Water Quality

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

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

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

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

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

If there is evidence indicating that despite compliance with the terms and conditions of this general permit it is demonstrated that the stormwater *discharge*s authorized by this permit are causing or contributing to a violation of *water quality standards*, or if the Department determines that a modification of the permit is necessary to prevent a violation of *water quality standards*, the authorized *discharge*s will no longer be eligible for coverage under this permit. The Department may require the *owner or operator* to obtain an individual SPDES permit to continue discharging.

E. Eligibility Under This General Permit

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

2. Except for non-stormwater *discharges* explicitly listed in the next paragraph, this permit only authorizes stormwater *discharge*s; including stormwater runoff, snowmelt runoff, and surface runoff and drainage, from *construction activities*.

3. Notwithstanding paragraphs E.1 and E.2 above, the following non-stormwater discharges are authorized by this permit: those 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"; waters to which other components have not been added that are used to control dust in accordance with the SWPPP; and uncontaminated *discharge*s from *construction site* de-watering operations. All non-stormwater discharges must be identified in the SWPPP. Under all circumstances, the *owner or operator* must still comply with *water quality standards* in Part I.D of this permit.

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

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

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

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

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

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

4. *Construction activities* or *discharges* from *construction activities* that may adversely affect an *endangered or threatened species* unless the *owner or*

operator has obtained a permit issued pursuant to 6 NYCRR Part 182 for the project or the Department has issued a letter of non-jurisdiction for the project. All documentation necessary to demonstrate eligibility shall be maintained on site in accordance with Part II.D.2 of this permit;

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

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

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

   b. Which are undertaken on land with no existing *impervious cover*; and

   c. Which disturb one (1) or more acres of land designated on the current United States Department of Agriculture ("USDA") Soil Survey as Soil Slope Phase "D", (provided the map unit name 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.

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

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

   b. Which are undertaken on land with no existing *impervious cover*; and

   c. Which disturb two (2) or more acres of land designated on the current USDA Soil Survey as Soil Slope Phase "D" (provided the map unit name 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.

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

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

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

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

   c. Documentation of satisfactory compliance with Section 106 of the National Historic Preservation Act for a coterminous project area:

      (i) No Affect
      (ii) No Adverse Affect
      (iii) Executed Memorandum of Agreement, or

   d. Documentation that:

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

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

Part II. PERMIT COVERAGE

A. How to Obtain Coverage

1. An *owner or operator* of a *construction activity* that is not subject to the requirements of a regulated, traditional land use control MS4 must first prepare a SWPPP in accordance with all applicable requirements of this permit and then submit a completed Notice of Intent (NOI) to the Department to be authorized to discharge under this permit.

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

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

B. Notice of Intent (NOI) Submittal

1. Prior to December 21, 2020, an owner or operator shall use either the electronic (eNOI) or paper version of the NOI that the Department prepared. Both versions of the NOI are located on the Department's website (http://www.dec.ny.gov/). The paper version of the NOI shall be signed in accordance with Part VII.H. of this permit and submitted to the following address:

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

2. Beginning December 21, 2020 and in accordance with EPA's 2015 NPDES Electronic Reporting Rule (40 CFR Part 127), the *owner or operator* must submit the NOI electronically using the *Department's* online NOI.

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

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

C. Permit Authorization

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

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

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

   b. where required, all necessary Department permits subject to the *Uniform Procedures Act ("UPA")* (see 6 NYCRR Part 621), or the equivalent from another New York State agency, have been obtained, unless otherwise notified by the Department pursuant to 6 NYCRR 621.3(a)(4). *Owners or operators* of *construction activities* that are required to obtain *UPA* permits

must submit a preliminary SWPPP to the appropriate DEC Permit Administrator at the Regional Office listed in Appendix F at the time all other necessary *UPA* permit applications are submitted. The preliminary SWPPP must include sufficient information to demonstrate that the *construction activity* qualifies for authorization under this permit,

   c. the final SWPPP has been prepared, and

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

3. An *owner or operator* that has satisfied the requirements of Part II.C.2 above will be authorized to *discharge* stormwater from their *construction activity* in accordance with the following schedule:

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

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

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

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

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

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

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

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

D. General Requirements For Owners or Operators With Permit Coverage

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

2. The *owner or operator* shall maintain a copy of the General Permit (GP-0-20-001), NOI, *NOI Acknowledgment Letter*, SWPPP, MS4 SWPPP Acceptance form, inspection reports, responsible contractor's or subcontractor's certification statement (see Part III.A.6.), and all documentation necessary to demonstrate eligibility with this permit at the *construction site* until all disturbed areas have achieved *final stabilization* and the NOT has been submitted to the Department. The documents must be maintained in a secure location, such as a job trailer, on-site construction office, or mailbox with lock. The secure location must be accessible during normal business hours to an individual performing a compliance inspection.

3. The *owner or operator* of a *construction activity* shall not disturb greater than five (5) acres of soil at any one time without prior written authorization from the Department or, in areas under the jurisdiction of a *regulated, traditional land*

use control MS4, the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*). At a minimum, the *owner or operator* must comply with the following requirements in order to be authorized to disturb greater than five (5) acres of soil at any one time:

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

b. In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven (7) days from the date the current soil disturbance activity ceased. The soil stabilization measures selected shall be in conformance with the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016.

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

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

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

4. In accordance with statute, regulations, and the terms and conditions of this permit, the Department may suspend or revoke an *owner's or operator's* coverage under this permit at any time if the Department determines that the SWPPP does not meet the permit requirements or consistent with Part VII.K..

5. Upon a finding of significant non-compliance with the practices described in the SWPPP or violation of this permit, the Department may order an immediate stop to all activity at the site until the non-compliance is remedied. The stop work order shall be in writing, describe the non-compliance in detail, and be sent to the *owner or operator*.

6. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4*, the *owner or operator* shall notify the

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

E. Permit Coverage for Discharges Authorized Under GP-0-15-002

1. Upon renewal of SPDES General Permit for Stormwater Discharges from *Construction Activity* (Permit No. GP-0-15-002), an *owner or operator* of *a construction activity* with coverage under GP-0-15-002, as of the effective date of GP- 0-20-001, shall be authorized to *discharge* in accordance with GP- 0-20-001, unless otherwise notified by the Department.

   An *owner or operator* may continue to implement the technical/design components of the post-construction stormwater management controls provided that such design was done in conformance with the technical standards in place at the time of initial project authorization. However, they must comply with the other, non-design provisions of GP-0-20-001.

F. Change of Owner or Operator

1. 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. 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.

2. Once the new *owner or operator* obtains permit coverage, the original *owner or operator* shall then submit a completed NOT with the name and permit identification number of the new *owner or operator* to the Department at the address in Part II.B.1. of this permit. If the original *owner or operator* maintains ownership of a portion of the *construction activity* and will disturb soil, they must maintain their coverage under the permit.

3. Permit coverage for the new *owner or operator* will be effective as of the date the Department receives a complete NOI, provided the original *owner or*

operator was not subject to a sixty (60) business day authorization period that has not expired as of the date the Department receives the NOI from the new *owner or operator*.

Part III. STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

A. General SWPPP Requirements

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

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

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

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

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

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

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

d. to document the final construction conditions.

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

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

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

   "I hereby certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the *qualified inspector* during a site inspection. I also understand that the *owner or operator* must comply with

the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater *discharge*s from *construction activities* and that it is unlawful for any person to cause or contribute to a violation of *water quality standards*. Furthermore, I am aware that there are significant penalties for submitting false information, that I do not believe to be true, including the possibility of fine and imprisonment for knowing violations"

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

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

B. Required SWPPP Contents

1. Erosion and sediment control component - All SWPPPs prepared pursuant to this permit shall include erosion and sediment control practices designed in conformance with the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016. Where erosion and sediment control practices are not designed in conformance with the design criteria included in the technical standard, the *owner or operator* must demonstrate *equivalence* to the technical standard. At a minimum, the erosion and sediment control component of the SWPPP shall include the following:

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

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

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

d. A construction phasing plan and sequence of operations describing the intended order of *construction activities*, including clearing and grubbing, excavation and grading, utility and infrastructure installation and any other activity at the site that results in soil disturbance;

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

f. A temporary and permanent soil stabilization plan that meets the requirements of this general permit and the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016, for each stage of the project, including initial land clearing and grubbing to project completion and achievement of *final stabilization*;

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

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

i. A maintenance inspection schedule for the contractor(s) identified in Part III.A.6. of this permit, to ensure continuous and effective operation of the erosion and sediment control practices. The maintenance inspection

schedule shall be in accordance with the requirements in the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016;

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

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

l. Identification of any elements of the design that are not in conformance with the design criteria in the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016. Include the reason for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

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

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

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

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

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

c. A Stormwater Modeling and Analysis Report that includes:
   (i) Map(s) showing pre-development conditions, including watershed/subcatchments boundaries, flow paths/routing, and design points;

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

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

   (iv) Summary table, with supporting calculations, which demonstrates that each post-construction stormwater management practice has been designed in conformance with the *sizing criteria* included in the Design Manual;

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

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

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

e. Infiltration test results, when required; and

f. An operations and maintenance plan that includes inspection and maintenance schedules and actions to ensure continuous and effective operation of each post-construction stormwater management practice. The plan shall identify the entity that will be responsible for the long term operation and maintenance of each practice.

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

C. Required SWPPP Components by Project Type

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

Part IV. INSPECTION AND MAINTENANCE REQUIREMENTS

A. General Construction Site Inspection and Maintenance Requirements

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

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

B. Contractor Maintenance Inspection Requirements

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

begin implementing corrective actions within one business day and shall complete the corrective actions in a reasonable time frame.

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

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

C. Qualified Inspector Inspection Requirements

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

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

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

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

   a. the construction of a single family residential subdivision with 25% or less *impervious cover* at total site build-out that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located

in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E;

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

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

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

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

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

   b. For construction sites where soil disturbance activities are on-going and the *owner or operator* has received authorization in accordance with Part II.D.3 to disturb greater than five (5) acres of soil at any one time, the *qualified inspector* shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

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

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

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

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

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

a. Date and time of inspection;

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

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

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

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

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

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

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

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

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

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

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

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

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

Part V. TERMINATION OF PERMIT COVERAGE

A. Termination of Permit Coverage

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

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

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

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

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

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

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

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

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

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

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

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

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

Part VI. REPORTING AND RETENTION RECORDS

A. Record Retention

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

B. Addresses

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

Part VII. STANDARD PERMIT CONDITIONS

A. Duty to Comply

The *owner or operator* must comply with all conditions of this permit. All contractors and subcontractors associated with the project must comply with the terms of the SWPPP. Any non-compliance with this permit constitutes a violation of the Clean Water

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

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

B. Continuation of the Expired General Permit

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

C. Enforcement

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

D. Need to Halt or Reduce Activity Not a Defense

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

E. Duty to Mitigate

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

F. Duty to Provide Information

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

G. Other Information

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

H. Signatory Requirements

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

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

   (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or

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

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

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

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

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

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

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

   b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field,

superintendent, position of *equivalent* responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position) and,

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

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

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

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

I. Property Rights

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

J. Severability

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

K. Requirement to Obtain Coverage Under an Alternative Permit

1. The Department may require any owner or operator authorized by this permit to apply for and/or obtain either an individual SPDES permit or another SPDES general permit. When the Department requires any discharger authorized by a general permit to apply for an individual SPDES permit, it shall notify the discharger in writing that a permit application is required. This notice shall

include a brief statement of the reasons for this decision, an application form, a statement setting a time frame for the owner or operator to file the application for an individual SPDES permit, and a deadline, not sooner than 180 days from owner or operator receipt of the notification letter, whereby the authorization to discharge under this general permit shall be terminated. Applications must be submitted to the appropriate Permit Administrator at the Regional Office. The Department may grant additional time upon demonstration, to the satisfaction of the Department, that additional time to apply for an alternative authorization is necessary or where the Department has not provided a permit determination in accordance with Part 621 of this Title.

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

L. Proper Operation and Maintenance

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

M. Inspection and Entry

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

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

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

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

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

N. Permit Actions

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

O. Definitions

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

P. Re-Opener Clause

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

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

Q. Penalties for Falsification of Forms and Reports

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

R. Other Permits

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

APPENDIX A – Acronyms and Definitions

Acronyms

APO – Agency Preservation Officer
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)
DOW – Division of Water
EAF – Environmental Assessment Form
ECL - 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
OPRHP – Office of Parks, Recreation and Historic Places
Qf – Extreme Flood
Qp – Overbank Flood
RRv – Runoff Reduction Volume
RWE – Regional Water Engineer
SEQR – State Environmental Quality Review
SEQRA - State Environmental Quality Review Act
SHPA – State Historic Preservation Act
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.

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 –means the land for construction of a barn, *agricultural building*, silo, stockyard, pen or other structural practices identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State" prepared by the Department in cooperation with agencies of New York Nonpoint Source Coordinating Committee (dated June 2007).

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

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

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

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

Construction Site – means the land area where *construction activity(ies)* will occur. See definition for "*Commence (Commencement of) Construction Activities"* and "*Larger Common Plan of Development or Sale" also.*

Dewatering – means the act of draining rainwater and/or groundwater from building foundations, vaults or excavations/trenches.

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

and the first point of discharge from the separate storm sewer system is the specific surface waterbody.

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

Embankment –means an earthen or rock slope that supports a road/highway.

Endangered or Threatened Species – see 6 NYCRR Part 182 of the Department's rules and regulations for definition of terms and requirements.

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

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

Final Stabilization - means that all soil disturbance activities have ceased and a uniform, perennial vegetative cover with a density of eighty (80) percent over the entire pervious surface has been established; or other equivalent stabilization measures, such as permanent landscape mulches, rock rip-rap or washed/crushed stone have been applied on all disturbed areas that are not covered by permanent structures, concrete or pavement.

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

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

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

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

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

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

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

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

Municipal Separate Storm Sewer (MS4) - a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

(i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to surface waters of the State*;*
(ii) Designed or used for collecting or conveying stormwater;
(iii) Which is not a *combined sewer*; and
(iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

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

Natural Buffer –means an undisturbed area with natural cover running along a surface water (e.g. wetland, stream, river, lake, etc.).

New Development – means 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.

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

Nonpoint Source - means 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 –means flow events that exceed the capacity of the stream channel and spill out into the adjacent floodplain.

Owner or Operator - means 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 conditions.

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

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

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

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

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

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

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

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

Regulated, Traditional Land Use Control MS4 - means a city, town or village with land use control authority that is 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).

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

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

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

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

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

Steep Slope – means land area designated on the current United States Department of Agriculture ("USDA") Soil Survey as Soil Slope Phase "D", (provided the map unit name 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.

Streambank – as used in this permit, means 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) – means 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 post-construction stormwater management controls); and identifies procedures the *owner or operator* will implement to comply with the terms and conditions 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 – means that an existing disturbed area will not be disturbed again within 14 calendar days of the previous soil disturbance.

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

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

Trained Contractor - means an employee from the contracting (construction) company, identified in Part III.A.6., that has received four (4) hours of Department endorsed

training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the *trained contractor* shall receive four (4) hours of training every three (3) years.

It can also mean an employee from the contracting (construction) company, identified in Part III.A.6., that meets the *qualified inspector* qualifications (e.g. licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, 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* is responsible for the day to day implementation of the SWPPP.

Uniform Procedures Act (UPA) Permit - means a permit required under 6 NYCRR Part 621 of the Environmental Conservation Law (ECL), Article 70.

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

APPENDIX B – Required SWPPP Components by Project Type

Table 1
Construction Activities that Require the Preparation of a SWPPP That Only Includes Erosion and Sediment Controls

The following construction activities that involve soil disturbances of one (1) or more acres of land, but less than five (5) acres: • Single family home not located in one of the watersheds listed in Appendix C or not *directly discharging* to one of the 303(d) segments listed in Appendix E • Single family residential subdivisions with 25% or less impervious cover at total site build-out and not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E • Construction of a barn or other *agricultural building*, silo, stock yard or pen.
The following construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land: All construction activities located in the watersheds identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.
The following construction activities that involve soil disturbances of one (1) or more acres of land: • Installation of underground, linear utilities; such as gas lines, fiber-optic cable, cable TV, electric, telephone, sewer mains, and water mains • Environmental enhancement projects, such as wetland mitigation projects, stormwater retrofits and stream restoration projects • Pond construction • Linear bike paths running through areas with vegetative cover, including bike paths surfaced with an impervious cover • Cross-country ski trails and walking/hiking trails • Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are not part of residential, commercial or institutional development; • Sidewalk, bike path or walking path projects, 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. • Slope stabilization projects • Slope flattening that changes the grade of the site, but does not significantly change the runoff characteristics

Table 1 (Continued) 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:

- Spoil areas that will be covered with vegetation
- Vegetated open space projects (i.e. recreational parks, lawns, meadows, fields, downhill ski trails) excluding projects that *alter hydrology from pre to post development* conditions,
- Athletic fields (natural grass) that do not include the construction or reconstruction of *impervious area* and do not *alter hydrology from pre to post development* conditions
- Demolition project where vegetation will be established, and no redevelopment is planned
- Overhead electric transmission line project that does not include the construction of permanent access roads or parking areas surfaced with *impervious cover*
- Structural practices as identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State", excluding projects that involve soil disturbances of greater than five acres and construction activities that include the construction or reconstruction of impervious area
- 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

Table 2
Construction Activities that Require the Preparation of a SWPPP That Includes Post-construction Stormwater Management Practices

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

- Single family home located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family 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 E
- Single family residential subdivisions that involve soil disturbances of between one (1) and five (5) acres of land with greater than 25% impervious cover at total site build-out
- Single family residential subdivisions that involve soil disturbances of five (5) or more acres of land, and single family residential subdivisions that involve soil disturbances of less than five (5) acres that are part of a larger common plan of development or sale that will ultimately disturb five or more acres of land
- Multi-family residential developments; includes duplexes, townhomes, condominiums, senior housing complexes, apartment complexes, and mobile home parks
- 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) and structural practices as identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State" that include the construction or reconstruction of *impervious area*, excluding projects that involve soil disturbances of less than five acres.
- Golf courses
- Institutional development; includes hospitals, prisons, schools and colleges
- Industrial facilities; includes industrial parks
- Landfills
- Municipal facilities; includes highway garages, transfer stations, office buildings, POTW's, water treatment plants, and water storage tanks
- Office complexes
- Playgrounds that include the construction or reconstruction of impervious area
- Sports complexes
- Racetracks; includes racetracks with earthen (dirt) surface
- Road construction or reconstruction, including roads constructed as part of the construction activities listed in Table 1

Table 2 (Continued)

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

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

- Parking lot construction or reconstruction, including parking lots constructed as part of the construction activities listed in Table 1
- Athletic fields (natural grass) that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Athletic fields with artificial turf
- Permanent access roads, parking areas, substations, compressor stations and well drilling pads, surfaced with *impervious cover,* and constructed as part of an over-head electric transmission line project, wind-power project, cell tower project, oil or gas well drilling project, sewer or water main project or other linear utility project
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are part of a residential, commercial or institutional development
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are part of a highway construction or reconstruction project
- All other construction activities that include the construction or reconstruction of *impervious area* or *alter the hydrology from pre to post development* conditions, and are not listed in Table 1

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 post-construction stormwater management practices designed in conformance with the Enhanced Phosphorus Removal Standards included in the technical standard, New York State Stormwater Management Design Manual ("Design Manual").

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

Figure 1 - New York City Watershed East of the Hudson

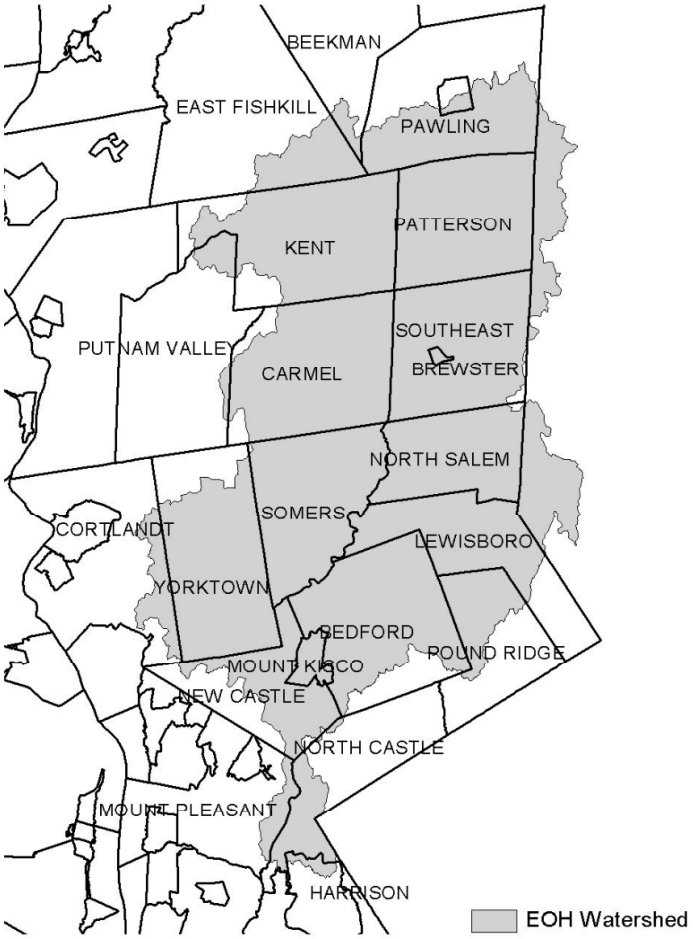


Figure 2 - Onondaga Lake Watershed

Figure 3 - Greenwood Lake Watershed

Figure 4 - Oscawana Lake Watershed

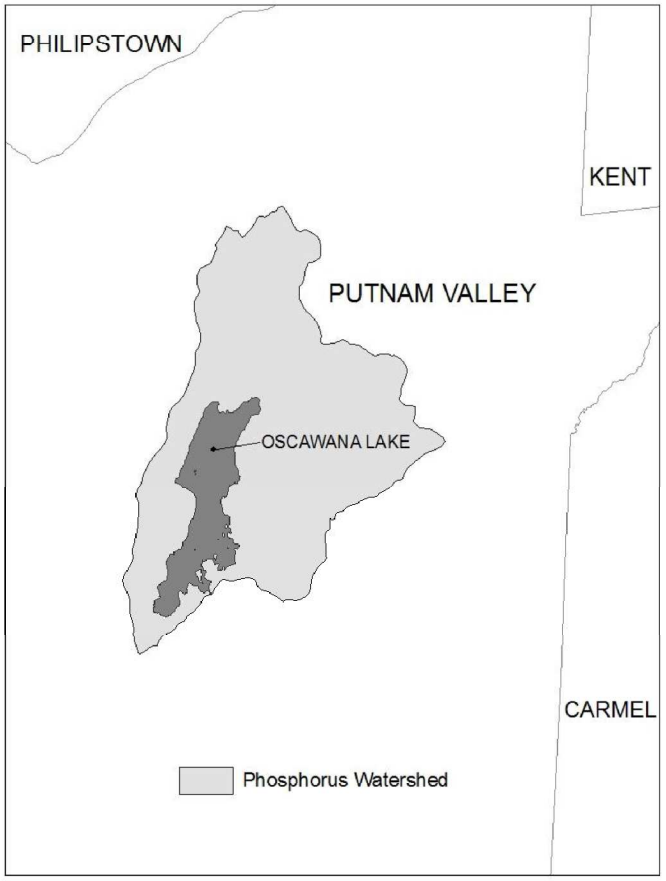
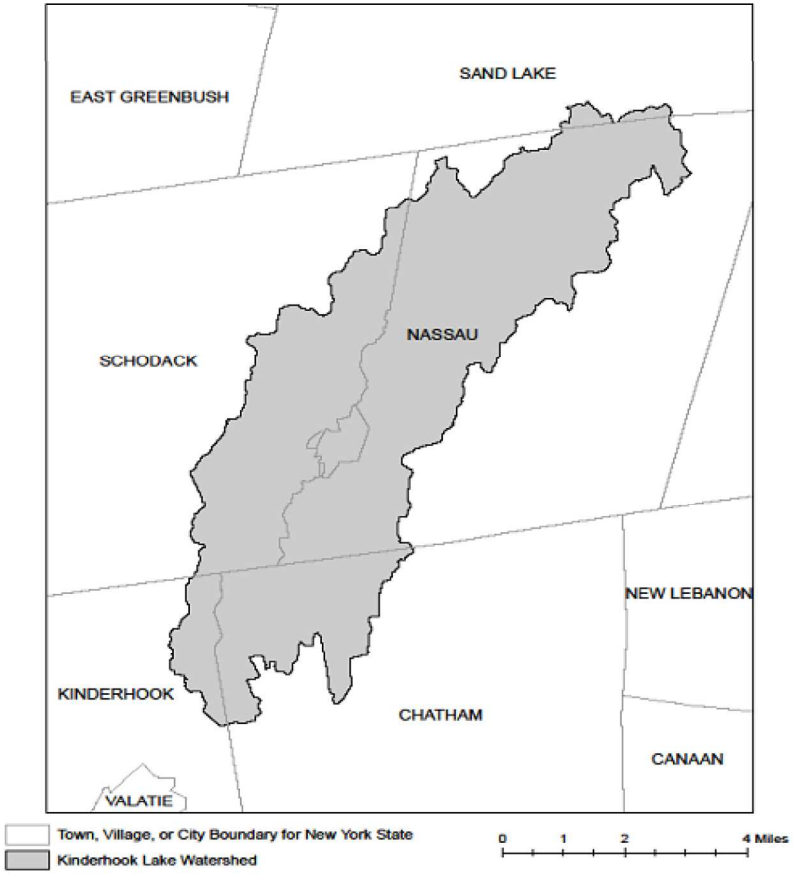


Figure 5 - Kinderhook Lake Watershed



APPENDIX D – Watersheds with Lower Disturbance Threshold

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

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

APPENDIX E – 303(d) Segments Impaired by Construction Related Pollutant(s)

List of 303(d) segments impaired by pollutants related to *construction activity* (e.g. silt, sediment or nutrients). The list was developed using "The Final New York State 2016 Section 303(d) List of Impaired Waters Requiring a TMDL/Other Strategy" dated November 2016. *Owners or operators* of single family home and single family residential subdivisions with 25% or less total impervious cover at total site build-out that involve soil disturbances of one or more acres of land, but less than 5 acres, and *directly discharge* to one of the listed segments below shall prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the New York State Stormwater Management Design Manual ("Design Manual"), dated January 2015.

COUNTY	WATERBODY	POLLUTANT
Albany	Ann Lee (Shakers) Pond, Stump Pond	Nutrients
Albany	Basic Creek Reservoir	Nutrients
Allegany	Amity Lake, Saunders Pond	Nutrients
Bronx	Long Island Sound, Bronx	Nutrients
Bronx	Van Cortlandt Lake	Nutrients
Broome	Fly Pond, Deer Lake, Sky Lake	Nutrients
Broome	Minor Tribs to Lower Susquehanna (north)	Nutrients
Broome	Whitney Point Lake/Reservoir	Nutrients
Cattaraugus	Allegheny River/Reservoir	Nutrients
Cattaraugus	Beaver (Alma) Lake	Nutrients
Cattaraugus	Case Lake	Nutrients
Cattaraugus	Linlyco/Club Pond	Nutrients
Cayuga	Duck Lake	Nutrients
Cayuga	Little Sodus Bay	Nutrients
Chautauqua	Bear Lake	Nutrients
Chautauqua	Chadakoin River and tribs	Nutrients
Chautauqua	Chautauqua Lake, North	Nutrients
Chautauqua	Chautauqua Lake, South	Nutrients
Chautauqua	Findley Lake	Nutrients
Chautauqua	Hulburt/Clymer Pond	Nutrients
Clinton	Great Chazy River, Lower, Main Stem	Silt/Sediment
Clinton	Lake Champlain, Main Lake, Middle	Nutrients
Clinton	Lake Champlain, Main Lake, North	Nutrients
Columbia	Kinderhook Lake	Nutrients
Columbia	Robinson Pond	Nutrients
Cortland	Dean Pond	Nutrients

Dutchess	Fall Kill and tribs	Nutrients
Dutchess	Hillside Lake	Nutrients
Dutchess	Wappingers Lake	Nutrients
Dutchess	Wappingers Lake	Silt/Sediment
Erie	Beeman Creek and tribs	Nutrients
Erie	Ellicott Creek, Lower, and tribs	Silt/Sediment
Erie	Ellicott Creek, Lower, and tribs	Nutrients
Erie	Green Lake	Nutrients
Erie	Little Sister Creek, Lower, and tribs	Nutrients
Erie	Murder Creek, Lower, and tribs	Nutrients
Erie	Rush Creek and tribs	Nutrients
Erie	Scajaquada Creek, Lower, and tribs	Nutrients
Erie	Scajaquada Creek, Middle, and tribs	Nutrients
Erie	Scajaquada Creek, Upper, and tribs	Nutrients
Erie	South Branch Smoke Cr, Lower, and tribs	Silt/Sediment
Erie	South Branch Smoke Cr, Lower, and tribs	Nutrients
Essex	Lake Champlain, Main Lake, South	Nutrients
Essex	Lake Champlain, South Lake	Nutrients
Essex	Willsboro Bay	Nutrients
Genesee	Bigelow Creek and tribs	Nutrients
Genesee	Black Creek, Middle, and minor tribs	Nutrients
Genesee	Black Creek, Upper, and minor tribs	Nutrients
Genesee	Bowen Brook and tribs	Nutrients
Genesee	LeRoy Reservoir	Nutrients
Genesee	Oak Orchard Cr, Upper, and tribs	Nutrients
Genesee	Tonawanda Creek, Middle, Main Stem	Nutrients
Greene	Schoharie Reservoir	Silt/Sediment
Greene	Sleepy Hollow Lake	Silt/Sediment
Herkimer	Steele Creek tribs	Silt/Sediment
Herkimer	Steele Creek tribs	Nutrients
Jefferson	Moon Lake	Nutrients
Kings	Hendrix Creek	Nutrients
Kings	Prospect Park Lake	Nutrients
Lewis	Mill Creek/South Branch, and tribs	Nutrients
Livingston	Christie Creek and tribs	Nutrients
Livingston	Conesus Lake	Nutrients
Livingston	Mill Creek and minor tribs	Silt/Sediment
Monroe	Black Creek, Lower, and minor tribs	Nutrients
Monroe	Buck Pond	Nutrients
Monroe	Cranberry Pond	Nutrients

303(d) Segments Impaired by Construction Related Pollutant(s)

Monroe	Lake Ontario Shoreline, Western	Nutrients
Monroe	Long Pond	Nutrients
Monroe	Mill Creek and tribs	Nutrients
Monroe	Mill Creek/Blue Pond Outlet and tribs	Nutrients
Monroe	Minor Tribs to Irondequoit Bay	Nutrients
Monroe	Rochester Embayment - East	Nutrients
Monroe	Rochester Embayment - West	Nutrients
Monroe	Shipbuilders Creek and tribs	Nutrients
Monroe	Thomas Creek/White Brook and tribs	Nutrients
Nassau	Beaver Lake	Nutrients
Nassau	Camaans Pond	Nutrients
Nassau	East Meadow Brook, Upper, and tribs	Silt/Sediment
Nassau	East Rockaway Channel	Nutrients
Nassau	Grant Park Pond	Nutrients
Nassau	Hempstead Bay	Nutrients
Nassau	Hempstead Lake	Nutrients
Nassau	Hewlett Bay	Nutrients
Nassau	Hog Island Channel	Nutrients
Nassau	Long Island Sound, Nassau County Waters	Nutrients
Nassau	Massapequa Creek and tribs	Nutrients
Nassau	Milburn/Parsonage Creeks, Upp, and tribs	Nutrients
Nassau	Reynolds Channel, west	Nutrients
Nassau	Tidal Tribs to Hempstead Bay	Nutrients
Nassau	Tribs (fresh) to East Bay	Nutrients
Nassau	Tribs (fresh) to East Bay	Silt/Sediment
Nassau	Tribs to Smith/Halls Ponds	Nutrients
Nassau	Woodmere Channel	Nutrients
New York	Harlem Meer	Nutrients
New York	The Lake in Central Park	Nutrients
Niagara	Bergholtz Creek and tribs	Nutrients
Niagara	Hyde Park Lake	Nutrients
Niagara	Lake Ontario Shoreline, Western	Nutrients
Niagara	Lake Ontario Shoreline, Western	Nutrients
Oneida	Ballou, Nail Creeks and tribs	Nutrients
Onondaga	Harbor Brook, Lower, and tribs	Nutrients
Onondaga	Ley Creek and tribs	Nutrients
Onondaga	Minor Tribs to Onondaga Lake	Nutrients
Onondaga	Ninemile Creek, Lower, and tribs	Nutrients
Onondaga	Onondaga Creek, Lower, and tribs	Nutrients
Onondaga	Onondaga Creek, Middle, and tribs	Nutrients

303(d) Segments Impaired by Construction Related Pollutant(s)

Onondaga	Onondaga Lake, northern end	Nutrients
Onondaga	Onondaga Lake, southern end	Nutrients
Ontario	Great Brook and minor tribs	Silt/Sediment
Ontario	Great Brook and minor tribs	Nutrients
Ontario	Hemlock Lake Outlet and minor tribs	Nutrients
Ontario	Honeoye Lake	Nutrients
Orange	Greenwood Lake	Nutrients
Orange	Monhagen Brook and tribs	Nutrients
Orange	Orange Lake	Nutrients
Orleans	Lake Ontario Shoreline, Western	Nutrients
Orleans	Lake Ontario Shoreline, Western	Nutrients
Oswego	Lake Neatahwanta	Nutrients
Oswego	Pleasant Lake	Nutrients
Putnam	Bog Brook Reservoir	Nutrients
Putnam	Boyd Corners Reservoir	Nutrients
Putnam	Croton Falls Reservoir	Nutrients
Putnam	Diverting Reservoir	Nutrients
Putnam	East Branch Reservoir	Nutrients
Putnam	Lake Carmel	Nutrients
Putnam	Middle Branch Reservoir	Nutrients
Putnam	Oscawana Lake	Nutrients
Putnam	Palmer Lake	Nutrients
Putnam	West Branch Reservoir	Nutrients
Queens	Bergen Basin	Nutrients
Queens	Flushing Creek/Bay	Nutrients
Queens	Jamaica Bay, Eastern, and tribs (Queens)	Nutrients
Queens	Kissena Lake	Nutrients
Queens	Meadow Lake	Nutrients
Queens	Willow Lake	Nutrients
Rensselaer	Nassau Lake	Nutrients
Rensselaer	Snyders Lake	Nutrients
Richmond	Grasmere Lake/Bradys Pond	Nutrients
Rockland	Congers Lake, Swartout Lake	Nutrients
Rockland	Rockland Lake	Nutrients
Saratoga	Ballston Lake	Nutrients
Saratoga	Dwaas Kill and tribs	Silt/Sediment
Saratoga	Dwaas Kill and tribs	Nutrients
Saratoga	Lake Lonely	Nutrients
Saratoga	Round Lake	Nutrients
Saratoga	Tribs to Lake Lonely	Nutrients

303(d) Segments Impaired by Construction Related Pollutant(s)

Schenectady	Collins Lake	Nutrients
Schenectady	Duane Lake	Nutrients
Schenectady	Mariaville Lake	Nutrients
Schoharie	Engleville Pond	Nutrients
Schoharie	Summit Lake	Nutrients
Seneca	Reeder Creek and tribs	Nutrients
St.Lawrence	Black Lake Outlet/Black Lake	Nutrients
St.Lawrence	Fish Creek and minor tribs	Nutrients
Steuben	Smith Pond	Nutrients
Suffolk	Agawam Lake	Nutrients
Suffolk	Big/Little Fresh Ponds	Nutrients
Suffolk	Canaan Lake	Silt/Sediment
Suffolk	Canaan Lake	Nutrients
Suffolk	Flanders Bay, West/Lower Sawmill Creek	Nutrients
Suffolk	Fresh Pond	Nutrients
Suffolk	Great South Bay, East	Nutrients
Suffolk	Great South Bay, Middle	Nutrients
Suffolk	Great South Bay, West	Nutrients
Suffolk	Lake Ronkonkoma	Nutrients
Suffolk	Long Island Sound, Suffolk County, West	Nutrients
Suffolk	Mattituck (Marratooka) Pond	Nutrients
Suffolk	Meetinghouse/Terrys Creeks and tribs	Nutrients
Suffolk	Mill and Seven Ponds	Nutrients
Suffolk	Millers Pond	Nutrients
Suffolk	Moriches Bay, East	Nutrients
Suffolk	Moriches Bay, West	Nutrients
Suffolk	Peconic River, Lower, and tidal tribs	Nutrients
Suffolk	Quantuck Bay	Nutrients
Suffolk	Shinnecock Bay and Inlet	Nutrients
Suffolk	Tidal tribs to West Moriches Bay	Nutrients
Sullivan	Bodine, Montgomery Lakes	Nutrients
Sullivan	Davies Lake	Nutrients
Sullivan	Evens Lake	Nutrients
Sullivan	Pleasure Lake	Nutrients
Tompkins	Cayuga Lake, Southern End	Nutrients
Tompkins	Cayuga Lake, Southern End	Silt/Sediment
Tompkins	Owasco Inlet, Upper, and tribs	Nutrients
Ulster	Ashokan Reservoir	Silt/Sediment
Ulster	Esopus Creek, Upper, and minor tribs	Silt/Sediment
Warren	Hague Brook and tribs	Silt/Sediment

303(d) Segments Impaired by Construction Related Pollutant(s)

Warren	Huddle/Finkle Brooks and tribs	Silt/Sediment
Warren	Indian Brook and tribs	Silt/Sediment
Warren	Lake George	Silt/Sediment
Warren	Tribs to L.George, Village of L George	Silt/Sediment
Washington	Cossayuna Lake	Nutrients
Washington	Lake Champlain, South Bay	Nutrients
Washington	Tribs to L.George, East Shore	Silt/Sediment
Washington	Wood Cr/Champlain Canal and minor tribs	Nutrients
Wayne	Port Bay	Nutrients
Westchester	Amawalk Reservoir	Nutrients
Westchester	Blind Brook, Upper, and tribs	Silt/Sediment
Westchester	Cross River Reservoir	Nutrients
Westchester	Lake Katonah	Nutrients
Westchester	Lake Lincolndale	Nutrients
Westchester	Lake Meahagh	Nutrients
Westchester	Lake Mohegan	Nutrients
Westchester	Lake Shenorock	Nutrients
Westchester	Long Island Sound, Westchester (East)	Nutrients
Westchester	Mamaroneck River, Lower	Silt/Sediment
Westchester	Mamaroneck River, Upper, and minor tribs	Silt/Sediment
Westchester	Muscoot/Upper New Croton Reservoir	Nutrients
Westchester	New Croton Reservoir	Nutrients
Westchester	Peach Lake	Nutrients
Westchester	Reservoir No.1 (Lake Isle)	Nutrients
Westchester	Saw Mill River, Lower, and tribs	Nutrients
Westchester	Saw Mill River, Middle, and tribs	Nutrients
Westchester	Sheldrake River and tribs	Silt/Sediment
Westchester	Sheldrake River and tribs	Nutrients
Westchester	Silver Lake	Nutrients
Westchester	Teatown Lake	Nutrients
Westchester	Titicus Reservoir	Nutrients
Westchester	Truesdale Lake	Nutrients
Westchester	Wallace Pond	Nutrients
Wyoming	Java Lake	Nutrients
Wyoming	Silver Lake	Nutrients

APPENDIX F – List of NYS DEC Regional Offices

Region	Covering the following counties:	Division of Environmental Permits (DEP) Permit Administrators	Division of Water (DOW) Water (SPDES) Program
1	Nassau and Suffolk	50 Circle Road Stony Brook, NY 11790 Tel. (631) 444-0365	50 Circle Road Stony Brook, NY 11790-3409 Tel. (631) 444-0405
2	Bronx, Kings, New York, Queens and Richmond	1 Hunters Point Plaza, 47-40 21st St. Long Island City, NY 11101-5407 Tel. (718) 482-4997	1 Hunters Point Plaza, 47-40 21st St. Long Island City, NY 11101-5407 Tel. (718) 482-4933
3	Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster and Westchester	21 South Putt Corners Road New Paltz, NY 12561-1696 Tel. (845) 256-3059	100 Hillside Avenue, Suite 1w White Plains, NY 10603 Tel. (914) 428 - 2505
4	Albany, Columbia, Delaware, Greene, Montgomery, Otsego, Rensselaer, Schenectady and Schoharie	1150 North Westcott Road Schenectady, NY 12306-2014 Tel. (518) 357-2069	1130 North Westcott Road Schenectady, NY 12306-2014 Tel. (518) 357-2045
5	Clinton, Essex, Franklin, Fulton, Hamilton, Saratoga, Warren and Washington	1115 State Route 86, Po Box 296 Ray Brook, NY 12977-0296 Tel. (518) 897-1234	232 Golf Course Road Warrensburg, NY 12885-1172 Tel. (518) 623-1200
6	HERKIMER, JEFFERSON, LEWIS, ONEIDA AND ST. LAWRENCE	STATE OFFICE BUILDING 317 WASHINGTON STREET WATERTOWN, NY 13601-3787 TEL. (315) 785-2245	STATE OFFICE BUILDING 207 GENESEE STREET UTICA, NY 13501-2885 TEL. (315) 793-2554
7	BROOME, CAYUGA, CHENANGO, CORTLAND, MADISON, ONONDAGA, OSWEGO, TIOGA AND TOMPKINS	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7438	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7500
8	CHEMUNG, GENESEE, LIVINGSTON, MONROE, ONTARIO, ORLEANS, SCHUYLER, SENECA, STEUBEN, WAYNE AND YATES	6274 EAST AVON-LIMA 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	270 MICHIGAN AVENUE BUFFALO, NY 14203-2999 TEL. (716) 851-7165	270 MICHIGAN AVENUE BUFFALO, NY 14203-2999 TEL. (716) 851-7070

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Appendix B:
NYSDEC Forms

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NOI for coverage under Stormwater General Permit for Construction Activity

version 1.37

(Submission #: HQ0-DC7J-AWBCM, version 1)

Details

Originally Started By	Courtney Davis
Alternate Identifier	Newburgh South Logistics Center
Submission ID	HQ0-DC7J-AWBCM
Submission Reason	New
Status	Draft

Form Input

Owner/Operator Information

Owner/Operator Name (Company/Private Owner/Municipality/Agency/Institution, etc.)
IV5 Newburgh South Logistics Center, LLC

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

Owner/Operator Contact Person First Name
Justin

Owner/Operator Mailing Address
1 Meadowlands Plaza, Suite 802

City
East Rutherford

State
New Jersey

Zip
07073

Phone
212-417-7173

Email
justin.drysdale@brookfieldproperties.com

Federal Tax ID
87-3549802

> If the owner/operator is an organization, provide the Federal Tax ID number, or Employer Identification Number (EIN), in the format xx-xxxxxxx. If the owner/operator is an individual and not an organization, enter "Not Applicable" or "N/A" and do not provide the individual's social security number.

Project Location

Project/Site Name
Newburgh South Logistics Center

Street Address (Not P.O. Box)
700 South Street

Side of Street
North

City/Town/Village (THAT ISSUES BUILDING PERMIT)
City of Newburgh

State
NY

Zip
12550

DEC Region
3

> The DEC Region must be provided. Please use the NYSDEC Stormwater Interactive Map (https://gisservices.dec.ny.gov/gis/stormwater/) to confirm which DEC Region this site is located in. To view the DEC Regions, click on "Other Useful Reference Layers" on the left side of the map, then click on "DEC Administrative Boundary." Zoom out as needed to see the Region boundaries.
> For projects that span multiple Regions, please select a primary Region and then provide the additional Regions as a note in Question 39.

County
ORANGE

Name of Nearest Cross Street
Pierces Road

Distance to Nearest Cross Street (Feet)
0

Project In Relation to Cross Street
West

Tax Map Numbers Section-Block-Parcel
5-1-1

Tax Map Numbers
NONE PROVIDED

> If the project does not have tax map numbers (e.g. linear projects), enter “Not Applicable” or "N/A".

1. Coordinates

Provide the Geographic Coordinates for the project site. The two methods are:
- Navigate to the project location on the map (below) and click to place a marker and obtain the XY coordinates.
- The "Find Me" button will provide the lat/long for the person filling out this form. Then pan the map to the correct location and click the map to place a marker and obtain the XY coordinates.

Navigate to your location and click on the map to get the X,Y coordinates
41.51021272554753,-74.04110595662232

Project Details

2. What is the nature of this project?
New Construction

> For the purposes of this eNOI, “New Construction” refers to any project that does not involve the disturbance of existing impervious area (i.e. 0 acres). If existing impervious area will be disturbed on the project site, it is considered redevelopment with either increase in impervious area or no increase in impervious area.

3. Select the predominant land use for both pre and post development conditions.

Pre-Development Existing Landuse
Pasture/Open Land

Post-Development Future Land Use
Industrial

3a. If Single Family Subdivision was selected in question 3, enter the number of subdivision lots.
NONE PROVIDED

---

4. In accordance with the larger common plan of development or sale, enter the total project site acreage, the acreage to be disturbed and the future impervious area (acreage)within the disturbed area.

*** ROUND TO THE NEAREST TENTH OF AN ACRE. ***

Total Site Area (acres)
49.0

Total Area to be Disturbed (acres)
30.5

Existing Impervious Area to be Disturbed (acres)
0.0

Future Impervious Area Within Disturbed Area (acres)
20.7

5. Do you plan to disturb more than 5 acres of soil at any one time?
Yes

---

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

A (%)
19.7

B (%)
0

C (%)
22.9

D (%)
57.4

7. Is this a phased project?
No

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

Start Date
03/01/2024

End Date
03/31/2025

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

> Drainage ditches and storm sewer systems are not considered surface waterbodies. Please identify the surface waterbody that they discharge to. If the nearest surface waterbody is unnamed, provide a description of the waterbody, such as, “Unnamed tributary to Niagara River.”

9a. Type of waterbody identified in question 9?
Stream/Creek On Site

Other Waterbody Type Off Site Description
NONE PROVIDED

9b. If "wetland" was selected in 9A, how was the wetland identified?
NONE PROVIDED

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

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

12. Is the project located in one of the watershed areas associated with AA and AA-S classified waters?
No

> Please use the DEC Stormwater Interactive Map (https://gisservices.dec.ny.gov/gis/stormwater/) to confirm if this site is located in one of the watersheds of an AA or AA-S classified water. To view the watershed areas, click on “Permit Related Layers” on the left side of the map, then click on “Class AA AAS Watersheds.”

If No, skip question 13.

13. Does this construction activity disturb land with no existing impervious cover and where the Soil Slope Phase is identified as D (provided the map unit name is inclusive of slopes greater than 25%), E or F on the USDA Soil Survey?
NONE PROVIDED

If Yes, what is the acreage to be disturbed?
NONE PROVIDED

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

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

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

17. Does any runoff from the site enter a sewer classified as a Combined Sewer?
No

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

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

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

Required SWPPP Components

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

22. Does this construction activity require the development of a SWPPP that includes the post-construction stormwater management practice component (i.e. Runoff Reduction, Water Quality and Quantity Control practices/techniques)?
Yes

If you answered No in question 22, skip question 23 and the Post-construction Criteria and Post-construction SMP Identification sections.

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

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

SWPPP Preparer
LaBella Associates

Contact Name (Last, First)
Kubow, Walter

Mailing Address
4 British American Boulevard

City
Latham

State
NY

Zip
12110

Phone
5182738391

Email
wkubow@labellapc.com

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) Scan the signed form
4) Upload the scanned document
Download SWPPP Preparer Certification Form

Please upload the SWPPP Preparer Certification
NONE PROVIDED
Comment
NONE PROVIDED

Erosion & Sediment Control Criteria

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

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

Temporary Structural
Dust Control
Stabilized Construction Entrance
Silt Fence
Storm Drain Inlet Protection

Biotechnical
None

Vegetative Measures
Mulching
Seeding
Sodding
Topsoiling

Permanent Structural
Diversion
Land Grading
Retaining Wall
Rock Outlet Protection

Other
NONE PROVIDED

Post-Construction Criteria

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

27. Identify all site planning practices that were used to prepare the final site plan/layout for the project.
Reduction of Clearing and Grading
Parking Reduction

27a. Indicate which of the following soil restoration criteria was used to address the requirements in Section 5.1.6("Soil Restoration") of the Design Manual (2010 version).
All disturbed areas will be restored in accordance with the Soil Restoration requirements in Table 5.3 of the Design Manual (see page 5-22).

28. Provide the total Water Quality Volume (WQv) required for this project (based on final site plan/layout). (Acre-feet)
2.205

29. Post-construction SMP Identification

Use the Post-construction SMP Identification section to identify the RR techniques (Area Reduction), RR techniques(Volume Reduction) and Standard SMPs with RRv Capacity that were used to reduce the Total WQv Required (#28).

Identify the SMPs to be used by providing the total impervious area that contributes runoff to each technique/practice selected. For the Area Reduction Techniques, provide the total contributing area (includes pervious area) and, if applicable, the total impervious area that contributes runoff to the technique/practice.

Note: Redevelopment projects shall use the Post-Construction SMP Identification section to identify the SMPs used to treat and/or reduce the WQv required. If runoff reduction techniques will not be used to reduce the required WQv, skip to question 33a after identifying the SMPs.

30. Indicate the Total RRv provided by the RR techniques (Area/Volume Reduction) and Standard SMPs with RRv capacity identified in question 29. (acre-feet)
0.630

31. Is the Total RRv provided (#30) greater than or equal to the total WQv required (#28)?
No

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

32. Provide the Minimum RRv required based on HSG. [Minimum RRv Required = (P) (0.95) (Ai) / 12, Ai=(s) (Aic)] (acre-feet)
0.583

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

If Yes, go to question 33.

Note: Use the space provided in question #39 to summarize the specific site limitations and justification for not reducing 100% of WQv required (#28). A detailed evaluation of the specific site limitations and justification for not reducing 100% of the WQv required (#28) must also be included in the SWPPP.

If No, sizing criteria has not been met; therefore, NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

33. SMPs

Use the Post-construction SMP Identification section to identify the Standard SMPs and, if applicable, the Alternative SMPs to be used to treat the remaining total WQv (=Total WQv Required in #28 - Total RRv Provided in #30).

Also, provide the total impervious area that contributes runoff to each practice selected.

NOTE: Use the Post-construction SMP Identification section to identify the SMPs used on Redevelopment projects.

33a. Indicate the Total WQv provided (i.e. WQv treated) by the SMPs identified in question #33 and Standard SMPs with RRv Capacity identified in question #29. (acre-feet)
1.575

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

34. Provide the sum of the Total RRv provided (#30) and the WQv provided (#33a).
2.205

35. Is the sum of the RRv provided (#30) and the WQv provided (#33a) greater than or equal to the total WQv required (#28)?
Yes

If Yes, go to question 36.

If No, sizing criteria has not been met; therefore, NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

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

CPv Required (acre-feet)
2.584

CPv Provided (acre-feet)
2.584

36a. The need to provide channel protection has been waived because:
NONE PROVIDED

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

Overbank Flood Control Criteria (Qp)

Pre-Development (CFS)
54.74

Post-Development (CFS)
45.31

Total Extreme Flood Control Criteria (Qf)

Pre-Development (CFS)
142.95

Post-Development (CFS)
141.73

37a. The need to meet the Qp and Qf criteria has been waived because:
NONE PROVIDED

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

If Yes, Identify the entity responsible for the long term Operation and Maintenance
IV5 Newburgh South Logistics Center, LLC

39. Use this space to summarize the specific site limitations and justification for not reducing 100% of WQv required (#28). (See question #32a) This space can also be used for other pertinent project information.
The project site has soils with an infiltration rate less than 0.5 in/hr, and contaminated soils which prevents reduction of the total WQv.

Post-Construction SMP Identification

Runoff Reduction (RR) Techniques, Standard Stormwater Management Practices (SMPs) and Alternative SMPs

Identify the Post-construction SMPs to be used by providing the total impervious area that contributes runoff to each technique/practice selected. For the Area Reduction Techniques, provide the total contributing area (includes pervious area) and, if applicable, the total impervious area that contributes runoff to the technique/practice.

RR Techniques (Area Reduction)

Round to the nearest tenth

Total Contributing Acres for Conservation of Natural Area (RR-1)
NONE PROVIDED

Total Contributing Impervious Acres for Conservation of Natural Area (RR-1)
NONE PROVIDED

Total Contributing Acres for Sheetflow to Riparian Buffers/Filter Strips (RR-2)
NONE PROVIDED

Total Contributing Impervious Acres for Sheetflow to Riparian Buffers/Filter Strips (RR-2)
NONE PROVIDED

Total Contributing Acres for Tree Planting/Tree Pit (RR-3)
NONE PROVIDED

Total Contributing Impervious Acres for Tree Planting/Tree Pit (RR-3)
NONE PROVIDED

Total Contributing Acres for Disconnection of Rooftop Runoff (RR-4)
NONE PROVIDED

RR Techniques (Volume Reduction)

Total Contributing Impervious Acres for Disconnection of Rooftop Runoff (RR-4)
NONE PROVIDED

Total Contributing Impervious Acres for Vegetated Swale (RR-5)
NONE PROVIDED

Total Contributing Impervious Acres for Rain Garden (RR-6)
NONE PROVIDED

Total Contributing Impervious Acres for Stormwater Planter (RR-7)
NONE PROVIDED

Total Contributing Impervious Acres for Rain Barrel/Cistern (RR-8)
NONE PROVIDED

Total Contributing Impervious Acres for Porous Pavement (RR-9)
NONE PROVIDED

Total Contributing Impervious Acres for Green Roof (RR-10)
NONE PROVIDED

Standard SMPs with RRv Capacity

Total Contributing Impervious Acres for Infiltration Trench (I-1)
NONE PROVIDED

Total Contributing Impervious Acres for Infiltration Basin (I-2)
NONE PROVIDED

Total Contributing Impervious Acres for Dry Well (I-3)
NONE PROVIDED

Total Contributing Impervious Acres for Underground Infiltration System (I-4)
NONE PROVIDED

Total Contributing Impervious Acres for Bioretention (F-5)
7.219

Total Contributing Impervious Acres for Dry Swale (O-1)
NONE PROVIDED

Standard SMPs

Total Contributing Impervious Acres for Micropool Extended Detention (P-1)
NONE PROVIDED

Total Contributing Impervious Acres for Wet Pond (P-2)
12.313

Total Contributing Impervious Acres for Wet Extended Detention (P-3)
NONE PROVIDED

Total Contributing Impervious Acres for Multiple Pond System (P-4)
NONE PROVIDED

Total Contributing Impervious Acres for Pocket Pond (P-5)
NONE PROVIDED

Total Contributing Impervious Acres for Surface Sand Filter (F-1)
NONE PROVIDED

Total Contributing Impervious Acres for Underground Sand Filter (F-2)
NONE PROVIDED

Total Contributing Impervious Acres for Perimeter Sand Filter (F-3)
NONE PROVIDED

Total Contributing Impervious Acres for Organic Filter (F-4)
NONE PROVIDED

Total Contributing Impervious Acres for Shallow Wetland (W-1)
NONE PROVIDED

Total Contributing Impervious Acres for Extended Detention Wetland (W-2)
NONE PROVIDED

Total Contributing Impervious Acres for Pond/Wetland System (W-3)
NONE PROVIDED

Total Contributing Impervious Acres for Pocket Wetland (W-4)
NONE PROVIDED

Total Contributing Impervious Acres for Wet Swale (O-2)
NONE PROVIDED

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

Total Contributing Impervious Area for Hydrodynamic
NONE PROVIDED

Total Contributing Impervious Area for Wet Vault
NONE PROVIDED

Total Contributing Impervious Area for Media Filter
NONE PROVIDED

"Other" Alternative SMP?
NONE PROVIDED

Total Contributing Impervious Area for "Other"
NONE PROVIDED

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

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

Manufacturer of Alternative SMP
NONE PROVIDED

Name of Alternative SMP
NONE PROVIDED

Other Permits

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

If SPDES Multi-Sector GP, then give permit ID
NONE PROVIDED

If Other, then identify
NONE PROVIDED

41. Does this project require a US Army Corps of Engineers Wetland Permit?
No

If "Yes," then indicate Size of Impact, in acres, to the nearest tenth
NONE PROVIDED

42. If this NOI is being submitted for the purpose of continuing or transferring coverage under a general permit for stormwater runoff from construction activities, please indicate the former SPDES number assigned.
NONE PROVIDED

MS4 SWPPP Acceptance

43. Is this project subject to the requirements of a regulated, traditional land use control MS4?
Yes - Please attach the MS4 Acceptance form below

If No, skip question 44

44. Has the "MS4 SWPPP Acceptance" form been signed by the principal executive officer or ranking elected official and submitted along with this NOI?
Yes

MS4 SWPPP Acceptance Form Download

Download form from the link below. Complete, sign, and upload.
MS4 SWPPP Acceptance Form

MS4 Acceptance Form Upload
NONE PROVIDED
Comment
NONE PROVIDED

Owner/Operator Certification

Owner/Operator Certification Form Download

Download the certification form by clicking the link below. Complete, sign, scan, and upload the form.
Owner/Operator Certification Form (PDF, 45KB)

Upload Owner/Operator Certification Form
NONE PROVIDED
Comment
NONE PROVIDED

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Owner/Operator Certification Form

SPDES General Permit For Stormwater Discharges From Construction Activity (GP-0-20-001)

Project/Site Name: Newburgh South Logistics Center

eNOI Submission Number: HQ0-DC7J-AWBCM

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

Certification Statement - Owner/Operator

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

Owner/Operator First Name M.I. Last Name

_____

Signature

_____

Date

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NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

SWPPP Preparer Certification Form

SPDES General Permit for Stormwater Discharges From Construction Activity (GP-0-20-001)

Project Site Information

Project/Site Name

Newburgh South Logistics Center

Owner/Operator Information

Owner/Operator (Company Name/Private Owner/Municipality Name)

IV5 Newburgh South Logistics Center, LLC

Certification Statement – SWPPP Preparer

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

Walter	J	Kubow
First name	MI	Last Name

Signature

Date

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

MS4 Stormwater Pollution Prevention Plan (SWPPP) Acceptance Form

for

Construction Activities Seeking Authorization Under SPDES General Permit

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

I. Project Owner/Operator Information	
1. Owner/Operator Name:	IV5 Newburgh South Logistics Center, LLC
2. Contact Person:	Justin Drysdale
3. Street Address:	1 Meadowlands Plaza, Suite 802
4. City/State/Zip:	East Rutherford, NJ 07073
II. Project Site Information	
5. Project/Site Name:	Newburgh South Logistics Center
6. Street Address:	700 South Street
7. City/State/Zip:	Newburgh, NY 12550
III. Stormwater Pollution Prevention Plan (SWPPP) Review and Acceptance Information	
8. SWPPP Reviewed by:	
9. Title/Position:	
10. Date Final SWPPP Reviewed and Accepted:	
IV. Regulated MS4 Information	
11. Name of MS4:	
12. MS4 SPDES Permit Identification Number: NYR20A	
13. Contact Person:	
14. Street Address:	
15. City/State/Zip:	
16. Telephone Number:	

MS4 SWPPP Acceptance Form - continued

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

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

Printed Name:

Title/Position:

Signature:

Date:

VI. Additional Information

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

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

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

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

I. Owner or Operator Information

1. Owner/Operator Name: IV5 Newburgh South Logistics Center, LLC

2. Street Address: 1 Meadowlands Plaza, Suite 802

3. City/State/Zip: East Rutherford, NJ 07073

4. Contact Person: Justin Drysdale | 4a.Telephone: 212-417-7173

4b. Contact Person E-Mail: justin.drysdale@brookfieldproperties.com

II. Project Site Information

5. Project/Site Name: Newburgh South Logistics Center

6. Street Address: 700 South Street

7. City/Zip: Newburgh, NY 12550

8. County: Orange County

III. Reason for Termination

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

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

9c. □ Other (Explain on Page 2)

IV. Final Site Information:

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

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

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

_____

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

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

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

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

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

□ For post-construction stormwater management practices that are privately owned, a mechanism is 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.

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

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

11. Is this project subject to the requirements of a regulated, traditional land use control MS4? □ yes □ no

(If Yes, complete section VI - "MS4 Acceptance" statement

V. Additional Information/Explanation:

(Use this section to answer questions 9c. and 10b., if applicable)

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

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

Printed Name:	
Title/Position:	
Signature:	Date:

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

VII. Qualified Inspector Certification - Final Stabilization:

I hereby certify that all disturbed areas have achieved final stabilization as defined in the current version of the general permit, and that all temporary, structural erosion and sediment control measures have been removed. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:	
Title/Position:	
Signature:	Date:

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

I hereby certify that all post-construction stormwater management practices have been constructed in conformance with the SWPPP. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:	
Title/Position:	
Signature:	Date:

IX. Owner or Operator Certification

I hereby certify that this document was prepared by me or under my direction or supervision. My determination, based upon my inquiry of the person(s) who managed the construction activity, or those persons directly responsible for gathering the information, is that the information provided in this document is true, accurate and complete. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:	
Title/Position:	
Signature:	Date:

(NYS DEC Notice of Termination - January 2015)

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Appendix C:
Contractor's Certification Form
Subcontractor's Certification Form

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

Newburgh South Logistics Center
700 South Street, Orange 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 terms and conditions of the SWPPP and agree to implement any corrective actions identified by the *qualified inspector* during a site inspection. I also understand that the *owner or operator* must comply with the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater *discharges* from *construction activities* and that it is unlawful for any person to cause or contribute to a violation of *water quality standards*. Furthermore, I 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.

[2] Signatory Requirements:

a. For a corporation, this form shall be signed by (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principle business function, or any other person who performs similar policy or decision-making functions for the corporation; or (ii) the manager of one or more manufacturing, production or operating facilities, provided the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

b. For a partnership or sole proprietorship, this form shall be signed by a general partner or the proprietor, respectively.

c. For a municipality, State, Federal, or other public agency, this form shall be signed by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g. Regional Administrators of EPA).

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

Newburgh South Logistics Center
700 South Street, City of Newburgh, Orange 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 terms and conditions of the SWPPP and agree to implement any corrective actions identified by the *qualified inspector* during a site inspection. I also understand that the *owner or operator* must comply with the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater *discharges* from *construction activities* and that it is unlawful for any person to cause or contribute to a violation of *water quality standards*. Furthermore, I 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.

[2] Signatory Requirements:

a. For a corporation, this form shall be signed by (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principle business function, or any other person who performs similar policy or decision-making functions for the corporation; or (ii) the manager of one or more manufacturing, production or operating facilities, provided the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

b. For a partnership or sole proprietorship, this form shall be signed by a general partner or the proprietor, respectively.

c. For a municipality, State, Federal, or other public agency, this form shall be signed by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g. Regional Administrators of EPA).

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Appendix D:
SWPPP Inspection Report
(Sample Form)

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Prepared by:
LaBella Associates
4 British American Boulevard
Latham, NY 12110
(518) 439-8235

SWPPP INSPECTION REPORT NUMBER XX
IV5 Newburgh South Logistics Center, LLC
Newburgh South Logistics Center
700 South Street, City of Newburgh, Orange County, NY

Performed: 9/29/2021 @ 12:00 AM
Report Issued: 9/29/2021

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

NYSDEC Issued Permit Identification Number: NYRXXXXXX

5-Acre Waiver: N/A (No 5-acre waiver for this project - Contractor not authorized to disturb >5 acres)

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
☐	☐	☐	NOI Acknowledgement letter
☐	☐	☐	Copy of eNOI
☐	☐	☐	Owner / Operator Certification
☐	☐	☐	SWPPP Preparer Certification
☐	☐	☐	MS4 SWPPP Acceptance Form
☐	☐	☐	Contractor and Subcontractor Certifications
☐	☐	☐	SPDES General Permit
☐	☐	☐	5 Acre Waiver
☐	☐	☐	NOT

Comments:

Site Conditions

Approximate Disturbed Area at Time of Inspection: XX Acres			
Allowable Disturbed Area Per NOI and/or 5-acre waiver: XX Acres			
Current Status of Construction: Description			
Weather Conditions: Conditions		**Temperature:** XX °F	**Soil Conditions:** Choose an item.

Description of Discharge Point/Natural Surface Waterbody	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:							

Photo Log

Photo 1 *Date – Item in need of repair or maintenance:*	***Photo 1A*** *Date – Corrected Action:*
Photo 2 *Date – Item in need of repair or maintenance:*	***Photo 2A*** *Date – Corrected Action:*
Photo 3 *Date – Item in need of repair or maintenance:*	***Photo 3A*** *Date – Corrected Action:*

Photo Log (continued)

Photo 4	***Photo 4A***
Date – Item in need of repair or maintenance:	*Date – Corrected Action:*
Photo 5	***Photo 5A***
Date – Item in need of repair or maintenance:	*Date – Corrected Action:*
Photo 6	***Photo 6A***
Date – Item in need of repair or maintenance:	*Date – Corrected Action:*

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Appendix E:
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

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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.

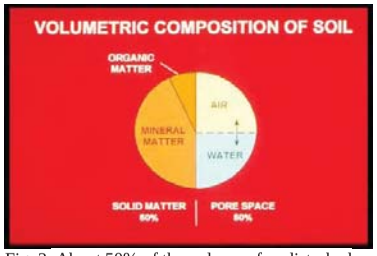

Fig. 2. About 50% of the volume of undisturbed loam surface soil is pore space, when soil is in good condition for plant growth. Brady, 2002.

Recommended Application of Practice

Fig. 3. Construction site with significant compaction of the deep basal till subsoil extends 24 inches below this exposed cut-and-fill work surface.

The objective of Deep Ripping and Decompaction is to effectively fracture (vertically and laterallly) 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).

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

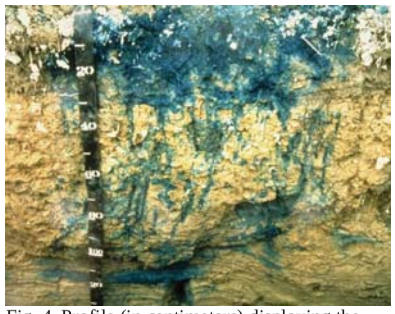

Fig. 4. Profile (in centimeters) displaying the infiltration test result of the natural undisturbed horizons of a soil in Hydrologic Soil Group C.

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.

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- 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 F:
Post-Construction Inspections and Maintenance

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POST CONSTRUCTION INSPECTIONS AND MAINTENANCE

The site is in the City of Newburgh's designated MS4 area and this project will be subject to inspection and oversight by the City in accordance with the MS4 Permit, including annual reporting due to NYSDEC by June 1st. The reporting period is March 10th through March 9th of the following year. Third party inspections of the post-construction stormwater management practices shall be performed on an annual basis by a qualified professional with the inspection report and reports of annual maintenance sent to the City within the annual MS4 reporting period.

1. SITE COVER

a. Fertilizer

As of January 1, 2012, the NYSDEC restricts the use of phosphorous fertilizer on lawns or non-agricultural turf. It is recommended that a soil test be conducted in order to ensure the use of an appropriate fertilizer. Additionally, fertilizer should not be applied within twenty (20) feet of a water body or on paved surfaces. The application rate shall be in accordance with the manufacturer's recommendations and should be applied in the following spring planting season.

b. Inspections

Site cover and associated structures and embankments should be inspected periodically for the first few months following construction and then on a biannual basis. Site inspections should also be performed following all major storm events. Items to check for include (but are not limited to):

i. Differential settlement of embankments, cracking or erosion.

ii. Lack of vigor and density of grass turf.

iii. Accumulation of sediments or litter on lawn areas, paved areas, or within catch basin sumps.

iv. Accumulation of pollutants, including oils or grease, in catch basin sumps.

v. Damage or fatigue of storm sewer structures or associated components.

c. Mowing and Sweeping

Vegetated areas and landscaping should be maintained to promote vigorous and dense growth. Lawn areas should be mowed at least three times a year (more frequent mowing may be desired for aesthetic reasons). Resultant yard waste shall be collected and disposed of off-site.

Paved areas should be swept at least twice a year. Additional sweeping may be appropriate in the early spring for removal of deicing materials

d. Debris and Litter Removal

Accumulation of litter and debris should be removed during each mowing or sweep operation.

e. Structural Repair or Replacement

Components of the system which require repair or replacement should be addressed immediately following identification.

f. Catch Basins

Catch basins should be cleaned out on an annual basis, post snow melt, and prior to spring rains. In the event cleanout is not conducted, the level of sediment in the sump shall be documented via pictures and included in an annual report to the City's Engineering Department.

Disposal of material from catch basins sumps, drainage manholes, and trench drains shall be in accordance with local, state, and federal guidelines.

g. Rip-rap Dissipation structures

Riprap used to dissipate energy from pipe outfalls shall be cleaned or replaced when it becomes overburdened with silt or sediment.

h. Winter Maintenance

To prevent impacts to storm water management facilities, the following winter maintenance limitations, restrictions, or requirements are recommended:

i. Remove snow and ice from inlet structures, basin inlet and outlet structures and away from culvert end sections.

ii. Snow removed from paved areas should not be piled at inlets/outlets of the storm water management basin.

iii. Use of deicing materials should be limited to sand and "environmentally friendly" chemical products. Use of salt mixtures should be kept to a minimum.

iv. Sand used for deicing should be clean, course material free of fines, silt, and clay.

v. Materials used for deicing should be removed during the early spring by sweeping and/ or vacuuming.

2. VEGETATED SWALES

a. Inspection Schedule

Conveyance swales should be inspected periodically for the first few months following construction and then on a biannual basis.

b. Inspection of Uphill Drainage Area

Look for areas that are uphill from the swale:

i. Areas of bare soil should be seeded and mulched or sodded to establish vegetation.

ii. Areas of erosion should be filled in with soil. compacted and seed and straw added to establish vegetation.

iii. Water flowing to formed rills or small channels should eb redirected utilizing a small berm or adding topsoil to areas that are heavily compacted.

iv. Piles of grass clippings, mulch, dirt, etc. should be removed or covered.

v. Open containers of oil, grease, paint, or other substances should be covered or properly disposed.

vi. Seed and mulch should be applied to dying grass areas at the edge of the road.

c. Inspection of Inlets

Stand in the swale and look for all the places where water flows in:

i. Grit and debris (especially at curb inlets or openings) should be flattened.

ii. Growing grass or weeds should be removed as well as the soil associated.

iii. Grass clippings, leaves, sticks, and other debris at the inlets or along the edge of the swale should be removed.

iv. Sediment and debris blocking pipes or ditch openings should be removed.

v. Materials removed should be disposed in such a way where it may not re-enter the swale.

vi. Small areas of erosion should be smoothed out and rock or stone applied to prevent further erosion. Erosion control matting can be applied to further prevent erosion.

d. Inspection of Surface Area

Examine the entire swale surface and side slopes:

i. Minor areas of sediment or grit should be removed and disposed of in such a way where it cannot re-enter the swale. If removal of the material creates a hole or low area, fill in with good topsoil and add seed and straw to re-vegetate.

ii. Trash, vegetative debris, and other undesirable materials should be removed.

iii. Eroded areas should be filled with clean topsoil, and then seeded and mulched to establish vegetation. If erosion is on a side slope, fill in with soil and cover with erosion-control mattering or at minimum straw mulch after reseeding.

iv. In areas where water flows unevenly down the length of the swale and ponds in certain areas for extended periods of time, the area should be raked to create a more even flow path.

v. In areas where water flows around the edges of check dams, creating erosion or sinkholes on the uphill or downhill side, or the check dams are breaking apart or breaching, move stone around, fill and compact soil, or add new material so that the water will be directed to the center of the check dam.

e. Inspection of Vegetation

Examine the swale vegetation:

i. Overgrown vegetation should be mowed or bush-hogged. Resultant yard waste shall be collected and disposed of off-site. Application of fertilizers and pesticides should be restricted or limited.

As of January 1, 2012, the NYSDEC restricts the use of phosphorous fertilizer on lawns or non-agricultural turf. It is recommended that a soil test be conducted in order to ensure the use of an appropriate fertilizer. Additionally, fertilizer should not be applied within twenty (20) feet of a water body or on paved surfaces. The application rate shall be in accordance with the manufacturer's recommendations and should be applied in the following spring planting season.

ii. Weeds or invasive plants should be removed by bush-hogging before the spring. The root mat should be removed manually or with appropriate herbicides.

f. Inspection of Outlets

Examine outlets that release water out of the swale:

i. Debris should be removed.

ii. Areas of erosion should be filled in with soil. compacted and seed and straw added to establish vegetation.

3. BIORETENTION FILTERS

a. Inspection Schedule

Bioretention filters should be inspected periodically for the first few months after construction and then on a monthly basis. Bioretention filters should be inspected after all major storm events.

b. Inspection of Uphill Drainage Area

Inspect areas that are uphill from the Bioretention filter.

i. Bare soil and/or erosion of the ground should be seeded and mulched to establish vegetation. Areas of erosion should be filled with soil, compacted, and seeded and mulched to establish vegetation.

ii. If a small channel(s) is forming, try to redirect water flowing to this area by creating a small berm or adding topsoil to areas that are heavily compacted.

iii. Piles of grass clippings, mulch, dirt, salt or other materials should be removed.

iv. Open containers of oil, grease, paint, or other substances should be covered and properly disposed of.

c. Inspection of Inlets

Stand in the Bioretention filter itself and inspect each location where water flows in.

i. Inlets should have a clear pathway for water to flow into the filter. Grit and debris or grass/weeds should be removed at curb inlets or openings.

ii. Clumps of growing grass or weeds and the associated soil or grit should be removed.

iii. Grass clippings, leaves, sticks, and other debris collecting at inlets should be removed.

iv. For pipes and ditches, sediment and debris partially blocking the pipe or ditch opening into the Bioretention filter should be removed.

v. All materials removed should be properly disposed in such a way that it may not re-enter the Bioretention filter.

vi. Small areas of erosion should be smoothed out and rock or stone applied to prevent further erosion. Reseeding and applying erosion-control matting can be used to prevent further erosion.

d. Inspection of Ponding Area

Examine the entire Bioretention surface and side slopes:

i. In areas where the mulch layer has decomposed or is less than 1-inch thick, new mulch should be added to a total depth of 2 to 3 inches. The mulch should be a shredded hardwood mulch that is less likely to float away during rainstorms. Avoid adding too much mulch so that inlets are obstructed, or certain areas become higher than the rest of the Bioretention surface.

ii. Excess sediment, grit, trash, or other debris that has accumulated on the bottom should be removed and disposed of in such a way that it cannot re-enter the Bioretention filter. If removing the material creates a hole or low area, fill in with a soil mix that matches the original mix and cover with mulch to create a flat surface.

iii. Eroded areas in the bottom or on the side slopes should be filled with clean topsoil or sand and covered with mulch. If the problem reoccurs, stone can be used to fill in the areas. If the erosion is on a side slope, fill in with clay that can be compacted and seed and mulch the area.

iv. The bottom of the Bioretention filter should be flat. The surface should be raked or mulch added to low spots to create a more level surface.

e. Inspection of Vegetation

Examine all Bioretention filter vegetation:

i. Weeds and dead and/or diseased plants should be removed and the mulch surrounding these replaced. Plants should be added to fill in areas that are not well vegetated.

ii. If bioretention filter utilized a vegetated seed mix, then grass areas shall be mowed to ensure that grass height does not exceed 6-inches.

iii. Undesirable trees and shrubs should be removed. Resultant yard wastes shall be collected and disposed of off-site

f. Inspection of Outlets

Examine the outlets that release water out of the Bioretention filter:

i. Stone should be added in areas of erosion at the outlet to reduce the impact from the water flowing out of the outlet pipe or weir during storms.

ii. Outlet obstructions should be removed and disposed of where it cannot re-enter the Bioretention filter.

g. Debris, Trash and Litter Control

Removal of debris and litter shall be accomplished during mowing operations. Inlet structures should be cleared of all debris and litter.

h. Structural Repairs and Replacement

Components of the bioretention filter, which require repair or replacement, should be addressed immediately following identification. This includes treating and or replacing diseased trees and shrub, fertilizing as necessary, replacing mulch where bare spots appear, replacing clogged underdrains and filter beds.

i. Erosion and Sediment Control

Sources of sedimentation, specifically eroded areas in upland drainage areas, should be stabilized immediately upon identification. Stabilization should be with vegetative practices or other erosion control practices when vegetative measures do not prove effective.

Soil slumpage, erosion of the embankments or around inlets/outlets, and cracking should be stabilized and repaired immediately upon identification.

j. Sediment Removal

Sediments that accumulate in the bioretention filter should be removed annually to prevent clogging of inlet or outlet structures. Disposal of material removed from bioretention filter shall be in accordance with local, state, and federal guidelines.

4. SURFACE DETENTION BASINS

a. Inspection Schedule

Detention Basins should be inspected periodically for the first few months after construction and then on an annual basis. Detention Basins should be inspected after major storm events to ensure inlets and outlets remain clear.

b. Inspection Items

Items to check for include (but are not limited to):

i. Differential settlement of embankments.

ii. Cracking, erosion, or seepage through embankments.

iii. Evidence of clogging at inlets or outlets.

iv. Erosion of the flow path through the detention basin.

v. Brush, shrub, or tree growth on embankments.

vi. Condition of the overflow spillway.

vii. Lack of vigor and density of grass turf on the basin embankments.

c. Mowing

The side slopes, embankments, inlets, and overflow spillways of the detention basin and bioretention area should be mowed at least three times a year.

Meadow areas shall be mowed, typically with a brush hog, no more than once a year at the end of the growing season. The mowed materials shall not be collected so that the mowing process disperses the seed for germination the following growing season. Additionally, periodic removal of individual invasive species and/or woody plant material is required.

d. Debris and Litter Control

Removal of debris and litter should be accomplished during mowing operations. Inlet and outlet structures should be cleared of all debris and litter.

e. Structural repairs and Replacement

Components of the detention basin, which require repair or replacement, should be addressed immediately following identification.

f. Erosion Control

Sources of sedimentation, specifically eroded areas in upland drainage areas, should be stabilized immediately upon identification. Stabilization should be with vegetative practices or other erosion control practices when vegetative measures do not prove effective.

Soil slumpage, erosion of the basin embankment or around inlets/outlets, and cracking should be stabilized and repaired immediately upon identification. Repair, replacement, or addition of rip-rap aprons, channels or embankments should be pursued as required.

g. Sediment removal

Sediments, which accumulate in the detention basin, should be removed periodically to prevent clogging of inlet or outlet structures. A typical clean-out cycle should be between 5 to 10 years with more frequent cleanings near inlet and outlet structures.

5. FOREBAYS AND WET POOLS

a. Inspection Schedule

Forebays and Wet Pools should be inspected periodically for the first few months after construction and then on an annual basis. Forebays and Wet Pools should be inspected following all major storm events.

b. Inspection of Uphill Drainage Area

Look for areas that are uphill from the forebay/pond:

i. Bare soil should be seeded and strawed to establish vegetation. Areas of erosion should be filled in with soil, compacted, and seeded and mulched to establish vegetation.

ii. Piles of grass clippings, mulch, dirt, salt, or other materials should be removed. Excess vegetation or woody debris that can block drainage systems should be removed.

iii. Open containers of oil, grease, paint, or other substances exposed to rain in the drainage area should be covered or properly disposed.

c. Inspection of Forebay/Pond Inlets

Look for all areas where water flows into the pond during storms. There may be multiple points of inflow and types of structures:

i. Silt, debris, or trash or excessive vegetation that is blocking or burying an inlet should be removed with hand tools.

d. Inspection of Forebay/Pond Areas and Embankments

Examine both the interior and exterior forebay/pond banks as well as the forebay/pond body. Observe from the inlet pipes to the outfall structure and emergency overflow:

i. Sediment, trash, vegetation or other debris built up in the pretreatment area(s), forebay(s) choking the flow of the water, and/or algae and aquatic plants in the pond area(s) should be removed.

ii. Minor rills or gullies on the side slopes of the pond that have become unstable, eroding and/or have areas of bare dirt should be filled in with topsoil, compacted, and seeded and mulches. Alternatively, herbaceous plugs can be used.

iii. In areas where the dam/embankment is slumping, sinking, settling, or eroding, clean material (clay and topsoil) should be added and seeded and mulched. Embankments should periodically be mowed to enable inspection and minimize the establishment of woody vegetation. Any woody vegetation that has already established on embankments should be removed.

iv. Emergency spillways or outfalls should be cleared of light debris and vegetation.

e. Inspection of Forebay/Pond Outlets

Examine the outlet of the pipe on the downstream side of the dam/embankment where it empties into a stream, channel, or drainage system.

i. Minor sediment, trash, debris, or vegetation blockages should be removed. Accumulated trash at the outlet should be removed.

f. Mowing

Tree and brush growth must be prevented on basin embankments, side slopes, bottoms, and around inlets and the overflow spillway(s). Mowing of the embankments shall be at least three times a year unless more frequent mowing is required to control vegetative growth. Resultant yard waste shall be collected and disposed of off-site.

Meadow areas shall be mowed, typically with a brush hog, no more than once a year at the end of the growing season. The mowed materials shall not be collected so that the mowing process disperses the seed for germination the following growing season. Additionally, periodic removal of individual invasive species and/or woody plant material is required.

g. Debris and Litter Removal

Removal of debris and litter shall be accomplished during mowing operations. Inlet structures should be cleared of all debris and litter.

h. Structural Repairs and Replacement

Components of the forebay or wet pool, which require repair or replacement, should be addressed immediately following identification.

i. Erosion Control

Sources of sedimentation, specifically eroded areas in upland drainage areas, should be stabilized immediately upon identification. Stabilization should be with vegetative practices or other erosion control practices when vegetative measures do not prove effective.

Soil slumpage, erosion of the basin embankment or around inlets or overflow outlets, and cracking should be stabilized and repaired immediately upon identification. Repair, replacement or addition of rip-rap aprons, channels or embankments should be pursued as required.

j. Sediment Removal

Cleanout frequency of Forebays and Wet Pools is dependent upon bottom cover, storage capacity, volume of inflow, and sediment load.

Sediment shall be removed from the Forebays and Wet Pools every 5 to 6 years or when accumulations reach 12 inches in depth. Monitoring the depth of sediments can be measured by installing permanent markers in the newly constructed facilities with a mark 12 inches above the permanent water surface. Markers should not be spaced more than 50 feet apart along the flow path through the facility. A log should be kept indicating the date that the facility was inspected and the distance to the bottom.

When sediment removal is required, the original grades depicted on the project drawings should be reestablished by a qualified contractor. If any of the impermeable material used in the construction of the basin bottom is removed it must be replaced with clean material consistent with the original material specifications.

6. AQUATIC BENCHES

a. Inspection Schedule

Aquatic Benches should be inspected periodically for the first few months after construction and then on an annual basis. Aquatic Benches should be inspected after all major storm events.

b. Inspection Items

Items to check for include (but are not limited to):

i. Checking basin embankments for subsidence, erosion, cracking, tree growth, and the presence of burrowing animals.

ii. Health and vigor of wetland vegetation.

iii. Accumulation of sediment.

c. Mowing

Mowing is not desirable nor allowed in the Aquatic Benches. Trees and shrubs should be removed from around inlet and outlet structures. Removal should be biannual.

d. Debris, Trash and Litter Control

Debris, trash, and litter should be removed from the Aquatic Benches immediately upon discovery.

e. Erosion Control

Soil slumpage, erosion of the Aquatic Bench embankment or around inlets or outlets, and cracking should be stabilized and repaired immediately upon identification.

Appendix G:
Figures

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THE Chazen COMPANIES®
Engineers/Surveyors
Planners
Environmental Scientists
Landscape Architects

Hudson Valley Office:
21 Fox Street, Poughkeepsie, NY 12601
Phone: (845) 454-3980
Capital District Office:
547 River Street, Troy, NY 12180
Phone: (518) 273-0055
North Country Office:
20 Elm Street, Glens Falls, NY 12801
Phone: (518) 812-0513
Westchester NY Office:
1 North Broadway,
White Plains, NY 10601
Phone: (914) 997-8510
Tennessee Offices:
2416 21st Ave S. Nashville, TN 37212
427 E. 5th St. Chattanooga, TN 37403

NEWBURGH WAREHOSUE

SITE LOCATION MAP

CITY OF NEWBURGH, ORANGE COUNTY, NEW YORK

drawn	checked
CAR	WJK
date	scale
8/27/21	1"=500'
project no.	
32142.00	
sheet no.	
FIG 1	

Drawing Name: Z:\projects\32100-32199\32142.00 - National Realty Newburgh Warehouse\DWG\99_FIG1_32142-00_SITE LOC.dwg Date Printed: Aug 27, 2021, 3:36pm

Figure 2: Soil Map—Orange County, New York

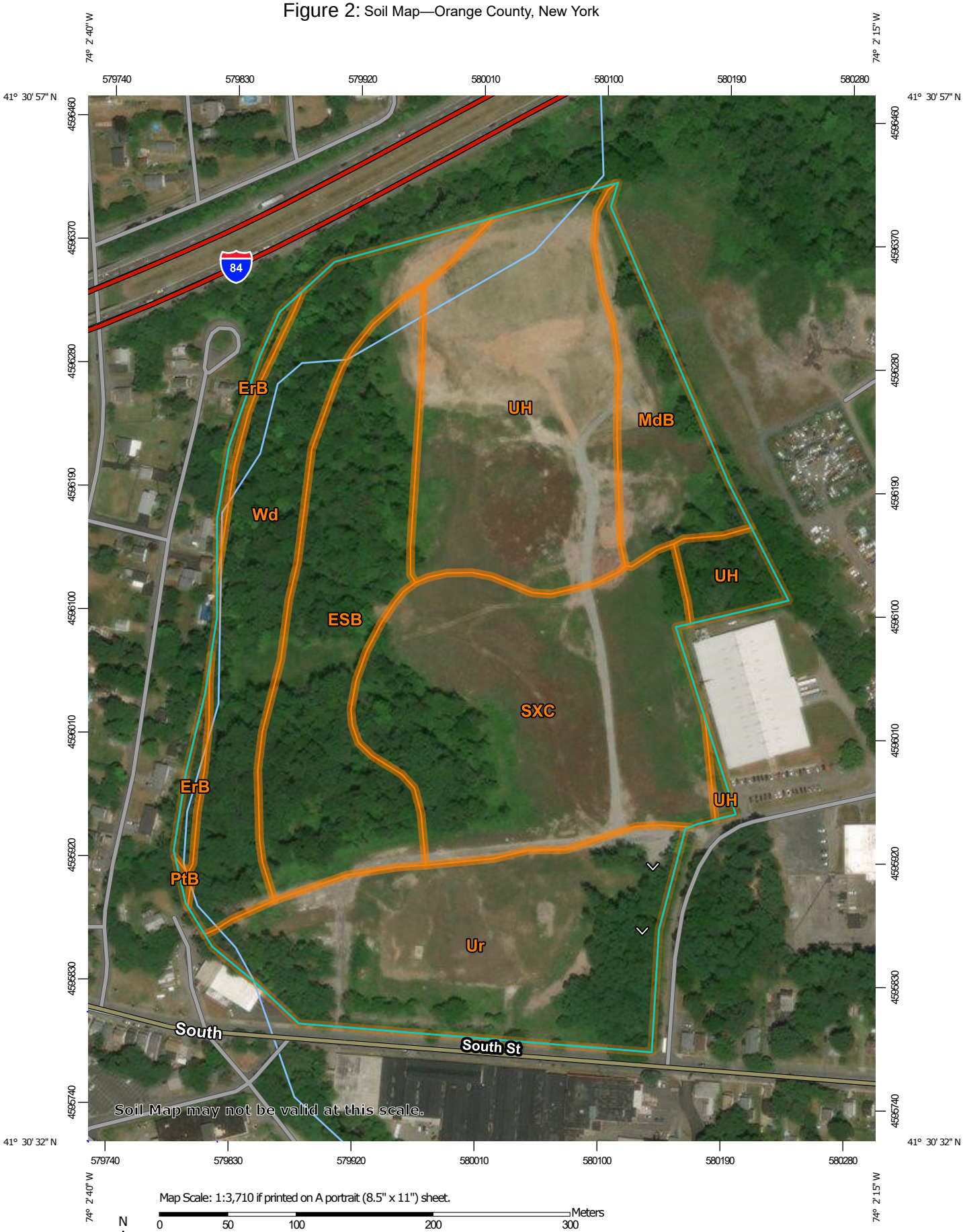

FIG 3

LEGEND

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

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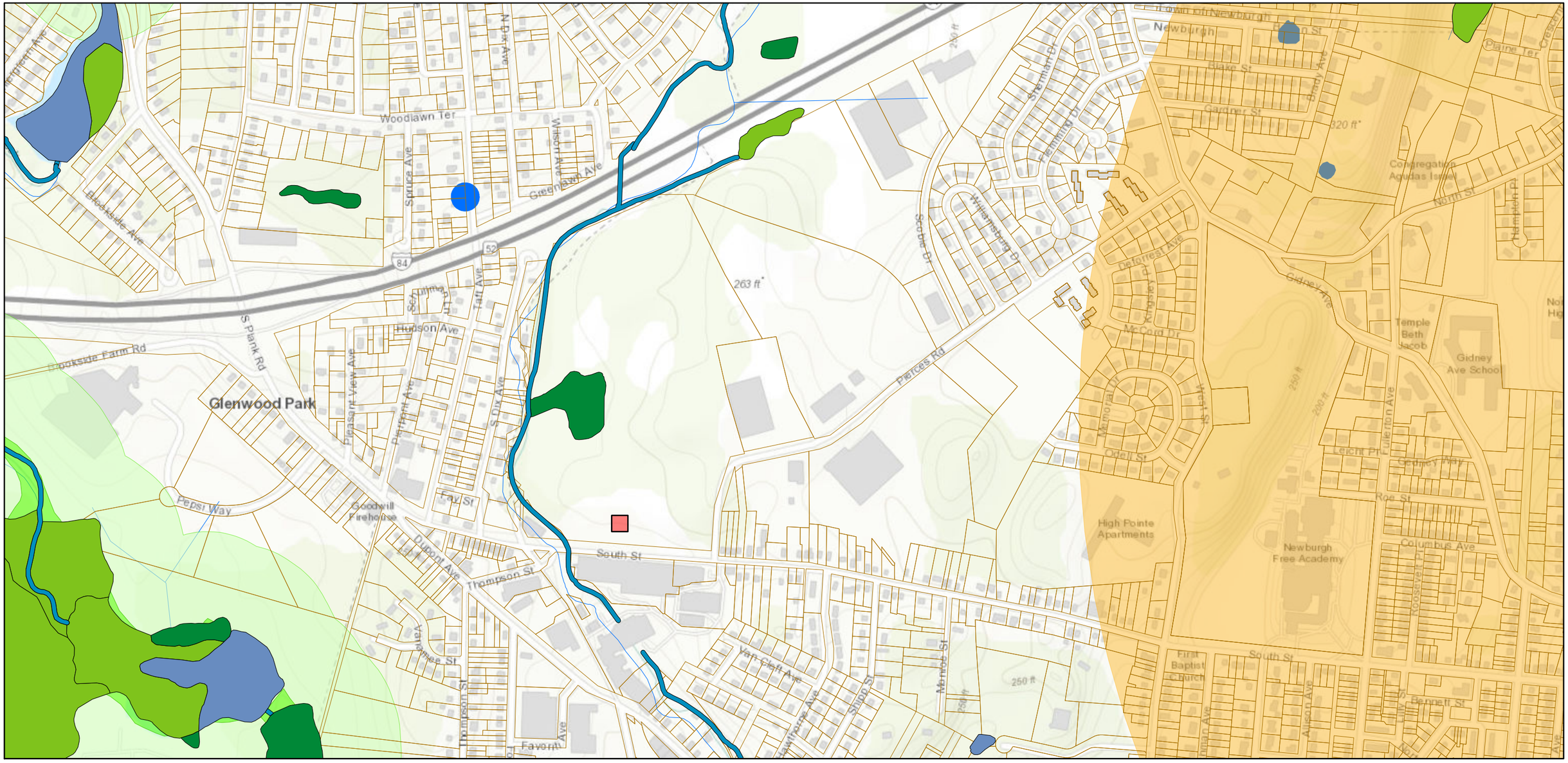
Figure 4: Environmental Resource Mapper



April 2, 2021

1:9,028

0 0.07 0.15 0.3 mi

0 0.13 0.25 0.5 km

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

NYS Department of Environmental Conservation
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NOTES TO USERS

p is for use in administering the National Flood Insurance Program. It t necessarily identify all areas subject to flooding, particularly from local sources of small size. The **community map repository** should be d for possible updated or additional flood hazard information.

in more detailed information in areas where **Base Flood Elevations** and/or **floodways** have been determined, users are encouraged to consult d Profiles and Floodway Data and/or Summary of Stillwater Elevations ontained within the Flood Insurance Study (FIS) report that accompanies M. Users should be aware that BFEs shown on the FIRM represent l whole-foot elevations. These BFEs are intended for flood insurance urposes only and should not be used as the sole source of flood in information. Accordingly, flood elevation data presented in the FIS should be utilized in conjunction with the FIRM for purposes of tion and/or floodplain management.

l Base Flood Elevations shown on this map apply only landward of h American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should e that coastal flood elevations are also provided in the Summary of Elevations tables in the Flood Insurance Study report for this jurisdiction. hs shown in the Summary of Stillwater Elevations tables should be used for tion and/or floodplain management purposes when they are higher than tions shown on this FIRM.

ies of the **floodways** were computed at cross sections and interpolated cross sections. The floodways were based on hydraulic considerations ard to requirements of the National Flood Insurance Program. Floodway nd other pertinent floodway data are provided in the Flood Insurance port for this jurisdiction.

areas not in Special Flood Hazard Areas may be protected by **flood structures**. Refer to Section 2.4 "Flood Protection Measures" of the surance Study report for information on flood control structures for this on.

jection used in the preparation of this map was Universal Transverse (UTM) zone 18. The **horizontal datum** was NAD 83, GRS80 spheroid. es in datum, spheroid, projection or UTM zones used in the production of or adjacent jurisdictions may result in slight positional differences in map across jurisdiction boundaries. These differences do not affect the of this FIRM.

evations on this map are referenced to the North American Vertical Datum These flood elevations must be compared to structure and ground s referenced to the same **vertical datum**. For information regarding on between the National Geodetic Vertical Datum of 1929 and the merican Vertical Datum of 1988, visit the National Geodetic Survey at http://www.ngs.noaa.gov or contact the National Geodetic Survey at ving address:

ormation Services
/NGS12
Geodetic Survey
, #9202
t-West Highway
ring, Maryland 20910-3282
3-3242

n current elevation, description, and/or location information for **bench** shown on this map, please contact the Information Services Branch National Geodetic Survey at **(301) 713-3242**, or visit its website at w.ngs.noaa.gov.

ap information shown on this FIRM was derived from digital tography provided by the New York Sate Office of Cyber Security & Infrastructure Coordination. This information was provided as 30- er and 60-centimeter resolution natural color orthoimagery from phy dated April-May 2004.

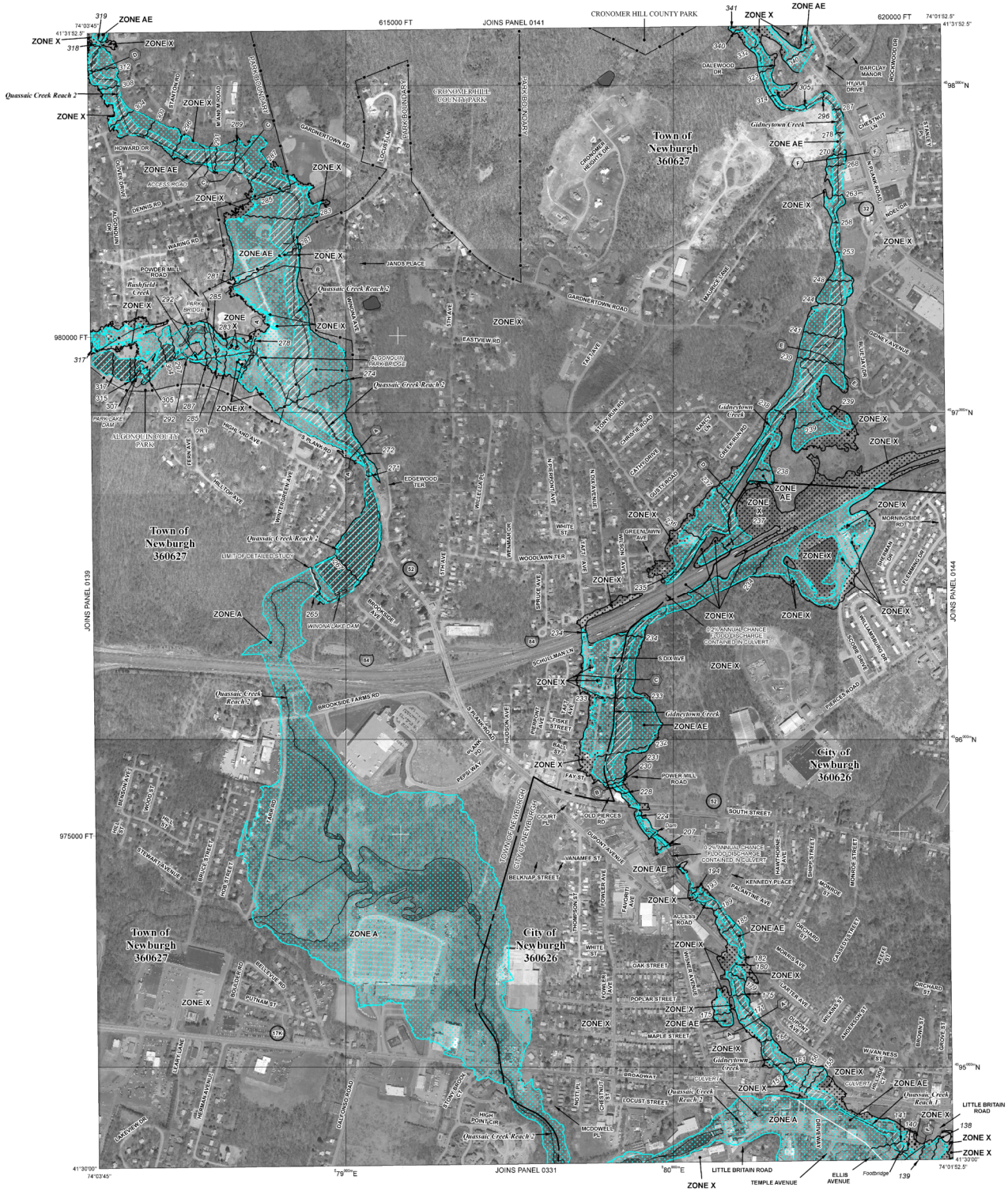
n updated topographic information, this map reflects more detailed and te **stream channel configurations and floodplain delineations** than own on the previous FIRM for this jurisdiction. As a result, the Flood and Floodway Data tables in the Flood Insurance Study Report (which authoritative hydraulic data) may reflect stream channel distances that m what is shown on this map. Also, the road to floodplain relationships for d streams may differ from what is shown on previous maps.

te limits shown on this map are based on the best data available at the publication. Because changes due to annexations or de-annexations may curred after this map was published, map users should contact appropriate ity officials to verify current corporate limit locations.

refer to the separately printed **Map Index** for an overview map of the showing the layout of map panels; community map repository addresses; sting of Communities table containing National Flood Insurance Program r each community as well as a listing of the panels on which each ity is located.

the **FEMA Map Service Center** at 1-800-358-9616 for information on products associated with this FIRM. Available products may include ly issued Letters of Map Change, a Flood Insurance Study report, and/or rsions of this map. The FEMA Map Service Center may also be reached 1-800-358-9620 and its website at http://msc.fema.gov.

ve **questions about this map** or questions concerning the National Flood e Program in general, please call **1-877-FEMA MAP** (1-877-336-2627) or FEMA website at http://www.fema.gov.



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUN BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual flood (100-year flood), also known as the base flood, is the flood that chance of being equaled or exceeded in any given year. The Special Flood Hazard A area subject to flooding by the 1% annual chance flood. Areas of Special Flood Haza Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the wat elevation of the 1% annual chance flood.

- **ZONE A** No Base Flood Elevations determined.
- **ZONE AE** Base Flood Elevations determined.
- **ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); B Elevations determined.
- **ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain depths determined. For areas of alluvial fan flooding, velo determined.
- **ZONE AR** Special Flood Hazard Area formerly protected from the 1% annu flood by a flood control system that was subsequently decertified indicates that the former flood control system is being restored protection from the 1% annual chance or greater flood.
- **ZONE A99** Area to be protected from 1% annual chance flood by a Fed protection system under construction; no Base Flood determined.
- **ZONE V** Coastal flood zone with velocity hazard (wave action); no B Elevations determined.
- **ZONE VE** Coastal flood zone with velocity hazard (wave action); Ba Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must b of encroachment so that the 1% annual chance flood can be carried without substantia in flood heights.

OTHER FLOOD AREAS

- **ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance average depths of less than 1 foot or with drainage areas 1 square mile; and areas protected by levees from 1% annual cha

OTHER AREAS

- **ZONE X** Areas determined to be outside the 0.2% annual chance floodpla
- **ZONE D** Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREA

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard A

- 1% annual chance floodplain boundary
- 0.2% annual chance floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Area Z boundary dividing Special Flood Hazard Areas of diff Flood Elevations, flood depths or flood velocities.
- 513 Base Flood Elevation line and value; elevation in feet*
- (EL 987) Base Flood Elevation value where uniform within zone in feet*

* Referenced to the North American Vertical Datum of 1988

- A–A Cross section line
- 3–3 Limited detail cross section line
- 23–23 Transect line
- 87°07'45", 32°22'30" Geographic coordinates referenced to the North Americ of 1983 (NAD 83), Western Hemisphere
- 76°00'N 1000-meter Universal Transverse Mercator grid values,
- 600000 FT 5000-foot grid ticks: New York State Plane coordinate s East zone (FIPSZONE 3101), Transverse Mercator proje
- DX5510 × Bench mark (see explanation in Notes to Users secti FIRM panel)
- M1.5 River Mile

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
August 3, 2009

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Comm Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Ins agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'
250 0 500 1000 FEET
150 0 150 300 METERS

NFIP
NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0143E

FIRM
FLOOD INSURANCE RATE MAP

for ORANGE COUNTY, NEW YORK
(ALL JURISDICTIONS)

CONTAINS:

COMMUNITY	NU
NEWBURGH, CITY OF	36
NEWBURGH, TOWN OF	36

PANEL 143 OF 630
MAP SUFFIX: E
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

Notice to User: The **Map Number** shown belo used when placing map orders; the **Communi** shown above should be used on insurance applica subject community.

MAP NU
360710

EFFECTIVE
AUGUST

Federal Emergency Management

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PROGRESS SET - NOT FOR CONSTRUCTION

0 1 2 3
ORIGINAL SCALE IN INCHES

rev.	date	description

NEWBURGH SOUTH LOGISTICS CENTER

PRE-DEVELOPMENT STORMWATER MAP

CITY OF NEWBURGH, ORANGE COUNTY, NEW YORK

designed CAR	checked WJK
date 11/10/23	scale 1"=100'
project no. 2220679	
sheet no. FIG 6	

Drawing Name: B:\GLOBAL\Projects\Brookfield Properties\2222335.01 – Newburgh Warehouse Civil Eng\06_Drawings\Civil\99_FIG6-7_32142-00_PRE-POST-DEVELOP.dwg
Xrefs Attached: XBASE_AS-BUILT-CLIENT_32142-00; XBASE_GIS_32142-00; XTB-24X36_32142-00; XLAYOUT_32142-00; XSTORM_32142-00; XBASE-ENG_32142-00_CHAZEN_rev1
Date Printed: Jan 04, 2024, 1:09pm

LEGEND:

- SUBCATCHMENT BOUNDARIES
- TIME OF CONCENTRATION FLOW PATH
- # — SUBCATCHMENT
- # — STORMWATER MANAGEMENT PRACTICE OR STRUCTURE

PROPOSED WAREHOUSE
1-STORY/29 FT HEIGHT (FRONTING PIERCES ROAD)
416,320 SF TOTAL

5,000 SF OFFICE SPACE
FFE 266.50
411,320 SF WAREHOUSE
FFE=250.50

REFER TO BUILDING DESIGN PLANS BY OTHERS

PROGRESS SET - NOT FOR CONSTRUCTION

rev.	date	description
1	04/24/23	REVISED SUBCATCHMENTS

NEWBURGH SOUTH LOGISTICS CENTER

POST-DEVELOPMENT STORMWATER MAP

CITY OF NEWBURGH, ORANGE COUNTY, NEW YORK

designed	checked
CAR	WJK
date	scale
11/10/23	1"=100'
project no.	
2220679	
sheet no.	
FIG 7	

0 1 2 3
ORIGINAL SCALE IN INCHES

Drawing Name: B:\GLOBAL\Projects\Brookfield Properties\2222335.01 – Newburgh Warehouse Civil Eng\06_Drawings\Civil\99_FIGS-7_32142-00_PRE-POST-DEVELOP.dwg
Xref's Attached: XBASE_AS-BUILT_CLIENT_32142-00; XBASE_GIS_32142-00; XTB-24X36_32142-00; XLAYOUT_32142-00; XSTORM_32142-00; XBASE-ENG_32142-00_CHAZEN_rev1
Date Printed: Jan 04, 2024, 12:43pm

Appendix H:
Chazen Certifying Professionals Letter

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February 17, 2022

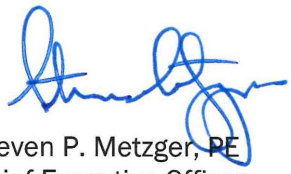
RE: LaBella Certifying Professionals for NYSDEC SPDES GP-20-001

To Whom it May Concern:

In accordance with the NYSDEC SPDES General Permit GP 0-20-001, part VII.H.2, the New York State licensed Professional Engineers employed by LaBella Associates and listed on the attachment to this letter are duly authorized to sign and seal Stormwater Pollution Prevention Plans (SWPPPs), NOIs, and NOTs prepared under their direct supervision.

Respectfully submitted,

LaBella Associates



Steven P. Metzger, PE
Chief Executive Officer

300 State Street, Suite 201 | Rochester, NY 14614 | p (585) 454-6110 | f (585) 454-3066
www.labellapc.com

LaBella Professional Engineers duly authorized to sign and seal SWPPPs, NOIs, and NOTs:

Name:	Title:	Signature:	Date:
Kyle Ahearn, PE	Senior Civil Engineer		2/9/22
Jody Allen, PE	Senior Civil Engineer		2/24/2022
Anthony Bernardi, PE	Senior Civil Engineer		
Brendan Bystrak, PE	Vice President		
Steven Calocerinos, PE	Senior Civil Engineer		2/9/2022
Jason Ebbs, PE	Municipal Group Leader		
Michael Flanagan, PE	Senior Civil Engineer		2/10/22
Don Hoefler, PE	Senior Project Engineer		
Reuben Hull, PE	Senior Civil Engineer		2/9/2002
Eric Johnson, PE	Senior Civil Engineer		2/9/2002
Roger Keating, PE	Senior Civil Engineer		2/9/2022
Walter Kubow, PE	Senior Civil Engineer		2/9/2022
Christopher Lapine, PE	Senior Civil Engineer		2/9/22
Joseph Lanaro, PE	Vice President		2/9/2022
Michael Mishook, PE	Vice President		2/10/22
Lauren Rodriquez, PE	Civil Engineer		2/9/2022
Jonathan Spurr, PE	Civil Engineer		2/10/22
Mary Steblein, PE	Senior Civil Engineer		2/9/2022
Robert Steehler, PE	Vice President		2/9/2022
Timothy Webber, PE	Vice President		2/9/2022
Kristopher Winkler, PE	Senior Civil Engineer		2/14/2022

Appendix I:
Pre-Development Stormwater Modeling

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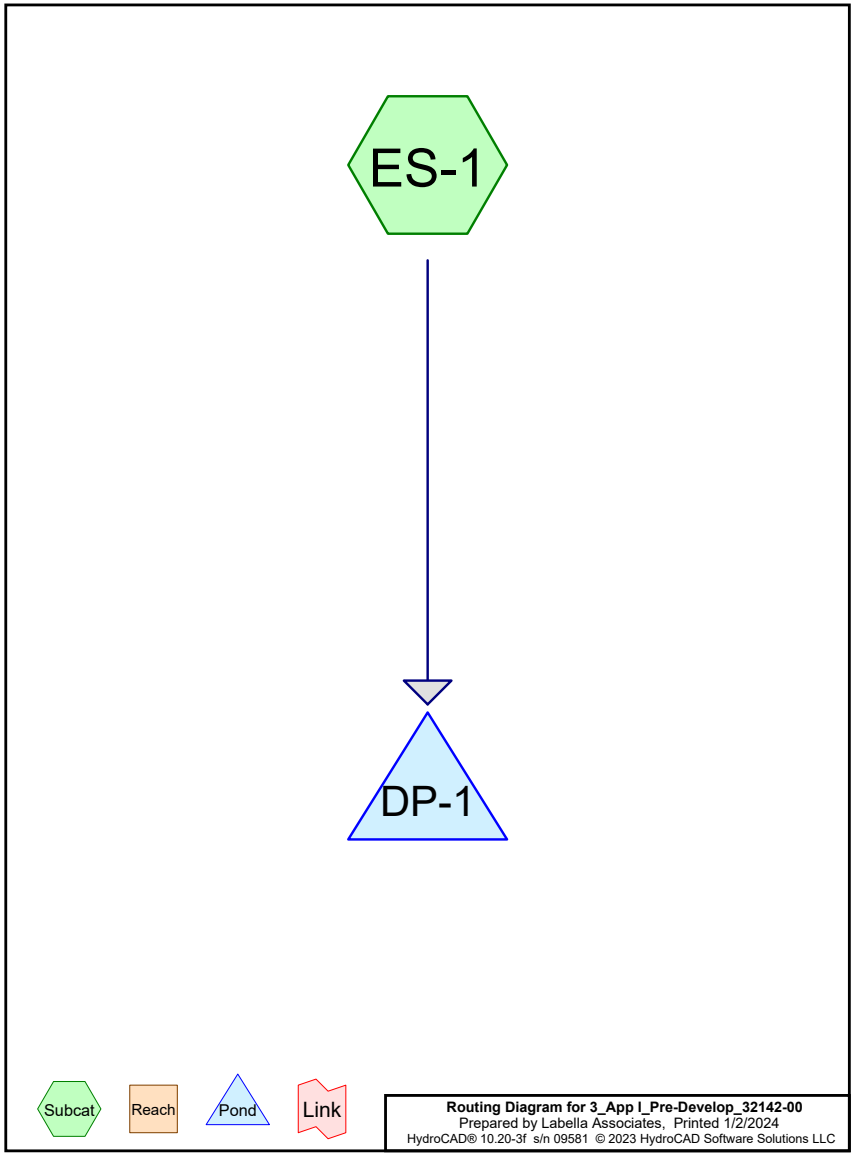

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentES-1: Runoff Area=2,181,396 sf 2.73% Impervious Runoff Depth=0.58"
Flow Length=1,366' Tc=30.5 min CN=72 Runoff=13.79 cfs 2.426 af

Pond DP-1: Inflow=13.79 cfs 2.426 af
Primary=13.79 cfs 2.426 af

Total Runoff Area = 50.078 ac Runoff Volume = 2.426 af Average Runoff Depth = 0.58"
97.27% Pervious = 48.710 ac 2.73% Impervious = 1.368 ac

Summary for Subcatchment ES-1:

Runoff = 13.79 cfs @ 12.44 hrs, Volume= 2.426 af, Depth= 0.58"
Routed to Pond DP-1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 500-yr 1-yr Rainfall=2.60"

Area (sf)	CN	Description
26,577	30	Woods, Good, HSG A
400,220	39	>75% Grass cover, Good, HSG A
12,083	76	Gravel roads, HSG A
5,025	98	Paved roads w/curbs & sewers, HSG A
1,122	98	Water Surface, HSG A
821,555	77	Woods, Good, HSG D
71,183	79	Woods/grass comb., Good, HSG D
708,907	80	>75% Grass cover, Good, HSG D
81,271	91	Gravel roads, HSG D
32,120	98	Paved roads w/curbs & sewers, HSG D
21,333	98	Water Surface, HSG D
2,181,396	72	Weighted Average
2,121,796		97.27% Pervious Area
59,600		2.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.8	100	0.0500	0.24		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.15"
0.3	65	0.0650	4.10		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
7.0	597	0.0410	1.42		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
16.4	604	0.0150	0.61		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
30.5	1,366	Total			

Summary for Pond DP-1:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 50.078 ac, 2.73% Impervious, Inflow Depth = 0.58" for 1-yr event
Inflow = 13.79 cfs @ 12.44 hrs, Volume= 2.426 af
Primary = 13.79 cfs @ 12.44 hrs, Volume= 2.426 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentES-1: Runoff Area=2,181,396 sf 2.73% Impervious Runoff Depth=1.96"
Flow Length=1,366' Tc=30.5 min CN=72 Runoff=54.74 cfs 8.188 af

Pond DP-1: Inflow=54.74 cfs 8.188 af
Primary=54.74 cfs 8.188 af

Total Runoff Area = 50.078 ac Runoff Volume = 8.188 af Average Runoff Depth = 1.96"
97.27% Pervious = 48.710 ac 2.73% Impervious = 1.368 ac

Summary for Subcatchment ES-1:

Runoff = 54.74 cfs @ 12.40 hrs, Volume= 8.188 af, Depth= 1.96"
Routed to Pond DP-1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 500-yr 10-yr Rainfall=4.69"

Area (sf)	CN	Description
26,577	30	Woods, Good, HSG A
400,220	39	>75% Grass cover, Good, HSG A
12,083	76	Gravel roads, HSG A
5,025	98	Paved roads w/curbs & sewers, HSG A
1,122	98	Water Surface, HSG A
821,555	77	Woods, Good, HSG D
71,183	79	Woods/grass comb., Good, HSG D
708,907	80	>75% Grass cover, Good, HSG D
81,271	91	Gravel roads, HSG D
32,120	98	Paved roads w/curbs & sewers, HSG D
21,333	98	Water Surface, HSG D
2,181,396	72	Weighted Average
2,121,796		97.27% Pervious Area
59,600		2.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.8	100	0.0500	0.24		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.15"
0.3	65	0.0650	4.10		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
7.0	597	0.0410	1.42		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
16.4	604	0.0150	0.61		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
30.5	1,366	Total			

Summary for Pond DP-1:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 50.078 ac, 2.73% Impervious, Inflow Depth = 1.96" for 10-yr event
Inflow = 54.74 cfs @ 12.40 hrs, Volume= 8.188 af
Primary = 54.74 cfs @ 12.40 hrs, Volume= 8.188 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentES-1: Runoff Area=2,181,396 sf 2.73% Impervious Runoff Depth=2.90"
Flow Length=1,366' Tc=30.5 min CN=72 Runoff=82.53 cfs 12.117 af

Pond DP-1: Inflow=82.53 cfs 12.117 af
Primary=82.53 cfs 12.117 af

Total Runoff Area = 50.078 ac Runoff Volume = 12.117 af Average Runoff Depth = 2.90"
97.27% Pervious = 48.710 ac 2.73% Impervious = 1.368 ac

Summary for Subcatchment ES-1:

Runoff = 82.53 cfs @ 12.37 hrs, Volume= 12.117 af, Depth= 2.90"
Routed to Pond DP-1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 500-yr 25-yr Rainfall=5.89"

Area (sf)	CN	Description
26,577	30	Woods, Good, HSG A
400,220	39	>75% Grass cover, Good, HSG A
12,083	76	Gravel roads, HSG A
5,025	98	Paved roads w/curbs & sewers, HSG A
1,122	98	Water Surface, HSG A
821,555	77	Woods, Good, HSG D
71,183	79	Woods/grass comb., Good, HSG D
708,907	80	>75% Grass cover, Good, HSG D
81,271	91	Gravel roads, HSG D
32,120	98	Paved roads w/curbs & sewers, HSG D
21,333	98	Water Surface, HSG D
2,181,396	72	Weighted Average
2,121,796		97.27% Pervious Area
59,600		2.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.8	100	0.0500	0.24		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.15"
0.3	65	0.0650	4.10		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
7.0	597	0.0410	1.42		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
16.4	604	0.0150	0.61		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
30.5	1,366	Total			

Summary for Pond DP-1:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 50.078 ac, 2.73% Impervious, Inflow Depth = 2.90" for 25-yr event
Inflow = 82.53 cfs @ 12.37 hrs, Volume= 12.117 af
Primary = 82.53 cfs @ 12.37 hrs, Volume= 12.117 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentES-1: Runoff Area=2,181,396 sf 2.73% Impervious Runoff Depth=4.99"
Flow Length=1,366' Tc=30.5 min CN=72 Runoff=142.95 cfs 20.804 af

Pond DP-1: Inflow=142.95 cfs 20.804 af
Primary=142.95 cfs 20.804 af

Total Runoff Area = 50.078 ac Runoff Volume = 20.804 af Average Runoff Depth = 4.99"
97.27% Pervious = 48.710 ac 2.73% Impervious = 1.368 ac

Summary for Subcatchment ES-1:

Runoff = 142.95 cfs @ 12.37 hrs, Volume= 20.804 af, Depth= 4.99"
Routed to Pond DP-1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 500-yr 100-yr Rainfall=8.33"

Area (sf)	CN	Description
26,577	30	Woods, Good, HSG A
400,220	39	>75% Grass cover, Good, HSG A
12,083	76	Gravel roads, HSG A
5,025	98	Paved roads w/curbs & sewers, HSG A
1,122	98	Water Surface, HSG A
821,555	77	Woods, Good, HSG D
71,183	79	Woods/grass comb., Good, HSG D
708,907	80	>75% Grass cover, Good, HSG D
81,271	91	Gravel roads, HSG D
32,120	98	Paved roads w/curbs & sewers, HSG D
21,333	98	Water Surface, HSG D
2,181,396	72	Weighted Average
2,121,796		97.27% Pervious Area
59,600		2.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.8	100	0.0500	0.24		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.15"
0.3	65	0.0650	4.10		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
7.0	597	0.0410	1.42		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
16.4	604	0.0150	0.61		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
30.5	1,366	Total			

Summary for Pond DP-1:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 50.078 ac, 2.73% Impervious, Inflow Depth = 4.99" for 100-yr event
Inflow = 142.95 cfs @ 12.37 hrs, Volume= 20.804 af
Primary = 142.95 cfs @ 12.37 hrs, Volume= 20.804 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

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Appendix J:
Post-Development Stormwater Modeling

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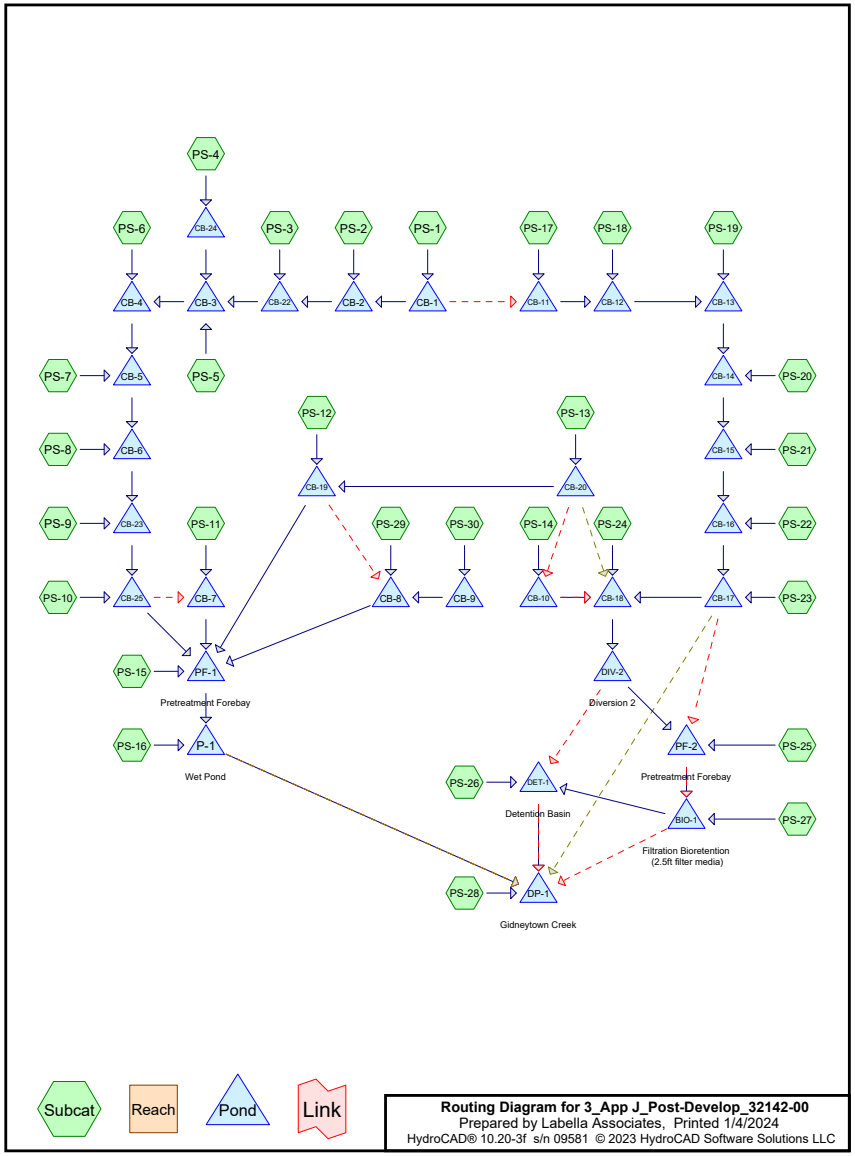

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentPS-1: Runoff Area=59,320 sf 46.38% Impervious Runoff Depth=1.01"
Flow Length=321' Tc=14.2 min CN=81 Runoff=1.30 cfs 0.115 af

SubcatchmentPS-10: Runoff Area=11,265 sf 67.79% Impervious Runoff Depth=0.91"
Tc=6.0 min CN=79 Runoff=0.31 cfs 0.020 af

SubcatchmentPS-11: Runoff Area=124,140 sf 99.06% Impervious Runoff Depth=2.26"
Tc=6.0 min CN=97 Runoff=8.55 cfs 0.537 af

SubcatchmentPS-12: Runoff Area=172,728 sf 100.00% Impervious Runoff Depth=2.37"
Tc=6.0 min CN=98 Runoff=12.16 cfs 0.783 af

SubcatchmentPS-13: Runoff Area=34,560 sf 100.00% Impervious Runoff Depth=2.37"
Tc=6.0 min CN=98 Runoff=2.43 cfs 0.157 af

SubcatchmentPS-14: Runoff Area=35,140 sf 97.85% Impervious Runoff Depth=2.37"
Tc=6.0 min CN=98 Runoff=2.47 cfs 0.159 af

SubcatchmentPS-15: Runoff Area=12,293 sf 0.00% Impervious Runoff Depth=1.26"
Tc=6.0 min CN=85 Runoff=0.50 cfs 0.030 af

SubcatchmentPS-16: Runoff Area=68,931 sf 0.00% Impervious Runoff Depth=1.33"
Tc=6.0 min CN=86 Runoff=2.96 cfs 0.175 af

SubcatchmentPS-17: Runoff Area=26,060 sf 83.73% Impervious Runoff Depth=2.06"
Tc=6.0 min CN=95 Runoff=1.69 cfs 0.103 af

SubcatchmentPS-18: Runoff Area=31,224 sf 79.46% Impervious Runoff Depth=1.97"
Tc=6.0 min CN=94 Runoff=1.95 cfs 0.117 af

SubcatchmentPS-19: Runoff Area=13,991 sf 95.15% Impervious Runoff Depth=2.26"
Tc=6.0 min CN=97 Runoff=0.96 cfs 0.061 af

SubcatchmentPS-2: Runoff Area=52,401 sf 62.82% Impervious Runoff Depth=1.70"
Flow Length=139' Tc=7.8 min CN=91 Runoff=2.62 cfs 0.171 af

SubcatchmentPS-20: Runoff Area=777 sf 100.00% Impervious Runoff Depth=2.37"
Tc=6.0 min CN=98 Runoff=0.05 cfs 0.004 af

SubcatchmentPS-21: Runoff Area=6,993 sf 69.58% Impervious Runoff Depth=1.87"
Tc=6.0 min CN=93 Runoff=0.42 cfs 0.025 af

SubcatchmentPS-22: Runoff Area=10,506 sf 66.97% Impervious Runoff Depth=1.79"
Tc=6.0 min CN=92 Runoff=0.61 cfs 0.036 af

SubcatchmentPS-23: Runoff Area=92,825 sf 95.28% Impervious Runoff Depth=2.26"
Tc=6.0 min CN=97 Runoff=6.39 cfs 0.402 af

SubcatchmentPS-24: Runoff Area=112,817 sf 98.41% Impervious Runoff Depth=2.37"
Tc=6.0 min CN=98 Runoff=7.94 cfs 0.512 af

SubcatchmentPS-25: Runoff Area=23,503 sf 23.00% Impervious Runoff Depth=1.47"
Tc=6.0 min CN=88 Runoff=1.12 cfs 0.066 af

SubcatchmentPS-26: Runoff Area=23,847 sf 0.00% Impervious Runoff Depth=0.96"
Tc=6.0 min CN=80 Runoff=0.71 cfs 0.044 af

SubcatchmentPS-27: Runoff Area=54,566 sf 4.64% Impervious Runoff Depth=1.01"
Tc=6.0 min CN=81 Runoff=1.74 cfs 0.106 af

SubcatchmentPS-28: Runoff Area=1,035,126 sf 6.64% Impervious Runoff Depth=0.50"
Flow Length=735' Tc=22.4 min CN=70 Runoff=7.06 cfs 0.998 af

SubcatchmentPS-29: Runoff Area=36,671 sf 100.00% Impervious Runoff Depth=2.37"
Tc=6.0 min CN=98 Runoff=2.58 cfs 0.166 af

SubcatchmentPS-3: Runoff Area=32,215 sf 78.33% Impervious Runoff Depth=1.87"
Tc=6.0 min CN=93 Runoff=1.94 cfs 0.115 af

SubcatchmentPS-30: Runoff Area=33,056 sf 85.37% Impervious Runoff Depth=2.06"
Tc=6.0 min CN=95 Runoff=2.14 cfs 0.130 af

SubcatchmentPS-4: Runoff Area=22,641 sf 0.00% Impervious Runoff Depth=0.43"
Flow Length=284' Tc=12.3 min CN=68 Runoff=0.16 cfs 0.019 af

SubcatchmentPS-5: Runoff Area=3,406 sf 94.86% Impervious Runoff Depth=2.26"
Tc=6.0 min CN=97 Runoff=0.23 cfs 0.015 af

SubcatchmentPS-6: Runoff Area=35,574 sf 96.53% Impervious Runoff Depth=2.26"
Tc=6.0 min CN=97 Runoff=2.45 cfs 0.154 af

SubcatchmentPS-7: Runoff Area=4,143 sf 59.04% Impervious Runoff Depth=0.96"
Tc=6.0 min CN=80 Runoff=0.12 cfs 0.008 af

SubcatchmentPS-8: Runoff Area=8,693 sf 67.40% Impervious Runoff Depth=0.91"
Tc=6.0 min CN=79 Runoff=0.24 cfs 0.015 af

SubcatchmentPS-9: Runoff Area=2,000 sf 100.00% Impervious Runoff Depth=2.37"
Tc=6.0 min CN=98 Runoff=0.14 cfs 0.009 af

Pond BIO-1: Filtration Bioretention (2.5ft Peak Elev=236.10' Storage=25,569 cf Inflow=21.90 cfs 1.589 af
Discarded=0.25 cfs 0.979 af Primary=5.06 cfs 0.610 af Secondary=0.00 cfs 0.000 af Outflow=5.31 cfs 1.589 af

Pond CB-1: Peak Elev=260.39' Storage=5 cf Inflow=1.30 cfs 0.115 af
Primary=1.30 cfs 0.115 af Secondary=0.00 cfs 0.000 af Outflow=1.30 cfs 0.115 af

Pond CB-10: Peak Elev=241.87' Storage=34 cf Inflow=2.47 cfs 0.159 af
Primary=2.37 cfs 0.159 af Secondary=0.00 cfs 0.000 af Outflow=2.37 cfs 0.159 af

Pond CB-11: Peak Elev=259.72' Storage=6 cf Inflow=1.69 cfs 0.103 af
18.0" Round Culvert n=0.013 L=216.0' S=0.0100 '/' Outflow=1.69 cfs 0.103 af

Pond CB-12: Peak Elev=257.94' Storage=13 cf Inflow=3.64 cfs 0.220 af
18.0" Round Culvert n=0.013 L=192.0' S=0.0100 '/' Outflow=3.64 cfs 0.220 af

Pond CB-13: Peak Elev=256.20' Storage=15 cf Inflow=4.60 cfs 0.281 af
18.0" Round Culvert n=0.013 L=137.0' S=0.0100 '/' Outflow=4.60 cfs 0.281 af

Pond CB-14: Peak Elev=254.84' Storage=15 cf Inflow=4.66 cfs 0.284 af
Outflow=4.66 cfs 0.284 af

Pond CB-15: Peak Elev=251.23' Storage=16 cf Inflow=5.08 cfs 0.309 af
Outflow=5.08 cfs 0.309 af

Pond CB-16: Peak Elev=243.56' Storage=19 cf Inflow=5.68 cfs 0.345 af
Outflow=5.68 cfs 0.345 af

Pond CB-17: Peak Elev=242.73' Storage=65 cf Inflow=12.07 cfs 0.747 af
Primary=11.81 cfs 0.747 af Secondary=0.00 cfs 0.000 af Tertiary=0.00 cfs 0.000 af Outflow=11.81 cfs 0.747 af

Pond CB-18: Peak Elev=241.83' Storage=95 cf Inflow=22.08 cfs 1.418 af
Outflow=21.95 cfs 1.418 af

Pond CB-19: Peak Elev=242.31' Storage=50 cf Inflow=14.59 cfs 0.940 af
Primary=14.58 cfs 0.940 af Secondary=0.00 cfs 0.000 af Outflow=14.58 cfs 0.940 af

Pond CB-2: Peak Elev=258.57' Storage=12 cf Inflow=3.56 cfs 0.286 af
Outflow=3.56 cfs 0.286 af

Pond CB-20: Peak Elev=242.98' Storage=9 cf Inflow=2.43 cfs 0.157 af
Primary=2.43 cfs 0.157 af Secondary=0.00 cfs 0.000 af Tertiary=0.00 cfs 0.000 af Outflow=2.43 cfs 0.157 af

Pond CB-22: Peak Elev=256.40' Storage=16 cf Inflow=5.32 cfs 0.401 af
Outflow=5.32 cfs 0.401 af

Pond CB-23: Peak Elev=244.74' Storage=28 cf Inflow=8.47 cfs 0.620 af
Outflow=8.47 cfs 0.620 af

Pond CB-24: Peak Elev=256.72' Storage=1 cf Inflow=0.16 cfs 0.019 af
12.0" Round Culvert n=0.013 L=26.0' S=0.0100 '/' Outflow=0.16 cfs 0.019 af

Pond CB-25: Peak Elev=243.16' Storage=29 cf Inflow=8.78 cfs 0.640 af
Primary=8.77 cfs 0.640 af Secondary=0.00 cfs 0.000 af Outflow=8.77 cfs 0.640 af

Pond CB-3: Peak Elev=255.48' Storage=29 cf Inflow=5.63 cfs 0.435 af
Outflow=5.63 cfs 0.435 af

Pond CB-4: Peak Elev=254.17' Storage=26 cf Inflow=7.98 cfs 0.589 af
18.0" Round Culvert n=0.013 L=241.0' S=0.0100 '/' Outflow=7.98 cfs 0.589 af

Pond CB-5: Peak Elev=251.80' Storage=26 cf Inflow=8.10 cfs 0.596 af
Outflow=8.10 cfs 0.596 af

Pond CB-6: Peak Elev=247.69' Storage=21 cf Inflow=8.34 cfs 0.611 af
Outflow=8.33 cfs 0.611 af

Pond CB-7: Peak Elev=240.51' Storage=32 cf Inflow=8.55 cfs 0.537 af
Outflow=8.54 cfs 0.537 af

Pond CB-8: Peak Elev=240.79' Storage=15 cf Inflow=4.72 cfs 0.297 af
Outflow=4.72 cfs 0.297 af

Pond CB-9: Peak Elev=241.46' Storage=8 cf Inflow=2.14 cfs 0.130 af
Outflow=2.14 cfs 0.130 af

Pond DET-1: Detention Basin Peak Elev=233.61' Storage=19,575 cf Inflow=5.25 cfs 0.654 af
Primary=0.30 cfs 0.654 af Secondary=0.00 cfs 0.000 af Outflow=0.30 cfs 0.654 af

Pond DIV-2: Diversion 2 Peak Elev=240.46' Storage=106 cf Inflow=21.95 cfs 1.418 af
Primary=22.02 cfs 1.418 af Secondary=0.00 cfs 0.000 af Outflow=22.02 cfs 1.418 af

Pond DP-1: Gidneytown Creek Inflow=7.52 cfs 3.582 af
Primary=7.52 cfs 3.582 af

Pond P-1: Wet Pond Peak Elev=237.99' Storage=89,854 cf Inflow=39.50 cfs 2.618 af
Primary=0.39 cfs 1.931 af Secondary=0.00 cfs 0.000 af Outflow=0.39 cfs 1.931 af

Pond PF-1: Pretreatment Forebay Peak Elev=238.93' Storage=1,703 cf Inflow=36.90 cfs 2.443 af
Outflow=36.57 cfs 2.443 af

Pond PF-2: Pretreatment Forebay Peak Elev=236.11' Storage=4,478 cf Inflow=23.14 cfs 1.484 af
Outflow=20.19 cfs 1.483 af

Total Runoff Area = 50.078 ac Runoff Volume = 5.249 af Average Runoff Depth = 1.26"
57.85% Pervious = 28.971 ac 42.15% Impervious = 21.108 ac

Summary for Subcatchment PS-1:

Runoff = 1.30 cfs @ 12.16 hrs, Volume= 0.115 af, Depth= 1.01"
Routed to Pond CB-1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 1-yr Rainfall=2.60"

Area (sf)	CN	Description
21,713	80	>75% Grass cover, Good, HSG D
20,423	98	Paved parking, HSG D
10,094	39	>75% Grass cover, Good, HSG A
7,090	98	Paved parking, HSG A
59,320	81	Weighted Average
31,807		53.62% Pervious Area
27,513		46.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.8	100	0.0500	0.24		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.15"
7.4	221	0.0050	0.49		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
14.2	321	Total			

Summary for Subcatchment PS-10:

Runoff = 0.31 cfs @ 12.04 hrs, Volume= 0.020 af, Depth= 0.91"
Routed to Pond CB-25 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 1-yr Rainfall=2.60"

Area (sf)	CN	Description
3,629	39	>75% Grass cover, Good, HSG A
7,636	98	Paved parking, HSG A
11,265	79	Weighted Average
3,629		32.21% Pervious Area
7,636		67.79% Impervious Area

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

Summary for Subcatchment PS-11:

Runoff = 8.55 cfs @ 12.04 hrs, Volume= 0.537 af, Depth= 2.26"
Routed to Pond CB-7 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 1-yr Rainfall=2.60"

Area (sf)	CN	Description
1,165	39	>75% Grass cover, Good, HSG A
436	98	Paved parking, HSG D
3,849	98	Roofs, HSG D
83,098	98	Roofs, HSG A
35,592	98	Paved parking, HSG A
124,140	97	Weighted Average
1,165		0.94% Pervious Area
122,975		99.06% Impervious Area

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

Summary for Subcatchment PS-12:

Runoff = 12.16 cfs @ 12.04 hrs, Volume= 0.783 af, Depth= 2.37"
Routed to Pond CB-19 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 1-yr Rainfall=2.60"

Area (sf)	CN	Description
155,036	98	Roofs, HSG D
17,692	98	Roofs, HSG A
172,728	98	Weighted Average
172,728		100.00% Impervious Area

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

Summary for Subcatchment PS-13:

Runoff = 2.43 cfs @ 12.04 hrs, Volume= 0.157 af, Depth= 2.37"
Routed to Pond CB-20 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 1-yr Rainfall=2.60"

Area (sf)	CN	Description
34,560	98	Roofs, HSG D
34,560		100.00% Impervious Area

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

Summary for Subcatchment PS-14:

Runoff = 2.47 cfs @ 12.04 hrs, Volume= 0.159 af, Depth= 2.37"
Routed to Pond CB-10 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 1-yr Rainfall=2.60"

Area (sf)	CN	Description
755	80	>75% Grass cover, Good, HSG D
34,385	98	Paved parking, HSG D
35,140	98	Weighted Average
755		2.15% Pervious Area
34,385		97.85% Impervious Area

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

Summary for Subcatchment PS-15:

Runoff = 0.50 cfs @ 12.04 hrs, Volume= 0.030 af, Depth= 1.26"
Routed to Pond PF-1 : Pretreatment Forebay

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 1-yr Rainfall=2.60"

Area (sf)	CN	Description
8,567	80	>75% Grass cover, Good, HSG D
3,726	98	Water Surface, 0% imp, HSG D
12,293	85	Weighted Average
12,293		100.00% Pervious Area

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

Summary for Subcatchment PS-16:

Runoff = 2.96 cfs @ 12.04 hrs, Volume= 0.175 af, Depth= 1.33"
Routed to Pond P-1 : Wet Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 1-yr Rainfall=2.60"

Area (sf)	CN	Description
45,151	80	>75% Grass cover, Good, HSG D
23,780	98	Water Surface, 0% imp, HSG D
68,931	86	Weighted Average
68,931		100.00% Pervious Area

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

Summary for Subcatchment PS-17:

Runoff = 1.69 cfs @ 12.04 hrs, Volume= 0.103 af, Depth= 2.06"
Routed to Pond CB-11 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 1-yr Rainfall=2.60"

Area (sf)	CN	Description
4,241	80	>75% Grass cover, Good, HSG D
21,819	98	Paved parking, HSG D
26,060	95	Weighted Average
4,241		16.27% Pervious Area
21,819		83.73% Impervious Area

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

Summary for Subcatchment PS-18:

Runoff = 1.95 cfs @ 12.04 hrs, Volume= 0.117 af, Depth= 1.97"
Routed to Pond CB-12 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 1-yr Rainfall=2.60"

Area (sf)	CN	Description
6,412	80	>75% Grass cover, Good, HSG D
24,812	98	Paved parking, HSG D
31,224	94	Weighted Average
6,412		20.54% Pervious Area
24,812		79.46% Impervious Area

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

Summary for Subcatchment PS-19:

Runoff = 0.96 cfs @ 12.04 hrs, Volume= 0.061 af, Depth= 2.26"
Routed to Pond CB-13 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 1-yr Rainfall=2.60"

Area (sf)	CN	Description
678	80	>75% Grass cover, Good, HSG D
13,313	98	Paved parking, HSG D
13,991	97	Weighted Average
678		4.85% Pervious Area
13,313		95.15% Impervious Area

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

Summary for Subcatchment PS-2:

Runoff = 2.62 cfs @ 12.06 hrs, Volume= 0.171 af, Depth= 1.70"
Routed to Pond CB-2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 1-yr Rainfall=2.60"

Area (sf)	CN	Description
19,091	80	>75% Grass cover, Good, HSG D
32,920	98	Paved parking, HSG D
390	39	>75% Grass cover, Good, HSG A
52,401	91	Weighted Average
19,481		37.18% Pervious Area
32,920		62.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	100	0.0400	0.22		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.15"
0.3	39	0.0967	2.18		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
7.8	139	Total			

Summary for Subcatchment PS-20:

Runoff = 0.05 cfs @ 12.04 hrs, Volume= 0.004 af, Depth= 2.37"
Routed to Pond CB-14 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 1-yr Rainfall=2.60"

Area (sf)	CN	Description
777	98	Paved parking, HSG D
777		100.00% Impervious Area

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

Summary for Subcatchment PS-21:

Runoff = 0.42 cfs @ 12.04 hrs, Volume= 0.025 af, Depth= 1.87"
Routed to Pond CB-15 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 1-yr Rainfall=2.60"

Area (sf)	CN	Description
2,127	80	>75% Grass cover, Good, HSG D
4,866	98	Paved parking, HSG D
6,993	93	Weighted Average
2,127		30.42% Pervious Area
4,866		69.58% Impervious Area

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

Summary for Subcatchment PS-22:

Runoff = 0.61 cfs @ 12.04 hrs, Volume= 0.036 af, Depth= 1.79"
Routed to Pond CB-16 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 1-yr Rainfall=2.60"

Area (sf)	CN	Description
3,470	80	>75% Grass cover, Good, HSG D
7,036	98	Paved parking, HSG D
10,506	92	Weighted Average
3,470		33.03% Pervious Area
7,036		66.97% Impervious Area

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

Summary for Subcatchment PS-23:

Runoff = 6.39 cfs @ 12.04 hrs, Volume= 0.402 af, Depth= 2.26"
Routed to Pond CB-17 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 1-yr Rainfall=2.60"

Area (sf)	CN	Description
4,379	80	>75% Grass cover, Good, HSG D
36,053	98	Paved parking, HSG D
52,393	98	Roofs, HSG D
92,825	97	Weighted Average
4,379		4.72% Pervious Area
88,446		95.28% Impervious Area

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

Summary for Subcatchment PS-24:

Runoff = 7.94 cfs @ 12.04 hrs, Volume= 0.512 af, Depth= 2.37"
Routed to Pond CB-18 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 1-yr Rainfall=2.60"

Area (sf)	CN	Description
1,790	80	>75% Grass cover, Good, HSG D
41,907	98	Paved parking, HSG D
69,120	98	Roofs, HSG D
112,817	98	Weighted Average
1,790		1.59% Pervious Area
111,027		98.41% Impervious Area

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

Summary for Subcatchment PS-25:

Runoff = 1.12 cfs @ 12.04 hrs, Volume= 0.066 af, Depth= 1.47"
Routed to Pond PF-2 : Pretreatment Forebay

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 1-yr Rainfall=2.60"

Area (sf)	CN	Description
12,606	80	>75% Grass cover, Good, HSG D
5,405	98	Paved parking, HSG D
5,492	98	Water Surface, 0% imp, HSG D
23,503	88	Weighted Average
18,098		77.00% Pervious Area
5,405		23.00% Impervious Area

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

Summary for Subcatchment PS-26:

Runoff = 0.71 cfs @ 12.04 hrs, Volume= 0.044 af, Depth= 0.96"
Routed to Pond DET-1 : Detention Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 1-yr Rainfall=2.60"

Area (sf)	CN	Description
23,847	80	>75% Grass cover, Good, HSG D
23,847		100.00% Pervious Area

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

Summary for Subcatchment PS-27:

Runoff = 1.74 cfs @ 12.04 hrs, Volume= 0.106 af, Depth= 1.01"
Routed to Pond BIO-1 : Filtration Bioretention (2.5ft filter media)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 1-yr Rainfall=2.60"

Area (sf)	CN	Description
52,036	80	>75% Grass cover, Good, HSG D
2,530	98	Paved parking, HSG D
54,566	81	Weighted Average
52,036		95.36% Pervious Area
2,530		4.64% Impervious Area

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

Summary for Subcatchment PS-28:

Runoff = 7.06 cfs @ 12.32 hrs, Volume= 0.998 af, Depth= 0.50"
Routed to Pond DP-1 : Gidneytown Creek

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 1-yr Rainfall=2.60"

Area (sf)	CN	Description
45,884	98	Paved parking, HSG D
350	98	Paved parking, HSG A
377,918	77	Woods, Good, HSG D
18,580	30	Woods, Good, HSG A
230,060	39	>75% Grass cover, Good, HSG A
339,862	80	>75% Grass cover, Good, HSG D
1,122	98	Water Surface, HSG A
21,350	98	Water Surface, HSG D
1,035,126	70	Weighted Average
966,420		93.36% Pervious Area
68,706		6.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.7	100	0.0130	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.15"
9.5	481	0.0145	0.84		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.2	154	0.0970	2.18		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
22.4	735	Total			

Summary for Subcatchment PS-29:

Runoff = 2.58 cfs @ 12.04 hrs, Volume= 0.166 af, Depth= 2.37"
Routed to Pond CB-8 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 1-yr Rainfall=2.60"

Area (sf)	CN	Description
28,170	98	Paved parking, HSG D
8,501	98	Paved parking, HSG A
36,671	98	Weighted Average
36,671		100.00% Impervious Area

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

Summary for Subcatchment PS-3:

Runoff = 1.94 cfs @ 12.04 hrs, Volume= 0.115 af, Depth= 1.87"
Routed to Pond CB-22 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 1-yr Rainfall=2.60"

Area (sf)	CN	Description
6,471	80	>75% Grass cover, Good, HSG D
25,183	98	Paved parking, HSG D
511	39	>75% Grass cover, Good, HSG A
50	98	Paved parking, HSG A
32,215	93	Weighted Average
6,982		21.67% Pervious Area
25,233		78.33% Impervious Area

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

Summary for Subcatchment PS-30:

Runoff = 2.14 cfs @ 12.04 hrs, Volume= 0.130 af, Depth= 2.06"
Routed to Pond CB-9 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 1-yr Rainfall=2.60"

Area (sf)	CN	Description
4,835	80	>75% Grass cover, Good, HSG D
28,221	98	Paved parking, HSG D
33,056	95	Weighted Average
4,835		14.63% Pervious Area
28,221		85.37% Impervious Area

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

Summary for Subcatchment PS-4:

Runoff = 0.16 cfs @ 12.16 hrs, Volume= 0.019 af, Depth= 0.43"
Routed to Pond CB-24 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 1-yr Rainfall=2.60"

Area (sf)	CN	Description
6,817	39	>75% Grass cover, Good, HSG A
15,824	80	>75% Grass cover, Good, HSG D
22,641	68	Weighted Average
22,641		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.9	100	0.0200	0.17		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.15"
2.4	184	0.0326	1.26		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
12.3	284	Total			

Summary for Subcatchment PS-5:

Runoff = 0.23 cfs @ 12.04 hrs, Volume= 0.015 af, Depth= 2.26"
Routed to Pond CB-3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 1-yr Rainfall=2.60"

Area (sf)	CN	Description
151	80	>75% Grass cover, Good, HSG D
3,231	98	Paved parking, HSG D
24	39	>75% Grass cover, Good, HSG A
3,406	97	Weighted Average
175		5.14% Pervious Area
3,231		94.86% Impervious Area

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

Summary for Subcatchment PS-6:

Runoff = 2.45 cfs @ 12.04 hrs, Volume= 0.154 af, Depth= 2.26"
Routed to Pond CB-4 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 1-yr Rainfall=2.60"

Area (sf)	CN	Description
1,235	80	>75% Grass cover, Good, HSG D
34,319	98	Paved parking, HSG D
20	98	Paved parking, HSG A
35,574	97	Weighted Average
1,235		3.47% Pervious Area
34,339		96.53% Impervious Area

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

Summary for Subcatchment PS-7:

Runoff = 0.12 cfs @ 12.04 hrs, Volume= 0.008 af, Depth= 0.96"
Routed to Pond CB-5 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 1-yr Rainfall=2.60"

Area (sf)	CN	Description
614	80	>75% Grass cover, Good, HSG D
1,329	98	Paved parking, HSG D
1,117	98	Paved parking, HSG A
1,083	39	>75% Grass cover, Good, HSG A
4,143	80	Weighted Average
1,697		40.96% Pervious Area
2,446		59.04% Impervious Area

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

Summary for Subcatchment PS-8:

Runoff = 0.24 cfs @ 12.04 hrs, Volume= 0.015 af, Depth= 0.91"
Routed to Pond CB-6 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 1-yr Rainfall=2.60"

Area (sf)	CN	Description
171	98	Paved parking, HSG D
2,834	39	>75% Grass cover, Good, HSG A
5,688	98	Paved parking, HSG A
8,693	79	Weighted Average
2,834		32.60% Pervious Area
5,859		67.40% Impervious Area

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

Summary for Subcatchment PS-9:

Runoff = 0.14 cfs @ 12.04 hrs, Volume= 0.009 af, Depth= 2.37"
Routed to Pond CB-23 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 1-yr Rainfall=2.60"

Area (sf)	CN	Description
2,000	98	Paved parking, HSG A
2,000		100.00% Impervious Area

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

Summary for Pond BIO-1: Filtration Bioretention (2.5ft filter media)

Inflow Area = 9.376 ac, 76.99% Impervious, Inflow Depth = 2.03" for 1-yr event
Inflow = 21.90 cfs @ 12.05 hrs, Volume= 1.589 af
Outflow = 5.31 cfs @ 12.37 hrs, Volume= 1.589 af, Atten= 76%, Lag= 19.2 min
Discarded = 0.25 cfs @ 12.37 hrs, Volume= 0.979 af
Primary = 5.06 cfs @ 12.37 hrs, Volume= 0.610 af
Routed to Pond DET-1 : Detention Basin
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond DP-1 : Gidneytown Creek

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 236.10' @ 12.37 hrs Surf.Area= 43,201 sf Storage= 25,569 cf
Flood Elev= 236.50' Surf.Area= 44,411 sf Storage= 42,886 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 501.8 min (1,372.6 - 870.8)

Volume	Invert	Avail.Storage	Storage Description
#1	235.50'	65,474 cf	**Bioretention (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
235.50	41,373	0	0
236.00	42,881	21,064	21,064
237.00	45,940	44,411	65,474

Device	Routing	Invert	Outlet Devices
#1	Discarded	235.50'	**0.250 in/hr Exfiltration Through Media over Surface area**
#2	Primary	236.00'	**60.0' long x 10.0' breadth Overflow Weir to Det**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#3	Secondary	236.00'	**20.0' long x 15.0' breadth Emergency Overflow Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.25 cfs @ 12.37 hrs HW=236.10' (Free Discharge)
↑**1=Exfiltration Through Media** (Exfiltration Controls 0.25 cfs)

Primary OutFlow Max=5.06 cfs @ 12.37 hrs HW=236.10' TW=232.37' (Dynamic Tailwater)
↑**2=Overflow Weir to Det** (Weir Controls 5.06 cfs @ 0.81 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=235.50' TW=0.00' (Dynamic Tailwater)
↑**3=Emergency Overflow Weir** (Controls 0.00 cfs)

Summary for Pond CB-1:

Inflow Area = 1.362 ac, 46.38% Impervious, Inflow Depth = 1.01" for 1-yr event
Inflow = 1.30 cfs @ 12.16 hrs, Volume= 0.115 af
Outflow = 1.30 cfs @ 12.16 hrs, Volume= 0.115 af, Atten= 0%, Lag= 0.0 min
Primary = 1.30 cfs @ 12.16 hrs, Volume= 0.115 af
Routed to Pond CB-2 :
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond CB-11 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 260.39' @ 12.16 hrs Surf.Area= 9 sf Storage= 5 cf
Flood Elev= 263.31' Surf.Area= 18 sf Storage= 32 cf

Plug-Flow detention time= 0.2 min calculated for 0.115 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (874.3 - 874.1)

Volume	Invert	Avail.Storage	Storage Description
#1	259.81'	32 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)
#2	263.31'	11,903 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		11,935 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
259.81	9	0	0
263.31	9	32	32

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
263.31	9	0	0
264.00	7,196	2,486	2,486
265.00	11,639	9,418	11,903

Device	Routing	Invert	Outlet Devices
#1	Primary	259.81'	**18.0" Round Culvert**
			L= 227.0' CPP, projecting, no headwall, Ke= 0.900
			Inlet / Outlet Invert= 259.81' / 257.54' S= 0.0100 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Primary	264.55'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50
			Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88
#3	Secondary	264.71'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50
			Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=1.30 cfs @ 12.16 hrs HW=260.39' TW=258.46' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 1.30 cfs @ 2.05 fps)
↑**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=259.81' TW=259.05' (Dynamic Tailwater)
↑**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond CB-10:

Inflow Area = 0.807 ac, 97.85% Impervious, Inflow Depth = 2.37" for 1-yr event
Inflow = 2.47 cfs @ 12.04 hrs, Volume= 0.159 af
Outflow = 2.37 cfs @ 12.05 hrs, Volume= 0.159 af, Atten= 4%, Lag= 0.7 min
Primary = 2.37 cfs @ 12.05 hrs, Volume= 0.159 af
Routed to Pond CB-18 :
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond CB-18 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 241.87' @ 12.06 hrs Surf.Area= 12 sf Storage= 34 cf
Flood Elev= 243.50' Surf.Area= 32 sf Storage= 54 cf

Plug-Flow detention time= 0.5 min calculated for 0.159 af (100% of inflow)
Center-of-Mass det. time= 0.3 min (763.3 - 763.0)

Volume	Invert	Avail.Storage	Storage Description
#1	239.00'	54 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)
#2	243.50'	5,338 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		5,392 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
239.00	12	0	0
243.50	12	54	54

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
243.50	20	0	0
244.00	1,744	441	441
244.70	12,247	4,897	5,338

Device	Routing	Invert	Outlet Devices
#1	Primary	239.00'	**24.0" Round Culvert** L= 240.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 239.00' / 237.80' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Secondary	244.60'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.00 cfs @ 12.05 hrs HW=241.69' TW=241.79' (Dynamic Tailwater)
↑—**1=Culvert** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=239.00' TW=237.08' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond CB-11:

Inflow Area = 0.598 ac, 83.73% Impervious, Inflow Depth = 2.06" for 1-yr event
Inflow = 1.69 cfs @ 12.04 hrs, Volume= 0.103 af
Outflow = 1.69 cfs @ 12.04 hrs, Volume= 0.103 af, Atten= 0%, Lag= 0.0 min
Primary = 1.69 cfs @ 12.04 hrs, Volume= 0.103 af
Routed to Pond CB-12 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 259.72' @ 12.04 hrs Surf.Area= 9 sf Storage= 6 cf
Flood Elev= 263.05' Surf.Area= 18 sf Storage= 36 cf

Plug-Flow detention time= 0.4 min calculated for 0.103 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (793.9 - 793.7)

Volume	Invert	Avail.Storage	Storage Description
#1	259.05'	36 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)
#2	263.05'	1,263 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		1,299 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
259.05	9	0	0
263.05	9	36	36

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
263.05	9	0	0
263.65	4,200	1,263	1,263

Device	Routing	Invert	Outlet Devices
#1	Primary	259.05'	**18.0" Round Culvert** L= 216.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 259.05' / 256.89' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.68 cfs @ 12.04 hrs HW=259.72' TW=257.94' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 1.68 cfs @ 2.20 fps)

Summary for Pond CB-12:

Inflow Area = 1.315 ac, 81.40% Impervious, Inflow Depth = 2.01" for 1-yr event
Inflow = 3.64 cfs @ 12.04 hrs, Volume= 0.220 af
Outflow = 3.64 cfs @ 12.04 hrs, Volume= 0.220 af, Atten= 0%, Lag= 0.0 min
Primary = 3.64 cfs @ 12.04 hrs, Volume= 0.220 af
Routed to Pond CB-13 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 257.94' @ 12.04 hrs Surf.Area= 12 sf Storage= 13 cf
Flood Elev= 263.05' Surf.Area= 24 sf Storage= 74 cf

Plug-Flow detention time= 0.2 min calculated for 0.220 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (798.1 - 797.9)

Volume	Invert	Avail.Storage	Storage Description
#1	256.89'	74 cf	**STRUCTURE (Prismatic)**Listed below (Recalc)
#2	263.05'	1,868 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
		1,942 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
256.89	12	0	0
263.05	12	74	74

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
263.05	12	0	0
263.82	4,839	1,868	1,868

Device	Routing	Invert	Outlet Devices
#1	Primary	256.89'	**18.0" Round Culvert** L= 192.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 256.89' / 254.97' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=3.63 cfs @ 12.04 hrs HW=257.94' TW=256.19' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 3.63 cfs @ 2.75 fps)

Summary for Pond CB-13:

Inflow Area = 1.636 ac, 84.10% Impervious, Inflow Depth = 2.06" for 1-yr event
Inflow = 4.60 cfs @ 12.04 hrs, Volume= 0.281 af
Outflow = 4.60 cfs @ 12.04 hrs, Volume= 0.281 af, Atten= 0%, Lag= 0.0 min
Primary = 4.60 cfs @ 12.04 hrs, Volume= 0.281 af
Routed to Pond CB-14 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 256.20' @ 12.04 hrs Surf.Area= 12 sf Storage= 15 cf
Flood Elev= 263.13' Surf.Area= 24 sf Storage= 98 cf

Plug-Flow detention time= 0.3 min calculated for 0.281 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (793.3 - 793.1)

Volume	Invert	Avail.Storage	Storage Description
#1	254.97'	98 cf	**STRUCTURE (Prismatic)**Listed below (Recalc)
#2	263.13'	1,289 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
		1,387 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
254.97	12	0	0
263.13	12	98	98

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
263.13	12	0	0
263.87	3,473	1,289	1,289

Device	Routing	Invert	Outlet Devices
#1	Primary	254.97'	**18.0" Round Culvert** L= 137.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 254.97' / 253.60' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=4.59 cfs @ 12.04 hrs HW=256.19' TW=254.83' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 4.59 cfs @ 2.97 fps)

Summary for Pond CB-14:

Inflow Area = 1.654 ac, 84.27% Impervious, Inflow Depth = 2.06" for 1-yr event
Inflow = 4.66 cfs @ 12.04 hrs, Volume= 0.284 af
Outflow = 4.66 cfs @ 12.04 hrs, Volume= 0.284 af, Atten= 0%, Lag= 0.0 min
Primary = 4.66 cfs @ 12.04 hrs, Volume= 0.284 af
Routed to Pond CB-15 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 254.84' @ 12.04 hrs Surf.Area= 12 sf Storage= 15 cf
Flood Elev= 262.48' Surf.Area= 12 sf Storage= 107 cf

Plug-Flow detention time= 0.2 min calculated for 0.284 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (793.2 - 793.0)

Volume	Invert	Avail.Storage	Storage Description
#1	253.60'	107 cf	**STRUCTURE (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
253.60	12	0	0
262.48	12	107	107
262.50	20	0	107

Device	Routing	Invert	Outlet Devices
#1	Primary	253.60'	**18.0" Round Culvert** L= 180.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 253.60' / 249.91' S= 0.0205 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Primary	262.48'	**20.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=4.65 cfs @ 12.04 hrs HW=254.83' TW=251.23' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 4.65 cfs @ 2.99 fps)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond CB-15:

Inflow Area = 1.815 ac, 82.97% Impervious, Inflow Depth = 2.04" for 1-yr event
Inflow = 5.08 cfs @ 12.04 hrs, Volume= 0.309 af
Outflow = 5.08 cfs @ 12.04 hrs, Volume= 0.309 af, Atten= 0%, Lag= 0.0 min
Primary = 5.08 cfs @ 12.04 hrs, Volume= 0.309 af
Routed to Pond CB-16 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 251.23' @ 12.04 hrs Surf.Area= 12 sf Storage= 16 cf
Flood Elev= 253.61' Surf.Area= 12 sf Storage= 44 cf

Plug-Flow detention time= 0.2 min calculated for 0.309 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (794.6 - 794.4)

Volume	Invert	Avail.Storage	Storage Description
#1	249.91'	47 cf	**STRUCTURE (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
249.91	12	0	0
253.61	12	44	44
253.75	20	2	47

Device	Routing	Invert	Outlet Devices
#1	Primary	249.91'	**18.0" Round Culvert** L= 180.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 249.91' / 241.94' S= 0.0443 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Primary	253.61'	**20.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=5.07 cfs @ 12.04 hrs HW=251.23' TW=243.39' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 5.07 cfs @ 3.08 fps)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond CB-16:

[90] Warning: Qout>Qin may require smaller dt or Finer Routing

Inflow Area = 2.056 ac, 81.10% Impervious, Inflow Depth = 2.01" for 1-yr event
Inflow = 5.68 cfs @ 12.04 hrs, Volume= 0.345 af
Outflow = 5.68 cfs @ 12.04 hrs, Volume= 0.345 af, Atten= 0%, Lag= 0.0 min
Primary = 5.68 cfs @ 12.04 hrs, Volume= 0.345 af
Routed to Pond CB-17 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 243.56' @ 12.06 hrs Surf.Area= 12 sf Storage= 19 cf
Flood Elev= 247.58' Surf.Area= 12 sf Storage= 68 cf

Plug-Flow detention time= 0.2 min calculated for 0.345 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (796.8 - 796.7)

Volume	Invert	Avail.Storage	Storage Description
#1	241.94'	72 cf	**STRUCTURE (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
241.94	12	0	0
247.58	12	68	68
247.85	20	4	72

Device	Routing	Invert	Outlet Devices
#1	Primary	241.94'	**18.0" Round Culvert** L= 194.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 241.94' / 240.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Primary	247.58'	**20.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=5.13 cfs @ 12.04 hrs HW=243.39' TW=242.38' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 5.13 cfs @ 3.73 fps)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond CB-17:

Inflow Area = 4.187 ac, 88.32% Impervious, Inflow Depth = 2.14" for 1-yr event
Inflow = 12.07 cfs @ 12.04 hrs, Volume= 0.747 af
Outflow = 11.81 cfs @ 12.04 hrs, Volume= 0.747 af, Atten= 2%, Lag= 0.1 min
Primary = 11.81 cfs @ 12.04 hrs, Volume= 0.747 af
Routed to Pond CB-18 :
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond PF-2 : Pretreatment Forebay
Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond DP-1 : Gidneytown Creek

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 242.73' @ 12.06 hrs Surf.Area= 20 sf Storage= 65 cf
Flood Elev= 244.30' Surf.Area= 40 sf Storage= 96 cf

Plug-Flow detention time= 0.2 min calculated for 0.747 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (785.3 - 785.1)

Volume	Invert	Avail.Storage	Storage Description
#1	239.50'	96 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)
#2	244.30'	18,411 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		18,507 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
239.50	20	0	0
244.30	20	96	96

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
244.30	20	0	0
245.00	7,740	2,716	2,716
245.35	12,368	3,519	6,235
246.00	25,096	12,176	18,411

Device	Routing	Invert	Outlet Devices
#1	Primary	239.50'	**24.0" Round Culvert** L= 192.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 239.50' / 237.58' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Primary	245.26'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88
#3	Secondary	245.34'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88
#4	Tertiary	245.40'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir**

Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50
Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=10.15 cfs @ 12.04 hrs HW=242.43' TW=241.71' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 10.15 cfs @ 3.23 fps)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=239.50' TW=232.00' (Dynamic Tailwater)
└**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=239.50' TW=0.00' (Dynamic Tailwater)
└**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond CB-18:

[80] Warning: Exceeded Pond CB-10 by 0.43' @ 12.02 hrs (6.66 cfs 0.022 af)

Inflow Area = 7.583 ac, 92.78% Impervious, Inflow Depth = 2.24" for 1-yr event
Inflow = 22.08 cfs @ 12.04 hrs, Volume= 1.418 af
Outflow = 21.95 cfs @ 12.04 hrs, Volume= 1.418 af, Atten= 1%, Lag= 0.2 min
Primary = 21.95 cfs @ 12.04 hrs, Volume= 1.418 af
Routed to Pond DIV-2 : Diversion 2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 241.83' @ 12.05 hrs Surf.Area= 20 sf Storage= 95 cf
Flood Elev= 243.50' Surf.Area= 40 sf Storage= 128 cf

Plug-Flow detention time= 0.2 min calculated for 1.418 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (775.0 - 774.8)

Volume	Invert	Avail.Storage	Storage Description
#1	237.08'	128 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)
#2	243.50'	4,850 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		4,978 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
237.08	20	0	0
243.50	20	128	128

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
243.50	20	0	0
244.75	7,740	4,850	4,850

Device	Routing	Invert	Outlet Devices
#1	Primary	237.08'	**30.0" Round Culvert** L= 64.0' CPP, projecting, no headwall, Ke= 0.900

Inlet / Outlet Invert= 237.08' / 236.06' S= 0.0159 '/' Cc= 0.900
n= 0.013 Corrugated PE, smooth interior, Flow Area= 4.91 sf

#2 Primary 244.70' **10.0' long x 5.0' breadth Broad-Crested Rectangular Weir**
Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50
Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=21.03 cfs @ 12.04 hrs HW=241.72' TW=240.45' (Dynamic Tailwater)
↑└**1=Culvert** (Inlet Controls 21.03 cfs @ 4.28 fps)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond CB-19:

Inflow Area = 4.759 ac,100.00% Impervious, Inflow Depth = 2.37" for 1-yr event
Inflow = 14.59 cfs @ 12.04 hrs, Volume= 0.940 af
Outflow = 14.58 cfs @ 12.04 hrs, Volume= 0.940 af, Atten= 0%, Lag= 0.1 min
Primary = 14.58 cfs @ 12.04 hrs, Volume= 0.940 af
Routed to Pond PF-1 : Pretreatment Forebay
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond CB-8 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 242.31' @ 12.04 hrs Surf.Area= 20 sf Storage= 50 cf
Flood Elev= 245.95' Surf.Area= 40 sf Storage= 123 cf

Plug-Flow detention time= 0.2 min calculated for 0.940 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (763.3 - 763.1)

Volume	Invert	Avail.Storage	Storage Description
#1	239.82'	123 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)
#2	245.95'	55 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		178 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
239.82	20	0	0
245.95	20	123	123

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
245.95	20	0	0
246.60	150	55	55

Device	Routing	Invert	Outlet Devices
#1	Primary	239.82'	**24.0" Round Culvert** L= 254.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 239.82' / 238.55' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Secondary	245.95'	**2.0' long x 2.0' breadth Broad-Crested Rectangular Weir**

Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50
Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=14.54 cfs @ 12.04 hrs HW=242.30' TW=238.93' (Dynamic Tailwater)
↑└**1=Culvert** (Inlet Controls 14.54 cfs @ 4.63 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=239.82' TW=239.53' (Dynamic Tailwater)
↑└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond CB-2:

Inflow Area = 2.565 ac, 54.09% Impervious, Inflow Depth = 1.34" for 1-yr event
Inflow = 3.56 cfs @ 12.07 hrs, Volume= 0.286 af
Outflow = 3.56 cfs @ 12.07 hrs, Volume= 0.286 af, Atten= 0%, Lag= 0.0 min
Primary = 3.56 cfs @ 12.07 hrs, Volume= 0.286 af
Routed to Pond CB-22 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 258.57' @ 12.07 hrs Surf.Area= 12 sf Storage= 12 cf
Flood Elev= 263.36' Surf.Area= 24 sf Storage= 70 cf

Plug-Flow detention time= 0.2 min calculated for 0.286 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (843.3 - 843.1)

Volume	Invert	Avail.Storage	Storage Description
#1	257.54'	70 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)
#2	263.36'	14,129 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		14,199 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
257.54	12	0	0
263.36	12	70	70

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
263.36	12	0	0
264.00	4,336	1,391	1,391
265.00	21,139	12,738	14,129

Device	Routing	Invert	Outlet Devices
#1	Primary	257.54'	**18.0" Round Culvert** L= 251.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 257.54' / 255.03' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Primary	264.55'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50

Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65
2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=3.55 cfs @ 12.07 hrs HW=258.57' TW=256.37' (Dynamic Tailwater)
1=Culvert (Inlet Controls 3.55 cfs @ 2.73 fps)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond CB-20:

Inflow Area = 0.793 ac,100.00% Impervious, Inflow Depth = 2.37" for 1-yr event
Inflow = 2.43 cfs @ 12.04 hrs, Volume= 0.157 af
Outflow = 2.43 cfs @ 12.04 hrs, Volume= 0.157 af, Atten= 0%, Lag= 0.1 min
Primary = 2.43 cfs @ 12.04 hrs, Volume= 0.157 af
Routed to Pond CB-19 :
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond CB-10 :
Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond CB-18 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 242.98' @ 12.04 hrs Surf.Area= 9 sf Storage= 9 cf
Flood Elev= 245.95' Surf.Area= 18 sf Storage= 36 cf

Plug-Flow detention time= 0.2 min calculated for 0.157 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (763.3 - 763.0)

Volume	Invert	Avail.Storage	Storage Description
#1	241.97'	36 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)
#2	245.95'	171 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		206 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
241.97	9	0	0
245.95	9	36	36

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
245.95	9	0	0
246.90	350	171	171

Device	Routing	Invert	Outlet Devices
#1	Primary	241.97'	**24.0" Round Culvert** L= 432.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 241.97' / 239.81' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Secondary	245.95'	**20.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65

2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

#3	Tertiary	245.95'	**20.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=2.36 cfs @ 12.04 hrs HW=242.97' TW=242.30' (Dynamic Tailwater)
1=Culvert (Outlet Controls 2.36 cfs @ 2.19 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=241.97' TW=239.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=241.97' TW=237.08' (Dynamic Tailwater)
3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond CB-22:

Inflow Area = 3.304 ac, 59.52% Impervious, Inflow Depth = 1.46" for 1-yr event
Inflow = 5.32 cfs @ 12.06 hrs, Volume= 0.401 af
Outflow = 5.32 cfs @ 12.06 hrs, Volume= 0.401 af, Atten= 0%, Lag= 0.1 min
Primary = 5.32 cfs @ 12.06 hrs, Volume= 0.401 af
Routed to Pond CB-3 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 256.40' @ 12.06 hrs Surf.Area= 12 sf Storage= 16 cf
Flood Elev= 263.26' Surf.Area= 24 sf Storage= 99 cf

Plug-Flow detention time= 0.3 min calculated for 0.401 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (833.4 - 833.2)

Volume	Invert	Avail.Storage	Storage Description
#1	255.03'	99 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)
#2	263.26'	9,471 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		9,570 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
255.03	12	0	0
263.26	12	99	99

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
263.26	12	0	0
264.00	3,123	1,160	1,160
265.00	13,500	8,312	9,471

Device	Routing	Invert	Outlet Devices
#1	Primary	255.03'	**18.0" Round Culvert** L= 99.0' CPP, projecting, no headwall, Ke= 0.900

Inlet / Outlet Invert= 255.03' / 254.04' S= 0.0100 '/' Cc= 0.900
n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

#2 Primary 264.57' **10.0' long x 5.0' breadth Broad-Crested Rectangular Weir**
Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50
Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=5.31 cfs @ 12.06 hrs HW=256.40' TW=255.48' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 5.31 cfs @ 3.14 fps)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond CB-23:

Inflow Area = 5.060 ac, 60.59% Impervious, Inflow Depth = 1.47" for 1-yr event
Inflow = 8.47 cfs @ 12.05 hrs, Volume= 0.620 af
Outflow = 8.47 cfs @ 12.05 hrs, Volume= 0.620 af, Atten= 0%, Lag= 0.1 min
Primary = 8.47 cfs @ 12.05 hrs, Volume= 0.620 af
Routed to Pond CB-25 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 244.74' @ 12.05 hrs Surf.Area= 12 sf Storage= 28 cf
Flood Elev= 246.73' Surf.Area= 12 sf Storage= 52 cf

Plug-Flow detention time= 0.2 min calculated for 0.620 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (821.6 - 821.5)

Volume	Invert	Avail.Storage	Storage Description
#1	242.40'	56 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
242.40	12	0	0
246.73	12	52	52
247.00	20	4	56

Device	Routing	Invert	Outlet Devices
#1	Primary	242.40'	**18.0" Round Culvert** L= 135.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 242.40' / 240.70' S= 0.0126 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Primary	246.73'	**24.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=8.45 cfs @ 12.05 hrs HW=244.73' TW=243.15' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 8.45 cfs @ 4.78 fps)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond CB-24:

Inflow Area = 0.520 ac, 0.00% Impervious, Inflow Depth = 0.43" for 1-yr event
Inflow = 0.16 cfs @ 12.16 hrs, Volume= 0.019 af
Outflow = 0.16 cfs @ 12.16 hrs, Volume= 0.019 af, Atten= 0%, Lag= 0.1 min
Primary = 0.16 cfs @ 12.16 hrs, Volume= 0.019 af
Routed to Pond CB-3 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 256.72' @ 12.16 hrs Surf.Area= 4 sf Storage= 1 cf
Flood Elev= 260.50' Surf.Area= 8 sf Storage= 16 cf

Plug-Flow detention time= 0.2 min calculated for 0.019 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (931.9 - 931.7)

Volume	Invert	Avail.Storage	Storage Description
#1	256.50'	16 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)
#2	260.50'	16,857 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		16,873 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
256.50	4	0	0
260.50	4	16	16

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
260.50	4	0	0
261.00	1,000	251	251
262.00	4,450	2,725	2,976
263.00	6,787	5,619	8,595
264.00	9,737	8,262	16,857

Device	Routing	Invert	Outlet Devices
#1	Primary	256.50'	**12.0" Round Culvert** L= 26.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 256.50' / 256.24' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.16 cfs @ 12.16 hrs HW=256.72' TW=255.18' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 0.16 cfs @ 1.25 fps)

Summary for Pond CB-25:

Inflow Area = 5.318 ac, 60.94% Impervious, Inflow Depth = 1.44" for 1-yr event
Inflow = 8.78 cfs @ 12.05 hrs, Volume= 0.640 af
Outflow = 8.77 cfs @ 12.05 hrs, Volume= 0.640 af, Atten= 0%, Lag= 0.1 min
Primary = 8.77 cfs @ 12.05 hrs, Volume= 0.640 af
Routed to Pond PF-1 : Pretreatment Forebay
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond CB-7 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 243.16' @ 12.05 hrs Surf.Area= 12 sf Storage= 29 cf
Flood Elev= 244.70' Surf.Area= 24 sf Storage= 48 cf

Plug-Flow detention time= 0.2 min calculated for 0.640 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (823.4 - 823.2)

Volume	Invert	Avail.Storage	Storage Description
#1	240.70'	48 cf	**structure (Prismatic)**Listed below (Recalc)
#2	244.70'	6 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
		54 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
240.70	12	0	0
244.70	12	48	48

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
244.70	12	0	0
245.10	20	6	6

Device	Routing	Invert	Outlet Devices
#1	Primary	240.70'	**18.0" Round Culvert** L= 82.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 240.70' / 239.00' S= 0.0207 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Secondary	244.70'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=8.75 cfs @ 12.05 hrs HW=243.15' TW=238.93' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 8.75 cfs @ 4.95 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=240.70' TW=238.91' (Dynamic Tailwater)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond CB-3:

Inflow Area = 3.902 ac, 52.30% Impervious, Inflow Depth = 1.34" for 1-yr event
Inflow = 5.63 cfs @ 12.06 hrs, Volume= 0.435 af
Outflow = 5.63 cfs @ 12.06 hrs, Volume= 0.435 af, Atten= 0%, Lag= 0.1 min
Primary = 5.63 cfs @ 12.06 hrs, Volume= 0.435 af
Routed to Pond CB-4 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 255.48' @ 12.06 hrs Surf.Area= 20 sf Storage= 29 cf
Flood Elev= 264.59' Surf.Area= 40 sf Storage= 211 cf

Plug-Flow detention time= 0.4 min calculated for 0.435 af (100% of inflow)
Center-of-Mass det. time= 0.3 min (835.9 - 835.6)

Volume	Invert	Avail.Storage	Storage Description
#1	254.04'	211 cf	**STRUCTURE (Prismatic)**Listed below (Recalc)
#2	264.59'	258 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
		469 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
254.04	20	0	0
264.59	20	211	211

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
264.59	20	0	0
265.00	500	107	107
265.20	1,010	151	258

Device	Routing	Invert	Outlet Devices
#1	Primary	254.04'	**18.0" Round Culvert** L= 203.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 254.04' / 252.01' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Primary	265.15'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=5.62 cfs @ 12.06 hrs HW=255.48' TW=254.15' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 5.62 cfs @ 3.22 fps)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond CB-4:

Inflow Area = 4.719 ac, 59.95% Impervious, Inflow Depth = 1.50" for 1-yr event
Inflow = 7.98 cfs @ 12.05 hrs, Volume= 0.589 af
Outflow = 7.98 cfs @ 12.05 hrs, Volume= 0.589 af, Atten= 0%, Lag= 0.1 min
Primary = 7.98 cfs @ 12.05 hrs, Volume= 0.589 af
Routed to Pond CB-5 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 254.17' @ 12.05 hrs Surf.Area= 12 sf Storage= 26 cf
Flood Elev= 263.70' Surf.Area= 24 sf Storage= 140 cf

Plug-Flow detention time= 0.2 min calculated for 0.589 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (820.1 - 820.0)

Volume	Invert	Avail.Storage	Storage Description
#1	252.01'	140 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)
#2	263.70'	8,379 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		8,519 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
252.01	12	0	0
263.70	12	140	140

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
263.70	12	0	0
264.00	970	147	147
265.00	15,493	8,232	8,379

Device	Routing	Invert	Outlet Devices
#1	Primary	252.01'	**18.0" Round Culvert** L= 241.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 252.01' / 249.60' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=7.97 cfs @ 12.05 hrs HW=254.17' TW=251.80' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 7.97 cfs @ 4.51 fps)

Summary for Pond CB-5:

Inflow Area = 4.814 ac, 59.93% Impervious, Inflow Depth = 1.49" for 1-yr event
Inflow = 8.10 cfs @ 12.05 hrs, Volume= 0.596 af
Outflow = 8.10 cfs @ 12.05 hrs, Volume= 0.596 af, Atten= 0%, Lag= 0.1 min
Primary = 8.10 cfs @ 12.05 hrs, Volume= 0.596 af
Routed to Pond CB-6 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 251.80' @ 12.05 hrs Surf.Area= 12 sf Storage= 26 cf
Flood Elev= 258.09' Surf.Area= 12 sf Storage= 102 cf

Plug-Flow detention time= 0.1 min calculated for 0.596 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (820.9 - 820.8)

Volume	Invert	Avail.Storage	Storage Description
#1	249.60'	105 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
249.60	12	0	0
258.09	12	102	102
258.30	20	3	105

Device	Routing	Invert	Outlet Devices
#1	Primary	249.60'	**18.0" Round Culvert** L= 178.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 249.60' / 245.40' S= 0.0236 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Primary	258.09'	**20.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=8.08 cfs @ 12.05 hrs HW=251.80' TW=247.68' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 8.08 cfs @ 4.57 fps)
└—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond CB-6:

Inflow Area = 5.014 ac, 60.23% Impervious, Inflow Depth = 1.46" for 1-yr event
Inflow = 8.34 cfs @ 12.05 hrs, Volume= 0.611 af
Outflow = 8.33 cfs @ 12.05 hrs, Volume= 0.611 af, Atten= 0%, Lag= 0.1 min
Primary = 8.33 cfs @ 12.05 hrs, Volume= 0.611 af
Routed to Pond CB-23 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 247.69' @ 12.05 hrs Surf.Area= 9 sf Storage= 21 cf
Flood Elev= 248.93' Surf.Area= 9 sf Storage= 32 cf

Plug-Flow detention time= 0.1 min calculated for 0.611 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (822.3 - 822.2)

Volume	Invert	Avail.Storage	Storage Description
#1	245.40'	36 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
245.40	9	0	0
248.93	9	32	32
249.25	20	5	36

Device	Routing	Invert	Outlet Devices
#1	Primary	245.40'	**18.0" Round Culvert** L= 85.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 245.40' / 242.40' S= 0.0353 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Primary	248.93'	**20.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=8.32 cfs @ 12.05 hrs HW=247.68' TW=244.73' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 8.32 cfs @ 4.71 fps)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond CB-7:

Inflow Area = 2.850 ac, 99.06% Impervious, Inflow Depth = 2.26" for 1-yr event
Inflow = 8.55 cfs @ 12.04 hrs, Volume= 0.537 af
Outflow = 8.54 cfs @ 12.04 hrs, Volume= 0.537 af, Atten= 0%, Lag= 0.0 min
Primary = 8.54 cfs @ 12.04 hrs, Volume= 0.537 af
Routed to Pond PF-1 : Pretreatment Forebay

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 240.51' @ 12.04 hrs Surf.Area= 20 sf Storage= 32 cf
Flood Elev= 243.50' Surf.Area= 58 sf Storage= 92 cf

Plug-Flow detention time= 0.4 min calculated for 0.537 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (775.3 - 775.1)

Volume	Invert	Avail.Storage	Storage Description
#1	238.91'	92 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)
#2	243.50'	8,702 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		8,793 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
238.91	20	0	0
243.50	20	92	92

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
243.50	38	0	0
244.00	1,938	494	494
245.00	14,477	8,208	8,702

Device	Routing	Invert	Outlet Devices
#1	Primary	238.91'	**24.0" Round Culvert** L= 81.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 238.91' / 238.50' S= 0.0051 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Primary	244.60'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=8.52 cfs @ 12.04 hrs HW=240.51' TW=238.93' (Dynamic Tailwater)
└─**1=Culvert** (Barrel Controls 8.52 cfs @ 4.33 fps)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond CB-8:

Inflow Area = 1.601 ac, 93.07% Impervious, Inflow Depth = 2.22" for 1-yr event
Inflow = 4.72 cfs @ 12.04 hrs, Volume= 0.297 af
Outflow = 4.72 cfs @ 12.04 hrs, Volume= 0.297 af, Atten= 0%, Lag= 0.0 min
Primary = 4.72 cfs @ 12.04 hrs, Volume= 0.297 af
Routed to Pond PF-1 : Pretreatment Forebay

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 240.79' @ 12.04 hrs Surf.Area= 12 sf Storage= 15 cf
Flood Elev= 244.30' Surf.Area= 24 sf Storage= 57 cf

Plug-Flow detention time= 0.4 min calculated for 0.297 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (776.8 - 776.6)

Volume	Invert	Avail.Storage	Storage Description
#1	239.53'	57 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)
#2	244.30'	4,841 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		4,898 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
239.53	12	0	0
244.30	12	57	57

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
244.30	12	0	0
245.00	8,154	2,858	2,858
245.20	11,676	1,983	4,841

Device	Routing	Invert	Outlet Devices
#1	Primary	239.53'	**18.0" Round Culvert** L= 144.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 239.53' / 238.81' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Primary	245.10'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=4.71 cfs @ 12.04 hrs HW=240.79' TW=238.93' (Dynamic Tailwater)
└─**1=Culvert** (Barrel Controls 4.71 cfs @ 4.02 fps)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond CB-9:

Inflow Area = 0.759 ac, 85.37% Impervious, Inflow Depth = 2.06" for 1-yr event
Inflow = 2.14 cfs @ 12.04 hrs, Volume= 0.130 af
Outflow = 2.14 cfs @ 12.04 hrs, Volume= 0.130 af, Atten= 0%, Lag= 0.0 min
Primary = 2.14 cfs @ 12.04 hrs, Volume= 0.130 af
Routed to Pond CB-8 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 241.46' @ 12.04 hrs Surf.Area= 9 sf Storage= 8 cf
Flood Elev= 244.05' Surf.Area= 18 sf Storage= 32 cf

Plug-Flow detention time= 0.4 min calculated for 0.130 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (793.9 - 793.7)

Volume	Invert	Avail.Storage	Storage Description
#1	240.55'	32 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)
#2	244.05'	5,860 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		5,892 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
240.55	9	0	0
244.05	9	32	32

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
244.05	9	0	0
245.00	8,154	3,877	3,877
245.20	11,676	1,983	5,860

Device	Routing	Invert	Outlet Devices
#1	Primary	240.55'	**18.0" Round Culvert** L= 204.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 240.55' / 239.53' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Primary	245.10'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=2.12 cfs @ 12.04 hrs HW=241.46' TW=240.79' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 2.12 cfs @ 2.70 fps)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond DET-1: Detention Basin

[44] Hint: Outlet device #2 is below defined storage

Inflow Area = 9.923 ac, 72.74% Impervious, Inflow Depth = 0.79" for 1-yr event
Inflow = 5.25 cfs @ 12.37 hrs, Volume= 0.654 af
Outflow = 0.30 cfs @ 17.58 hrs, Volume= 0.654 af, Atten= 94%, Lag= 312.6 min
Primary = 0.30 cfs @ 17.58 hrs, Volume= 0.654 af
Routed to Pond DP-1 : Gidneytown Creek
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond DP-1 : Gidneytown Creek

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 233.61' @ 17.58 hrs Surf.Area= 13,321 sf Storage= 19,575 cf
Flood Elev= 236.50' Surf.Area= 17,706 sf Storage= 64,365 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 827.1 min (1,686.9 - 859.8)

Volume	Invert	Avail.Storage	Storage Description
#1	232.00'	73,418 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
232.00	11,095	0	0
233.00	12,455	11,775	11,775
234.00	13,886	13,171	24,946
235.00	15,369	14,628	39,573
236.00	16,908	16,139	55,712
237.00	18,504	17,706	73,418

Device	Routing	Invert	Outlet Devices
#1	Primary	231.91'	**12.0" Round Culvert** L= 15.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 231.91' / 231.84' S= 0.0047 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	231.91'	**3.0" Vert. CPv Orifice** C= 0.600 Limited to weir flow at low heads
#3	Device 1	233.65'	**4.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#4	Primary	236.05'	**10.0' long x 5.0' breadth Stabilized Overflow to Wetland** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88
#5	Secondary	236.50'	**10.0' long x 5.0' breadth Emergency Overflow** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88
#6	Primary	233.65'	**12.0" Round Culvert X 2.00** L= 30.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 233.65' / 233.50' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.30 cfs @ 17.58 hrs HW=233.61' TW=0.00' (Dynamic Tailwater)
- **1=Culvert** (Passes 0.30 cfs of 3.26 cfs potential flow)
  - **2=CPv Orifice** (Orifice Controls 0.30 cfs @ 6.03 fps)
  - **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)
- **4=Stabilized Overflow to Wetland** (Controls 0.00 cfs)
- **6=Culvert** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=232.00' TW=0.00' (Dynamic Tailwater)
- **5=Emergency Overflow** (Controls 0.00 cfs)

Summary for Pond DIV-2: Diversion 2

[90] Warning: Qout>Qin may require smaller dt or Finer Routing

Inflow Area = 7.583 ac, 92.78% Impervious, Inflow Depth = 2.24" for 1-yr event
Inflow = 21.95 cfs @ 12.04 hrs, Volume= 1.418 af
Outflow = 22.02 cfs @ 12.04 hrs, Volume= 1.418 af, Atten= 0%, Lag= 0.1 min
Primary = 22.02 cfs @ 12.04 hrs, Volume= 1.418 af
Routed to Pond PF-2 : Pretreatment Forebay
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond DET-1 : Detention Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 240.46' @ 12.04 hrs Surf.Area= 24 sf Storage= 106 cf
Flood Elev= 244.67' Surf.Area= 24 sf Storage= 207 cf

Plug-Flow detention time= 0.2 min calculated for 1.418 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (775.1 - 775.0)

Volume	Invert	Avail.Storage	Storage Description
#1	236.06'	207 cf	**Ponding before Weir (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
236.06	24	0	0
244.67	24	207	207

Device	Routing	Invert	Outlet Devices
#1	Primary	236.06'	**24.0" Round Outlet Pipe to Bioretention** L= 44.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 236.06' / 235.50' S= 0.0127 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Device 3	240.50'	**5.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#3	Secondary	236.06'	**24.0" Round Outlet Pipe to Detention** L= 45.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 236.06' / 235.83' S= 0.0051 '/' Cc= 0.900 n= 0.012 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=21.97 cfs @ 12.04 hrs HW=240.44' TW=235.97' (Dynamic Tailwater)
- **1=Outlet Pipe to Bioretention** (Inlet Controls 21.97 cfs @ 6.99 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=236.06' TW=232.00' (Dynamic Tailwater)
- **3=Outlet Pipe to Detention** (Controls 0.00 cfs)
  - **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond DP-1: Gidneytown Creek

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 50.078 ac, 42.15% Impervious, Inflow Depth > 0.86" for 1-yr event
Inflow = 7.52 cfs @ 12.32 hrs, Volume= 3.582 af
Primary = 7.52 cfs @ 12.32 hrs, Volume= 3.582 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Pond P-1: Wet Pond

Inflow Area = 16.392 ac, 75.11% Impervious, Inflow Depth = 1.92" for 1-yr event
Inflow = 39.50 cfs @ 12.05 hrs, Volume= 2.618 af
Outflow = 0.39 cfs @ 24.09 hrs, Volume= 1.931 af, Atten= 99%, Lag= 722.3 min
Primary = 0.39 cfs @ 24.09 hrs, Volume= 1.931 af
Routed to Pond DP-1 : Gidneytown Creek
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond DP-1 : Gidneytown Creek

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 237.99' @ 24.09 hrs Surf.Area= 78,631 sf Storage= 89,854 cf
Flood Elev= 239.50' Surf.Area= 84,891 sf Storage= 177,145 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 1,479.0 min (2,269.2 - 790.2)

Volume	Invert	Avail.Storage	Storage Description
#1	232.00'	0 cf	**Permanent Pool (Prismatic)** Listed below (Recalc) 62,038 cf Overall x 0.0% Voids
#2	236.00'	208,229 cf	**Extended Detention (Prismatic)** Listed below (Recalc)
		208,229 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
232.00	12,694	0	0
233.00	13,630	13,162	13,162
234.00	14,592	14,111	27,273
235.00	15,579	15,086	42,359
236.00	23,780	19,680	62,038

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
236.00	23,780	0	0
237.00	50,853	37,317	37,317
238.00	54,875	52,864	90,181
239.00	58,999	56,937	147,118
240.00	63,223	61,111	208,229

Device	Routing	Invert	Outlet Devices
#1	Primary	235.10'	**12.0" Round Culvert From OCS** L= 20.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 235.10' / 235.00' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	235.10'	**3.0" Vert. CPv Orifice** C= 0.600 Limited to weir flow at low heads
#3	Device 1	238.00'	**4.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00

			Coef. (English) 2.80 2.92 3.08 3.30 3.32
#4	Primary	238.00'	**12.0" Round Culverts to Floodplain X 2.00** L= 33.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 238.00' / 235.00' S= 0.0909 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#5	Primary	238.40'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#6	Secondary	239.50'	**20.0' long x 10.0' breadth Emergency Overflow Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.39 cfs @ 24.09 hrs HW=237.99' TW=0.00' (Dynamic Tailwater)
- **1=Culvert From OCS** (Passes 0.39 cfs of 4.62 cfs potential flow)
  - **2=CPv Orifice** (Orifice Controls 0.39 cfs @ 8.01 fps)
  - **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)
- **4=Culverts to Floodplain** (Controls 0.00 cfs)
- **5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=232.00' TW=0.00' (Dynamic Tailwater)
- **6=Emergency Overflow Weir** (Controls 0.00 cfs)

Summary for Pond PF-1: Pretreatment Forebay

Inflow Area = 14.810 ac, 83.14% Impervious, Inflow Depth = 1.98" for 1-yr event
Inflow = 36.90 cfs @ 12.04 hrs, Volume= 2.443 af
Outflow = 36.57 cfs @ 12.05 hrs, Volume= 2.443 af, Atten= 1%, Lag= 0.5 min
Primary = 36.57 cfs @ 12.05 hrs, Volume= 2.443 af
Routed to Pond P-1 : Wet Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 238.93' @ 12.05 hrs Surf.Area= 7,899 sf Storage= 1,703 cf
Flood Elev= 239.50' Surf.Area= 8,510 sf Storage= 4,249 cf

Plug-Flow detention time= 1.9 min calculated for 2.443 af (100% of inflow)
Center-of-Mass det. time= 1.9 min (786.3 - 784.3)

Volume	Invert	Avail.Storage	Storage Description
#1	235.00'	0 cf	**Pretreatment Forebay (Prismatic)** Listed below (Recalc) 7,202 cf Overall x 0.0% Voids
#2	238.50'	9,918 cf	**Overflow (Prismatic)** Listed below (Recalc)
		9,918 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
235.00	496	0	0
236.00	1,348	922	922
237.00	2,257	1,803	2,725
238.00	3,223	2,740	5,465
238.50	3,726	1,737	7,202

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
238.50	3,726	0	0
239.00	4,244	1,993	1,993
240.00	5,323	4,784	6,776
240.50	7,246	3,142	9,918

Device	Routing	Invert	Outlet Devices
#1	Primary	238.50'	**50.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=36.52 cfs @ 12.05 hrs HW=238.93' TW=236.96' (Dynamic Tailwater)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 36.52 cfs @ 1.69 fps)

Summary for Pond PF-2: Pretreatment Forebay

Inflow Area = 8.123 ac, 88.14% Impervious, Inflow Depth = 2.19" for 1-yr event
Inflow = 23.14 cfs @ 12.04 hrs, Volume= 1.484 af
Outflow = 20.19 cfs @ 12.05 hrs, Volume= 1.483 af, Atten= 13%, Lag= 0.6 min
Primary = 20.19 cfs @ 12.05 hrs, Volume= 1.483 af
Routed to Pond BIO-1 : Filtration Bioretention (2.5ft filter media)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 236.11' @ 12.38 hrs Surf.Area= 14,792 sf Storage= 4,478 cf
Flood Elev= 236.50' Surf.Area= 15,398 sf Storage= 7,696 cf

Plug-Flow detention time= 93.3 min calculated for 1.483 af (100% of inflow)
Center-of-Mass det. time= 93.3 min (871.2 - 777.8)

Volume	Invert	Avail.Storage	Storage Description
#1	232.00'	0 cf	**Pretreatment Forebay (Prismatic)** Listed below (Recalc) 15,694 cf Overall x 0.0% Voids
#2	235.50'	12,118 cf	**STORAGE ABOVE (Prismatic)** Listed below (Recalc)
		12,118 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
232.00	2,149	0	0
233.00	3,434	2,792	2,792
234.00	4,791	4,113	6,904
235.00	6,213	5,502	12,406
235.50	6,937	3,288	15,694

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
235.50	6,937	0	0
236.00	7,693	3,658	3,658
237.00	9,228	8,461	12,118

Device	Routing	Invert	Outlet Devices
#1	Primary	235.50'	**40.0' long x 22.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=18.12 cfs @ 12.05 hrs HW=235.98' TW=235.93' (Dynamic Tailwater)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 18.12 cfs @ 0.94 fps)

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentPS-1: Runoff Area=59,320 sf 46.38% Impervious Runoff Depth=2.71"
Flow Length=321' Tc=14.2 min CN=81 Runoff=3.30 cfs 0.308 af

SubcatchmentPS-10: Runoff Area=11,265 sf 67.79% Impervious Runoff Depth=2.54"
Tc=6.0 min CN=79 Runoff=0.82 cfs 0.055 af

SubcatchmentPS-11: Runoff Area=124,140 sf 99.06% Impervious Runoff Depth=4.34"
Tc=6.0 min CN=97 Runoff=14.08 cfs 1.030 af

SubcatchmentPS-12: Runoff Area=172,728 sf 100.00% Impervious Runoff Depth=4.45"
Tc=6.0 min CN=98 Runoff=19.75 cfs 1.472 af

SubcatchmentPS-13: Runoff Area=34,560 sf 100.00% Impervious Runoff Depth=4.45"
Tc=6.0 min CN=98 Runoff=3.95 cfs 0.294 af

SubcatchmentPS-14: Runoff Area=35,140 sf 97.85% Impervious Runoff Depth=4.45"
Tc=6.0 min CN=98 Runoff=4.02 cfs 0.299 af

SubcatchmentPS-15: Runoff Area=12,293 sf 0.00% Impervious Runoff Depth=3.08"
Tc=6.0 min CN=85 Runoff=1.09 cfs 0.072 af

SubcatchmentPS-16: Runoff Area=68,931 sf 0.00% Impervious Runoff Depth=3.18"
Tc=6.0 min CN=86 Runoff=6.29 cfs 0.419 af

SubcatchmentPS-17: Runoff Area=26,060 sf 83.73% Impervious Runoff Depth=4.11"
Tc=6.0 min CN=95 Runoff=2.89 cfs 0.205 af

SubcatchmentPS-18: Runoff Area=31,224 sf 79.46% Impervious Runoff Depth=4.00"
Tc=6.0 min CN=94 Runoff=3.41 cfs 0.239 af

SubcatchmentPS-19: Runoff Area=13,991 sf 95.15% Impervious Runoff Depth=4.34"
Tc=6.0 min CN=97 Runoff=1.59 cfs 0.116 af

SubcatchmentPS-2: Runoff Area=52,401 sf 62.82% Impervious Runoff Depth=3.68"
Flow Length=139' Tc=7.8 min CN=91 Runoff=4.94 cfs 0.369 af

SubcatchmentPS-20: Runoff Area=777 sf 100.00% Impervious Runoff Depth=4.45"
Tc=6.0 min CN=98 Runoff=0.09 cfs 0.007 af

SubcatchmentPS-21: Runoff Area=6,993 sf 69.58% Impervious Runoff Depth=3.89"
Tc=6.0 min CN=93 Runoff=0.75 cfs 0.052 af

SubcatchmentPS-22: Runoff Area=10,506 sf 66.97% Impervious Runoff Depth=3.79"
Tc=6.0 min CN=92 Runoff=1.11 cfs 0.076 af

SubcatchmentPS-23: Runoff Area=92,825 sf 95.28% Impervious Runoff Depth=4.34"
Tc=6.0 min CN=97 Runoff=10.53 cfs 0.770 af

SubcatchmentPS-24: Runoff Area=112,817 sf 98.41% Impervious Runoff Depth=4.45"
Tc=6.0 min CN=98 Runoff=12.90 cfs 0.961 af

SubcatchmentPS-25: Runoff Area=23,503 sf 23.00% Impervious Runoff Depth=3.38"
Tc=6.0 min CN=88 Runoff=2.26 cfs 0.152 af

SubcatchmentPS-26: Runoff Area=23,847 sf 0.00% Impervious Runoff Depth=2.62"
Tc=6.0 min CN=80 Runoff=1.81 cfs 0.120 af

SubcatchmentPS-27: Runoff Area=54,566 sf 4.64% Impervious Runoff Depth=2.71"
Tc=6.0 min CN=81 Runoff=4.28 cfs 0.283 af

SubcatchmentPS-28: Runoff Area=1,035,126 sf 6.64% Impervious Runoff Depth=1.81"
Flow Length=735' Tc=22.4 min CN=70 Runoff=30.04 cfs 3.583 af

SubcatchmentPS-29: Runoff Area=36,671 sf 100.00% Impervious Runoff Depth=4.45"
Tc=6.0 min CN=98 Runoff=4.19 cfs 0.312 af

SubcatchmentPS-3: Runoff Area=32,215 sf 78.33% Impervious Runoff Depth=3.89"
Tc=6.0 min CN=93 Runoff=3.45 cfs 0.240 af

SubcatchmentPS-30: Runoff Area=33,056 sf 85.37% Impervious Runoff Depth=4.11"
Tc=6.0 min CN=95 Runoff=3.66 cfs 0.260 af

SubcatchmentPS-4: Runoff Area=22,641 sf 0.00% Impervious Runoff Depth=1.66"
Flow Length=284' Tc=12.3 min CN=68 Runoff=0.78 cfs 0.072 af

SubcatchmentPS-5: Runoff Area=3,406 sf 94.86% Impervious Runoff Depth=4.34"
Tc=6.0 min CN=97 Runoff=0.39 cfs 0.028 af

SubcatchmentPS-6: Runoff Area=35,574 sf 96.53% Impervious Runoff Depth=4.34"
Tc=6.0 min CN=97 Runoff=4.03 cfs 0.295 af

SubcatchmentPS-7: Runoff Area=4,143 sf 59.04% Impervious Runoff Depth=2.62"
Tc=6.0 min CN=80 Runoff=0.31 cfs 0.021 af

SubcatchmentPS-8: Runoff Area=8,693 sf 67.40% Impervious Runoff Depth=2.54"
Tc=6.0 min CN=79 Runoff=0.64 cfs 0.042 af

SubcatchmentPS-9: Runoff Area=2,000 sf 100.00% Impervious Runoff Depth=4.45"
Tc=6.0 min CN=98 Runoff=0.23 cfs 0.017 af

Pond BIO-1: Filtration Bioretention (2.5ft Peak Elev=236.30' Storage=33,928 cf Inflow=28.46 cfs 3.094 af
Discarded=0.25 cfs 1.033 af Primary=24.49 cfs 2.061 af Secondary=0.00 cfs 0.000 af Outflow=24.75 cfs 3.094 af

Pond CB-1: Peak Elev=263.66' Storage=666 cf Inflow=3.30 cfs 0.308 af
Primary=6.06 cfs 0.308 af Secondary=0.00 cfs 0.000 af Outflow=6.06 cfs 0.308 af

Pond CB-10: Peak Elev=243.63' Storage=88 cf Inflow=4.02 cfs 0.299 af
Primary=4.49 cfs 0.299 af Secondary=0.00 cfs 0.000 af Outflow=4.49 cfs 0.299 af

Pond CB-11: Peak Elev=259.96' Storage=8 cf Inflow=2.89 cfs 0.205 af
18.0" Round Culvert n=0.013 L=216.0' S=0.0100 '/' Outflow=2.89 cfs 0.205 af

Pond CB-12: Peak Elev=258.52' Storage=20 cf Inflow=6.29 cfs 0.444 af
18.0" Round Culvert n=0.013 L=192.0' S=0.0100 '/' Outflow=6.29 cfs 0.444 af

Pond CB-13: Peak Elev=257.10' Storage=26 cf Inflow=7.88 cfs 0.560 af
18.0" Round Culvert n=0.013 L=137.0' S=0.0100 '/' Outflow=7.87 cfs 0.560 af

Pond CB-14: Peak Elev=255.75' Storage=26 cf Inflow=7.96 cfs 0.567 af
Outflow=7.96 cfs 0.567 af

Pond CB-15: Peak Elev=252.34' Storage=29 cf Inflow=8.71 cfs 0.619 af
Outflow=8.70 cfs 0.619 af

Pond CB-16: Peak Elev=247.25' Storage=64 cf Inflow=9.81 cfs 0.695 af
Outflow=9.80 cfs 0.695 af

Pond CB-17: Peak Elev=244.86' Storage=1,820 cf Inflow=20.30 cfs 1.465 af
Primary=17.05 cfs 1.465 af Secondary=0.00 cfs 0.000 af Tertiary=0.00 cfs 0.000 af Outflow=17.05 cfs 1.465 af

Pond CB-18: Peak Elev=243.54' Storage=135 cf Inflow=30.02 cfs 2.726 af
Outflow=29.89 cfs 2.726 af

Pond CB-19: Peak Elev=245.00' Storage=104 cf Inflow=23.65 cfs 1.766 af
Primary=23.63 cfs 1.766 af Secondary=0.00 cfs 0.000 af Outflow=23.63 cfs 1.766 af

Pond CB-2: Peak Elev=263.55' Storage=194 cf Inflow=8.18 cfs 0.677 af
Outflow=8.08 cfs 0.677 af

Pond CB-20: Peak Elev=245.17' Storage=29 cf Inflow=3.95 cfs 0.294 af
Primary=3.91 cfs 0.294 af Secondary=0.00 cfs 0.000 af Tertiary=0.00 cfs 0.000 af Outflow=3.91 cfs 0.294 af

Pond CB-22: Peak Elev=263.22' Storage=98 cf Inflow=9.70 cfs 0.917 af
Outflow=9.36 cfs 0.917 af

Pond CB-23: Peak Elev=246.93' Storage=55 cf Inflow=14.41 cfs 1.392 af
Outflow=14.40 cfs 1.392 af

Pond CB-24: Peak Elev=260.81' Storage=114 cf Inflow=0.78 cfs 0.072 af
12.0" Round Culvert n=0.013 L=26.0' S=0.0100 '/' Outflow=2.37 cfs 0.072 af

Pond CB-25: Peak Elev=244.94' Storage=51 cf Inflow=15.22 cfs 1.447 af
Primary=12.55 cfs 1.429 af Secondary=2.80 cfs 0.018 af Outflow=15.35 cfs 1.447 af

Pond CB-3: Peak Elev=261.94' Storage=158 cf Inflow=10.94 cfs 1.017 af
Outflow=10.79 cfs 1.017 af

Pond CB-4: Peak Elev=259.84' Storage=94 cf Inflow=13.47 cfs 1.312 af
18.0" Round Culvert n=0.013 L=241.0' S=0.0100 '/' Outflow=13.29 cfs 1.312 af

Pond CB-5: Peak Elev=254.42' Storage=58 cf Inflow=13.60 cfs 1.333 af
Outflow=13.56 cfs 1.333 af

Pond CB-6: Peak Elev=249.13' Storage=34 cf Inflow=14.19 cfs 1.375 af
Outflow=14.18 cfs 1.375 af

Pond CB-7: Peak Elev=241.86' Storage=59 cf Inflow=16.59 cfs 1.048 af
Outflow=16.69 cfs 1.048 af

Pond CB-8: Peak Elev=241.69' Storage=26 cf Inflow=7.85 cfs 0.573 af
Outflow=7.83 cfs 0.573 af

Pond CB-9: Peak Elev=242.13' Storage=14 cf Inflow=3.66 cfs 0.260 af
Outflow=3.65 cfs 0.260 af

Pond DET-1: Detention Basin Peak Elev=234.84' Storage=37,070 cf Inflow=28.60 cfs 2.248 af
Primary=9.94 cfs 2.248 af Secondary=0.00 cfs 0.000 af Outflow=9.94 cfs 2.248 af

Pond DIV-2: Diversion 2 Peak Elev=241.03' Storage=119 cf Inflow=29.89 cfs 2.726 af
Primary=23.80 cfs 2.659 af Secondary=5.88 cfs 0.067 af Outflow=29.68 cfs 2.726 af

Pond DP-1: Gidneytown Creek Inflow=45.31 cfs 10.363 af
Primary=45.31 cfs 10.363 af

Pond P-1: Wet Pond Peak Elev=238.63' Storage=125,529 cf Inflow=67.61 cfs 5.308 af
Primary=10.75 cfs 4.532 af Secondary=0.00 cfs 0.000 af Outflow=10.75 cfs 4.532 af

Pond PF-1: Pretreatment Forebay Peak Elev=239.09' Storage=2,388 cf Inflow=61.74 cfs 4.889 af
Outflow=61.39 cfs 4.889 af

Pond PF-2: Pretreatment Forebay Peak Elev=236.32' Storage=6,198 cf Inflow=26.02 cfs 2.811 af
Outflow=24.32 cfs 2.810 af

Total Runoff Area = 50.078 ac Runoff Volume = 12.172 af Average Runoff Depth = 2.92"
57.85% Pervious = 28.971 ac 42.15% Impervious = 21.108 ac

Summary for Subcatchment PS-1:

Runoff = 3.30 cfs @ 12.15 hrs, Volume= 0.308 af, Depth= 2.71"
Routed to Pond CB-1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 10-yr Rainfall=4.69"

Area (sf)	CN	Description
21,713	80	>75% Grass cover, Good, HSG D
20,423	98	Paved parking, HSG D
10,094	39	>75% Grass cover, Good, HSG A
7,090	98	Paved parking, HSG A
59,320	81	Weighted Average
31,807		53.62% Pervious Area
27,513		46.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.8	100	0.0500	0.24		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.15"
7.4	221	0.0050	0.49		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
14.2	321	Total			

Summary for Subcatchment PS-10:

Runoff = 0.82 cfs @ 12.04 hrs, Volume= 0.055 af, Depth= 2.54"
Routed to Pond CB-25 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 10-yr Rainfall=4.69"

Area (sf)	CN	Description
3,629	39	>75% Grass cover, Good, HSG A
7,636	98	Paved parking, HSG A
11,265	79	Weighted Average
3,629		32.21% Pervious Area
7,636		67.79% Impervious Area

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

Summary for Subcatchment PS-11:

Runoff = 14.08 cfs @ 12.04 hrs, Volume= 1.030 af, Depth= 4.34"
Routed to Pond CB-7 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 10-yr Rainfall=4.69"

Area (sf)	CN	Description
1,165	39	>75% Grass cover, Good, HSG A
436	98	Paved parking, HSG D
3,849	98	Roofs, HSG D
83,098	98	Roofs, HSG A
35,592	98	Paved parking, HSG A
124,140	97	Weighted Average
1,165		0.94% Pervious Area
122,975		99.06% Impervious Area

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

Summary for Subcatchment PS-12:

Runoff = 19.75 cfs @ 12.04 hrs, Volume= 1.472 af, Depth= 4.45"
Routed to Pond CB-19 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 10-yr Rainfall=4.69"

Area (sf)	CN	Description
155,036	98	Roofs, HSG D
17,692	98	Roofs, HSG A
172,728	98	Weighted Average
172,728		100.00% Impervious Area

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

Summary for Subcatchment PS-13:

Runoff = 3.95 cfs @ 12.04 hrs, Volume= 0.294 af, Depth= 4.45"
Routed to Pond CB-20 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 10-yr Rainfall=4.69"

Area (sf)	CN	Description
34,560	98	Roofs, HSG D
34,560		100.00% Impervious Area

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

Summary for Subcatchment PS-14:

Runoff = 4.02 cfs @ 12.04 hrs, Volume= 0.299 af, Depth= 4.45"
Routed to Pond CB-10 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 10-yr Rainfall=4.69"

Area (sf)	CN	Description
755	80	>75% Grass cover, Good, HSG D
34,385	98	Paved parking, HSG D
35,140	98	Weighted Average
755		2.15% Pervious Area
34,385		97.85% Impervious Area

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

Summary for Subcatchment PS-15:

Runoff = 1.09 cfs @ 12.04 hrs, Volume= 0.072 af, Depth= 3.08"
Routed to Pond PF-1 : Pretreatment Forebay

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 10-yr Rainfall=4.69"

Area (sf)	CN	Description
8,567	80	>75% Grass cover, Good, HSG D
3,726	98	Water Surface, 0% imp, HSG D
12,293	85	Weighted Average
12,293		100.00% Pervious Area

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

Summary for Subcatchment PS-16:

Runoff = 6.29 cfs @ 12.04 hrs, Volume= 0.419 af, Depth= 3.18"
Routed to Pond P-1 : Wet Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 10-yr Rainfall=4.69"

Area (sf)	CN	Description
45,151	80	>75% Grass cover, Good, HSG D
23,780	98	Water Surface, 0% imp, HSG D
68,931	86	Weighted Average
68,931		100.00% Pervious Area

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

Summary for Subcatchment PS-17:

Runoff = 2.89 cfs @ 12.04 hrs, Volume= 0.205 af, Depth= 4.11"
Routed to Pond CB-11 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 10-yr Rainfall=4.69"

Area (sf)	CN	Description
4,241	80	>75% Grass cover, Good, HSG D
21,819	98	Paved parking, HSG D
26,060	95	Weighted Average
4,241		16.27% Pervious Area
21,819		83.73% Impervious Area

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

Summary for Subcatchment PS-18:

Runoff = 3.41 cfs @ 12.04 hrs, Volume= 0.239 af, Depth= 4.00"
Routed to Pond CB-12 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 10-yr Rainfall=4.69"

Area (sf)	CN	Description
6,412	80	>75% Grass cover, Good, HSG D
24,812	98	Paved parking, HSG D
31,224	94	Weighted Average
6,412		20.54% Pervious Area
24,812		79.46% Impervious Area

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

Summary for Subcatchment PS-19:

Runoff = 1.59 cfs @ 12.04 hrs, Volume= 0.116 af, Depth= 4.34"
Routed to Pond CB-13 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 10-yr Rainfall=4.69"

Area (sf)	CN	Description
678	80	>75% Grass cover, Good, HSG D
13,313	98	Paved parking, HSG D
13,991	97	Weighted Average
678		4.85% Pervious Area
13,313		95.15% Impervious Area

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

Summary for Subcatchment PS-2:

Runoff = 4.94 cfs @ 12.06 hrs, Volume= 0.369 af, Depth= 3.68"
Routed to Pond CB-2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 10-yr Rainfall=4.69"

Area (sf)	CN	Description
19,091	80	>75% Grass cover, Good, HSG D
32,920	98	Paved parking, HSG D
390	39	>75% Grass cover, Good, HSG A
52,401	91	Weighted Average
19,481		37.18% Pervious Area
32,920		62.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	100	0.0400	0.22		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.15"
0.3	39	0.0967	2.18		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
7.8	139	Total			

Summary for Subcatchment PS-20:

Runoff = 0.09 cfs @ 12.04 hrs, Volume= 0.007 af, Depth= 4.45"
Routed to Pond CB-14 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 10-yr Rainfall=4.69"

Area (sf)	CN	Description
777	98	Paved parking, HSG D
777		100.00% Impervious Area

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

Summary for Subcatchment PS-21:

Runoff = 0.75 cfs @ 12.04 hrs, Volume= 0.052 af, Depth= 3.89"
Routed to Pond CB-15 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 10-yr Rainfall=4.69"

Area (sf)	CN	Description
2,127	80	>75% Grass cover, Good, HSG D
4,866	98	Paved parking, HSG D
6,993	93	Weighted Average
2,127		30.42% Pervious Area
4,866		69.58% Impervious Area

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

Summary for Subcatchment PS-22:

Runoff = 1.11 cfs @ 12.04 hrs, Volume= 0.076 af, Depth= 3.79"
Routed to Pond CB-16 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 10-yr Rainfall=4.69"

Area (sf)	CN	Description
3,470	80	>75% Grass cover, Good, HSG D
7,036	98	Paved parking, HSG D
10,506	92	Weighted Average
3,470		33.03% Pervious Area
7,036		66.97% Impervious Area

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

Summary for Subcatchment PS-23:

Runoff = 10.53 cfs @ 12.04 hrs, Volume= 0.770 af, Depth= 4.34"
Routed to Pond CB-17 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 10-yr Rainfall=4.69"

Area (sf)	CN	Description
4,379	80	>75% Grass cover, Good, HSG D
36,053	98	Paved parking, HSG D
52,393	98	Roofs, HSG D
92,825	97	Weighted Average
4,379		4.72% Pervious Area
88,446		95.28% Impervious Area

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

Summary for Subcatchment PS-24:

Runoff = 12.90 cfs @ 12.04 hrs, Volume= 0.961 af, Depth= 4.45"
Routed to Pond CB-18 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 10-yr Rainfall=4.69"

Area (sf)	CN	Description
1,790	80	>75% Grass cover, Good, HSG D
41,907	98	Paved parking, HSG D
69,120	98	Roofs, HSG D
112,817	98	Weighted Average
1,790		1.59% Pervious Area
111,027		98.41% Impervious Area

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

Summary for Subcatchment PS-25:

Runoff = 2.26 cfs @ 12.04 hrs, Volume= 0.152 af, Depth= 3.38"
Routed to Pond PF-2 : Pretreatment Forebay

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 10-yr Rainfall=4.69"

Area (sf)	CN	Description
12,606	80	>75% Grass cover, Good, HSG D
5,405	98	Paved parking, HSG D
5,492	98	Water Surface, 0% imp, HSG D
23,503	88	Weighted Average
18,098		77.00% Pervious Area
5,405		23.00% Impervious Area

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

Summary for Subcatchment PS-26:

Runoff = 1.81 cfs @ 12.04 hrs, Volume= 0.120 af, Depth= 2.62"
Routed to Pond DET-1 : Detention Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 10-yr Rainfall=4.69"

Area (sf)	CN	Description
23,847	80	>75% Grass cover, Good, HSG D
23,847		100.00% Pervious Area

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

Summary for Subcatchment PS-27:

Runoff = 4.28 cfs @ 12.04 hrs, Volume= 0.283 af, Depth= 2.71"
Routed to Pond BIO-1 : Filtration Bioretention (2.5ft filter media)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 10-yr Rainfall=4.69"

Area (sf)	CN	Description
52,036	80	>75% Grass cover, Good, HSG D
2,530	98	Paved parking, HSG D
54,566	81	Weighted Average
52,036		95.36% Pervious Area
2,530		4.64% Impervious Area

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

Summary for Subcatchment PS-28:

Runoff = 30.04 cfs @ 12.27 hrs, Volume= 3.583 af, Depth= 1.81"
Routed to Pond DP-1 : Gidneytown Creek

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 10-yr Rainfall=4.69"

Area (sf)	CN	Description
45,884	98	Paved parking, HSG D
350	98	Paved parking, HSG A
377,918	77	Woods, Good, HSG D
18,580	30	Woods, Good, HSG A
230,060	39	>75% Grass cover, Good, HSG A
339,862	80	>75% Grass cover, Good, HSG D
1,122	98	Water Surface, HSG A
21,350	98	Water Surface, HSG D
1,035,126	70	Weighted Average
966,420		93.36% Pervious Area
68,706		6.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.7	100	0.0130	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.15"
9.5	481	0.0145	0.84		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.2	154	0.0970	2.18		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
22.4	735	Total			

Summary for Subcatchment PS-29:

Runoff = 4.19 cfs @ 12.04 hrs, Volume= 0.312 af, Depth= 4.45"
Routed to Pond CB-8 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 10-yr Rainfall=4.69"

Area (sf)	CN	Description
28,170	98	Paved parking, HSG D
8,501	98	Paved parking, HSG A
36,671	98	Weighted Average
36,671		100.00% Impervious Area

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

Summary for Subcatchment PS-3:

Runoff = 3.45 cfs @ 12.04 hrs, Volume= 0.240 af, Depth= 3.89"
Routed to Pond CB-22 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 10-yr Rainfall=4.69"

Area (sf)	CN	Description
6,471	80	>75% Grass cover, Good, HSG D
25,183	98	Paved parking, HSG D
511	39	>75% Grass cover, Good, HSG A
50	98	Paved parking, HSG A
32,215	93	Weighted Average
6,982		21.67% Pervious Area
25,233		78.33% Impervious Area

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

Summary for Subcatchment PS-30:

Runoff = 3.66 cfs @ 12.04 hrs, Volume= 0.260 af, Depth= 4.11"
Routed to Pond CB-9 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 10-yr Rainfall=4.69"

Area (sf)	CN	Description
4,835	80	>75% Grass cover, Good, HSG D
28,221	98	Paved parking, HSG D
33,056	95	Weighted Average
4,835		14.63% Pervious Area
28,221		85.37% Impervious Area

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

Summary for Subcatchment PS-4:

Runoff = 0.78 cfs @ 12.13 hrs, Volume= 0.072 af, Depth= 1.66"
Routed to Pond CB-24 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 10-yr Rainfall=4.69"

Area (sf)	CN	Description
6,817	39	>75% Grass cover, Good, HSG A
15,824	80	>75% Grass cover, Good, HSG D
22,641	68	Weighted Average
22,641		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.9	100	0.0200	0.17		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.15"
2.4	184	0.0326	1.26		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
12.3	284	Total			

Summary for Subcatchment PS-5:

Runoff = 0.39 cfs @ 12.04 hrs, Volume= 0.028 af, Depth= 4.34"
Routed to Pond CB-3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 10-yr Rainfall=4.69"

Area (sf)	CN	Description
151	80	>75% Grass cover, Good, HSG D
3,231	98	Paved parking, HSG D
24	39	>75% Grass cover, Good, HSG A
3,406	97	Weighted Average
175		5.14% Pervious Area
3,231		94.86% Impervious Area

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

Summary for Subcatchment PS-6:

Runoff = 4.03 cfs @ 12.04 hrs, Volume= 0.295 af, Depth= 4.34"
Routed to Pond CB-4 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 10-yr Rainfall=4.69"

Area (sf)	CN	Description
1,235	80	>75% Grass cover, Good, HSG D
34,319	98	Paved parking, HSG D
20	98	Paved parking, HSG A
35,574	97	Weighted Average
1,235		3.47% Pervious Area
34,339		96.53% Impervious Area

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

Summary for Subcatchment PS-7:

Runoff = 0.31 cfs @ 12.04 hrs, Volume= 0.021 af, Depth= 2.62"
Routed to Pond CB-5 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 10-yr Rainfall=4.69"

Area (sf)	CN	Description
614	80	>75% Grass cover, Good, HSG D
1,329	98	Paved parking, HSG D
1,117	98	Paved parking, HSG A
1,083	39	>75% Grass cover, Good, HSG A
4,143	80	Weighted Average
1,697		40.96% Pervious Area
2,446		59.04% Impervious Area

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

Summary for Subcatchment PS-8:

Runoff = 0.64 cfs @ 12.04 hrs, Volume= 0.042 af, Depth= 2.54"
Routed to Pond CB-6 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 10-yr Rainfall=4.69"

Area (sf)	CN	Description
171	98	Paved parking, HSG D
2,834	39	>75% Grass cover, Good, HSG A
5,688	98	Paved parking, HSG A
8,693	79	Weighted Average
2,834		32.60% Pervious Area
5,859		67.40% Impervious Area

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

Summary for Subcatchment PS-9:

Runoff = 0.23 cfs @ 12.04 hrs, Volume= 0.017 af, Depth= 4.45"
Routed to Pond CB-23 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 10-yr Rainfall=4.69"

Area (sf)	CN	Description
2,000	98	Paved parking, HSG A
2,000		100.00% Impervious Area

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

Summary for Pond BIO-1: Filtration Bioretention (2.5ft filter media)

Inflow Area = 9.376 ac, 76.99% Impervious, Inflow Depth = 3.96" for 10-yr event
Inflow = 28.46 cfs @ 12.05 hrs, Volume= 3.094 af
Outflow = 24.75 cfs @ 12.19 hrs, Volume= 3.094 af, Atten= 13%, Lag= 8.3 min
Discarded = 0.25 cfs @ 12.19 hrs, Volume= 1.033 af
Primary = 24.49 cfs @ 12.19 hrs, Volume= 2.061 af
Routed to Pond DET-1 : Detention Basin
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond DP-1 : Gidneytown Creek

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 236.30' @ 12.19 hrs Surf.Area= 43,789 sf Storage= 33,928 cf
Flood Elev= 236.50' Surf.Area= 44,411 sf Storage= 42,886 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 286.7 min (1,106.3 - 819.6)

Volume	Invert	Avail.Storage	Storage Description
#1	235.50'	65,474 cf	**Bioretention (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
235.50	41,373	0	0
236.00	42,881	21,064	21,064
237.00	45,940	44,411	65,474

Device	Routing	Invert	Outlet Devices
#1	Discarded	235.50'	**0.250 in/hr Exfiltration Through Media over Surface area**
#2	Primary	236.00'	**60.0' long x 10.0' breadth Overflow Weir to Det**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#3	Secondary	236.50'	**20.0' long x 15.0' breadth Emergency Overflow Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.25 cfs @ 12.19 hrs HW=236.30' (Free Discharge)
↑**1=Exfiltration Through Media** (Exfiltration Controls 0.25 cfs)

Primary OutFlow Max=24.46 cfs @ 12.19 hrs HW=236.30' TW=234.06' (Dynamic Tailwater)
↑**2=Overflow Weir to Det** (Weir Controls 24.46 cfs @ 1.37 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=235.50' TW=0.00' (Dynamic Tailwater)
↑**3=Emergency Overflow Weir** (Controls 0.00 cfs)

Summary for Pond CB-1:

[58] Hint: Peaked 0.35' above defined flood level
[90] Warning: Qout>Qin may require smaller dt or Finer Routing
[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=9)

Inflow Area = 1.362 ac, 46.38% Impervious, Inflow Depth = 2.71" for 10-yr event
Inflow = 3.30 cfs @ 12.15 hrs, Volume= 0.308 af
Outflow = 6.06 cfs @ 12.24 hrs, Volume= 0.308 af, Atten= 0%, Lag= 5.3 min
Primary = 6.06 cfs @ 12.24 hrs, Volume= 0.308 af
Routed to Pond CB-2 :
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond CB-11 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 263.66' @ 12.17 hrs Surf.Area= 3,646 sf Storage= 666 cf
Flood Elev= 263.31' Surf.Area= 18 sf Storage= 32 cf

Plug-Flow detention time= 0.5 min calculated for 0.308 af (100% of inflow)
Center-of-Mass det. time= 0.5 min (843.8 - 843.2)

Volume	Invert	Avail.Storage	Storage Description
#1	259.81'	32 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)
#2	263.31'	11,903 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		11,935 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
259.81	9	0	0
263.31	9	32	32

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
263.31	9	0	0
264.00	7,196	2,486	2,486
265.00	11,639	9,418	11,903

Device	Routing	Invert	Outlet Devices
#1	Primary	259.81'	**18.0" Round Culvert** L= 227.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 259.81' / 257.54' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Primary	264.55'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88
#3	Secondary	264.71'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=5.22 cfs @ 12.24 hrs HW=263.54' TW=262.72' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 5.22 cfs @ 2.95 fps)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=259.81' TW=259.05' (Dynamic Tailwater)
└**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond CB-10:

[58] Hint: Peaked 0.13' above defined flood level
[90] Warning: Qout>Qin may require smaller dt or Finer Routing
[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=11)

Inflow Area = 0.807 ac, 97.85% Impervious, Inflow Depth = 4.45" for 10-yr event
Inflow = 4.02 cfs @ 12.04 hrs, Volume= 0.299 af
Outflow = 4.49 cfs @ 12.12 hrs, Volume= 0.299 af, Atten= 0%, Lag= 5.0 min
Primary = 4.49 cfs @ 12.12 hrs, Volume= 0.299 af
Routed to Pond CB-18 :
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond CB-18 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 243.63' @ 12.06 hrs Surf.Area= 494 sf Storage= 88 cf
Flood Elev= 243.50' Surf.Area= 32 sf Storage= 54 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.3 min (750.2 - 749.9)

Volume	Invert	Avail.Storage	Storage Description
#1	239.00'	54 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)
#2	243.50'	5,338 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		5,392 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
239.00	12	0	0
243.50	12	54	54

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
243.50	20	0	0
244.00	1,744	441	441
244.70	12,247	4,897	5,338

Device	Routing	Invert	Outlet Devices
#1	Primary	239.00'	**24.0" Round Culvert** L= 240.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 239.00' / 237.80' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Secondary	244.60'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.00 cfs @ 12.12 hrs HW=242.97' TW=243.01' (Dynamic Tailwater)
↑**1=Culvert** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=239.00' TW=237.08' (Dynamic Tailwater)
↑**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond CB-11:

Inflow Area = 0.598 ac, 83.73% Impervious, Inflow Depth = 4.11" for 10-yr event
Inflow = 2.89 cfs @ 12.04 hrs, Volume= 0.205 af
Outflow = 2.89 cfs @ 12.04 hrs, Volume= 0.205 af, Atten= 0%, Lag= 0.0 min
Primary = 2.89 cfs @ 12.04 hrs, Volume= 0.205 af
Routed to Pond CB-12 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 259.96' @ 12.04 hrs Surf.Area= 9 sf Storage= 8 cf
Flood Elev= 263.05' Surf.Area= 18 sf Storage= 36 cf

Plug-Flow detention time= 0.2 min calculated for 0.205 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (774.0 - 773.9)

Volume	Invert	Avail.Storage	Storage Description
#1	259.05'	36 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)
#2	263.05'	1,263 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		1,299 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
259.05	9	0	0
263.05	9	36	36

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
263.05	9	0	0
263.65	4,200	1,263	1,263

Device	Routing	Invert	Outlet Devices
#1	Primary	259.05'	**18.0" Round Culvert** L= 216.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 259.05' / 256.89' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=2.88 cfs @ 12.04 hrs HW=259.96' TW=258.51' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 2.88 cfs @ 2.56 fps)

Summary for Pond CB-12:

Inflow Area = 1.315 ac, 81.40% Impervious, Inflow Depth = 4.05" for 10-yr event
Inflow = 6.29 cfs @ 12.04 hrs, Volume= 0.444 af
Outflow = 6.29 cfs @ 12.04 hrs, Volume= 0.444 af, Atten= 0%, Lag= 0.1 min
Primary = 6.29 cfs @ 12.04 hrs, Volume= 0.444 af
Routed to Pond CB-13 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 258.52' @ 12.04 hrs Surf.Area= 12 sf Storage= 20 cf
Flood Elev= 263.05' Surf.Area= 24 sf Storage= 74 cf

Plug-Flow detention time= 0.3 min calculated for 0.444 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (777.5 - 777.3)

Volume	Invert	Avail.Storage	Storage Description
#1	256.89'	74 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)
#2	263.05'	1,868 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		1,942 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
256.89	12	0	0
263.05	12	74	74

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
263.05	12	0	0
263.82	4,839	1,868	1,868

Device	Routing	Invert	Outlet Devices
#1	Primary	256.89'	**18.0" Round Culvert** L= 192.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 256.89' / 254.97' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=6.27 cfs @ 12.04 hrs HW=258.51' TW=257.09' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 6.27 cfs @ 3.55 fps)

Summary for Pond CB-13:

Inflow Area = 1.636 ac, 84.10% Impervious, Inflow Depth = 4.11" for 10-yr event
Inflow = 7.88 cfs @ 12.04 hrs, Volume= 0.560 af
Outflow = 7.87 cfs @ 12.04 hrs, Volume= 0.560 af, Atten= 0%, Lag= 0.1 min
Primary = 7.87 cfs @ 12.04 hrs, Volume= 0.560 af
Routed to Pond CB-14 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 257.10' @ 12.04 hrs Surf.Area= 12 sf Storage= 26 cf
Flood Elev= 263.13' Surf.Area= 24 sf Storage= 98 cf

Plug-Flow detention time= 0.2 min calculated for 0.560 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (773.8 - 773.7)

Volume	Invert	Avail.Storage	Storage Description
#1	254.97'	98 cf	**STRUCTURE (Prismatic)**Listed below (Recalc)
#2	263.13'	1,289 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
		1,387 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
254.97	12	0	0
263.13	12	98	98

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
263.13	12	0	0
263.87	3,473	1,289	1,289

Device	Routing	Invert	Outlet Devices
#1	Primary	254.97'	**18.0" Round Culvert** L= 137.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 254.97' / 253.60' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=7.79 cfs @ 12.04 hrs HW=257.09' TW=255.75' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 7.79 cfs @ 4.41 fps)

Summary for Pond CB-14:

Inflow Area = 1.654 ac, 84.27% Impervious, Inflow Depth = 4.11" for 10-yr event
Inflow = 7.96 cfs @ 12.04 hrs, Volume= 0.567 af
Outflow = 7.96 cfs @ 12.04 hrs, Volume= 0.567 af, Atten= 0%, Lag= 0.1 min
Primary = 7.96 cfs @ 12.04 hrs, Volume= 0.567 af
Routed to Pond CB-15 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 255.75' @ 12.04 hrs Surf.Area= 12 sf Storage= 26 cf
Flood Elev= 262.48' Surf.Area= 12 sf Storage= 107 cf

Plug-Flow detention time= 0.2 min calculated for 0.567 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (773.7 - 773.5)

Volume	Invert	Avail.Storage	Storage Description
#1	253.60'	107 cf	**STRUCTURE (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
253.60	12	0	0
262.48	12	107	107
262.50	20	0	107

Device	Routing	Invert	Outlet Devices
#1	Primary	253.60'	**18.0" Round Culvert** L= 180.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 253.60' / 249.91' S= 0.0205 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Primary	262.48'	**20.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=7.95 cfs @ 12.04 hrs HW=255.75' TW=252.33' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 7.95 cfs @ 4.50 fps)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond CB-15:

Inflow Area = 1.815 ac, 82.97% Impervious, Inflow Depth = 4.09" for 10-yr event
Inflow = 8.71 cfs @ 12.04 hrs, Volume= 0.619 af
Outflow = 8.70 cfs @ 12.04 hrs, Volume= 0.619 af, Atten= 0%, Lag= 0.1 min
Primary = 8.70 cfs @ 12.04 hrs, Volume= 0.619 af
Routed to Pond CB-16 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 252.34' @ 12.04 hrs Surf.Area= 12 sf Storage= 29 cf
Flood Elev= 253.61' Surf.Area= 12 sf Storage= 44 cf

Plug-Flow detention time= 0.1 min calculated for 0.619 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (774.9 - 774.7)

Volume	Invert	Avail.Storage	Storage Description
#1	249.91'	47 cf	**STRUCTURE (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
249.91	12	0	0
253.61	12	44	44
253.75	20	2	47

Device	Routing	Invert	Outlet Devices
#1	Primary	249.91'	**18.0" Round Culvert** L= 180.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 249.91' / 241.94' S= 0.0443 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

#2	Primary	253.61'	**20.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=8.70 cfs @ 12.04 hrs HW=252.34' TW=247.23' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 8.70 cfs @ 4.92 fps)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond CB-16:

Inflow Area = 2.056 ac, 81.10% Impervious, Inflow Depth = 4.06" for 10-yr event
Inflow = 9.81 cfs @ 12.04 hrs, Volume= 0.695 af
Outflow = 9.80 cfs @ 12.04 hrs, Volume= 0.695 af, Atten= 0%, Lag= 0.1 min
Primary = 9.80 cfs @ 12.04 hrs, Volume= 0.695 af
Routed to Pond CB-17 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 247.25' @ 12.05 hrs Surf.Area= 12 sf Storage= 64 cf
Flood Elev= 247.58' Surf.Area= 12 sf Storage= 68 cf

Plug-Flow detention time= 0.1 min calculated for 0.695 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (776.8 - 776.7)

Volume	Invert	Avail.Storage	Storage Description
#1	241.94'	72 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
241.94	12	0	0
247.58	12	68	68
247.85	20	4	72

Device	Routing	Invert	Outlet Devices
#1	Primary	241.94'	**18.0" Round Culvert** L= 194.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 241.94' / 240.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Primary	247.58'	**20.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=9.66 cfs @ 12.04 hrs HW=247.24' TW=244.71' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 9.66 cfs @ 5.47 fps)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond CB-17:

[58] Hint: Peaked 0.56' above defined flood level
[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=10)

Inflow Area = 4.187 ac, 88.32% Impervious, Inflow Depth = 4.20" for 10-yr event
Inflow = 20.30 cfs @ 12.04 hrs, Volume= 1.465 af
Outflow = 17.05 cfs @ 12.14 hrs, Volume= 1.465 af, Atten= 16%, Lag= 6.1 min
Primary = 17.05 cfs @ 12.14 hrs, Volume= 1.465 af
Routed to Pond CB-18 :
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond PF-2 : Pretreatment Forebay
Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond DP-1 : Gidneytown Creek

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 244.86' @ 12.09 hrs Surf.Area= 6,187 sf Storage= 1,820 cf
Flood Elev= 244.30' Surf.Area= 40 sf Storage= 96 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.3 min (767.8 - 767.5)

Volume	Invert	Avail.Storage	Storage Description
#1	239.50'	96 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)
#2	244.30'	18,411 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		18,507 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
239.50	20	0	0
244.30	20	96	96

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
244.30	20	0	0
245.00	7,740	2,716	2,716
245.35	12,368	3,519	6,235
246.00	25,096	12,176	18,411

Device	Routing	Invert	Outlet Devices
#1	Primary	239.50'	**24.0" Round Culvert** L= 192.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 239.50' / 237.58' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Primary	245.26'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88
#3	Secondary	245.34'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir**

Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50
Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

#4 Tertiary 245.40' **10.0' long x 5.0' breadth Broad-Crested Rectangular Weir**
Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50
Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=16.64 cfs @ 12.14 hrs HW=244.75' TW=242.81' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 16.64 cfs @ 5.30 fps)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=239.50' TW=232.00' (Dynamic Tailwater)
└─**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=239.50' TW=0.00' (Dynamic Tailwater)
└─**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond CB-18:

[58] Hint: Peaked 0.04' above defined flood level
[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=1)
[80] Warning: Exceeded Pond CB-10 by 1.04' @ 11.98 hrs (11.61 cfs 0.039 af)

Inflow Area = 7.583 ac, 92.78% Impervious, Inflow Depth = 4.31" for 10-yr event
Inflow = 30.02 cfs @ 12.10 hrs, Volume= 2.726 af
Outflow = 29.89 cfs @ 12.08 hrs, Volume= 2.726 af, Atten= 0%, Lag= 0.0 min
Primary = 29.89 cfs @ 12.08 hrs, Volume= 2.726 af
Routed to Pond DIV-2 : Diversion 2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 243.54' @ 12.05 hrs Surf.Area= 312 sf Storage= 135 cf
Flood Elev= 243.50' Surf.Area= 40 sf Storage= 128 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.1 min (759.7 - 759.6)

Volume	Invert	Avail.Storage	Storage Description
#1	237.08'	128 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)
#2	243.50'	4,850 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		4,978 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
237.08	20	0	0
243.50	20	128	128

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
243.50	20	0	0
244.75	7,740	4,850	4,850

Device	Routing	Invert	Outlet Devices
#1	Primary	237.08'	**30.0" Round Culvert** L= 64.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 237.08' / 236.06' S= 0.0159 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 4.91 sf
#2	Primary	244.70'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=29.20 cfs @ 12.08 hrs HW=243.46' TW=241.01' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 29.20 cfs @ 5.95 fps)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond CB-19:

[80] Warning: Exceeded Pond CB-20 by 0.30' @ 12.01 hrs (5.15 cfs 0.013 af)

Inflow Area = 4.759 ac,100.00% Impervious, Inflow Depth = 4.45" for 10-yr event
Inflow = 23.65 cfs @ 12.04 hrs, Volume= 1.766 af
Outflow = 23.63 cfs @ 12.04 hrs, Volume= 1.766 af, Atten= 0%, Lag= 0.1 min
Primary = 23.63 cfs @ 12.04 hrs, Volume= 1.766 af
Routed to Pond PF-1 : Pretreatment Forebay
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond CB-8 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 245.00' @ 12.04 hrs Surf.Area= 20 sf Storage= 104 cf
Flood Elev= 245.95' Surf.Area= 40 sf Storage= 123 cf

Plug-Flow detention time= 0.1 min calculated for 1.766 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (750.1 - 750.0)

Volume	Invert	Avail.Storage	Storage Description
#1	239.82'	123 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)
#2	245.95'	55 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		178 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
239.82	20	0	0
245.95	20	123	123

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
245.95	20	0	0
246.60	150	55	55

Device	Routing	Invert	Outlet Devices
#1	Primary	239.82'	**24.0" Round Culvert** L= 254.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 239.82' / 238.55' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Secondary	245.95'	**2.0' long x 2.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=23.59 cfs @ 12.04 hrs HW=244.99' TW=239.09' (Dynamic Tailwater)
└─**1=Culvert** (Barrel Controls 23.59 cfs @ 7.51 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=239.82' TW=239.53' (Dynamic Tailwater)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond CB-2:

[58] Hint: Peaked 0.19' above defined flood level
[80] Warning: Exceeded Pond CB-1 by 1.16' @ 12.04 hrs (6.20 cfs 0.016 af)

Inflow Area = 2.565 ac, 54.09% Impervious, Inflow Depth = 3.17" for 10-yr event
Inflow = 8.18 cfs @ 12.24 hrs, Volume= 0.677 af
Outflow = 8.08 cfs @ 12.24 hrs, Volume= 0.677 af, Atten= 1%, Lag= 0.1 min
Primary = 8.08 cfs @ 12.24 hrs, Volume= 0.677 af
Routed to Pond CB-22 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 263.55' @ 12.07 hrs Surf.Area= 1,308 sf Storage= 194 cf
Flood Elev= 263.36' Surf.Area= 24 sf Storage= 70 cf

Plug-Flow detention time= 0.3 min calculated for 0.677 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (819.0 - 818.8)

Volume	Invert	Avail.Storage	Storage Description
#1	257.54'	70 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)
#2	263.36'	14,129 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		14,199 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
257.54	12	0	0
263.36	12	70	70

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
263.36	12	0	0
264.00	4,336	1,391	1,391
265.00	21,139	12,738	14,129

Device	Routing	Invert	Outlet Devices
#1	Primary	257.54'	**18.0" Round Culvert** L= 251.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 257.54' / 255.03' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Primary	264.55'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=7.64 cfs @ 12.24 hrs HW=262.75' TW=260.87' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 7.64 cfs @ 4.32 fps)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond CB-20:

Inflow Area = 0.793 ac,100.00% Impervious, Inflow Depth = 4.45" for 10-yr event
Inflow = 3.95 cfs @ 12.04 hrs, Volume= 0.294 af
Outflow = 3.91 cfs @ 12.04 hrs, Volume= 0.294 af, Atten= 1%, Lag= 0.3 min
Primary = 3.91 cfs @ 12.04 hrs, Volume= 0.294 af
Routed to Pond CB-19 :
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond CB-10 :
Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond CB-18 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 245.17' @ 12.05 hrs Surf.Area= 9 sf Storage= 29 cf
Flood Elev= 245.95' Surf.Area= 18 sf Storage= 36 cf

Plug-Flow detention time= 0.4 min calculated for 0.294 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (750.1 - 749.9)

Volume	Invert	Avail.Storage	Storage Description
#1	241.97'	36 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)
#2	245.95'	171 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		206 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
241.97	9	0	0
245.95	9	36	36

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
245.95	9	0	0
246.90	350	171	171

Device	Routing	Invert	Outlet Devices
#1	Primary	241.97'	**24.0" Round Culvert** L= 432.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 241.97' / 239.81' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Secondary	245.95'	**20.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88
#3	Tertiary	245.95'	**20.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=2.98 cfs @ 12.04 hrs HW=245.09' TW=244.99' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 2.98 cfs @ 0.95 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=241.97' TW=239.00' (Dynamic Tailwater)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=241.97' TW=237.08' (Dynamic Tailwater)
└**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond CB-22:

[80] Warning: Exceeded Pond CB-2 by 0.22' @ 12.02 hrs (2.62 cfs 0.003 af)

Inflow Area = 3.304 ac, 59.52% Impervious, Inflow Depth = 3.33" for 10-yr event
Inflow = 9.70 cfs @ 12.04 hrs, Volume= 0.917 af
Outflow = 9.36 cfs @ 12.24 hrs, Volume= 0.917 af, Atten= 3%, Lag= 12.1 min
Primary = 9.36 cfs @ 12.24 hrs, Volume= 0.917 af
Routed to Pond CB-3 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 263.22' @ 12.05 hrs Surf.Area= 12 sf Storage= 98 cf
Flood Elev= 263.26' Surf.Area= 24 sf Storage= 99 cf

Plug-Flow detention time= 0.2 min calculated for 0.917 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (810.5 - 810.4)

Volume	Invert	Avail.Storage	Storage Description
#1	255.03'	99 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)
#2	263.26'	9,471 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		9,570 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
255.03	12	0	0
263.26	12	99	99

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
263.26	12	0	0
264.00	3,123	1,160	1,160
265.00	13,500	8,312	9,471

Device	Routing	Invert	Outlet Devices
#1	Primary	255.03'	**18.0" Round Culvert** L= 99.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 255.03' / 254.04' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Primary	264.57'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=8.33 cfs @ 12.24 hrs HW=260.88' TW=259.34' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 8.33 cfs @ 4.72 fps)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond CB-23:

[58] Hint: Peaked 0.20' above defined flood level

Inflow Area = 5.060 ac, 60.59% Impervious, Inflow Depth = 3.30" for 10-yr event
Inflow = 14.41 cfs @ 12.04 hrs, Volume= 1.392 af
Outflow = 14.40 cfs @ 12.04 hrs, Volume= 1.392 af, Atten= 0%, Lag= 0.0 min
Primary = 14.40 cfs @ 12.04 hrs, Volume= 1.392 af
Routed to Pond CB-25 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 246.93' @ 12.05 hrs Surf.Area= 18 sf Storage= 55 cf
Flood Elev= 246.73' Surf.Area= 12 sf Storage= 52 cf

Plug-Flow detention time= 0.1 min calculated for 1.392 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (803.5 - 803.3)

Volume	Invert	Avail.Storage	Storage Description
#1	242.40'	56 cf	**STRUCTURE (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
242.40	12	0	0
246.73	12	52	52
247.00	20	4	56

Device	Routing	Invert	Outlet Devices
#1	Primary	242.40'	**18.0" Round Culvert** L= 135.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 242.40' / 240.70' S= 0.0126 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Primary	246.73'	**24.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=14.33 cfs @ 12.04 hrs HW=246.93' TW=244.93' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 9.49 cfs @ 5.37 fps)
└—**2=Broad-Crested Rectangular Weir**(Weir Controls 4.84 cfs @ 1.03 fps)

Summary for Pond CB-24:

[58] Hint: Peaked 0.31' above defined flood level
[90] Warning: Qout>Qin may require smaller dt or Finer Routing
[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=13)

Inflow Area = 0.520 ac, 0.00% Impervious, Inflow Depth = 1.66" for 10-yr event
Inflow = 0.78 cfs @ 12.13 hrs, Volume= 0.072 af
Outflow = 2.37 cfs @ 12.16 hrs, Volume= 0.072 af, Atten= 0%, Lag= 2.3 min
Primary = 2.37 cfs @ 12.16 hrs, Volume= 0.072 af
Routed to Pond CB-3 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 260.81' @ 12.11 hrs Surf.Area= 627 sf Storage= 114 cf
Flood Elev= 260.50' Surf.Area= 8 sf Storage= 16 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.3 min (882.7 - 882.3)

Volume	Invert	Avail.Storage	Storage Description
#1	256.50'	16 cf	**STRUCTURE (Prismatic)**Listed below (Recalc)
#2	260.50'	16,857 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
		16,873 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
256.50	4	0	0
260.50	4	16	16

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
260.50	4	0	0
261.00	1,000	251	251
262.00	4,450	2,725	2,976
263.00	6,787	5,619	8,595
264.00	9,737	8,262	16,857

Device	Routing	Invert	Outlet Devices
#1	Primary	256.50'	**12.0" Round Culvert** L= 26.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 256.50' / 256.24' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.04 cfs @ 12.16 hrs HW=260.64' TW=260.18' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 2.04 cfs @ 2.60 fps)

Summary for Pond CB-25:

[58] Hint: Peaked 0.24' above defined flood level
[90] Warning: Qout>Qin may require smaller dt or Finer Routing

Inflow Area = 5.318 ac, 60.94% Impervious, Inflow Depth = 3.27" for 10-yr event
Inflow = 15.22 cfs @ 12.04 hrs, Volume= 1.447 af
Outflow = 15.35 cfs @ 12.05 hrs, Volume= 1.447 af, Atten= 0%, Lag= 0.1 min
Primary = 12.55 cfs @ 12.05 hrs, Volume= 1.429 af
Routed to Pond PF-1 : Pretreatment Forebay
Secondary = 2.80 cfs @ 12.05 hrs, Volume= 0.018 af
Routed to Pond CB-7 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 244.94' @ 12.05 hrs Surf.Area= 29 sf Storage= 51 cf
Flood Elev= 244.70' Surf.Area= 24 sf Storage= 48 cf

Plug-Flow detention time= 0.1 min calculated for 1.447 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (805.0 - 804.9)

Volume	Invert	Avail.Storage	Storage Description
#1	240.70'	48 cf	**structure (Prismatic)**Listed below (Recalc)
#2	244.70'	6 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
		54 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
240.70	12	0	0
244.70	12	48	48

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
244.70	12	0	0
245.10	20	6	6

Device	Routing	Invert	Outlet Devices
#1	Primary	240.70'	**18.0" Round Culvert** L= 82.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 240.70' / 239.00' S= 0.0207 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Secondary	244.70'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=12.54 cfs @ 12.05 hrs HW=244.93' TW=239.09' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 12.54 cfs @ 7.09 fps)

Secondary OutFlow Max=2.66 cfs @ 12.05 hrs HW=244.93' TW=241.82' (Dynamic Tailwater)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 2.66 cfs @ 1.14 fps)

Summary for Pond CB-3:

[80] Warning: Exceeded Pond CB-24 by 1.84' @ 12.18 hrs (4.06 cfs 0.026 af)

Inflow Area = 3.902 ac, 52.30% Impervious, Inflow Depth = 3.13" for 10-yr event
Inflow = 10.94 cfs @ 12.13 hrs, Volume= 1.017 af
Outflow = 10.79 cfs @ 12.13 hrs, Volume= 1.017 af, Atten= 1%, Lag= 0.1 min
Primary = 10.79 cfs @ 12.13 hrs, Volume= 1.017 af
Routed to Pond CB-4 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 261.94' @ 12.05 hrs Surf.Area= 20 sf Storage= 158 cf
Flood Elev= 264.59' Surf.Area= 40 sf Storage= 211 cf

Plug-Flow detention time= 0.3 min calculated for 1.017 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (814.4 - 814.2)

Volume	Invert	Avail.Storage	Storage Description
#1	254.04'	211 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)
#2	264.59'	258 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		469 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
254.04	20	0	0
264.59	20	211	211

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
264.59	20	0	0
265.00	500	107	107
265.20	1,010	151	258

Device	Routing	Invert	Outlet Devices
#1	Primary	254.04'	**18.0" Round Culvert** L= 203.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 254.04' / 252.01' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Primary	265.15'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=9.19 cfs @ 12.13 hrs HW=260.80' TW=258.45' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 9.19 cfs @ 5.20 fps)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond CB-4:

Inflow Area = 4.719 ac, 59.95% Impervious, Inflow Depth = 3.34" for 10-yr event
Inflow = 13.47 cfs @ 12.04 hrs, Volume= 1.312 af
Outflow = 13.29 cfs @ 12.04 hrs, Volume= 1.312 af, Atten= 1%, Lag= 0.2 min
Primary = 13.29 cfs @ 12.04 hrs, Volume= 1.312 af
Routed to Pond CB-5 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 259.84' @ 12.05 hrs Surf.Area= 12 sf Storage= 94 cf
Flood Elev= 263.70' Surf.Area= 24 sf Storage= 140 cf

Plug-Flow detention time= 0.1 min calculated for 1.312 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (802.0 - 801.9)

Volume	Invert	Avail.Storage	Storage Description
#1	252.01'	140 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)
#2	263.70'	8,379 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		8,519 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
252.01	12	0	0
263.70	12	140	140

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
263.70	12	0	0
264.00	970	147	147
265.00	15,493	8,232	8,379

Device	Routing	Invert	Outlet Devices
#1	Primary	252.01'	**18.0" Round Culvert** L= 241.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 252.01' / 249.60' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=13.00 cfs @ 12.04 hrs HW=259.69' TW=254.39' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 13.00 cfs @ 7.35 fps)

Summary for Pond CB-5:

Inflow Area = 4.814 ac, 59.93% Impervious, Inflow Depth = 3.32" for 10-yr event
Inflow = 13.60 cfs @ 12.04 hrs, Volume= 1.333 af
Outflow = 13.56 cfs @ 12.04 hrs, Volume= 1.333 af, Atten= 0%, Lag= 0.2 min
Primary = 13.56 cfs @ 12.04 hrs, Volume= 1.333 af
Routed to Pond CB-6 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 254.42' @ 12.04 hrs Surf.Area= 12 sf Storage= 58 cf
Flood Elev= 258.09' Surf.Area= 12 sf Storage= 102 cf

Plug-Flow detention time= 0.1 min calculated for 1.333 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (802.7 - 802.6)

Volume	Invert	Avail.Storage	Storage Description
#1	249.60'	105 cf	**STRUCTURE (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
249.60	12	0	0
258.09	12	102	102
258.30	20	3	105

Device	Routing	Invert	Outlet Devices
#1	Primary	249.60'	**18.0" Round Culvert** L= 178.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 249.60' / 245.40' S= 0.0236 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Primary	258.09'	**20.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=13.50 cfs @ 12.04 hrs HW=254.39' TW=249.13' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 13.50 cfs @ 7.64 fps)
└─**2=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

Summary for Pond CB-6:

[58] Hint: Peaked 0.20' above defined flood level

Inflow Area = 5.014 ac, 60.23% Impervious, Inflow Depth = 3.29" for 10-yr event
Inflow = 14.19 cfs @ 12.04 hrs, Volume= 1.375 af
Outflow = 14.18 cfs @ 12.04 hrs, Volume= 1.375 af, Atten= 0%, Lag= 0.0 min
Primary = 14.18 cfs @ 12.04 hrs, Volume= 1.375 af
Routed to Pond CB-23 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 249.13' @ 12.05 hrs Surf.Area= 16 sf Storage= 34 cf
Flood Elev= 248.93' Surf.Area= 9 sf Storage= 32 cf

Plug-Flow detention time= 0.1 min calculated for 1.375 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (804.0 - 803.9)

Volume	Invert	Avail.Storage	Storage Description
#1	245.40'	36 cf	**STRUCTURE (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
245.40	9	0	0
248.93	9	32	32
249.25	20	5	36

Device	Routing	Invert	Outlet Devices
#1	Primary	245.40'	**18.0" Round Culvert** L= 85.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 245.40' / 242.40' S= 0.0353 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Primary	248.93'	**20.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=14.11 cfs @ 12.04 hrs HW=249.13' TW=246.93' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 9.97 cfs @ 5.64 fps)
└─**2=Broad-Crested Rectangular Weir**(Weir Controls 4.14 cfs @ 1.04 fps)

Summary for Pond CB-7:

[90] Warning: Qout>Qin may require smaller dt or Finer Routing

Inflow Area = 2.850 ac, 99.06% Impervious, Inflow Depth = 4.41" for 10-yr event
Inflow = 16.59 cfs @ 12.04 hrs, Volume= 1.048 af
Outflow = 16.69 cfs @ 12.04 hrs, Volume= 1.048 af, Atten= 0%, Lag= 0.0 min
Primary = 16.69 cfs @ 12.04 hrs, Volume= 1.048 af
Routed to Pond PF-1 : Pretreatment Forebay

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 241.86' @ 12.04 hrs Surf.Area= 20 sf Storage= 59 cf
Flood Elev= 243.50' Surf.Area= 58 sf Storage= 92 cf

Plug-Flow detention time= 0.4 min calculated for 1.048 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (758.6 - 758.4)

Volume	Invert	Avail.Storage	Storage Description
#1	238.91'	92 cf	**STRUCTURE (Prismatic)**Listed below (Recalc)
#2	243.50'	8,702 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
		8,793 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
238.91	20	0	0
243.50	20	92	92

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
243.50	38	0	0
244.00	1,938	494	494
245.00	14,477	8,208	8,702

Device	Routing	Invert	Outlet Devices
#1	Primary	238.91'	**24.0" Round Culvert** L= 81.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 238.91' / 238.50' S= 0.0051 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Primary	244.60'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=16.63 cfs @ 12.04 hrs HW=241.85' TW=239.09' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 16.63 cfs @ 5.29 fps)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond CB-8:

Inflow Area = 1.601 ac, 93.07% Impervious, Inflow Depth = 4.29" for 10-yr event
Inflow = 7.85 cfs @ 12.04 hrs, Volume= 0.573 af
Outflow = 7.83 cfs @ 12.04 hrs, Volume= 0.573 af, Atten= 0%, Lag= 0.0 min
Primary = 7.83 cfs @ 12.04 hrs, Volume= 0.573 af
Routed to Pond PF-1 : Pretreatment Forebay

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 241.69' @ 12.04 hrs Surf.Area= 12 sf Storage= 26 cf
Flood Elev= 244.30' Surf.Area= 24 sf Storage= 57 cf

Plug-Flow detention time= 0.2 min calculated for 0.572 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (761.0 - 760.9)

Volume	Invert	Avail.Storage	Storage Description
#1	239.53'	57 cf	**STRUCTURE (Prismatic)**Listed below (Recalc)
#2	244.30'	4,841 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
		4,898 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
239.53	12	0	0
244.30	12	57	57

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
244.30	12	0	0
245.00	8,154	2,858	2,858
245.20	11,676	1,983	4,841

Device	Routing	Invert	Outlet Devices
#1	Primary	239.53'	**18.0" Round Culvert** L= 144.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 239.53' / 238.81' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Primary	245.10'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=7.82 cfs @ 12.04 hrs HW=241.69' TW=239.09' (Dynamic Tailwater)
└**1=Culvert** (Barrel Controls 7.82 cfs @ 4.42 fps)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond CB-9:

Inflow Area = 0.759 ac, 85.37% Impervious, Inflow Depth = 4.11" for 10-yr event
Inflow = 3.66 cfs @ 12.04 hrs, Volume= 0.260 af
Outflow = 3.65 cfs @ 12.04 hrs, Volume= 0.260 af, Atten= 0%, Lag= 0.1 min
Primary = 3.65 cfs @ 12.04 hrs, Volume= 0.260 af
Routed to Pond CB-8 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 242.13' @ 12.04 hrs Surf.Area= 9 sf Storage= 14 cf
Flood Elev= 244.05' Surf.Area= 18 sf Storage= 32 cf

Plug-Flow detention time= 0.4 min calculated for 0.260 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (774.0 - 773.9)

Volume	Invert	Avail.Storage	Storage Description
#1	240.55'	32 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)
#2	244.05'	5,860 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		5,892 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
240.55	9	0	0
244.05	9	32	32

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
244.05	9	0	0
245.00	8,154	3,877	3,877
245.20	11,676	1,983	5,860

Device	Routing	Invert	Outlet Devices
#1	Primary	240.55'	**18.0" Round Culvert** L= 204.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 240.55' / 239.53' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Primary	245.10'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=3.54 cfs @ 12.04 hrs HW=242.11' TW=241.69' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 3.54 cfs @ 2.39 fps)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond DET-1: Detention Basin

[44] Hint: Outlet device #2 is below defined storage

Inflow Area = 9.923 ac, 72.74% Impervious, Inflow Depth = 2.72" for 10-yr event
Inflow = 28.60 cfs @ 12.10 hrs, Volume= 2.248 af
Outflow = 9.94 cfs @ 12.60 hrs, Volume= 2.248 af, Atten= 65%, Lag= 29.8 min
Primary = 9.94 cfs @ 12.60 hrs, Volume= 2.248 af
Routed to Pond DP-1 : Gidneytown Creek
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond DP-1 : Gidneytown Creek

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 234.84' @ 12.60 hrs Surf.Area= 15,126 sf Storage= 37,070 cf
Flood Elev= 236.50' Surf.Area= 17,706 sf Storage= 64,365 cf

Plug-Flow detention time= 331.6 min calculated for 2.247 af (100% of inflow)
Center-of-Mass det. time= 331.9 min (1,167.6 - 835.7)

Volume	Invert	Avail.Storage	Storage Description
#1	232.00'	73,418 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
232.00	11,095	0	0
233.00	12,455	11,775	11,775
234.00	13,886	13,171	24,946
235.00	15,369	14,628	39,573
236.00	16,908	16,139	55,712
237.00	18,504	17,706	73,418

Device	Routing	Invert	Outlet Devices
#1	Primary	231.91'	**12.0" Round Culvert** L= 15.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 231.91' / 231.84' S= 0.0047 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	231.91'	**3.0" Vert. CPv Orifice** C= 0.600 Limited to weir flow at low heads
#3	Device 1	233.65'	**4.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#4	Primary	236.05'	**10.0' long x 5.0' breadth Stabilized Overflow to Wetland** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88
#5	Secondary	236.50'	**10.0' long x 5.0' breadth Emergency Overflow** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

#6 Primary 233.65' **12.0" Round Culvert X 2.00**
L= 30.0' CPP, end-section conforming to fill, Ke= 0.500
Inlet / Outlet Invert= 233.65' / 233.50' S= 0.0050 '/' Cc= 0.900
n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=9.94 cfs @ 12.60 hrs HW=234.84' TW=0.00' (Dynamic Tailwater)
- **1=Culvert** (Inlet Controls 4.65 cfs @ 5.92 fps)
  - **2=CPv Orifice** (Passes < 0.40 cfs potential flow)
    - **3=Broad-Crested Rectangular Weir** (Passes < 17.15 cfs potential flow)
- **4=Stabilized Overflow to Wetland** (Controls 0.00 cfs)
- **6=Culvert** (Barrel Controls 5.29 cfs @ 3.58 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=232.00' TW=0.00' (Dynamic Tailwater)
- **5=Emergency Overflow** (Controls 0.00 cfs)

Summary for Pond DIV-2: Diversion 2

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=1)

Inflow Area = 7.583 ac, 92.78% Impervious, Inflow Depth = 4.31" for 10-yr event
Inflow = 29.89 cfs @ 12.08 hrs, Volume= 2.726 af
Outflow = 29.68 cfs @ 12.05 hrs, Volume= 2.726 af, Atten= 1%, Lag= 0.0 min
Primary = 23.80 cfs @ 12.05 hrs, Volume= 2.659 af
Routed to Pond PF-2 : Pretreatment Forebay
Secondary = 5.88 cfs @ 12.05 hrs, Volume= 0.067 af
Routed to Pond DET-1 : Detention Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 241.03' @ 12.05 hrs Surf.Area= 24 sf Storage= 119 cf
Flood Elev= 244.67' Surf.Area= 24 sf Storage= 207 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.1 min (759.8 - 759.7)

Volume	Invert	Avail.Storage	Storage Description
#1	236.06'	207 cf	**Ponding before Weir (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
236.06	24	0	0
244.67	24	207	207

Device	Routing	Invert	Outlet Devices
#1	Primary	236.06'	**24.0" Round Outlet Pipe to Bioretention** L= 44.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 236.06' / 235.50' S= 0.0127 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Device 3	240.50'	**5.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

#3 Secondary 236.06' **24.0" Round Outlet Pipe to Detention**
L= 45.0' CPP, projecting, no headwall, Ke= 0.900
Inlet / Outlet Invert= 236.06' / 235.83' S= 0.0051 '/' Cc= 0.900
n= 0.012 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=23.80 cfs @ 12.05 hrs HW=241.03' TW=236.27' (Dynamic Tailwater)
- **1=Outlet Pipe to Bioretention** (Inlet Controls 23.80 cfs @ 7.58 fps)

Secondary OutFlow Max=5.87 cfs @ 12.05 hrs HW=241.03' TW=233.10' (Dynamic Tailwater)
- **3=Outlet Pipe to Detention** (Passes 5.87 cfs of 23.80 cfs potential flow)
  - **2=Broad-Crested Rectangular Weir** (Weir Controls 5.87 cfs @ 2.21 fps)

Summary for Pond DP-1: Gidneytown Creek

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 50.078 ac, 42.15% Impervious, Inflow Depth > 2.48" for 10-yr event
Inflow = 45.31 cfs @ 12.34 hrs, Volume= 10.363 af
Primary = 45.31 cfs @ 12.34 hrs, Volume= 10.363 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Pond P-1: Wet Pond

Inflow Area = 16.392 ac, 75.11% Impervious, Inflow Depth = 3.89" for 10-yr event
Inflow = 67.61 cfs @ 12.05 hrs, Volume= 5.308 af
Outflow = 10.75 cfs @ 12.61 hrs, Volume= 4.532 af, Atten= 84%, Lag= 33.8 min
Primary = 10.75 cfs @ 12.61 hrs, Volume= 4.532 af
Routed to Pond DP-1 : Gidneytown Creek
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond DP-1 : Gidneytown Creek

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 238.63' @ 12.61 hrs Surf.Area= 81,250 sf Storage= 125,529 cf
Flood Elev= 239.50' Surf.Area= 84,891 sf Storage= 177,145 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 735.8 min (1,511.5 - 775.8)

Volume	Invert	Avail.Storage	Storage Description
#1	232.00'	0 cf	**Permanent Pool (Prismatic)** Listed below (Recalc) 62,038 cf Overall x 0.0% Voids
#2	236.00'	208,229 cf	**Extended Detention (Prismatic)** Listed below (Recalc)
		208,229 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
232.00	12,694	0	0
233.00	13,630	13,162	13,162
234.00	14,592	14,111	27,273
235.00	15,579	15,086	42,359
236.00	23,780	19,680	62,038

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
236.00	23,780	0	0
237.00	50,853	37,317	37,317
238.00	54,875	52,864	90,181
239.00	58,999	56,937	147,118
240.00	63,223	61,111	208,229

Device	Routing	Invert	Outlet Devices
#1	Primary	235.10'	**12.0" Round Culvert From OCS** L= 20.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 235.10' / 235.00' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	235.10'	**3.0" Vert. CPv Orifice** C= 0.600 Limited to weir flow at low heads
#3	Device 1	238.00'	**4.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#4	Primary	238.00'	**12.0" Round Culverts to Floodplain X 2.00** L= 33.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 238.00' / 235.00' S= 0.0909 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#5	Primary	238.40'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#6	Secondary	239.50'	**20.0' long x 10.0' breadth Emergency Overflow Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=10.75 cfs @ 12.61 hrs HW=238.63' TW=0.00' (Dynamic Tailwater)
- **1=Culvert From OCS** (Inlet Controls 5.20 cfs @ 6.62 fps)
  - **2=CPv Orifice** (Passes < 0.44 cfs potential flow)
  - **3=Broad-Crested Rectangular Weir** (Passes < 6.21 cfs potential flow)
- **4=Culverts to Floodplain** (Inlet Controls 2.81 cfs @ 2.70 fps)
- **5=Broad-Crested Rectangular Weir** (Weir Controls 2.75 cfs @ 1.20 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=232.00' TW=0.00' (Dynamic Tailwater)
- **6=Emergency Overflow Weir** (Controls 0.00 cfs)

Summary for Pond PF-1: Pretreatment Forebay

Inflow Area = 14.810 ac, 83.14% Impervious, Inflow Depth = 3.96" for 10-yr event
Inflow = 61.74 cfs @ 12.04 hrs, Volume= 4.889 af
Outflow = 61.39 cfs @ 12.05 hrs, Volume= 4.889 af, Atten= 1%, Lag= 0.4 min
Primary = 61.39 cfs @ 12.05 hrs, Volume= 4.889 af
Routed to Pond P-1 : Wet Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 239.09' @ 12.05 hrs Surf.Area= 8,069 sf Storage= 2,388 cf
Flood Elev= 239.50' Surf.Area= 8,510 sf Storage= 4,249 cf

Plug-Flow detention time= 1.6 min calculated for 4.889 af (100% of inflow)
Center-of-Mass det. time= 1.6 min (772.2 - 770.6)

Volume	Invert	Avail.Storage	Storage Description
#1	235.00'	0 cf	**Pretreatment Forebay (Prismatic)** Listed below (Recalc) 7,202 cf Overall x 0.0% Voids
#2	238.50'	9,918 cf	**Overflow (Prismatic)** Listed below (Recalc)
		9,918 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
235.00	496	0	0
236.00	1,348	922	922
237.00	2,257	1,803	2,725
238.00	3,223	2,740	5,465
238.50	3,726	1,737	7,202

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
238.50	3,726	0	0
239.00	4,244	1,993	1,993
240.00	5,323	4,784	6,776
240.50	7,246	3,142	9,918

Device	Routing	Invert	Outlet Devices
#1	Primary	238.50'	**50.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=61.20 cfs @ 12.05 hrs HW=239.09' TW=237.87' (Dynamic Tailwater)
- **1=Broad-Crested Rectangular Weir** (Weir Controls 61.20 cfs @ 2.07 fps)

Summary for Pond PF-2: Pretreatment Forebay

Inflow Area = 8.123 ac, 88.14% Impervious, Inflow Depth = 4.15" for 10-yr event
Inflow = 26.02 cfs @ 12.03 hrs, Volume= 2.811 af
Outflow = 24.32 cfs @ 12.06 hrs, Volume= 2.810 af, Atten= 7%, Lag= 1.8 min
Primary = 24.32 cfs @ 12.06 hrs, Volume= 2.810 af
Routed to Pond BIO-1 : Filtration Bioretention (2.5ft filter media)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 236.32' @ 12.18 hrs Surf.Area= 15,121 sf Storage= 6,198 cf
Flood Elev= 236.50' Surf.Area= 15,398 sf Storage= 7,696 cf

Plug-Flow detention time= 54.8 min calculated for 2.810 af (100% of inflow)
Center-of-Mass det. time= 54.6 min (818.0 - 763.4)

Volume	Invert	Avail.Storage	Storage Description
#1	232.00'	0 cf	**Pretreatment Forebay (Prismatic)** Listed below (Recalc) 15,694 cf Overall x 0.0% Voids
#2	235.50'	12,118 cf	**STORAGE ABOVE (Prismatic)** Listed below (Recalc)
		12,118 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
232.00	2,149	0	0
233.00	3,434	2,792	2,792
234.00	4,791	4,113	6,904
235.00	6,213	5,502	12,406
235.50	6,937	3,288	15,694

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
235.50	6,937	0	0
236.00	7,693	3,658	3,658
237.00	9,228	8,461	12,118

Device	Routing	Invert	Outlet Devices
#1	Primary	235.50'	**40.0' long x 22.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=21.93 cfs @ 12.06 hrs HW=236.28' TW=236.26' (Dynamic Tailwater)
↑**1=Broad-Crested Rectangular Weir** (Weir Controls 21.93 cfs @ 0.70 fps)

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentPS-1: Runoff Area=59,320 sf 46.38% Impervious Runoff Depth=3.78"
Flow Length=321' Tc=14.2 min CN=81 Runoff=4.44 cfs 0.429 af

SubcatchmentPS-10: Runoff Area=11,265 sf 67.79% Impervious Runoff Depth=3.58"
Tc=6.0 min CN=79 Runoff=1.11 cfs 0.077 af

SubcatchmentPS-11: Runoff Area=124,140 sf 99.06% Impervious Runoff Depth=5.53"
Tc=6.0 min CN=97 Runoff=16.98 cfs 1.314 af

SubcatchmentPS-12: Runoff Area=172,728 sf 100.00% Impervious Runoff Depth=5.65"
Tc=6.0 min CN=98 Runoff=23.75 cfs 1.868 af

SubcatchmentPS-13: Runoff Area=34,560 sf 100.00% Impervious Runoff Depth=5.65"
Tc=6.0 min CN=98 Runoff=4.75 cfs 0.374 af

SubcatchmentPS-14: Runoff Area=35,140 sf 97.85% Impervious Runoff Depth=5.65"
Tc=6.0 min CN=98 Runoff=4.83 cfs 0.380 af

SubcatchmentPS-15: Runoff Area=12,293 sf 0.00% Impervious Runoff Depth=4.20"
Tc=6.0 min CN=85 Runoff=1.41 cfs 0.099 af

SubcatchmentPS-16: Runoff Area=68,931 sf 0.00% Impervious Runoff Depth=4.30"
Tc=6.0 min CN=86 Runoff=8.06 cfs 0.568 af

SubcatchmentPS-17: Runoff Area=26,060 sf 83.73% Impervious Runoff Depth=5.30"
Tc=6.0 min CN=95 Runoff=3.51 cfs 0.264 af

SubcatchmentPS-18: Runoff Area=31,224 sf 79.46% Impervious Runoff Depth=5.19"
Tc=6.0 min CN=94 Runoff=4.16 cfs 0.310 af

SubcatchmentPS-19: Runoff Area=13,991 sf 95.15% Impervious Runoff Depth=5.53"
Tc=6.0 min CN=97 Runoff=1.91 cfs 0.148 af

SubcatchmentPS-2: Runoff Area=52,401 sf 62.82% Impervious Runoff Depth=4.85"
Flow Length=139' Tc=7.8 min CN=91 Runoff=6.14 cfs 0.486 af

SubcatchmentPS-20: Runoff Area=777 sf 100.00% Impervious Runoff Depth=5.65"
Tc=6.0 min CN=98 Runoff=0.11 cfs 0.008 af

SubcatchmentPS-21: Runoff Area=6,993 sf 69.58% Impervious Runoff Depth=5.07"
Tc=6.0 min CN=93 Runoff=0.92 cfs 0.068 af

SubcatchmentPS-22: Runoff Area=10,506 sf 66.97% Impervious Runoff Depth=4.96"
Tc=6.0 min CN=92 Runoff=1.36 cfs 0.100 af

SubcatchmentPS-23: Runoff Area=92,825 sf 95.28% Impervious Runoff Depth=5.53"
Tc=6.0 min CN=97 Runoff=12.69 cfs 0.983 af

SubcatchmentPS-24: Runoff Area=112,817 sf 98.41% Impervious Runoff Depth=5.65"
Tc=6.0 min CN=98 Runoff=15.51 cfs 1.220 af

SubcatchmentPS-25: Runoff Area=23,503 sf 23.00% Impervious Runoff Depth=4.52"
Tc=6.0 min CN=88 Runoff=2.86 cfs 0.203 af

SubcatchmentPS-26: Runoff Area=23,847 sf 0.00% Impervious Runoff Depth=3.68"
Tc=6.0 min CN=80 Runoff=2.42 cfs 0.168 af

SubcatchmentPS-27: Runoff Area=54,566 sf 4.64% Impervious Runoff Depth=3.78"
Tc=6.0 min CN=81 Runoff=5.68 cfs 0.395 af

SubcatchmentPS-28: Runoff Area=1,035,126 sf 6.64% Impervious Runoff Depth=2.72"
Flow Length=735' Tc=22.4 min CN=70 Runoff=44.96 cfs 5.383 af

SubcatchmentPS-29: Runoff Area=36,671 sf 100.00% Impervious Runoff Depth=5.65"
Tc=6.0 min CN=98 Runoff=5.04 cfs 0.397 af

SubcatchmentPS-3: Runoff Area=32,215 sf 78.33% Impervious Runoff Depth=5.07"
Tc=6.0 min CN=93 Runoff=4.24 cfs 0.313 af

SubcatchmentPS-30: Runoff Area=33,056 sf 85.37% Impervious Runoff Depth=5.30"
Tc=6.0 min CN=95 Runoff=4.45 cfs 0.335 af

SubcatchmentPS-4: Runoff Area=22,641 sf 0.00% Impervious Runoff Depth=2.54"
Flow Length=284' Tc=12.3 min CN=68 Runoff=1.18 cfs 0.110 af

SubcatchmentPS-5: Runoff Area=3,406 sf 94.86% Impervious Runoff Depth=5.53"
Tc=6.0 min CN=97 Runoff=0.47 cfs 0.036 af

SubcatchmentPS-6: Runoff Area=35,574 sf 96.53% Impervious Runoff Depth=5.53"
Tc=6.0 min CN=97 Runoff=4.86 cfs 0.377 af

SubcatchmentPS-7: Runoff Area=4,143 sf 59.04% Impervious Runoff Depth=3.68"
Tc=6.0 min CN=80 Runoff=0.42 cfs 0.029 af

SubcatchmentPS-8: Runoff Area=8,693 sf 67.40% Impervious Runoff Depth=3.58"
Tc=6.0 min CN=79 Runoff=0.86 cfs 0.060 af

SubcatchmentPS-9: Runoff Area=2,000 sf 100.00% Impervious Runoff Depth=5.65"
Tc=6.0 min CN=98 Runoff=0.28 cfs 0.022 af

Pond BIO-1: Filtration Bioretention (2.5ft Peak Elev=236.32' Storage=34,809 cf Inflow=30.94 cfs 3.967 af
Discarded=0.25 cfs 1.046 af Primary=27.10 cfs 2.921 af Secondary=0.00 cfs 0.000 af Outflow=27.35 cfs 3.967 af

Pond CB-1: Peak Elev=263.96' Storage=2,231 cf Inflow=4.44 cfs 0.429 af
Primary=7.34 cfs 0.429 af Secondary=0.00 cfs 0.000 af Outflow=7.34 cfs 0.429 af

Pond CB-10: Peak Elev=243.98' Storage=455 cf Inflow=6.81 cfs 0.384 af
Primary=5.94 cfs 0.384 af Secondary=0.00 cfs 0.000 af Outflow=5.94 cfs 0.384 af

Pond CB-11: Peak Elev=260.35' Storage=12 cf Inflow=3.51 cfs 0.264 af
18.0" Round Culvert n=0.013 L=216.0' S=0.0100 '/' Outflow=3.48 cfs 0.264 af

Pond CB-12: Peak Elev=259.76' Storage=34 cf Inflow=7.63 cfs 0.574 af
18.0" Round Culvert n=0.013 L=192.0' S=0.0100 '/' Outflow=7.59 cfs 0.574 af

Pond CB-13: Peak Elev=258.30' Storage=40 cf Inflow=9.50 cfs 0.722 af
18.0" Round Culvert n=0.013 L=137.0' S=0.0100 '/' Outflow=9.43 cfs 0.722 af

Pond CB-14: Peak Elev=256.36' Storage=33 cf Inflow=9.54 cfs 0.731 af
Outflow=9.53 cfs 0.731 af

Pond CB-15: Peak Elev=253.07' Storage=38 cf Inflow=10.44 cfs 0.799 af
Outflow=10.43 cfs 0.799 af

Pond CB-16: Peak Elev=247.69' Storage=69 cf Inflow=11.79 cfs 0.898 af
Outflow=11.97 cfs 0.898 af

Pond CB-17: Peak Elev=245.14' Storage=4,038 cf Inflow=24.64 cfs 1.881 af
Primary=18.02 cfs 1.881 af Secondary=0.00 cfs 0.000 af Tertiary=0.00 cfs 0.000 af Outflow=18.02 cfs 1.881 af

Pond CB-18: Peak Elev=243.86' Storage=535 cf Inflow=34.44 cfs 3.490 af
Outflow=31.06 cfs 3.490 af

Pond CB-19: Peak Elev=246.20' Storage=134 cf Inflow=28.67 cfs 2.233 af
Primary=26.62 cfs 2.232 af Secondary=0.63 cfs 0.001 af Outflow=27.25 cfs 2.233 af

Pond CB-2: Peak Elev=263.80' Storage=714 cf Inflow=9.25 cfs 0.916 af
Outflow=9.13 cfs 0.916 af

Pond CB-20: Peak Elev=246.08' Storage=40 cf Inflow=4.75 cfs 0.374 af
Primary=4.96 cfs 0.365 af Secondary=2.09 cfs 0.004 af Tertiary=2.09 cfs 0.004 af Outflow=5.09 cfs 0.374 af

Pond CB-22: Peak Elev=263.42' Storage=154 cf Inflow=10.62 cfs 1.228 af
Outflow=10.03 cfs 1.228 af

Pond CB-23: Peak Elev=246.96' Storage=55 cf Inflow=15.48 cfs 1.861 af
Outflow=15.51 cfs 1.861 af

Pond CB-24: Peak Elev=261.11' Storage=400 cf Inflow=1.18 cfs 0.110 af
12.0" Round Culvert n=0.013 L=26.0' S=0.0100 '/' Outflow=3.30 cfs 0.110 af

Pond CB-25: Peak Elev=244.99' Storage=52 cf Inflow=16.56 cfs 1.938 af
Primary=12.65 cfs 1.897 af Secondary=3.85 cfs 0.041 af Outflow=16.49 cfs 1.938 af

Pond CB-3: Peak Elev=262.56' Storage=170 cf Inflow=12.34 cfs 1.374 af
Outflow=11.54 cfs 1.374 af

Pond CB-4: Peak Elev=260.76' Storage=105 cf Inflow=14.41 cfs 1.751 af
18.0" Round Culvert n=0.013 L=241.0' S=0.0100 '/' Outflow=14.04 cfs 1.751 af

Pond CB-5: Peak Elev=254.95' Storage=64 cf Inflow=14.43 cfs 1.780 af
Outflow=14.41 cfs 1.780 af

Pond CB-6: Peak Elev=249.16' Storage=35 cf Inflow=15.22 cfs 1.840 af
Outflow=15.22 cfs 1.840 af

Pond CB-7: Peak Elev=242.81' Storage=78 cf Inflow=20.33 cfs 1.355 af
Outflow=20.34 cfs 1.355 af

Pond CB-8: Peak Elev=242.53' Storage=36 cf Inflow=10.13 cfs 0.732 af
Outflow=9.93 cfs 0.732 af

Pond CB-9: Peak Elev=243.03' Storage=22 cf Inflow=4.45 cfs 0.335 af
Outflow=4.48 cfs 0.335 af

Pond DET-1: Detention Basin Peak Elev=235.74' Storage=51,423 cf Inflow=34.52 cfs 3.210 af
Primary=14.45 cfs 3.210 af Secondary=0.00 cfs 0.000 af Outflow=14.45 cfs 3.210 af

Pond DIV-2: Diversion 2 Peak Elev=241.10' Storage=121 cf Inflow=31.06 cfs 3.490 af
Primary=24.01 cfs 3.369 af Secondary=7.20 cfs 0.121 af Outflow=31.21 cfs 3.490 af

Pond DP-1: Gidneytown Creek Inflow=77.86 cfs 14.691 af
Primary=77.86 cfs 14.691 af

Pond P-1: Wet Pond Peak Elev=238.98' Storage=146,011 cf Inflow=77.49 cfs 6.884 af
Primary=22.67 cfs 6.098 af Secondary=0.00 cfs 0.000 af Outflow=22.67 cfs 6.098 af

Pond PF-1: Pretreatment Forebay Peak Elev=239.14' Storage=2,609 cf Inflow=70.06 cfs 6.316 af
Outflow=69.51 cfs 6.316 af

Pond PF-2: Pretreatment Forebay Peak Elev=236.34' Storage=6,379 cf Inflow=26.82 cfs 3.572 af
Outflow=25.40 cfs 3.572 af

Total Runoff Area = 50.078 ac Runoff Volume = 16.522 af Average Runoff Depth = 3.96"
57.85% Pervious = 28.971 ac 42.15% Impervious = 21.108 ac

Summary for Subcatchment PS-1:

Runoff = 4.44 cfs @ 12.15 hrs, Volume= 0.429 af, Depth= 3.78"
Routed to Pond CB-1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 25-yr Rainfall=5.89"

Area (sf)	CN	Description
21,713	80	>75% Grass cover, Good, HSG D
20,423	98	Paved parking, HSG D
10,094	39	>75% Grass cover, Good, HSG A
7,090	98	Paved parking, HSG A
59,320	81	Weighted Average
31,807		53.62% Pervious Area
27,513		46.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.8	100	0.0500	0.24		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.15"
7.4	221	0.0050	0.49		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
14.2	321	Total			

Summary for Subcatchment PS-10:

Runoff = 1.11 cfs @ 12.04 hrs, Volume= 0.077 af, Depth= 3.58"
Routed to Pond CB-25 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 25-yr Rainfall=5.89"

Area (sf)	CN	Description
3,629	39	>75% Grass cover, Good, HSG A
7,636	98	Paved parking, HSG A
11,265	79	Weighted Average
3,629		32.21% Pervious Area
7,636		67.79% Impervious Area

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

Summary for Subcatchment PS-11:

Runoff = 16.98 cfs @ 12.04 hrs, Volume= 1.314 af, Depth= 5.53"
Routed to Pond CB-7 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 25-yr Rainfall=5.89"

Area (sf)	CN	Description
1,165	39	>75% Grass cover, Good, HSG A
436	98	Paved parking, HSG D
3,849	98	Roofs, HSG D
83,098	98	Roofs, HSG A
35,592	98	Paved parking, HSG A
124,140	97	Weighted Average
1,165		0.94% Pervious Area
122,975		99.06% Impervious Area

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

Summary for Subcatchment PS-12:

Runoff = 23.75 cfs @ 12.04 hrs, Volume= 1.868 af, Depth= 5.65"
Routed to Pond CB-19 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 25-yr Rainfall=5.89"

Area (sf)	CN	Description
155,036	98	Roofs, HSG D
17,692	98	Roofs, HSG A
172,728	98	Weighted Average
172,728		100.00% Impervious Area

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

Summary for Subcatchment PS-13:

Runoff = 4.75 cfs @ 12.04 hrs, Volume= 0.374 af, Depth= 5.65"
Routed to Pond CB-20 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 25-yr Rainfall=5.89"

Area (sf)	CN	Description
34,560	98	Roofs, HSG D
34,560		100.00% Impervious Area

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

Summary for Subcatchment PS-14:

Runoff = 4.83 cfs @ 12.04 hrs, Volume= 0.380 af, Depth= 5.65"
Routed to Pond CB-10 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 25-yr Rainfall=5.89"

Area (sf)	CN	Description
755	80	>75% Grass cover, Good, HSG D
34,385	98	Paved parking, HSG D
35,140	98	Weighted Average
755		2.15% Pervious Area
34,385		97.85% Impervious Area

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

Summary for Subcatchment PS-15:

Runoff = 1.41 cfs @ 12.04 hrs, Volume= 0.099 af, Depth= 4.20"
Routed to Pond PF-1 : Pretreatment Forebay

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 25-yr Rainfall=5.89"

Area (sf)	CN	Description
8,567	80	>75% Grass cover, Good, HSG D
3,726	98	Water Surface, 0% imp, HSG D
12,293	85	Weighted Average
12,293		100.00% Pervious Area

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

Summary for Subcatchment PS-16:

Runoff = 8.06 cfs @ 12.04 hrs, Volume= 0.568 af, Depth= 4.30"
Routed to Pond P-1 : Wet Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 25-yr Rainfall=5.89"

Area (sf)	CN	Description
45,151	80	>75% Grass cover, Good, HSG D
23,780	98	Water Surface, 0% imp, HSG D
68,931	86	Weighted Average
68,931		100.00% Pervious Area

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

Summary for Subcatchment PS-17:

Runoff = 3.51 cfs @ 12.04 hrs, Volume= 0.264 af, Depth= 5.30"
Routed to Pond CB-11 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 25-yr Rainfall=5.89"

Area (sf)	CN	Description
4,241	80	>75% Grass cover, Good, HSG D
21,819	98	Paved parking, HSG D
26,060	95	Weighted Average
4,241		16.27% Pervious Area
21,819		83.73% Impervious Area

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

Summary for Subcatchment PS-18:

Runoff = 4.16 cfs @ 12.04 hrs, Volume= 0.310 af, Depth= 5.19"
Routed to Pond CB-12 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 25-yr Rainfall=5.89"

Area (sf)	CN	Description
6,412	80	>75% Grass cover, Good, HSG D
24,812	98	Paved parking, HSG D
31,224	94	Weighted Average
6,412		20.54% Pervious Area
24,812		79.46% Impervious Area

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

Summary for Subcatchment PS-19:

Runoff = 1.91 cfs @ 12.04 hrs, Volume= 0.148 af, Depth= 5.53"
Routed to Pond CB-13 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 25-yr Rainfall=5.89"

Area (sf)	CN	Description
678	80	>75% Grass cover, Good, HSG D
13,313	98	Paved parking, HSG D
13,991	97	Weighted Average
678		4.85% Pervious Area
13,313		95.15% Impervious Area

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

Summary for Subcatchment PS-2:

Runoff = 6.14 cfs @ 12.06 hrs, Volume= 0.486 af, Depth= 4.85"
Routed to Pond CB-2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 25-yr Rainfall=5.89"

Area (sf)	CN	Description
19,091	80	>75% Grass cover, Good, HSG D
32,920	98	Paved parking, HSG D
390	39	>75% Grass cover, Good, HSG A
52,401	91	Weighted Average
19,481		37.18% Pervious Area
32,920		62.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	100	0.0400	0.22		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.15"
0.3	39	0.0967	2.18		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
7.8	139	Total			

Summary for Subcatchment PS-20:

Runoff = 0.11 cfs @ 12.04 hrs, Volume= 0.008 af, Depth= 5.65"
Routed to Pond CB-14 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 25-yr Rainfall=5.89"

Area (sf)	CN	Description
777	98	Paved parking, HSG D
777		100.00% Impervious Area

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

Summary for Subcatchment PS-21:

Runoff = 0.92 cfs @ 12.04 hrs, Volume= 0.068 af, Depth= 5.07"
Routed to Pond CB-15 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 25-yr Rainfall=5.89"

Area (sf)	CN	Description
2,127	80	>75% Grass cover, Good, HSG D
4,866	98	Paved parking, HSG D
6,993	93	Weighted Average
2,127		30.42% Pervious Area
4,866		69.58% Impervious Area

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

Summary for Subcatchment PS-22:

Runoff = 1.36 cfs @ 12.04 hrs, Volume= 0.100 af, Depth= 4.96"
Routed to Pond CB-16 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 25-yr Rainfall=5.89"

Area (sf)	CN	Description
3,470	80	>75% Grass cover, Good, HSG D
7,036	98	Paved parking, HSG D
10,506	92	Weighted Average
3,470		33.03% Pervious Area
7,036		66.97% Impervious Area

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

Summary for Subcatchment PS-23:

Runoff = 12.69 cfs @ 12.04 hrs, Volume= 0.983 af, Depth= 5.53"
Routed to Pond CB-17 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 25-yr Rainfall=5.89"

Area (sf)	CN	Description
4,379	80	>75% Grass cover, Good, HSG D
36,053	98	Paved parking, HSG D
52,393	98	Roofs, HSG D
92,825	97	Weighted Average
4,379		4.72% Pervious Area
88,446		95.28% Impervious Area

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

Summary for Subcatchment PS-24:

Runoff = 15.51 cfs @ 12.04 hrs, Volume= 1.220 af, Depth= 5.65"
Routed to Pond CB-18 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 25-yr Rainfall=5.89"

Area (sf)	CN	Description
1,790	80	>75% Grass cover, Good, HSG D
41,907	98	Paved parking, HSG D
69,120	98	Roofs, HSG D
112,817	98	Weighted Average
1,790		1.59% Pervious Area
111,027		98.41% Impervious Area

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

Summary for Subcatchment PS-25:

Runoff = 2.86 cfs @ 12.04 hrs, Volume= 0.203 af, Depth= 4.52"
Routed to Pond PF-2 : Pretreatment Forebay

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 25-yr Rainfall=5.89"

Area (sf)	CN	Description
12,606	80	>75% Grass cover, Good, HSG D
5,405	98	Paved parking, HSG D
5,492	98	Water Surface, 0% imp, HSG D
23,503	88	Weighted Average
18,098		77.00% Pervious Area
5,405		23.00% Impervious Area

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

Summary for Subcatchment PS-26:

Runoff = 2.42 cfs @ 12.04 hrs, Volume= 0.168 af, Depth= 3.68"
Routed to Pond DET-1 : Detention Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 25-yr Rainfall=5.89"

Area (sf)	CN	Description
23,847	80	>75% Grass cover, Good, HSG D
23,847		100.00% Pervious Area

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

Summary for Subcatchment PS-27:

Runoff = 5.68 cfs @ 12.04 hrs, Volume= 0.395 af, Depth= 3.78"
Routed to Pond BIO-1 : Filtration Bioretention (2.5ft filter media)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 25-yr Rainfall=5.89"

Area (sf)	CN	Description
52,036	80	>75% Grass cover, Good, HSG D
2,530	98	Paved parking, HSG D
54,566	81	Weighted Average
52,036		95.36% Pervious Area
2,530		4.64% Impervious Area

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

Summary for Subcatchment PS-28:

Runoff = 44.96 cfs @ 12.27 hrs, Volume= 5.383 af, Depth= 2.72"
Routed to Pond DP-1 : Gidneytown Creek

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 25-yr Rainfall=5.89"

Area (sf)	CN	Description
45,884	98	Paved parking, HSG D
350	98	Paved parking, HSG A
377,918	77	Woods, Good, HSG D
18,580	30	Woods, Good, HSG A
230,060	39	>75% Grass cover, Good, HSG A
339,862	80	>75% Grass cover, Good, HSG D
1,122	98	Water Surface, HSG A
21,350	98	Water Surface, HSG D
1,035,126	70	Weighted Average
966,420		93.36% Pervious Area
68,706		6.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.7	100	0.0130	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.15"
9.5	481	0.0145	0.84		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.2	154	0.0970	2.18		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
22.4	735	Total			

Summary for Subcatchment PS-29:

Runoff = 5.04 cfs @ 12.04 hrs, Volume= 0.397 af, Depth= 5.65"
Routed to Pond CB-8 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 25-yr Rainfall=5.89"

Area (sf)	CN	Description
28,170	98	Paved parking, HSG D
8,501	98	Paved parking, HSG A
36,671	98	Weighted Average
36,671		100.00% Impervious Area

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

Summary for Subcatchment PS-3:

Runoff = 4.24 cfs @ 12.04 hrs, Volume= 0.313 af, Depth= 5.07"
Routed to Pond CB-22 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 25-yr Rainfall=5.89"

Area (sf)	CN	Description
6,471	80	>75% Grass cover, Good, HSG D
25,183	98	Paved parking, HSG D
511	39	>75% Grass cover, Good, HSG A
50	98	Paved parking, HSG A
32,215	93	Weighted Average
6,982		21.67% Pervious Area
25,233		78.33% Impervious Area

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

Summary for Subcatchment PS-30:

Runoff = 4.45 cfs @ 12.04 hrs, Volume= 0.335 af, Depth= 5.30"
Routed to Pond CB-9 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 25-yr Rainfall=5.89"

Area (sf)	CN	Description
4,835	80	>75% Grass cover, Good, HSG D
28,221	98	Paved parking, HSG D
33,056	95	Weighted Average
4,835		14.63% Pervious Area
28,221		85.37% Impervious Area

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

Summary for Subcatchment PS-4:

Runoff = 1.18 cfs @ 12.12 hrs, Volume= 0.110 af, Depth= 2.54"
Routed to Pond CB-24 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 25-yr Rainfall=5.89"

Area (sf)	CN	Description
6,817	39	>75% Grass cover, Good, HSG A
15,824	80	>75% Grass cover, Good, HSG D
22,641	68	Weighted Average
22,641		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.9	100	0.0200	0.17		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.15"
2.4	184	0.0326	1.26		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
12.3	284	Total			

Summary for Subcatchment PS-5:

Runoff = 0.47 cfs @ 12.04 hrs, Volume= 0.036 af, Depth= 5.53"
Routed to Pond CB-3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 25-yr Rainfall=5.89"

Area (sf)	CN	Description
151	80	>75% Grass cover, Good, HSG D
3,231	98	Paved parking, HSG D
24	39	>75% Grass cover, Good, HSG A
3,406	97	Weighted Average
175		5.14% Pervious Area
3,231		94.86% Impervious Area

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

Summary for Subcatchment PS-6:

Runoff = 4.86 cfs @ 12.04 hrs, Volume= 0.377 af, Depth= 5.53"
Routed to Pond CB-4 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 25-yr Rainfall=5.89"

Area (sf)	CN	Description
1,235	80	>75% Grass cover, Good, HSG D
34,319	98	Paved parking, HSG D
20	98	Paved parking, HSG A
35,574	97	Weighted Average
1,235		3.47% Pervious Area
34,339		96.53% Impervious Area

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

Summary for Subcatchment PS-7:

Runoff = 0.42 cfs @ 12.04 hrs, Volume= 0.029 af, Depth= 3.68"
Routed to Pond CB-5 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 25-yr Rainfall=5.89"

Area (sf)	CN	Description
614	80	>75% Grass cover, Good, HSG D
1,329	98	Paved parking, HSG D
1,117	98	Paved parking, HSG A
1,083	39	>75% Grass cover, Good, HSG A
4,143	80	Weighted Average
1,697		40.96% Pervious Area
2,446		59.04% Impervious Area

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

Summary for Subcatchment PS-8:

Runoff = 0.86 cfs @ 12.04 hrs, Volume= 0.060 af, Depth= 3.58"
Routed to Pond CB-6 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 25-yr Rainfall=5.89"

Area (sf)	CN	Description
171	98	Paved parking, HSG D
2,834	39	>75% Grass cover, Good, HSG A
5,688	98	Paved parking, HSG A
8,693	79	Weighted Average
2,834		32.60% Pervious Area
5,859		67.40% Impervious Area

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

Summary for Subcatchment PS-9:

Runoff = 0.28 cfs @ 12.04 hrs, Volume= 0.022 af, Depth= 5.65"
Routed to Pond CB-23 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 25-yr Rainfall=5.89"

Area (sf)	CN	Description
2,000	98	Paved parking, HSG A
2,000		100.00% Impervious Area

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

Summary for Pond BIO-1: Filtration Bioretention (2.5ft filter media)

Inflow Area = 9.376 ac, 76.99% Impervious, Inflow Depth = 5.08" for 25-yr event
Inflow = 30.94 cfs @ 12.05 hrs, Volume= 3.967 af
Outflow = 27.35 cfs @ 12.17 hrs, Volume= 3.967 af, Atten= 12%, Lag= 7.8 min
Discarded = 0.25 cfs @ 12.17 hrs, Volume= 1.046 af
Primary = 27.10 cfs @ 12.17 hrs, Volume= 2.921 af
Routed to Pond DET-1 : Detention Basin
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond DP-1 : Gidneytown Creek

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 236.32' @ 12.17 hrs Surf.Area= 43,851 sf Storage= 34,809 cf
Flood Elev= 236.50' Surf.Area= 44,411 sf Storage= 42,886 cf

Plug-Flow detention time= 236.3 min calculated for 3.966 af (100% of inflow)
Center-of-Mass det. time= 236.3 min (1,042.3 - 806.1)

Volume	Invert	Avail.Storage	Storage Description
#1	235.50'	65,474 cf	**Bioretention (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
235.50	41,373	0	0
236.00	42,881	21,064	21,064
237.00	45,940	44,411	65,474

Device	Routing	Invert	Outlet Devices
#1	Discarded	235.50'	**0.250 in/hr Exfiltration Through Media over Surface area**
#2	Primary	236.00'	**60.0' long x 10.0' breadth Overflow Weir to Det**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#3	Secondary	236.00'	**20.0' long x 15.0' breadth Emergency Overflow Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.25 cfs @ 12.17 hrs HW=236.32' (Free Discharge)
└**1=Exfiltration Through Media** (Exfiltration Controls 0.25 cfs)

Primary OutFlow Max=27.09 cfs @ 12.17 hrs HW=236.32' TW=234.96' (Dynamic Tailwater)
└**2=Overflow Weir to Det** (Weir Controls 27.09 cfs @ 1.42 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=235.50' TW=0.00' (Dynamic Tailwater)
└**3=Emergency Overflow Weir** (Controls 0.00 cfs)

Summary for Pond CB-1:

[58] Hint: Peaked 0.65' above defined flood level
[90] Warning: Qout>Qin may require smaller dt or Finer Routing
[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=13)

Inflow Area = 1.362 ac, 46.38% Impervious, Inflow Depth = 3.78" for 25-yr event
Inflow = 4.44 cfs @ 12.15 hrs, Volume= 0.429 af
Outflow = 7.34 cfs @ 12.35 hrs, Volume= 0.429 af, Atten= 0%, Lag= 12.2 min
Primary = 7.34 cfs @ 12.35 hrs, Volume= 0.429 af
Routed to Pond CB-2 :
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond CB-11 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 263.96' @ 12.27 hrs Surf.Area= 6,779 sf Storage= 2,231 cf
Flood Elev= 263.31' Surf.Area= 18 sf Storage= 32 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 2.2 min (834.9 - 832.7)

Volume	Invert	Avail.Storage	Storage Description
#1	259.81'	32 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)
#2	263.31'	11,903 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		11,935 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
259.81	9	0	0
263.31	9	32	32

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
263.31	9	0	0
264.00	7,196	2,486	2,486
265.00	11,639	9,418	11,903

Device	Routing	Invert	Outlet Devices
#1	Primary	259.81'	**18.0" Round Culvert**
			L= 227.0' CPP, projecting, no headwall, Ke= 0.900
			Inlet / Outlet Invert= 259.81' / 257.54' S= 0.0100 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Primary	264.55'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50
			Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88
#3	Secondary	264.71'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50
			Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=4.25 cfs @ 12.35 hrs HW=263.91' TW=263.37' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 4.25 cfs @ 2.40 fps)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=259.81' TW=259.05' (Dynamic Tailwater)
└**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond CB-10:

[58] Hint: Peaked 0.48' above defined flood level
[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=9)

Inflow Area = 0.807 ac, 97.85% Impervious, Inflow Depth = 5.72" for 25-yr event
Inflow = 6.81 cfs @ 12.05 hrs, Volume= 0.384 af
Outflow = 5.94 cfs @ 12.15 hrs, Volume= 0.384 af, Atten= 13%, Lag= 5.8 min
Primary = 5.94 cfs @ 12.15 hrs, Volume= 0.384 af
Routed to Pond CB-18 :
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond CB-18 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 243.98' @ 12.09 hrs Surf.Area= 1,675 sf Storage= 455 cf
Flood Elev= 243.50' Surf.Area= 32 sf Storage= 54 cf

Plug-Flow detention time= 0.4 min calculated for 0.384 af (100% of inflow)
Center-of-Mass det. time= 0.4 min (746.0 - 745.6)

Volume	Invert	Avail.Storage	Storage Description
#1	239.00'	54 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)
#2	243.50'	5,338 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		5,392 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
239.00	12	0	0
243.50	12	54	54

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
243.50	20	0	0
244.00	1,744	441	441
244.70	12,247	4,897	5,338

Device	Routing	Invert	Outlet Devices
#1	Primary	239.00'	**24.0" Round Culvert** L= 240.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 239.00' / 237.80' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Secondary	244.60'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=6.26 cfs @ 12.15 hrs HW=243.70' TW=243.40' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 6.26 cfs @ 1.99 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=239.00' TW=237.08' (Dynamic Tailwater)
↑**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond CB-11:

Inflow Area = 0.598 ac, 83.73% Impervious, Inflow Depth = 5.30" for 25-yr event
Inflow = 3.51 cfs @ 12.04 hrs, Volume= 0.264 af
Outflow = 3.48 cfs @ 12.03 hrs, Volume= 0.264 af, Atten= 1%, Lag= 0.0 min
Primary = 3.48 cfs @ 12.03 hrs, Volume= 0.264 af
Routed to Pond CB-12 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 260.35' @ 12.06 hrs Surf.Area= 9 sf Storage= 12 cf
Flood Elev= 263.05' Surf.Area= 18 sf Storage= 36 cf

Plug-Flow detention time= 0.4 min calculated for 0.264 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (767.4 - 767.2)

Volume	Invert	Avail.Storage	Storage Description
#1	259.05'	36 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)
#2	263.05'	1,263 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		1,299 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
259.05	9	0	0
263.05	9	36	36

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
263.05	9	0	0
263.65	4,200	1,263	1,263

Device	Routing	Invert	Outlet Devices
#1	Primary	259.05'	**18.0" Round Culvert** L= 216.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 259.05' / 256.89' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=2.82 cfs @ 12.03 hrs HW=260.16' TW=259.50' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 2.82 cfs @ 2.78 fps)

Summary for Pond CB-12:

Inflow Area = 1.315 ac, 81.40% Impervious, Inflow Depth = 5.24" for 25-yr event
Inflow = 7.63 cfs @ 12.04 hrs, Volume= 0.574 af
Outflow = 7.59 cfs @ 12.04 hrs, Volume= 0.574 af, Atten= 1%, Lag= 0.3 min
Primary = 7.59 cfs @ 12.04 hrs, Volume= 0.574 af
Routed to Pond CB-13 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 259.76' @ 12.05 hrs Surf.Area= 12 sf Storage= 34 cf
Flood Elev= 263.05' Surf.Area= 24 sf Storage= 74 cf

Plug-Flow detention time= 0.3 min calculated for 0.574 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (770.6 - 770.4)

Volume	Invert	Avail.Storage	Storage Description
#1	256.89'	74 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)
#2	263.05'	1,868 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		1,942 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
256.89	12	0	0
263.05	12	74	74

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
263.05	12	0	0
263.82	4,839	1,868	1,868

Device	Routing	Invert	Outlet Devices
#1	Primary	256.89'	**18.0" Round Culvert** L= 192.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 256.89' / 254.97' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=7.19 cfs @ 12.04 hrs HW=259.66' TW=258.27' (Dynamic Tailwater)
1=Culvert (Outlet Controls 7.19 cfs @ 4.07 fps)

Summary for Pond CB-13:

Inflow Area = 1.636 ac, 84.10% Impervious, Inflow Depth = 5.30" for 25-yr event
Inflow = 9.50 cfs @ 12.04 hrs, Volume= 0.722 af
Outflow = 9.43 cfs @ 12.04 hrs, Volume= 0.722 af, Atten= 1%, Lag= 0.1 min
Primary = 9.43 cfs @ 12.04 hrs, Volume= 0.722 af
Routed to Pond CB-14 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 258.30' @ 12.05 hrs Surf.Area= 12 sf Storage= 40 cf
Flood Elev= 263.13' Surf.Area= 24 sf Storage= 98 cf

Plug-Flow detention time= 0.1 min calculated for 0.722 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (767.3 - 767.2)

Volume	Invert	Avail.Storage	Storage Description
#1	254.97'	98 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)
#2	263.13'	1,289 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		1,387 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
254.97	12	0	0
263.13	12	98	98

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
263.13	12	0	0
263.87	3,473	1,289	1,289

Device	Routing	Invert	Outlet Devices
#1	Primary	254.97'	**18.0" Round Culvert** L= 137.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 254.97' / 253.60' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=9.30 cfs @ 12.04 hrs HW=258.27' TW=256.36' (Dynamic Tailwater)
1=Culvert (Inlet Controls 9.30 cfs @ 5.26 fps)

Summary for Pond CB-14:

Inflow Area = 1.654 ac, 84.27% Impervious, Inflow Depth = 5.30" for 25-yr event
Inflow = 9.54 cfs @ 12.04 hrs, Volume= 0.731 af
Outflow = 9.53 cfs @ 12.04 hrs, Volume= 0.731 af, Atten= 0%, Lag= 0.1 min
Primary = 9.53 cfs @ 12.04 hrs, Volume= 0.731 af
Routed to Pond CB-15 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 256.36' @ 12.04 hrs Surf.Area= 12 sf Storage= 33 cf
Flood Elev= 262.48' Surf.Area= 12 sf Storage= 107 cf

Plug-Flow detention time= 0.1 min calculated for 0.731 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (767.2 - 767.1)

Volume	Invert	Avail.Storage	Storage Description
#1	253.60'	107 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
253.60	12	0	0
262.48	12	107	107
262.50	20	0	107

Device	Routing	Invert	Outlet Devices
#1	Primary	253.60'	**18.0" Round Culvert** L= 180.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 253.60' / 249.91' S= 0.0205 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Primary	262.48'	**20.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=9.51 cfs @ 12.04 hrs HW=256.35' TW=253.06' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 9.51 cfs @ 5.38 fps)
└─**2=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

Summary for Pond CB-15:

Inflow Area = 1.815 ac, 82.97% Impervious, Inflow Depth = 5.28" for 25-yr event
Inflow = 10.44 cfs @ 12.04 hrs, Volume= 0.799 af
Outflow = 10.43 cfs @ 12.04 hrs, Volume= 0.799 af, Atten= 0%, Lag= 0.1 min
Primary = 10.43 cfs @ 12.04 hrs, Volume= 0.799 af
Routed to Pond CB-16 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 253.07' @ 12.04 hrs Surf.Area= 12 sf Storage= 38 cf
Flood Elev= 253.61' Surf.Area= 12 sf Storage= 44 cf

Plug-Flow detention time= 0.1 min calculated for 0.799 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (768.3 - 768.1)

Volume	Invert	Avail.Storage	Storage Description
#1	249.91'	47 cf	**STRUCTURE (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
249.91	12	0	0
253.61	12	44	44
253.75	20	2	47

Device	Routing	Invert	Outlet Devices
#1	Primary	249.91'	**18.0" Round Culvert** L= 180.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 249.91' / 241.94' S= 0.0443 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

#2	Primary	253.61'	**20.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=10.41 cfs @ 12.04 hrs HW=253.06' TW=247.68' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 10.41 cfs @ 5.89 fps)
└─**2=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

Summary for Pond CB-16:

[58] Hint: Peaked 0.11' above defined flood level
[90] Warning: Qout>Qin may require smaller dt or Finer Routing
[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=2)

Inflow Area = 2.056 ac, 81.10% Impervious, Inflow Depth = 5.24" for 25-yr event
Inflow = 11.79 cfs @ 12.04 hrs, Volume= 0.898 af
Outflow = 11.97 cfs @ 12.04 hrs, Volume= 0.898 af, Atten= 0%, Lag= 0.0 min
Primary = 11.97 cfs @ 12.04 hrs, Volume= 0.898 af
Routed to Pond CB-17 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 247.69' @ 12.04 hrs Surf.Area= 15 sf Storage= 69 cf
Flood Elev= 247.58' Surf.Area= 12 sf Storage= 68 cf

Plug-Flow detention time= 0.2 min calculated for 0.898 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (770.1 - 769.9)

Volume	Invert	Avail.Storage	Storage Description
#1	241.94'	72 cf	**STRUCTURE (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
241.94	12	0	0
247.58	12	68	68
247.85	20	4	72

Device	Routing	Invert	Outlet Devices
#1	Primary	241.94'	**18.0" Round Culvert** L= 194.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 241.94' / 240.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Primary	247.58'	**20.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=11.82 cfs @ 12.04 hrs HW=247.69' TW=244.89' (Dynamic Tailwater)
1=Culvert (Outlet Controls 10.17 cfs @ 5.75 fps)
2=Broad-Crested Rectangular Weir (Weir Controls 1.65 cfs @ 0.77 fps)

Summary for Pond CB-17:

[58] Hint: Peaked 0.84' above defined flood level
[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=11)

Inflow Area = 4.187 ac, 88.32% Impervious, Inflow Depth = 5.39" for 25-yr event
Inflow = 24.64 cfs @ 12.04 hrs, Volume= 1.881 af
Outflow = 18.02 cfs @ 12.22 hrs, Volume= 1.881 af, Atten= 27%, Lag= 10.8 min
Primary = 18.02 cfs @ 12.22 hrs, Volume= 1.881 af
Routed to Pond CB-18 :
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond PF-2 : Pretreatment Forebay
Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond DP-1 : Gidneytown Creek

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 245.14' @ 12.13 hrs Surf.Area= 9,629 sf Storage= 4,038 cf
Flood Elev= 244.30' Surf.Area= 40 sf Storage= 96 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.7 min (762.3 - 761.6)

Volume	Invert	Avail.Storage	Storage Description
#1	239.50'	96 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)
#2	244.30'	18,411 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		18,507 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
239.50	20	0	0
244.30	20	96	96

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
244.30	20	0	0
245.00	7,740	2,716	2,716
245.35	12,368	3,519	6,235
246.00	25,096	12,176	18,411

Device	Routing	Invert	Outlet Devices
#1	Primary	239.50'	**24.0" Round Culvert** L= 192.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 239.50' / 237.58' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Primary	245.26'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir**

Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50
Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

#3	Secondary	245.34'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88
#4	Tertiary	245.40'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=17.88 cfs @ 12.22 hrs HW=244.94' TW=242.70' (Dynamic Tailwater)
1=Culvert (Inlet Controls 17.88 cfs @ 5.69 fps)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=239.50' TW=232.00' (Dynamic Tailwater)
3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=239.50' TW=0.00' (Dynamic Tailwater)
4=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond CB-18:

[58] Hint: Peaked 0.36' above defined flood level
[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=1)
[80] Warning: Exceeded Pond CB-10 by 1.05' @ 11.97 hrs (11.71 cfs 0.037 af)

Inflow Area = 7.583 ac, 92.78% Impervious, Inflow Depth = 5.52" for 25-yr event
Inflow = 34.44 cfs @ 12.03 hrs, Volume= 3.490 af
Outflow = 31.06 cfs @ 12.07 hrs, Volume= 3.490 af, Atten= 10%, Lag= 2.3 min
Primary = 31.06 cfs @ 12.07 hrs, Volume= 3.490 af
Routed to Pond DIV-2 : Diversion 2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 243.86' @ 12.06 hrs Surf.Area= 2,260 sf Storage= 535 cf
Flood Elev= 243.50' Surf.Area= 40 sf Storage= 128 cf

Plug-Flow detention time= 0.1 min calculated for 3.489 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (754.8 - 754.7)

Volume	Invert	Avail.Storage	Storage Description
#1	237.08'	128 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)
#2	243.50'	4,850 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		4,978 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
237.08	20	0	0
243.50	20	128	128

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
243.50	20	0	0
244.75	7,740	4,850	4,850

Device	Routing	Invert	Outlet Devices
#1	Primary	237.08'	**30.0" Round Culvert** L= 64.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 237.08' / 236.06' S= 0.0159 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 4.91 sf
#2	Primary	244.70'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=30.98 cfs @ 12.07 hrs HW=243.85' TW=241.10' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 30.98 cfs @ 6.31 fps)
└—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond CB-19:

[58] Hint: Peaked 0.25' above defined flood level
[80] Warning: Exceeded Pond CB-20 by 0.58' @ 12.00 hrs (7.11 cfs 0.030 af)

Inflow Area = 4.759 ac,100.00% Impervious, Inflow Depth = 5.63" for 25-yr event
Inflow = 28.67 cfs @ 12.04 hrs, Volume= 2.233 af
Outflow = 27.25 cfs @ 12.04 hrs, Volume= 2.233 af, Atten= 5%, Lag= 0.1 min
Primary = 26.62 cfs @ 12.04 hrs, Volume= 2.232 af
Routed to Pond PF-1 : Pretreatment Forebay
Secondary = 0.63 cfs @ 12.04 hrs, Volume= 0.001 af
Routed to Pond CB-8 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 246.20' @ 12.04 hrs Surf.Area= 90 sf Storage= 134 cf
Flood Elev= 245.95' Surf.Area= 40 sf Storage= 123 cf

Plug-Flow detention time= 0.3 min calculated for 2.233 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (746.2 - 746.0)

Volume	Invert	Avail.Storage	Storage Description
#1	239.82'	123 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)
#2	245.95'	55 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		178 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
239.82	20	0	0
245.95	20	123	123

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
245.95	20	0	0
246.60	150	55	55

Device	Routing	Invert	Outlet Devices
#1	Primary	239.82'	**24.0" Round Culvert** L= 254.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 239.82' / 238.55' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Secondary	245.95'	**2.0' long x 2.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=26.56 cfs @ 12.04 hrs HW=246.17' TW=239.14' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 26.56 cfs @ 8.46 fps)

Secondary OutFlow Max=0.63 cfs @ 12.04 hrs HW=246.20' TW=242.53' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 0.63 cfs @ 1.27 fps)

Summary for Pond CB-2:

[58] Hint: Peaked 0.44' above defined flood level
[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=4)
[80] Warning: Exceeded Pond CB-1 by 1.31' @ 12.01 hrs (6.59 cfs 0.024 af)

Inflow Area = 2.565 ac, 54.09% Impervious, Inflow Depth = 4.28" for 25-yr event
Inflow = 9.25 cfs @ 12.35 hrs, Volume= 0.916 af
Outflow = 9.13 cfs @ 12.38 hrs, Volume= 0.916 af, Atten= 1%, Lag= 1.8 min
Primary = 9.13 cfs @ 12.38 hrs, Volume= 0.916 af
Routed to Pond CB-22 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 263.80' @ 12.10 hrs Surf.Area= 2,963 sf Storage= 714 cf
Flood Elev= 263.36' Surf.Area= 24 sf Storage= 70 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.3 min (811.2 - 810.9)

Volume	Invert	Avail.Storage	Storage Description
#1	257.54'	70 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)
#2	263.36'	14,129 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		14,199 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
257.54	12	0	0
263.36	12	70	70

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
263.36	12	0	0
264.00	4,336	1,391	1,391
265.00	21,139	12,738	14,129

Device	Routing	Invert	Outlet Devices
#1	Primary	257.54'	**18.0" Round Culvert** L= 251.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 257.54' / 255.03' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Primary	264.55'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=8.40 cfs @ 12.38 hrs HW=263.20' TW=260.92' (Dynamic Tailwater)
↑1=**Culvert** (Outlet Controls 8.40 cfs @ 4.75 fps)
↑2=**Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond CB-20:

[58] Hint: Peaked 0.13' above defined flood level
[90] Warning: Qout>Qin may require smaller dt or Finer Routing
[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=8)

Inflow Area = 0.793 ac,100.00% Impervious, Inflow Depth = 5.65" for 25-yr event
Inflow = 4.75 cfs @ 12.04 hrs, Volume= 0.374 af
Outflow = 5.09 cfs @ 12.06 hrs, Volume= 0.374 af, Atten= 0%, Lag= 1.4 min
Primary = 4.96 cfs @ 12.04 hrs, Volume= 0.365 af
Routed to Pond CB-19 :
Secondary = 2.09 cfs @ 12.05 hrs, Volume= 0.004 af
Routed to Pond CB-10 :
Tertiary = 2.09 cfs @ 12.05 hrs, Volume= 0.004 af
Routed to Pond CB-18 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 246.08' @ 12.05 hrs Surf.Area= 63 sf Storage= 40 cf
Flood Elev= 245.95' Surf.Area= 18 sf Storage= 36 cf

Plug-Flow detention time= 0.4 min calculated for 0.374 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (746.1 - 745.9)

Volume	Invert	Avail.Storage	Storage Description
#1	241.97'	36 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)
#2	245.95'	171 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		206 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
241.97	9	0	0
245.95	9	36	36

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
245.95	9	0	0
246.90	350	171	171

Device	Routing	Invert	Outlet Devices
#1	Primary	241.97'	**24.0" Round Culvert** L= 432.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 241.97' / 239.81' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Secondary	245.95'	**20.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88
#3	Tertiary	245.95'	**20.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.00 cfs @ 12.04 hrs HW=245.90' TW=246.16' (Dynamic Tailwater)
↑1=**Culvert** (Controls 0.00 cfs)

Secondary OutFlow Max=2.05 cfs @ 12.05 hrs HW=246.07' TW=243.90' (Dynamic Tailwater)
↑2=**Broad-Crested Rectangular Weir** (Weir Controls 2.05 cfs @ 0.82 fps)

Tertiary OutFlow Max=2.05 cfs @ 12.05 hrs HW=246.07' TW=243.83' (Dynamic Tailwater)
↑3=**Broad-Crested Rectangular Weir** (Weir Controls 2.05 cfs @ 0.82 fps)

Summary for Pond CB-22:

[58] Hint: Peaked 0.16' above defined flood level
[80] Warning: Exceeded Pond CB-2 by 0.25' @ 12.01 hrs (2.80 cfs 0.007 af)

Inflow Area = 3.304 ac, 59.52% Impervious, Inflow Depth = 4.46" for 25-yr event
Inflow = 10.62 cfs @ 12.01 hrs, Volume= 1.228 af
Outflow = 10.03 cfs @ 12.38 hrs, Volume= 1.228 af, Atten= 6%, Lag= 22.2 min
Primary = 10.03 cfs @ 12.38 hrs, Volume= 1.228 af
Routed to Pond CB-3 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 263.42' @ 12.03 hrs Surf.Area= 693 sf Storage= 154 cf
Flood Elev= 263.26' Surf.Area= 24 sf Storage= 99 cf

Plug-Flow detention time= 0.2 min calculated for 1.228 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (803.0 - 802.8)

Volume	Invert	Avail.Storage	Storage Description
#1	255.03'	99 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)
#2	263.26'	9,471 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		9,570 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
255.03	12	0	0
263.26	12	99	99

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
263.26	12	0	0
264.00	3,123	1,160	1,160
265.00	13,500	8,312	9,471

Device	Routing	Invert	Outlet Devices
#1	Primary	255.03'	**18.0" Round Culvert** L= 99.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 255.03' / 254.04' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Primary	264.57'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=8.32 cfs @ 12.38 hrs HW=260.93' TW=259.40' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 8.32 cfs @ 4.71 fps)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond CB-23:

[58] Hint: Peaked 0.23' above defined flood level
[90] Warning: Qout>Qin may require smaller dt or Finer Routing

Inflow Area = 5.060 ac, 60.59% Impervious, Inflow Depth = 4.41" for 25-yr event
Inflow = 15.48 cfs @ 12.02 hrs, Volume= 1.861 af
Outflow = 15.51 cfs @ 12.02 hrs, Volume= 1.861 af, Atten= 0%, Lag= 0.0 min
Primary = 15.51 cfs @ 12.02 hrs, Volume= 1.861 af
Routed to Pond CB-25 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 246.96' @ 12.02 hrs Surf.Area= 19 sf Storage= 55 cf
Flood Elev= 246.73' Surf.Area= 12 sf Storage= 52 cf

Plug-Flow detention time= 0.1 min calculated for 1.861 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (797.2 - 797.1)

Volume	Invert	Avail.Storage	Storage Description
#1	242.40'	56 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
242.40	12	0	0
246.73	12	52	52
247.00	20	4	56

Device	Routing	Invert	Outlet Devices
#1	Primary	242.40'	**18.0" Round Culvert** L= 135.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 242.40' / 240.70' S= 0.0126 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Primary	246.73'	**24.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=15.30 cfs @ 12.02 hrs HW=246.95' TW=244.99' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 9.41 cfs @ 5.33 fps)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 5.89 cfs @ 1.11 fps)

Summary for Pond CB-24:

[58] Hint: Peaked 0.61' above defined flood level
[90] Warning: Qout>Qin may require smaller dt or Finer Routing
[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=17)

Inflow Area = 0.520 ac, 0.00% Impervious, Inflow Depth = 2.54" for 25-yr event
Inflow = 1.18 cfs @ 12.12 hrs, Volume= 0.110 af
Outflow = 3.30 cfs @ 12.24 hrs, Volume= 0.110 af, Atten= 0%, Lag= 7.2 min
Primary = 3.30 cfs @ 12.24 hrs, Volume= 0.110 af
Routed to Pond CB-3 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 261.11' @ 12.15 hrs Surf.Area= 1,389 sf Storage= 400 cf
Flood Elev= 260.50' Surf.Area= 8 sf Storage= 16 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 1.0 min (869.8 - 868.8)

Volume	Invert	Avail.Storage	Storage Description
#1	256.50'	16 cf	**STRUCTURE (Prismatic)**Listed below (Recalc)
#2	260.50'	16,857 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
		16,873 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
256.50	4	0	0
260.50	4	16	16

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
260.50	4	0	0
261.00	1,000	251	251
262.00	4,450	2,725	2,976
263.00	6,787	5,619	8,595
264.00	9,737	8,262	16,857

Device	Routing	Invert	Outlet Devices
#1	Primary	256.50'	**12.0" Round Culvert** L= 26.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 256.50' / 256.24' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.28 cfs @ 12.24 hrs HW=261.01' TW=260.43' (Dynamic Tailwater)
↳**1=Culvert** (Inlet Controls 2.28 cfs @ 2.90 fps)

Summary for Pond CB-25:

[58] Hint: Peaked 0.29' above defined flood level

Inflow Area = 5.318 ac, 60.94% Impervious, Inflow Depth = 4.37" for 25-yr event
Inflow = 16.56 cfs @ 12.02 hrs, Volume= 1.938 af
Outflow = 16.49 cfs @ 12.02 hrs, Volume= 1.938 af, Atten= 0%, Lag= 0.0 min
Primary = 12.65 cfs @ 12.02 hrs, Volume= 1.897 af
Routed to Pond PF-1 : Pretreatment Forebay
Secondary = 3.85 cfs @ 12.02 hrs, Volume= 0.041 af
Routed to Pond CB-7 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 244.99' @ 12.02 hrs Surf.Area= 30 sf Storage= 52 cf
Flood Elev= 244.70' Surf.Area= 24 sf Storage= 48 cf

Plug-Flow detention time= 0.1 min calculated for 1.938 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (798.6 - 798.5)

Volume	Invert	Avail.Storage	Storage Description
#1	240.70'	48 cf	**structure (Prismatic)**Listed below (Recalc)
#2	244.70'	6 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
		54 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
240.70	12	0	0
244.70	12	48	48

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
244.70	12	0	0
245.10	20	6	6

Device	Routing	Invert	Outlet Devices
#1	Primary	240.70'	**18.0" Round Culvert** L= 82.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 240.70' / 239.00' S= 0.0207 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Secondary	244.70'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=12.64 cfs @ 12.02 hrs HW=244.99' TW=239.12' (Dynamic Tailwater)
↳**1=Culvert** (Inlet Controls 12.64 cfs @ 7.15 fps)

Secondary OutFlow Max=3.74 cfs @ 12.02 hrs HW=244.99' TW=242.69' (Dynamic Tailwater)
↳**2=Broad-Crested Rectangular Weir** (Weir Controls 3.74 cfs @ 1.29 fps)

Summary for Pond CB-3:

[80] Warning: Exceeded Pond CB-24 by 2.39' @ 12.34 hrs (4.11 cfs 0.047 af)

Inflow Area = 3.902 ac, 52.30% Impervious, Inflow Depth = 4.23" for 25-yr event
Inflow = 12.34 cfs @ 12.21 hrs, Volume= 1.374 af
Outflow = 11.54 cfs @ 12.29 hrs, Volume= 1.374 af, Atten= 6%, Lag= 5.0 min
Primary = 11.54 cfs @ 12.29 hrs, Volume= 1.374 af
Routed to Pond CB-4 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 262.56' @ 12.02 hrs Surf.Area= 20 sf Storage= 170 cf
Flood Elev= 264.59' Surf.Area= 40 sf Storage= 211 cf

Plug-Flow detention time= 0.3 min calculated for 1.374 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (807.2 - 807.0)

Volume	Invert	Avail.Storage	Storage Description
#1	254.04'	211 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)
#2	264.59'	258 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		469 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
254.04	20	0	0
264.59	20	211	211

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
264.59	20	0	0
265.00	500	107	107
265.20	1,010	151	258

Device	Routing	Invert	Outlet Devices
#1	Primary	254.04'	**18.0" Round Culvert** L= 203.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 254.04' / 252.01' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Primary	265.15'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=9.35 cfs @ 12.29 hrs HW=260.40' TW=257.96' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 9.35 cfs @ 5.29 fps)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond CB-4:

Inflow Area = 4.719 ac, 59.95% Impervious, Inflow Depth = 4.45" for 25-yr event
Inflow = 14.41 cfs @ 12.01 hrs, Volume= 1.751 af
Outflow = 14.04 cfs @ 12.01 hrs, Volume= 1.751 af, Atten= 3%, Lag= 0.2 min
Primary = 14.04 cfs @ 12.01 hrs, Volume= 1.751 af
Routed to Pond CB-5 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 260.76' @ 12.02 hrs Surf.Area= 12 sf Storage= 105 cf
Flood Elev= 263.70' Surf.Area= 24 sf Storage= 140 cf

Plug-Flow detention time= 0.1 min calculated for 1.751 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (795.9 - 795.8)

Volume	Invert	Avail.Storage	Storage Description
#1	252.01'	140 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)
#2	263.70'	8,379 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		8,519 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
252.01	12	0	0
263.70	12	140	140

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
263.70	12	0	0
264.00	970	147	147
265.00	15,493	8,232	8,379

Device	Routing	Invert	Outlet Devices
#1	Primary	252.01'	**18.0" Round Culvert** L= 241.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 252.01' / 249.60' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=13.43 cfs @ 12.01 hrs HW=260.48' TW=254.82' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 13.43 cfs @ 7.60 fps)

Summary for Pond CB-5:

Inflow Area = 4.814 ac, 59.93% Impervious, Inflow Depth = 4.44" for 25-yr event
Inflow = 14.43 cfs @ 12.01 hrs, Volume= 1.780 af
Outflow = 14.41 cfs @ 12.02 hrs, Volume= 1.780 af, Atten= 0%, Lag= 0.2 min
Primary = 14.41 cfs @ 12.02 hrs, Volume= 1.780 af
Routed to Pond CB-6 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 254.95' @ 12.02 hrs Surf.Area= 12 sf Storage= 64 cf
Flood Elev= 258.09' Surf.Area= 12 sf Storage= 102 cf

Plug-Flow detention time= 0.1 min calculated for 1.780 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (796.5 - 796.4)

Volume	Invert	Avail.Storage	Storage Description
#1	249.60'	105 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
249.60	12	0	0
258.09	12	102	102
258.30	20	3	105

Device	Routing	Invert	Outlet Devices
#1	Primary	249.60'	**18.0" Round Culvert** L= 178.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 249.60' / 245.40' S= 0.0236 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Primary	258.09'	**20.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=14.25 cfs @ 12.02 hrs HW=254.85' TW=249.16' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 14.25 cfs @ 8.07 fps)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond CB-6:

[58] Hint: Peaked 0.23' above defined flood level
[90] Warning: Qout>Qin may require smaller dt or Finer Routing

Inflow Area = 5.014 ac, 60.23% Impervious, Inflow Depth = 4.40" for 25-yr event
Inflow = 15.22 cfs @ 12.02 hrs, Volume= 1.840 af
Outflow = 15.22 cfs @ 12.02 hrs, Volume= 1.840 af, Atten= 0%, Lag= 0.0 min
Primary = 15.22 cfs @ 12.02 hrs, Volume= 1.840 af
Routed to Pond CB-23 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 249.16' @ 12.02 hrs Surf.Area= 17 sf Storage= 35 cf
Flood Elev= 248.93' Surf.Area= 9 sf Storage= 32 cf

Plug-Flow detention time= 0.1 min calculated for 1.840 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (797.7 - 797.6)

Volume	Invert	Avail.Storage	Storage Description
#1	245.40'	36 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
245.40	9	0	0
248.93	9	32	32
249.25	20	5	36

Device	Routing	Invert	Outlet Devices
#1	Primary	245.40'	**18.0" Round Culvert** L= 85.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 245.40' / 242.40' S= 0.0353 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Primary	248.93'	**20.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=15.04 cfs @ 12.02 hrs HW=249.16' TW=246.95' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 9.97 cfs @ 5.64 fps)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 5.06 cfs @ 1.12 fps)

Summary for Pond CB-7:

[90] Warning: Qout>Qin may require smaller dt or Finer Routing

Inflow Area = 2.850 ac, 99.06% Impervious, Inflow Depth = 5.71" for 25-yr event
Inflow = 20.33 cfs @ 12.02 hrs, Volume= 1.355 af
Outflow = 20.34 cfs @ 12.02 hrs, Volume= 1.355 af, Atten= 0%, Lag= 0.1 min
Primary = 20.34 cfs @ 12.02 hrs, Volume= 1.355 af
Routed to Pond PF-1 : Pretreatment Forebay

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 242.81' @ 12.02 hrs Surf.Area= 20 sf Storage= 78 cf
Flood Elev= 243.50' Surf.Area= 58 sf Storage= 92 cf

Plug-Flow detention time= 0.2 min calculated for 1.355 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (753.2 - 753.0)

Volume	Invert	Avail.Storage	Storage Description
#1	238.91'	92 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)
#2	243.50'	8,702 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		8,793 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
238.91	20	0	0
243.50	20	92	92

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
243.50	38	0	0
244.00	1,938	494	494
245.00	14,477	8,208	8,702

Device	Routing	Invert	Outlet Devices
#1	Primary	238.91'	**24.0" Round Culvert** L= 81.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 238.91' / 238.50' S= 0.0051 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Primary	244.60'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=20.17 cfs @ 12.02 hrs HW=242.76' TW=239.13' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 20.17 cfs @ 6.42 fps)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond CB-8:

Inflow Area = 1.601 ac, 93.07% Impervious, Inflow Depth = 5.49" for 25-yr event
Inflow = 10.13 cfs @ 12.04 hrs, Volume= 0.732 af
Outflow = 9.93 cfs @ 12.04 hrs, Volume= 0.732 af, Atten= 2%, Lag= 0.1 min
Primary = 9.93 cfs @ 12.04 hrs, Volume= 0.732 af
Routed to Pond PF-1 : Pretreatment Forebay

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 242.53' @ 12.04 hrs Surf.Area= 12 sf Storage= 36 cf
Flood Elev= 244.30' Surf.Area= 24 sf Storage= 57 cf

Plug-Flow detention time= 0.3 min calculated for 0.732 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (755.9 - 755.7)

Volume	Invert	Avail.Storage	Storage Description
#1	239.53'	57 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)
#2	244.30'	4,841 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		4,898 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
239.53	12	0	0
244.30	12	57	57

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
244.30	12	0	0
245.00	8,154	2,858	2,858
245.20	11,676	1,983	4,841

Device	Routing	Invert	Outlet Devices
#1	Primary	239.53'	**18.0" Round Culvert** L= 144.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 239.53' / 238.81' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Primary	245.10'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=9.92 cfs @ 12.04 hrs HW=242.53' TW=239.14' (Dynamic Tailwater)
└─**1=Culvert** (Barrel Controls 9.92 cfs @ 5.61 fps)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond CB-9:

[90] Warning: Qout>Qin may require smaller dt or Finer Routing

Inflow Area = 0.759 ac, 85.37% Impervious, Inflow Depth = 5.30" for 25-yr event
Inflow = 4.45 cfs @ 12.04 hrs, Volume= 0.335 af
Outflow = 4.48 cfs @ 12.04 hrs, Volume= 0.335 af, Atten= 0%, Lag= 0.1 min
Primary = 4.48 cfs @ 12.04 hrs, Volume= 0.335 af
Routed to Pond CB-8 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 243.03' @ 12.05 hrs Surf.Area= 9 sf Storage= 22 cf
Flood Elev= 244.05' Surf.Area= 18 sf Storage= 32 cf

Plug-Flow detention time= 0.4 min calculated for 0.335 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (767.4 - 767.2)

Volume	Invert	Avail.Storage	Storage Description
#1	240.55'	32 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)
#2	244.05'	5,860 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		5,892 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
240.55	9	0	0
244.05	9	32	32

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
244.05	9	0	0
245.00	8,154	3,877	3,877
245.20	11,676	1,983	5,860

Device	Routing	Invert	Outlet Devices
#1	Primary	240.55'	**18.0" Round Culvert** L= 204.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 240.55' / 239.53' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Primary	245.10'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=3.54 cfs @ 12.04 hrs HW=242.85' TW=242.50' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 3.54 cfs @ 2.00 fps)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond DET-1: Detention Basin

[44] Hint: Outlet device #2 is below defined storage

Inflow Area = 9.923 ac, 72.74% Impervious, Inflow Depth = 3.88" for 25-yr event
Inflow = 34.52 cfs @ 12.11 hrs, Volume= 3.210 af
Outflow = 14.45 cfs @ 12.54 hrs, Volume= 3.210 af, Atten= 58%, Lag= 26.0 min
Primary = 14.45 cfs @ 12.54 hrs, Volume= 3.210 af
Routed to Pond DP-1 : Gidneytown Creek
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond DP-1 : Gidneytown Creek

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 235.74' @ 12.54 hrs Surf.Area= 16,513 sf Storage= 51,423 cf
Flood Elev= 236.50' Surf.Area= 17,706 sf Storage= 64,365 cf

Plug-Flow detention time= 248.9 min calculated for 3.210 af (100% of inflow)
Center-of-Mass det. time= 249.2 min (1,077.8 - 828.6)

Volume	Invert	Avail.Storage	Storage Description
#1	232.00'	73,418 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
232.00	11,095	0	0
233.00	12,455	11,775	11,775
234.00	13,886	13,171	24,946
235.00	15,369	14,628	39,573
236.00	16,908	16,139	55,712
237.00	18,504	17,706	73,418

Device	Routing	Invert	Outlet Devices
#1	Primary	231.91'	**12.0" Round Culvert** L= 15.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 231.91' / 231.84' S= 0.0047 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	231.91'	**3.0" Vert. CPv Orifice** C= 0.600 Limited to weir flow at low heads
#3	Device 1	233.65'	**4.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#4	Primary	236.05'	**10.0' long x 5.0' breadth Stabilized Overflow to Wetland** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88
#5	Secondary	236.50'	**10.0' long x 5.0' breadth Emergency Overflow** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88
#6	Primary	233.65'	**12.0" Round Culvert X 2.00** L= 30.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 233.65' / 233.50' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=14.45 cfs @ 12.54 hrs HW=235.74' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 5.45 cfs @ 6.94 fps)
└─**2=CPv Orifice** (Passes < 0.46 cfs potential flow)
└─**3=Broad-Crested Rectangular Weir** (Passes < 40.22 cfs potential flow)
└─**4=Stabilized Overflow to Wetland** (Controls 0.00 cfs)
└─**6=Culvert** (Barrel Controls 8.99 cfs @ 5.73 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=232.00' TW=0.00' (Dynamic Tailwater)
└─**5=Emergency Overflow** (Controls 0.00 cfs)

Summary for Pond DIV-2: Diversion 2

[90] Warning: Qout>Qin may require smaller dt or Finer Routing

Inflow Area = 7.583 ac, 92.78% Impervious, Inflow Depth = 5.52" for 25-yr event
Inflow = 31.06 cfs @ 12.07 hrs, Volume= 3.490 af
Outflow = 31.21 cfs @ 12.05 hrs, Volume= 3.490 af, Atten= 0%, Lag= 0.0 min
Primary = 24.01 cfs @ 12.05 hrs, Volume= 3.369 af
Routed to Pond PF-2 : Pretreatment Forebay
Secondary = 7.20 cfs @ 12.05 hrs, Volume= 0.121 af
Routed to Pond DET-1 : Detention Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 241.10' @ 12.05 hrs Surf.Area= 24 sf Storage= 121 cf
Flood Elev= 244.67' Surf.Area= 24 sf Storage= 207 cf

Plug-Flow detention time= 0.1 min calculated for 3.489 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (755.0 - 754.8)

Volume	Invert	Avail.Storage	Storage Description
#1	236.06'	207 cf	**Ponding before Weir (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
236.06	24	0	0
244.67	24	207	207

Device	Routing	Invert	Outlet Devices
#1	Primary	236.06'	**24.0" Round Outlet Pipe to Bioretention** L= 44.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 236.06' / 235.50' S= 0.0127 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Device 3	240.50'	**5.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#3	Secondary	236.06'	**24.0" Round Outlet Pipe to Detention** L= 45.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 236.06' / 235.83' S= 0.0051 '/' Cc= 0.900 n= 0.012 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=24.01 cfs @ 12.05 hrs HW=241.10' TW=236.31' (Dynamic Tailwater)
└**1=Outlet Pipe to Bioretention** (Inlet Controls 24.01 cfs @ 7.64 fps)

Secondary OutFlow Max=7.20 cfs @ 12.05 hrs HW=241.10' TW=234.20' (Dynamic Tailwater)
└**3=Outlet Pipe to Detention** (Passes 7.20 cfs of 24.01 cfs potential flow)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 7.20 cfs @ 2.39 fps)

Summary for Pond DP-1: Gidneytown Creek

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 50.078 ac, 42.15% Impervious, Inflow Depth > 3.52" for 25-yr event
Inflow = 77.86 cfs @ 12.31 hrs, Volume= 14.691 af
Primary = 77.86 cfs @ 12.31 hrs, Volume= 14.691 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Pond P-1: Wet Pond

Inflow Area = 16.392 ac, 75.11% Impervious, Inflow Depth = 5.04" for 25-yr event
Inflow = 77.49 cfs @ 12.05 hrs, Volume= 6.884 af
Outflow = 22.67 cfs @ 12.50 hrs, Volume= 6.098 af, Atten= 71%, Lag= 27.6 min
Primary = 22.67 cfs @ 12.50 hrs, Volume= 6.098 af
Routed to Pond DP-1 : Gidneytown Creek
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond DP-1 : Gidneytown Creek

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 238.98' @ 12.50 hrs Surf.Area= 82,702 sf Storage= 146,011 cf
Flood Elev= 239.50' Surf.Area= 84,891 sf Storage= 177,145 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 572.7 min (1,343.8 - 771.0)

Volume	Invert	Avail.Storage	Storage Description
#1	232.00'	0 cf	**Permanent Pool (Prismatic)** Listed below (Recalc) 62,038 cf Overall x 0.0% Voids
#2	236.00'	208,229 cf	**Extended Detention (Prismatic)** Listed below (Recalc)
		208,229 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
232.00	12,694	0	0
233.00	13,630	13,162	13,162
234.00	14,592	14,111	27,273
235.00	15,579	15,086	42,359
236.00	23,780	19,680	62,038

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
236.00	23,780	0	0
237.00	50,853	37,317	37,317
238.00	54,875	52,864	90,181
239.00	58,999	56,937	147,118
240.00	63,223	61,111	208,229

Device	Routing	Invert	Outlet Devices
#1	Primary	235.10'	**12.0" Round Culvert From OCS** L= 20.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 235.10' / 235.00' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	235.10'	**3.0" Vert. CPv Orifice** C= 0.600 Limited to weir flow at low heads
#3	Device 1	238.00'	**4.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00

Coef. (English) 2.80 2.92 3.08 3.30 3.32

#4 Primary 238.00' **12.0" Round Culverts to Floodplain X 2.00**
L= 33.0' CPP, end-section conforming to fill, Ke= 0.500
Inlet / Outlet Invert= 238.00' / 235.00' S= 0.0909 '/' Cc= 0.900
n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

#5 Primary 238.40' **10.0' long x 10.0' breadth Broad-Crested Rectangular Weir**
Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

#6 Secondary 239.50' **20.0' long x 10.0' breadth Emergency Overflow Weir**
Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=22.67 cfs @ 12.50 hrs HW=238.98' TW=0.00' (Dynamic Tailwater)
- **1=Culvert From OCS** (Inlet Controls 5.49 cfs @ 6.99 fps)
  - **2=CPv Orifice** (Passes < 0.46 cfs potential flow)
    - **3=Broad-Crested Rectangular Weir** (Passes < 12.90 cfs potential flow)
- **4=Culverts to Floodplain** (Inlet Controls 5.27 cfs @ 3.37 fps)
- **5=Broad-Crested Rectangular Weir** (Weir Controls 11.90 cfs @ 2.05 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=232.00' TW=0.00' (Dynamic Tailwater)
- **6=Emergency Overflow Weir** (Controls 0.00 cfs)

Summary for Pond PF-1: Pretreatment Forebay

Inflow Area = 14.810 ac, 83.14% Impervious, Inflow Depth = 5.12" for 25-yr event
Inflow = 70.06 cfs @ 12.04 hrs, Volume= 6.316 af
Outflow = 69.51 cfs @ 12.05 hrs, Volume= 6.316 af, Atten= 1%, Lag= 0.3 min
Primary = 69.51 cfs @ 12.05 hrs, Volume= 6.316 af
Routed to Pond P-1 : Wet Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 239.14' @ 12.05 hrs Surf.Area= 8,124 sf Storage= 2,609 cf
Flood Elev= 239.50' Surf.Area= 8,510 sf Storage= 4,249 cf

Plug-Flow detention time= 1.7 min calculated for 6.316 af (100% of inflow)
Center-of-Mass det. time= 1.6 min (767.7 - 766.1)

Volume	Invert	Avail.Storage	Storage Description
#1	235.00'	0 cf	**Pretreatment Forebay (Prismatic)** Listed below (Recalc)
			7,202 cf Overall x 0.0% Voids
#2	238.50'	9,918 cf	**Overflow (Prismatic)** Listed below (Recalc)
		9,918 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
235.00	496	0	0
236.00	1,348	922	922
237.00	2,257	1,803	2,725
238.00	3,223	2,740	5,465
238.50	3,726	1,737	7,202

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
238.50	3,726	0	0
239.00	4,244	1,993	1,993
240.00	5,323	4,784	6,776
240.50	7,246	3,142	9,918

Device	Routing	Invert	Outlet Devices
#1	Primary	238.50'	**50.0' long x 10.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=69.33 cfs @ 12.05 hrs HW=239.14' TW=238.39' (Dynamic Tailwater)
- **1=Broad-Crested Rectangular Weir** (Weir Controls 69.33 cfs @ 2.16 fps)

Summary for Pond PF-2: Pretreatment Forebay

Inflow Area = 8.123 ac, 88.14% Impervious, Inflow Depth = 5.28" for 25-yr event
Inflow = 26.82 cfs @ 12.03 hrs, Volume= 3.572 af
Outflow = 25.40 cfs @ 12.07 hrs, Volume= 3.572 af, Atten= 5%, Lag= 2.2 min
Primary = 25.40 cfs @ 12.07 hrs, Volume= 3.572 af
Routed to Pond BIO-1 : Filtration Bioretention (2.5ft filter media)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 236.34' @ 12.18 hrs Surf.Area= 15,155 sf Storage= 6,379 cf
Flood Elev= 236.50' Surf.Area= 15,398 sf Storage= 7,696 cf

Plug-Flow detention time= 45.3 min calculated for 3.571 af (100% of inflow)
Center-of-Mass det. time= 45.4 min (804.0 - 758.6)

Volume	Invert	Avail.Storage	Storage Description
#1	232.00'	0 cf	**Pretreatment Forebay (Prismatic)** Listed below (Recalc)
			15,694 cf Overall x 0.0% Voids
#2	235.50'	12,118 cf	**STORAGE ABOVE (Prismatic)** Listed below (Recalc)
		12,118 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
232.00	2,149	0	0
233.00	3,434	2,792	2,792
234.00	4,791	4,113	6,904
235.00	6,213	5,502	12,406
235.50	6,937	3,288	15,694

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
235.50	6,937	0	0
236.00	7,693	3,658	3,658
237.00	9,228	8,461	12,118

Device	Routing	Invert	Outlet Devices
#1	Primary	235.50'	**40.0' long x 22.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=23.57 cfs @ 12.07 hrs HW=236.32' TW=236.30' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 23.57 cfs @ 0.72 fps)

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentPS-1: Runoff Area=59,320 sf 46.38% Impervious Runoff Depth=6.05"
Flow Length=321' Tc=14.2 min CN=81 Runoff=6.77 cfs 0.687 af

SubcatchmentPS-10: Runoff Area=11,265 sf 67.79% Impervious Runoff Depth=5.82"
Tc=6.0 min CN=79 Runoff=1.71 cfs 0.125 af

SubcatchmentPS-11: Runoff Area=124,140 sf 99.06% Impervious Runoff Depth=7.97"
Tc=6.0 min CN=97 Runoff=22.99 cfs 1.893 af

SubcatchmentPS-12: Runoff Area=172,728 sf 100.00% Impervious Runoff Depth=8.09"
Tc=6.0 min CN=98 Runoff=32.08 cfs 2.673 af

SubcatchmentPS-13: Runoff Area=34,560 sf 100.00% Impervious Runoff Depth=8.09"
Tc=6.0 min CN=98 Runoff=6.42 cfs 0.535 af

SubcatchmentPS-14: Runoff Area=35,140 sf 97.85% Impervious Runoff Depth=8.09"
Tc=6.0 min CN=98 Runoff=6.53 cfs 0.544 af

SubcatchmentPS-15: Runoff Area=12,293 sf 0.00% Impervious Runoff Depth=6.53"
Tc=6.0 min CN=85 Runoff=2.05 cfs 0.154 af

SubcatchmentPS-16: Runoff Area=68,931 sf 0.00% Impervious Runoff Depth=6.65"
Tc=6.0 min CN=86 Runoff=11.63 cfs 0.877 af

SubcatchmentPS-17: Runoff Area=26,060 sf 83.73% Impervious Runoff Depth=7.73"
Tc=6.0 min CN=95 Runoff=4.78 cfs 0.385 af

SubcatchmentPS-18: Runoff Area=31,224 sf 79.46% Impervious Runoff Depth=7.61"
Tc=6.0 min CN=94 Runoff=5.70 cfs 0.455 af

SubcatchmentPS-19: Runoff Area=13,991 sf 95.15% Impervious Runoff Depth=7.97"
Tc=6.0 min CN=97 Runoff=2.59 cfs 0.213 af

SubcatchmentPS-2: Runoff Area=52,401 sf 62.82% Impervious Runoff Depth=7.25"
Flow Length=139' Tc=7.8 min CN=91 Runoff=8.59 cfs 0.727 af

SubcatchmentPS-20: Runoff Area=777 sf 100.00% Impervious Runoff Depth=8.09"
Tc=6.0 min CN=98 Runoff=0.14 cfs 0.012 af

SubcatchmentPS-21: Runoff Area=6,993 sf 69.58% Impervious Runoff Depth=7.49"
Tc=6.0 min CN=93 Runoff=1.27 cfs 0.100 af

SubcatchmentPS-22: Runoff Area=10,506 sf 66.97% Impervious Runoff Depth=7.37"
Tc=6.0 min CN=92 Runoff=1.89 cfs 0.148 af

SubcatchmentPS-23: Runoff Area=92,825 sf 95.28% Impervious Runoff Depth=7.97"
Tc=6.0 min CN=97 Runoff=17.19 cfs 1.415 af

SubcatchmentPS-24: Runoff Area=112,817 sf 98.41% Impervious Runoff Depth=8.09"
Tc=6.0 min CN=98 Runoff=20.95 cfs 1.746 af

SubcatchmentPS-25: Runoff Area=23,503 sf 23.00% Impervious Runoff Depth=6.89"
Tc=6.0 min CN=88 Runoff=4.06 cfs 0.310 af

SubcatchmentPS-26: Runoff Area=23,847 sf 0.00% Impervious Runoff Depth=5.94"
Tc=6.0 min CN=80 Runoff=3.68 cfs 0.271 af

SubcatchmentPS-27: Runoff Area=54,566 sf 4.64% Impervious Runoff Depth=6.05"
Tc=6.0 min CN=81 Runoff=8.55 cfs 0.632 af

SubcatchmentPS-28: Runoff Area=1,035,126 sf 6.64% Impervious Runoff Depth=4.75"
Flow Length=735' Tc=22.4 min CN=70 Runoff=77.25 cfs 9.405 af

SubcatchmentPS-29: Runoff Area=36,671 sf 100.00% Impervious Runoff Depth=8.09"
Tc=6.0 min CN=98 Runoff=6.81 cfs 0.568 af

SubcatchmentPS-3: Runoff Area=32,215 sf 78.33% Impervious Runoff Depth=7.49"
Tc=6.0 min CN=93 Runoff=5.84 cfs 0.462 af

SubcatchmentPS-30: Runoff Area=33,056 sf 85.37% Impervious Runoff Depth=7.73"
Tc=6.0 min CN=95 Runoff=6.07 cfs 0.489 af

SubcatchmentPS-4: Runoff Area=22,641 sf 0.00% Impervious Runoff Depth=4.51"
Flow Length=284' Tc=12.3 min CN=68 Runoff=2.07 cfs 0.196 af

SubcatchmentPS-5: Runoff Area=3,406 sf 94.86% Impervious Runoff Depth=7.97"
Tc=6.0 min CN=97 Runoff=0.63 cfs 0.052 af

SubcatchmentPS-6: Runoff Area=35,574 sf 96.53% Impervious Runoff Depth=7.97"
Tc=6.0 min CN=97 Runoff=6.59 cfs 0.542 af

SubcatchmentPS-7: Runoff Area=4,143 sf 59.04% Impervious Runoff Depth=5.94"
Tc=6.0 min CN=80 Runoff=0.64 cfs 0.047 af

SubcatchmentPS-8: Runoff Area=8,693 sf 67.40% Impervious Runoff Depth=5.82"
Tc=6.0 min CN=79 Runoff=1.32 cfs 0.097 af

SubcatchmentPS-9: Runoff Area=2,000 sf 100.00% Impervious Runoff Depth=8.09"
Tc=6.0 min CN=98 Runoff=0.37 cfs 0.031 af

Pond BIO-1: Filtration Bioretention (2.5ft Peak Elev=236.50' Storage=42,945 cf Inflow=35.47 cfs 5.720 af
Discarded=0.26 cfs 1.060 af Primary=32.06 cfs 4.660 af Secondary=0.00 cfs 0.000 af Outflow=32.31 cfs 5.720 af

Pond CB-1: Peak Elev=264.43' Storage=6,020 cf Inflow=6.77 cfs 0.687 af
Primary=8.26 cfs 0.688 af Secondary=0.00 cfs 0.000 af Outflow=8.26 cfs 0.688 af

Pond CB-10: Peak Elev=244.42' Storage=2,539 cf Inflow=9.84 cfs 0.571 af
Primary=8.70 cfs 0.571 af Secondary=0.00 cfs 0.000 af Outflow=8.70 cfs 0.571 af

Pond CB-11: Peak Elev=263.26' Storage=188 cf Inflow=4.78 cfs 0.385 af
18.0" Round Culvert n=0.013 L=216.0' S=0.0100 '/' Outflow=6.18 cfs 0.385 af

Pond CB-12: Peak Elev=263.10' Storage=81 cf Inflow=10.51 cfs 0.840 af
18.0" Round Culvert n=0.013 L=192.0' S=0.0100 '/' Outflow=9.96 cfs 0.840 af

Pond CB-13: Peak Elev=260.91' Storage=71 cf Inflow=12.63 cfs 1.053 af
18.0" Round Culvert n=0.013 L=137.0' S=0.0100 '/' Outflow=12.40 cfs 1.053 af

Pond CB-14: Peak Elev=257.78' Storage=50 cf Inflow=12.54 cfs 1.065 af
Outflow=12.44 cfs 1.065 af

Pond CB-15: Peak Elev=253.73' Storage=46 cf Inflow=13.70 cfs 1.166 af
Outflow=13.77 cfs 1.166 af

Pond CB-16: Peak Elev=247.82' Storage=71 cf Inflow=15.65 cfs 1.314 af
Outflow=15.76 cfs 1.314 af

Pond CB-17: Peak Elev=245.51' Storage=8,540 cf Inflow=32.89 cfs 2.729 af
Primary=20.19 cfs 2.703 af Secondary=1.62 cfs 0.019 af Tertiary=0.84 cfs 0.008 af Outflow=20.19 cfs 2.729 af

Pond CB-18: Peak Elev=244.34' Storage=2,344 cf Inflow=40.03 cfs 5.047 af
Outflow=33.18 cfs 5.047 af

Pond CB-19: Peak Elev=246.83' Storage=178 cf Inflow=32.08 cfs 3.154 af
Primary=28.07 cfs 3.134 af Secondary=4.33 cfs 0.019 af Outflow=32.41 cfs 3.154 af

Pond CB-2: Peak Elev=264.21' Storage=2,773 cf Inflow=9.22 cfs 1.414 af
Outflow=9.09 cfs 1.414 af

Pond CB-20: Peak Elev=246.12' Storage=43 cf Inflow=6.42 cfs 0.535 af
Primary=5.43 cfs 0.481 af Secondary=3.32 cfs 0.027 af Tertiary=3.32 cfs 0.027 af Outflow=6.64 cfs 0.535 af

Pond CB-22: Peak Elev=263.76' Storage=630 cf Inflow=10.61 cfs 1.876 af
Outflow=10.18 cfs 1.876 af

Pond CB-23: Peak Elev=246.98' Storage=56 cf Inflow=16.47 cfs 2.841 af
Outflow=16.47 cfs 2.841 af

Pond CB-24: Peak Elev=261.60' Storage=1,473 cf Inflow=2.07 cfs 0.196 af
12.0" Round Culvert n=0.013 L=26.0' S=0.0100 '/' Outflow=2.79 cfs 0.196 af

Pond CB-25: Peak Elev=245.06' Storage=54 cf Inflow=18.11 cfs 2.966 af
Primary=12.77 cfs 2.865 af Secondary=5.43 cfs 0.101 af Outflow=18.20 cfs 2.966 af

Pond CB-3: Peak Elev=262.83' Storage=176 cf Inflow=11.80 cfs 2.124 af
Outflow=11.45 cfs 2.124 af

Pond CB-4: Peak Elev=261.46' Storage=113 cf Inflow=14.57 cfs 2.666 af
18.0" Round Culvert n=0.013 L=241.0' S=0.0100 '/' Outflow=14.35 cfs 2.666 af

Pond CB-5: Peak Elev=255.27' Storage=68 cf Inflow=14.95 cfs 2.713 af
Outflow=14.89 cfs 2.713 af

Pond CB-6: Peak Elev=249.18' Storage=35 cf Inflow=16.15 cfs 2.810 af
Outflow=16.12 cfs 2.810 af

Pond CB-7: Peak Elev=244.11' Storage=870 cf Inflow=27.95 cfs 1.993 af
Outflow=24.47 cfs 1.993 af

Pond CB-8: Peak Elev=244.52' Storage=350 cf Inflow=17.66 cfs 1.076 af
Outflow=13.69 cfs 1.076 af

Pond CB-9: Peak Elev=244.46' Storage=753 cf Inflow=6.07 cfs 0.489 af
Outflow=10.27 cfs 0.489 af

Pond DET-1: Detention Basin Peak Elev=236.47' Storage=63,826 cf Inflow=42.98 cfs 5.218 af
Primary=24.18 cfs 5.218 af Secondary=0.00 cfs 0.000 af Outflow=24.18 cfs 5.218 af

Pond DIV-2: Diversion 2 Peak Elev=241.18' Storage=123 cf Inflow=33.18 cfs 5.047 af
Primary=24.25 cfs 4.760 af Secondary=8.95 cfs 0.287 af Outflow=33.20 cfs 5.047 af

Pond DP-1: Gidneytown Creek Inflow=141.73 cfs 23.931 af
Primary=141.73 cfs 23.931 af

Pond P-1: Wet Pond Peak Elev=239.46' Storage=174,984 cf Inflow=89.46 cfs 10.100 af
Primary=42.77 cfs 9.301 af Secondary=0.00 cfs 0.000 af Outflow=42.77 cfs 9.301 af

Pond PF-1: Pretreatment Forebay Peak Elev=239.49' Storage=4,218 cf Inflow=80.49 cfs 9.223 af
Outflow=77.86 cfs 9.223 af

Pond PF-2: Pretreatment Forebay Peak Elev=236.51' Storage=7,800 cf Inflow=28.23 cfs 5.088 af
Outflow=27.97 cfs 5.088 af

Total Runoff Area = 50.078 ac Runoff Volume = 25.790 af Average Runoff Depth = 6.18"
57.85% Pervious = 28.971 ac 42.15% Impervious = 21.108 ac

Summary for Subcatchment PS-1:

Runoff = 6.77 cfs @ 12.14 hrs, Volume= 0.687 af, Depth= 6.05"
Routed to Pond CB-1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 100-yr Rainfall=8.33"

Area (sf)	CN	Description
21,713	80	>75% Grass cover, Good, HSG D
20,423	98	Paved parking, HSG D
10,094	39	>75% Grass cover, Good, HSG A
7,090	98	Paved parking, HSG A
59,320	81	Weighted Average
31,807		53.62% Pervious Area
27,513		46.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.8	100	0.0500	0.24		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.15"
7.4	221	0.0050	0.49		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
14.2	321	Total			

Summary for Subcatchment PS-10:

Runoff = 1.71 cfs @ 12.04 hrs, Volume= 0.125 af, Depth= 5.82"
Routed to Pond CB-25 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 100-yr Rainfall=8.33"

Area (sf)	CN	Description
3,629	39	>75% Grass cover, Good, HSG A
7,636	98	Paved parking, HSG A
11,265	79	Weighted Average
3,629		32.21% Pervious Area
7,636		67.79% Impervious Area

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

Summary for Subcatchment PS-11:

Runoff = 22.99 cfs @ 12.04 hrs, Volume= 1.893 af, Depth= 7.97"
Routed to Pond CB-7 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 100-yr Rainfall=8.33"

Area (sf)	CN	Description
1,165	39	>75% Grass cover, Good, HSG A
436	98	Paved parking, HSG D
3,849	98	Roofs, HSG D
83,098	98	Roofs, HSG A
35,592	98	Paved parking, HSG A
124,140	97	Weighted Average
1,165		0.94% Pervious Area
122,975		99.06% Impervious Area

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

Summary for Subcatchment PS-12:

Runoff = 32.08 cfs @ 12.04 hrs, Volume= 2.673 af, Depth= 8.09"
Routed to Pond CB-19 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 100-yr Rainfall=8.33"

Area (sf)	CN	Description
155,036	98	Roofs, HSG D
17,692	98	Roofs, HSG A
172,728	98	Weighted Average
172,728		100.00% Impervious Area

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

Summary for Subcatchment PS-13:

Runoff = 6.42 cfs @ 12.04 hrs, Volume= 0.535 af, Depth= 8.09"
Routed to Pond CB-20 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 100-yr Rainfall=8.33"

Area (sf)	CN	Description
34,560	98	Roofs, HSG D
34,560		100.00% Impervious Area

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

Summary for Subcatchment PS-14:

Runoff = 6.53 cfs @ 12.04 hrs, Volume= 0.544 af, Depth= 8.09"
Routed to Pond CB-10 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 100-yr Rainfall=8.33"

Area (sf)	CN	Description
755	80	>75% Grass cover, Good, HSG D
34,385	98	Paved parking, HSG D
35,140	98	Weighted Average
755		2.15% Pervious Area
34,385		97.85% Impervious Area

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

Summary for Subcatchment PS-15:

Runoff = 2.05 cfs @ 12.04 hrs, Volume= 0.154 af, Depth= 6.53"
Routed to Pond PF-1 : Pretreatment Forebay

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 100-yr Rainfall=8.33"

Area (sf)	CN	Description
8,567	80	>75% Grass cover, Good, HSG D
3,726	98	Water Surface, 0% imp, HSG D
12,293	85	Weighted Average
12,293		100.00% Pervious Area

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

Summary for Subcatchment PS-16:

Runoff = 11.63 cfs @ 12.04 hrs, Volume= 0.877 af, Depth= 6.65"
Routed to Pond P-1 : Wet Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 100-yr Rainfall=8.33"

Area (sf)	CN	Description
45,151	80	>75% Grass cover, Good, HSG D
23,780	98	Water Surface, 0% imp, HSG D
68,931	86	Weighted Average
68,931		100.00% Pervious Area

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

Summary for Subcatchment PS-17:

Runoff = 4.78 cfs @ 12.04 hrs, Volume= 0.385 af, Depth= 7.73"
Routed to Pond CB-11 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 100-yr Rainfall=8.33"

Area (sf)	CN	Description
4,241	80	>75% Grass cover, Good, HSG D
21,819	98	Paved parking, HSG D
26,060	95	Weighted Average
4,241		16.27% Pervious Area
21,819		83.73% Impervious Area

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

Summary for Subcatchment PS-18:

Runoff = 5.70 cfs @ 12.04 hrs, Volume= 0.455 af, Depth= 7.61"
Routed to Pond CB-12 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 100-yr Rainfall=8.33"

Area (sf)	CN	Description
6,412	80	>75% Grass cover, Good, HSG D
24,812	98	Paved parking, HSG D
31,224	94	Weighted Average
6,412		20.54% Pervious Area
24,812		79.46% Impervious Area

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

Summary for Subcatchment PS-19:

Runoff = 2.59 cfs @ 12.04 hrs, Volume= 0.213 af, Depth= 7.97"
Routed to Pond CB-13 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 100-yr Rainfall=8.33"

Area (sf)	CN	Description
678	80	>75% Grass cover, Good, HSG D
13,313	98	Paved parking, HSG D
13,991	97	Weighted Average
678		4.85% Pervious Area
13,313		95.15% Impervious Area

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

Summary for Subcatchment PS-2:

Runoff = 8.59 cfs @ 12.06 hrs, Volume= 0.727 af, Depth= 7.25"
Routed to Pond CB-2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 100-yr Rainfall=8.33"

Area (sf)	CN	Description
19,091	80	>75% Grass cover, Good, HSG D
32,920	98	Paved parking, HSG D
390	39	>75% Grass cover, Good, HSG A
52,401	91	Weighted Average
19,481		37.18% Pervious Area
32,920		62.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	100	0.0400	0.22		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.15"
0.3	39	0.0967	2.18		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
7.8	139	Total			

Summary for Subcatchment PS-20:

Runoff = 0.14 cfs @ 12.04 hrs, Volume= 0.012 af, Depth= 8.09"
Routed to Pond CB-14 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 100-yr Rainfall=8.33"

Area (sf)	CN	Description
777	98	Paved parking, HSG D
777		100.00% Impervious Area

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

Summary for Subcatchment PS-21:

Runoff = 1.27 cfs @ 12.04 hrs, Volume= 0.100 af, Depth= 7.49"
Routed to Pond CB-15 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 100-yr Rainfall=8.33"

Area (sf)	CN	Description
2,127	80	>75% Grass cover, Good, HSG D
4,866	98	Paved parking, HSG D
6,993	93	Weighted Average
2,127		30.42% Pervious Area
4,866		69.58% Impervious Area

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

Summary for Subcatchment PS-22:

Runoff = 1.89 cfs @ 12.04 hrs, Volume= 0.148 af, Depth= 7.37"
Routed to Pond CB-16 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 100-yr Rainfall=8.33"

Area (sf)	CN	Description
3,470	80	>75% Grass cover, Good, HSG D
7,036	98	Paved parking, HSG D
10,506	92	Weighted Average
3,470		33.03% Pervious Area
7,036		66.97% Impervious Area

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

Summary for Subcatchment PS-23:

Runoff = 17.19 cfs @ 12.04 hrs, Volume= 1.415 af, Depth= 7.97"
Routed to Pond CB-17 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 100-yr Rainfall=8.33"

Area (sf)	CN	Description
4,379	80	>75% Grass cover, Good, HSG D
36,053	98	Paved parking, HSG D
52,393	98	Roofs, HSG D
92,825	97	Weighted Average
4,379		4.72% Pervious Area
88,446		95.28% Impervious Area

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

Summary for Subcatchment PS-24:

Runoff = 20.95 cfs @ 12.04 hrs, Volume= 1.746 af, Depth= 8.09"
Routed to Pond CB-18 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 100-yr Rainfall=8.33"

Area (sf)	CN	Description
1,790	80	>75% Grass cover, Good, HSG D
41,907	98	Paved parking, HSG D
69,120	98	Roofs, HSG D
112,817	98	Weighted Average
1,790		1.59% Pervious Area
111,027		98.41% Impervious Area

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

Summary for Subcatchment PS-25:

Runoff = 4.06 cfs @ 12.04 hrs, Volume= 0.310 af, Depth= 6.89"
Routed to Pond PF-2 : Pretreatment Forebay

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 100-yr Rainfall=8.33"

Area (sf)	CN	Description
12,606	80	>75% Grass cover, Good, HSG D
5,405	98	Paved parking, HSG D
5,492	98	Water Surface, 0% imp, HSG D
23,503	88	Weighted Average
18,098		77.00% Pervious Area
5,405		23.00% Impervious Area

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

Summary for Subcatchment PS-26:

Runoff = 3.68 cfs @ 12.04 hrs, Volume= 0.271 af, Depth= 5.94"
Routed to Pond DET-1 : Detention Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 100-yr Rainfall=8.33"

Area (sf)	CN	Description
23,847	80	>75% Grass cover, Good, HSG D
23,847		100.00% Pervious Area

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

Summary for Subcatchment PS-27:

Runoff = 8.55 cfs @ 12.04 hrs, Volume= 0.632 af, Depth= 6.05"
Routed to Pond BIO-1 : Filtration Bioretention (2.5ft filter media)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 100-yr Rainfall=8.33"

Area (sf)	CN	Description
52,036	80	>75% Grass cover, Good, HSG D
2,530	98	Paved parking, HSG D
54,566	81	Weighted Average
52,036		95.36% Pervious Area
2,530		4.64% Impervious Area

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

Summary for Subcatchment PS-28:

Runoff = 77.25 cfs @ 12.27 hrs, Volume= 9.405 af, Depth= 4.75"
Routed to Pond DP-1 : Gidneytown Creek

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 100-yr Rainfall=8.33"

Area (sf)	CN	Description
45,884	98	Paved parking, HSG D
350	98	Paved parking, HSG A
377,918	77	Woods, Good, HSG D
18,580	30	Woods, Good, HSG A
230,060	39	>75% Grass cover, Good, HSG A
339,862	80	>75% Grass cover, Good, HSG D
1,122	98	Water Surface, HSG A
21,350	98	Water Surface, HSG D
1,035,126	70	Weighted Average
966,420		93.36% Pervious Area
68,706		6.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.7	100	0.0130	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.15"
9.5	481	0.0145	0.84		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.2	154	0.0970	2.18		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
22.4	735	Total			

Summary for Subcatchment PS-29:

Runoff = 6.81 cfs @ 12.04 hrs, Volume= 0.568 af, Depth= 8.09"
Routed to Pond CB-8 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 100-yr Rainfall=8.33"

Area (sf)	CN	Description
28,170	98	Paved parking, HSG D
8,501	98	Paved parking, HSG A
36,671	98	Weighted Average
36,671		100.00% Impervious Area

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

Summary for Subcatchment PS-3:

Runoff = 5.84 cfs @ 12.04 hrs, Volume= 0.462 af, Depth= 7.49"
Routed to Pond CB-22 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 100-yr Rainfall=8.33"

Area (sf)	CN	Description
6,471	80	>75% Grass cover, Good, HSG D
25,183	98	Paved parking, HSG D
511	39	>75% Grass cover, Good, HSG A
50	98	Paved parking, HSG A
32,215	93	Weighted Average
6,982		21.67% Pervious Area
25,233		78.33% Impervious Area

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

Summary for Subcatchment PS-30:

Runoff = 6.07 cfs @ 12.04 hrs, Volume= 0.489 af, Depth= 7.73"
Routed to Pond CB-9 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 100-yr Rainfall=8.33"

Area (sf)	CN	Description
4,835	80	>75% Grass cover, Good, HSG D
28,221	98	Paved parking, HSG D
33,056	95	Weighted Average
4,835		14.63% Pervious Area
28,221		85.37% Impervious Area

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

Summary for Subcatchment PS-4:

Runoff = 2.07 cfs @ 12.12 hrs, Volume= 0.196 af, Depth= 4.51"
Routed to Pond CB-24 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 100-yr Rainfall=8.33"

Area (sf)	CN	Description
6,817	39	>75% Grass cover, Good, HSG A
15,824	80	>75% Grass cover, Good, HSG D
22,641	68	Weighted Average
22,641		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.9	100	0.0200	0.17		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.15"
2.4	184	0.0326	1.26		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
12.3	284	Total			

Summary for Subcatchment PS-5:

Runoff = 0.63 cfs @ 12.04 hrs, Volume= 0.052 af, Depth= 7.97"
Routed to Pond CB-3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 100-yr Rainfall=8.33"

Area (sf)	CN	Description
151	80	>75% Grass cover, Good, HSG D
3,231	98	Paved parking, HSG D
24	39	>75% Grass cover, Good, HSG A
3,406	97	Weighted Average
175		5.14% Pervious Area
3,231		94.86% Impervious Area

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

Summary for Subcatchment PS-6:

Runoff = 6.59 cfs @ 12.04 hrs, Volume= 0.542 af, Depth= 7.97"
Routed to Pond CB-4 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 100-yr Rainfall=8.33"

Area (sf)	CN	Description
1,235	80	>75% Grass cover, Good, HSG D
34,319	98	Paved parking, HSG D
20	98	Paved parking, HSG A
35,574	97	Weighted Average
1,235		3.47% Pervious Area
34,339		96.53% Impervious Area

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

Summary for Subcatchment PS-7:

Runoff = 0.64 cfs @ 12.04 hrs, Volume= 0.047 af, Depth= 5.94"
Routed to Pond CB-5 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 100-yr Rainfall=8.33"

Area (sf)	CN	Description
614	80	>75% Grass cover, Good, HSG D
1,329	98	Paved parking, HSG D
1,117	98	Paved parking, HSG A
1,083	39	>75% Grass cover, Good, HSG A
4,143	80	Weighted Average
1,697		40.96% Pervious Area
2,446		59.04% Impervious Area

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

Summary for Subcatchment PS-8:

Runoff = 1.32 cfs @ 12.04 hrs, Volume= 0.097 af, Depth= 5.82"
Routed to Pond CB-6 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 100-yr Rainfall=8.33"

Area (sf)	CN	Description
171	98	Paved parking, HSG D
2,834	39	>75% Grass cover, Good, HSG A
5,688	98	Paved parking, HSG A
8,693	79	Weighted Average
2,834		32.60% Pervious Area
5,859		67.40% Impervious Area

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

Summary for Subcatchment PS-9:

Runoff = 0.37 cfs @ 12.04 hrs, Volume= 0.031 af, Depth= 8.09"
Routed to Pond CB-23 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NY-32142-00 24-hr S1 100-yr Rainfall=8.33"

Area (sf)	CN	Description
2,000	98	Paved parking, HSG A
2,000		100.00% Impervious Area

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

Summary for Pond BIO-1: Filtration Bioretention (2.5ft filter media)

Inflow Area = 9.376 ac, 76.99% Impervious, Inflow Depth = 7.32" for 100-yr event
Inflow = 35.47 cfs @ 12.04 hrs, Volume= 5.720 af
Outflow = 32.31 cfs @ 12.16 hrs, Volume= 5.720 af, Atten= 9%, Lag= 7.1 min
Discarded = 0.26 cfs @ 12.50 hrs, Volume= 1.060 af
Primary = 32.06 cfs @ 12.16 hrs, Volume= 4.660 af
Routed to Pond DET-1 : Detention Basin
Secondary = 0.00 cfs @ 12.50 hrs, Volume= 0.000 af
Routed to Pond DP-1 : Gidneytown Creek

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 236.50' @ 12.50 hrs Surf.Area= 44,415 sf Storage= 42,945 cf
Flood Elev= 236.50' Surf.Area= 44,411 sf Storage= 42,886 cf

Plug-Flow detention time= 179.6 min calculated for 5.719 af (100% of inflow)
Center-of-Mass det. time= 179.6 min (969.3 - 789.8)

Volume	Invert	Avail.Storage	Storage Description
#1	235.50'	65,474 cf	**Bioretention (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
235.50	41,373	0	0
236.00	42,881	21,064	21,064
237.00	45,940	44,411	65,474

Device	Routing	Invert	Outlet Devices
#1	Discarded	235.50'	**0.250 in/hr Exfiltration Through Media over Surface area**
#2	Primary	236.00'	**60.0' long x 10.0' breadth Overflow Weir to Det**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#3	Secondary	236.00'	**20.0' long x 15.0' breadth Emergency Overflow Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.26 cfs @ 12.50 hrs HW=236.50' (Free Discharge)
└**1=Exfiltration Through Media** (Exfiltration Controls 0.26 cfs)

Primary OutFlow Max=31.33 cfs @ 12.16 hrs HW=236.35' TW=236.05' (Dynamic Tailwater)
└**2=Overflow Weir to Det** (Weir Controls 31.33 cfs @ 1.48 fps)

Secondary OutFlow Max=0.00 cfs @ 12.50 hrs HW=236.50' TW=0.00' (Dynamic Tailwater)
└**3=Emergency Overflow Weir** (Weir Controls 0.00 cfs @ 0.09 fps)

Summary for Pond CB-1:

[58] Hint: Peaked 1.12' above defined flood level
[90] Warning: Qout>Qin may require smaller dt or Finer Routing
[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=10)

Inflow Area = 1.362 ac, 46.38% Impervious, Inflow Depth = 6.05" for 100-yr event
Inflow = 6.77 cfs @ 12.14 hrs, Volume= 0.687 af
Outflow = 8.26 cfs @ 12.77 hrs, Volume= 0.688 af, Atten= 0%, Lag= 37.6 min
Primary = 8.26 cfs @ 12.77 hrs, Volume= 0.688 af
Routed to Pond CB-2 :
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond CB-11 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 264.43' @ 12.43 hrs Surf.Area= 9,114 sf Storage= 6,020 cf
Flood Elev= 263.31' Surf.Area= 18 sf Storage= 32 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 7.7 min (824.9 - 817.2)

Volume	Invert	Avail.Storage	Storage Description
#1	259.81'	32 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)
#2	263.31'	11,903 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		11,935 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
259.81	9	0	0
263.31	9	32	32

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
263.31	9	0	0
264.00	7,196	2,486	2,486
265.00	11,639	9,418	11,903

Device	Routing	Invert	Outlet Devices
#1	Primary	259.81'	**18.0" Round Culvert**
			L= 227.0' CPP, projecting, no headwall, Ke= 0.900
			Inlet / Outlet Invert= 259.81' / 257.54' S= 0.0100 '/' Cc= 0.900
			n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Primary	264.55'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50
			Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88
#3	Secondary	264.71'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50
			Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=7.48 cfs @ 12.77 hrs HW=264.14' TW=262.46' (Dynamic Tailwater)
└**1=Culvert** (Outlet Controls 7.48 cfs @ 4.23 fps)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=259.81' TW=259.05' (Dynamic Tailwater)
└**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond CB-10:

[58] Hint: Peaked 0.92' above defined flood level
[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=12)

Inflow Area = 0.807 ac, 97.85% Impervious, Inflow Depth = 8.49" for 100-yr event
Inflow = 9.84 cfs @ 12.04 hrs, Volume= 0.571 af
Outflow = 8.70 cfs @ 12.36 hrs, Volume= 0.571 af, Atten= 12%, Lag= 19.1 min
Primary = 8.70 cfs @ 12.36 hrs, Volume= 0.571 af
Routed to Pond CB-18 :
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond CB-18 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 244.42' @ 12.15 hrs Surf.Area= 8,035 sf Storage= 2,539 cf
Flood Elev= 243.50' Surf.Area= 32 sf Storage= 54 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 1.6 min (741.5 - 739.9)

Volume	Invert	Avail.Storage	Storage Description
#1	239.00'	54 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)
#2	243.50'	5,338 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		5,392 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
239.00	12	0	0
243.50	12	54	54

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
243.50	20	0	0
244.00	1,744	441	441
244.70	12,247	4,897	5,338

Device	Routing	Invert	Outlet Devices
#1	Primary	239.00'	**24.0" Round Culvert** L= 240.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 239.00' / 237.80' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Secondary	244.60'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=6.08 cfs @ 12.36 hrs HW=243.72' TW=243.44' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 6.08 cfs @ 1.94 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=239.00' TW=237.08' (Dynamic Tailwater)
↑**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond CB-11:

[58] Hint: Peaked 0.21' above defined flood level
[90] Warning: Qout>Qin may require smaller dt or Finer Routing
[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=12)

Inflow Area = 0.598 ac, 83.73% Impervious, Inflow Depth = 7.73" for 100-yr event
Inflow = 4.78 cfs @ 12.04 hrs, Volume= 0.385 af
Outflow = 6.18 cfs @ 12.10 hrs, Volume= 0.385 af, Atten= 0%, Lag= 4.0 min
Primary = 6.18 cfs @ 12.10 hrs, Volume= 0.385 af
Routed to Pond CB-12 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 263.26' @ 12.07 hrs Surf.Area= 1,466 sf Storage= 188 cf
Flood Elev= 263.05' Surf.Area= 18 sf Storage= 36 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.2 min (758.4 - 758.3)

Volume	Invert	Avail.Storage	Storage Description
#1	259.05'	36 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)
#2	263.05'	1,263 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		1,299 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
259.05	9	0	0
263.05	9	36	36

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
263.05	9	0	0
263.65	4,200	1,263	1,263

Device	Routing	Invert	Outlet Devices
#1	Primary	259.05'	**18.0" Round Culvert** L= 216.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 259.05' / 256.89' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=5.76 cfs @ 12.10 hrs HW=263.13' TW=262.17' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 5.76 cfs @ 3.26 fps)

Summary for Pond CB-12:

[58] Hint: Peaked 0.05' above defined flood level
[80] Warning: Exceeded Pond CB-11 by 0.51' @ 12.01 hrs (4.20 cfs 0.009 af)

Inflow Area = 1.315 ac, 81.40% Impervious, Inflow Depth = 7.66" for 100-yr event
Inflow = 10.51 cfs @ 12.03 hrs, Volume= 0.840 af
Outflow = 9.96 cfs @ 12.08 hrs, Volume= 0.840 af, Atten= 5%, Lag= 3.2 min
Primary = 9.96 cfs @ 12.08 hrs, Volume= 0.840 af
Routed to Pond CB-13 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 263.10' @ 12.03 hrs Surf.Area= 309 sf Storage= 81 cf
Flood Elev= 263.05' Surf.Area= 24 sf Storage= 74 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.1 min (761.1 - 761.0)

Volume	Invert	Avail.Storage	Storage Description
#1	256.89'	74 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)
#2	263.05'	1,868 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		1,942 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
256.89	12	0	0
263.05	12	74	74

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
263.05	12	0	0
263.82	4,839	1,868	1,868

Device	Routing	Invert	Outlet Devices
#1	Primary	256.89'	**18.0" Round Culvert** L= 192.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 256.89' / 254.97' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=9.89 cfs @ 12.08 hrs HW=262.94' TW=260.30' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 9.89 cfs @ 5.60 fps)

Summary for Pond CB-13:

Inflow Area = 1.636 ac, 84.10% Impervious, Inflow Depth = 7.72" for 100-yr event
Inflow = 12.63 cfs @ 12.03 hrs, Volume= 1.053 af
Outflow = 12.40 cfs @ 12.03 hrs, Volume= 1.053 af, Atten= 2%, Lag= 0.0 min
Primary = 12.40 cfs @ 12.03 hrs, Volume= 1.053 af
Routed to Pond CB-14 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 260.91' @ 12.03 hrs Surf.Area= 12 sf Storage= 71 cf
Flood Elev= 263.13' Surf.Area= 24 sf Storage= 98 cf

Plug-Flow detention time= 0.2 min calculated for 1.053 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (758.4 - 758.3)

Volume	Invert	Avail.Storage	Storage Description
#1	254.97'	98 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)
#2	263.13'	1,289 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		1,387 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
254.97	12	0	0
263.13	12	98	98

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
263.13	12	0	0
263.87	3,473	1,289	1,289

Device	Routing	Invert	Outlet Devices
#1	Primary	254.97'	**18.0" Round Culvert** L= 137.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 254.97' / 253.60' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=11.78 cfs @ 12.03 hrs HW=260.79' TW=257.72' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 11.78 cfs @ 6.67 fps)

Summary for Pond CB-14:

Inflow Area = 1.654 ac, 84.27% Impervious, Inflow Depth = 7.73" for 100-yr event
Inflow = 12.54 cfs @ 12.03 hrs, Volume= 1.065 af
Outflow = 12.44 cfs @ 12.03 hrs, Volume= 1.065 af, Atten= 1%, Lag= 0.1 min
Primary = 12.44 cfs @ 12.03 hrs, Volume= 1.065 af
Routed to Pond CB-15 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 257.78' @ 12.03 hrs Surf.Area= 12 sf Storage= 50 cf
Flood Elev= 262.48' Surf.Area= 12 sf Storage= 107 cf

Plug-Flow detention time= 0.1 min calculated for 1.065 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (758.4 - 758.2)

Volume	Invert	Avail.Storage	Storage Description
#1	253.60'	107 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
253.60	12	0	0
262.48	12	107	107
262.50	20	0	107

Device	Routing	Invert	Outlet Devices
#1	Primary	253.60'	**18.0" Round Culvert** L= 180.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 253.60' / 249.91' S= 0.0205 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Primary	262.48'	**20.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=12.38 cfs @ 12.03 hrs HW=257.75' TW=253.73' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 12.38 cfs @ 7.00 fps)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond CB-15:

[58] Hint: Peaked 0.12' above defined flood level
[90] Warning: Qout>Qin may require smaller dt or Finer Routing

Inflow Area = 1.815 ac, 82.97% Impervious, Inflow Depth = 7.71" for 100-yr event
Inflow = 13.70 cfs @ 12.03 hrs, Volume= 1.166 af
Outflow = 13.77 cfs @ 12.03 hrs, Volume= 1.166 af, Atten= 0%, Lag= 0.0 min
Primary = 13.77 cfs @ 12.03 hrs, Volume= 1.166 af
Routed to Pond CB-16 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 253.73' @ 12.03 hrs Surf.Area= 19 sf Storage= 46 cf
Flood Elev= 253.61' Surf.Area= 12 sf Storage= 44 cf

Plug-Flow detention time= 0.2 min calculated for 1.166 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (759.3 - 759.2)

Volume	Invert	Avail.Storage	Storage Description
#1	249.91'	47 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
249.91	12	0	0
253.61	12	44	44
253.75	20	2	47

Device	Routing	Invert	Outlet Devices
#1	Primary	249.91'	**18.0" Round Culvert** L= 180.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 249.91' / 241.94' S= 0.0443 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Primary	253.61'	**20.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=13.72 cfs @ 12.03 hrs HW=253.73' TW=247.82' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 11.77 cfs @ 6.66 fps)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 1.95 cfs @ 0.81 fps)

Summary for Pond CB-16:

[58] Hint: Peaked 0.24' above defined flood level
[90] Warning: Qout>Qin may require smaller dt or Finer Routing

Inflow Area = 2.056 ac, 81.10% Impervious, Inflow Depth = 7.67" for 100-yr event
Inflow = 15.65 cfs @ 12.03 hrs, Volume= 1.314 af
Outflow = 15.76 cfs @ 12.03 hrs, Volume= 1.314 af, Atten= 0%, Lag= 0.0 min
Primary = 15.76 cfs @ 12.03 hrs, Volume= 1.314 af
Routed to Pond CB-17 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 247.82' @ 12.03 hrs Surf.Area= 19 sf Storage= 71 cf
Flood Elev= 247.58' Surf.Area= 12 sf Storage= 68 cf

Plug-Flow detention time= 0.1 min calculated for 1.313 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (760.9 - 760.7)

Volume	Invert	Avail.Storage	Storage Description
#1	241.94'	72 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
241.94	12	0	0
247.58	12	68	68
247.85	20	4	72

Device	Routing	Invert	Outlet Devices
#1	Primary	241.94'	**18.0" Round Culvert** L= 194.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 241.94' / 240.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Primary	247.58'	**20.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50

Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65
2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=15.59 cfs @ 12.03 hrs HW=247.82' TW=245.10' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 10.02 cfs @ 5.67 fps)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 5.57 cfs @ 1.16 fps)

Summary for Pond CB-17:

[58] Hint: Peaked 1.21' above defined flood level
[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=7)

Inflow Area = 4.187 ac, 88.32% Impervious, Inflow Depth = 7.82" for 100-yr event
Inflow = 32.89 cfs @ 12.03 hrs, Volume= 2.729 af
Outflow = 20.19 cfs @ 12.39 hrs, Volume= 2.729 af, Atten= 39%, Lag= 21.4 min
Primary = 20.19 cfs @ 12.39 hrs, Volume= 2.703 af
Routed to Pond CB-18 :
Secondary = 1.62 cfs @ 12.15 hrs, Volume= 0.019 af
Routed to Pond PF-2 : Pretreatment Forebay
Tertiary = 0.84 cfs @ 12.15 hrs, Volume= 0.008 af
Routed to Pond DP-1 : Gidneytown Creek

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 245.51' @ 12.15 hrs Surf.Area= 15,496 sf Storage= 8,540 cf
Flood Elev= 244.30' Surf.Area= 40 sf Storage= 96 cf

Plug-Flow detention time= 1.5 min calculated for 2.729 af (100% of inflow)
Center-of-Mass det. time= 1.5 min (755.3 - 753.8)

Volume	Invert	Avail.Storage	Storage Description
#1	239.50'	96 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)
#2	244.30'	18,411 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		18,507 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
239.50	20	0	0
244.30	20	96	96

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
244.30	20	0	0
245.00	7,740	2,716	2,716
245.35	12,368	3,519	6,235
246.00	25,096	12,176	18,411

Device	Routing	Invert	Outlet Devices
#1	Primary	239.50'	**24.0" Round Culvert** L= 192.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 239.50' / 237.58' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Primary	245.26'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88
#3	Secondary	245.34'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88
#4	Tertiary	245.40'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=18.12 cfs @ 12.39 hrs HW=245.17' TW=242.87' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 18.12 cfs @ 5.77 fps)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Secondary OutFlow Max=1.62 cfs @ 12.15 hrs HW=245.51' TW=236.38' (Dynamic Tailwater)
└─**3=Broad-Crested Rectangular Weir** (Weir Controls 1.62 cfs @ 0.96 fps)

Tertiary OutFlow Max=0.84 cfs @ 12.15 hrs HW=245.51' TW=0.00' (Dynamic Tailwater)
└─**4=Broad-Crested Rectangular Weir** (Weir Controls 0.84 cfs @ 0.77 fps)

Summary for Pond CB-18:

[58] Hint: Peaked 0.84' above defined flood level
[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=2)
[80] Warning: Exceeded Pond CB-10 by 2.73' @ 12.37 hrs (18.85 cfs 0.088 af)

Inflow Area = 7.583 ac, 92.78% Impervious, Inflow Depth = 7.99" for 100-yr event
Inflow = 40.03 cfs @ 12.02 hrs, Volume= 5.047 af
Outflow = 33.18 cfs @ 12.10 hrs, Volume= 5.047 af, Atten= 17%, Lag= 4.4 min
Primary = 33.18 cfs @ 12.10 hrs, Volume= 5.047 af
Routed to Pond DIV-2 : Diversion 2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 244.34' @ 12.10 hrs Surf.Area= 5,251 sf Storage= 2,344 cf
Flood Elev= 243.50' Surf.Area= 40 sf Storage= 128 cf

Plug-Flow detention time= 0.3 min calculated for 5.047 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (748.9 - 748.7)

Volume	Invert	Avail.Storage	Storage Description
#1	237.08'	128 cf	**STRUCTURE (Prismatic)**Listed below (Recalc)
#2	243.50'	4,850 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
		4,978 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
237.08	20	0	0
243.50	20	128	128

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
243.50	20	0	0
244.75	7,740	4,850	4,850

Device	Routing	Invert	Outlet Devices
#1	Primary	237.08'	**30.0" Round Culvert** L= 64.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 237.08' / 236.06' S= 0.0159 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 4.91 sf
#2	Primary	244.70'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=33.17 cfs @ 12.10 hrs HW=244.34' TW=241.18' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 33.17 cfs @ 6.76 fps)
└**2=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

Summary for Pond CB-19:

[93] Warning: Storage range exceeded by 0.23'
[58] Hint: Peaked 0.88' above defined flood level
[90] Warning: Qout>Qin may require smaller dt or Finer Routing
[80] Warning: Exceeded Pond CB-20 by 0.86' @ 11.98 hrs (8.68 cfs 0.071 af)

Inflow Area = 4.759 ac,100.00% Impervious, Inflow Depth = 7.95" for 100-yr event
Inflow = 32.08 cfs @ 12.04 hrs, Volume= 3.154 af
Outflow = 32.41 cfs @ 12.03 hrs, Volume= 3.154 af, Atten= 0%, Lag= 0.0 min
Primary = 28.07 cfs @ 12.03 hrs, Volume= 3.134 af
Routed to Pond PF-1 : Pretreatment Forebay
Secondary = 4.33 cfs @ 12.03 hrs, Volume= 0.019 af
Routed to Pond CB-8 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 246.83' @ 12.03 hrs Surf.Area= 170 sf Storage= 178 cf
Flood Elev= 245.95' Surf.Area= 40 sf Storage= 123 cf

Plug-Flow detention time= 0.3 min calculated for 3.154 af (100% of inflow)

Center-of-Mass det. time= 0.1 min (741.2 - 741.1)

Volume	Invert	Avail.Storage	Storage Description
#1	239.82'	123 cf	**STRUCTURE (Prismatic)**Listed below (Recalc)
#2	245.95'	55 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
		178 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
239.82	20	0	0
245.95	20	123	123

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
245.95	20	0	0
246.60	150	55	55

Device	Routing	Invert	Outlet Devices
#1	Primary	239.82'	**24.0" Round Culvert** L= 254.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 239.82' / 238.55' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Secondary	245.95'	**2.0' long x 2.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

Primary OutFlow Max=28.03 cfs @ 12.03 hrs HW=246.81' TW=239.33' (Dynamic Tailwater)
└**1=Culvert** (Barrel Controls 28.03 cfs @ 8.92 fps)

Secondary OutFlow Max=4.20 cfs @ 12.03 hrs HW=246.81' TW=244.38' (Dynamic Tailwater)
└**2=Broad-Crested Rectangular Weir**(Weir Controls 4.20 cfs @ 2.43 fps)

Summary for Pond CB-2:

[58] Hint: Peaked 0.85' above defined flood level
[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=20)
[80] Warning: Exceeded Pond CB-1 by 0.89' @ 11.97 hrs (5.44 cfs 0.049 af)

Inflow Area = 2.565 ac, 54.09% Impervious, Inflow Depth = 6.62" for 100-yr event
Inflow = 9.22 cfs @ 12.77 hrs, Volume= 1.414 af
Outflow = 9.09 cfs @ 12.71 hrs, Volume= 1.414 af, Atten= 1%, Lag= 0.0 min
Primary = 9.09 cfs @ 12.71 hrs, Volume= 1.414 af
Routed to Pond CB-22 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 264.21' @ 12.21 hrs Surf.Area= 7,942 sf Storage= 2,773 cf
Flood Elev= 263.36' Surf.Area= 24 sf Storage= 70 cf

Plug-Flow detention time= 1.5 min calculated for 1.414 af (100% of inflow)
Center-of-Mass det. time= 1.4 min (802.1 - 800.7)

Volume	Invert	Avail.Storage	Storage Description
#1	257.54'	70 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)
#2	263.36'	14,129 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		14,199 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
257.54	12	0	0
263.36	12	70	70

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
263.36	12	0	0
264.00	4,336	1,391	1,391
265.00	21,139	12,738	14,129

Device	Routing	Invert	Outlet Devices
#1	Primary	257.54'	**18.0" Round Culvert** L= 251.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 257.54' / 255.03' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Primary	264.55'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=8.91 cfs @ 12.71 hrs HW=263.55' TW=260.99' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 8.91 cfs @ 5.04 fps)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond CB-20:

[58] Hint: Peaked 0.17' above defined flood level
[90] Warning: Qout>Qin may require smaller dt or Finer Routing
[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=6)

Inflow Area = 0.793 ac,100.00% Impervious, Inflow Depth = 8.09" for 100-yr event
Inflow = 6.42 cfs @ 12.04 hrs, Volume= 0.535 af
Outflow = 6.64 cfs @ 12.04 hrs, Volume= 0.535 af, Atten= 0%, Lag= 0.2 min
Primary = 5.43 cfs @ 12.12 hrs, Volume= 0.481 af
Routed to Pond CB-19 :
Secondary = 3.32 cfs @ 12.04 hrs, Volume= 0.027 af
Routed to Pond CB-10 :
Tertiary = 3.32 cfs @ 12.04 hrs, Volume= 0.027 af
Routed to Pond CB-18 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 246.12' @ 12.04 hrs Surf.Area= 80 sf Storage= 43 cf
Flood Elev= 245.95' Surf.Area= 18 sf Storage= 36 cf

Plug-Flow detention time= 0.1 min calculated for 0.535 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (740.9 - 740.8)

Volume	Invert	Avail.Storage	Storage Description
#1	241.97'	36 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)
#2	245.95'	171 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		206 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
241.97	9	0	0
245.95	9	36	36

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
245.95	9	0	0
246.90	350	171	171

Device	Routing	Invert	Outlet Devices
#1	Primary	241.97'	**24.0" Round Culvert** L= 432.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 241.97' / 239.81' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Secondary	245.95'	**20.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88
#3	Tertiary	245.95'	**20.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=5.82 cfs @ 12.12 hrs HW=245.23' TW=244.84' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 5.82 cfs @ 1.85 fps)

Secondary OutFlow Max=3.32 cfs @ 12.04 hrs HW=246.12' TW=244.18' (Dynamic Tailwater)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 3.32 cfs @ 0.97 fps)

Tertiary OutFlow Max=3.32 cfs @ 12.04 hrs HW=246.12' TW=244.18' (Dynamic Tailwater)
└─**3=Broad-Crested Rectangular Weir** (Weir Controls 3.32 cfs @ 0.97 fps)

Summary for Pond CB-22:

[58] Hint: Peaked 0.50' above defined flood level
[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=2)

Inflow Area = 3.304 ac, 59.52% Impervious, Inflow Depth = 6.81" for 100-yr event
Inflow = 10.61 cfs @ 11.97 hrs, Volume= 1.876 af
Outflow = 10.18 cfs @ 12.72 hrs, Volume= 1.876 af, Atten= 4%, Lag= 45.0 min
Primary = 10.18 cfs @ 12.72 hrs, Volume= 1.876 af
Routed to Pond CB-3 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 263.76' @ 12.09 hrs Surf.Area= 2,126 sf Storage= 630 cf
Flood Elev= 263.26' Surf.Area= 24 sf Storage= 99 cf

Plug-Flow detention time= 0.3 min calculated for 1.876 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (793.8 - 793.6)

Volume	Invert	Avail.Storage	Storage Description
#1	255.03'	99 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)
#2	263.26'	9,471 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		9,570 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
255.03	12	0	0
263.26	12	99	99

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
263.26	12	0	0
264.00	3,123	1,160	1,160
265.00	13,500	8,312	9,471

Device	Routing	Invert	Outlet Devices
#1	Primary	255.03'	**18.0" Round Culvert** L= 99.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 255.03' / 254.04' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Primary	264.57'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=9.46 cfs @ 12.72 hrs HW=261.04' TW=259.05' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 9.46 cfs @ 5.35 fps)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond CB-23:

[58] Hint: Peaked 0.25' above defined flood level

Inflow Area = 5.060 ac, 60.59% Impervious, Inflow Depth = 6.74" for 100-yr event
Inflow = 16.47 cfs @ 12.02 hrs, Volume= 2.841 af
Outflow = 16.47 cfs @ 12.02 hrs, Volume= 2.841 af, Atten= 0%, Lag= 0.0 min
Primary = 16.47 cfs @ 12.02 hrs, Volume= 2.841 af
Routed to Pond CB-25 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 246.98' @ 12.02 hrs Surf.Area= 19 sf Storage= 56 cf
Flood Elev= 246.73' Surf.Area= 12 sf Storage= 52 cf

Plug-Flow detention time= 0.1 min calculated for 2.840 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (789.1 - 789.1)

Volume	Invert	Avail.Storage	Storage Description
#1	242.40'	56 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
242.40	12	0	0
246.73	12	52	52
247.00	20	4	56

Device	Routing	Invert	Outlet Devices
#1	Primary	242.40'	**18.0" Round Culvert** L= 135.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 242.40' / 240.70' S= 0.0126 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Primary	246.73'	**24.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=16.39 cfs @ 12.02 hrs HW=246.98' TW=245.06' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 9.30 cfs @ 5.26 fps)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 7.09 cfs @ 1.19 fps)

Summary for Pond CB-24:

[58] Hint: Peaked 1.10' above defined flood level
[90] Warning: Qout>Qin may require smaller dt or Finer Routing
[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=36)

Inflow Area = 0.520 ac, 0.00% Impervious, Inflow Depth = 4.51" for 100-yr event
Inflow = 2.07 cfs @ 12.12 hrs, Volume= 0.196 af
Outflow = 2.79 cfs @ 12.63 hrs, Volume= 0.196 af, Atten= 0%, Lag= 30.6 min
Primary = 2.79 cfs @ 12.63 hrs, Volume= 0.196 af
Routed to Pond CB-3 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 261.60' @ 12.24 hrs Surf.Area= 3,057 sf Storage= 1,473 cf
Flood Elev= 260.50' Surf.Area= 8 sf Storage= 16 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 4.4 min (854.2 - 849.8)

Volume	Invert	Avail.Storage	Storage Description
#1	256.50'	16 cf	**STRUCTURE (Prismatic)**Listed below (Recalc)
#2	260.50'	16,857 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
		16,873 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
256.50	4	0	0
260.50	4	16	16

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
260.50	4	0	0
261.00	1,000	251	251
262.00	4,450	2,725	2,976
263.00	6,787	5,619	8,595
264.00	9,737	8,262	16,857

Device	Routing	Invert	Outlet Devices
#1	Primary	256.50'	**12.0" Round Culvert** L= 26.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 256.50' / 256.24' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.13 cfs @ 12.63 hrs HW=260.98' TW=260.47' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 2.13 cfs @ 2.71 fps)

Summary for Pond CB-25:

[58] Hint: Peaked 0.36' above defined flood level
[90] Warning: Qout>Qin may require smaller dt or Finer Routing

Inflow Area = 5.318 ac, 60.94% Impervious, Inflow Depth = 6.69" for 100-yr event
Inflow = 18.11 cfs @ 12.02 hrs, Volume= 2.966 af
Outflow = 18.20 cfs @ 12.02 hrs, Volume= 2.966 af, Atten= 0%, Lag= 0.0 min
Primary = 12.77 cfs @ 12.02 hrs, Volume= 2.865 af
Routed to Pond PF-1 : Pretreatment Forebay
Secondary = 5.43 cfs @ 12.02 hrs, Volume= 0.101 af
Routed to Pond CB-7 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 245.06' @ 12.02 hrs Surf.Area= 31 sf Storage= 54 cf
Flood Elev= 244.70' Surf.Area= 24 sf Storage= 48 cf

Plug-Flow detention time= 0.1 min calculated for 2.966 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (790.3 - 790.3)

Volume	Invert	Avail.Storage	Storage Description
#1	240.70'	48 cf	**structure (Prismatic)**Listed below (Recalc)
#2	244.70'	6 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)
		54 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
240.70	12	0	0
244.70	12	48	48

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
244.70	12	0	0
245.10	20	6	6

Device	Routing	Invert	Outlet Devices
#1	Primary	240.70'	**18.0" Round Culvert** L= 82.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 240.70' / 239.00' S= 0.0207 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Secondary	244.70'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=12.77 cfs @ 12.02 hrs HW=245.06' TW=239.30' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 12.77 cfs @ 7.23 fps)

Secondary OutFlow Max=5.43 cfs @ 12.02 hrs HW=245.06' TW=243.84' (Dynamic Tailwater)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 5.43 cfs @ 1.49 fps)

Summary for Pond CB-3:

[80] Warning: Exceeded Pond CB-24 by 1.79' @ 12.03 hrs (4.00 cfs 0.075 af)

Inflow Area = 3.902 ac, 52.30% Impervious, Inflow Depth = 6.53" for 100-yr event
Inflow = 11.80 cfs @ 12.63 hrs, Volume= 2.124 af
Outflow = 11.45 cfs @ 12.59 hrs, Volume= 2.124 af, Atten= 3%, Lag= 0.0 min
Primary = 11.45 cfs @ 12.59 hrs, Volume= 2.124 af
Routed to Pond CB-4 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 262.83' @ 12.07 hrs Surf.Area= 20 sf Storage= 176 cf
Flood Elev= 264.59' Surf.Area= 40 sf Storage= 211 cf

Plug-Flow detention time= 0.3 min calculated for 2.124 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (798.4 - 798.2)

Volume	Invert	Avail.Storage	Storage Description
#1	254.04'	211 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)
#2	264.59'	258 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		469 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
254.04	20	0	0
264.59	20	211	211

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
264.59	20	0	0
265.00	500	107	107
265.20	1,010	151	258

Device	Routing	Invert	Outlet Devices
#1	Primary	254.04'	**18.0" Round Culvert** L= 203.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 254.04' / 252.01' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Primary	265.15'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=10.42 cfs @ 12.59 hrs HW=260.77' TW=257.74' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 10.42 cfs @ 5.90 fps)
└—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond CB-4:

Inflow Area = 4.719 ac, 59.95% Impervious, Inflow Depth = 6.78" for 100-yr event
Inflow = 14.57 cfs @ 12.01 hrs, Volume= 2.666 af
Outflow = 14.35 cfs @ 12.01 hrs, Volume= 2.666 af, Atten= 1%, Lag= 0.1 min
Primary = 14.35 cfs @ 12.01 hrs, Volume= 2.666 af
Routed to Pond CB-5 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 261.46' @ 12.02 hrs Surf.Area= 12 sf Storage= 113 cf
Flood Elev= 263.70' Surf.Area= 24 sf Storage= 140 cf

Plug-Flow detention time= 0.1 min calculated for 2.666 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (788.1 - 788.0)

Volume	Invert	Avail.Storage	Storage Description
#1	252.01'	140 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)
#2	263.70'	8,379 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		8,519 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
252.01	12	0	0
263.70	12	140	140

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
263.70	12	0	0
264.00	970	147	147
265.00	15,493	8,232	8,379

Device	Routing	Invert	Outlet Devices
#1	Primary	252.01'	**18.0" Round Culvert** L= 241.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 252.01' / 249.60' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=13.82 cfs @ 12.01 hrs HW=261.19' TW=255.19' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 13.82 cfs @ 7.82 fps)

Summary for Pond CB-5:

Inflow Area = 4.814 ac, 59.93% Impervious, Inflow Depth = 6.76" for 100-yr event
Inflow = 14.95 cfs @ 12.01 hrs, Volume= 2.713 af
Outflow = 14.89 cfs @ 12.02 hrs, Volume= 2.713 af, Atten= 0%, Lag= 0.2 min
Primary = 14.89 cfs @ 12.02 hrs, Volume= 2.713 af
Routed to Pond CB-6 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 255.27' @ 12.02 hrs Surf.Area= 12 sf Storage= 68 cf
Flood Elev= 258.09' Surf.Area= 12 sf Storage= 102 cf

Plug-Flow detention time= 0.1 min calculated for 2.713 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (788.6 - 788.5)

Volume	Invert	Avail.Storage	Storage Description
#1	249.60'	105 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
249.60	12	0	0
258.09	12	102	102
258.30	20	3	105

Device	Routing	Invert	Outlet Devices
#1	Primary	249.60'	**18.0" Round Culvert** L= 178.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 249.60' / 245.40' S= 0.0236 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Primary	258.09'	**20.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=14.84 cfs @ 12.02 hrs HW=255.23' TW=249.18' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 14.84 cfs @ 8.40 fps)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond CB-6:

[58] Hint: Peaked 0.25' above defined flood level

Inflow Area = 5.014 ac, 60.23% Impervious, Inflow Depth = 6.72" for 100-yr event
Inflow = 16.15 cfs @ 12.02 hrs, Volume= 2.810 af
Outflow = 16.12 cfs @ 12.02 hrs, Volume= 2.810 af, Atten= 0%, Lag= 0.0 min
Primary = 16.12 cfs @ 12.02 hrs, Volume= 2.810 af
Routed to Pond CB-23 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 249.18' @ 12.02 hrs Surf.Area= 18 sf Storage= 35 cf
Flood Elev= 248.93' Surf.Area= 9 sf Storage= 32 cf

Plug-Flow detention time= 0.1 min calculated for 2.809 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (789.6 - 789.5)

Volume	Invert	Avail.Storage	Storage Description
#1	245.40'	36 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
245.40	9	0	0
248.93	9	32	32
249.25	20	5	36

Device	Routing	Invert	Outlet Devices
#1	Primary	245.40'	**18.0" Round Culvert** L= 85.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 245.40' / 242.40' S= 0.0353 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Primary	248.93'	**20.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=16.06 cfs @ 12.02 hrs HW=249.18' TW=246.98' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 9.97 cfs @ 5.64 fps)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 6.08 cfs @ 1.20 fps)

Summary for Pond CB-7:

[58] Hint: Peaked 0.61' above defined flood level

Inflow Area = 2.850 ac, 99.06% Impervious, Inflow Depth = 8.39" for 100-yr event
Inflow = 27.95 cfs @ 12.03 hrs, Volume= 1.993 af
Outflow = 24.47 cfs @ 12.07 hrs, Volume= 1.993 af, Atten= 12%, Lag= 2.4 min
Primary = 24.47 cfs @ 12.07 hrs, Volume= 1.993 af
Routed to Pond PF-1 : Pretreatment Forebay

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 244.11' @ 12.07 hrs Surf.Area= 3,318 sf Storage= 870 cf
Flood Elev= 243.50' Surf.Area= 58 sf Storage= 92 cf

Plug-Flow detention time= 0.4 min calculated for 1.993 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (746.4 - 746.2)

Volume	Invert	Avail.Storage	Storage Description
#1	238.91'	92 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)
#2	243.50'	8,702 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		8,793 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
238.91	20	0	0
243.50	20	92	92

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
243.50	38	0	0
244.00	1,938	494	494
245.00	14,477	8,208	8,702

Device	Routing	Invert	Outlet Devices
#1	Primary	238.91'	**24.0" Round Culvert** L= 81.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 238.91' / 238.50' S= 0.0051 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Primary	244.60'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=24.47 cfs @ 12.07 hrs HW=244.11' TW=239.40' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 24.47 cfs @ 7.79 fps)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond CB-8:

[58] Hint: Peaked 0.22' above defined flood level
[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=2)
[80] Warning: Exceeded Pond CB-9 by 0.23' @ 12.01 hrs (2.89 cfs 0.006 af)

Inflow Area = 1.601 ac, 93.07% Impervious, Inflow Depth = 8.07" for 100-yr event
Inflow = 17.66 cfs @ 12.03 hrs, Volume= 1.076 af
Outflow = 13.69 cfs @ 12.04 hrs, Volume= 1.076 af, Atten= 22%, Lag= 0.3 min
Primary = 13.69 cfs @ 12.04 hrs, Volume= 1.076 af
Routed to Pond PF-1 : Pretreatment Forebay

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 244.52' @ 12.04 hrs Surf.Area= 2,621 sf Storage= 350 cf
Flood Elev= 244.30' Surf.Area= 24 sf Storage= 57 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.1 min (748.7 - 748.5)

Volume	Invert	Avail.Storage	Storage Description
#1	239.53'	57 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)
#2	244.30'	4,841 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		4,898 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
239.53	12	0	0
244.30	12	57	57

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
244.30	12	0	0
245.00	8,154	2,858	2,858
245.20	11,676	1,983	4,841

Device	Routing	Invert	Outlet Devices
#1	Primary	239.53'	**18.0" Round Culvert** L= 144.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 239.53' / 238.81' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Primary	245.10'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=13.45 cfs @ 12.04 hrs HW=244.39' TW=239.33' (Dynamic Tailwater)
└─**1=Culvert** (Barrel Controls 13.45 cfs @ 7.61 fps)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond CB-9:

[58] Hint: Peaked 0.41' above defined flood level
[90] Warning: Qout>Qin may require smaller dt or Finer Routing
[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=10)

Inflow Area = 0.759 ac, 85.37% Impervious, Inflow Depth = 7.73" for 100-yr event
Inflow = 6.07 cfs @ 12.04 hrs, Volume= 0.489 af
Outflow = 10.27 cfs @ 12.14 hrs, Volume= 0.489 af, Atten= 0%, Lag= 6.3 min
Primary = 10.27 cfs @ 12.14 hrs, Volume= 0.489 af
Routed to Pond CB-8 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 244.46' @ 12.08 hrs Surf.Area= 3,527 sf Storage= 753 cf
Flood Elev= 244.05' Surf.Area= 18 sf Storage= 32 cf

Plug-Flow detention time= 0.3 min calculated for 0.489 af (100% of inflow)
Center-of-Mass det. time= 0.3 min (758.6 - 758.3)

Volume	Invert	Avail.Storage	Storage Description
#1	240.55'	32 cf	**STRUCTURE (Prismatic)** Listed below (Recalc)
#2	244.05'	5,860 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		5,892 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
240.55	9	0	0
244.05	9	32	32

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
244.05	9	0	0
245.00	8,154	3,877	3,877
245.20	11,676	1,983	5,860

Device	Routing	Invert	Outlet Devices
#1	Primary	240.55'	**18.0" Round Culvert** L= 204.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 240.55' / 239.53' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Primary	245.10'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=4.09 cfs @ 12.14 hrs HW=244.30' TW=243.83' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 4.09 cfs @ 2.32 fps)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond DET-1: Detention Basin

[44] Hint: Outlet device #2 is below defined storage

Inflow Area = 9.923 ac, 72.74% Impervious, Inflow Depth = 6.31" for 100-yr event
Inflow = 42.98 cfs @ 12.12 hrs, Volume= 5.218 af
Outflow = 24.18 cfs @ 12.51 hrs, Volume= 5.218 af, Atten= 44%, Lag= 23.1 min
Primary = 24.18 cfs @ 12.51 hrs, Volume= 5.218 af
Routed to Pond DP-1 : Gidneytown Creek
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond DP-1 : Gidneytown Creek

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 236.47' @ 12.51 hrs Surf.Area= 17,657 sf Storage= 63,826 cf
Flood Elev= 236.50' Surf.Area= 17,706 sf Storage= 64,365 cf

Plug-Flow detention time= 173.9 min calculated for 5.217 af (100% of inflow)
Center-of-Mass det. time= 174.2 min (990.8 - 816.7)

Volume	Invert	Avail.Storage	Storage Description
#1	232.00'	73,418 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
232.00	11,095	0	0
233.00	12,455	11,775	11,775
234.00	13,886	13,171	24,946
235.00	15,369	14,628	39,573
236.00	16,908	16,139	55,712
237.00	18,504	17,706	73,418

Device	Routing	Invert	Outlet Devices
#1	Primary	231.91'	**12.0" Round Culvert** L= 15.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 231.91' / 231.84' S= 0.0047 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	231.91'	**3.0" Vert. CPv Orifice** C= 0.600 Limited to weir flow at low heads
#3	Device 1	233.65'	**4.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#4	Primary	236.05'	**10.0' long x 5.0' breadth Stabilized Overflow to Wetland** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88
#5	Secondary	236.50'	**10.0' long x 5.0' breadth Emergency Overflow** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88
#6	Primary	233.65'	**12.0" Round Culvert X 2.00** L= 30.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 233.65' / 233.50' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=24.17 cfs @ 12.51 hrs HW=236.47' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 6.02 cfs @ 7.66 fps)
└─**2=CPv Orifice** (Passes < 0.50 cfs potential flow)
└─**3=Broad-Crested Rectangular Weir** (Passes < 62.86 cfs potential flow)
└─**4=Stabilized Overflow to Wetland** (Weir Controls 6.84 cfs @ 1.63 fps)
└─**6=Culvert** (Barrel Controls 11.32 cfs @ 7.21 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=232.00' TW=0.00' (Dynamic Tailwater)
└─**5=Emergency Overflow** (Controls 0.00 cfs)

Summary for Pond DIV-2: Diversion 2

[90] Warning: Qout>Qin may require smaller dt or Finer Routing

Inflow Area = 7.583 ac, 92.78% Impervious, Inflow Depth = 7.99" for 100-yr event
Inflow = 33.18 cfs @ 12.10 hrs, Volume= 5.047 af
Outflow = 33.20 cfs @ 12.10 hrs, Volume= 5.047 af, Atten= 0%, Lag= 0.1 min
Primary = 24.25 cfs @ 12.10 hrs, Volume= 4.760 af
Routed to Pond PF-2 : Pretreatment Forebay
Secondary = 8.95 cfs @ 12.10 hrs, Volume= 0.287 af
Routed to Pond DET-1 : Detention Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 241.18' @ 12.10 hrs Surf.Area= 24 sf Storage= 123 cf
Flood Elev= 244.67' Surf.Area= 24 sf Storage= 207 cf

Plug-Flow detention time= 0.2 min calculated for 5.047 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (749.0 - 748.9)

Volume	Invert	Avail.Storage	Storage Description
#1	236.06'	207 cf	**Ponding before Weir (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
236.06	24	0	0
244.67	24	207	207

Device	Routing	Invert	Outlet Devices
#1	Primary	236.06'	**24.0" Round Outlet Pipe to Bioretention** L= 44.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 236.06' / 235.50' S= 0.0127 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Device 3	240.50'	**5.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#3	Secondary	236.06'	**24.0" Round Outlet Pipe to Detention** L= 45.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 236.06' / 235.83' S= 0.0051 '/' Cc= 0.900 n= 0.012 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=24.25 cfs @ 12.10 hrs HW=241.18' TW=236.38' (Dynamic Tailwater)
└**1=Outlet Pipe to Bioretention** (Inlet Controls 24.25 cfs @ 7.72 fps)

Secondary OutFlow Max=8.95 cfs @ 12.10 hrs HW=241.18' TW=235.69' (Dynamic Tailwater)
└**3=Outlet Pipe to Detention** (Passes 8.95 cfs of 24.25 cfs potential flow)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 8.95 cfs @ 2.62 fps)

Summary for Pond DP-1: Gidneytown Creek

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 50.078 ac, 42.15% Impervious, Inflow Depth > 5.73" for 100-yr event
Inflow = 141.73 cfs @ 12.27 hrs, Volume= 23.931 af
Primary = 141.73 cfs @ 12.27 hrs, Volume= 23.931 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Pond P-1: Wet Pond

Inflow Area = 16.392 ac, 75.11% Impervious, Inflow Depth = 7.39" for 100-yr event
Inflow = 89.46 cfs @ 12.04 hrs, Volume= 10.100 af
Outflow = 42.77 cfs @ 12.27 hrs, Volume= 9.301 af, Atten= 52%, Lag= 13.8 min
Primary = 42.77 cfs @ 12.27 hrs, Volume= 9.301 af
Routed to Pond DP-1 : Gidneytown Creek
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond DP-1 : Gidneytown Creek

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 239.46' @ 12.27 hrs Surf.Area= 84,741 sf Storage= 174,984 cf
Flood Elev= 239.50' Surf.Area= 84,891 sf Storage= 177,145 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 408.5 min (1,173.1 - 764.6)

Volume	Invert	Avail.Storage	Storage Description
#1	232.00'	0 cf	**Permanent Pool (Prismatic)** Listed below (Recalc) 62,038 cf Overall x 0.0% Voids
#2	236.00'	208,229 cf	**Extended Detention (Prismatic)** Listed below (Recalc)
		208,229 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
232.00	12,694	0	0
233.00	13,630	13,162	13,162
234.00	14,592	14,111	27,273
235.00	15,579	15,086	42,359
236.00	23,780	19,680	62,038

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
236.00	23,780	0	0
237.00	50,853	37,317	37,317
238.00	54,875	52,864	90,181
239.00	58,999	56,937	147,118
240.00	63,223	61,111	208,229

Device	Routing	Invert	Outlet Devices
#1	Primary	235.10'	**12.0" Round Culvert From OCS** L= 20.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 235.10' / 235.00' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	235.10'	**3.0" Vert. CPv Orifice** C= 0.600 Limited to weir flow at low heads
#3	Device 1	238.00'	**4.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00

			Coef. (English) 2.80 2.92 3.08 3.30 3.32
#4	Primary	238.00'	**12.0" Round Culverts to Floodplain X 2.00** L= 33.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 238.00' / 235.00' S= 0.0909 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#5	Primary	238.40'	**10.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#6	Secondary	239.50'	**20.0' long x 10.0' breadth Emergency Overflow Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=42.77 cfs @ 12.27 hrs HW=239.46' TW=0.00' (Dynamic Tailwater)
- **1=Culvert From OCS** (Inlet Controls 5.87 cfs @ 7.47 fps)
  - **2=CPv Orifice** (Passes < 0.49 cfs potential flow)
  - **3=Broad-Crested Rectangular Weir** (Passes < 23.54 cfs potential flow)
- **4=Culverts to Floodplain** (Inlet Controls 7.43 cfs @ 4.73 fps)
- **5=Broad-Crested Rectangular Weir** (Weir Controls 29.47 cfs @ 2.77 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=232.00' TW=0.00' (Dynamic Tailwater)
- **6=Emergency Overflow Weir** (Controls 0.00 cfs)

Summary for Pond PF-1: Pretreatment Forebay

Inflow Area = 14.810 ac, 83.14% Impervious, Inflow Depth = 7.47" for 100-yr event
Inflow = 80.49 cfs @ 12.04 hrs, Volume= 9.223 af
Outflow = 77.86 cfs @ 12.04 hrs, Volume= 9.223 af, Atten= 3%, Lag= 0.4 min
Primary = 77.86 cfs @ 12.04 hrs, Volume= 9.223 af
Routed to Pond P-1 : Wet Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 239.49' @ 12.26 hrs Surf.Area= 8,502 sf Storage= 4,218 cf
Flood Elev= 239.50' Surf.Area= 8,510 sf Storage= 4,249 cf

Plug-Flow detention time= 1.7 min calculated for 9.221 af (100% of inflow)
Center-of-Mass det. time= 1.7 min (761.8 - 760.1)

Volume	Invert	Avail.Storage	Storage Description
#1	235.00'	0 cf	**Pretreatment Forebay (Prismatic)** Listed below (Recalc) 7,202 cf Overall x 0.0% Voids
#2	238.50'	9,918 cf	**Overflow (Prismatic)** Listed below (Recalc)
		9,918 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
235.00	496	0	0
236.00	1,348	922	922
237.00	2,257	1,803	2,725
238.00	3,223	2,740	5,465
238.50	3,726	1,737	7,202

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
238.50	3,726	0	0
239.00	4,244	1,993	1,993
240.00	5,323	4,784	6,776
240.50	7,246	3,142	9,918

Device	Routing	Invert	Outlet Devices
#1	Primary	238.50'	**50.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=73.96 cfs @ 12.04 hrs HW=239.35' TW=239.10' (Dynamic Tailwater)
- **1=Broad-Crested Rectangular Weir** (Weir Controls 73.96 cfs @ 1.74 fps)

Summary for Pond PF-2: Pretreatment Forebay

[58] Hint: Peaked 0.01' above defined flood level

Inflow Area = 8.123 ac, 88.14% Impervious, Inflow Depth = 7.52" for 100-yr event
Inflow = 28.23 cfs @ 12.04 hrs, Volume= 5.088 af
Outflow = 27.97 cfs @ 12.14 hrs, Volume= 5.088 af, Atten= 1%, Lag= 6.2 min
Primary = 27.97 cfs @ 12.14 hrs, Volume= 5.088 af
Routed to Pond BIO-1 : Filtration Bioretention (2.5ft filter media)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 236.51' @ 12.50 hrs Surf.Area= 15,416 sf Storage= 7,800 cf
Flood Elev= 236.50' Surf.Area= 15,398 sf Storage= 7,696 cf

Plug-Flow detention time= 35.1 min calculated for 5.088 af (100% of inflow)
Center-of-Mass det. time= 35.0 min (787.3 - 752.3)

Volume	Invert	Avail.Storage	Storage Description
#1	232.00'	0 cf	**Pretreatment Forebay (Prismatic)** Listed below (Recalc) 15,694 cf Overall x 0.0% Voids
#2	235.50'	12,118 cf	**STORAGE ABOVE (Prismatic)** Listed below (Recalc)
		12,118 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
232.00	2,149	0	0
233.00	3,434	2,792	2,792
234.00	4,791	4,113	6,904
235.00	6,213	5,502	12,406
235.50	6,937	3,288	15,694

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
235.50	6,937	0	0
236.00	7,693	3,658	3,658
237.00	9,228	8,461	12,118

Device	Routing	Invert	Outlet Devices
#1	Primary	235.50'	**40.0' long x 22.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=27.73 cfs @ 12.14 hrs HW=236.38' TW=236.35' (Dynamic Tailwater)
↑**1=Broad-Crested Rectangular Weir** (Weir Controls 27.73 cfs @ 0.79 fps)

Appendix K:
Project Evaluation and Design Calculations

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

Group	Practice	Description	Applicable	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.	**No**	The proposed site layout has been designed to limit land disturbance to the greatest extent practical. Approximately 17.5 +/- Acres of land will remain undisturbed, in its natural state, which accounts for 35.7% of the total project parcel. 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.	**No**	There is a stream and wetlands located on the project site. The wetland is regulated by the US ACOE therefore it does not have a regulated setback associated with it. The stream is within the City WPO which requires that no structures be located within 100' of the stream. The project does not propose any structures within this setback however some grading is required.
	Reduction of Clearing and Grading	Limit clearing and grading to the minimum amount needed for roads, driveways, foundations, utilities and stormwater management facilities.	**Yes**	Clearing and grading will be limited to the area of disturbance and will be minimized to the greatest extent practical. The limits of all proposed clearing will be demarcated in the field with orange construction fencing, prior to construction, to prevent unnecessary removal of trees.
	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.	**No**	The project does not propose disturbance to the onsite ACOE wetland. However, minor grading within the 100-year floodplain and WPO setback are required. No fill is proposed within the floodplain.
	Open Space Design	Use clustering, conservation design or open space design to reduce impervious cover, preserve more open space and protect water resources.	**N/A**	The project site is an industrial use on a single lot. As such, the measure does not apply.
	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.	**Yes**	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.
	Roadway Reduction	Minimize roadway widths and lengths to reduce site impervious area	**N/A**	No new roads are proposed as a part of this project.
	Sidewalk Reduction	Minimize sidewalk lengths and widths to reduce site impervious area	**No**	Sidewalk widths and lengths have been minimized to the greatest extent practical. Quantity of sidewalk has been reduced to that required to ensure safe pedestrian access throughout the site. Sidewalk widths however, have not been reduced to the 3' minimum required by ADA.

Reduction of Impervious Cover	**Driveway Reduction**	Minimize driveway lengths and widths to reduce site impervious area	**No**	Driveway widths and lengths have been minimized to the greatest extent practical. Reducing the driveway width further is not feasible for the intended industrial use. Tractor trailers must be able to enter and exit the site safely and efficiently.
	Cul-de-sac Reduction	Minimize the number of cul-de-sacs and incorporate landscaped areas to reduce their impervious cover.	**N/A**	No cul-de-sacs are proposed as part of this project.
	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.	**No**	All new building area has been allocated to efficiently implement the intended industrial use. The building has been sized to accommodate the required floor space and number of loading docks. The proposed offices will be two stories within the warehouse footprint, to reduce the overall footprint required.
	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.	**Yes**	On-site parking has been allocated to provide a sufficient number of spaces for the intended use. Based upon the Applicant's experience at similarly sized facilities, and in an effort to reduce impervious area, the Applicant has receievd a waiver from the Planning Board reduce the number of required parking spaces from 429 to 154.

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

Section 4.2 of the NYSDEC Stormwater Management Design Manual describes the Water Quality Volume equation as:

WQv = (P x Rv x A) / 12

where: WQv = Water Quality Volume (acre-feet)
P = 90% Rainfall Event Number (inches) (interpolated from Design Manual Fig 4.1)
Rv = 0.05 + 0.009 (I)
I = Impervious Cover (%) within the drainage area contributing to the SMP
A = Drainage area (acres) contributing to the SMP

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

SMP ID	P	A	Impervious Cover	I	Rv	WQv	
	(inches)	(acres)	(acres)	(%)		(acre-feet)	(cubic feet)
WET-1	1.40	16.392	12.313	75	0.73	1.396	60,810
BIO-1	1.40	9.376	7.219	77	0.74	0.809	35,240
Total						2.205	96,050

Appendix K - Table C
Step 3 - Evaluation of Runoff Reduction Techniques and Standard SMPs with RRv Capacity

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.	**Yes**	The proposed site layout has been designed to limit land disturbance to the greatest extent practical. Approximately 17.5 +/- Acres will remain undisturbed, in its natural state, which accounts for 35.7% of the total property. 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 portions of development.	**No**	Sheet flow to riparian buffers or filter strips is not proposed as a part of this project.
RR-3	**Tree Planting/ Tree Pit**	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.	**No**	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. However, credit for these trees will not be taken toward an area reduction in the RRv calculations.
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.	**N/A**	Rooftop disconnect is not applicable, since this is a commercial building project.
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.	**No**	The site has been designed to place greater emphasis on sheet flow instead of channeled flow. Stormwater practices have been designed to provide management and treatment at the source. Vegetated swales are proposed at several locations on-site. However, credit for these practices will not be taken in the RRv calculations.

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.	**No**	Due to the limited tributary area to rain gardens (≤ 1,000SF), a bioretention facility will be implemented instead of rain gardens.
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.	**No**	The stormwater management approach for this project is intended to provide a more natural aesthetic that is consistent with the wooded surrounding. Since, stormwater planters have significant maintenance considerations and a more structured aesthetic, they have not been proposed for this project.
RR-8	**Rain Barrels/ Cisterns**	Capture and store stormwater runoff to be used for irrigation systems or filtered and reused for non-contact activities.	**No**	Rain Barrels/Cisterns are not proposed on-site due to the need for active management/maintenance and initial capital cost. In addition, the cold climate of the project area would require additional protection measures from freezing.
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.	**No**	Porous pavement is not proposed as part of this project due to low permeability of on-site soils, as well as concerns regarding winter maintenance.
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.	**No**	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.	**No**	No stream daylighting opportunities are present on this site.

I-1	**Infiltration Trench**	Excavated, stone-filled trenches designed to capture and temporarily store runoff in the stone reservoir to promote infiltration. Can be constructed as sheet flow to a ground surface depression or piped flow discharged directly into the trench.	**No**	Infiltration is not proposed due to poor draining soils.
I-2	**Infiltration Basin**	Vegetated excavations designed to capture and infiltrate the WQv. Can be designed off-line to bypass larger flows to downstream flood control facilities or as combined infiltration/flood control facilities by providing temporary detention ponding.	**No**	Infiltration is not proposed due to poor draining soils.
I-3	**Dry Wells**	Underground structures designed to capture, treat, and infiltrate runoff from small drainage areas (rooftop only) that have low sediment or pollutant loadings. Larger stormwater volumes can be bypassed directly to a flood control facility.	**No**	Infiltration is not proposed due to poor draining soils.
I-4	**Underground Infiltration Systems**	Underground, proprietary systems designed to capture and infiltrate the WQv, reduce runoff, remove fine sediment and associated pollutants, recharge groundwater, and attenuate peak flows.	**No**	Infiltration is not proposed due to poor draining soils.
F-5	**Bioretention**	Shallow landscaped depressions where stormwater flows into the practice, ponds at the surface, and gradually filters through the media to remove pollutants. Filtered runoff can either infiltrate into the surrounding soil, or be collected by an underdrain system and discharged to the storm sewer system or directly to receiving waters.	**Yes**	Bioretention has been applied to this project.
O-1	**Dry Swale**	Designed to temporarily hold the WQv in a pool or series of pools created by permanent check dams. The soil bed consists of native soils or highly permeable fill material, underlain by an underdrain system. Pollutants are removed through sedimentation, nutrient uptake, and infiltration.	**No**	Dry swales are not proposed because they are intended for use with roads, highways, or residential development.

Appendix K - Table D
Step 4 - Determine Minimum Runoff Reduction Volume (RRv) Required

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

$$\mathbf{RRv_{min} = (P \times \bar{R}v \times Aic \times S) / 12}$$

where: RRv_{min} = Minimum Runoff Reduction Volume Required (acre-feet)
P = 90% Rainfall Event Number (inches) (interpolated from Design Manual Fig 4.1)
$\bar{R}v$ = 0.05 + 0.009 (I), where I is 100% impervious = 0.95 constant
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).

SMP ID	P	Rv*	Specifc Reduction Factor (S)	Impervious Cover (Aic)	RRv	
	(inches)			(acres)	(acre feet)	(cubic feet)
WET-1	1.4	0.95	0.55	3.868	0.236	10,280
WET-1	1.4	0.95	0.2	8.445	0.187	8,150
BIO-1	1.4	0.95	0.2	7.219	0.16	6,970
				Total:	0.583	25,395

Appendix K - Table E1
Practice Specific Sizing Calculation Worksheet

BIORETENTION FILTER (BIO-1)

Determine Required Water Quality Volume

WQv = (P/12) * Rv * A

where: WQv = Water Quality Volume (acre-feet)
P = 90% Rainfall Event Number (inches) (interpolated from Design Manual Fig 4.1)
Rv = 0.05 + 0.009 (I)
I = Impervious Cover (%) within the drainage area contributing to the SWM practice
A = Drainage area (square feet) contributing to the SWM practice

Required WQv =	**35,240 CF**	**Value taken from Appendix K - Table B*

Calculate Required Filter Bed Area

Af=(WQv)*(df)/[(k)*(hf+df)*(tf)]

where: Af = Surface area of filter bed (SF)
WQv = Required Water Quality Volume (CF)
df = Filter bed depth (ft)
k = Coefficient of permeability of filter media (ft/day)
hf = Average height of water above filter bed (ft)
tf = Design filter bed drain time (days)

SMP ID	WQv (cubic feet)	df (feet)	k (ft/day)	hf (feet)	tf (days)	Minimum Af (sq-ft)	Provided Af (sq-ft)
BIO-1	35,240	2.5	0.5	0.5	2.0	29,367	41,373

Calculate Provided Water Quality Volume

Provided WQv = Vf + Vs + Vp

where: Vf = Volume of Filter (CF) = Af * df * n-filter
Vs = Volume of Stone Drainage Course (CF) = Af * ds * n-stone
Vp = Volume of Ponding (CF)

df =	2.5	ft			
n-filter =	0.30				
ds =	1.00	ft			
n-stone =	0.40				

Vf =	31030	CF	
Vs =	16549	CF	
Vp =	**21064**	**CF**	**Value taken directly from HydroCAD*
Provided WQv =	**68,643**	**CF**	

Calculate Provided Runoff Reduction Volume

Using Underdrains? Yes

RRv Available =	27,457	CF
RRv Applied =	**27,457**	**CF**

APPENDIX D

Community Action Monitoring Plan

Appendix 1A
New York State Department of Health
Generic Community Air Monitoring Plan

Overview

A Community Air Monitoring Plan (CAMP) requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air.

The generic CAMP presented below will be sufficient to cover many, if not most, sites. Specific requirements should be reviewed for each situation in consultation with NYSDOH to ensure proper applicability. In some cases, a separate site-specific CAMP or supplement may be required. Depending upon the nature of contamination, chemical- specific monitoring with appropriately-sensitive methods may be required. Depending upon the proximity of potentially exposed individuals, more stringent monitoring or response levels than those presented below may be required. Special requirements will be necessary for work within 20 feet of potentially exposed individuals or structures and for indoor work with co-located residences or facilities. These requirements should be determined in consultation with NYSDOH.

Reliance on the CAMP should not preclude simple, common-sense measures to keep VOCs, dust, and odors at a minimum around the work areas.

Community Air Monitoring Plan

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for VOCs and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary. Most sites will involve VOC and particulate monitoring; sites known to be contaminated with heavy metals alone may only require particulate monitoring. If radiological contamination is a concern, additional monitoring requirements may be necessary per consultation with appropriate DEC/NYSDOH staff.

Continuous monitoring will be required for all ground intrusive activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

Periodic monitoring for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. “Periodic” monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or

overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions, particularly if wind direction changes. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

1. If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

2. If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

3. If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

4. All 15-minute readings must be recorded and be available for State (DEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

Particulate Monitoring, Response Levels, and Actions

Particulate concentrations should be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring should be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

1. If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m^3 above the upwind level and provided that no visible dust is migrating from the work area.

2. If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m^3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m^3 of the upwind level and in preventing visible dust migration.

3. All readings must be recorded and be available for State (DEC and NYSDOH) and County Health personnel to review.

December 2009

Special Requirements CAMP

1. When work areas are within 20 feet of potentially exposed populations or occupied structures, the continuous monitoring locations for VOCs and particulates must reflect the nearest potentially exposed individuals and the location of ventilation system intakes for nearby structures. The use of engineering controls such as vapor/dust barriers, temporary negative-pressure enclosures, or special ventilation devices should be considered to prevent exposures related to the work activities and to control dust and odors. Consideration should be given to implementing the planned activities when potentially exposed populations are at a minimum, such as during weekends or evening hours in non-residential settings.

2. If total VOC concentrations opposite the walls of occupied structures or next to intake vents exceed 1 ppm, monitoring should occur within the occupied structure(s). Depending upon the nature of contamination, chemical-specific colorimetric tubes of sufficient sensitivity may be necessary for comparing the exposure point concentrations with appropriate pre-determined response levels (response actions should also be pre-determined). Background readings in the occupied spaces must be taken prior to commencement of the planned work. Any unusual background readings should be discussed with NYSDOH prior to commencement of the work.

3. If total particulate concentrations opposite the walls of occupied structures or next to intake vents exceed 150 mcg/m_3, work activities should be suspended until controls are implemented and are successful in reducing the total particulate concentration to 150 mcg/m_3 or less at the monitoring point.

4. Depending upon the nature of contamination and remedial activities, other parameters (e.g., explosivity, oxygen, hydrogen sulfide, carbon monoxide) may also need to be monitored. Especially if machinery with internal combustion engines are utilized for indoor work. Response levels and actions should be pre-determined, as necessary, for each site.

5. Unless a self-contained, negative-pressure enclosure with proper emission controls will encompass the work area, all individuals not directly involved with the planned work must be absent from the room in which the work will occur. Monitoring requirements shall be as stated above under "Special Requirements for Work Within 20 Feet of Potentially Exposed Individuals or Structures" except that in this instance "nearby/occupied structures" would be adjacent occupied rooms. Additionally, the location of all exhaust vents in the room and their discharge points, as well as potential vapor pathways (openings, conduits, etc.) relative to adjoining rooms, should be understood and the monitoring locations established accordingly. In these situations, it is strongly recommended that exhaust fans or other engineering controls be used to create negative air pressure within the work area during remedial activities. Additionally, it is strongly recommended that the planned work be implemented during hours (e.g. weekends or evenings) when building occupancy is at a minimum.

APPENDIX E

Site-Specific Health and Safety Plan

Site-Specific Health and Safety Plan

Project Title:

DuPont-Stauffer Landfill Site NYSDEC Site 336009

Location:

700 South Street, City of Newburgh, Orange County, New York

Prepared For:

Brookfield Properties

LaBella Project No. 2222335 Phase .11

TABLE OF CONTENTS

ATTACHMENTS

A – Daily Pre-Job Safety Tailgate/Toolbox Meeting Form

B – Accident/Incident/Near Miss/Hazard Report

0.0 HASP Acknowledgment

All LaBella project personnel are required to sign the following agreement prior to conducting work:

1. I have read and fully understand the requirements of this site-specific HASP including my individual responsibilities listed above.

2. I agree to abide by the provisions of the HASP and participate in any health and safety meetings or modifications to the HASP criteria during the implementation of work.

Name	Company	Date

1.0 Introduction

The purpose of this Health and Safety Plan (HASP) is to provide guidelines for responding to potential health and safety issues that may be encountered during the Remedial Investigation (RI) at the project site, located at 700 South Street, City of Newburgh, Orange County, New York. This HASP only reflects the policies of LaBella Associates D.P.C. The requirements of this HASP are applicable to all approved LaBella personnel at the work site. This document's project specifications are to be consulted for guidance in preventing and quickly abating any threat to human safety or the environment. The provisions of the HASP do not replace or supersede any federal, state or local regulatory requirements.

2.0 Responsibilities

This HASP presents guidelines to minimize the risk of injury to project personnel, and to provide rapid response in the event of injury. The HASP is applicable only to activities of approved LaBella personnel and their authorized visitors specific to this project. The Project Manager shall implement the provisions of this HASP for the duration of the project. It is the responsibility of LaBella employees to follow the requirements of this HASP, and all applicable company safety procedures.

3.0 Daily Pre-Job Safety Meetings

Prior to the beginning of work each day the Field Supervisor/Foreman or on-site Project Manager will review upcoming daily job requirements, anticipated hazards and hazard control measures with the project team members. At this meeting information such as personal protective equipment, site conditions, emergency procedures, and other applicable topics may be addressed.

A copy of the **Daily Pre-Job Safety Tailgate/Toolbox Meeting Form** is attached to this HASP.

4.0 Site Information

Project Name:	DuPont-Stauffer Landfill Site NYSDEC Site 336009
LaBella Project No.:	2222335 Phase .11
Project Location:	700 South Street, City of Newburgh, Orange County, New York
Current Use of Project Location:	Vegetated property that has previously undergone remediation via removal of buried waste and impacted soil. Capped landfill is on the northern end of the Site

	and was used to consolidate non-hazardous waste from other parts of the property.
Uses of Surrounding Areas (Res Vacant Land, Commercial, etc.):	Landfills, Commercial, and Residential, Industrial
Proposed Date(s) of Field Activity - Start:	2023-11-01
Proposed Date(s) of Field Activity - End:	2023-12-29

5.0 Scope of Work

The proposed field work covered under this HASP includes the following:

- Soil borings to delineate area of buried waste and impacted debris that was discovered during a geotech investigation. Characterize waste for disposal, excavate and remove impacted material, backfill.

6.0 Emergency Information

The personnel and emergency response contacts associated with the proposed scope of work are presented below and are to be posted onsite during all field activities. The Site Safety Officer (SSO) is the primary authority for directing site operations and relaying communications under emergency conditions. During the SSO's absence, the Project Manager or Site Supervisor will lead emergency operations.

Project Personnel		
Contact	**Name**	**Phone**
LaBella Project Manager	Arlette St. Romain	518-824-1928
LaBella Site Supervisor	Branson Fields or Eric Orlowski	720-626-6362 518-928-5823
Corporate Safety Manager	Catherine Monian	845-486-1557
Site Safety Officer	Branson Fields or Eric Orlowski	720-626-6362 518-928-5823
Site Contact	NA – Site is unoccupied	NA – Site is unoccupied
Human Resources	Michelle Hoyt	
Emergency Personnel including Police and Fire Dept and Ambulance – Dial 911		
Hospital- *see Hospital Route*	Buffalo General Hospital	716-859-5600

Section below for directions		
Poison Control		800-336-6997
NYSDEC Spill Response Hotline		800-457-7362

First Aid

A First Aid Kit will be located in each field vehicle. The injured person may be transported to a trained medical center for further examination and treatment. he preferred transport method is a professional emergency transportation service; however, if this option is not readily available or would result in excessive delay, other transport is authorized.

Under no circumstances should an injured person transport themselves to a medical facility for treatment, no matter how minor the injury may appear.

Incident Reporting

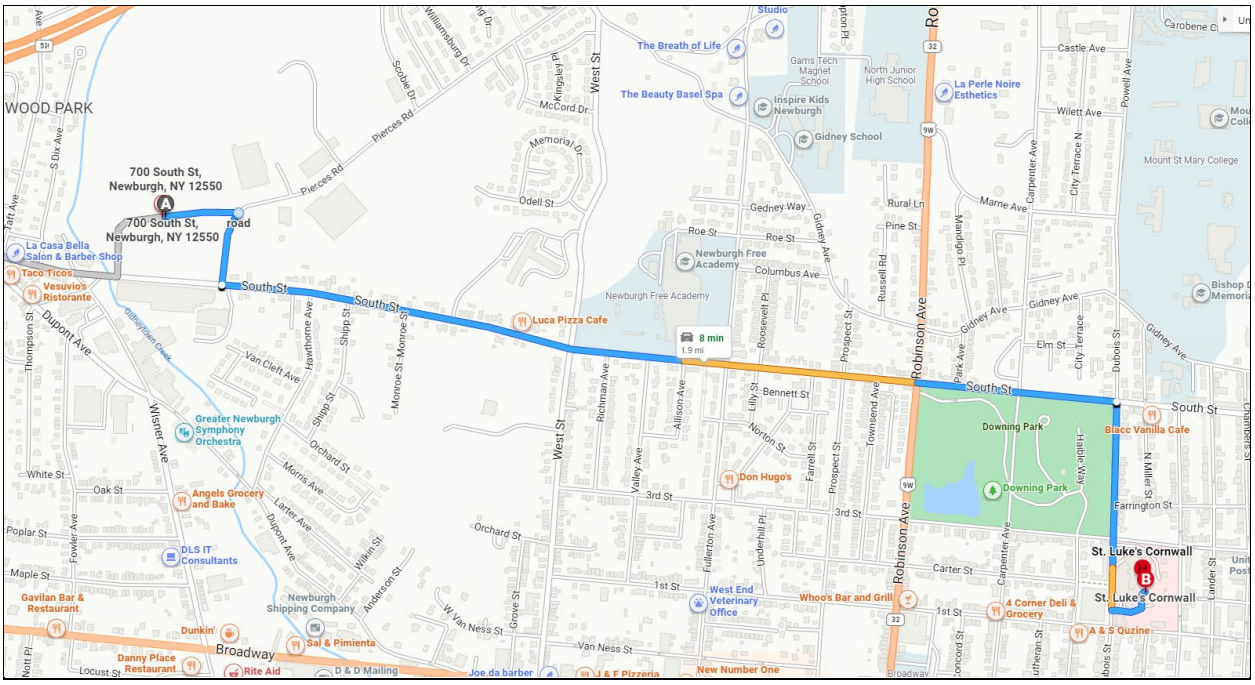
Employees shall report all incidents and injuries to their supervisor as soon as possible, including those involving employees operating vehicles and other equipment. All reporting procedures contained in LaBella Safety Policy 1.22 must be followed.

During emergencies employees should seek medical care immediately. When contacting their Supervisor/Safety Manager/HR, employees should discuss medical care options. If an employee is asked by medical personnel for a worker's compensation number they should tell them that LaBella should be billed directly.

When emergency medical care is not imminent, employees shall immediately report events to their immediate Supervisor, the Safety Manager and Human Resources, and participate in the investigation process as well as the corrective action process, as needed. The attached Accident /Incident/ Near Miss /Hazard Report Form must be submitted online or by e-mail to the Supervisor, Safety Manager and HR as soon as possible but no later than 24 hours after the event.

Hospital Route

Hospital Directions:



Print

A
700 South St, Newburgh, NY 12550
Depart and head toward Pierces Rd — 0.1 mi
Take Pierces Rd — 0.1 mi
Turn left onto South St — 1.3 mi
Turn right onto Dubois St — 0.2 mi
Arrive at Dubois St
The last intersection before your destination is 3rd St
If you reach Carter St, you've gone too far
B
Montefiore St. Luke's Cornwall
70 Dubois St, Newburgh, NY 12550

7.0 Potential Health and Safety Hazards and Controls

This section lists potential health and safety hazards that project personnel may encounter at the project site and actions to be implemented by approved personnel to control and reduce the associated risk to health and safety. This is not intended to be a complete listing of any and all potential health and safety hazards. New or different hazards may be

encountered as site environmental and site work conditions change. The suggested actions to be taken under this plan are not to be substituted for good judgment on the part of project personnel. At all times, the Site Safety Officer has responsibility for site safety and their instructions must be followed.

Physical Hazards		
Work Action or Condition	**Potential Safety Hazard**	**Controls (including PPE)**
Cold Weather	Frost nip, Frost bite, Hypothermia	Engineering: •Basic wind block • Heated shelter • Barriers or insulation placed on metal surfaces to reduce heat loss from extremities Administrative: It is recommended that multiple vehicles be utilized during periods of extreme cold unless a warm shelter is within reasonable proximity to the work site. Number of vehicles depends on number of employees. Warm liquids should be considered to combat dehydration and to manage core temperatures. Note that caffeinated beverages will lessen circulation and are discouraged. Adequate Breaks - Break periods will be at least ten (10) minutes long. While on break personnel should remove outer layers of clothing to ensure adequate warming of the core and extremities. Individuals should assess their physical condition during breaks. Do not return to work in the cold until adequately warmed. If engineering controls, such as shelters are used, the ambient temperature/wind chill where the work is taking place will be used to determine the work / warm–up schedule Personal Protective Equipment: The outer layer of clothing must be fire retardant. • The outer most layers should consist of winter clothing (i.e. bibs, bomber or parka, head sock, winter /arctic boots). • Under layers (insulation) should consist of one or more thin garments. Outer winter layers should be removed prior to insulation layers becoming wet with perspiration. • Wet clothing should not be worn. A best practice is to bring extra insulating clothing and change clothes if they become wet.

		• PPE that is in direct contact with the skin should be changed if it becomes wet. • Exposed skin shall be avoided in extreme cold temperatures to minimize the risk of frostbite. • Hand / foot warmers are available on all sites.
Hand Tools	Physical injury	• Do not use a tool if you have not been trained. Inspect tool before use and do not use damaged tools. • Maintain tools in good condition and follow manufacturers' instructions. • Wear gloves, safety glasses and and appropriate PPE /apparel, avoiding loose clothing; secure long hair. • When using a cutting tool hold its handly firmly and cut away from your body, never towards it. • If working on a ladder or scaffold raise and lower tools using a bucket and hand line; never carry tools in a way that prevents using both hands on a ladder (maintain three poits of contact)
Heavy Equipment - Working Near	Struck by, Caught in between, Causing an obstruction on existing roadway, Rollaway, and hearing damage.	Working near heavy equipment presents struck-by and caught-in or in-between risks. Heavy equipment can also rollaway or obstruct roadways, limiting visibility. The following hazard control measures will be applied: • Maintain 360 degrees of awareness of your surroundings. • Meet the Operator, discuss work operations, and stay in line of sight. • Wear hi visibility clothing (outer layer), hard hat, safety glasses, work boots. • Stand in safe zone away from blind areas. Never walk in back of or to the side of heavy equipment without the operator's knowledge. Have an escape plan. • Stay out of the swing zone of heavy equipment such as excavators or traditional auger rigs. The swing zone is defined as an entire 360 degree circle equipment may move within as measured from a central location point. • Only approach drill rig after auger has stopped rotating and the operator has given the OK for you to approach to collect a sample. • Wear hearing protection when working near heavy or moving equipment.
Uneven or Wet Terrain (Slopes,	Slip, Trip, Fall	• Wear appropriate footwear for the site and conditions: steel toe or composite boots for

Leaves, Holes, etc.)		construction sites, skid-resistant, hiking boots for other field work if indicated. • Use walking stick or other object for additional support/balance and to check for animal burrows/holes. • Watch for trip hazards such as uneven terrain, holes, ditches, puddles (if raining) stretched wires or ropes, or other materials or pieces of equipment in path.

Biological and Environmental Hazards		
Work Action or Condition	**Potential Safety Hazard**	**Controls (including PPE)**
Hazardous Animals	Injury from Hazardous Animals	Hazardous animals and insects may be encountered on rural sites. The following hazard control measures will be applied: • Apply bug repellant spray or lotion to exposed skin. If you have been prescribed medication for stings bring it with you. • Be cautious of walking path and foot placement to avoid places where snakes/spiders my be, (e.g., stepping over logs). • Stay on trails away from high grassy areas/bushes. Tuck pants into boots, wear tall boots if going through tall grass/bush. • For Ticks: Conduct daily tick check, wear long pants/long-sleeved shirts/hates/socks that are light in color, put hair up, carry tick removal kit. • For Spiders: Don't put unprotected hands inside items that might have spiders and be careful moving undisturbed piles of materials. Bears: make noise and use bear spray. • For Snakes: Stay away - striking distance is 1/2 to 2/3 their body length.
Hazardous Plants	Injury from Hazardous Plants	Hazardous plant may be encountered on rural sites. The following hazard control measures will be applied: • Create a narrow path or route when possible. • Wear appropriate PPE for the vegetation (i.e. leather gloves, Carhart coveralls, and face shield for vegetation that could cause cuts/punctures and/or is higher than waist level) • Become familiar with and avoid poisonous plants, see Safety Manual section '3.05 Plants'

		• Separate clothes from normal laundry if you've been in contact with poisonous plants. • Use soap/water or Technu to wash poisonous plant oils from skin.

Ergonomic Hazards		
Work Action or Condition	**Potential Safety Hazard**	**Controls (including PPE)**
Lifting Heavy Objects	Injury from Improper Lifting/Lifting weights that are too heavy	• When lifting heavy objects, keep the load close to the body and use the leg muscles instead of the back muscles to perform lifting tasks. • Do not attempt to lift large, heavy (especially over 50-lbs), or awkwardly shaped objects without assistance from another employee or from a manual lifting devise.
Noise (Loud, Sustained)	Hearing Damage	• Ear protection will be worn at all times when personnel are within 20-feet of operating equipment or when noise level becomes consistently loud enough to have to raise voice to communicate with someone. • Hearing protection will also be worn in the vicinity of generators, concrete cutters, and any other high noise emitting equipment.

Chemical Hazards (General)		
Work Action or Condition	**Potential Safety Hazard**	**Controls (including PPE)**
Chemical Exposure - Heavy Metals	*Contaminants identified in testing locations at the Site include low-level heavy metals, primarily associated with Site contamination. Heavy metal-impacted media including fill material may be*	The presence of heavy metals in site media may be difficult to ascertain in the field. Heavy metal concentrations at this site are not anticipated to exceed PELs. The following hazard control measures will be applied, however: • Workers shall wear appropriate PPE and follow listed decontamination procedures to prevent exposures. Refer to the relevant sections of this HASP for more detail regarding PPE and decontamination procedures.

	encountered during subsurface activities at the project work site.	
Chemical Exposure - Pesticides	*Contaminants identified in testing locations at the Site include organochlorine pesticides. Pesticide-impacted media may be encountered during subsurface activities at the project work site. Exposure to high concentrations of organochlorine pesticides over a short period may produce convulsions, headache, dizziness, nausea, vomiting, tremors, confusion, muscle weakness, slurred speech, salivation and sweating. Long-term exposure to organochlorine pesticides may damage the liver, kidney, central nervous system, thyroid and bladder. There is some evidence indicating that organochlorine pesticides may also cause cancer in humans. Relevant Safety Data Sheets are*	The presence of pesticides in site media may be difficult to ascertain in the field. Pesticide concentrations at this site are not anticipated to exceed PELs. The following hazard control measures will be applied, however: • Workers should be wearing appropriate PPE and following listed decontamination procedures to prevent exposures. Refer to the relevant sections of this HASP for more detail regarding PPE and decontamination procedures.

	included as Appendix 1.	
Chemical Exposure - PFAS	*Contaminants identified in testing locations at the Site include PFAS. PFAS-impacted media may be encountered during subsurface activities at the project work site. Research is still ongoing regarding the health effects of PFAS, but studies have shown that exposures to certain levels of PFAS can increase one's risk of certain cancers and create reproductive, immunulogical or developmental effects.*	The presence of PFAS in site media may be difficult to ascertain in the field. PFAS concentrations at this site are not anticipated to exceed PELs. The following hazard control measures will be applied, however: • Workers should be wearing appropriate PPE and following listed decontamination procedures to prevent exposures. Refer to the relevant sections of this HASP for more detail regarding PPE and decontamination procedures.
Chemical Exposure - Polychlorinated Biphenyls	*Contaminants identified in testing locations at the Site include PCBs. PCB-impacted media may be encountered during subsurface activities at the project work site. Potential human health effects of PCB exposure include cancer as well as neurological, immunological and reproductive effects. Relevant Safety Data*	The presence of PCBs in site media may be difficult to ascertain in the field. PCB concentrations at this site are not anticipated to exceed PELs. The following hazard control measures will be applied, however: • Workers should be wearing appropriate PPE and following listed decontamination procedures to prevent exposures. Refer to the relevant sections of this HASP for more detail regarding PPE and decontamination procedures.

	Sheets are included as Appendix 1.	
Chemical Exposure - Semi-Volatile Organic Compounds (SVOC)	*Contaminants identified in testing locations at the Site include SVOCs. SVOC-impacted media including fill material may be encountered during subsurface activities at the project work site.*	The presence of SVOCs in site media may be detected by their odor and monitoring instrumentation. SVOC concentrations at this Site are not anticipated to exceed PELs. The following hazard control measures will be applied, however: • Workers should be wearing appropriate PPE and following listed decontamination procedures to prevent exposures. Refer to the relevant sections of this HASP for more detail regarding PPE and decontamination procedures.
Chemical Exposure - Volatile Organic Compounds (VOC)	*Contaminants identified in testing locations at the Site include various volatile organic compounds (VOCs), primarily VOCs associated with Site contamination. Volatile organic vapors may be encountered during subsurface activities at the project work site. Inhalation of high concentrations of volatile organic vapors can cause headache, stupor, drowsiness, confusion and other health effects. Skin contact can cause irritation, chemical burn, or dermatitis. Relevant Safety Data Sheets are included as Appendix 1.*	Volatile Organic Compound (VOC) gases may be emitted from a number of materials and products. The presence of organic vapors may be detected by their odor and by monitoring instrumentation and can lead to physical harm. VOC concentrations at this Site are not anticipated to exceed PELs. The following hazard control measures will be applied, however: • Workers should be wearing appropriate PPE, following listed decontamination procedures and be periodically screening the work zone to prevent against and evaluate for unexpected exposures. Refer to the relevant sections of this HASP for more detail regarding PPE, decontamination procedures and work zone screening.

Landfill Work	*Exposure to explosive and toxic landfill gases, some of which are flammable*	Landfill work presents unique challenges related to air quality. The following hazard control measures will be applied: • Adequate outdoor ventilation is expected to minimize respiratory exposure, however explosive gas issues may arise. No smoking is permitted. • Reduced sparking tools should be used when hammering or digging any test holes. • Work should proceed slowly to minimize heat content and reduce friction that could generate sparks. • Periodic monitoring performed for explosive gases (LEL and H2S) with a 4-gas meter. Methane is colorless and odorless. • If action levels are reached activity should cease and personnel should immediately evacuate the site. These action levels are: >10% LEL for combustible gases, 1 ppm for hydrogen sulfide, LEL of 5% for methane, <19.5% or >23% (5,000 ppm) for oxygen. When work ceases employees will be directed away from the operations and the situation assessed with the Health and Safety Officer.
Sample Collection - Soil or Groundwater	*Exposure to contaminants. Hand injury from cutting, crushing, tool or glass breakage. Back strain from lifting cooler.*	• When collecting samples, workers will utilize nitrile gloves, safety glasses or goggles. If material being sampled potentially contains fill or other sharp material, use a stainless steel spoon (or similar) as a tool to collect the sample. Any such tools should be dedicated or properly decontaminated between samples. • When lifting sample coolers, workers will use proper lifting techniques and get assistance when possible, especially for containers heavier than 50 lbs.
Lead	*Injury, Illness*	• Lead exposure, which occurs most commonly by breathing in particles, can result in long term physical illness and disability (See 4.04 LEAD SAFETY POLICY in Labella's Safety Manual for information on Exposure Controls).

Individual Contaminant Hazards			
Chemical	**OSHA Permissible Exposure Limit (PEL)/ NIOSH Recommended Exposure Limit (REL) or Immediately dangerous to life or health air concentration values (IDLH)**	**Routes of Exposure**	**Symptoms of Overexposure**
Chlorobenzene (VOC)	**TWA 75 ppm (350 mg/m3) NIOSH REL/IDLH: REL: TWA 75 ppm (350 mg/m3)** **IDLH: 1000 ppm**	The substance can be absorbed into the body by inhalation of its vapour, through the skin and by ingestion.	irritation eyes, skin, nose; drowsiness, incoordination; central nervous system depression; In Animals: liver, lung, kidney injury
1,2-Dichloroethylene (VOC)	**TWA 200 ppm (790 mg/m3) NIOSH REL/IDLH: TWA 200 ppm (790 mg/m3)**	The substance can be absorbed into the body by inhalation of its vapour and by ingestion.	irritation eyes, respiratory system; central nervous system depression
Tetrachloroethane (VOC)	**REL: TWA 10 ppm (60 mg/m3) ST 20 ppm (120 mg/m3)**	inhalation, skin absorption, ingestion, skin and/or eye contact	nausea, vomiting, abdominal pain; tremor fingers
Toluene (VOC)	**TWA 200 ppm NIOSH REL/IDLH: REL: TWA 100 ppm (375 mg/m3) IDLH: 500 ppm**	The substance can be absorbed into the body by inhalation, through the skin and by ingestion.	irritation eyes, nose, throat; resp sensitization, cough, pulmonary secretions, chest pain, dyspnea (breathing difficulty); asthma
Trichloroethylene (VOC)	**TWA: 50 ppm 270 mg/m3 Ceiling: 200 ppm STEL: 200 ppm NIOSH REL/IDLH: IDLH: 1000 ppm**	The substance can be absorbed into the body by inhalation and by ingestion.	dizziness, headaches, sleepiness, confusion, nausea, unconsciousness

Cadmium (Metal)	**TWA 0.005 mg/m3 NIOSH REL/IDLH: TWA 0.5 mg/m3**	inhalation, ingestion	pulmonary edema, dyspnea (breathing difficulty), cough, chest tightness, substernal (occurring beneath the sternum) pain; headache; chills, muscle aches; nausea, vomiting, diarrhea; anosmia
Mercury (Metal)	**OSHA PEL TWA 0.1 mg/m3 NIOSH REL/IDLH: REL: Hg Vapor: TWA 0.05 mg/m3 [skin] Other: C 0.1 mg/m3 [skin]** **IDLH: 10 mg/m3**	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation eyes, skin; cough, chest pain, dyspnea (breathing difficulty), bronchitis, pneumonitis; tremor, insomnia, irritability, indecision, headache, lassitude
Lead (Metal)	**TWA (8-hour) 0.050 mg/m3 NIOSH REL/IDLH: TWA 0.050 mg/m3** **IDLH: 100 mg/m3**	inhalation, ingestion, skin and/or eye contact	lassitude (weakness, exhaustion), insomnia; facial pallor; anorexia, weight loss, malnutrition; constipation, abdominal pain, colic; anemia; gingival lead line; tremor; paralysis wrist, ankles; encephalopathy; kidney disease; irritation eyes; hypertension

8.0 Personal Protective Equipment (PPE)

All site workers will have appropriate training as identified in Section 7.0. Training includes the identification of PPE necessary for various tasks; how to don, doff, adjust, and wear PPE; limitations of PPE; and proper care, inspection, testing, maintenance, useful life, storage, and disposal of the PPE. PPE will be inspected on a regular basis.

Modified Level D: Assigned protection includes:	- Street clothes - Safety glasses - Safety toed boots - Hard hat - An ANSI Level III safety vest - Nitrile glove if potentially contacting any contaminated materials - Disposable N95 masks will be provided for use if needed

9.0 Employee Training

All workers and other personnel shall receive appropriate training prior to engaging in site activities. All workers must recognize and understand the potential hazards to health and safety that are associated with the proposed scope of work and must be thoroughly familiar with programs and procedures contained in this Safety Plan.

The following training levels were determined to be needed:

- 40-Hour HAZWOPER and up-to-date refreshers

10.0 Exposure Monitoring

CAMP will be performed. See Work Plan.

11.0 Site Control

Project work zones will be subdivided into exclusion zone and contaminant reduction zone if warranted by site conditions.

The exclusion zone is where contamination is present or may be present. The contamination reduction zone is located immediately outside of the exclusion zone and is utilized for decontamination. All personnel must enter and exit the exclusion zone through the contaminant reduction zone.

All equipment and PPE in the exclusion zone must be decontaminated or properly discarded upon exit. Because of the nature of the site work, the exclusion and contaminant reduction zones may change. Plastic bags containing used PPE will be placed in designated trash receptacles.

12.0 Recordkeeping

An electronic or hardcopy version of this HASP will be present at the Site during all field work activities. Copies of field logs, including daily pre-job safety meeting logs, will be filed by LaBella and available for the duration of the project.

Employees will be able to provide physical or electronic copies of required training certificates.

Incident reporting will be completed in accordance with LaBella policies.

6.08 PRE-JOB SAFETY TAILGATE/TOOLBOX MEETING FORM

Date		Time	
Location or Address		Temperature	
Project Number		Humidity	
Conducted by		Conditions	
Were all workers reminded that COVID is still prevalent and that appropriate measures should be taking to prevent infection of themselves and others?			Yes ☐ No ☐

911	**If 911 is unavailable at this location, please state the procedure for reporting emergencies** _____

List Safety Topic of Discussion and/or Any Specific Hazards for the Work Being Performed Today	
1	
2	
3	
4	
5	
6	
7	
List Control Measures for Each Specific Hazard Listed Above	
1	
2	
3	
4	
5	
6	
7	

PLEASE SIGN THE BACK OF THIS SHEET

The presenter and all attendees shall print and sign in the appropriate areas on the back of this sheet

By signing, you declare that you understand the information presented in today's meeting, and that you have had the opportunity to ask questions and to clarify any uncertainty regarding such information.

All Visitors and Contractors Must Print Their Company Name

Name	Signature	Company

PART A – INCIDENT/LOSS MANAGEMENT REPORTING SCHEDULE

Event	Form(s) Required	Action
Property damage to company property (including Fleet vehicles) **OR** Damage to non-company property by company employee	All cases: LaBella's Online Incident/Near-Miss/ Hazard Reporting Form ("Online Reporting Form") **or** Part B- Incident/Near-Miss Hazard Report ("Part B: Employee Rpt.") from the Safety Manual 6.01 Incident/Near Miss/Hazard Report Package. Include photos. Losses greater than $5,000: Online Reporting Form or Part B: Employee Rpt. Part C: Supervisor Invest/Analysis Report Part D: Witness Statement Form Photos, Diagrams, Maps, etc. **In addition to insurance forms	Immediate verbal notification to Supervisor and Online Reporting Form within 24 hours Send Parts B, C and D to Safety Manager as soon as possible but within 2-4 business days.
Near Miss Incidents: Low* potential for significant injury or property damage Moderate* or High* potential for significant injury or property damage *Category to be determined by Safety Manager	All cases: Online Reporting Form or Part B: Employee Report Online Reporting Form or Part B: Employee Rpt. Online Reporting Form/Part B: Employee Rpt. Part C: Supervisor Invest. & Analysis Report Part D: Witness Statement Form Photos, Diagrams, Maps, etc.	Same-day verbal notification to Supervisor Send to Safety Manager and HR within 24 hours. Send Parts C and D to Safety Manager as soon as possible but within 2-4 business days.
Employee Injury or Illness: Minor injury (first aid treatment/non-OSHA recordable) Serious Injury (employee received medical treatment/lost days away from work, or required job restriction or transfer) Catastrophes (examples: fatality, multiple persons injured)	All cases: Online Reporting Form or Part B – Employee Report Online Reporting Form or Part B: Employee Rpt. Online Reporting Form or Part B: Employee Rpt. Part C: Supervisor Invest. & Analysis Report Part D: Witness Statement Form Photos, Diagrams, Maps, etc. Above documentation plus additional documentation as requested Health and Safety Manager or Senior Management **In addition to insurance forms	Immediate verbal notification to Supervisor and/or Field Supervisor (in all cases). Send to Safety Manager and HR within 24 hours. Send Parts C and D to Safety Manager as soon as possible but within 2-4 business days. IMMEDIATELY call Safety Manager and Vice President of Operations (24/7).
Incidents Involving Personnel Other than LaBella (example: subcontractors)	Part C: Supervisor Invest. & Analysis Report Part D: Witness Statement Form Photos, Diagrams, Maps, etc.	Same verbal reporting requirements as employees.

PART B - INCIDENT/ NEAR MISS / HAZARD REPORT

Completed by Employee with Supervisor

Complete all fields. Be as specific as possible and include drawings, photos, additional narrative, as needed.

Person Submitting Form:	Name of Affected Employee:	Employee's Supervisor:
Employee's Division Director:	Employee's Home Office Location:	Date of Hire:

-An incident is an unwanted event that causes injury or illness to the body and/or involves damage to property, equipment, or the environment.
-A near-miss is an incident in which no property was damaged and no personal injury was sustained, but where given a slight shift in time or position, damage or injury easily could have occurred.
-A hazard is an object or situation that has the potential to harm people or cause damage to property or the environment.

If you have IT equipment that has been stolen or damaged, you must complete the **IT Incident Report** located on the Information Technology page of the intranet immediately for security purposes.

Date of Event	Time of Event:	Type of Incident: ❑ Incident ❑ Near Miss ❑ Hazard	Project Number:
Address of Incident:	Additional information Regarding Incident Location:		

How did the incident happen? *(Describe step by step the events that led up to the event and site conditions, weather and tools. Document any immediate action taken to protect internal/internal staff)*

Incident involved the following (check all that apply): ❑ Vehicles If Yes, list license Plate Numbers: _____

❑ Machines ❑ Equipment ❑ Tools ❑ Property ❑ Environment ❑ Chemicals ❑ Electronic Equipment ❑ Wildlife

Describe how items above played a part in the incident and if they contributed to/resulted in injury:

Did property or equipment damage occur: ❑ Yes ❑ No	Approximate estimated value of damage:
Names of all involved persons:	Witness Statements Attached (1 for each witness)(see Safety Manual 1.22): ❑ Yes ❑ No

Did this Incident involve an injury? ❑ Yes ❑ No If No – sign at bottom and provide to Supervisor, Safety Manager and HR.

Injured Employee Name:	SSN: (last 4 digits)	Date of Birth:	Gender:

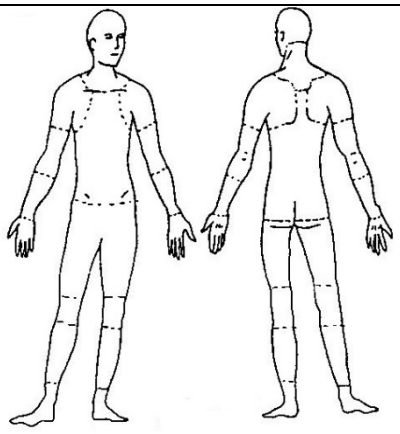
Job Title:	Employee type: ❑ Full time ❑ Part Time ❑ On-Call/temporary	Time Employee Began Work & Time of Injury:	Phone Number:
Type of Injury (e.g. abrasion, bruise, burn, sprain, cut, etc):		Was PPE being used & what type:	

Was medical treatment provided? ❑ Yes ❑ No

Was medicine prescribed? ❑ Yes ❑ No Type:

Describe treatment:

Hospital/Clinic & Dr Name:	Is employee still being treated? ❑ Yes ❑ No
Has employee returned to work? ❑ Yes ❑ No	Was employee assigned: ❑ Restricted duty ❑ Job transfer ❑ Days away from work



Part of body affected:
Shade all that apply or list:

Employee Name (print):	Signature:	Date:
Supervisor Name (print):	Signature:	Date:

PART C - SUPERVISOR INVESTIGATION & ANALYSIS REPORT

Completed by Supervisor with Input by Safety Manager and Others as Needed

Date of Event	Time of Event:	Type of Event: ❑ Incident ❑ Near Miss ❑ Hazard	Date of this Report:
Event Location:	Project Number:	Supervisor:	Title:

Description of Incident:

Incident involved the following (check all that apply): ❑ Vehicles If Yes, list license Plate Numbers: _____

❑ Machines ❑ Equipment ❑ Tools ❑ Property ❑ Environment ❑ Chemicals ❑ Electronic Equipment ❑ Wildlife

EMPLOYEE & INJURY INFORMATION

Involved Employee:	Employee Age:	Employee Gender:	Date of Hire:
Was employee injured: ❑ Yes ❑ No	If Yes, describe injury:		
Date last worked:	Date returned to work:	Was employee assigned: ❑ Restricted duty ❑ Job transfer ❑ Days away from work	
Hospital/Clinic Name:	Doctor name:	Type of Injury:	

INVOLVED PARTIES and WITNESSES

Names of all involved persons:	Witnesses (name and contact information):	Witness Statements Attached? ❑ Yes ❑ No

PROPERTY DAMAGE

Did property damage occur? ❑ Yes ❑ No	If Yes, what is nature of damage and what inflicted the damage:
Cost to repair damage:	Repercussions from damage:

INCIDENT DESCRIPTION

Describe what happened. (Investigate scene of incident or conditions. Describe who was involved, when and where the incident happened, what happened, and how.) Attach photographs, maps, drawings.

What PPE was being used at the time of the event and was it appropriate?	❑ Yes ❑ No
Is there a task that applies to the **task** being performed when the injury or incident occurred? *If Yes, review the THA, answer the following questions, and attach a copy to this report. If no, please explain why the THA was not required for the task.*	❑ Yes ❑ No
Were hazards sufficiently identified? If not, please explain.	❑ Yes ❑ No
Were identified controls adequate and implemented? If not, please explain.	❑ Yes ❑ No
Were the identified controls not implemented? If not, please explain.	❑ Yes ❑ No

PART C - SUPERVISOR INVESTIGATION & ANALYSIS REPORT

Root Cause (What was the root cause of the incident, i.e., actually caused the illness, injury, or incident?)

Unsafe Acts	**Unsafe Conditions**	**Management System Deficiencies**
❑ Improper Work Technique	❑ Poor Workstation Design or Layout	❑ Lack of Written Procedures or Safety Rules
❑ Improper PPE, Not Used or Used Incorrectly	❑ Fire or Explosion Hazard	❑ Safety Rules Not Enforced
❑ Safety Rule Violation	❑ Congested Work Area	❑ Hazards Not Identified
❑ Operating Without Authorization	❑ Hazardous Substances	❑ PPE Unavailable
❑ Failure to Warn or Secure	❑ Inadequate Ventilation	❑ Insufficient Worker Training
❑ Operating at Improper Speeds	❑ Improper Material Storage	❑ Insufficient Supervisor Training
❑ By-Passing Safety Devices	❑ Improper Tool or Equipment	❑ Improper Maintenance
❑ Guards Not Used	❑ Insufficient Job Knowledge	❑ Inadequate Supervision
❑ Improper Loading or Placement	❑ Slippery Conditions	❑ Insufficient Job Planning
❑ Improper Lifting	❑ Poor Housekeeping	❑ Inadequate Hiring Practices
❑ Servicing or Adjusting Machinery in Motion	❑ Excessive Noise	❑ Poor Process Design
❑ Horseplay	❑ Inadequate Guarding of Hazards	❑ Inadequate Workplace Inspections
❑ Drug or Alcohol Use	❑ Defective Tools/Equipment	❑ Inadequate Equipment
❑ Unsafe Act(s) of Others	❑ Insufficient Lighting	❑ Unsafe Design or Construction
❑ Unnecessary Haste	❑ Inadequate Fall Protection	❑ Unrealistic Scheduling
❑ Other:	❑ Other:	❑ Other:

Contributing Cause(s) (Conditions that made the incident more likely)

Immediate Actions Taken

Actions to Prevent Recurrence (Be specific as to what would prevent injury, incident or damage from recurrence) (use extra page if needed)

CORRECTIVE ACTION TRACKING (All Blocks Must be Filled In and Information Verifiable)

List action(s) that have or will be taken to prevent a recurrence.	Assigned To Whom	Scheduled Completion Date	Actual Completion Date	Follow-up Date

INVESTIGATOR SIGNATURES:

Signature:	Name;	Title;	Date;
Signature:	Name;	Title;	Date;
Signature:	Name;	Title;	Date;
Signature:	Name;	Title;	Date;
Signature:	Name;	Title;	Date;

PART D – WITNESS STATEMENT FORM

Date of Incident: _____ Date of this Statement: _____

Name of Witness: _____

Name of Interviewer: _____

Instructions: Witness statements should be fact based and when possible written by the witness. If the interviewer writes the statement for the witness, the witness must review the statement completely before signing this form. Deletions must be lined out and initialed by the witness. All changes must be initialed by the witness.

Statement:

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Witness Signature & Date: _____

Interviewer Signature & Date: _____

*Note. If the Witness refuses to sign this form, the interviewer should print "refused to sign" and the date on the Witness Signature line.